RENAULT

0 General vehicle information

01A VEHICLE MECHANICAL SPECIFICATIONS

01C VEHICLE BODYWORK SPECIFICATIONS

01D MECHANICAL INTRODUCTION

02A LIFTING EQUIPMENT

03B COLLISION

04B CONSUMABLES - PRODUCTS

04E PAINT

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Chapitre 0

Contents

Pages

01A VEHICLE MECHANICAL SPECIFICATIONS

Vehicle: Specifications 01A-1

01C VEHICLE BODYWORK SPECIFICATIONS

Vehicle: Identification 01C-1

Vehicle panel gaps: Adjustment value 01C-3

01D MECHANICAL INTRODUCTION

Vehicle: Precautions for the repair 01D-1

Tightening torques: General information 01D-3

02A LIFTING EQUIPMENT

Vehicle: Towing and lifting 02A-1

03B COLLISION

Vehicle involved in an impact: Impact fault finding 03B-1

Vehicle involved in a frontal impact: Description 03B-4

03B COLLISION

Vehicle involved in a side impact: Description 03B-9

Vehicle involved in a rear impact: Description 03B-16

04B CONSUMABLES - PRODUCTS

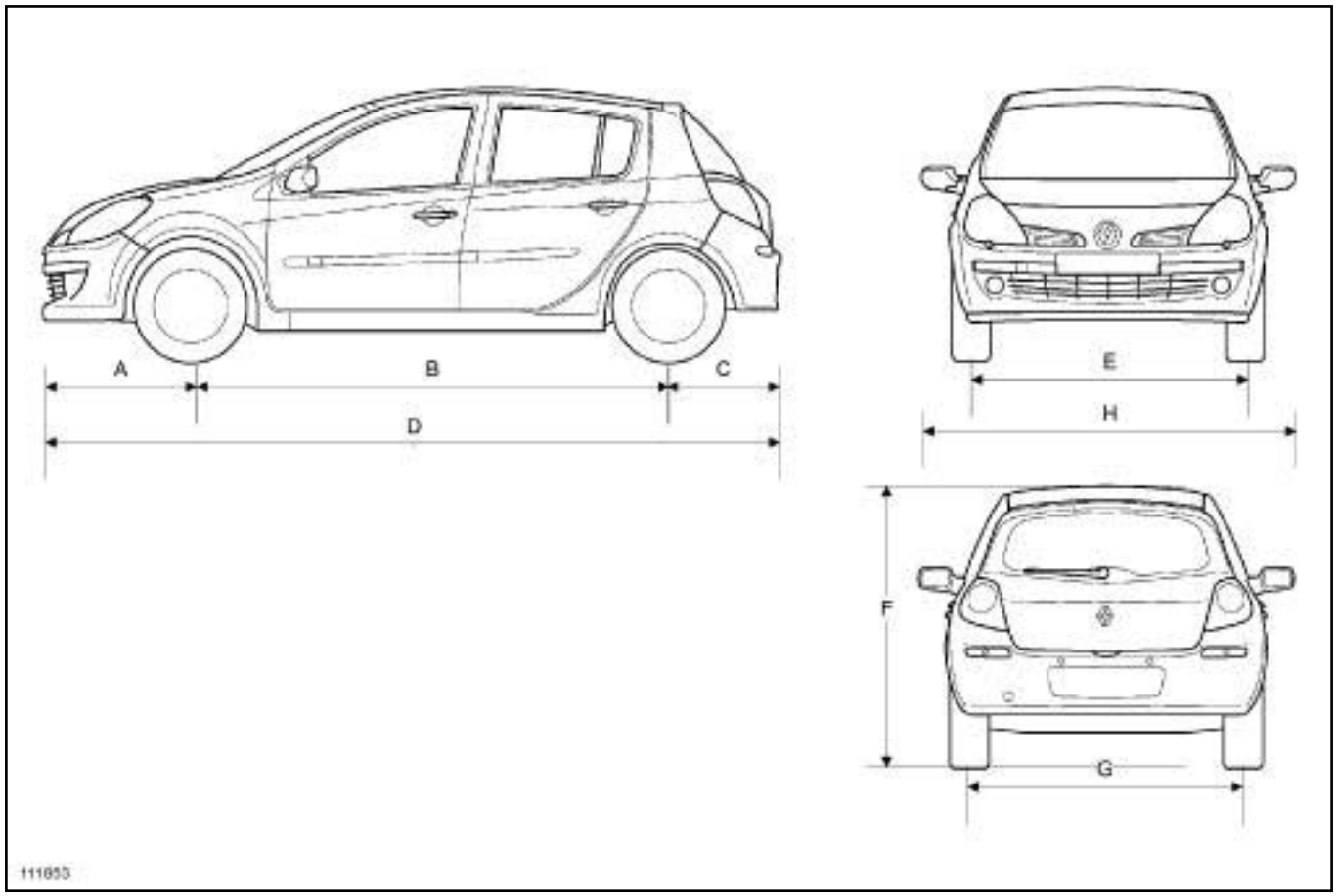
Vehicle: Parts and consumables for the repair 04B-1

04E PAINT

Anti-corrosion protection product: Description 04E-1

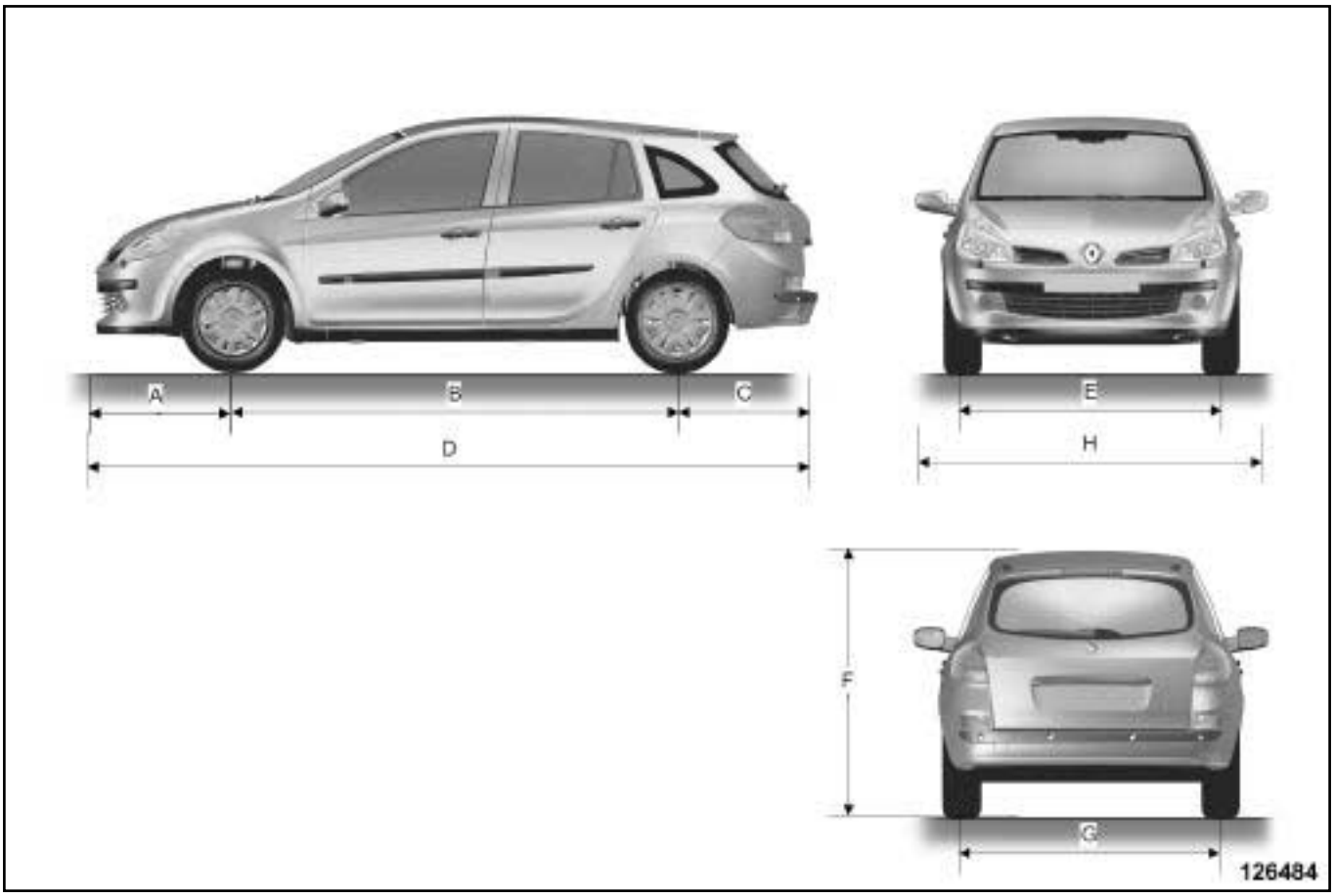
Colour code: Specifications 04E-4

B85 or C85 or S85



111853

K85



126484

Dimensions in metres :

	all models except Clio RS	Clio RS only	Clio Estate	all Clio phase 2 models except Clio RS
A	0.805	0.800	0.805	0.805
B	2.575	2.585	2.575	2.575
C	0.606	0.606	0.822	0.621
D	3.986	3.991	4.203	4.017
E	1.472 (165/65 R15 81T and 195/50 R16 88V)	1.520	1.472	1.472
	1.458 (185/60 R15 84H)		1.458	1.458
F (unladen)	1.497	1.484	1.497	1.497

G	1.471 (165/65 R15 81T)	1.520	1.471	1.470
	1.460 (185/60 R15 84H)			1.460
	1.450 (195/50 R16 88V)		1.450	1.450
H	2.025	2.025	2.025	2.025

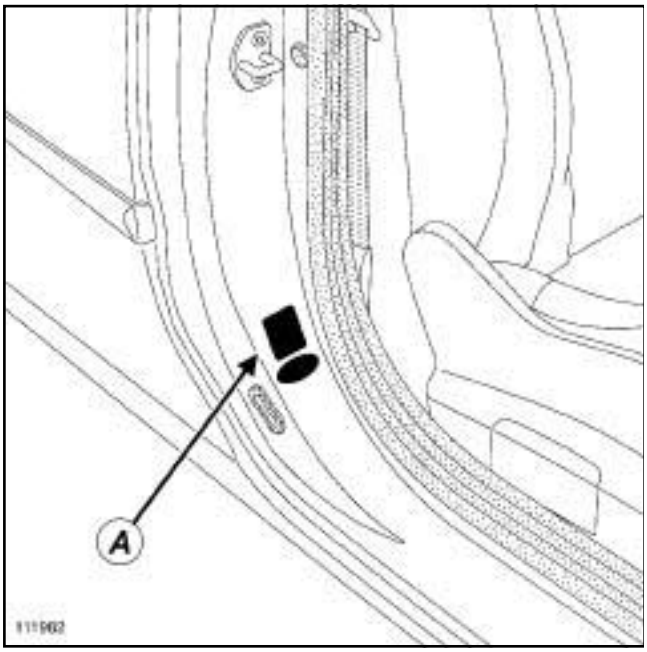
Engine type	Engine suffix	Gearbox	Gearbox suffix	Emissions standard
D4F	740	JH3	128 176	EURO 3, 4 and 5
	742 (a)			EURO 4
	764	JH3	128 176	EURO 4 and 5
		JA3	001	EURO 3 and 4
	784	JH3	184 185 186 187	EURO 4
	786		312 313 315	EURO 5
F4R	830	TL4	003 024	EURO 4
	832		024 031	
K4J	780	JH3	129 154 172 173 177	EURO 3 and 4

Engine type	Engine suffix	Gearbox	Gearbox suffix	Emissions standard
K4M	800	JH3	131 155 179	EURO 3 and 4
		JR5	138 171	US94, EURO 3 and 4
	801	DP0	074	EURO 3, 4 and 5
	804	JH3	131 155 179	EURO 4
	862	TL4	039	
K9K	750	JR5	113 162	EURO 1 and 3
	752	JH3	132 174	
	764	TL4	002	EURO 4
	766	JA5	001	
		JR5	124 128 164 322	
	768	JH3	141 175 189 190	
	772	TL4	002	EURO 4
M4R	700	TL4	008	EURO 4
	701	DP0	021	

a: Engine running on an ethanol/petrol mixture.

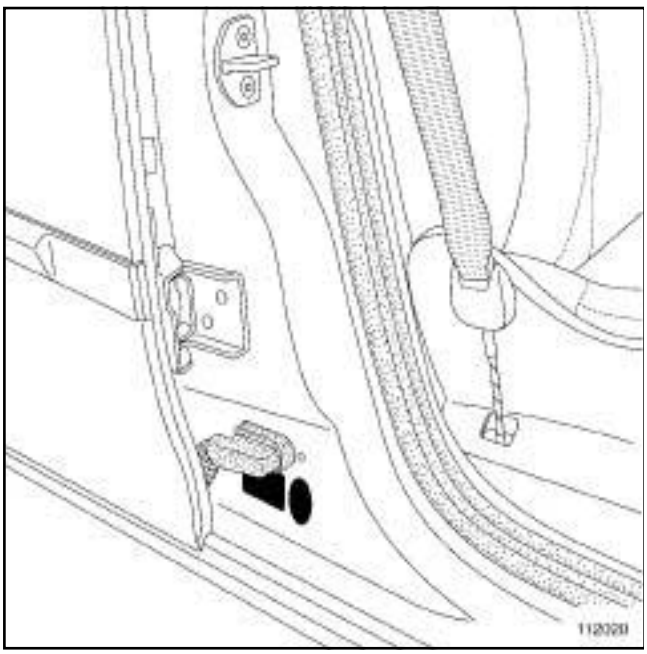
I - LOCATIONS OF THE VEHICLE IDENTIFICATION PLATE

C85 or S85

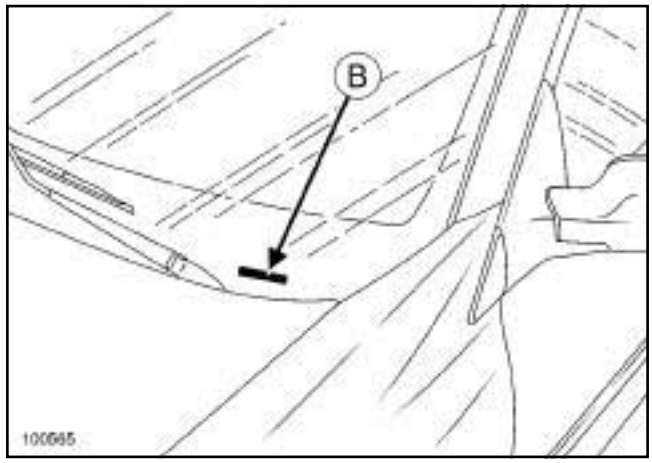


111982

B85 or K85

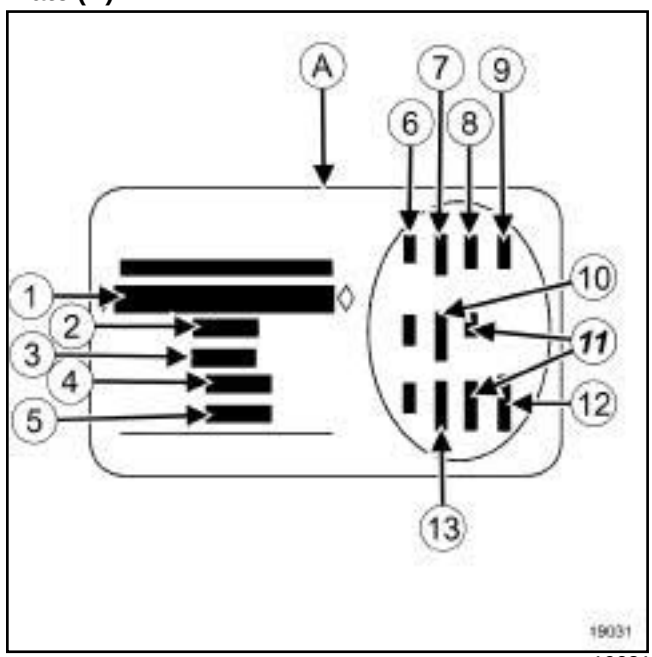


112020



100565

Plate (A):

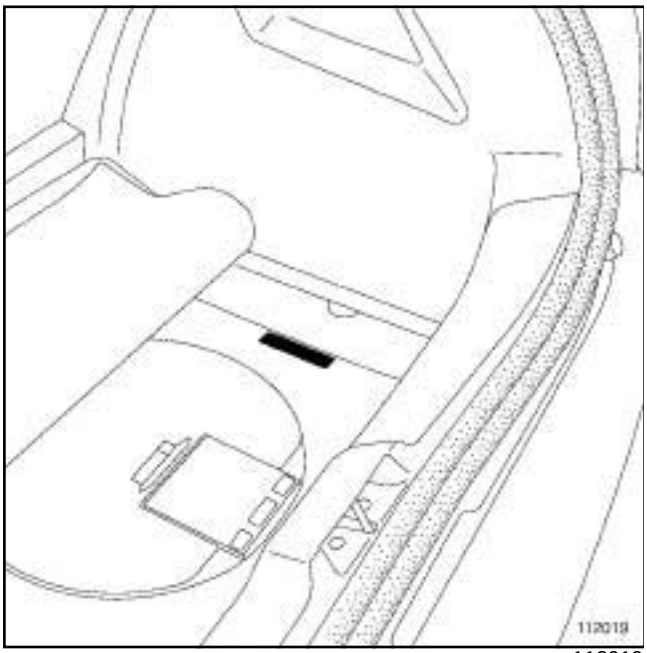


19031

(**1**)	Vehicle type mine and type number; this information also appears on marking (B)
(**2**)	MGVW (Maximum Gross Vehicle Weight)
(**3**)	GTW (Gross train weight, vehicle under load with trailer)
(**4**)	Maximum permissible front axle load
(**5**)	Maximum permissible rear axle load
(**6**)	Vehicle technical specifications
(**7**)	Paintwork reference number
(**8**)	Equipment level
(**9**)	Vehicle type

(**10**) Upholstery code
(**11**) Additional equipment details
(**12**) Fabrication number
(**13**) Interior trim code

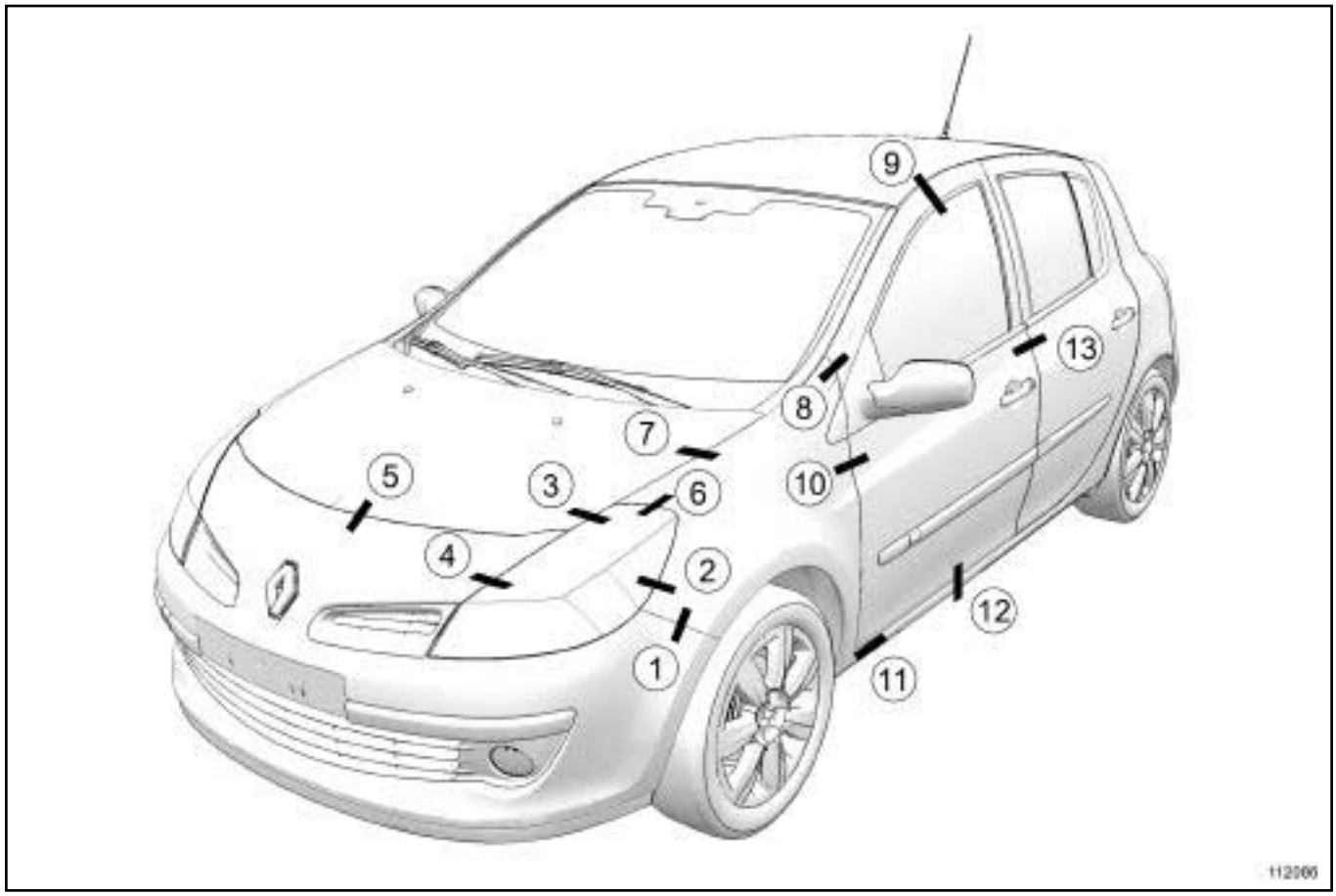
II - COLD-MARKING OF THE BODY



112019

Note:

If the complete body is being replaced, it must be marked in compliance with the current regulations.



112086

WARNING

The clearance values are given for information purposes.

Certain rules have to be followed when clearances are adjusted:

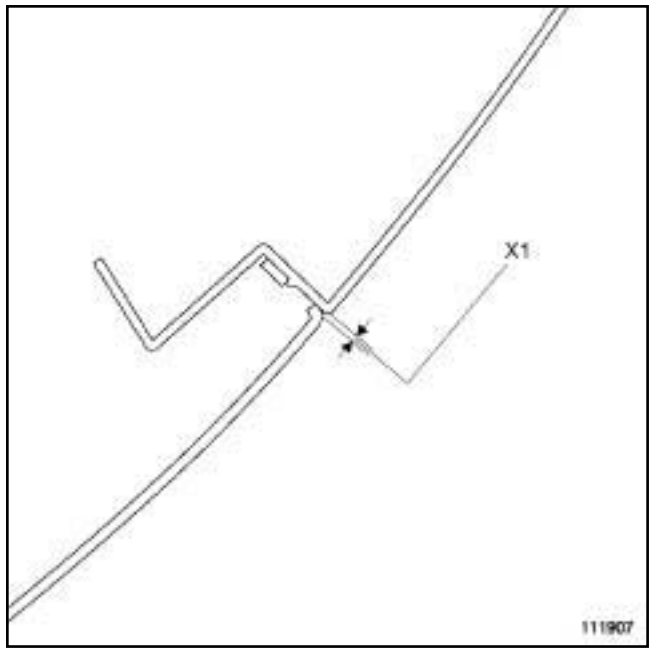
-maintain symmetry in relation to opposite side,

-ensure the flush fitting is correct,

-check correct operation of the opening, and water- and airtightness.

All values are given in millimetres.

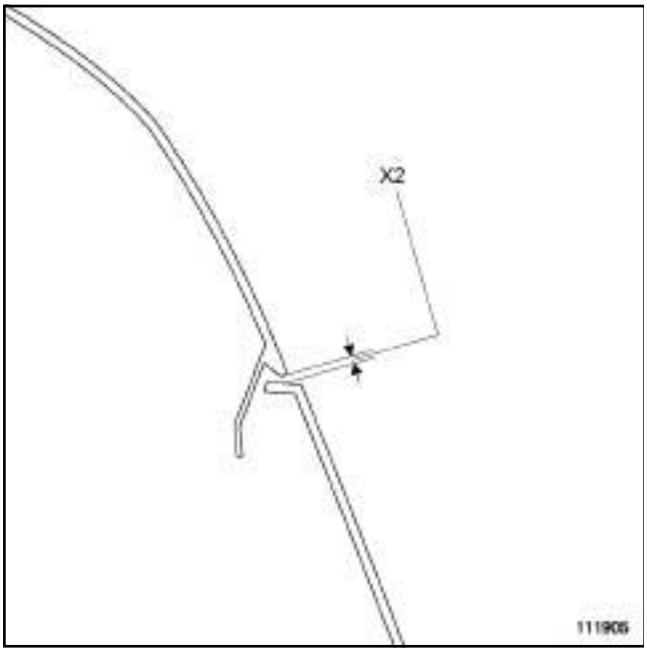
Section 1



111907

(**X1**) = **0.75** mm ± **0.75**

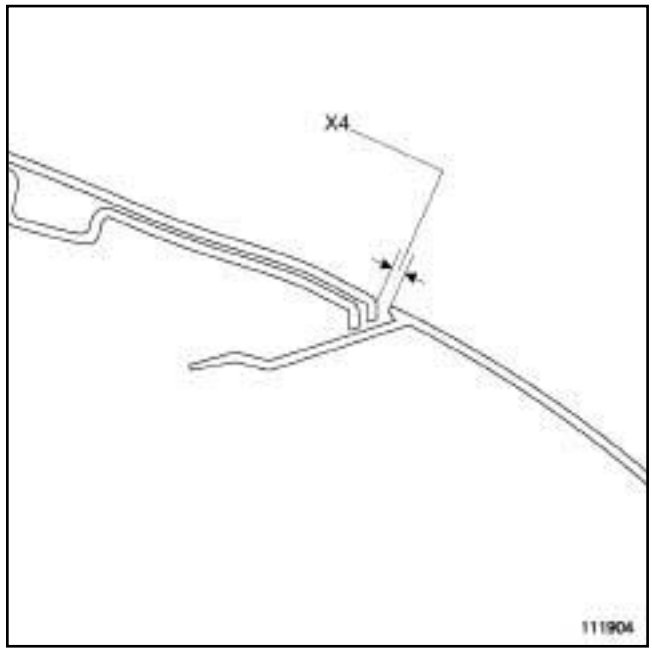
Section 2



111905

(**X2**) = **2** mm ± **1**

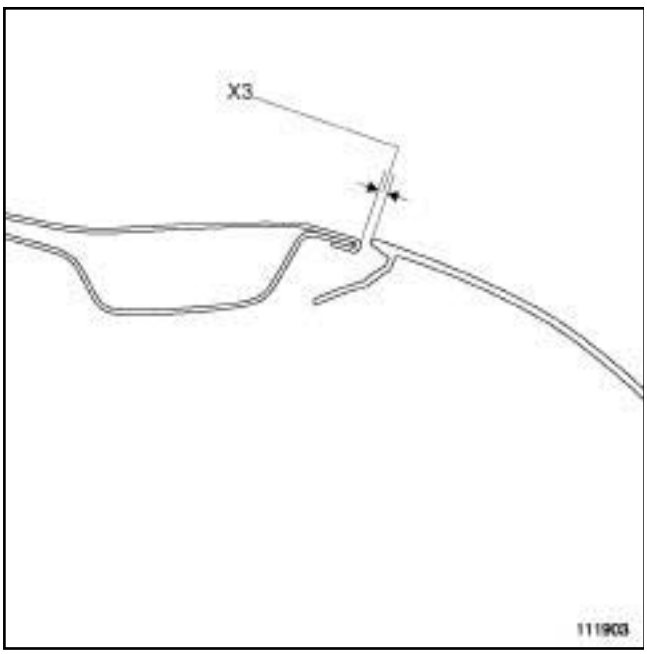
Section 4



111904

(**X4**) = **3.4** mm ± **1.5**

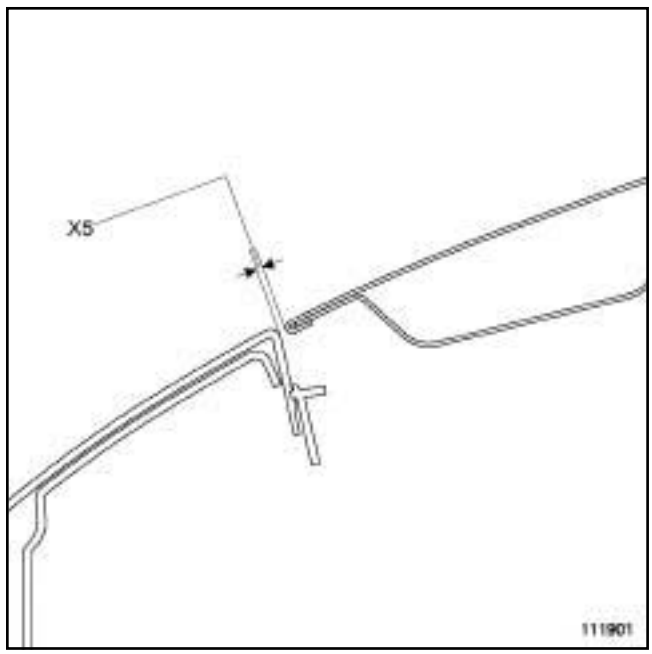
Section 3



111903

(**X3**) = **3.5** mm ± **1.5**

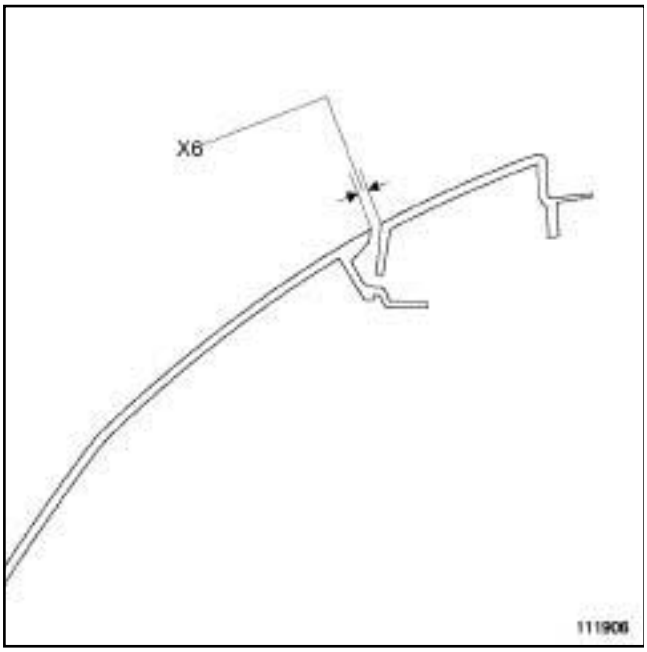
Section 5



111901

(**X5**) = **3.5** mm ± **1.5**

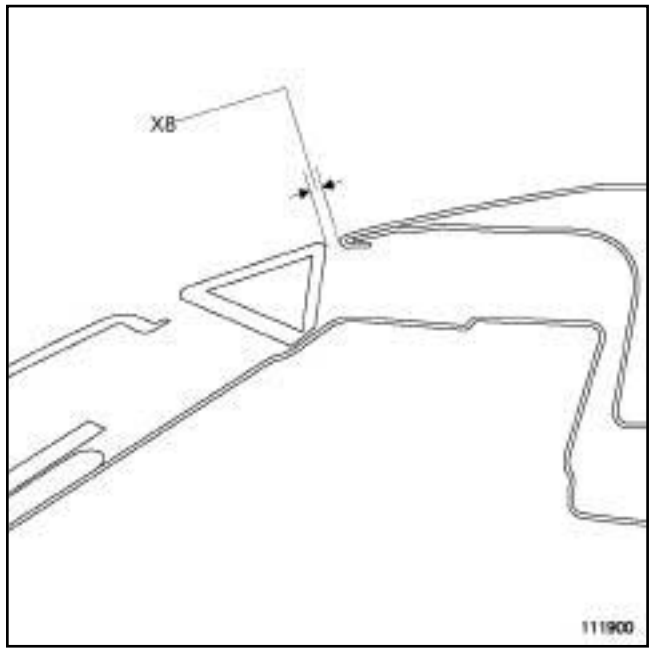
Section 6



111906

(**X6**) = **2** mm ± **1**

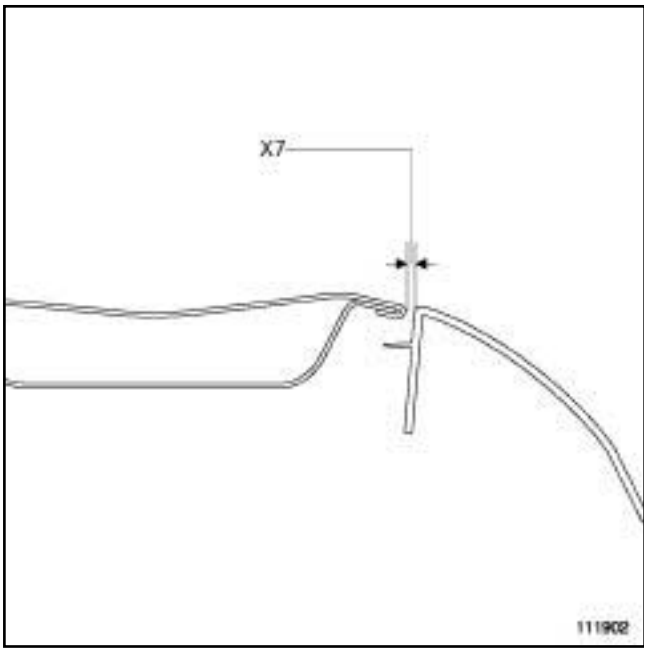
Section 8



111900

(**X8**) = **4** mm ± **1**

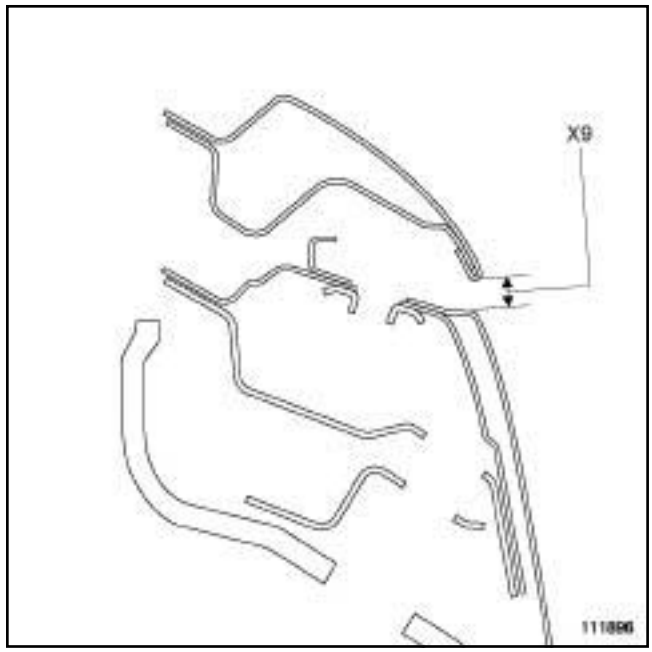
Section 7



111902

(**X7**) = **3.5** mm ± **1.2**

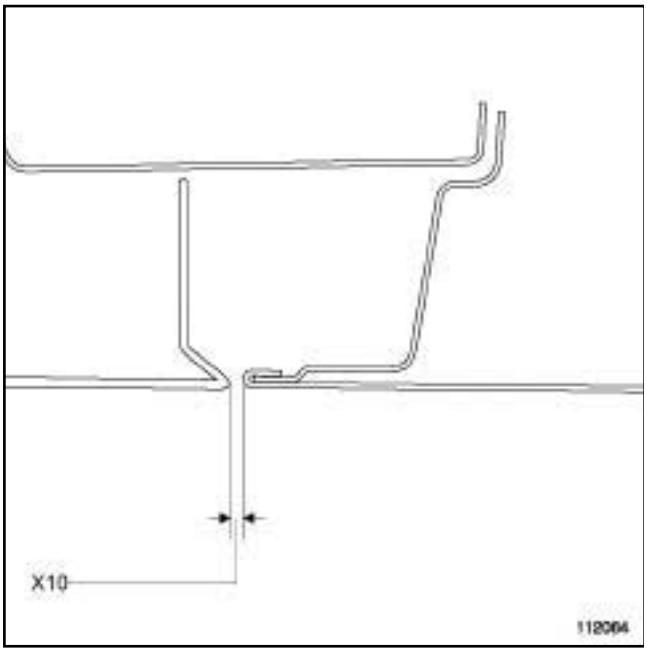
Section 9



111896

(**X9**) = **6mm** ± **1**

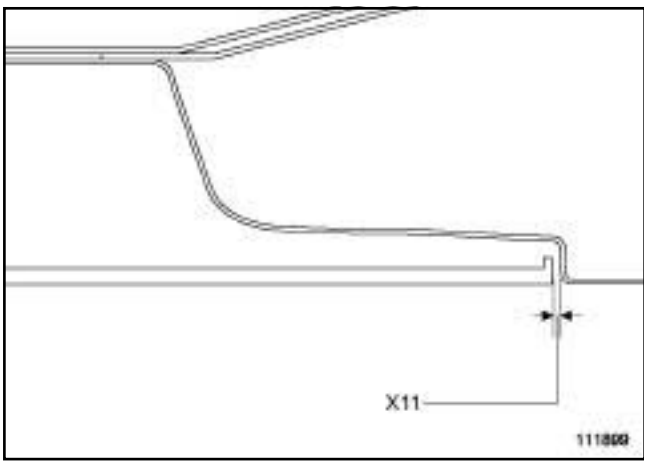
Section 10



112064

(**X10**) = **4** mm ± **1**

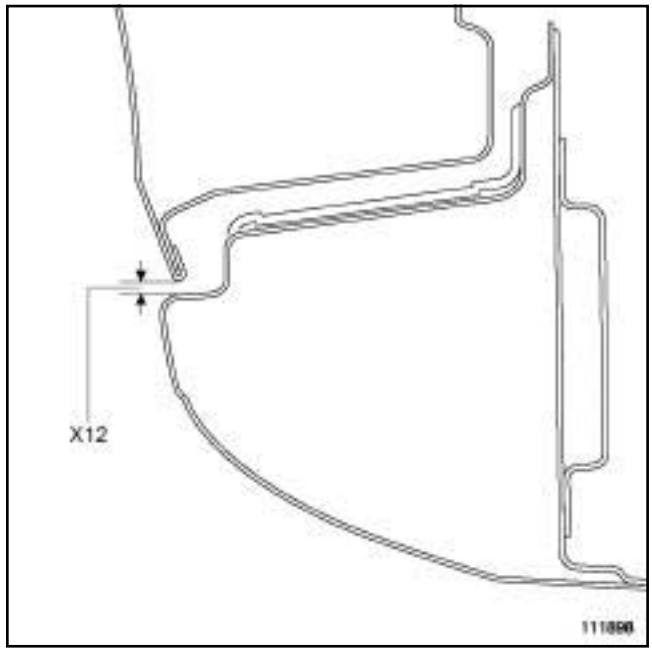
Section 11



111899

(**X11**) = **4.2** mm ± **1.5**

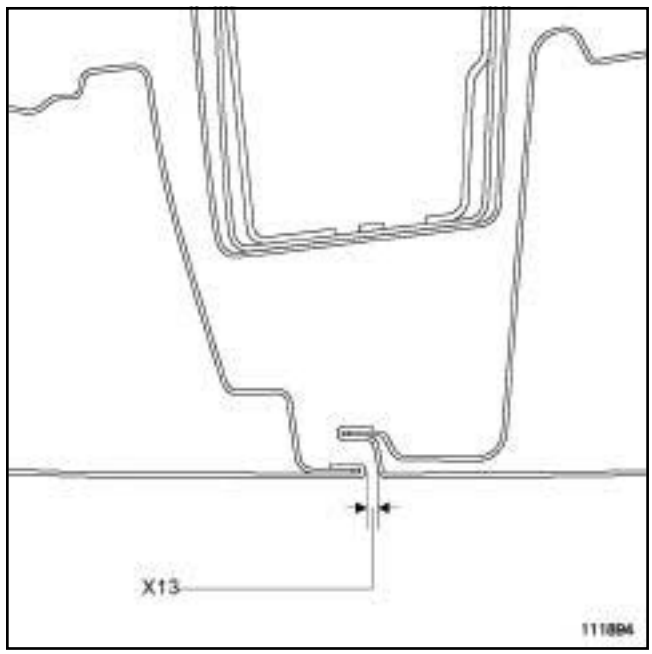
Section 12



111898

(**X12**) = **3mm** ± **1**

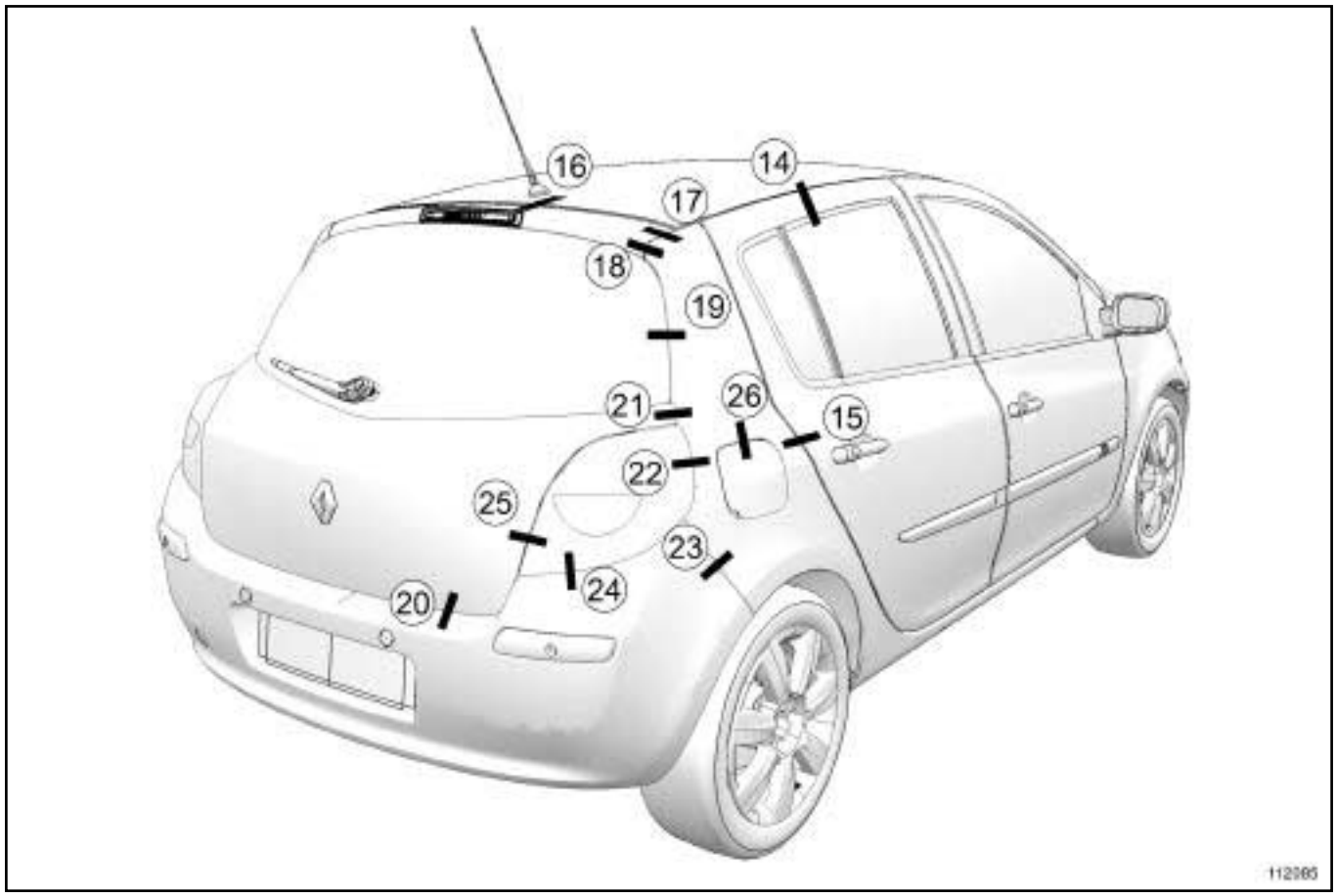
Section 13



111894

(**X13**) = **4.5** mm ± **1.5**

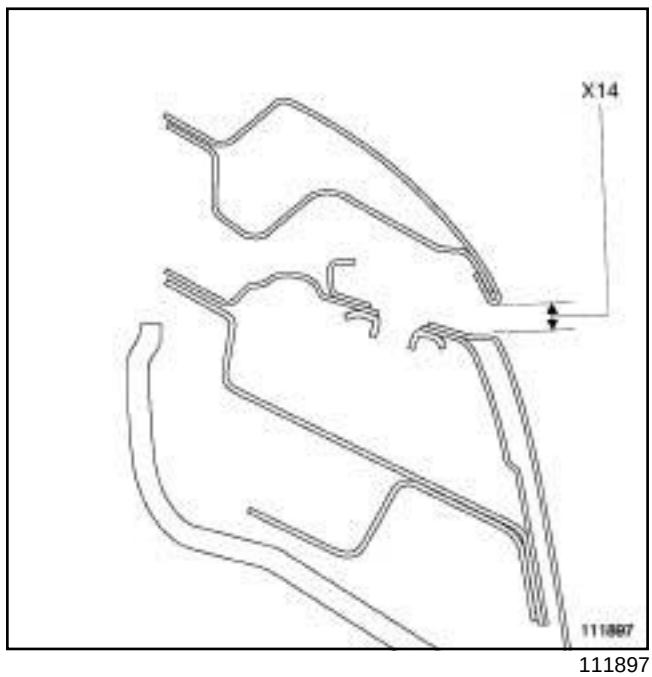
B85 or C85 or S85



112085

B85

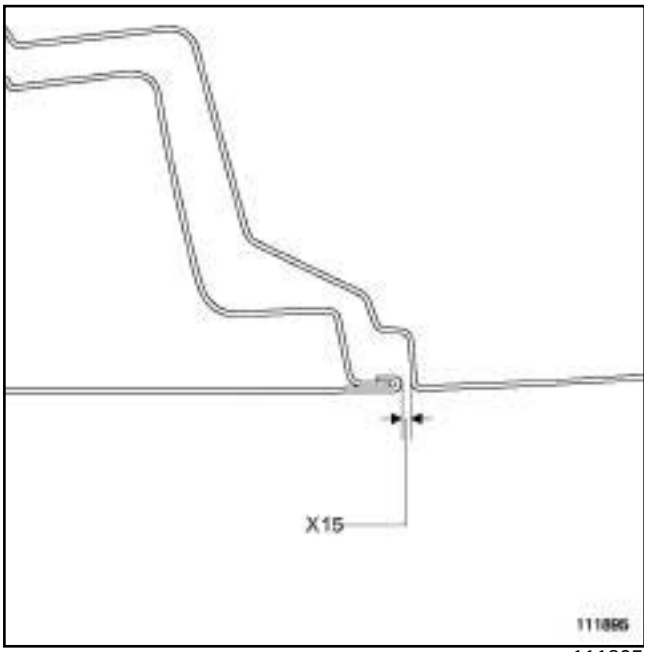
Section 14



111897

(**X14**) = **6** mm ± **2**

Section 15

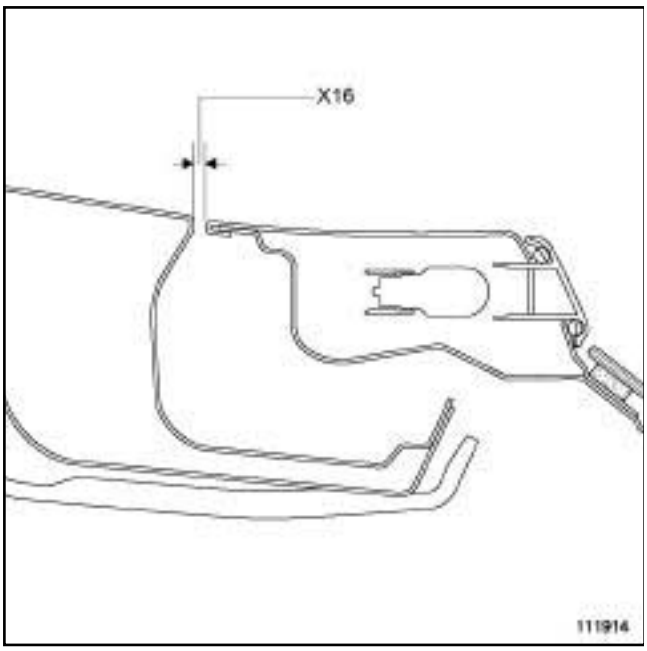


111895

(**X15**) = **4** mm ± **1**

B85 or C85 or S85

Section 16



111914

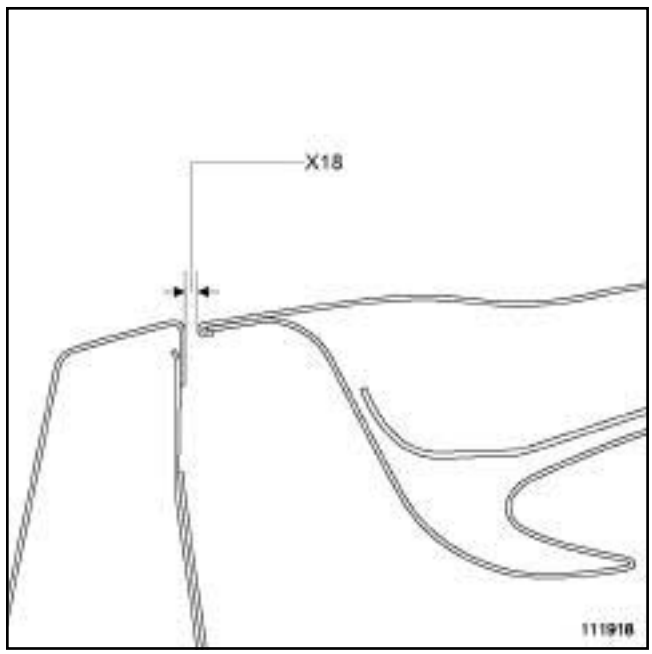
(**X16**) = **5** mm ± **1**

Section 17

111917

(**X17**) = **4.3** mm ± **1.5**

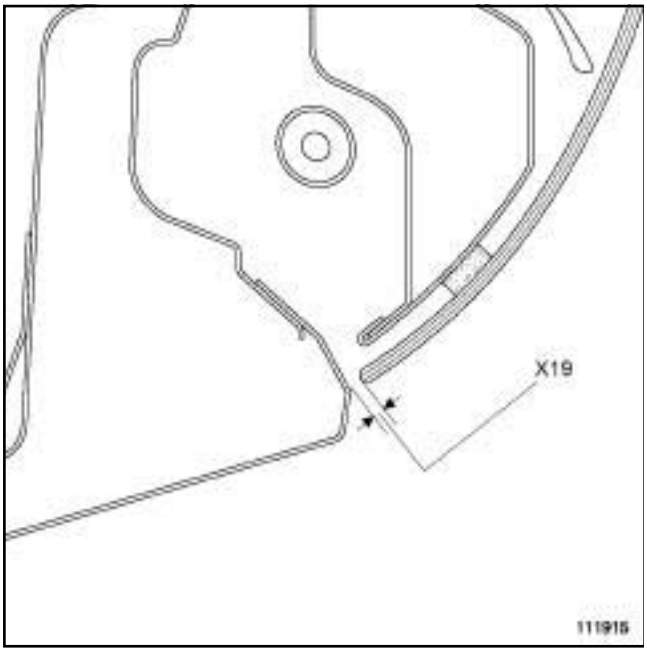
Section 18



111918

(**X18**) = **4** mm ± **1.5**

Section 19



111915

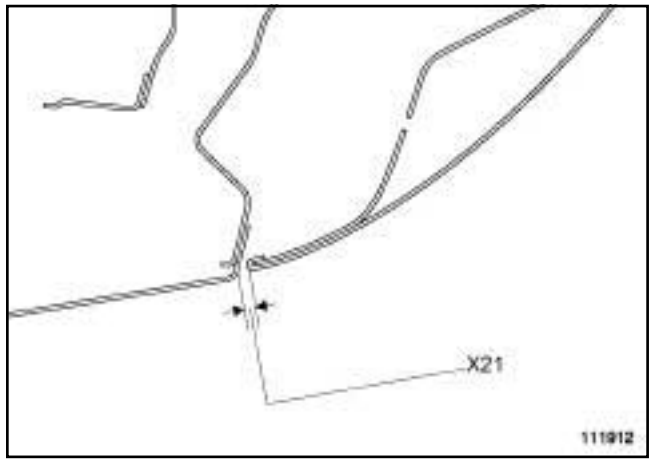
(**X19**) = **4** mm ± **2**

Section 20

111916

(**X20**) = **5** mm ± **2**

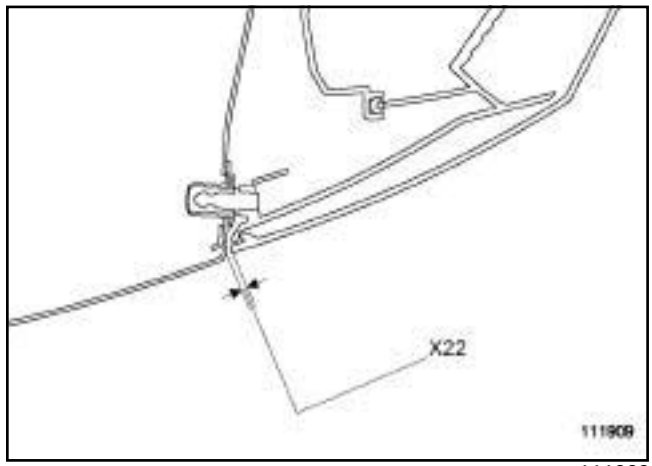
Section 21



111912

(**X21**) = **4** mm ± **2**

Section 22



111909

(**X22**) = **1.5** mm ± **1**

Section 23

111913

(**X23**) = **0.75** mm ± **0.75**

Section 24

111910

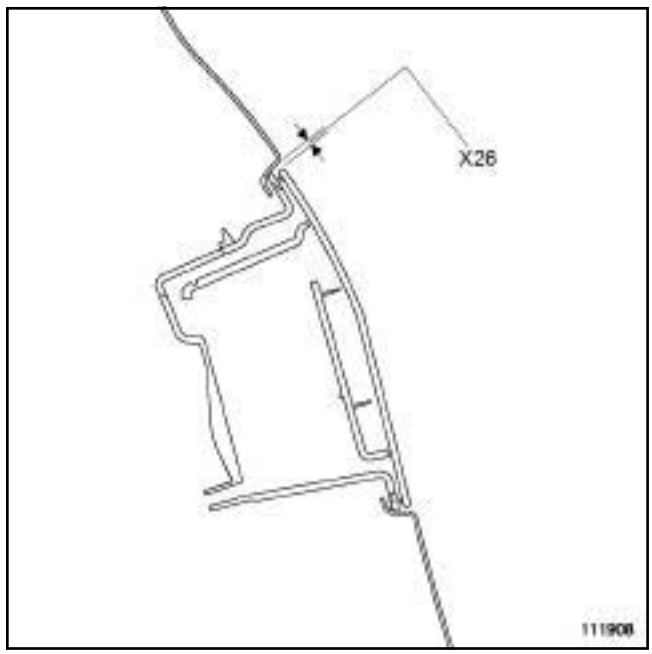
(**X24**) = **1.5** mm ± **1**

Section 25

111911

(**X25**) = **4** mm ± **2**

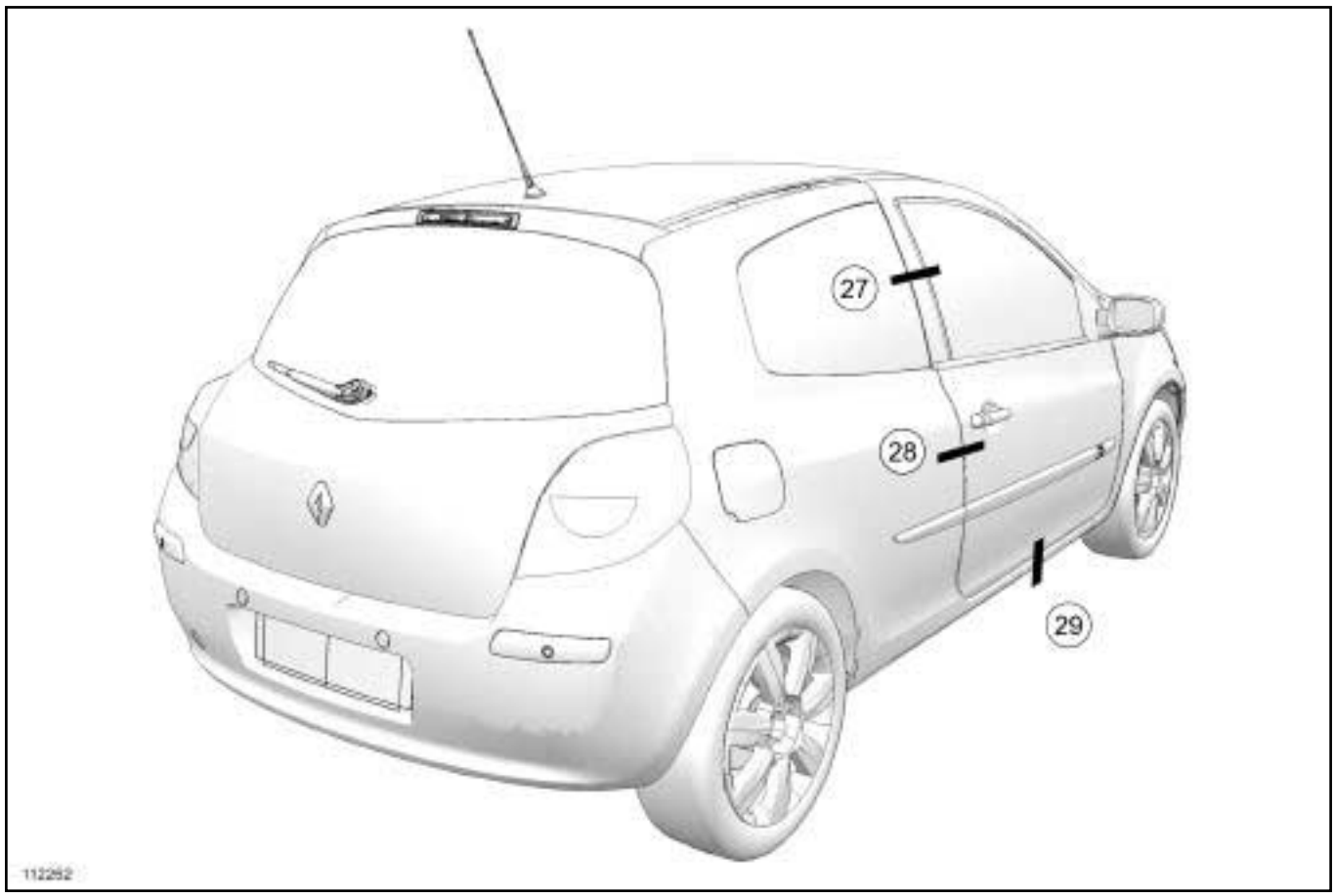
Section 26



111908

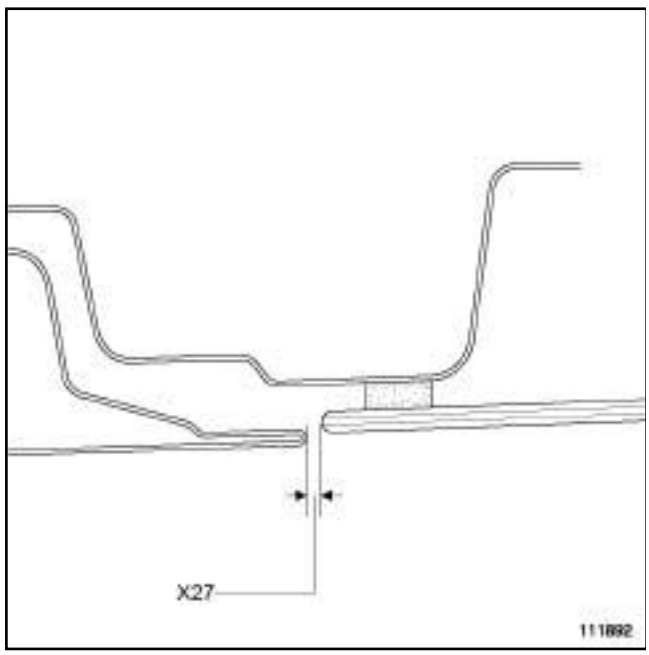
(**X26**) = **2.5** mm ± **1**

C85 or S85



112262

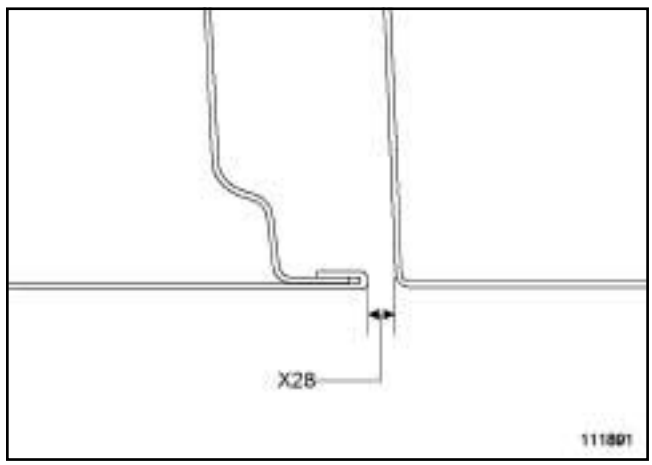
Section 27



111892

(**X27**) = **4** mm ± **1.5**

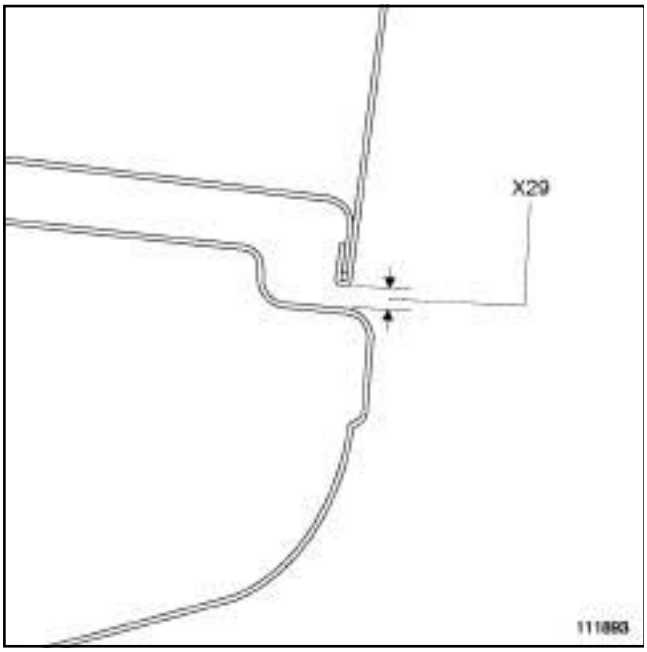
Section 28



111891

(**X28**) = **4** mm ± **1.3**

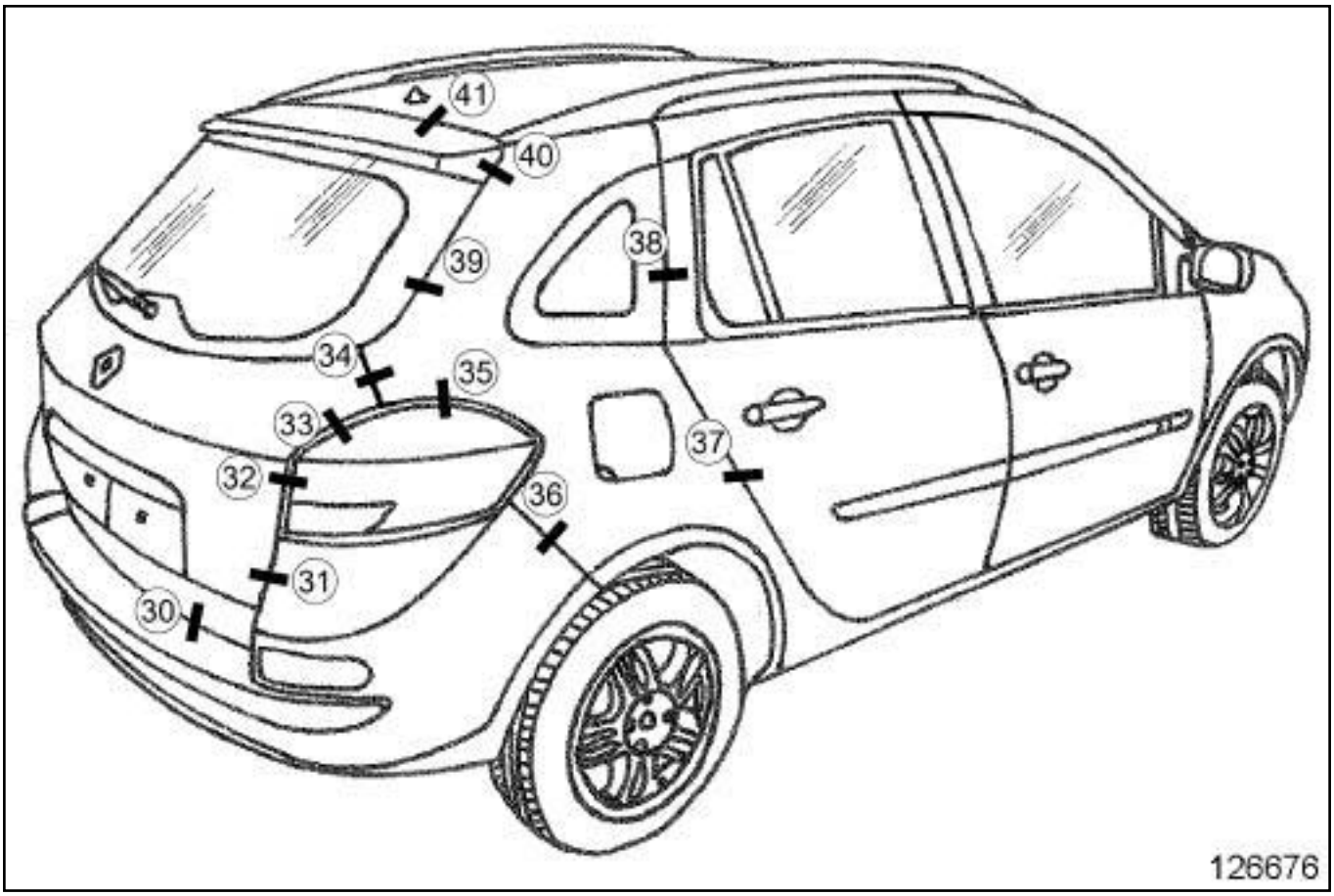
Section 29



111893

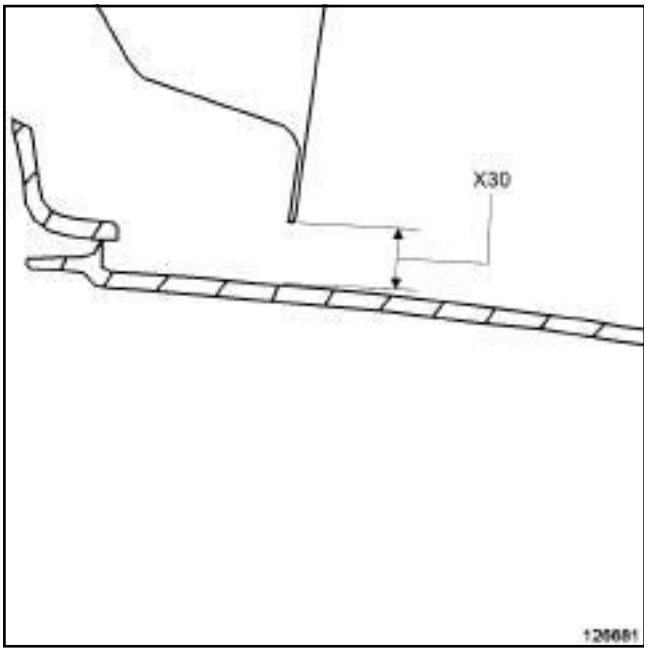
(**X29**) = **4.5** mm

K85



126676

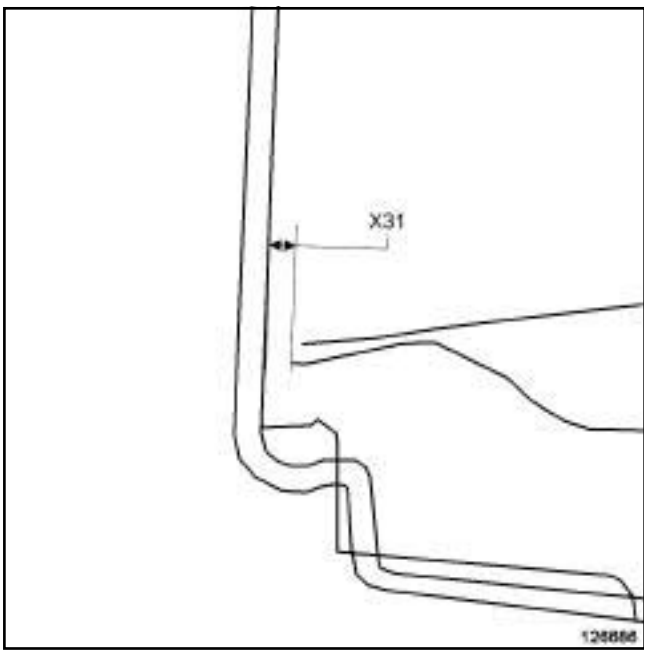
Section 30



126681

(**30**) = **6** mm ± **2.5**

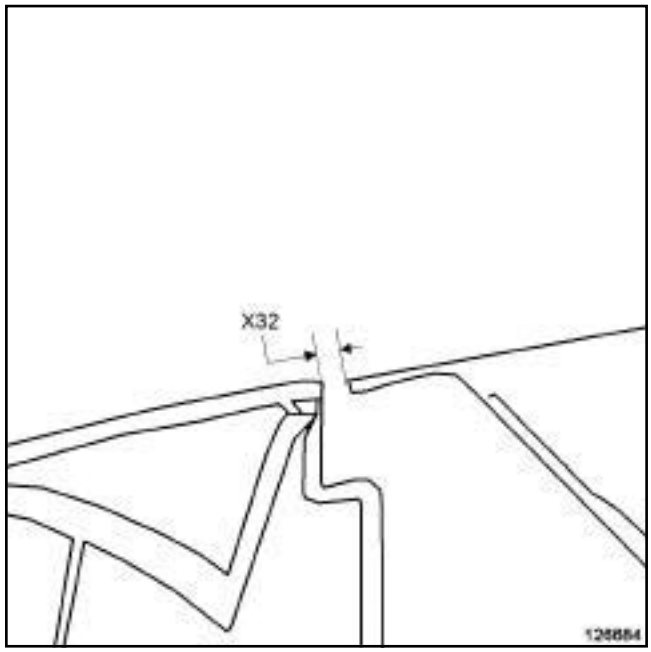
Section 31



126686

(**31**) = **4** mm ± **2**

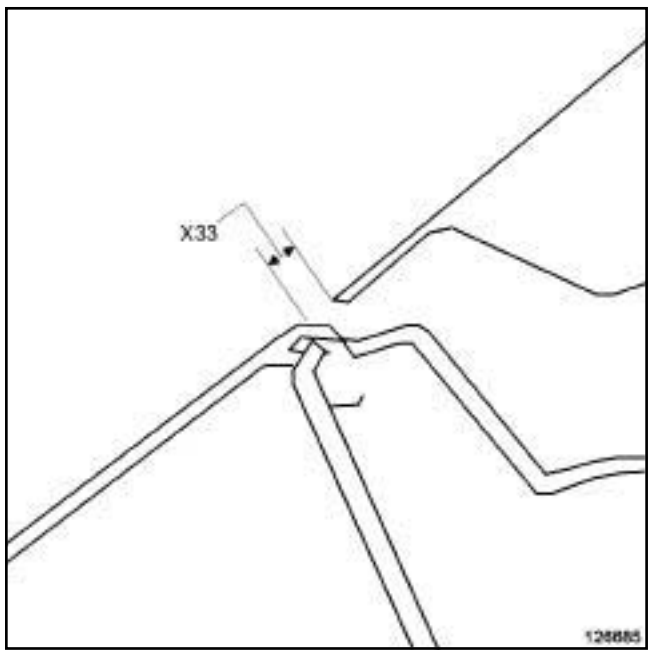
Section 32



126684

(**32**) = **4** mm ± **2**

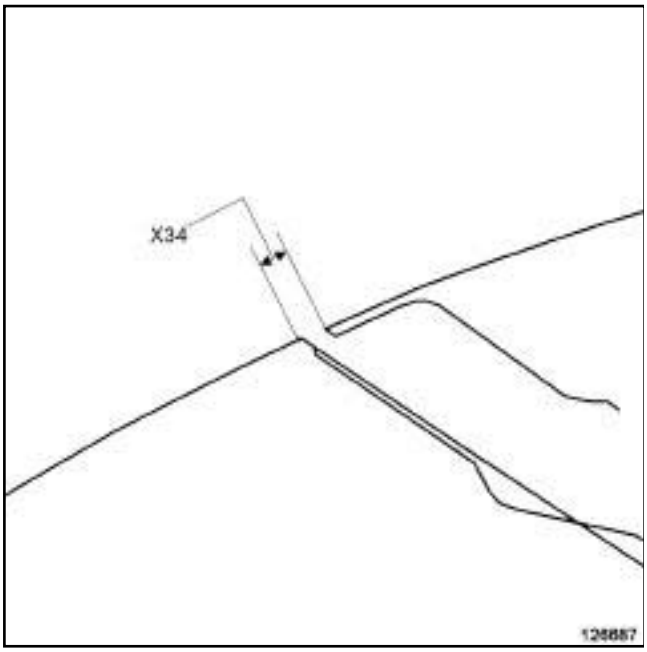
Section 33



126685

(**33**) = **4** mm ± **2**

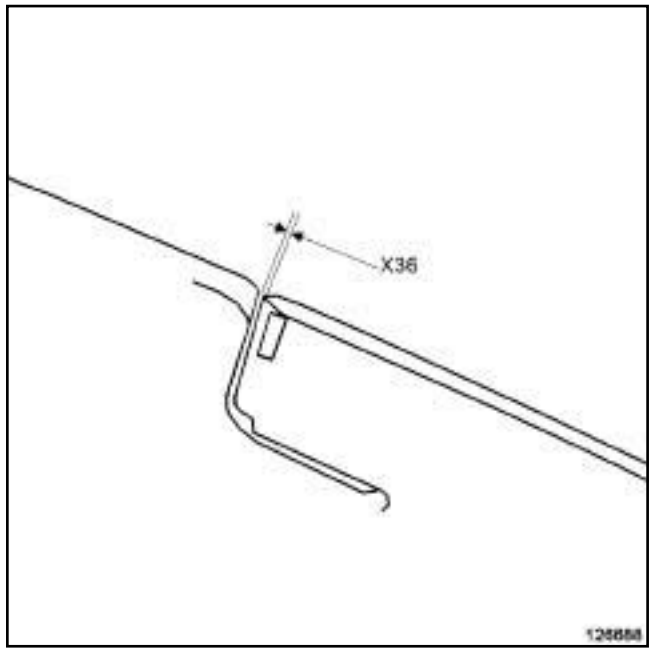
Section 34



126687

(**34**) = **4.3** mm ± **2**

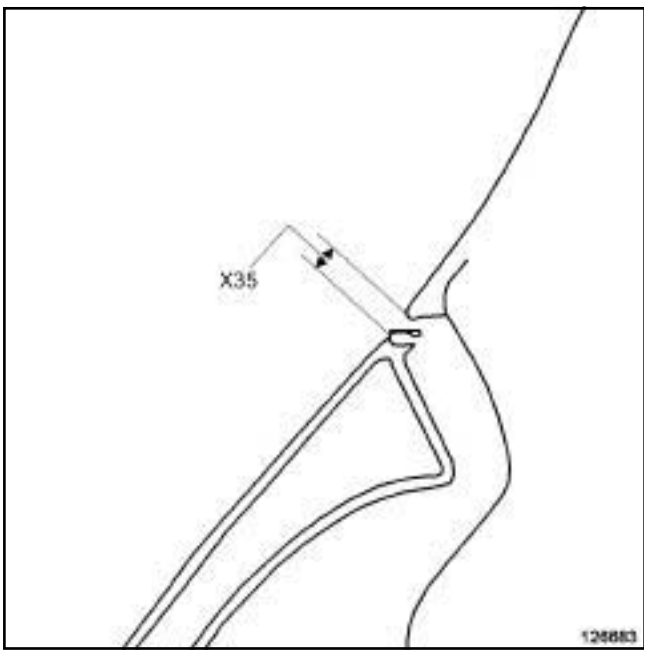
Section 36



126688

(**36**) = **0.5** mm ± **1**

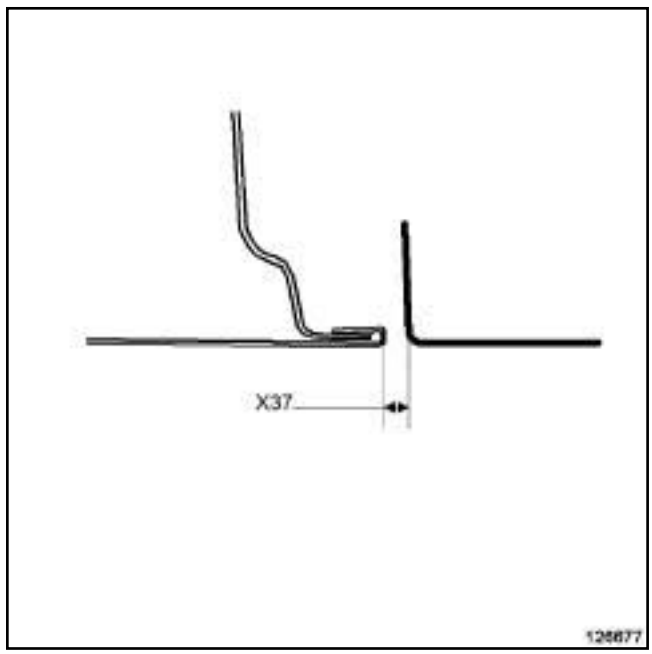
Section 35



126683

(**35**) = **1.5** mm ± **1**

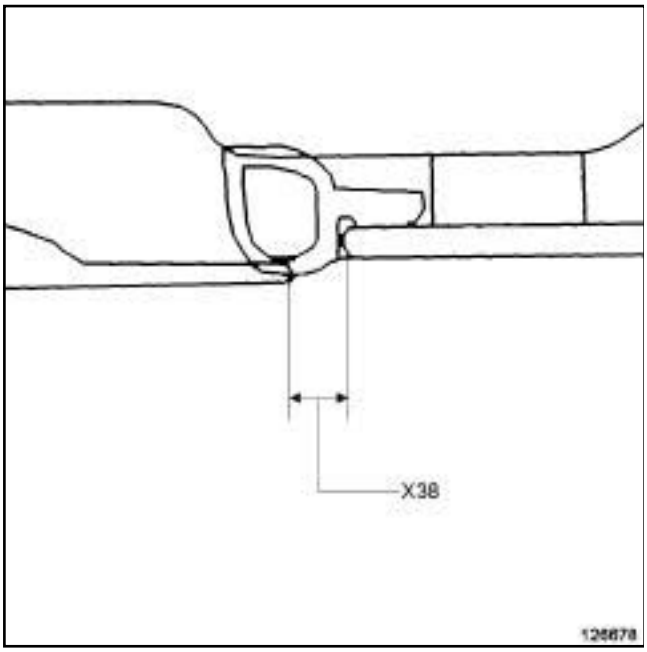
Section 37



126677

(**37**) = **4** mm ± **1.5**

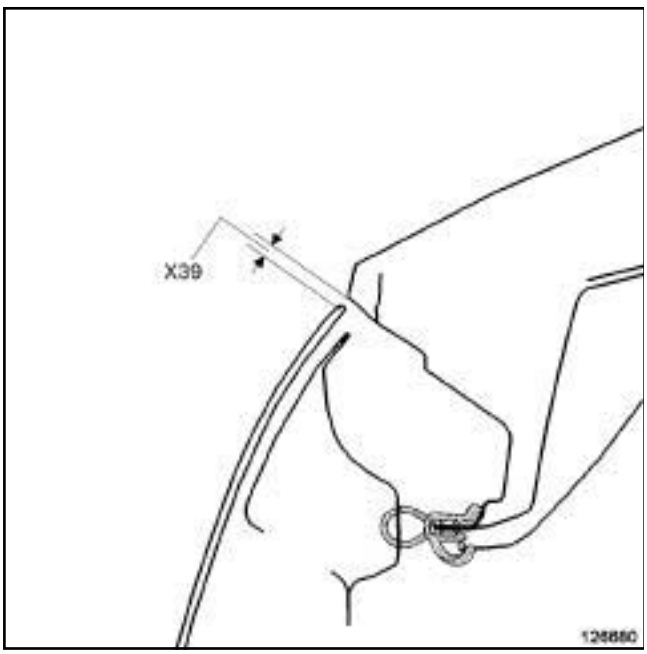
Section 38



126678

(**38**) = **4** mm ± **2.3**

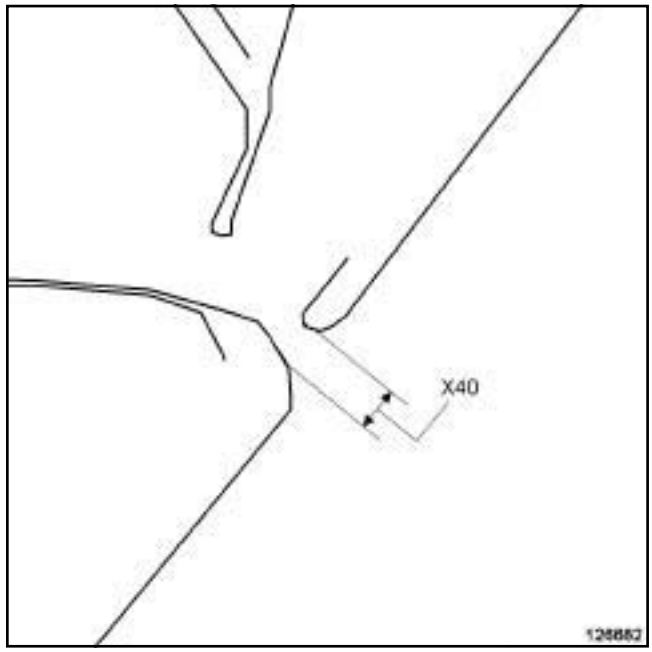
Section 39



126680

(**39**) = **4** mm ± **2**

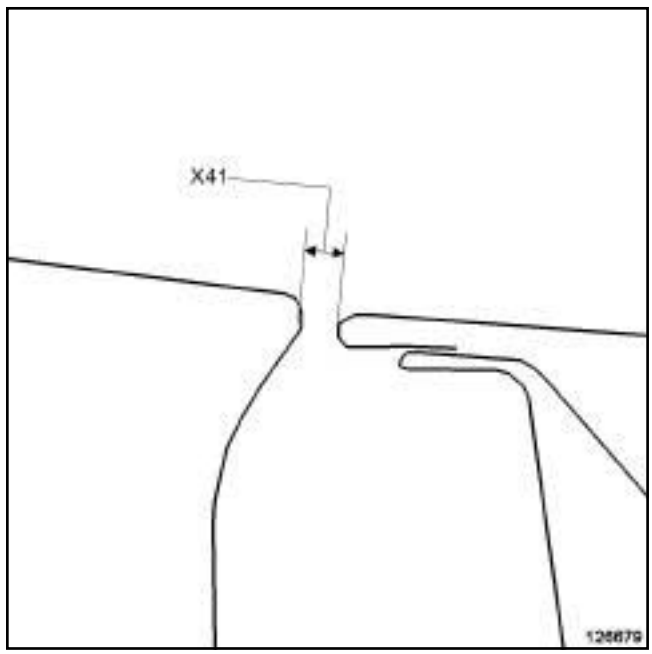
Section 40



126682

(**40**) = **4.3** mm ± **1.5**

Section 41



126679

(**41**) = **5.5** mm ± **1**

GENERAL INFORMATION

All information contained in these manuals is intended exclusively for automotive industry professionals.

The documentation is intended to cover all vehicles in the **RENAULT** range throughout the world, but may not cover equipment designed for use in specific countries.

The procedures and fault finding procedures recommended and described in this manual have been designed by automotive industry repair professionals.

1 - General recommendations

Observe basic principles of vehicle repair.

The quality of repair depends first and foremost on the care exercised by the person in carrying it out.

To ensure good repair:

- protect the sensitive areas of the vehicle (seats, steering wheel, wings, etc.),
- unless otherwise indicated, all repairs must be done with the ignition off,
- when welding on the vehicle, it is advisable to remove or disconnect components near the repair area that could be affected by the heat,
- use recommended professional products and original parts,
- observe the tightening torques,
- replace roll pins, self-locking or bonded nuts or bolts every time they are removed,
- take care with electrical and electronic components which cannot withstand excess voltage and improper handling; replace any electrical and electronic components which have experienced a voltage drop,
- make sure that the connectors are correctly clipped,
- do not pull on the wiring,
- check for the sealing plugs on the connectors,
- Do not splash any liquid, regardless of its type (oil, cleaner, etc.), on the electric and electronic components (computers, sensors, etc.)
- do not just replace parts one after the other, carry out detailed fault finding beforehand,
- carry out a final check before returning the vehicle to the customer (set the clock, check the alarm operation, check the lights and indicators etc.),
- clean and degrease the sections to be bonded (threads, stub axle splines) to ensure proper adherence,
- protect the accessories and timing belts, the electrical accessories (starter, blanking cover, electric power assisted steering pump) and the mating face to prevent diesel fuel spilling onto the clutch friction plate.

The design quality of our vehicles demands that nothing is left to chance in making a good repair, and it is essential to refit parts or components exactly as they were originally (for instance: heat shields, wiring routing, pipe routing, particularly in the area of the exhaust pipe).

Do not blow away asbestos particles or dust (brakes, clutch, etc.), vacuum them up or clean the component with a cleaning agent (such as a brake cleaning product).

Use professional products and apply them with care, for example do not apply too much sealing paste to the sealing surface.

Exhaust gases (petrol and diesel) are pollutants. Operate engines with care and always use exhaust gas extractors.

Ensure that there is no risk of a short circuit occurring when the electrical connections are reconnected (e.g. starter, alternator, etc.). Some points need greasing, others do not, therefore particular attention should be paid during refitting operations to ensure that they work properly under all conditions.

2 - Special tooling - ease of use

The repair procedures have been designed using special tools; they must therefore be carried out using these tools to ensure a high degree of working safety and quality of repair.

The equipment we have approved has undergone careful research and testing, and must be used and maintained with care.

3 - Reliability - updating

New repair procedures are constantly being developed in the interests of repair quality, either with new products (emission control, injection, electronics, etc.), or in fault finding. Be sure to consult the Workshop Repair Manuals or Technical Notes or fault finding summaries before any servicing operation.

Since vehicle specifications are subject to change during their commercial life, it is essential to check whether there are any updated Technical Notes when seeking information.

4 - Safety

Operations on certain equipment and certain parts (for instance: spring-shock absorber assembly, automatic transmission, brake system, ABS, airbag, common rail diesel injection, LPG, etc.) require particular attention to be paid to safety, cleanliness and care.

The safety symbol used in this manual indicates that special attention must be paid to the procedure or the tightening torque values.

Working safely:

- use suitable tools which are in good condition (use of « multi-purpose» tools, such as adjustable pliers, etc., should be avoided wherever possible),
- use supports and adopt a correct posture when performing heavy work or raising loads,
- make sure that the procedure used is not dangerous,
- Do not wear any jewellery or other small objects during an operation,
- use personal protection (gloves, safety glasses, work shoes, masks, skin barrier creams, etc.),
- always follow the safety instructions associated with the operation to be performed,
- do not smoke when working on vehicles,
- use smoke extractors (welding, exhaust gases, etc.),
- do not use harmful products in unventilated rooms,
- do not overstrain yourself or attempt inappropriate work operations,
- use axle stands when working under a vehicle raised on a jack,
- do not ingest any chemicals (brake fluid, coolant, etc.),
- do not open the cooling circuit when it is hot and pressurised,
- take care with components that are liable to start up suddenly (engine cooling fan, etc.).

Respecting the environment:

- do not allow waste refrigerants to escape into the atmosphere,
- do not dispose of waste vehicle fluids (oil, brake fluid, etc.) in drains,
- do not burn discarded products (tyres, etc.).

5 - Conclusion

The procedures contained in this document merit your attention. Please read them carefully in order to reduce the risk of injury, and avoid using incorrect procedures that could damage the vehicle or make it dangerous in use.

Following the recommended procedures will help you to provide a quality of service which will ensure the vehicles achieve the highest levels of performance and reliability.

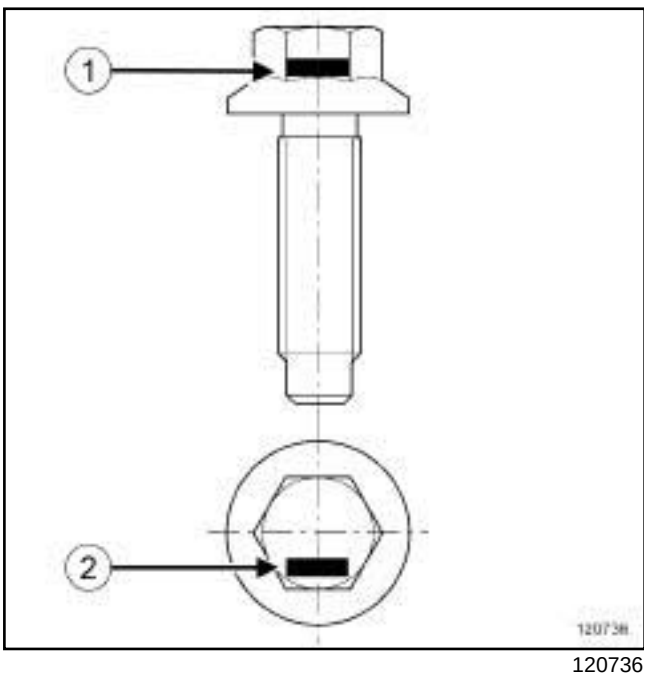
Maintenance and repair operations must be carried out under the proper conditions to ensure that our vehicles run safely and reliably.

I - TABLE OF STANDARD TORQUES

Fastenings		Standard tightening torque (N.m)
Diameter	**Property class**	
M6	8.8	10
M8	8.8	25
M10	8.8	50
M10	10.9	62
M12	10.9	105
M14	10.9	180
M16	10.9	280
M18	10.9	400

Special notes on electrical earths

Fastenings	Standard tightening torque (N.m)
Diameter	
M6	8
M8	21
M10	44



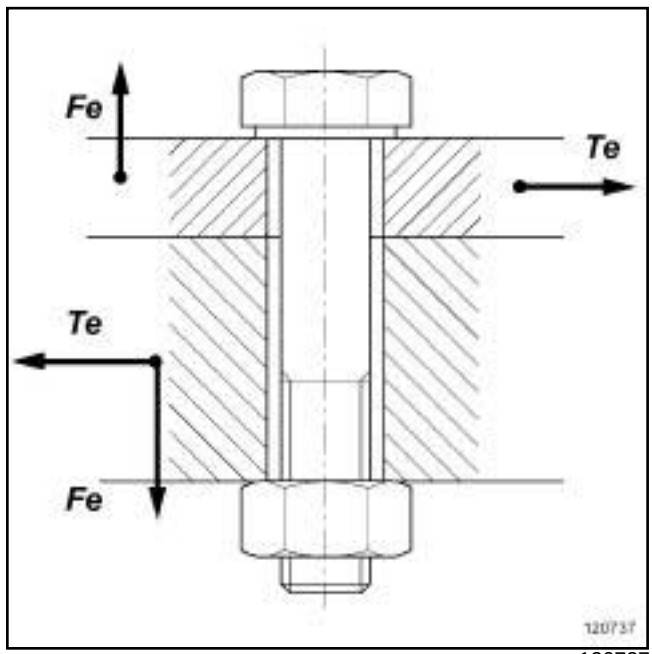
120736

The property class is indicated on the bolt (**1**) or (**2**) .

II - FUNCTION OF A BOLTED ASSEMBLY

The bolting system connects parts of an assembly to prevent their separation or sliding when submitted to exterior forces.

Exterior forces

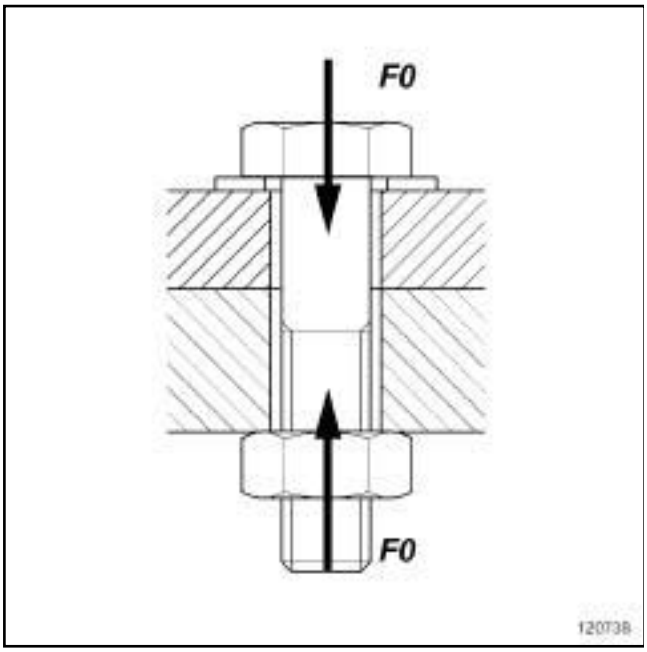


120737

The assembly is submitted to forces that are:

- static and / or dynamic,
- simple (e.g. simple traction),
- multiple (traction + flexion + torsion).

Creating tension (or preload) F0

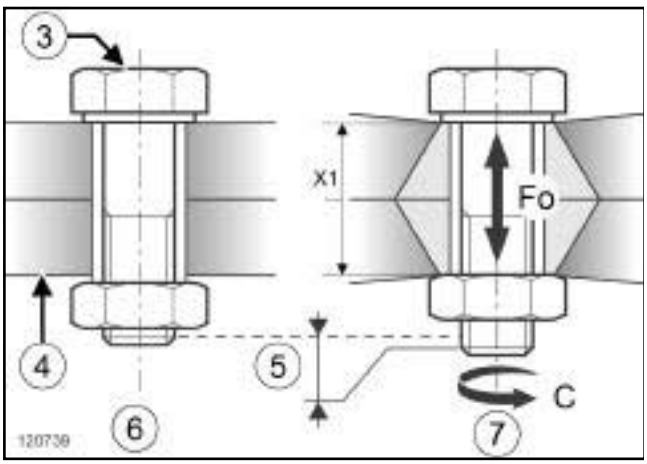


120738

The assembly is held together by the tension created in the bolt when it is tightened.

A reliable assembly is only possible if the correct tension is used:

- insufficient tension: risk of loosening,
- too much tension: risk of deformation of the parts to be assembled, or shearing of the bolt.



120739

(**3**)	Bolt
(**4**)	Assembled components
(**5**)	Extension of the bolt
(**6**)	Non-tightened assembly
(**7**)	Tightened assembly
(**X1**)	compression of the assembly
(**Fo**)	tension
(**C**)	tightening torque

Customer complaints resulting from incorrect tightening may be, following assembly, a safety issue (fire, loss of control of the vehicle etc.), an immobilising fault or a noise.

III - TIGHTENING PROCEDURES

The two controlled tightening procedures adapted to automotive repairs because of their low cost and simple operation are torque tightening and angle tightening (also called torque and angle).

1 - Torque tightening

This is the most commonly used procedure. Is consists of tightening until a given resisting torque is reached, known as tightening torque.

The tightening torque is distributed in a large part as friction torque (under the head and in the thread) and in a small part as useful torque (to create the tension).

This practise spreads the tension significantly due to the variation in the friction coefficients from one assembly to another and the uncertainty of the tightening procedures and methods.

2 - Angle tightening

The principle consists of putting the parts of the assembly in contact using a mating torque (approximately 25 to 30% of the final torque) then to tighten to a determined angle.

This method, which is not dependent on the friction of the tightened assembly, gives more precise results than torque tightening.

IV - OBSERVING THE TIGHTENING TORQUES AND ANGLES

Bolted assemblies whose tightening torques and angles are explicitly specified in the removal / refitting procedures must be observed using the appropriate tools (torque wrench, angle measuring disc). Failure to observe this can lead to safety risks, immobilising faults or unwanted noises.

For other bolted assemblies, non-measured tightening (using standard spanners) is acceptable. Nevertheless, the corresponding tightening torque is indicated in the table of standard tightening torques.

V - RECOMMENDED TIGHTENING TOOLS

For measured tightening, the repairer must have available torque wrenches to tighten from **4 to 400 N.m** as well as an angle measuring disc.

The torque wrenches used may be click type or electronic.

For example:

- 1 torque wrench **4 - 40 N.m**,

- 1 torque wrench **20 - 100 N.m**,

- 1 torque wrench **80 - 400 N.m**,

- 1 angle measurement disc.

The torque wrenches used must comply with the **ISO 6789** standard. They must be calibrated regularly following the supplier's recommendations using the appropriate procedures.

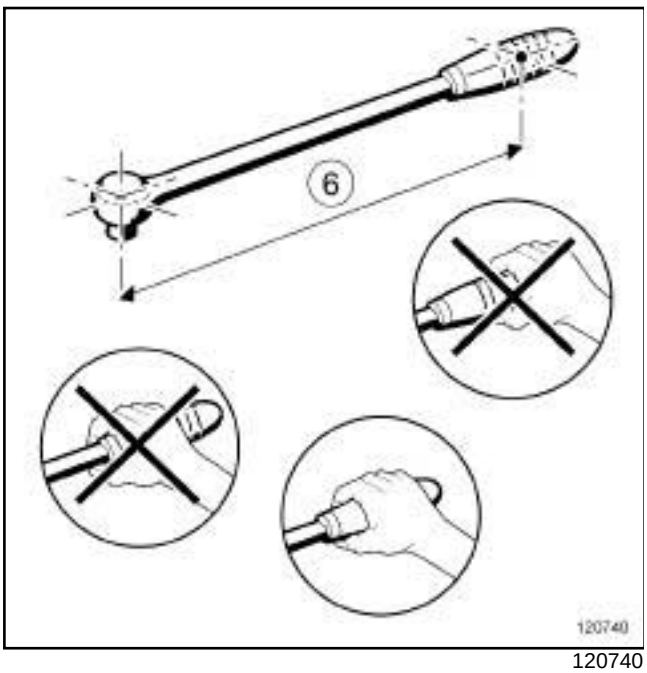
VI - PRECAUTIONS WHEN USING A CLICK TYPE TORQUE WRENCH

A click type torque wrench is a manual tightening tool. The trigger mechanism causes a break or disengagement of the wrench past a force threshold.

This threshold depends on the setting of the wrench but also depends on the way the wrench is handled.

When used following best practises, the accuracy of the tightness when using a click type torque wrench is ± 15%.

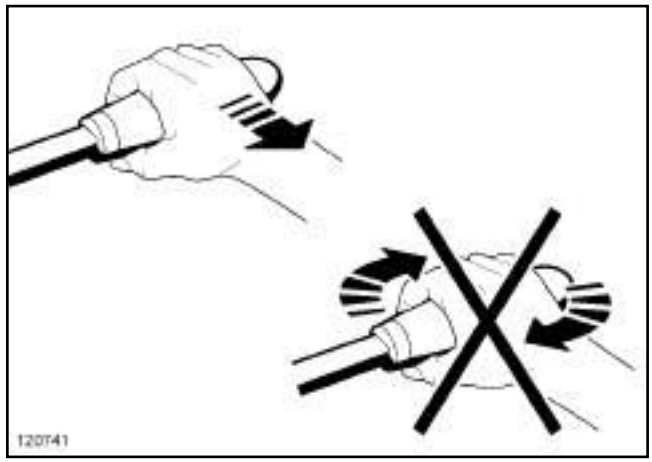
The instructions to be observed are:



120740

(**6**) lever arm

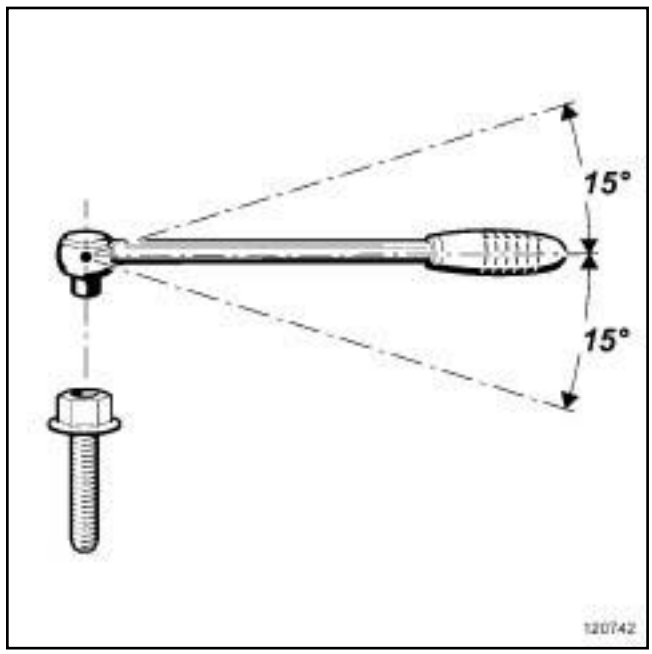
- Place the hand in the centre of the handle. An incorrectly positioned hand on the handle will alter the trigger threshold.



120741

- Pull the wrench gently and steadily, without applying any torsion. Excessive tightening speed as well as jerkiness are major causes of overtightening. Any torsion applied to the wrench will alter the trigger threshold.

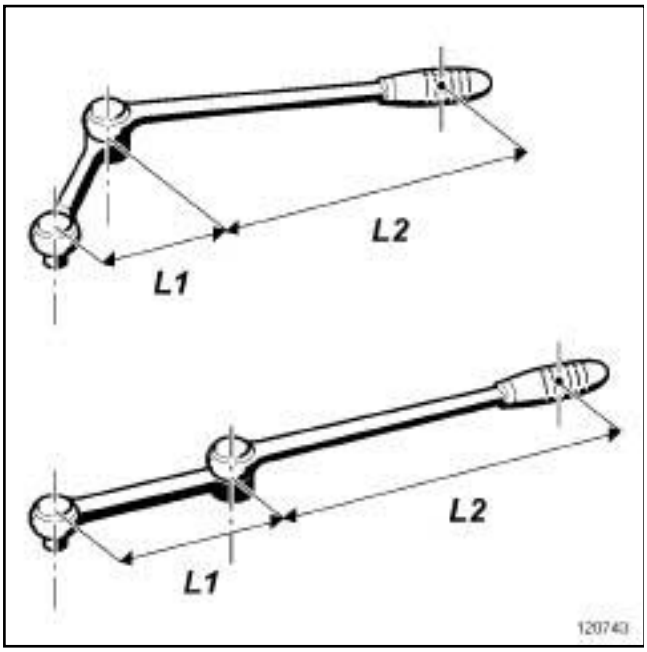
- Hold the wrench on the bolt using a minimum of effort. Any effort applied to the wrench head will alter the trigger threshold.



120742

- Apply the tightening effort perpendicular to the mounting observing a tolerance of ± 15° relative to the perpendicularity. If the wrench is not perpendicular to the mounting axis, this will result in insufficient tightening.

- Stop tightening as soon as the wrench is triggered. Continued tightening after the wrench is triggered will lead to overtightening.



120743

If the length of the wrench is modified (extending the handle, adapting an end piece) it is essential to recalibrate the wrench to its new configuration.

Modifying the length of the wrench will modify its trigger threshold.

Use the formula: C1 = CO x L2 / (L1+L2)

- CO: torque to apply,

- C1: adjustment torque to be displayed on the wrench,

- L1: length of the extension,

- L2: length of the wrench.

Unless there are special instructions in the repair method, a universal joint (CARDAN joint type) should be used for measured tightening. Using a universal joint will result in a difference between the set torque of the wrench and the actual torque applied.

Before storing the wrench, loosen the adjustment spring completely. A wrench stored with a spring under tension will lose its tightening accuracy.

VII - PRECAUTIONS WHEN USING ELECTRONIC TORQUE WRENCHES

An electronic torque wrench is a manual tightening tool. The tightening torque and, depending on the model, the angle is read directly.

When used following best practises, the accuracy of the tightness when using an electronic torque wrench is ± 5%.

Electronic torque wrenches are not affected by the position of the operator's hand.

It is advisable to handle the wrench with care and to stop tightening when the required value is displayed on the wrench.

Equipment required
safety strap(s)

I - TOWING

WARNING

See the current towing regulations in each country.

Never use the drive shafts as attachment points.

The towing points may only be used for towing on the road.

Never use the towing points for removing the vehicle from a ditch or to lift the vehicle, either directly or indirectly.

Screw in and lock the towing ring before towing.

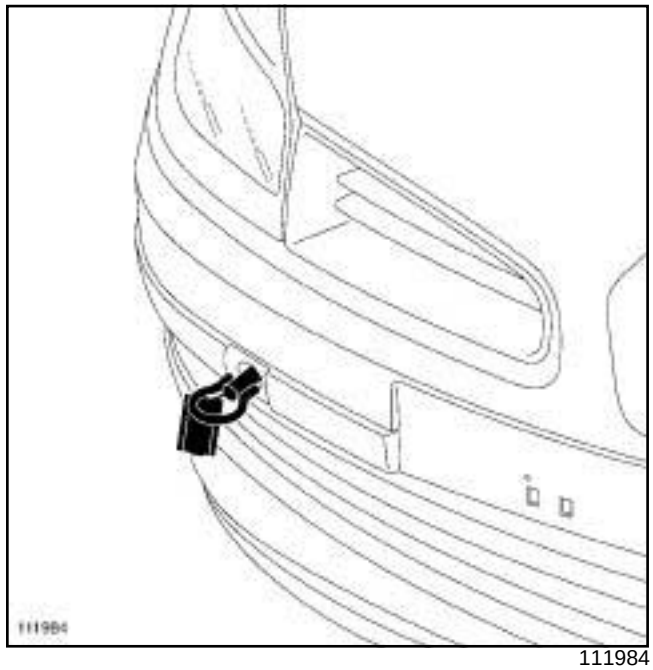
Vehicles fitted with automatic transmission:

- The vehicle should preferably be transported on a platform or towed by lifting the front wheels. As an exception, the vehicle may be towed with the wheels on the ground but at a speed below 12 mph (20km/h) and over a maximum distance of **18 miles (30 km)** (with the gear lever in neutral).

Vehicles fitted with Renault Card:

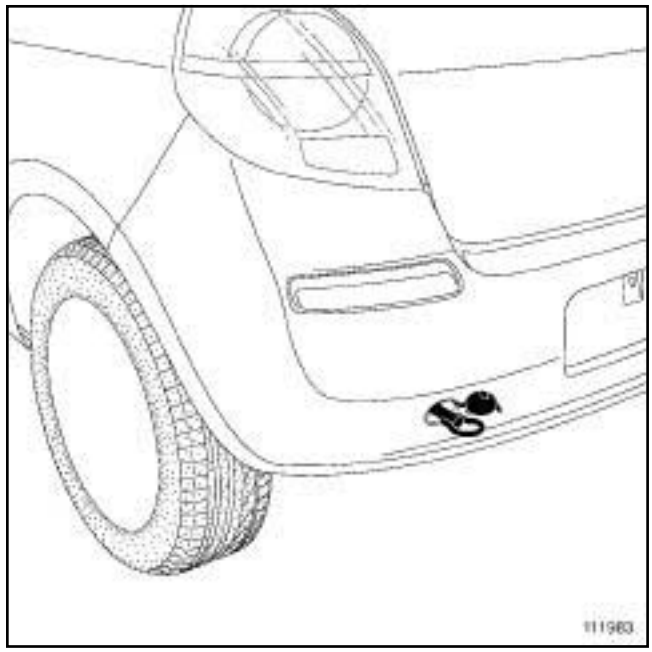
- If the vehicle battery is flat, the steering column remains locked. In this case, fit a new battery or connect to an electrical source to lock the airbag computer using the diagnostic tool, (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners), which unlocks the steering column.
- If it is not possible to lock the airbag computer, the front of the vehicle must be lifted.

1 - Position of front attachment point



111984

2 - Position of rear attachment point



111983

Fully screw in the tow eye supplied in the onboard vehicle tool kit located in the boot inside the emergency spare wheel.

II - LIFTING BY TROLLEY JACK

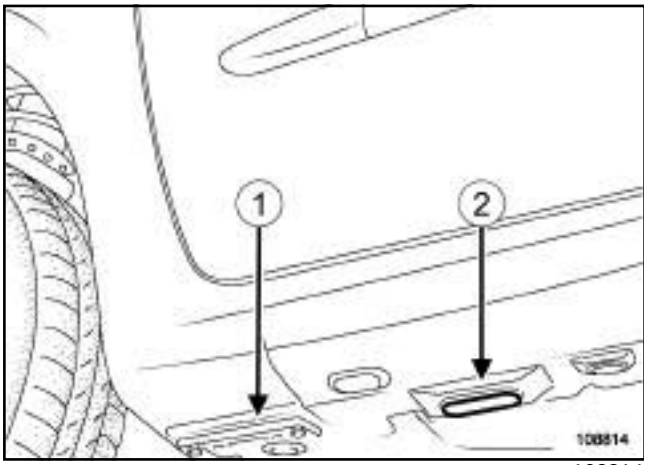
IMPORTANT

To prevent any accidents, the trolley jack must only be used to lift and/or move the vehicle. The vehicle height must be maintained with axle stands which are strong enough to support the weight of the vehicle.

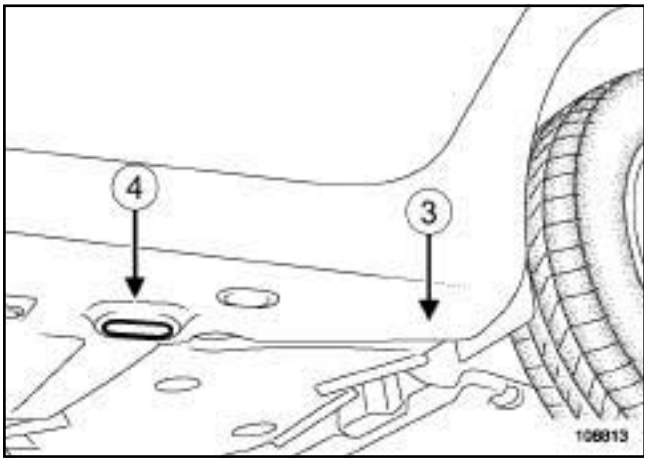
WARNING

To avoid any damage to the original protection, use equipment fitted with rubber pads to prevent the equipment coming into direct contact with the vehicle.

To avoid any damage to the axle assemblies, the vehicle must not be raised using the front suspension arms for support or under the rear axle.



108814

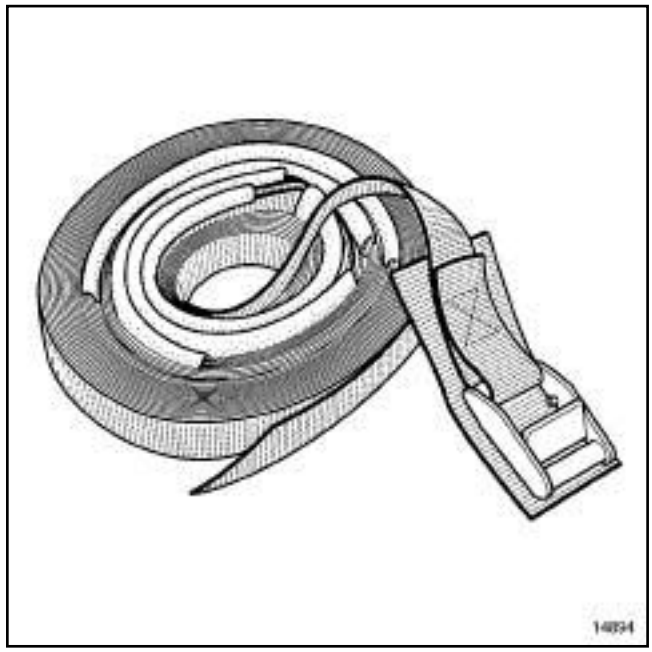


108813

To mount the vehicle on axle stands, the entire vehicle must be lifted on one side and axle stands must be placed under the body reinforcements which are used as jacking points at ***(2)*** or ***(4)*** .

III - LIFTING ON A LIFT

1 - Safety advice reminder



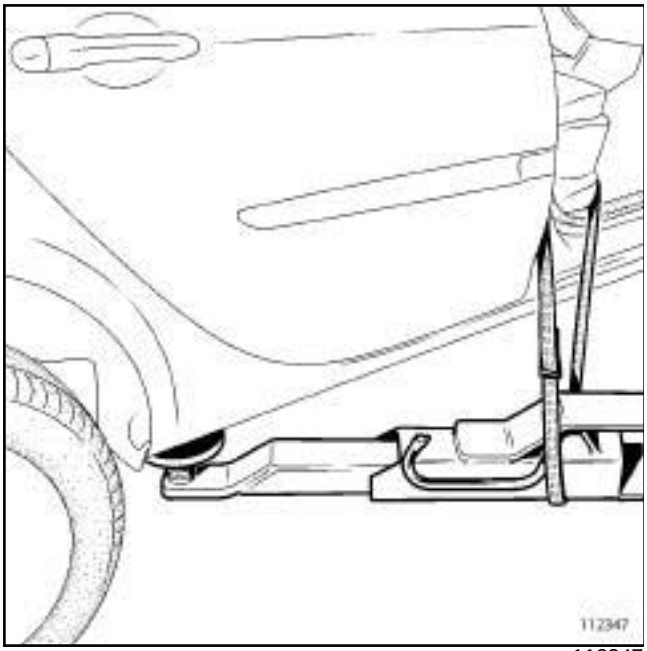
14894

Safety advice reminder:

If it is necessary to remove heavy components from the vehicle, it is preferable to use a four-post lift.

There is a danger that the vehicle will tilt on a two-post lift after certain components have been removed (e.g. engine and transmission assembly, rear axle, gearbox). Fit the **safety strap(s)** available from the **Parts Department**.

2 - Fitting the straps



112347

Fitting the straps:

For safety reasons, these straps must always be in perfect condition. Replace them as soon as they show signs of wear.

When fitting the straps, check that the seats and fragile parts of the vehicle are correctly protected.

a - Tilting towards the front

Pass the strap under the rear right-hand arm of the lift.

Pass the strap through the inside of the vehicle.

Pass the strap under the rear left-hand arm of the lift.

Pass the belt through the inside of the vehicle again.

Tighten the strap.

b - Tilting towards the rear

Pass the strap under the front right-hand arm of the lift.

Pass the strap through the inside of the vehicle.

Pass the strap under the front left-hand arm of the lift.

Pass the belt through the inside of the vehicle again.

Tighten the strap.

3 - Permitted lifting points

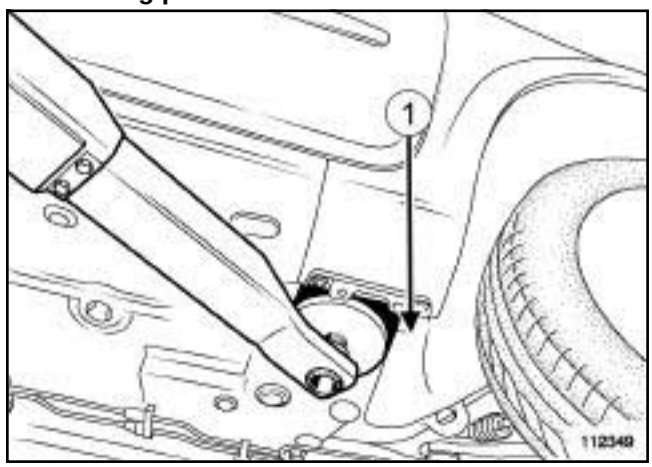
To raise the vehicle, position the pads of the lifting arms as indicated below, taking care not to damage the end of the front wing or the underside of the sill panel.

IMPORTANT

Only the jacking points described in this section allow the vehicle to be raised in complete safety.

Do not raise the vehicle using points other than those described in this section.

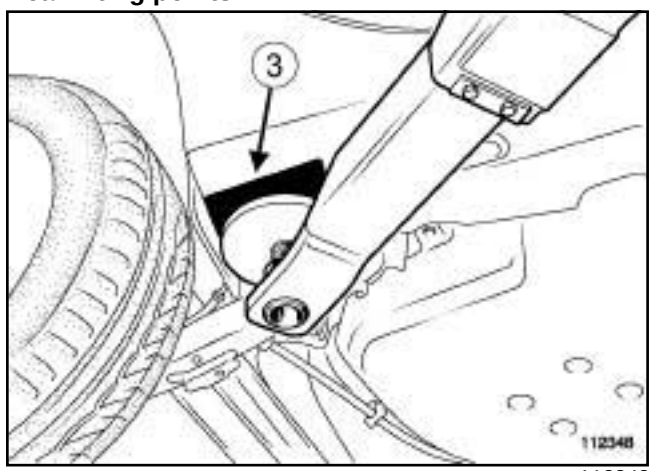
Front lifting points



112349

Position the lift arms under the side cross members (**1**) .

Rear lifting points



112348

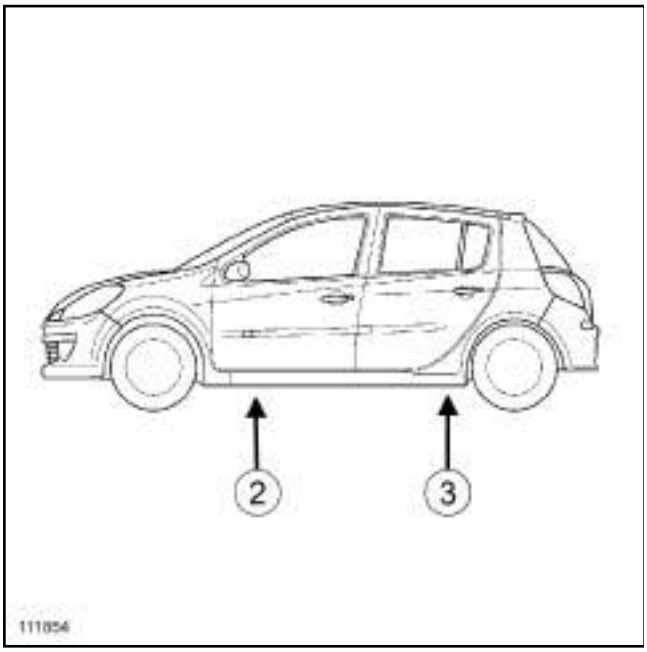
Position the lift arms under the end of the sill panel body flanges (**3**) .

Note:

If this arrangement is not possible, notably when underbody supports are being used for bodywork rebuilding on a body jig bench, proceed as follows:

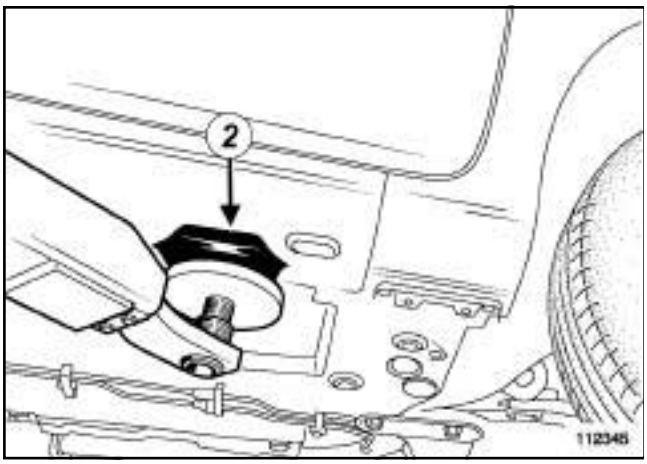
IV - DISENGAGEMENT OF THE CROSS MEMBERS

Disengagement of the front side cross members:



111854

Support the vehicle at the jacking points at the front (**2**) and under the sill panel body flanges at the rear (**3**) .

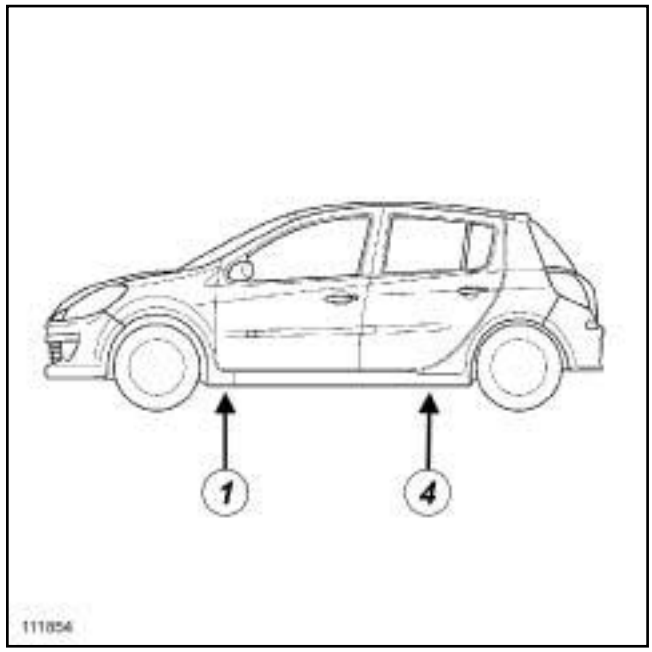


112345

IMPORTANT

This situation increases the risk of the vehicle tilting forwards; removing components from the rear section of the vehicle is therefore prohibited.

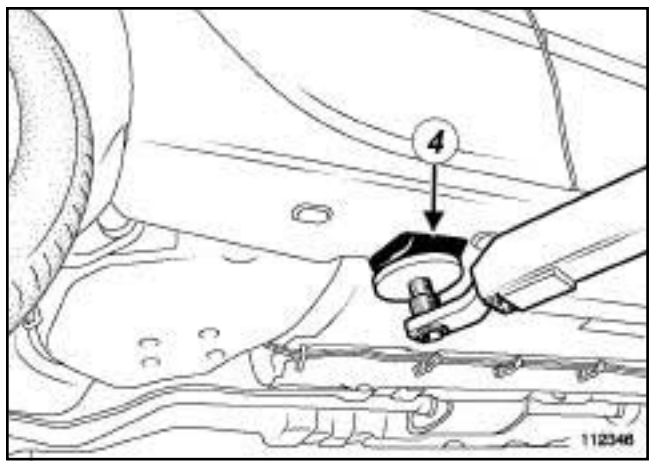
Disengagement of the rear side cross members:



111854

Position the lifting arms under the sub-frame body flanges.

Support the vehicle under the side cross members at the front (**1**) , taking care not to damage the end of the front wing, and under the jacking points at the rear ***(4)*** .

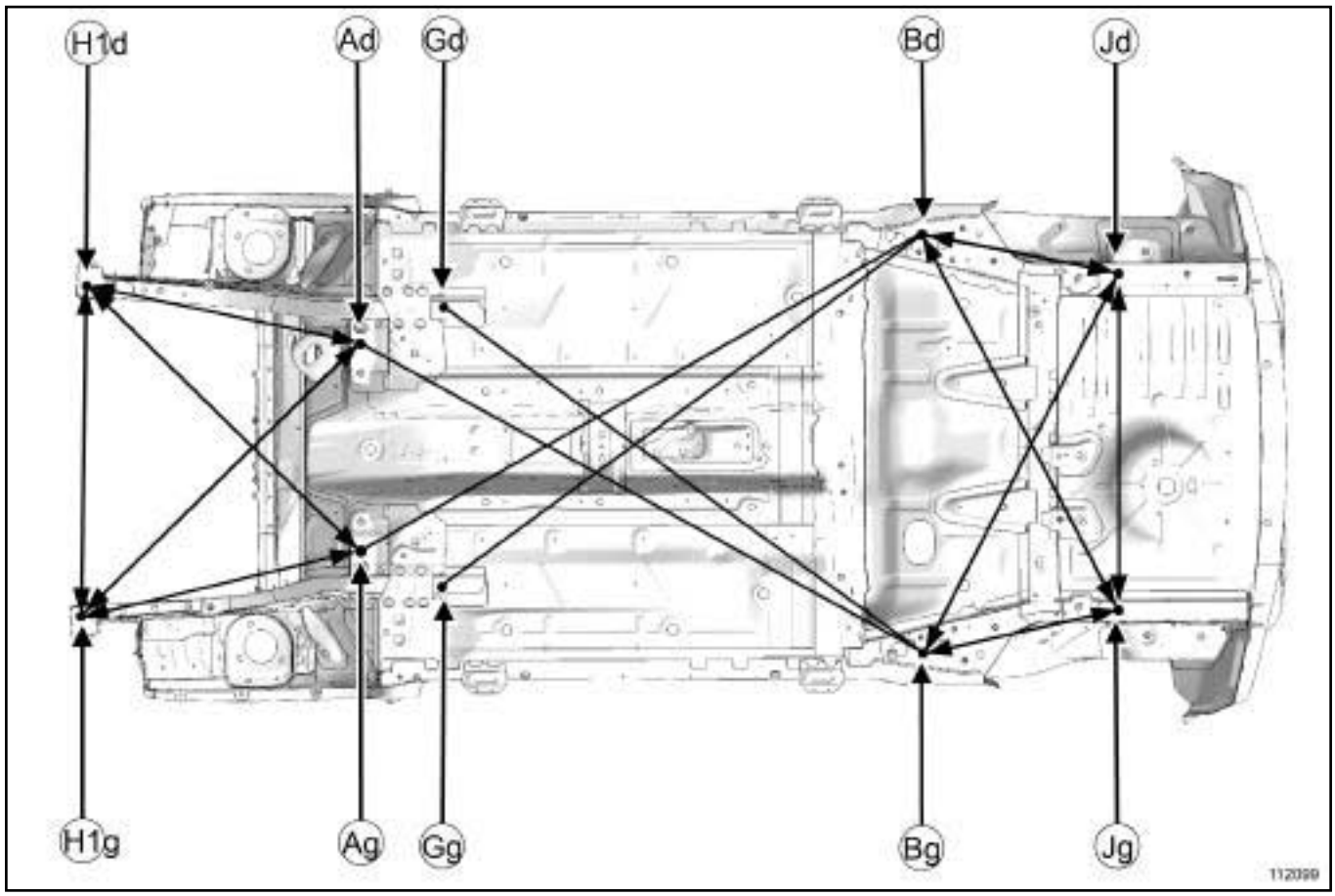


112346

IMPORTANT

In this instance, the risk of the vehicle tilting towards the rear is high. It is forbidden to remove components from the front section of the vehicle.

SUB-FRAME INSPECTION



112099

❑

Chronological order of checks:

❑ FRONTAL impact

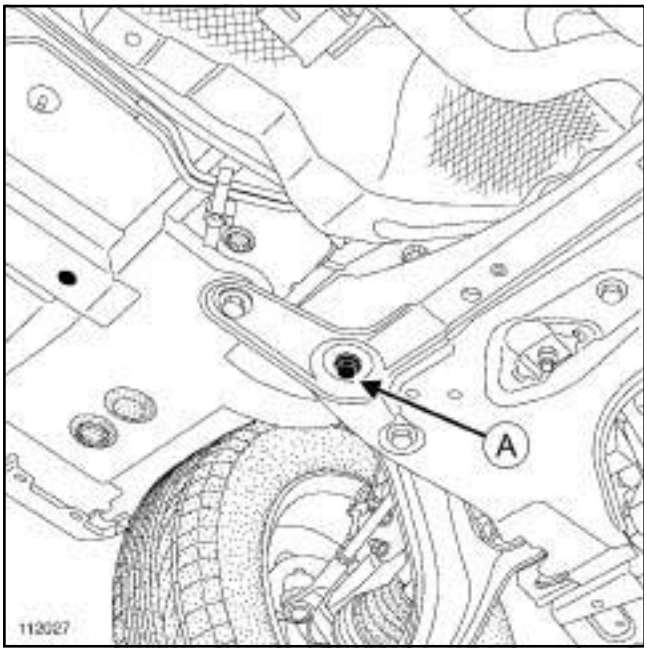
- 1: ***(Bd)*** - ***(Ag)*** = ***(Bg)*** - ***(Ad)***
- 2: ***(Bd)*** - ***(Gg)*** = ***(Bg)*** - ***(Gd)***
- 3: ***(Ad)*** - ***(H1g)*** = 1,148 mm
- 4: ***(Ag)*** - ***(H1d)*** = 1,120 mm
- 5: ***(H1d)*** - ***(H1g)*** = 968 mm

❑ REAR impact

- 1: ***(Ad)*** - ***(Bg)*** = ***(Ag)*** - ***(Bd)***
- 2: ***(Gd)*** - ***(Bg)*** = ***(Gg)*** - ***(Bd)***
- 3: ***(Bd)*** - ***(Jg)*** = 1,245 mm
- 4: ***(Bg)*** - ***(Jd)*** = 1,254 mm
- 5: ***(Jd)*** - ***(Jg)*** = 985 mm

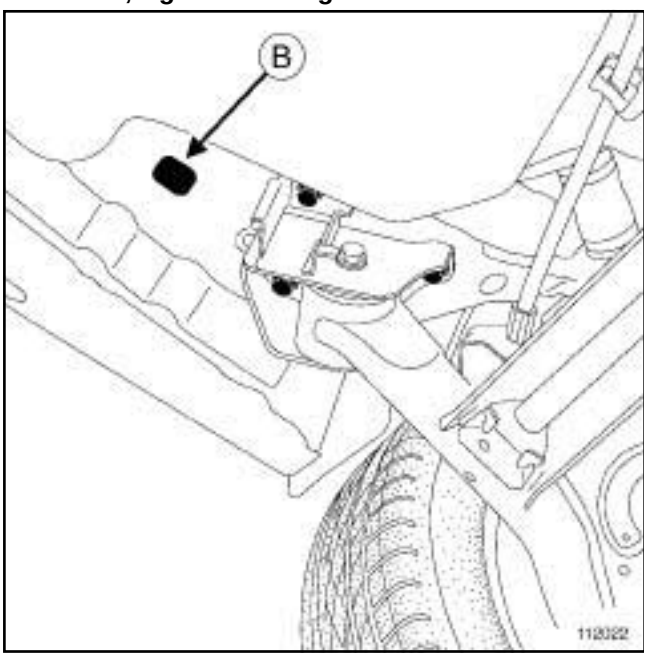
Detailed view of inspection points

Points Ad, Ag: Front sub-frame rear mounting



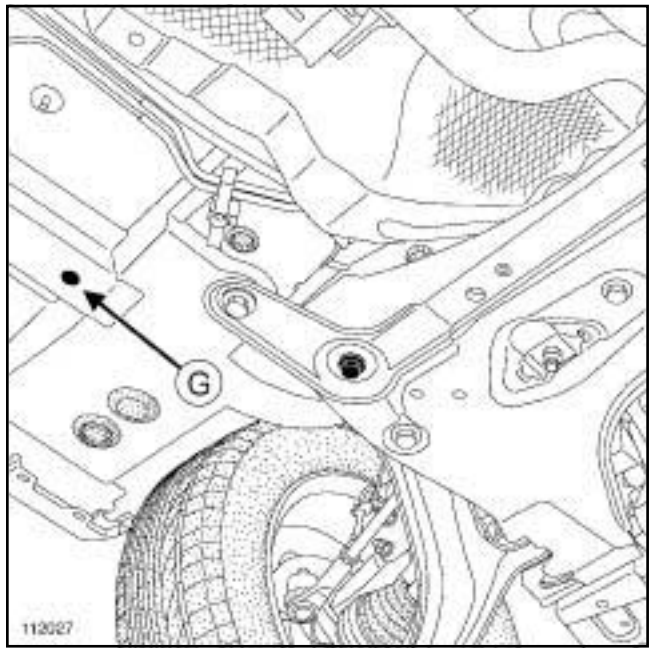
112027

Points Bd, Bg: Rear axle guide



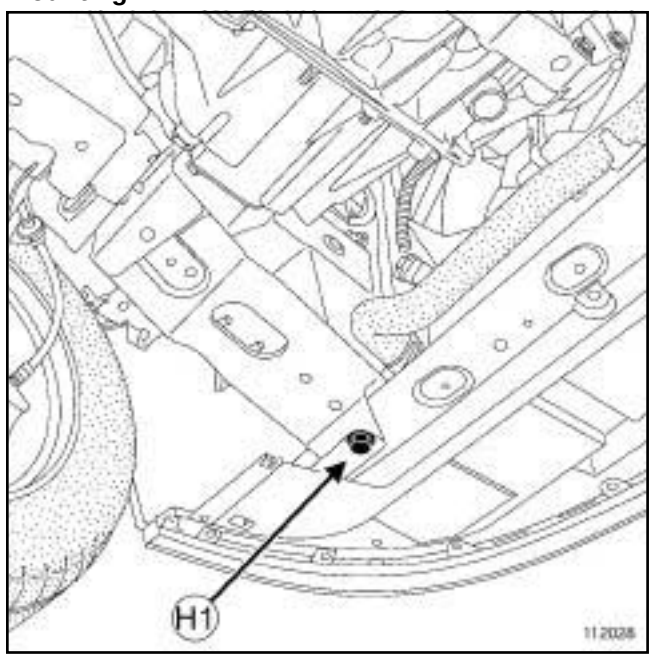
112022

Points Gd, Gg: Front side member rear mounting



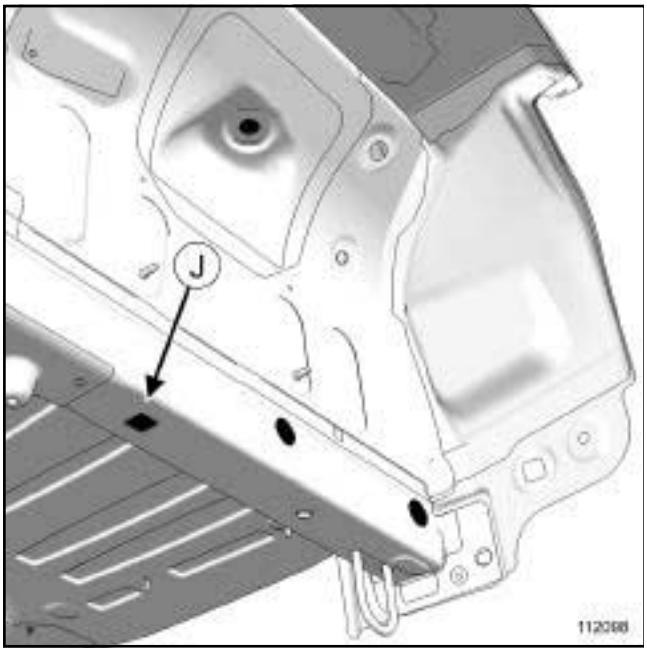
112027

Points H1d, H1g: Front side member front mounting



112028

Points Jd, Jg: Rear side member rear guide

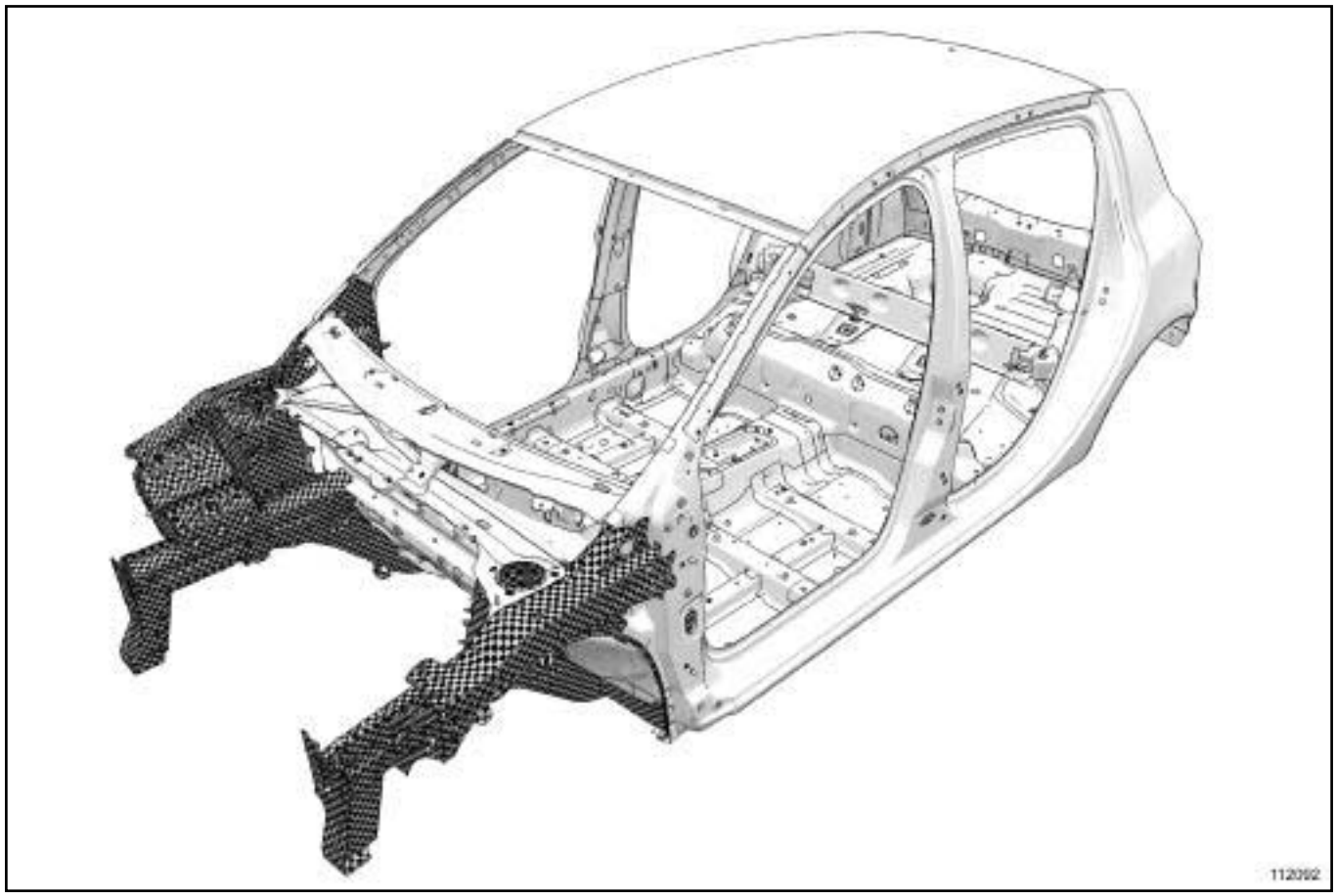


112098

❑

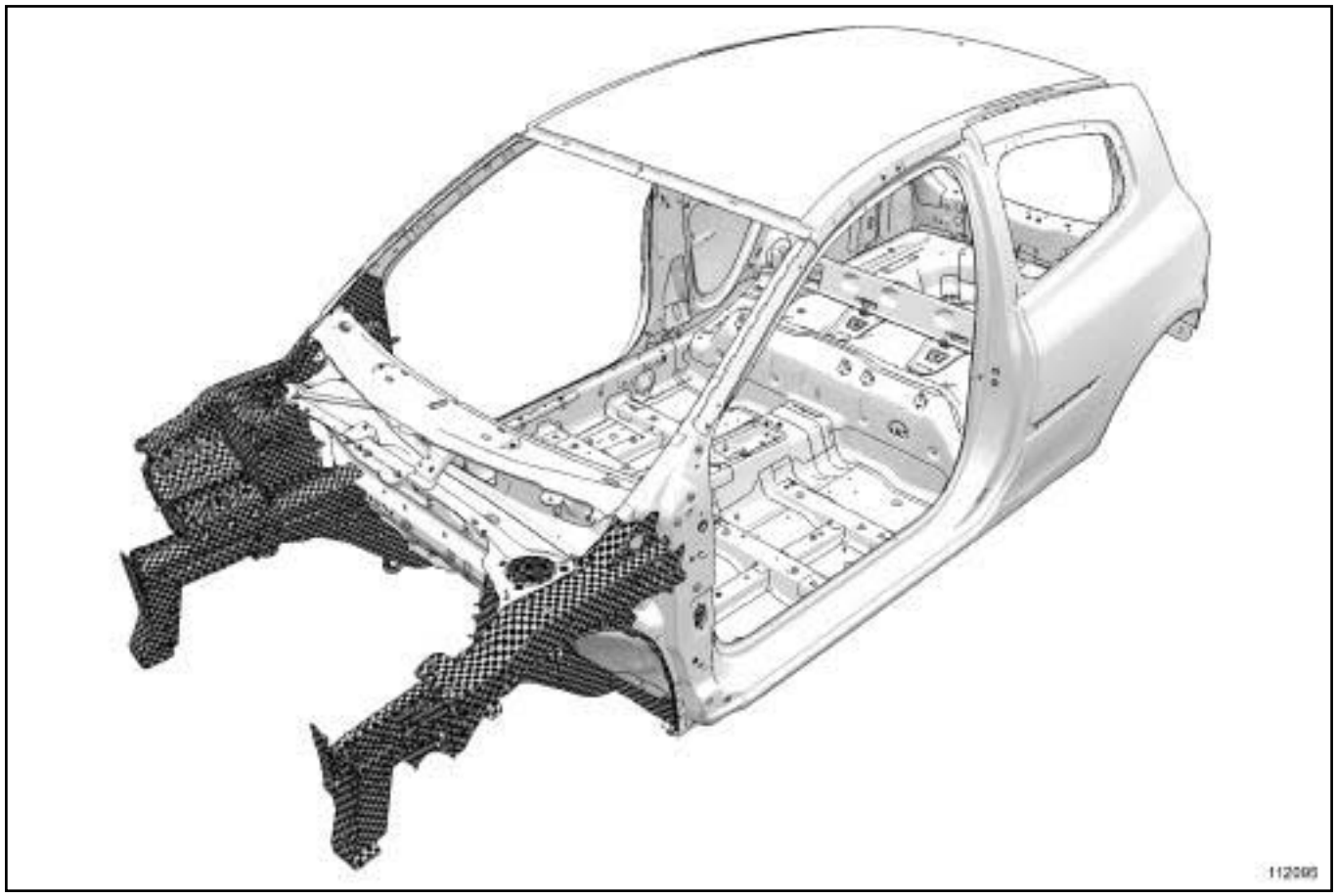
COMBINATIONS FOR REPLACING WELDED STRUCTURAL PARTS IN ACCORDANCE WITH IMPACT SUSTAINED

B85



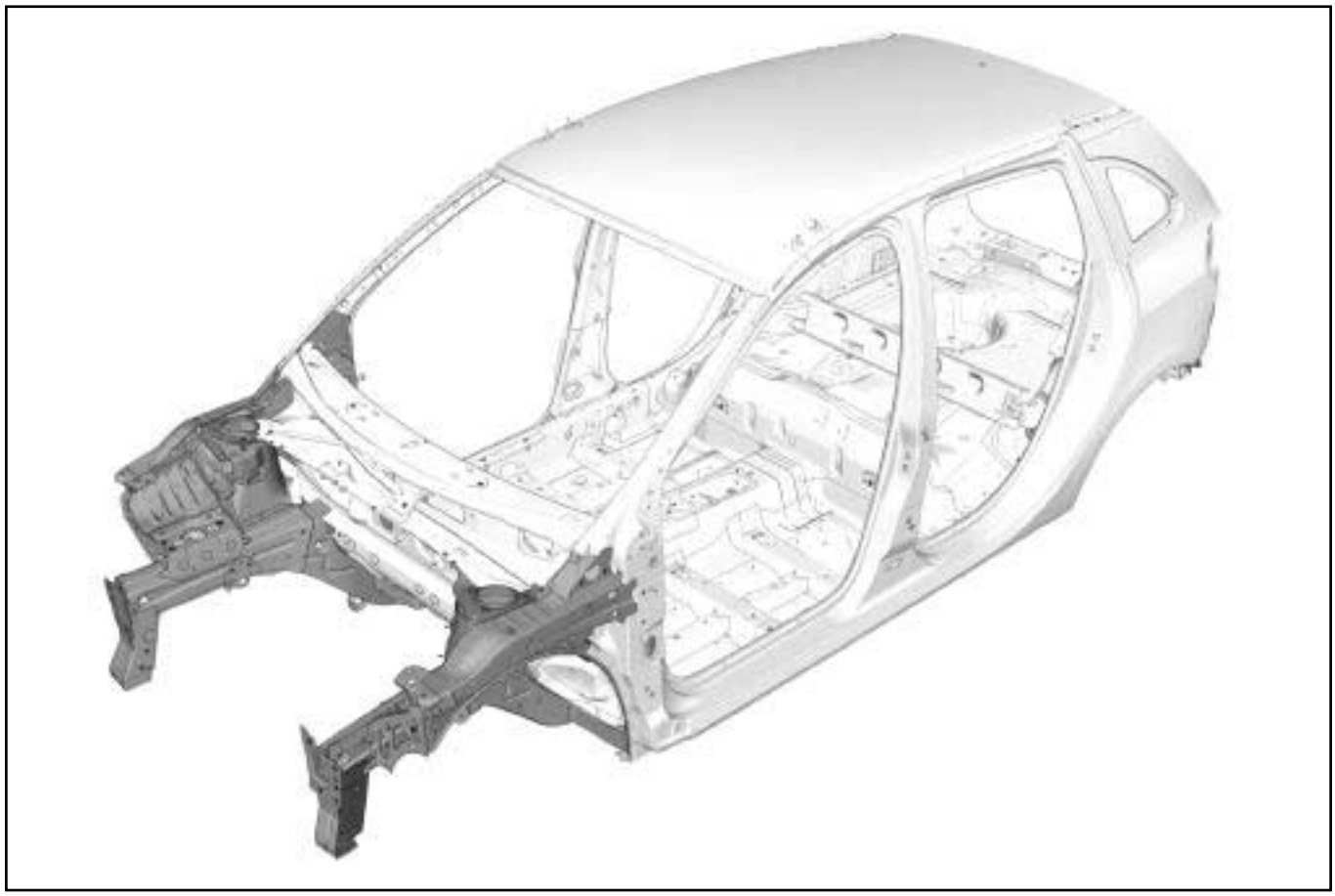
112092

C85 or S85



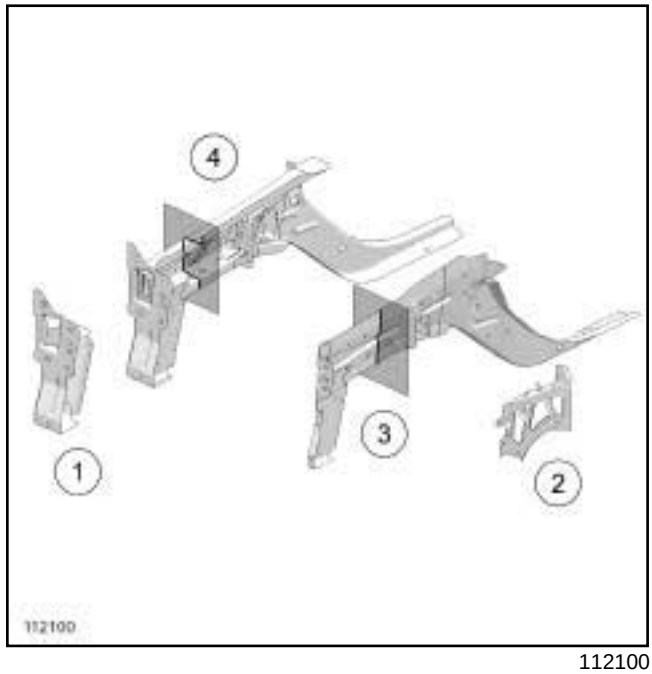
112095

K85



126748

1st degree

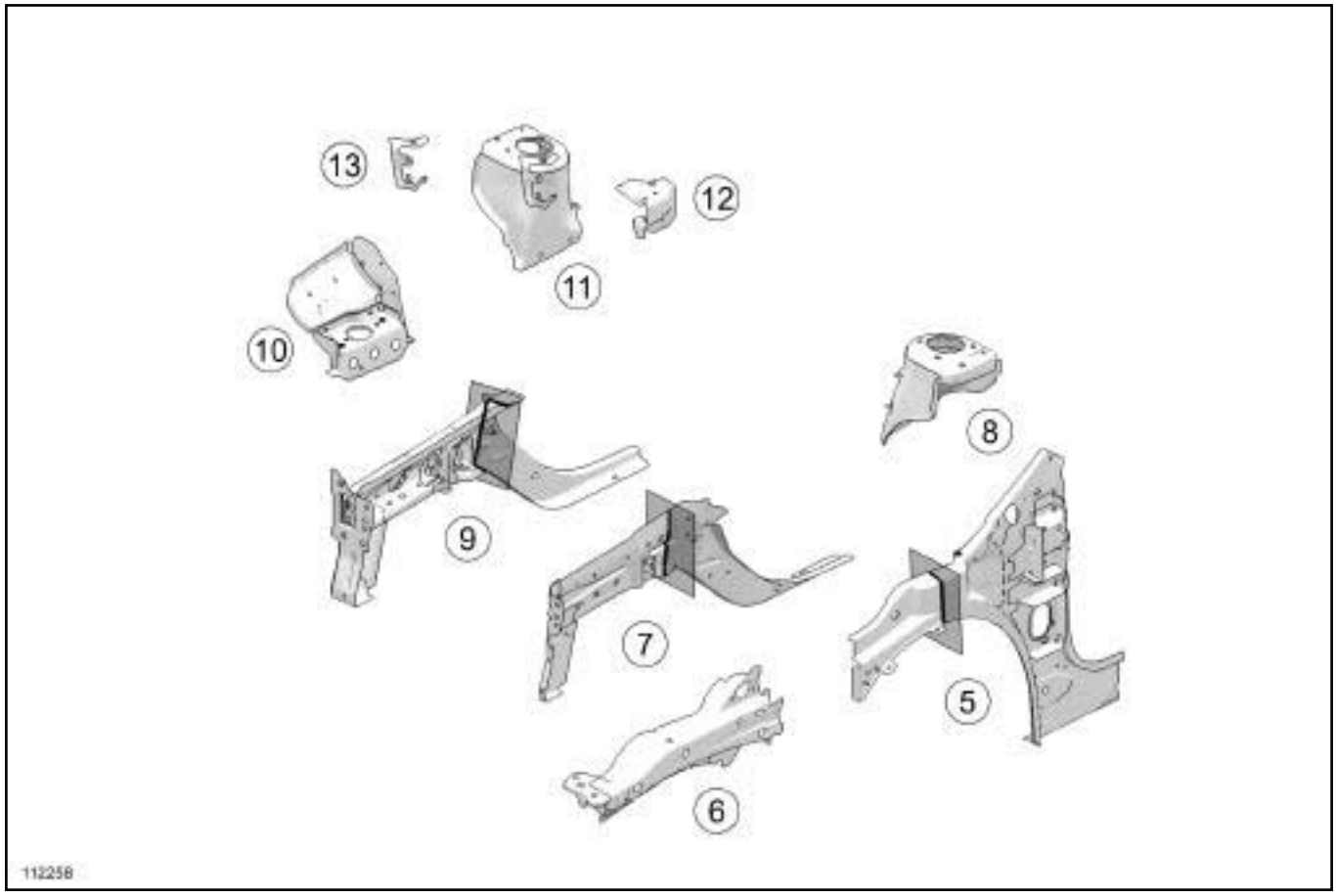


112100

- (**1**) Radiator cross member support
- (**2**) Front end side cross member

- (**3**) Front side member closure panel
- (**4**) Front side member

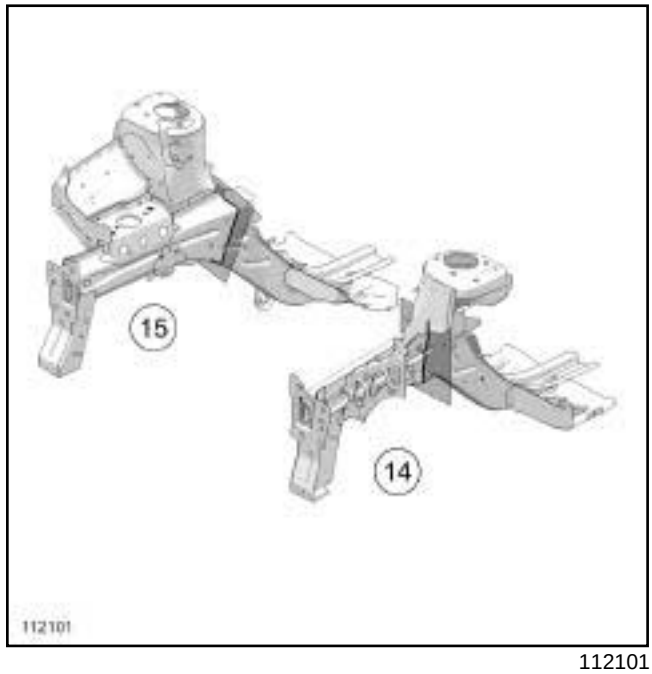
2nddegree



112258

- (**5**) Scuttle side panel
- (**6**) Scuttle side panel upper reinforcement
- (**7**) Front side member closure panel
- (**8**) Front left-hand wheel arch
- (**9**) Front side member
- (**10**) Engine stand
- (**11**) Front right-hand wheel arch
- (**12**) Engine tie-rod attachment
- (**13**) Acoustic tie-bar mounting

3rddegree

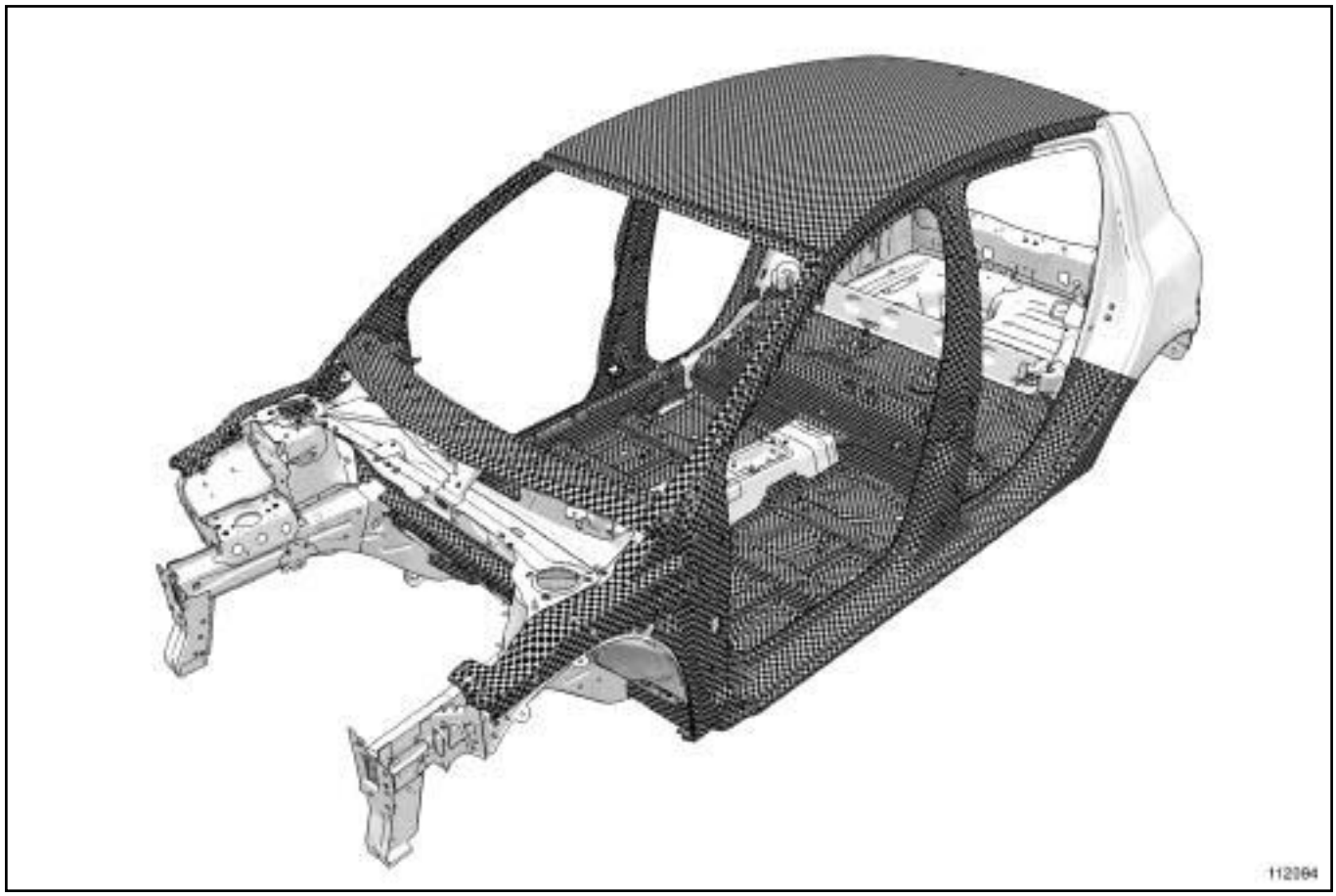


112101

- (**14**) Front left-hand half unit

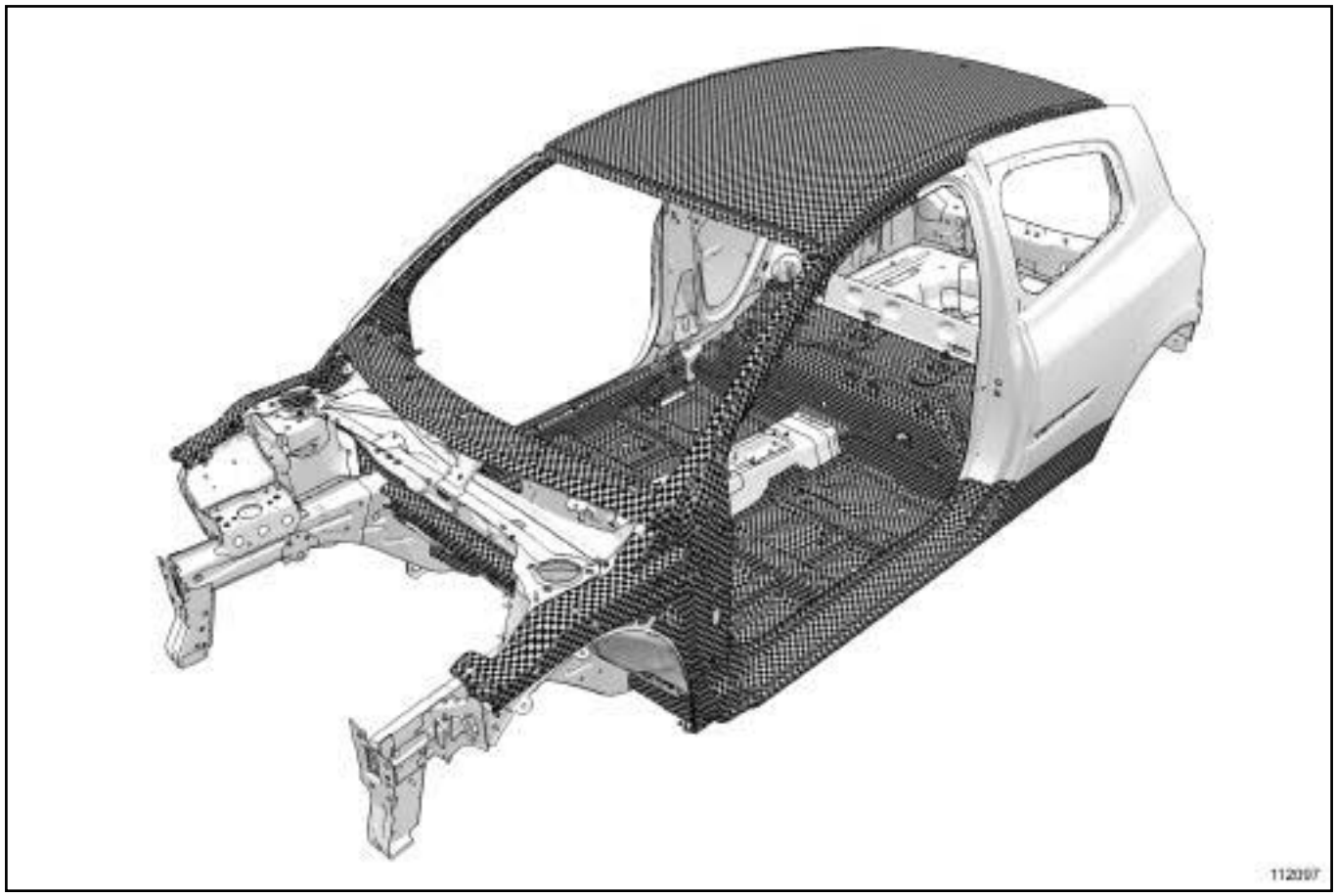
- (**15**) Front right-hand half unit

B85



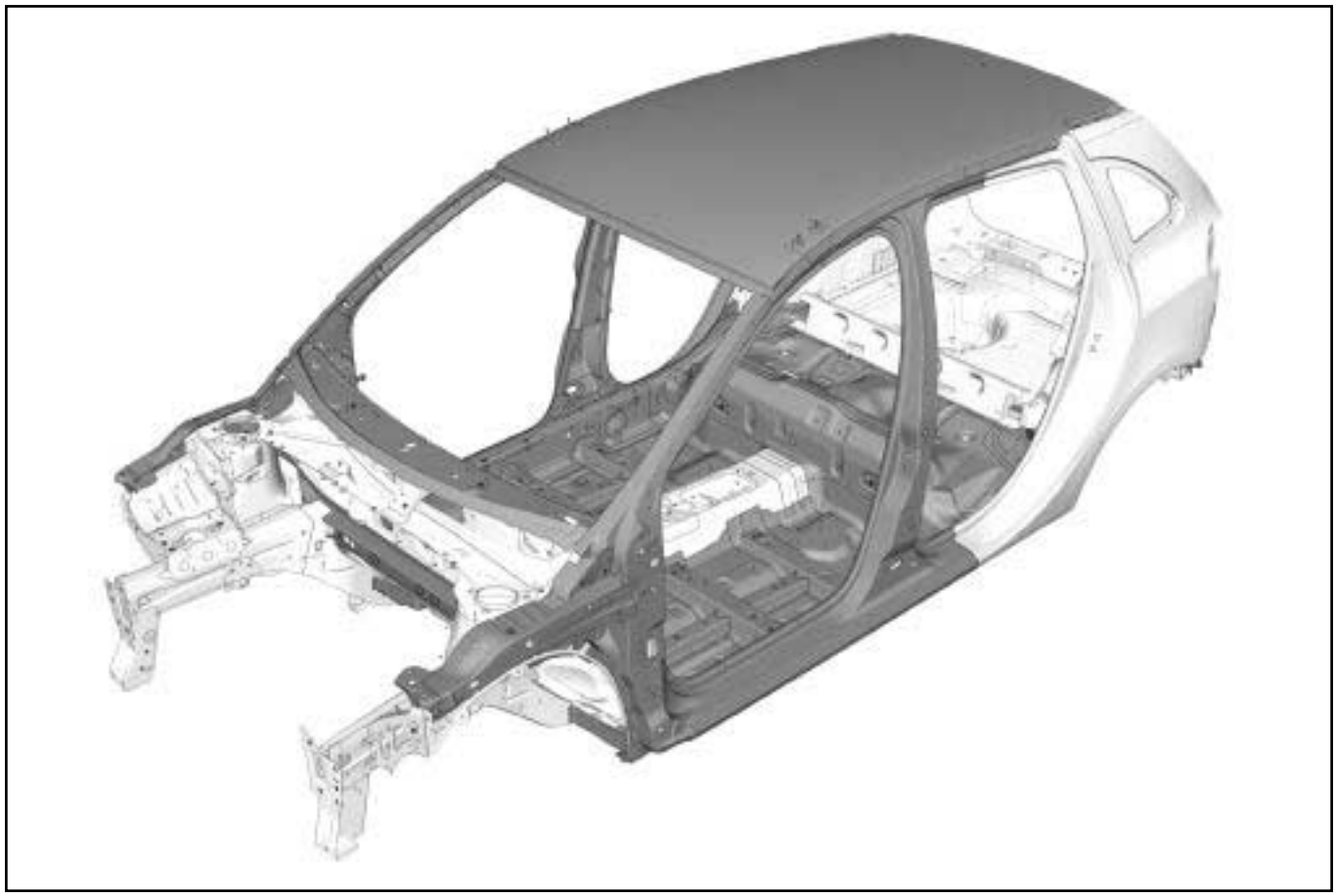
112094

C85 or S85



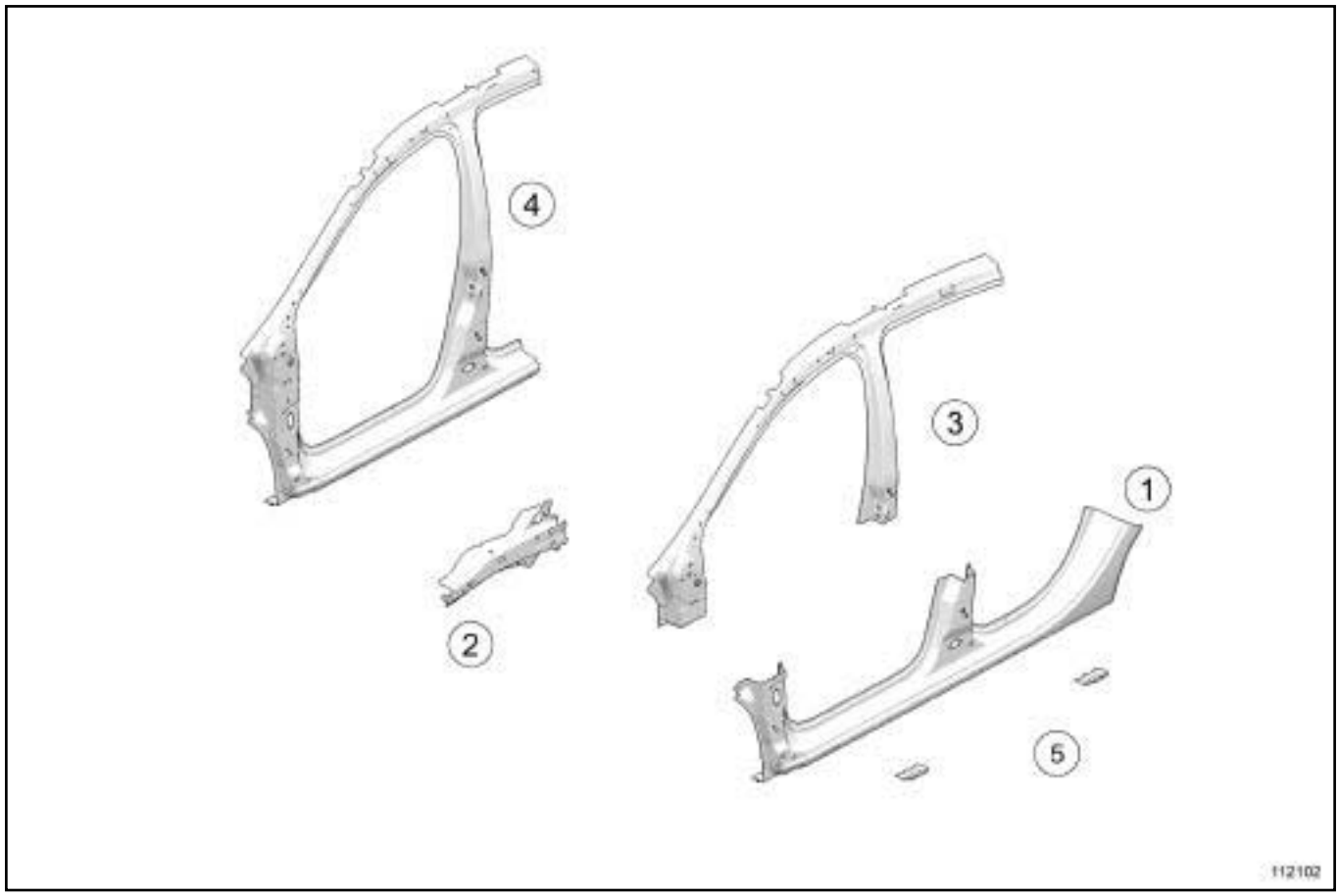
112097

K85



126749

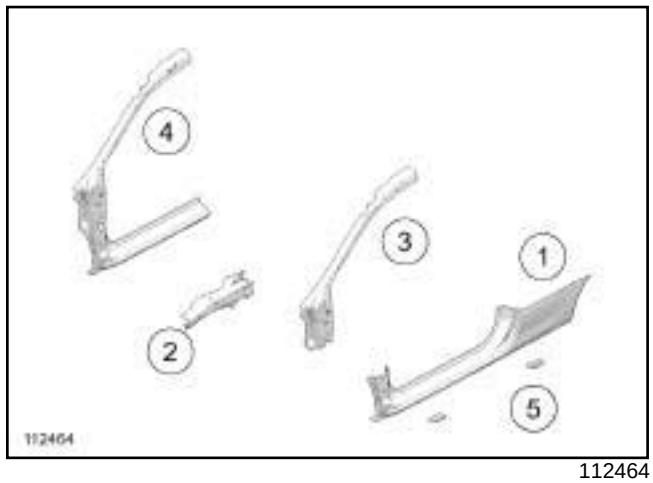
1st degree



112102

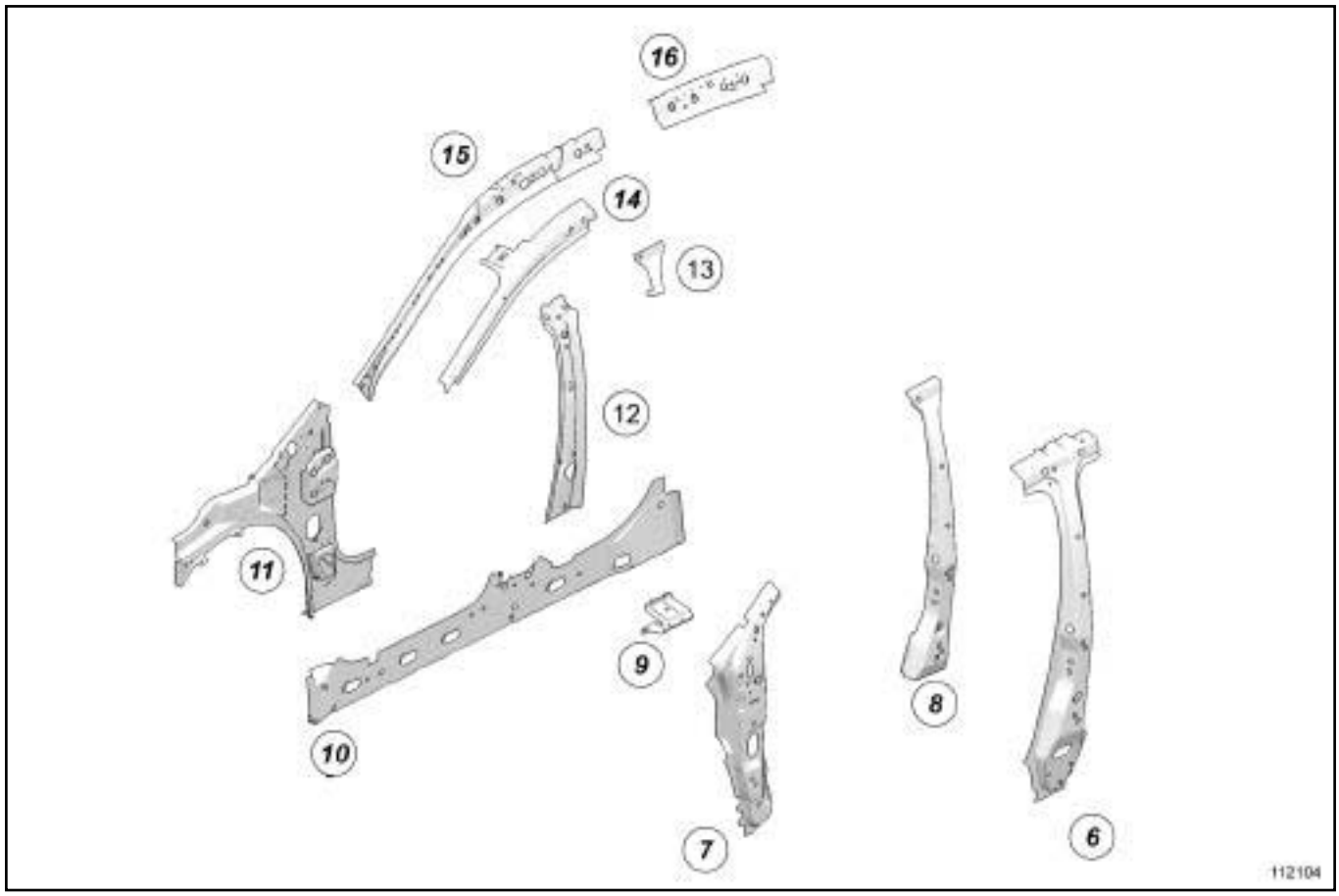
- (**1**) Sill panel
- (**2**) Scuttle side panel reinforcement
- (**3**) Upper body
- (**4**) Body side front section
- (**5**) Jacking point bridge piece

C85 or S85



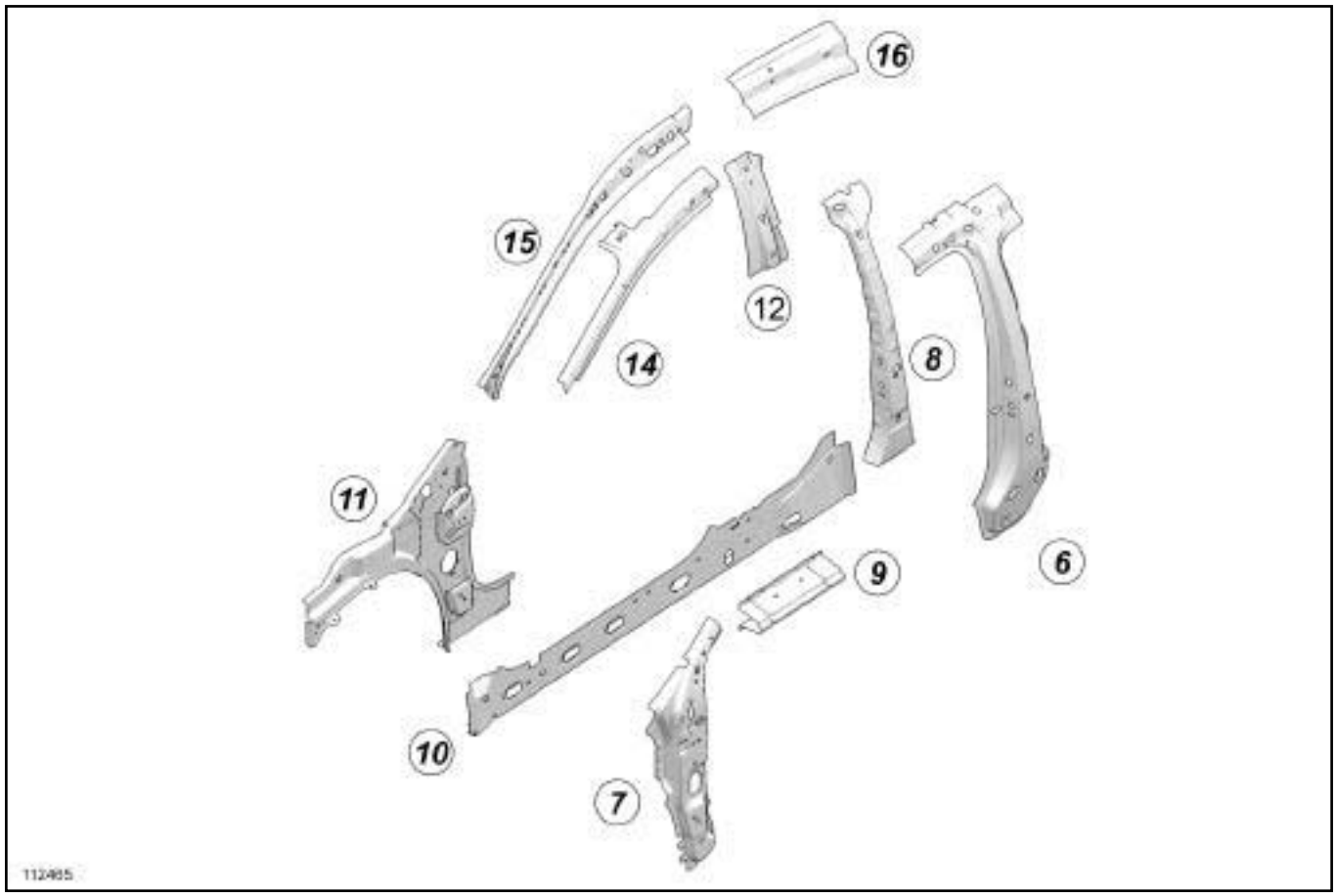
112464

2nd degree



112104

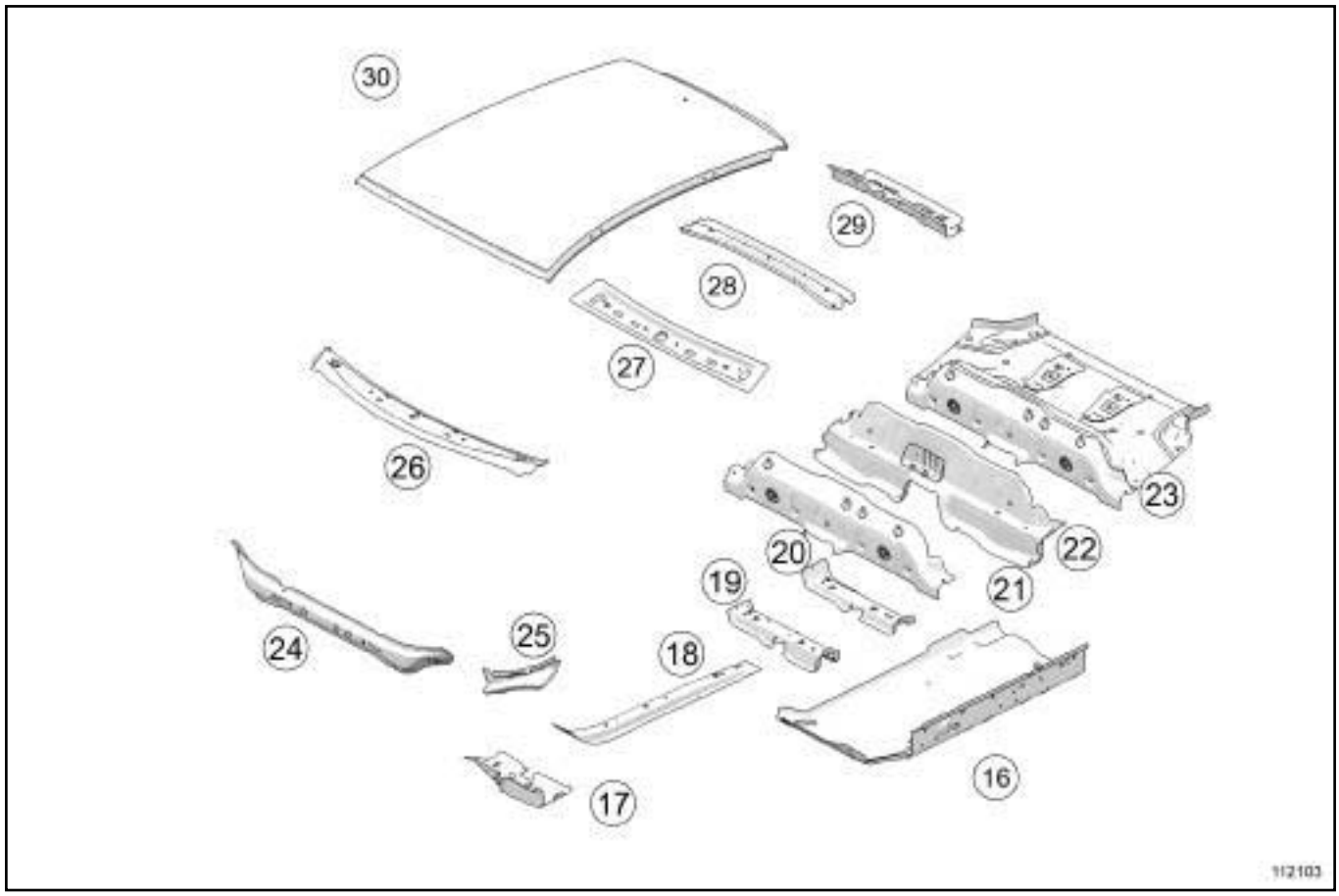
C85 or S85



112465

- (**6**) B-pillar reinforcement
- (**7**) A-pillar reinforcement
- (**8**) B-pillar hinge reinforcement
- (**9**) Impact reinforcement
- (**10**) Sill panel closure panel
- (**11**) Scuttle side panel
- (**12**) B-pillar lining
- (**13**) B-pillar upper reinforcement
- (**14**) Front roof drip moulding stiffener
- (**15**) A-pillar lining
- (**16**) Roof drip moulding lining

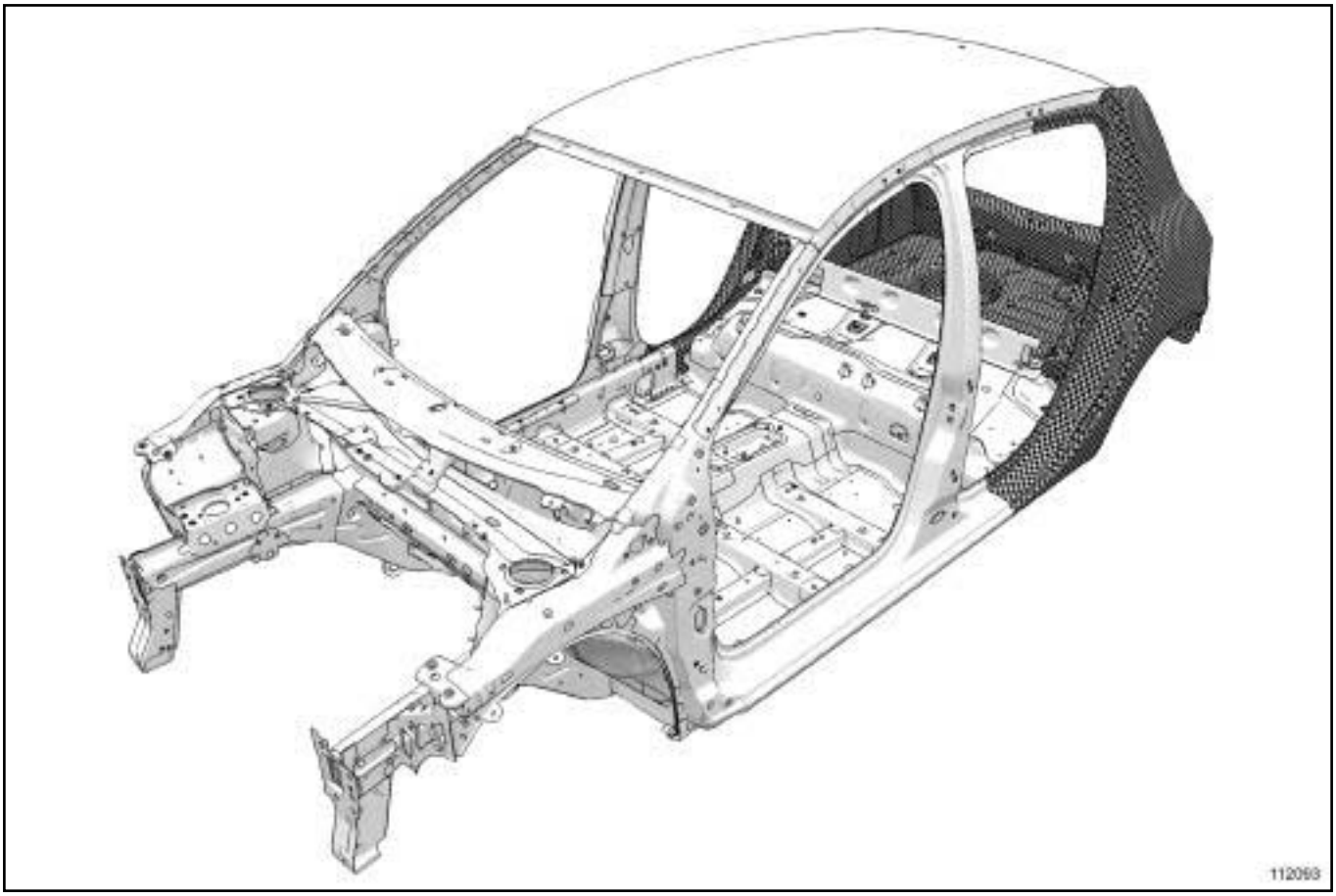
3rddegree



112103

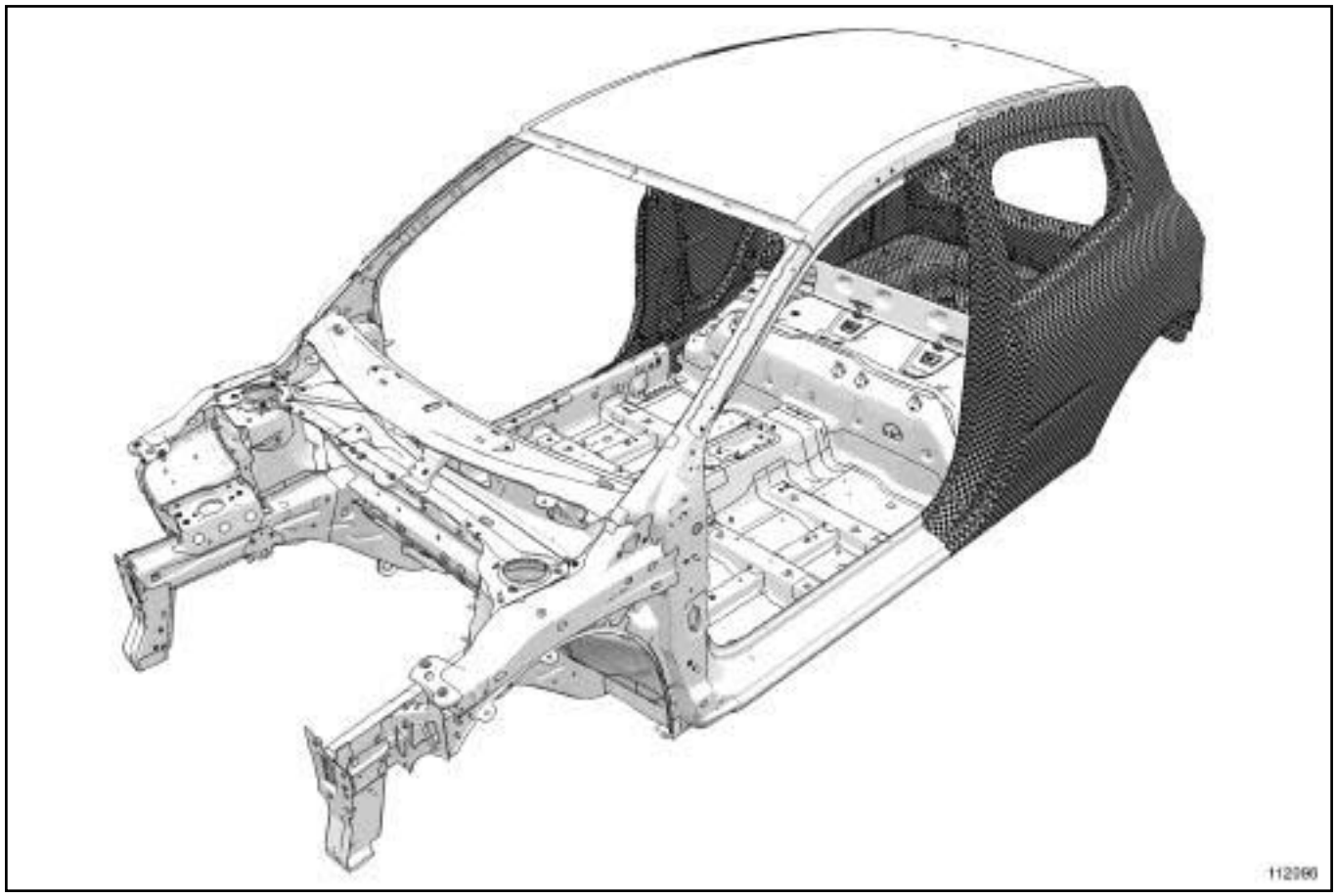
- (**16**) Centre floor, side section
- (**17**) Centre floor front side cross member
- (**18**) Front side member, centre section
- (**19**) Front cross member under front seat
- (**20**) Rear cross member under front seat
- (**21**) Floor partition cross member
- (**22**) Rear floor front cross member reinforcement
- (**23**) Front section of rear floor
- (**24**) Bulkhead lower cross member
- (**25**) Bulkhead side stiffener
- (**26**) Windscreen aperture lower cross member closure panel
- (**27**) Roof front cross member
- (**28**) Roof centre cross member
- (**29**) Roof rear cross member
- (**30**) Roof

B85



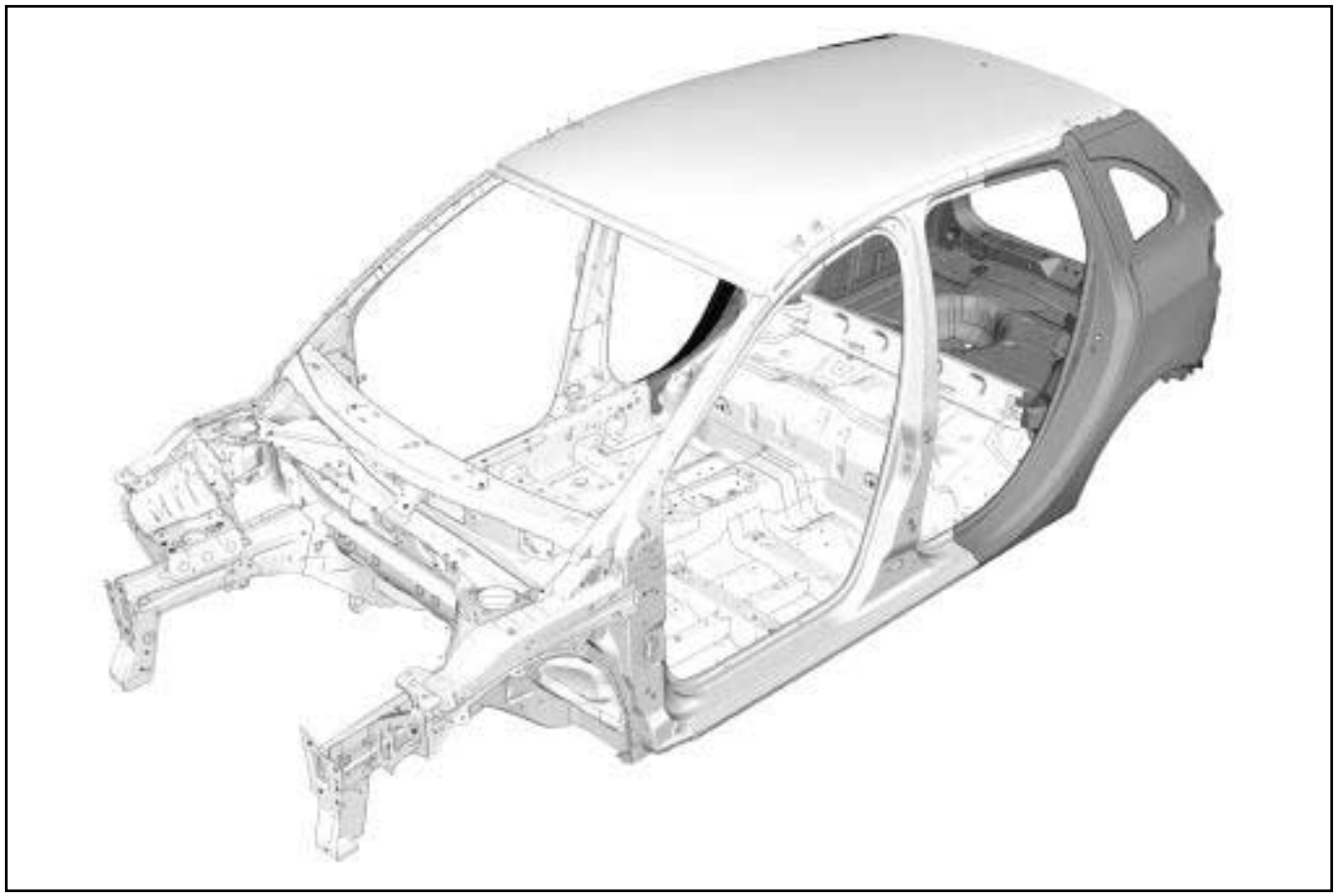
112093

C85 or S85



112096

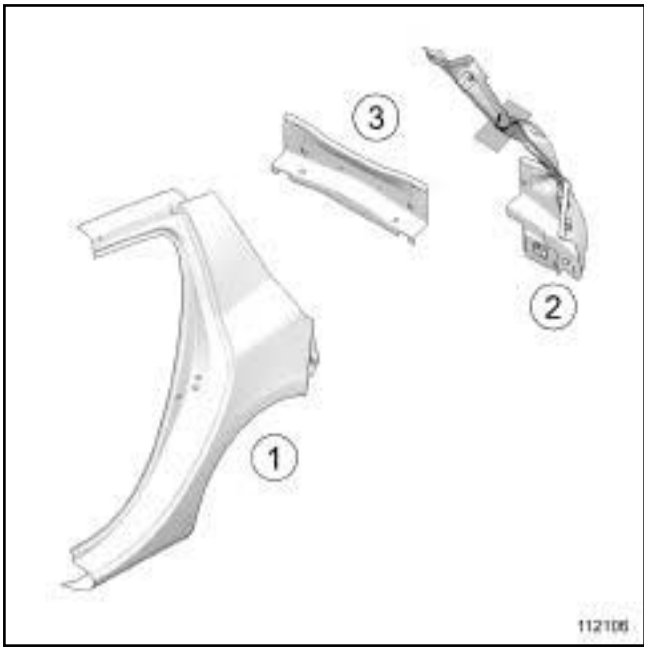
K85



126750

B85

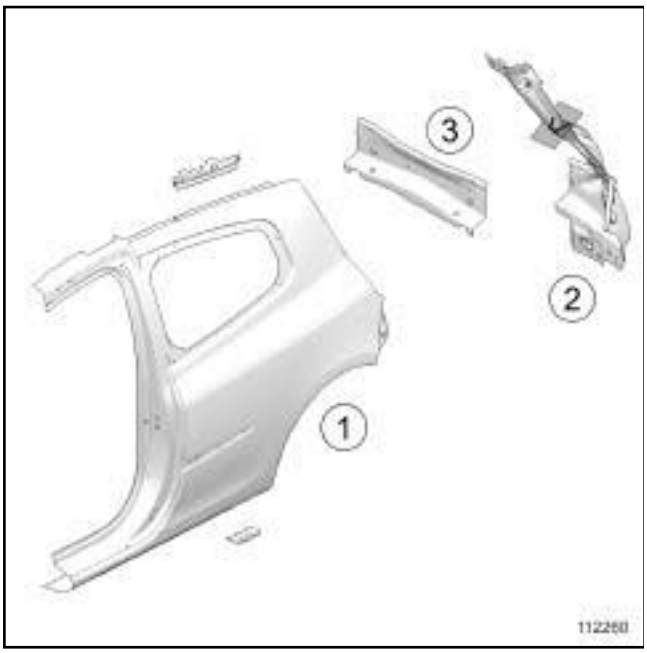
1st degree



112106

C85 or S85

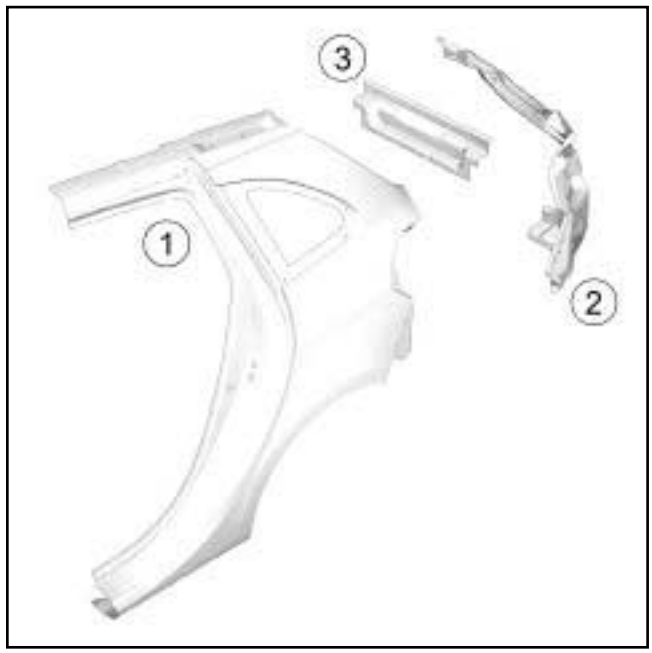
1st degree



112260

K85

1st degree

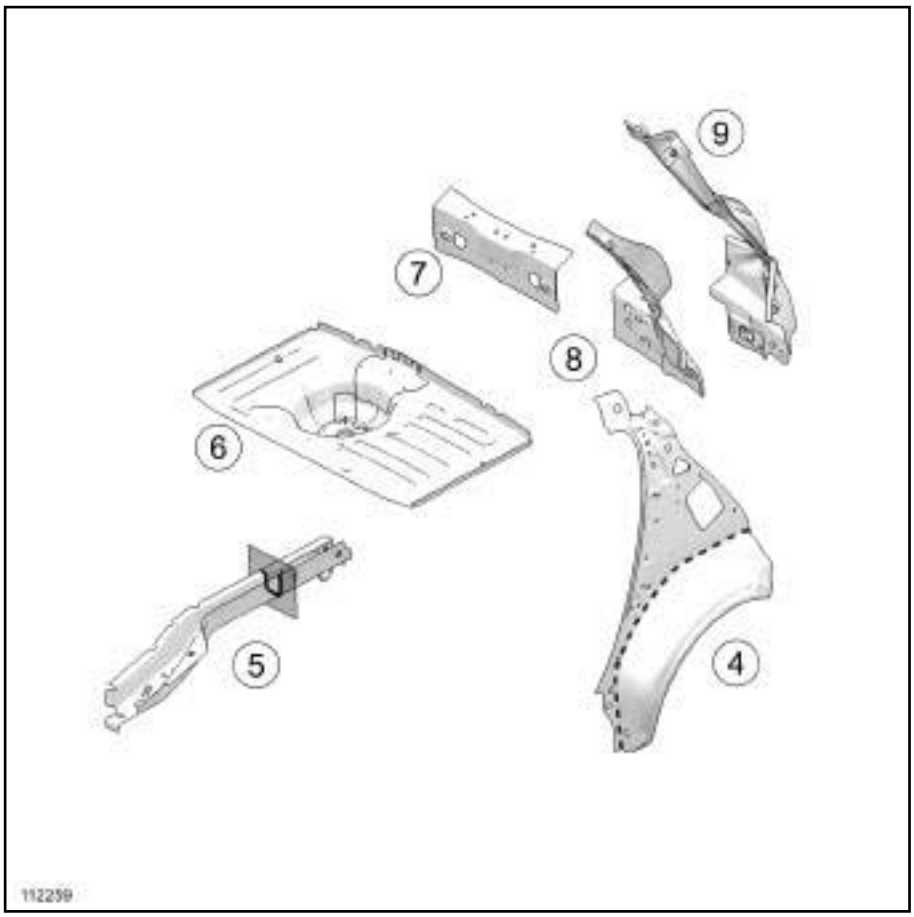


126751

- (**1**) Rear wing panel
- (**2**) Rear light mounting
- (**3**) Rear end panel

B85

2nd degree

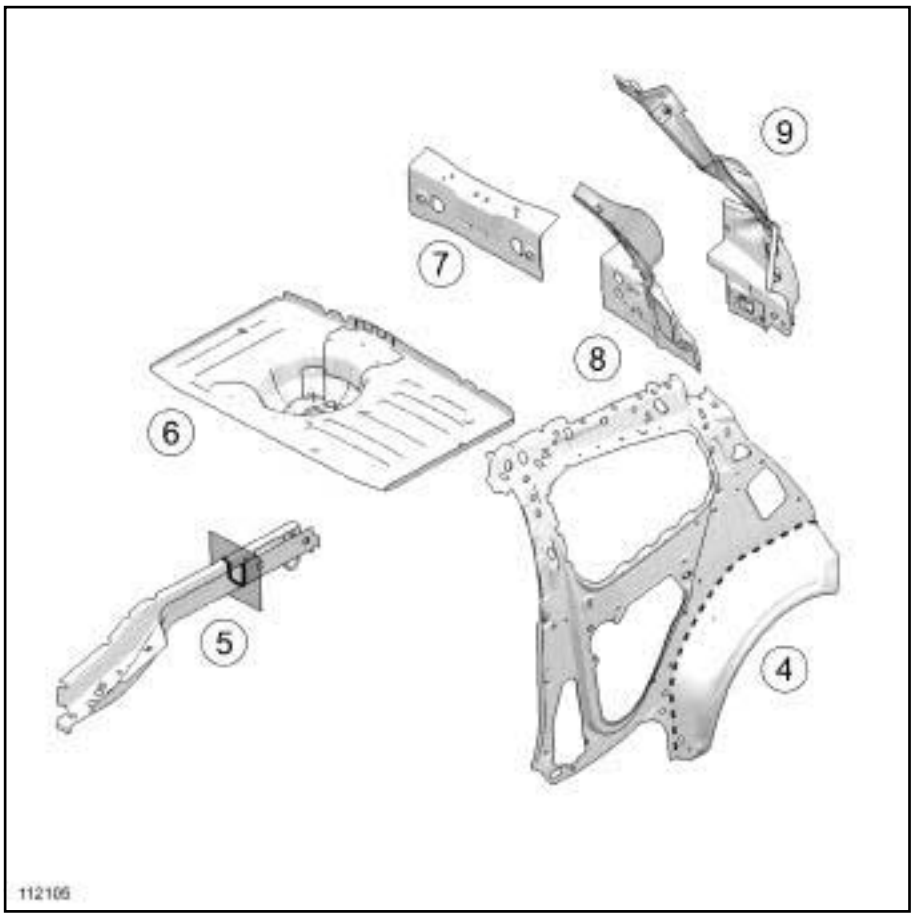


112259

- ***(4)*** Outer rear wheel arch
- ***(5)*** Rear section of rear side member
- ***(6)*** Rear floor rear section
- ***(7)*** Rear end panel lining
- ***(8)*** Rear light mounting lining
- ***(9)*** Rear light mounting

C85 or S85

2nddegree

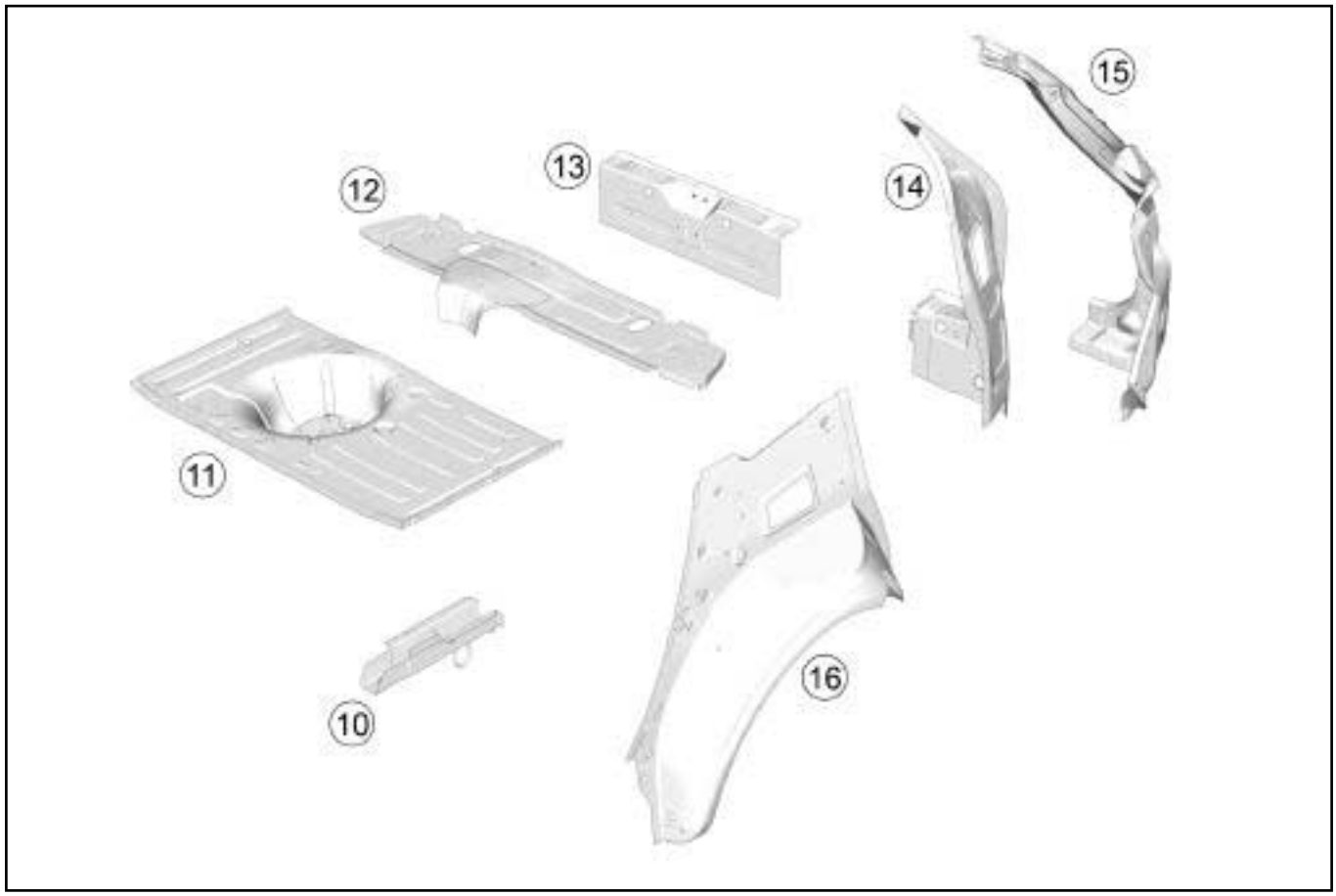


112105

- (**4**) Outer rear wheel arch
- (**5**) Rear section of rear side member
- (**6**) Rear floor rear section
- (**7**) Rear end panel lining
- (**8**) Rear light mounting lining
- (**9**) Rear light mounting

K85

2nddegree

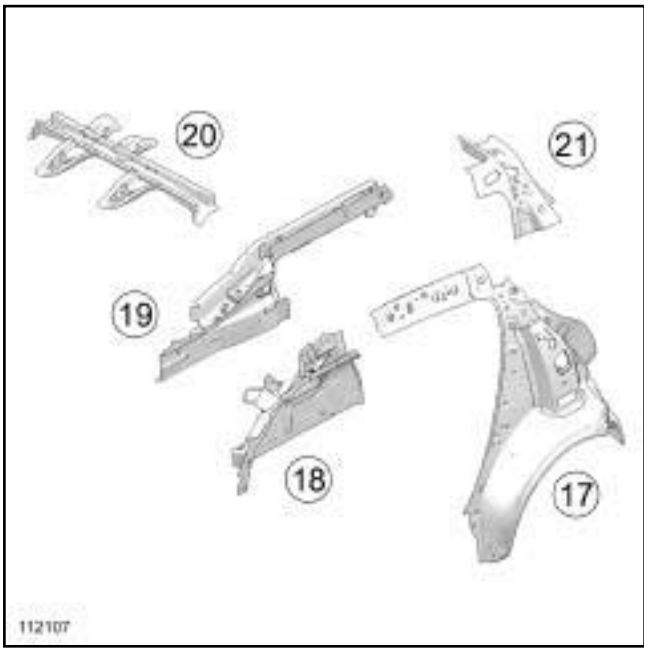


126752

- (**10**) Rear side member extension
- (**11**) Rear floor rear section
- (**12**) Rear floor extension
- (**13**) Rear end panel lining
- (**14**) Rear light mounting lining
- (**15**) Rear light mounting
- (**16**) Outer rear wheel arch

B85

3rddegree

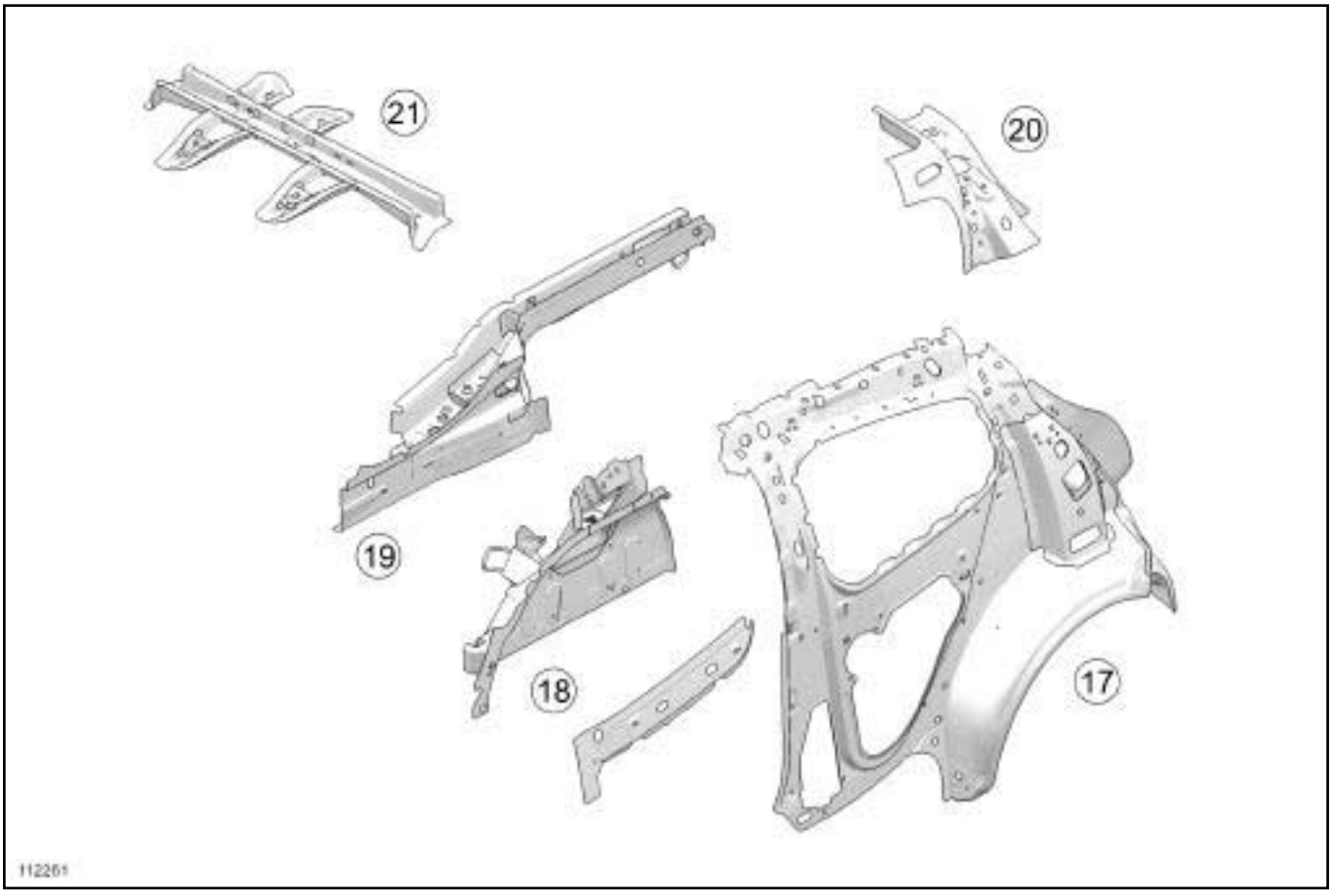


112107

- ***(17)*** Quarter panel lining
- ***(18)*** Inner wheel arch
- ***(19)*** Rear side member
- ***(20)*** Quarter panel upper reinforcement
- ***(21)*** Rear centre cross member

C85 or S85

3rddegree

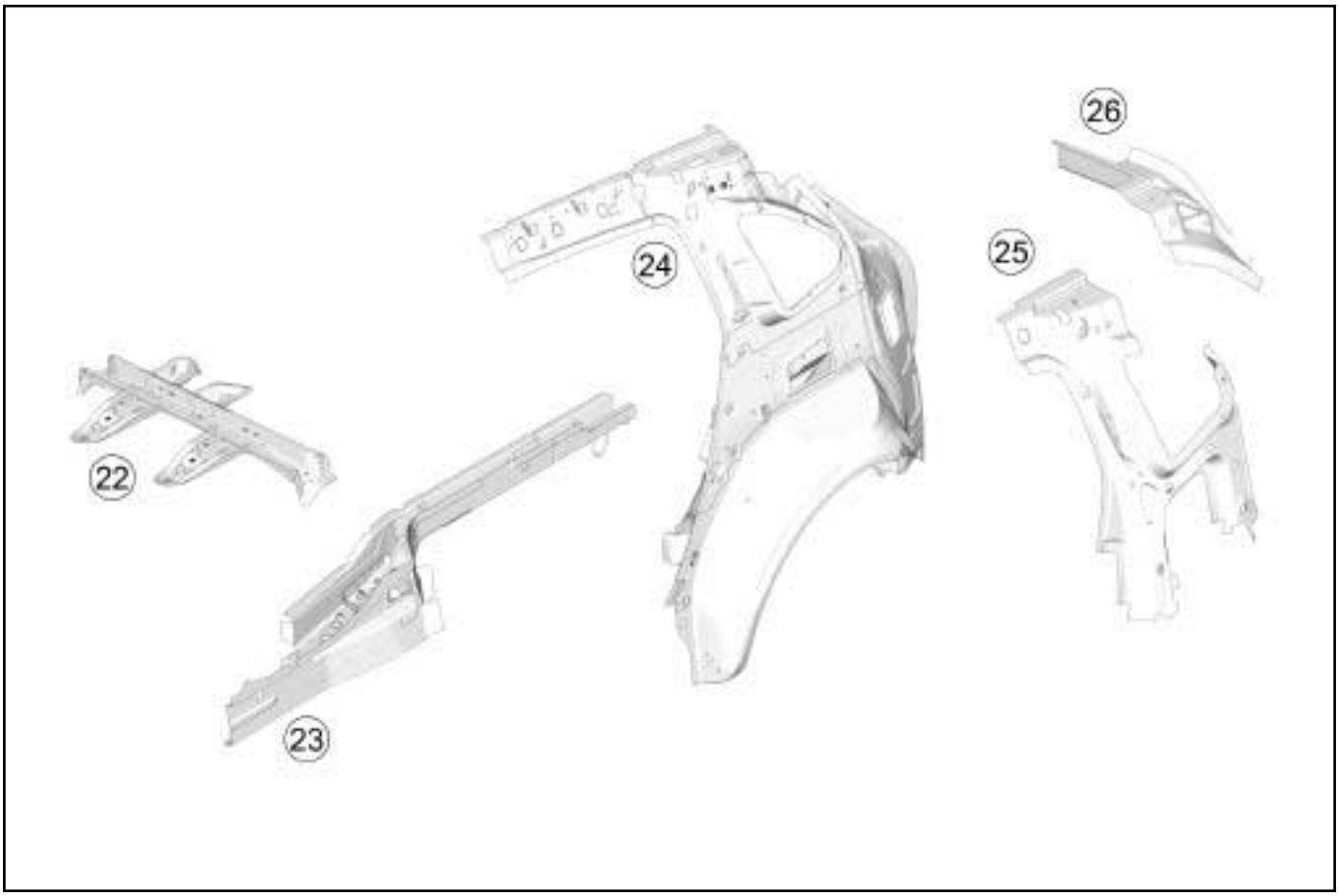


112261

- ***(17)*** Quarter panel lining
- ***(18)*** Inner wheel arch
- (**19**) Rear side member
- (**20**) Quarter panel upper reinforcement
- (**21**) Rear centre cross member

K85

3rddegree



126753

- (**22**) Rear centre cross member
- (**23**) Rear side member
- (**24**) Quarter panel lining
- (**25**) C-pillar stiffener
- (**26**) Quarter panel upper reinforcement

Consumables for mechanical repair:

DEFINITION	PACKAGING	PART NUMBER
MECHANICAL SEALANTS		
SILICOR sealing paste	**85 g** tube	**77 11 236 470**
MASTIXO Joint face seal	**100 g** tube	**77 11 236 172**
BEARING SEALING KIT For crankshaft bearing cap side sealing	Kit	**77 11 237 896**
SILICONE ADHESIVE SEAL Engine and gearbox sealing paste	**100 g** cartridge	**77 11 227 484**
TRANSPARENT SEALING MASTIC	**45 g** tube	**77 11 223 369**
SILICOJOINT	**90 g** tube	**77 11 236 469**
LOCTITE ADHESIVE 597 Sealing paste for PXX gearboxes	Cartridge	**77 11 219 705**
RESIN ADHESIVE or **SEALING RESIN** Sealing resin for engine and gearbox covers	**25 ml** tube	**77 11 237 640**
EXHAUST MASTIC For exhaust pipe union seals	**1.5 kg** tin	**77 01 421 161**
LEAK DETECTOR	**400 ml** aerosol	**77 11 236 176**
ADHESIVES		
FRENETANCHE Sealing the threading at low and medium pressure	**50 ml** bottle	**77 11 236 471**
HIGH-STRENGTH THREADLOCK For locking bolts	**50 ml** bottle	**77 11 230 112**
SEALING RESIN For locking the bearings	**50 ml** bottle	**77 11 236 472**
LUBRICANT CLEANERS		
NÉTELEC Avoid bad contacts in electrical circuits	**150 ml** aerosol	**77 11 225 871**

INJECTOR CLEANER	**355 ml** container	**77 11 224 188** or **77 11 225 539**
CLOTH FOR INJECTION SYSTEM		**77 11 211 707**
SUPER RELEASING AGENT	**500 ml** aerosol	**77 11 236 166**
SUPER RELEASING AGENT	**250 ml** aerosol	**77 11 420 439**
SUPER CLEANER FOR JOINT FACES For cleaning joint faces	**300 ml** aerosol	**77 11 238 181**
SURFACE CLEANER	**5 L** container	**77 01 404 178**
SILICONE LUBRICANT	**500 ml** aerosol	**77 11 236 168**
SILICONE-FREE LUBRICANT	**500 ml** aerosol	**77 11 236 167**
BRAKE CLEANER	**600 ml** aerosol	**77 11 422 413**
	150 ml aerosol	**77 11 422 414**
BIO BRAKE CLEANER	**750 ml** spray bottle	**77 11 427 217**
AIR CONDITIONING CLEANER	**250 ml** aerosol	**77 11 230 498**
CARBURETTOR CLEANER	Aerosol	**77 11 236 177**
IXTAR ENGINE CLEANER	**400 ml** can	**77 11 229 365**
GREASE		
BR2+ GREASE For: - the lower arm bearings, - the anti-roll bar grooves, - the driveshaft splines.	**1 kg** pack	**77 01 421 145**
SILICONE GREASE For: - the tubular rear axle bushes, - the anti-roll bar bushes.	**100 g** tube	**77 11 419 216**
COPPER ANTI-SEIZE GREASE Grease for turbochargers (high temperature)	**85 g** tube	**77 11 236 173**
COPPER-ALUMINIUM LUBRICANT Grease for turbochargers (high temperature)	**500 ml** aerosol	**77 11 236 169**
GREASE For driveshaft seals	**180 g** sachets	**77 11 420 011**

WHITE GREASE For wheel sensors	**400 ml** aerosol	**77 11 236 174**
MULTIPURPOSE GREASE	**500 ml** aerosol	**77 11 236 170**
	250 ml aerosol	**77 11 236 171**
FLUORSTAR 2L Silicone-free electric sealing grease	**100 g** tube	**82 00 168 855**
LACQUER		
JELT ARGENT Varnish for repairing heated rear screens	**5 g** bottle	**77 11 230 111**
BRAKE		
DOT 4, ISO CLASS 6, RENAULT STANDARD: 03-50-006, For vehicles with and without electronic stability program (ESP)	**0.5 L** container	**77 11 218 589**
	5 L container	**77 11 238 318**
	25 L container	**77 11 238 319**
DOT 4, ISO CLASS 4, RENAULT STANDARD: 03-50-005 Authorised for vehicles without ESP	**0.5 L** container	**77 11 172 381**
	5 L container	**77 01 395 503**
	25 L container	**77 11 171 926**
DOT 4 Authorised for vehicles without ESP, without clutch with hydraulic tappet	**0.5 L** container	**86 71 000 000**
	5 L container	**86 71 014 277**
	25 L container	**86 71 014 278**
COOLING SYSTEM		
ANTIFREEZE (TYPE D)	**1 L** container	**77 11 170 548**
COOLANT (TYPE D)	**1 L** container	**77 11 171 589**
	2 L container	**77 11 170 545**
	5 L container	**77 11 170 546**
OIL		
ENGINE OIL	(see **Engine oil: Specifications**) (Technical Note 6013A, 04A, Lubricants)	
GEARBOX OIL	(see **Manual gearbox oil: Specifications**) (Technical Note 6012A, 04A, Lubricants)	
	(see **Automatic gearbox oil: Specifications**) (Technical Note 6012A, 04A, Lubricants)	
	(see **Sequential gearbox oil: Specifications**) (Technical Note 6012A, 04A, Lubricants)	

AXLE OIL	(see **Rear axle oil: Specifications**) (Technical Note 6012A, 04A, Lubricants)	
ELF RENAULT MATIC D2 Oil for power-assisted steering: Pump connected, pump assembly (except Laguna III)	**2 L** container	**77 01 402 037**
TOTAL POWER-ASSISTED STEERING FLUID Oil for power-assisted steering: Pump assembly (Laguna III)	**1 L** container	no part number
PLANETELF PAG 488	**250 ml** container	**77 11 172 668**
SANDEN SP 10 Oil for air conditioning compressor		**77 01 419 313**
UNIVIS J26 Oil for retractable roof hydraulic system	**250 ml** container	**77 11 172 160**
TYRES		
TYRE PASTE	**1 kg** pack	**77 11 223 052**
	5 kg pack	**77 11 223 053**
TYRE REPAIR AGENT	**400 ml** tube	**77 11 221 296**
	300 ml tube	**77 11 222 802**
BLANKING PLUG		
Engine type	Injection type	Part no.
F5R		**77 01 206 382**
F8Q		**77 01 206 340**
F9Q		**77 01 208 229**
G9T AND G9U		**77 01 208 229**
K9K	**DELPHI**	**77 01 206 804**
K9K	**SIEMENS**	**77 01 476 857**
M9R		**77 01 209 062**
P9X		**77 01 474 730**
ZD3		**77 01 208 229**
MISCELLANEOUS		
GREY ABRASIVE PAD		**77 01 405 943**

Consumables for bodywork repair:

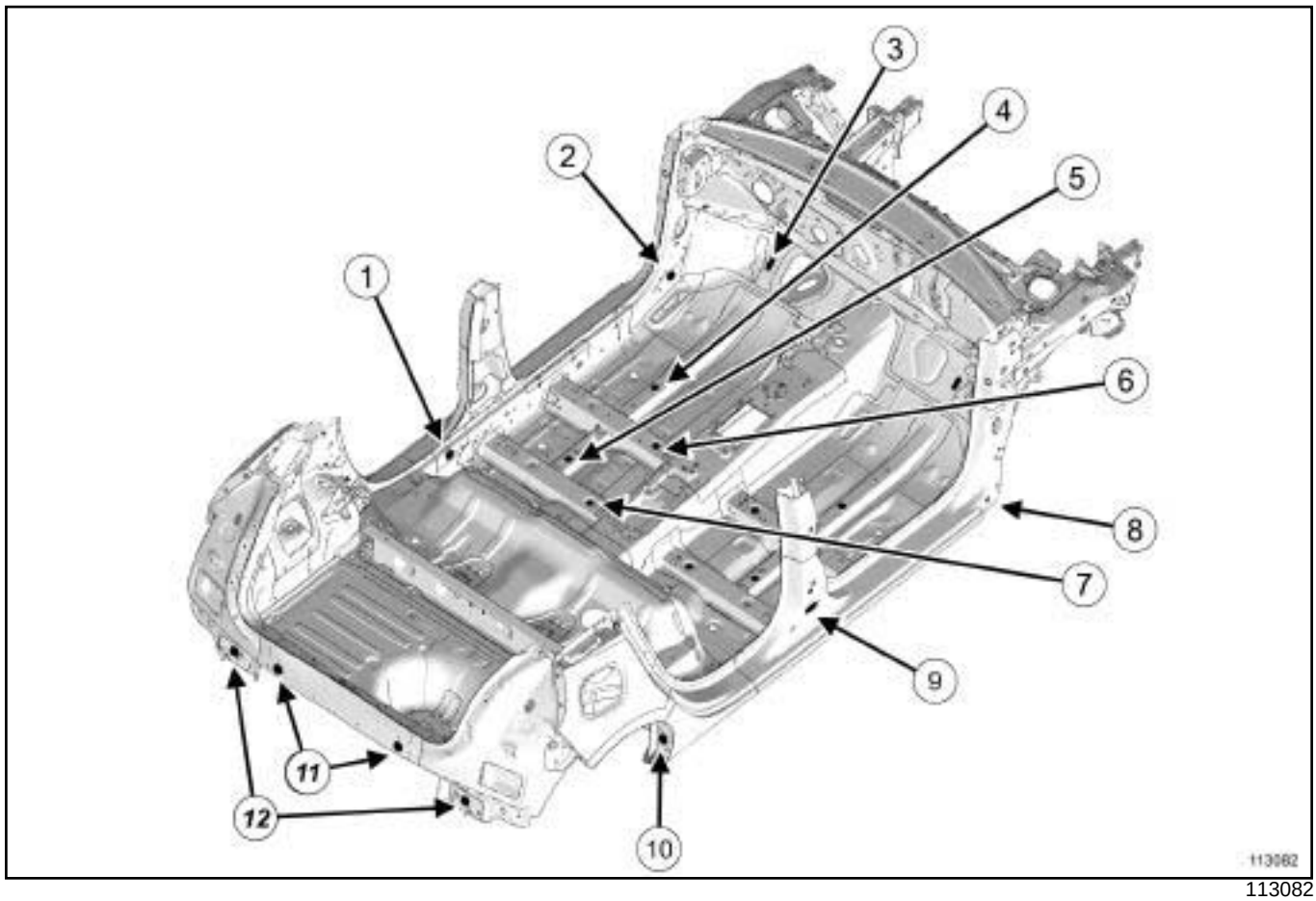
HOLLOW SECTION WAX		
SPR CC	**1 L** container	**77 11 172 672**
SPR CC SPRAY	**500 ml** aerosol	**77 11 211 654**
STRUCTURAL ADHESIVE		
STRUCTURAL ADHESIVE	Kit =2 **80 ml** cartridges	**77 11 219 885**
HIGH PERFORMANCE STRUCTURAL ADHESIVE	1 **195 ml** cartridge	**77 11 419 113**
GLAZING PRODUCTS AND ADHESIVES		
MONOPAC EVOLUTION ADHESIVE KIT	**310 ml** cartridge	**77 11 421 430**
MONOPAC EVOLUTION ADDITIONAL CARTRIDGE + NOZZLE	**310 ml** cartridge	**77 11 421 431**
S-P KIT ADHESIVE KIT	**310 ml** cartridge	**77 11 421 432**
ADDITIONAL S-P KIT CARTRIDGE + NOZZLE	**310 ml** cartridge	**77 11 421 433**
BIPAC EVOLUTION ADHESIVE KIT	2 **225 ml** cartridges	**77 11 421 434**
LINT-FREE CLOTH	Box of **340** cloths	**77 11 237 262**
WINDOW SEALING MASTIC	**310 ml** cartridge	**77 11 170 222**
SPECIAL ADHESIVE FOR WINDOWS		**77 11 425 759**
ADHESION PROMOTER For bonding double-sided adhesive tape	Cloth	**77 11 423 222**
MISCELLANEOUS		
DOUBLE-SIDED ADHESIVE	**18 mm** wide	**77 11 226 308**
DOUBLE-SIDED ADHESIVE	**8 mm** wide	**77 11 427 869**
FRENETANCHE	**50 ml** bottle	**77 11 236 471**
ADHESIVE PATCH		**82 00 043 181**
ADHESIVE PAD		**77 05 042 163**
SEALS		
BLACK MJ PRO (Electroweldable)	**310 ml** cartridge	**77 11 172 676**
WHITE MJ PRO II (Electroweldable)	**310 ml** cartridge	**77 11 426 951**

PREFORMED SEALING MASTIC BEAD	**2.6 m** roll	**77 01 423 330**
BRUSH MASTIC	**1 kg** pack	**77 11 228 113**
FILLER MASTIC	60 beads **Ø 6 mm by 0.3 m**	**77 11 170 230**
GREASE		
WHITE GREASE	**400 ml** aerosol	**77 11 236 174**
OPENING ELEMENT MECHANISM GREASE	**20 g** sachets	**77 11 419 865**
SILICONE LUBRICANT	**500 ml** aerosol	**77 11 236 168**
SILICONE-FREE LUBRICANT	**500 ml** aerosol	**77 11 236 167**
SOUNDPROOFING		
SPR GREY EVOLUTION	**1 l** cartridge	**77 11 419 114**
SPR GREY EVOLUTION SPRAY	**400 ml** aerosol	**77 11 419 116**
SPR BLACK EVOLUTION II	**1 l** cartridge	**77 11 419 115**
SOUNDPROOFING PAD (3.5 Kg/m²)	Pack of **10**	**77 01 423 546**
SOUNDPROOFING PAD (6.5 Kg/m²)	Pack of **5**	**77 01 423 269**
POLISHING		
POLISHING LIQUID	**1 L** container	**77 11 420 288**
FINISHING LIQUID	**1 L** container	**77 11 420 289**
MASTIC		
Universal mastic		
GALAXI	**2.5 kg** pack	**77 11 172 238**
OPTIMAX	**1.23 l** cartridge	**77 11 172 239**
EXCELLENCE +	**960 g** cartridge	**77 11 423 539**
For finishing plastic repair	**1 kg** pack	**77 11 423 540**
Plugging mastic		
XFIBRE FIBREGLASS MASTIC	**975 kg** pack	**77 11 172 235**
STANDARD BASIX POLYESTER MASTIC	**1.975 kg** pack	**77 11 172 234**
ALUX ALUMINIUM MASTIC	**975 kg** pack	**77 11 172 236**
Sprayable mastic		

PIXTO SPRAYABLE POLYESTER MASTIC	**1.5 kg** tin	**77 11 172 237**
Finishing mastic		
IXTRA POLYESTER MASTIC	**1.625 kg** pack	**77 11 172 233**
Anti-grit mastic		
MAG PRO 1	**310 ml** cartridge	**77 11 172 679**
MAG PRO 3 (Dual component)	**1.5 kg** tin	**77 11 218 364**
SURFACE CLEANER		
HEPTANE	**500 ml** container	**77 11 170 064**
SOLVENT SURFACE CLEANER	**5 L** container	**77 01 404 178**
WATER-BASED SURFACE CLEANER	**5 L** container	**77 11 421 337**
ANTISTATIC THINNER (for plastic materials)	**400 ml** aerosol	**77 01 408 493**
COMPOSITE MATERIAL REPAIR BY BONDING		
PLASTIC REPAIR KIT		**77 11 170 064**
NOZZLE FOR PLASTIC REPAIR KIT		**77 11 423 523**
PLASTIC REPAIR CLEANER	**1 L** container	**77 11 423 517**
PLASTIC REPAIR PRIMER	**150 ml** bottle	**77 11 423 518**
PLASTIC REPAIR ADHESIVE	**2 x 25 ml** bicomponent cartridge	**77 11 423 519**
PLASTIC REPAIR CLOTH	**90 m** roller	**77 11 423 520**
PLASTIC REPAIR NOZZLES	**12** nozzles	**77 11 423 522**
COMPOSITE MATERIAL REPAIR BY WELDING		
PLASTIC WELD REPAIR SET		**77 11 425 742**
PROTECTIVE STRIPS	Bag of **10** protective strips	**77 11 425 744**
STAINLESS STEEL MESH	Bag of **2** meshes	**77 11 425 743**
COOLER	**400 ml** aerosol	**77 11 425 745**
BRUSH	Box of **10** brushes	**77 11 237 793**
WINDOW MASKING TAPE		
10 MM WINDSCREEN TAPE		**77 11 171 708**
20 MM WINDSCREEN TAPE		**77 11 171 709**
PROTECTIVE WELDING		

ANTI-SPLASH SPRAY	**400 ml** aerosol	**77 11 218 270**
SPECIFIED UNDERCOAT		
PRE-TREATMENT PRIMER WITHOUT ZINC CHROMATE (I-Alpha) + **THINNER**	**1 L** container	**77 11 420 027** (Primer)
		77 11 420 028 (Thinner)
I-PREMIA REACTIVE PRIMER (do not use on aluminium)	**3.5 l** container	**77 11 239 243** (Primer)
		77 11 228 654 (Thinner)
I-PREMIA REACTIVE PRIMER (do not use on aluminium)	**400 ml** aerosol	**77 11 419 416**
ADHÉRA SPRAY (adhesion promoter for thermoplastics)	**400 ml** aerosol	**77 11 423 734**
PRIMARA BLACK (adhesion promoter/primer for thermoplastics)	**1 L** container	**77 11 423 735**
		77 11 171 514 (Activator)
PRIMARA (adhesion promoter/primer for thermoplastics)	**1 L** container	**77 11 171 513**
		77 11 171 514 (Activator)
UNDERCOAT		
LEVIA	**3.5 l** container	**77 11 228 651**
FORTIA	**3.5 l** container	**77 11 228 650**

I - POINTS LOCATED INSIDE THE VEHICLE



113082

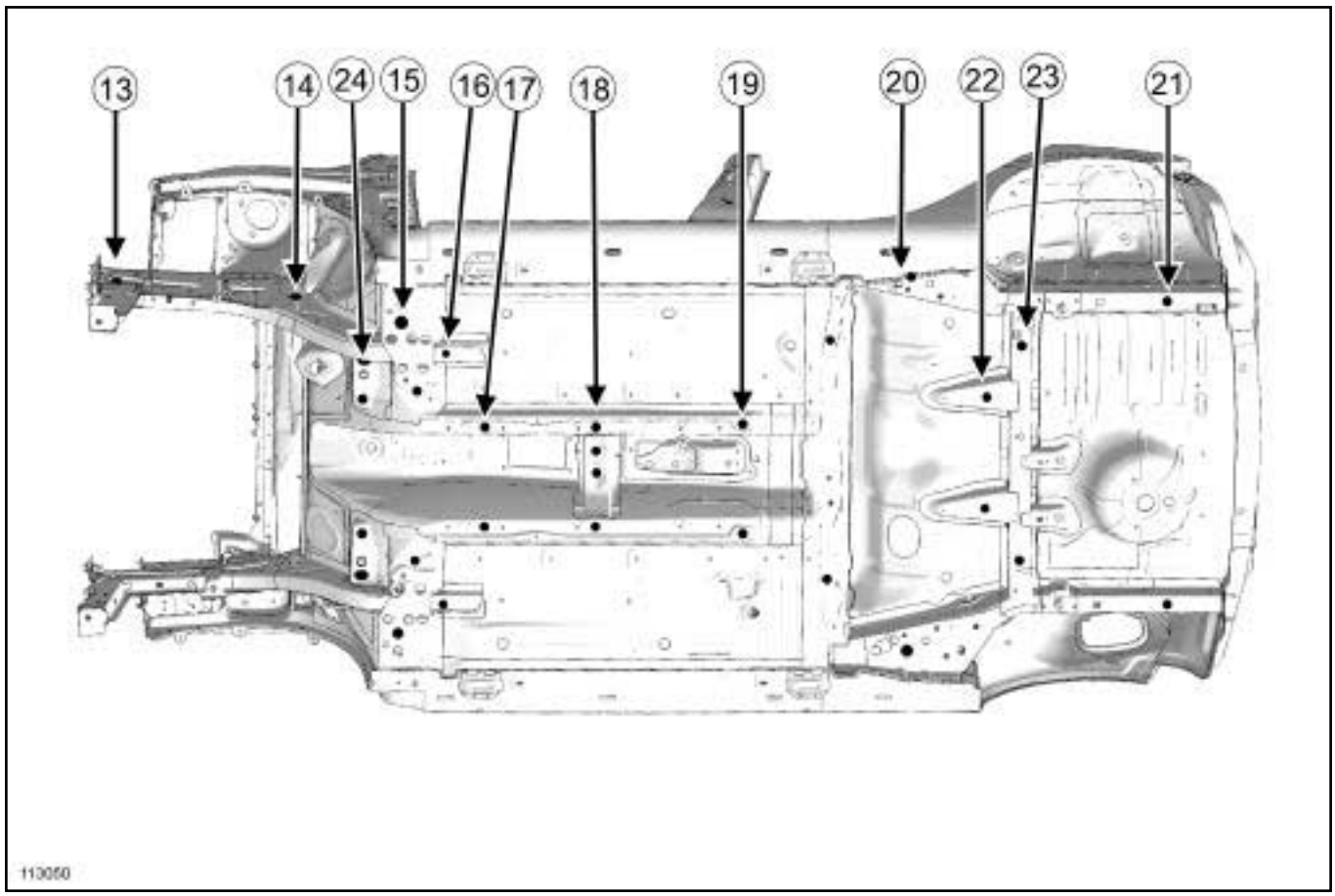
Note:

Hollow body parts to be treated from inside the vehicle must be treated after painting and before retrimming.

Side impact:

- replacing or repairing the sill panel:
  - protection of the join between the inner sill panel and the sill panel reinforcement: Wax injected into points 1 and 2,
  - protection of the join between the sill panel and the sill panel closure: wax injected into points 8, 9 and 10.
- replacing the centre floor:
  - protection of the join between the floor and the side member reinforcement: Wax injected into points 4 and 5,
  - protection of the join between the floor and the front seat mounting cross member: wax injected into points 6 and 7.
- replacing the centre side member beneath the floor:
  - wax injected into points 17, 18 and 19.

II - POINTS BENEATH THE VEHICLE



113050

Note:

Blanking pieces are fitted to the injection points located beneath the vehicle. When any work is carried out on the vehicle, plug all the points used for injection. Replace the damaged or deformed blanking covers.

Front impact:

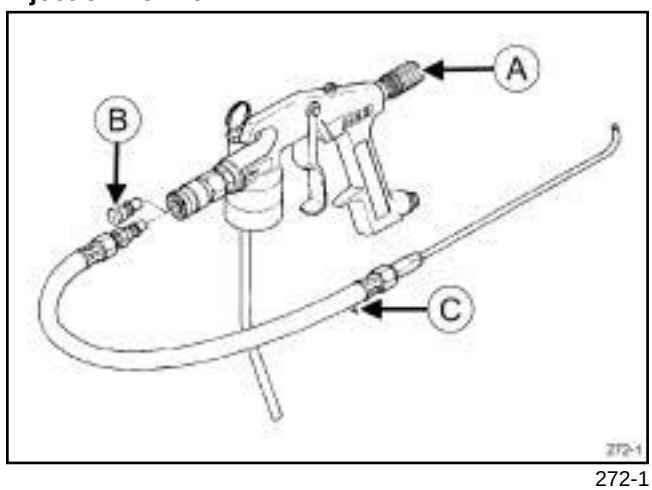
- replacing or repairing the front side member, the front side member closure panel and the front sub-frame mounting unit:
  - Wax injected into points 3, 13 and 14.
- replacing the front side cross member or the front half unit:
  - Wax injected into points 15, 16 and 24.

Rear impact:

- replacing the complete rear side member:
  - Wax injected into points 12 and 21.
- Replacement of the rear end panel:
  - wax injected into 11.
- replacing the rear floor centre cross member:
  - Wax injected into points 22 and 23.
- replacing the front section of the rear floor:
  - wax injected into 20.

1 - Equipment required

Injection nozzle



272-1

(**A**) Wax flow control

(**B**) Quick-release union end piece

(**C**) Interchangeable injection hose

Note:

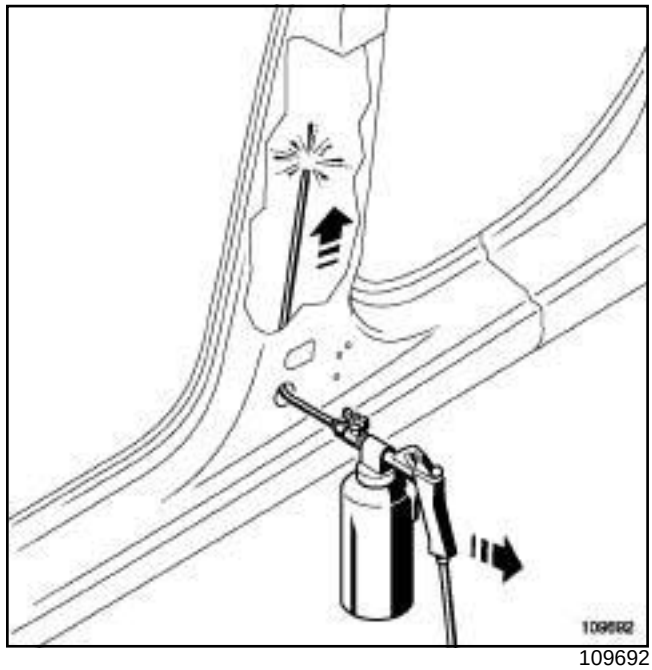
Choose the hose most suitable for the operation.

Can of wax

272

The subframe under the floor is protected with a special wax **SPR CC** (see **04B**, **Consumables - products**, **Vehicle: Parts and consumables for the repair**, page **04B-1**) (04B, Consumables - Products).

2 - Method of use



109692

1 - Insert the nozzle tip until it reaches the end of the hollow section

2 - Inject the wax whilst retracting the nozzle tip

Colour description	Colour code	Satin textured code
Liquid yellow	TEJ37	
Racing blue	OJ45	
Capsicum red	OV727	230 103
Blue grey	TEJ47	215 131
Glacier White	O389	220 112
Pearl black	NV676	205 255
Nimbus	TEF60	
Mercury	TED69	205 265
Extreme blue	TERNA	215 137
Deep black	TEGNA	205 288
Albi blue	TERNC	215 243
Stone	TEHNK	220 125
Star blue	TERNL	
Ruby red	TENNJ	230 114
Oyster grey	TEKNG	205 325
Ultra red	OVNNF	230 105
Malta blue	TERNT	215 156
Apple green	TEDNQ	
Alien green	TEDNR	

RENAULT

1 Engine and peripherals

10A ENGINE AND CYLINDER BLOCK ASSEMBLY

11A TOP AND FRONT OF ENGINE

12A FUEL MIXTURE

12B TURBOCHARGING

13A FUEL SUPPLY

13B DIESEL INJECTION

13C PREHEATING

14A ANTIPOLLUTION

16A STARTING - CHARGING

17A IGNITION

17B PETROL INJECTION

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

19A COOLING

19B EXHAUST

19B EXHAUST

19C TANK

19D ENGINE MOUNTING

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Chapitre 1

Contents

Pages

10A ENGINE AND CYLINDER BLOCK ASSEMBLY

Crankshaft seal on timing end: Removal - Refitting 10A-1

Crankshaft seal, gearbox end: Removal - Refitting 10A-6

Engine oil: Draining - Refilling 10A-12

Oil filter: Removal - Refitting 10A-19

Oil-coolant heat exchanger: Removal - Refitting 10A-25

Oil pressure sensor: Removal - Refitting 10A-39

Oil level sensor: Removal - Refitting 10A-46

Lower cover: Removal - Refitting 10A-52

Conrod bearing shell: Removal - Refitting 10A-70

Oil pump: Removal - Refitting 10A-78

Multifunction support: Removal - Refitting 10A-96

Engine - gearbox assembly: Removal - Refitting 10A-112

Engine - gearbox assembly: Removal - Refitting 10A-161

Valves: Adjustment 10A-231

Oil pressure: Check 10A-235

10A ENGINE AND CYLINDER BLOCK ASSEMBLY

Flywheel: Removal - Refitting 10A-237

Drive plate: Removal - Refitting 10A-241

11A TOP AND FRONT OF ENGINE

Pressure at end of compression: Check 11A-1

Accessories belt: Removal - Refitting 11A-5

Crankshaft accessories pulley: Removal - Refitting 11A-31

Accessories dummy pulley: Removal - Refitting 11A-47

Timing belt: Removal - Refitting 11A-48

Timing chain: Removal - Refitting 11A-170

Rocker cover: Removal - Refitting 11A-183

Camshaft dephaser: Function 11A-224

Camshaft dephaser: Function 11A-228

Camshaft dephaser: Removal - Refitting 11A-234

Camshaft: Removal - Refitting 11A-247

Contents

11A TOP AND FRONT OF ENGINE

Camshaft seal, timing end: Removal - Refitting 11A-284

Oil decanter: Removal - Refitting 11A-302

Lifting eyes: Removal - Refitting 11A-305

Cylinder head: Removal - Refitting 11A-308

Cylinder head: Removal - Refitting 11A-356

12A FUEL MIXTURE

Air inlet: Description 12A-1

Air resonator: Removal - Refitting 12A-10

Air filter: Removal - Refitting 12A-15

Air filter unit: Removal - Refitting 12A-17

Air flowmeter: Removal - Refitting 12A-27

Damper valve: Removal - Refitting 12A-31

Throttle valve: Removal - Refitting 12A-33

Throttle valve: Cleaning 12A-43

Inlet distributor: Removal - Refitting 12A-45

Injector holder shim: Removal - Refitting 12A-69

Exhaust manifold: Removal - Refitting 12A-74

12B TURBOCHARGING

Turbocharging: Precautions for the repair 12B-1

Turbocharger: Removal - Refitting 12B-4

Turbocharger oil pipe: Removal - Refitting 12B-15

Intercooler: Removal - Refitting 12B-21

13A FUEL SUPPLY

Fuel circuit: Operating diagram 13A-1

Petrol supply circuit: Operating diagram 13A-2

Diesel supply circuit: Operating diagram 13A-3

Diesel filter: Removal - Refitting 13A-6

Fuel filter: Removal - Refitting 13A-9

Particle filter injector fuel filter: Removal - Refitting 13A-10

Injector rail - Injectors: Removal - Refitting 13A-11

Fuel pressure: Check 13A-23

Fuel flow: Check 13A-31

13B DIESEL INJECTION

Diesel injection: Precautions for the repair 13B-1

Diesel injection: List and location of components 13B-8

Diesel injection computer: Configuration 13B-17

Diesel injection computer: Removal - Refitting 13B-18

Contents

13B DIESEL INJECTION

Flow regulation solenoid valve: Removal - Refitting 13B-19

Pressure regulation solenoid valve: Removal - Refitting 13B-20

High pressure pump leak flow: Check 13B-21

High pressure pump: Removal - Refitting 13B-23

Flow actuator: Removal - Refitting 13B-39

Venturi: Removal - Refitting 13B-42

Diesel return pipe: Removal - Refitting 13B-45

High pressure pipe between pump and rail: Removal - Refitting 13B-50

High pressure pipe between rail and injector: Removal - Refitting 13B-56

Injector rail: Removal - Refitting 13B-64

Rail pressure sensor: Removal - Refitting 13B-74

Fuel temperature sensor: Removal - Refitting 13B-76

Injector leak flow: Check 13B-80

Diesel injector: Configurations 13B-82

Diesel injector: Removal - Refitting 13B-83

High pressure pipe: Check 13B-99

Accelerometer: Removal - Refitting 13B-101

Crankshaft position sensor: Removal - Refitting 13B-105

13C PREHEATING

Pre-postheating unit: Removal - Refitting 13C-1

Heater plugs: Removal - Refitting 13C-2

14A ANTIPOLLUTION

Exhaust gas recirculation: List and location of components 14A-1

Exhaust gas recirculation solenoid valve: Removal - Refitting 14A-3

Exhaust gas cooler: Removal - Refitting 14A-7

Exhaust gas recirculation unit: Removal - Refitting 14A-12

Exhaust gas recirculation mounting: Removal - Refitting 14A-17

Exhaust gas recirculation rigid pipe: Removal - Refitting 14A-20

Fuel vapour recirculation circuit: Function 14A-23

Fuel vapour recirculation circuit: Operating diagram 14A-24

Fuel vapour recirculation circuit: Check 14A-25

Fuel vapour absorber: Removal - Refitting 14A-26

Fuel vapour absorber: Check 14A-27

Oil vapour rebreathing circuit: Descriptions 14A-28

Oil vapour rebreathing circuit: Operating diagram 14A-29

Oil vapour rebreathing circuit: Operating diagram 14A-31

Contents

16A STARTING - CHARGING

Charge circuit: Specifications 16A-1
Charge circuit: Function 16A-2
Charge circuit: Check 16A-3
Alternator: Removal - Refitting 16A-5
Starter: Removal - Refitting 16A-23

17A IGNITION

Ignition: Specifications 17A-1
Coils: Removal - Refitting 17A-2
Plugs: Removal - Refitting 17A-11

17B PETROL INJECTION

Petrol injection: List and location of components 17B-1
Oxygen sensors: Removal - Refitting 17B-19
Crankshaft position sensor: Removal - Refitting 17B-32
Petrol injection computer: Removal - Refitting 17B-37

19A COOLING

Engine cooling: Parts and consumables for the repair 19A-1
Engine cooling: Precautions for the repair 19A-2
Engine cooling system: Specifications 19A-3
Engine cooling system: Check 19A-5
Engine cooling system: Operating diagram 19A-7

19A COOLING

Cooling system: Draining - Refilling 19A-16
Cooling radiator: Removal - Refitting 19A-20
Coolant pump: Removal - Refitting 19A-41
Thermostat: Removal - Refitting 19A-59
Water chamber: Removal - Refitting 19A-63
Coolant temperature sensor: Removal - Refitting 19A-77
Engine cooling fan assembly: Removal - Refitting 19A-85
Coolant pump inlet pipe: Removal - Refitting 19A-93
Expansion bottle: Removal - Refitting 19A-101

19B EXHAUST

Exhaust: List and location of components 19B-1
Exhaust: Precautions for the repair 19B-19
Catalytic pre-converter: Removal - Refitting 19B-23
Catalytic converter: Removal - Refitting 19B-29
Expansion chamber: Removal - Refitting 19B-47
Intermediate pipe: Removal - Refitting 19B-49
Silencer: Removal - Refitting 19B-50
Particle filter: Removal - Refitting 19B-56
Particle filter pressure sensor: Removal - Refitting 19B-59

Contents

19B EXHAUST

Particle filter temperature sensors: Removal - Refitting 19B-62

Exhaust fuel injector: Removal - Refitting 19B-66

Exhaust fuel injector cooler: Removal - Refitting 19B-69

19B EXHAUST

Exhaust: Precautions for the repair 19B-71

Catalytic converter: Removal - Refitting 19B-75

Expansion chamber: Removal - Refitting 19B-93

Intermediate pipe: Removal - Refitting 19B-95

Silencer: Removal - Refitting 19B-96

19C TANK

Fuel tank: Removal - Refitting 19C-1

Filler neck: Removal - Refitting 19C-6

Fuel tank: Draining 19C-8

Sender: Removal - Refitting 19C-14

Pump - sender: Removal - Refitting 19C-16

Pump - sender - filter: Removal - Refitting 19C-18

Fuel level sensor: Check 19C-20

19D ENGINE MOUNTING

Suspended engine mounting: Tightening torque 19D-1

Lower engine tie-bar: Removal - Refitting 19D-13

Right-hand suspended engine mounting: Removal - Refitting 19D-22

Left-hand suspended engine mounting: Removal - Refitting 19D-34

K9K

Special tooling required	
Mot. 1577	Lip seal extractor (shaft diameter 28 mm to 42 mm).

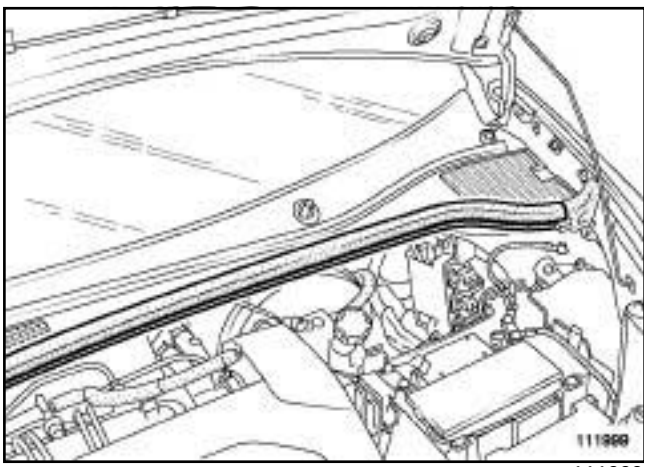
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover.

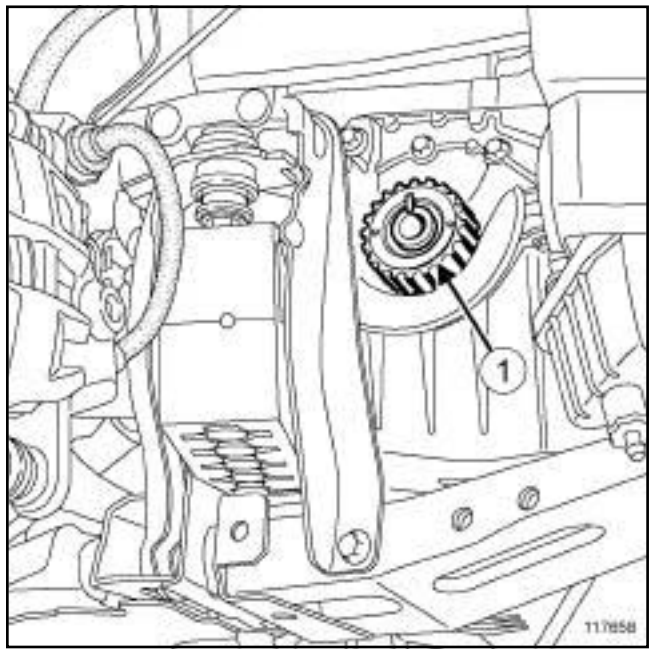


111999

❏ Remove:

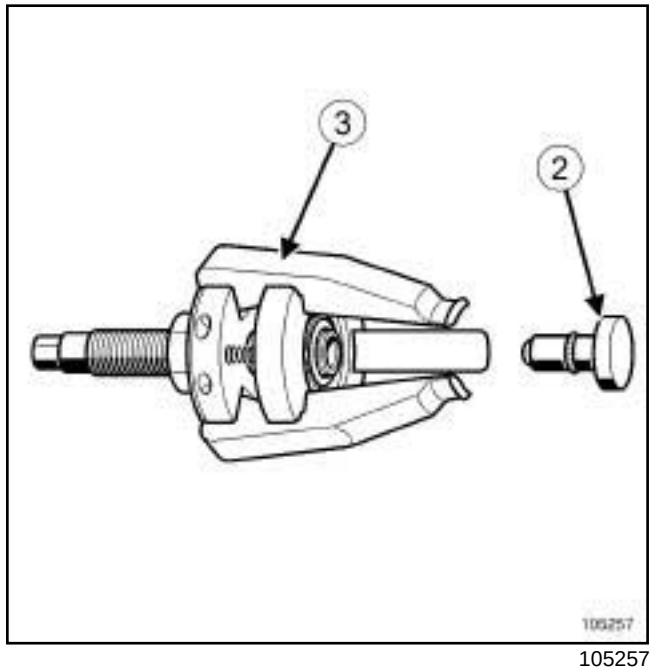
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117658

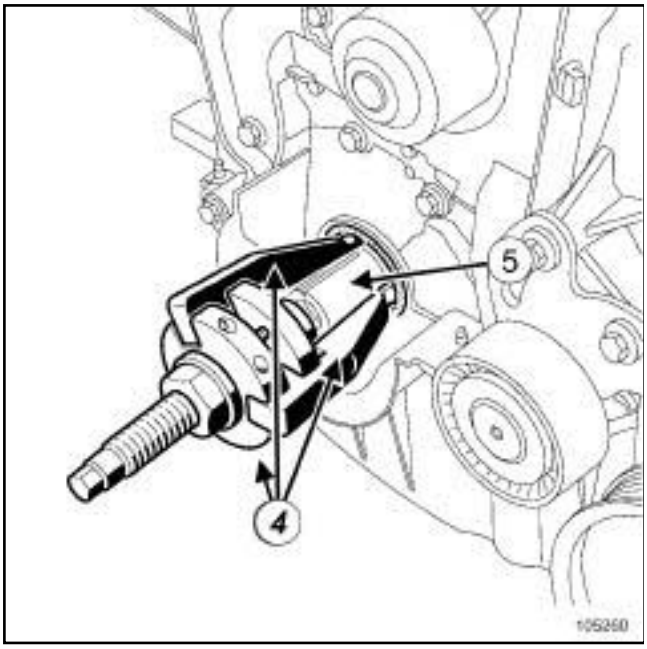
❏ Remove the timing sprocket (**1**) .



105257

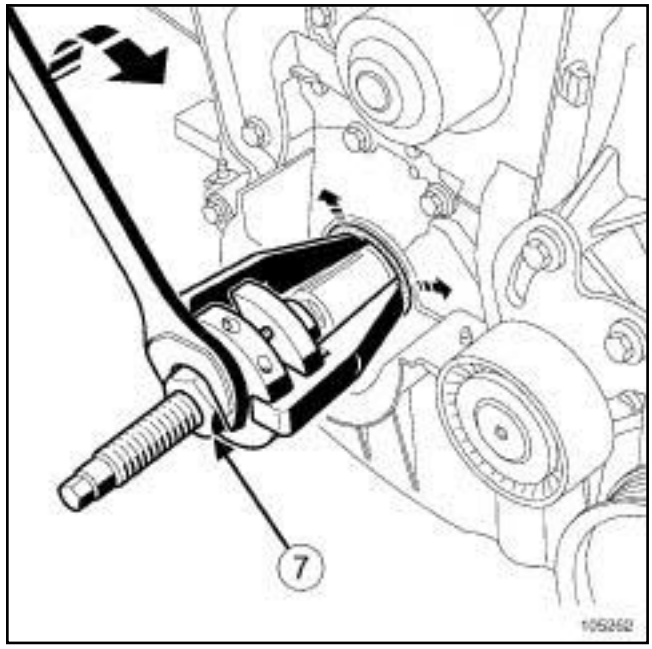
❏ Fit the end piece (**2**) of the **(Mot. 1577)** (**3**) .

K9K



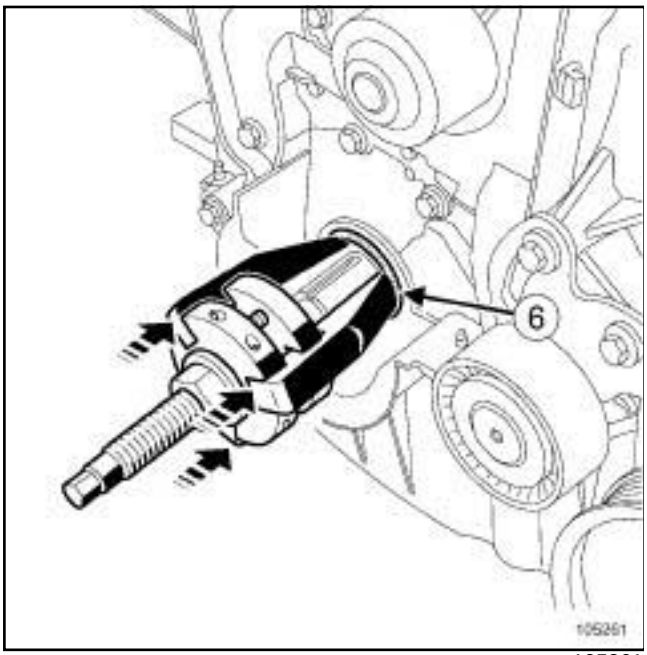
105260

❑ Position the jaws (**4**) of the **(Mot. 1577)** on the crankshaft (**5**) .



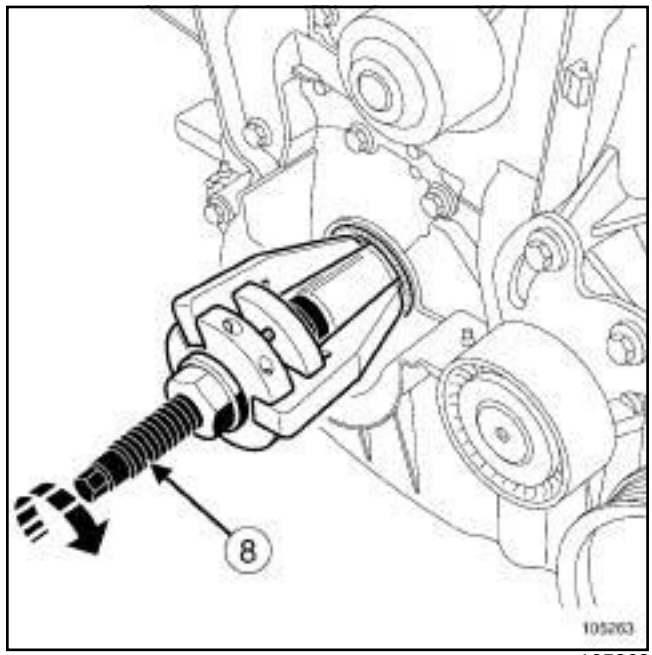
105262

❑ Move the jaws away by tightening the bolt (**7**) using an open-jawed spanner.



105261

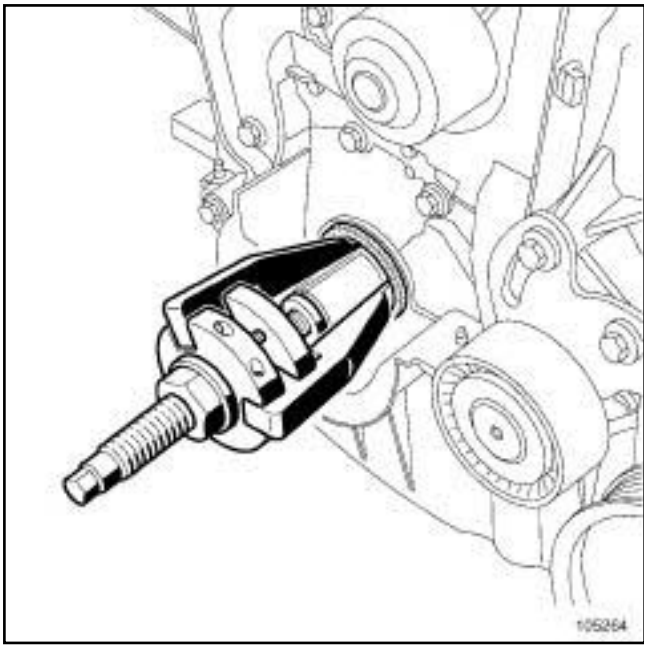
❑ Push the **(Mot. 1577)** until contact is made between the ends (**6**) of the jaws and the crankshaft seal.



105263

❑ Screw down the threaded rod (**8**) of the **(Mot. 1577)**.

K9K



105264

❑ Remove the crankshaft seal using the **(Mot. 1577)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the crankshaft seal (see) (Technical Note 6006, 10A, Engine and peripherals),
- the timing sprocket.

II - FINAL OPERATION

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

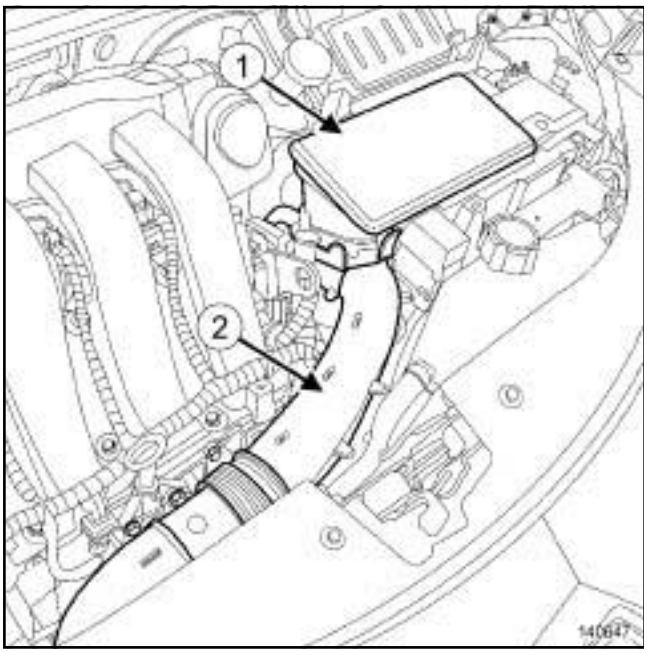
K4M

Special tooling required	
Mot. 1385	Tool for fitting the crankshaft seal, timing end (35 x 47 x 7).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

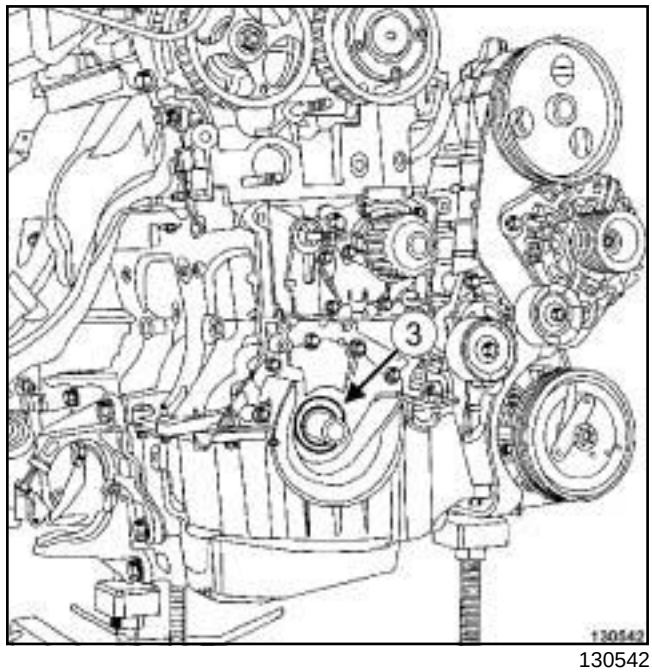


140647

❑ Remove:

- the air resonator (**1**) ,
- the air filter unit air inlet pipe (**2**) ,
- the engine undertray bolts,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the battery (see) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



130542

❑ Remove the crankshaft seal (**3**) .

K4M

REFITTING

I - REFITTING PREPARATION OPERATION

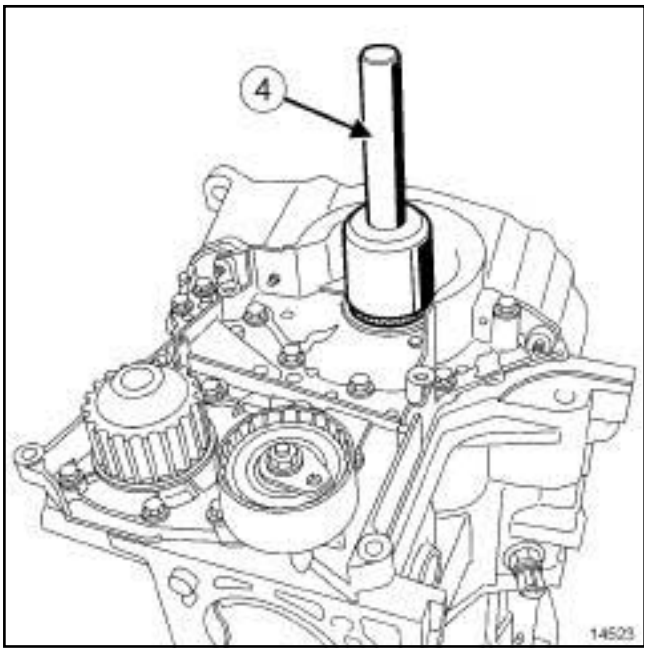
❑ **parts always to be replaced: Crankshaft seal on timing end**.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the crankshaft seal mating face,
- the cylinder block seal housing.

> **WARNING**
> To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

II - REFITTING OPERATION FOR PART CONCERNED



14523

❑ Refit a new crankshaft seal using the **(Mot. 1385)** (**4**) .

III - FINAL OPERATION

❑ Refit:

- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see) (80A, Battery),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the air filter unit air inlet pipe,
- the air resonator.

K9K

Special tooling required	
Mot. 1579	Lip seal extractor (shaft diameter 80 mm to 98 mm).

REMOVAL

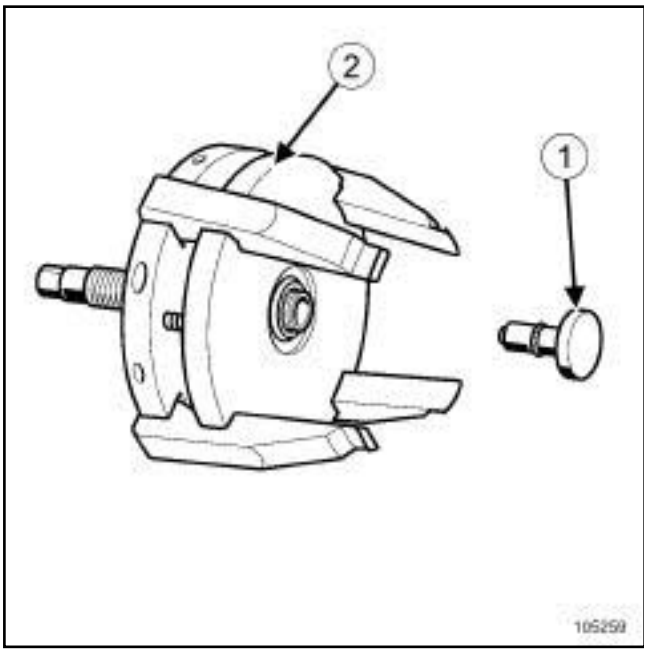
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

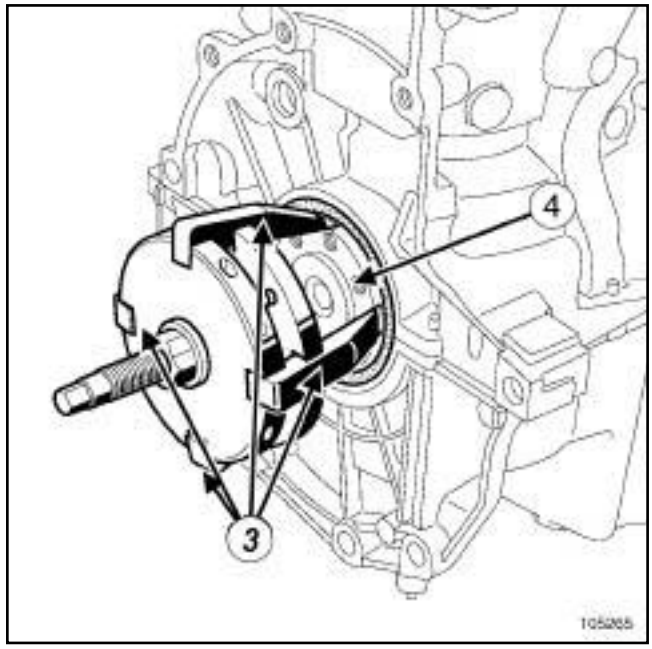
- the gearbox (see **Manual gearbox: Removal - Refitting**) (MR 392, 21A, Manual gearbox),
- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) (MR 392, 20A, Clutch),
- the flywheel (see **10A**, **Engine and cylinder block assembly**, **Flywheel: Removal - Refitting**, page **10A-237**) (MR 392, 20A, Clutch).

II - OPERATION FOR REMOVAL OF PART CONCERNED



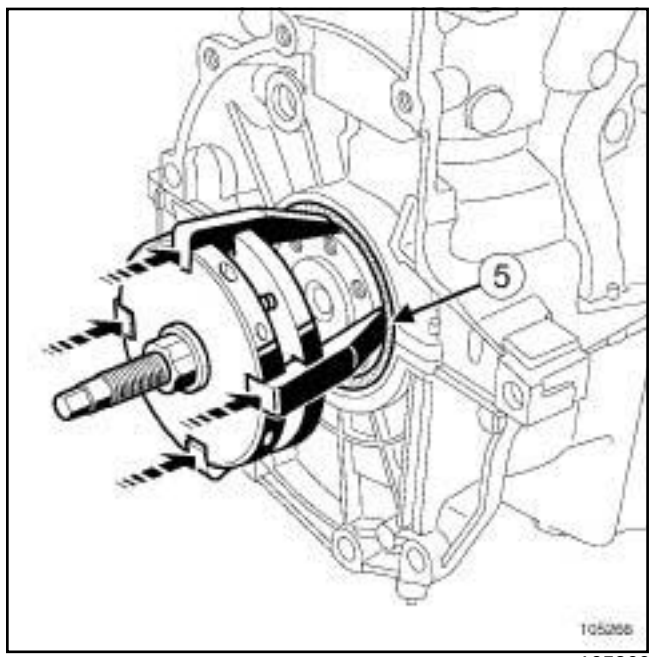
105259

❏ Fit the end piece (**1**) of the **(Mot. 1579)** (**2**) .



105265

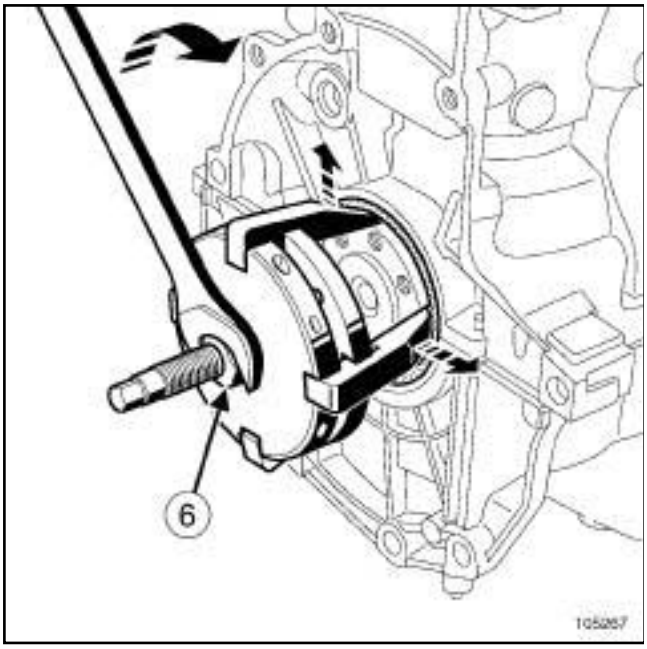
❏ Position the jaws (**3**) of the **(Mot. 1579)** on the crankshaft (**4**) .



105266

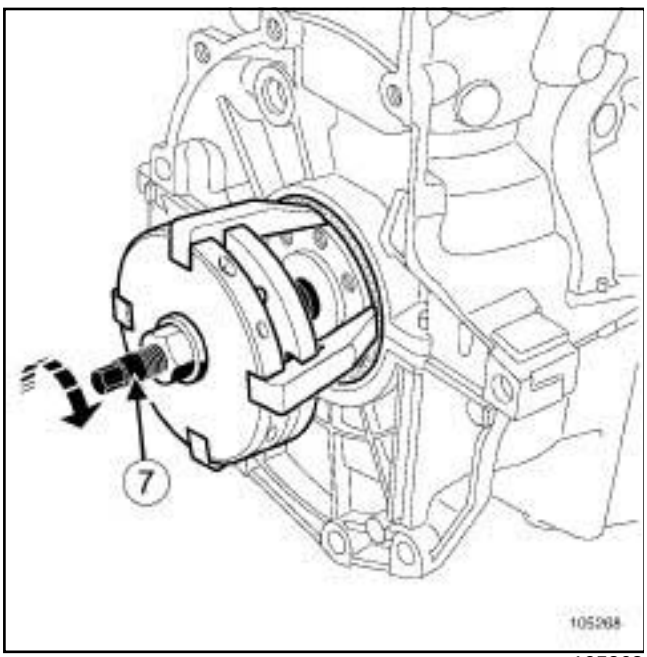
❏ Push the tool until contact is made between the ends (**5**) of the jaws and the crankshaft seal.

K9K



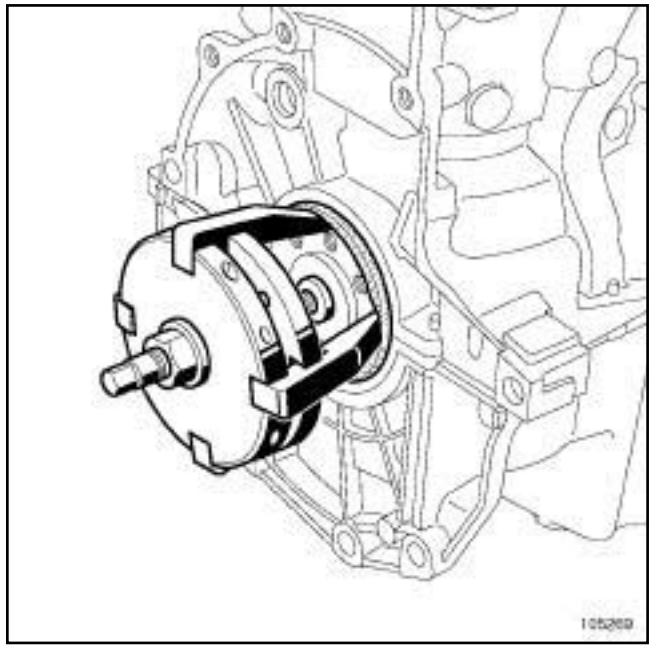
105267

❑ Move the jaws away by tightening the bolt (**6**) using an open-jawed spanner.



105268

❑ Screw down the threaded rod of the (**7**) **(Mot. 1579)**.



105269

❑ Remove the crankshaft seal using the **(Mot. 1579)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the crankshaft seal on the gearbox side (see) (Technical Note 6006A, 10A, Engine and peripherals).

II - FINAL OPERATION.

❑ Refit:

- the flywheel (see **10A**, **Engine and cylinder block assembly**, **Flywheel: Removal - Refitting**, page **10A-237**) (MR 392, 20A, Clutch),
- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) (MR 392, 20A, Clutch),
- the gearbox (see **Manual gearbox: Removal - Refitting**) (MR 392, 21A, Manual gearbox).

K4M

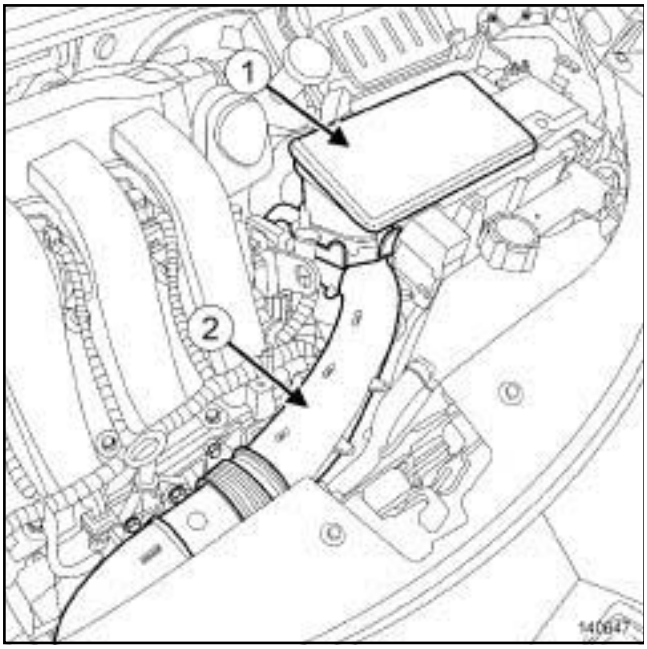
Special tooling required	
Mot. 1129-01	Tool for fitting the crankshaft seal, flywheel end (80 x 100 x 8 seal).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

K4M



140647

❑ Remove:

- the air resonator (**1**) ,
- the air filter unit air inlet pipe (**2**) ,
- the engine undertray bolts,
- the engine undertray,
- the battery (see) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) ,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

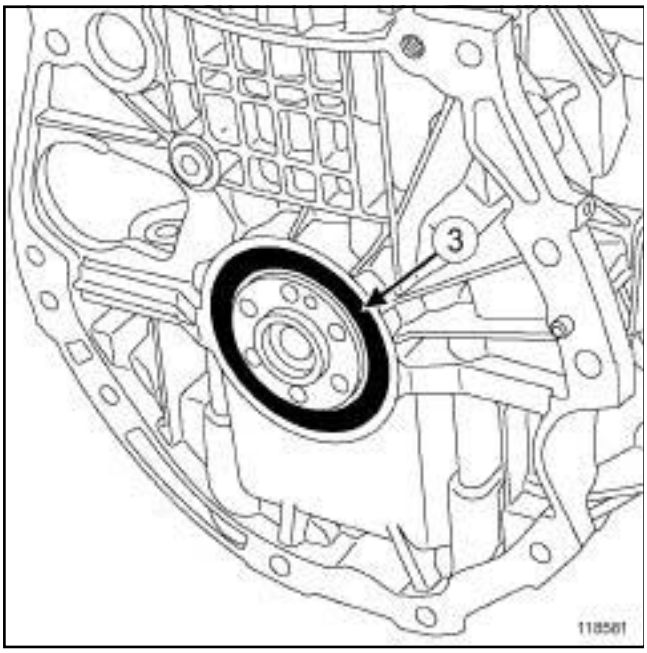
❑ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❑ Remove:

- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the gearbox (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox),
- the « pressure plate - disc » assembly (see **Pressure plate - Disc: Removal - Refitting**) (20A, Clutch),
- the flywheel (see **10A**, **Engine and cylinder block assembly**, **Flywheel: Removal - Refitting**, page **10A-237**) .

K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED



118581

❑ Remove the crankshaft seal (**3**) using a screwdriver.

> Note:
>
> Take care not to damage the crankshaft mating face.

REFITTING

I - REFITTING PREPARATION OPERATION

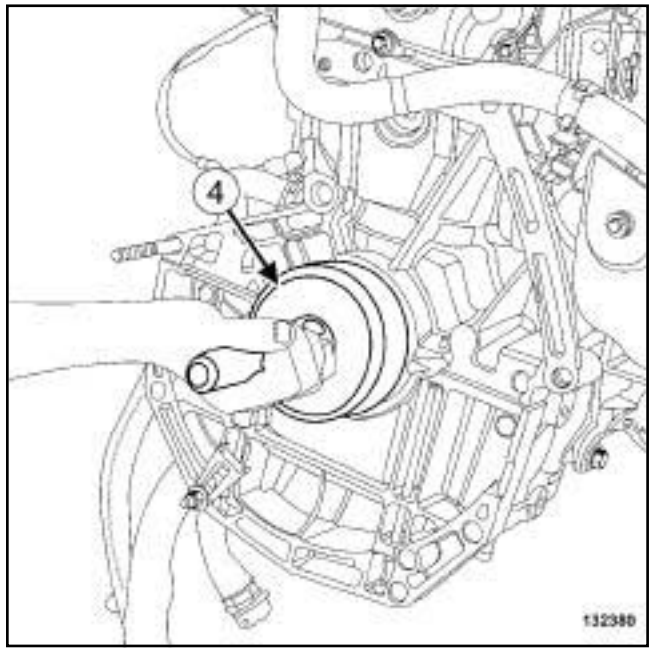
❑ **parts always to be replaced: Crankshaft seal on gearbox end**.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the crankshaft seal mating face,
- the seal housing on the cylinder block.

> **WARNING**
> To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

II - REFITTING OPERATION FOR PART CONCERNED



132380

❑ Refit a new crankshaft seal using the **(Mot. 1129-01)** (**4**) .

III - FINAL OPERATION

❑ Refit:

- the flywheel (see **10A**, **Engine and cylinder block assembly**, **Flywheel: Removal - Refitting**, page **10A-237**) ,
- the « pressure plate - disc » assembly (see **Pressure plate - Disc: Removal - Refitting**) (20A, Clutch),
- the gearbox (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

❑ Fill the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❑ Refit:

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,

K4M

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .
- the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see) (80A, Battery),
- the engine undertray,
- the air filter unit air inlet pipe,
- the air resonator.

D4F or K4J or K4M or K9K

Special tooling required	
Mot. 1018	8 mm square engine drain plug spanner.

Equipment required
oil recovery tray
oil change wrench
torque wrench
oil change end piece with an 8 mm square drive

Tightening torques ▽	
drain plug	**20 N.m**

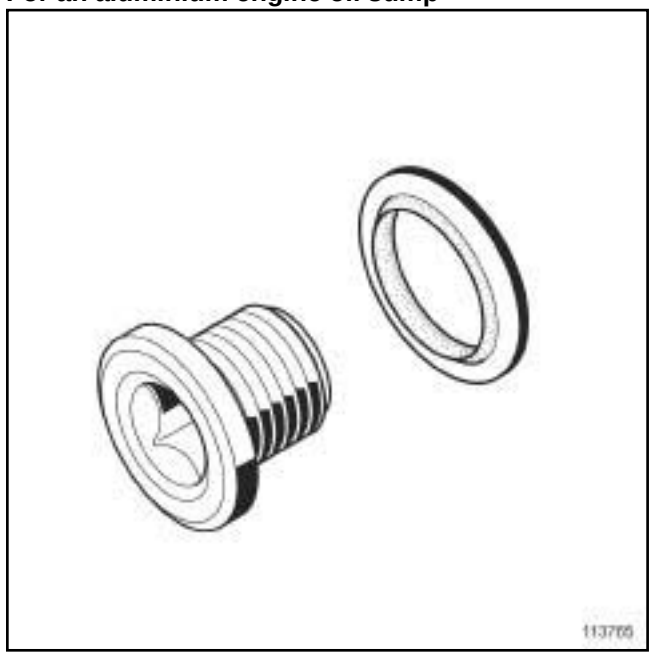
Engine	Average oil capacity (adjust with dipstick) (l)	
	Draining	**Oil change plus oil filter replacement**
K4J	4.9	5
K4M	4.9	5
K9K	4.4	4.5
D4F	3.8	4

I - RECOMMENDATIONS FOR REPAIR

❏ Direction of fitting of the drain plug seal.

K4J or K4M or K9K

For an aluminium engine oil sump



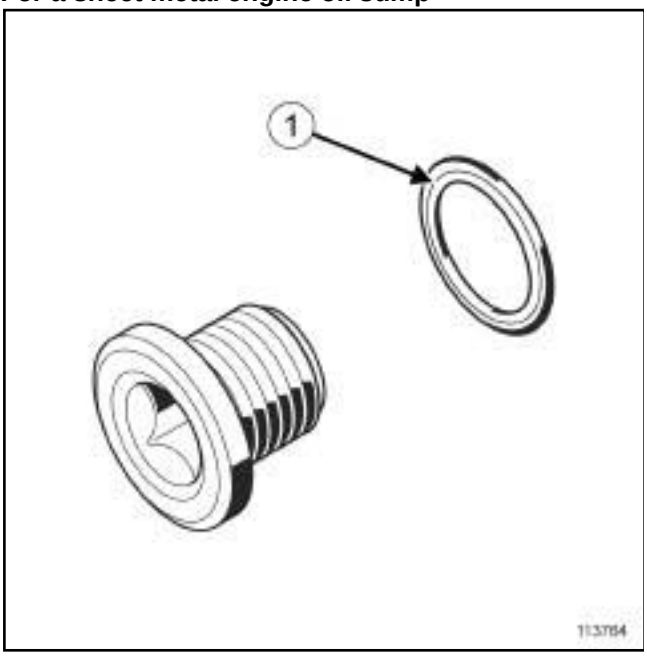
113765

❏ There is no direction of fitting for a seal fitted with a rubber lip.

D4F or K4J or K4M or K9K

D4F

For a sheet metal engine oil sump



113764

❑ Position the slot (**1**) of the seal towards the drain plug.

II - PARTS AND CONSUMABLES FOR REPAIR

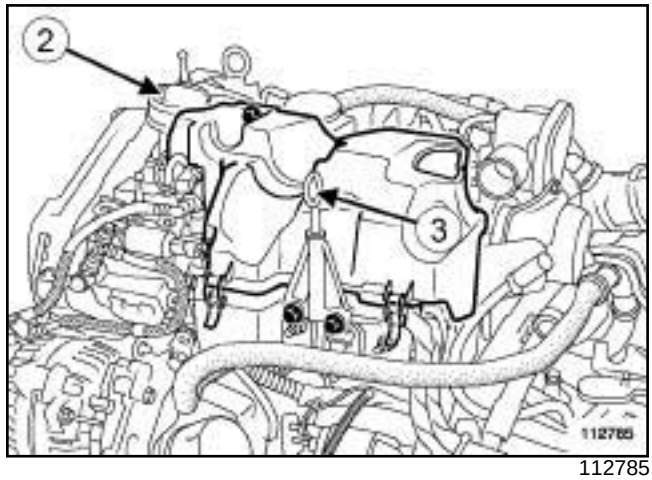
❑ **parts always to be replaced: Drain plug seal on engine oil sump**.

❑ Consumable:

- engine oil (see **Engine oil: Specifications**) (Technical Note 6013A, 04A, Lubricants).

III - DRAINING

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

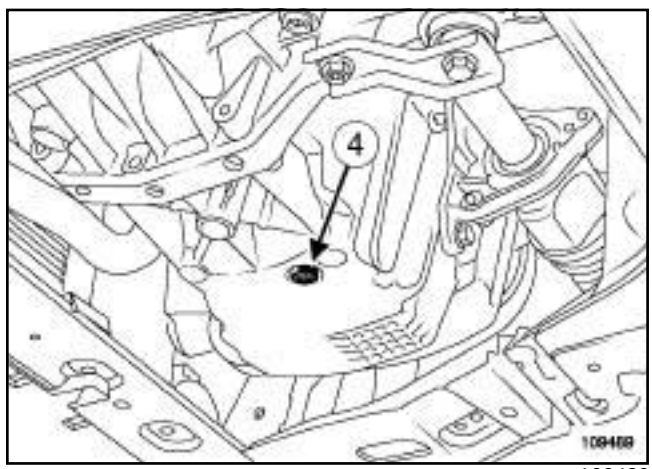


112785

❑ Remove

- the engine oil filler cap (**2**) ,
- the dipstick (**3**) ,
- the engine undertray.

❑ Place the **oil recovery tray** under the engine.



109489

❑ Remove the drain plug (**4**) from the engine oil sump using the **(Mot. 1018)** or a **oil change wrench**.

❑ Let the engine oil flow out.

❑ Remove the seal from the drain plug.

❑ Fit the new seal on the drain plug, positioning it correctly.

❑ Screw the drain plug onto the engine oil sump.

❑ Torque tighten the **drain plug (20 N.m)** using a **torque wrench** and a **oil change end piece with an 8 mm square drive**.

❑ Use a cloth to wipe away any oil drips on the engine oil sump.

❑ Remove the **oil recovery tray**.

❑ Refit the engine undertray.

D4F or K4J or K4M or K9K

IV - FILLING

❑

WARNING

Always check the oil level using the dipstick.

Do not exceed the maximum level on the dipstick (could destroy the engine).

Correct the engine oil level if necessary before delivering the vehicle to the customer.

Note:

Prevent oil outflow on the engine to avoid damaging the surrounding components.

❑ Use a funnel to fill the engine with engine oil recommended by the manufacturer (see **Engine oil: Specifications**) (Technical Note 6013A, 04, Lubricants).

Note:

When filling up the engine oil, always leave at least **10 minutes** for the oil to drain down before checking the level on the dipstick.

❑ Top up the oil level if necessary.

❑ Refit:

- the engine oil filler cap,
- the dipstick.

M4R

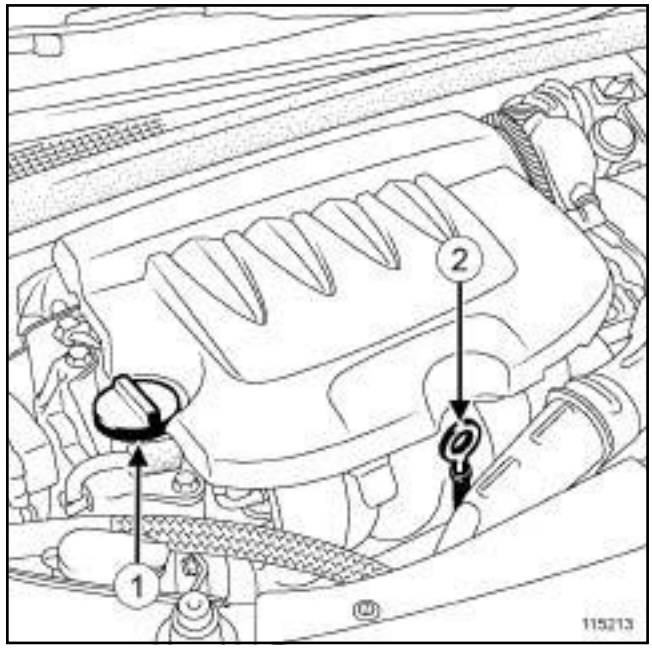
Equipment required
oil recovery tray
funnel

Tightening torques ▽	
drain plug	**34 N.m**

Engine	Average oil capacity (use dipstick)	
	Draining	**Oil change plus oil filter replacement**
M4R Without removal - refitting of sump	3.3	3.5
M4R With removal - refitting of sump	4.2	4.4

I - DRAINING

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

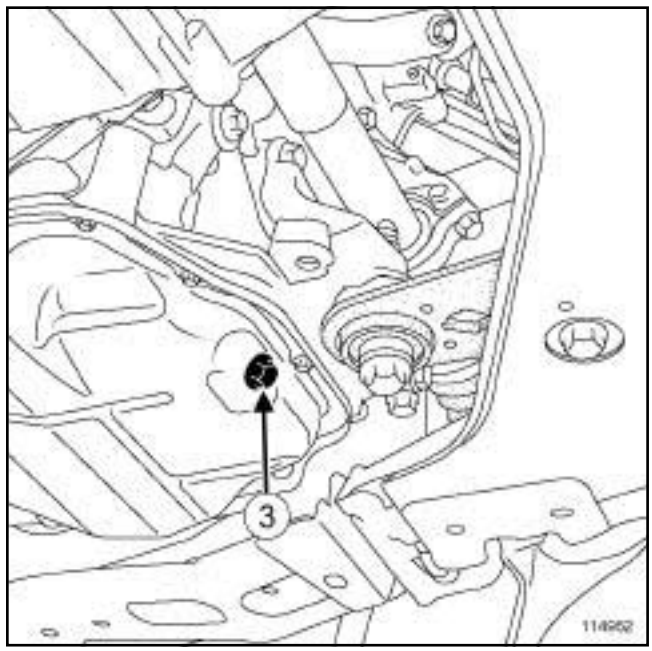


115213

❏ Remove:

- the oil filler cap (**1**) ,

- the dipstick (**2**) .

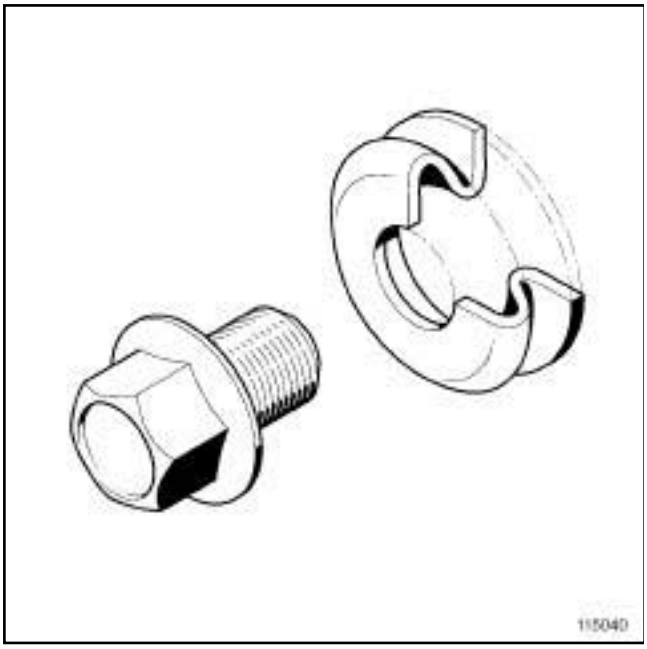


114952

❏ Fit a **oil recovery tray** under the engine oil drain plug.

❏ Remove the drain plug (**3**) .

❏ Allow the engine oil to flow into the oil recovery container.



115040

❑ Refit the new seal onto the drain plug, respecting the direction indicated in the diagram.

❑ Torque tighten the **drain plug (34 N.m)**.

❑ Clean the traces of oil around the drain plug so that any possible leaks can be detected.

II - FILLING

❑

WARNING
Always check the oil level using the dipstick.

Do not exceed the maximum level on the dipstick (as this could damage the engine).

Correct the engine oil level if necessary before delivering the vehicle to the customer.

Note:

Prevent oil outflow on the engine to avoid damaging the surrounding components.

❑ Use a **funnel** to fill the engine with engine oil recommended by the manufacturer (see **Engine oil: Specifications**) (Technical Note 6013A, 04, Lubricants)

Note:

When filling up the engine oil, always leave at least **10 minutes** for the oil to drain down before checking with a dipstick

❑ Check the oil level with the dipstick.

❑ Refit the engine oil filler cap.

Engine oil: Draining - Refilling

F4R

Special tooling required	
Mot. 1018	8 mm square engine drain plug spanner.

Equipment required
oil recovery tray
oil change end piece with an 8 mm square drive
funnel

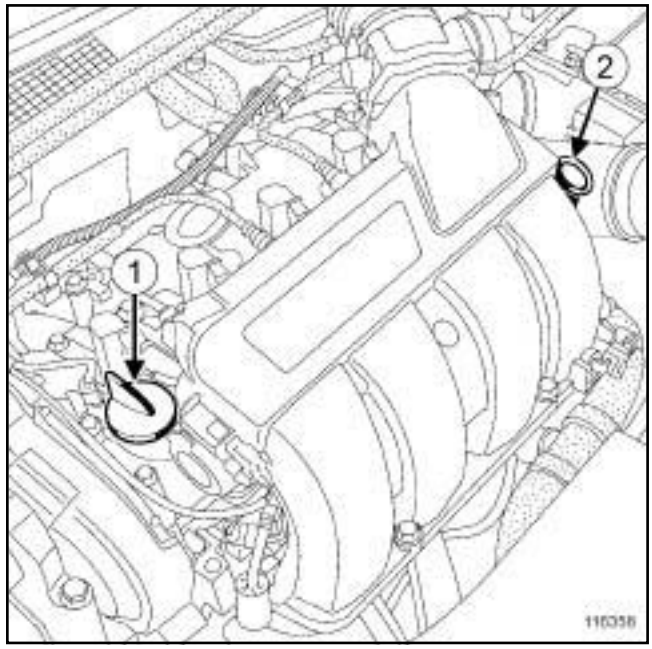
Tightening torques ▽	
drain plug	**20 N.m**

Engine	Average oil capacity (use dipstick)	
	Draining	**Oil change plus oil filter replacement**
F4R	5.2	5.4

❑ **parts always to be replaced: Drain plug seal on engine oil sump**

I - DRAINING

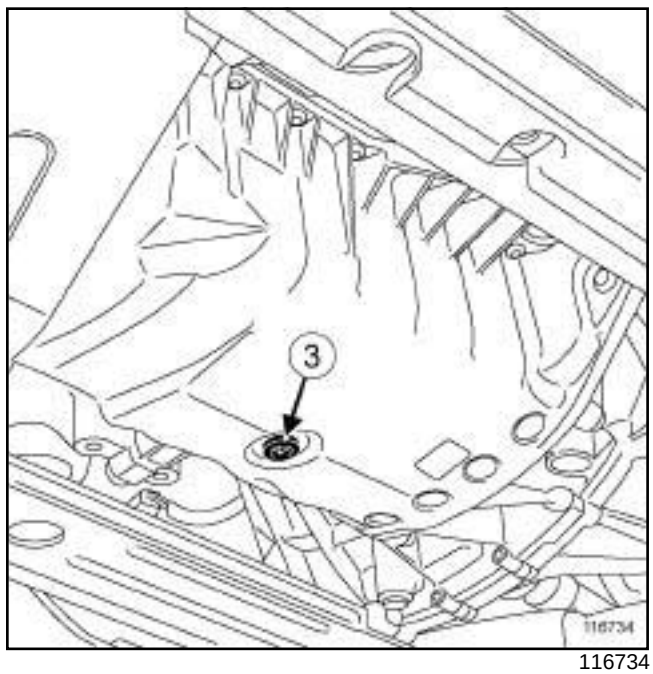
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).



116358

❑ Remove:

- the oil filler cap (**1**) ,
- the dipstick (**2**) .

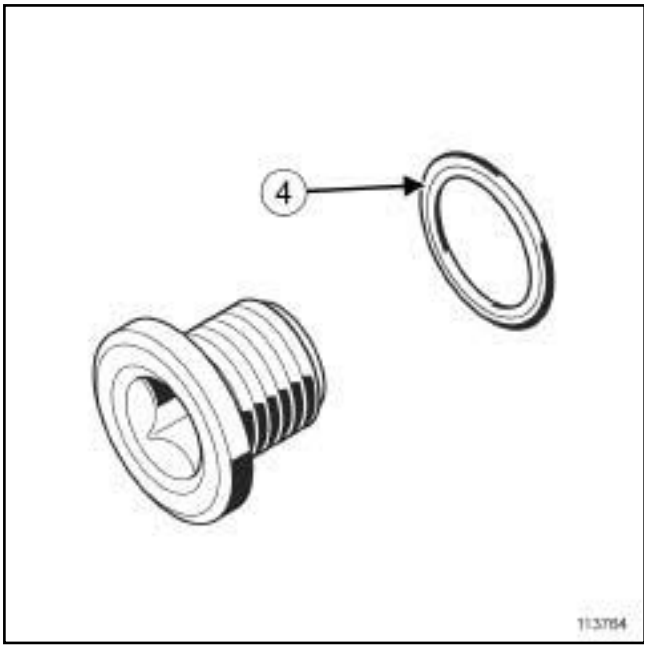


116734

❑ Fit a **oil recovery tray** under the drain plug (**3**) .

❑ Remove the drain plug (**3**) using the **(Mot. 1018)**.

❑ Allow the engine oil to flow into the oil recovery container.



113764

❑ Fit the new drain plug seal (position the seal groove (**4**) facing the drain plug).

❑ Torque tighten the **drain plug (20 N.m)** using a **oil change end piece with an 8 mm square drive**.

❑ Clean the traces of oil around the drain plug so that any possible leaks can be detected.

II - FILLING

❑

WARNING
Always check the oil level using the dipstick.

Do not exceed the maximum level on the dipstick (as this could damage the engine).

Correct the engine oil level if necessary before delivering the vehicle to the customer.

Note:

Prevent oil outflow on the engine to avoid damaging the surrounding components.

❑ Use a **funnel** to fill the engine with engine oil recommended by the manufacturer (see **Engine oil: Specifications**) (Technical Note 6013A, 04, Lubricants).

Note:

When filling up the engine oil, always leave at least **10 minutes** for the oil to drain down before checking the level on the dipstick.

❑ Check the engine oil level using the dipstick.

❑ Refit:

- the oil filler cap,

- the dipstick.

K9K

Special tooling required	
Mot. 1329	Oil filter removing tool (76 mm diameter)

Equipment required
oil recovery tray

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

WARNING
Always check the oil level using the dipstick.

Do not exceed the maximum level on the dipstick (could destroy the engine).

Correct the engine oil level if necessary before delivering the vehicle to the customer.

Note:

When topping up the engine oil, always leave at least **10 minutes** before checking the level with a dipstick.

When removing the oil filter, check that the oil filter seal is not still stuck to the cylinder block or oil filter.

REMOVAL

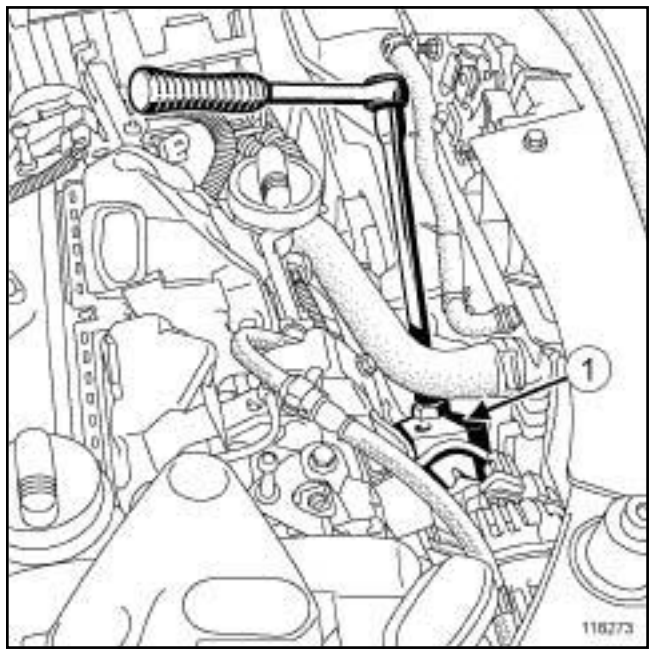
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Fit a **oil recovery tray**.

❑ Separate the turbocharger pressure regulation solenoid valve from the fan assembly (if equipped).

II - OIL FILTER REMOVAL OPERATION



118273

❑ Position the **(Mot. 1329)** (**1**) with an extension piece and a ratchet on the oil filter.

❑ Remove the oil filter.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - products) to clean and degrease the joint face of the oil filter on the engine.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ **parts always to be replaced: Oil filter**

❑ Lubricate the new oil filter seal.

II - OIL FILTER REFITTING OPERATION

❑ Refit the oil filter.

❑ Tighten the oil filter until the seal makes contact with the engine.

❑ Tighten the oil filter by hand **3/4** of a turn.

K9K

III - FINAL OPERATION

- ❑ Fit the turbocharger pressure regulation solenoid valve on the fan assembly (if equipped).
- ❑ Wipe any oil run-off with a cloth.
- ❑ Top up the engine oil with oil recommended by the manufacturer (see **Engine oil: Specifications**) (Technical Note 6013A, 04A, Lubricants).
- ❑ Start the vehicle and wait until the oil pressure warning light goes out on the instrument panel.
- ❑ Check for leaks from the oil filter.
- ❑ Remove the **oil recovery tray**.
- ❑ Check the oil level using the dipstick.

Note:

The level should be between MIN and MAX.

- ❑ Adjust the oil level.

D4F

Special tooling required	
Mot. 1330	Oil filter removing tool (66 mm diameter).

REMOVAL

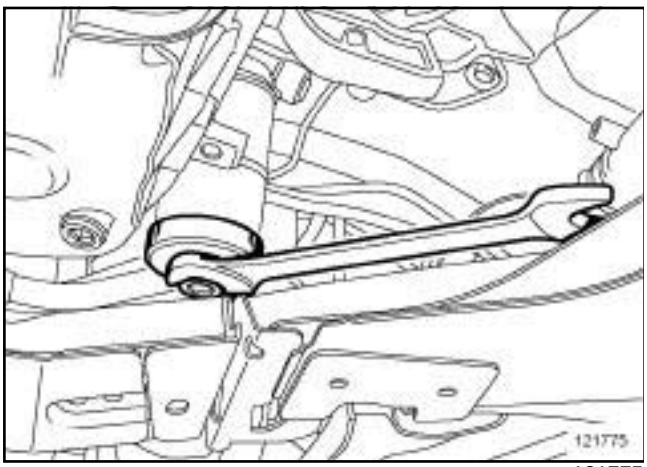
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the engine undertray.

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



121775

❑ Remove the oil filter using tool **(Mot. 1330)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Coat the new oil filter sealing ring with engine oil.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Tighten the oil filter until it makes contact.

❑ Tighten the **oil filter by 3/4 of a turn** with the **(Mot. 1330)**.

III - FINAL OPERATION.

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Refit the engine undertray.

K4J or K4M

Special tooling required	
Mot. 1329	Oil filter removing tool (76 mm diameter)

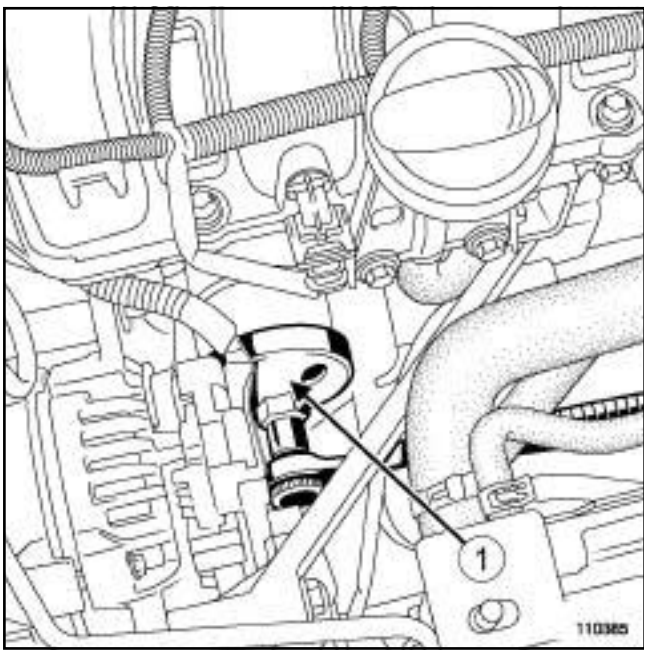
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - REMOVAL OF THE PART CONCERNED



110385

❑ Fit the **(Mot. 1329)** (**1**) with a ratchet on the oil filter.

❑ Remove the oil filter.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Lubricate the new oil filter seal.

II - REFITTING PART CONCERNED

❑ Tighten the oil filter until the seal makes contact with the engine.

❑ Tighten the oil filter three-quarters of a turn by hand.

III - FINAL OPERATION

❑ Top up the engine with oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

M4R

Special tooling required	
Mot. 1654	Oil filter removing tool (64 mm diameter).

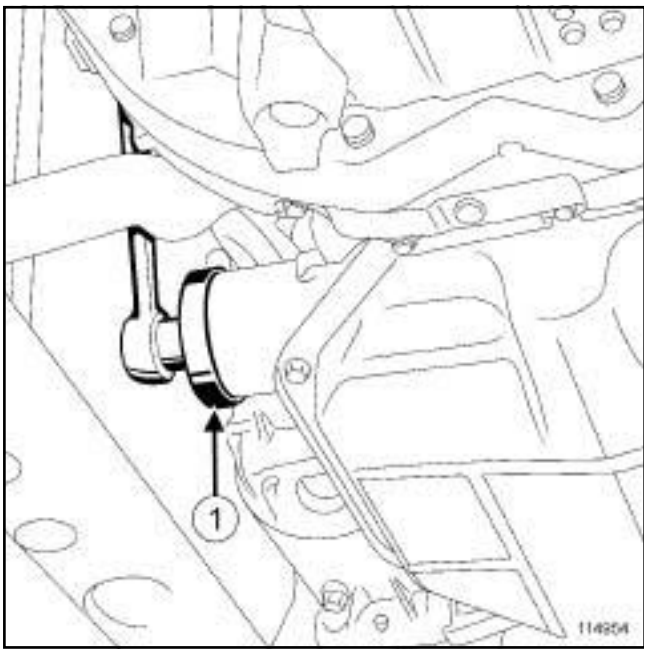
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - REMOVAL OF PART CONCERNED



114954

❑ Fit at (**1**) the **(Mot. 1654)** with a ratchet on the oil filter.

❑ Remove the oil filter.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Lubricate the new oil filter seal with engine oil.

II - REFITTING THE PART CONCERNED

❑ Tighten the oil filter until the seal makes contact with the engine.

❑ Tighten oil filter **3/4 of a turn** by hand.

III - FINAL OPERATION

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

F4R

Special tooling required	
Mot. 1329	Oil filter removing tool (76 mm diameter)

REMOVAL

I - REMOVAL PREPARATION OPERATION

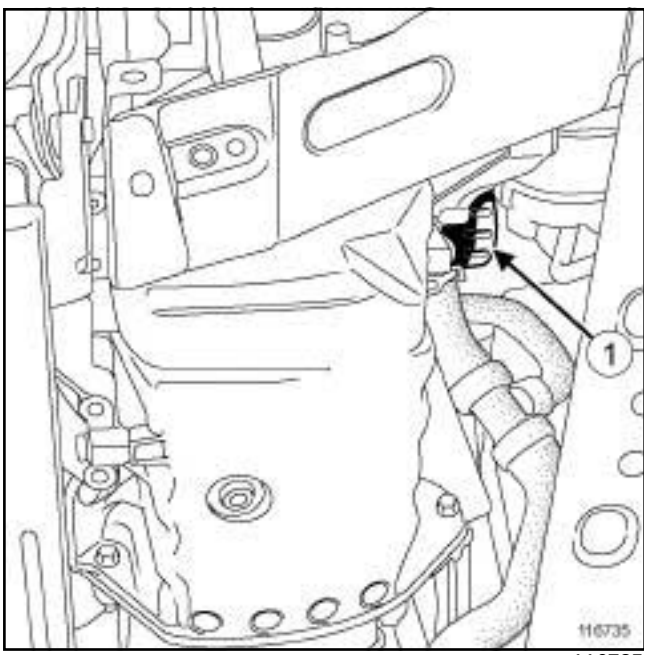
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the dipstick,
- the engine undertray.

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116735

❑ Remove the oil filter using the **(Mot. 1329)** and a ratchet.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Lubricate the new oil filter seal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the new oil filter.

❑ Tighten the oil filter until it makes contact.

❑ Tighten the oil filter **3/4 of a turn** by hand.

III - FINAL OPERATION.

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Start the vehicle in order to check that there are no oil leaks from the oil filter.

❑ Refit the engine undertray.

K9K, and 764 or 766 or 768

Tightening torques ▽	
oil-coolant heat exchanger nipple	**39 N.m**
oil filter holder bolt	**28 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

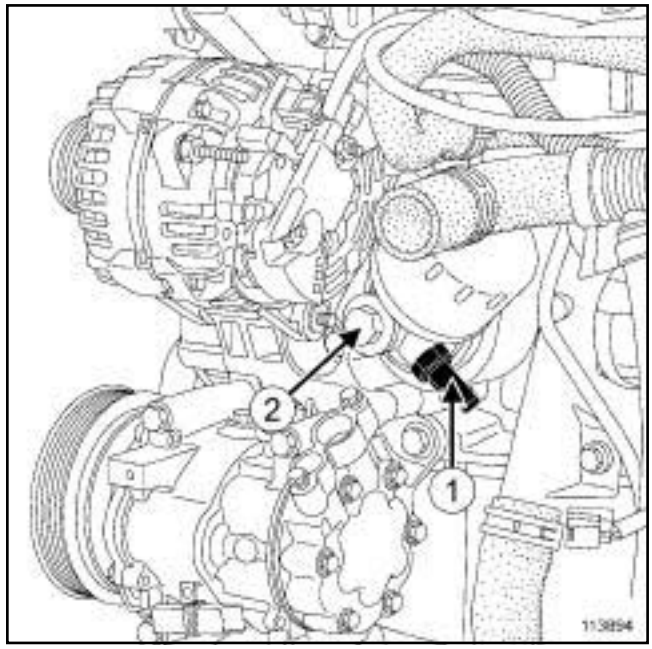
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine protector,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

❏ Drain:

- the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



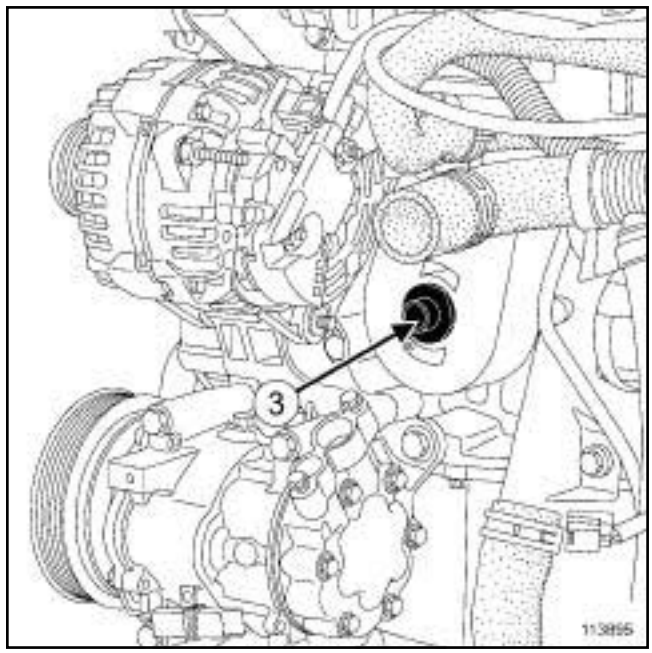
113894

❏ Disconnect the oil pressure sensor connector (**1**) .

❏ Remove:

- the bolt (**2**) from the oil filter support,
- the oil filter holder.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113895

❏ Remove:

- the nipple (**3**) from the oil-coolant heat exchanger,
- the oil-coolant heat exchanger.

K9K, and 764 or 766 or 768

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant-engine oil heat exchanger seal on the cylinder block**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- new seals on the oil-coolant heat exchanger, previously lubricated with soapy water,
- the oil-coolant heat exchanger on the coolant inlet pipe.

❑ Put two drops of **HIGH RESISTANCE THREAD LOCK** on the nipple of the oil-coolant heat exchanger.

❑ Torque tighten the **oil-coolant heat exchanger nipple (39 N.m)**.

III - FINAL OPERATION

❑ Refit the oil filter holder.

❑ Torque tighten the **oil filter holder bolt (28 N.m)**.

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Wait **2 minutes**.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine protector.

M4R

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Tightening torques ▽	
oil-coolant exchanger bolt	**49 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

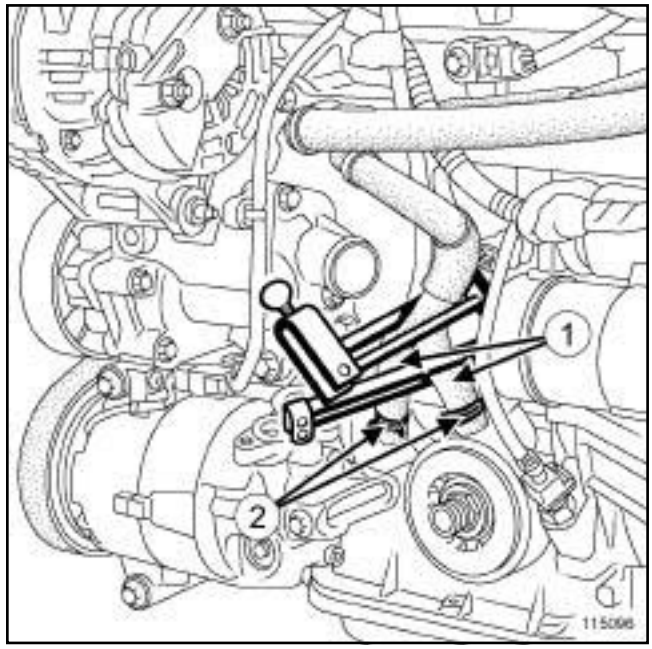
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .



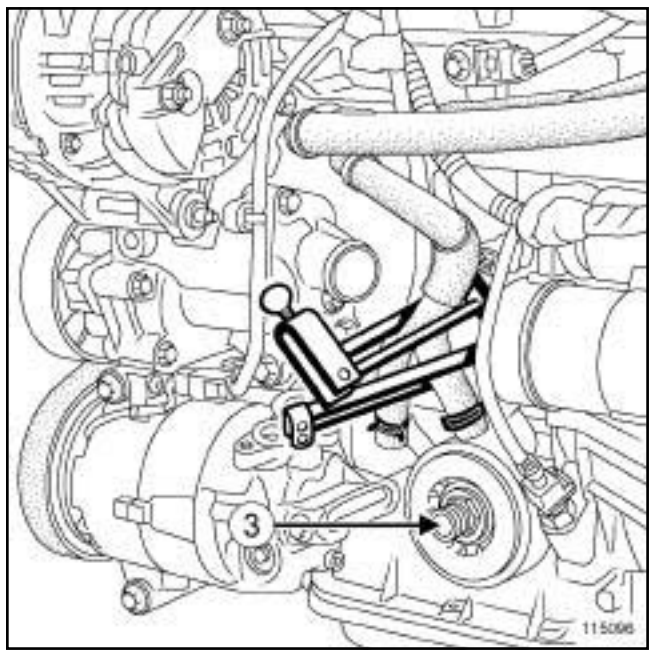
115096

❏ Fit hose clamps **(Ms. 583)** onto the oil-coolant heat exchanger hoses (**1**) .

❏ Separate the clips (**2**) on the oil-coolant heat exchanger inlet and outlet hoses, using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Connect the oil-coolant heat exchanger hoses.

II - OPERATION FOR REMOVAL OF PART CONCERNED



115096

❏ Remove:

- the bolt (**3**) from the oil-coolant heat exchanger,

- the oil-coolant heat exchanger,
- the oil-coolant heat exchanger O-ring.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant-engine oil heat exchanger seal on the cylinder block**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the oil-coolant heat exchanger equipped with a new seal.

❑ Torque tighten the **oil-coolant exchanger bolt (49 N.m)**.

III - FINAL OPERATION

❑ Connect the oil-coolant heat exchanger inlet and outlet hoses.

❑ Fit the oil-coolant heat exchanger inlet and outlet hose clips using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Remove the hose clamps **(Ms. 583)** on the oil-coolant heat exchanger inlet and outlet hoses.

❑ Refit the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

Oil-coolant heat exchanger: Removal - Refitting

F4R

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Tightening torques ▽	
oil filter nipple	**55 N.m**

If there is an internal leak in the coolant-oil exchanger resulting in a coolant-oil mixture, you will need to:

- drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- drain the coolant (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- replace the oil filter.

REMOVAL

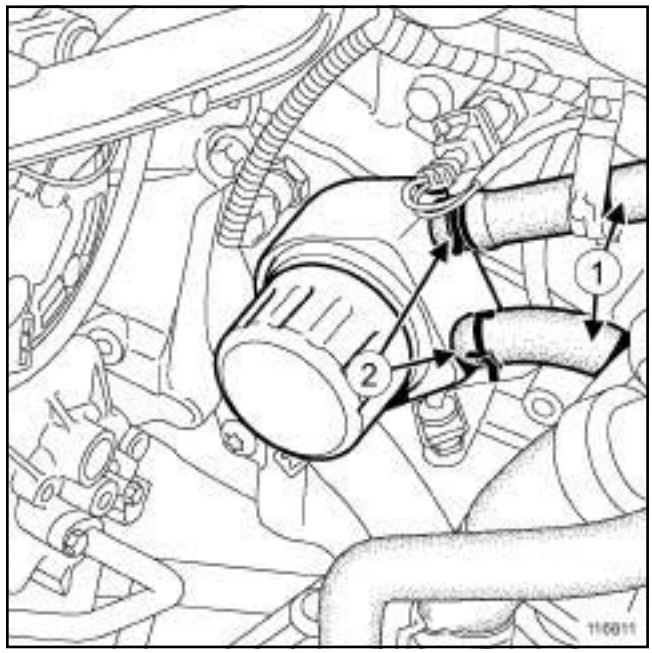
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray,
- the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116811

❏ Fit a hose clamp **(Ms. 583)** on the coolant hoses (**1**) .

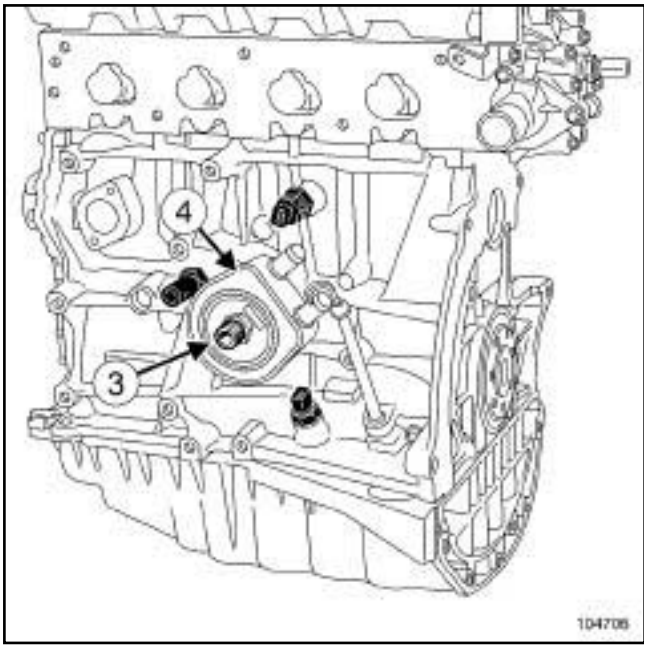
❏ Separate the hose clips (**2**) using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the oil-water heat exchanger cooling hoses.

Note:

Watch out for coolant outflow.

F4R



104706

❑ It is essential to mark the position of the coolant-oil heat exchanger.

❑ Remove:

- the oil filter nipple (**3**) ,
- the coolant-oil heat exchanger (**4**) ,
- the coolant-oil exchanger seal.

Note:

Watch out for the outflow of engine oil.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant-engine oil heat exchanger seal on the cylinder block**.

❑ Clean the sealing surfaces.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new seal on the oil-coolant heat exchanger,
- the oil-coolant heat exchanger with its new seal, observing its fitting position,
- the oil filter nipple, taking care not to alter the oil-coolant heat exchanger fitting position.

❑ Torque tighten the **oil filter nipple (55 N.m)**.

III - FINAL OPERATION

❑ Connect the cooling hoses to the oil-coolant heat exchanger.

❑ Fit the clips on the hoses using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Remove the hose clamp **(Ms. 583)**.

❑ Refit the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) with a new seal.

❑ Perform the following operations:

- top up the engine oil level using the dipstick,
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Check that there are no leaks from the oil filter and the coolant-oil heat exchanger.

❑ Refit the engine undertray.

K9K, and 772

Tightening torques ▽	
oil-coolant heat exchanger nipple	**39 N.m**
oil filter holder hollow bolt	**28 N.m**
alternator bolts	**21 N.m**
air duct clips between the intercooler and the damper valve	**5.5 N.m**
exchanger inlet air pipe nut on the alternator	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

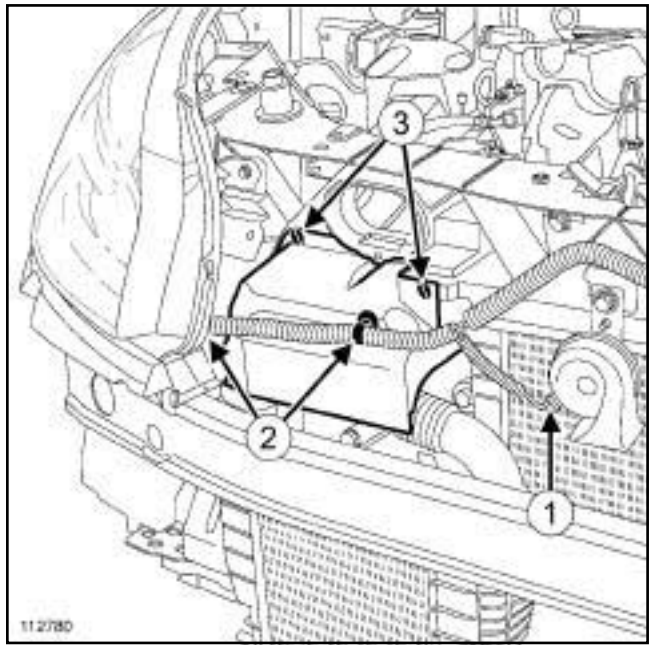
❏ Remove:

- the engine cover,
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove:

- the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



112780

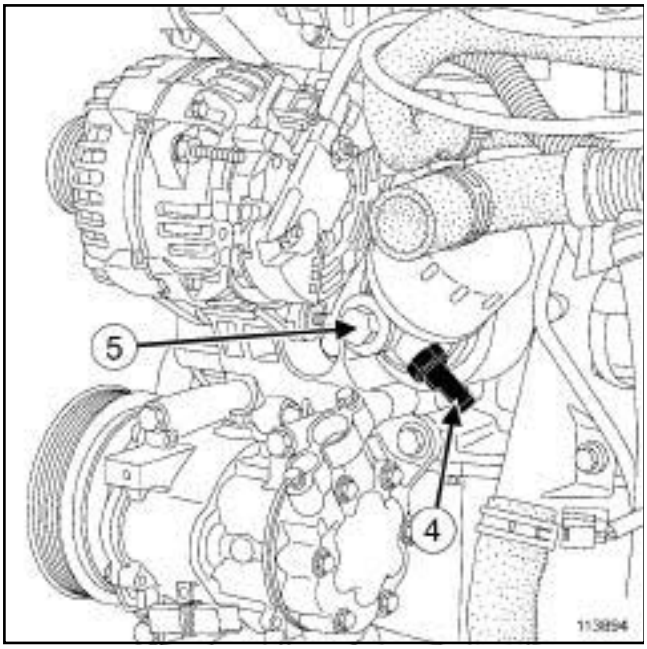
❏ Disconnect the horn connector (**1**) .

❏ Unclip the electrical wiring from the air deflector at (**2**) .

❏ Remove:

- the air deflector clips (**3**) ,
- the air deflector.

K9K, and 772



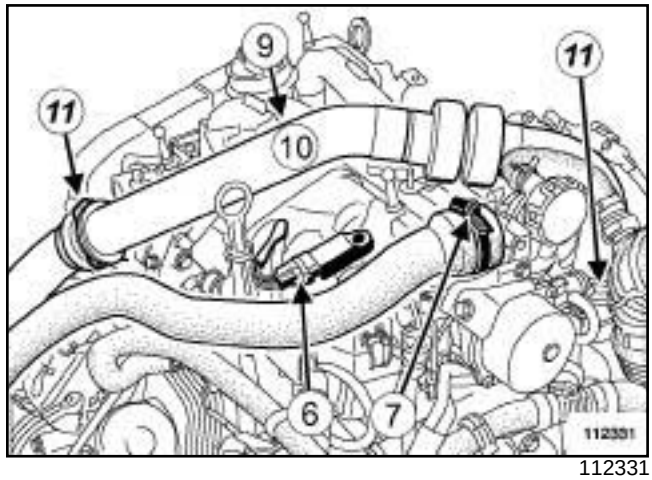
113894

❏ Disconnect the oil pressure sensor connector (**4**) .

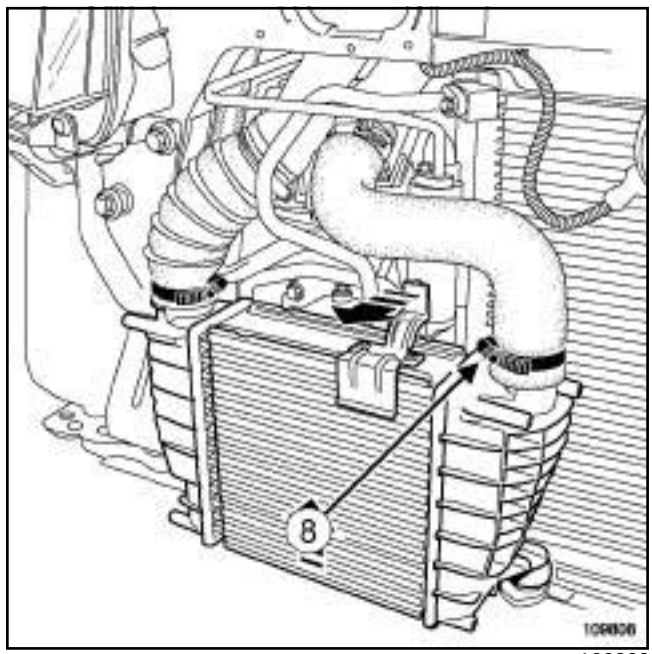
❏ Mark the position of the oil filter holder on the coolant-oil heat exchanger.

❏ Remove:

- the oil filter holder hollow bolt (**5**) ,
- the oil filter holder.



112331



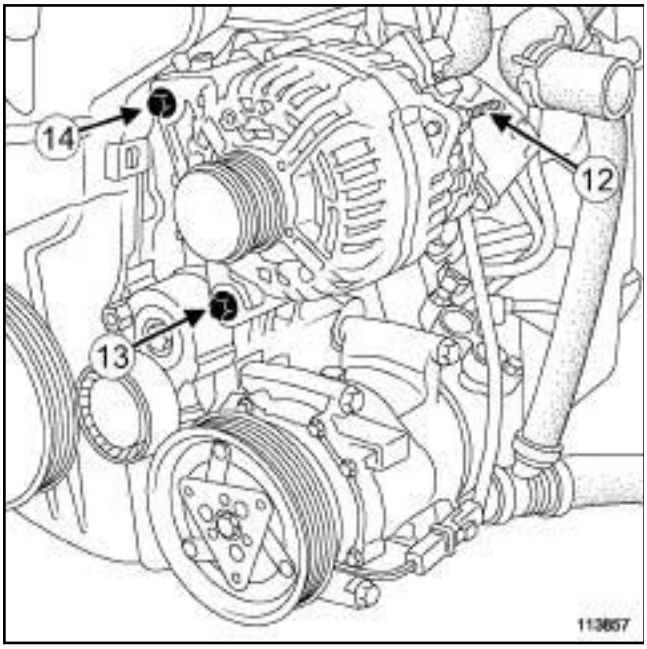
109808

❏ Disconnect the inlet pressure sensor connector (**6**) .

❏ Undo:

- the air duct clip (**7**) between the intercooler and the damper valve on the damper valve,
- the air duct clip (**8**) between the intercooler and the damper valve on the intercooler,
- the bolt (**9**) of the upper air duct between the turbocharger and the intercooler,
- the upper section of the air duct (**10**) between the turbocharger and the intercooler by moving aside the clips (**11**) .

K9K, and 772



113857

❑ Remove:

- the nut (**12**) from the air inlet ducts on the alternator,
- the air duct between the intercooler and the damper valve,
- the bolt from the upper air duct between the turbocharger and the intercooler,
- the upper section of the air duct between the turbocharger and the intercooler by separating the clips.

❑ Move the lower section of the duct between the turbocharger and the intercooler away from the alternator.

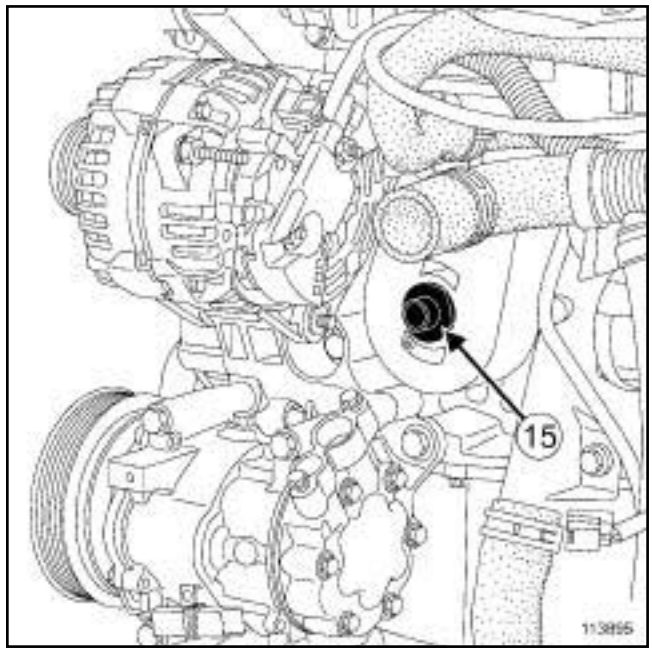
❑ Remove the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❑ Loosen the alternator lower bolt (**13**) .

❑ Remove the alternator upper bolt (**14**) .

❑ Tip the alternator towards the front of the vehicle.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113895

❑ Remove:

- the nipple (**15**) from the oil-coolant heat exchanger,
- the coolant-oil heat exchanger by releasing it from the coolant pump inlet pipe.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant-engine oil heat exchanger seal on the cylinder block**.

❑ Clean the bearing faces on the coolant-oil heat exchanger and the cylinder block.

❑ Refit new seals on the oil-coolant heat exchanger, previously lubricated with soapy water.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the oil-coolant heat exchanger by connecting it to the coolant pump inlet pipe.
- the oil-coolant heat exchanger nipple.

❑ Put two drops of **HIGH RESISTANCE THREAD LOCK** on the nipple of the oil-coolant heat exchanger.

❑ Torque tighten the **oil-coolant heat exchanger nipple (39 N.m)**.

K9K, and 772

III - FINAL OPERATION

❑ Refit:

- the oil filter holder,
- the hollow bolt to the oil filter holder with new seals.

❑ Tighten to torque the **oil filter holder hollow bolt (28 N.m)**.

❑ Refit the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

❑ Fit the alternator in place.

❑ Refit the alternator upper bolt.

❑ Torque tighten the **alternator bolts (21 N.m)**.

❑ Position the lower section of the air duct between the turbocharger and the intercooler on the alternator.

❑ Refit:

- the air duct between the intercooler and the damper valve,
- the air duct nut on the alternator.

❑ Tighten to torque the **air duct clips between the intercooler and the damper valve (5.5 N.m)**.

❑ Connect the inlet pressure sensor connector.

❑ Fit:

- the clip to the inlet of the lower section of the air duct between the turbocharger and the intercooler,
- the clip to the inlet of the upper section of the air duct between the turbocharger and the intercooler.

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Snap the air duct to the turbocharger and to the air pipe at the intercooler inlet.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **exchanger inlet air pipe nut on the alternator (8 N.m)**.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the deflector above the intercooler,
- the deflector clips.

❑ Connect the horn connector.

❑ Clip the electrical wiring onto the deflector.

❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the engine undertray,
- the engine cover.

K9K, and 750 or 752

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

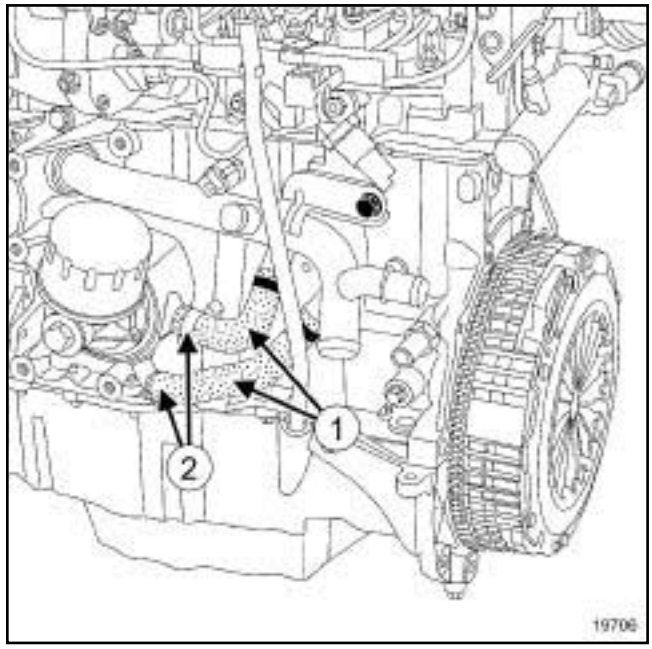
Tightening torques ▽	
oil-coolant heat exchanger nipple	**45 N.m**
oil filter holder bolt	**45 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove the engine undertray.

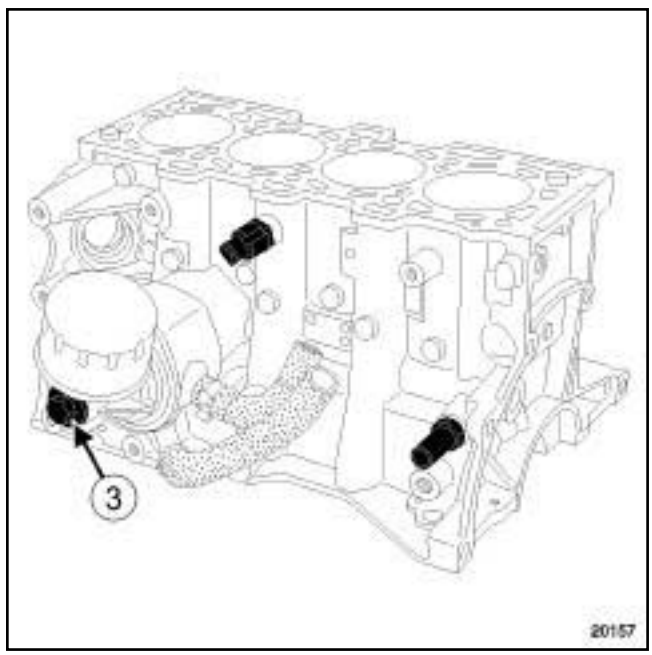


19706

❏ Fit the hose clamps **(Ms. 583)** on the oil-coolant heat exchanger inlet and outlet hoses (**1**) .

❏ Separate the clips (**2**) on the oil-coolant heat exchanger inlet and outlet hoses, using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the oil-coolant heat exchanger inlet and outlet hoses.



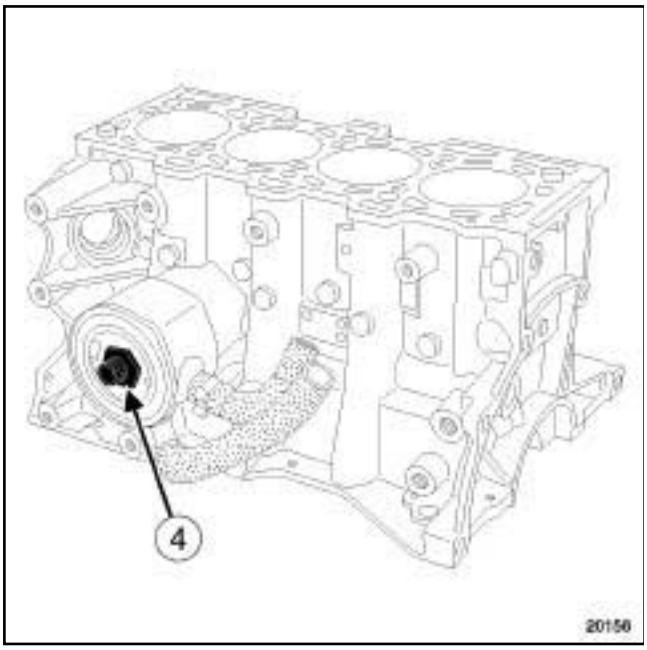
20157

❏ Remove:

- the bolt (**3**) from the oil filter support,
- the oil filter holder.

K9K, and 750 or 752

II - OPERATION FOR REMOVAL OF PART CONCERNED



20156

❑ Remove:

- the nipple (**4**) from the oil-coolant heat exchanger,
- the oil-coolant heat exchanger.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant-engine oil heat exchanger seal on the cylinder block**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new exchanger seal by positioning the seal lip behind the exchanger tabs,
- the oil-coolant heat exchanger.

❑ Screw in the oil-coolant heat exchanger nipple, without tightening it.

❑ Torque tighten the **oil-coolant heat exchanger nipple (45 N.m)**.

III - FINAL OPERATION

❑ Refit the oil filter holder.

❑ Torque tighten the **oil filter holder bolt (45 N.m)**.

❑ Connect the oil-coolant heat exchanger inlet and outlet hoses.

❑ Fit the oil-coolant heat exchanger inlet and outlet hoses clips using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Remove the hose clamps **(Ms. 583)** on the oil-coolant heat exchanger inlet and outlet hoses.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit the engine undertray.

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
oil-coolant heat exchanger nipple	**30 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

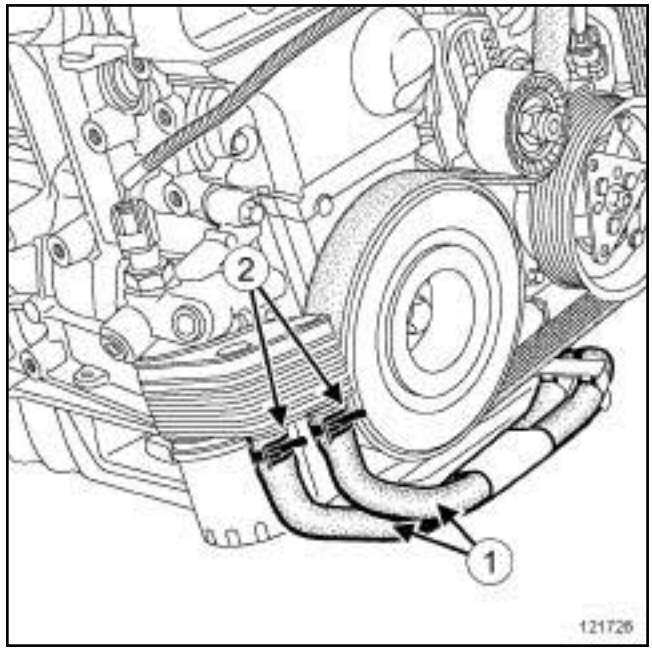
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

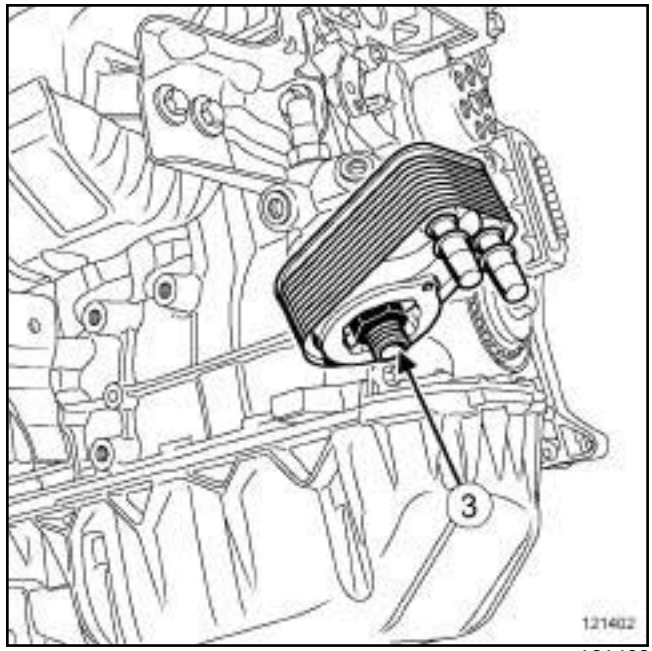


121726

❏ Fit hose clamps **(Ms. 583)** onto the oil-coolant heat exchanger hoses (**1**) .

❏ Release the clips (**2**) using the **(Mot. 1448)**.

❏ Disconnect the oil cooler hoses.



121402

❏ Remove:

- the nipple (**3**) from the oil-water heat exchanger,
- the oil cooler.

D4F, and 784 or 786

REFITTING

I - REMOVAL PREPARATION OPERATION

- ❏ Clean the bearing faces on the coolant-oil heat exchanger and the cylinder block.
- ❏ Always replace the coolant-oil heat exchanger seals.

II - REFITTING OPERATION FOR PART CONCERNED

- ❏ Refit:
  - the oil cooler,
  - the oil-coolant heat exchanger fitting.
- ❏ Torque tighten the **oil-coolant heat exchanger nipple (30 Nm)**.
- ❏ Connect the oil-coolant heat exchanger hoses.
- ❏ Refit the clips using the **(Mot. 1448)**.
- ❏ Remove the hose clamps **(Ms. 583)**.

III - FINAL OPERATION.

- ❏ Refit:
  - the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) ,
  - the engine undertray.
- ❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❏ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

D4F, and 740 or 742 or 764

Tightening torques ▽	
oil pressure sensor	**32 N.m**

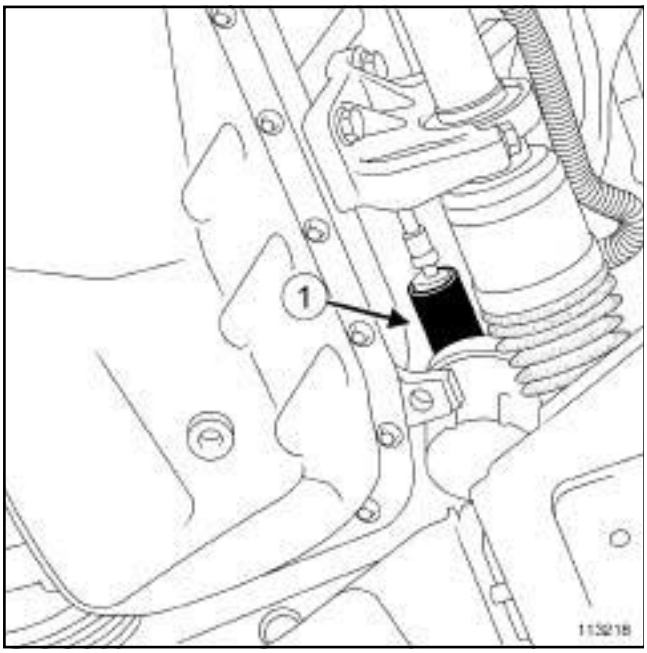
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the engine undertray.



113218

❏ Unclip the connector cover (**1**) .

❏ Remove the oil pressure sensor connector.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the oil pressure sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil pressure sensor.

❏ Torque tighten the **oil pressure sensor (32 N.m)**.

II - FINAL OPERATION.

❏ Refit the oil pressure sensor connector.

❏ Clip the connector cover.

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

Oil pressure sensor: Removal - Refitting

K9K

Tightening torques ▽	
oil pressure sensor	**40 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil pressure sensor.

❏ Torque tighten the **oil pressure sensor (40 N.m)**.

❏ Connect the oil pressure sensor connector.

II - FINAL OPERATION

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J or K4M

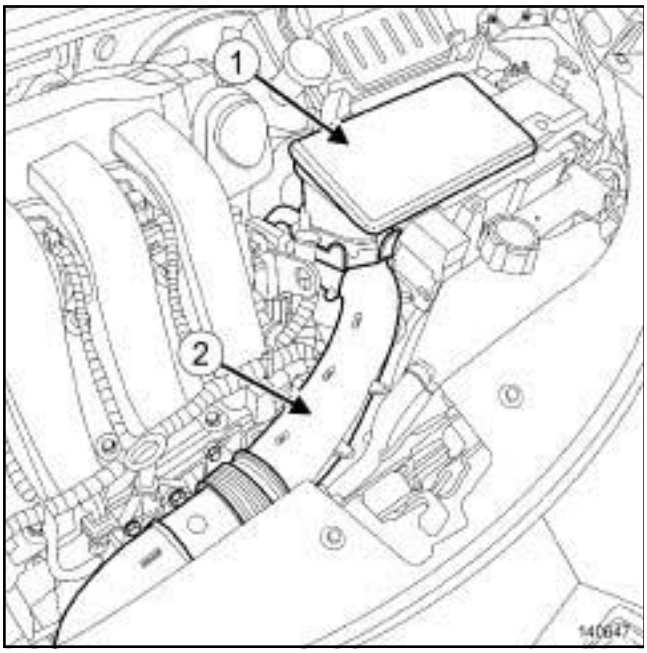
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front engine cover.

K4M, and 862

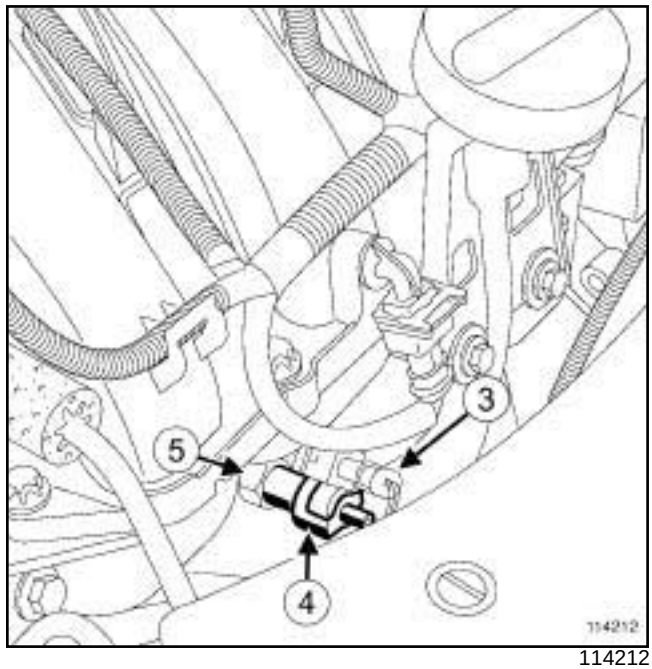


140647

❏ Remove:

- the air resonator (**1**) ,
- the air inlet pipe (**2**) from the air filter unit.

II - OPERATION FOR REMOVAL OF PART CONCERNED



114212

❏ Disconnect:

- the pinking sensor connector (**3**) ,
- the oil pressure sensor connector (**4**) .

❏ Remove the oil pressure sensor (**5**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to degrease the bearing face of the oil pressure sensor on the cylinder block.

❏ Refit the oil pressure sensor.

❏ Connect:

- the oil pressure sensor connector,
- the pinking sensor connector.

II - FINAL OPERATION

K4M, and 862

❏ Refit:

- the air filter unit air inlet pipe,
- the air resonator.

K4J or K4M

- ❑ Refit the engine cover.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R

Tightening torques ▽	
oil pressure sensor	**15 Nm**

REMOVAL

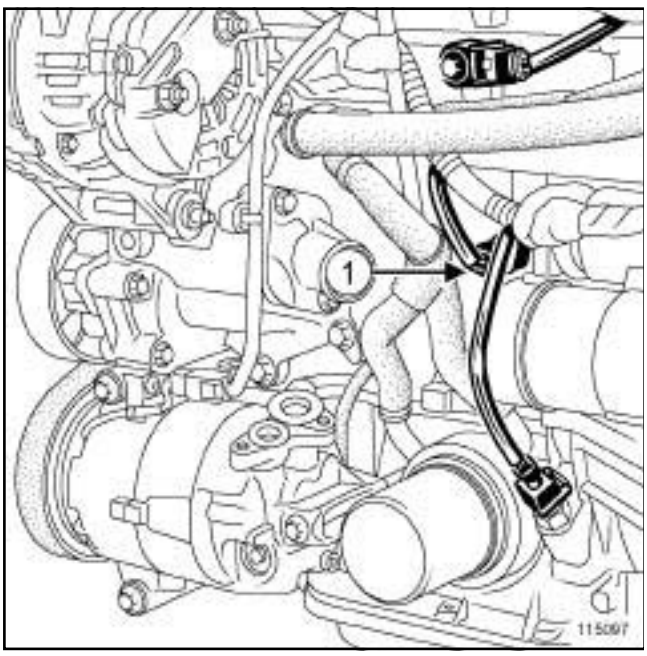
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .



115097

❑ Disconnect the oil pressure sensor connector (**1**) .

II - REMOVAL OF PART CONCERNED

❑ Remove the oil pressure sensor.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Coat the oil pressure sensor wire with **SILICONE ADHESIVE SEALANT (77 11 227 484)** to ensure a good seal.

II - REFITTING PART CONCERNED

❑ Refit the oil pressure sensor.

❑ Tighten to torque the **oil pressure sensor (15 Nm)**.

III - FINAL OPERATION.

❑ Connect the oil pressure sensor connector.

❑ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

F4R

Tightening torques ▽	
oil pressure sensor	**30 Nm**

REMOVAL

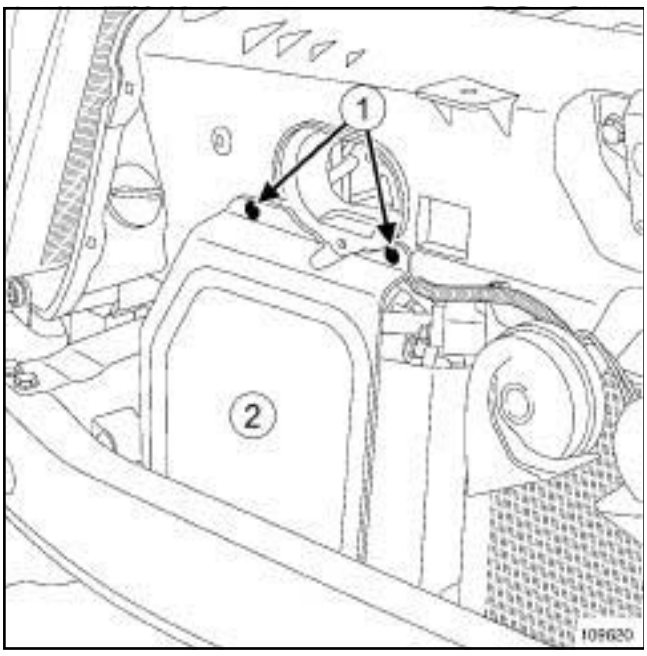
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

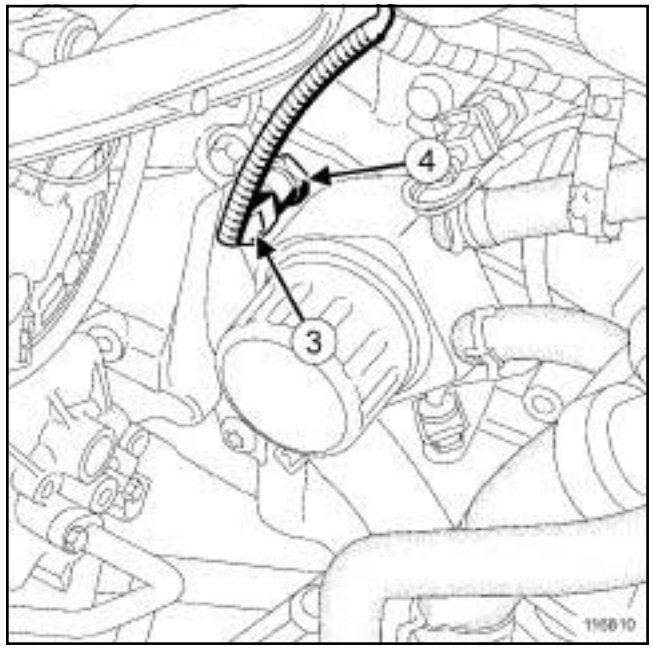


109620

❑ Remove:

- the plastic cover retaining clips,
- the plastic cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116810

❑ Disconnect the oil pressure sensor connector (**3**) .

❑ Remove the oil pressure sensor (**4**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the oil pressure sensor.

❑ Torque tighten the **oil pressure sensor (30 Nm)**.

❑ Connect the oil pressure sensor connector.

II - FINAL REFITTING OPERATION

❑ Position the plastic cover.

❑ Refit:

- the plastic cover retaining clips,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Tightening torques ▽	
oil pressure sensor	**35 Nm**

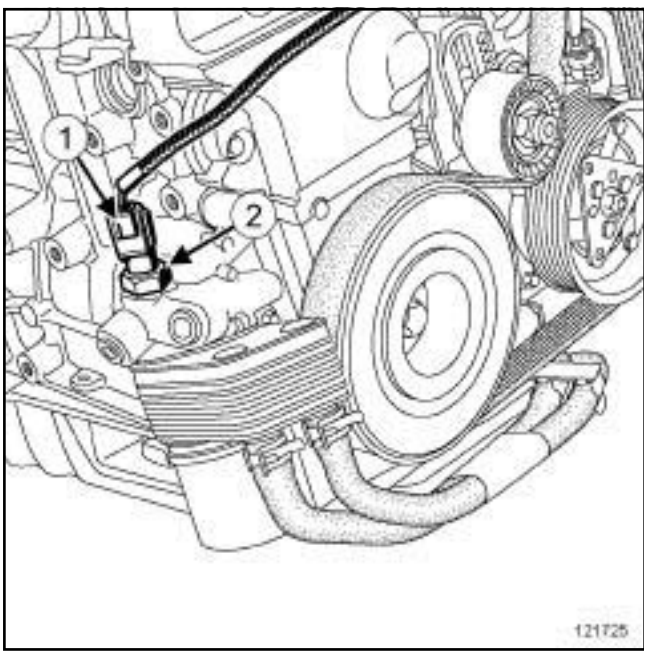
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the front engine cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



121725

❏ Disconnect the oil pressure sensor connector (**1**) .

❏ Remove the oil pressure sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil pressure sensor.

❏ Torque tighten the **oil pressure sensor (35 Nm)**.

❏ Connect the oil pressure sensor connector.

II - FINAL OPERATION.

❏ Refit the engine undertray.

D4F, and 740 or 742 or 764

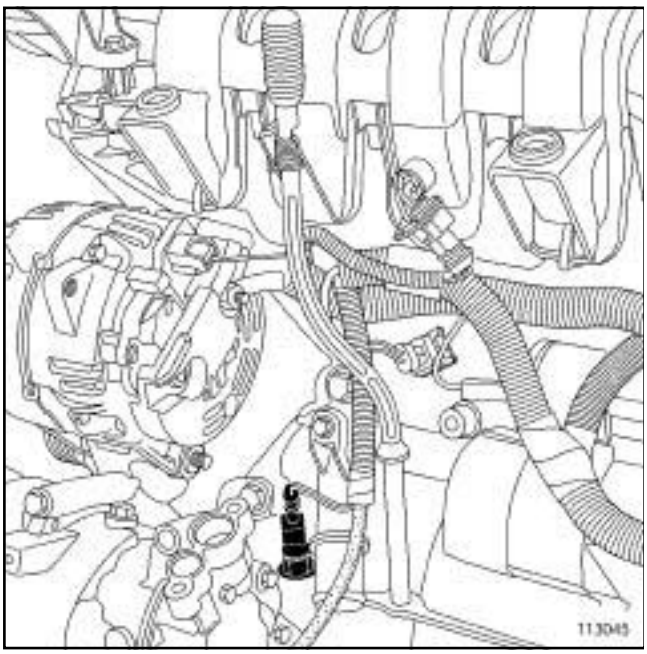
Tightening torques ▽	
oil level sensor	**30 ± 5 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Move the air inlet hose to one side.



113045

❏ Disconnect the connector from the oil level sensor.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the oil level sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil level sensor.

❏ Torque tighten the **oil level sensor (30 ± 5 N.m)**.

II - FINAL OPERATION.

❏ Connect the connector to the oil level sensor.

❏ Refit the air intake sleeve.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K

Tightening torques ▽	
oil level sensor	**25 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

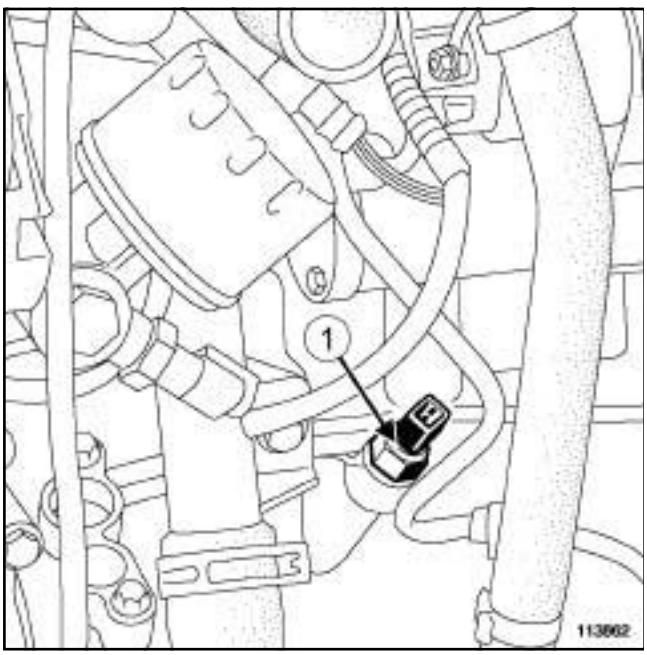
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

❏ Unclip the water hose from the engine cooling fan support.

❏ Separate the regulation solenoid valve from the turbocharger (if equipped).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113862

❏ Disconnect the connector from the oil level sensor.

❏ Remove the oil level sensor (**1**) .

REFITTING

I - REFITTING PART CONCERNED

❏ Refit the oil level sensor.

❏ Tighten to torque the **oil level sensor (25 N.m)**.

❏ Connect the connector to the oil level sensor.

II - FINAL OPERATION

❏ Clip the hose onto the engine cooling fan support.

❏ Fit the turbocharger regulation solenoid valve (if equipped).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the engine undertray.

K4J or K4M

REMOVAL

I - REMOVAL PREPARATION OPERATION

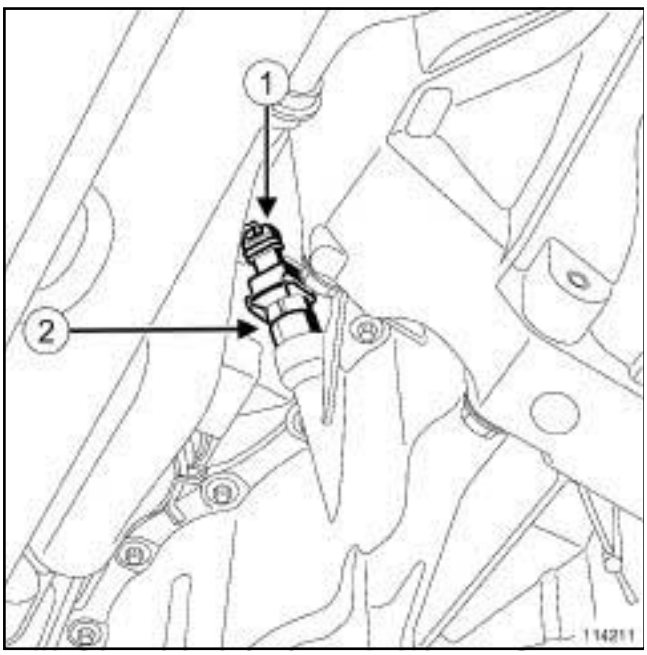
❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Unpick the engine radiator bottom hose.

❏ Move the bottom hose to the side without forcing it.

II - OPERATION FOR REMOVAL OF PART CONCERNED



114211

❏ Disconnect the connector (**1**) from the oil level sensor.

❏ Remove the oil level sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clean the grease off the support area of the oil level sensor on the cylinder block.

❏ Refit the oil level sensor.

❏ Connect the connector to the oil level sensor.

II - FINAL OPERATION

❏ Clip the engine radiator bottom hose into place.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

M4R

Tightening torques ▽	
oil level sensor	**20 Nm**

REMOVAL

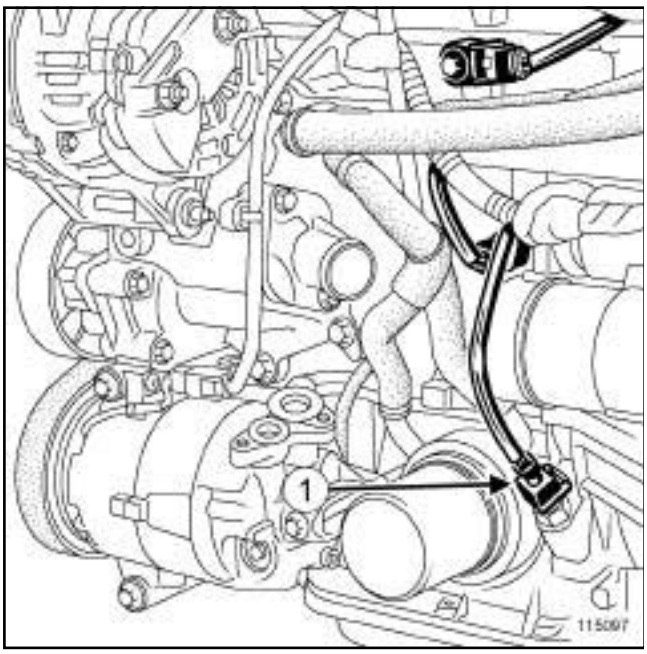
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .



115097

❑ Disconnect the connector (**1**) from the oil level sensor.

II - REMOVAL OF PART CONCERNED

❑ Remove the oil level sensor.

REFITTING

I - REFITTING PART CONCERNED

❑ Refit a new seal onto the new oil level sensor.

❑ Tighten to torque the **oil level sensor (20 Nm)**.

II - FINAL OPERATION.

❑ Connect the connector to the oil level sensor.

❑ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

F4R

REMOVAL

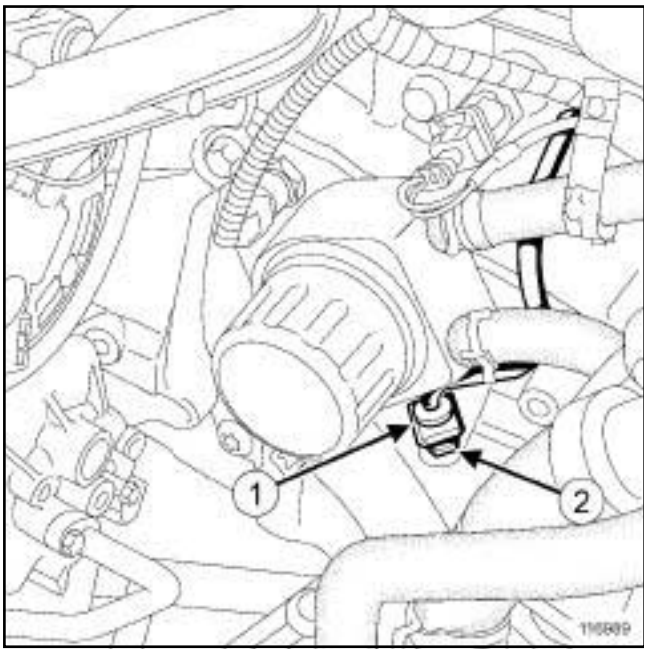
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116989

❑ Disconnect the connector (**1**) from the oil level sensor.

❑ Remove the oil level sensor (**2**) using an open-jawed spanner.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the oil level sensor.

❑ Connect the connector to the oil level sensor.

II - FINAL OPERATION.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Start the engine to check that there are no leaks.

❑ Refit the engine undertray.

D4F, and 784 or 786

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

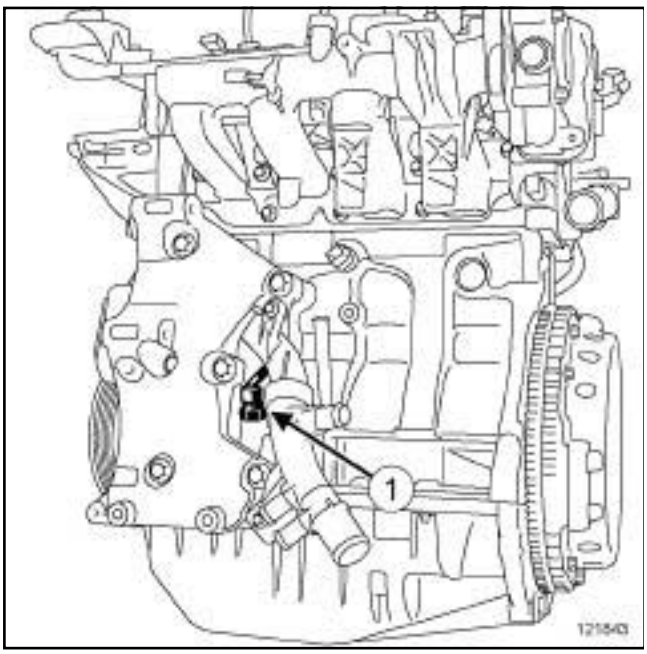
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove the coolant pump inlet pipe (see **19A**, **Cooling**, **Coolant pump inlet pipe: Removal - Refitting**, page **19A-93**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



121843

❑ Disconnect the connector (**1**) from the oil level sensor.

❑ Remove the oil level sensor using a **19 mm** ring spanner.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the oil level sensor.

❑ Connect the connector to the oil level sensor.

II - FINAL OPERATION.

❑ Refit the coolant pump inlet pipe (see **19A**, **Cooling**, **Coolant pump inlet pipe: Removal - Refitting**, page **19A-93**) .

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K

Equipment required
safety strap(s)

Tightening torques ▽	
sump bolts on the gear-box	**44 N.m**
sump bolts	**14 N.m**
sump bolts on the multi-function support	**21 N.m**
radiator cross member bolts	**105 N.m**
relay bearing bolts	**44 N.m**

REMOVAL

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the resonator on the battery,
- the battery covers.

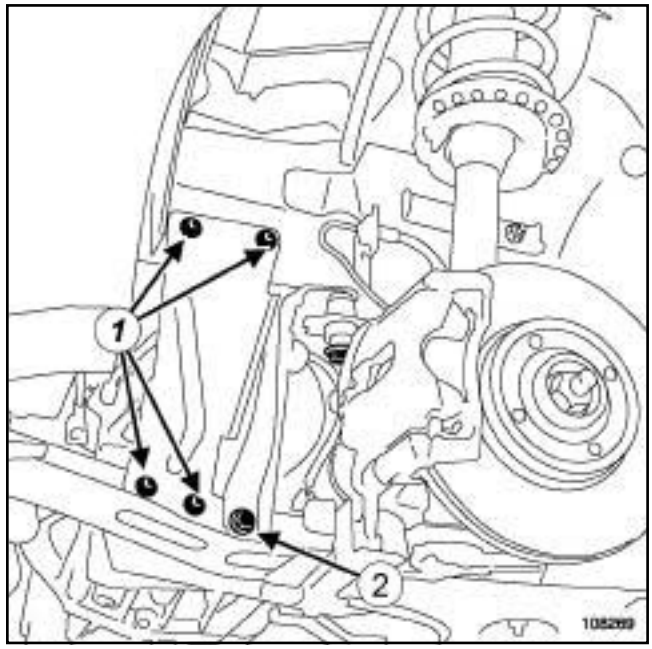
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the engine undertray.

❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove:

- the dipstick,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

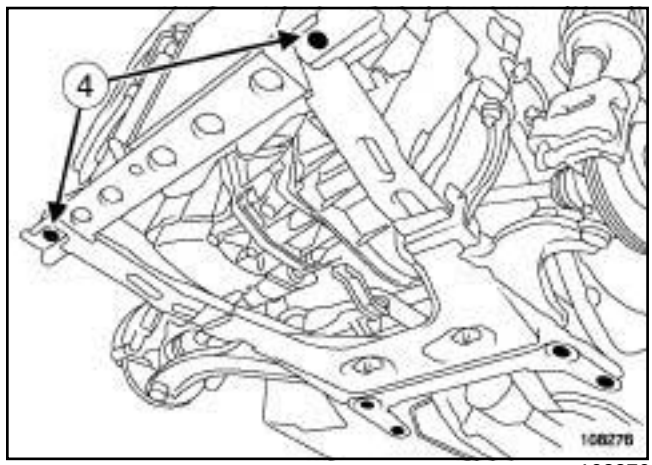


108269

❏ Remove:

- the left-hand side reinforcement bolts (**1**) ,
- the left-hand side reinforcement,
- the lower bolt (**2**) from the side tie rods.

❏ Fit the cooling assembly to the upper cross member using **safety strap(s)**.



108276

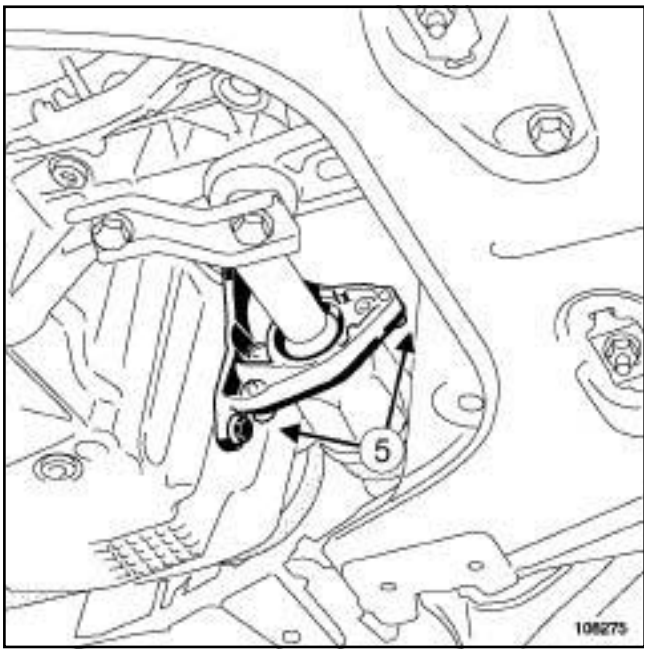
❏ Remove:

- the bumper bolts from the radiator cross member,
- the bolts (**4**) from the radiator lower cross member,
- the radiator lower cross member.

❏ Disconnect the connector from the oil level sensor.

K9K

I - FIRST FITTING OF RIGHT-HAND DRIVESHAFT RELAY BEARING

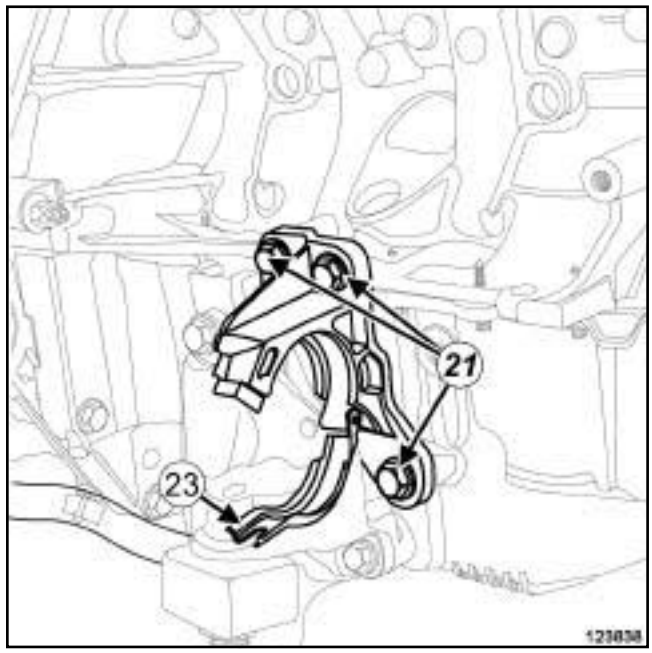


108275

❑ Remove:

- the bolts from right-hand driveshaft bracket (**5**) on the relay bearing,
- the relay bearing bolts from the sump,
- the sump bolts from the multifunction support.

II - SECOND FITTING OF RIGHT-HAND DRIVESHAFT RELAY BEARING



123838

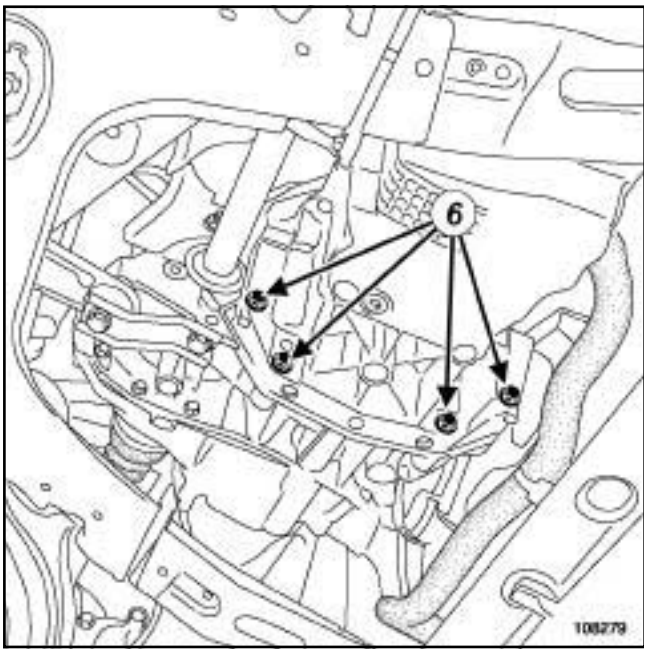
❑ Remove:

- the half-shell bolt (**23**) ,
- the bolts (**21**) of the right-hand driveshaft relay bearing on the engine.

❑ Extract the relay bearing by sliding it towards the gearbox then turning it around the right-hand driveshaft.

K9K

III - OPERATION FOR REMOVAL OF PART CONCERNED



108279

❑ Remove:

- the sump bolt on the gearbox,
- the sump bolts,
- the sump,
- the sump seal.

Note:

If the sump cannot be extracted because it is in contact with the oil pump strainer, do not force the removal of the sump as this may damage the oil splash plate.

Loosen the oil pump bolts by a few turns (the tip of your finger should pass between the bolt head and the oil pump casing) using 10 mm and 13 mm open-jawed spanners and while tilting the sump towards the front of the vehicle.

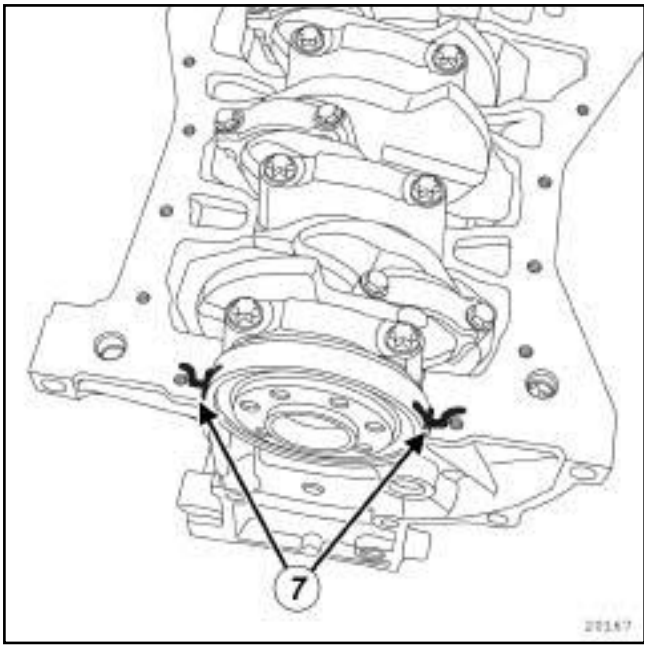
REFITTING

❑

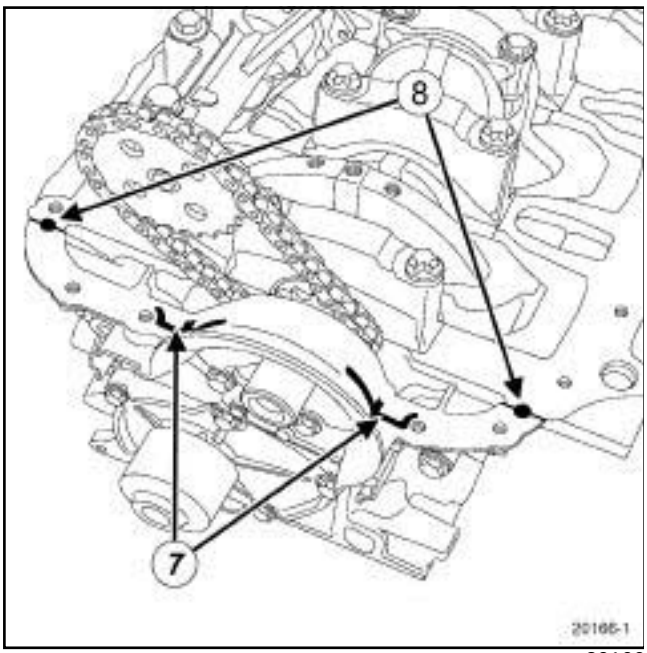
WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

K9K



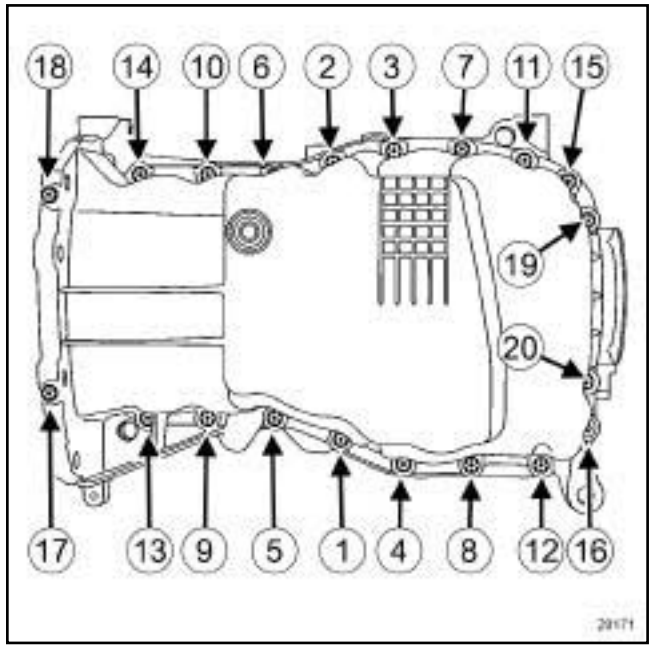
20167



20166

❏ Apply four beads of **ADHESIVE SILICONE SEALANT**, part number **77 11 227 484**, at (**7**) with a diameter of **5 mm**.

❏ Apply two dabs of **ADHESIVE SILICONE SEALANT**, part number **77 11 227 484**, at (**8**) with a diameter of **7 mm** at the connection between the crankshaft closure panel and the cylinder block.



20171

❏ Fit the sump.

Note:

If the oil pump was loosened beforehand in order to extract the sump, position the sump in order to pass the oil pump strainer into the oil splash plate of the sump.

Position a component jack to support the sump.

Tilt the sump towards the front of the vehicle, in order to facilitate access to the oil pump bolts.

Torque tighten the oil pump bolts (**25 N.m**) using the small torque wrench **77 11 226 888**.

Fit the sump and then follow the following instructions.

Note:

Before pressing the sump on the cylinder block, check that the sump seal is still in place and that it has not come out of the grooves on the sides.

❏ Tighten:

- the sump bolts on the gearbox, without locking them,
- to torque the **sump bolts on the gearbox (44 N.m)**,
- in order and to torque the **sump bolts (14 N.m)**.

AIR CONDITIONING

❑ Tighten to torque the **sump bolts on the multifunction support (21 N.m)**.

❑ Proceed in the reverse order to removal.

WARNING

A shim of **10 mm** in thickness must be placed between the radiator cross member and the subframe. Centre the radiator cross member pin in the subframe hole at the level of the lower arm front mounting, to torque tighten the radiator cross member mountings.

❑ Torque tighten:

- the **radiator cross member bolts (105 N.m)**,
- the **relay bearing bolts (44 N.m)**.

❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

D4F

Special tooling required	
Mot. 1716	Removes housing with silicone seals.

Tightening torques ▽	
sump bolts (initial torque)	**8 Nm**
sump bolts	**10 Nm**
sump bolts on the gearbox	**44 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the dipstick,
- the engine undertray.

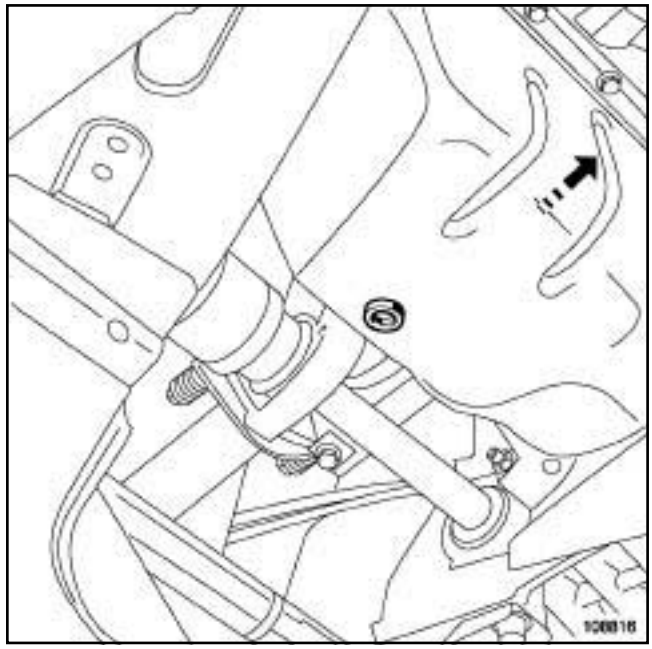
❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

D4F, and 784

❏ Remove the bolts from the sump on the gearbox.

❏ Remove the sump bolts.



108816

❏ If the sump is fitted with **ADHESIVE SILICONE SEALANT** :

- cut the **ADHESIVE SILICONE SEALANT** using the **(Mot. 1716)**,
- gradually detach the sump,
- remove the sump.

❏ If the sump is fitted with a seal:

- remove the sump, rotating it forwards,
- remove the seal from the sump.

REFITTING

I - REFITTING PREPARATIONS OPERATION

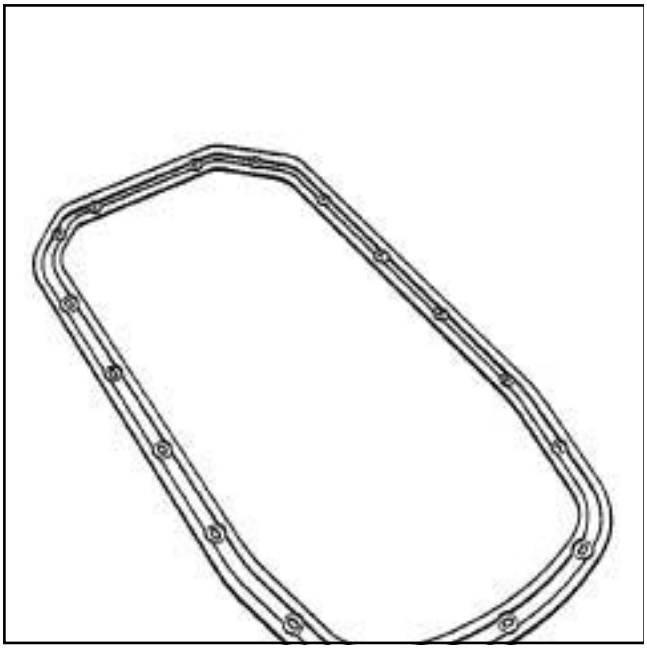
❏ Clean the sump sealing faces using **SUPER CLEANER FOR SEALING FACES**.

❏ Use **SURFACE CLEANER** to degrease the sump sealing faces.

WARNING
Do not scratch the aluminium joint faces: any surface damage to the joint faces may cause leaks.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

D4F

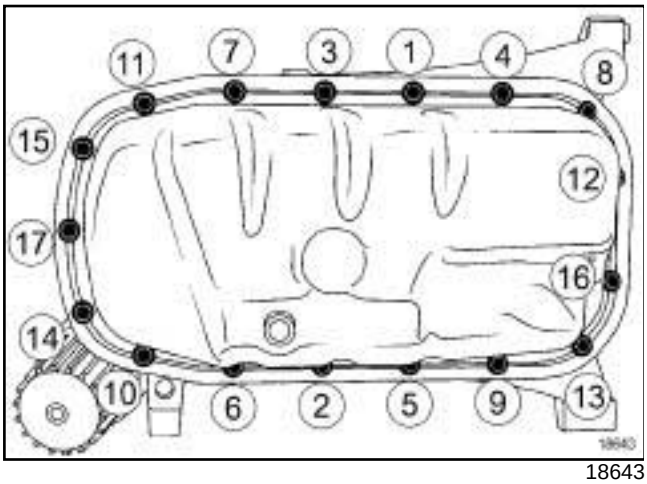


98978

❑ Fit a specific new after-sales seal to a steel sump or apply a beading of **SILICONE ADHESIVE SEALANT** to an aluminium sump.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the sump.



18643

❑ Refit the sump bolts.

❑ Pre-tighten in order and to torque the **sump bolts (initial torque) (8 Nm)**.

❑ Tighten to torque and in order the **sump bolts (10 Nm)**.

D4F, and 784

❑ Refit the sump bolts onto the gearbox.

❑ Torque tighten the **sump bolts on the gearbox (44 Nm)**.

III - FINAL OPERATION.

❑ Wipe any possible traces of oil from the sump.

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Check for leaks from the sump.

❑ Refit:

- the engine undertray,
- the dipstick.

K4J or K4M

Tightening torques ▽	
engine oil sump mounting bolts	**14 N.m**
bolts mounting the engine oil sump on the gearbox	**44 N.m**
engine oil sump bolt on the multifunction support	**25 N.m**
exhaust manifold upstream stay bolts	**44 N.m**
exhaust manifold downstream stay bolts	**44 N.m**
driveshaft flange bolts	**21 N.m**
driveshaft flange bolt	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

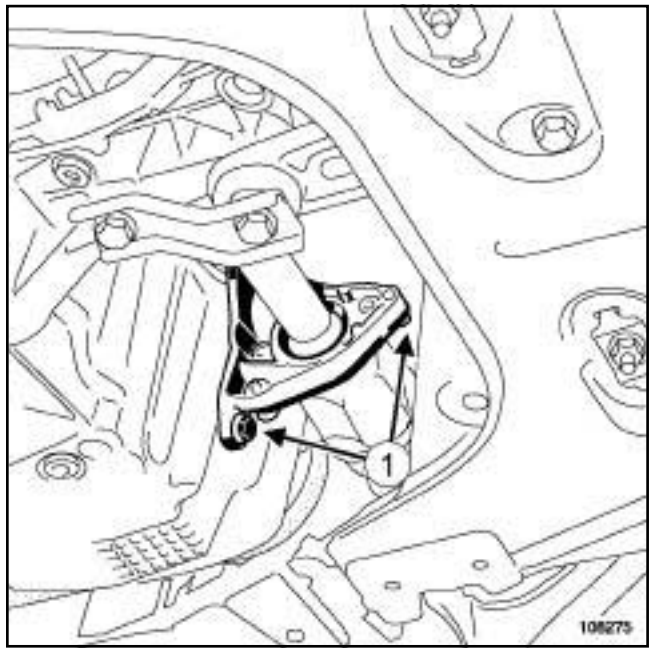
❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove:

- the dipstick,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).

❏ Disconnect the oil level sensor.

K4J – K4M, and 800 or 801 or 804



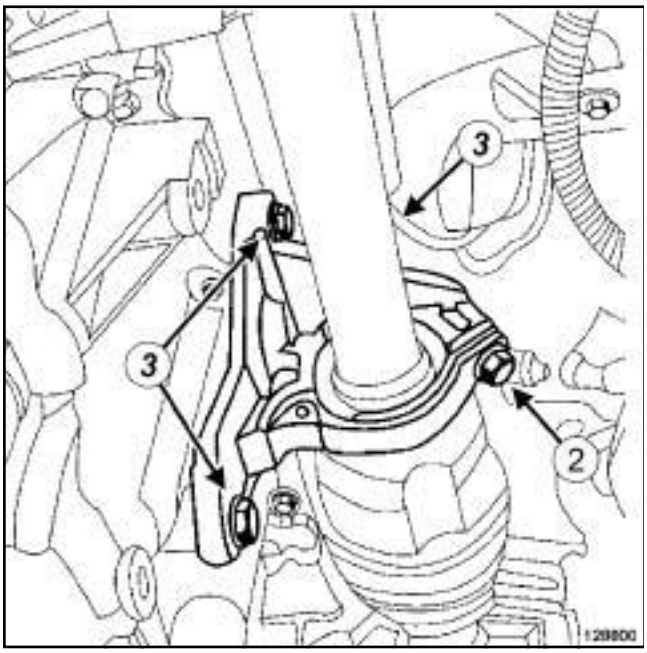
108275

❏ Remove:

- the right-hand driveshaft flange bolts (**1**) on the driveshaft relay bearing,
- the relay bearing bolts on the engine oil sump,
- the relay bearing.

K4J or K4M

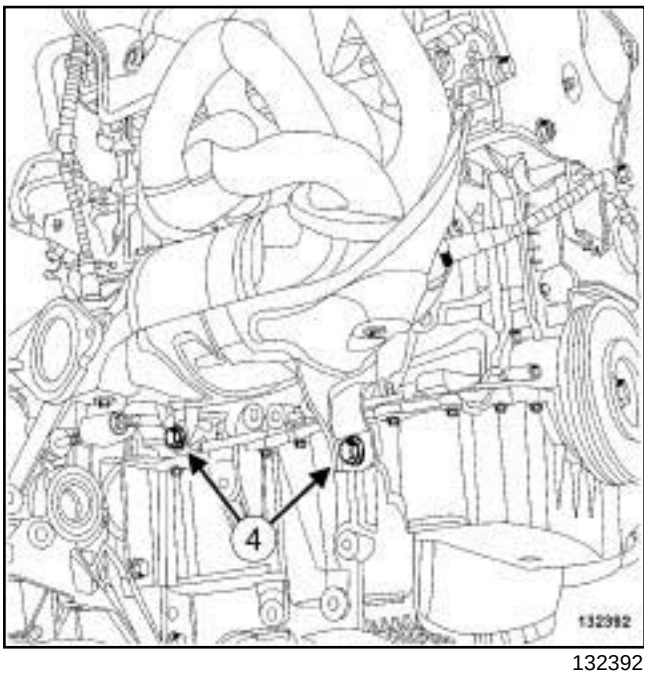
K4M, and 862



128800

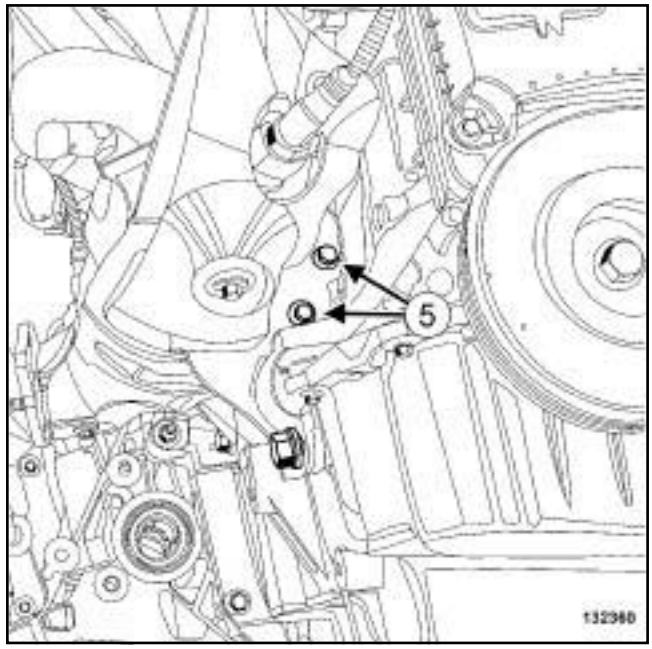
❑ Remove:

- the right-hand driveshaft flange bolt (**2**) on the relay bearing,
- the bolts (**3**) from the driveshaft relay bearing,
- the driveshaft relay bearing.



132392

❑ Remove the bolts (**4**) from the exhaust manifold downstream stay.



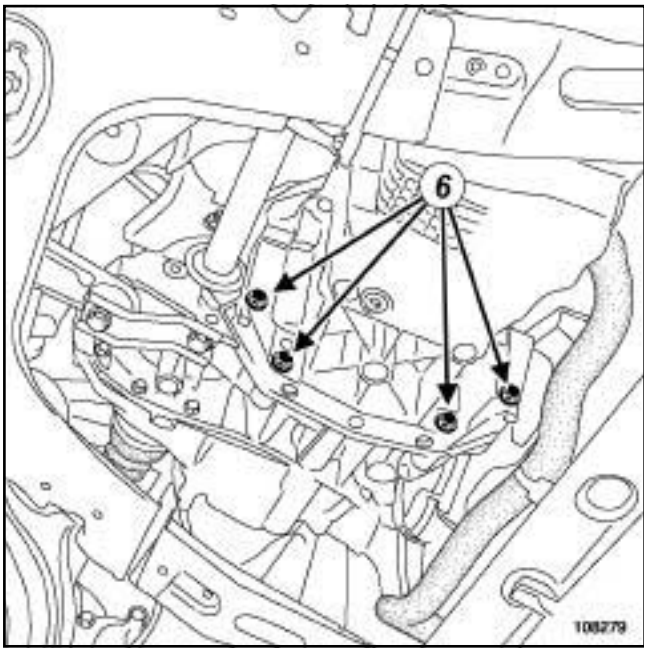
132360

❑ Remove the bolts (**5**) from the exhaust manifold upstream stay.

K4J or K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED

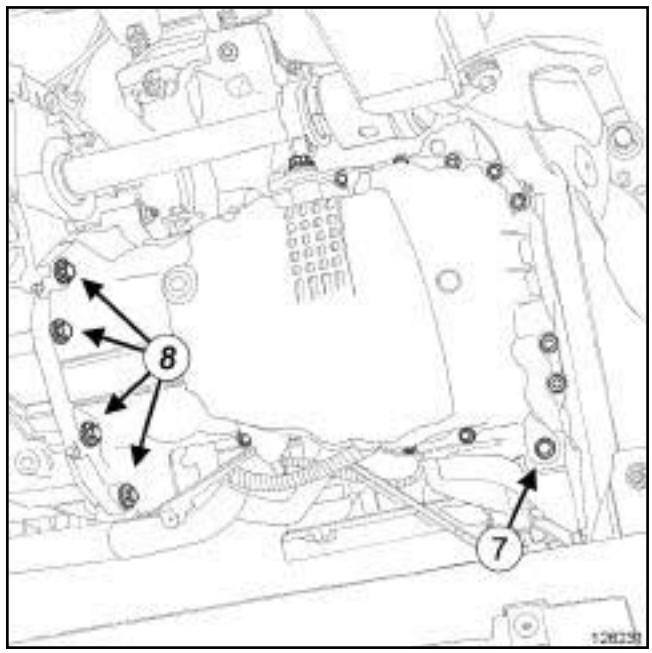
K4J – K4M, and 800 or 801 or 804



108279

❑ Remove the bolts (**6**) from the engine oil sump on the gearbox.

K4M, and 862



126231

❑ Remove:

- the engine oil sump bolt (**7**) on the multifunction support,
- the engine oil sump bolts (**8**) on the gearbox.

❑ Remove:

- the sump bolts,
- the engine oil sump,
- the engine oil sump seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: engine oil sump seal**.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

K4J or K4M

❑ Clean the cylinder block joint face using **SUPER CLEANING AGENT FOR JOINT FACES** (see) (04B, Consumables - Products).

WARNING

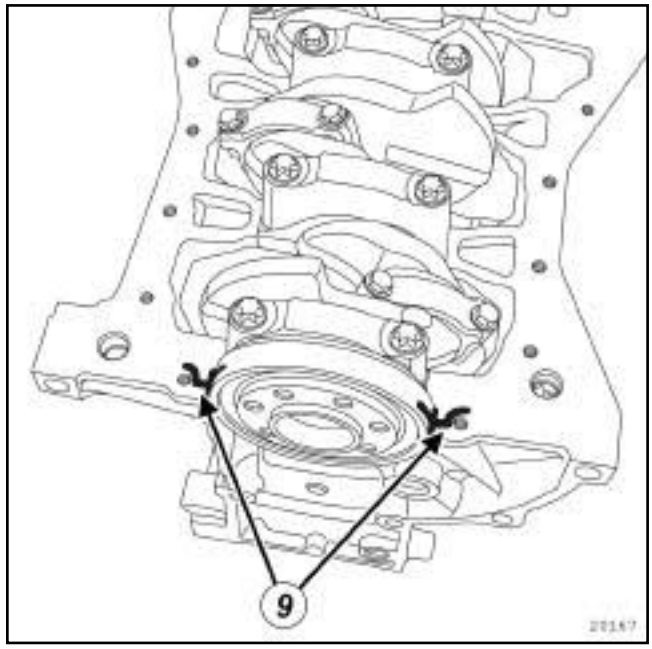
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to degrease:

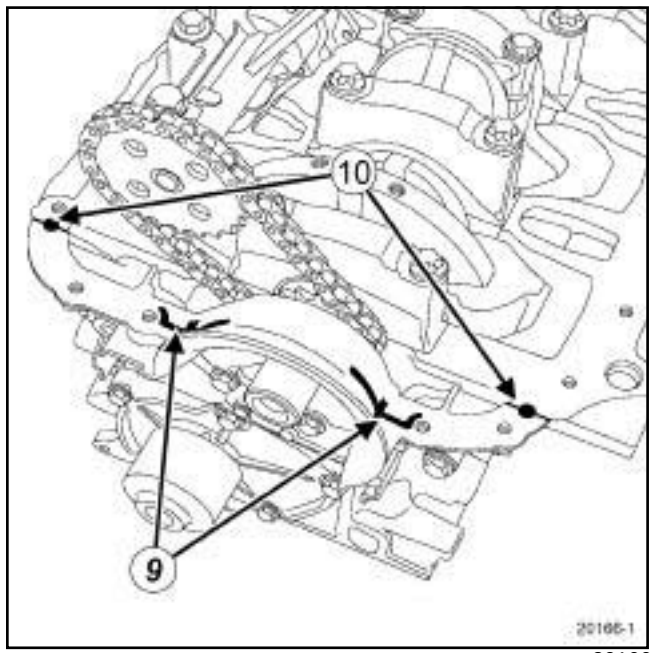
- the sump joint face if it is to be reused,
- the cylinder block gasket face.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. Mixing of the sealant with fluid could result in damage to certain components (engine, radiator, etc.).



20167



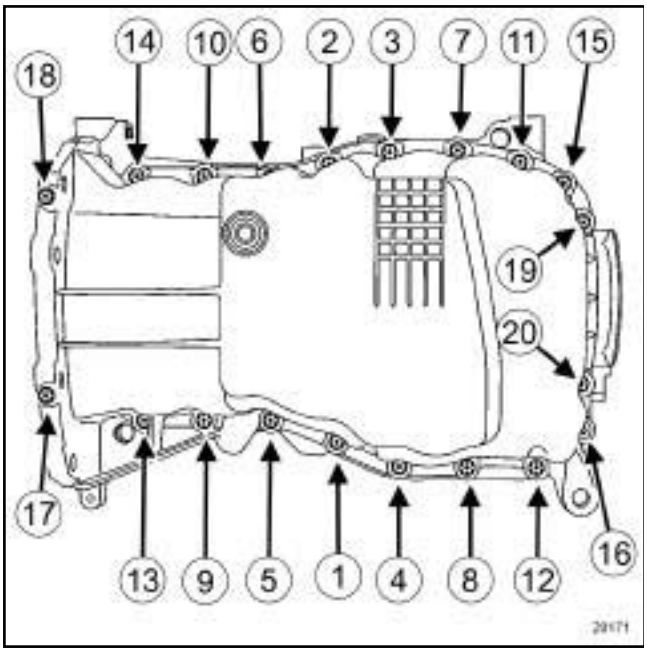
20166

❑ Apply:

- four beads (**9**) of **MASTIXO** (see) (04B, Consumables - Products) with a diameter of **5 mm**,
- two drops (**10**) of **MASTIXO** (see) (04B, Consumables - Products) with a diameter of **5 mm**.

K4J or K4M

II - REFITTING OPERATION FOR PART CONCERNED



20171

❑ Refit:

- a new engine oil sump seal,
- the engine oil sump,
- the engine oil sump bolts without tightening them,
- the engine oil sump bolts on the gearbox without tightening them.

❑ Torque tighten the **engine oil sump bolts (14 N.m)** (**1**) , (**2**) , (**19**) , (**20**) , (**17**) and (**18**) .

❑ Tighten to torque and in order the **engine oil sump mounting bolts (14 N.m)**.

❑ Torque tighten the **bolts mounting the engine oil sump on the gearbox (44 N.m)**.

K4M, and 862

❑ Torque tighten the **engine oil sump bolt on the multifunction support (25 N.m)**.

III - FINAL OPERATION

K4M, and 862

❑ Tighten to torque:

- the **exhaust manifold upstream stay bolts (44 N.m)**,
- the **exhaust manifold downstream stay bolts (44 N.m)**.

❑ Refit:

- the relay bearing,
- the relay bearing bolts on the engine oil sump,
- the right-hand driveshaft flange bolts on the relay bearing.

❑ Refit the relay bearing bolts.

K4J – K4M, and 800 or 801 or 804

❑ Refit the driveshaft flange bolts.

❑ Torque tighten the **driveshaft flange bolts (21 N.m)**.

K4M, and 862

❑ Refit the driveshaft flange bolt.

❑ Torque tighten the **driveshaft flange bolt (21 N.m)**.

❑ Connect the oil level sensor.

WARNING
Place a **10 mm** thick shim between the radiator cross member and the sub-frame and centre the radiator cross member pin in the sub-frame hole at the level of the lower arm front mounting to torque tighten the radiator cross member mountings.

❑ Refit:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the dipstick.

K4J or K4M

- ❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .
- ❑ Refit the engine undertray.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R

Special tooling required	
Mot. 1716	Removes housing with silicone seals.

Tightening torques ▽	
sump mounting bolts	**10 Nm**

REMOVAL

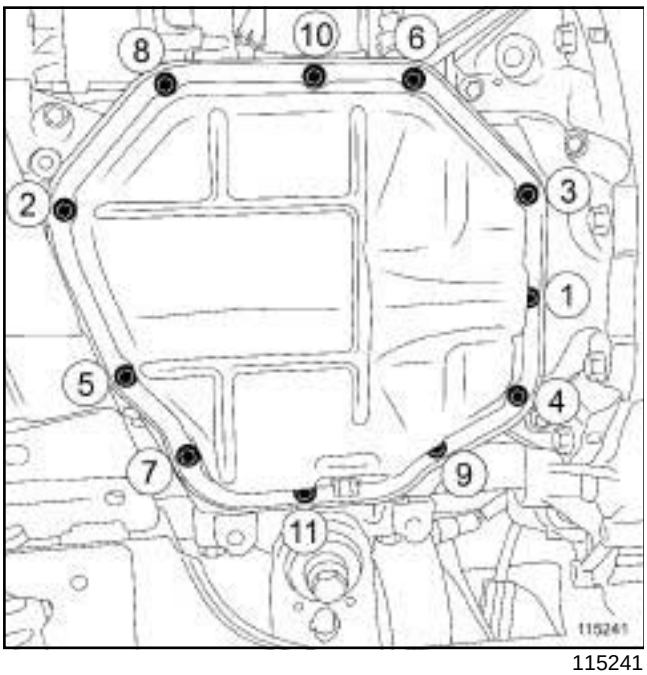
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove the engine undertray.

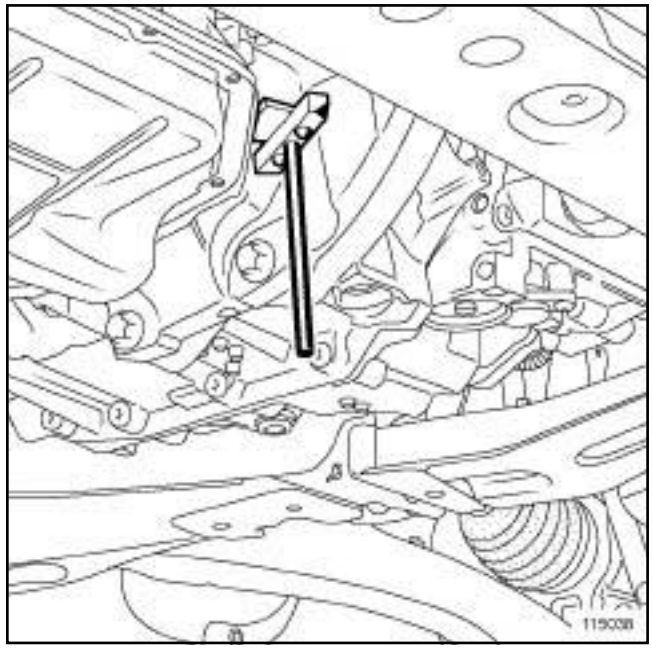
❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

II - REMOVAL OF PART CONCERNED



115241

❏ Remove the sump mounting bolts in the above order.



115038

❏ Detach the sump using the **(Mot. 1716)** and a hammer.

❏ Remove the sump.

IMPORTANT
Note the quantity of oil in the sump.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the sealing surfaces using the **DECAPJOINT** product.

IMPORTANT
- Do not scratch the aluminium sealing surfaces.
- Wear goggles.
- Wear gloves during the operation.

WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.)

WARNING
The gasket faces must be clean, dry and free from grease (avoid finger marks).

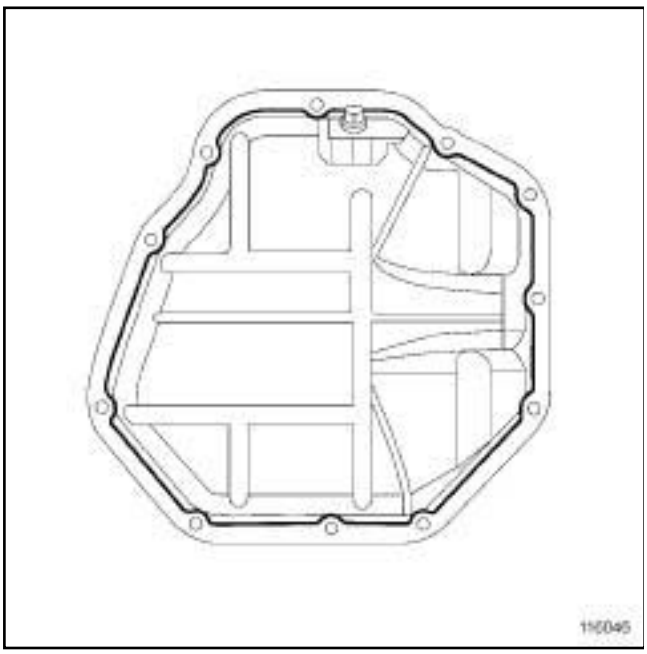
M4R

❏ Check that the sump is not:

- scratched,
- deformed.

If this is the case, replace the sump.

❏ Check that the baseplate is not scratched.

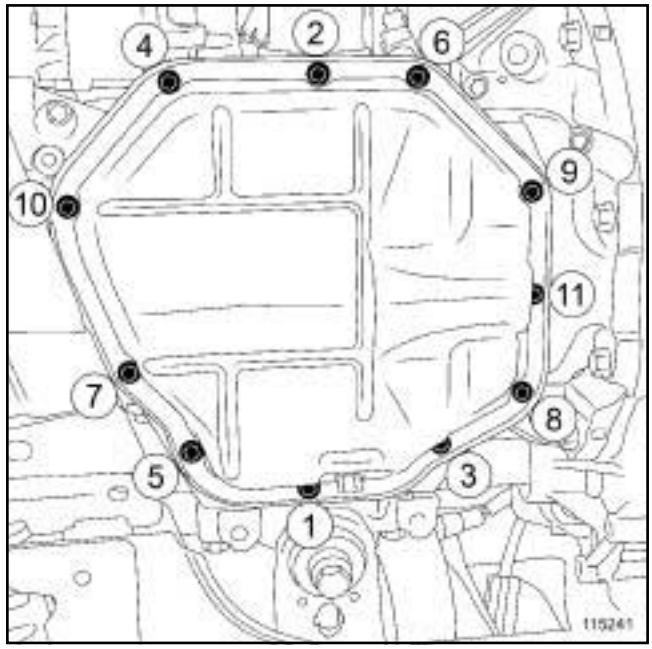


116046

❏ Apply a bead of **SILICONE ADHESIVE SEALANT (77 11 227 484)** approximately **5 mm** in diameter, approximately **8 mm** away from the inside rim of the sump to ensure a good seal.

II - REFITTING THE PART CONCERNED

❏ Fit the sump.



115241

❏ Finger tightenthe mounting bolts in the above order until they make contact with the sump.

❏ Tighten to torque and in order the **sump mounting bolts (10 Nm)**.

III - FINAL OPERATION

❏ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Refit the engine undertray.

F4R

Tightening torques ▽	
sump mounting bolts (1) to (6)	**15 Nm**
sump mounting bolts (7) to (10), (1), (2), and (11) to (22)	**18 Nm**
sump mounting bolts on the gearbox	**44 Nm**
engine tie-bar mounting bolt on the mounting	**180 Nm**
engine tie-bar mounting bolt on the sub-frame	**105 Nm**
engine tie-bar support mounting bolts	**62 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

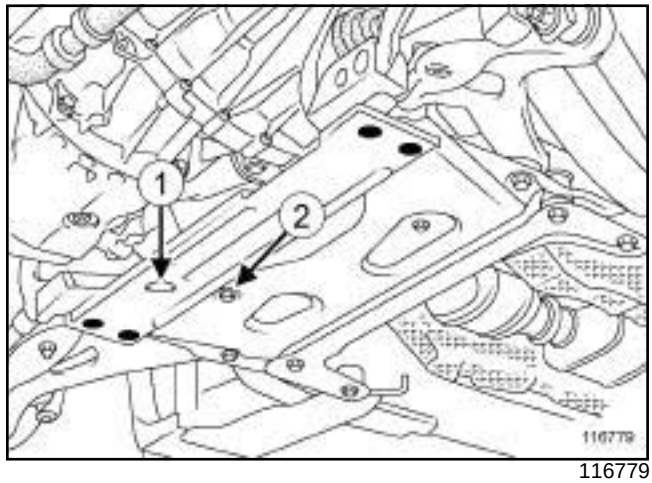
❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Refit the drain plug with its old seal.

❏ Strap the cooling unit in place.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

1 - Standard removal of sump



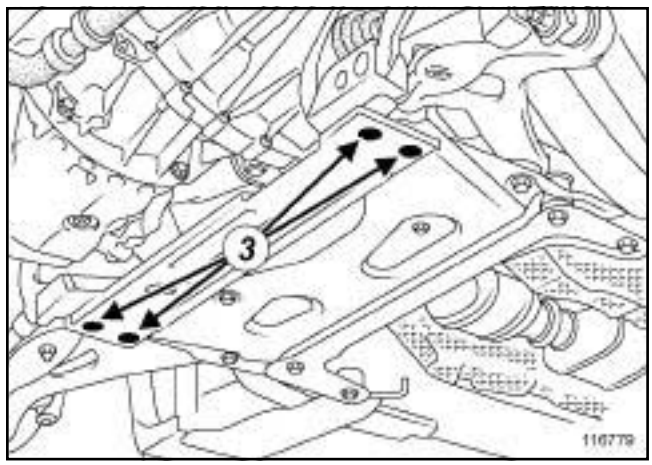
116779

❏ Remove the mounting bolt (**1**) from the lower engine tie-bar, engine side.

❏ Undo the mounting bolt (**2**) on the lower engine tie-bar, sub-frame side.

❏ Move the lower engine tie-bar to one side.

2 - Replacement of the sump

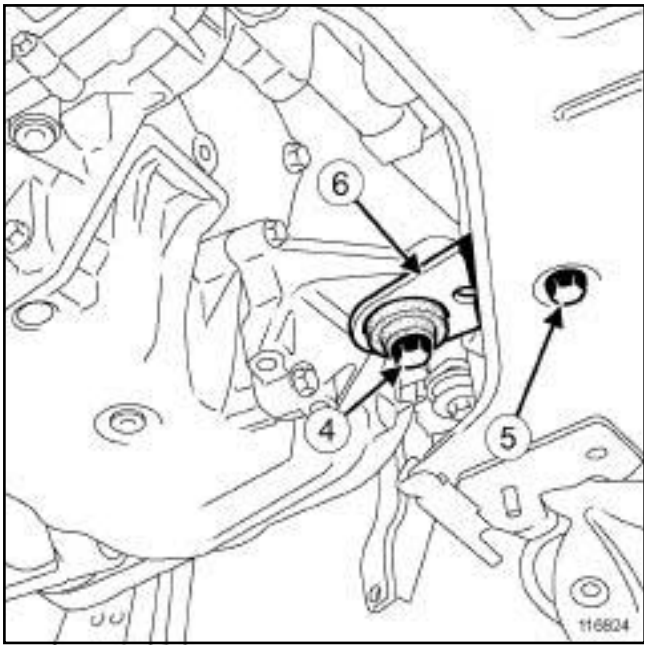


116779

❏ Remove:

- the mounting nuts (**3**) from the reinforcement lower cross member,
- the reinforcement lower cross member.

F4R

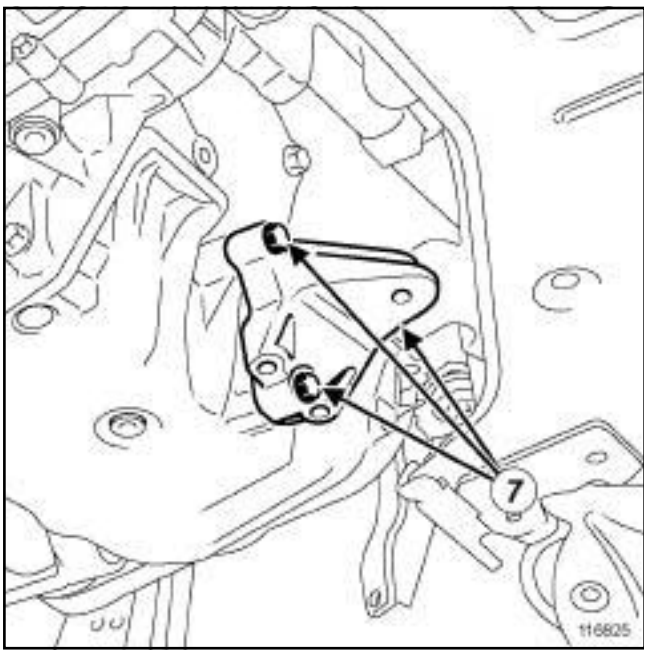


116824

❏ Remove the mounting bolt (**4**) from the lower engine tie-bar, engine side.

❏ Undo the mounting bolt (**5**) on the lower engine tie-bar, sub-frame side.

❏ Move the lower engine tie-bar (**6**) to one side.

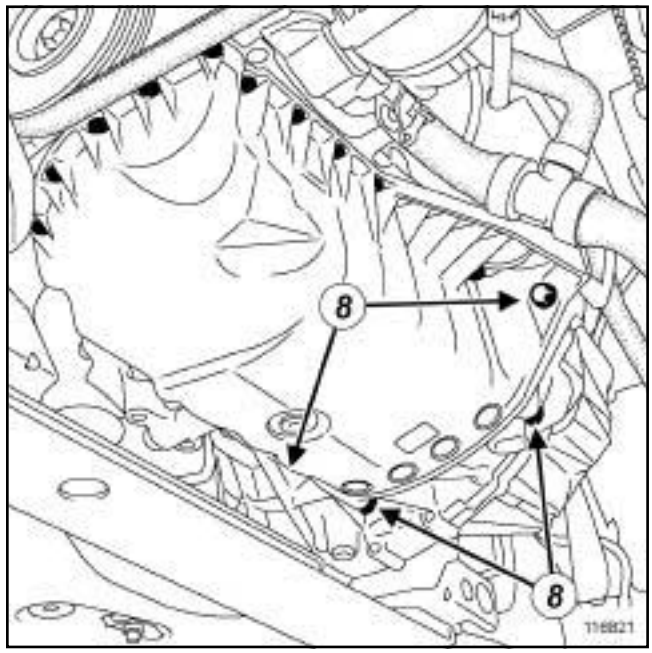


116825

❏ Remove:

- the mounting bolts (**7**) from the engine tie-bar support, engine side,
- the engine tie-bar support, engine side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116821

❏ Remove:

- the bolts (**8**) mounting the sump on the gearbox,
- the bolts mounting the sump on the cylinder block,
- the sump.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Clean:

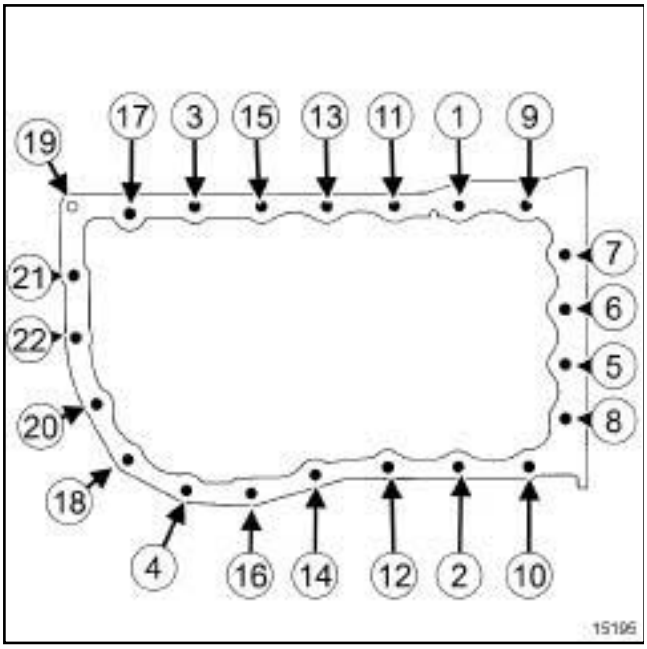
- the sump joint face,
- the cylinder block joint face.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the sump with its new seal,
- the bolts mounting the sump on the cylinder block,
- the bolts mounting the sump on the gearbox.

F4R



15195

❏ Torque tighten and in order:

- the **sump mounting bolts (1) to (6) (15 Nm)**,
- the **sump mounting bolts (7) to (10), (1), (2), and (11) to (22) (18 Nm)**,
- the **sump mounting bolts on the gearbox (44 Nm)**.

❏ Clean around the sides of the sump.

❏ Remove the drain plug and its old seal.

❏ Refit the drain plug with its new seal.

WARNING
Systematically replace the gaskets.

1 - Standard refitting of sump

❏ Fit the lower engine tie-bar.

❏ Refit the lower engine tie-bar mounting bolt, engine side.

❏ Torque tighten:

- the **engine tie-bar mounting bolt on the mounting (180 Nm)**,
- the **engine tie-bar mounting bolt on the subframe (105 Nm)**.

2 - Replacement of the sump

❏ Refit:

- the lower cross member.
- the reinforcement lower cross member mounting nuts,

❏ Refit:

- the engine tie-bar support, engine side,
- the engine tie-bar support mounting bolts, engine side.

❏ Torque tighten the **engine tie-bar support mounting bolts (62 Nm)**.

❏ Fit the lower engine tie-bar.

❏ Refit the lower engine tie-bar mounting bolt, engine side.

❏ Torque tighten:

- the **engine tie-bar mounting bolt on its mounting (180 Nm)**,
- the **engine tie-bar mounting bolt on the subframe (105 Nm)**.

III - FINAL OPERATION

❏ Perform the following operations:

- top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- check the engine oil level using the dipstick.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Start the engine and let it run for **5 minutes**.

❏ Check that there are no leaks between the cylinder block and the sump.

❏ Refit the engine undertray.

K9K

Special tooling required	
Mot. 1914	Tool for fitting G9 con rod bearing shells
Mot. 1920	Tool for fitting F9 / K9 con rod bearing shells

Equipment required
safety strap(s)
component jack
indelible pencil
torque wrench
Diagnostic tool

Tightening torques ▽	
con rod cap bolts	**20 N.m + 45° ± 6°**
oil pump bolts	**25 N.m**

IMPORTANT
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **Vehicle: Precautions for the repair**) .

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

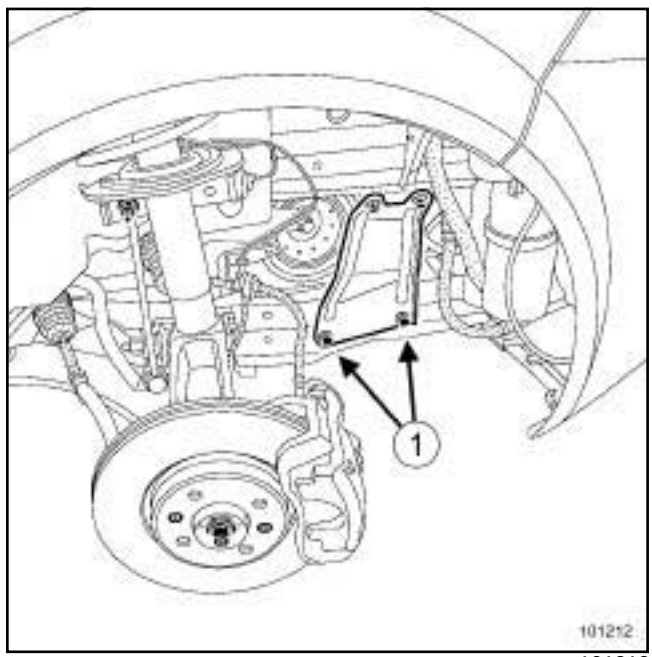
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the engine undertray.

❑ Drain the oil from the engine (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Remove the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

❑ Remove the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



101212

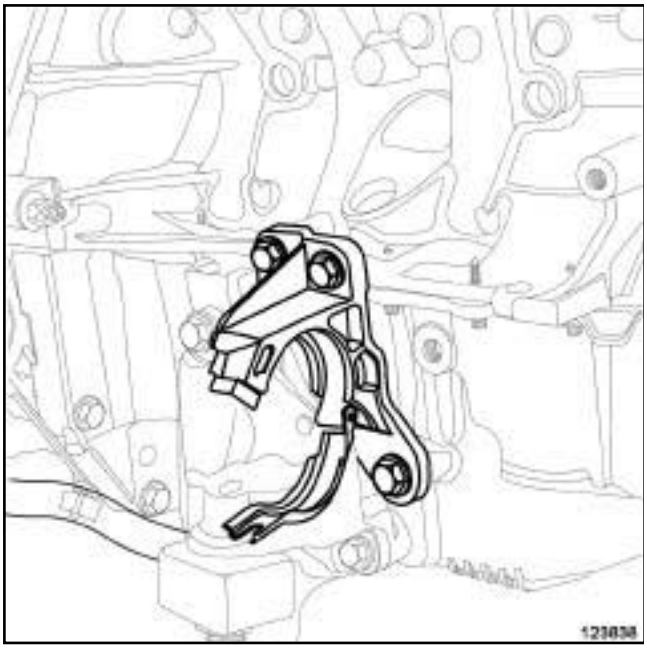
❑ Strap the radiator to the vehicle using **safety strap(s)**.

❑ Remove the clips from the front wheel arch liners on the radiator mounting cross member.

❑ Remove the side reinforcement mountings on the radiator mounting cross member (**1**) .

❑ Remove the radiator mounting cross member without removing the front bumper (see **Radiator mounting cross member: Removal - Refitting**) (31A, Front axle components).

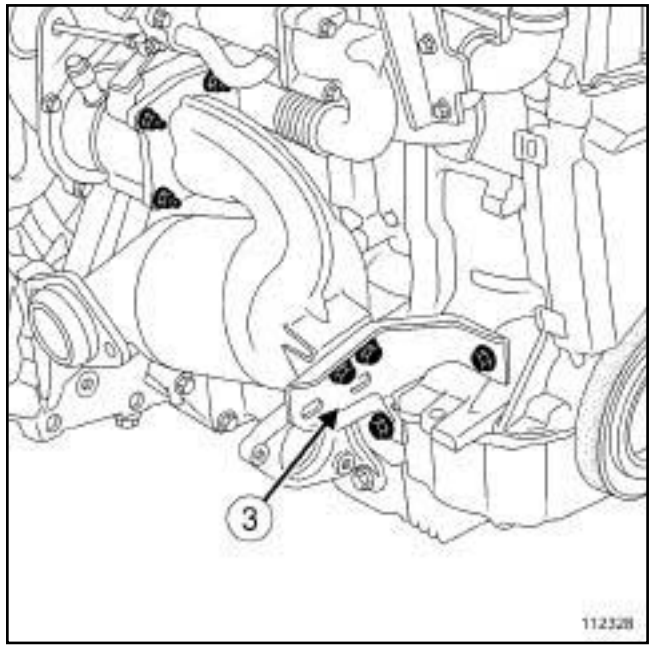
K9K


123838

❑ Remove the relay bearing of the front right-hand wheel driveshaft.

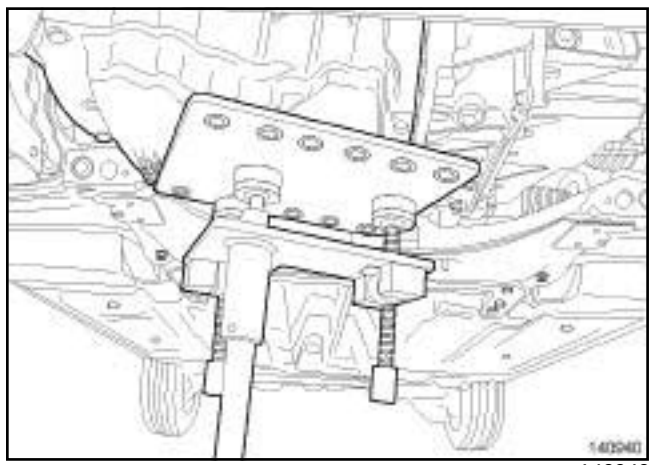
123834

❑ Disconnect the oil level sensor connector (if equipped) (**2**) .



112328

❑ Remove the catalytic converter upstream stay (**3**) .


140940

❑

WARNING

Failure to observe the following procedure may damage the oil pump strainer.

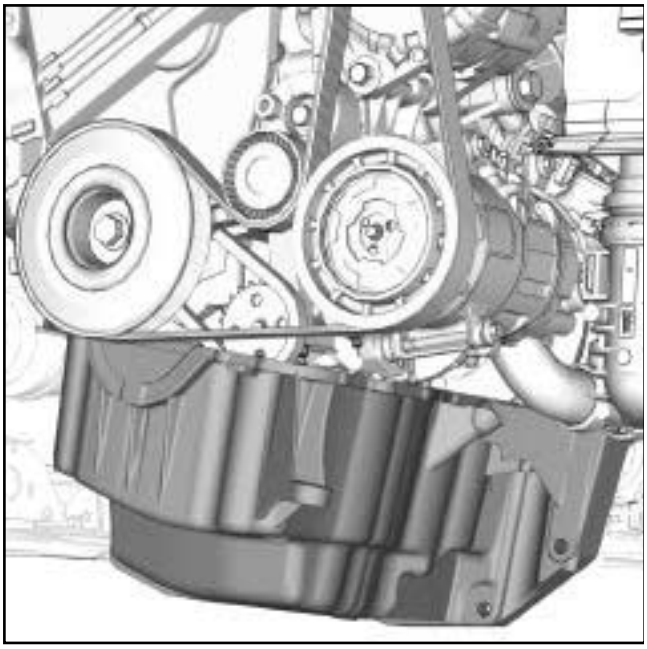
Undo the bolts of the engine oil sump.

❑ Fit a **component jack** to support the engine oil sump.

❑ Remove the bolts from the engine oil sump.

❑ Detach the engine oil sump, while supporting it with the **component jack**.

K9K



140917

❑ Tilt the engine oil sump forwards in order to access the oil pump bolts.

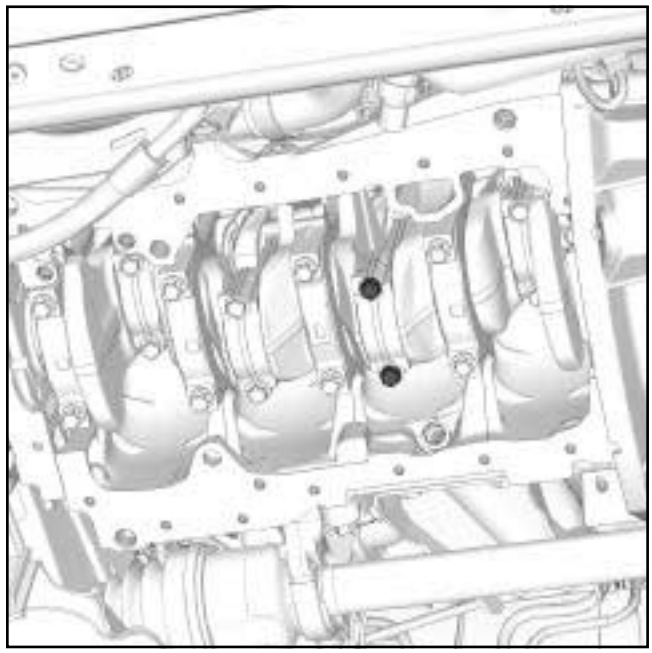
❑ Partially loosen the oil pump bolts **3 mm** to **5 mm**.

❑ Detach the oil pump from its position in order to remove the engine oil sump.

❑ Remove:

- the engine oil sump,
- the engine oil sump seal,
- the oil pump.

II - REMOVAL OPERATION FOR THE CON ROD BEARING SHELLS NO.2



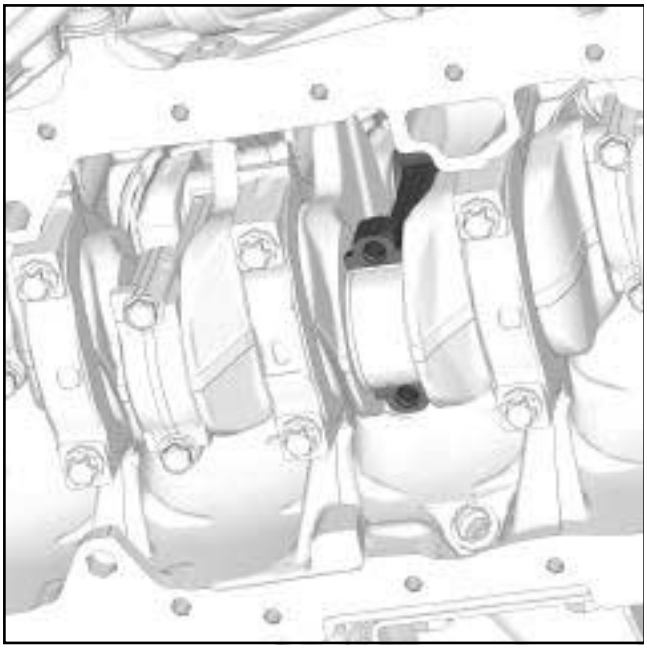
139306

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean the big ends.

❑ Mark the position of the con rod cap in relation to the con rod body using a **indelible pencil**.

❑ Position the crankshaft at Top Dead Centre.

K9K



139300

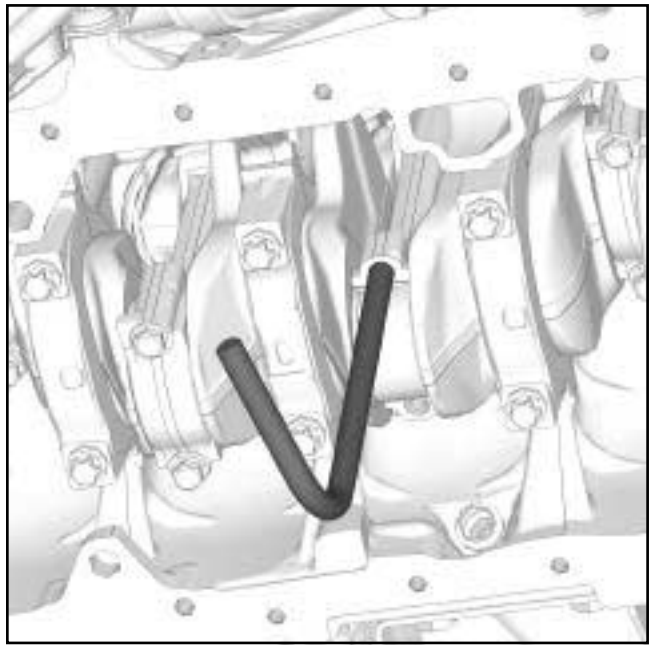
❑ Remove:

- the con rod bolts,
- the con rod cap,
- the lower con rod bearing shell.

Note:

If reusing the con rod bearing shells, mark the position of the lower con rod bearing shell in relation to the con rod cap.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - products) to clean the bearing mating face on the con rod cap.



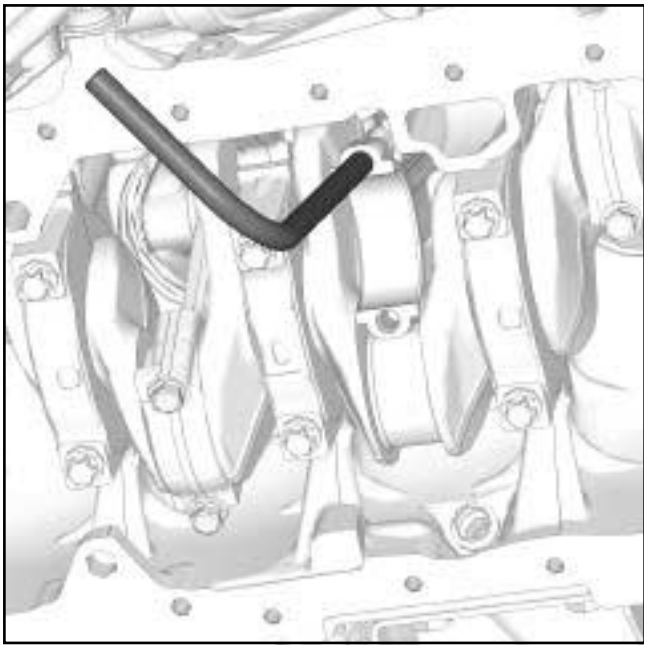
139310

❑ Fit the tie rod of the tool **(Mot. 1914)** on the con rod body.

❑ Push the con rod upwards to release the con rod from the crankpin.

❑ Turn the crankshaft **90°** clockwise (timing end).

K9K



139315

❑

WARNING
Failure to observe the following procedure may damage the piston base cooling jets.

Pull the con rod - piston assembly using the tie rod of the tool **(Mot. 1914)**, taking care not to allow the piston to touch the piston base cooling jets.

❑ Remove the upper con rod bearing shell.

Note:
If reusing the con rod bearing shells, mark the position of the upper con rod bearing shell in relation to the con rod body.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - products) to clean the bearing mating face on the con rod body.

REFITTING

❑

Note:
Always replace the 8 con rod bearing shells.
The set of con rod bearing shells contains only con rod bearing shells with a width of **18 mm**.

I - REFITTING OPERATION FOR THE CON ROD BEARING SHELLS ON CYLINDER NO.2

❑ **parts always to be replaced: con rod cap bolts**

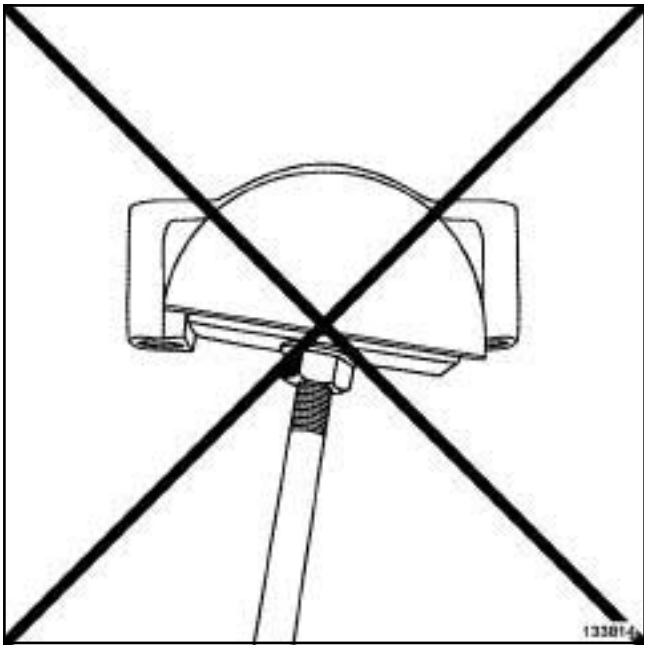
❑

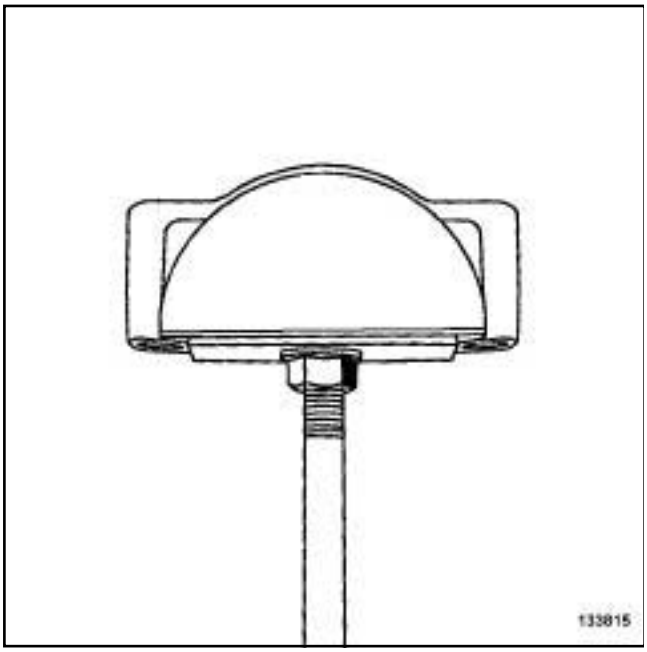
Note:
Always replace con rod bearing shells with a width of **20 mm** by con rod bearing shells with a width of **18 mm**.
Only use the head of the tool **(Mot. 1920)** with the marking " **K9K SUP** " for con rod bearing shells with a width of **18 mm**.

Fit the head of the tool **(Mot. 1920)** with the marking " **K9K INF** " on the threaded sleeve of the tool **(Mot. 1914)**.

❑ Position the lower con rod bearing shell on the tool **(Mot. 1920)**.

K9K


133814


133815

❑

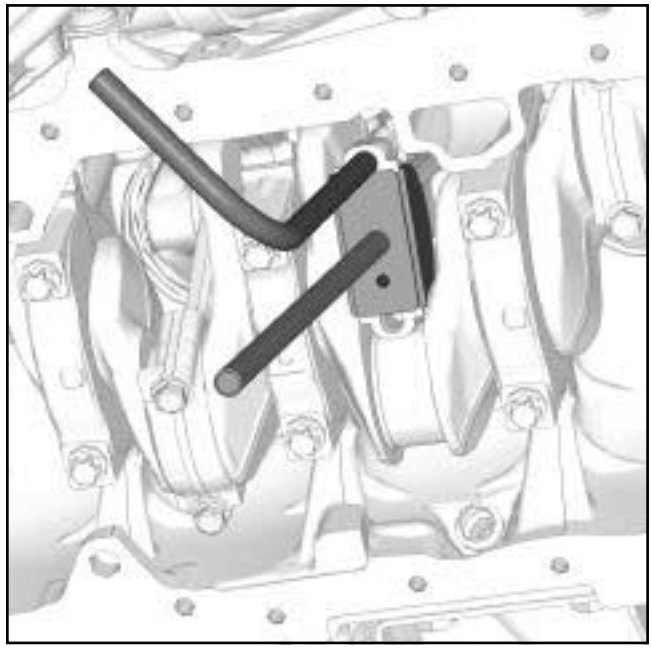
Note:

The contact surface between the bearing shell and the con rod must be dry and free of grease.

Fit the lower con rod bearing shell on the con rod cap using the tool **(Mot. 1920)**.

❑ Position the lower con rod bearing shell so that the ends do not protrude beyond the con rod cap.

❑ Lubricate the surface of the con rod bearing shell (crankshaft end) using new engine oil.


139318

❑ Remove the tool head with the marking " **K9K INF** " and fit the head with the marking " **K9K SUP** ".

❑ Position the upper con rod bearing shell on the tool **(Mot. 1920)**.

❑ Fit the upper con rod bearing shell on the con rod body using the tool **(Mot. 1920)**.

❑ Position the upper con rod bearing shell so that the ends do not protrude beyond the con rod body.

❑ Lubricate the surface of the con rod bearing shell (crankshaft end) using new engine oil.

❑ Push the con rod - piston assembly back up into place.

❑ Turn the crankshaft **90°** anticlockwise.

❑ Lubricate the crankpin with new engine oil.

❑ Pull the con rod - piston assembly to position the con rod on the crankshaft.

❑

Note:

Before refitting the con rod cap, ensure that there are no impurities (filings, cloth lint, etc.) on the con rod body or cap surfaces.

Refit:

- the con rod cap according to the mark made during removal,
- the new con rod bolts.

❑ Torque and angle tighten the **con rod cap bolts (20 N.m + 45° ± 6°)**.

K9K

II - REMOVAL - REFITTING OPERATIONS FOR THE CON ROD BEARING SHELLS ON CYLINDERS NO.3, 1 AND 4

❑ Perform the same removal - refitting operations as for the con rod bearing shells on cylinder no. 2.

Note:

For removing and refitting the con rod bearing shells on cylinders no. 1 and no. 4, position the pistons at Bottom Dead Centre before perfoming the same removal and refitting operations as for the con rod bearing shells on cylinder no. 2.

III - FINAL OPERATION

❑ **parts always to be replaced: engine oil sump seal**

parts always to be replaced: Oil filter

parts always to be replaced: Drain plug seal on engine oil sump

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Use a wooden spatula or an **ABRASIVE PAD** to clean the joint face of the cylinder block and engine oil sump.

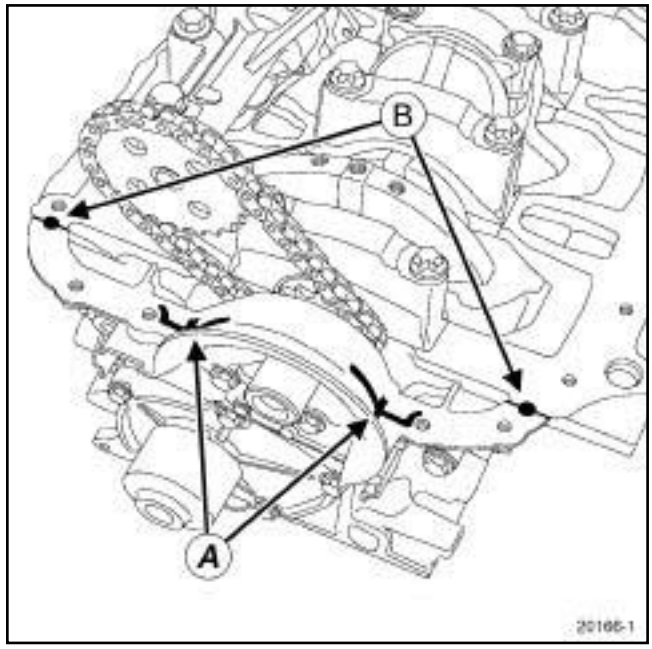
❑ Refit the oil pump.

❑ Fit without tightening the oil pump bolts, while keeping a clearance of **3 mm** to **5 mm**.

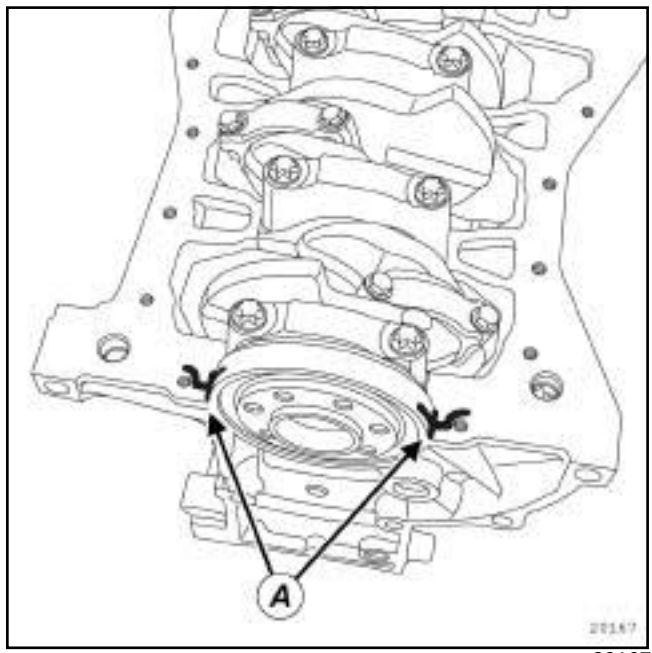
❑ Fit the engine oil sump seal.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).



20166



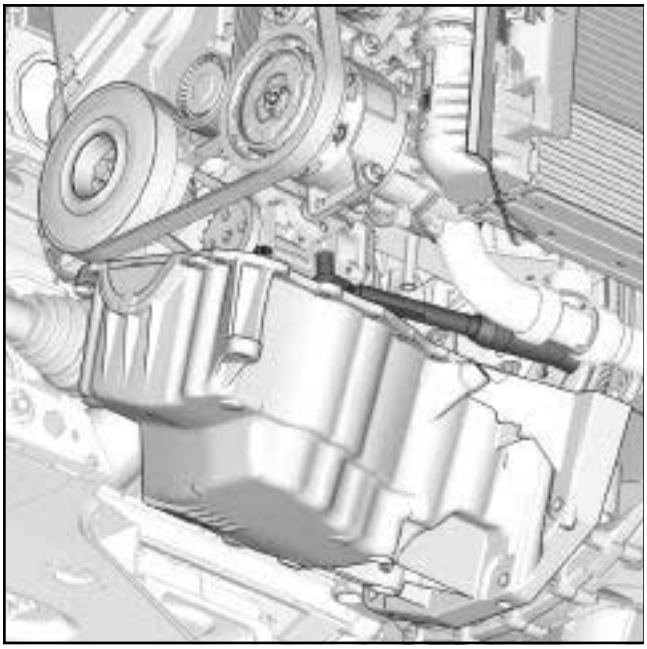
20167

❑ Apply **SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and consumables for the repair**) :

- four beads with a diameter of **5 mm** at (**A**) ,
- two drops with a diameter of **5 mm** at (**B**) .

❑ Fit the engine oil sump while supporting it using a **component jack**.

K9K



140918

❑ Tilt the engine oil sump forwards in order to access the oil pump bolts.

❑ Torque tighten the **oil pump bolts (25 N.m)** using the **torque wrench** PROSTEEL, part number **77 11 226 888** starting with the **13 mm** bolt.

❑

Note:

Check that the engine oil sump seal is definitely in place before tightening the engine oil sump bolts.

❑ Refit the engine oil sump bolts.

❑ Torque tighten in order the engine oil sump bolts (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

❑ Refit the catalytic converter upstream stay (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

❑ Connect the connector to the oil level sensor.

❑ Refit the relay bearing of the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) .

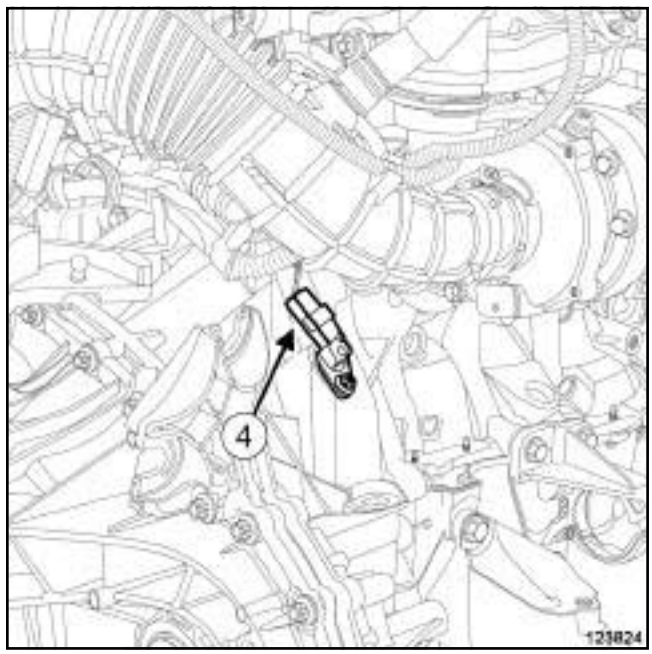
❑ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (31A, Front axle components).

❑ Refit the side reinforcement mountings on the radiator mounting cross member.

❑ Refit the mountings of the front right-hand wheel arch liner on the radiator mounting cross member.

❑ Remove the **safety strap(s)** from the radiator.

❑ Refit the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



123824

❑ Disconnect the crankshaft position sensor (**4**) to prevent the engine from starting.

❑ Refit the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**)

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Start the engine using the starter until the engine oil warning light goes out.

❑ Connect the crankshaft position sensor.

❑ Refit the engine undertray.

❑ Clear the present faults using the **Diagnostic tool**.

D4F, and 740 or 742 or 764

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 1374	Oil pump seal extractor.
Mot. 1626	Tool for fitting the PTFE crankshaft seal, timing end.

Tightening torques ▽	
oil pump mounting bolts	**9 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

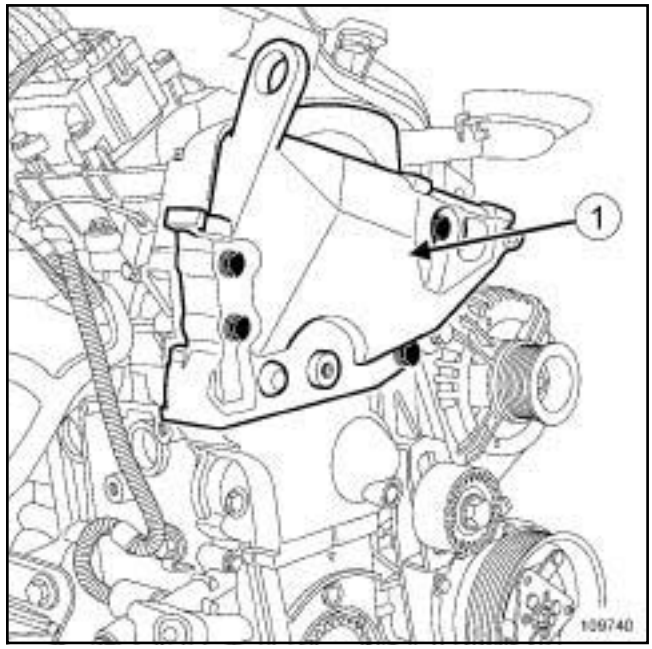
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

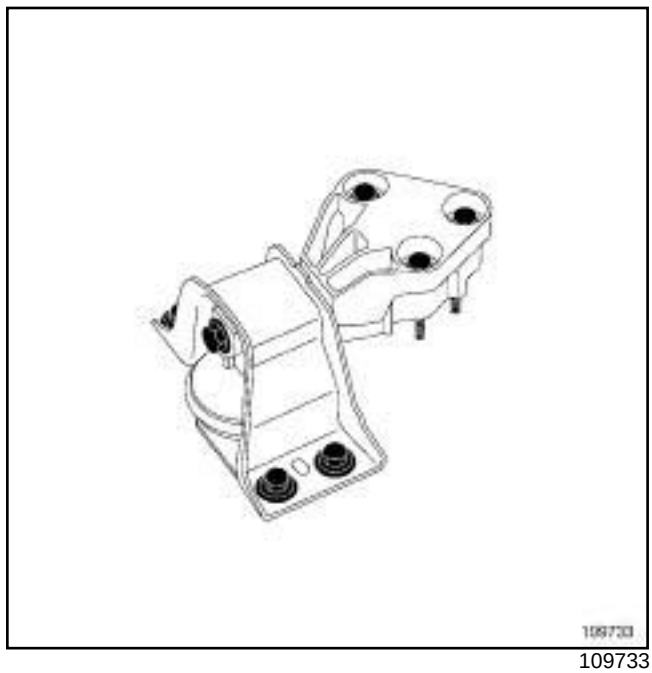
- the dipstick,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

❏ Drain the oil from the engine (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .



109740

❏ Refit the upper timing cover (**1**) .



109733

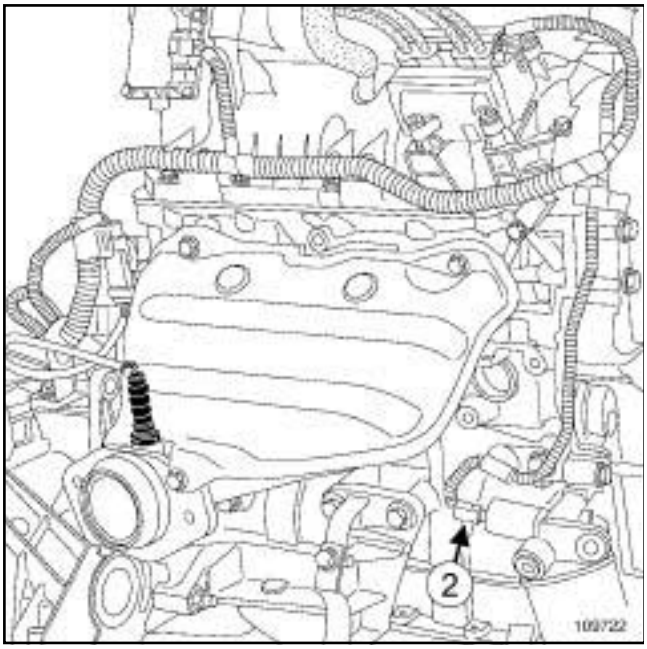
❏ Refit the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Remove:

- the lower cover (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) ,

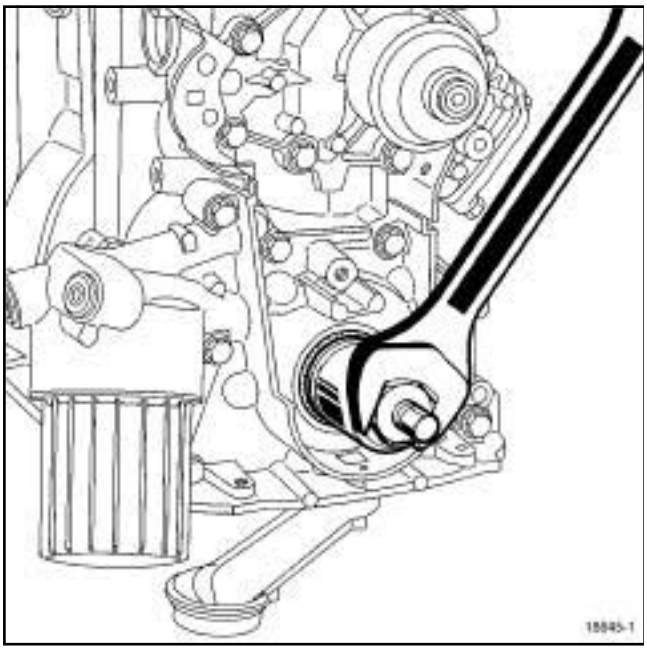
D4F, and 740 or 742 or 764



109722

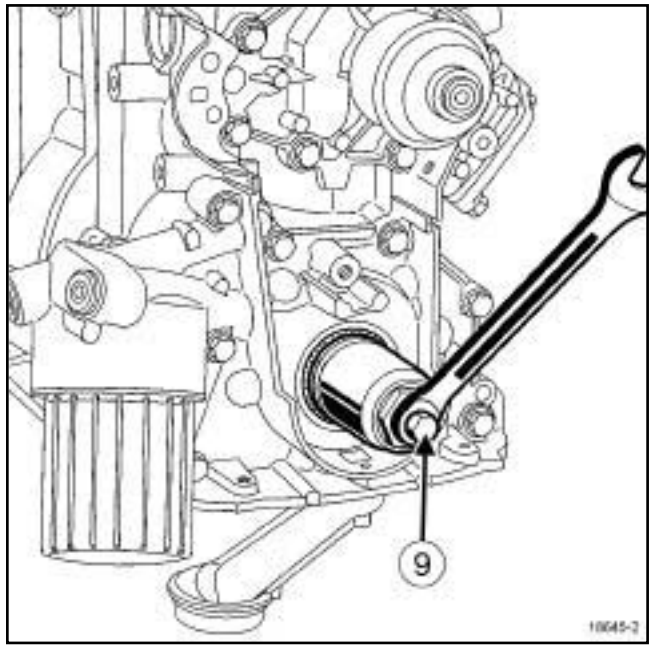
❏ Disconnect the oil pressure sensor connector (**2**) .

❏ Remove the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) .



18645-1

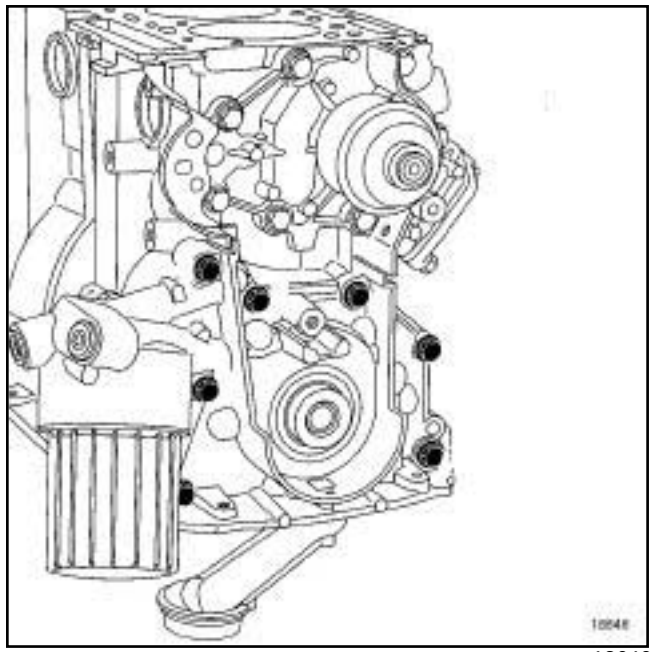
❏ Remove the crankshaft seal by turning tool **(Mot. 1374)**.



18645-2

❏ Remove the seal by tightening the bolt (**9**) on the **(Mot. 1374)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



18646

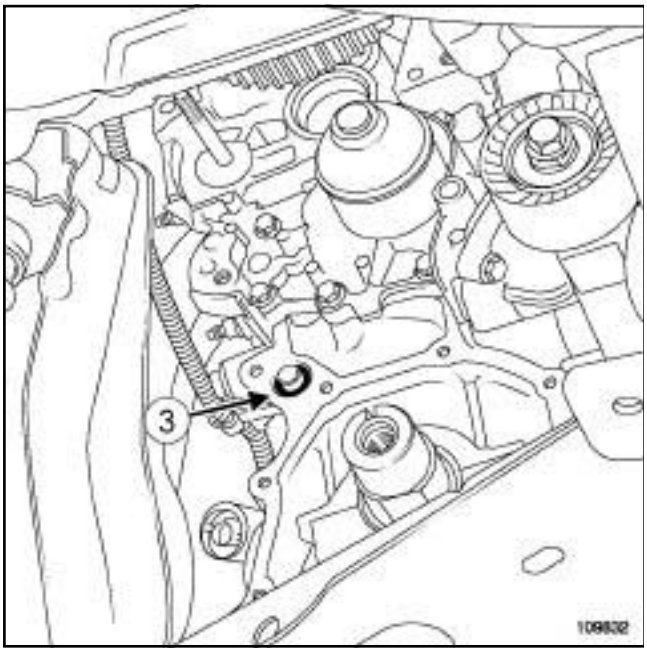
❏ Remove:

- the oil pump strainer,
- the oil pump mounting bolts,
- the oil pump.

D4F, and 740 or 742 or 764

REFITTING

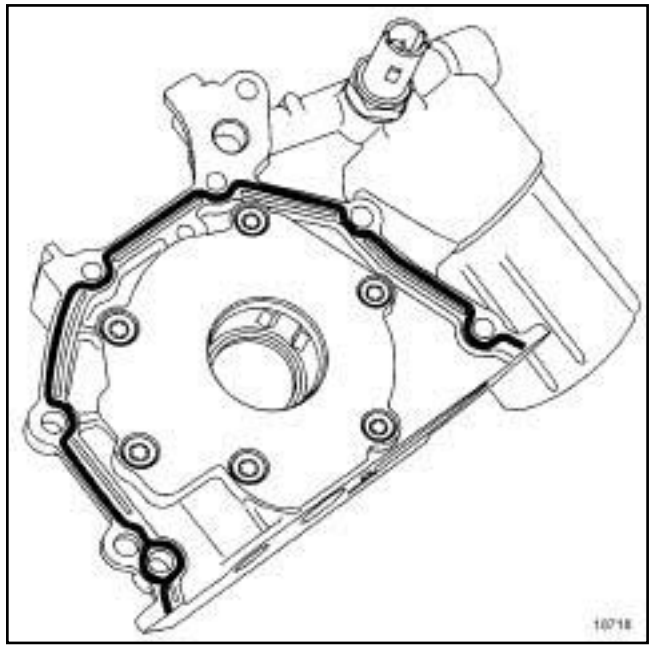
I - REFITTING PREPARATION OPERATION



109832

❑ Always replace:

- the O-ring (**3**) ,
- the crankshaft seal.



18718

❑ Refit the oil pump.

WARNING

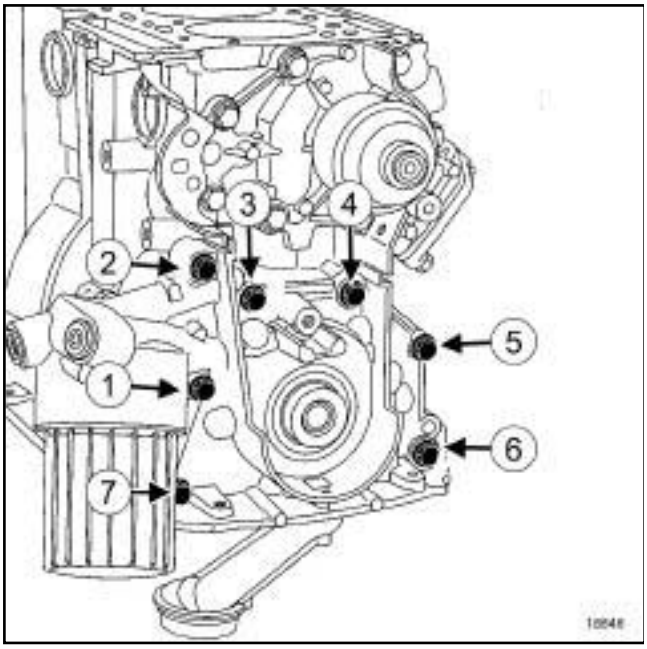
The sealing surfaces must be clean, dry and free from grease (avoid finger marks).

Apply a beading of **SILICONE ADHESIVE SEALANT 77 11 227 484** with a width of **1.3 mm** to seal the oil pump.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the oil pump, aligning the oil pump drive points with the flat surface of the crankshaft.

D4F, and 740 or 742 or 764



18646

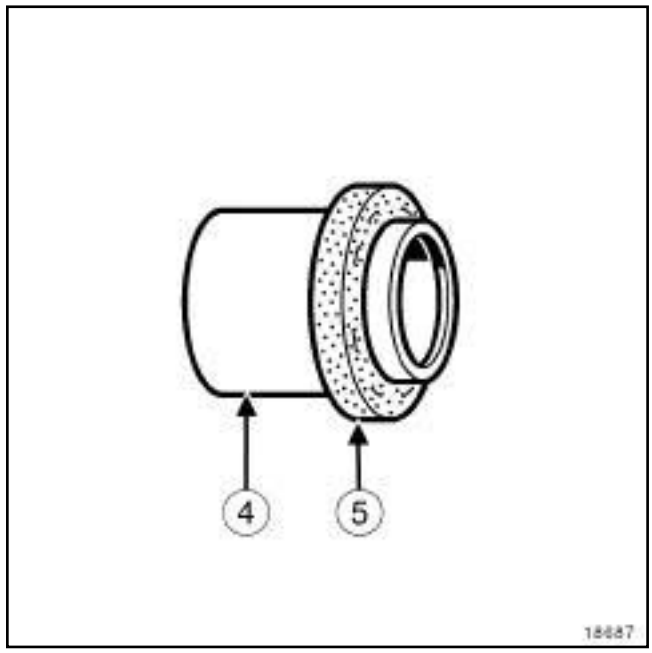
❏ Tighten to torque and in order the **oil pump mounting bolts (9 N.m)**.

❏ Refit the oil pump strainer.

Note:

The oil pump strainer does not have a seal.

III - FINAL OPERATION.

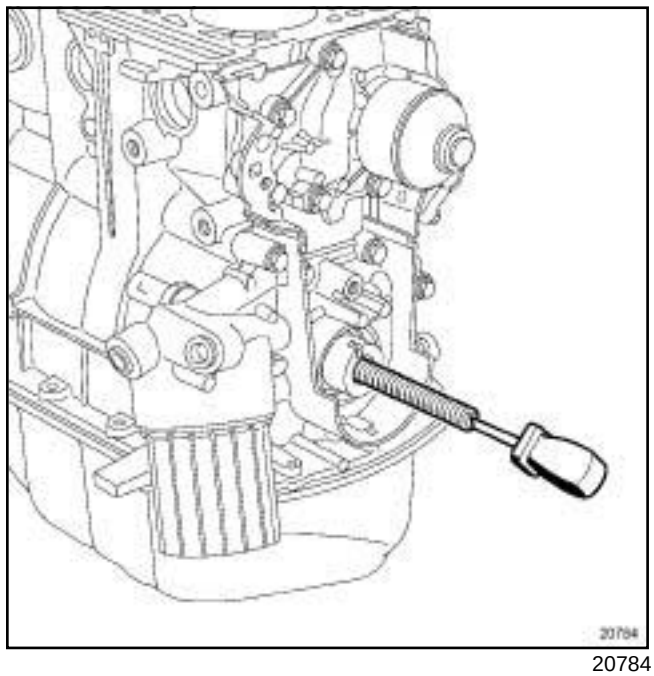


18687

❏ Refit the crankshaft seal.

WARNING

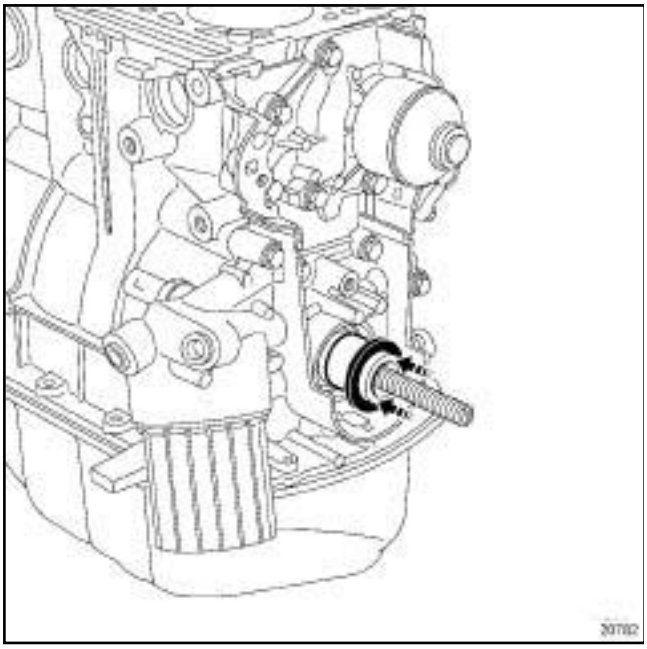
This type of seal is extremely fragile. When handling, it is essential to grip protective piece (**4**) . It is strictly forbidden to touch seal; (**5**) this is to prevent any oil leaks once the oil seal is fitted to the engine.



20784

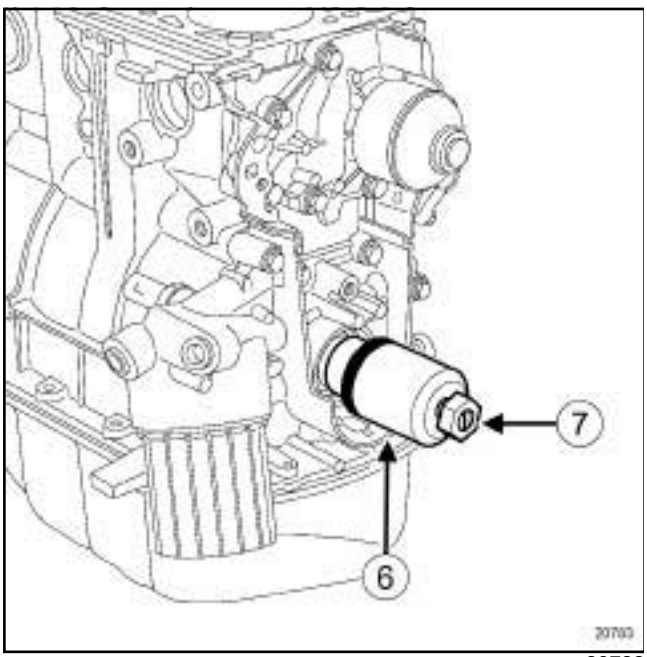
❏ Screw the threaded rod **(Mot. 1626)** into the crankshaft.

D4F, and 740 or 742 or 764



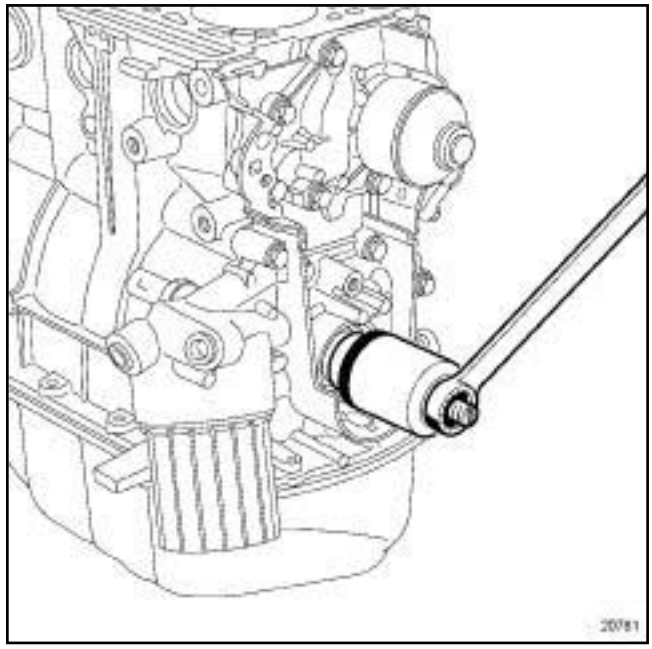
20782

❑ Fit the seal and protector on the crankshaft, taking care not to touch the seal.

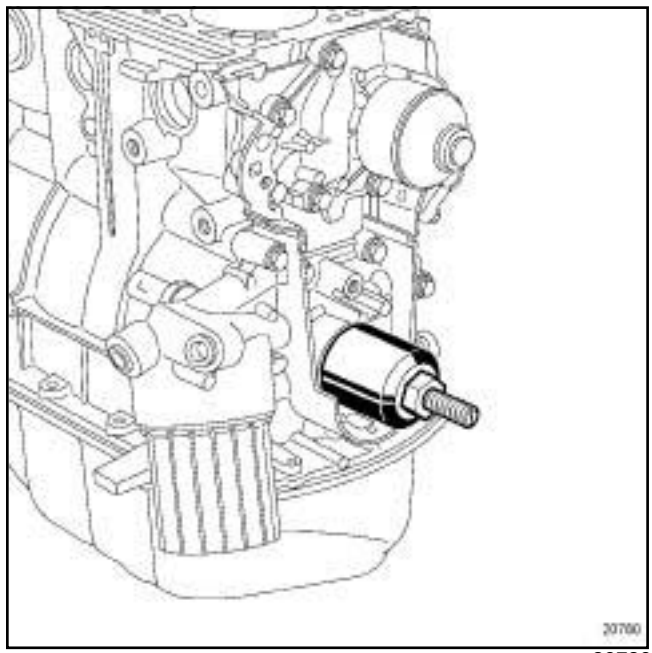


20783

❑ Fit the cover (**6**) and the collar nut (**7**) of the **(Mot. 1626)**.



20781

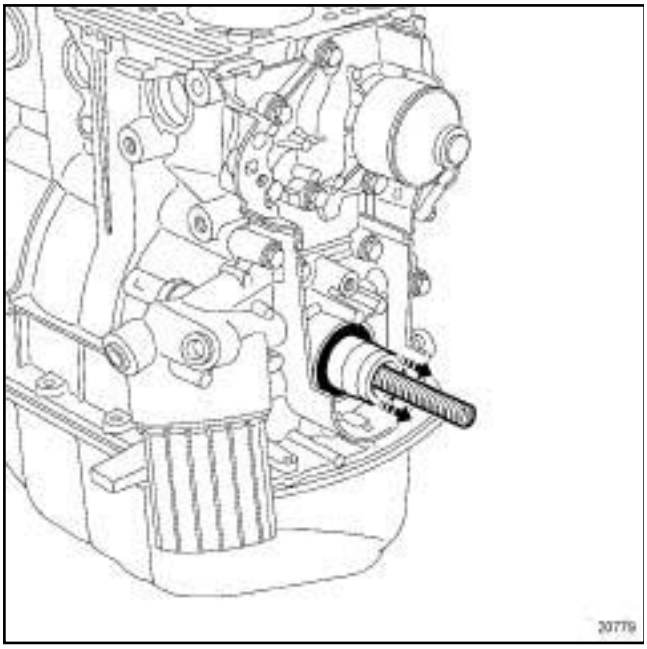


20780

❑ Tighten the collar nut until the cap touches the crankshaft closure panel.

Oil pump: Removal - Refitting

D4F, and 740 or 742 or 764



20779

❑ Remove:

- the nut,
- the cover,
- the guard,
- the threaded rod.

❑ Refit the lower cover (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

❑ Refit the lower engine support **(Mot. 1672)**.

❑ Remove:

- the right-hand suspended mounting support,
- the upper timing cover.

❑ Connect the oil pressure sensor connector.

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the dipstick,
- the engine undertray,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J or K4M

Tightening torques ▽	
oil pump bolts	**25 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

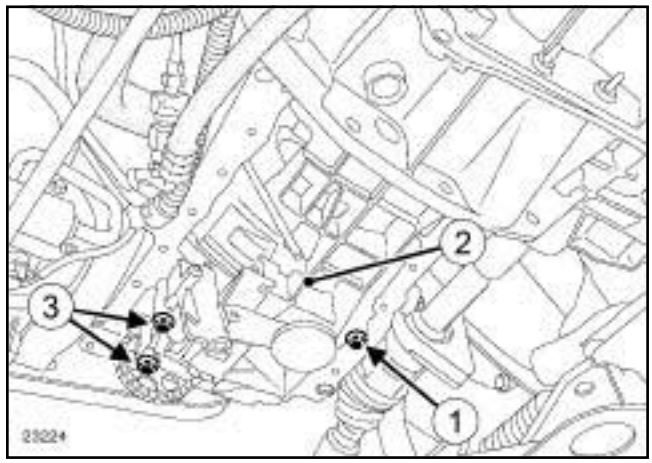
❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove:

- the dipstick,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the engine oil sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

K4J – K4M, and 800 or 801 or 804



23224

❏ Remove:

- the oil splash plate bolt (**1**) ,
- the oil splash plate (**2**) ,
- the oil pump bolts (**3**) .

K4M, and 862

128799

❏ Remove the oil pump bolts (**4**) .

K4J or K4M

❑ Remove the oil pump.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the oil pump,
- the oil pump bolts.

❑ Torque tighten the **oil pump bolts (25 N.m)**.

K4J – K4M, and 800 or 801 or 804

❑ Refit:

- the oil splash plate,
- the oil splash plate bolt.

II - FINAL OPERATION

❑ Refit:

- the engine oil sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the dipstick.

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K9K

Tightening torques ▽	
oil pump bolts	**25 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

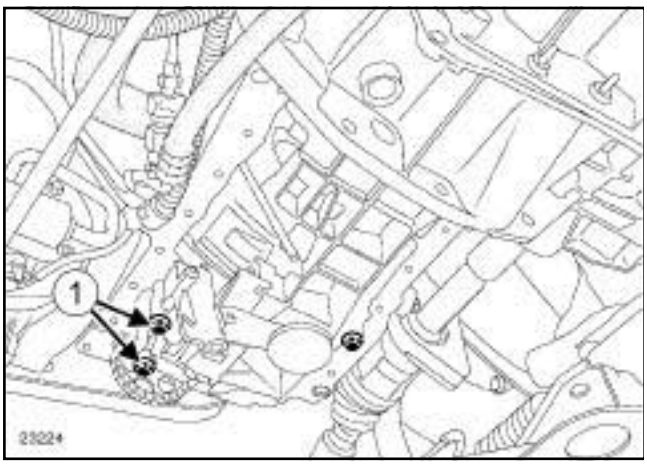
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



23224

❏ Remove:

- the oil pump bolts (**1**) ,
- the oil pump.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil pump.

❏ Tighten the **oil pump bolts (25 Nm)**.

II - FINAL OPERATION.

❏ Refit:

- the sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) ,
- the engine undertray.

❏ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Oil pump: Removal - Refitting

M4R

- The engine and gearbox assembly must be removed to remove/refit the oil pump (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-112**) .
- For the removal and refitting procedure for the oil pump (see) and (see) (Technical Note 6020A, 10A, Engine and peripherals).

F4R

Tightening torques ▽	
oil pump mounting bolts	**24 Nm**
oil splash plate mounting bolts	**24 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

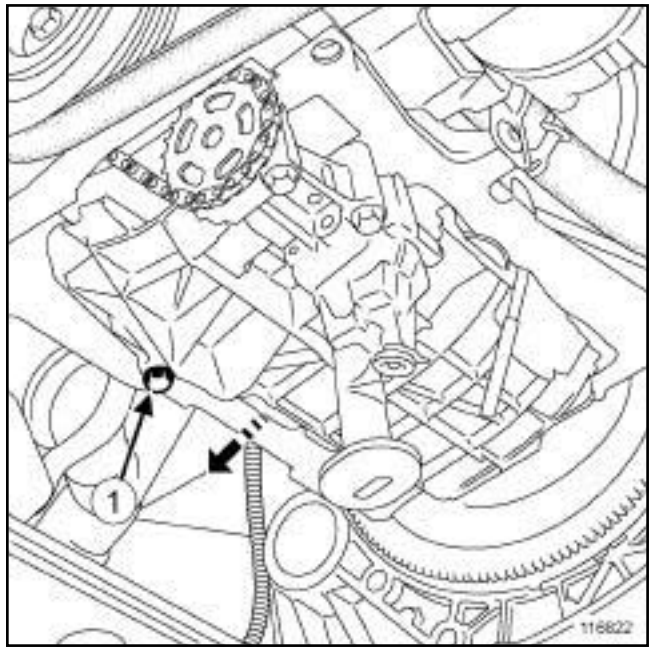
❏ Remove:

- the dipstick,
- the engine undertray.

❏ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove the sump (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

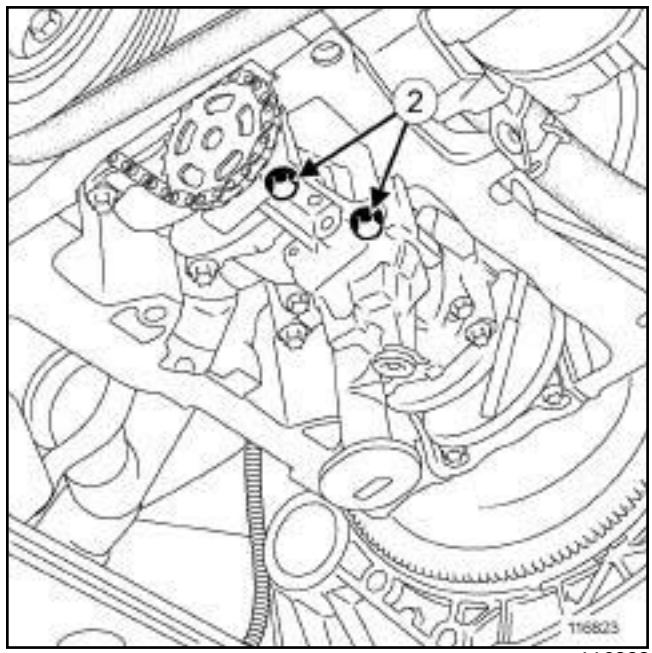
II - OPERATION FOR REMOVAL OF PART CONCERNED



116822

❏ Remove:

- the oil splash plate mounting bolt (**1**) ,
- the oil splash plate by sliding it in the direction of the arrow.



116823

❏ Remove:

- the oil pump mounting bolts (**2**) ,
- the oil pump.

F4R

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the oil pump,
- the oil pump mounting bolts.

❑ Torque tighten the **oil pump mounting bolts (24 Nm)**.

❑ Refit:

- the oil splash plate,
- the oil splash plate mounting bolts.

❑ Torque tighten the **oil splash plate mounting bolts (24 Nm)**.

II - FINAL OPERATION

❑ Refit the sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Start the engine and let it run for **5 minutes** after the engine oil warning light goes off.

❑ Check that there are no leaks between the cylinder block and the sump.

❑ Refit the engine undertray.

❑ Top up the engine oil level using the dipstick.

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1672	Lower engine support.
Mot. 1374	Oil pump seal extractor.
Mot. 1626	Tool for fitting the PTFE crankshaft seal, timing end.

Tightening torques ▽	
oil pump bolts	**10 Nm**
oil pump strainer bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

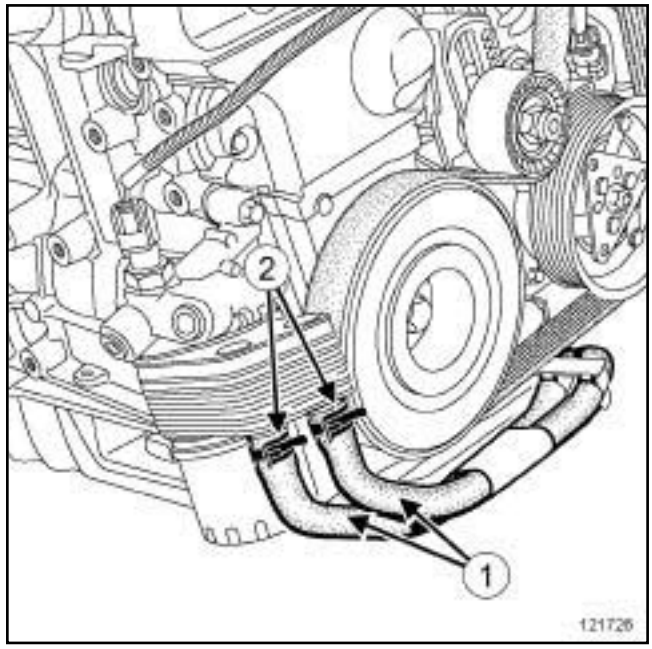
❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Remove:

- the dipstick,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



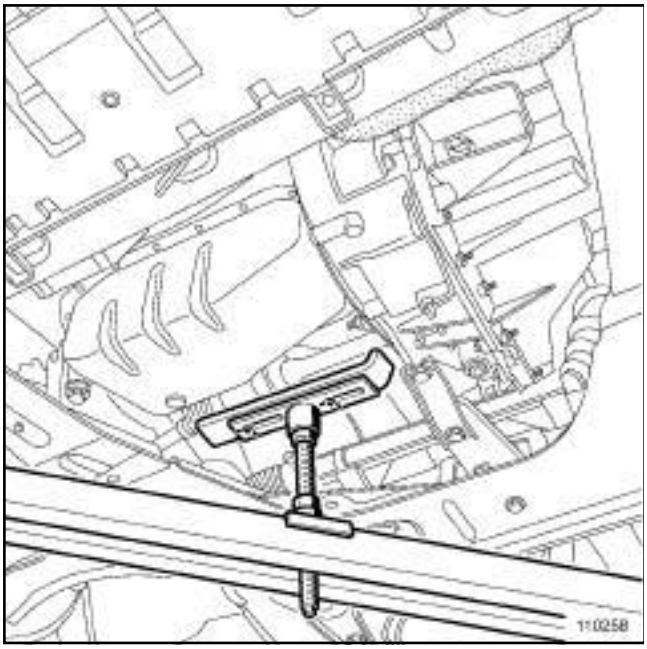
121726

❑ Fit hose clamps **(Ms. 583)** onto the oil-coolant heat exchanger hoses (**1**) .

❑ Release the clips (**2**) using the **(Mot. 1448)**.

❑ Disconnect the oil cooler hoses.

D4F, and 784 or 786



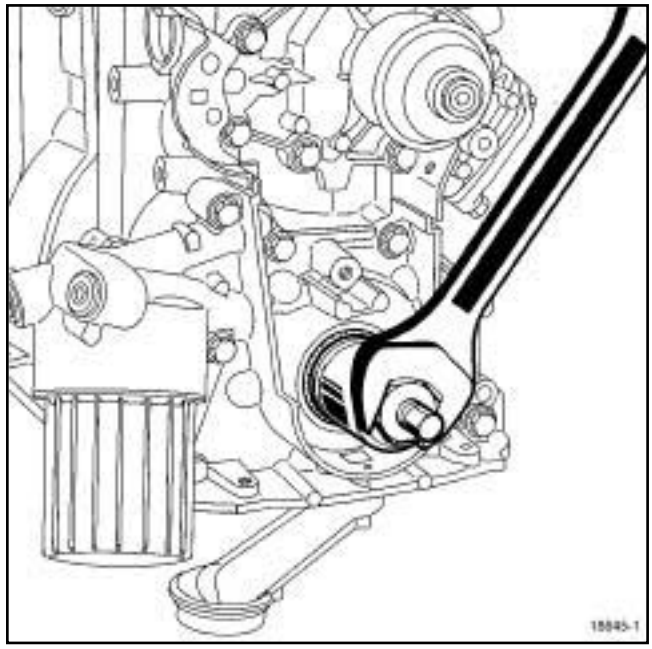
110258

❏ Fit the engine support tool **(Mot. 1672)** using the driveshaft relay bearing as a support.

❏ Remove:

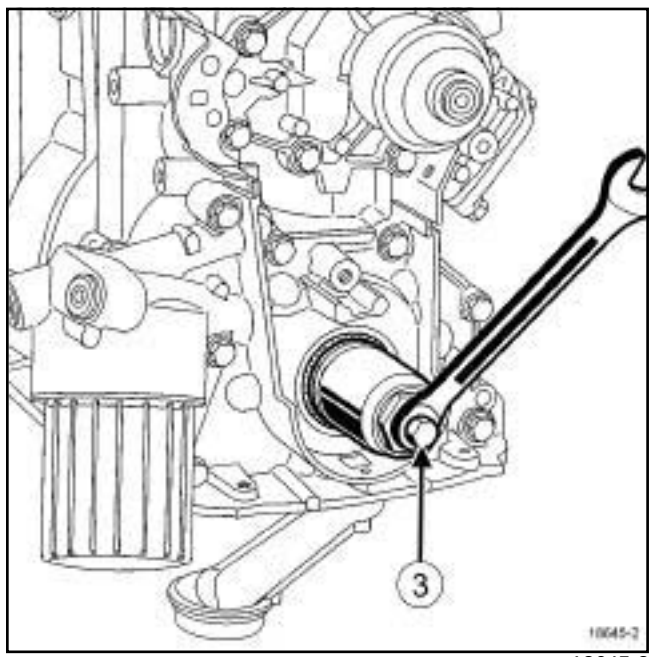
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) .

❏ Disconnect the oil pressure sensor connector.



18645-1

❏ Remove the crankshaft seal by turning tool **(Mot. 1374)**.

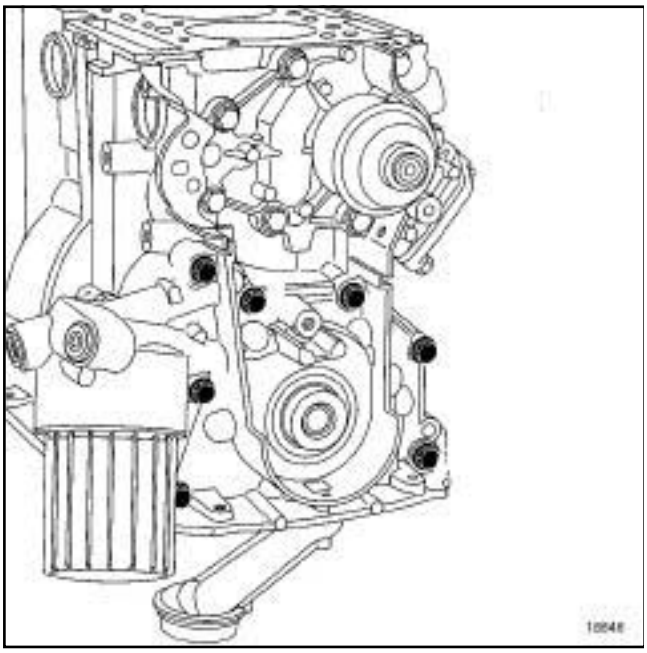


18645-2

❏ Remove the seal by tightening the bolt (**3**) on the **(Mot. 1374)**.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



18646

❑ Remove:

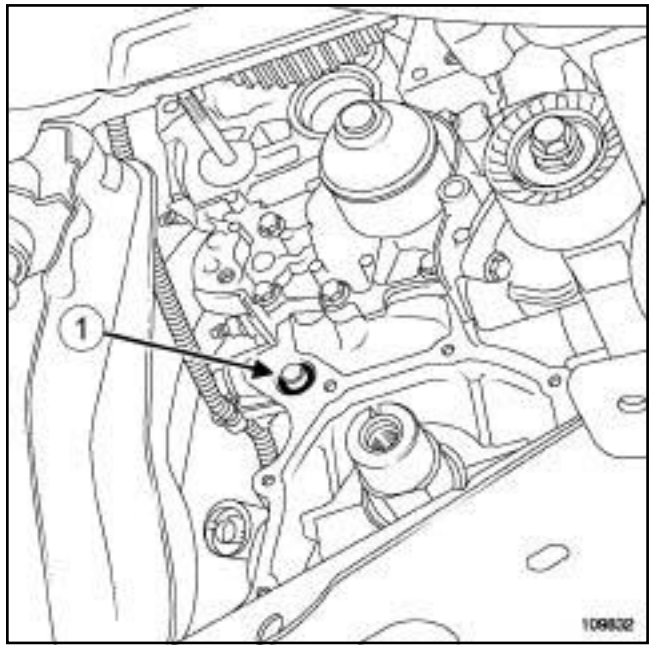
- the oil pump strainer bolts,
- the oil pump strainer,
- the oil pump bolts,
- the oil pump.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the joint faces with **SUPER CLEANING AGENT FOR JOINT FACES** to dissolve any seal still adhering.

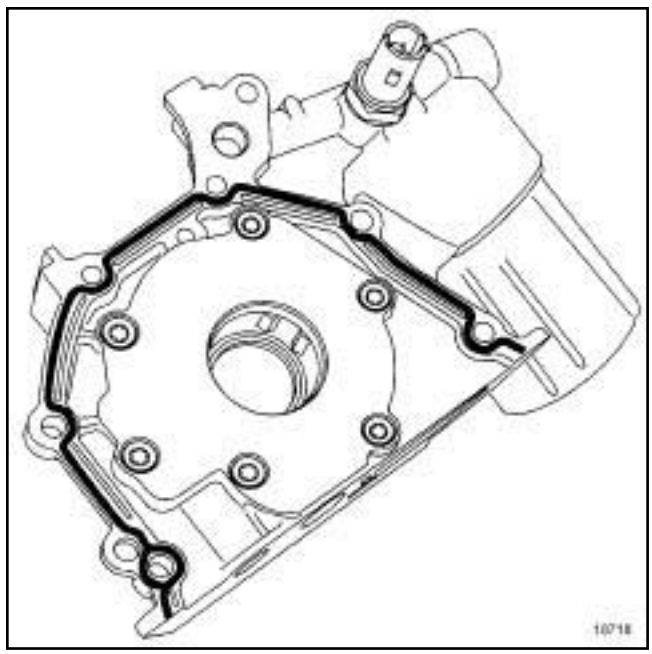
> **WARNING**
> The joint faces must be clean, dry and free from grease (avoid finger marks).



109832

❑ Always replace:

- the O-ring (**1**) ,
- the crankshaft seal.



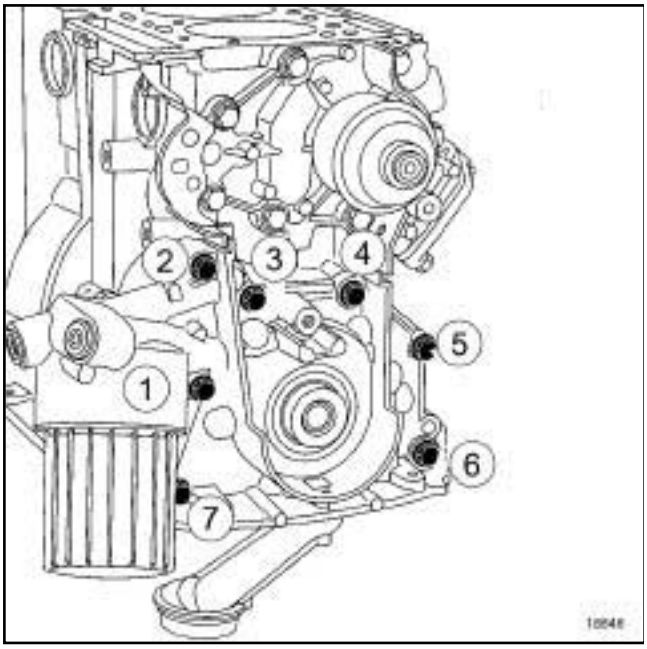
18718

❑ Apply a bead of **MASTIXO** with a width of **1.3 mm** to ensure that the oil pump is sealed.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the oil pump, aligning the oil pump drive points with the flat surfaces of the crankshaft.

D4F, and 784 or 786



18646

❑ Refit the oil pump bolts.

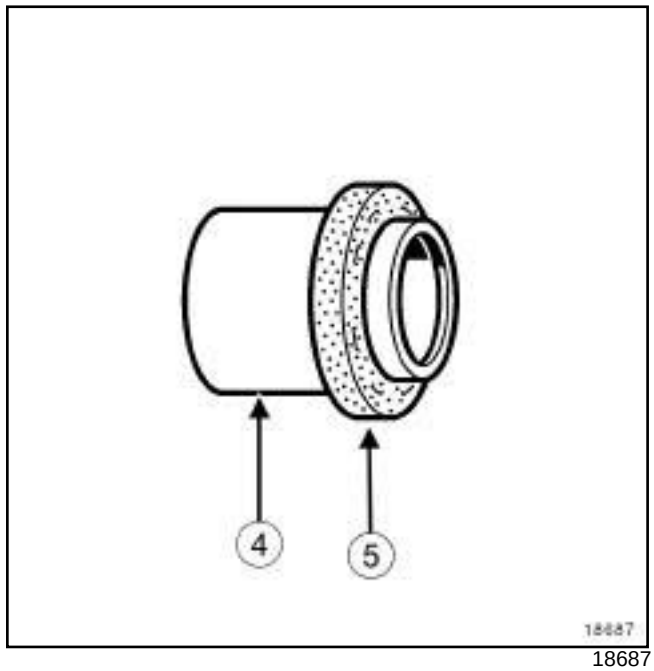
❑ Tighten to torque and in order the **oil pump bolts (10 Nm)**.

❑ Refit:

- the oil pump strainer,
- the oil pump strainer bolts.

❑ Torque tighten the **oil pump strainer bolts (10 Nm)**.

III - FINAL OPERATION.

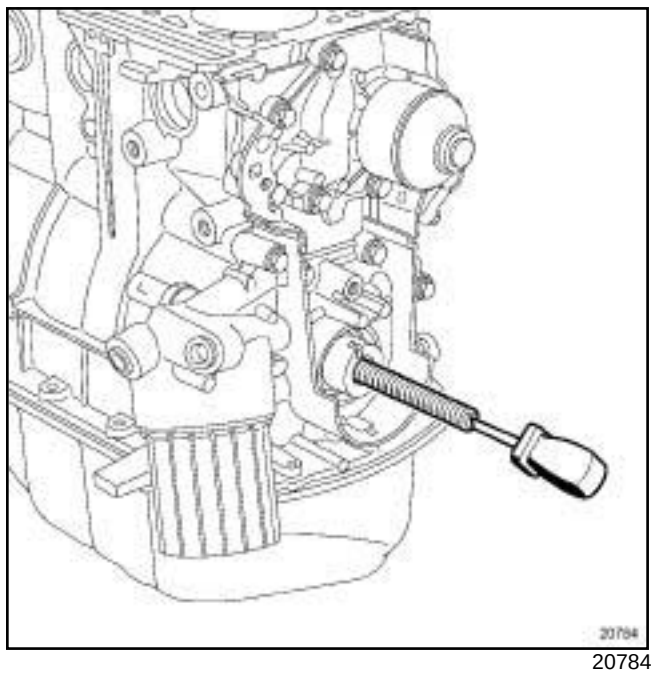


18687

❑ Refit the crankshaft seal.

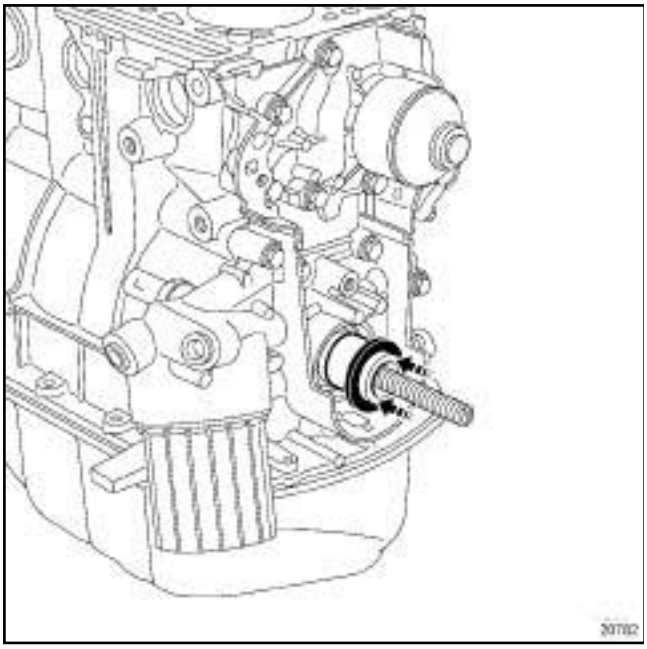
Note:

This type of seal is extremely fragile. When handling, it is essential to hold the protective piece (**4**) . It is strictly forbidden to touch the seal (**5**) ; this is to prevent any oil leaks once the oil seal is fitted to the engine.

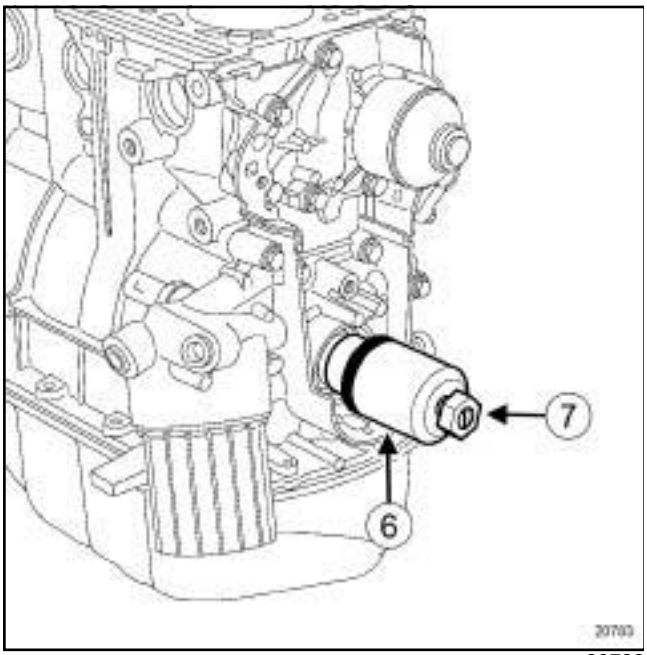

20784

❑ Screw the threaded rod **(Mot. 1626)** into the crankshaft.

D4F, and 784 or 786

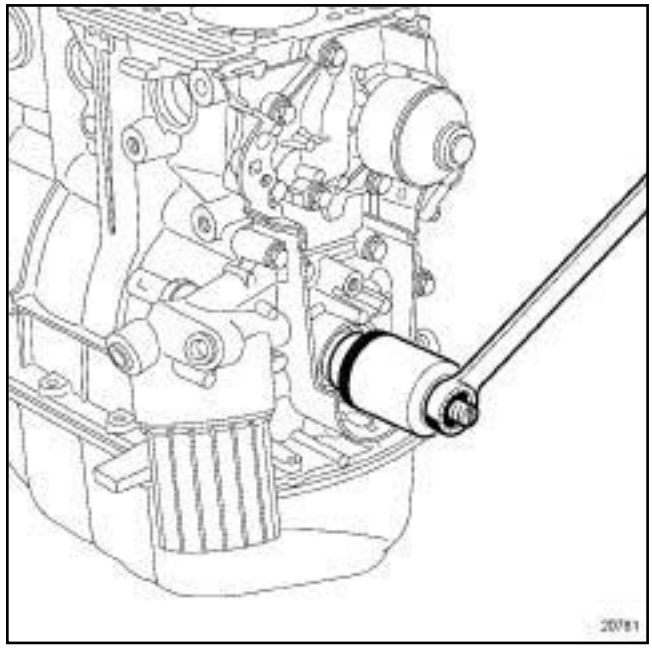

20782

❑ Fit the seal and protector on the crankshaft, taking care not to touch the seal.

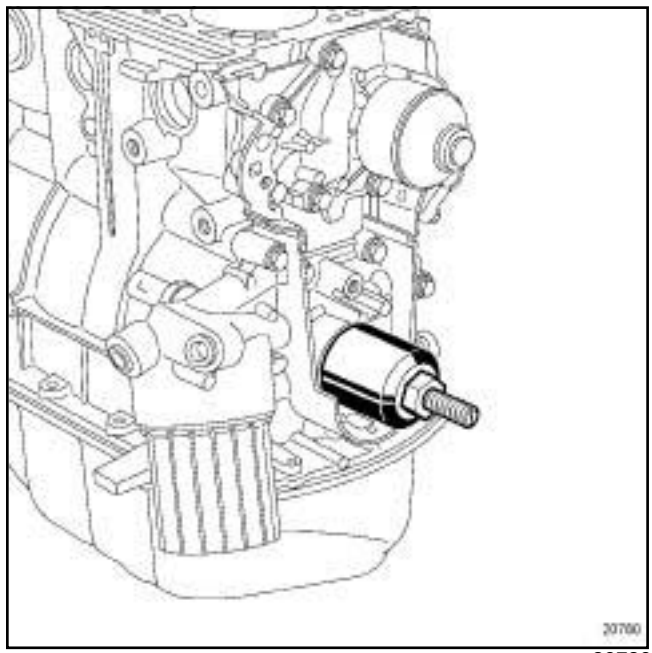


20783

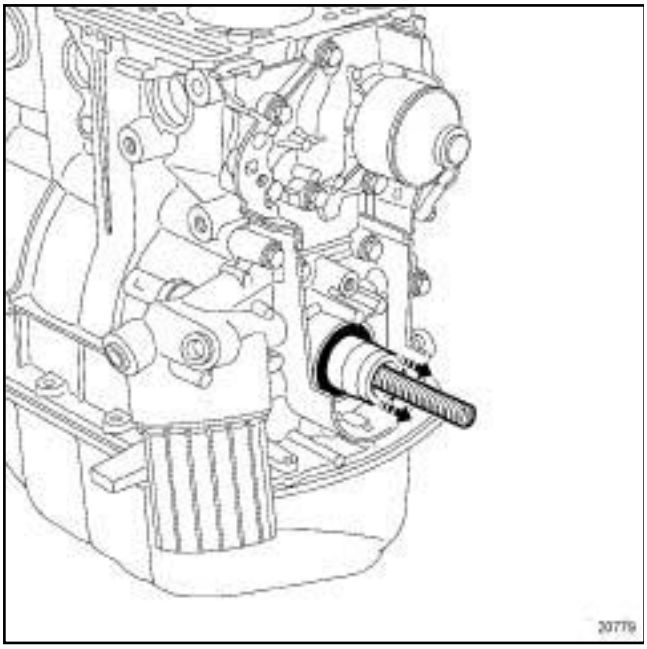
❑ Fit the cover (**6**) and the collar nut (**7**) of the **(Mot. 1626)**.


20781

❑ Tighten the collar nut until the cap touches the crankshaft closure panel.


20780

D4F, and 784 or 786



20779

❏ Remove:

- the nut,
- the cap,
- the guard,
- the threaded rod.

❏ Connect the oil pressure sensor connector.

❏ Refit:

- the sump (see **10A**, **Engine and cylinder block assembly**, **Lower cover: Removal - Refitting**, page **10A-52**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❏ Remove the engine support tool **(Mot. 1672)**.

❏ Connect the oil-coolant heat exchanger hoses.

❏ Refit the clips using the **(Mot. 1448)**.

❏ Remove the hose clamps **(Ms. 583)**.

❏ Refit:

- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the dipstick.

❏ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit the engine undertray.

❏ Connect the battery (see) (MR 392, 80A, Battery).

D4F, and 740 or 742 or 764

Tightening torques ▽	
multifunction support mounting bolts	**50 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

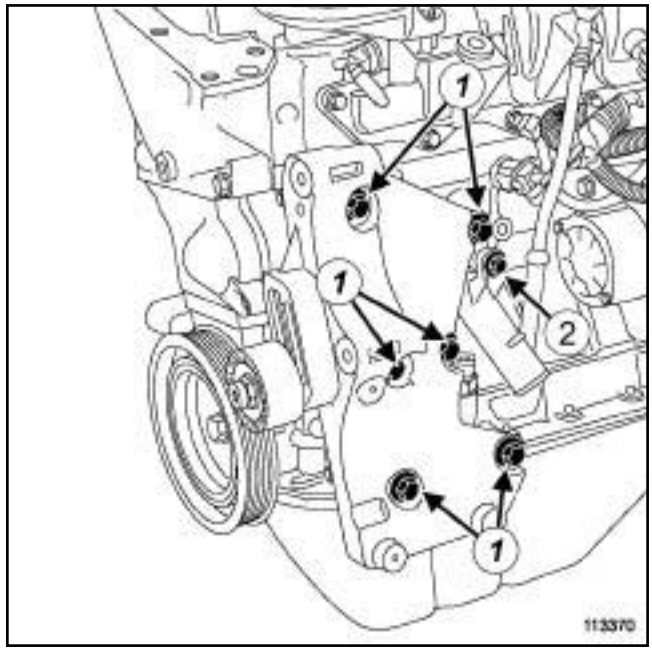
❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .

AIR CONDITIONING

❏ Remove the air conditioning compressor (see **Compressor: Removal - Refitting**) (MR 392, 62A, Air conditioning).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113370

❏ Remove:

- the multifunction support mounting bolts (**1**) ,
- the coolant pump inlet pipe mounting bolt (**2**) ,
- the multifunction support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the multifunction support.

❏ Tighten to torque the **multifunction support mounting bolts (50 N.m)**.

❏ Refit the water pump inlet pipe mounting bolt.

II - FINAL OPERATION.

AIR CONDITIONING

❏ Refit the air conditioning compressor (see **Compressor: Removal - Refitting**) (MR 392, 62A, Air conditioning).

❏ Refit:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,

D4F, and 740 or 742 or 764

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
multifunction support mounting bolts	**44 Nm**
bolt mounting the multi-function support on the sump	**21 Nm**
air conditioning compressor bolts	**25 Nm**

REMOVAL

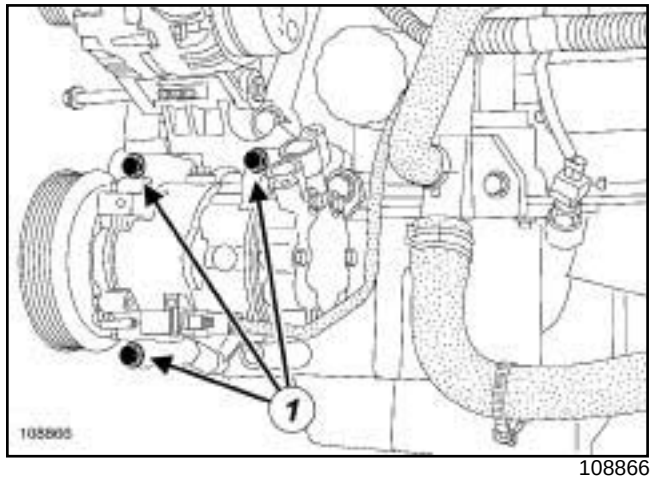
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .



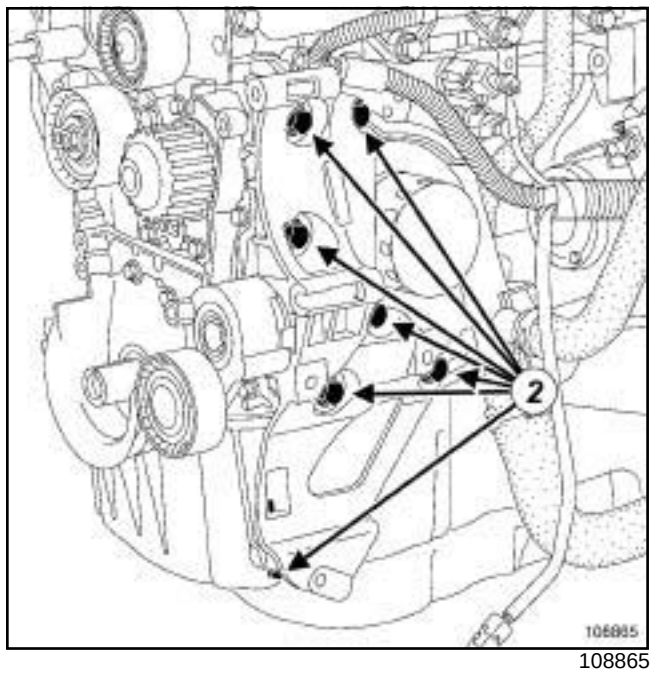
108866

❏ Remove the mounting bolts (**1**) from the air conditioning compressor.

❏ Attach the air conditioning compressor to the cooling radiator cross member.

❏ Unclip the alternator wiring harness from the multifunction support.

II - REMOVAL OF PART CONCERNED



108865

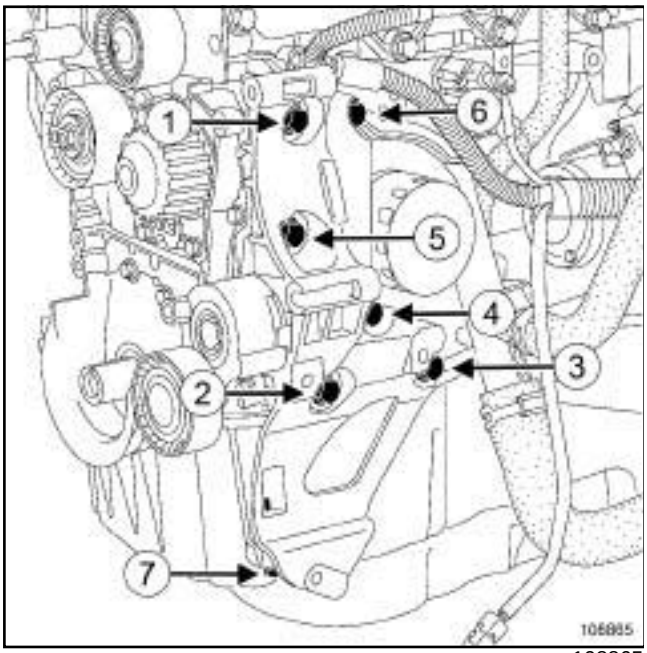
❏ Remove:

- the multifunction support mounting bolts (**2**) ,
- the multifunction support.

K4J or K4M, and AIR CONDITIONING

REFITTING

I - REFITTING PART CONCERNED



108865

❑ Torque tighten and in order:

- the **multifunction support mounting bolts (44 Nm)**,
- the **bolt mounting the multifunction support on the sump (21 Nm)**.

II - FINAL OPERATION.

❑ Clip the alternator wiring harness onto the multifunction support.

❑ Detach the air conditioning compressor from the cooling radiator cross member.

❑ Refit the air conditioning compressor mounting bolts.

❑ Torque tighten the **air conditioning compressor bolts (25 Nm)**.

❑ Refit:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J or K4M, and STANDARD HEATING

Tightening torques ▽	
multifunction support mounting bolts	**44 Nm**

REMOVAL

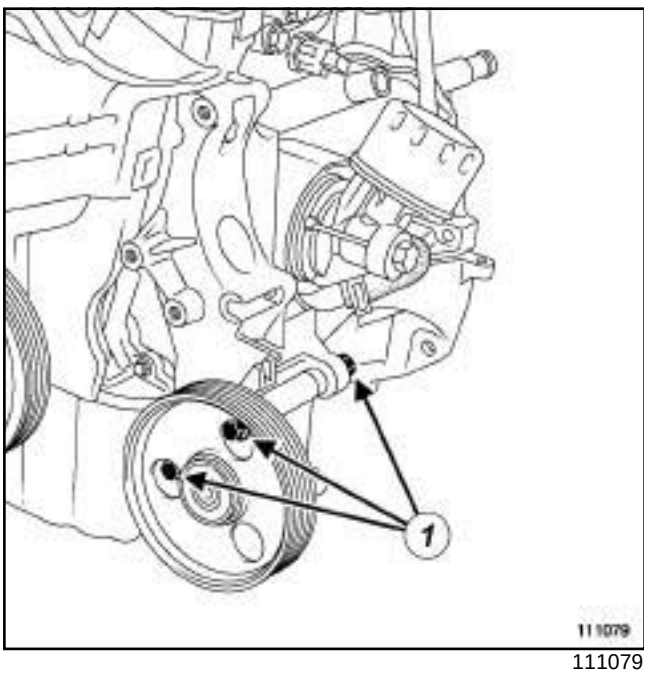
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .



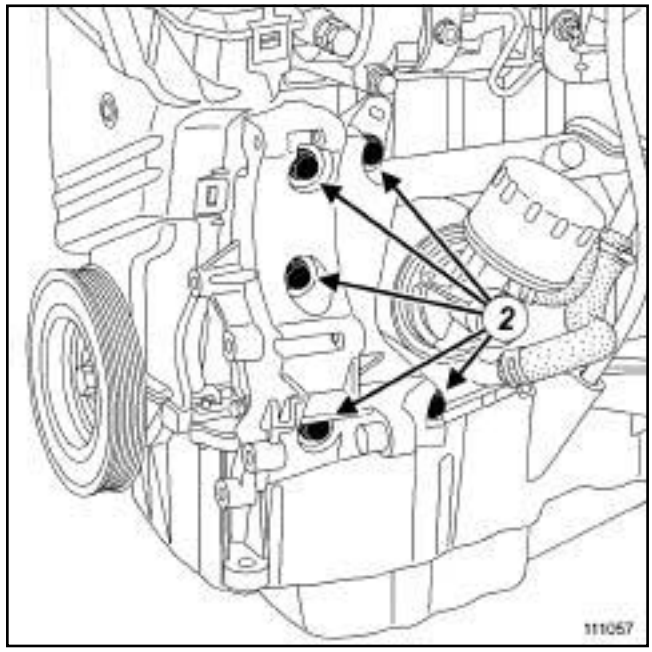
111079

❏ Remove:

- the idler pulley support mounting bolts (**1**) ,
- the idler pulley support.

❏ Unclip the alternator wiring harness from the multifunction support.

II - REMOVAL OF PART CONCERNED



111057

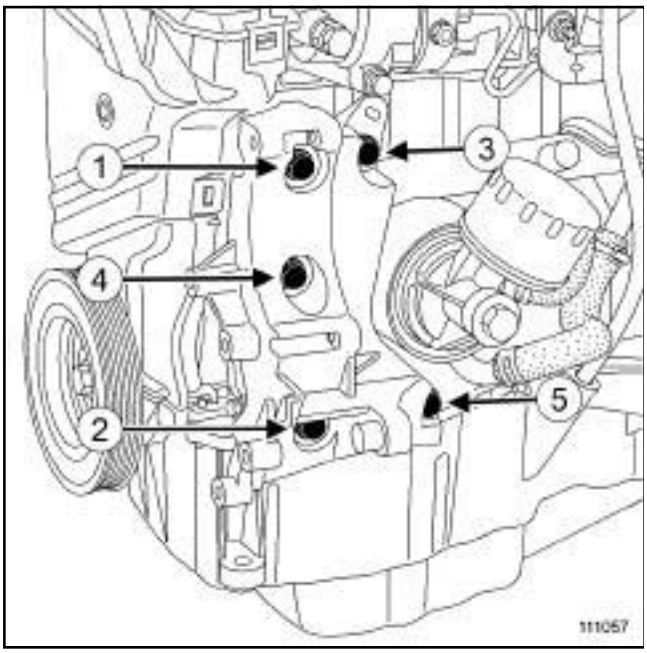
❏ Remove:

- the multifunction support mounting bolts (**2**) ,
- the multifunction support.

K4J or K4M, and STANDARD HEATING

REFITTING

I - REFITTING PART CONCERNED



111057

❑ Refit:

- the multifunction support,
- the multifunction support mounting bolts.

❑ Tighten to torque and in order the **multifunction support mounting bolts (44 Nm)**.

II - FINAL OPERATION.

❑ Clip the alternator wiring harness onto the multifunction support.

❑ Refit:

- the free pulley support,
- the free pulley support mounting bolts,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
bolts mounting the multifunction support on the cylinder block	**44 Nm**
bolt mounting the multifunction support on the sump	**25 Nm**
air conditioning compressor bolts	**21 Nm**

REMOVAL

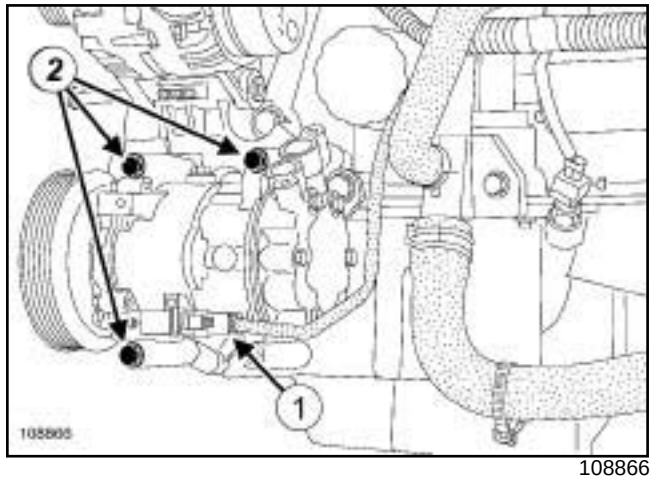
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .



108866

❏ Disconnect the clutch connector (**1**) from the air conditioning compressor.

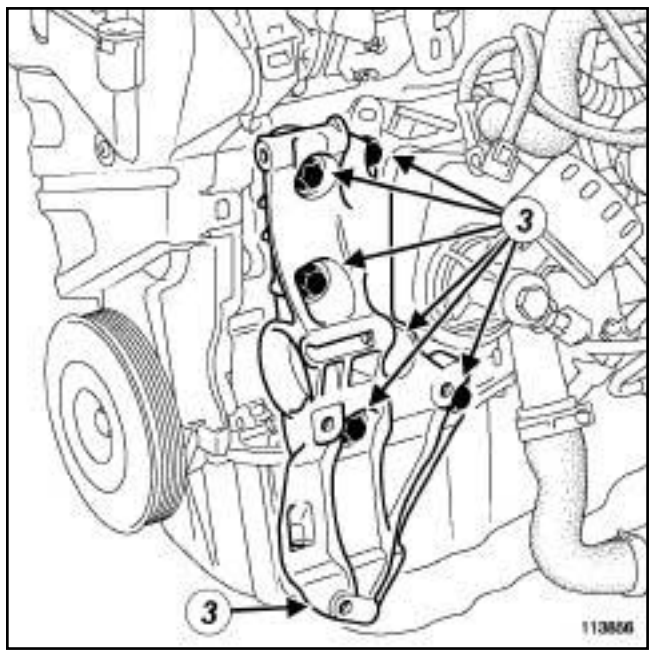
❏ Remove the air conditioning compressor bolts (**2**) .

❏ Move the air conditioning compressor aside.

Note:

This operation does not require the AC system to be drained.

II - OPERATION FOR REMOVAL OF PART CONCERNED



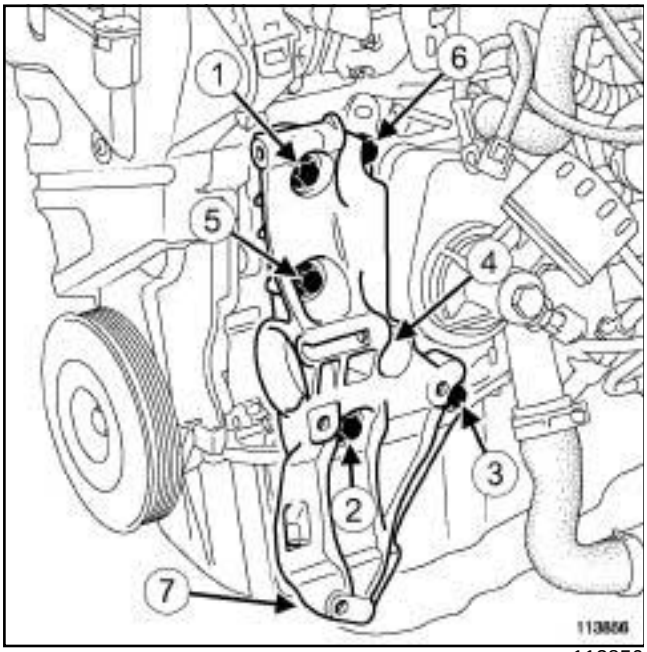
113856

❏ Remove:

- the multifunction support bolts (**3**) ,
- the multifunction support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113856

❏ Refit the multifunction support.

❏ Fit the multifunction support bolts on the cylinder block without tightening.

❏ Torque tighten and in order:

- the **bolts mounting the multifunction support on the cylinder block (44 Nm)**,
- the **bolt mounting the multifunction support on the sump (25 Nm)**.

II - FINAL OPERATION.

❏ Refit the air conditioning compressor bolts.

❏ Torque tighten the **air conditioning compressor bolts (21 Nm)**.

❏ Connect the air conditioning compressor clutch connector.

❏ Refit:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the engine cover,

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
multifunction support mounting bolts	**44 Nm**
free pulley support mounting bolts	**21 Nm**

REMOVAL

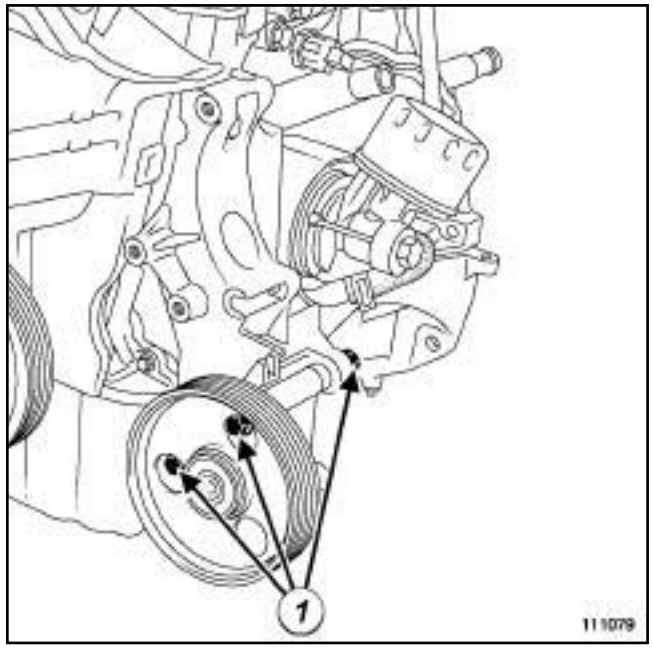
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .

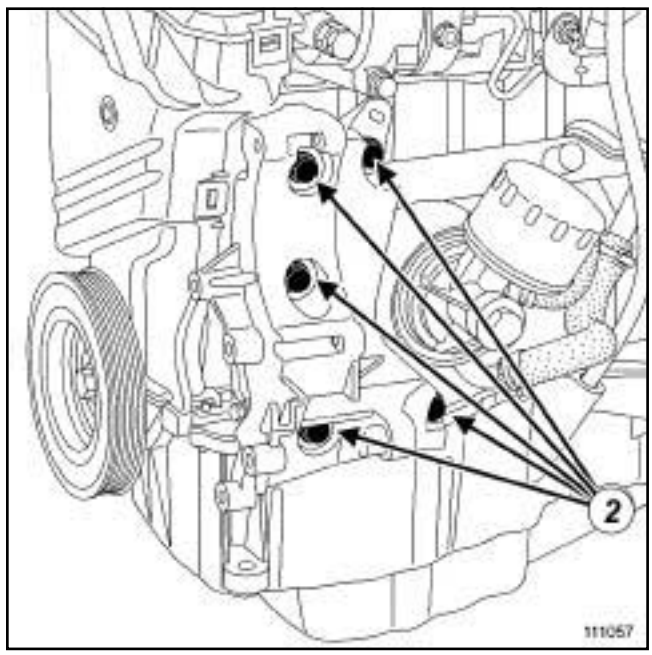


111079

❏ Remove:

- the idler pulley support mounting bolts (**1**) ,
- the idler pulley support.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111057

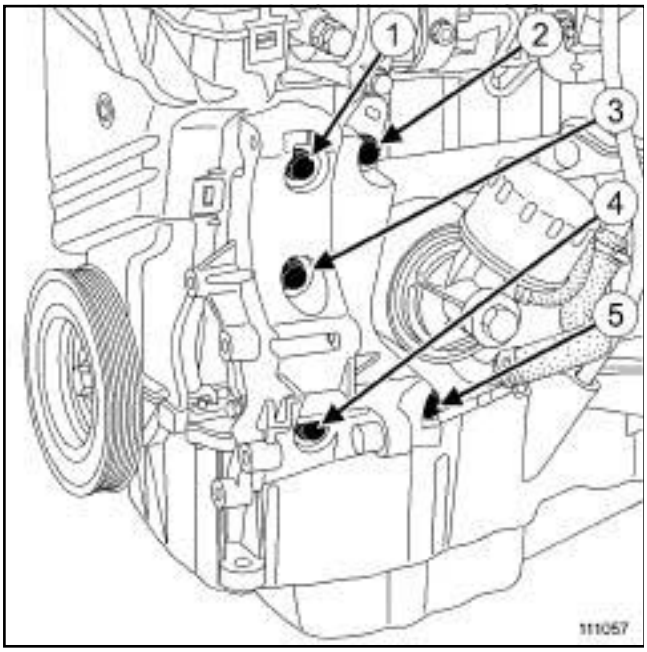
❏ Remove:

- the multifunction support mounting bolts (**2**) ,
- the multifunction support.

K9K, and STANDARD HEATING

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



111057

❑ Refit the multifunction support, finger tightening the bolts.

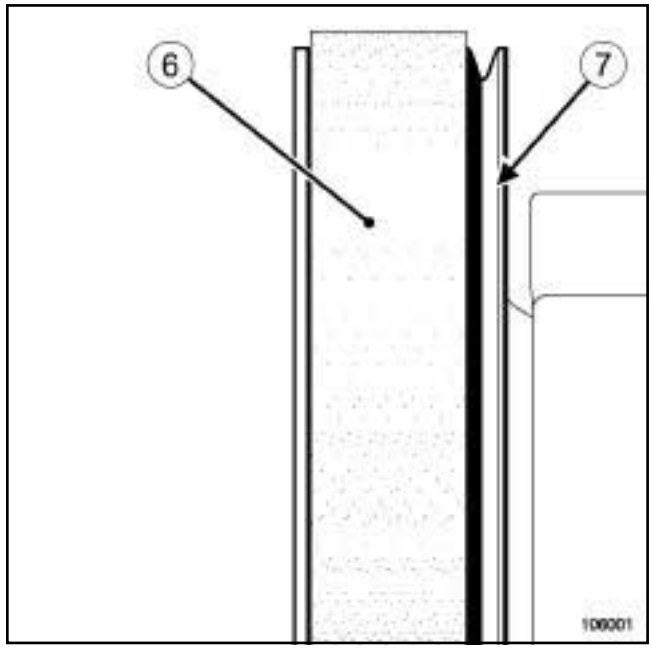
❑ Tighten to torque and in order the **multifunction support mounting bolts (44 Nm)**.

II - FINAL OPERATION.

❑ Refit:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the free pulley support,
- the free pulley support mounting bolts.

❑ Torque tighten the **free pulley support mounting bolts (21 Nm)**.



106001

(**6**) accessories belt

(**7**) free wheel pulley

❑

Note:

The accessories belt (**6**) must be fitted on the free wheel pulley (**7**) as shown in the diagram above.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
multifunction support mounting bolts	**50 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

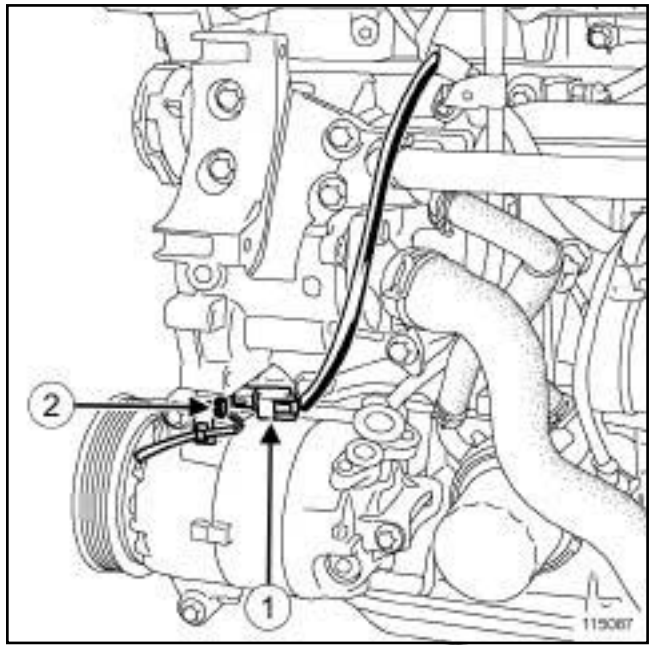
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove:

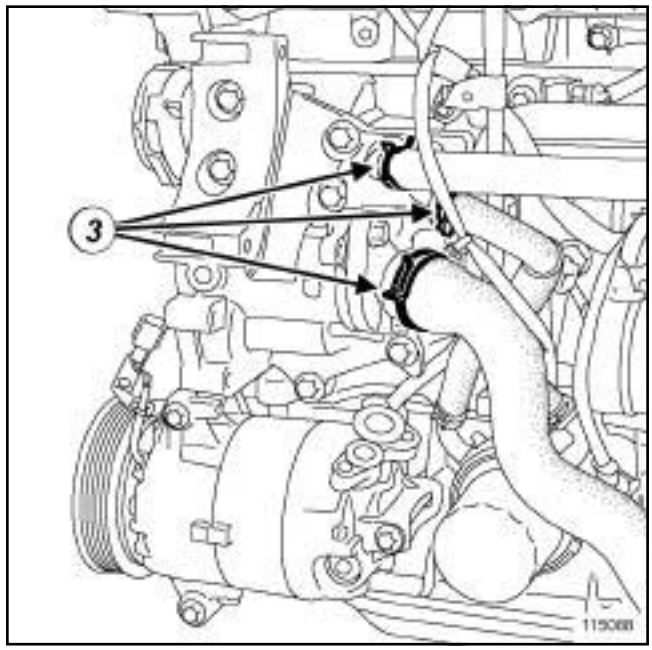
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the coolant pump (see **19A**, **Cooling**, **Coolant pump: Removal - Refitting**, page **19A-41**) .



115087

❑ Disconnect the connector (**1**) from the air conditioning compressor.

❑ Remove the bolt (**2**) mounting the air conditioning connector mounting.

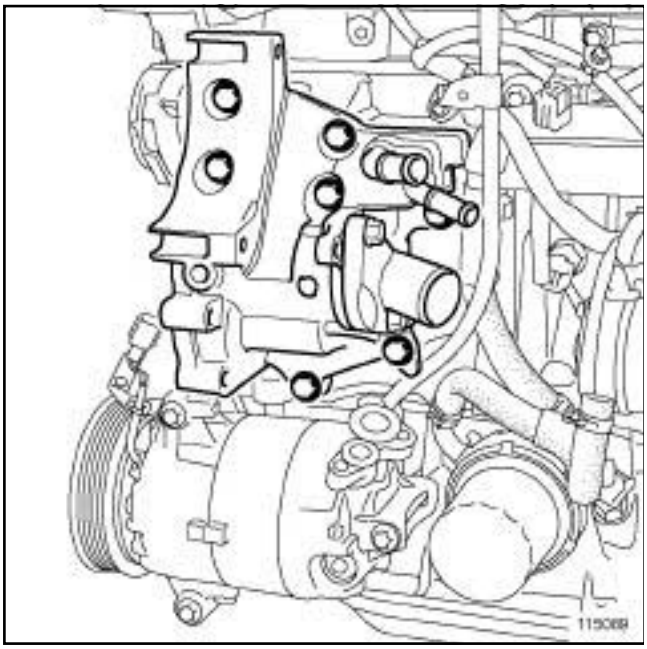


115088

❑ Disconnect the cooling hoses (**3**) using the **(Mot. 1448)**.

M4R

II - REMOVAL OF PART CONCERNED



115089

❑ Remove:

- the multifunction support mounting bolts,
- the multifunction support,
- the multifunction support seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ The multifunction support seal must be replaced.

II - REFITTING PART CONCERNED

❑ Refit the multifunction support.

❑ Finger tighten the multifunction support mounting bolts until contact.

❑ Tighten to torque the **multifunction support mounting bolts (50 Nm)**.

III - FINAL OPERATION.

❑ Connect the cooling hoses using the **(Mot. 1448)**.

❑ Refit the bolt securing the air conditioning connector mounting.

❑ Connect the air conditioning compressor connector.

❑ Refit:

- the coolant pump (see **19A**, **Cooling**, **Coolant pump: Removal - Refitting**, page **19A-41**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❑ Connect the battery (see) .

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 80A, Battery).

F4R

Tightening torques ▽	
multifunction support mounting bolts	**44 N.m**
air conditioning compressor mounting bolts	**25 N.m**

REMOVAL

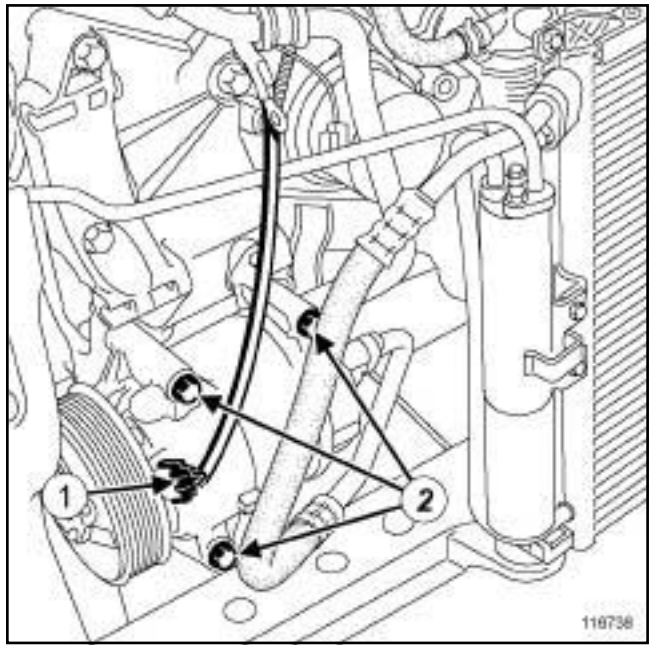
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .



116738

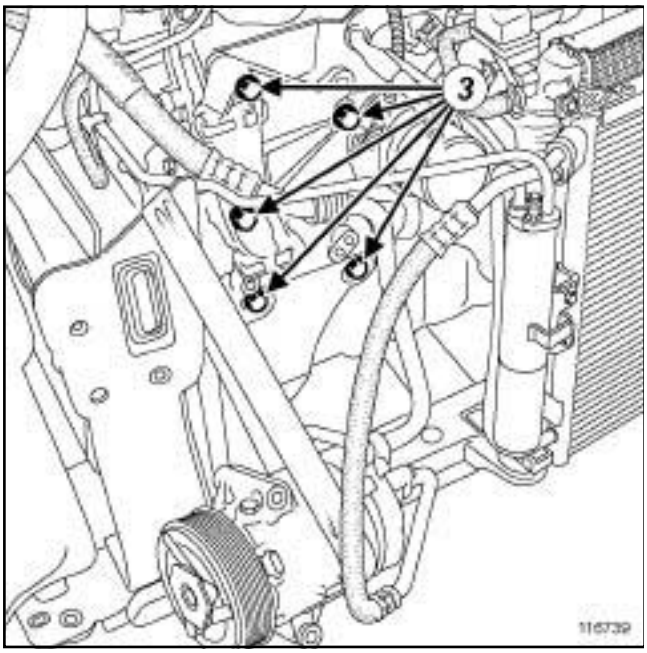
❏ Disconnect the connector (**1**) from the air conditioning compressor.

❏ Remove the mounting bolts (**2**) from the air conditioning compressor.

❏ Attach the air conditioning compressor to prevent the air conditioning ducts from being disturbed in any way.

F4R

II - OPERATION FOR PREPARATION OF PART CONCERNED



116739

❏ Remove:

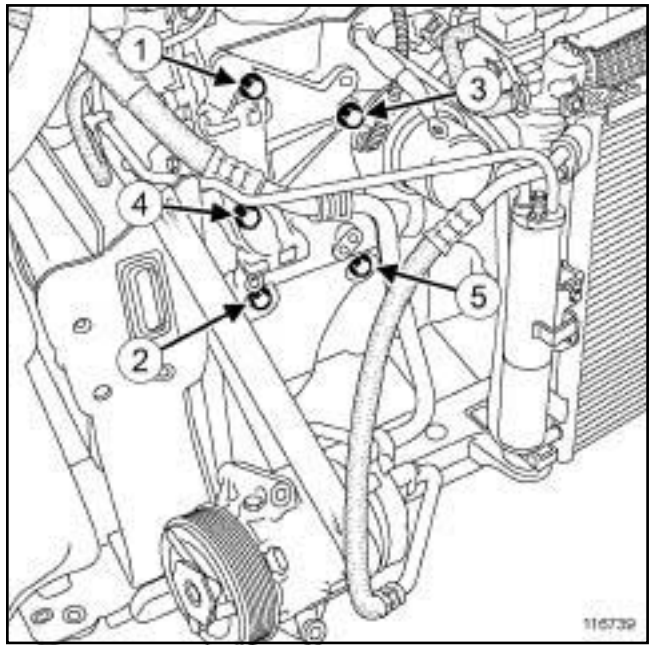
- the multifunction support mounting bolts (**3**) ,
- the multifunction support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the multifunction support,
- the multifunction support bolts.



116739

❏ Tighten to torque and in order the **multifunction support mounting bolts (44 N.m)**.

II - FINAL OPERATION

❏ Fit the air conditioning compressor.

❏ Refit the air conditioning compressor mounting bolts.

❏ Tighten to torque the **air conditioning compressor mounting bolts (25 N.m)**.

❏ Refit:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Tightening torques ▽	
multifunction support bolts	**50 Nm**
coolant pump inlet pipe bolts	**10 Nm**
air conditioning compressor bolts	**25 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Remove:

- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .

AIR CONDITIONING

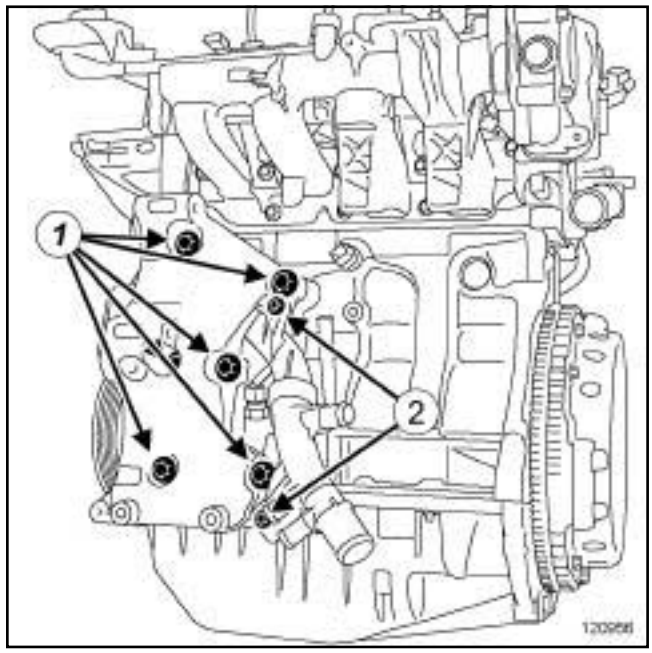
❑ Disconnect the air conditioning compressor clutch connector.

❑ Remove the air conditioning compressor bolts.

❑ Detach the air conditioning pipe from the body between the compressor and the expansion valve.

❑ Position the air conditioning compressor on the radiator mounting cross member.

II - OPERATION FOR REMOVAL OF PART CONCERNED



120956

❑ Remove:

- the bolts (**1**) from the coolant pump inlet pipe,
- the multifunction support bolts (**2**) ,
- the multifunction support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the multifunction support,
- the multifunction support bolts,
- the coolant pump inlet pipe bolts.

❑ Torque tighten:

- the **multifunction support bolts (50 Nm)**,
- the **coolant pump inlet pipe bolts (10 Nm)**.

D4F, and 784 or 786

II - FINAL OPERATION.

AIR CONDITIONING

- ❏ Refit the air conditioning compressor.
- ❏ Attach the air conditioning pipe to the body between the compressor and the expansion valve.
- ❏ Refit the air conditioning compressor bolts.
- ❏ Torque tighten the **air conditioning compressor bolts (25 Nm)**.
- ❏ Connect the air conditioning compressor clutch connector.

- ❏ Refit:
  - the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
  - the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
  - the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
  - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
  - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
  - the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
  - the engine undertray.
- ❏ Connect the battery (see) (MR 392, 80A, Battery).

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Ms. 583	Pipe clamps.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
left-hand suspended engine mounting shaft nut	**62 N.m**
earth nut on the shock absorber cup height adjuster	**8 N.m**
nut of each earth cable on the side member	**8 N.m**
nut of the supply cable on the battery protection fuse box	**6 N.m**
nut of the fuse board supply cable	**8 N.m**
bolt of the connecting pipe between the « expansion valve - compressor »	**8 N.m**
air filter unit air outlet pipe clip	**5.5 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit air inlet pipe,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

AIR CONDITIONING

❏ Drain the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

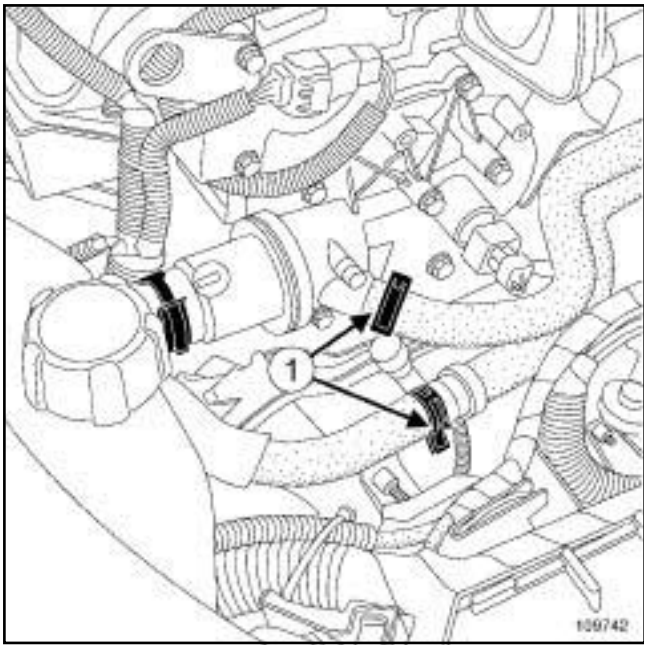
❏ Remove:

- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

❏ Loosen the clip of the air filter unit air outlet pipe on the throttle valve.

❏ Disconnect the air filter unit air outlet pipe from the throttle valve.

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

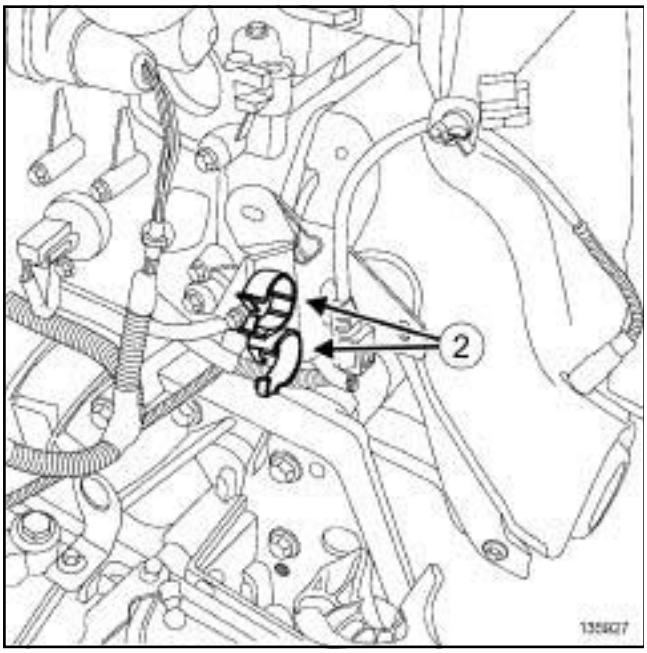


109742

❏ Separate the clip on each heater matrix cooling hose (**1**) using the tool **(Mot. 1448)**.

❏ Disconnect:

- the heater matrix cooling hose from the water chamber,
- the heater matrix cooling hose from the cylinder block cooling hose.



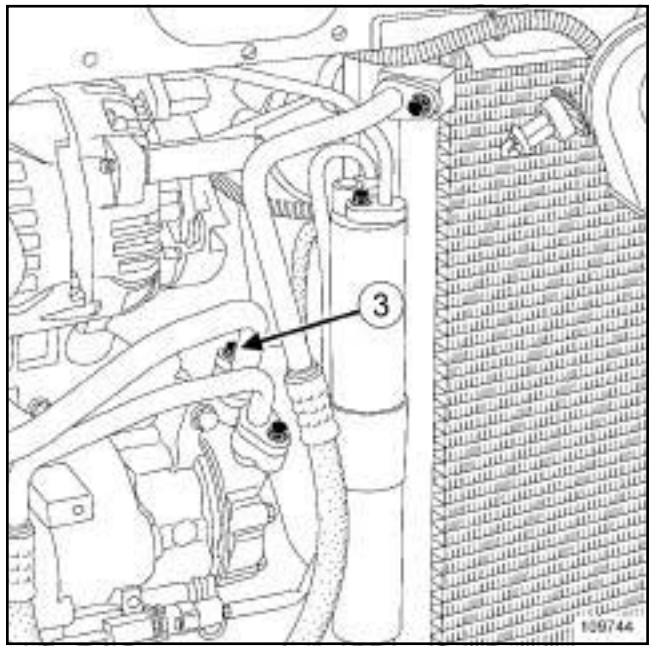
135927

❏ Unclip the heater matrix cooling hoses at (**2**) .

❏ Remove:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the exhaust downpipe nuts,
- the seal between the catalytic converter and the exhaust downpipe hose.

AIR CONDITIONING or CLIMATE CONTROL



109744

❏ Remove the bolt (**3**) from the « expansion valve - compressor » connecting pipe on the compressor.

WARNING

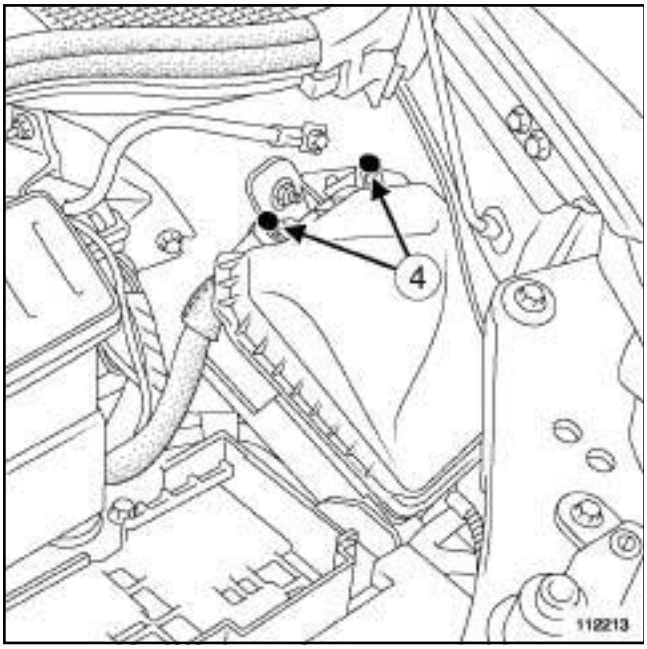
To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

❏ Disconnect the « expansion valve - compressor » connecting pipe from the compressor.

❏ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the « condenser - cooling radiator - engine cooling fan assembly » (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) .

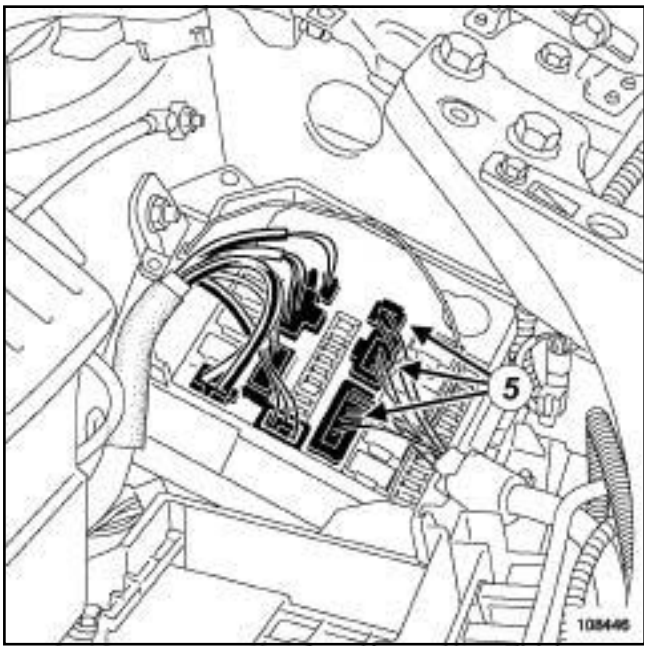
K4M, and JH3 – K4J, and JH3 – K4M, and TL4



112213

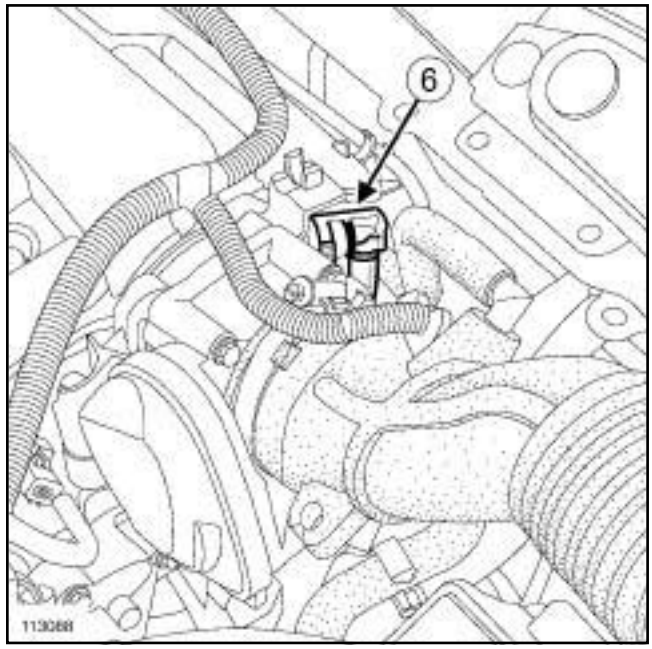
❏ Remove:

- the bolts (**4**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.



108446

❏ Disconnect the connectors (**5**) from the Protection and Switching Unit.

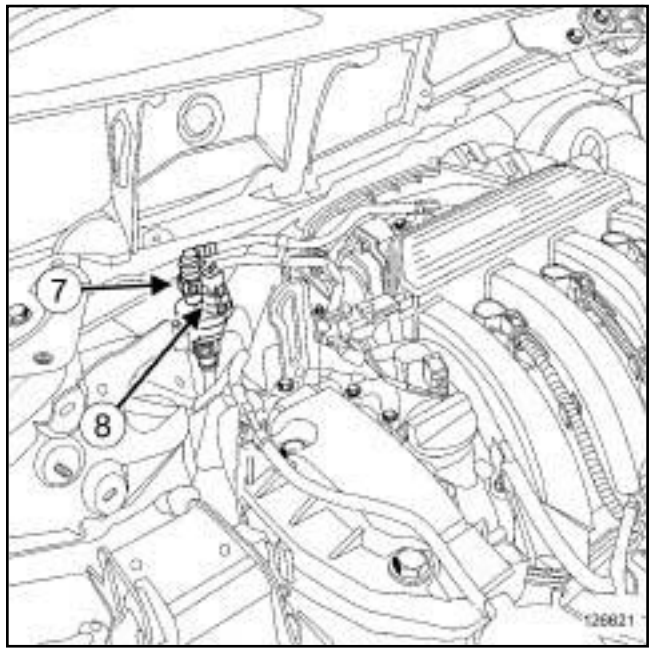


113088

❏ Disconnect the brake servo pipe union (**6**) from the inlet distributor.

K4J – K4M, and JH3

❏ Disconnect the oxygen sensor connectors.

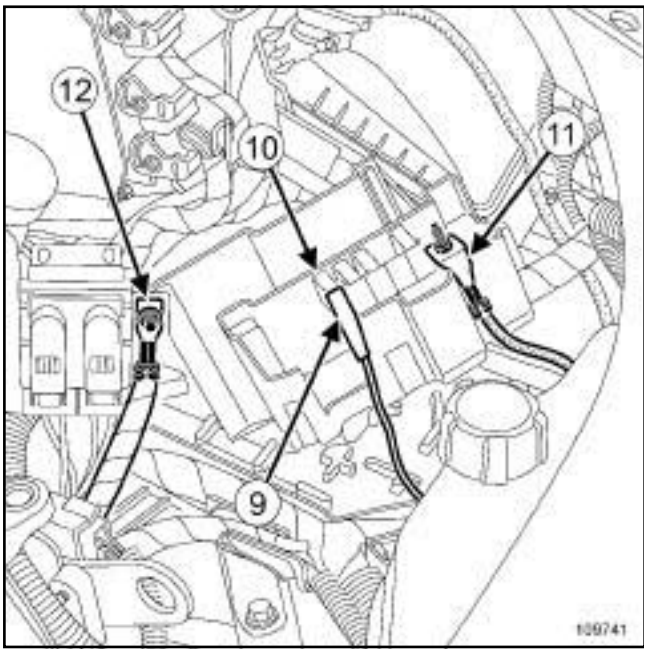


126621

❏ Disconnect:

- the union (**7**) of the fuel vapour rebreathing pipe from the petrol vapour rebreathing solenoid valve,

- the connector (**8**) of the fuel vapour rebreathing solenoid valve.



109741

❏ Disconnect:

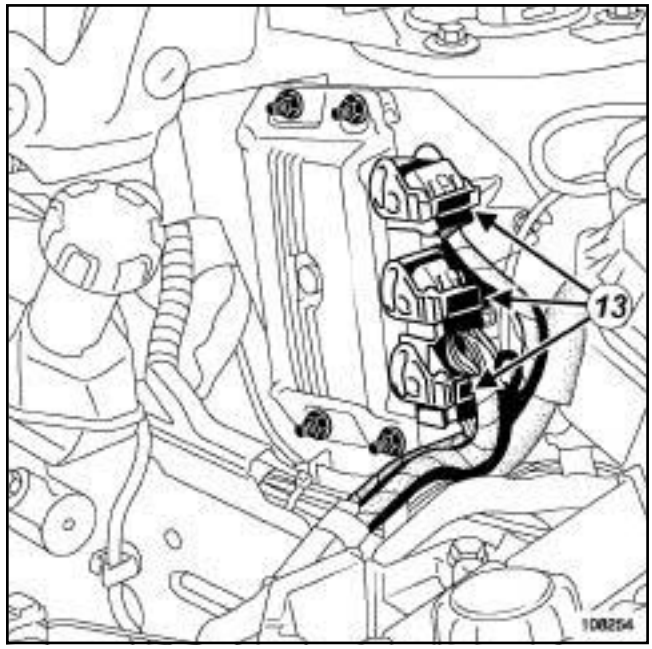
- the fuse (**9**) ,
- the fuse holder (**10**) from the fuse board.

❏ Remove:

- the nut from the supply cable of the fuse board (**11**) ,
- the supply cable nut from the battery protection fuse box (**12**) ,
- the nut of each side member earth cable.

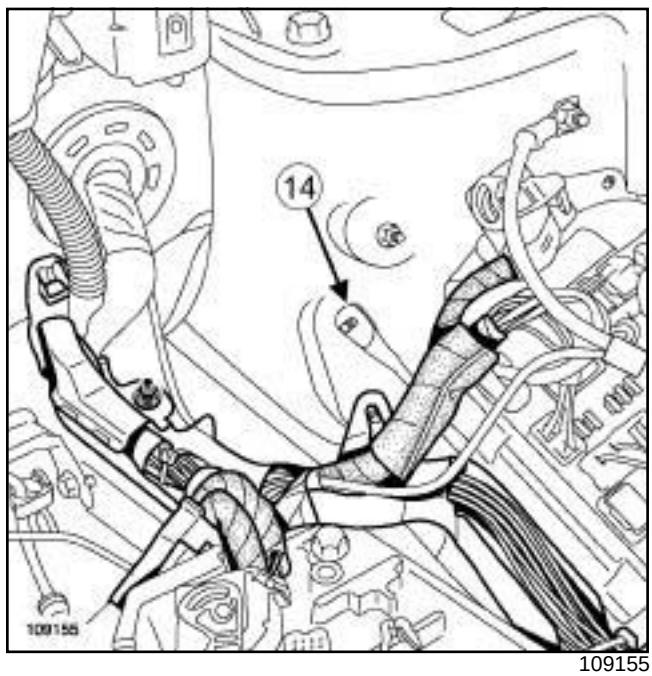
❏ Remove:

- the supply cable from the fuse board,
- the supply cable from the battery protection fuse box,
- the earth cables on the side member.



108254

❏ Disconnect the connector (**13**) from the petrol injection computer.



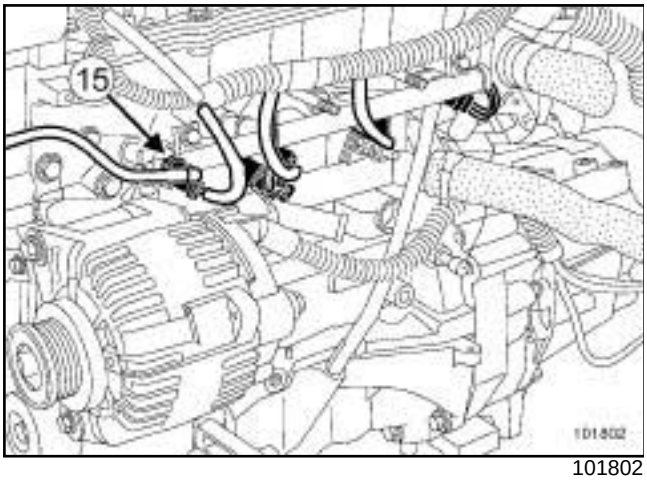
109155

❏ Remove the earth nut (**14**) .

❏ Remove:

- the earth cable from the shock absorber cup height adjuster,
- the wiring channel.

K4M, and JH3 – K4J, and JH3 – K4M, and TL4



101802

❑

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

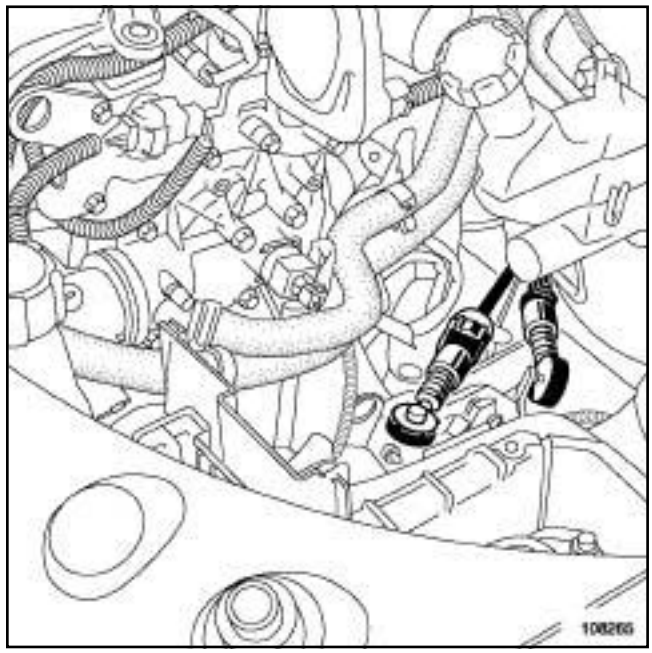
WARNING

To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

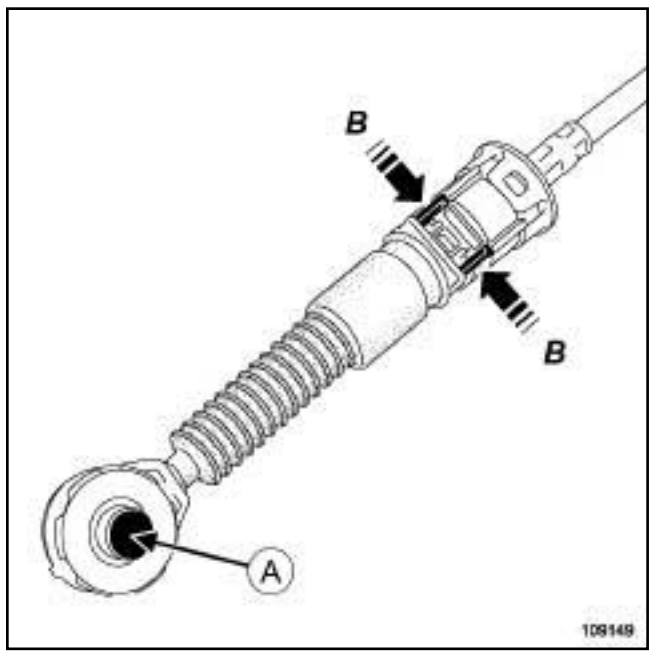
❑ Disconnect the fuel supply pipe union (**15**) from the injector rail.

❑ Unclip the fuel supply pipe from the retaining bracket.

JH3



108265



109149

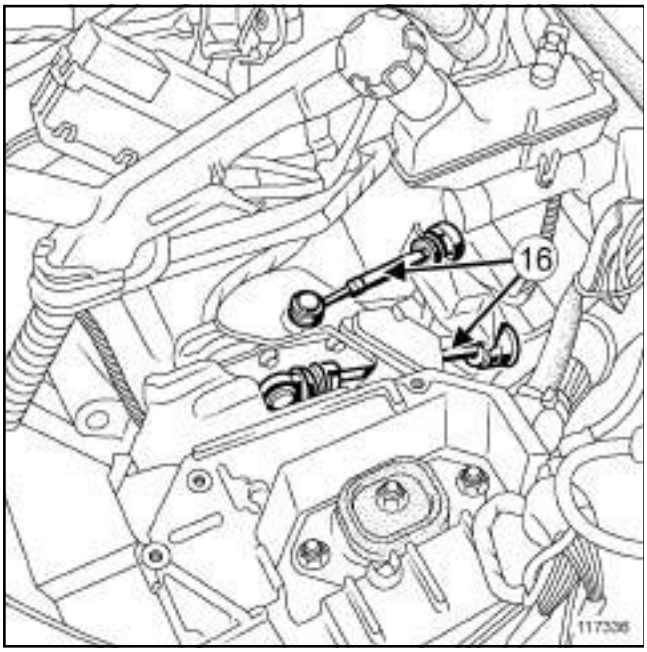
❑ Move aside the gear control cables by:

- pressing at (**A**) ,
- pressing at (**B**) .

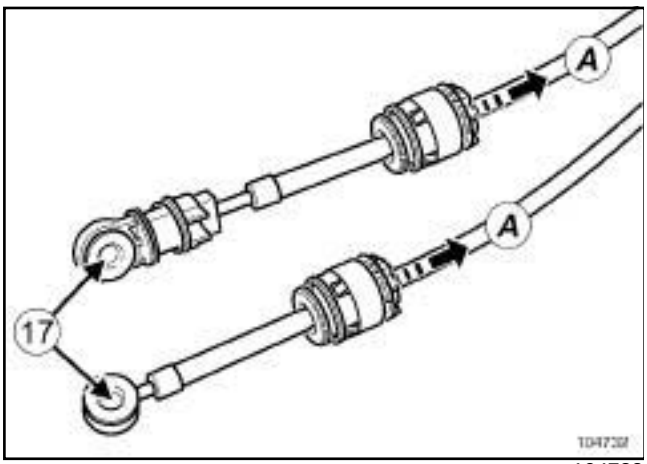
❑ Remove the wiring channel mountings from the gearbox.

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

TL4



117336



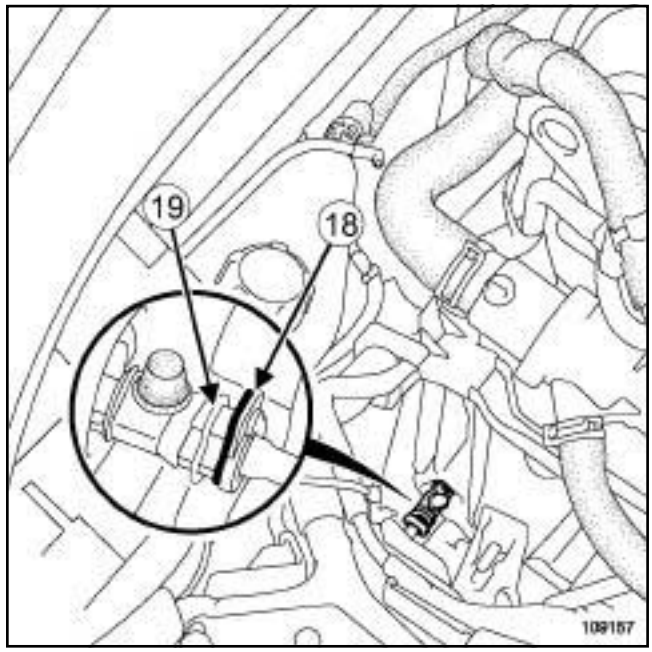
104732

❑ Move aside the gear control cables (**16**) by:

- unclipping each gear control cable (**17**) from the gearbox control levers using an open-jawed spanner,
- pulling each control cable sleeve stop ring towards (**A**) .

❑ Fit the tool **(Ms. 583)** between the brake fluid reservoir and the clutch master cylinder.

JH3

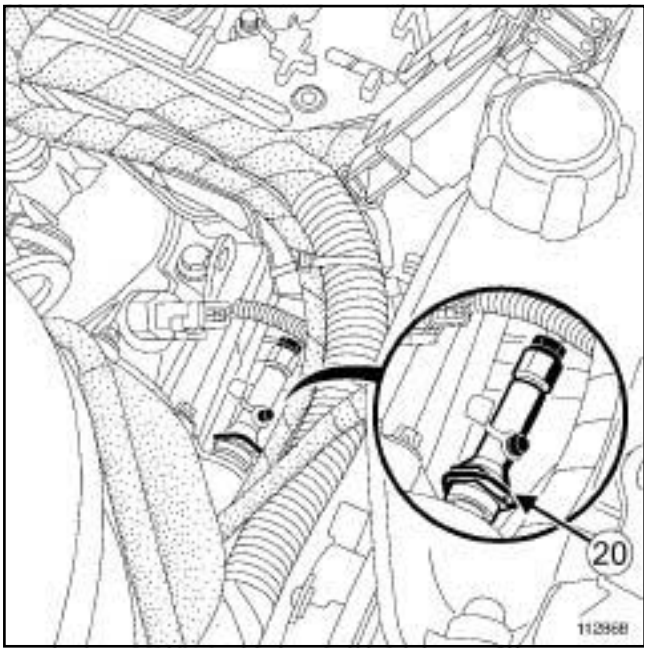


109157

❑ Disconnect the clutch pipe union from the hydraulic clutch slave cylinder by pulling on the clips (**18**) and (**19**) .

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

TL4



112868

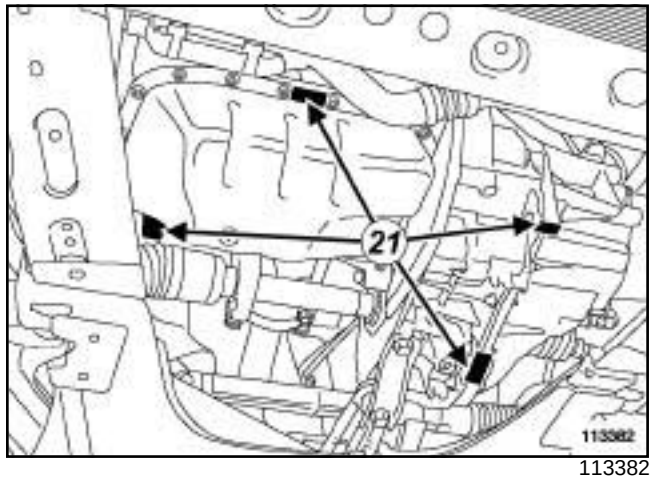
❏ Disconnect the clutch pipe union from the hydraulic clutch slave cylinder by pressing the clip (**20**) .

❏ Fit a blanking plug:

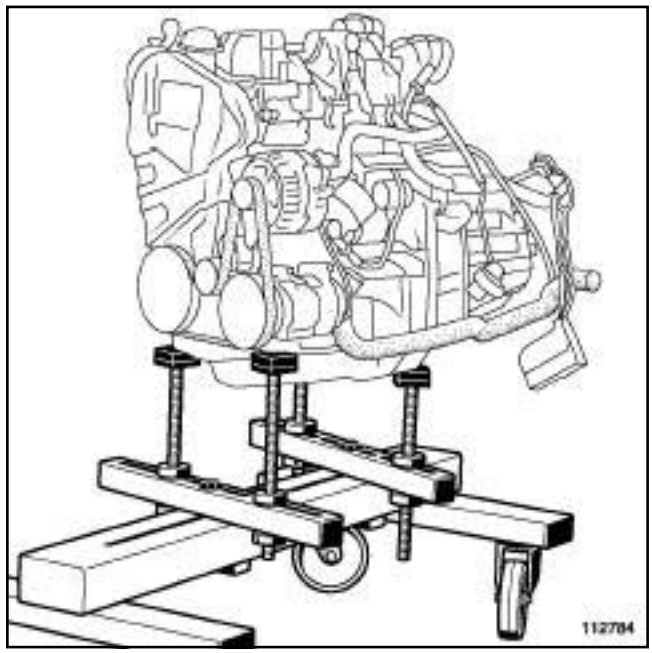
- on the opening of the hydraulic clutch slave cylinder,
- on the clutch pipe union.

❏ Unclip the clutch pipe from the left-hand suspended engine mounting support on the gearbox.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382



112784

❏ Remove:

- the « engine - gearbox » assembly using the tool **(Mot. 1390)** positioning it on the marks (**21**) of the « engine - gearbox » assembly,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting shaft nut.

❏ Hit the shaft of the left-hand suspended engine mounting using a copper hammer.

❏ Raise the vehicle, moving the engine towards the front.

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

❑ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see) (Technical Note 6023A, 10A, Engine and peripherals).

❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the « engine - gearbox » assembly in the vehicle,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Torque tighten the **left-hand suspended engine mounting shaft nut (62 N.m)**.

❑ Remove the **(Mot. 1390)** from the «engine - gearbox » assembly.

III - FINAL OPERATION

❑ Remove the blanking plug:

- on the opening of the hydraulic clutch slave cylinder,
- on the clutch pipe union.

❑ Connect the clutch pipe to the hydraulic clutch slave cylinder.

❑ Clip the clutch pipe onto the left-hand suspended engine mounting support on the gearbox.

❑ Remove the tool **(Ms. 583)** between the brake fluid reservoir and the clutch master cylinder.

❑ Clip each gear control cable onto:

- the gear control cable sleeve stops,
- the gearbox control levers.

❑ Connect the fuel supply pipe union to the injector rail.

❑ Clip the fuel supply pipe onto the retaining bracket.

❑ Fit:

- the wiring channel,
- the earth cable on the shock absorber cup height adjuster.

❑ Tighten the **earth nut on the shock absorber cup height adjuster (8 N.m)**.

❑ Connect the petrol injection computer connectors.

❑ Fit:

- the earth cables on the side member,
- the supply cable of the battery protection fuse box on the battery protection fuse box,
- the fuse board supply cable on the fuse board.

❑ Torque tighten:

- the **nut of each earth cable on the side member (8 N.m)**,
- the **nut of the supply cable on the battery protection fuse box (6 N.m)**,
- the **nut of the fuse board supply cable (8 N.m)**.

❑ Connect:

- the fuse holder to the fuse board,
- the fuse,
- the connector of the fuel vapour rebreathing solenoid valve,
- the union of the fuel vapour rebreathing pipe to the petrol vapour rebreathing solenoid valve.

K4M, and JH3 – K4J, and JH3

❑ Connect the oxygen sensor connectors.

❑ Connect:

- the brake servo pipe union on the inlet distributor,
- the Protection and Switching Unit connectors.

❑ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover,
- the « condenser - cooling radiator - engine cooling fan assembly » (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

AIR CONDITIONING or CLIMATE CONTROL

❑ Connect the « expansion valve - compressor » connecting pipe to the compressor.

❑ Torque tighten the **bolt of the connecting pipe between the « expansion valve - compressor » (8 N.m)**.

❑ Refit:

- a new seal between the catalytic converter and the exhaust downpipe hose,
- the exhaust downpipe nuts,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❑ Connect the heater matrix cooling hose to:

- the water chamber,
- the cylinder block cooling hose.

❑ Fit the clip on each heater matrix cooling hose using the tool **(Mot. 1448)**.

❑ Clip on the heater matrix cooling hoses.

❑ Connect the air filter box air outlet pipe to the throttle valve.

❑ Torque tighten the **air filter unit air outlet pipe clip (5.5 N.m)**.

❑ Refit:

- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the air filter unit air inlet pipe,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Perform the following operations:

- fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
- fill and bleed the cooling circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the clutch circuit (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

AIR CONDITIONING

❑ Fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

K4M, and DP0

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Tightening torques ▽	
exhaust downpipe mounting nuts	**9 Nm**
the air conditioning pipe mounting bolts on the air conditioning compressor	**8 Nm**
the bolts mounting the air conditioning pipes on the evaporator	**8 Nm**
the bolts mounting the air conditioning pipes on the condenser	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

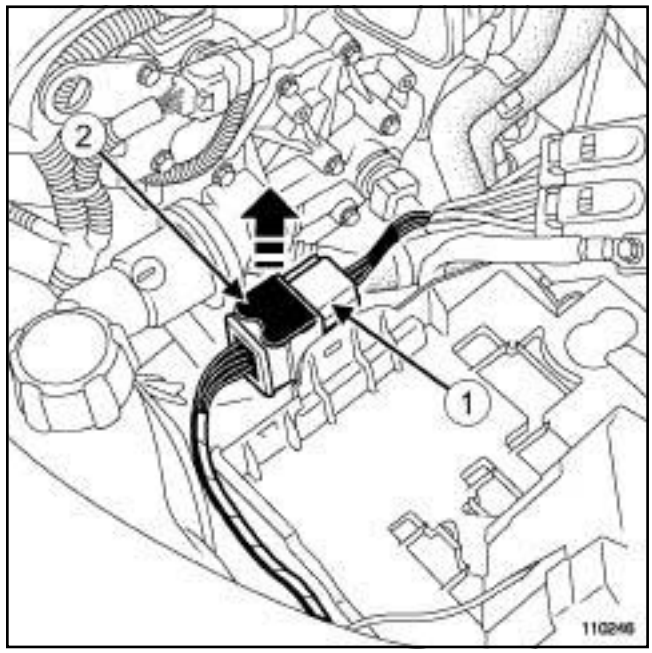
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❑ To fit the strap to the vehicle (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air inlet duct,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



110246

❑ Disconnect:

- the modular connector (**1**) by pulling the slide (**2**) ,
- the petrol vapour rebreathing pipe on the petrol vapour rebreathing solenoid valve.

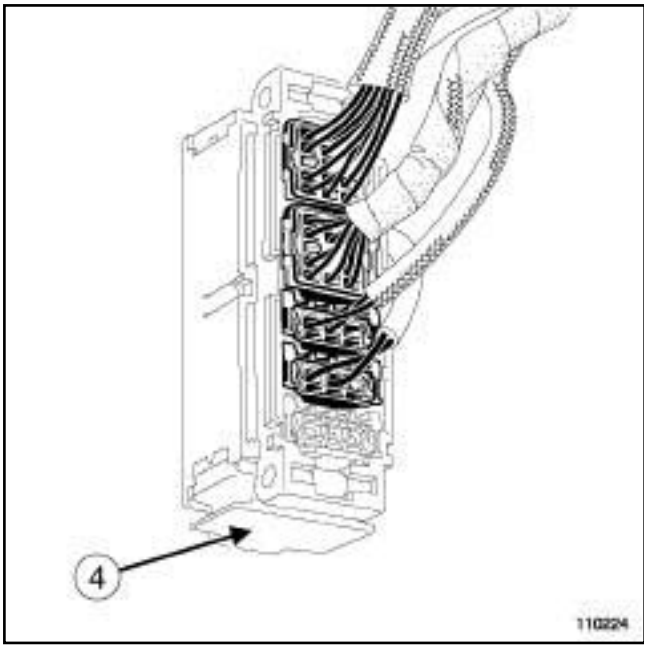
❑ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission).

AIR CONDITIONING

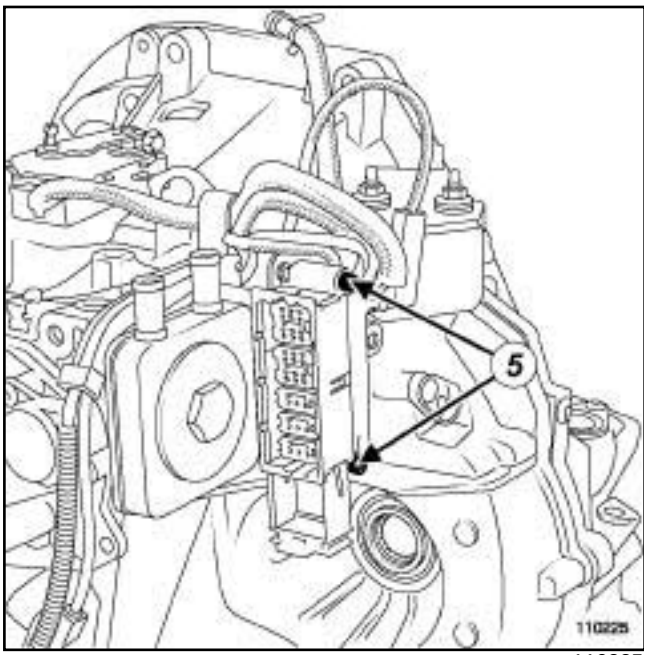
❑ Drain the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

K4M, and DP0



110224

❏ Disconnect the connectors from the modular connector by pulling the slide (**4**) .



110225

❏ Remove the modular connector mounting bolts (**5**) .

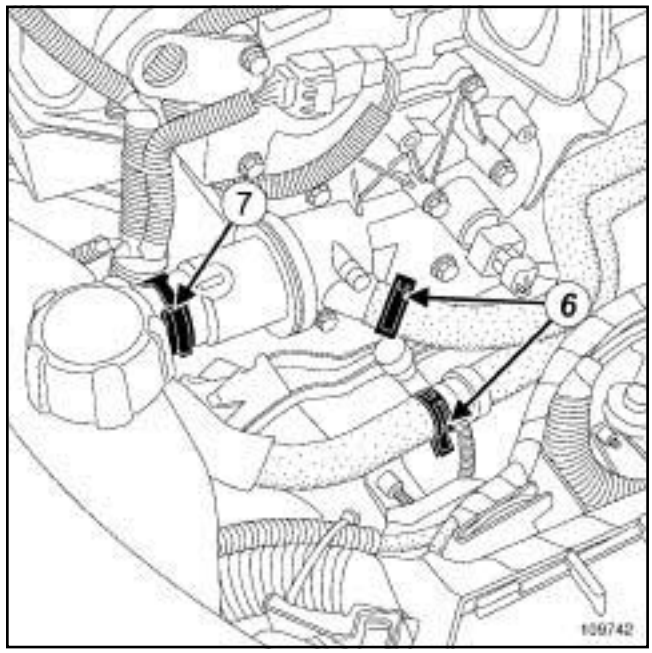
❏ Protect the modular connector by putting it into a waterproof plastic bag.

❏ Disconnect the automatic transmission cooling hoses.

❏ Remove:

- the « left-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component),
- the « right-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❏ Attach the cooling radiator assembly to the front end panel.



109742

❏ Disconnect:

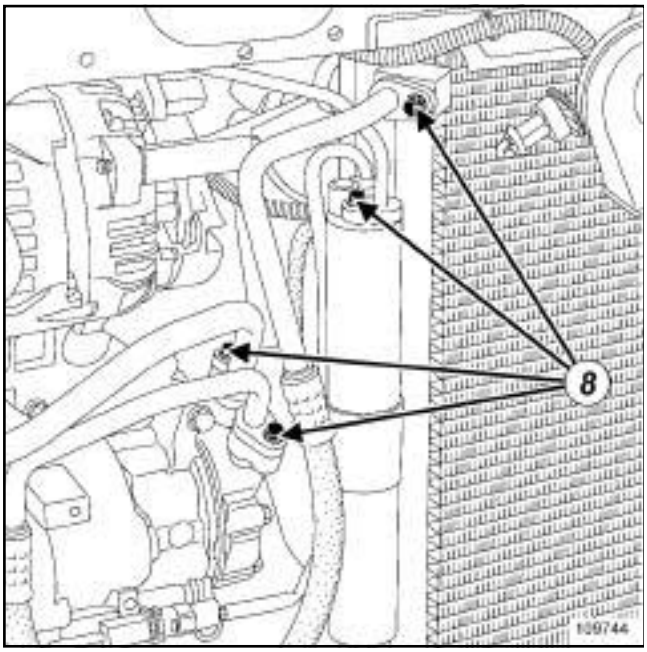
- the engine cooling fan assembly connectors,
- the top hose (**7**) on the cylinder head coolant pipe housing outlet,
- the passenger compartment heating hoses (**6**) .

❏ Remove:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

K4M, and DP0

AIR CONDITIONING



109744

❑ Disconnect:

- the pressure switch from the condenser,
- the mounting bolts (**8**) from the air conditioning pipes on the air conditioning compressor, on the evaporator, and on the condenser.

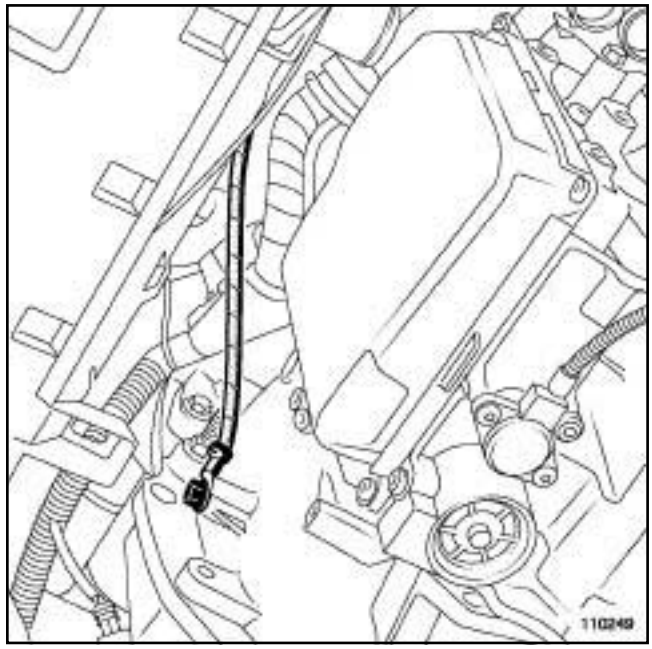
WARNING

Fit plugs into the openings.

Plugs must be fitted on the hoses to prevent moisture from entering the system.

❑ Remove:

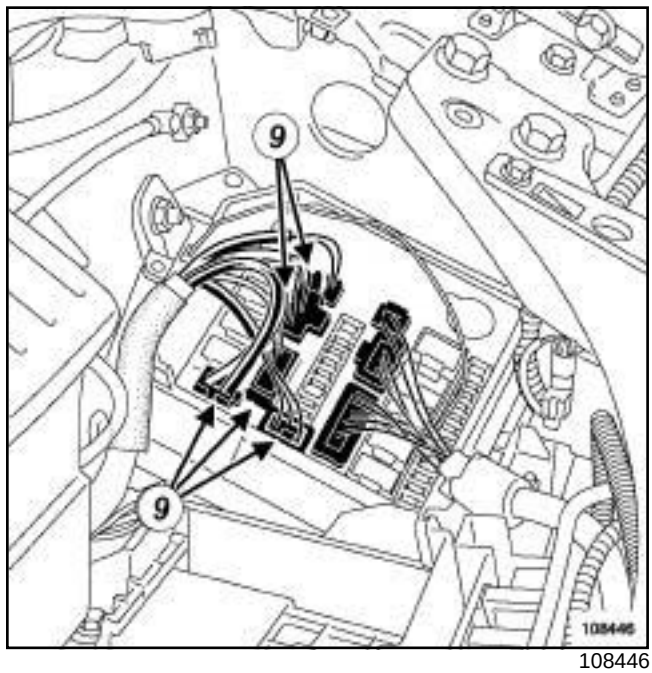
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) .



110249

❑ Remove the earth strap from the gearbox.

❑ Remove the Protection and Switching Unit cover.

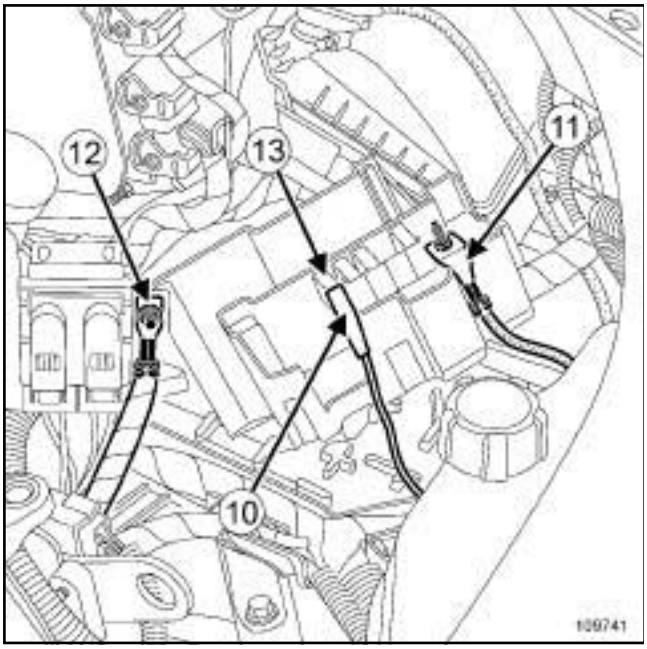


108446

❑ Disconnect:

- the Protection and Switching Unit connectors (**9**) ,
- the brake servo pipe,
- the oxygen sensor connectors,
- the petrol vapour rebreather connector,
- the connector from the lifting eye at the flywheel end,

K4M, and DP0



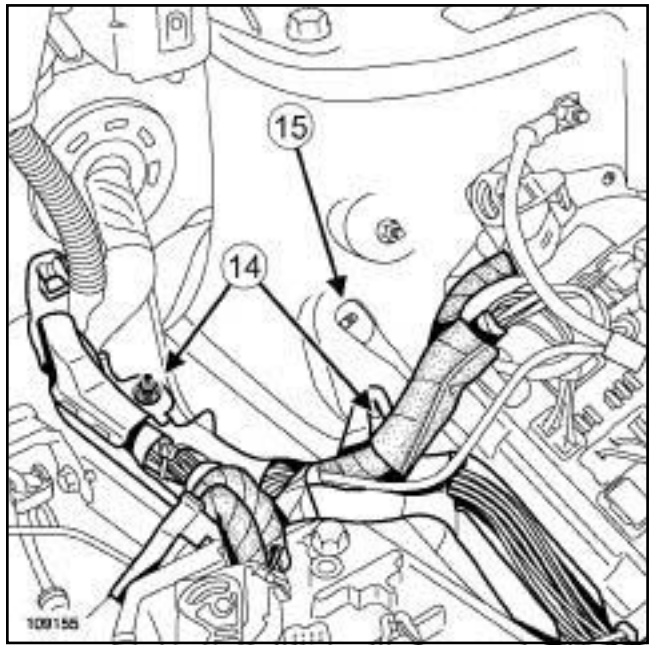
109741

❏ Disconnect:

- the fuse (**10**) ,
- the fuse holder (**11**) from the fuse board,
- the feed wire (**12**) from the fuse board,
- the feed wire (**13**) from the battery protection fuse box,
- the earths on the side member.

❏ Remove:

- the computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the computer mounting.



109155

❏ Remove:

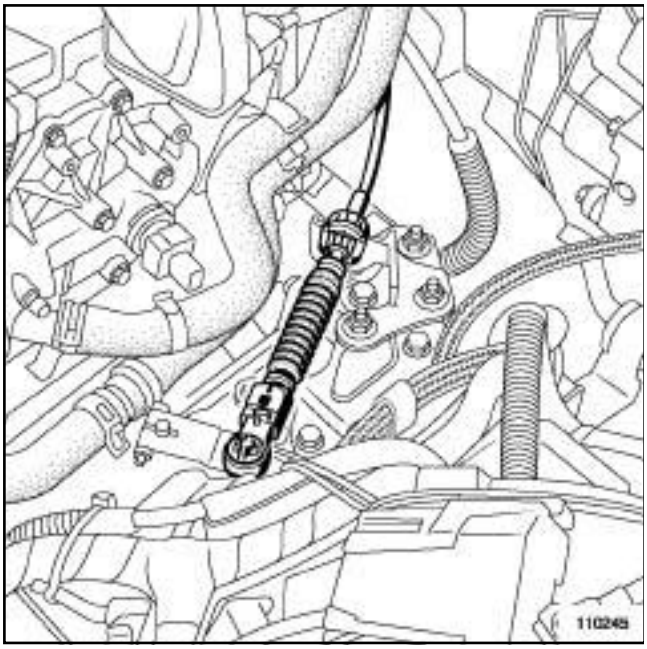
- the wiring harness channel mounting bolts (**14**) on the body,
- the earth (**15**) .

❏ Remove the adhesive tape from the electrical wiring harness.

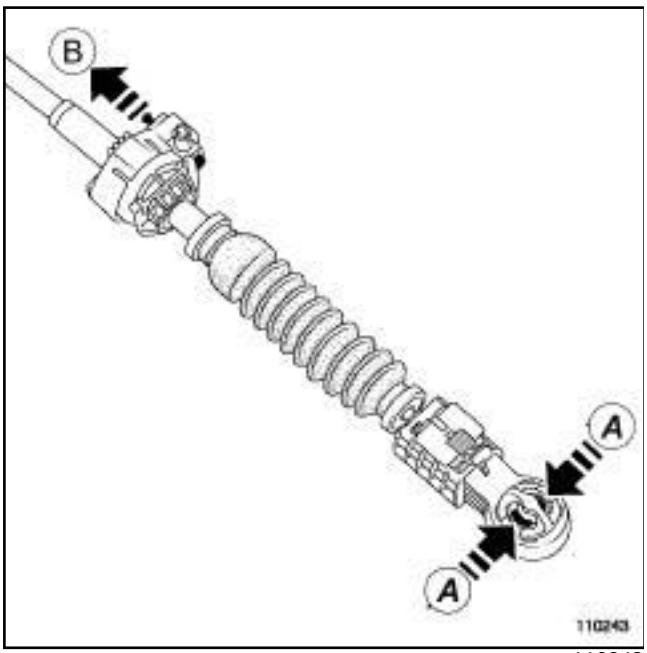
❏ Disconnect the fuel supply pipe from the injection rail.

❏ Remove the wiring duct.

K4M, and DP0



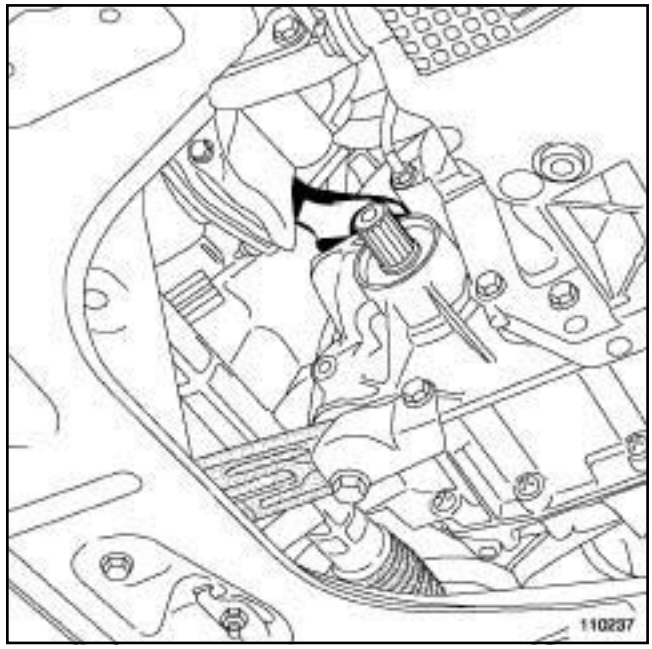
110245



110243

❑ Remove:

- the gear control cable on the box by pushing in (**A**) ,
- the control cable by pushing in (**B**) ,
- the wiring harness channel mountings on the gearbox.



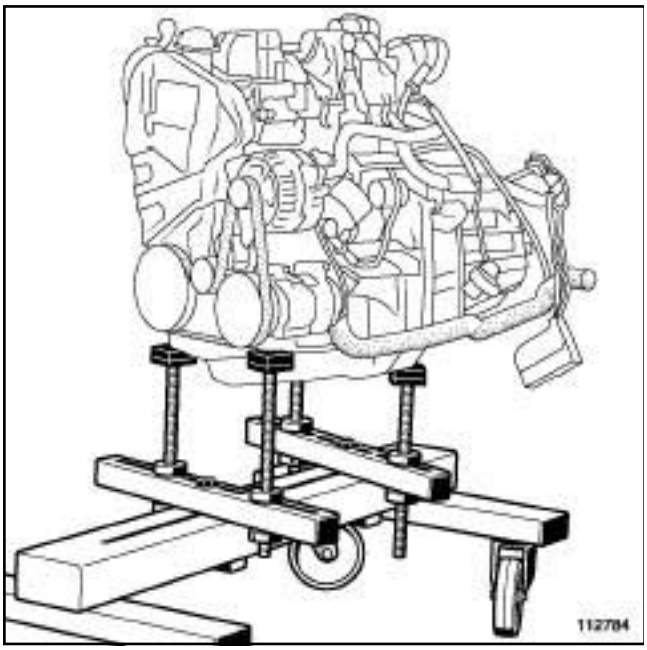
110237

❑ Remove:

- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the exhaust downpipe mountings.

K4M, and DP0

II - OPERATION FOR REMOVAL OF PART CONCERNED



112784

❏ Mark the positions of the suspended engine mountings on the body.

❏ Support the « engine-gearbox assembly» on the **(Mot. 1390)**.

❏ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting nut (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❏ Strike the stud with a copper hammer.

❏ Remove:

- the gearbox mounting rubber pad,
- the left-hand suspended engine mounting.

❏ Raise the vehicle, moving the engine towards the front.

❏ Be sure to replace the clip on the automatic transmission control cable each time it is removed.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ For standard engine replacements (see) (Technical Note 3784A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Position the « engine-gearbox » assembly in the vehicle.

❏ Refit:

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Remove the **(Mot. 1390)** from the «engine - gearbox » assembly.

III - FINAL OPERATION.

❏ Refit the exhaust downpipe mountings.

❏ Torque tighten the **exhaust downpipe mounting nuts (9 Nm)**.

❏ Refit the rear engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

❏ Refit the wiring harness channel to the gearbox.

❏ Refit the gearbox control cable.

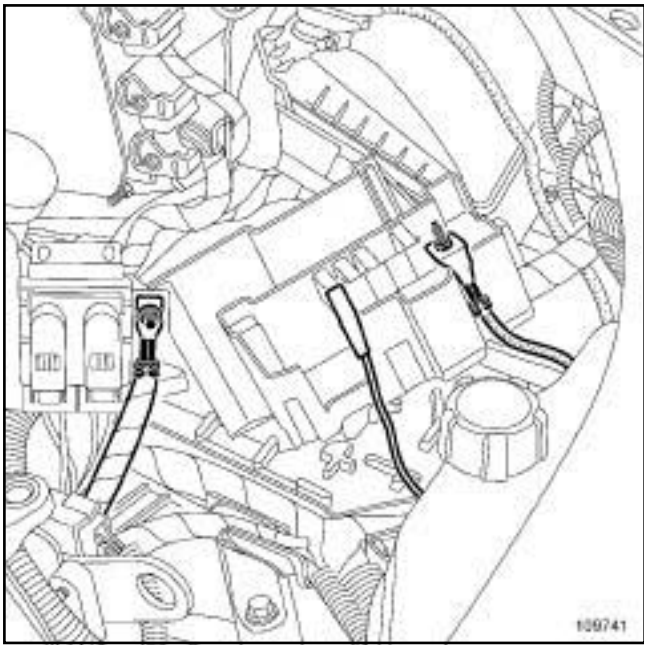
❏ Reconnect the petrol supply pipe to the injector rail.

❏ Refit the wiring harness channel mountings to the body.

❏ Refit:

- the wiring harness channel mounting nuts on the body,
- the computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) .

K4M, and DP0



109741

❑ Connect:

- the supply cable to the battery protection fuse box,
- the supply cable on the fuse board,
- the fuse holder on the fuse board,
- the fuse,
- the connector on the lifting eye at the flywheel end,
- the petrol vapour rebreather connector,
- the oxygen sensor connectors,
- the brake servo pipe,
- the Protection and Switching Unit connectors.

❑ Refit:

- the Protection and Switching Unit cover,
- the earths,
- the cooling radiator assembly (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

AIR CONDITIONING

❑ Refit:

- the bolts mounting the air conditioning pipes on the air conditioning compressor,
- the bolts mounting for the air conditioning pipes on the evaporator,
- the bolts mounting the air conditioning pipe on the condenser.

Torque tighten:

- **the air conditioning pipe mounting bolts on the air conditioning compressor (8 Nm)**,
- **the bolts mounting the air conditioning pipes on the evaporator (8 Nm)**,
- **the bolts mounting the air conditioning pipes on the condenser (8 Nm)**.

❑ Connect the pressure switch connector to the condenser.

❑ Refit:

- the resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❑ Connect:

- the passenger compartment heater hoses,
- the top hose on the cylinder head coolant outlet unit,
- the fan assembly connectors.

❑ Refit:

- the « right-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component),
- the « left-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❑ Connect the automatic transmission cooling hoses.

❑ Remove the waterproof plastic bag from the modular connector.

❑ Refit the mounting bolts to the modular connector.

❑ Connect the connectors to the modular connector.

K4M, and DP0

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Refill:

- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the air inlet duct,
- the two air inlet duct clips,
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the wiring harness channel mounting bolts on the body.

AIR CONDITIONING

❑ Fill the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

K9K, and JH3 or JR5 – K9K, and 772, and TL4

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
safety strap(s)
refrigerant charging station

Tightening torques ▽	
bolts for the gearbox suspended mounting	**62 Nm**
bolts for the suspended engine mounting on the engine	**62 Nm**
bolts for the suspended engine mounting on the body	**62 Nm**
engine tie-bar bolts	**105 Nm**
front cross member bolts	**105 Nm**
air conditioning pipe bolts	**8 Nm**
nut mounting the inter-cooler air inlet pipe on the alternator	**8 Nm**

REMOVAL

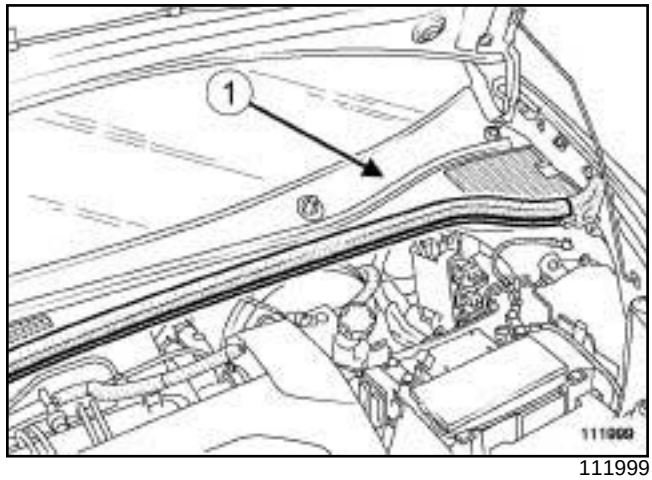
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

WARNING
During this operation, secure the vehicle to the lift with a **safety strap(s)**, to prevent it from becoming unbalanced.

To fit the strap to the vehicle (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the front engine cover.

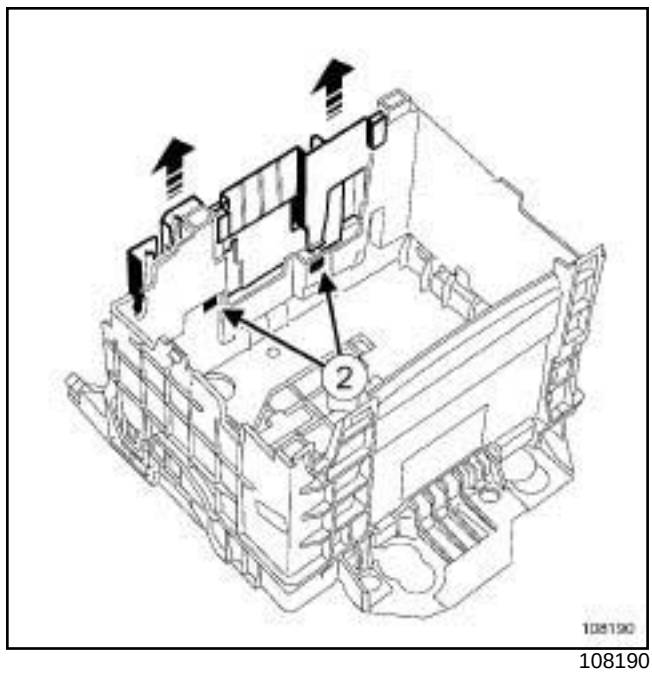


111999

❏ Remove:

- the scuttle panel grille (**1**) (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille.

❏ Remove the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

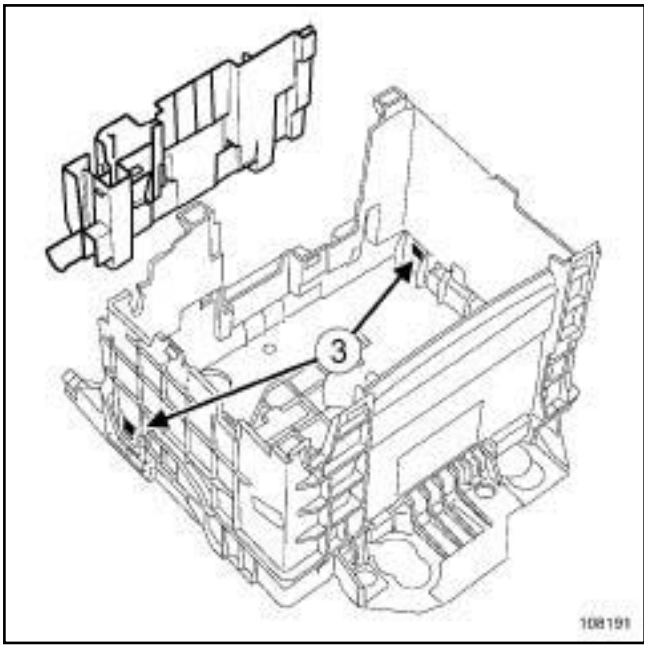


108190

❏ Unclip the power supply fuse board support at (**2**) .

❏ Move the support from the fuse board as indicated by the arrows.

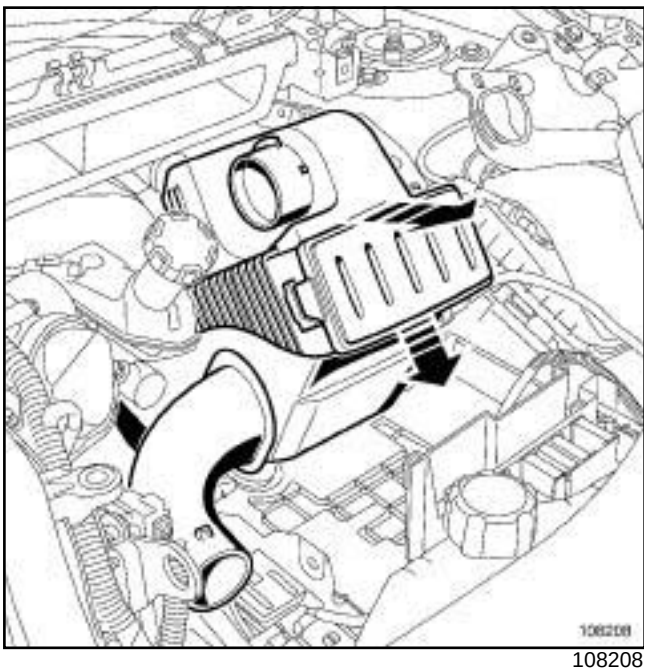
K9K, and JH3 or JR5 – K9K, and 772, and TL4



108191

❏ Remove the shielding by unclipping at (**3**) .

❏ Disconnect the air flow sensor connector.

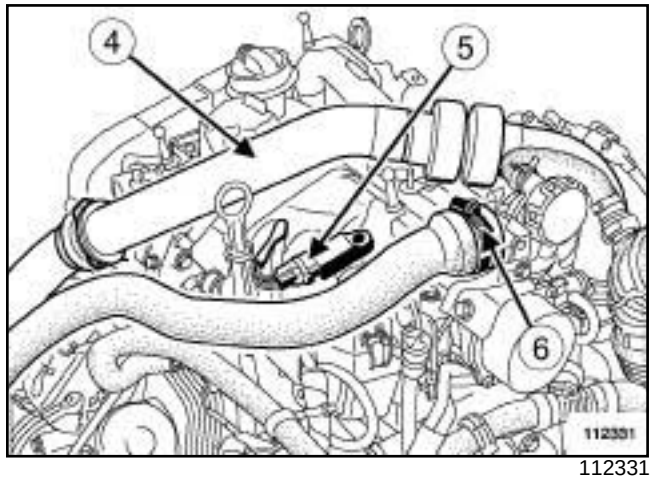


108208

❏ Loosen the air inlet duct clip on the air filter unit.

❏ Remove:

- the air filter unit,
- the battery tray base.



112331

❏ Loosen the mounting nut of the air pipe at the intercooler inlet on the alternator.

❏ Remove the air duct bolt on the rocker cover.

❏ Move the air duct clips to one side of the turbocharger and the air pipe at the intercooler inlet.

❏ Unclip the air duct (**4**) on the turbocharger and the air pipe at the intercooler inlet.

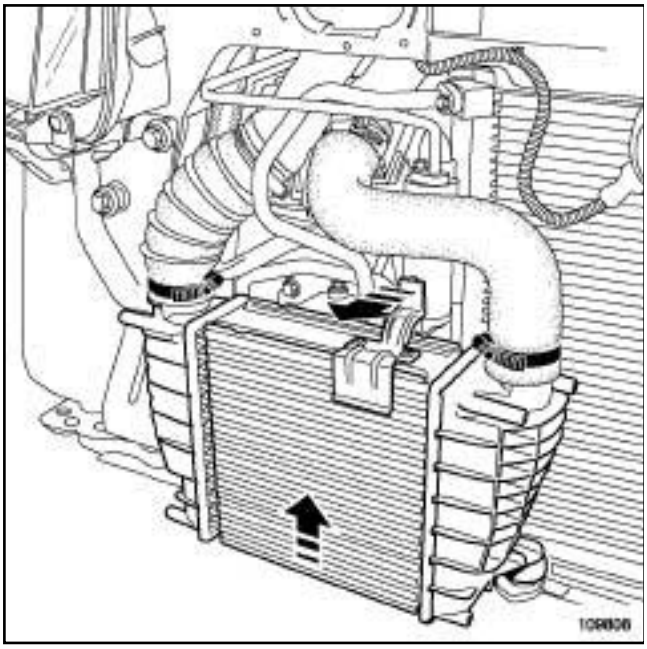
❏ Disconnect the connector (**5**) from the inlet air pressure sensor.

❏ Loosen the air inlet duct clip (**6**) .

❏ Remove the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

K9K, and JH3 or JR5 – K9K, and 772, and TL4



109808

❑ Remove the air duct clips on the intercooler.

❑ Pull the tab and lift the intercooler from its mounting studs.

❑ Remove:

- the intercooler,
- the nut from the air pipes on the alternator,
- the turbocharging air ducts.

❑ Drain:

- the cooling circuit through the radiator bottom hose,
- the gearbox,
- the engine, if necessary.

❑ Drain the coolant circuit using the **refrigerant charging station**.

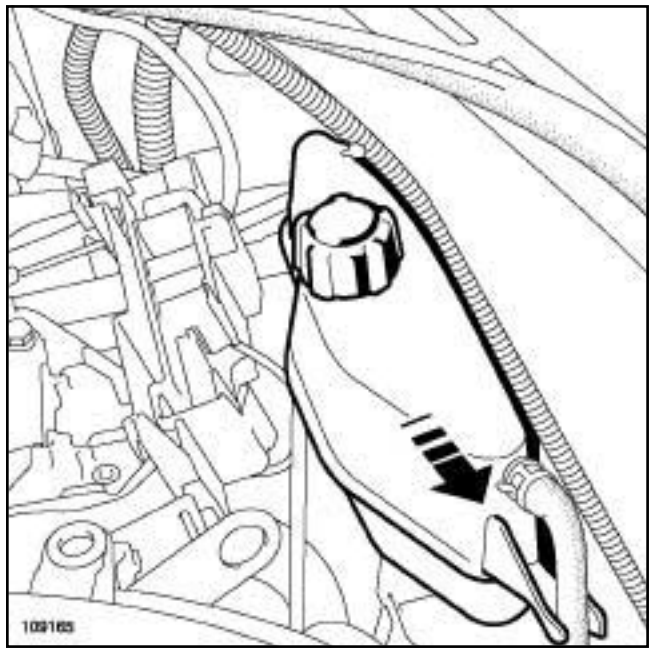
❑ Remove the « hub carrier - left-hand driveshaft » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❑ Remove the « hub carrier - right-hand driveshaft » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❑ Check the condition of the lip seal contact surface.

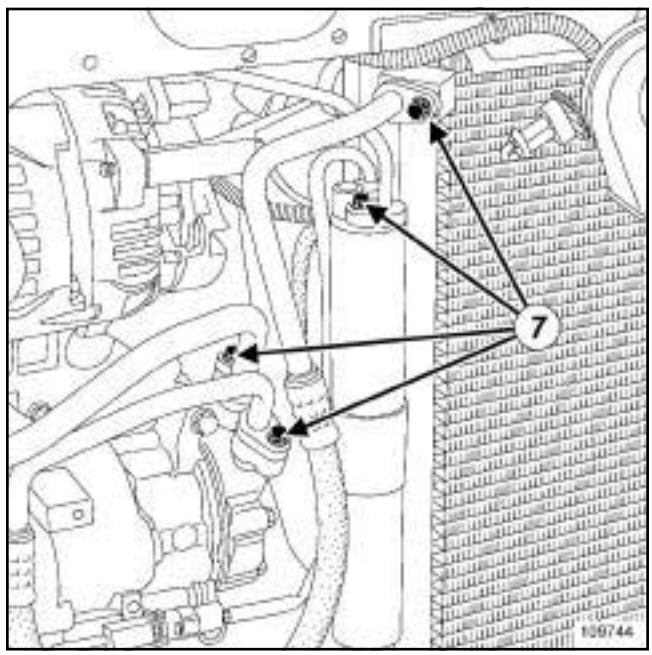
❑ Disconnect:

- the engine cooling fan assembly connectors,
- the top hose on the cylinder head coolant outlet unit,
- the passenger compartment heater hoses.



109165

❑ Extract the expansion bottle from its housing by following the direction of the arrow and put it to one side.



109744

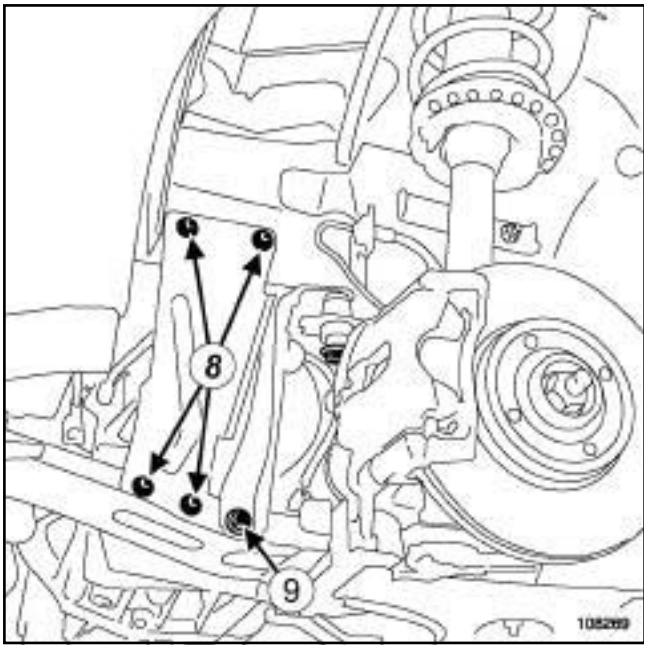
❑ Disconnect the pressure switch connector on the condenser.

❑ Remove the bolts (**7**) from the air conditioning pipes.

Note:

Plugs must be fitted on the hoses to prevent moisture from entering the system.

K9K, and JH3 or JR5 – K9K, and 772, and TL4

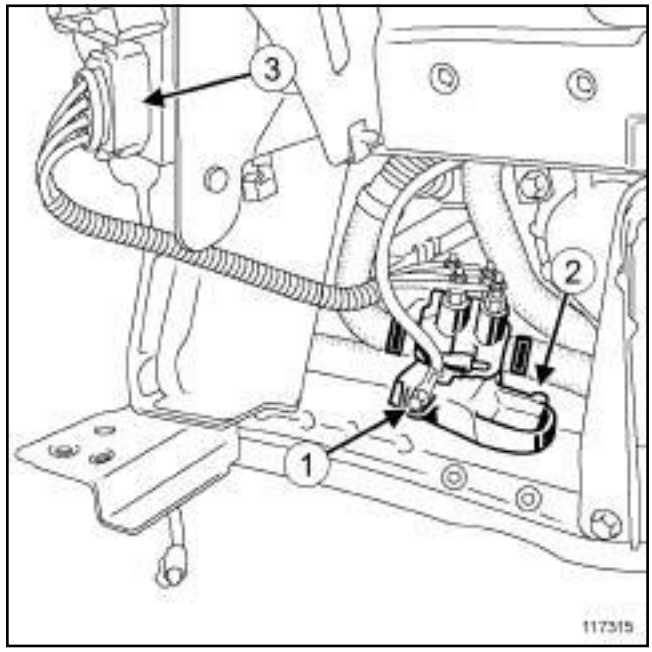


108269

❑ Remove:

- the left-hand side stiffener bolts (**8**) ,
- the left-hand side stiffener,
- the lower bolt (**9**) from the side tie rods.

K9K, and 772, and TL4

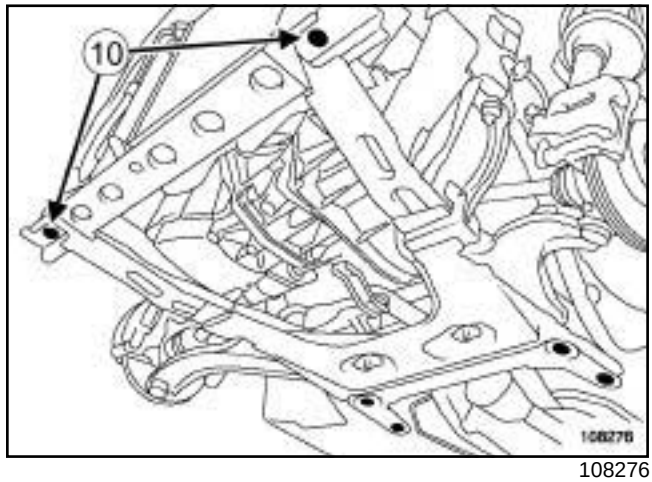


117315

❑ Remove:

- the bolt (**1**) mounting the earth on the coolant pump and the heating element unit support,
- the bolt (**2**) mounting the coolant pump and the heating element unit support on the radiator mounting cross member.

❑ Disconnect the connector (**3**) from the heating element unit.



108276

❑ Remove:

- the front cross member bolts (**10**) ,
- the front radiator cross member,

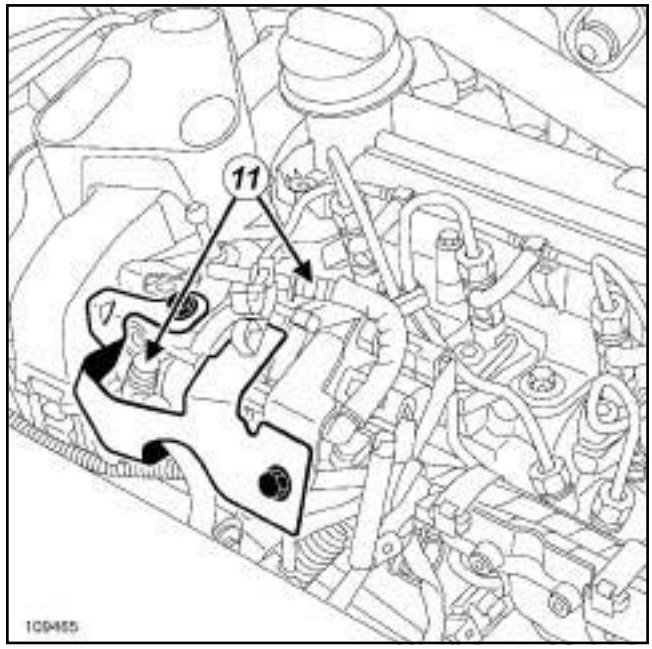
K9K, and JH3 or JR5 – K9K, and 772, and TL4

- the cooling radiator assembly,
- the earth wiring.

❏ Disconnect:

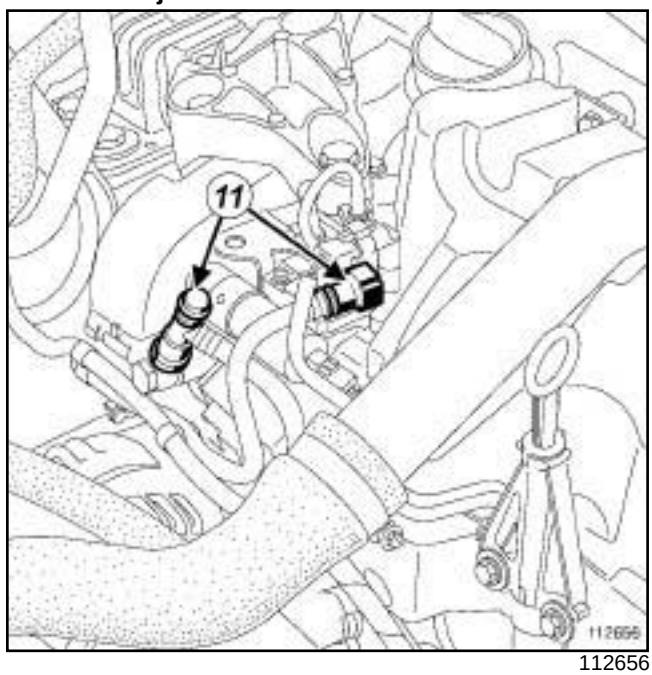
- the preheating unit connector.
- the coolant temperature sensor.

DELPHI injection



109465

SIEMENS injection



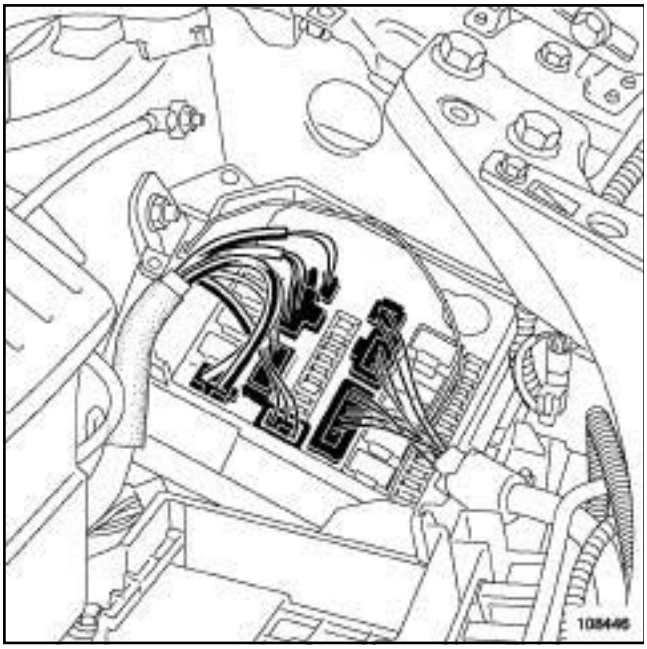
112656

❏ Disconnect the fuel supply and return pipes on the high-pressure pump (**11**) .

❏ Move the engine wiring harness to one side.

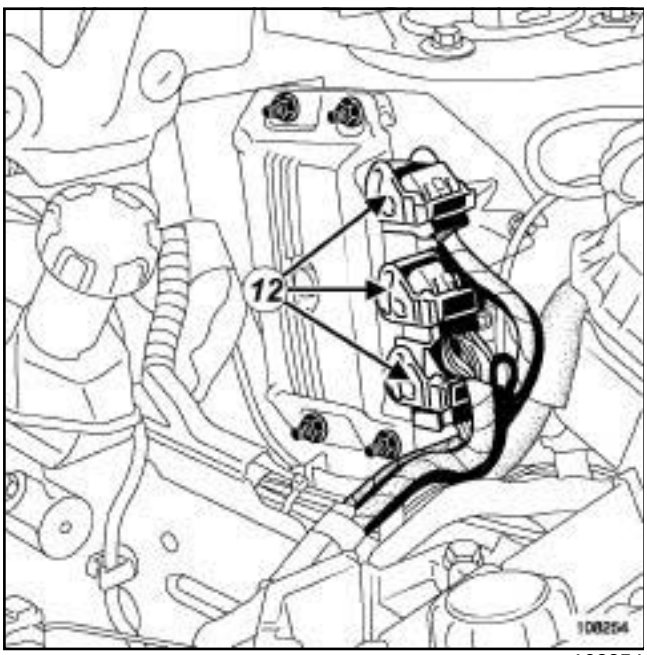
❏ Remove the Protection and Switching Unit cover.

K9K, and JH3 or JR5 – K9K, and 772, and TL4


108446

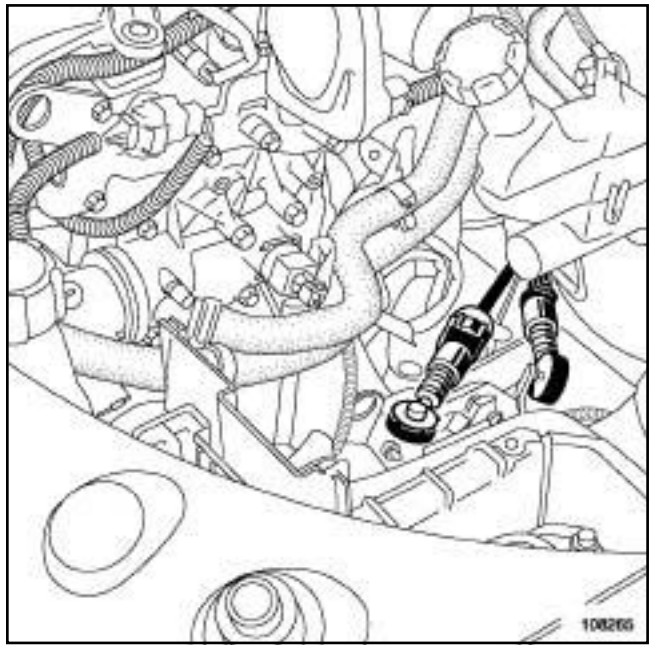
❑ Disconnect:

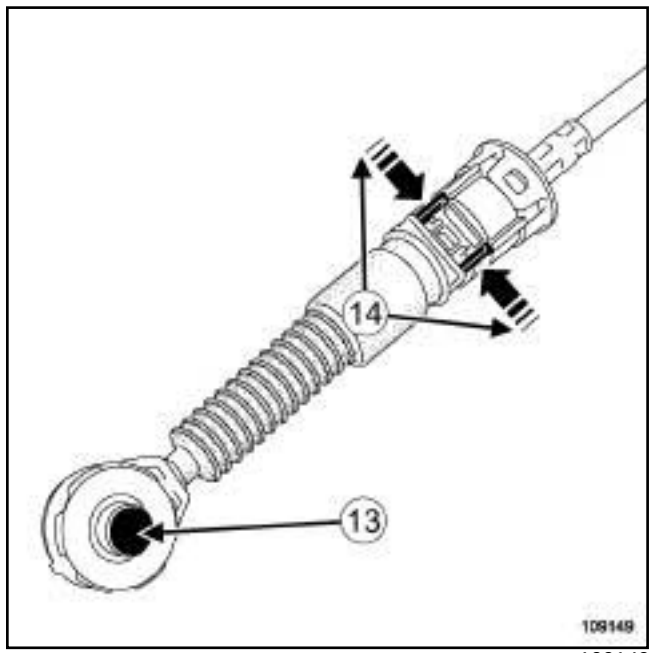
- the Protection and Switching Unit connectors,
- the brake servo pipe,
- the **30A** and **70A** engine fuses,
- the fuse holder on the fuse board,
- the feed wiring on the fuse board,
- the feed wiring on the battery protection fuse box.



108254

❑ Disconnect the injection computer connectors (**12**) .


108265

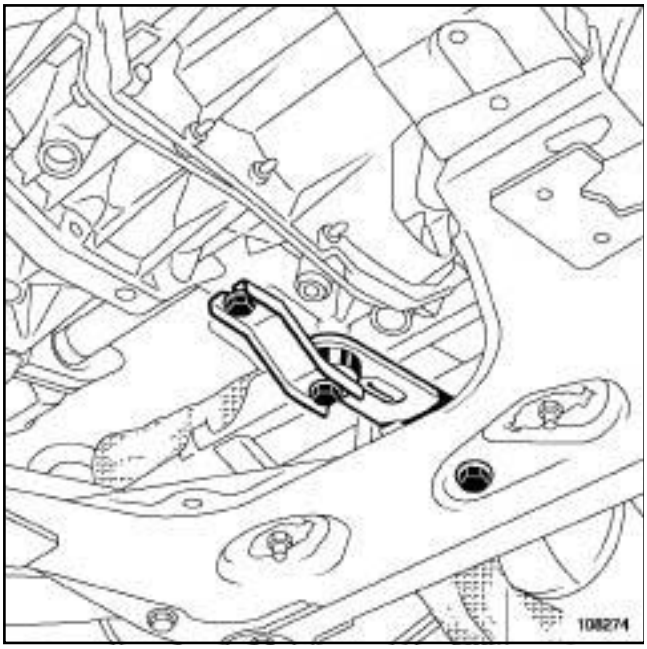


109149

❑ Remove:

- the gear control cables on the gearbox by pushing at (**13**) ,
- the gear control cables from the sleeve stops by pressing at (**14**) ,
- the wiring harness channel mountings on the gearbox.

K9K, and JH3 or JR5 – K9K, and 772, and TL4

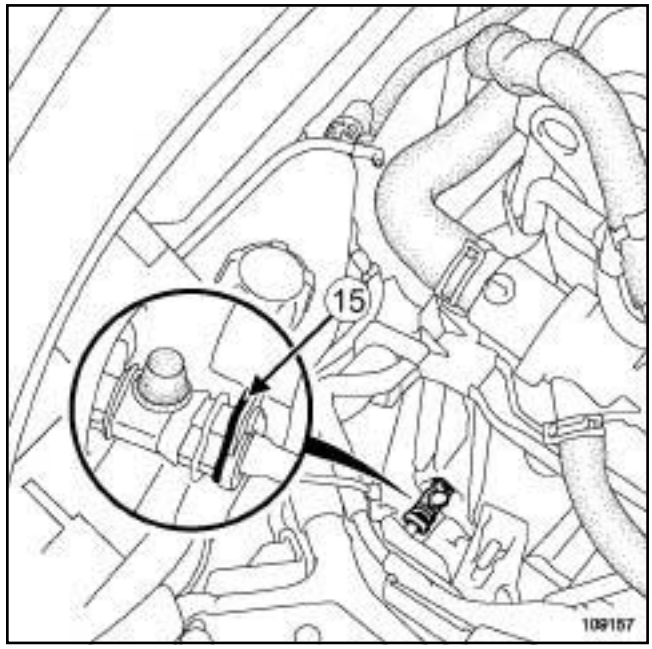


108274

❑ Remove:

- the engine tie-bar,
- the exhaust downpipe bolts.

❑ Drain the brake fluid reservoir down to the clutch master cylinder pipe union using a syringe.



109157

❑ Remove the clip at the wheel end (**15**) .

❑ Disconnect the clutch pipe from the clutch slave cylinder.

❑ Support the engine and gearbox assembly on **(Mot. 1390)**.

❑ Mark the positions of the suspended engine mountings on the body.

❑ Remove:

- the suspended engine mounting,
- the gearbox support rubber pad,
- the gearbox suspended engine mounting.

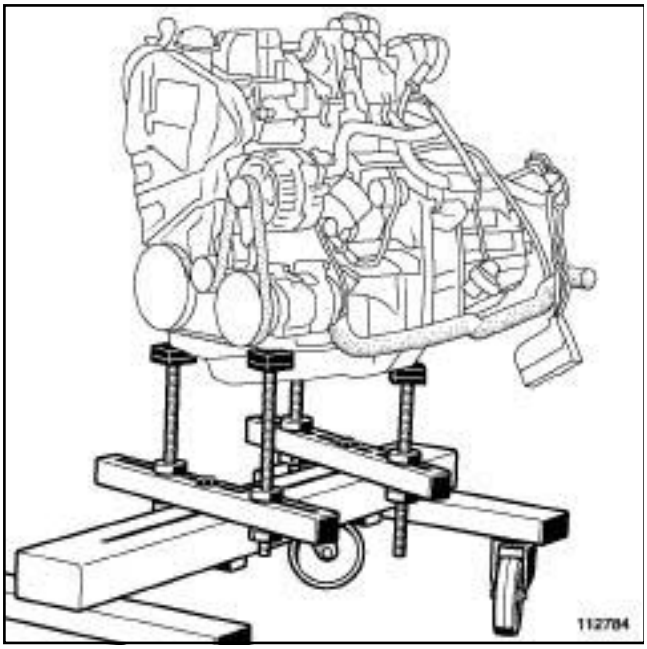
K9K, and 772, and TL4

❑ Disconnect the fuel supply union from the diesel injector on the catalytic pre-converter.

II - REMOVAL OF PART CONCERNED

❑ Raise the vehicle, moving the engine towards the front.

K9K, and JH3 or JR5 – K9K, and 772, and TL4



112784

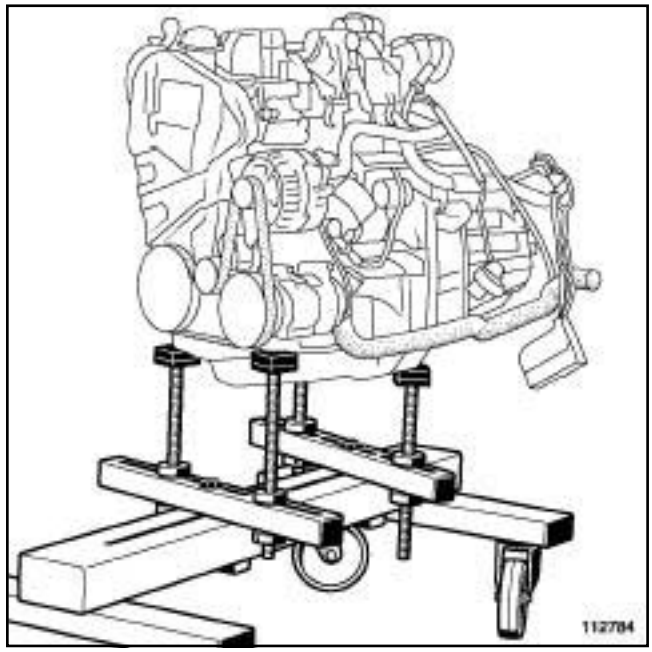
❑ Extract the engine and gearbox assembly from the engine compartment.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see) (Technical Note 6006A, 10A, Engine and peripherals).

II - REFITTING PART CONCERNED



112784

❑ Refit the engine and gearbox assembly in the engine compartment.

III - FINAL OPERATION.

K9K, and 772, and TL4

❑ Connect the fuel supply union to the diesel injector on the catalytic pre-converter.

❑ Refit:

- the gearbox suspended engine mounting,
- the gearbox support rubber pad,
- the suspended engine mounting.

❑ Remove the **(Mot. 1390)**.

❑ Torque tighten:

- the **bolts for the gearbox suspended mounting (62 Nm)**,
- the **bolts for the suspended engine mounting on the engine (62 Nm)**,
- the **bolts for the suspended engine mounting on the body (62 Nm)**.

❑ Connect the clutch pipe.

❑ Bleed the clutch system.

❑ Refit the exhaust downpipe bolts.

❑ Refit the lower engine tie-bar.

K9K, and JH3 or JR5 – K9K, and 772, and TL4

❏ Tighten to torque the **engine tie-bar bolts (105 Nm)**.

❏ Refit the gear control cables.

❏ Reconnect:

- the connectors to the injection computer,
- the feed wiring on the battery protection fuse box,
- the feed wiring on the fuse board,
- the fuse holder on the fuse board,
- the **30A** and **70A** engine fuses,
- the brake servo pipe,
- the Protection and Switching Unit connectors.

❏ Refit the Protection and Switching Unit cover.

❏ Refit the engine wiring harness.

❏ Connect the fuel supply and return pipes on the high-pressure pump.

❏ Connect:

- the coolant temperature sensor,
- the preheating unit connector.
- the earth wiring.

❏ Refit:

- the cooling radiator assembly,
- the front radiator cross member,
- the front cross member bolts.

❏ Tighten to torque the **front cross member bolts (105 Nm)**.

K9K, and 772, and TL4

❏ Refit:

- the bolt mounting the earth on the coolant pump and heating element unit support,
- the bolt mounting the coolant pump and heating element unit support on the radiator mounting cross member.

❏ Connect the connector to the heating element unit.

❏ Refit:

- the side tie-rod lower bolts,
- the left-hand side stiffener,
- the air conditioning pipes.

❏ Tighten to torque the **air conditioning pipe bolts (8 Nm)**.

❏ Connect the pressure switch connector to the condenser.

❏ Refit the expansion bottle.

❏ Connect:

- the passenger compartment heater hoses,
- the top hose on the cylinder head coolant outlet unit,
- the radiator bottom hose,
- the fan assembly connectors.

❏ Always replace the differential output lip seal each time the driveshaft is removed (see **Differential output seal: Removal - Refitting**) (MR 392, 21A, Manual gearbox).

❏ Refit the « hub carrier - right-hand driveshaft» assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❏ Refit the « hub carrier - left-hand driveshaft» assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

❏ Refit:

- the turbocharging pipes,
- the nut to the turbocharger pipes on the alternator,
- the intercooler.

❏ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Refit the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Refit the inlet pipe to the inlet manifold.

❏ Connect the inlet air pressure sensor

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Clip the air duct on the turbocharger and the air pipe at the intercooler inlet.

❏ Refit the air duct bolt on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.

❏ refit:

- the battery tray base,
- the air filter unit.

K9K, and JH3 or JR5 – K9K, and 772, and TL4

- ❑ Refit the air inlet duct to the air filter unit and tighten the clip.
- ❑ Refit the battery protective tray.
- ❑ Refit the fuse board.
- ❑ Perform the following operations:
  - refill the refrigerant circuit using the **refrigerant charging station**,
  - refill the engine if necessary,
  - refill the gearbox,
  - refill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .
- ❑ Bleed the cooling system (see) .
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❑ Refit:
  - the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
  - the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
  - the engine cover.

D4F, and 740 or 742 or 764

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Tightening torques ▽	
exhaust downpipe mountings	**9 N.m**
air conditioning mounting bolts on the compressor, evaporator and condenser	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

For strapping the vehicle (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❑ Remove:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) ,
- the battery tray (see) ,
- the engine undertray.

❑ Drain:

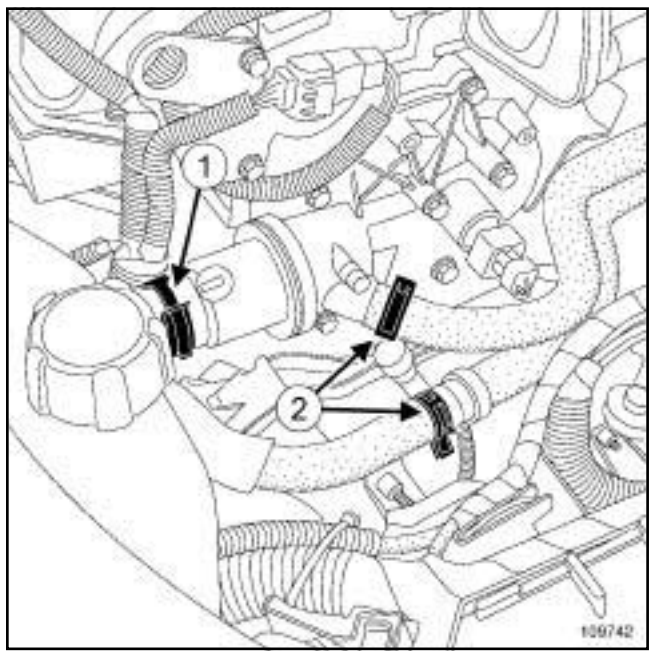
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the gearbox (see **Manual gearbox oils: Draining - Filling**) ,
- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

AIR CONDITIONING

❑ Drain the coolant circuit (see **Air conditioning: Parts and consumables for the repair**) .

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) ,
- the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners**),
- the front bumper (see **MR 393, Bodywork, 55A, Exterior protection, Front bumper: Removal - Refitting**),
- the « left-hand driveshaft-stub axle carrier » assembly, (see **Hub carrier - driveshaft assembly: Removal - Refitting**)
- the « right-hand driveshaft-stub axle carrier » assembly. (see **Hub carrier - driveshaft assembly: Removal - Refitting**)



109742

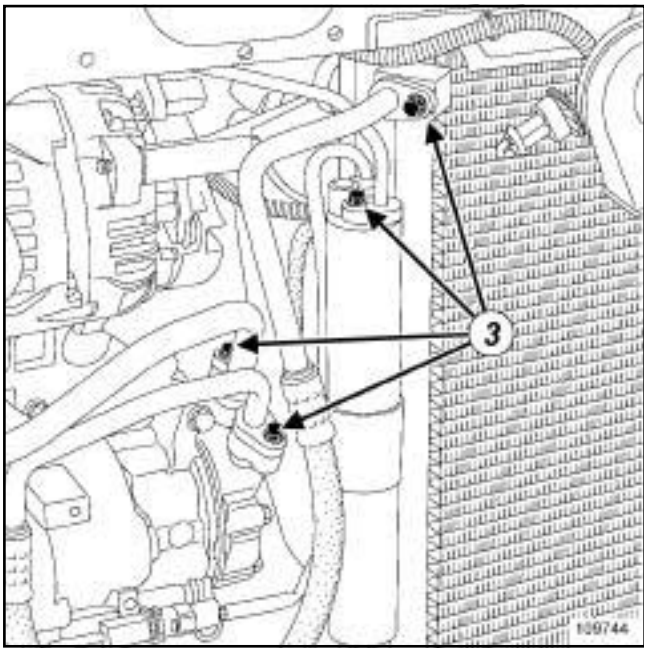
❑ Disconnect:

- the engine cooling fan assembly connectors,
- the top hose (**1**) on the cylinder head coolant pipe housing outlet,
- the passenger compartment heater hoses (**2**) .

❑ Remove the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

D4F, and 740 or 742 or 764

AIR CONDITIONING



109744

❏ Unclip the wiring harness of the pressure switch on the condenser.

❏ Disconnect:

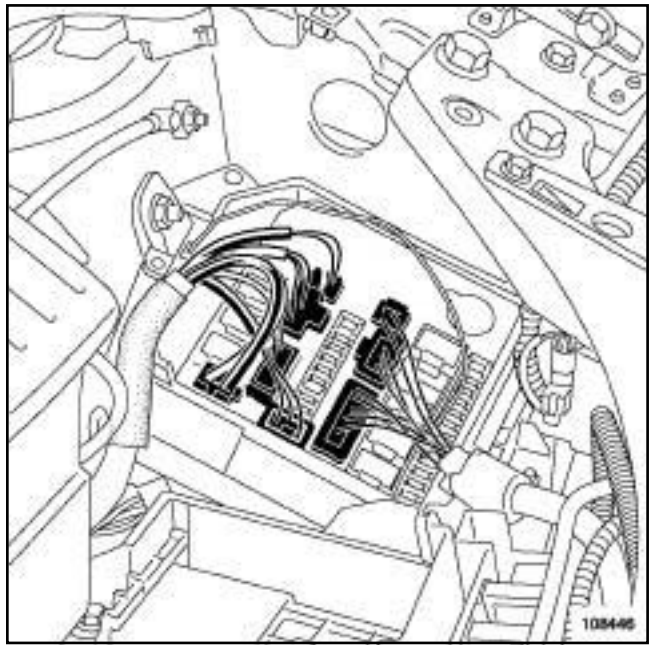
- the pressure switch from the condenser,
- the air conditioning compressor clutch connector.

❏ Remove the air conditioning pipe union mounting bolts (**3**) on the compressor, evaporator and condenser.

❏ Fit plugs into the openings.

❏ Remove:

- the radiator mounting cross member (see **MR 393 Bodywork, 41A, Lower front structure, Radiator mounting cross member: Removal - Refitting**).
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the earths,
- the Protection and Switching Unit cover.



108446

❏ Disconnect the connectors from the protection and switching unit.

❏ Unclip the oxygen sensor harnesses.

❏ Disconnect:

- the brake servo pipe,
- the oxygen sensor connectors,
- the petrol vapour rebreather connector,
- the connector from the lifting eye at the flywheel end,

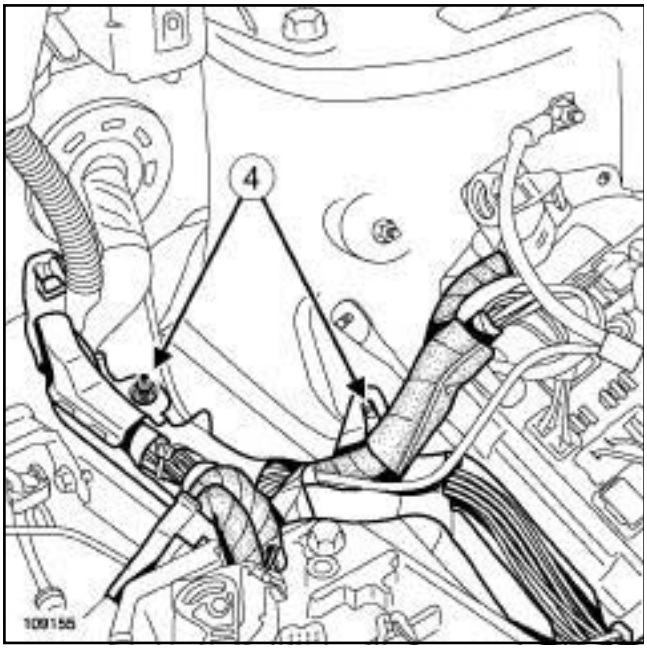
❏ Disconnect:

- the fuse,
- the fuse holder to the fuse board,
- the supply cable on the fuse board,
- the supply cable from the battery protection fuse box.

❏ Remove:

- the petrol injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the computer support mounting bolts,
- the computer bracket.

D4F, and 740 or 742 or 764



109155

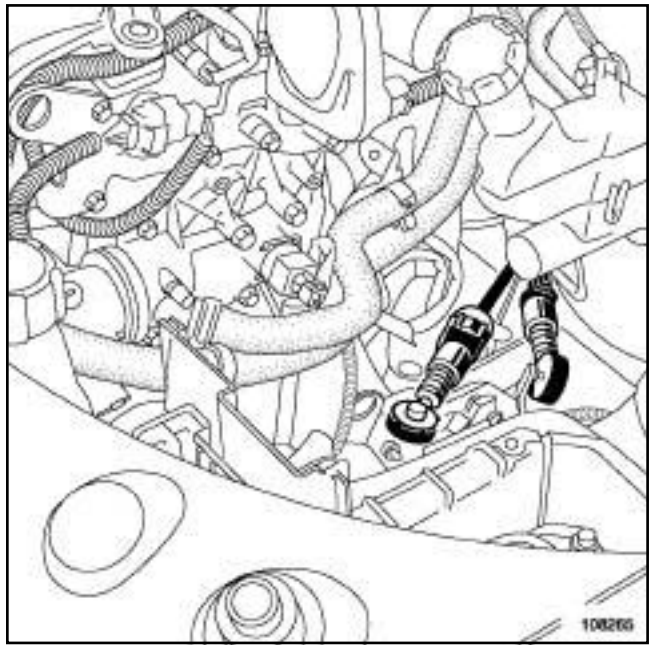
❏ Remove the wiring channel mounting bolts (**4**) on the body.

❏ Remove the wiring duct.

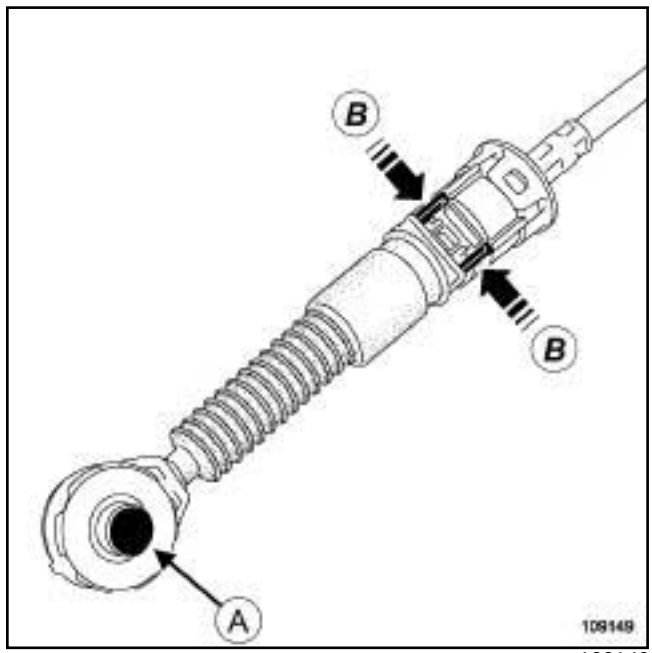
❏ Disconnect:

- the canister solenoid valve connector,
- the canister solenoid valve pipe,
- the petrol supply pipe from the injector rail.

❏ Fit plugs into the openings.



108265

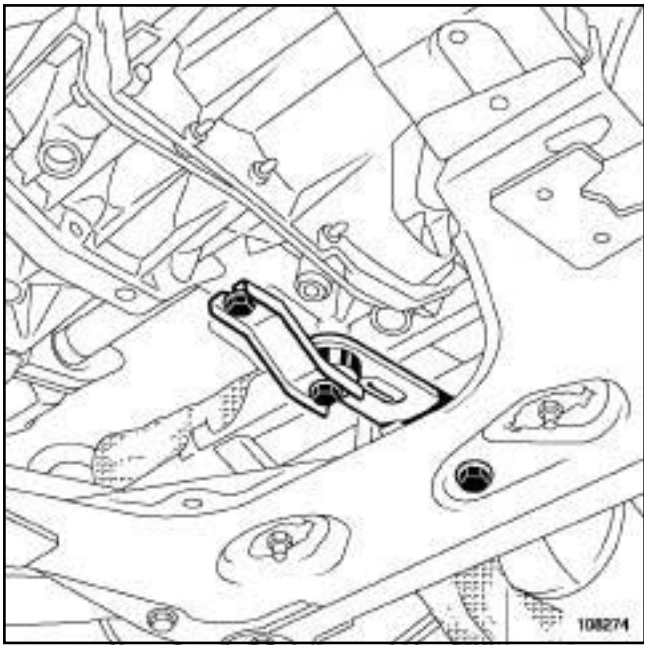


109149

❏ Remove:

- the gear control cables on the gearbox by pushing at (**A**) ,
- the control cables by pushing at (**B**) ,
- the wiring harness channel mountings on the gearbox.

D4F, and 740 or 742 or 764



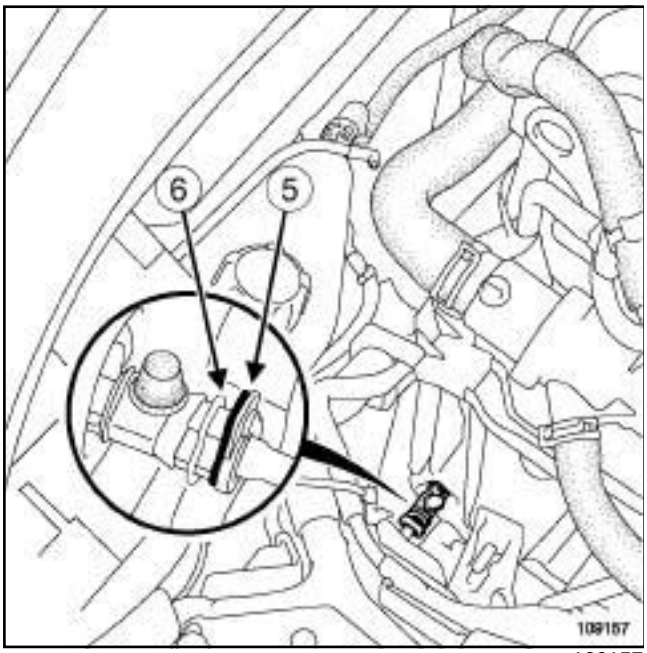
108274

❏ Remove:

- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,

- the exhaust downpipe mountings.

❏ Fit a hose clamp between the brake fluid reservoir and the clutch master cylinder.



109157

❏ Disconnect the clutch slave cylinder by pulling the clips (**5**) and (**6**)

❏ Collect the fluid in a container.

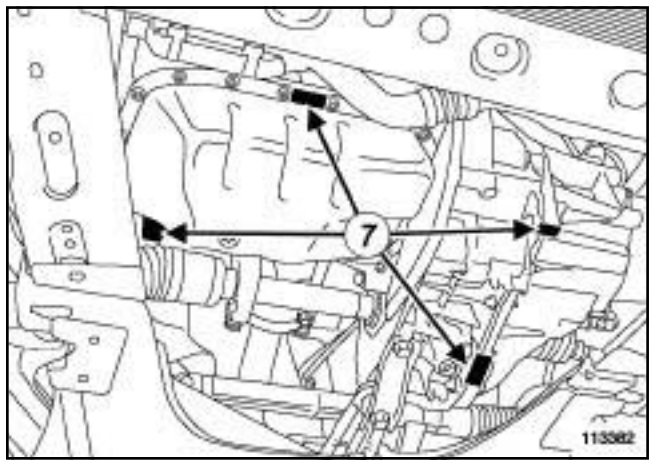
WARNING

Fit plugs into the openings.

Plugs must be fitted on the pipes to prevent moisture from entering the system.

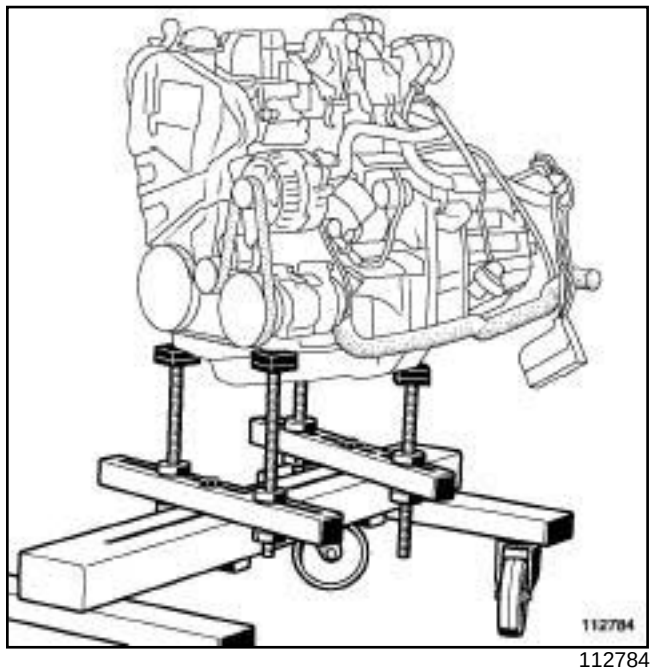
❏ Unclip the gearbox clutch pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382

❏ Support the « engine - gearbox » assembly on the engine marks (**7**) with the **(Mot. 1390)**.



112784

❏ Mark the positions of the suspended engine mountings on the body.

D4F, and 740 or 742 or 764

❑ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❑ Raise the vehicle, moving the engine towards the front.

❑ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If carrying out a standard engine replacement (see **Technical Note 6004A, 4 cylinder - D4 - petrol engine, 10A, Engine and peripherals, Standard replacement**).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the « engine - gearbox » assembly in the vehicle.

❑ Refit:

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the **(Mot. 1390)** from the «engine - gearbox » assembly.

III - FINAL OPERATION.

❑ Clip the clutch pipe to the gearbox.

❑ Remove the protective plugs from the pipe openings.

❑ Connect the clutch slave cylinder pipes.

❑ Remove the hose clamp between the brake fluid reservoir and the clutch master cylinder.

❑ Refit the exhaust downpipe mountings.

❑ Torque tighten the **exhaust downpipe mountings (9 N.m)**.

❑ Refit the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

❑ Refit the wiring harness channel mountings on the gearbox.

❑ Refit the gearbox control cables.

❑ Remove the protective plug from the injector rail.

❑ Connect:

- the fuel supply pipe to the injector rail,
- the canister solenoid valve pipe,
- the canister solenoid valve connector.

❑ Refit the wiring harness channel mountings to the body.

❑ Refit:

- the wiring harness channel mountings to the body,
- the computer mounting,
- the computer bracket mounting bolts bolts,
- the injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) .

❑ Connect:

- the supply cable on the battery protection fuse box,
- the supply cable on the fuse board,
- the fuse holder to the fuse board,
- the fuse,
- the connector on the lifting eye at the flywheel end,
- the petrol vapour rebreather connector,
- the oxygen sensor connectors,
- the brake servo pipe ,
- the Protection and Switching Unit connectors.

❑ Refit:

- the Protection and Switching Unit cover,
- the earths,
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **MR 393 Bodywork, 41A, Lower front structure, Radiator mounting cross member: Removal - Refitting**).

❑ Clip the oxygen sensor wiring harnesses into place.

D4F, and 740 or 742 or 764

AIR CONDITIONING

❑ Refit the air conditioning pipe mounting bolts on the compressor, evaporator and condenser.

❑ Torque tighten the **air conditioning mounting bolts on the compressor, evaporator and condenser (8 N.m)**.

❑ Connect:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector.

❑ Clip the pressure switch wiring harness on the condenser.

❑ Refit the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❑ Connect:

- the passenger compartment heating hoses,
- the top hose from the cylinder head coolant outlet unit,
- the fan assembly connectors.

❑ Refit:

- the « right-hand driveshaft and stub-axle carrier assembly » (see **Hub carrier - driveshaft assembly: Removal - Refitting**) ,
- the « left-hand driveshaft and stub axle carrier assembly » (see **Hub carrier - driveshaft assembly: Removal - Refitting**) ,
- the front bumper (see **MR 393, Bodywork, 55A, Exterior protection, Front bumper: Removal - Refitting**),
- the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners**),
- the front wheels (see **Wheel: Removal - Refitting**) .

❑ Refill:

- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- the gearbox (see **Manual gearbox oils: Draining - Filling**) ,
- the engine cooling circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the engine undertray,
- the battery tray (see) ,
- the battery (see **Battery: Removal - Refitting**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

AIR CONDITIONING

❑ Refill the coolant circuit (see **Air conditioning: Parts and consumables for the repair**) .

M4R, and DP0

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
engine cover mounting bolts	**62 Nm**
rubber mounting bush mounting bolts on the body	**62 Nm**
rubber mounting bush mounting bolt on the engine cover	**105 Nm**
upper engine tie-bar mounting bolts	**105 Nm**
gearbox support mounting bolts on the body	**62 Nm**
rubber mounting bush mounting bolts on the gearbox mounting	**62 Nm**
rubber mounting bush mounting nut on the gearbox	**62 Nm**
exhaust clamp mounting bolts	**21 Nm**
engine tie-bar mounting bolt on the engine	**180 Nm**
engine tie-bar mounting bolt on the sub-frame	**105 Nm**
air inlet duct clips	**6 Nm**

REMOVAL

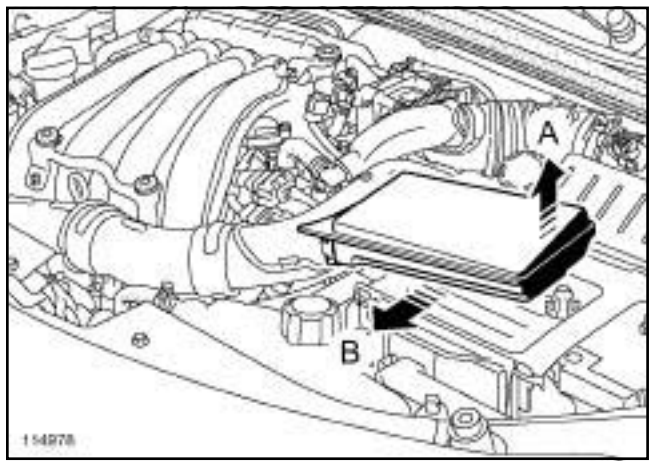
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❑ Remove the engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

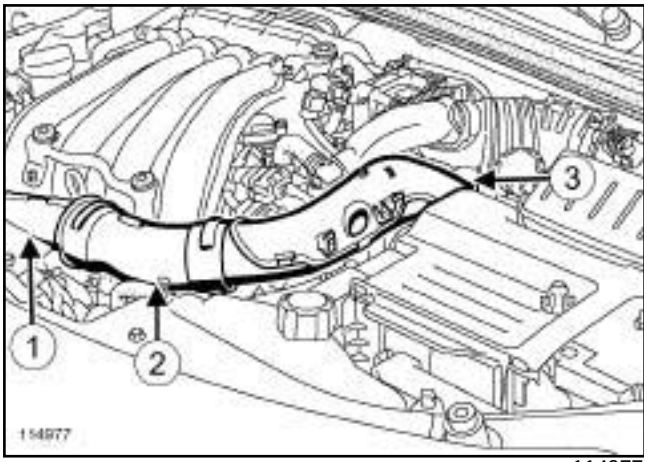


114978

❑ Lift the air resonator (**A**) to remove it from the battery cover.

❑ Pull the air resonator (**B**) towards the front of the vehicle to remove it.

M4R, and DP0

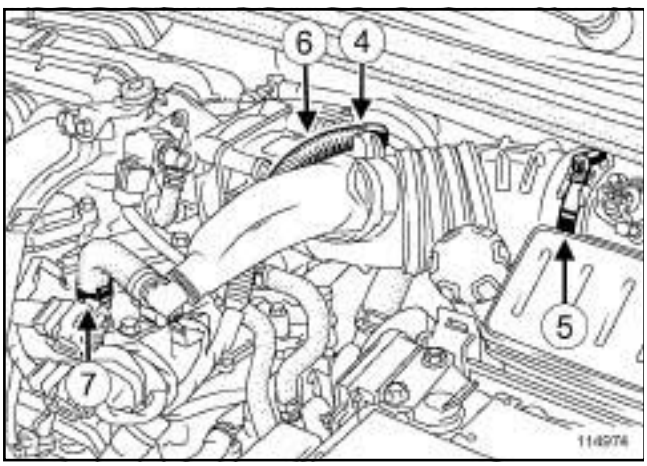


114977

❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove the air intake sleeve.



114974

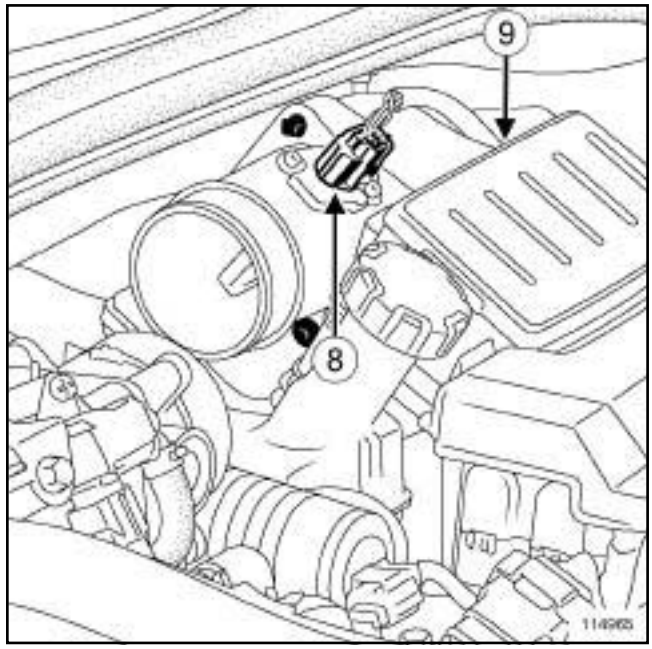
❏ Detach the wiring harness from the air inlet duct at (**4**) .

❏ Undo the air duct securing clips:

- on the air flow sensor (**5**) ,
- on the motorised throttle valve (**6**) .

❏ Remove the oil vapour rebreather duct (**7**) from the rocker cover using the **(Mot. 1448)**.

❏ Remove the air inlet duct.



114965

❏ Disconnect the air flowmeter connector (**8**) .

❏ Unclip the air flowmeter connector wiring harness at (**9**) .

❏ Remove the engine undertray.

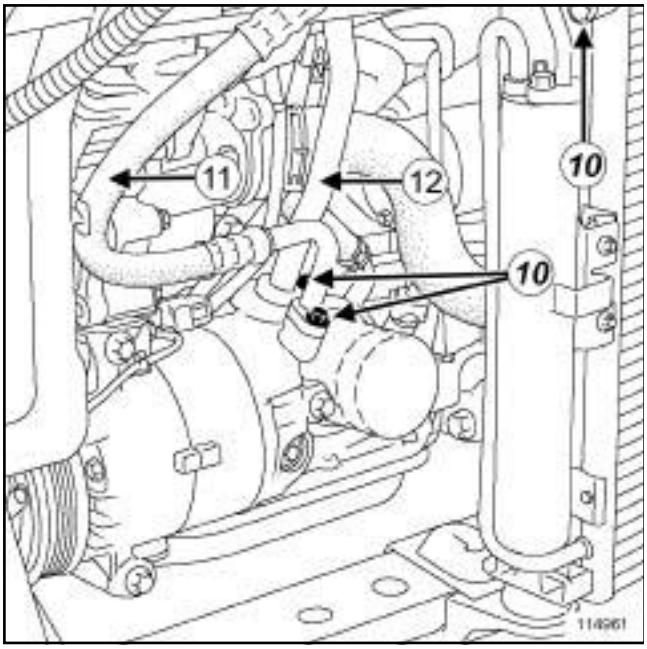
❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),
- the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,

M4R, and DP0



114961

❏ Remove:

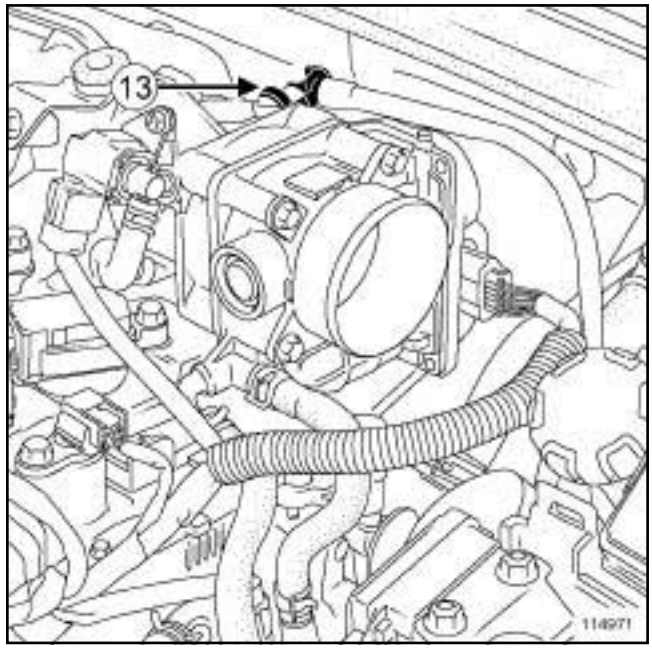
- the bolts (**10**) from the air conditioning pipe unions,
- the air conditioning pipe (**11**) .

WARNING
Plugs must be fitted on the hoses to prevent moisture from entering the system.

❏ Pull out the air conditioning pipe (**12**) .

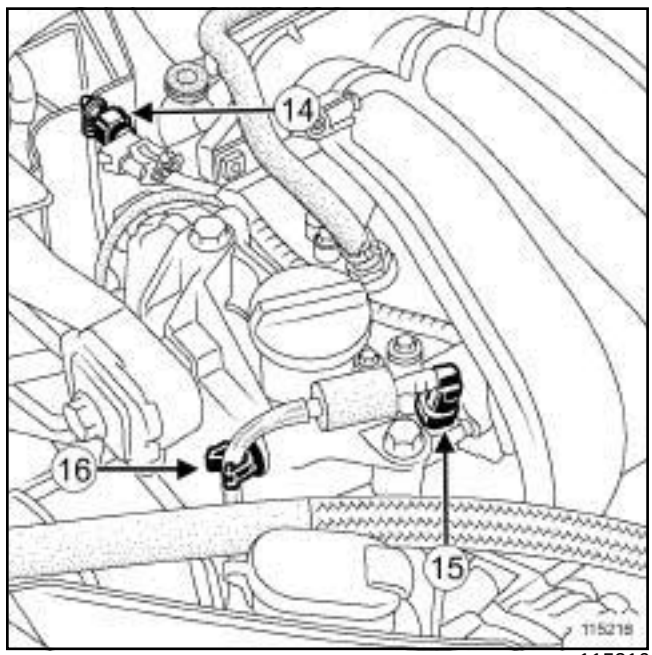
❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).



114971

❏ Disconnect the brake servo hose (**13**) .



115216

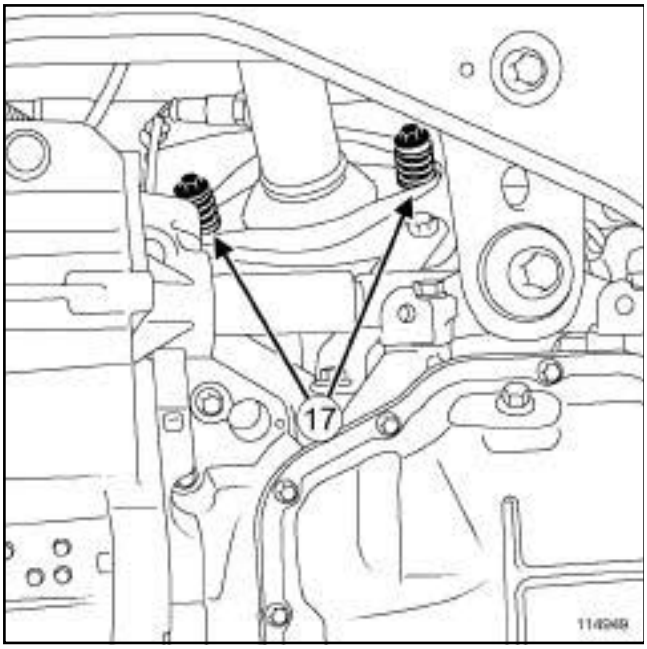
❏ Disconnect:

- the petrol vapour rebreather pipe (**14**) ,
- the fuel supply pipe (**15**) .

WARNING
Protect sensitive areas from fuel spillage.

❏ Unclip the fuel supply pipe at (**16**) .

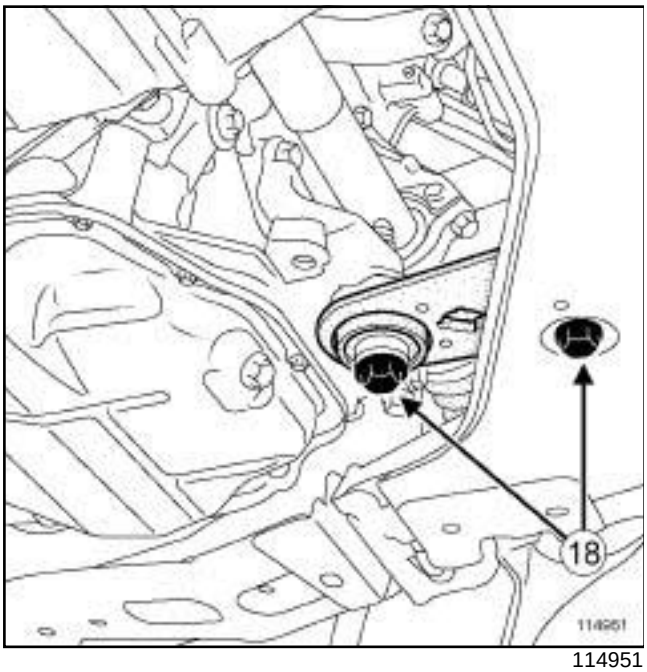
M4R, and DP0



114949

❑ Remove:

- the exhaust clamp mounting bolts (**17**) ,
- the exhaust clamp seal.

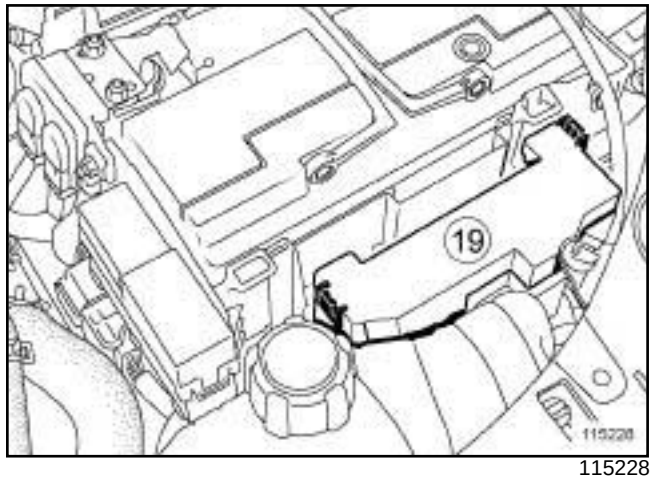


114951

❑ Remove:

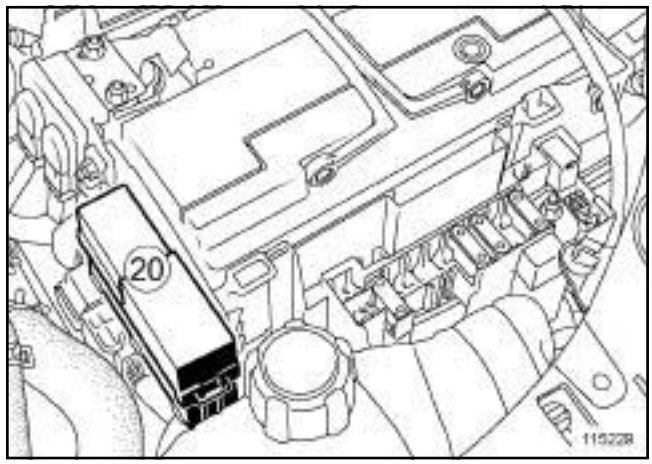
- the engine tie-bar mounting bolts (**18**) ,
- the engine tie-bar.

❑ Remove the battery cover.



115228

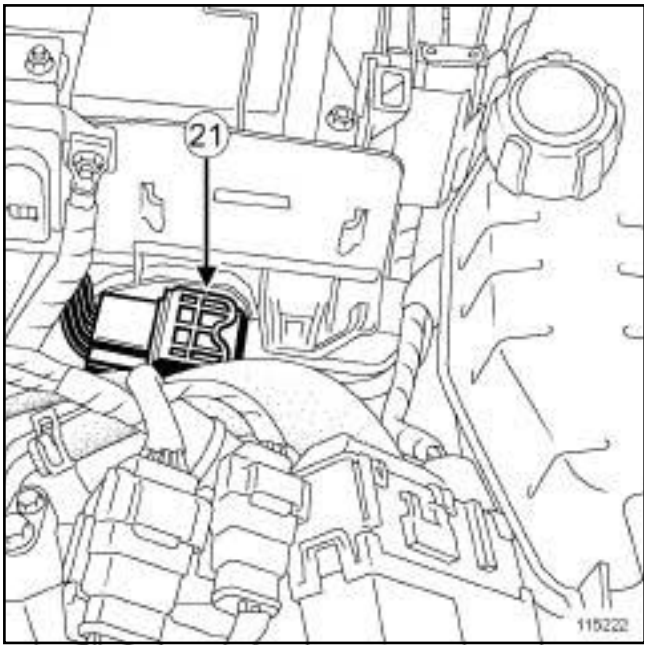
❑ Remove the fuse box cover (**19**) .



115229

❑ Unclip the relay box (**20**) .

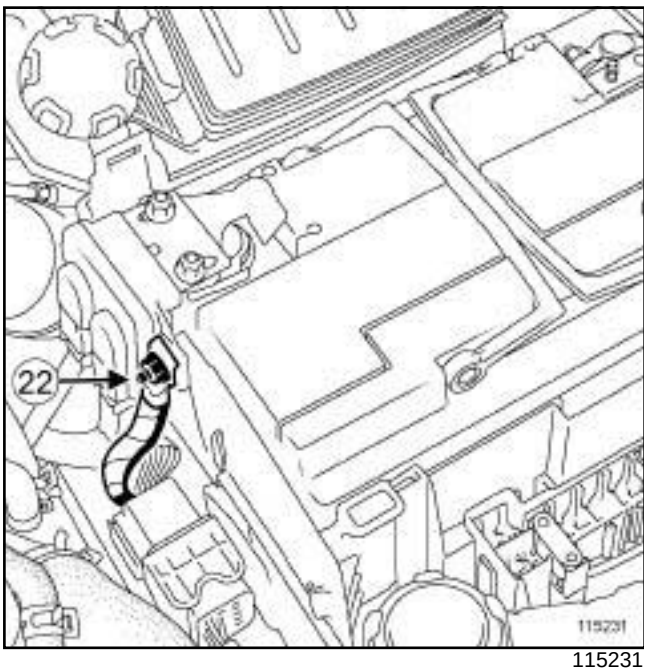
M4R, and DP0



115222

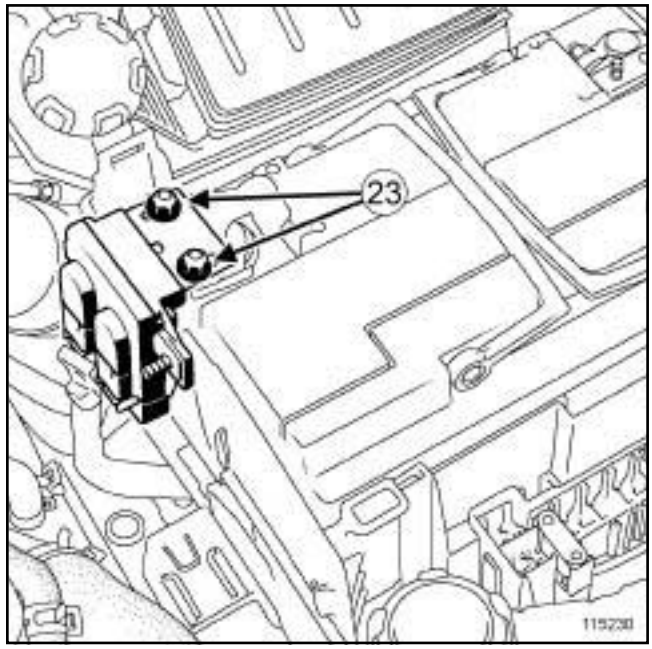
❏ Unclip the wiring harness connector (**21**) .

❏ Disconnect the wiring harness connector (**21**) .



115231

❏ Disconnect the lead (**22**) .

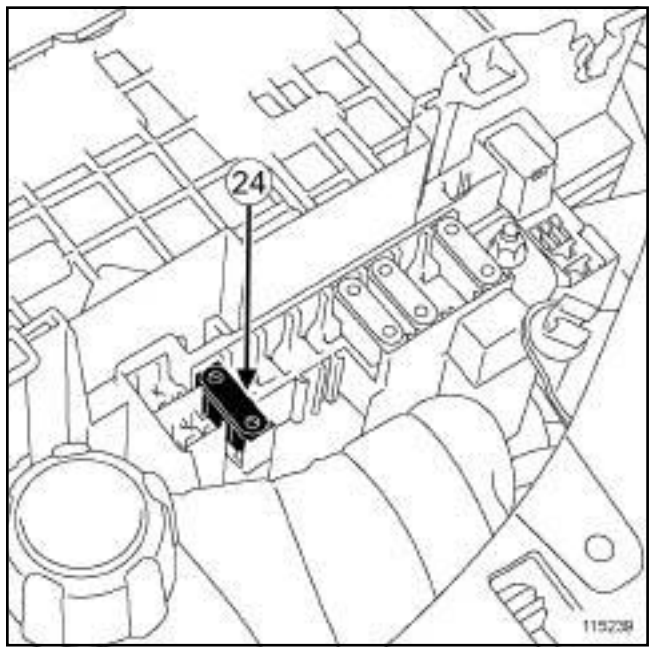


115230

❏ Disconnect the positive battery terminal (**23**) .

❏ Remove:

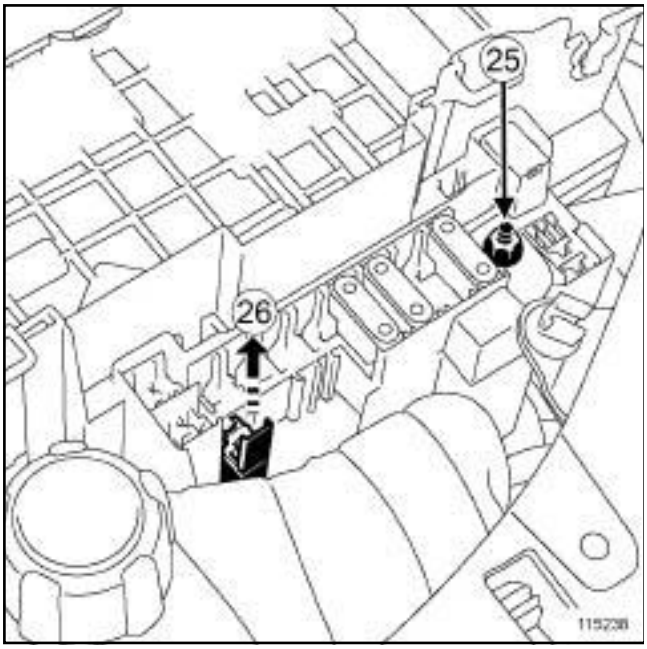
- the battery mounting clamp,
- the battery.



115239

❏ Remove the fuse (**24**) .

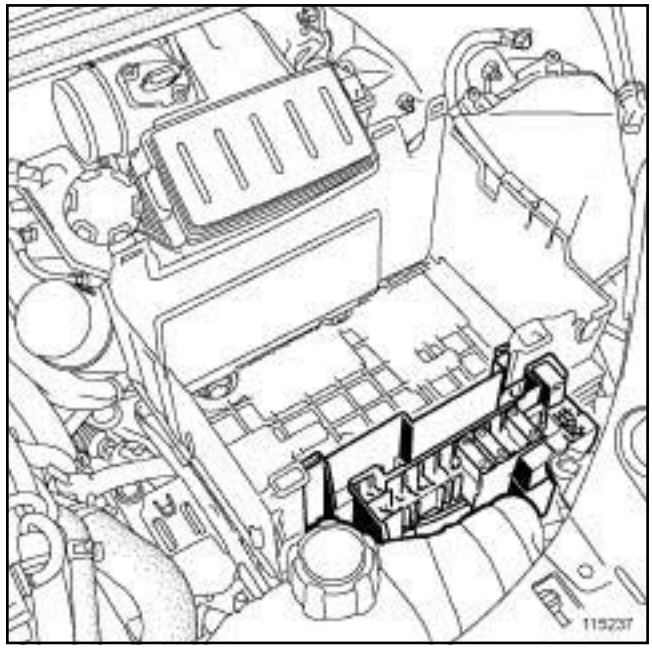
M4R, and DP0



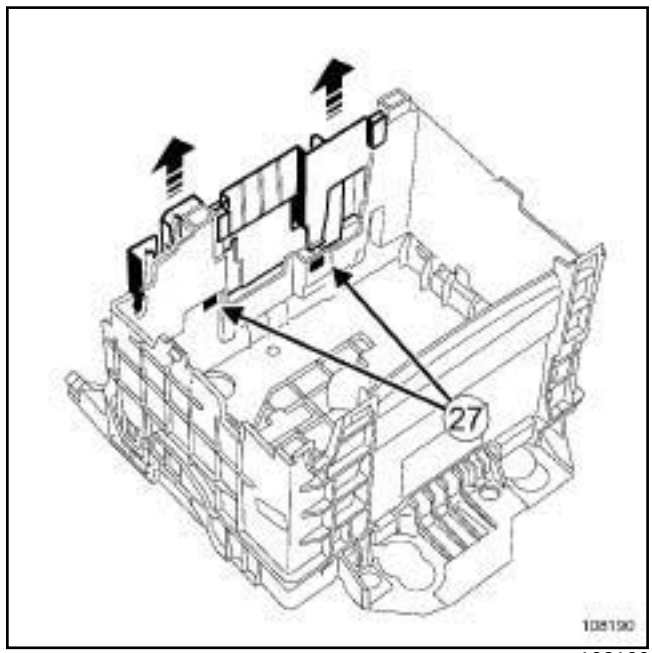
115238

❏ Disconnect the electrical connector (**25**) .

❏ Pull the fuse holder out from the fuse box (**26**) .



115237

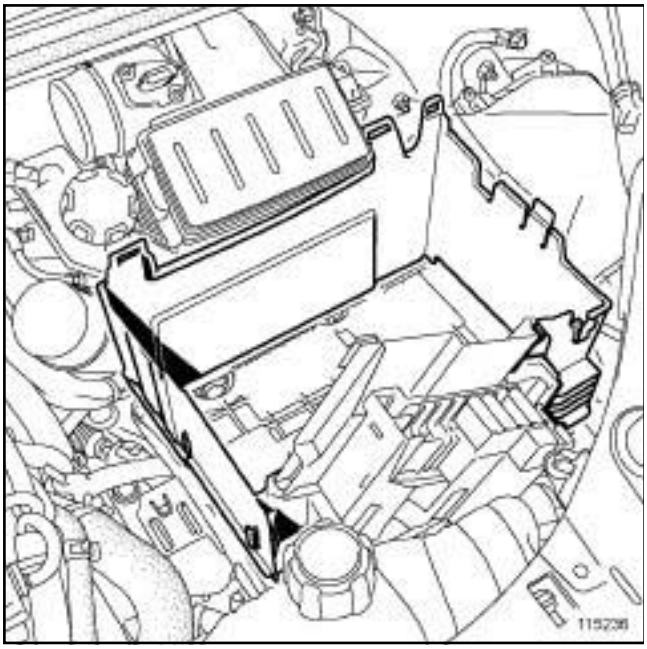


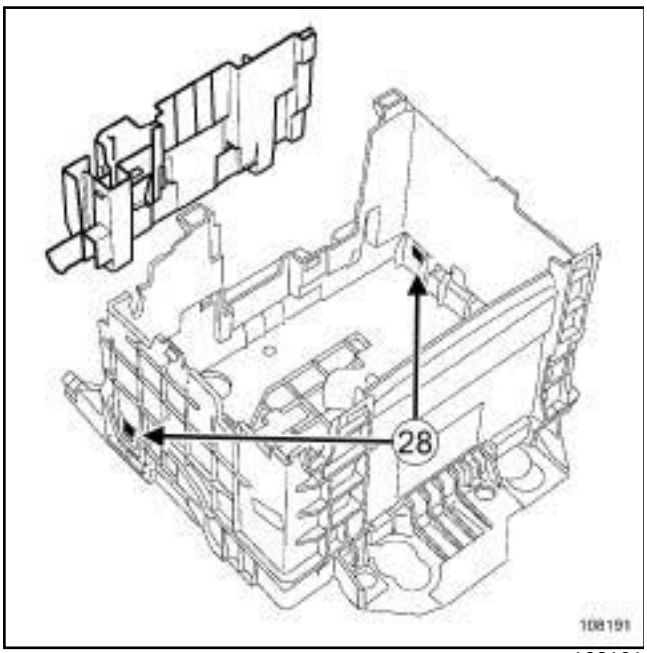
108190

❏ Unhook the fuse box from the battery tray at (**27**) .

❏ Move the fuse box away from the battery tray.

M4R, and DP0

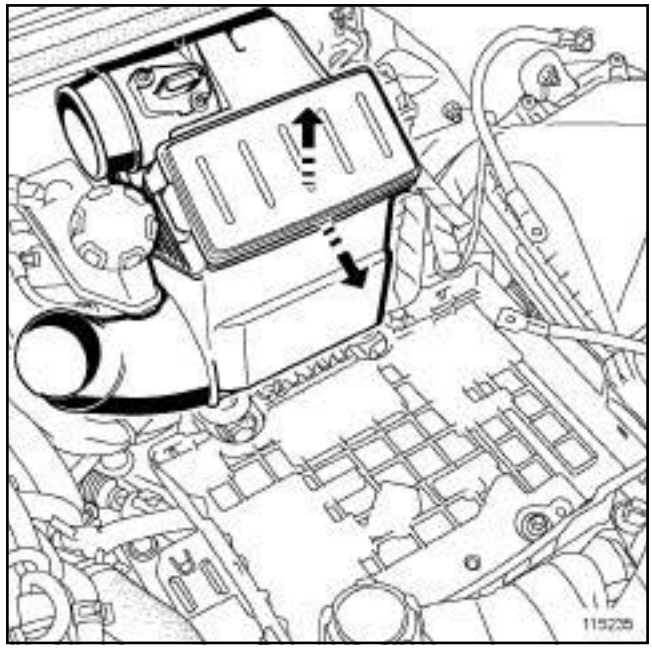

115236



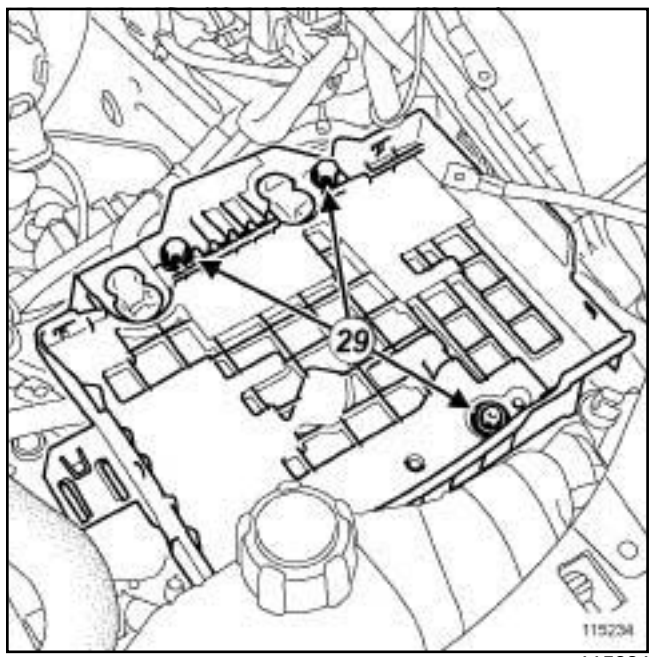
108191

❑ Unclip the battery tray from the battery tray base at (**28**) .

❑ Remove the battery tray.


115235

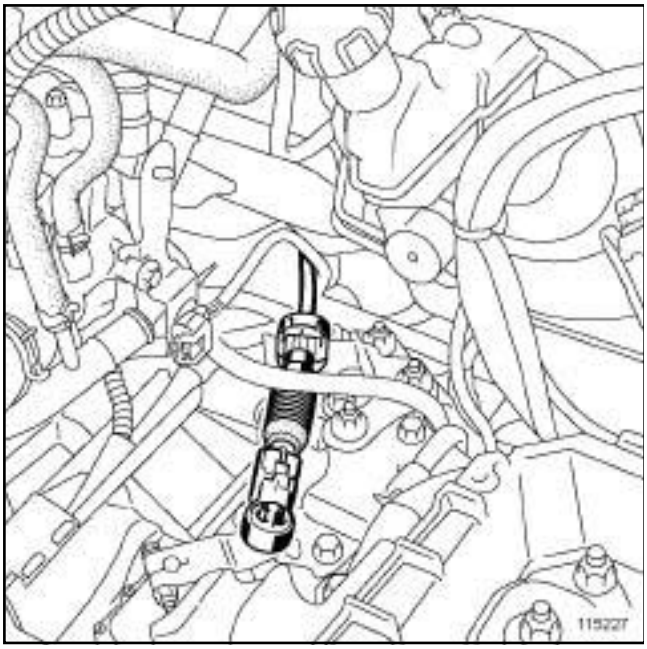
❑ Remove the air filter unit in the direction of the arrows.



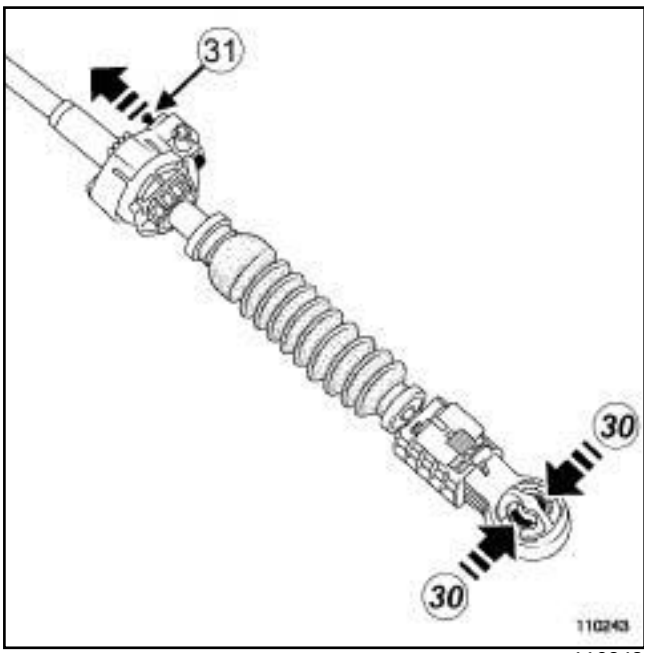
115234

❑ Remove:

- the battery tray base mounting bolts (**29**) ,
- the battery tray base.



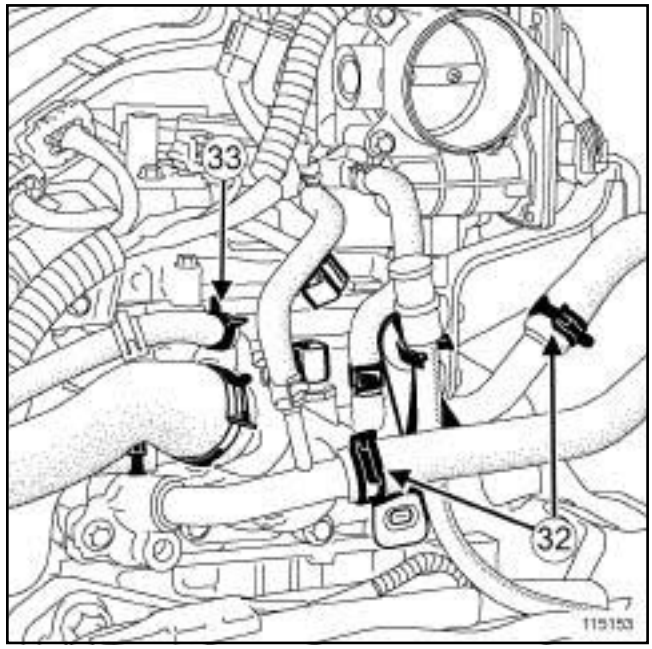
115227



110243

❏ Detach the automatic transmission control cable ball joint by pressing at (**30**) .

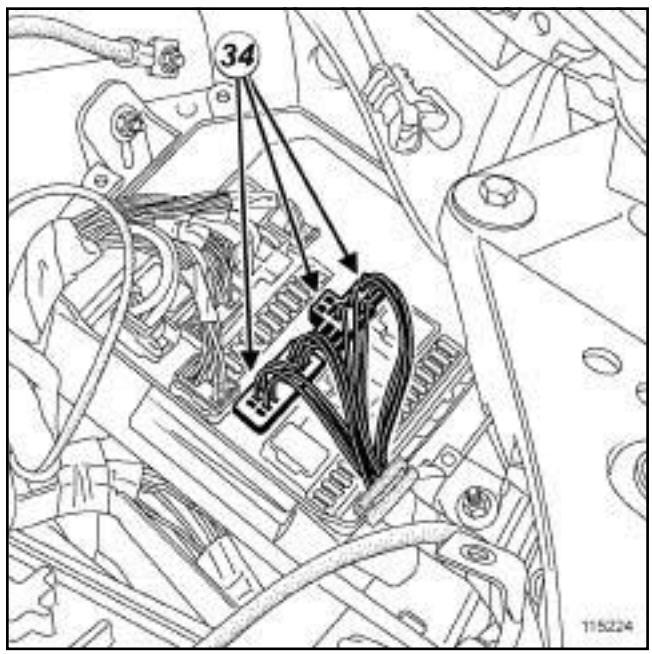
❏ Pull out the automatic transmission control cable by pulling tab (**31**) .



115153

❏ Disconnect:

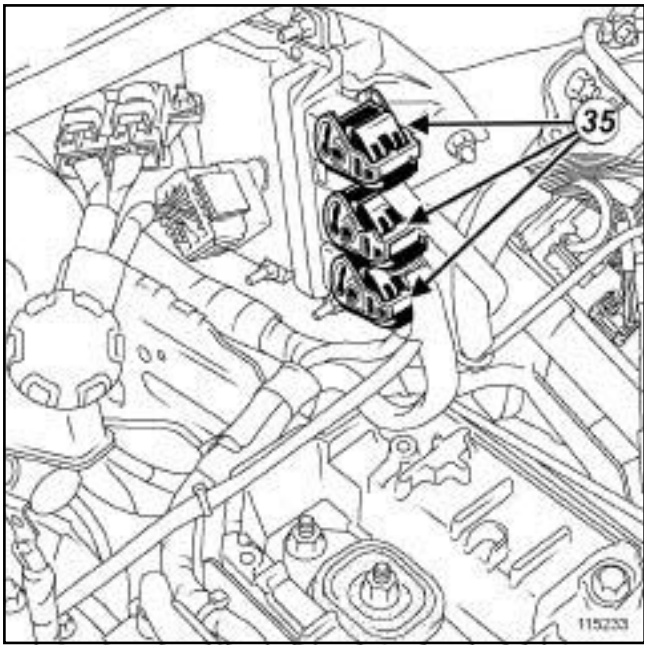
- the passenger compartment heating hoses (**32**) ,
- the expansion bottle hoses (**33**) .



115224

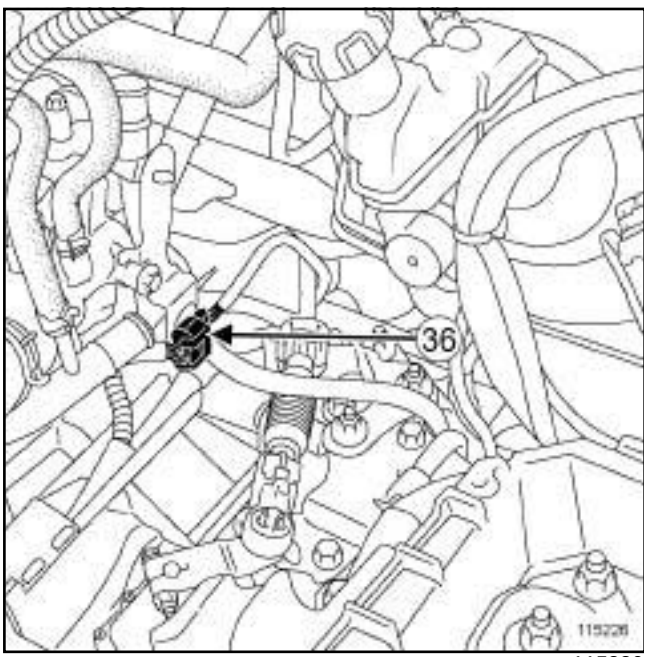
❏ Remove the Protection and Switching Unit cover.

❏ Remove the engine wiring harness connectors (**34**) from the Protection and Switching unit.



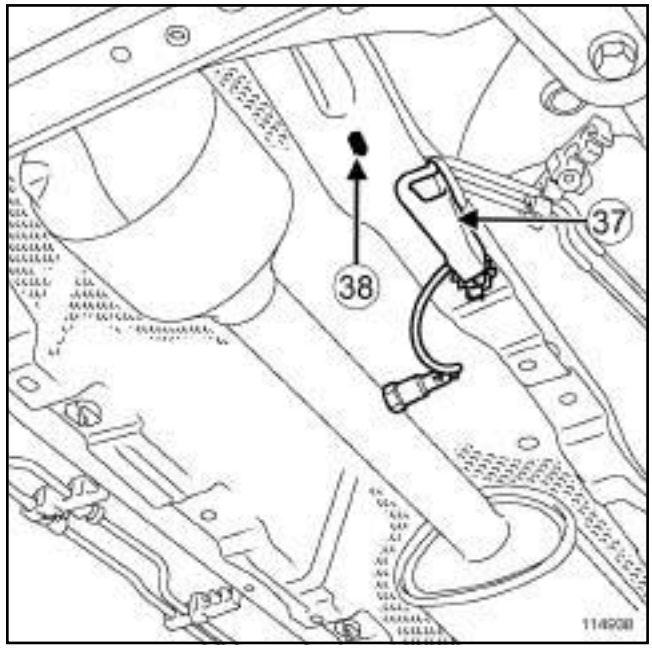
115233

❏ Disconnect the engine wiring harness connectors (**35**) from the injection computer.



115226

❏ Disconnect the upstream oxygen sensor connector (**36**) .



114938

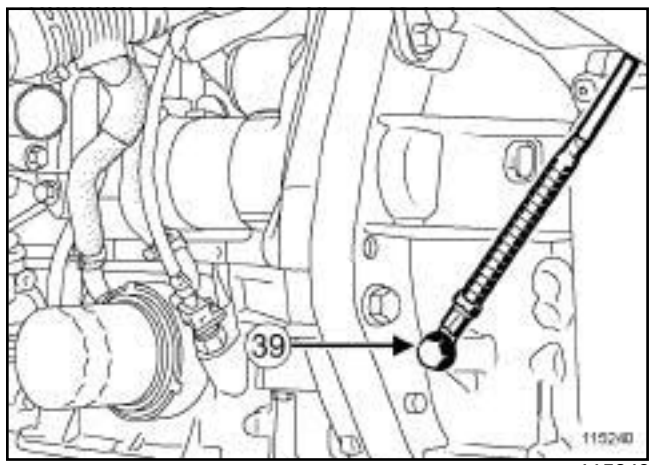
❏ Remove the plastic cover (**37**) .

❏ Detach the downstream oxygen sensor connector at (**38**) .

❏ Disconnect the downstream oxygen sensor connector.

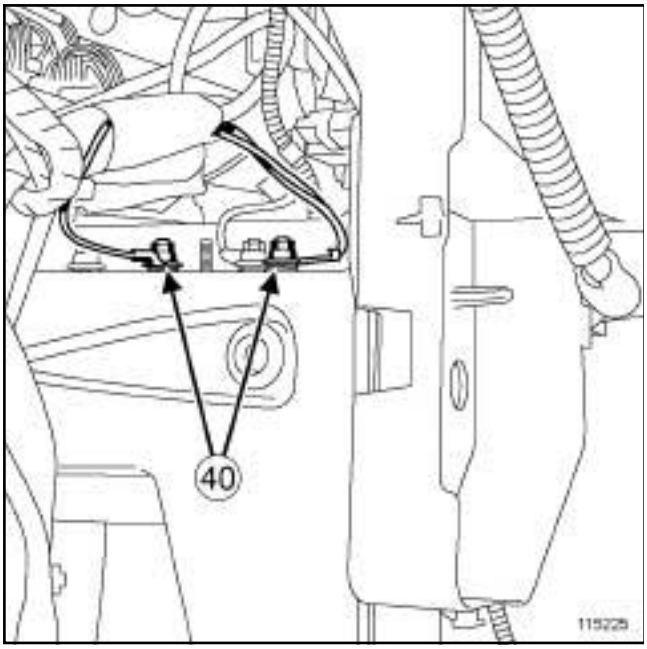
❏ Unclip the downstream oxygen sensor wiring harness from the power-assisted steering box.

❏ Feed the downstream oxygen sensor wiring harness into the engine compartment.



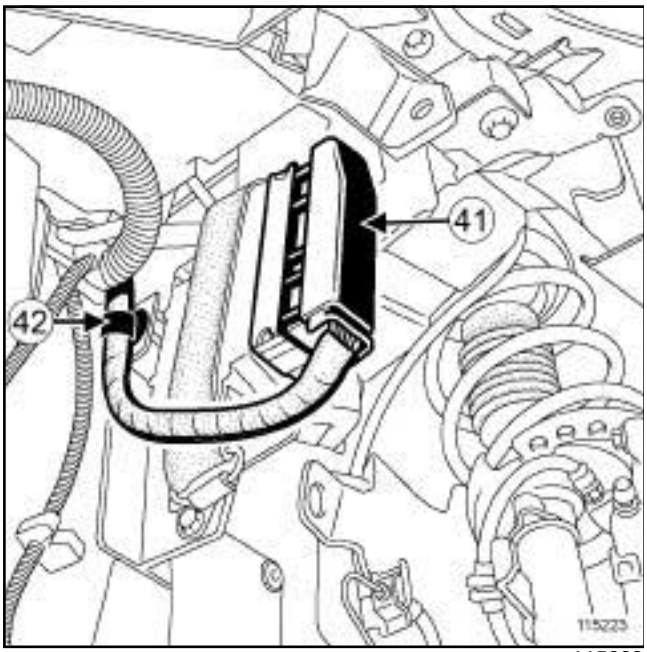
115240

❏ Disconnect the automatic transmission earth wire (**39**) .



115225

❏ Disconnect the side member earth wires.

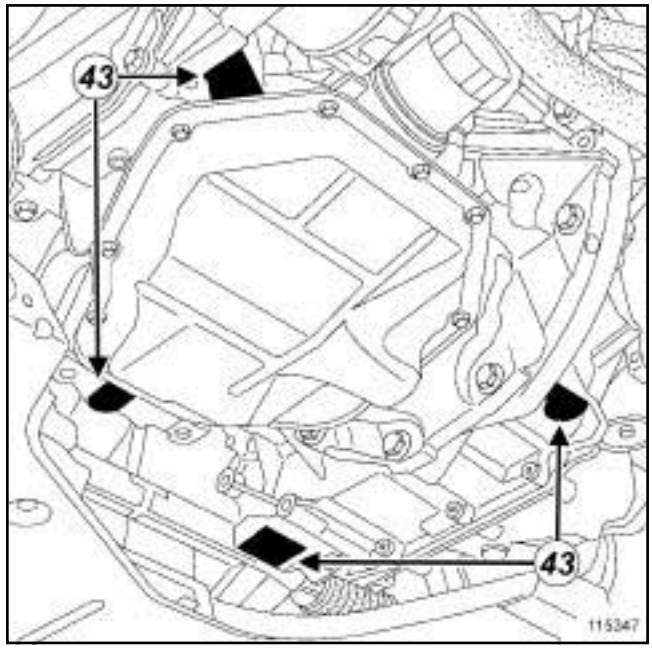


115223

❏ Disconnect the automatic transmission connector (**41**) .

❏ Unclip the automatic transmission wiring harness at (**42**) .

❏ Feed the automatic transmission wiring harness into the engine compartment.



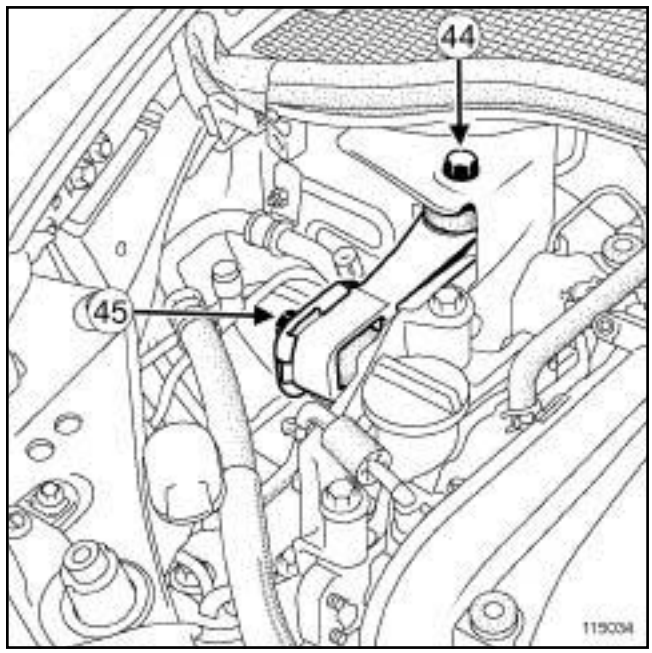
115347

❏ Position the **(Mot. 1390)** under the «engine-gearbox » assembly.

❏ Lower the vehicle down onto the pads of the **(Mot. 1390)**.

❏ Adjust the pads of the **(Mot. 1390)** at (**43**) to ensure that the « engine-gearbox » assembly is stable.

II - REMOVAL OF PART CONCERNED

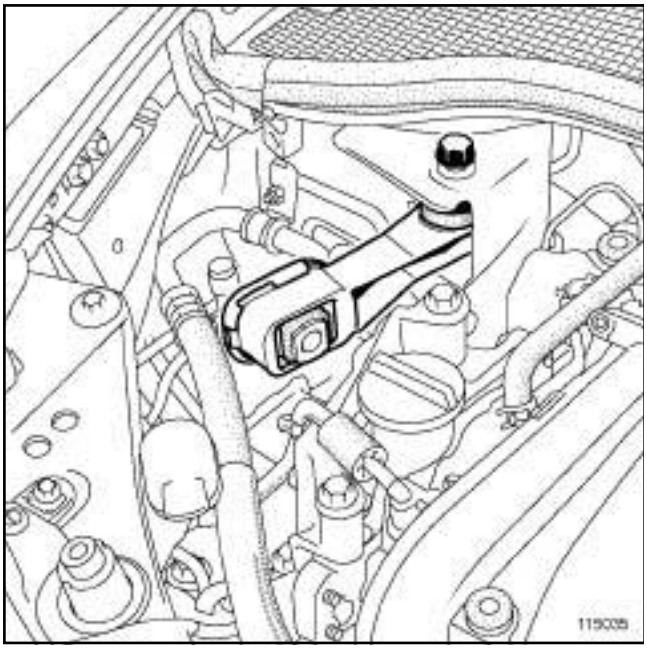


115034

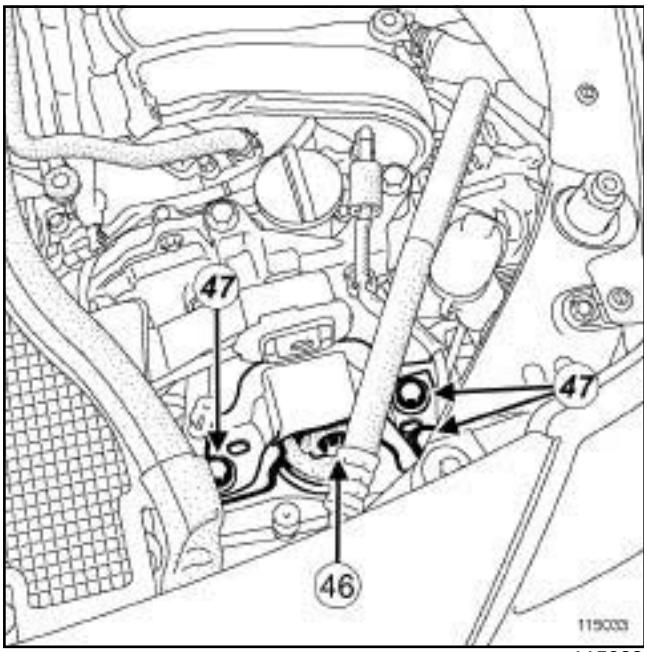
❏ Undo the upper engine tie-bar mounting bolt (**44**) .

❏ Remove the upper engine tie-bar mounting bolt (**45**) .

M4R, and DP0


115035

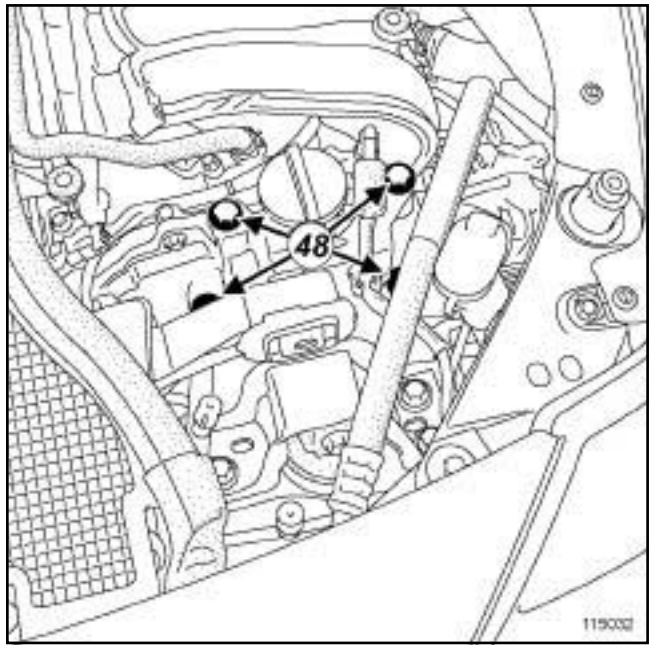
❏ Remove the upper engine tie-bar.



115033

❏ Remove:

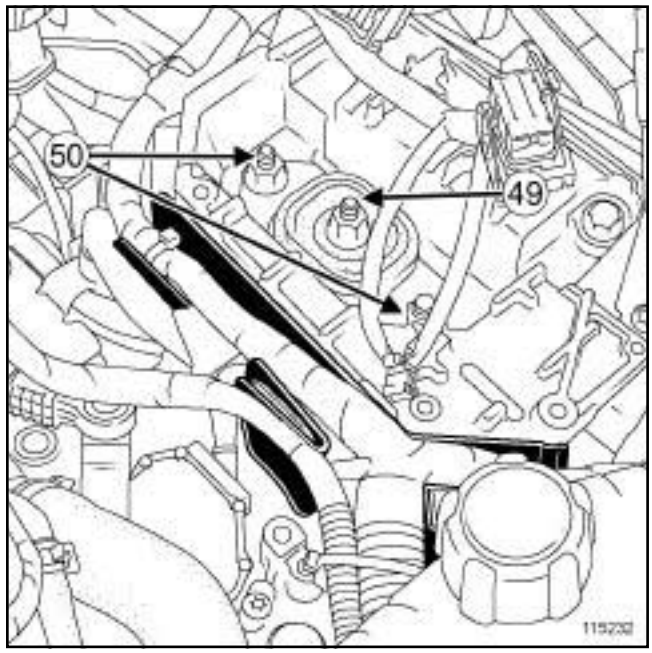
- the bolt (**46**) mounting the rubber mounting bush to the engine cover,
- the bolts (**47**) mounting the rubber mounting bush to the body.



115032

❏ Remove:

- the engine cover mounting bolts (**48**) ,
- the engine cover,
- the rubber mounting bush.



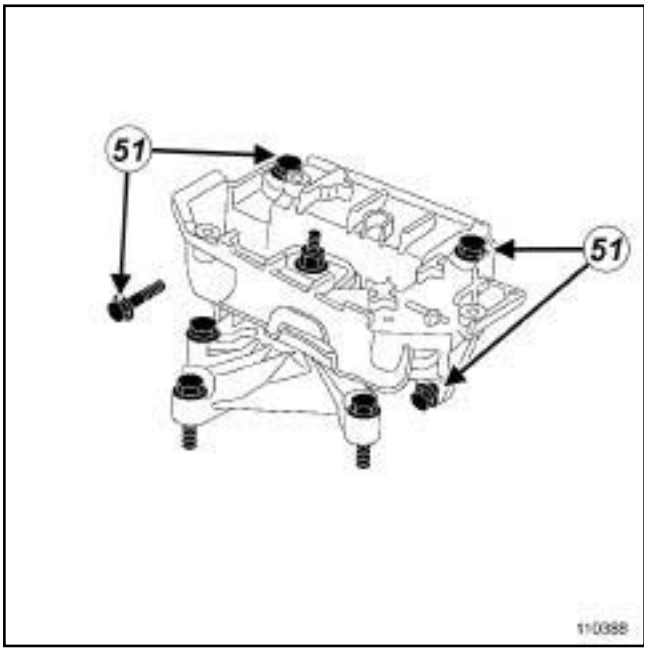
115232

❏ Separate the neck of the wiring harness from the gearbox support.

❏ Remove:

- the nut (**49**) mounting the rubber mounting bush to the gearbox cover,
- the rubber mounting bush mounting bolts (**50**) ,

- the rubber mounting bush.



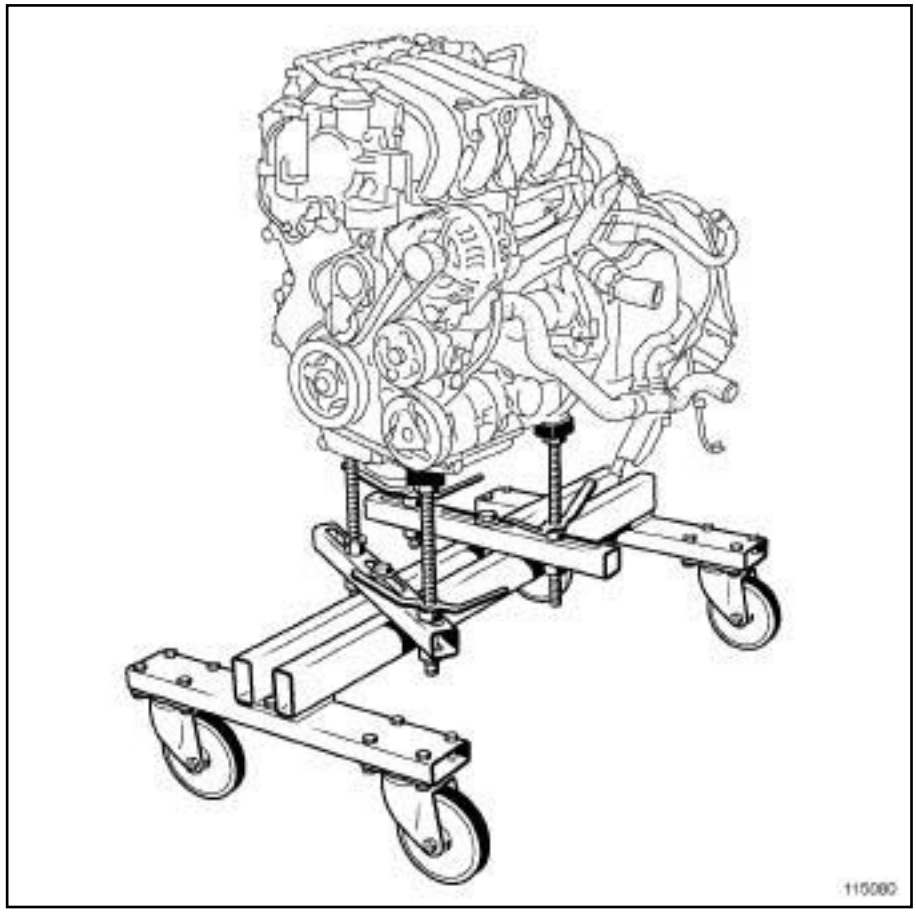
110388

❏ Remove:

- the bolts (**51**) mounting the gearbox support on the body,
- the gearbox support.

❏ Gently move the engine towards the front of the vehicle.

M4R, and DP0



115080

❑ Lift the vehicle to remove the « engine-gearbox » assembly.

Note:

Check that no component obstructs the movement of the body around the « engine and gearbox » assembly.

REFITTING

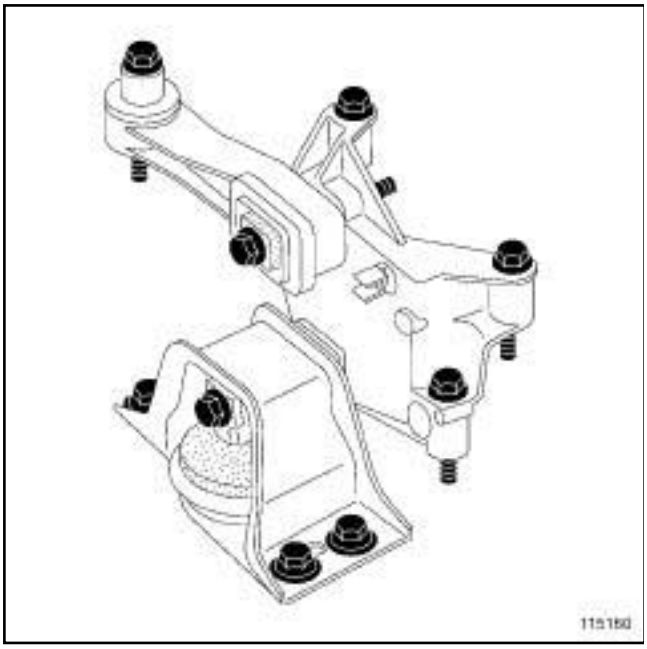
I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see) (Technical Note 6020A, 10A, Engine and peripherals).

II - REFITTING PART CONCERNED

❑ Position the « engine - gearbox » assembly in the body.

M4R, and DP0



115160

❏ Fit:

- the rubber mounting bush,
- the engine cover.

❏ Pretighten:

- the engine cover mounting bolts,
- the bolts securing the rubber mounting bush to the body.

Note:

Allow the two parts to move freely.

❏ Fit the bolts securing the rubber mounting bush to the engine cover.

❏ Torque tighten and in order:

- the **engine cover mounting bolts (62 Nm)**,
- the **rubber mounting bush mounting bolts on the body (62 Nm)**,
- the **rubber mounting bush mounting bolt on the engine cover (105 Nm)**,
- the **upper engine tie-bar mounting bolts (105 Nm)**.

❏ Refit:

- the gearbox support,
- the mounting bolts securing the gearbox support to the body,
- the rubber mounting bush,
- the mounting studs securing the rubber mounting bush to the gearbox support,
- the mounting nut securing the rubber mounting bush to the gearbox cover.

❏ Torque tighten:

- the **gearbox support mounting bolts on the body (62 Nm)**,
- the **rubber mounting bush mounting bolts on the gearbox mounting (62 Nm)**,
- the **rubber mounting bush mounting nut on the gearbox (62 Nm)**.

III - FINAL OPERATION.

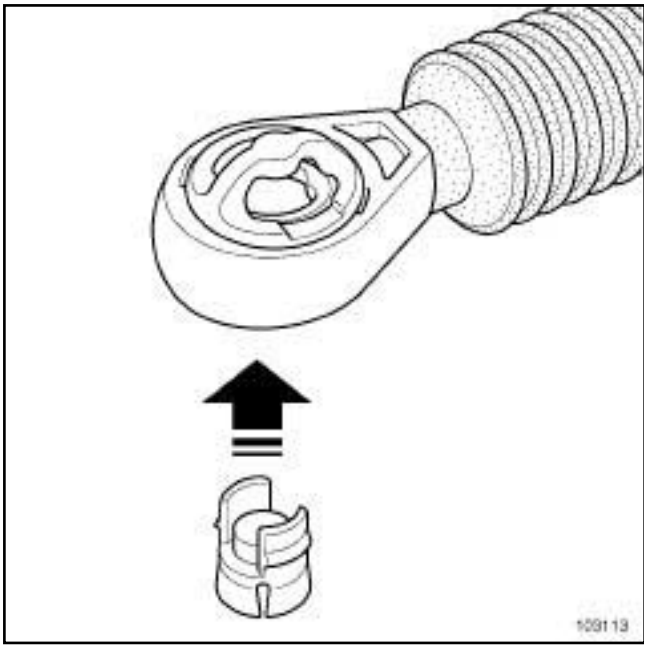
❏ Connect:

- the engine wiring harness,
- the air conditioning pipe unions,
- the cooling hoses,
- the air flowmeter connector,
- the fuel supply pipe,
- the petrol vapour rebreather pipe,
- the brake servo pipe.

❏ Clip:

- the fuel supply pipe,
- the air flowmeter connector wiring harness.

M4R, and DP0



103113

❏ Be sure to replace the clip on the gearbox control cable ball joint each time it is removed.

❏ Fit the gearbox control cable.

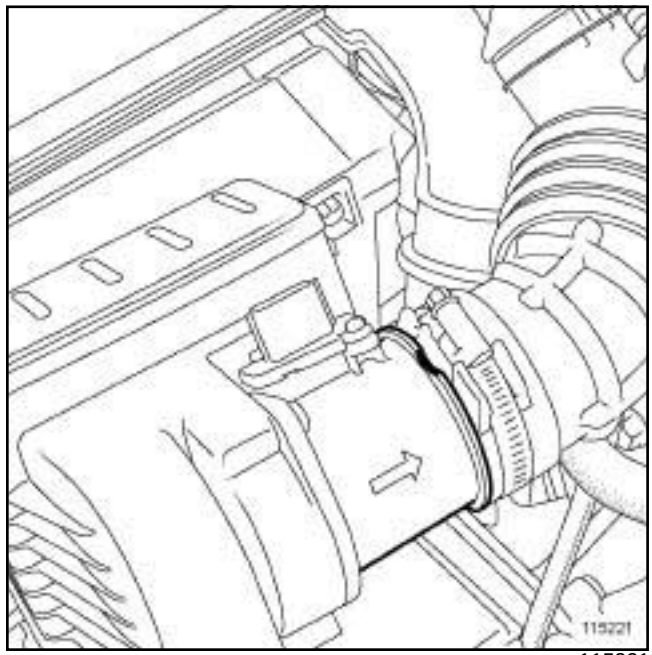
❏ The exhaust clamp seal must be replaced.

❏ Torque tighten:

- the **exhaust clamp mounting bolts (21 Nm)**,
- the **engine tie-bar mounting bolt on the engine (180 Nm)**,
- the **engine tie-bar mounting bolt on the sub-frame (105 Nm)**.

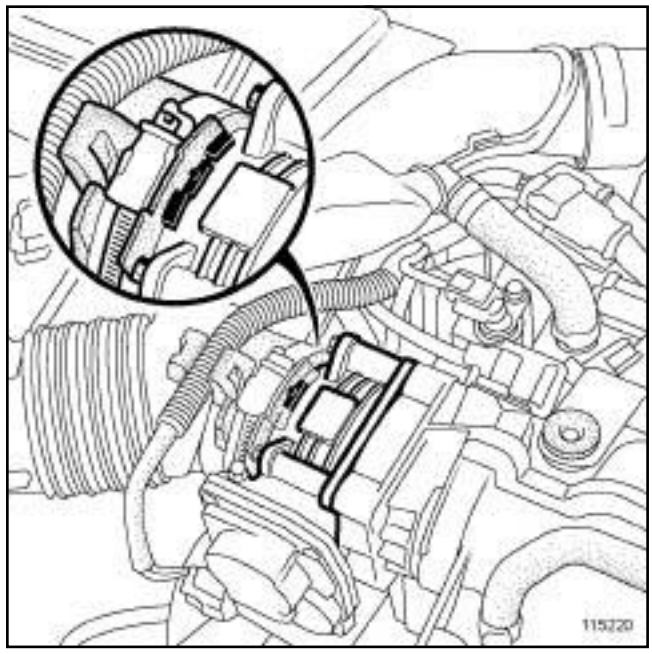
❏ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



115221

❏ Fit the air inlet duct on the air flowmeter following the assembly marking.



115220

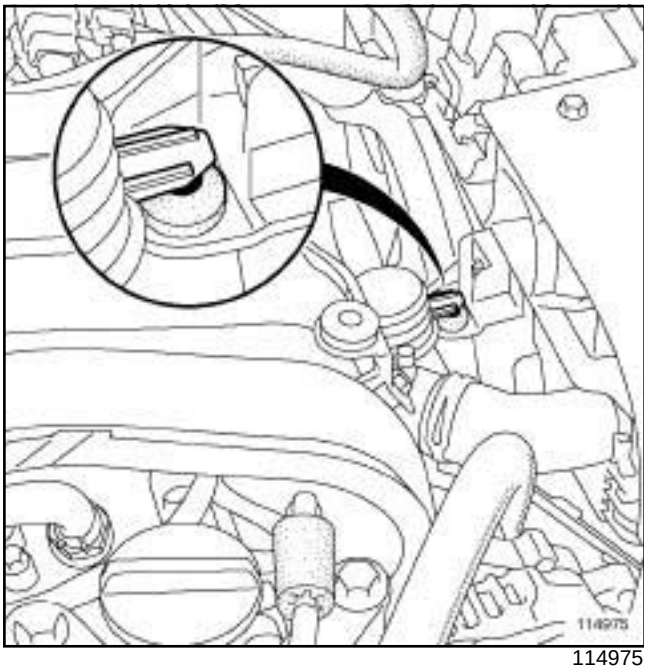
❏ Fit the air inlet duct on the motorised throttle valve following the assembly marking.

❏ Connect the oil vapour rebreather pipe to the rocker cover.

❏ Torque tighten the **air inlet duct clips (6 Nm)**.

M4R, and DP0

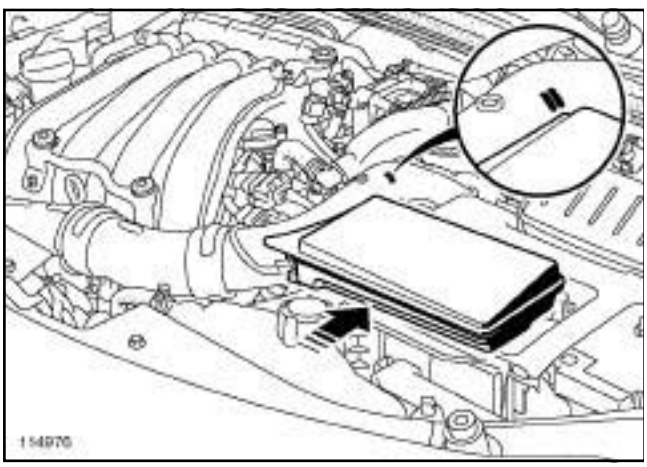
❏ Clip the wiring harness onto the air inlet duct.



114975

❏ Before refitting the air inlet hose, check that the air resonator upper mounting at the front end is correctly clipped at .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle so that the corner of the air resonator is between the two lines marked on the air inlet hose.

❏ Press on the air resonator to fit it into the battery cover.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Perform the following operations:

- fill the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),
- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).
- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see) .

❏ Refit the engine cover.

F4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station
Diagnostic tool

Tightening torques ▽	
exhaust manifold nuts	**30 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

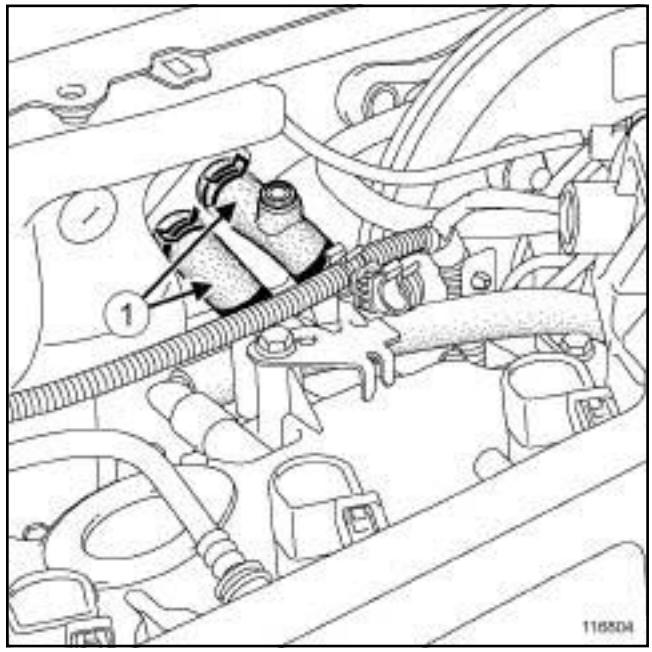
❑ Remove the engine undertray.

❑ Perform the following operations:

- drain the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- drain the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❑ Remove:

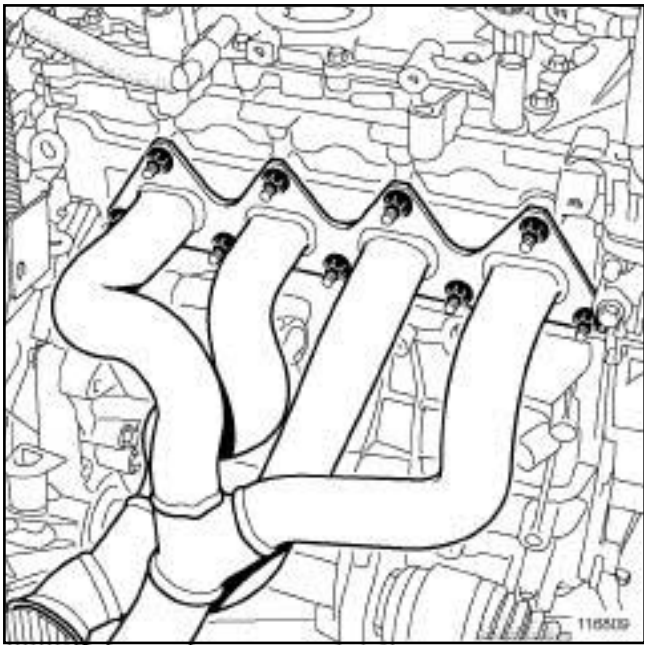
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the soundproofing unit,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery tray).



116804

❑ Disconnect the hoses (**1**) from the heater radiator using the **(Mot. 1448)**.

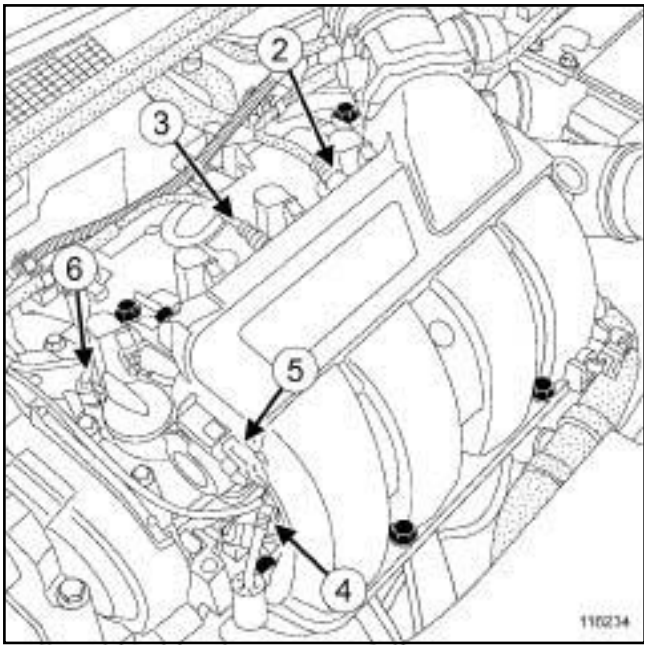
F4R



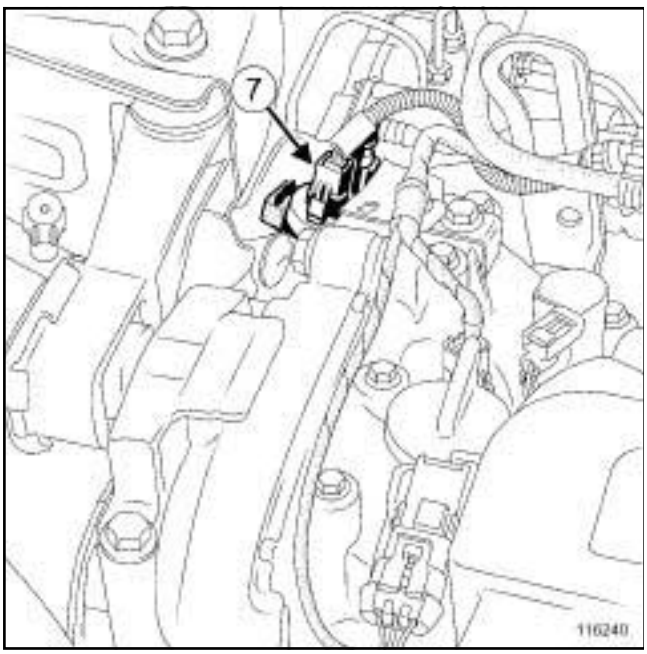
116809

❑ Remove the exhaust manifold nuts.

F4R



116234

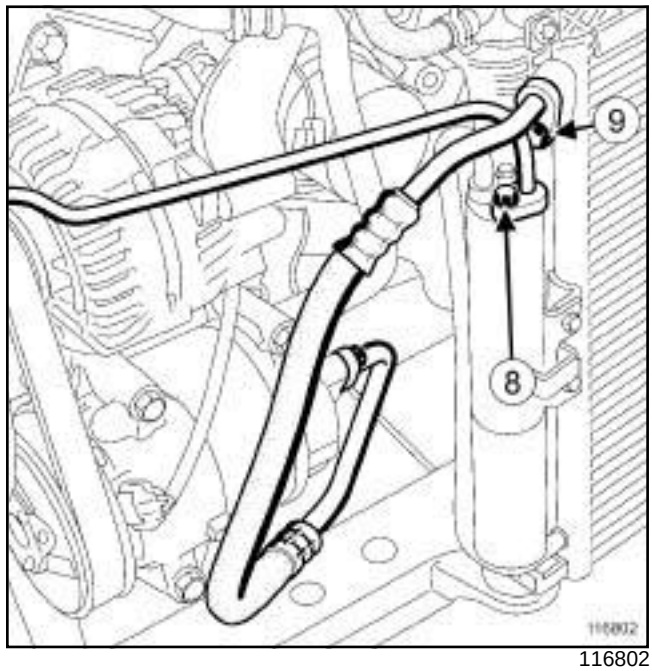


116240

❑ Disconnect:

- the brake servo pipe (**2**) on the inlet distributor side,
- the petrol vapour rebreather pipe (**3**) on the inlet distributor side,
- the fuel supply pipe (**4**) from the injector rail,
- the connector (**5**) from the inlet air pressure sensor,
- the camshaft dephaser solenoid valve connector (**6**) ,
- the petrol vapour recirculation solenoid valve connector (**7**) .

❑ Move the wiring harness to one side.



116802

❑ Remove:

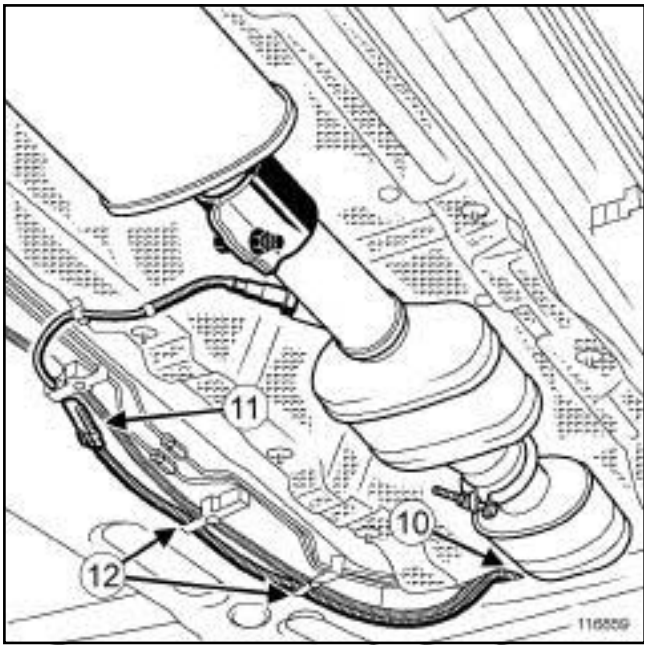
- the bolt (**8**) from the «expansion valve - condenser » connecting pipe,
- the « compressor - condenser » connecting pipe bolt (**9**) .

❑ Disconnect:

- the « expansion valve - condenser » connecting pipe on the condenser side,
- the « compressor - condenser » connecting pipe on the condenser side,
- the cooling radiator hose on the cooling radiator using the **(Mot. 1448)**,
- the fan assembly connectors.

❑ Remove:

- the « engine cooling fan - radiator - condenser - expansion bottle » assembly,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).



116859

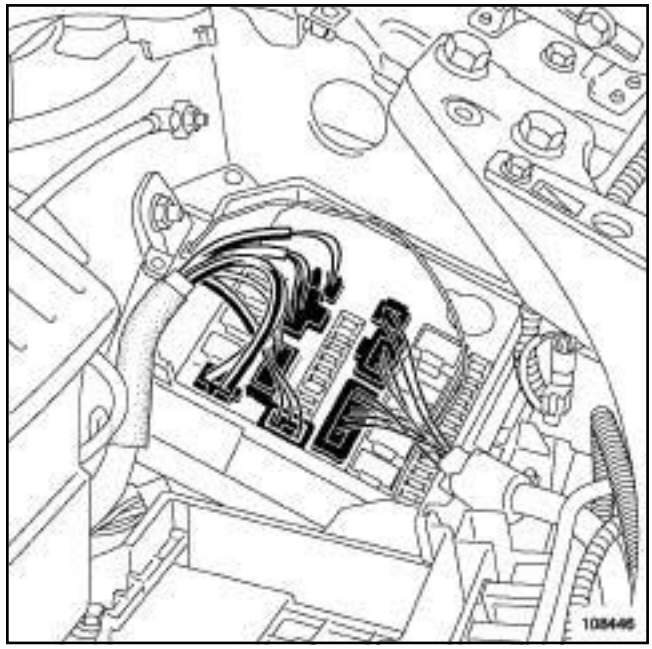
❏ Disconnect:

- the upstream oxygen sensor connector (**10**) ,
- the downstream oxygen sensor connector (**11**) .

❏ Unclip the wiring harness at (**12**) from the downstream oxygen sensor.

Note:

with the wiring harness sitting on the engine, it is necessary to move the heat shields aside when removing the engine.

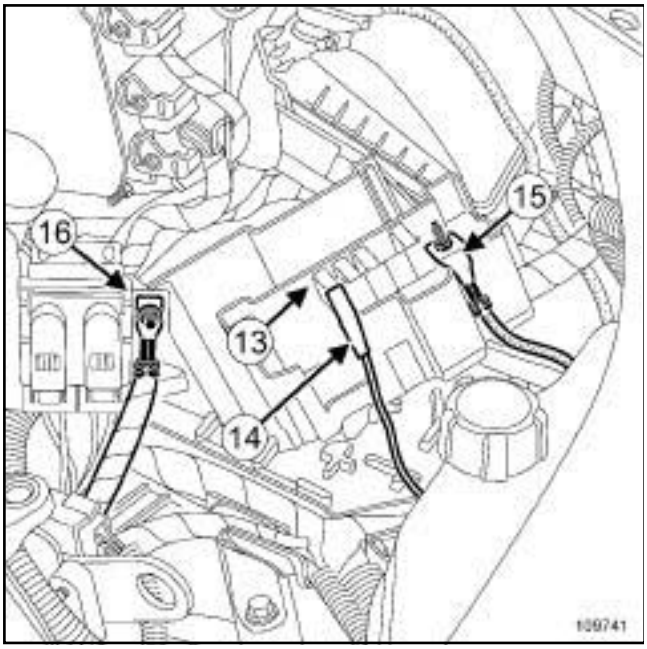


108446

❏ Disconnect:

- the injection computer connectors,
- the connectors in the connection unit.

F4R



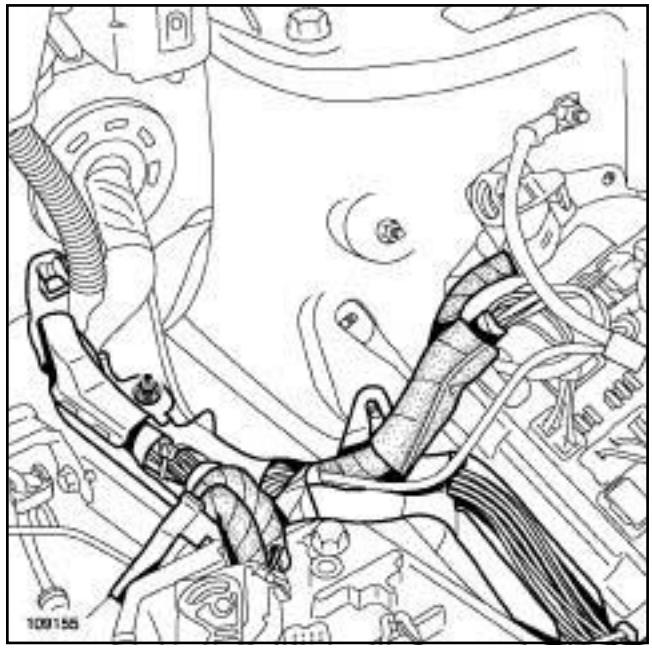
109741

❏ Disconnect:

- the fuse (**13**) ,
- the fuse holder (**14**) from the fuse board,
- the supply cable (**15**) from the fuse board,
- the supply cable (**16**) from the battery protection fuse box.

❏ Remove:

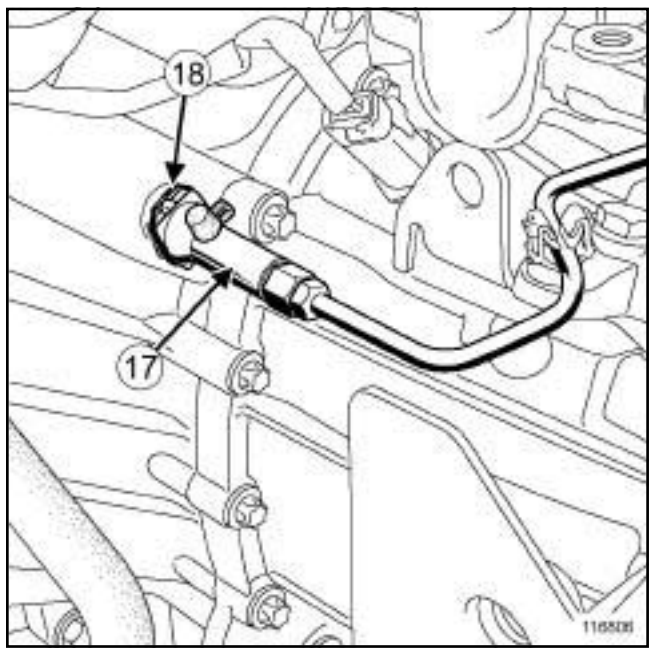
- the petrol injection computer,
- the earth nut on the side member,
- the earth nut on the left-hand wheel arch.



109155

❏ Cut the adhesive tape in order to move the wiring harness away from its channel.

❏ Move the engine wiring away from the channel



116806

❏ Disconnect the clutch control duct (**17**) by pushing the clip (**18**) and moving it aside.

❏ Remove the gearbox controls.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Position the **(Mot. 1390)**.

❏ Remove:

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Move the « engine-gearbox » assembly forward positioned on the **(Mot. 1390)**.

❏ Raise the vehicle using a two-post lift to remove the « engine-gearbox » assembly from the engine compartment.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ For standard engine replacements (see) (Technical Note 6027A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Position the « engine - gearbox » assembly in the engine compartment.

❏ Refit:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❏ Remove the tool **(Mot. 1390)**.

III - FINAL OPERATION

❏ Connect the clutch control duct.

❏ Bleed the clutch control.

❏ Refit the gearbox controls.

❏ Fit the wiring harness.

❏ Refit:

- the earth nut on the left-hand wheel arch,
- the earth nut on the side member,
- the petrol injection computer.

❏ Connect:

- the injection computer connectors,
- the connectors in the connection unit.

❏ Refit the engine compartment connection unit cover.

❏ Position the engine wiring harness in its channel.

❏ Attach the wiring harness using **ADHESIVE TAPE** on its channel.

❏ Connect:

- the supply cable to the battery protection fuse box,
- the supply cable to the fuse board,
- the fuse holder to the fuse board,
- the fuse .

❏ Pass the downstream oxygen sensor wiring harness behind the heat shield.

❏ Connect:

- the upstream oxygen sensor connector,
- the downstream oxygen sensor connector.

❏ Clip the downstream oxygen sensor wiring harness into place.

F4R

❏ Refit:

- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the « engine cooling fan - radiator - condenser» assembly.

❏ Connect:

- the cooling radiator upper and lower hoses using the **(Mot. 1448)**,
- the engine cooling fan assembly connectors,
- the cooling radiator hose to the cooling radiator using the **(Mot. 1448)**,
- the « compressor - condenser » connecting pipe on the condenser side,
- the « expansion valve - condenser » connecting pipe on the condenser side.

❏ Refit:

- the bolt (**9**) on the « compressor - condenser » connecting pipe,
- the bolt (**8**) of the « expansion valve - condenser » connecting pipe.

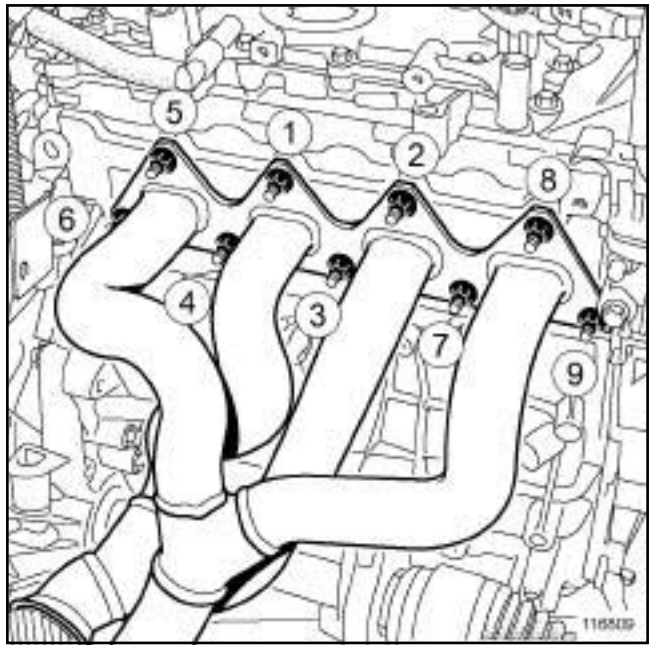
❏ Connect:

- the petrol vapour recirculation solenoid valve connector.
- the camshaft dephaser solenoid valve connector,
- the inlet air pressure sensor connector,
- the fuel supply pipe on the injector rail,
- the petrol vapour rebreather pipe on the inlet distributor side,
- the brake servo pipe on the inlet distributor side

❏ Fit:

- a new exhaust manifold seal on the cylinder head,
- the exhaust manifold on the cylinder head.

❏ Refit the exhaust manifold nuts.



116809

❏ Torque tighten in order the **exhaust manifold nuts (30 N.m)**.

❏ Connect the heating radiator hoses using the **(Mot. 1448)**.

❏ Refit:

- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery tray),
- the soundproofing unit,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Perform the following operations:

- top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- fill up the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,

- bleed the cooling circuit,
- fill the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

❏ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.

❏ Check:

- that there are no leaks,
- using the **Diagnostic tool**, that there are no faults stored by the computer, and clear them if necessary.

❏ Refit the engine undertray.

❏ Carry out a road test to check that the vehicle is in good working order.

M4R, and TL4

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
side member earth wiring nuts	**8 N.m**
manual gearbox earth wiring bolt	**21 N.m**
Protection and Switching Unit cover bolts	**4 N.m**
nut of the supply wiring for the power supply fuse unit	**8 N.m**
exhaust flange bolts	**21 N.m**
compressor-intermediate pipe connecting pipe bolt on the compressor	**8 N.m**
dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir	**8 N.m**
compressor-condenser connecting pipe bolt on the compressor	**8 N.m**
compressor-condenser connecting pipe bolt on the compressor	**8 N.m**
air filter box air outlet pipe clips	**6 N.m**
protective fuse mounting wiring nut	**6 N.m**

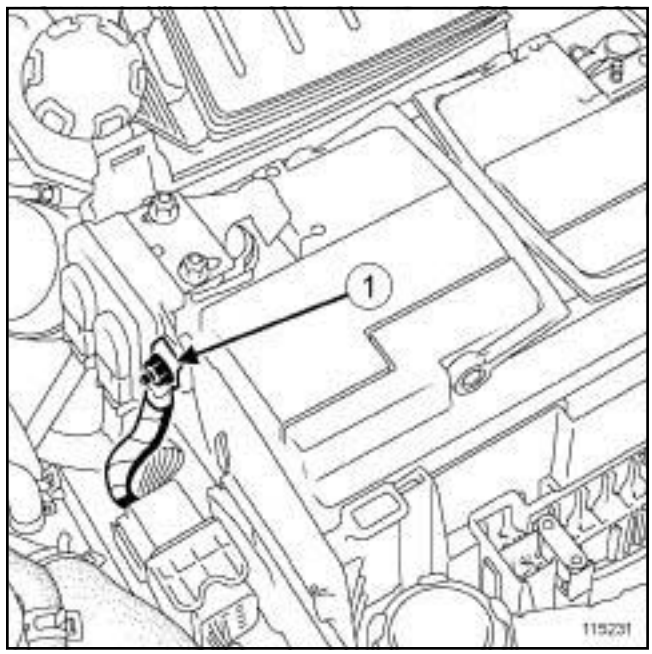
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the front engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

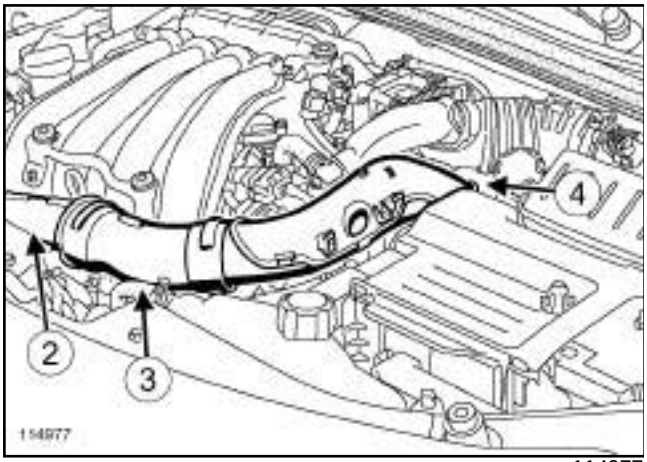


115231

❑ Remove:

- the nut (**1**) from the protective fuse mounting wiring,
- the protective fuse mounting wiring,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R, and TL4

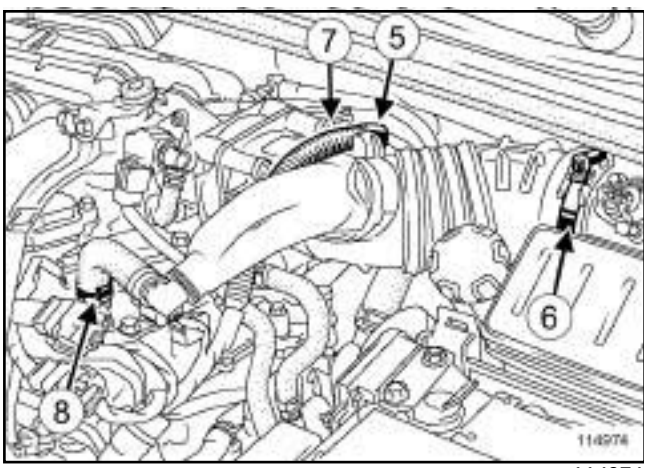


114977

❏ Disconnect the air filter unit air inlet pipe:

- from the front end panel at (**2**) ,
- from the air resonator on the front end panel at (**3**) ,
- from the air filter unit at (**4**) .

❏ Remove the air pipe at the air filter unit inlet.



114974

❏ Unclip the wiring from the air filter unit air outlet pipe at (**5**) .

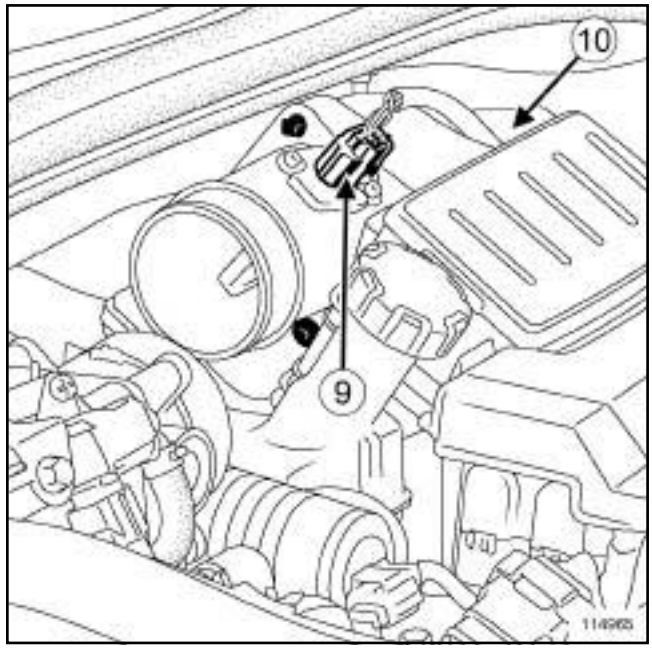
❏ Undo the clips on the air filter unit air outlet pipe:

- on the air flow sensor (**6**) ,
- on the motorised throttle valve (**7**) .

❏ Separate the clip (**8**) of the oil vapour rebreathing hose on the rocker cover using the tool **(Mot. 1448)**.

❏ Disconnect the oil vapour rebreathing hose on the rocker cover.

❏ Remove the air outlet pipe from the air filter box.



114965

❏ Disconnect the air flowmeter connector (**9**) .

❏ Unclip the air flowmeter connector wiring (**10**) .

❏ Remove the engine undertray.

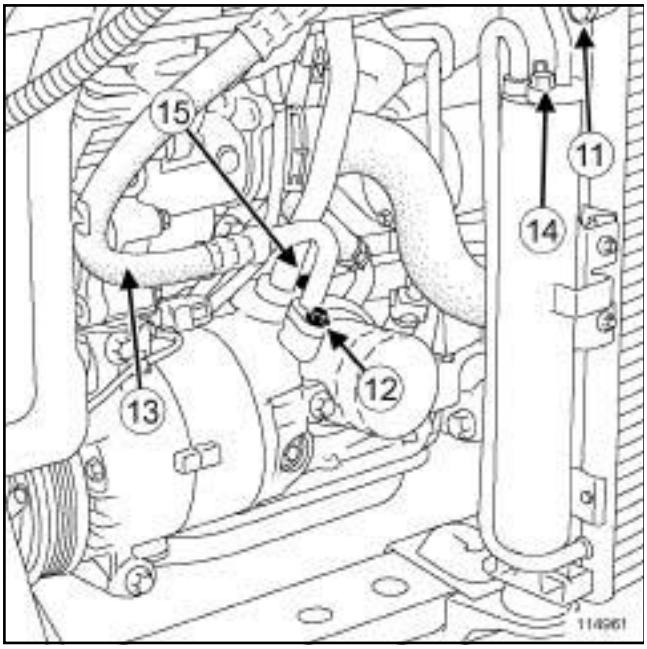
❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).
- the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

M4R, and TL4



114961

❑ Remove:

- the bolt (**11**) from the compressor-condenser connecting pipe, on the condenser,
- the bolt (**12**) from the compressor-condenser connecting pipe, on the compressor,
- the compressor-condenser connecting pipe (**13**) ,
- the bolt (**14**) from the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

❑ Disconnect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

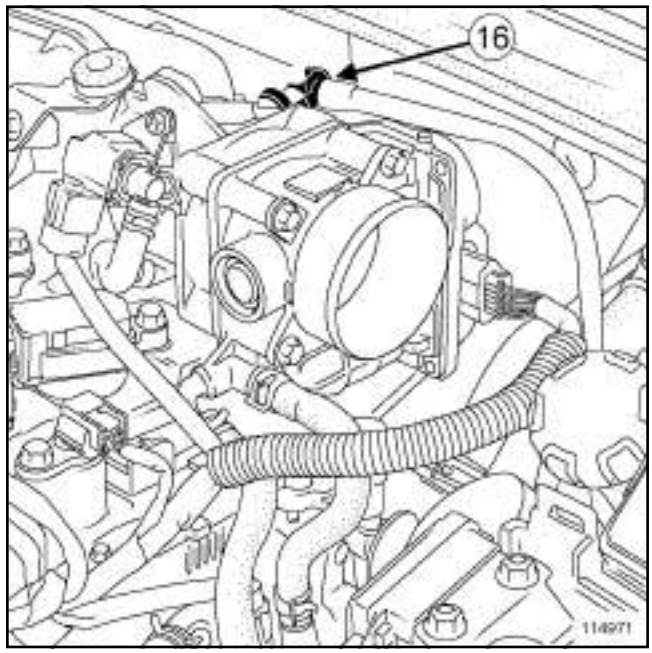
❑ Remove the bolt (**15**) from the compressor-intermediate pipe connecting pipe on the compressor.

❑ Disconnect the compressor-intermediate pipe connecting pipe on the compressor.

WARNING
Plugs must be fitted on the hoses to prevent moisture from entering the system.

❑ Remove:

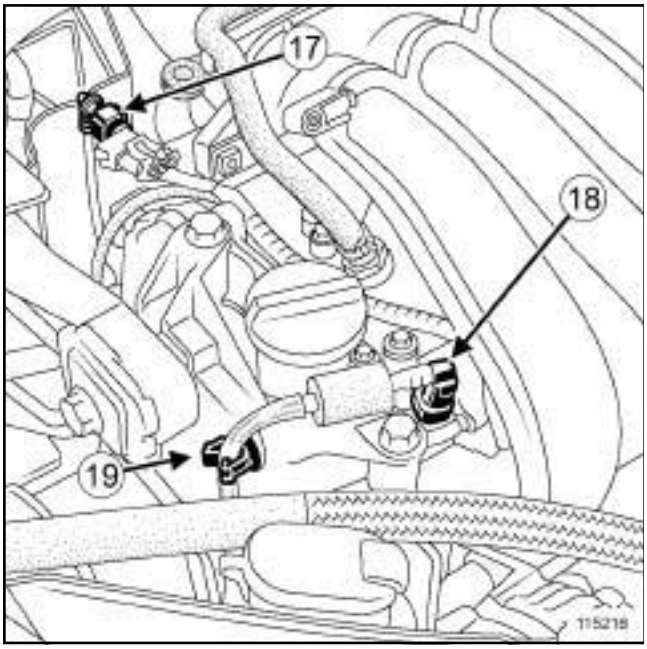
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).



114971

❑ Disconnect the brake servo pipe union (**16**) from the inlet distributor.

M4R, and TL4



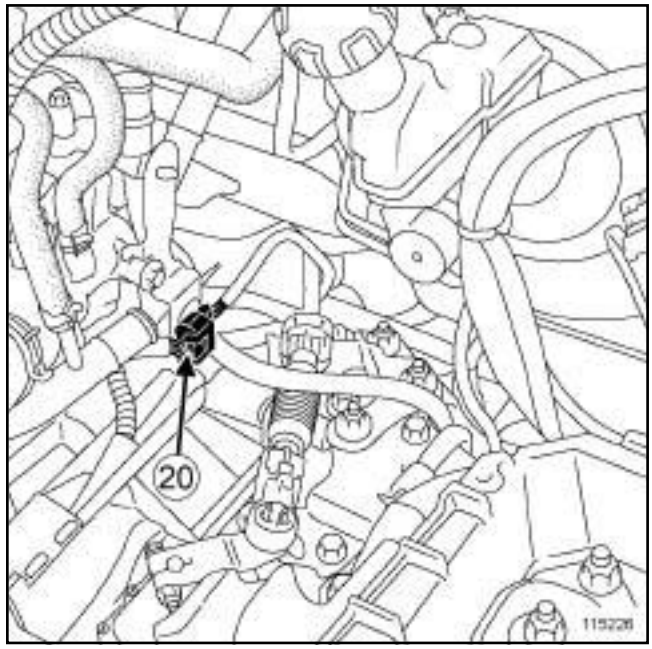
115216

❏ Disconnect:

- the petrol vapour rebreather pipe (**17**) ,
- the fuel supply pipe (**18**) .

WARNING
Protect sensitive areas from fuel spillage.

❏ Unclip the fuel supply pipe at (**19**) .

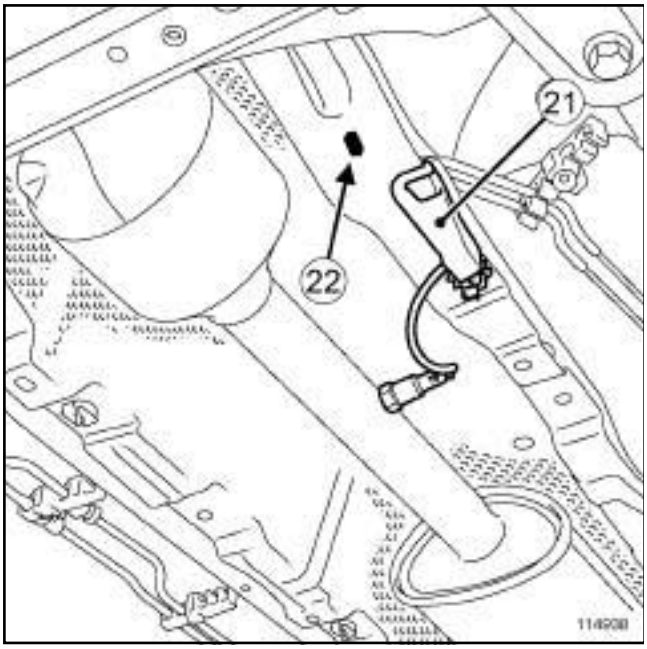


115226

❏ Disconnect the upstream oxygen sensor connector (**20**) .

❏ Move the connector away from the upstream oxygen sensor.

M4R, and TL4



114938

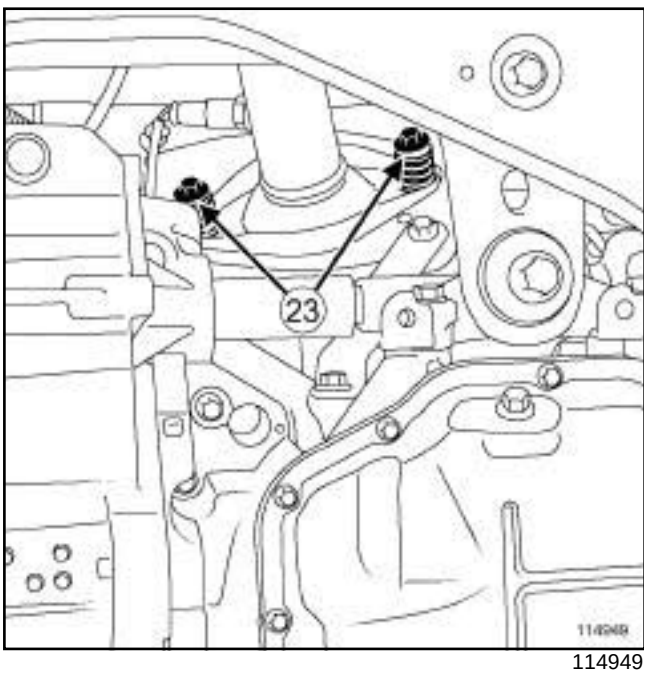
❏ Remove the plastic cover (**21**) .

❏ Detach the downstream oxygen sensor connector at (**22**) .

❏ Disconnect the downstream oxygen sensor connector.

❏ Unclip the downstream oxygen sensor wiring from the power-assisted steering box.

❏ Feed the downstream oxygen sensor wiring into the engine compartment.

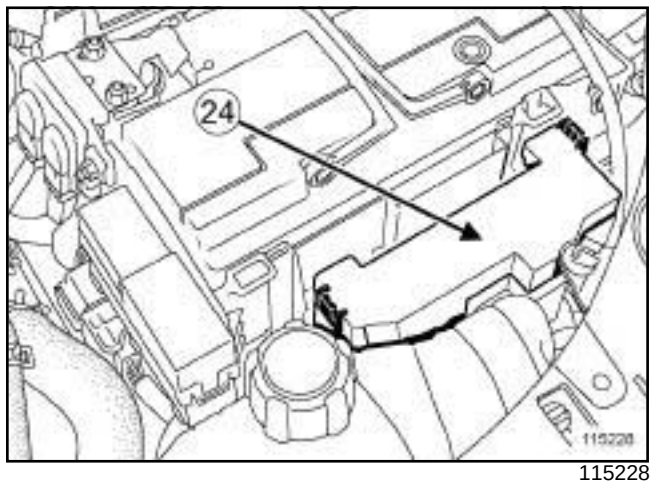


114949

❏ Remove:

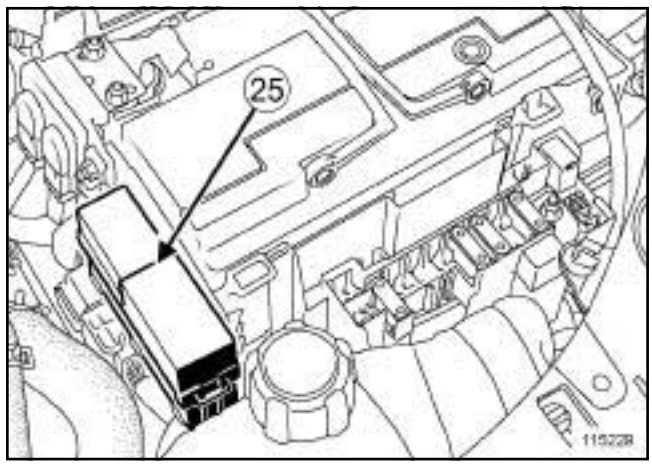
- the bolts (**23**) from the exhaust flange,
- the exhaust flange seal.

❏ Remove the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



115228

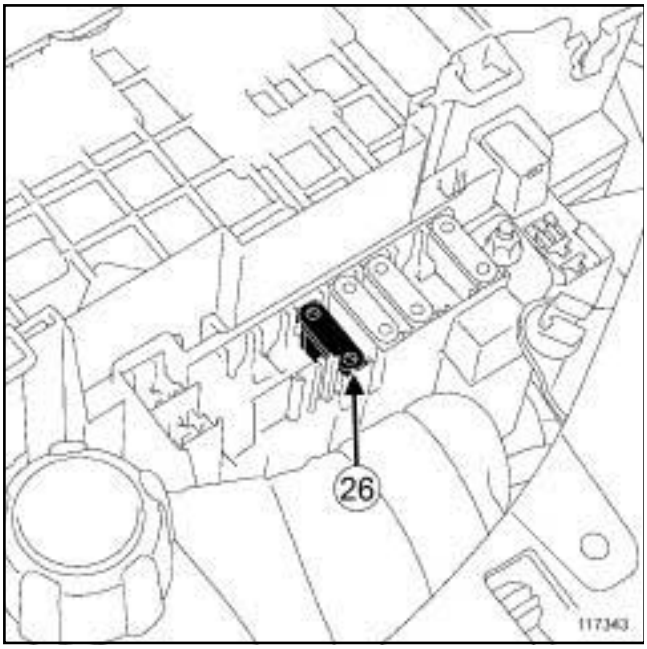
❏ Remove the cover (**24**) from power supply fuse unit.



115229

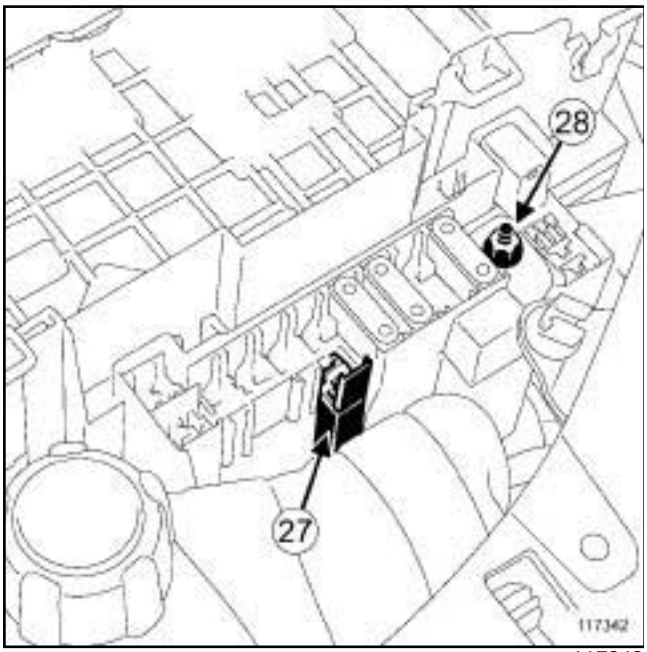
❏ Unclip the optional relay unit (**25**) .

M4R, and TL4



117343

❏ Remove the fuse (**26**) .



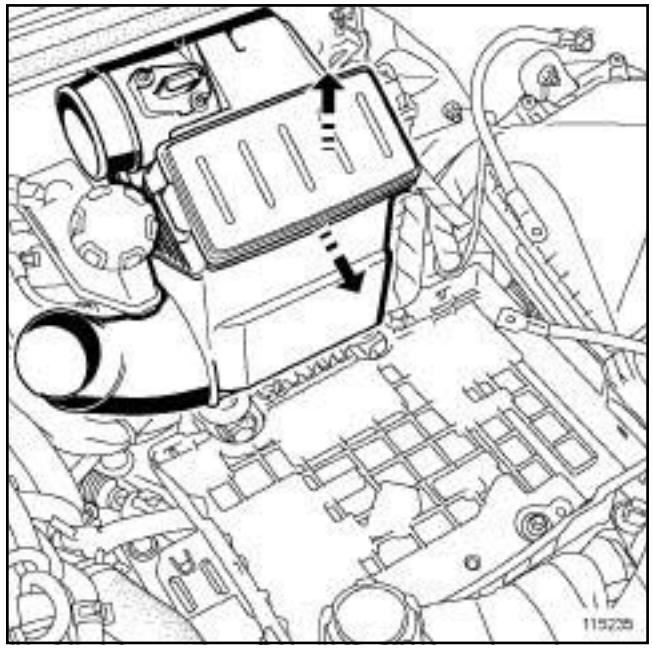
117342

❏ Unclip the fuse holder (**27**) .

❏ Remove the nut (**28**) from the supply wiring of the power supply fuse unit.

❏ Disconnect the supply wiring from the power supply fuse unit.

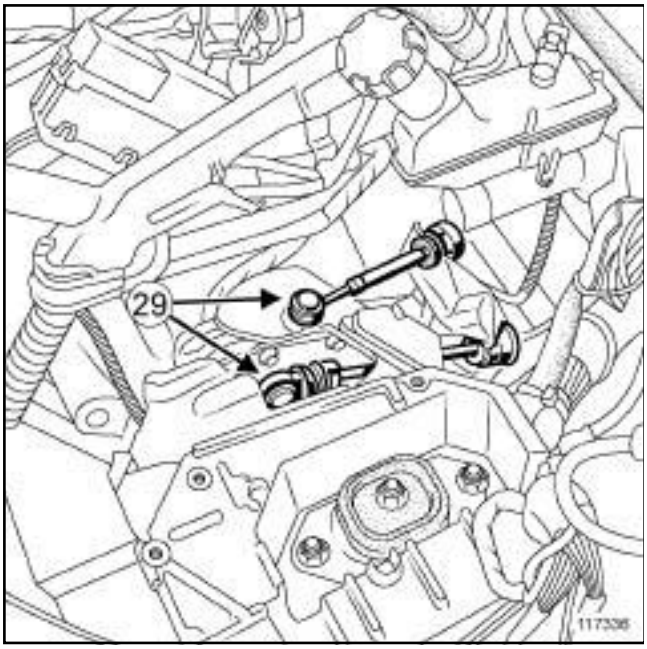
❏ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).



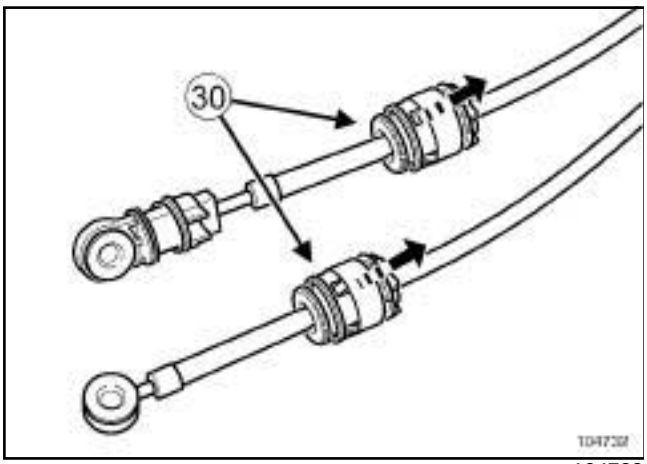
115235

❏ Remove the air filter unit in the direction of the arrows.

M4R, and TL4



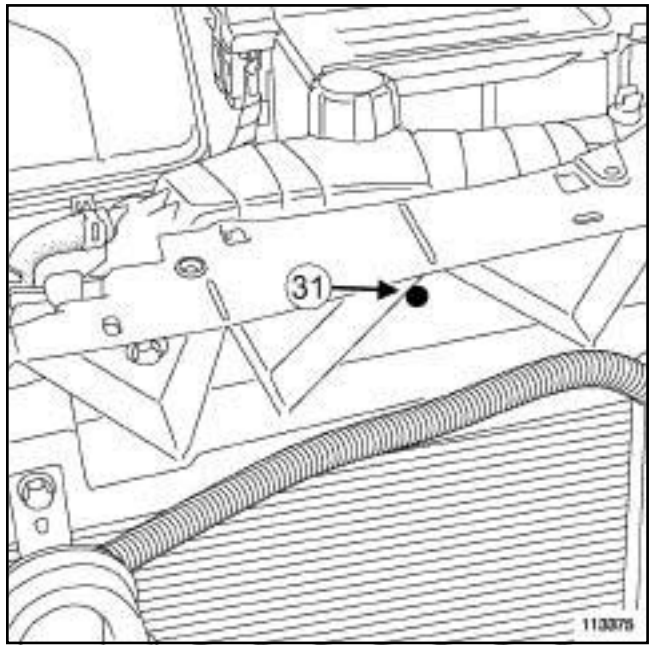
117336



104732

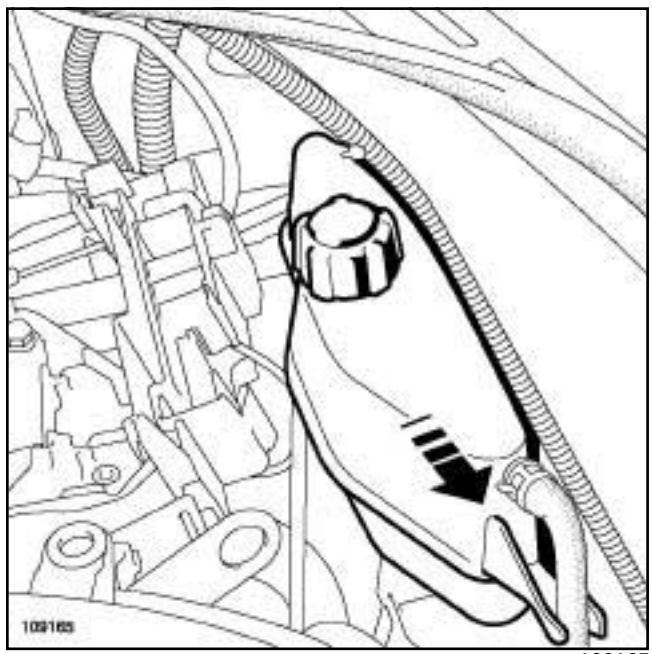
❑ Unclip:

- the control cables (**29**) on the gearbox using an open-ended spanner,
- the control cable sleeve stops (**30**) on the gearbox.



113375

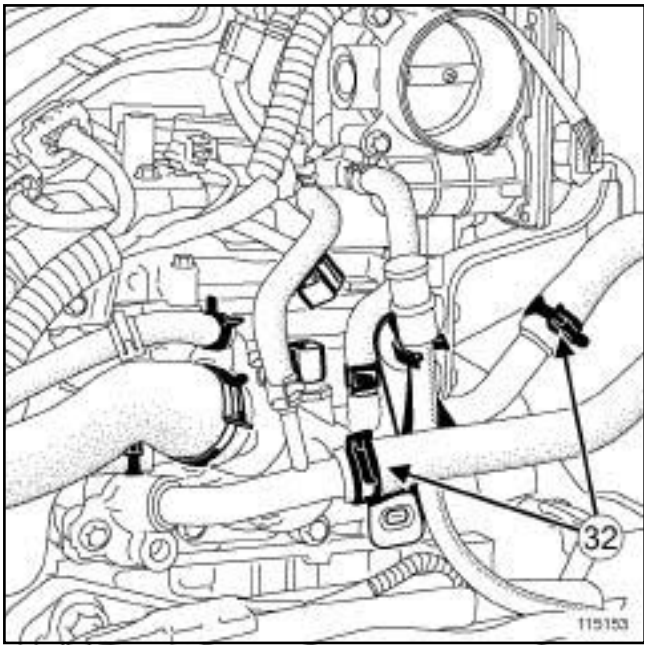
❑ Remove the clip (**31**) from the expansion bottle.



109165

❑ Move the expansion bottle away from its housing in the direction of the arrow.

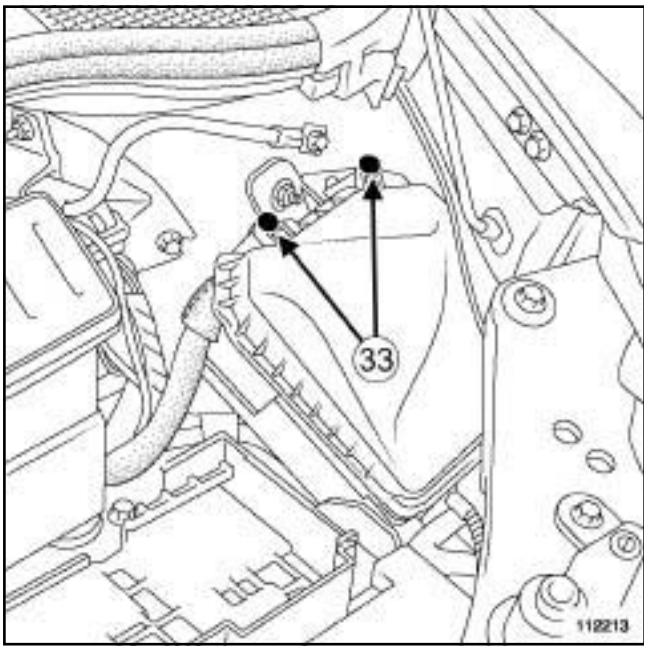
M4R, and TL4



115153

❏ Separate the clips (**32**) on the passenger compartment heater hoses using the tool **(Mot. 1448)**.

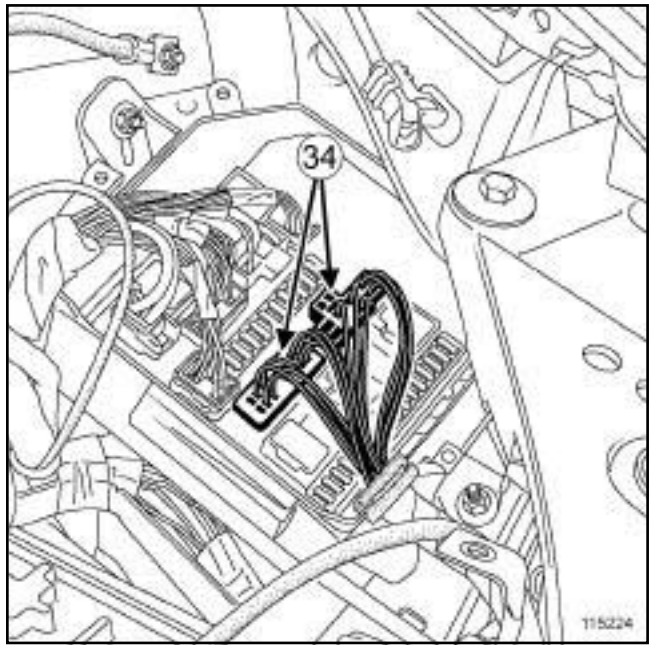
❏ Disconnect the passenger compartment heater hoses.



112213

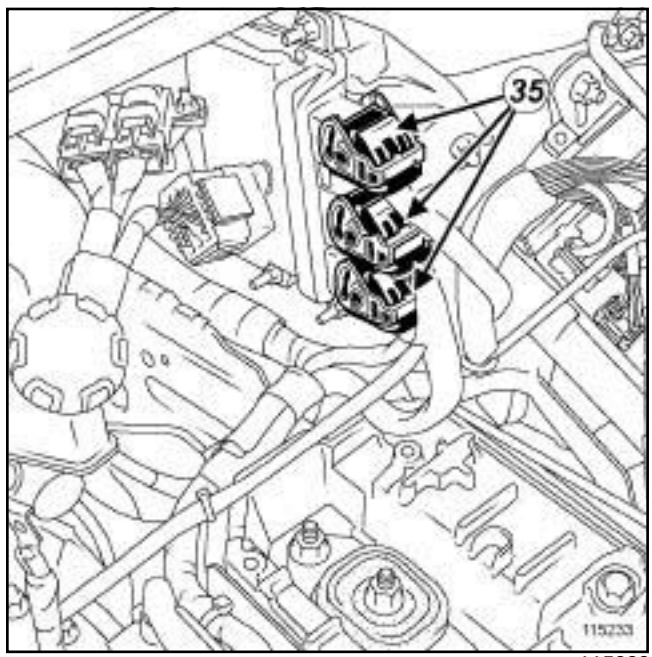
❏ Remove:

- the bolts (**33**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.



115224

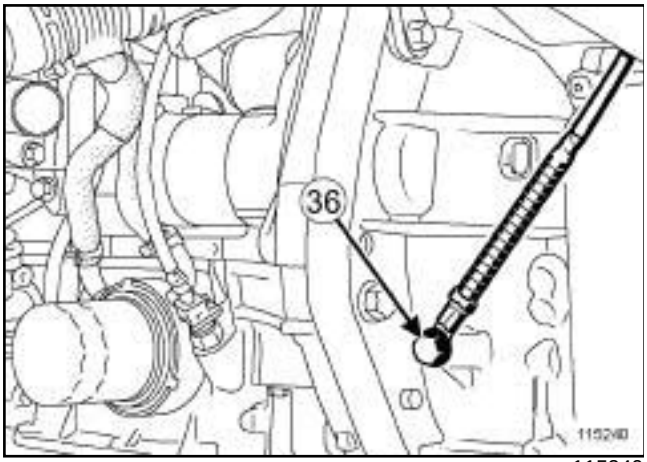
❏ Disconnect the engine wiring connectors (**34**) from the Protection and Switching Unit.



115233

❏ Disconnect the injection computer connectors (**35**) .

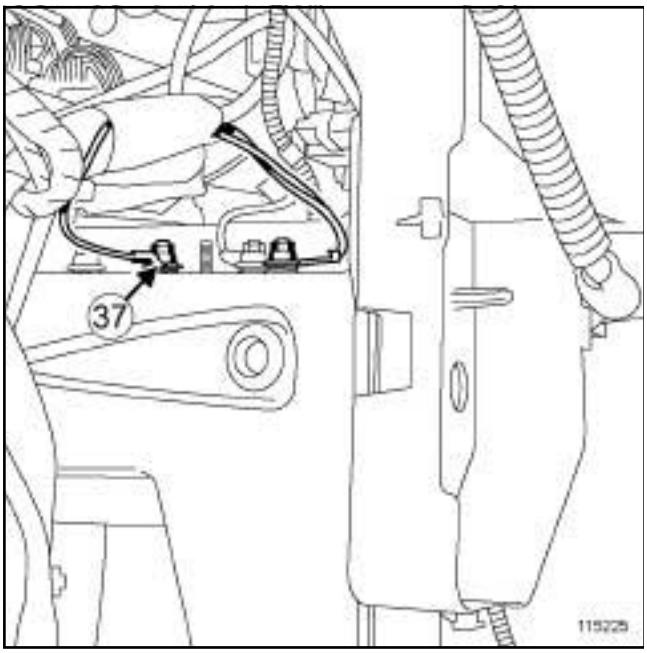
M4R, and TL4



115240

❑ Remove:

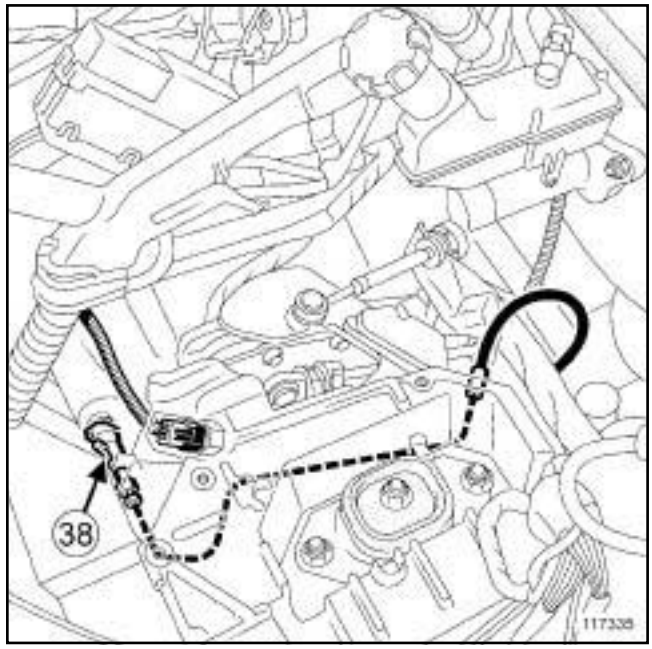
- the bolt (**36**) from the manual gearbox earth wiring.
- the manual gearbox earth wiring.



115225

❑ Remove the nut (**37**) from the side member earth wiring.

❑ Move the earth wiring away from the side member.

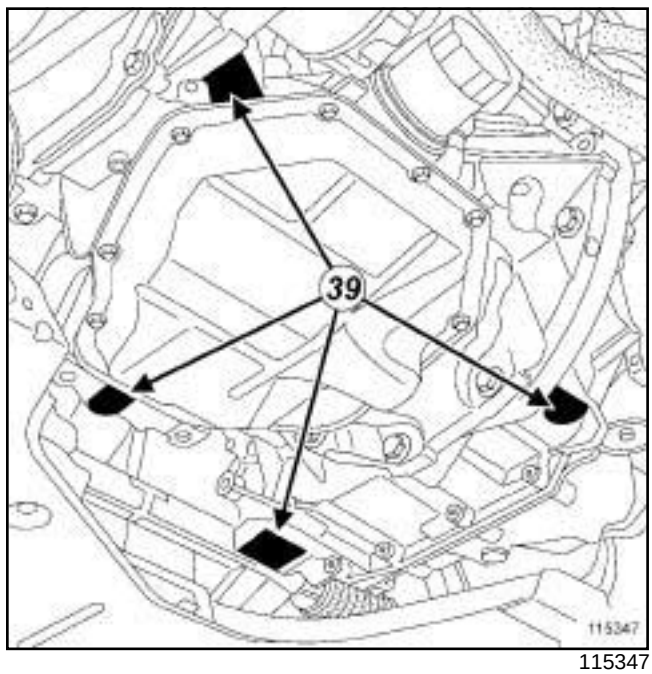


117335

❑ Push on the clip of the hydraulic clutch control pipe.

❑ Disconnect the hydraulic clutch control pipe (**38**) .

❑ Unclip the hydraulic clutch control pipe.



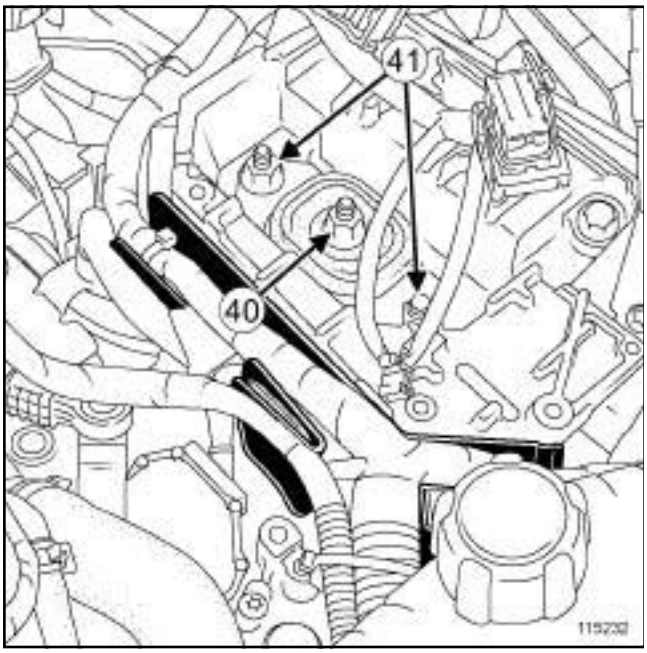
115347

❑ Support the **(Mot. 1390)** on the « engine - gearbox » assembly marks.

M4R, and TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .



115232

❏ Separate the neck of the electrical wiring from the gearbox support.

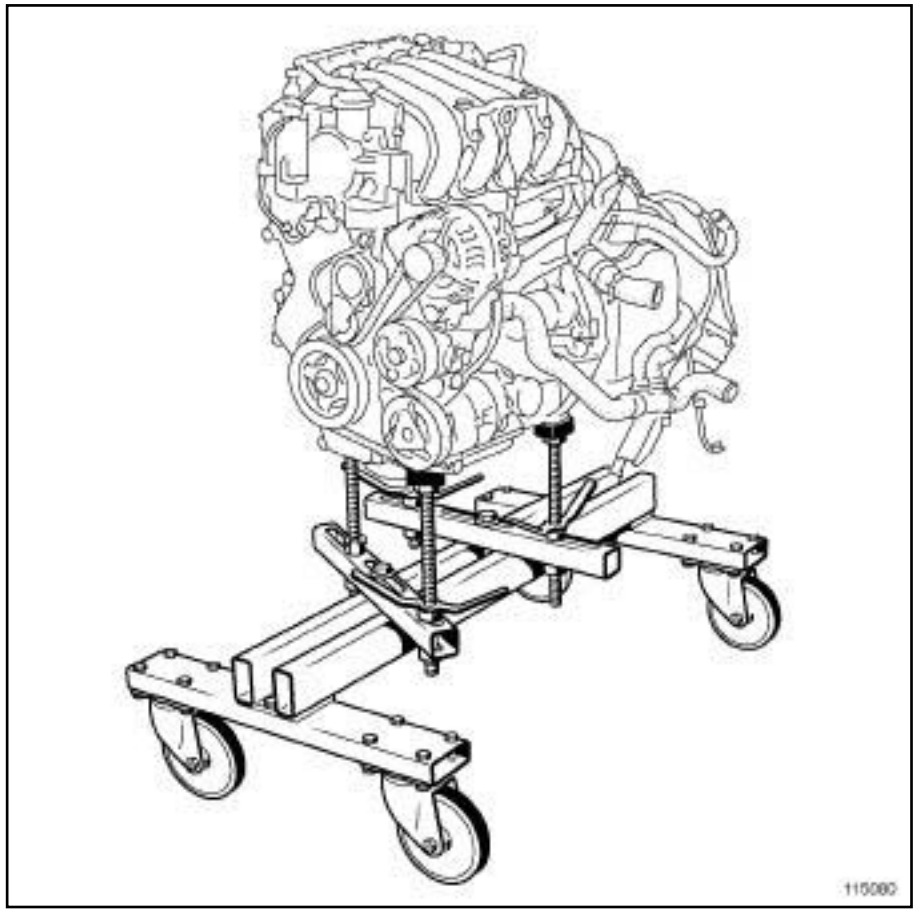
❏ Remove:

- the left-hand suspended engine mounting shaft nut (**40**) ,
- the nuts (**41**) from the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting rubber pad.

Note:

Tap the bolt with a copper hammer, if necessary.

M4R, and TL4



115080

❑ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see **Engine: New replacement)** (Technical Note 6020A, 10A, Engine and peripherals).

❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the « engine - gearbox » assembly in the body.

❑ Refit:

- the left-hand suspended engine mounting rubber pad,
- the nuts for the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting shaft nut.

❑ Torque tighten (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) .

❑ Refit the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Lift the **(Mot. 1390)** from the « engine - gearbox» assembly.

III - FINAL OPERATION

❑ Connect the hydraulic clutch control pipe.

❑ Clip on the hydraulic clutch control pipe.

❑ Fit the side member earth wiring.

❑ Refit the side member earth wiring nuts.

❑ Torque tighten the **side member earth wiring nuts (8 N.m)**.

❑ Refit:

- the manual gearbox earth wiring,
- the bolt to the manual gearbox earth wiring.

M4R, and TL4

❏ Torque tighten the **manual gearbox earth wiring bolt (21 N.m)**.

❏ Connect:

- the injection computer connectors,
- the engine wiring connectors to the Protection and Switching Unit.

❏ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Torque tighten the **Protection and Switching Unit cover bolts (4 N.m)**.

❏ Connect the passenger compartment heater hoses.

❏ Fit:

- the passenger compartment heater hose clips,
- the expansion bottle into its housing.

❏ Refit the clip to the expansion bottle.

❏ Clip:

- the control cables onto the gearbox using an open-ended spanner,
- the gearbox control cable sleeve stops onto the gearbox.

❏ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit.

❏ Connect the air flowmeter connector.

❏ Clip on the air flowmeter connector wiring.

❏ Connect the supply wiring of the power supply fuse unit.

❏ Refit the nut of the supply wiring for the power supply fuse unit.

❏ Torque tighten the **nut of the supply wiring for the power supply fuse unit (8 N.m)**.

❏ Clip in the fuse holder.

❏ Refit:

- the fuse,
- the cover of the power supply fuse unit.

❏ Clip on the optional relay unit.

❏ Refit the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

❏ Tighten to torque the (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**)

❏ Refit:

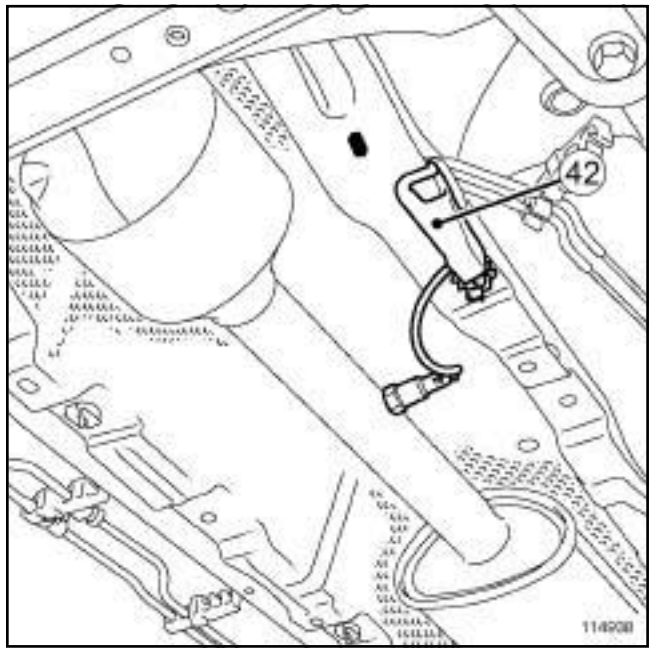
- a new exhaust flange seal,
- the exhaust flange bolts.

❏ Torque tighten the **exhaust flange bolts (21 N.m)**.

❏ Clip the downstream oxygen sensor wiring onto the power-assisted steering box.

❏ Connect the downstream oxygen sensor connector.

❏ Clip the downstream oxygen sensor connector.



114938

❏ Refit the plastic cover (**42**) .

❏ Connect:

- the upstream oxygen sensor connector,
- the brake servo pipe to the brake servo,
- the petrol vapour rebreathing pipe,
- the fuel supply pipe.

❏ Clip on the fuel supply pipe.

❏ Refit:

- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,

M4R, and TL4

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the air conditioning pipes,
- the air conditioning pipe bolts.

❑ Connect the compressor-intermediate pipe connecting pipe on the compressor.

❑ Refit the bolt to the compressor-intermediate pipe connecting pipe on the compressor.

❑ Torque tighten the **compressor-intermediate pipe connecting pipe bolt on the compressor (8 N.m)**.

❑ Connect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

❑ Refit the dehydrator reservoir-expansion valve connecting pipe bolt on the dehydrator reservoir.

❑ Torque tighten the **dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir (8 N.m)**.

❑ Refit:

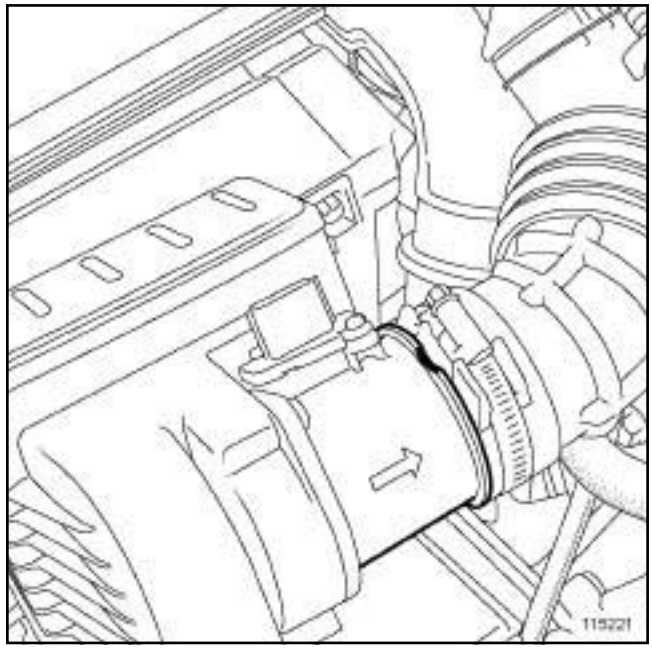
- the compressor-condenser connecting pipe,
- the condenser-compressor connecting pipe bolt on the compressor,
- the compressor-condenser connecting pipe bolt on the condenser.

❑ Tighten to torque:

- the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**,
- the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**.

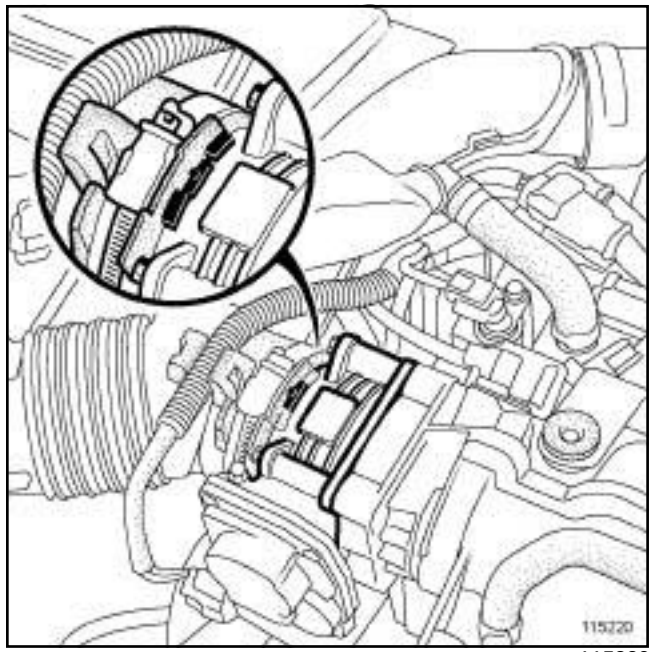
❑ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



115221

❑ Refit the air filter unit air outlet pipe on the air flowmeter, taking care to follow the markings for fitting.



115220

❑ Refit the air filter unit air outlet pipe on the motorised throttle valve, taking care to follow the markings for fitting.

❑ Connect the oil vapour rebreathing hose on the rocker cover.

❑ Fit the oil vapour rebreathing hose clip onto the rocker cover using the tool **(Mot. 1448)**.

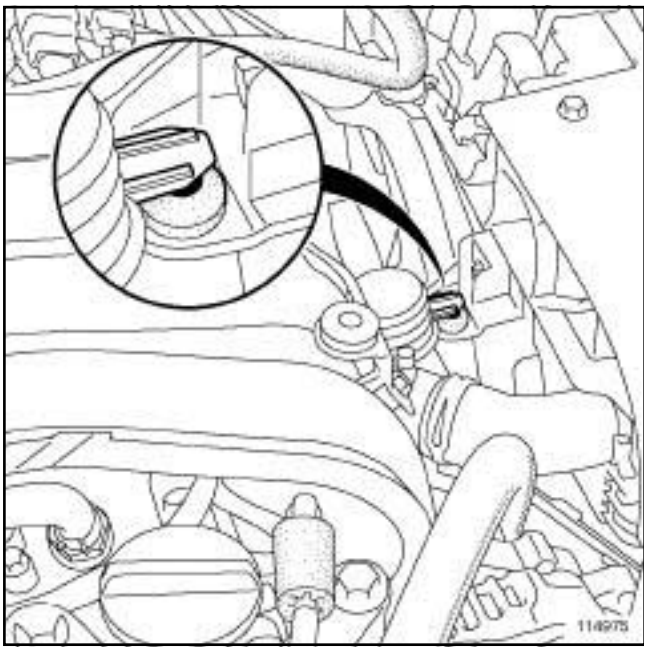
❑ Torque tighten the **air filter box air outlet pipe clips (6 N.m)**.

M4R, and TL4

❏ Refit:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the protective fuse mounting wiring,
- the protective fuse mounting cable nut.

❏ Torque tighten the **protective fuse mounting wiring nut (6 N.m)**.



114975

❏ Before refitting the air filter unit air inlet pipe, check that the upper mounting of the air resonator is correctly clipped on the front end panel.

❏ Refit the air filter unit air inlet pipe.

❏ Connect the air filter unit air inlet pipe:

- to the front end panel,
- on the air resonator on the front end panel,
- on the air filter box.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning),
- fill and bleed the cooling circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

❏ Refit:

- the engine cover,
- the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K9K, and JA5

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
side member earth wiring nuts	**8 N.m**
Protection and Switching Unit cover bolts	**4 N.m**
air filter unit air outlet pipe clip, turbocharger side, on the air filter unit air outlet pipe, turbocharger side	**5.5 N.m**
intercooler air outlet pipe clip	**5.5 N.m**
supply wiring nut of the power supply fuse unit	**8 N.m**
exhaust flange bolts	**21 N.m**
compressor-intermediate pipe connecting pipe bolt on the compressor	**8 N.m**
dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir	**8 N.m**
compressor-condenser connecting pipe bolt on the compressor	**8 N.m**
compressor-condenser connecting pipe bolt on the condenser	**8 N.m**
protective fuse mounting wiring nut	**6 N.m**

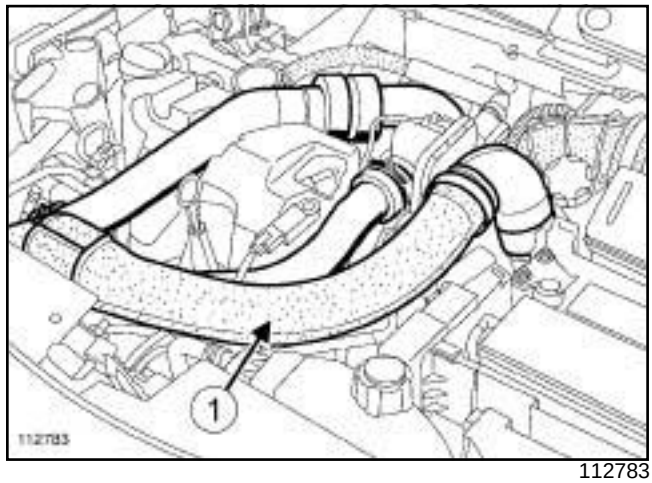
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

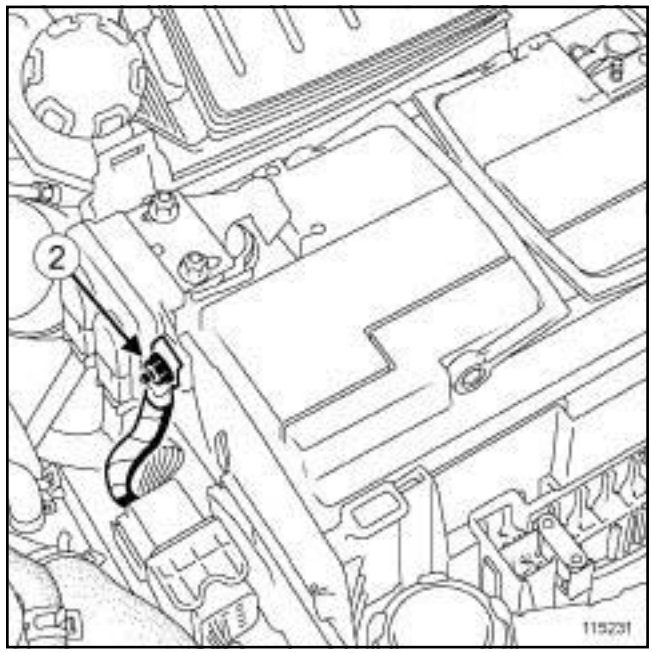
❏ Remove the front engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



112783

❏ Remove the air pipe at the air filter unit inlet (**1**) .



115231

❏ Remove the nut (**2**) from the protective fuse mounting wiring.

❏ Move the protective fuse mounting wiring to one side.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine undertray.

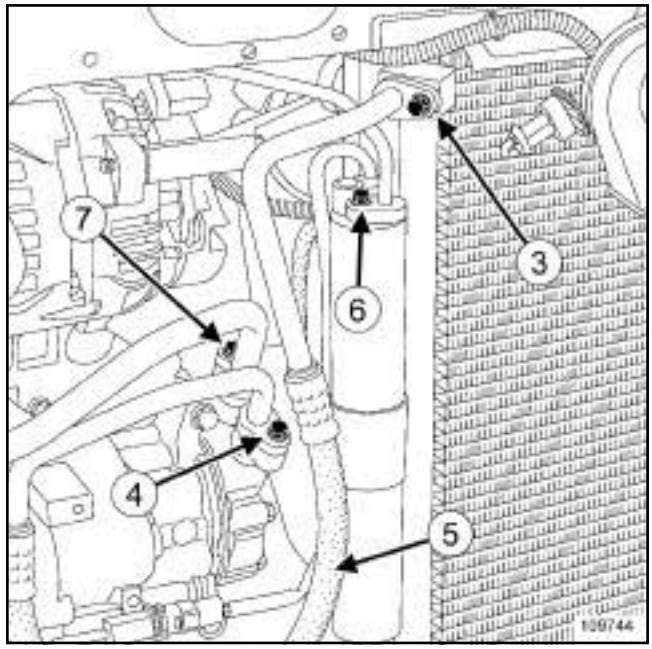
❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,

- the sequential gearbox,
- the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .



109744

❑ Remove:

- the bolt (**3**) from the compressor-condenser connecting pipe, on the condenser,
- the bolt (**4**) from the compressor-condenser connecting pipe, on the compressor,
- the compressor-condenser connecting pipe (**5**) ,
- the bolt (**6**) from the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

❑ Disconnect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

❑ Remove the bolt (**7**) from the compressor-intermediate pipe connecting pipe on the compressor.

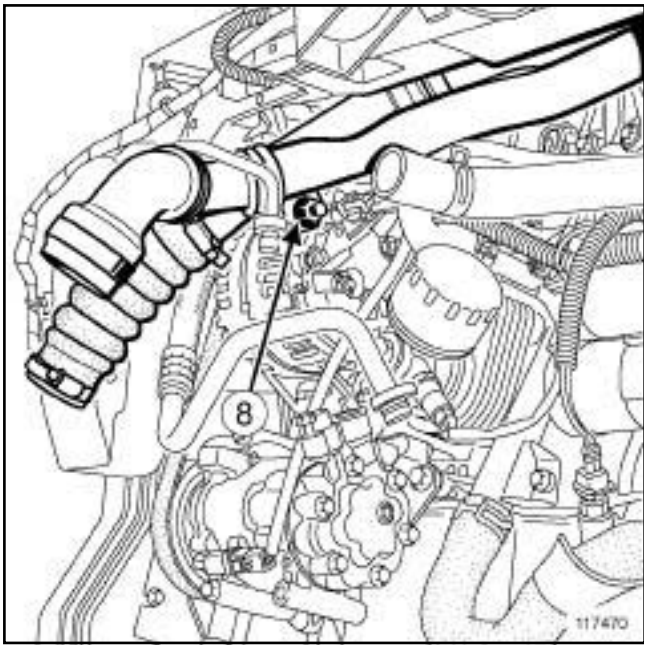
❑ Disconnect the compressor-intermediate pipe connecting pipe on the compressor.

WARNING
Plugs must be fitted on the hoses to prevent moisture from entering the system.

❑ Remove:

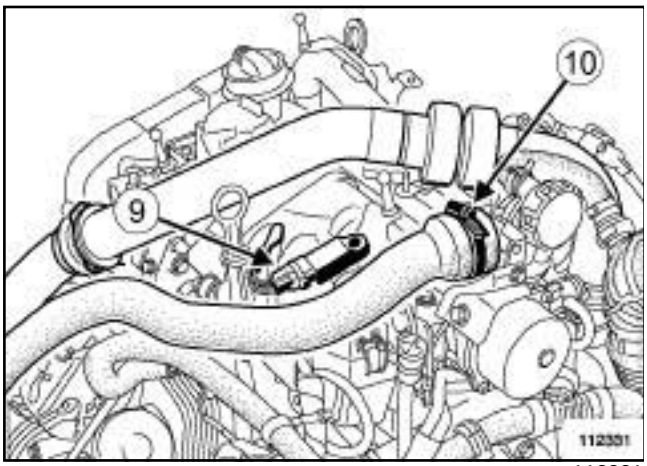
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) .

K9K, and JA5



117470

❏ Remove the nut (**8**) from intercooler air inlet and outlet pipes.

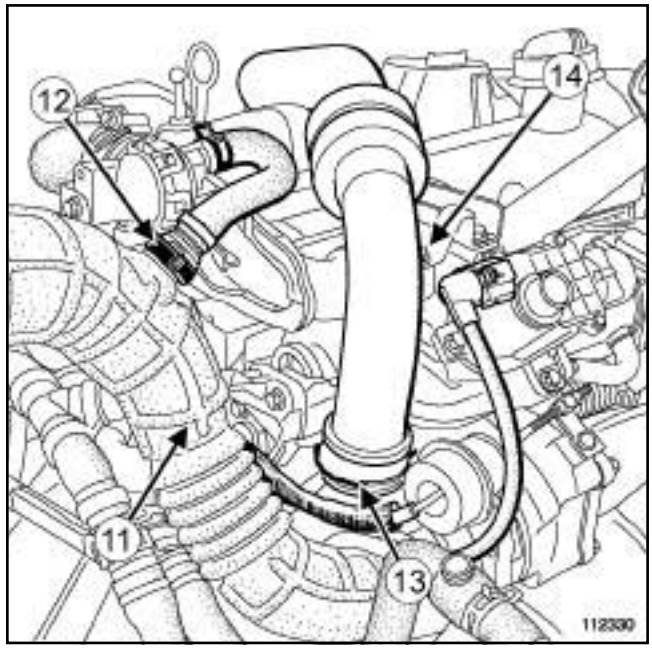


112331

❏ Disconnect the connector (**9**) from the inlet air pressure sensor.

❏ Loosen the clip (**10**) on the intercooler air outlet pipe.

❏ Remove the intercooler air outlet pipe.



112330

❏ Undo the clip of the air filter unit air outlet pipe at the turbocharger side.

❏ Disconnect:

- the air filter unit air outlet pipe (**11**) on the turbocharger side,
- the oil rebreathing pipe (**12**) on the air filter unit air outlet pipe, on the turbocharger side.

❏ Remove:

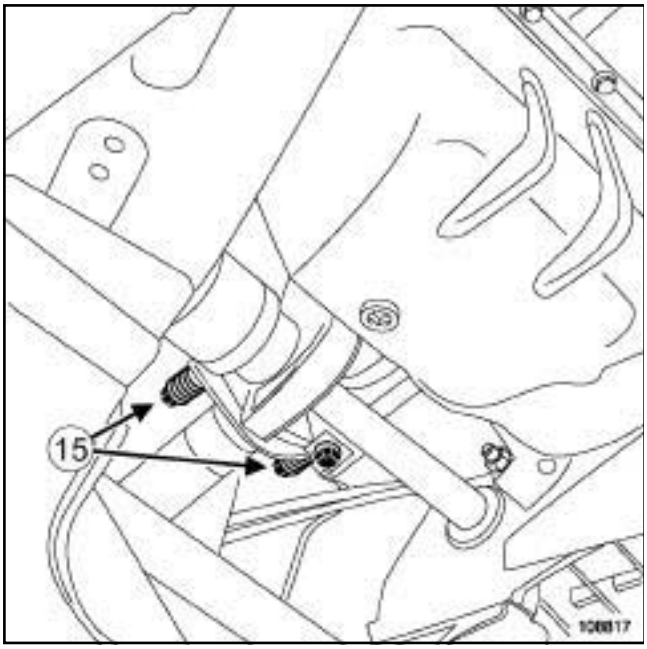
- the clip (**13**) of the turbocharger air outlet pipe,
- the bolt (**14**) from the turbocharger air outlet pipe,
- the turbocharger air outlet pipe.

❏ Disconnect the union from the brake servo pipe on the vacuum pump side.

❏ Remove:

- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

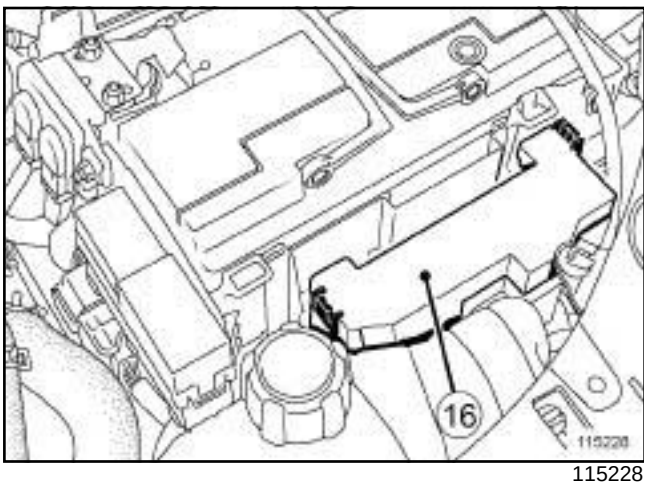
K9K, and JA5



108817

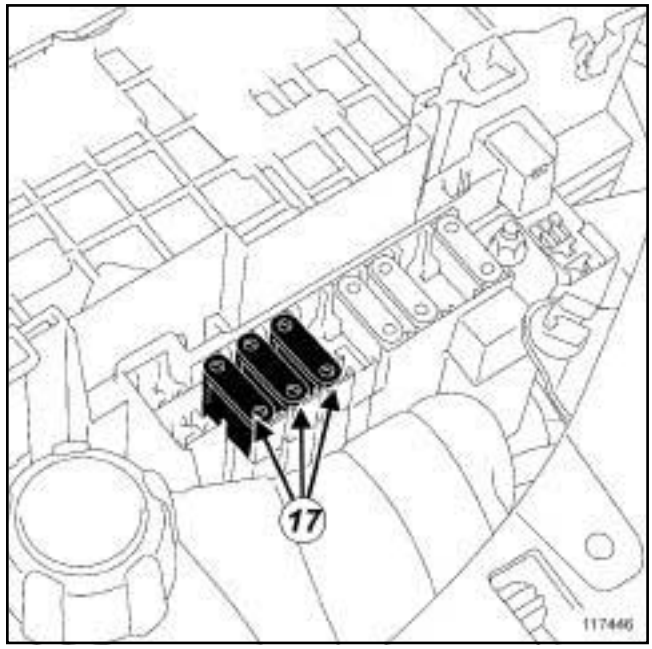
❑ Remove:

- the bolts (**15**) from the exhaust flange,
- the exhaust bracket gasket,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



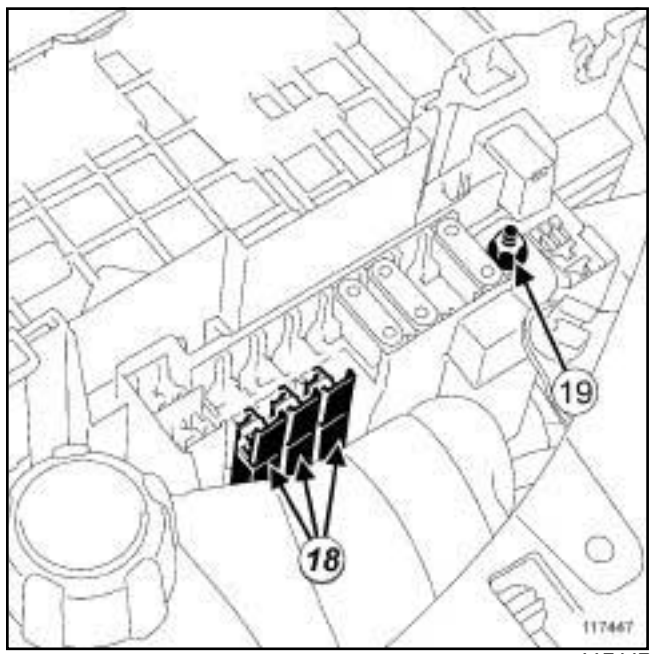
115228

❑ Remove the cover (**16**) from the power supply fuse unit.



117446

❑ Remove the fuses (**17**) .



117447

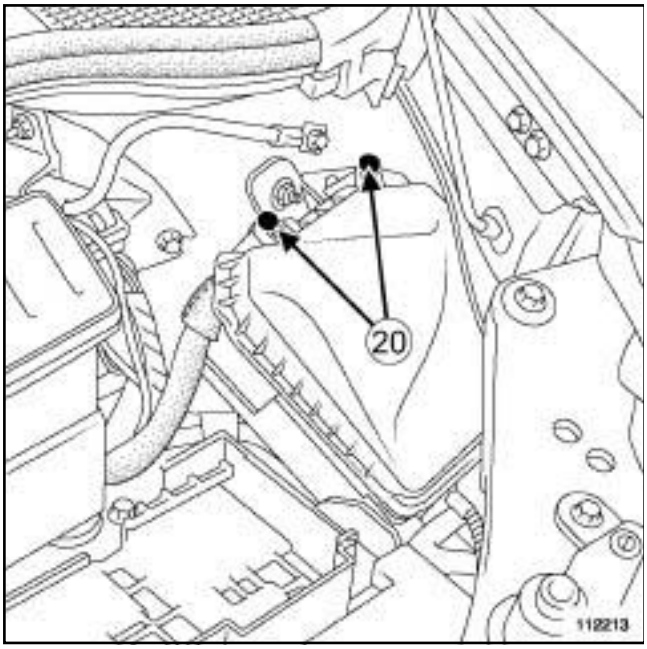
❑ Unclip the fuse holder (**18**) .

❑ Remove the nut (**19**) from the supply wiring of the power supply fuse unit.

❑ Disconnect the supply wiring from the power supply fuse unit.

❑ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

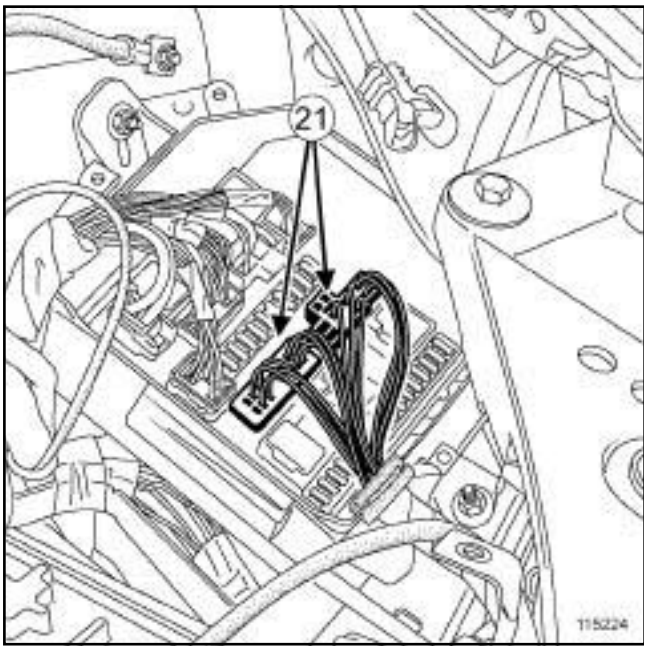
K9K, and JA5



112213

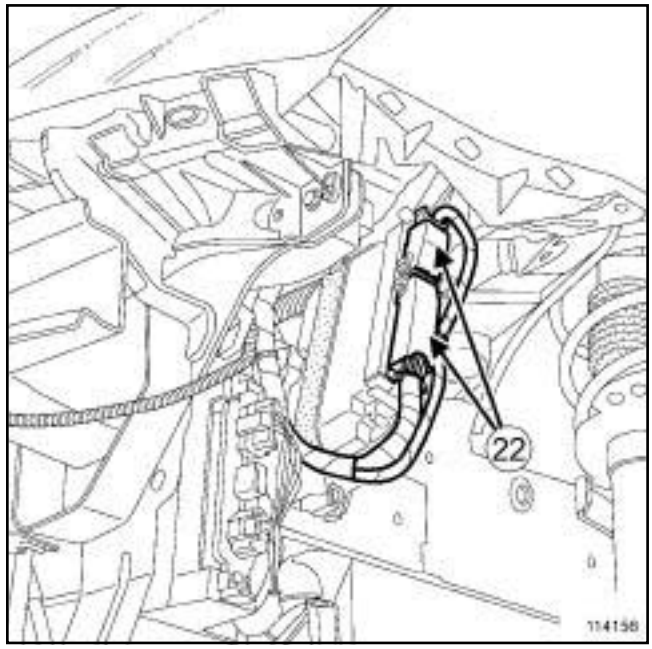
❏ Remove:

- the bolts (**20**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.



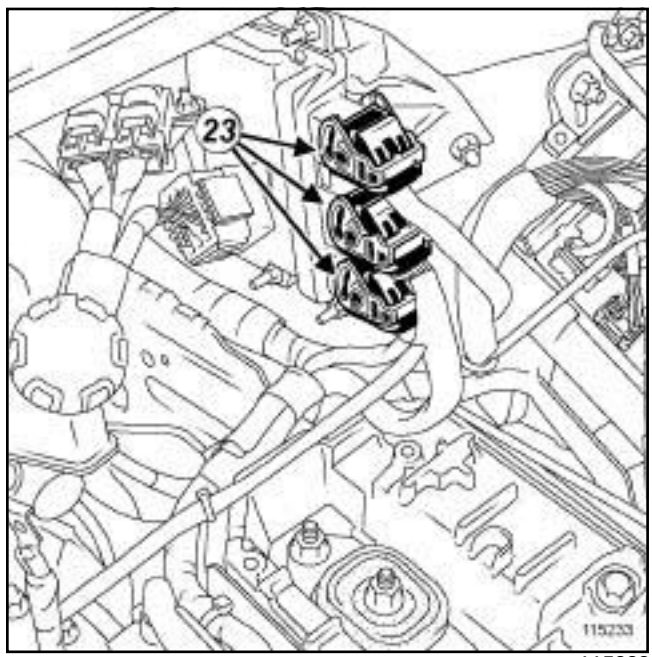
115224

❏ Disconnect the engine wiring connectors (**21**) from the Protection and Switching Unit.



114156

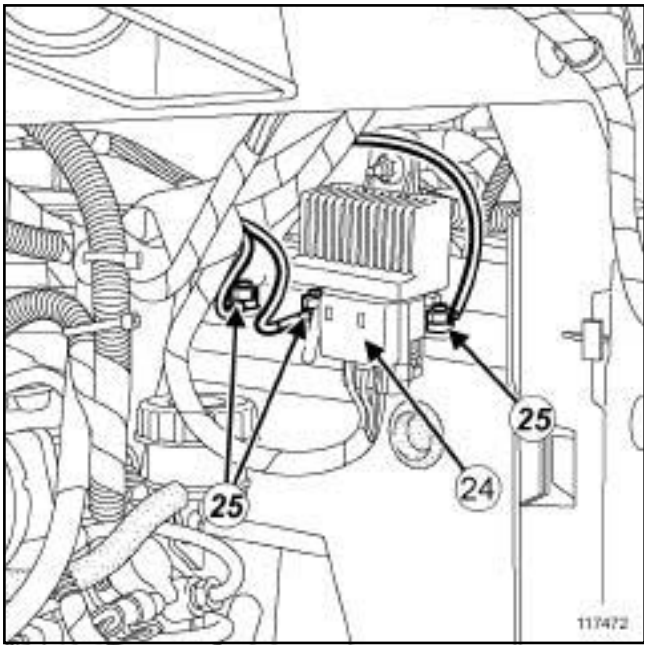
❏ Disconnect the connectors (**22**) from the sequential gearbox computer.



115233

❏ Disconnect the injection computer connectors (**23**) .

K9K, and JA5

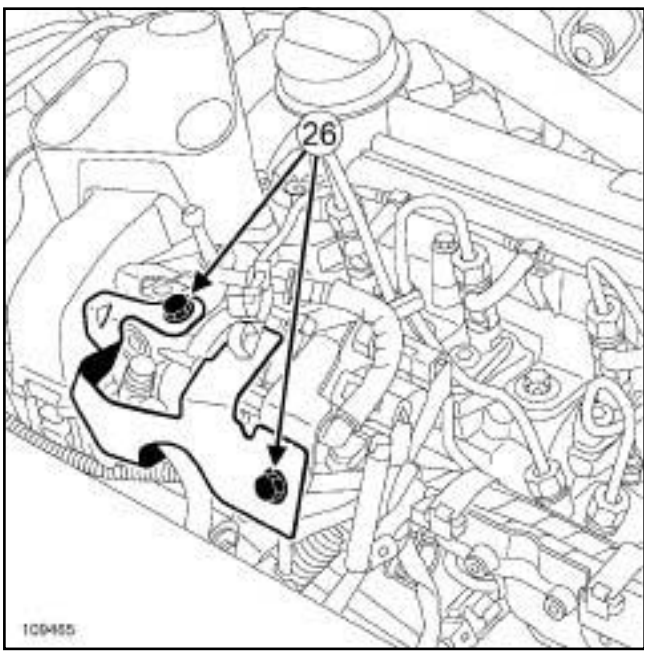


117472

❏ Disconnect the pre-postheating unit connector (**24**) .

❏ Remove the nuts (**25**) from the side member earth wiring.

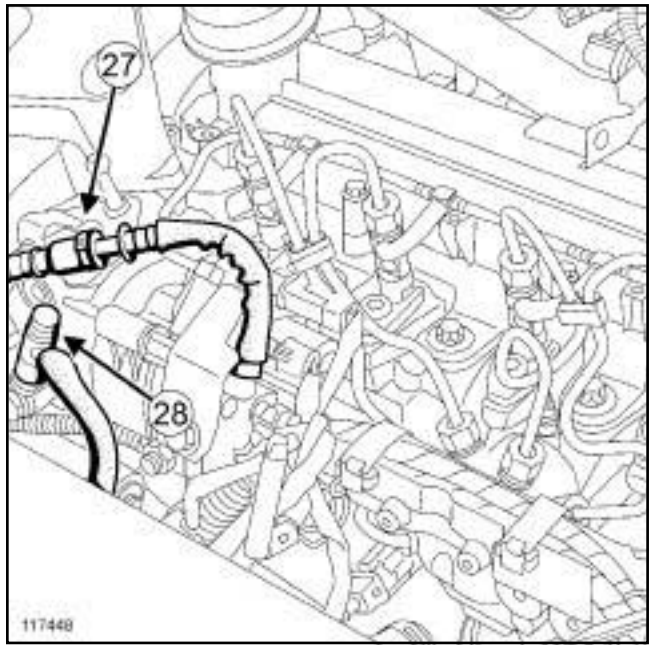
❏ Move the earth wiring away from the side member.



109465

❏ Remove:

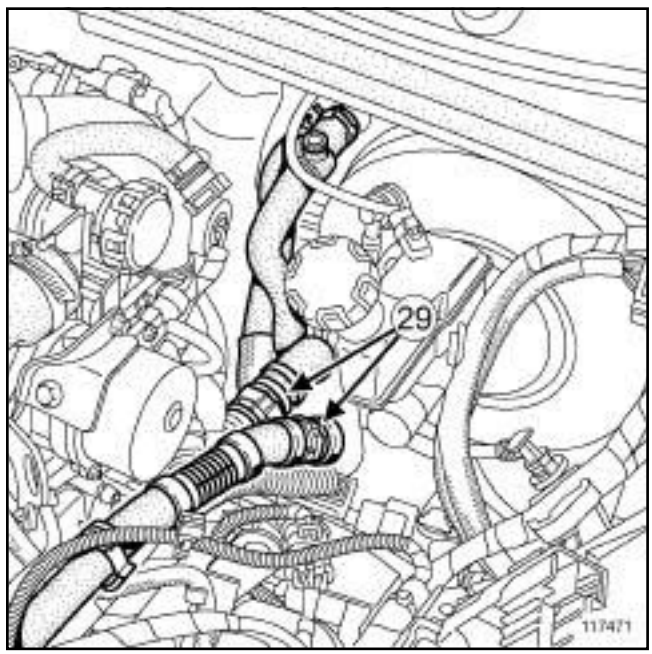
- the bolts (**26**) from the high pressure pump protector,
- the high pressure pump protector.



117448

❏ Disconnect:

- the fuel supply pipe (**27**) ,
- the fuel return pipe (**28**) .

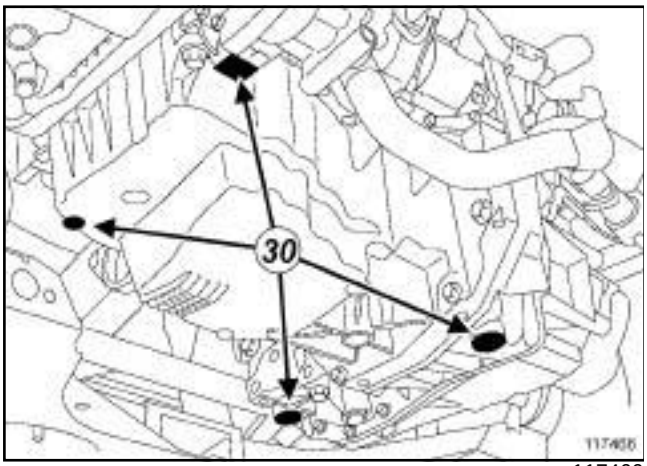


117471

❏ Disconnect the quick-release unions (**29**) from the heater radiator hoses.

K9K, and JA5

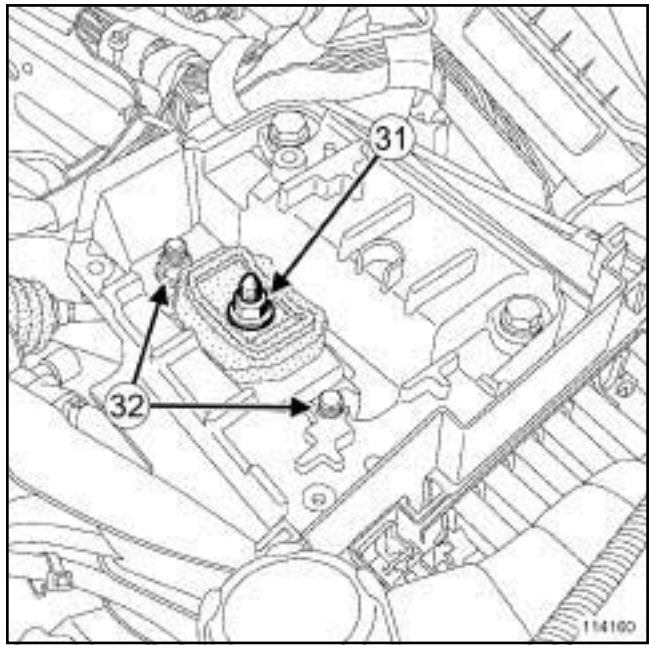
II - OPERATION FOR REMOVAL OF PART CONCERNED



117466

❏ Support the **(Mot. 1390)** on the marks (**30**) on the « engine - gearbox » assembly.

❏ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .



114160

❏ Separate the neck of the electrical wiring from the gearbox support.

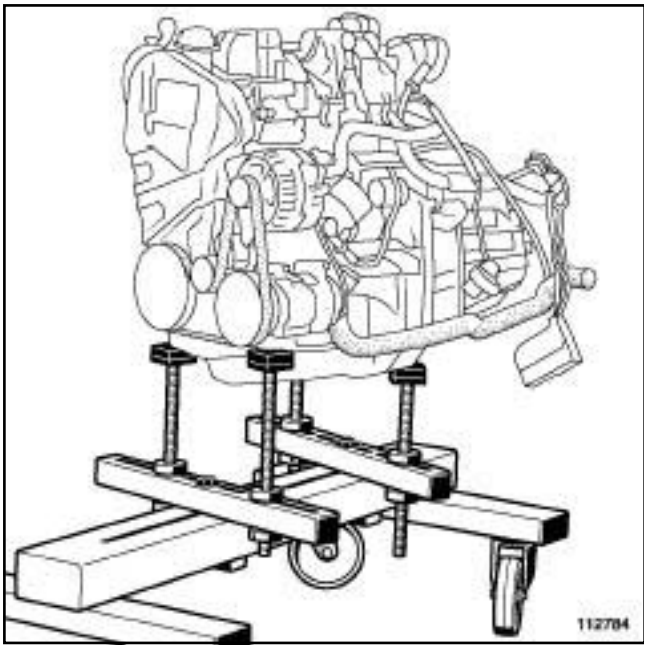
❏ Remove:

- the left-hand suspended engine mounting shaft nut (**31**) ,
- the nuts (**32**) from the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting rubber pad.

Note:

Tap the bolt with a copper hammer, if necessary.

K9K, and JA5



112784

❏ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ For standard engine replacements (see) (Technical Note 6006A, 10A, Engine and peripherals).

❏ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Position the « engine - gearbox » assembly in the body.

❏ Refit:

- the left-hand suspended engine mounting rubber pad,
- the nuts for the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting shaft nut.

❏ Torque tighten (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) .

❏ Refit the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Torque tighten (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) .

❏ Lift the **(Mot. 1390)** from the « engine - gearbox» assembly.

III - FINAL OPERATION

❏ Connect:

- the quick-release unions of the cooling radiator hoses,
- the fuel return pipe,
- the fuel supply pipe.

❏ Refit:

- the high pressure pump protector,
- the bolts of the high pressure pump protector.

❏ Fit the side member earth wiring.

❏ Refit the side member earth wiring nuts.

❏ Torque tighten the **side member earth wiring nuts (8 N.m)**.

❏ Connect:

- the pre-postheating unit connector,
- the injection computer connectors,
- the connectors to the sequential gearbox computer,
- the engine wiring connectors to the Protection and Switching Unit.

❏ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Torque tighten the **Protection and Switching Unit cover bolts (4 N.m)**.

❏ Refit:

- the turbocharger air outlet pipe,
- the clip of the turbocharger air outlet pipe,
- the turbocharger air outlet pipe bolt.

❏ Connect:

- the brake servo union on the vacuum pump,
- the air filter unit air outlet pipe on the turbocharger side,
- the oil rebreathing pipe on the air filter unit air outlet pipe, on the turbocharger side.

K9K, and JA5

❏ Torque tighten the **air filter unit air outlet pipe clip, turbocharger side, on the air filter unit air outlet pipe, turbocharger side (5.5 N.m)**.

❏ Refit:

- the intercooler air outlet pipe,
- the nut from the intercooler air inlet and outlet pipes.

❏ Torque tighten the **intercooler air outlet pipe clip (5.5 N.m)**.

❏ Connect the air inlet pressure sensor connector.

❏ Refit the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

❏ Clip on the fuse holder.

❏ Connect the supply wiring of the power supply fuse unit.

❏ Refit the supply wiring nut of the power supply fuse unit.

❏ Torque tighten the **supply wiring nut of the power supply fuse unit (8 N.m)**.

❏ Refit:

- the fuses,
- the fuse box cover,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .
- a new exhaust bracket seal,
- the exhaust bracket bolts,

❏ Torque tighten the **exhaust flange bolts (21 N.m)**.

❏ Refit:

- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) .
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),

❏ Connect the compressor-intermediate pipe connecting pipe on the compressor.

❏ Refit the bolt to the compressor-intermediate pipe connecting pipe on the compressor.

❏ Torque tighten the **compressor-intermediate pipe connecting pipe bolt on the compressor (8 N.m)**.

❏ Connect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.

❏ Refit the dehydrator reservoir-expansion valve connecting pipe bolt on the dehydrator reservoir.

❏ Torque tighten the **dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir (8 N.m)**.

❏ Refit:

- the compressor-condenser connecting pipe,
- the condenser-compressor connecting pipe bolt on the compressor,
- the compressor-condenser connecting pipe bolt on the condenser.

❏ Tighten to torque:

- the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**,
- the **compressor-condenser connecting pipe bolt on the condenser (8 N.m)**.

❏ Refit:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the headlights (see) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Fit the protective fuse mounting wiring.

❏ Refit the protective fuse mounting wiring nut.

❏ Torque tighten the **protective fuse mounting wiring nut (6 N.m)**.

❏ Refit the air filter unit air inlet pipe.

K9K, and JA5

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Perform the following operations:

- fill the sequential gearbox,
- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the engine cover,
- the engine undertray.

D4F, and JA3

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Tightening torques ▽	
exhaust downpipe bolts	**9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Drain:

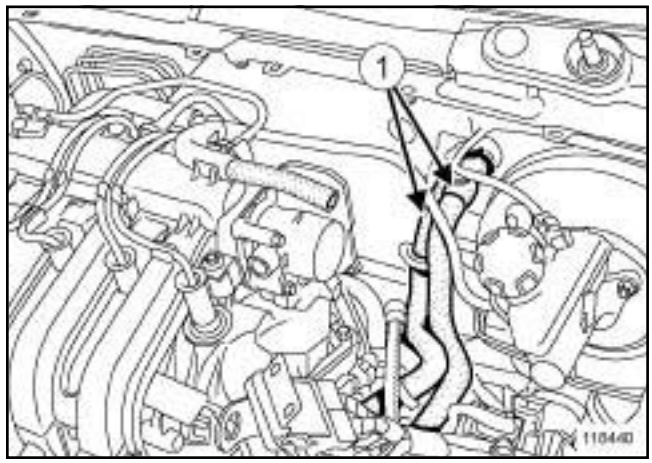
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

AIR CONDITIONING

❑ Drain the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).



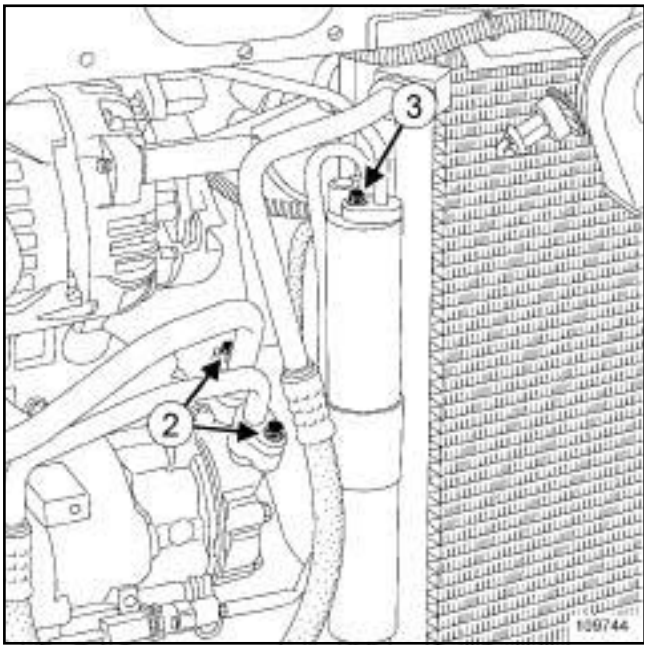
118440

❑ Remove:

- the clips for the passenger compartment heating hoses using the **(Mot. 1448)**,
- the passenger compartment heater hoses (**1**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

D4F, and JA3

AIR CONDITIONING



109744

❏ Unclip the wiring harness of the pressure switch on the condenser.

❏ Disconnect the pressure switch connector on the condenser.

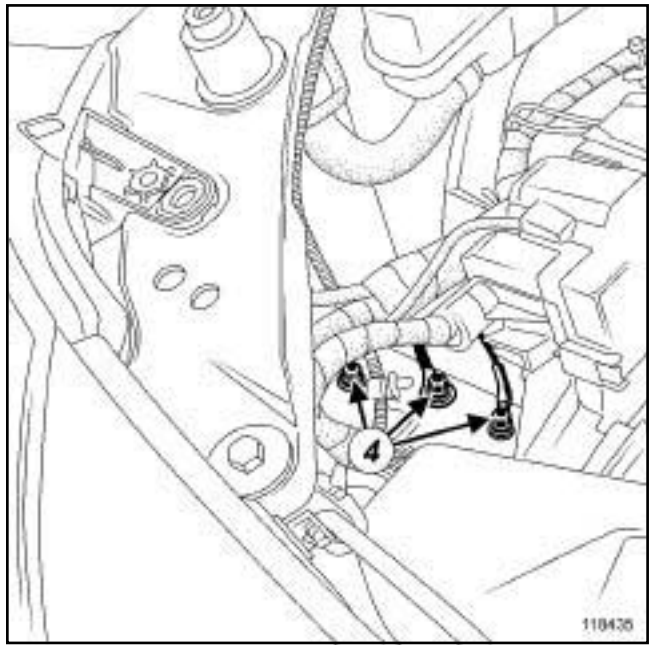
❏ Remove:

- the bolts (**2**) from the air conditioning pipe unions on the compressor,
- the bolts (**3**) from the air conditioning pipe unions on the condenser.

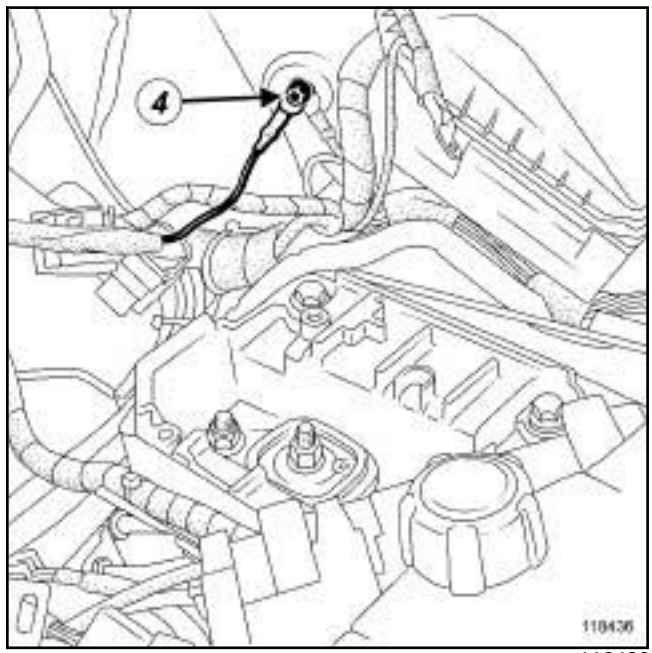
WARNING
Plugs must be fitted on the hoses to prevent moisture from entering the system.

❏ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the petrol injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the injection computer support mounting bolts,
- the injection computer support.



118435

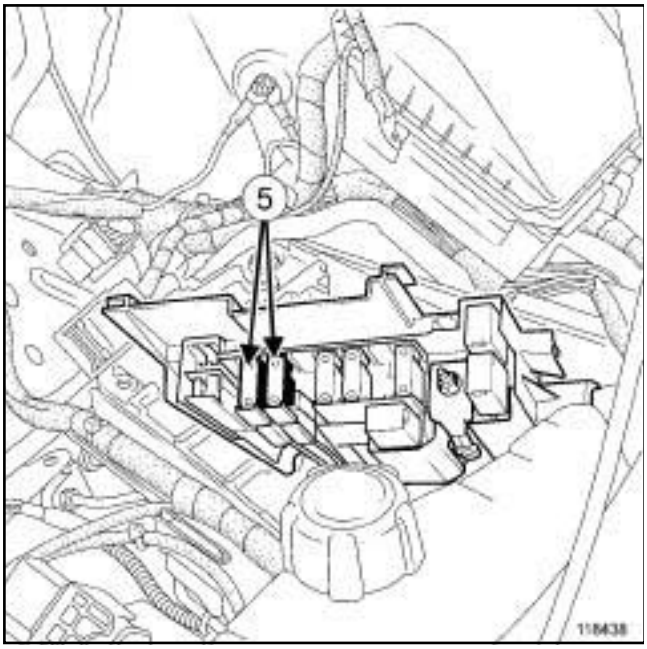


118436

❏ Remove:

- the earth terminal nuts,
- the earth terminals (**4**) .

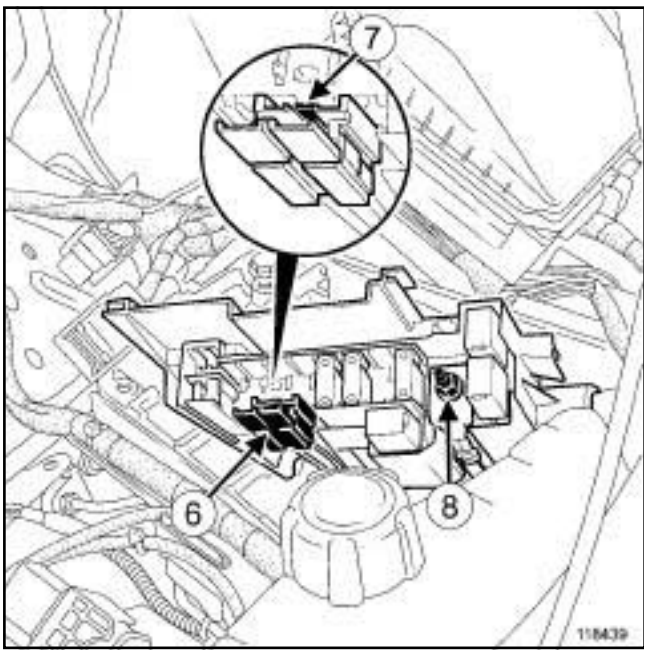
D4F, and JA3



118438

❏ Remove:

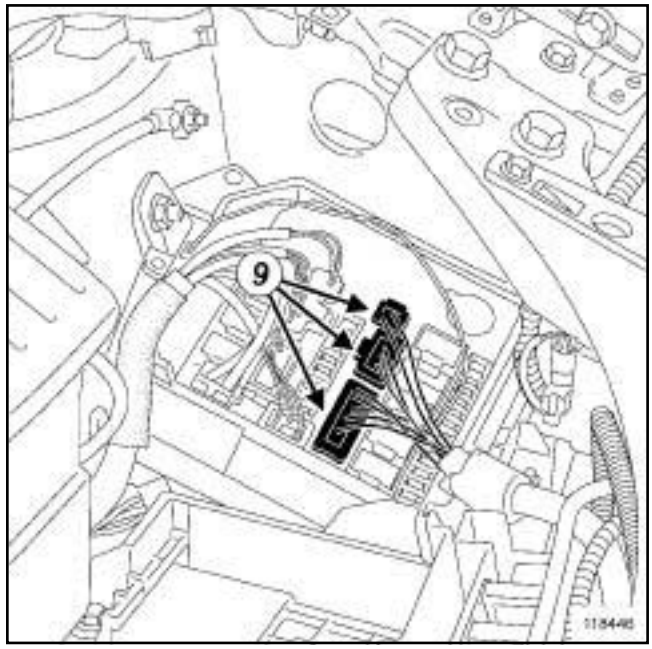
- the cover from the fuse holder board,
- the fuses (**5**) .



118439

❏ Remove:

- the fuse holder (**6**) by pressing on the tab (**7**) ,
- the feed wire (**8**) from the fuse holder board,
- the supply cable from the battery protection fuse box.

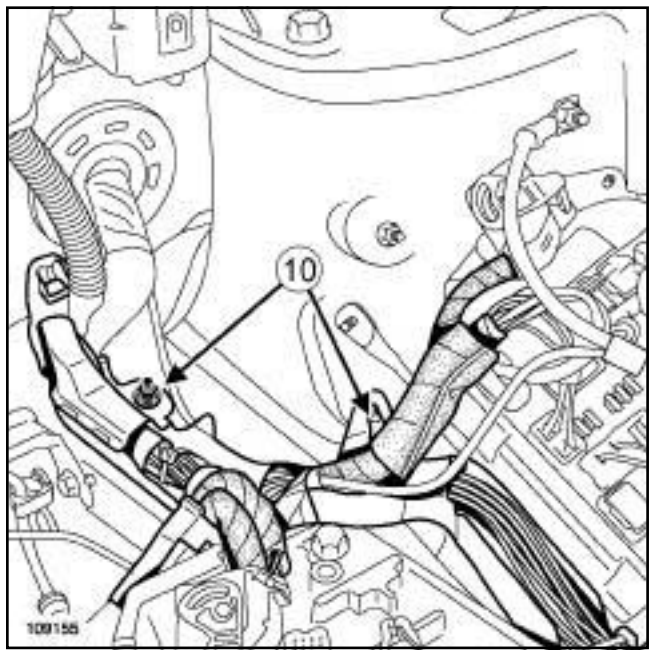


118446

❏ Remove the Protection and Switching Unit cover.

❏ Disconnect the connectors (**9**) from the Protection and Switching Unit.

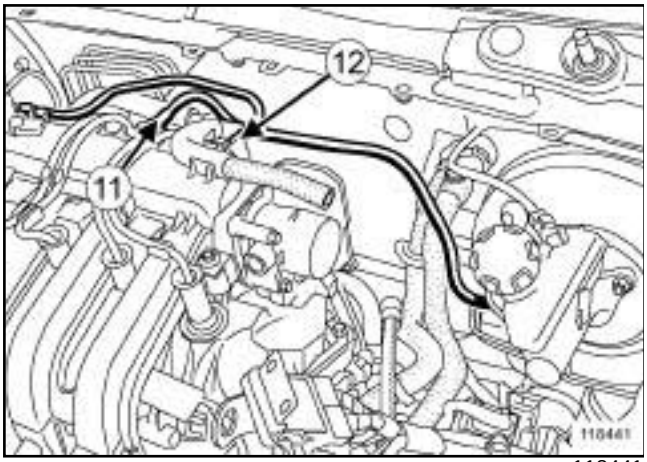
❏ Remove the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).



109155

❏ Remove the bolts (**10**) from the wiring channel on the body.

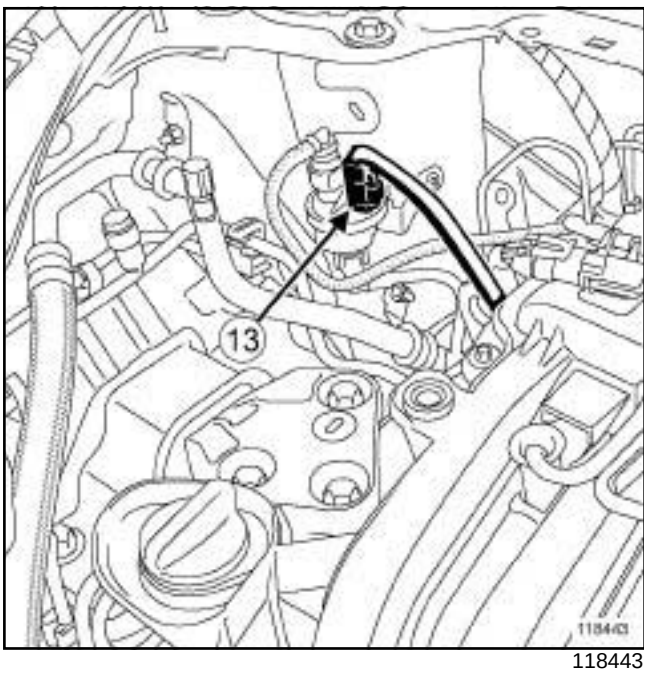
❏ Move the wiring harness to one side.



118441

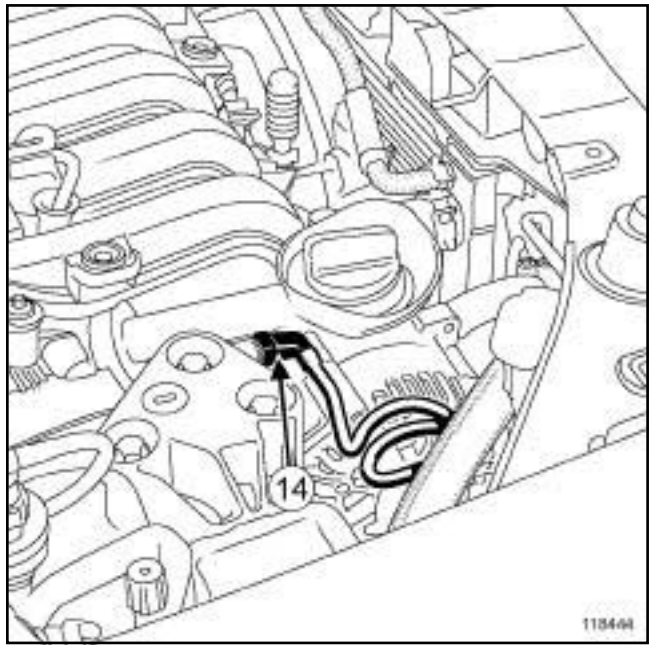
❑ Disconnect:

- the quick-release union from the brake servo pipe (**11**) ,
- the quick-release union from the petrol vapour re-breathing pipe (**12**) .



118443

❑ Disconnect the connector (**13**) from the fuel vapour absorber bleed solenoid valve.



118444

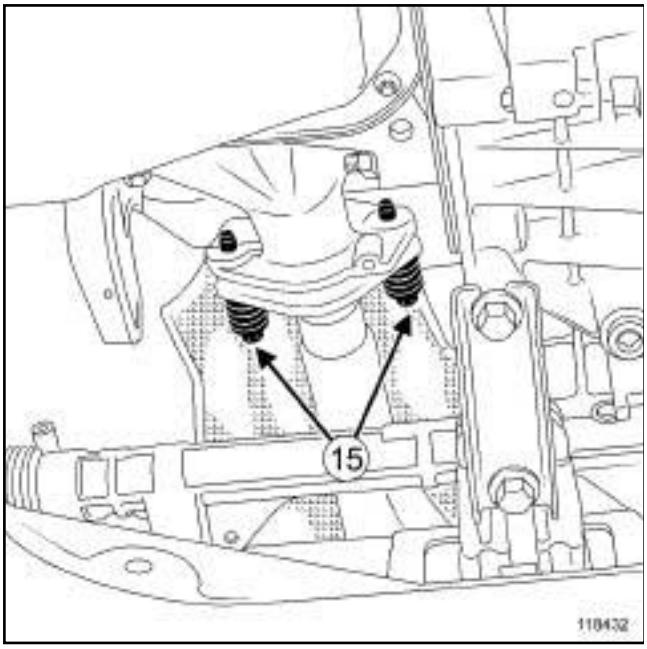
❑ Disconnect the quick-release union from the fuel supply pipe (**14**) on the injector rail.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

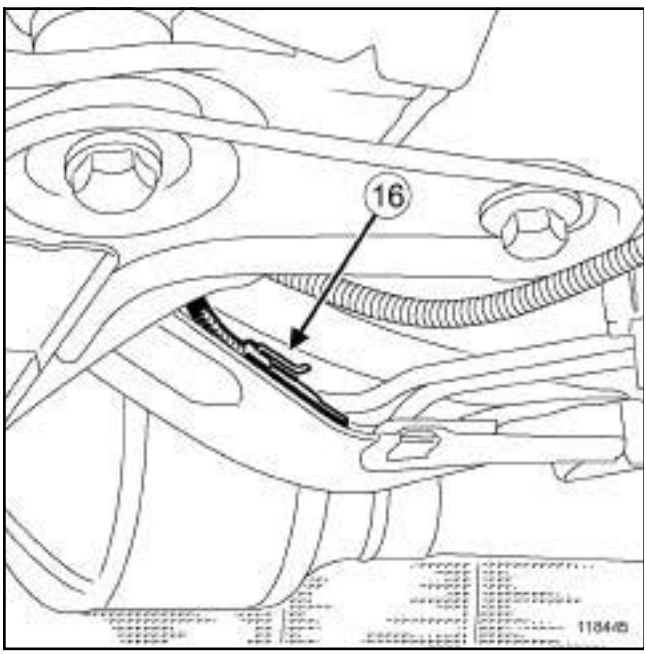
D4F, and JA3



118432

❑ Remove the bolts (**15**) from the exhaust downpipe.

❑ Remove the exhaust pipe towards the rear of the vehicle.



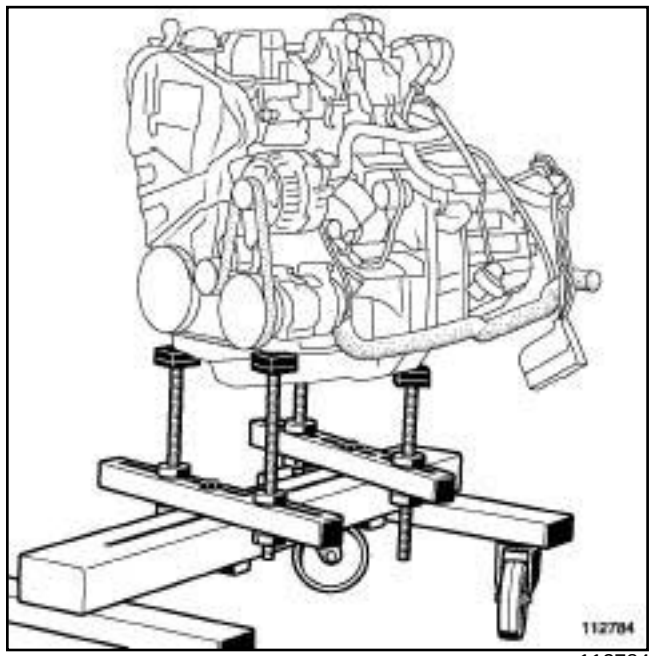
118445

❑ Disconnect the oxygen sensor connector (**16**) .

❑ Feed the oxygen sensor wiring harness into the engine compartment.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the lower engine torque reaction tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



112784

❑ Support the « engine - gearbox » assembly on engine marks using the **(Mot. 1390)**.

❑ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❑ Raise the vehicle, moving the engine towards the front.

❑ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see) (Technical Note 6004A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the « engine - gearbox » assembly in the vehicle,

D4F, and JA3

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the **(Mot. 1390)**.

III - FINAL OPERATION.

❑ Refit:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the oxygen sensor wiring harness.

❑ Connect the oxygen sensor connector.

❑ Refit the exhaust downpipe.

❑ Torque tighten the **exhaust downpipe bolts (9 Nm)**.

❑ Connect:

- the quick-release union to the fuel supply pipe on the injector rail,
- the quick-release union to the petrol vapour re-breathing pipe,
- the quick-release union to the brake servo pipe.

❑ refit the wiring harness.

❑ Screw the bolts for the wiring harness channel on the body.

❑ Refit the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).

❑ Connect the Protection and Switching Unit connectors.

❑ Refit:

- the Protection and Switching Unit cover,
- the supply cable on the battery protection fuse box,
- the feed wire on the fuse holder board,
- the fuse holder,
- the fuses,
- the cover from the fuse holder board,
- the earth terminals on the side member,
- the earth terminal nuts,
- the injection computer mounting,
- the injection computer support bolts,
- the petrol injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

AIR CONDITIONING

❑ Refit:

- the bolts to the air conditioning pipe unions on the condenser,
- the bolts to the air conditioning pipe unions on the compressor.

❑ Connect the pressure switch connector to the condenser.

❑ Clip the pressure switch wiring harness on the condenser.

❑ Refit:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the passenger compartment heater hoses,
- the clips for the passenger compartment heating hoses using the **(Mot. 1448)**.

❑ Refit:

- the clip for the top hose on the cooling radiator using the **(Mot. 1448)**,
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Refill:

- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,

D4F, and JA3

- the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

AIR CONDITIONING

❑ Fill the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
connecting pipe bolts	**8 Nm**
exhaust downpipe bolts	**9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

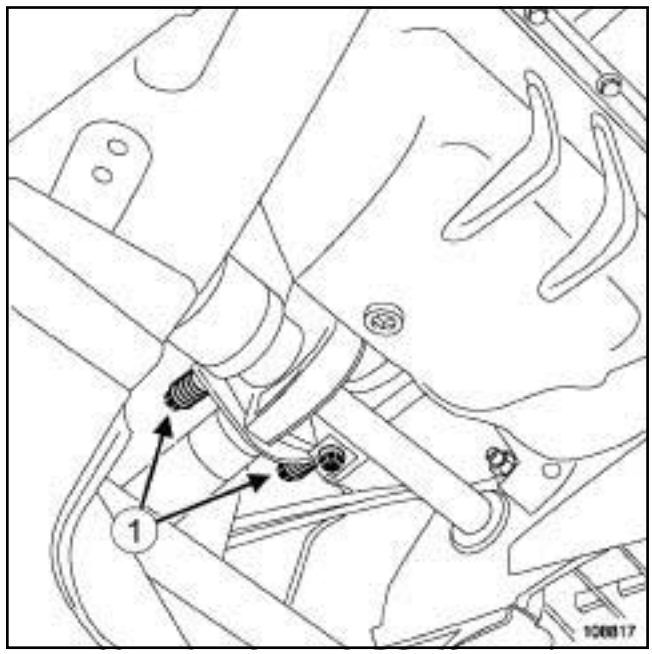
- the engine cover,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

❑ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- the engine if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

AIR CONDITIONING

❑ Drain the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).



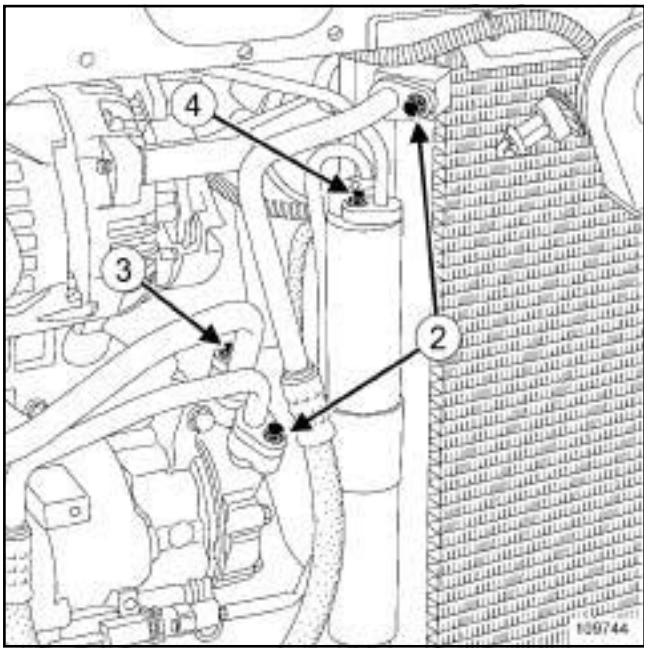
108817

❑ Remove:

- the exhaust downpipe bolts (**1**) ,
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

D4F, and 784 or 786

AIR CONDITIONING



109744

❑ Unclip the wiring harness of the pressure switch on the condenser.

❑ Disconnect:

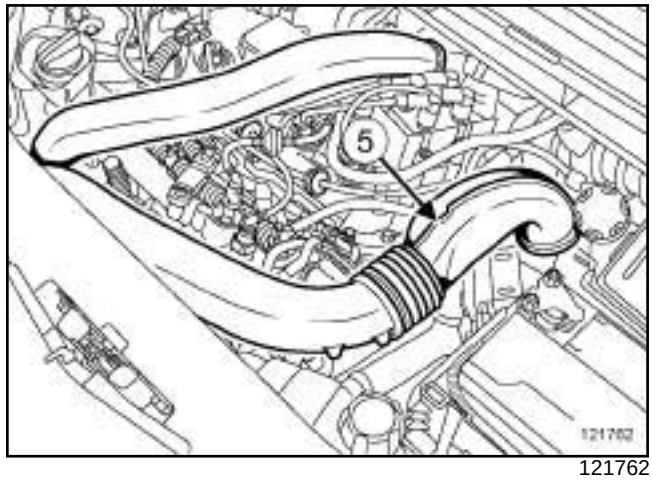
- the pressure switch from the condenser,
- the air conditioning compressor clutch connector.

❑ Remove:

- the compressor - condenser connecting pipe bolts (**2**) ,
- the compressor - condenser connection pipe.
- the compressor - expansion valve connecting pipe bolt (**3**) ,
- the dehydrator reservoir - expansion valve connecting pipe bolt (**4**) .

❑ Uncouple the connecting pipes.

❑ Plug the openings.

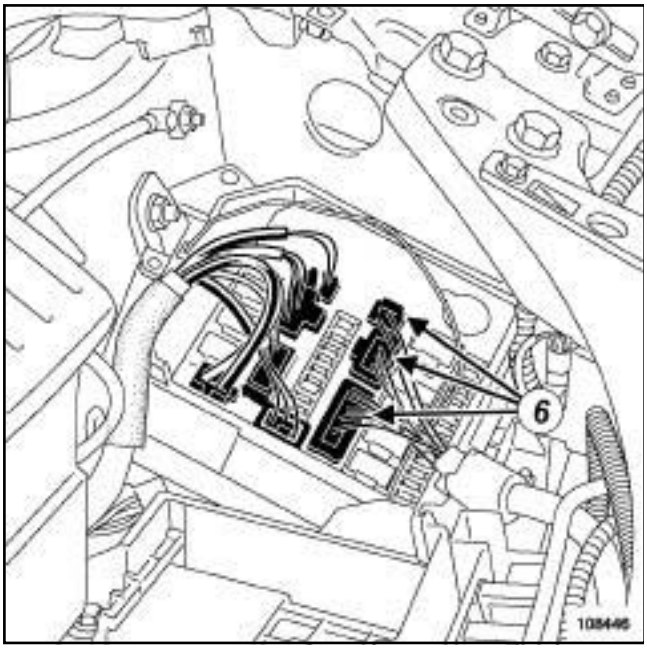


121762

❑ Remove:

- the air filter unit air inlet pipe (**5**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the passenger compartment radiator cooling hoses on the bulkhead,
- the Protection and Switching Unit cover.

D4F, and 784 or 786



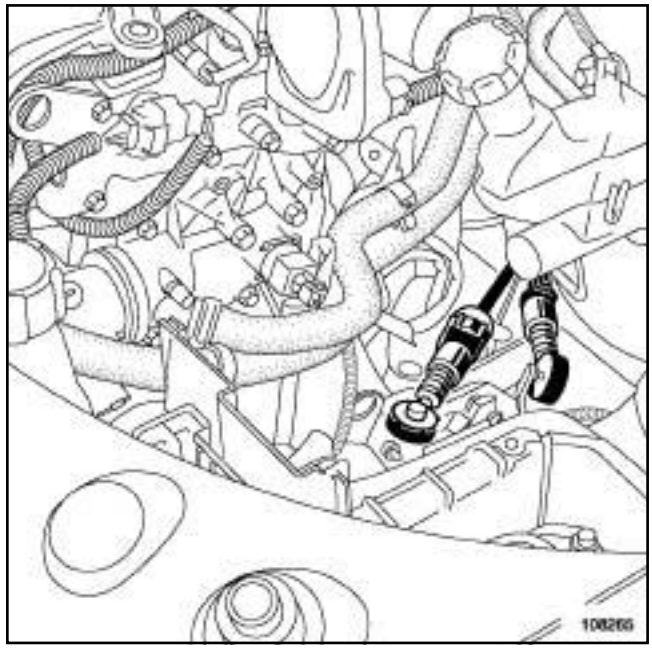
108446

❏ Disconnect:

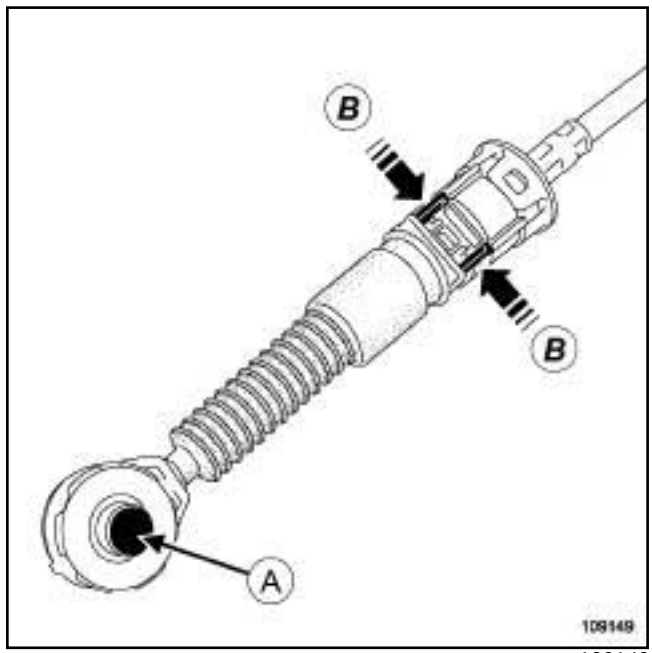
- the Protection and Switching Unit connectors (**6**) ,
- the fuse,
- the fuse holder to the fuse board,
- the supply cable on the battery protection fuse box,
- the petrol injection computer connectors.

❏ Remove the earth nuts.

❏ Move the wiring harness to one side.



108265

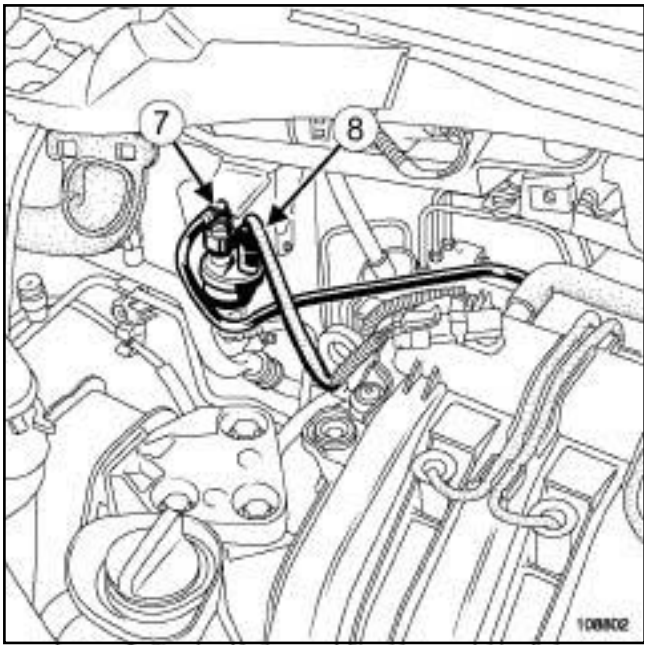


109149

❏ Remove:

- the gear control cables on the gearbox by pushing at (**A**) ,
- the control cables by pushing at (**B**) .

D4F, and 784 or 786



108802

❏ Disconnect:

- the petrol vapour recirculation solenoid valve connector (**8**) ,
- the fuel vapour recirculation pipe (**7**) ,
- the brake servo non-return valve.

WARNING
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

IMPORTANT
Wear latex gloves during the operation.

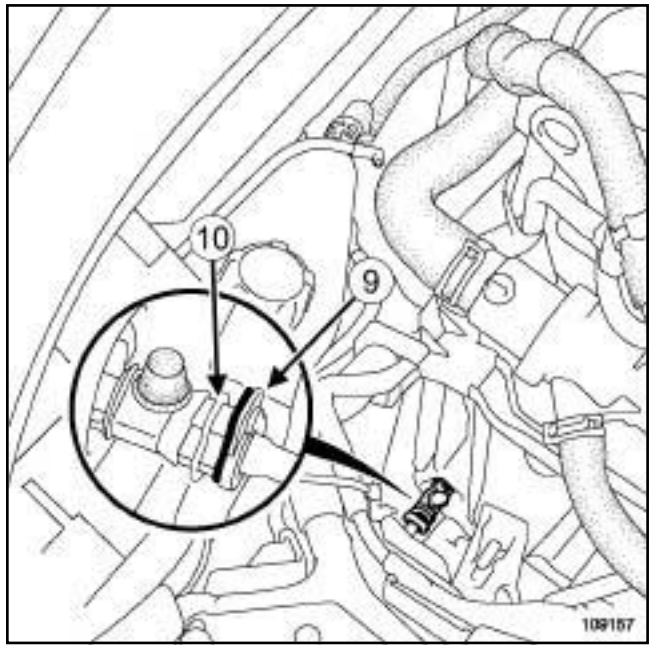
IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

❏ Disconnect the fuel inlet union on the injection rail.

❏ Plug the openings.



109157

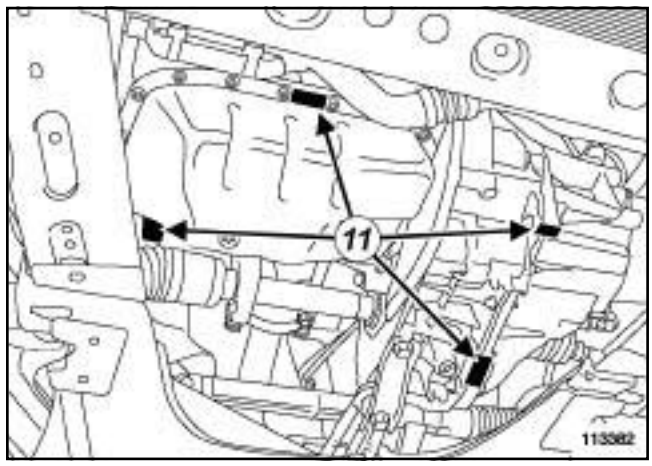
❏ Place a hose clamp **(Ms. 583)** between the brake fluid reservoir and the clutch master cylinder.

❏ Disconnect the clutch slave cylinder by pulling the clips (**9**) and (**10**)

❏ Unclip the gearbox clutch pipe.

❏ Plug the openings.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382

❏ Support the « engine - gearbox » assembly on the engine marks (**11**) with the **(Mot. 1390)**.

❏ Mark the positions of the suspended engine mountings on the body.

D4F, and 784 or 786

❑ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❑ Raise the vehicle, moving the engine towards the front.

❑ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see) (Technical Note 6004A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the « engine-gearbox » assembly in the vehicle.

❑ Refit:

- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the **(Mot. 1390)** from the «engine - gearbox » assembly.

III - FINAL OPERATION.

❑ Clip the clutch pipe to the gearbox.

❑ Remove the blanking plugs from the openings.

❑ Connect the clutch slave cylinder pipes.

❑ Remove the hose clamp **(Ms. 583)**.

❑ Remove the blanking plugs from the openings.

❑ Connect:

- the petrol inlet union on the injector rail,
- the brake servo non-return valve,
- fuel vapour recirculation pipe,
- the petrol vapour recirculation solenoid valve connector.

❑ Refit:

- the gearbox control cables,
- the earth nuts.

❑ Connect:

- the connectors to the petrol injection computer,
- the Protection and Switching Unit connectors,
- the fuse,
- the fuse holder to the fuse board,
- the feed wire from the battery protection fuse box.

❑ Refit:

- the Protection and Switching Unit cover,
- the passenger compartment radiator cooling hoses on the bulkhead,
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit air inlet pipe.

AIR CONDITIONING

❑ Remove the blanking plugs.

❑ Couple the connecting pipes.

❑ Refit:

- the dehydrator reservoir - expansion valve connecting pipe bolt,
- the compressor - expansion valve connecting pipe bolt,
- the compressor - condenser connection pipe.
- the compressor - condenser connecting pipe bolts.

❑ Torque tighten the **connecting pipe bolts (8 Nm)**.

❑ Connect:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector.

❑ Clip the pressure switch wiring harness on the condenser.

D4F, and 784 or 786

❑ Refit:

- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the exhaust downpipe bolts.

❑ Torque tighten the **exhaust downpipe bolts (9 Nm)**.

❑ Refit:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- fill up the engine oil if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- fill the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the clutch circuit (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

❑ Refit:

- the engine undertray,
- the engine cover.

M4R, and DP0

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
bolts of the right-hand suspended engine mounting cover	**62 N.m**
bolts for the right-hand suspended engine mounting rubber pad	**62 N.m**
bolt of the right-hand suspended engine mounting rubber pad	**105 N.m**
upper engine tie-bar bolts	**105 N.m**
support bolts for the left-hand suspended engine mounting on the vehicle body	**62 N.m**
left-hand suspended engine mounting rubber pad nuts	**62 N.m**
left-hand suspended engine mounting central nut	**62 N.m**
exhaust flange bolts	**21 N.m**
engine tie-bar bolt on the engine	**180 N.m**
engine tie-bar bolt on the subframe	**105 N.m**
air inlet duct clips	**6 N.m**

REMOVAL

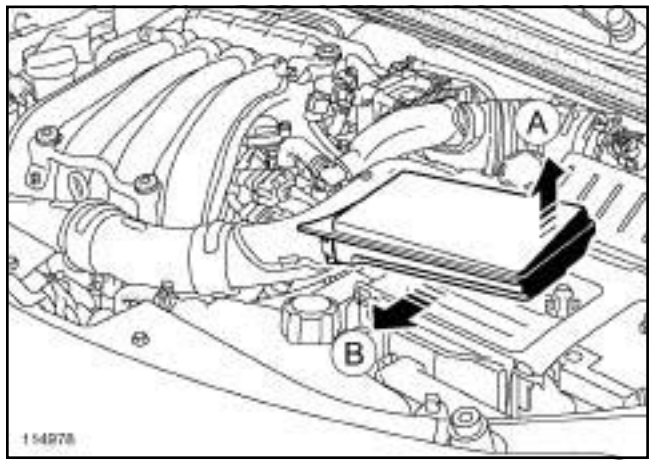
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

IMPORTANT
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

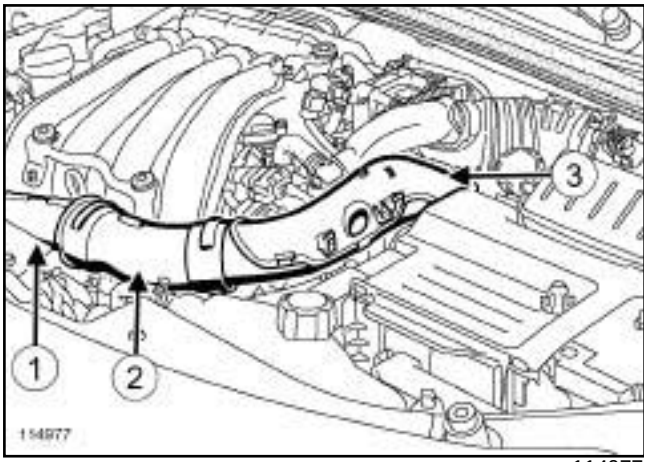


114978

❑ Lift the air resonator (**A**) to remove it from the battery cover.

❑ Pull the air resonator (**B**) towards the front of the vehicle to remove it.

M4R, and DP0

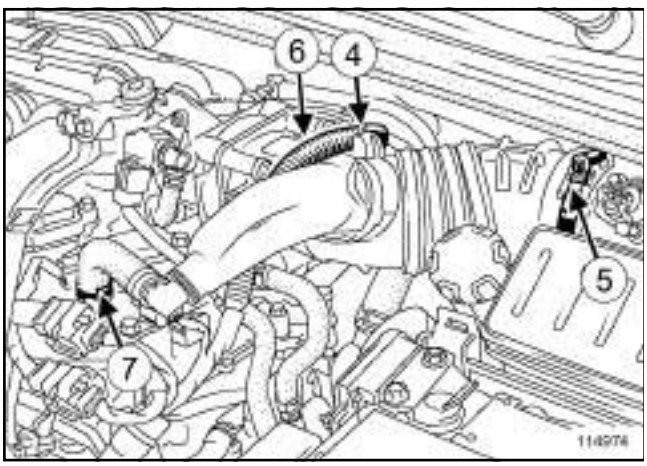


114977

❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove the air inlet sleeve.



114974

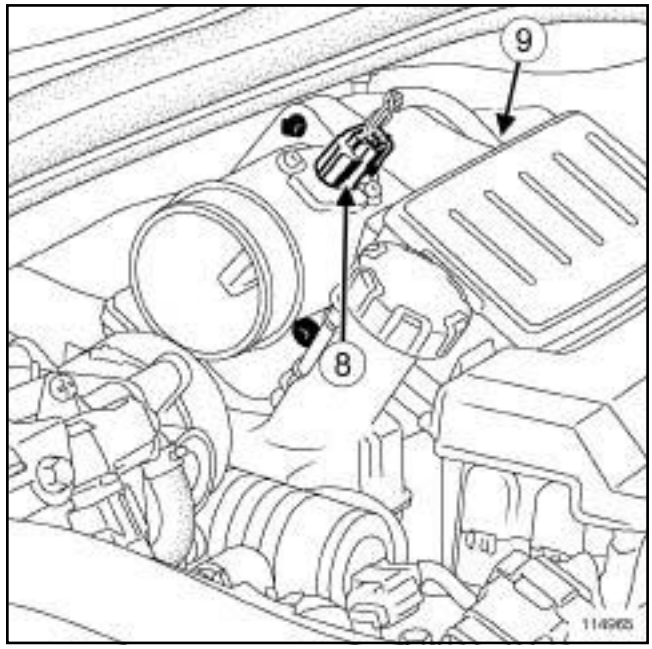
❏ Unclip the electrical wiring from the air inlet duct at (**4**) .

❏ Loosen the air duct clips:

- on the air flow sensor (**5**) ,
- on the motorised throttle valve (**6**) .

❏ Extract the oil vapour rebreathing hose (**7**) on the rocker cover using the tool **(Mot. 1448)**.

❏ Remove the air inlet duct.



114965

❏ Disconnect the air flowmeter connector (**8**) .

❏ Unclip the air flowmeter connector electrical wiring at (**9**) .

❏ Remove the engine undertray.

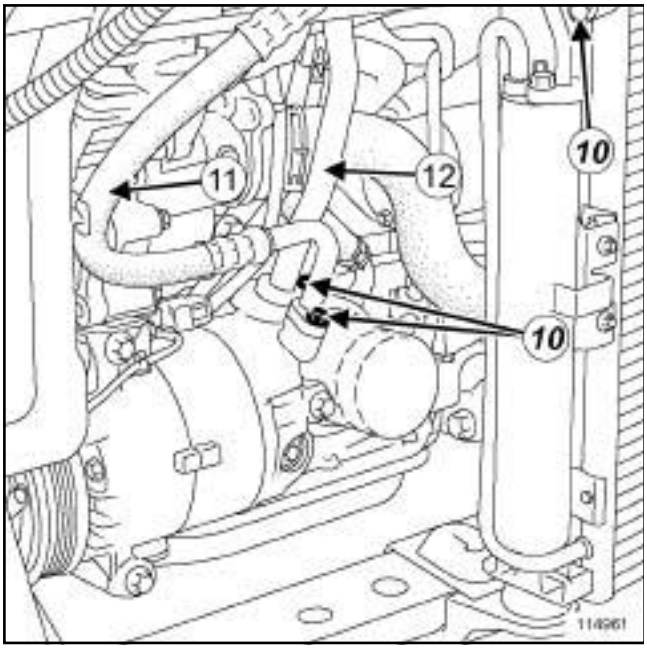
❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (23A, Automatic transmission),
- the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

M4R, and DP0



114961

❏ Remove:

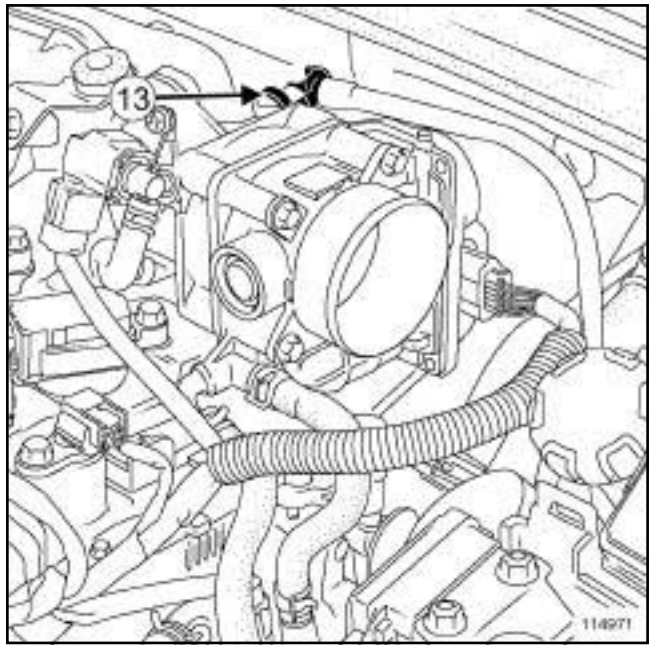
- the bolts (**10**) from the air conditioning pipe unions,
- the air conditioning pipe (**11**) .

WARNING
To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

❏ Pull out the air conditioning pipe (**12**) .

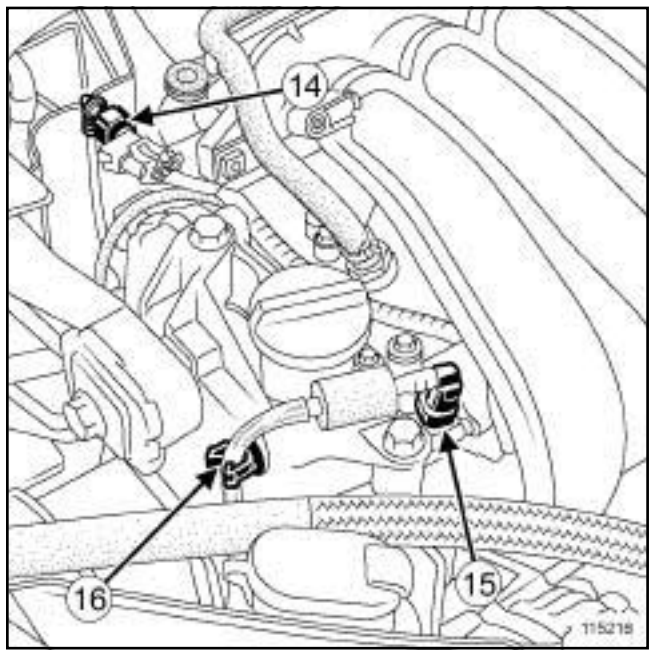
❏ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).



114971

❏ Disconnect the brake servo pipe (**13**) from the intake distributor.



115216

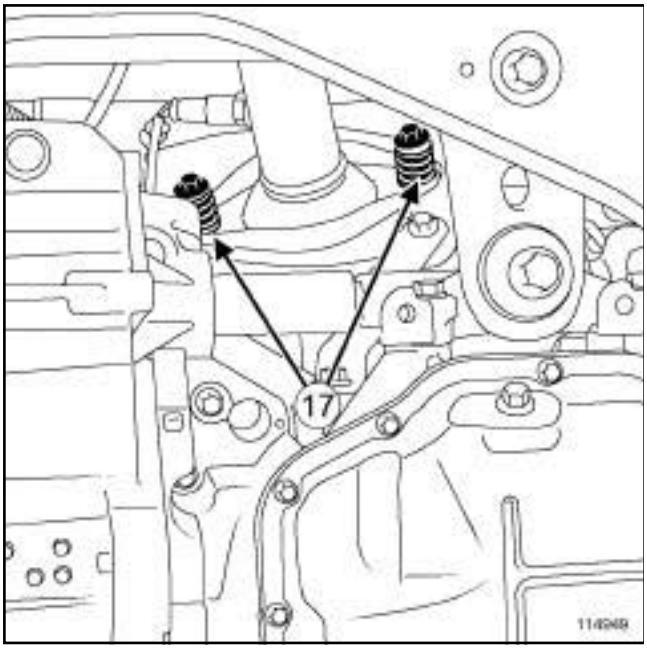
❏ Disconnect:

- the petrol vapour rebreather pipe (**14**) ,
- the fuel supply pipe (**15**) .

WARNING
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❏ Unclip the fuel supply pipe at (**16**) .

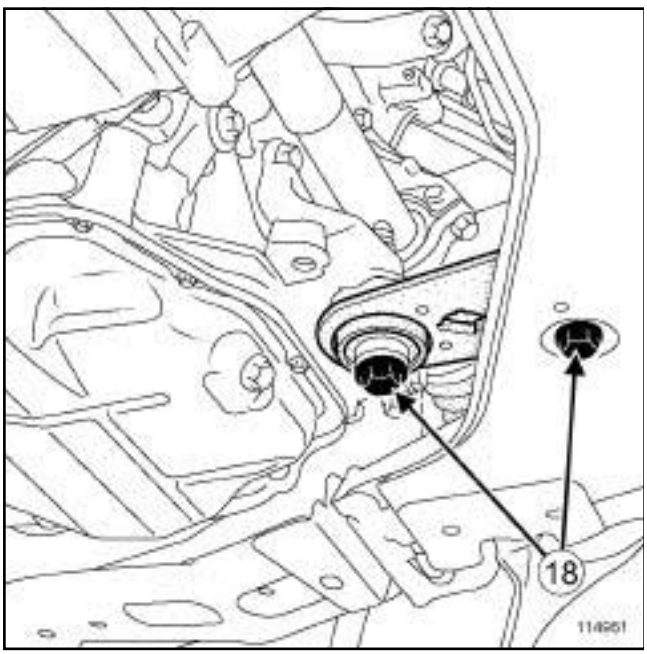
M4R, and DP0



114949

❑ Remove:

- the bolts (**17**) from the exhaust flange,
- the exhaust flange seal.

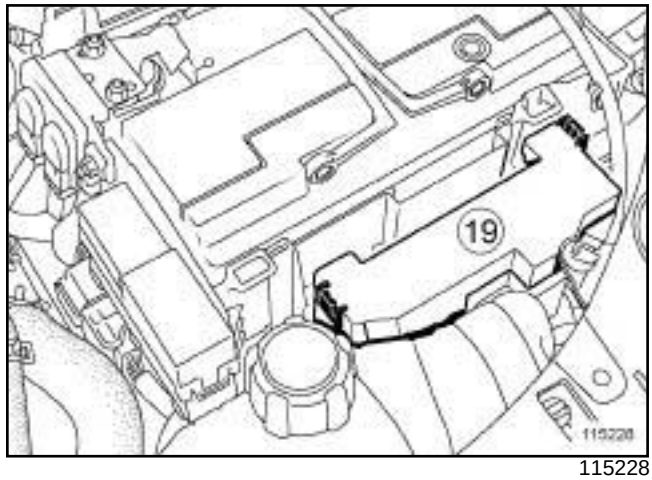


114951

❑ Remove:

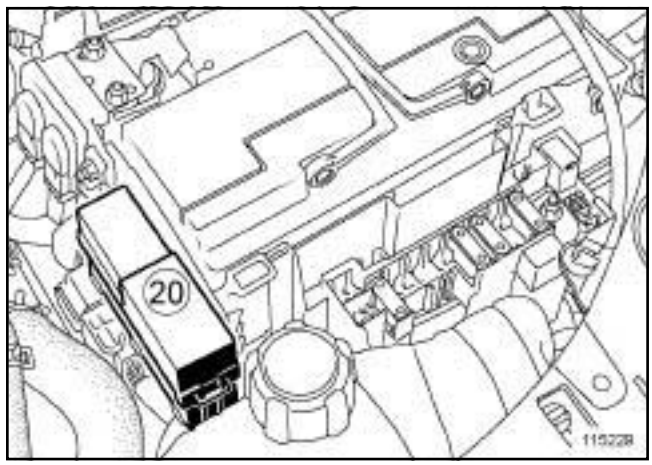
- the engine tie-bar bolts (**18**) ,
- the engine tie-bar .

❑ Remove the battery cover.



115228

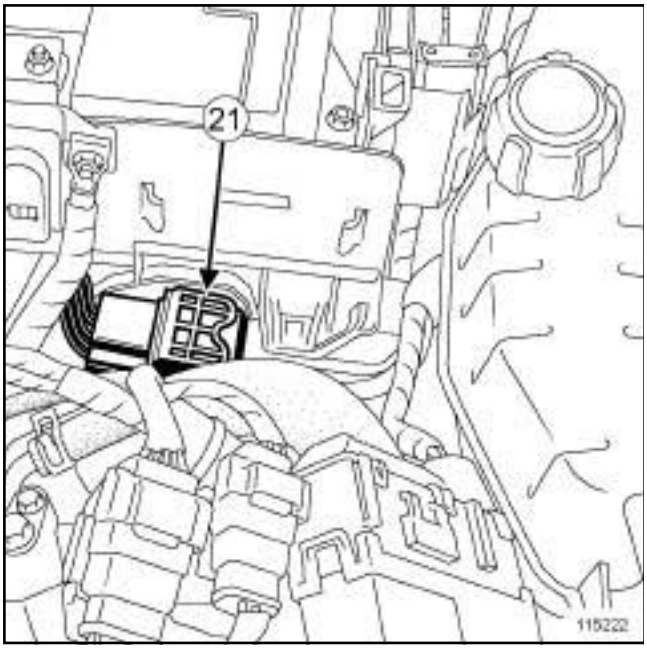
❑ Remove the cover (**19**) from the power supply fuse unit.



115229

❑ Unclip the optional relay unit (**20**) .

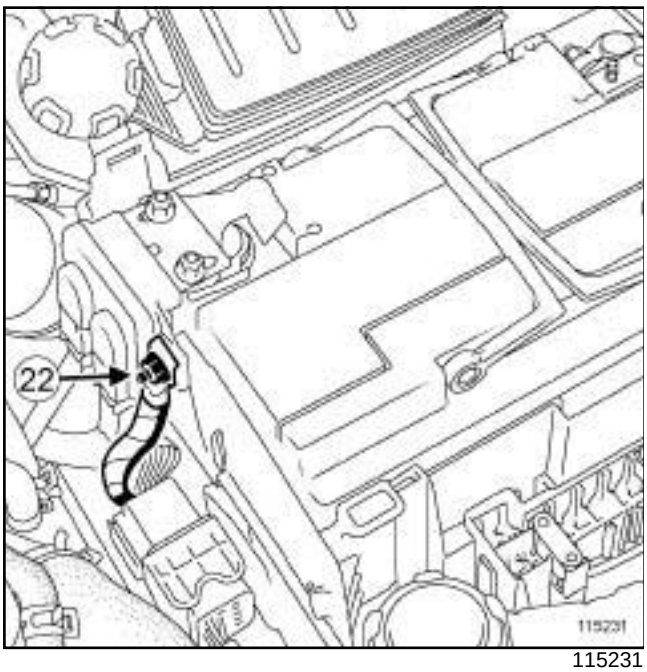
M4R, and DP0



115222

❏ Unclip the electrical wiring connector (**21**) .

❏ Disconnect the electrical wiring connector (**21**) .

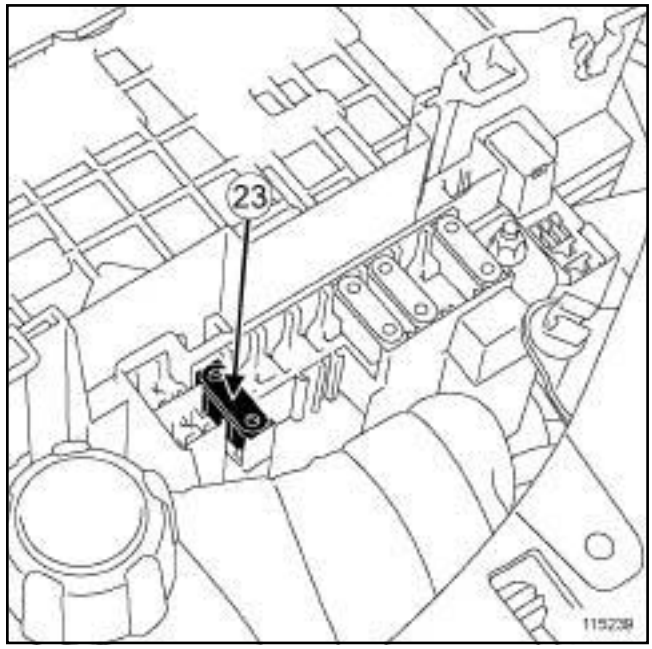


115231

❏ Remove the nut (**22**) from the protective fuse mounting wiring.

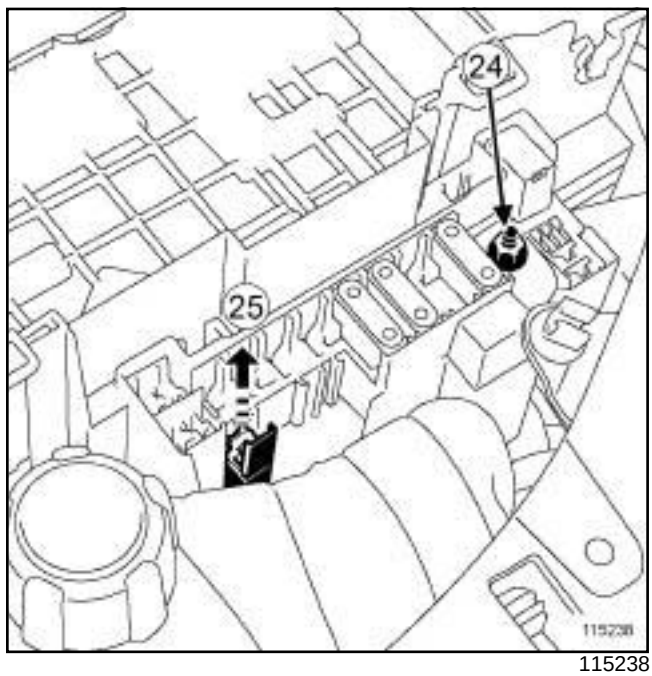
❏ Move aside the protective fuse mounting wiring.

❏ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).



115239

❏ Remove the fuse (**23**) .



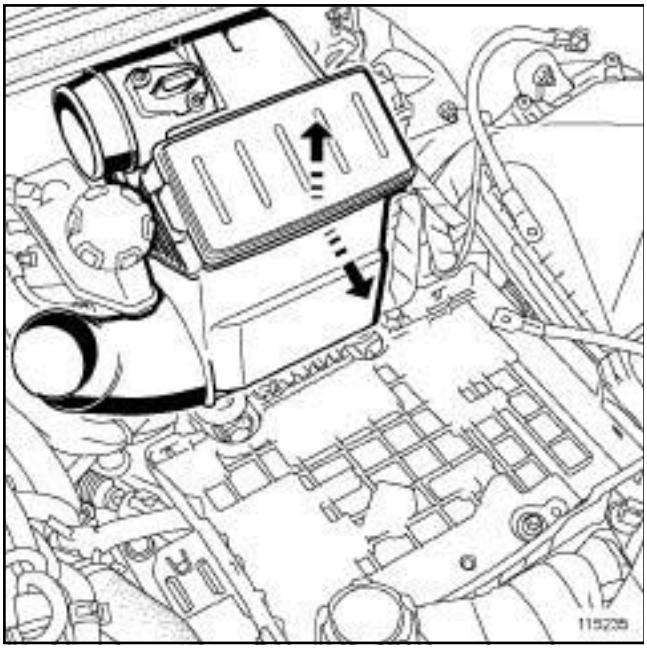
115238

❏ Remove the nut (**24**) from the supply wiring of the power supply fuse unit.

❏ Disconnect the supply wiring from the power supply fuse unit.

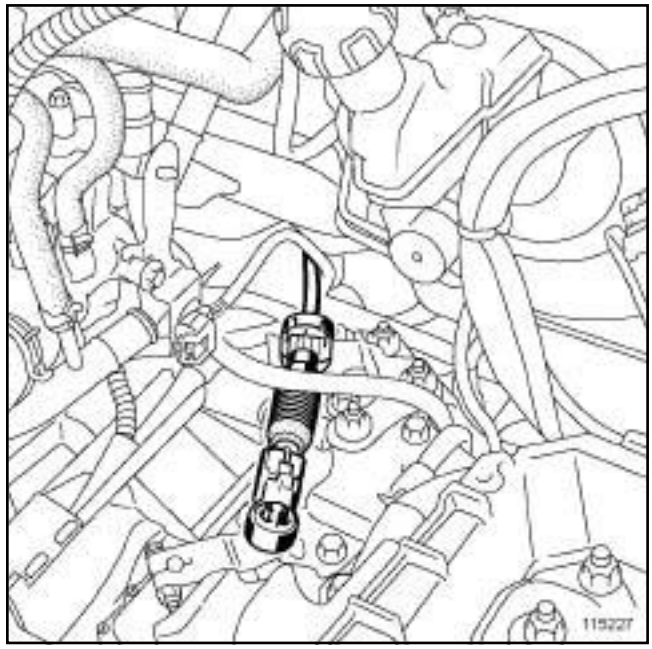
❏ Extract the fuse holder from the power supply fuse unit (**25**) .

❏ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

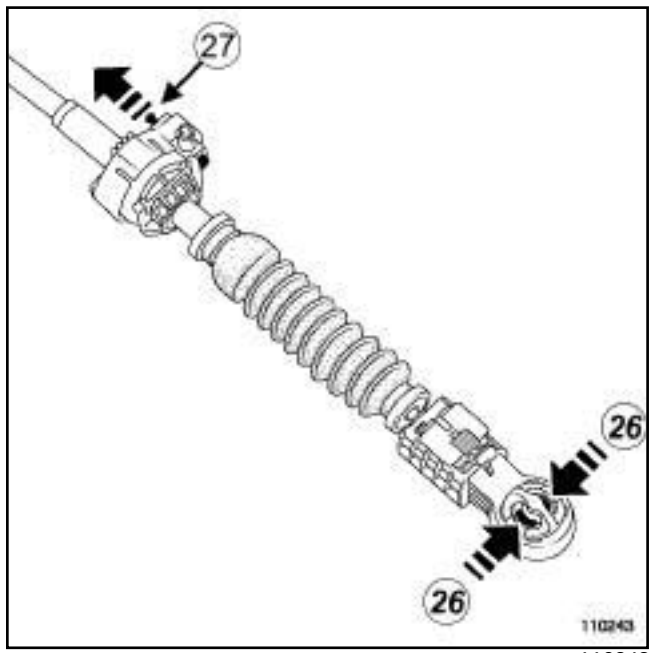


115235

❑ Remove the air filter unit in the direction of the arrows.



115227

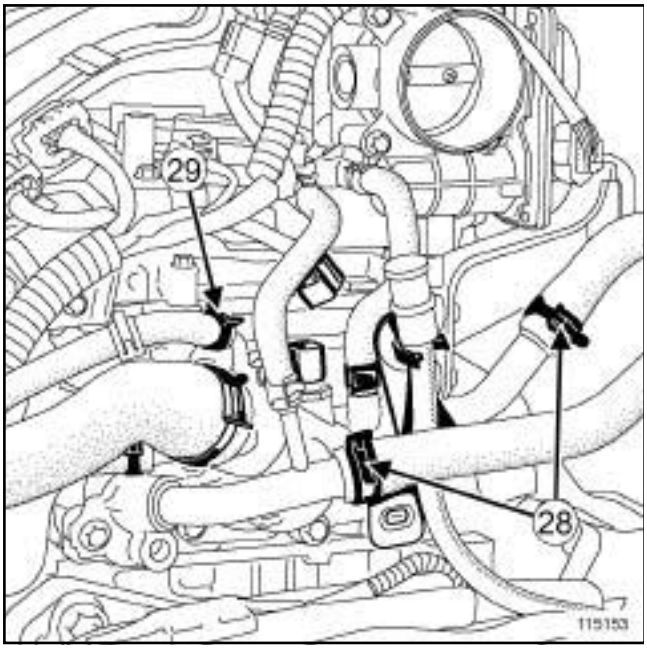


110243

❑ Detach the automatic transmission control cable ball joint by pressing at (**26**) .

❑ Pull out the automatic transmission control cable by pulling tab (**27**) .

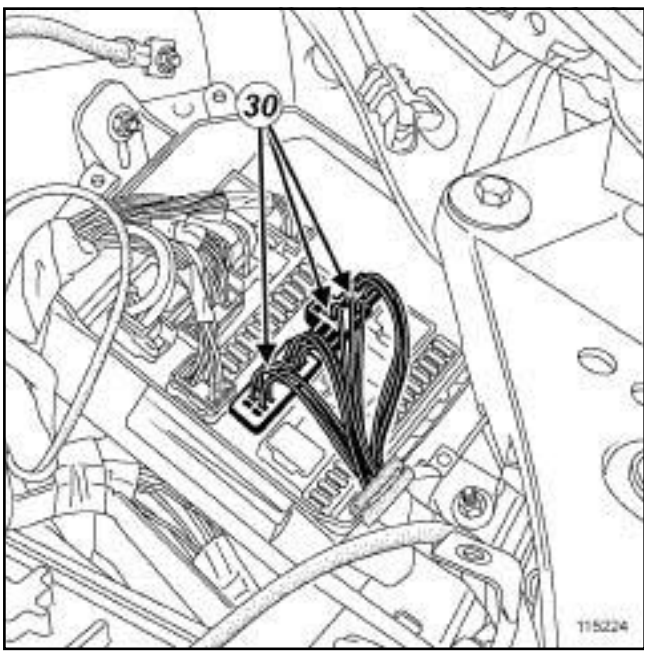
M4R, and DP0



115153

❏ Disconnect the hoses from:

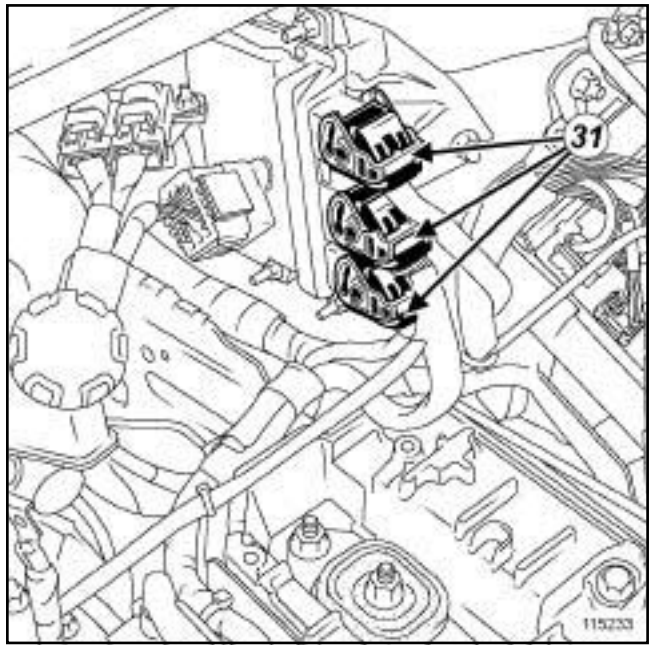
- the heater matrix (**28**) ,
- the expansion bottle (**29**) .



115224

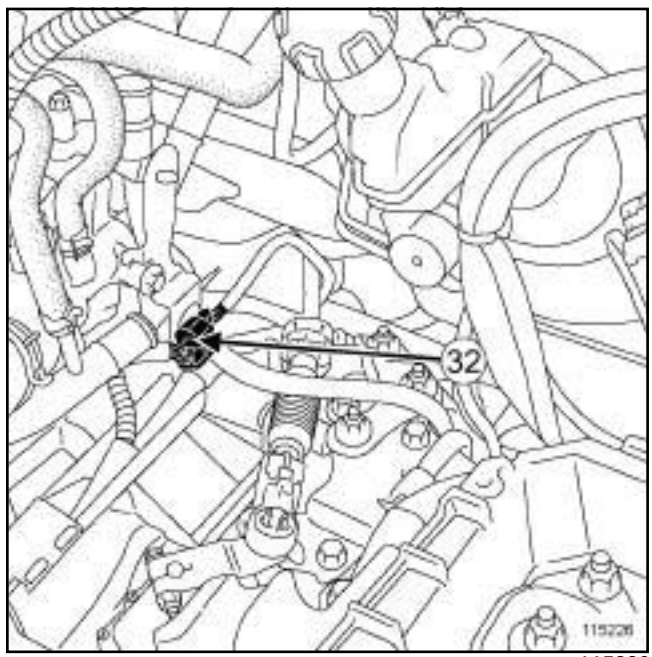
❏ Remove the Protection and Switching Unit cover.

❏ Disconnect the engine electrical wiring connectors (**30**) from the Protection and Switching Unit.



115233

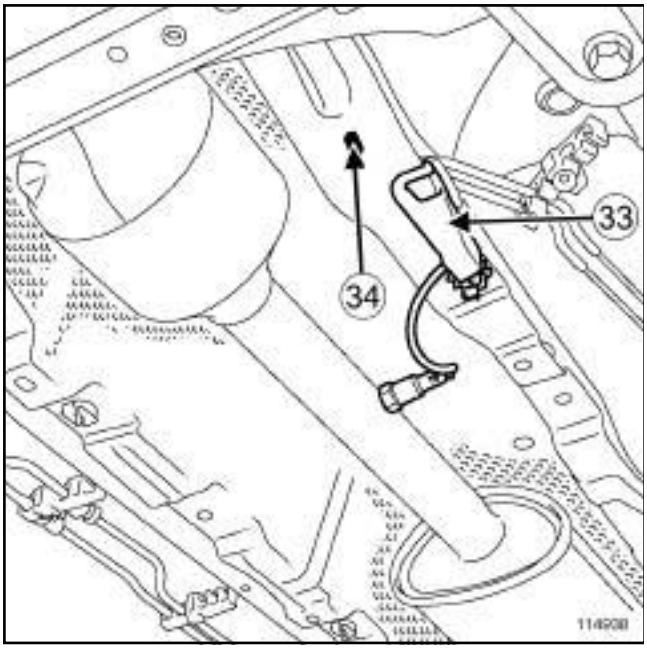
❏ Disconnect the engine electrical wiring connectors (**31**) from the injection computer.



115226

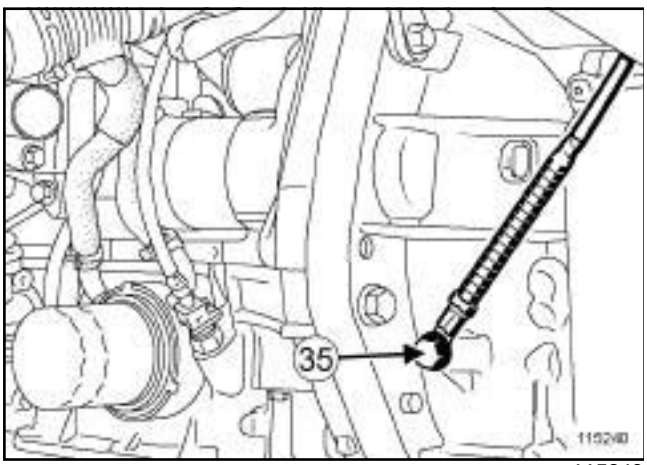
❏ Disconnect the upstream oxygen sensor connector (**32**) .

M4R, and DP0



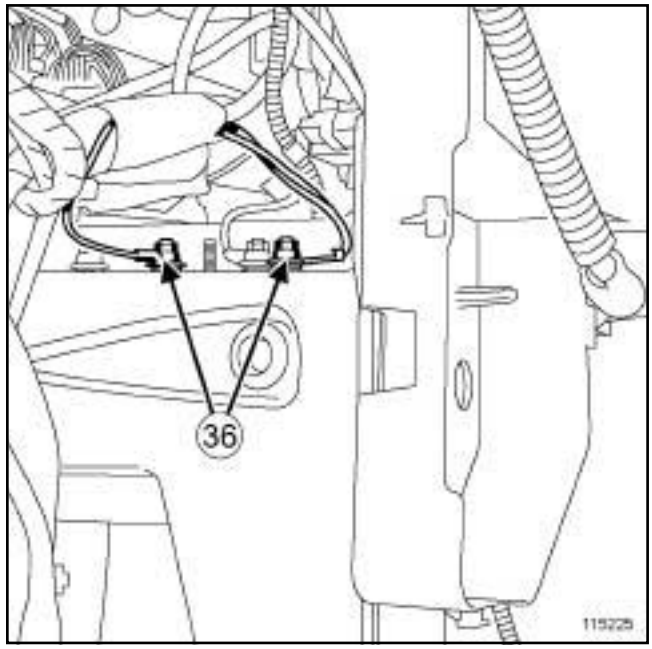
114938

- ❏ Remove the plastic cover (**33**) .
- ❏ Detach the downstream oxygen sensor connector at (**34**) .
- ❏ Disconnect the downstream oxygen sensor connector.
- ❏ Unclip the downstream oxygen sensor electrical wiring from the power-assisted steering box.
- ❏ Feed the downstream oxygen sensor electrical wiring into the engine compartment.



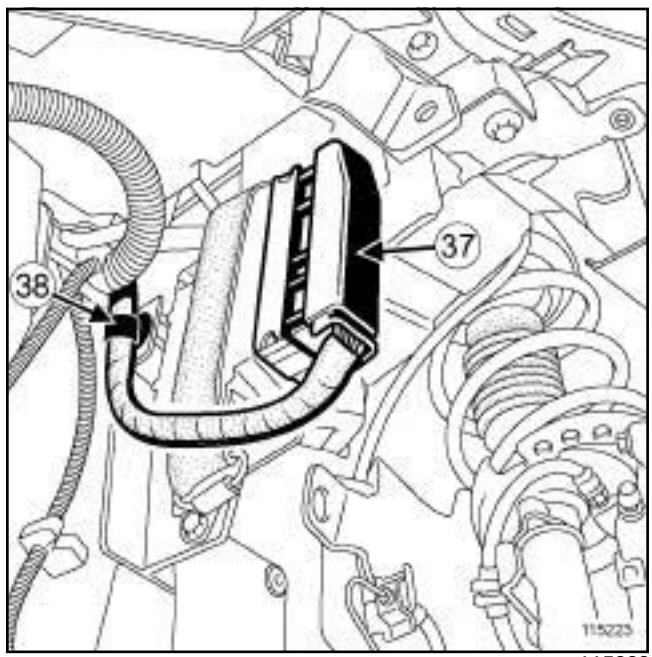
115240

- ❏ Disconnect the automatic transmission earth wire (**35**) .



115225

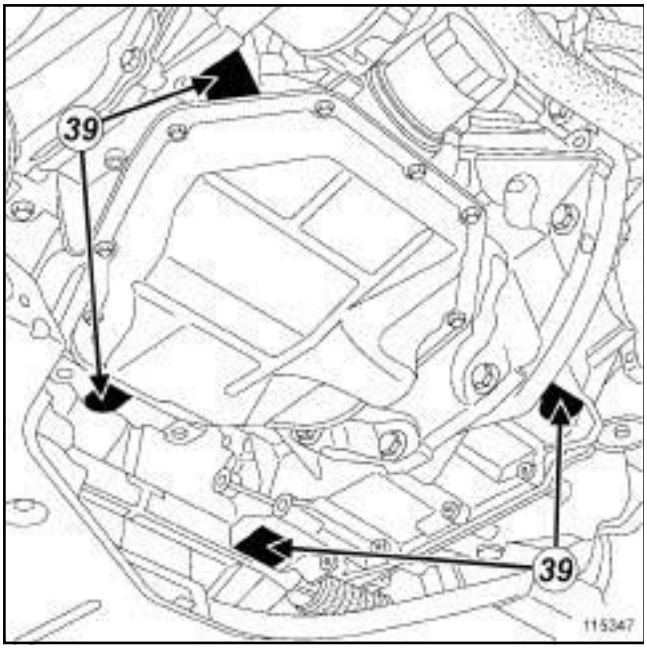
- ❏ Disconnect the earth cables (**36**) from the side member.



115223

- ❏ Disconnect the automatic transmission connector (**37**) .
- ❏ Unclip the automatic transmission electrical wiring at (**38**) .
- ❏ Feed the automatic transmission electrical wiring into the engine compartment.

M4R, and DP0



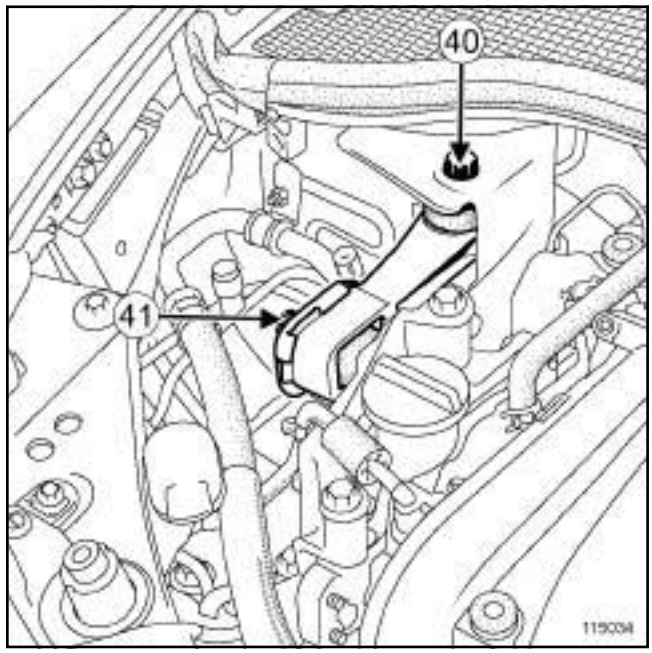
115347

❏ Position the **(Mot. 1390)** under the «engine - gearbox » assembly.

❏ Lower the vehicle down onto the pads of the **(Mot. 1390)**.

❏ Adjust the pads of the tool **(Mot. 1390)** at (**39**) to ensure that the « engine - gearbox » assembly is stable.

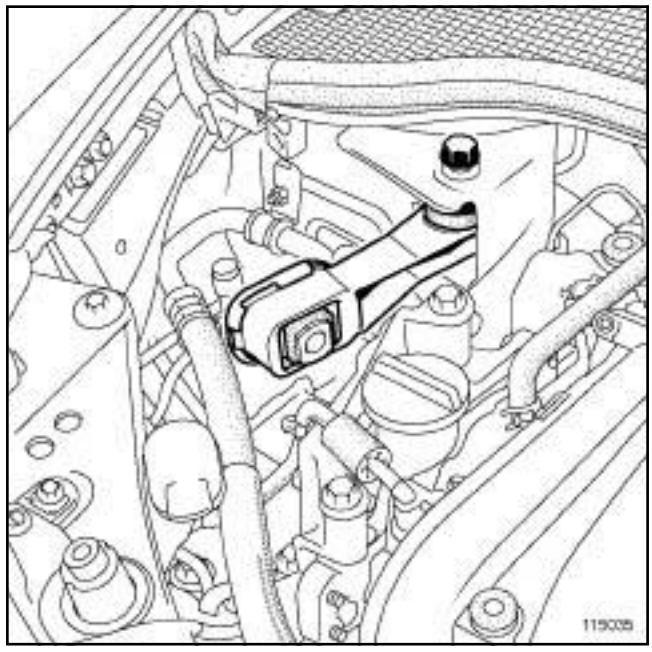
II - OPERATION FOR REMOVAL OF PART CONCERNED



115034

❏ Undo the upper engine tie-bar bolt (**40**) .

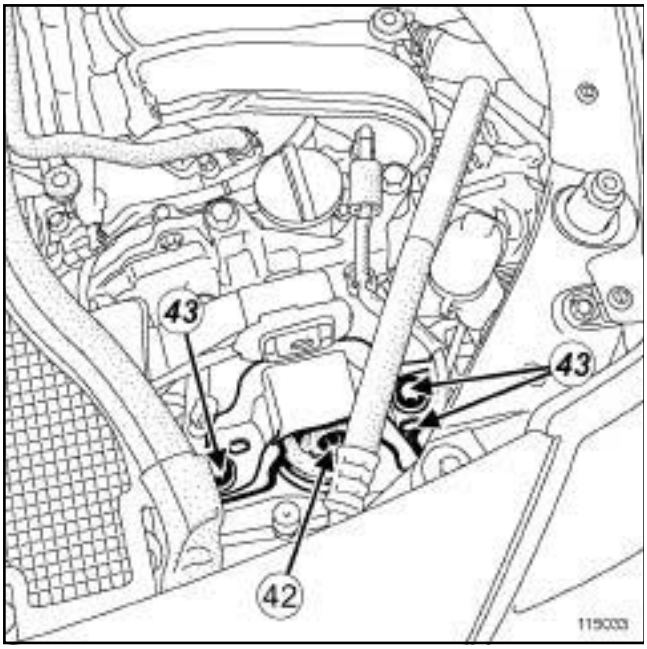
❏ Remove the upper engine tie-bar bolt (**41**) .



115035

❏ Remove the upper engine tie-bar.

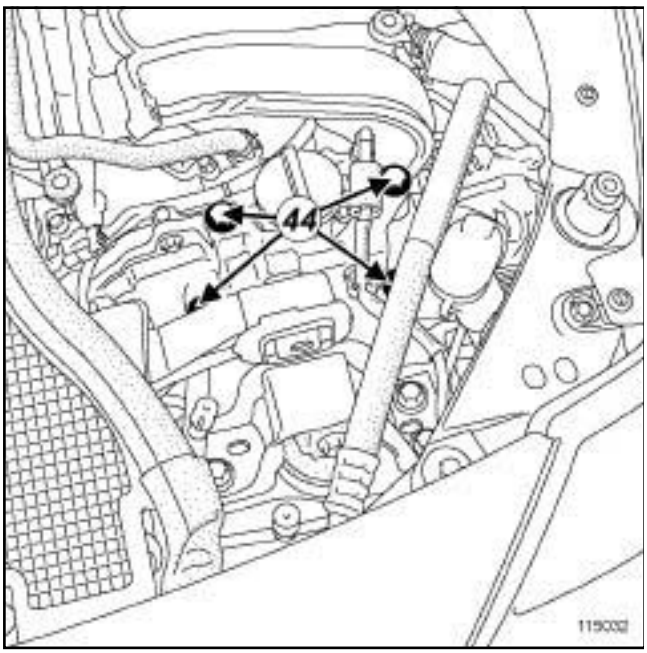
M4R, and DP0



115033

❑ Remove:

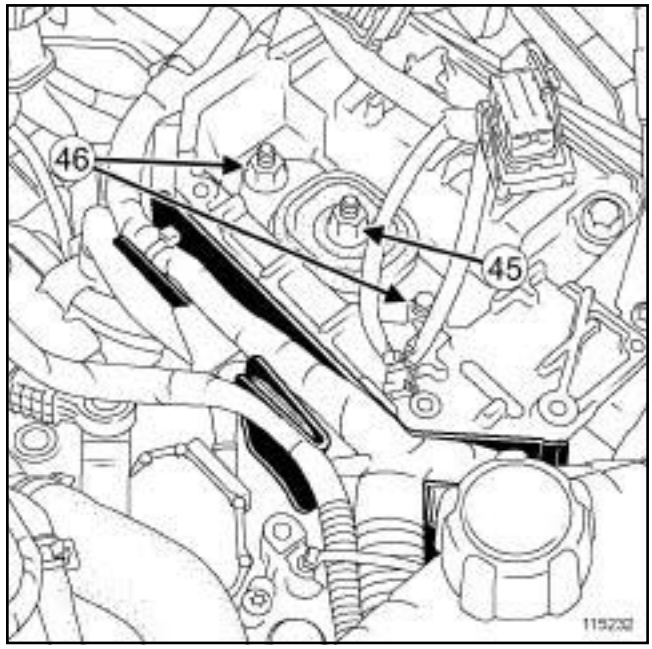
- the bolt (**42**) of the rubber pad on the right-hand suspended engine mounting,
- the bolts (**43**) of the rubber pad on the right-hand suspended engine mounting.



115032

❑ Remove:

- the bolts (**44**) from the right-hand suspended engine mounting cover,
- the right-hand suspended engine mounting cover,
- the rubber pad on the right-hand suspended engine mounting.



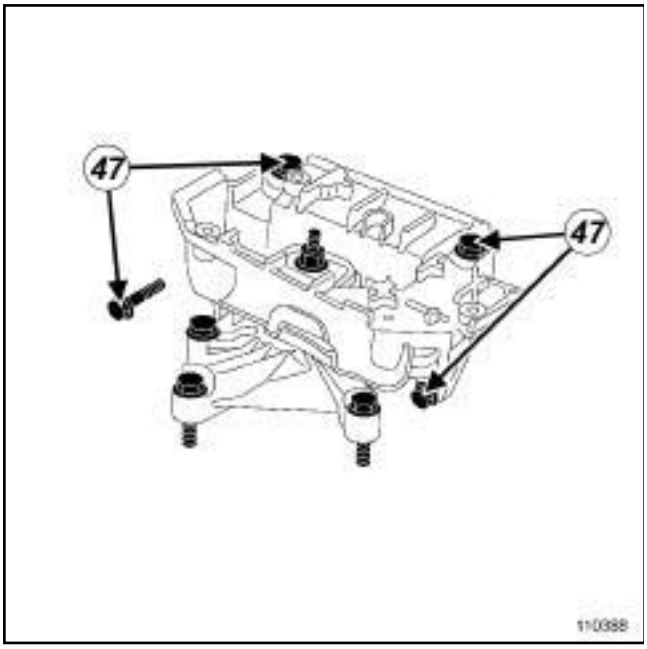
115232

❑ Separate the neck of the electrical wiring from the gearbox support.

❑ Remove:

- the left-hand suspended engine mounting shaft nut (**45**) ,
- the nuts (**46**) from the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting rubber pad.

M4R, and DP0

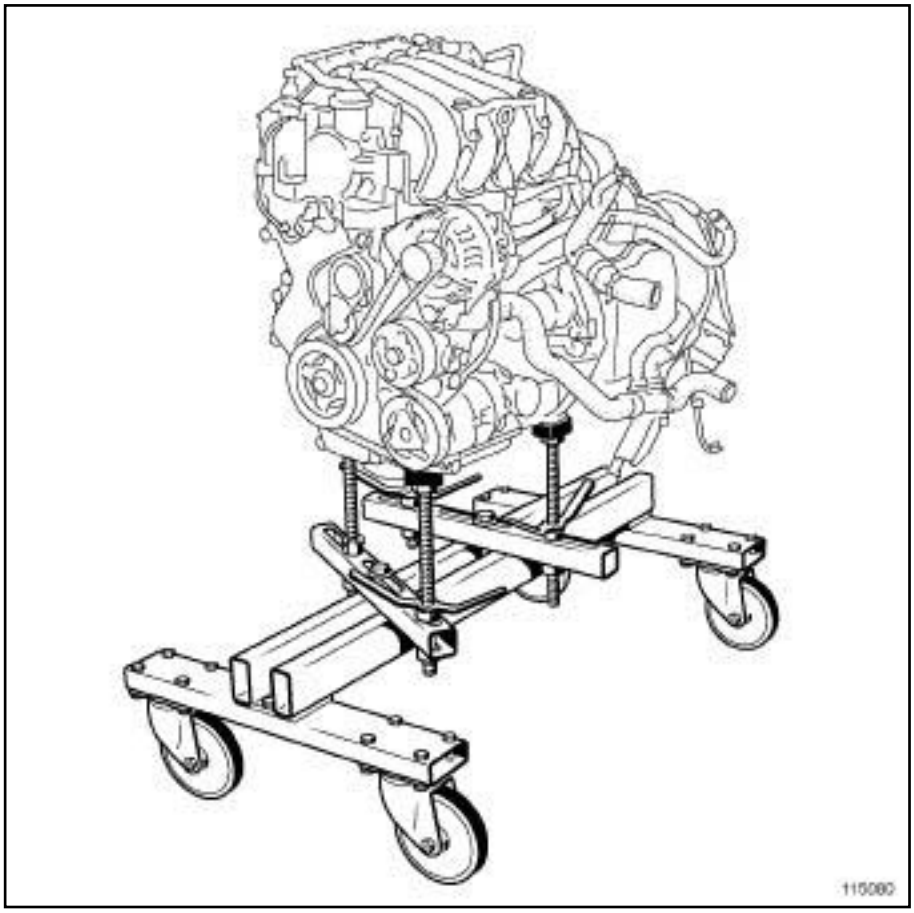


110388

❏ Remove:

- the bolts (**47**) from the left-hand suspended engine mounting support on the body,
- the left-hand suspended engine mounting support on the body.

❏ Gently move the engine towards the front of the vehicle.



115080

❑ Lift the vehicle to remove the « engine-gearbox » assembly.

Note:

Check that no component obstructs the movement of the body around the «engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

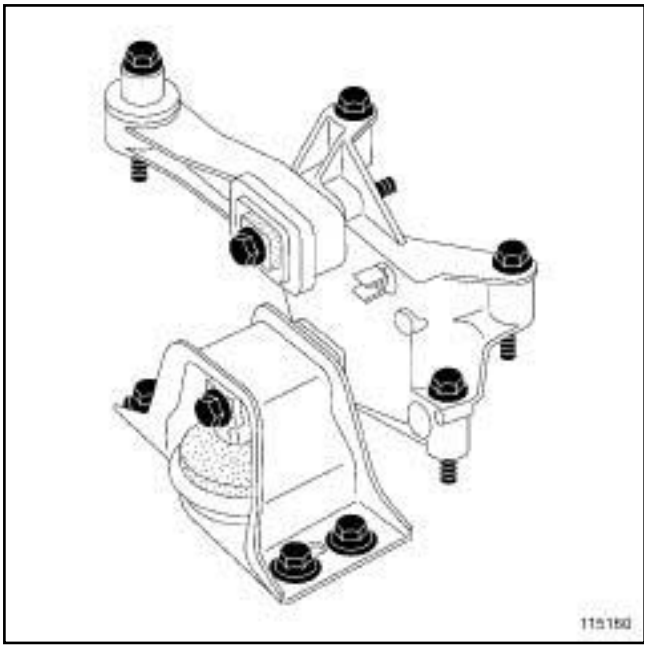
❑ For standard engine replacements (see **Engine: Standard replacement**) (Technical Note 6020A, 10A, Engine and peripherals).

❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the « engine - gearbox » assembly in the body.

M4R, and DP0



115160

115160

❑ Fit:

- the rubber pad on the right-hand suspended engine mounting.
- the right-hand suspended engine mounting cover.

❑ Pretighten:

- the bolts for the right-hand suspended engine mounting cover,
- the bolts for the right-hand suspended engine mounting rubber pad.

Note:

Allow the two parts to move freely.

❑ Fit the bolt of the right-hand suspended engine mounting rubber pad.

❑ Tighten to torque and in order:

- the **bolts of the right-hand suspended engine mounting cover (62 N.m)**,
- the **bolts for the right-hand suspended engine mounting rubber pad (62 N.m)**,
- the **bolt of the right-hand suspended engine mounting rubber pad (105 N.m)**,
- the **upper engine tie-bar bolts (105 N.m)**.

❑ Refit:

- the left-hand suspended engine mounting support on the body,
- the left-hand suspended engine mounting support bolts,
- the left-hand suspended engine mounting rubber pad,
- the nuts for the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting shaft nut.

❑ Tighten to torque:

- the **support bolts for the left-hand suspended engine mounting on the vehicle body (62 N.m)**,
- the **left-hand suspended engine mounting rubber pad nuts (62 N.m)**,
- the **left-hand suspended engine mounting central nut (62 N.m)**.

III - FINAL OPERATION

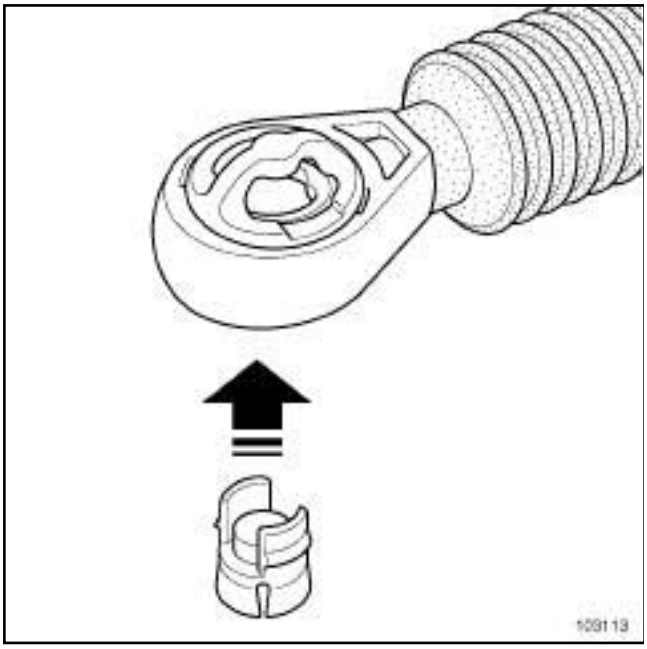
❑ Connect:

- the engine electrical wiring,
- the air conditioning pipe unions,
- the cooling hoses,
- the air flowmeter connector,
- the fuel supply pipe,
- the petrol vapour rebreathing pipe,
- the brake servo pipe on the inlet manifold.

❑ Clip:

- the fuel supply pipe,
- the air flowmeter connector electrical wiring.

M4R, and DP0



103113

❏ Be sure to replace the clip on the gearbox control cable ball joint each time it is removed.

❏ Fit the gearbox control cable.

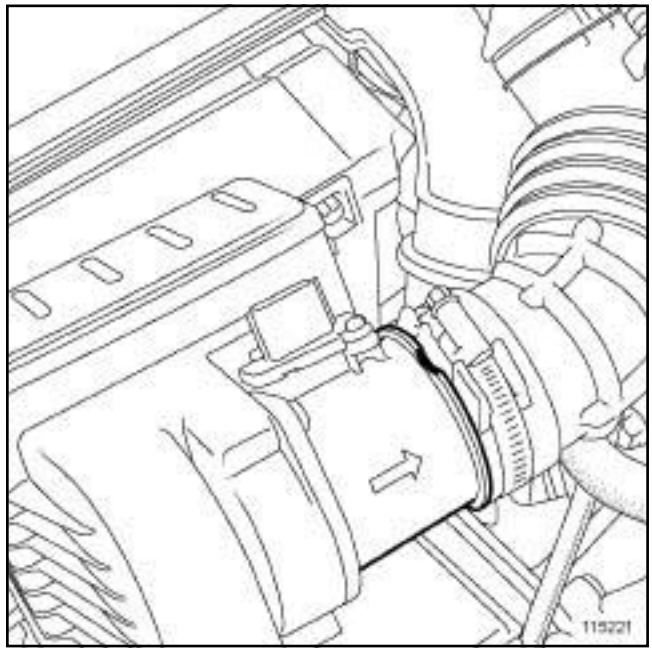
❏ Fit a new exhaust flange seal.

❏ Tighten to torque:

- the **exhaust flange bolts (21 N.m)**,
- the **engine tie-bar bolt on the engine (180 N.m)**,
- the **engine tie-bar bolt on the subframe (105 N.m)**.

❏ Refit:

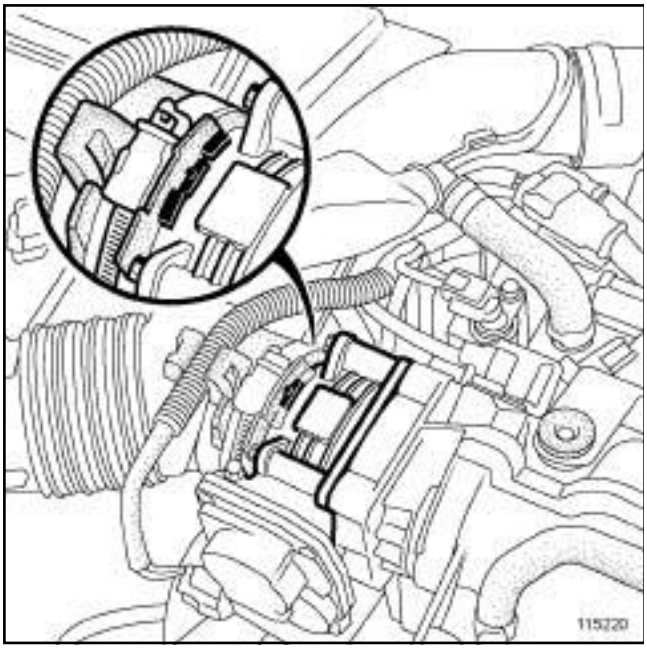
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



115221

❏ Fit the air inlet duct on the air flowmeter, paying attention to the fitting mark.

M4R, and DP0



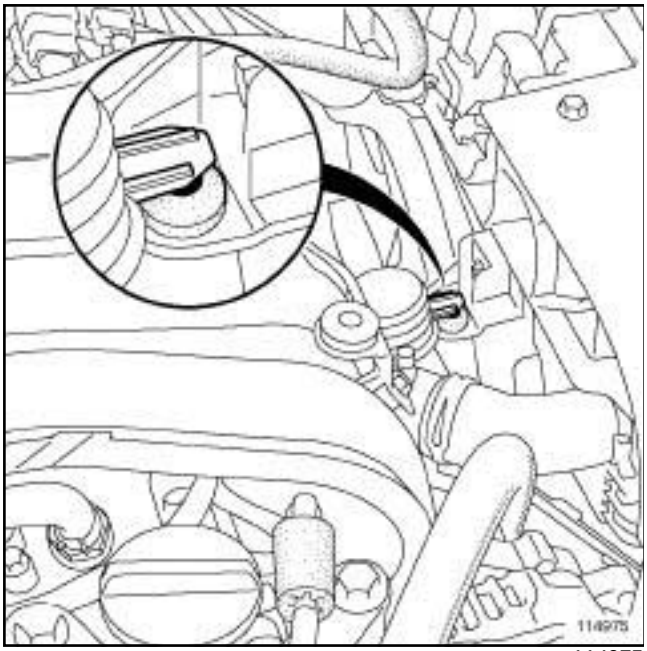
115220

❑ Fit the air inlet duct on the motorised throttle valve, paying attention to the fitting mark.

❑ Connect the oil vapour rebreathing hose on the rocker cover.

❑ Torque tighten the **air inlet duct clips (6 N.m)**.

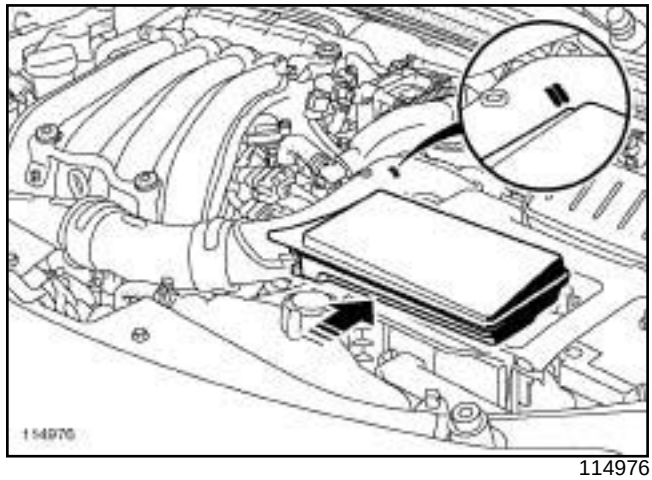
❑ Clip the electrical wiring onto the air inlet duct.



114975

❑ Before refitting the air intake sleeve, check that the upper mounting is correctly clipped onto the front end panel air resonator.

❑ Refit the air intake sleeve.



114976

❑ Push the air resonator towards the rear of the vehicle so that the corner of the air resonator is between the two lines marked on the air inlet hose.

❑ Press on the air resonator to fit it into the battery cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Perform the following operations:

- fill the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (23A, Automatic transmission),
- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit the engine cover.

K9K, and JH3 or JR5 or TL4

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques ▽	
left-hand suspended engine mounting shaft nut	**62 N.m**
engine tie-bar bolts	**105 N.m**
front cross member bolts	**105 N.m**
air conditioning pipe bolts	**8 N.m**
nut mounting the inter-cooler inlet air pipe on the alternator	**8 N.m**

REMOVAL

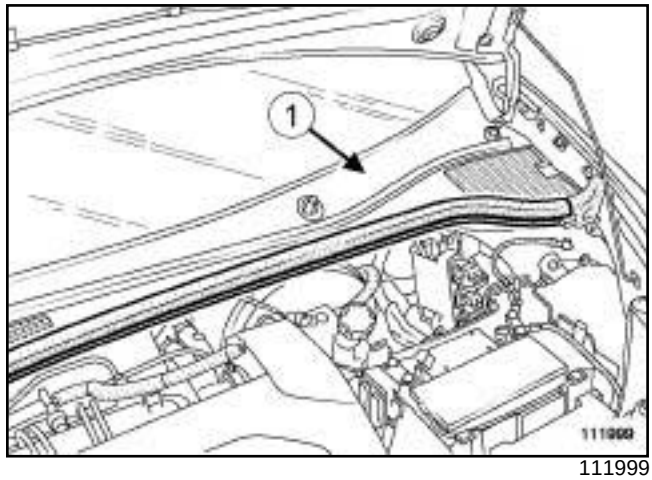
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the front engine cover.

K9K, and 772

❑ Discharge the pressure in the fuel supply circuit of the exhaust fuel injector (see **19B**, **Exhaust**, **Exhaust fuel injector: Removal - Refitting**, page **19B-66**) .

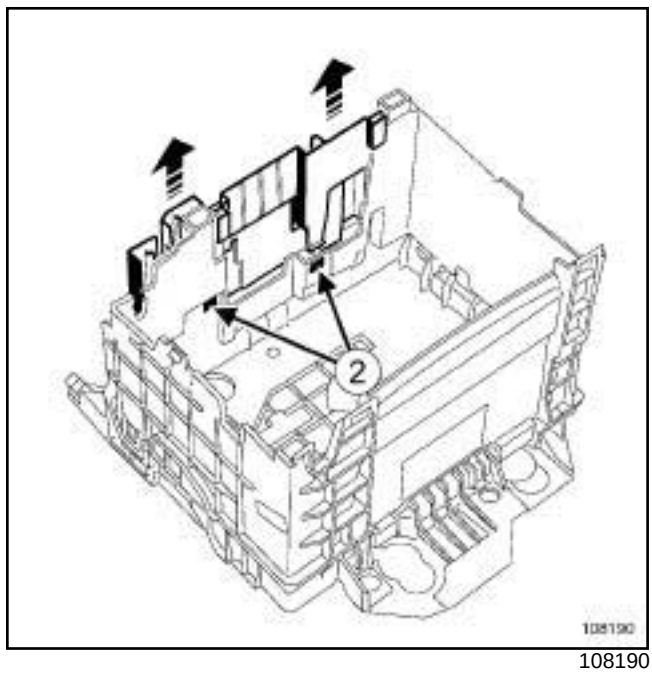


111999

❑ Remove:

- the scuttle panel grille (**1**) (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille.

❑ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).

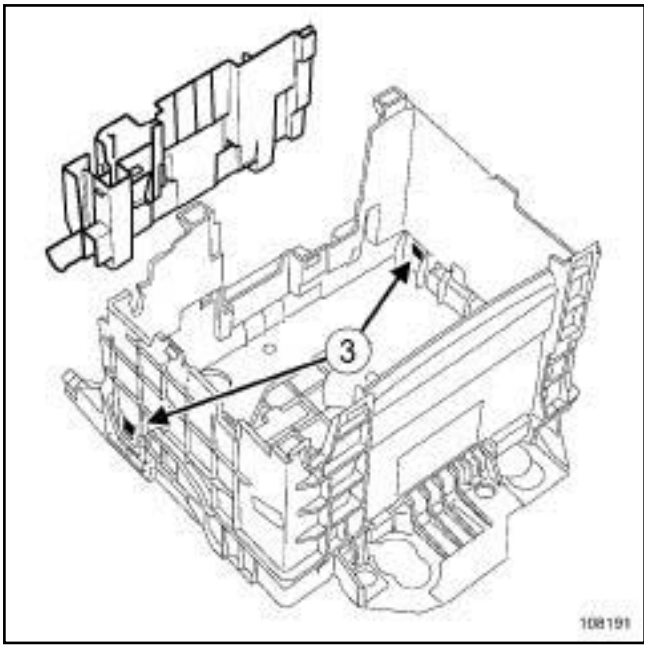


108190

❑ Unclip the power supply fuse board support at (**2**) .

❑ Move the support from the fuse board as indicated by the arrows.

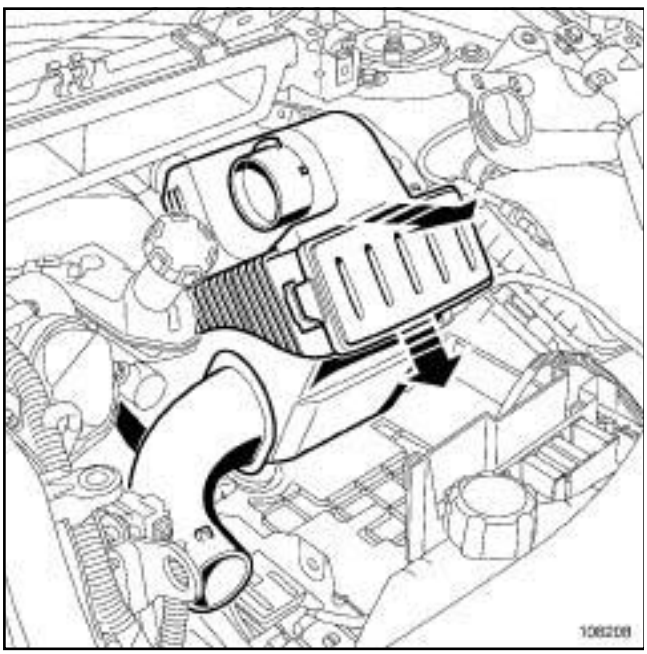
K9K, and JH3 or JR5 or TL4



108191

❏ Remove the shielding by unclipping at (**3**) .

❏ Disconnect the connector from the air flowmeter (if equipped).

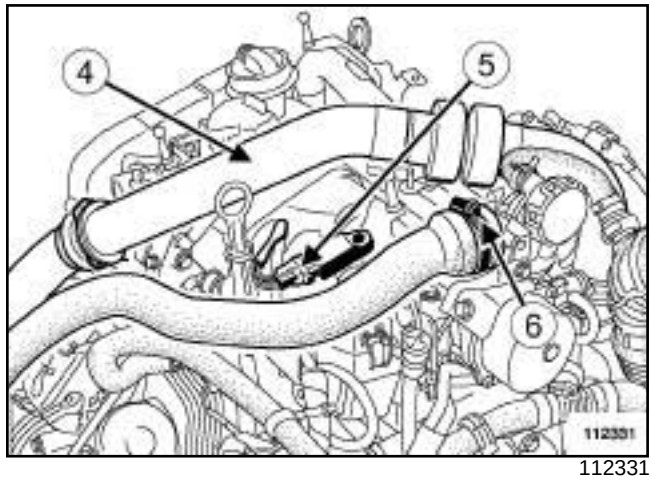


108208

❏ Loosen the air inlet duct clip on the air filter unit.

❏ Remove:

- the air filter unit,
- the battery tray base.



112331

❏ Loosen the intercooler air inlet pipe nut on the alternator.

❏ Remove the air duct bolt on the rocker cover.

❏ Separate the clips on the turbocharger air duct and on the intercooler air inlet pipe.

❏ Unclip the air duct (**4**) on the turbocharger and the intercooler air inlet pipe.

❏ Disconnect the connector (**5**) from the inlet air pressure sensor.

❏ Loosen the clip (**6**) on the damper valve air inlet pipe.

❏ Remove the air pipe.

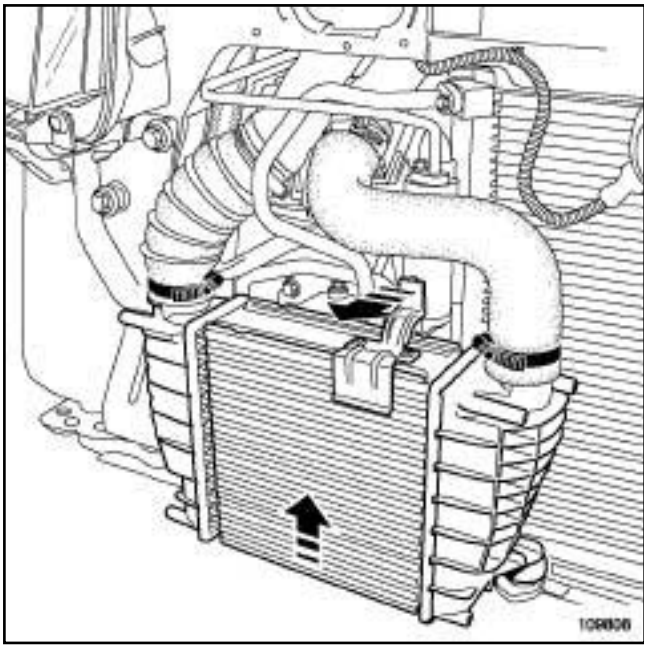
❏ Remove:

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

K9K, and 764 or 772

❏ Disconnect the electrical connector from the damper valve (if equipped).

K9K, and JH3 or JR5 or TL4


109808

❏ Remove the air duct clips on the intercooler.

❏ Pull the tab and lift the intercooler from its mounting studs.

❏ Remove:

- the intercooler,
- the nut from the air ducts on the alternator,
- the turbocharging air ducts.

❏ Drain:

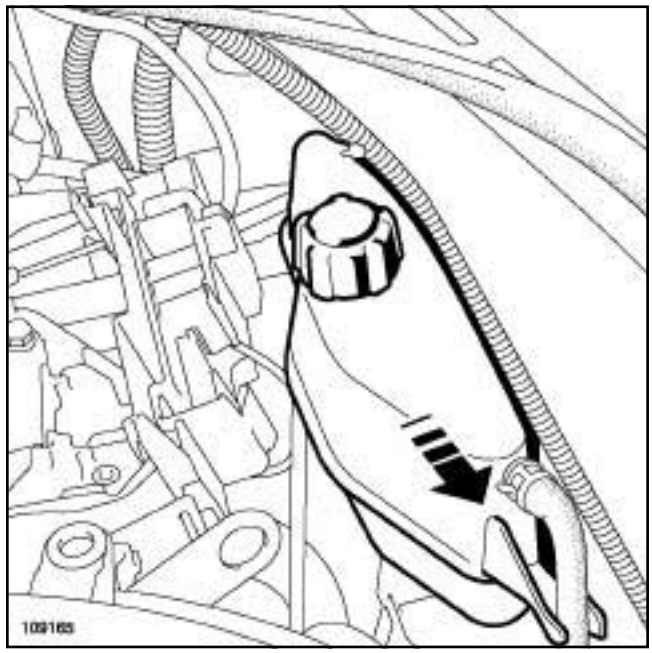
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the manual gearbox oil (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
- the engine oil if necessary (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- the refrigerant fluid circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

❏ Remove:

- the front left-hand driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

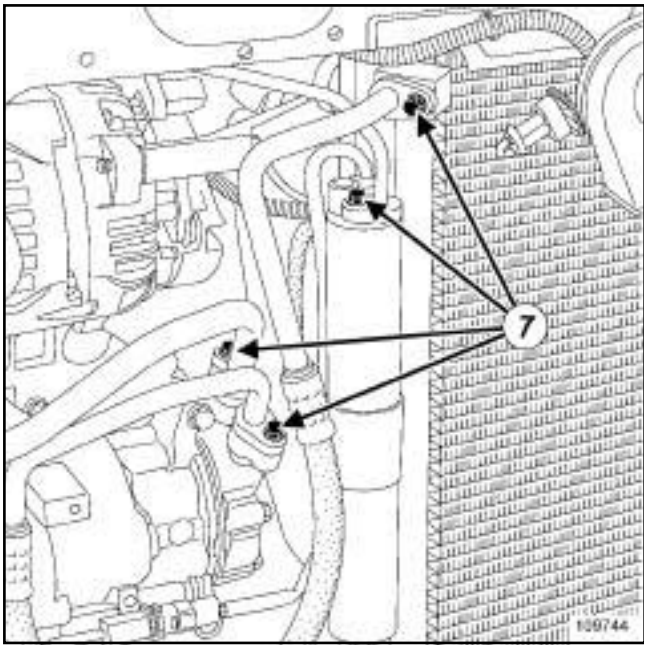
❏ Disconnect:

- the engine cooling fan assembly connectors,
- the top hose on the coolant outlet unit,
- the passenger compartment heating hoses.


109165

❏ Extract the expansion bottle from its housing by following the direction of the arrow and put it to one side.

K9K, and JH3 or JR5 or TL4



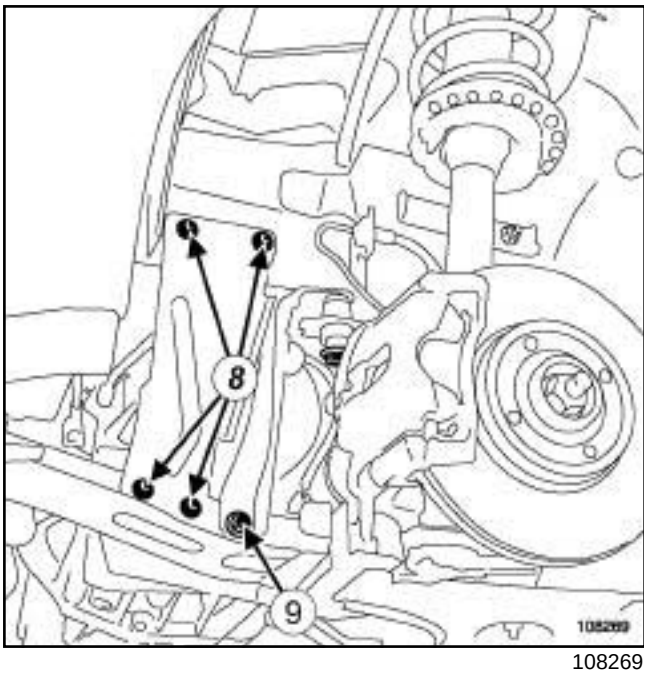
109744

❏ Disconnect the pressure switch connector on the condenser.

❏ Remove the bolts (**7**) from the air conditioning pipes.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

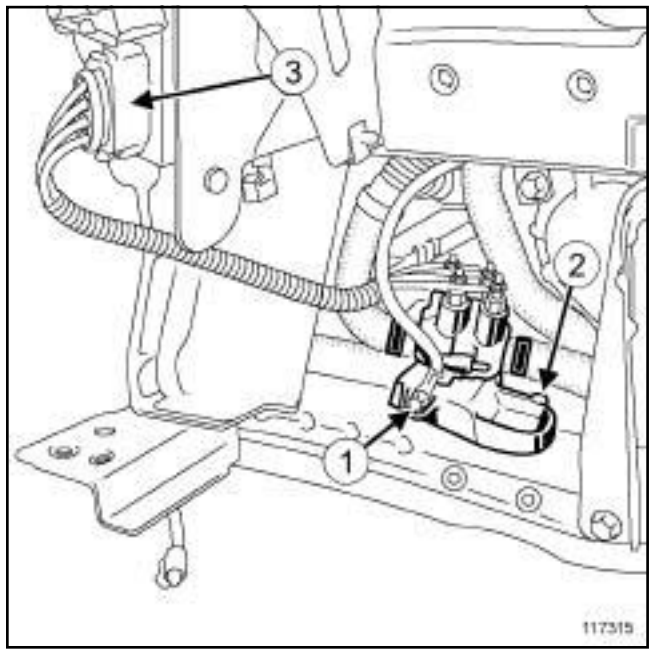


108269

❏ Remove:

- the left-hand side reinforcement bolts (**8**) ,
- the left-hand side reinforcement,
- the lower bolt (**9**) from the side tie rods.

K9K, and 772



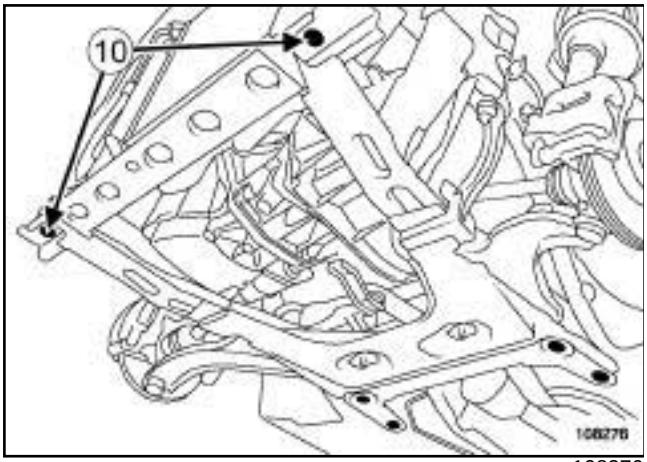
117315

❏ Remove:

- the bolt (**1**) mounting the earth on the thermoplunger unit and the coolant pump mounting,
- the bolt (**2**) mounting the thermoplunger unit and the coolant pump mounting on the radiator mounting cross member.

❏ Disconnect the connector (**3**) from the thermoplunger unit.

K9K, and JH3 or JR5 or TL4



108276

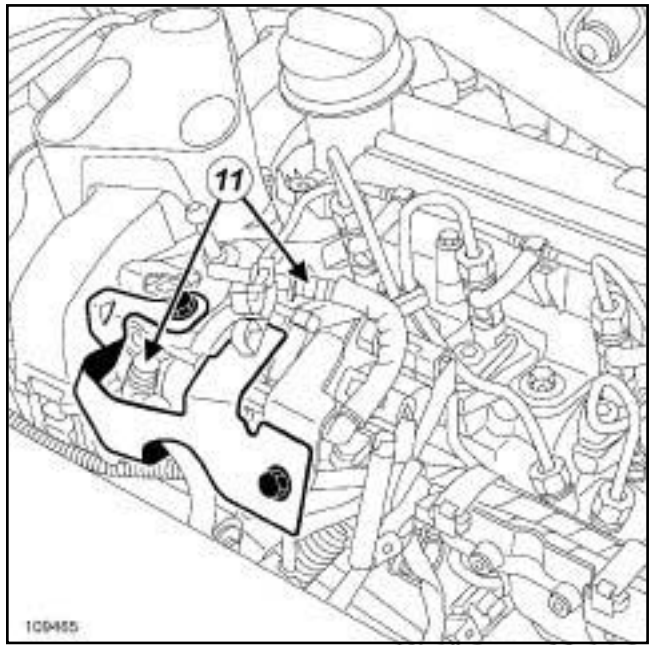
❏ Remove:

- the front cross member bolts (**10**) ,
- the front radiator cross member,
- the cooling radiator assembly,
- the earth wiring.

❏ Disconnect:

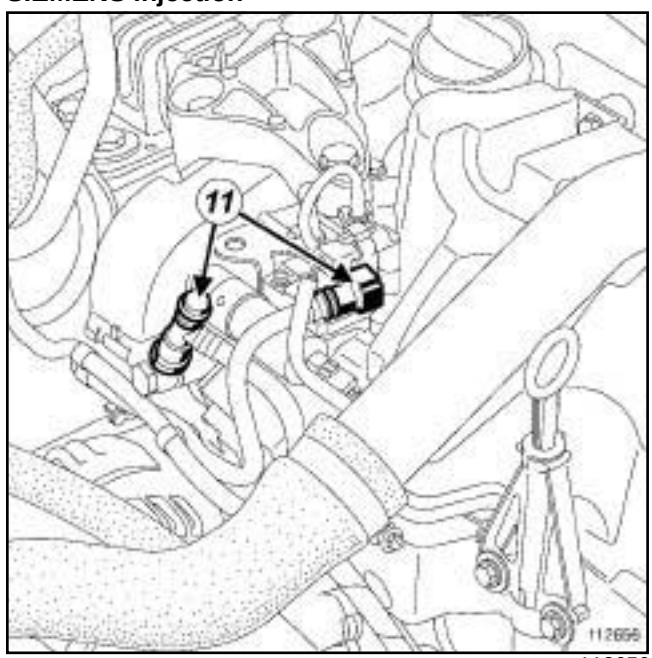
- the pre-postheating unit connector ,
- the coolant temperature sensor.

DELPHI injection



109465

SIEMENS injection



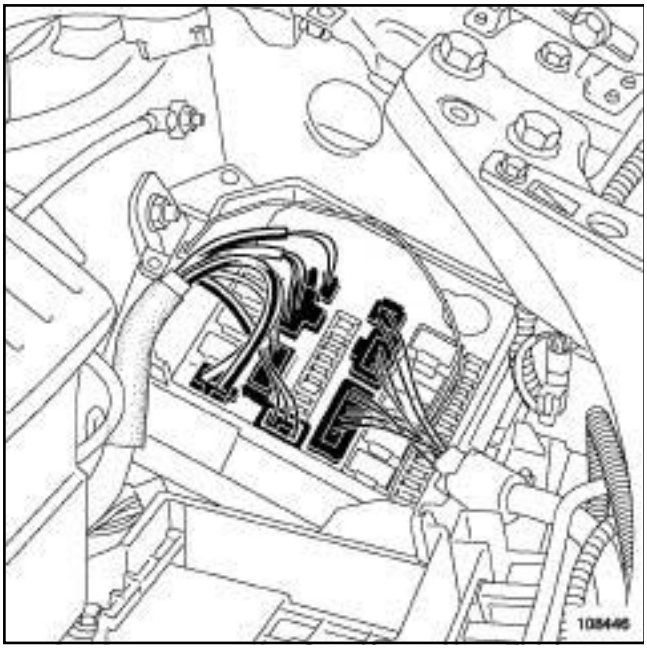
112656

❏ Disconnect the fuel supply and return pipes on the high-pressure pump (**11**) .

❏ Move aside the engine wiring.

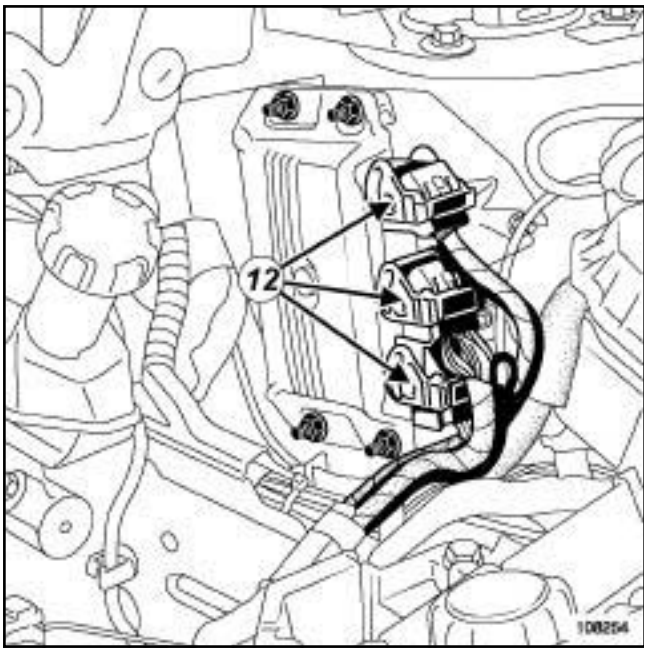
❏ Remove the Protection and Switching Unit cover.

K9K, and JH3 or JR5 or TL4


108446

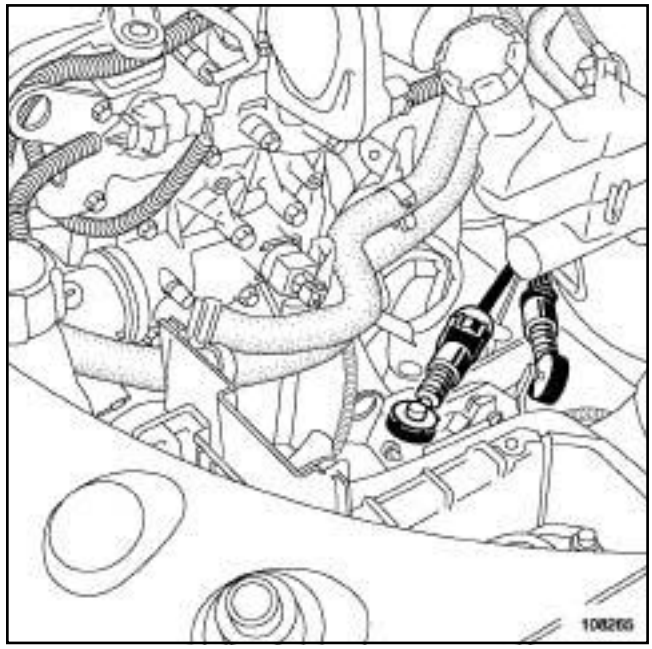
❑ Disconnect:

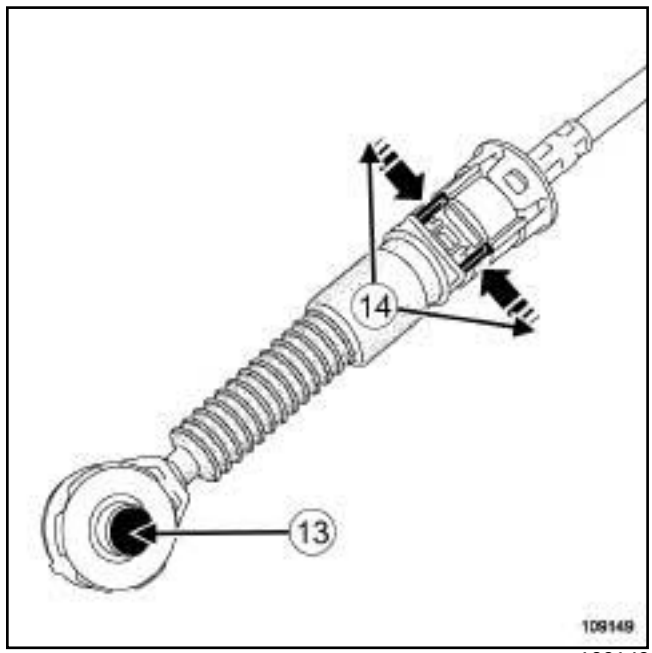
- the Protection and Switching Unit connectors,
- the brake servo pipe from the vacuum pump,
- the engine fuses **30A** and **70A**,
- the fuse holder on the fuse board,
- the supply wiring on the fuse board,
- the supply wiring on the battery protection fuse box.



108254

❑ Disconnect the injection computer connectors (**12**) .


108265



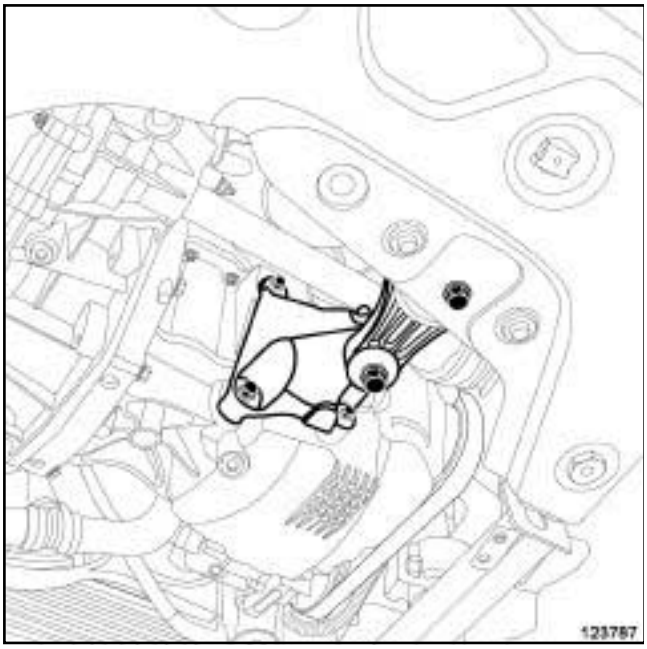
109149

❑ Remove:

- the gear control cables on the gearbox by pushing at (**13**) ,
- the gear control cables from the sleeve stops by pressing at (**14**) ,
- the wiring harness channel mountings on the gearbox.

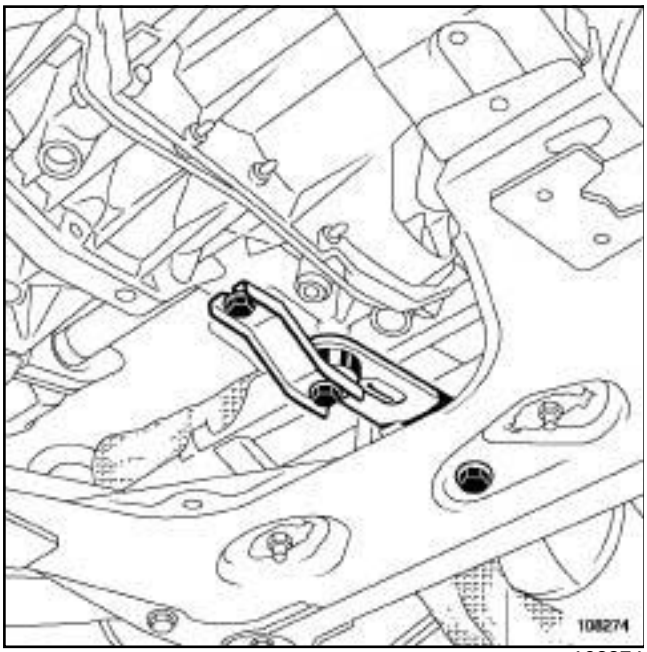
K9K, and JH3 or JR5 or TL4

K9K/TL4



123787

K9K/JH3, JR5

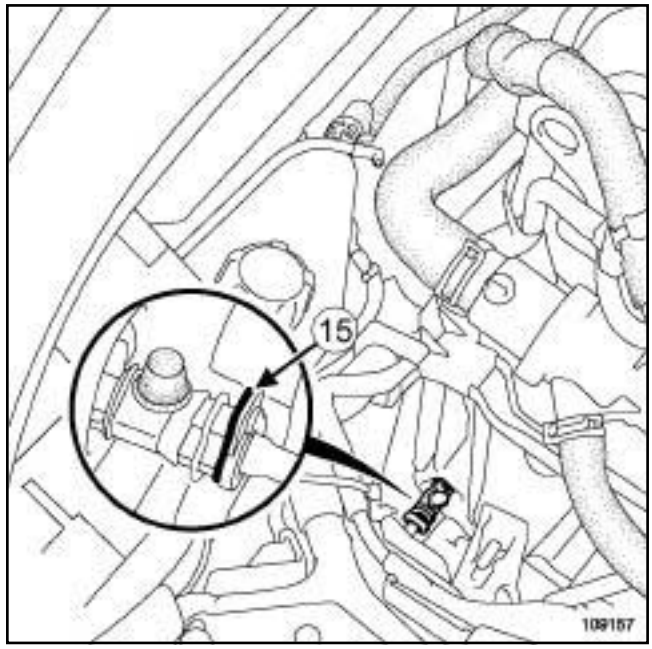


108274

❑ Remove:

- the engine tie-bar,
- the exhaust downpipe bolts.

❑ Drain the brake fluid reservoir down to the clutch master cylinder pipe union using a syringe.



109157

❑ Remove the clip at the wheel end (**15**) .

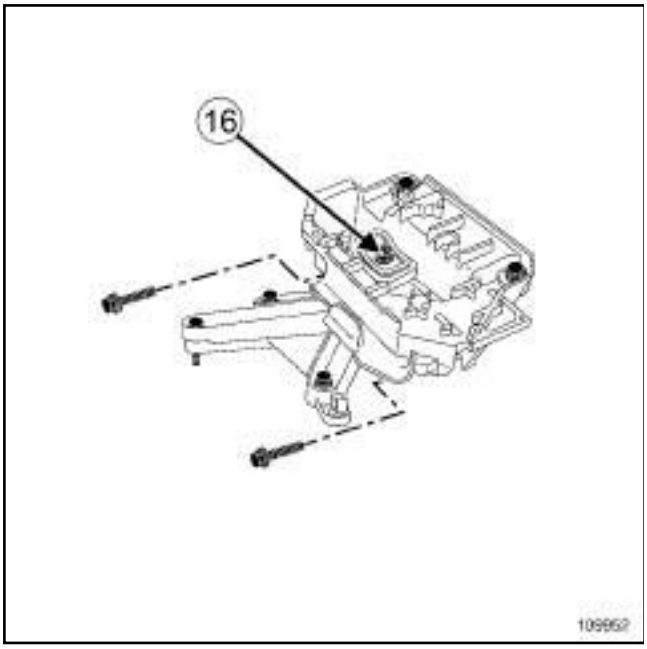
❑ Disconnect the clutch pipe from the clutch slave cylinder.

❑ Support the « engine-gearbox assembly» on the **(Mot. 1390)**.

❑ Mark the positions of the suspended engine mountings on the body.

❑ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

K9K, and JH3 or JR5 or TL4



109952

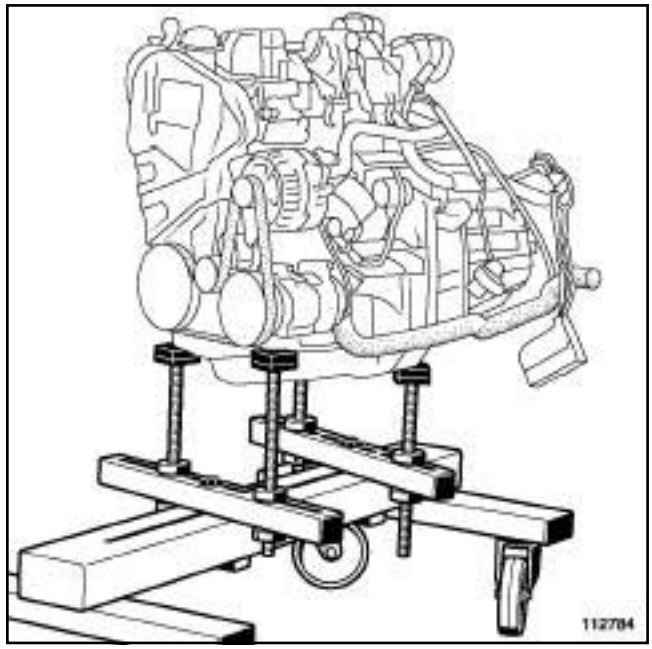
❑ Remove the left-hand suspended engine mounting shaft nut (**16**) .

K9K, and 772

❑ Disconnect the fuel supply union from the diesel injector on the catalytic pre-converter.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Raise the vehicle, moving the engine towards the front.



112784

❑ Extract the « engine - gearbox » assembly from the engine compartment.

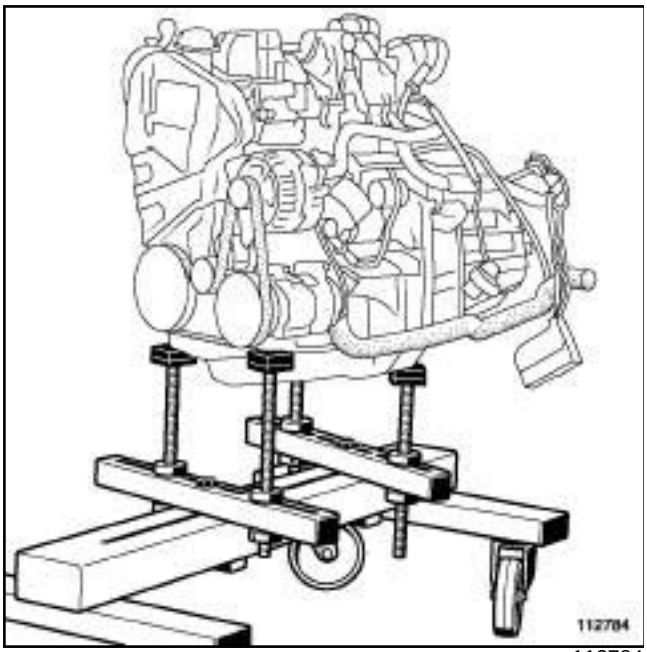
REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see **Standard replacement**) (Technical Note 6006A, 10A, Engine and peripherals).

K9K, and JH3 or JR5 or TL4

II - REFITTING OPERATION FOR PART CONCERNED



112784

❏ Position the « engine - gearbox » assembly in the engine compartment.

III - FINAL OPERATION

K9K, and 772

❏ Connect the fuel supply union to the diesel injector on the catalytic pre-converter.

❏ Fit the left-hand suspended engine mounting shaft.

❏ Refit:

- the left-hand suspended engine mounting shaft nut,
- the right-hand suspended engine mounting.

❏ Remove the tool **(Mot. 1390)**.

❏ Torque tighten the **left-hand suspended engine mounting shaft nut (62 N.m)**.

❏ Connect the clutch pipe.

❏ Bleed the clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component control).

❏ Refit:

- the exhaust downpipe bolts,
- the lower engine tie-bar.

❏ Torque tighten the **engine tie-bar bolts (105 N.m)**.

❏ Refit the gear control cables.

❏ Connect:

- the injection computer connectors,
- the supply wiring on the battery protection fuse box,
- the supply wiring on the fuse board,
- the fuse holder on the fuse board,
- the engine fuses **30A** and **70A**,
- the brake servo pipe on the vacuum pump,
- the Protection and Switching Unit connectors.

K9K, and 764 or 772

❏ Disconnect the electrical connector from the damper valve (if equipped).

❏ Fit the engine wiring.

❏ Connect the fuel supply and return pipes on the high-pressure pump.

❏ Connect:

- the coolant temperature sensor,
- the pre-postheating unit connector ,
- the earth wiring.

❏ Refit:

- the cooling radiator assembly,
- the front radiator cross member,
- the front cross member bolts.

❏ Tighten to torque the **front cross member bolts (105 N.m)**.

TL4

❏ Refit:

- the bolt mounting the earth on the thermoplunger unit and the coolant pump mounting,
- the bolt on the thermoplunger unit and the coolant pump mounting on the radiator mounting cross member.

❏ Connect the thermoplunger unit connector.

❏ Refit:

- the side tie-rod lower bolts,

K9K, and JH3 or JR5 or TL4

- the left-hand side reinforcement,
- the air conditioning pipes.

❏ Torque tighten the **air conditioning pipe bolts (8 N.m)**.

❏ Connect the pressure switch connector to the condenser.

❏ Position the expansion bottle.

❏ Connect:

- the passenger compartment heating hoses,
- the top hose on the coolant outlet unit,
- the bottom radiator hose,
- the fan assembly connectors.

❏ Refit:

- the front left-hand driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the turbocharging ducts,
- the nut to the turbocharger pipes on the alternator,
- the intercooler,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the inlet pipe to the inlet manifold.

❏ Connect the inlet air pressure sensor.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Clip the air duct onto the turbocharger and the air pipe at the intercooler inlet.

❏ Refit the air duct bolt on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❏ Refit:

- the battery tray base,
- the air filter unit.

❏ Fit the air inlet duct on the air filter unit and tighten the clip.

❏ Refit the battery protective tray.

❏ Fit the fuse board.

❏ Refit the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- fill the refrigerant circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning),
- top up the engine oil (if necessary) (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- fill the manual gearbox oil (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the engine cover.

K9K, and 772

❏ Carry out a sealing test on the fuel supply circuit of the exhaust fuel injector (see **19B**, **Exhaust**, **Exhaust fuel injector: Removal - Refitting**, page **19B-66**) .

D4F

Special tooling required	
Mot. 1054	TDC setting pin.

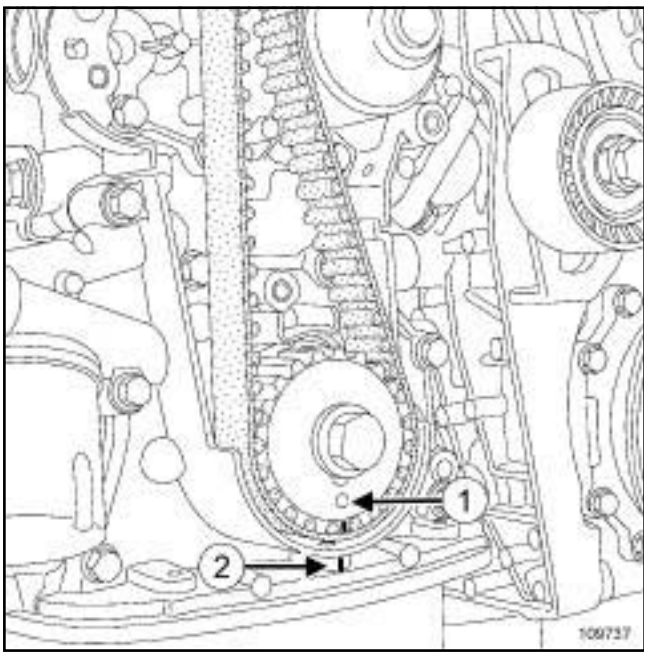
I - VALVE CLEARANCE ADJUSTMENT PREPARATION OPERATION

❏ Fit the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove:

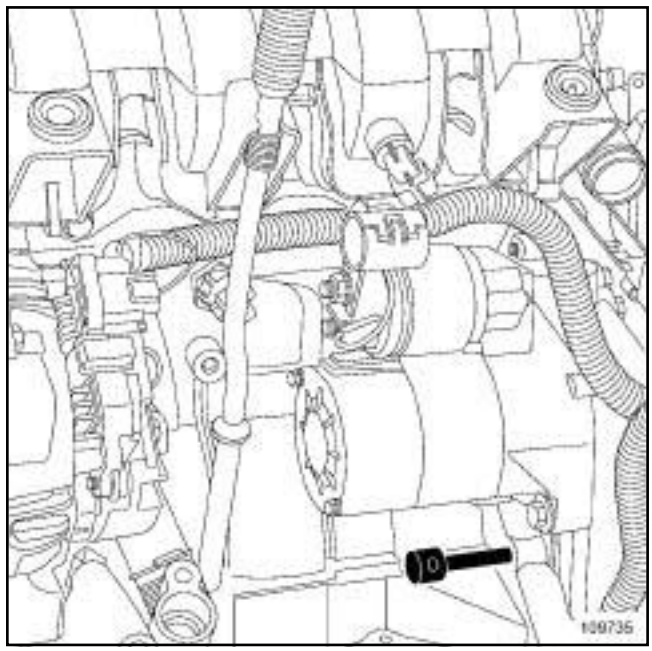
- the front right-hand wheel (see **Wheel: Removal - Refitting**) ,
- the front right-hand wheel arch liner (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners: Removal - Refitting**).
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the plenum chamber (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

Adjusting the timing



109737

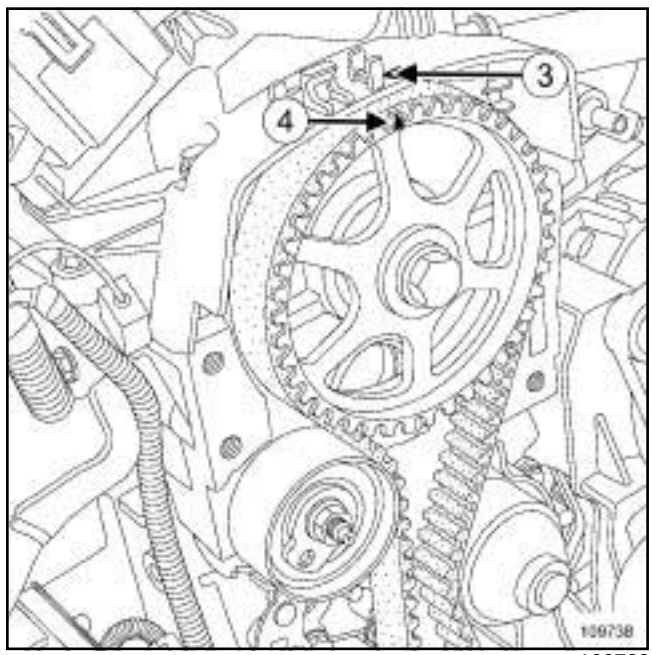
❏ Turn the crankshaft clockwise (timing end), half a tooth before the alignment of the crankshaft pulley mark (**1**) with the fixed mark (**2**) .



109735

❏ Insert **(Mot. 1054)**.

❏ Turn the crankshaft clockwise to the timing point.



109738

❏ Check that the camshaft pulley mark (**4**) and the crankshaft pulley mark ***(1)*** are aligned with the fixed marks (**3**) .

II - ADJUSTING THE VALVE CLEARANCES

❏ To adjust the valves (see **Technical Note 6004A, Petrol engine - 4 cylinders - D4, 10A, Engine and peripherals, Timing - cylinder head: Refit**).

D4F

III - FINAL OPERATION

❑ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the plenum chamber (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel arch liner (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners: Removal - Refitting**).
- the front right-hand wheel (see **Wheel: Removal - Refitting**) .

Valves: Adjustment

K9K

❑ To adjust the valves (see) (Technical Note 6006A, 10A, Engine and peripherals).

M4R

- The engine and gearbox assembly must be removed to adjust the valves (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-112**) .
- For the valve adjustment procedure (see) (Technical Note 6020A, 10A, Engine and peripherals).

Oil pressure: Check

D4F or F4R or K4J or K4M or K9K or M4R

Special tooling required	
Mot. 836-05	Oil pressure gauge kit.
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Oil pressure tables:

Engine	Minimum oil pressure (bar)		Maximum oil pressure (bar)
	Idling speed	**4000 rpm**	**4000 rpm**
F4R	0.8	3.7	5.3
K4J/K4M	0.5	3.1	4.4
K9K	0.8	3.4	5.2
M4R	1.0	5.5	7.3

Engine	Minimum oil pressure (bar)		Maximum oil pressure (bar)
	Idling speed	**3000 rpm**	**3000 rpm**
D4F	1.5	3.9	5.3

End pieces to be used:

Engine	End pieces
F4R	B + F
K4J/K4M	E + C + F
K9K	E + C + F
M4R	Mot. 1658 + F
D4F	C + F

REMOVAL

❑

WARNING

Always check the oil level using the dipstick.

Do not exceed the maximum level on the dipstick (could destroy the engine).

Correct the engine oil level if necessary before delivering the vehicle to the customer.

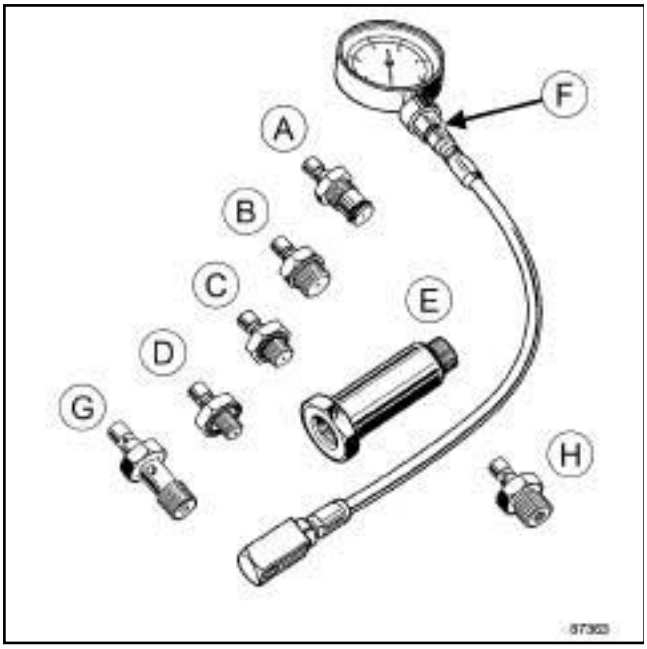
Note:

When topping up the engine oil, always leave at least **10 minutes** before checking the level with a dipstick.

CHECK

❑ Remove the oil pressure sensor (see **10A**, **Engine and cylinder block assembly**, **Oil pressure sensor: Removal - Refitting**, page **10A-39**) .

D4F or F4R or K4J or K4M or K9K or M4R



87363

- ❏ In place of the oil pressure sensor, fit the **(Mot. 836-05)** with suitable adapters using the **(Mot. 1495-01)** or a **22 mm** long socket.
- ❏ Start the vehicle.
- ❏ Monitor the engine oil pressure as the engine oil temperature rises **(approximately 80°C or the first time the engine cooling fan) is activated** it should not be less than the pressure at idle speed.
- ❏ If the oil pressure is lower than the pressure at idle speed, check that:
  - the oil filter is not clogged,
  - dirt or swarf is not present in the engine oil,
  - the oil pump is in good condition and being correctly driven.
- ❏ Check the oil pressure in comparison with the values given in the table above.
- ❏ Switch off the engine.
- ❏ Remove the **(Mot. 836-05)** with the end pieces.
- ❏ Refit the oil pressure sensor (see **10A**, **Engine and cylinder block assembly**, **Oil pressure sensor: Removal - Refitting**, page **10A-39**) .
- ❏ Wipe any oil run-off with a cloth.
- ❏ Wait at least **10 minutes**.
- ❏ Check the oil level using the dipstick.
- ❏ Top up the engine oil level if necessary (see **Engine oil: Specifications**) (04A, Lubricants).
- ❏ Start the vehicle and check that there are no oil leaks at the oil pressure sensor.

Flywheel: Removal - Refitting

D4F or F4R or K4J or K4M or K9K

Special tooling required	
Mot. 582-01	Flywheel locking tool.

Tightening torques ▽	
flywheel bolts (K4)	**25 N.m + 50° ± 6°**
flywheel bolts (F4R)	**30 N.m + 60° ± 10°**
flywheel bolts (D4F)	**18 N.m + 110° ± 6°**
flywheel bolts (K9K/JA5, JH3, JR5)	**55 N.m**
flywheel bolts (K9K/TL4)	**20 +36° ± 6°**

REMOVAL

I - REMOVAL PREPARATION OPERATION

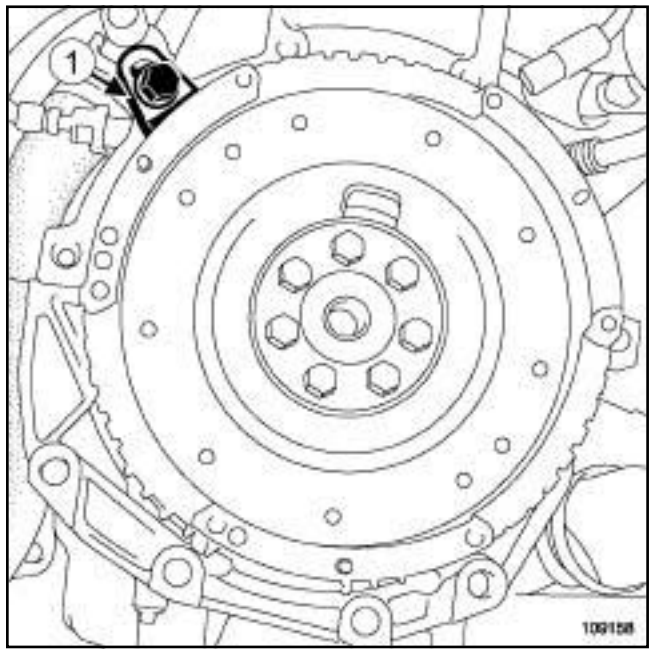
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see) (80A, Battery).

❏ Remove:

- the gearbox (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox),
- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) (20A, Clutch).

II - OPERATION FOR REMOVAL OF PART CONCERNED



109158

❏ Lock the flywheel using tool **(Mot. 582-01)** (**1**) .

❏ Remove:

- the flywheel bolts,
- the flywheel,
- the **(Mot. 582-01)** (**1**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Flywheel bolts**.

❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

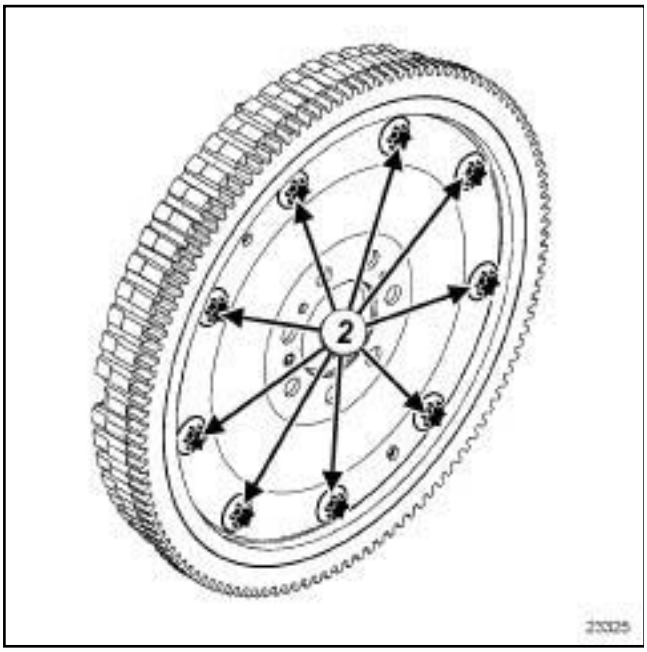
- the flywheel bearing face if reusing,
- the crankshaft bearing face.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the flywheel.

D4F or F4R or K4J or K4M or K9K

K9K, and TL4

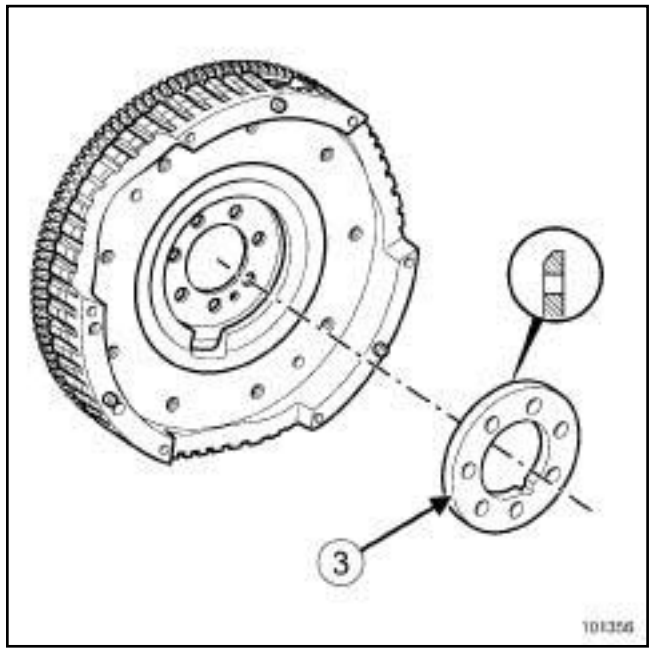


23325

❑

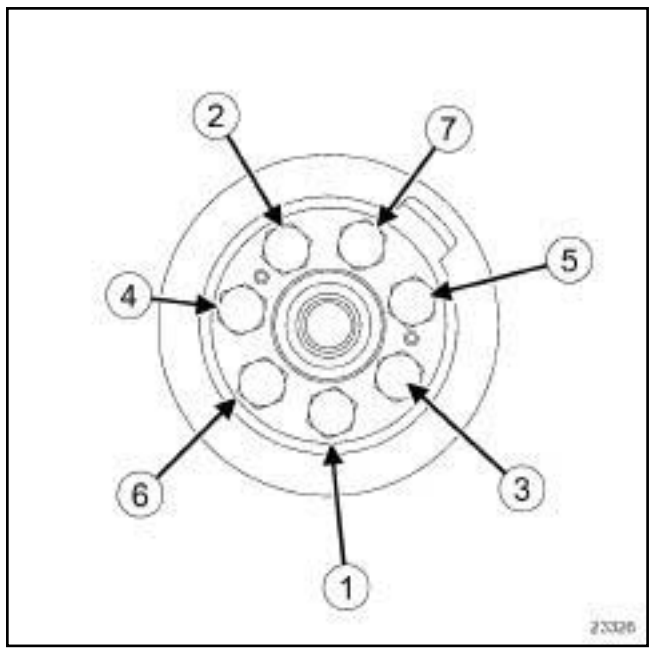
WARNING
Do not remove the flywheel drive plate mounting bolts (**2**) .

K9K, and JA5 or JH3 or JR5



101356

❑ Refit the spacer (**3**) observing the fitting direction of the chamfer on the flywheel end.



23326

❑ Observe the tightening order.

D4F or F4R or K4J or K4M or K9K

K4J or K4M

❑ Tighten in order and to torque the **flywheel bolts (K4) (25 N.m + 50° ± 6°)**.

F4R

❑ Tighten in order and to torque the **flywheel bolts (F4R) (30 N.m + 60° ± 10°)**.

D4F

❑ Tighten in order and to torque the **flywheel bolts (D4F) (18 N.m + 110° ± 6°)**.

K9K, and JA5 or JH3 or JR5

❑ Torque tighten in order the **flywheel bolts (K9K/ JA5, JH3, JR5) (55 N.m)**.

K9K, and TL4

❑ Torque tighten in order the **flywheel bolts (K9K/ TL4) (20 +36° ± 6°)**.

III - FINAL OPERATION

❑ Refit:

- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) (20A, Clutch),
- the gearbox (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

❑ Connect the battery (see) (80A, Battery).

M4R, and TL4

Special tooling required	
Mot. 1677	Flywheel locking tool.

Tightening torques ▽	
flywheel bolts	**108 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

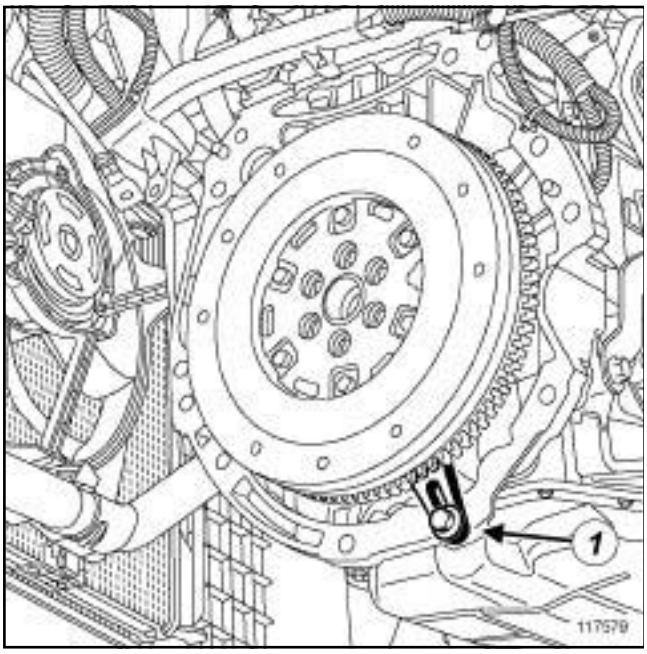
❏ Position the vehicle on a two-post lift (see **02A, Lifting Equipment, Vehicle: Towing and lifting**).

❏ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Remove:

- the gearbox (see **Manual gearbox: Removal - Refitting**) ,
- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117579

❏ Lock the engine using tool **(Mot. 1677)** (**1**) .

❏ Remove:

- the flywheel bolts,
- the flywheel,
- tool **(Mot. 1677)** (**1**) .

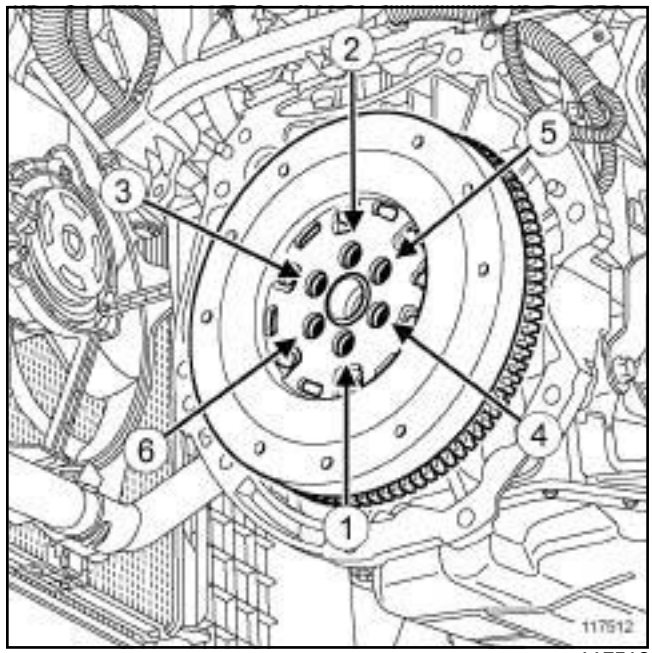
REFITTING

I - REFITTING PREPARATION OPERATION

❏ On the crankshaft, clean the flywheel bolt threading.

❏ Degrease the pressure face of the flywheel on the crankshaft.

II - REFITTING OPERATION FOR PART CONCERNED



117512

❏ Follow the flywheel bolt tightening order.

❏ Tighten to torque and in order the **flywheel bolts (108 Nm)**.

III - FINAL OPERATION

❏ Refit:

- the clutch pressure plate (see **Pressure plate - Disc: Removal - Refitting**) ,
- the gearbox (see **Manual gearbox: Removal - Refitting**) .

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

K4M, and DP0

Special tooling required	
Mot. 582-01	Flywheel locking tool.

Equipment required
Diagnostic tool

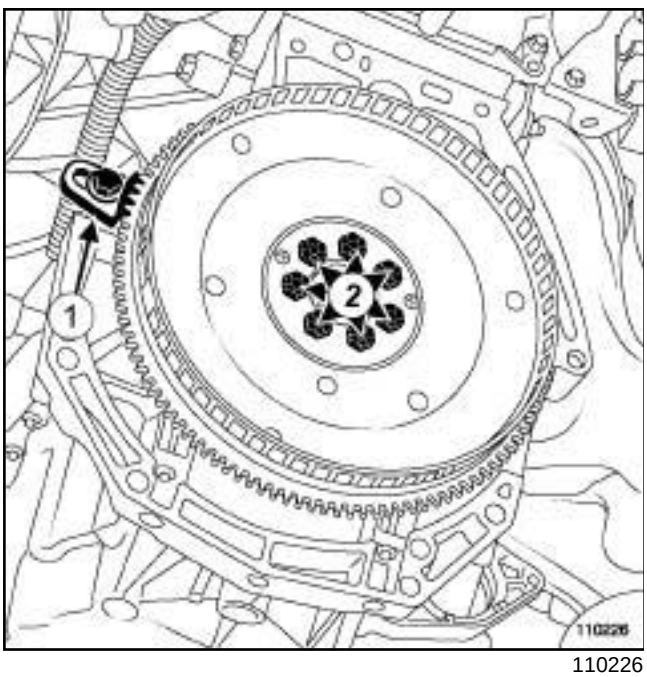
Tightening torques ▽	
drive plate bolts	**55 Nm + 50° ± 5**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the gearbox (see **Automatic gearbox: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



110226

❑ Set up the **(Mot. 582-01)** (**2**) .

❑ Remove:

- the bolts (**2**) ,
- the drive plate,
- tool **(Mot. 582-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the drive plate, ensuring it is correctly positioned in relation to the centring pins.

❑ Apply **LOCTITE FRENBLOC** to the bolt threads.

❑ Tighten the bolts on the drive plate.

❑ Torque and angle tighten the **drive plate bolts (55 Nm + 50° ± 5)** by immobilising the starter ring using the **(Mot. 582-01)**.

III - FINAL OPERATION.

❑ Refit the gearbox (see **Automatic gearbox: Removal - Refitting**) .

❑ Connect the **Diagnostic tool** for the conformity check.

M4R, and DP0

Special tooling required	
Mot. 919-02	Flywheel locking tool.

Tightening torques ▽	
drive plate bolts	**108 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❏ Remove:

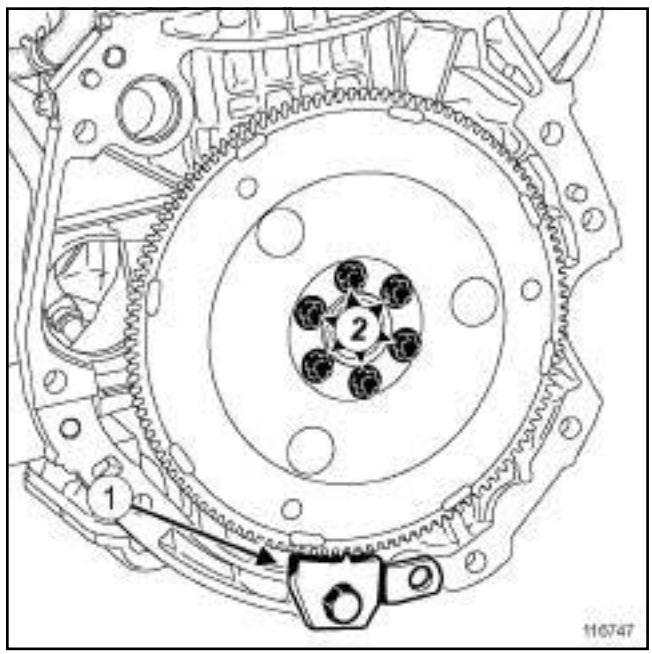
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery),

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) (MR 392, 19A, Cooling),
- the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) (MR392, 16A, Starting-charging),
- the left-hand driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) ,
- the right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) (MR 392, 19D, Engine mounting),
- the automatic gearbox (see **Automatic gearbox: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116747

❏ Set up the **(Mot. 919-02)** (**1**) .

❏ Remove:

- the drive plate mounting bolts (**2**) ,
- the drive plate,
- the **(Mot. 919-02)**.

M4R, and DP0

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the drive plate, ensuring it is correctly positioned in relation to the centring pins.

❑ Apply **HIGH RESISTANCE THREAD LOCK** to the bolt threads.

❑ Finger tighten the drive plate mounting bolts.

❑ Torque and angle tighten the **drive plate bolts (108 Nm)** by immobilising the starter ring with the tool.

III - FINAL OPERATION.

❑ Refit:

- the automatic gearbox (see **Automatic gearbox: Removal - Refitting**) ,
- the left-hand suspended engine mounting (see **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) (MR 392, 19D, Engine mounting),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) ,
- the left-hand driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) ,
- the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) (MR392, 16A, Starting-charging),
- the cooling radiator (see **19A**, **Cooling**, **Cooling radiator: Removal - Refitting**, page **19A-20**) (MR 392, 19A, Cooling),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit:

- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

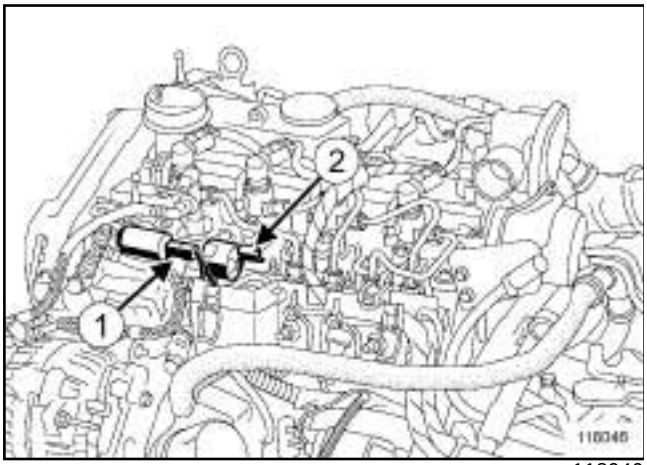
❑ Bleed the cooling system (see) (MR 392, 19A, Cooling).

K9K

Special tooling required	
Mot. 1592	Flexible end piece for taking end of compression pressure measurements.

Equipment required
Diagnostic tool

❏ Remove the heater plugs (see **13C**, **Preheating**, **Heater plugs: Removal - Refitting**, page **13C-2**) .

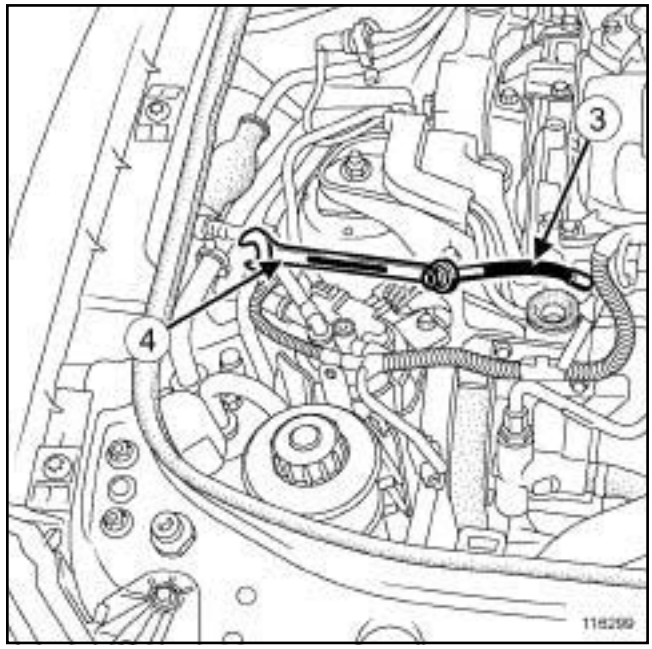


118046

❏ Disconnect:

- the pressure regulation solenoid valve connector (**1**) ,
- the flow control solenoid valve connector (**2**) ,

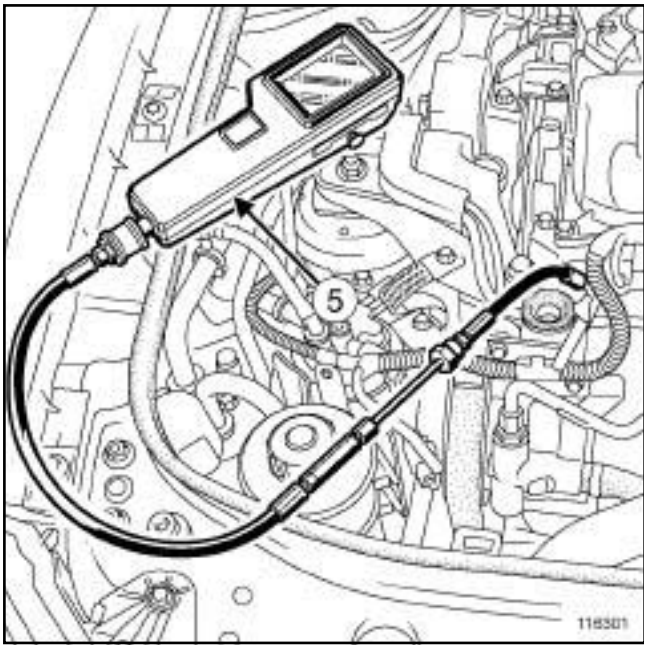
❏ Fit the hose end piece **(Mot. 1592)** in place of one of the removed plugs.



116299

❏ Moderately tighten the hose end piece **(Mot. 1592)** using an open-jawed spanner.

K9K



116301

❏ Moderately tighten the diesel compression gauge on the hose end piece **(Mot. 1592)**.

❏ Connect a self-contained starter or an automatic battery charger.

❏ Vehicle which is equipped with RENAULT Card:

- run command **SC003 Save computer data**,
- run command **RZ019 Reinitialise programming**,
- run the starter for at least **15 seconds** until the compression gauge needle stabilises to obtain the maximum value,
- open the discharge valve to release all of the pressure in the compression gauge,
- proceed through the diagram sheet,
- carry out the same procedure for the other cylinders,
- run command **SC001 Write computer data**.

❏ For vehicles equipped with keys, follow the starting cycle until the compression gauge needle stabilises to obtain the maximum value:

- open the discharge valve to release all of the pressure in the compression gauge,
- proceed through the diagram sheet,
- carry out the same procedure for the other cylinders.

Note:

The pressure value after compression must be at least **18 bar**.

❏ Disconnect the self-contained starter or automatic battery charger.

❏ Loosen:

- the diesel compression gauge on the hose end piece **(Mot. 1592)**,
- the hose end piece **(Mot. 1592)** using an open-jawed spanner.

❏ Remove the hose end piece **(Mot. 1592)** which was fitted in place of one of the removed plugs.

❏ Connect:

- the connector to the pressure regulation solenoid valve,
- the flow control solenoid valve connector,

❏ Refit the heater plugs (see **13C**, **Preheating**, **Heater plugs: Removal - Refitting**, page **13C-2**) .

❏ Using the **Diagnostic tool**, check for the absence of stored faults in the computers; deal with any faults and clear them if necessary.

D4F

Equipment required
petrol compression gauge
Diagnostic tool

CHECK

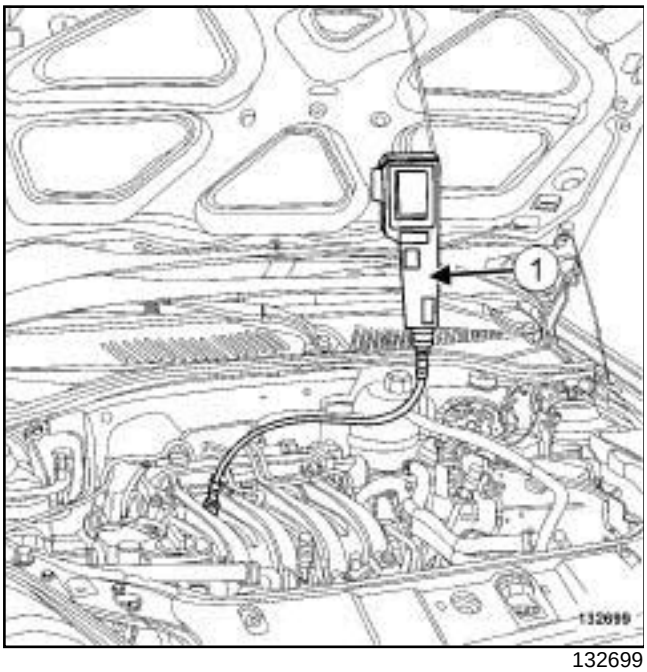
I - PREPARATION OPERATION FOR CHECK

❏ Remove the plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) .

Note:

Use a petrol compression gauge compatible with the special tools.

The petrol compression gauge must be equipped with a universal end piece (rubber), or a gaz 1/4 thread bolt.



132699

❏ Connect a **petrol compression gauge** (**1**) .

❏ Run command with **Diagnostic tool** :

- **RZ009: VEHICLE FUNCTION PROGRAMMING**,
- **VP036: FUEL SUPPLY INHIBITION**.

❏ Put the vehicle under the starting conditions by positioning the gear lever in neutral.

II - TEST OPERATION

❏ Activate the starter until the needle of the **petrol compression gauge** stabilises.

❏ Measure the cylinder compressions, cylinder by cylinder.

❏ Fully depress the accelerator pedal in order to open the throttle valve during the compression measurements.

Note:

It is necessary to wait for at least **10 seconds** before starting the engine each time (the starter will not run due to its thermal protection).

III - FINAL OPERATION

❏ Disconnect the **petrol compression gauge**.

❏ Refit the plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) .

❏ Run command **VP037: "STOP INHIBIT FUEL SUPPLY"** using the **Diagnostic tool**.

❏ Start the engine.

Note:

If the engine does not start, run command **VP037: STOP FUEL SUPPLY INHIBITION** using the **Diagnostic tool** or switch off the ignition and wait **1 min** before starting the engine again.

K4M

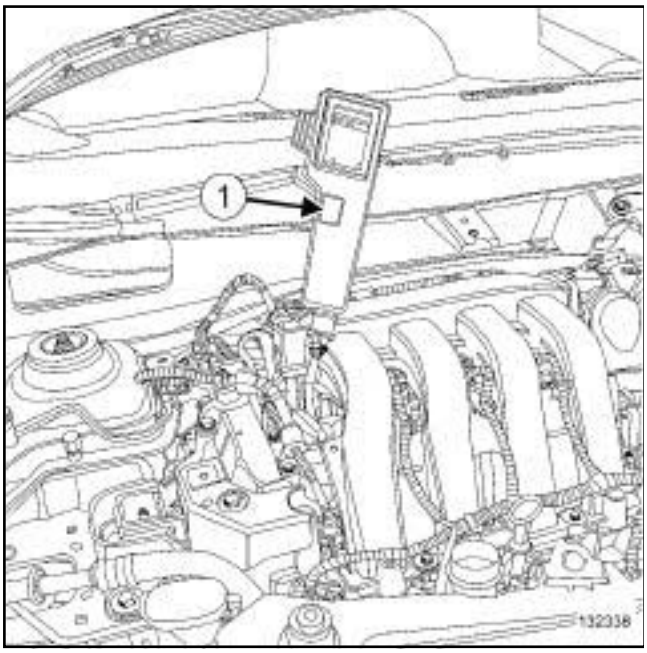
Equipment required
petrol compression gauge
Diagnostic tool

CHECK

I - PREPARATION OPERATION FOR CHECK

❏ Remove:

- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) .



132338

❏ Connect a **petrol compression gauge** (**1**) .

❏ Put the vehicle under starting conditions:

- gear lever in neutral position for manual gearbox,
- gear lever in position P (park) for an automatic gearbox.

❏ Disconnect the injector connectors.

II - TEST OPERATION

❏ Activate the starter until the needle of the petrol compression gauge stabilises.

❏ Measure the compression of the engine, cylinder by cylinder.

❏ Fully depress the accelerator pedal in order to open the throttle valve during the compression measurements.

> Note:
>
> It is necessary to wait for at least **10 seconds** before starting the engine each time (the starter will not run due to its thermal protection).

III - FINAL OPERATION

❏ Disconnect the **petrol compression gauge**.

❏ Refit:

- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) ,
- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

❏ Connect the injector connectors.

❏ Using the **Diagnostic tool**, check that there are no faults stored in the computer.

❏ Start the vehicle.

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

Special tooling required	
Mot. 1638	Accessories belt tensioning tool. For engines fitted with mechanical tensioning roller.
Mot. 1715	Belt tension checking tool (frequency indicator).
Mot. 1505	Belt tension setting tool (frequency meter)

Tightening torques ▽	
tensioning roller bolts	**30 N.m**
auto tensioner bolts	**40 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

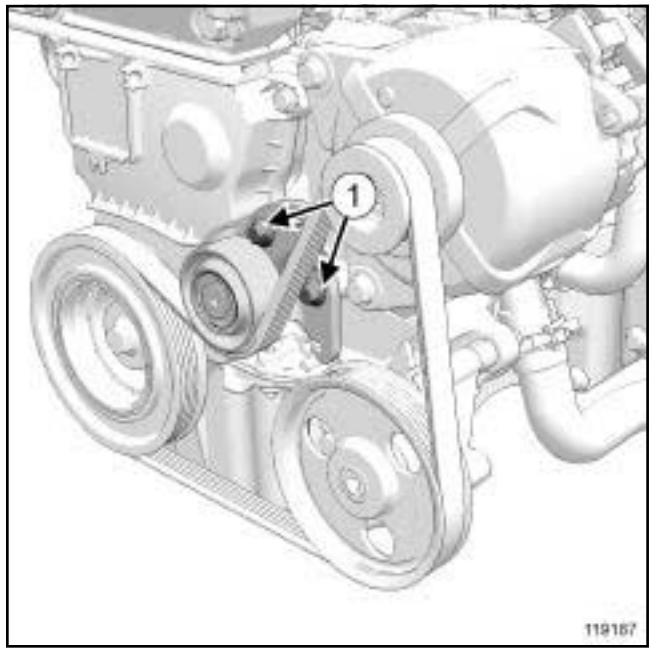
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

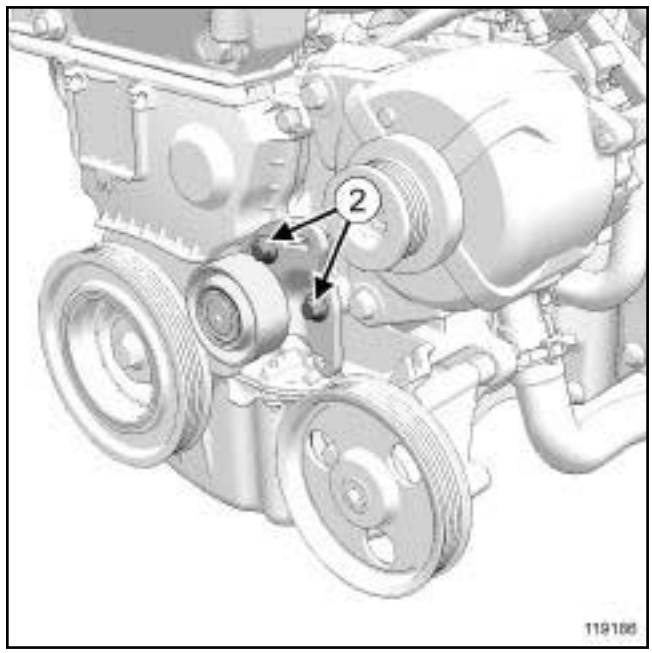
1 - Removal preparation operation for the part concerned: mechanical tensioning roller and accessories belt (5V)



119187

❑ Loosen the tensioning roller bolts (**1**) .

❑ Remove the accessories belt.



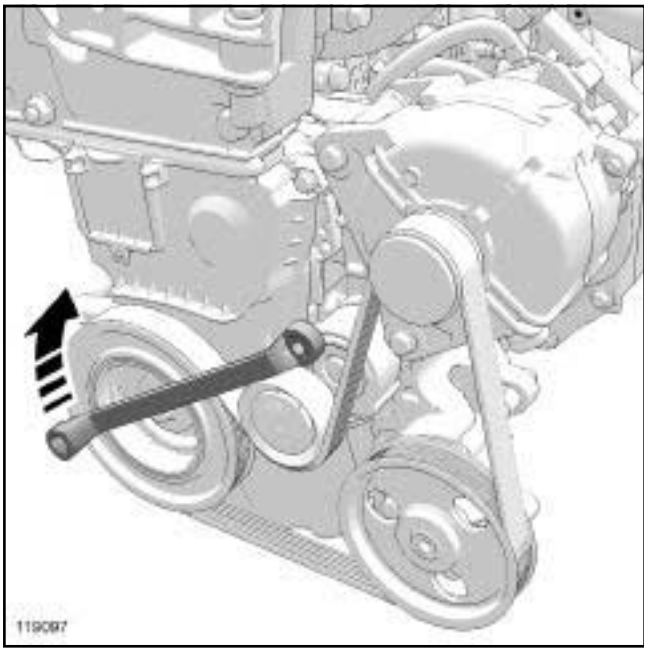
119186

❑ Remove:

- the tensioning roller bolts (**2**) ,
- the tensioning roller.

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

2 - Removal preparation operation for the part concerned: auto tensioner and accessories belt (6V)



119097

❑ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.

❑ Remove:

- the accessories belt,
- the tensioning roller bolt,
- the tensioning roller.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Accessories belt**.

❑ **parts always to be replaced: Accessories belt tensioning roller**.

❑ **parts always to be replaced: Accessories tensioning roller bolt**.

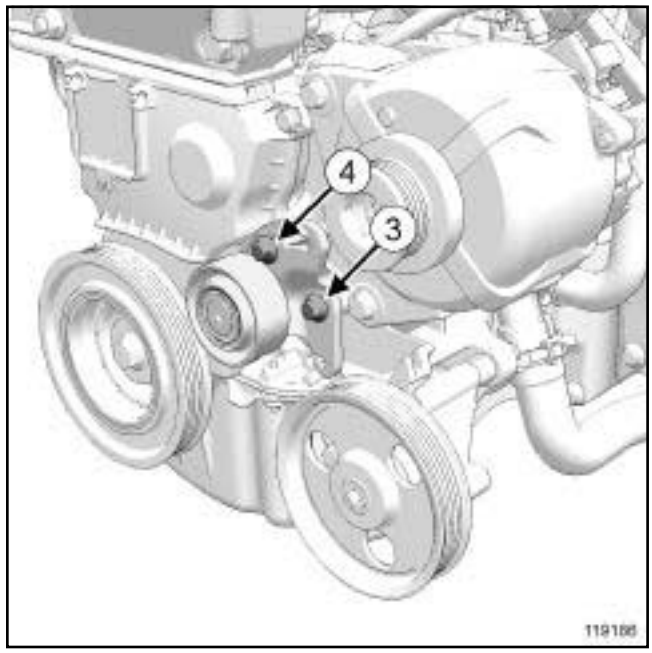
Refitting preparation operation for the two fittings

❑ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Refitting preparation operation for the part concerned: mechanical tensioning roller and accessories belt (5V)

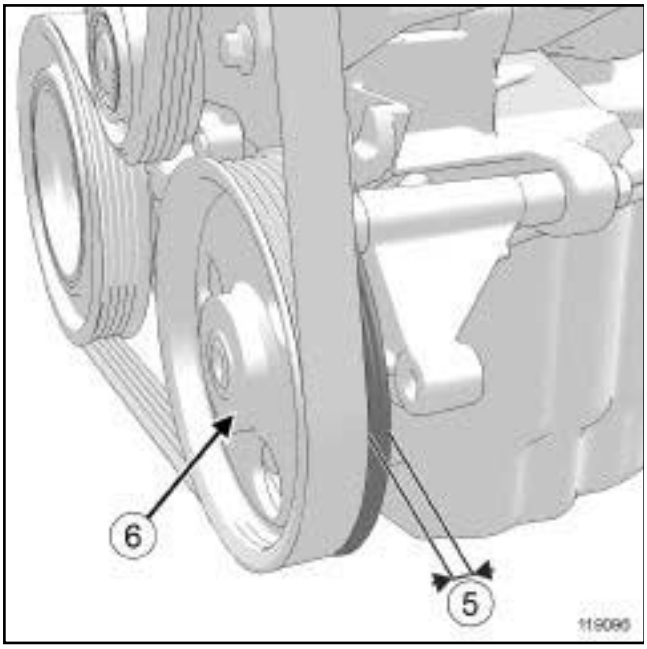


119186

❑ Refit:

- a new tensioning roller,
- a new tensioning roller bolt (**3**) ,
- a new tensioning roller bolt (**4**) .

❑ Fit a new accessories belt.

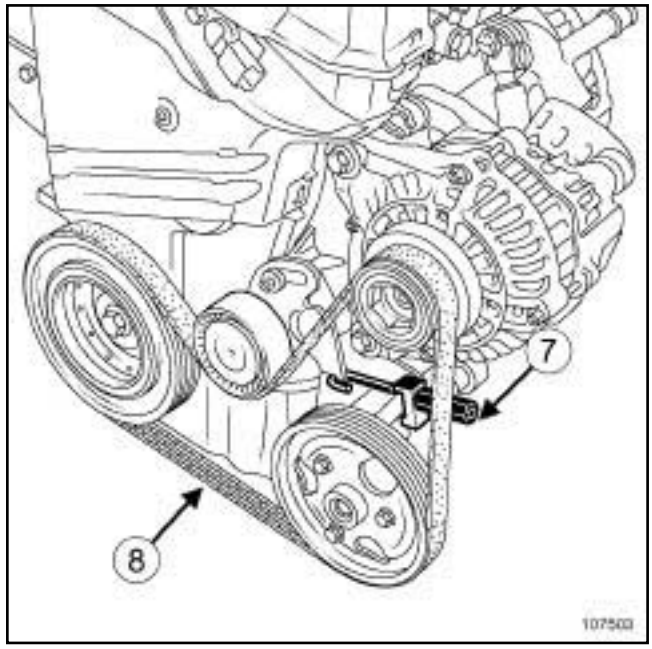


119096

❑

Note:

Check that the inner tooth (**5**) of the pulley (**6**) remains free.



107503

❑ Position the **(Mot. 1638)**.

❑ Tension the accessories belt using the **(Mot. 1638)**, tightening nut (**7**) .

❑ Use the **(Mot. 1715)** or **(Mot. 1505)** to measure the accessories belt tension **234 Hz ± 10 Hz**.

❑ Torque tighten the **tensioning roller bolts (30 N.m)**.

❑ Rotate the engine through two revolutions to position the accessories belt correctly.

❑ Use the **(Mot. 1715)** or **(Mot. 1505)** at (**8**) to measure the accessories belt tension again **234 Hz ± 10Hz**.

2 - Refitting preparation operation for the part concerned: auto tensioner and accessories belt (6V)

❑ Refit a new tensioning roller.

❑ Torque tighten the **auto tensioner bolts (40 N.m)**.

❑ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.

❑ Refit a new accessories belt.

❑ Rotate the engine through two revolutions to position the accessories belt correctly.

III - FINAL OPERATION

❑ Refit:

- the engine undertray,

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K9K, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques ▽	
tensioning roller bolt	**40 Nm**
the fuel filter interior protector nuts	**21 Nm**
fuel filter exterior protector nuts	**21 Nm**

❑

WARNING

The belt must be replaced with a new one if it has been removed.

The tensioning roller must be replaced when the belt is replaced.

Do not run the engine without the accessories belt, to avoid irreparable damage to the crankshaft accessories pulley.

REMOVAL

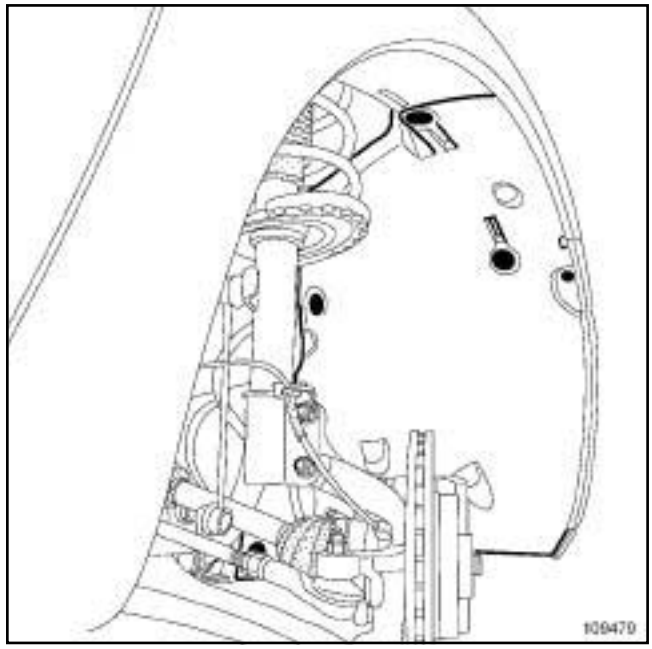
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

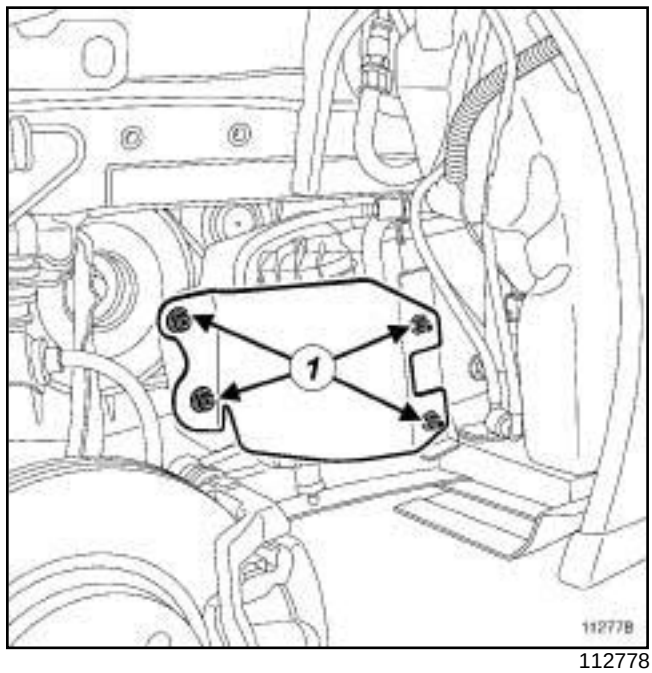
❑ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



109479

❑ Remove the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

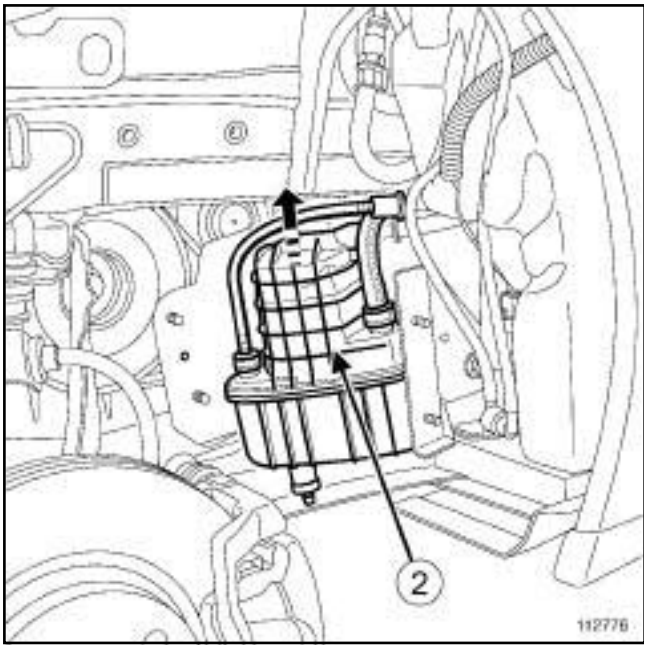


112778

❑ Remove:

- the fuel filter exterior protector nuts (**1**) ,
- the fuel filter exterior protector.

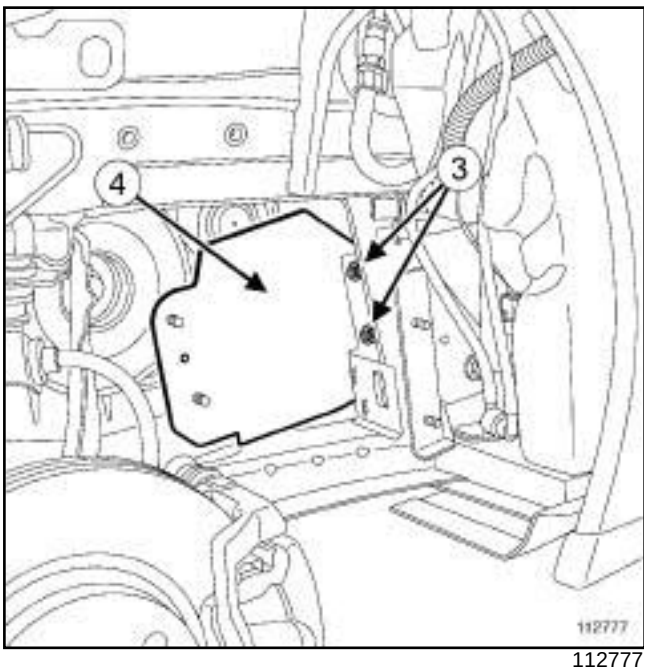
K9K, and AIR CONDITIONING or CLIMATE CONTROL



112776

❏ Lift the "fuel filter - pipe" assembly (**2**) .

❏ Fasten the "fuel filter - pipe" assembly to the vehicle.

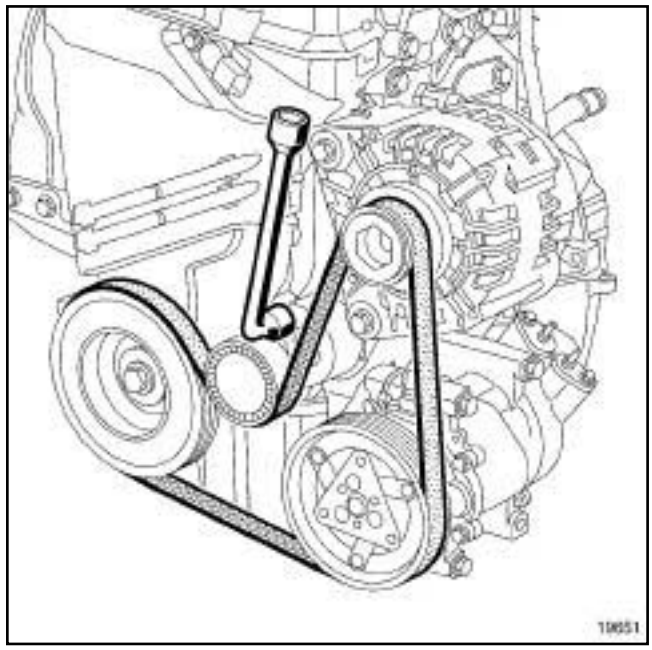


112777

❏ Remove:

- the fuel filter interior protector nuts (**3**) ,
- the fuel filter interior protector (**4**) .

II - REMOVAL OF PART CONCERNED



19651

❏ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.

❏ Remove the accessories belt.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

❏ Replace the tension wheel.

❏ Torque tighten the **tensioning roller bolt (40 Nm)**.

II - REFITTING PART CONCERNED

❏ Turn the auto tensioning roller anti-clockwise using a **16 mm** spanner.

❏ Refit the accessories belt.

III - FINAL OPERATION.

❏ Refit:

- the fuel filter interior protector,
- the fuel filter interior protector nuts,

❏ Torque tighten the **the fuel filter interior protector nuts (21 Nm)**.

❏ Reinstall the "fuel filter - pipe" assembly.

❏ Refit:

- the fuel filter exterior protector,

K9K, and AIR CONDITIONING or CLIMATE CONTROL

- the fuel filter exterior protector nut.

❑ Torque tighten the **fuel filter exterior protector nuts (21 Nm)**.

❑ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J, and AIR CONDITIONING or CLIMATE CONTROL – K4M, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques ▽	
tensioning roller mounting bolt	**40 Nm**

IMPORTANT
Wear gloves throughout the operation.

WARNING
Never turn the engine in the opposite direction to its normal operating direction.

WARNING
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

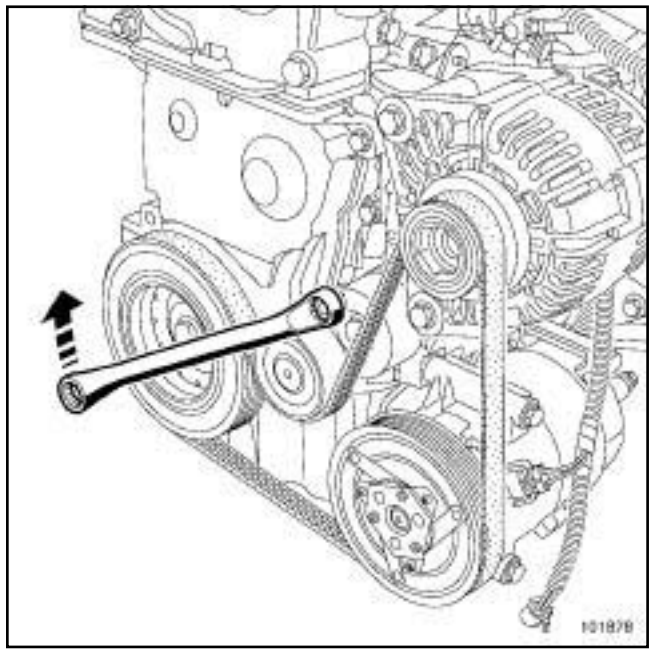
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - REMOVAL OF PART CONCERNED


101878

❏ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.

❏ Remove:

- the accessories belt,
- the tensioning roller mounting bolt,
- the tensioning roller.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING
It is essential to replace the accessories belt and the tensioning roller.

❏ Refit the tensioning roller.

❏ Tighten to torque the **tensioning roller mounting bolt (40 Nm)**.

II - REFITTING PART CONCERNED

❏ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.

❏ Refit the accessories belt.

III - FINAL OPERATION.

❑ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and STANDARD HEATING

Special tooling required	
Mot. 1638	Accessories belt tensioning tool. For engines fitted with mechanical tensioning roller.
Mot. 1505	Belt tension setting tool (frequency meter)
Mot. 1715	Belt tension checking tool (frequency indicator).

Tightening torques ▽	
mechanical tensioning roller bolts	**35 N.m**
auto tensioner bolts	**40 N.m**
the fuel filter interior protector nuts	**21 N.m**
fuel filter exterior protector nuts	**21 N.m**

REMOVAL

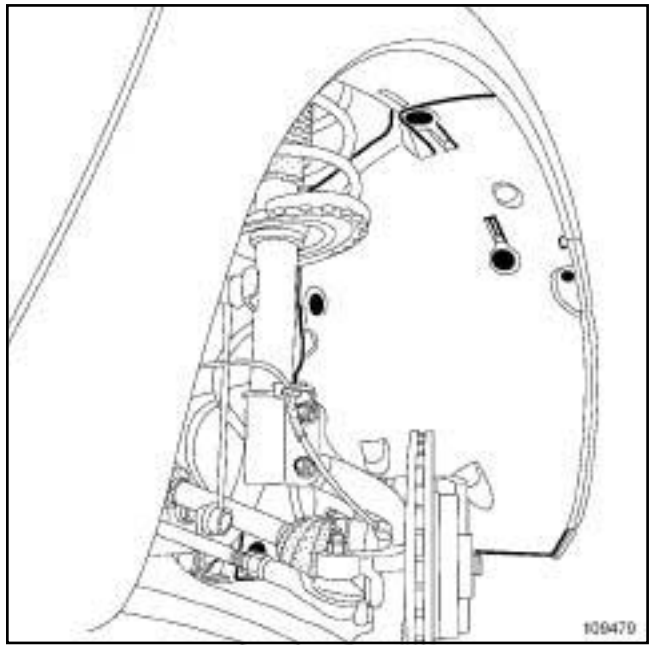
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

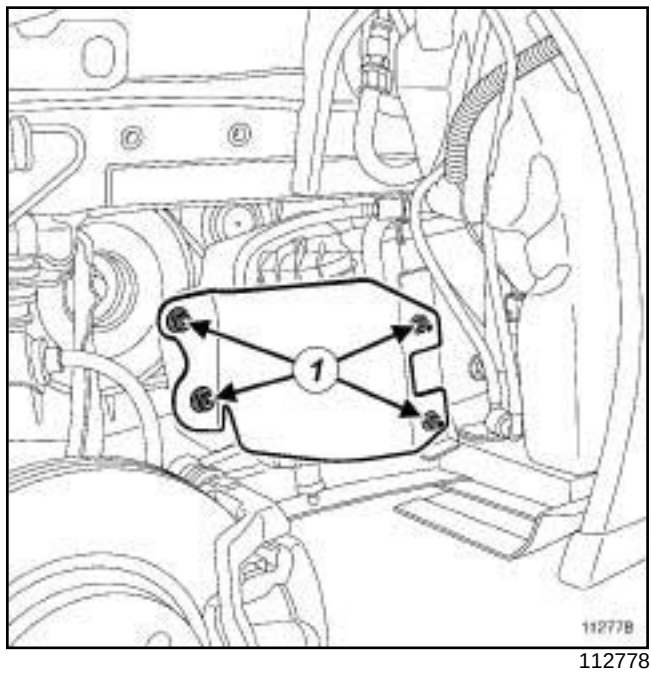
❏ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



109479

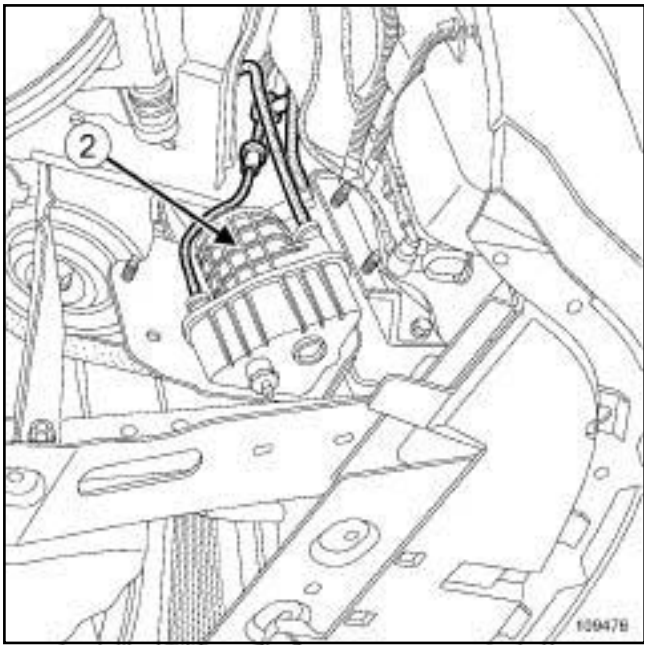
❏ Remove the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112778

❏ Remove:

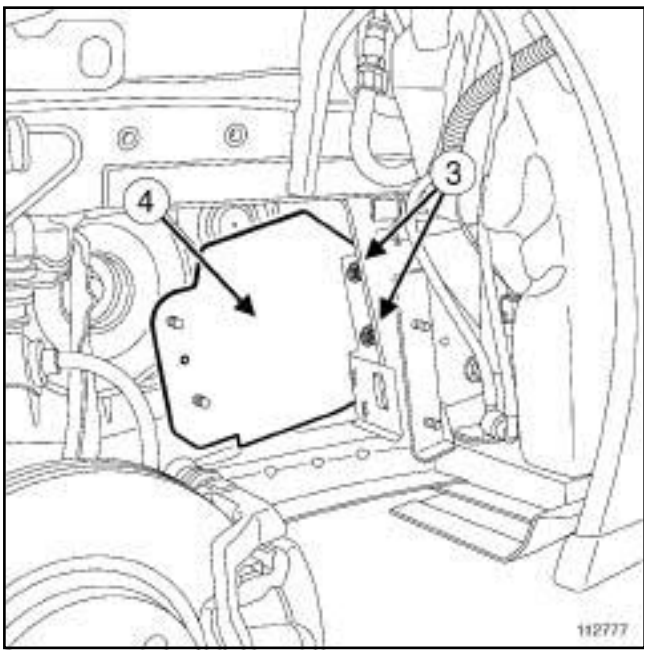
- the fuel filter exterior protector nuts (**1**) ,
- the fuel filter exterior protector.



109476

❏ Move the « fuel filter - pipe » assembly (**2**) to one side.

❏ Attach the « fuel filter - pipe » assembly to the vehicle.



112777

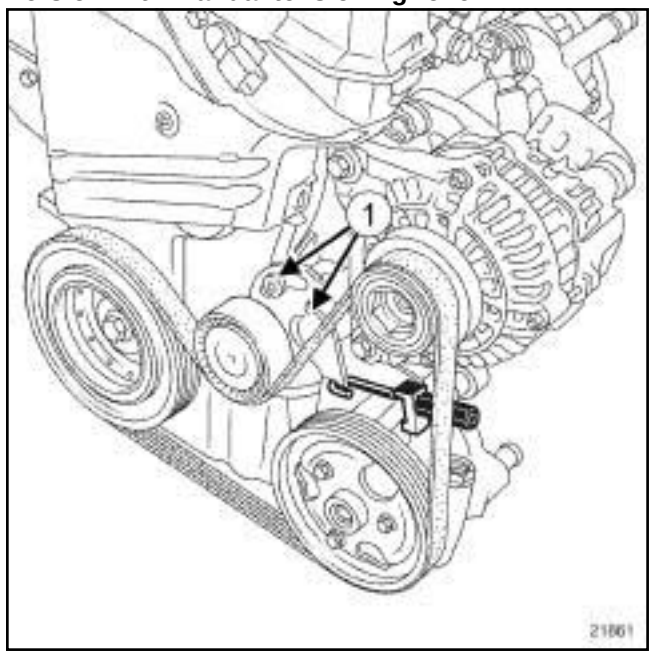
❏ Remove:

- the fuel filter interior protector nuts (**3**) ,
- the fuel filter interior protector (**4**) .

❏ Loosen the accessories belt tensioning roller nuts.

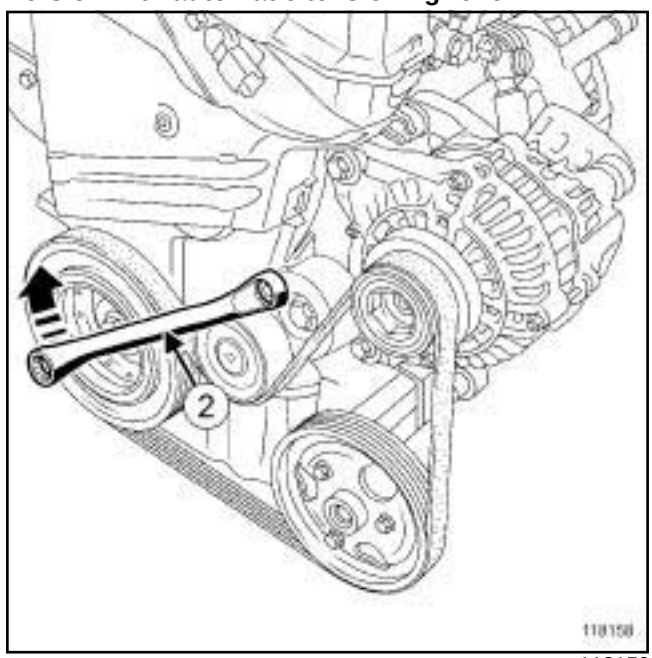
II - OPERATION FOR REMOVAL OF PART CONCERNED

Version with manual tensioning roller



21861

Version with automatic tensioning roller



118158

❏ Undo the manual tensioning roller bolts (**1**) or pivot the auto tensioner using a spanner (**2**) to slacken the belt (depending on the version).

❏ Remove:

- the accessories belt then discard it in the waste bin,
- the accessories belt tensioning roller then discard it in the waste bin as well as its bolt.

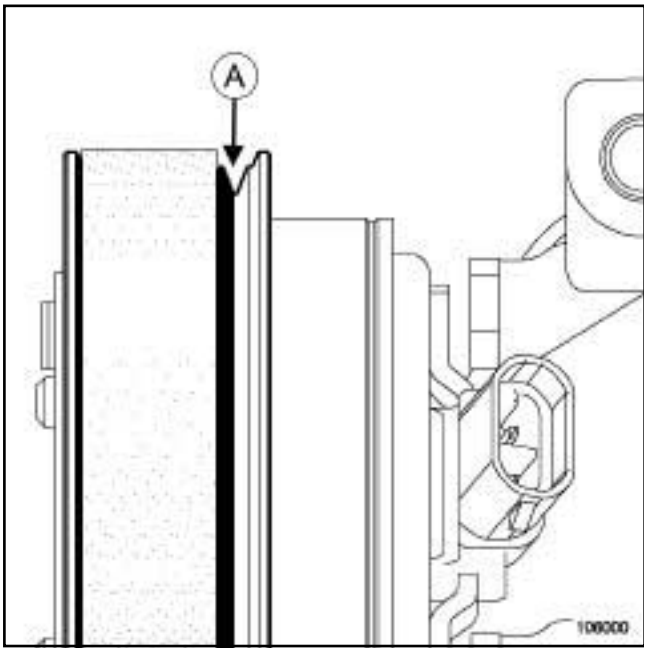
K9K, and STANDARD HEATING

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING
It is essential to replace the accessories belt and the tensioning roller.



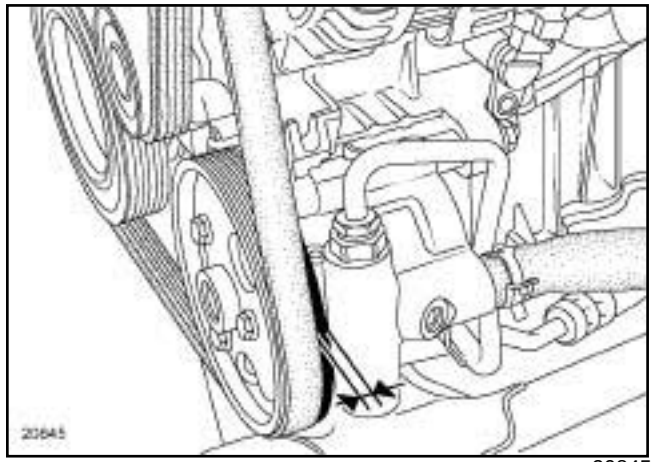
❑ It is essential to leave the inner tooth (**A**) of the pulleys free for engines fitted with an accessories belt with **5 teeth** for pulleys with **6 teeth**.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Accessories belt fitted with a manual tensioning roller

❑ Refit:

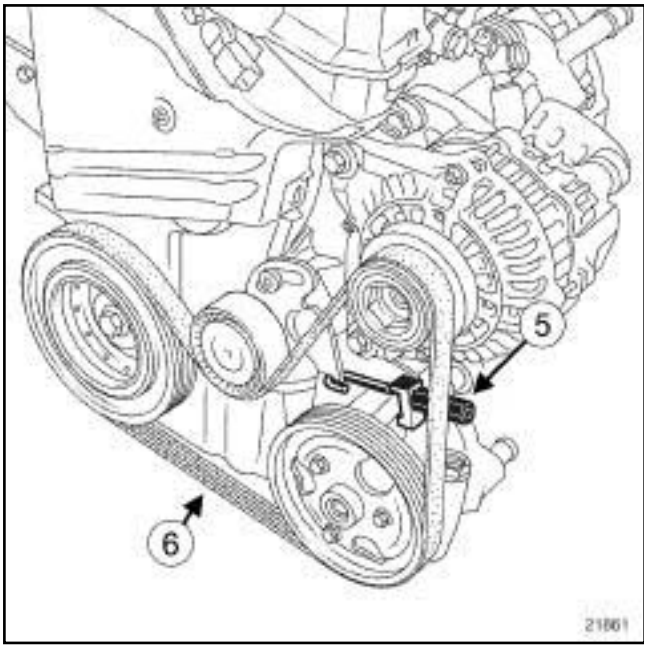
- the tensioning roller,
- the new tensioning roller bolts.



❑ It is essential to leave the inner tooth free for engines fitted with an accessories belt with **5 teeth** on pulleys with **6 teeth**.

❑ Refit the accessories belt.

Note:
Ensure that the 2 bolts of the tensioning roller are not tightened, in order to be able to pivot the roller when tensioning the belt.



21861

❑ Position the tool **(Mot. 1638)** in the notch of the tensioning roller.

❑ Tension the accessories belt using the tool Mot.1638 by tightening the nut (**5**) .

❑ Check the accessories belt tension at point (**6**) using the tools **(Mot. 1505)** or **(Mot. 1715)**.

Note:

The accessories belt tension should be **254 Hz ± 11 Hz**.

❑ It is essential to turn the engine through 2 revolutions to position the accessories belt correctly.

❑ At the measuring point (**6**) , check that the belt tension is **254 Hz ± 11 Hz**.

❑ Adjust the accessories belt tension, if necessary, by turning the bolts of the tensioning roller then check again.

❑ Torque tighten the **mechanical tensioning roller bolts (35 N.m)**.

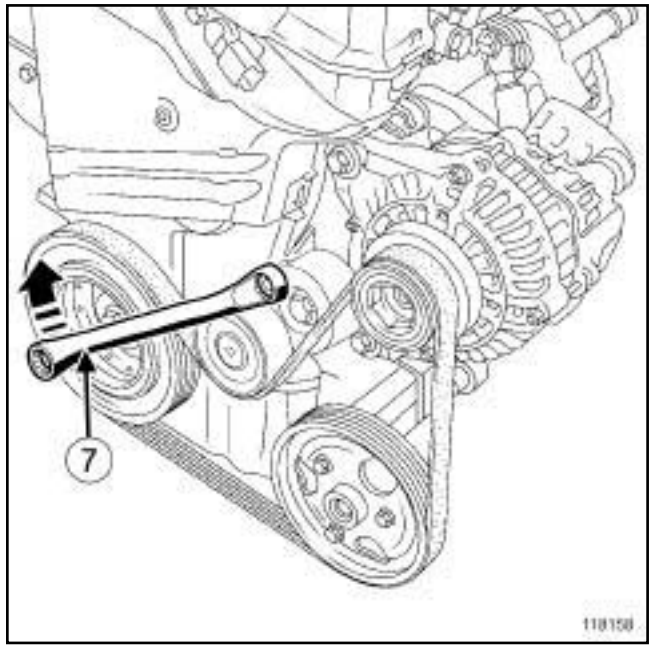
❑ Remove tool Mot.1638.

2 - Accessories belt fitted with an auto tensioner

❑ Refit:

- the auto tensioner,
- the new tensioning roller bolt.

❑ Torque tighten the **auto tensioner bolts (40 N.m)**.



118158

❑ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner (**7**) .

❑ Refit the accessories belt then release the tensioning roller.

❑ It is essential to turn the engine through 2 revolutions to position the accessories belt correctly.

III - FINAL OPERATION

❑ Refit:

- the fuel filter interior protector,
- the fuel filter interior protector nuts.

❑ Torque tighten the **the fuel filter interior protector nuts (21 N.m)**.

❑ Detach the « fuel filter - pipe» assembly from the vehicle.

❑ Refit:

- the « fuel filter - pipe » assembly,
- the fuel filter exterior protector,
- the fuel filter exterior protector nuts.

❑ Torque tighten the **fuel filter exterior protector nuts (21 N.m)**.

❑ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

K9K, and STANDARD HEATING

- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
auto tensioner mounting bolt	**22 Nm**
engine cover mounting bolts	**62 Nm**
bolts mounting the rubber mounting bush on the body	**62 Nm**
bolts mounting the rubber mounting bush on the engine	**105 Nm**
upper engine tie-bar mounting bolts	**105 Nm**
bolt mounting the engine tie-bar on the subframe	**105 Nm**
bolt mounting the engine tie-bar on the engine	**180 Nm**
lifting eye mounting bolts	**33 Nm**
radiator mounting cross member right-hand mounting bolt	**105 Nm**
subframe tie-rod left-hand mounting bolt	**105 Nm**
exhaust bracket mounting bolts	**21 Nm**

WARNING

Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the engine cover.

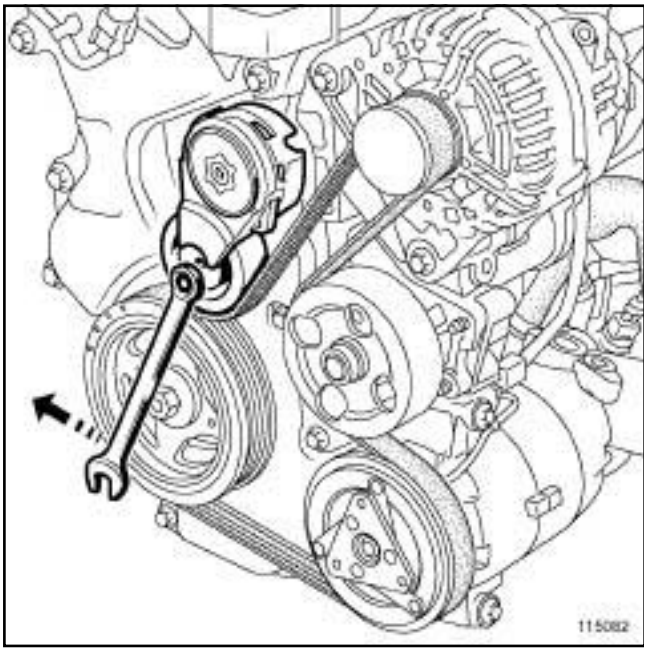
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

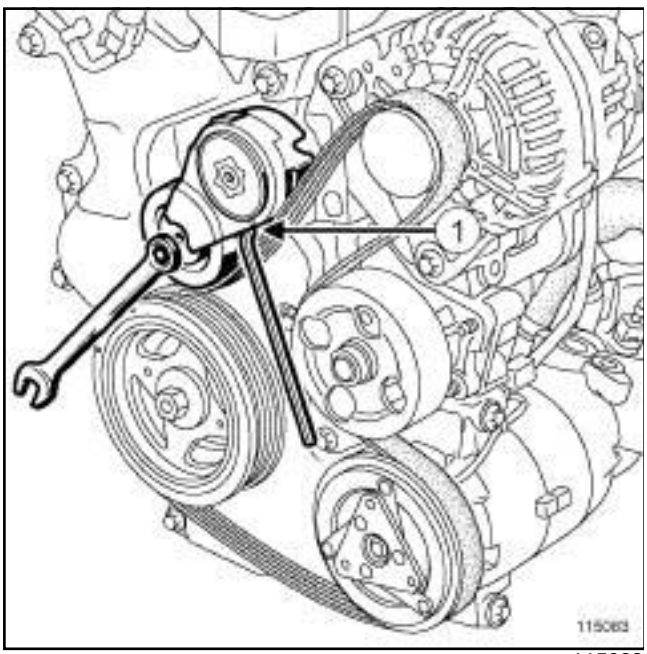
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

M4R

II - REMOVAL OF PART CONCERNED



115082



115083

❏ Turn the accessories belt auto tensioner clockwise using a **14 mm** spanner.

❏ Lock the auto tensioner using a **6 mm** Allen key at (**1**) .

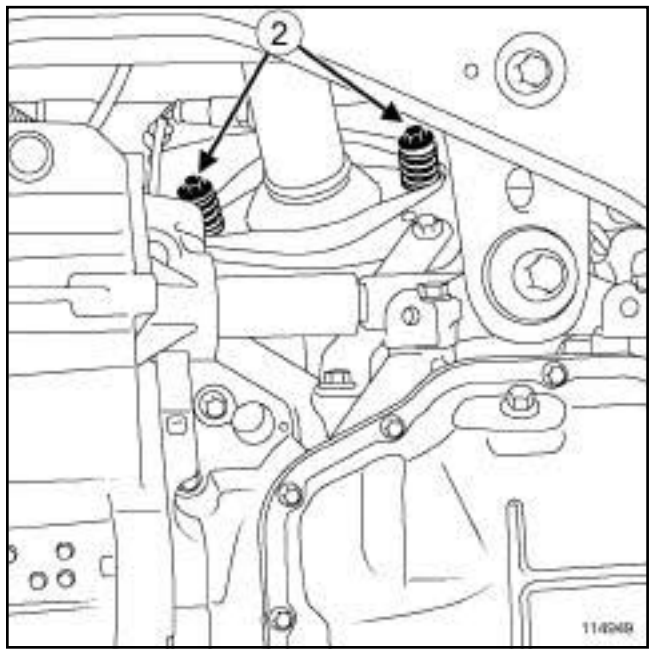
❏ Remove the accessories belt.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

Replacing the auto tensioner

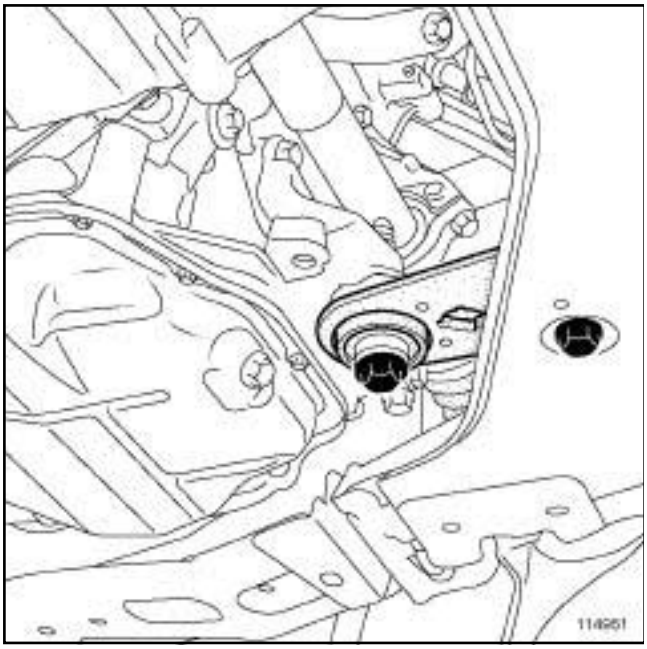


114949

❏ Remove:

- the exhaust bracket mounting bolts (**2**) ,
- The exhaust bracket seal.

M4R



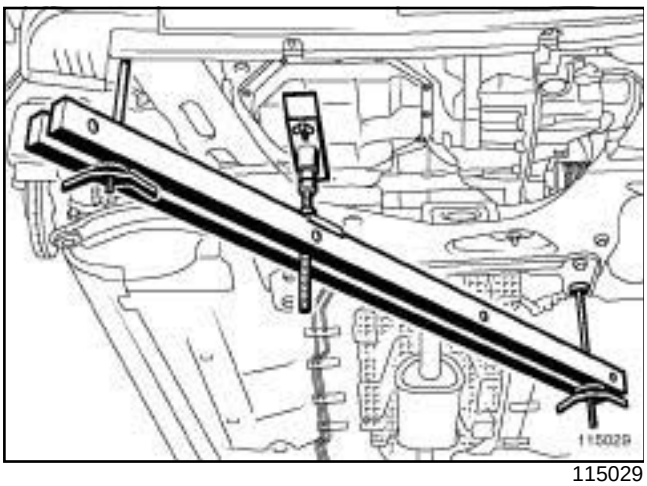
114951

❏ Remove:

- the mounting bolts from the engine tie-bar,
- the engine tie-bar.

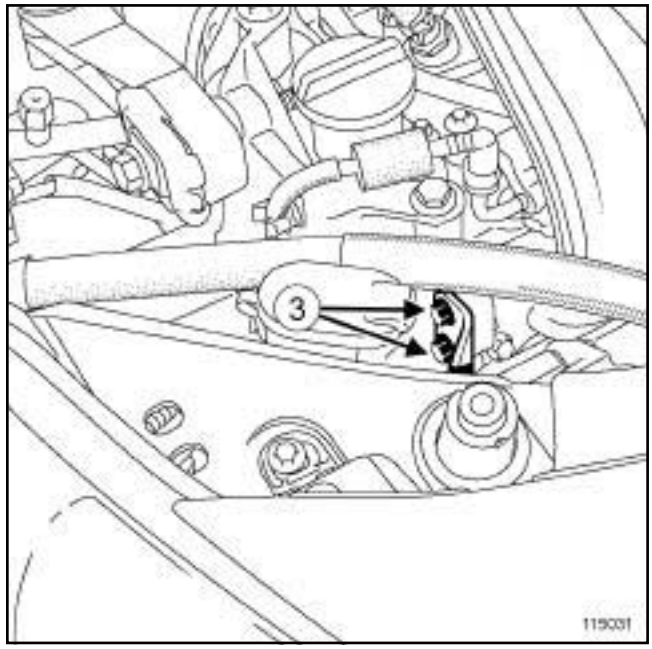
❏ Remove:

- the right-hand mounting bolt from the radiator support cross member,
- the left-hand mounting bolt from the sub-frame tie-rod.



115029

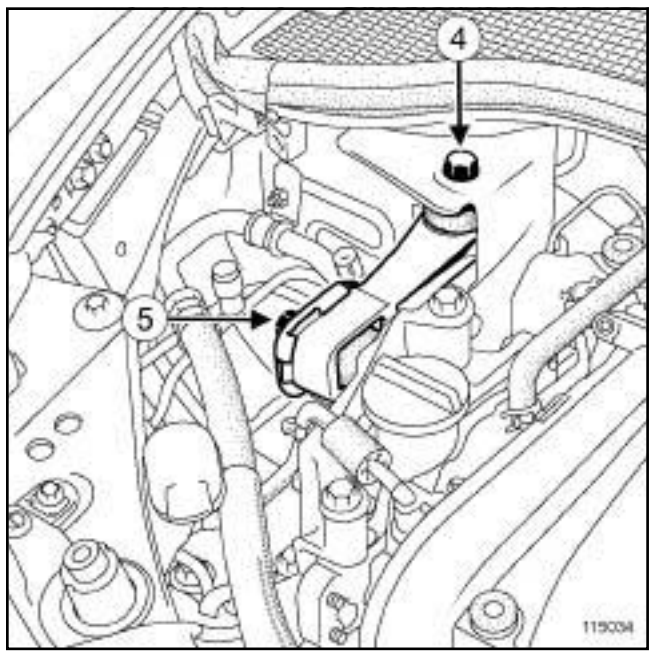
❏ Fit the lower engine support tool **(Mot. 1672)**.



115031

❏ Remove:

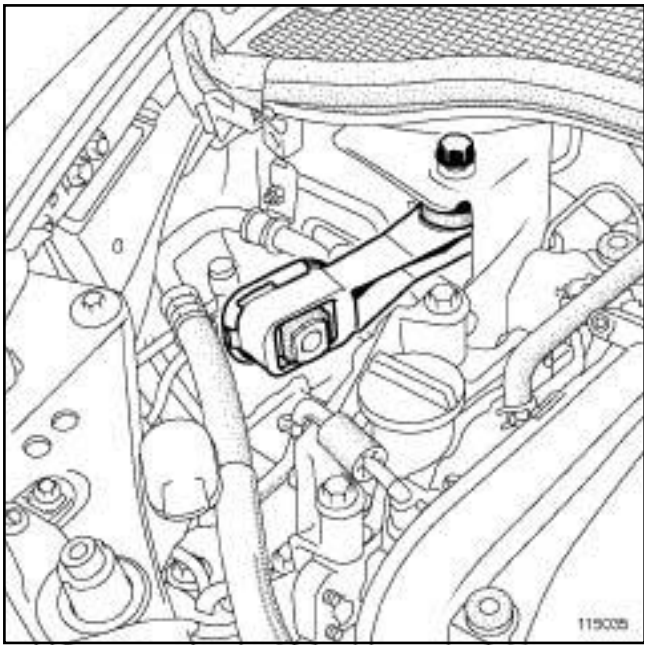
- the lifting eye mounting bolts (**3**) ,
- the lifting eye.



115034

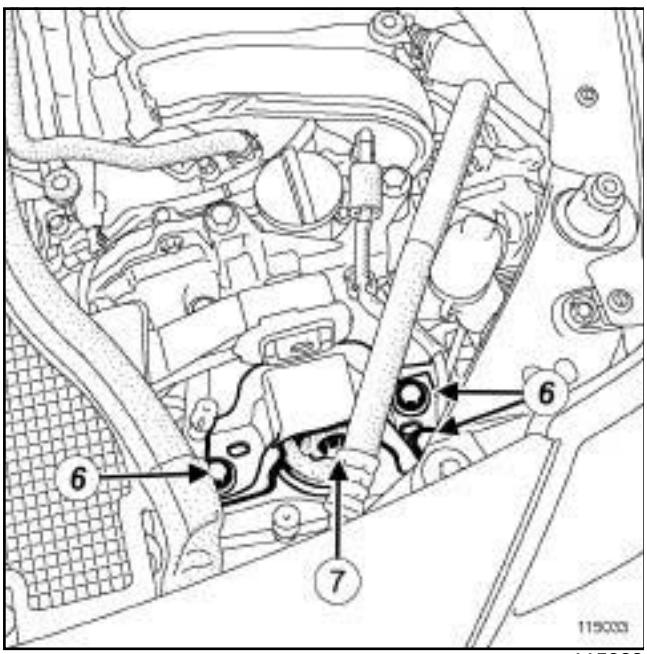
❏ Undo the upper engine tie-bar mounting bolt (**4**) .

❏ Remove the upper engine tie-bar mounting bolt (**5**) .



115035

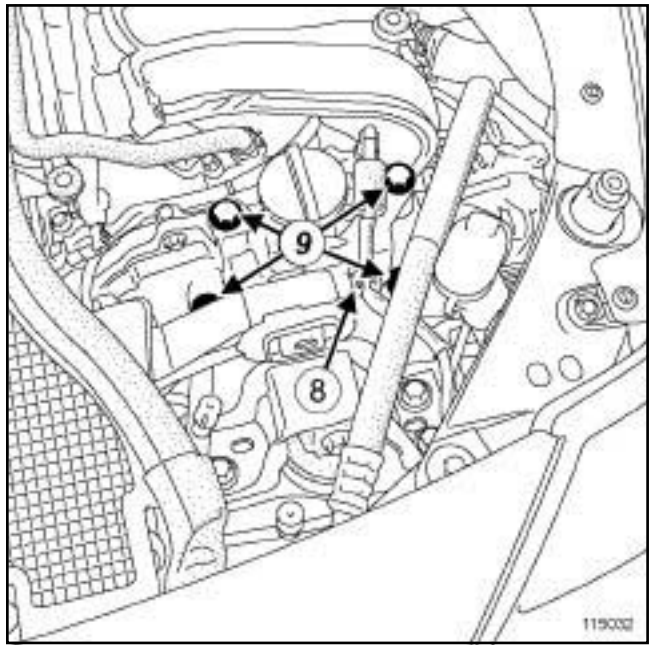
❏ Remove the upper engine tie-bar.



115033

❏ Remove:

- the engine cover rubber mounting bush mounting bolt (**6**)
- the rubber mounting bush mounting bolts (**7**) on the body,

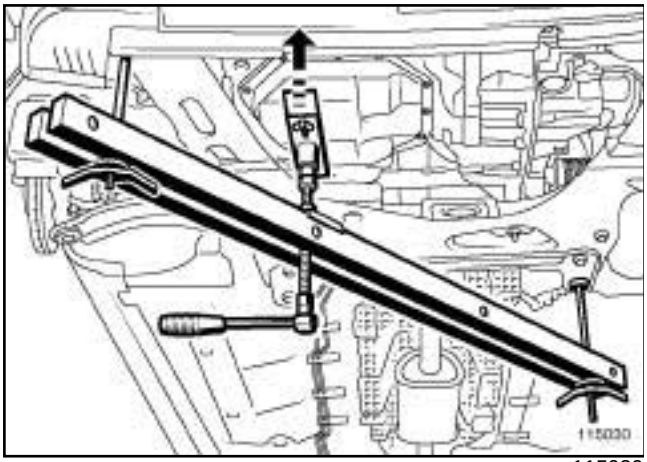


115032

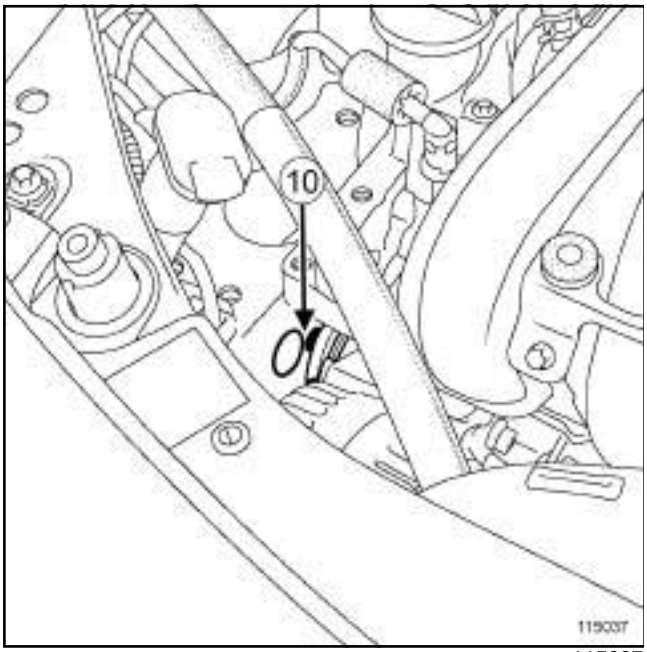
❏ Unclip the fuel supply pipe at (**8**) .

❏ Remove:

- the engine cover mounting bolts (**9**) ,
- the engine cover,
- the rubber mounting bush.



115030

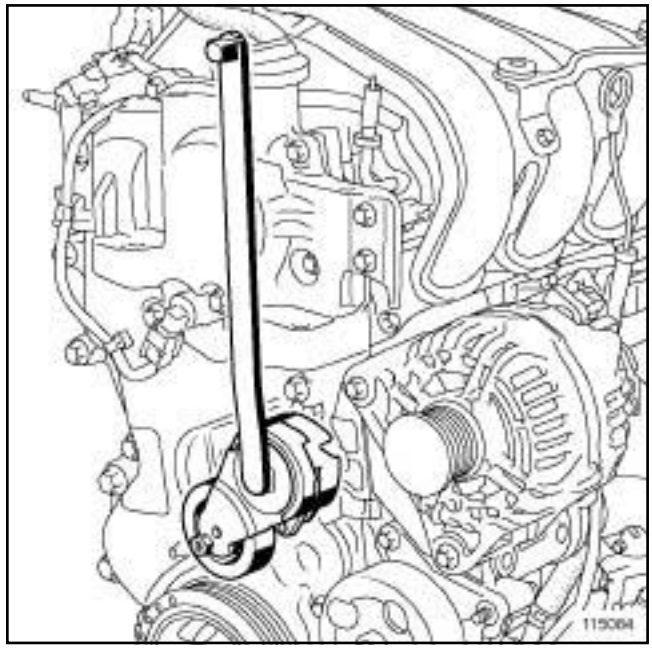


115037

❑ Fit the engine at approximately **25 mm** so that the auto tensioner mounting bolt is opposite the side member hole at (**10**) .

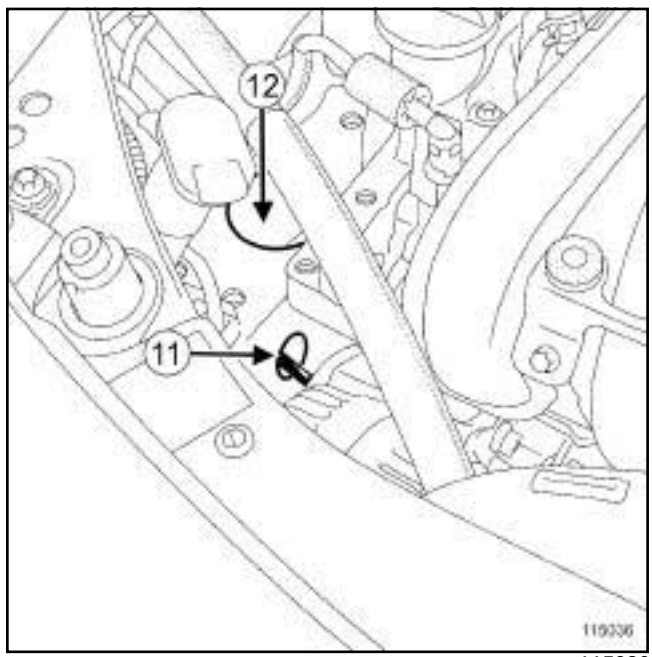
Note:

Before removing the auto tensioner, it is essential to retrieve the **6 mm** Allen key by unlocking the tensioning roller using a **14 mm** open-jawed spanner.



115084

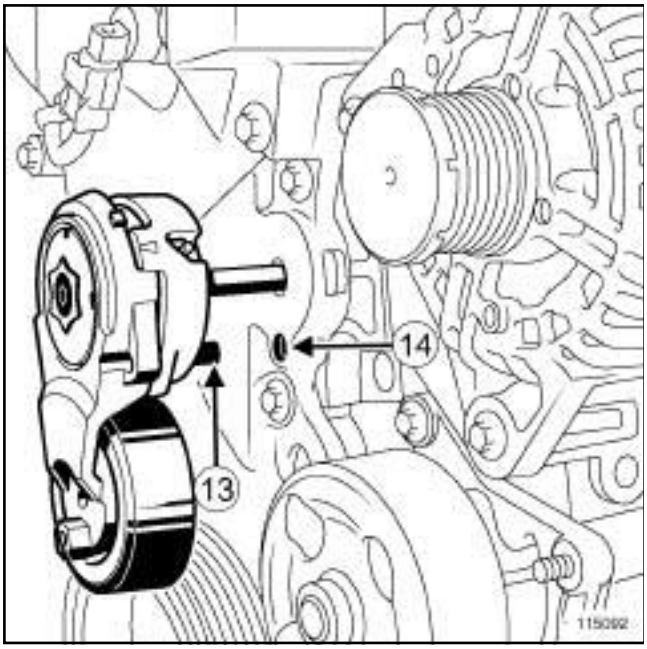
❑ Undo the auto tensioner mounting bolt completely using the.



115036

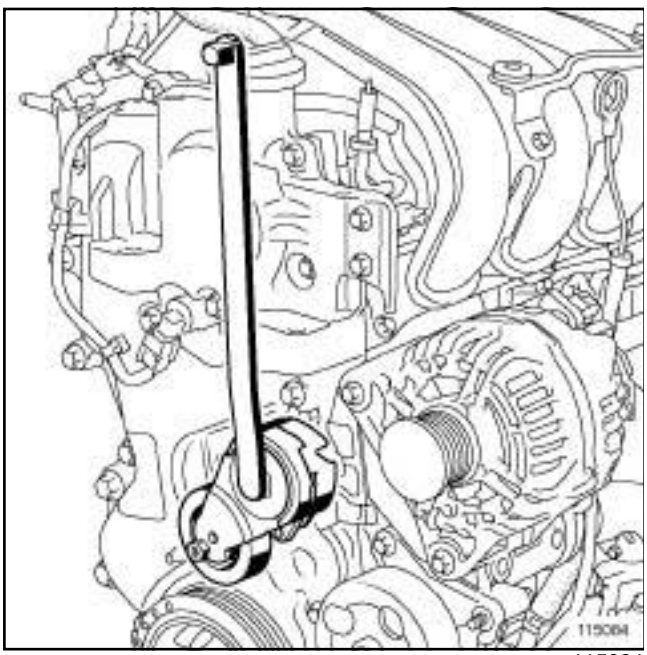
❑ Remove the auto tensioner by inserting the mounting bolt into the side member hole at (**11**) .

❑ Retrieve the auto tensioner mounting bolt via the side member hole at (**12**) .



115092

❑ Refit the new auto tensioner by inserting lug (**13**) into its housing (**14**) .


115084

❑ Torque tighten the **auto tensioner mounting bolt (22 Nm)** using the.

II - REFITTING PART CONCERNED

❑ Turn the accessories belt auto tensioner clockwise using a **14 mm** spanner.

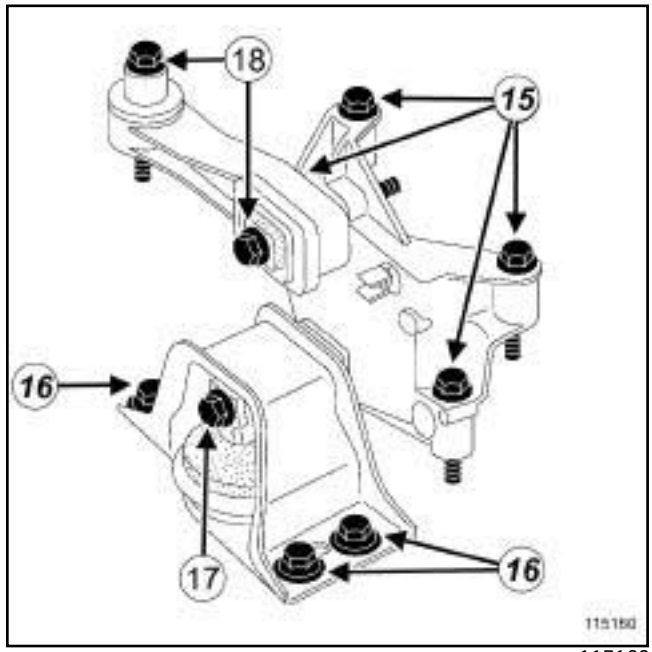
Lock the auto tensioner using a **6 mm** Allen key.

❑ Refit the accessories belt.

❑ Retrieve the **6 mm** Allen key and gradually unlock the auto tensioner using a **14 mm** open-jawed spanner.

❑ Rotate the crankshaft clockwise twice to balance the accessories belt tension on every pulley.

III - FINAL OPERATION.



115160

❑ Fit:

- the rubber mounting bush,
- the engine cover.

❑ Without tightening, fit:

- the engine cover mounting bolts (**15**) ,
- the rubber mounting bush mounting bolts (**16**) on the body.

Note:

Allow the two parts to move freely.

❑ Lower the engine to fit the engine cover rubber mounting bush mounting bolt (**17**) .

❑ Torque tighten and in order:

- the **engine cover mounting bolts (62 Nm)** at (**15**) ,
- the **bolts mounting the rubber mounting bush on the body (62 Nm)** at (**16**) ,
- the **bolts mounting the rubber mounting bush on the engine (105 Nm)** at (**17**) ,

- the **upper engine tie-bar mounting bolts (105 Nm)** at (**18**) .

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Refit the lifting eye.

❏ Torque tighten:

- the **bolt mounting the engine tie-bar on the sub-frame (105 Nm)**,
- the **bolt mounting the engine tie-bar on the engine (180 Nm)**,
- the **lifting eye mounting bolts (33 Nm)**.

❏ The exhaust clamp seal must be replaced.

❏ Torque tighten:

- the **radiator mounting cross member right-hand mounting bolt (105 Nm)**,
- the **subframe tie-rod left-hand mounting bolt (105 Nm)**,
- the **exhaust bracket mounting bolts (21 Nm)**.

❏ Refit:

- the front section of the wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the engine cover.

F4R

Tightening torques ▽	
tensioning roller mounting bolt	**50 Nm**

WARNING
The belt must be replaced with a new one if it has been removed.

WARNING
The tensioning roller must be replaced when the belt is replaced.

WARNING
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

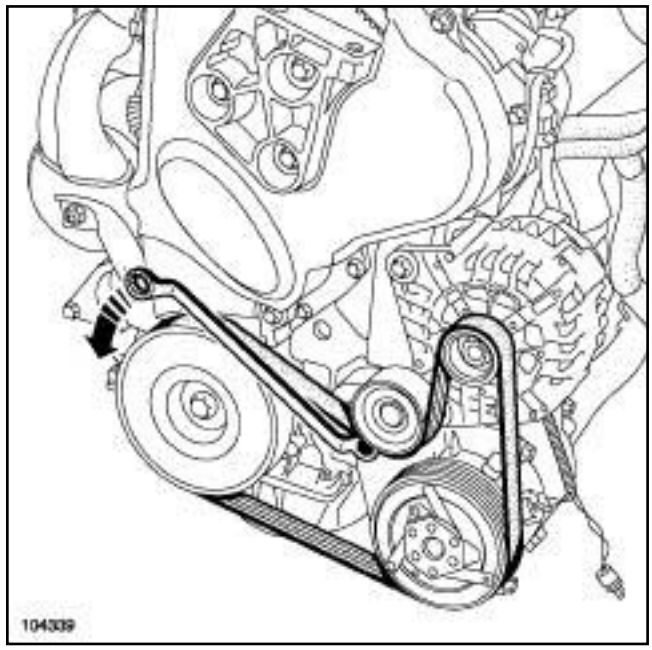
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



104339

❑ Turn the tensioning roller anti-clockwise using a **16 mm** spanner.

❑ Remove:

- the accessories belt,
- the tensioning roller mounting bolt,
- the tensioning roller,

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new tensioning roller,
- the tensioning roller new mounting bolt.

❑ Tighten to torque the **tensioning roller mounting bolt (50 Nm)**.

❑ Refit the belt by turning the tensioning roller anti-clockwise using a **16 mm** spanner.

❑ Rotate the crankshaft twice to position the accessories belt correctly.

II - FINAL OPERATION.

❑ Refit:

- the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F

Special tooling required	
Mot. 1715	Belt tension checking tool (frequency indicator).
Mot. 1505	Belt tension setting tool (frequency meter)

Equipment required
repositioner

Tightening torques ▽	
tensioning roller bolt	**50 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

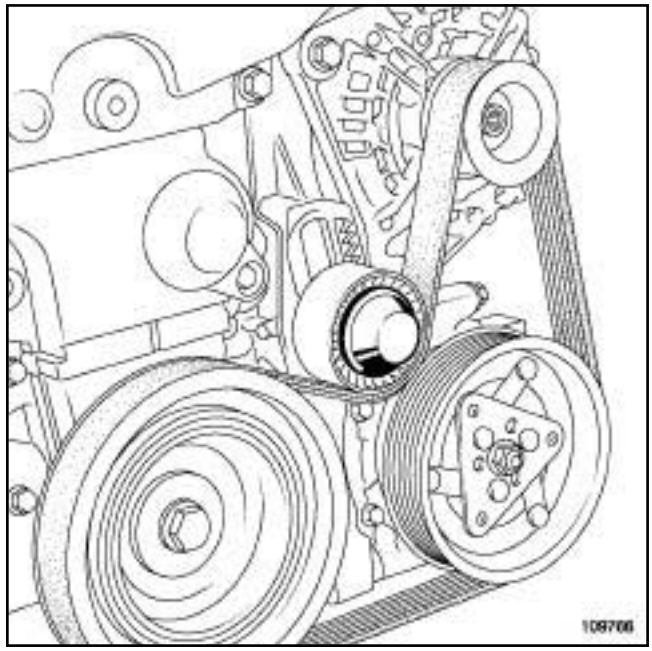
❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

IMPORTANT
Wear protective gloves during the operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109766

❑ Remove the accessories belt tensioning roller protector.

❑ Undo the accessories belt tensioning roller bolt.

❑ Remove:

- the accessories belt,
- the tensioner roller bolt,
- the accessories belt tension wheel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Accessories belt**.

❑ **parts always to be replaced: Accessories belt tensioning roller**.

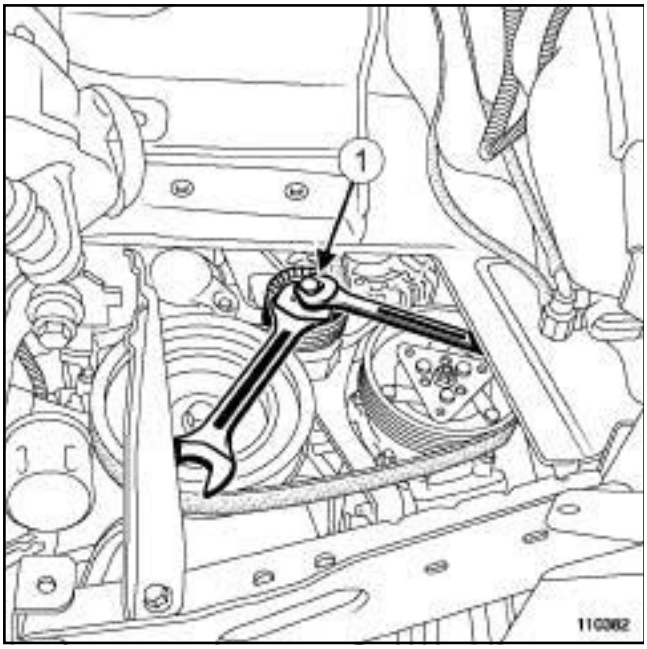
❑ It is essential to replace the tensioning roller torx bolt with a hexagonal-head bolt, part no. **77 03 101 075**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the accessories belt tensioning roller,
- the accessories belt.

D4F



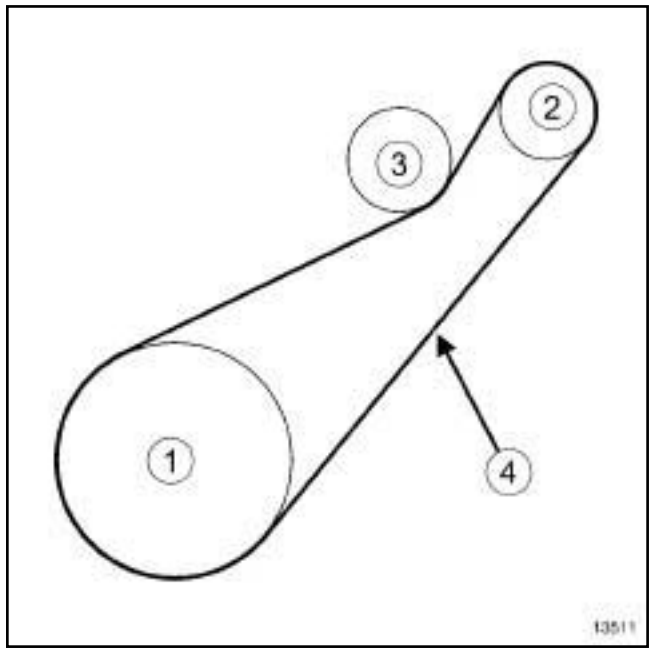
110382

❏ Tighten the accessories belt by turning the tensioning roller anti-clockwise, using a **20 mm** open-jawed spanner.

❏ Adjust the accessories belt tension using the **(Mot. 1715)** or **(Mot. 1505)**.

❏ Without locking, tighten the bolt (**1**) on the tensioning roller with a **16 mm** open-jawed spanner, while keeping the tensioning roller tension at the adjustment value using a **20 mm** open-jawed spanner.

STANDARD HEATING

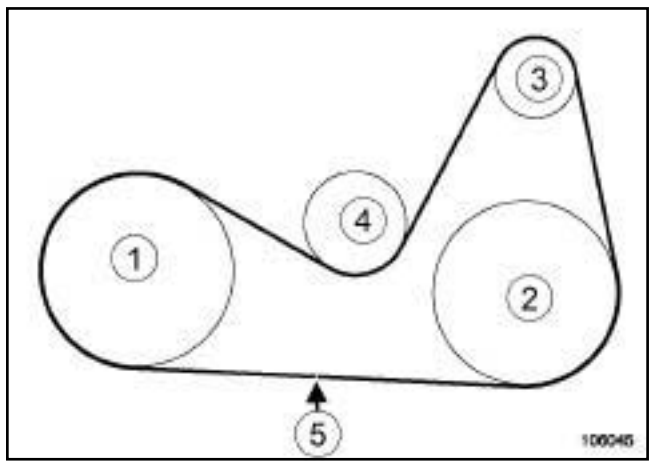


13511

(**1**) Crankshaft
(**2**) Alternator
(**3**) Tensioning roller
(**4**) Measuring point

❏ The accessories belt tension value is **210 Hz ± 10**.

AIR CONDITIONING



106045

(**1**) Crankshaft
(**2**) Air conditioning compressor

(**3**) Alternator

(**4**) Tensioning roller

(**5**) Measuring point

❏ The accessories belt tension value is **277 Hz ± 5**.

❏ Torque tighten the **tensioning roller bolt (50 N.m)** using a **16 mm** socket and a **repositioner**, while keeping the tensioning roller tension at the adjustment value with a **20 mm** open-jawed spanner.

❏ Turn the engine through three revolutions clockwise (timing end) to position the belt correctly.

❏ Check the accessories belt tension value with the **(Mot. 1715)** or **(Mot. 1505)**.

❏ If the accessory belt tension is outside permitted tolerance values, readjust it.

❏ Refit the accessories belt tension wheel protector.

III - FINAL OPERATION.

❏ Refit:

- the engine undertray,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Connect the battery (see) (MR 392, 80A, Battery).

Crankshaft accessories pulley: Removal - Refitting

D4F, and 740 or 742 or 764

Special tooling required	
Mot. 582-01	Flywheel locking tool.

Tightening torques ▽	
crankshaft accessories pulley mounting bolt	**40 N.m + 70° ± 6°**

REMOVAL

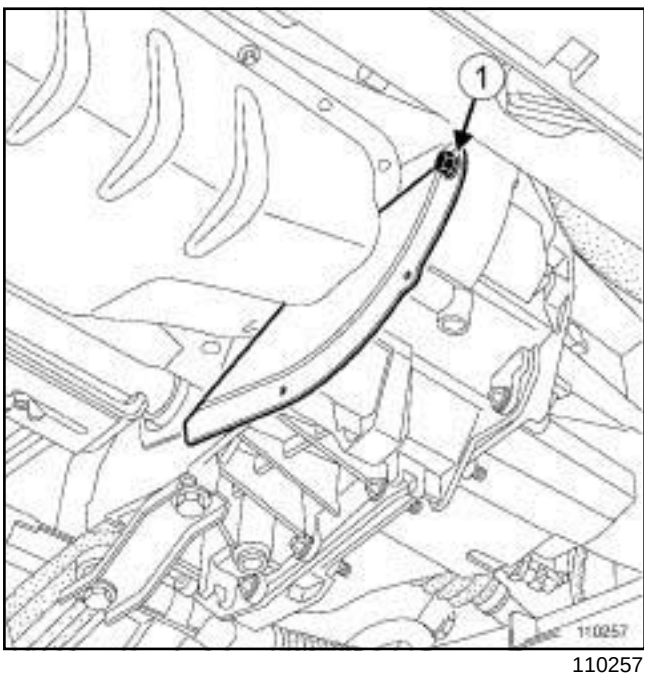
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

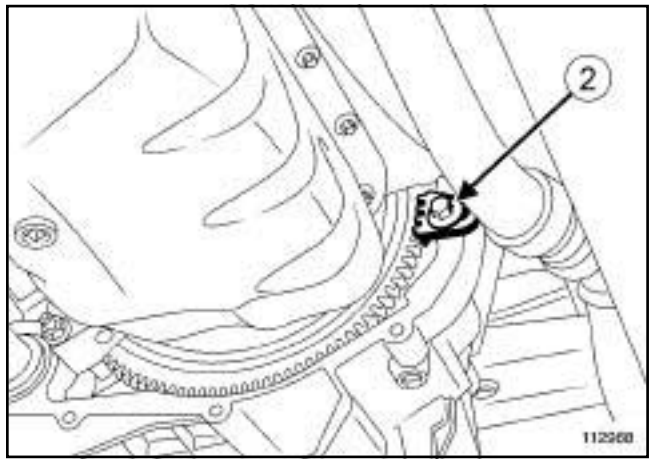
II - OPERATION FOR REMOVAL OF PART CONCERNED



110257

❑ Remove:

- the flywheel cover mounting bolt (**1**) ,
- the flywheel cover.



112988

❑ Fit the immobilising tool **(Mot. 582-01)** (**2**) .

❑ Remove:

- the accessories pulley mounting bolt,
- the accessories pulley.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
You must replace the crankshaft accessories pulley mounting bolt.

Clean the crankshaft accessories pulley grooves with a wire brush to ensure there are no deposits.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the crankshaft accessories pulley using a new bolt.

❑ Torque tighten the **crankshaft accessories pulley mounting bolt (40 N.m + 70° ± 6°)**.

III - FINAL OPERATION.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

D4F, and 740 or 742 or 764

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

K4J or K4M

Special tooling required	
Mot. 1489	TDC locating pin.
Mot. 1496	Camshaft timing tool.
Mot. 1750	Additional tool to support the camshaft adjusting tool, Mot. 1496.
Mot. 1487	Tool for refitting camshaft covers (57 mm diameter).
Mot. 1488	Tool for refitting camshaft covers (43 mm diameter).

Tightening torques ▽	
crankshaft accessories pulley mounting bolt	**40 N.m + 145° ± 15°**
TDC setting pin plug	**20 N.m**

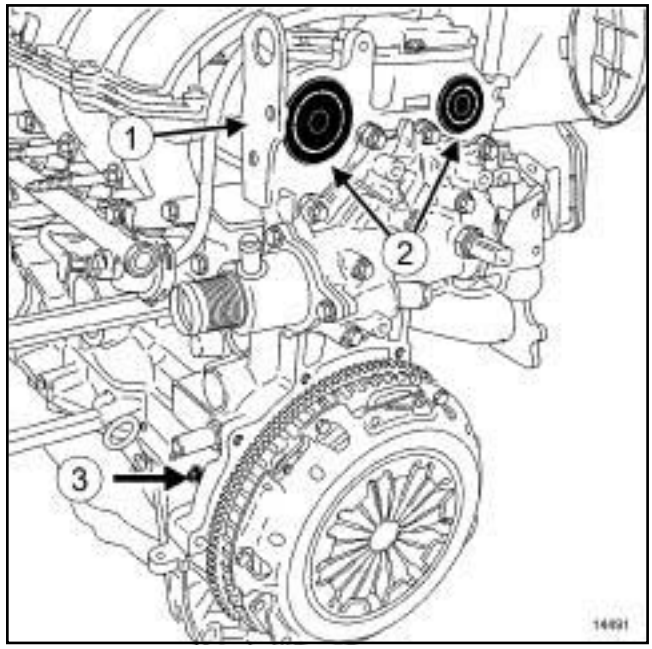
REMOVAL

I - REFITTING PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the air inlet duct clips,
- the air inlet duct,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .



14491

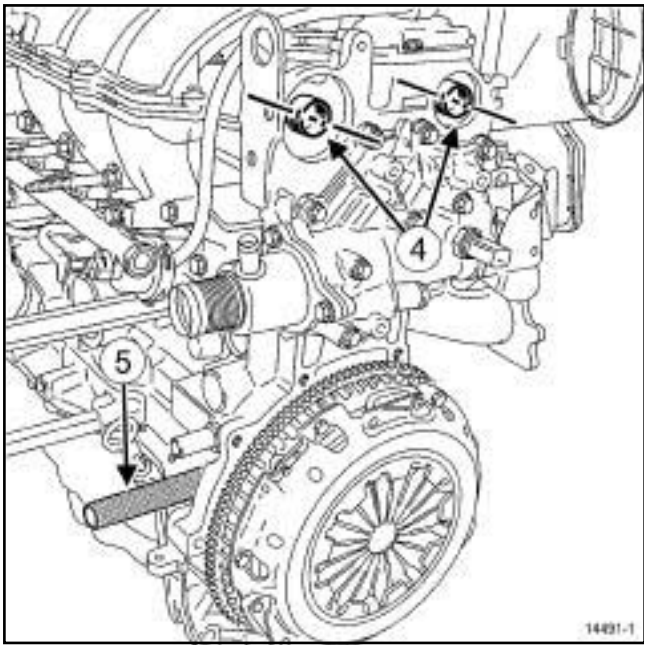
❑ Remove the engine lifting eye (**1**) on the flywheel side.

❑ Pierce the centre of the plugs (**2**) at the camshaft ends with a screwdriver.

❑ Remove:

- the plugs from the camshaft ends with a screwdriver,
- the TDC setting pin plug (**3**) .

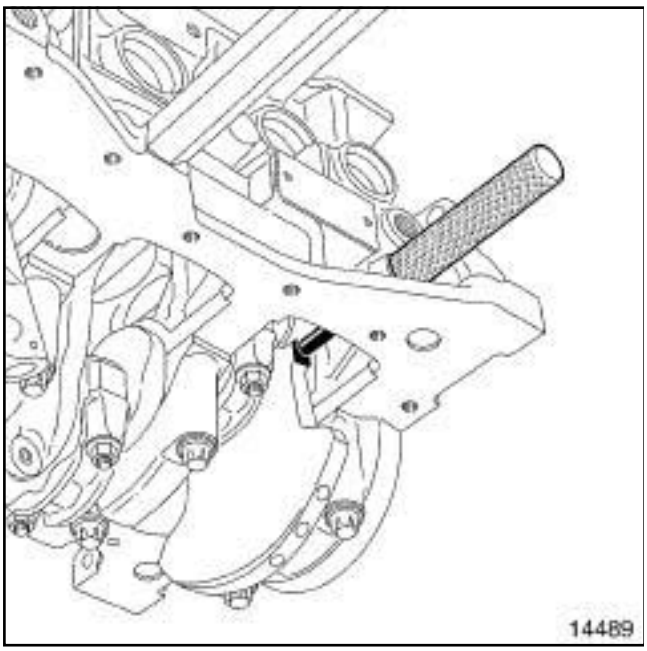
K4J or K4M



14491-1

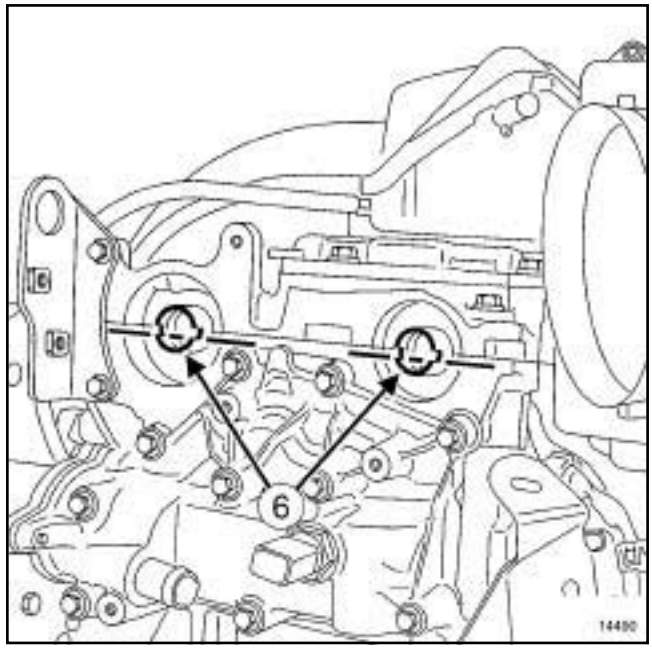
❏ Position the camshaft grooves (**4**) almost horizontally and offset towards the bottom turning the crankshaft in the operating direction (clockwise at timing end).

❏ Screw in the TDC setting pin (**5**) **(Mot. 1489)**.



14489

❏ Turn the crankshaft in its operating direction (clockwise at timing end), until the crankshaft presses against the TDC setting pin **(Mot. 1489)**.



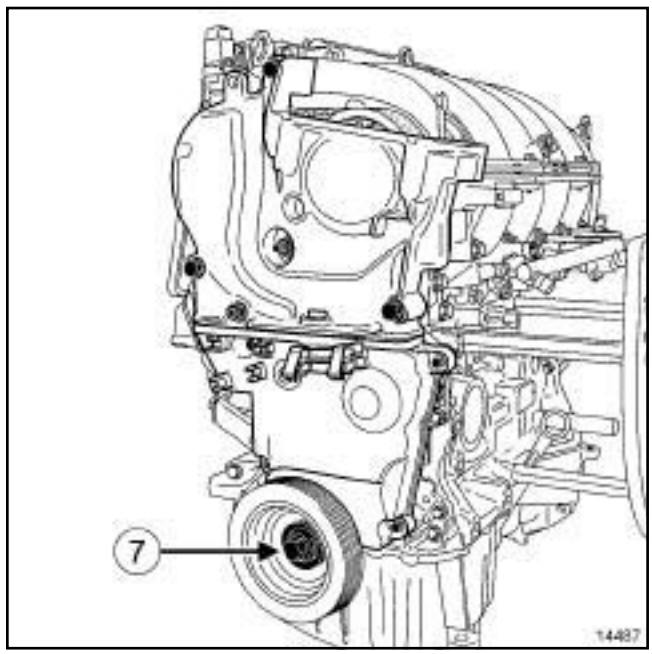
14490

❏ The camshaft grooves (**6**) must be horizontal and offset downwards.

❏ Remove the TDC setting pin **(Mot. 1489)**.

❏ Lock the flywheel using a screwdriver.

II - REMOVAL OF PART CONCERNED



14487

❏ Remove the crankshaft accessories pulley mounting bolt (**7**) .

K4J or K4M

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Always replace the bolt and the crankshaft accessories pulley.

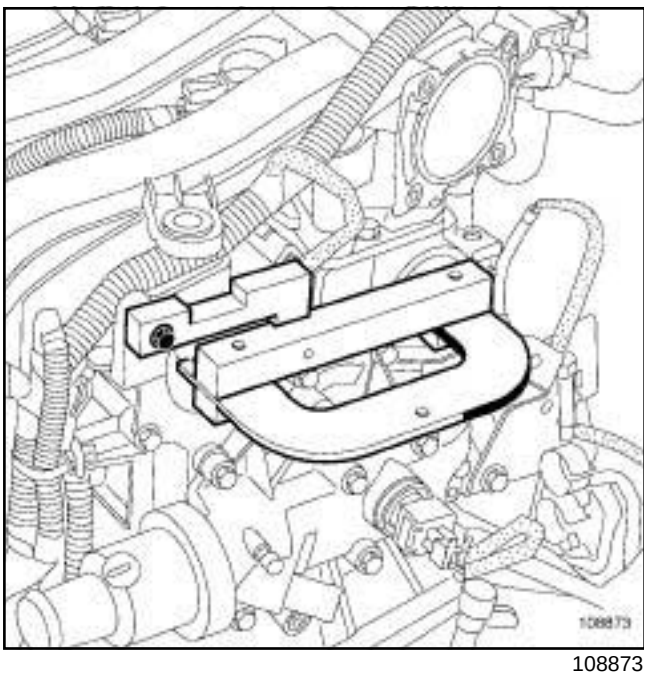
WARNING

Be sure to degrease:

- the end of the crankshaft,
- the bearing face of the crankshaft accessories pulley.

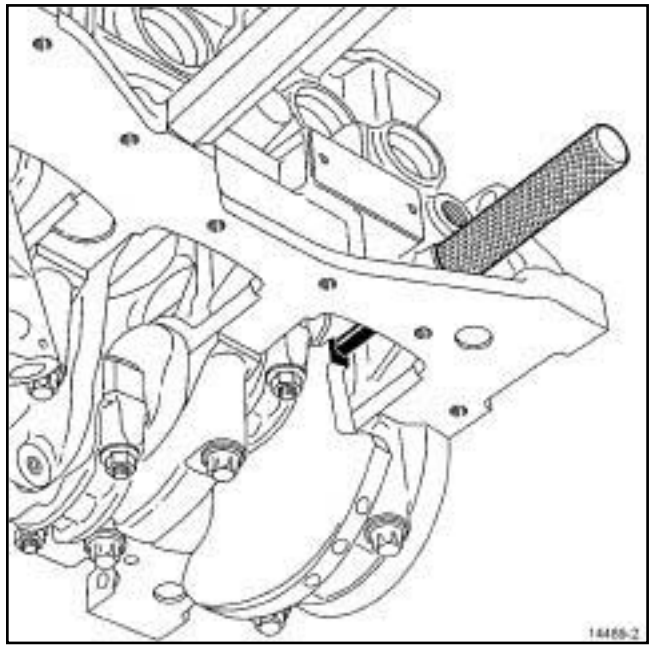
This is to prevent timing slippage.

WARNING
Never run the engine in the opposite direction to that of normal operation.



108873

❑ Position timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**.



14489-2

❑ Screw in the TDC setting pin **(Mot. 1489)**.

❑ Check that the crankshaft is pressing against the TDC setting pin **(Mot. 1489)**.

❑ The crankshaft groove must be upwards.

II - REFITTING PART CONCERNED

❑ Refit the crankshaft accessories pulley.

❑ Tighten to torque and angle the **crankshaft accessories pulley mounting bolt (40 N.m + 145° ± 15°)**.

III - FINAL OPERATION

❑ Remove:

- the TDC setting pin **(Mot. 1489)**,
- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**.

❑ Refit:

- the inlet camshaft plug using the **(Mot. 1487)**,
- the exhaust camshaft plug using the **(Mot. 1488)**.

❑ Place a drop of **SILICONE ADHESIVE SEALANT** on the thread hole of the TDC pin plug.

❑ Refit the TDC setting pin plug.

❑ Torque tighten the **TDC setting pin plug (20 N.m)**.

❑ Refit:

- the engine lifting eye at the flywheel end,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

K4J or K4M

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the air inlet duct,
- the air inlet duct clips,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

❏ Connect the battery (see **Battery tray: Removal - Refitting**) (80A, Battery).

K9K

Tightening torques ▽	
M12 bolt of the crankshaft accessories pulley	**60 N.m +100°**
M14 bolt of the crankshaft accessories pulley	**120 N.m + 95° ± 15°**

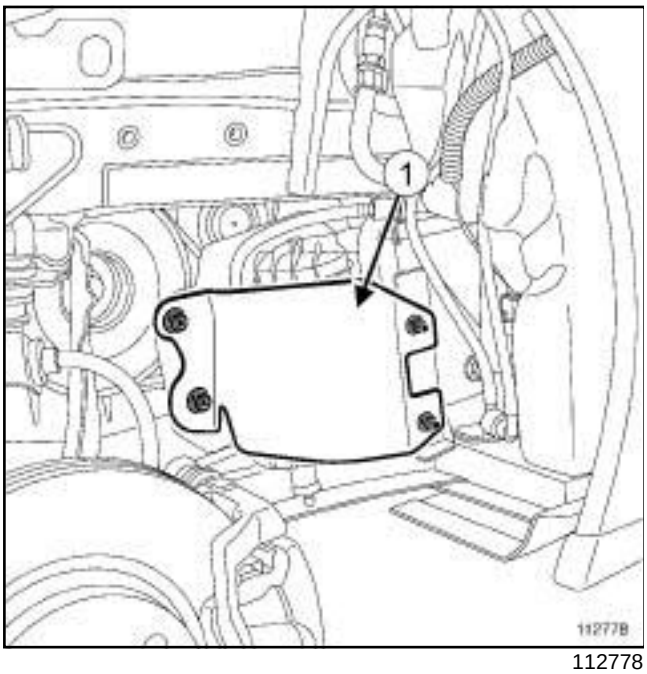
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

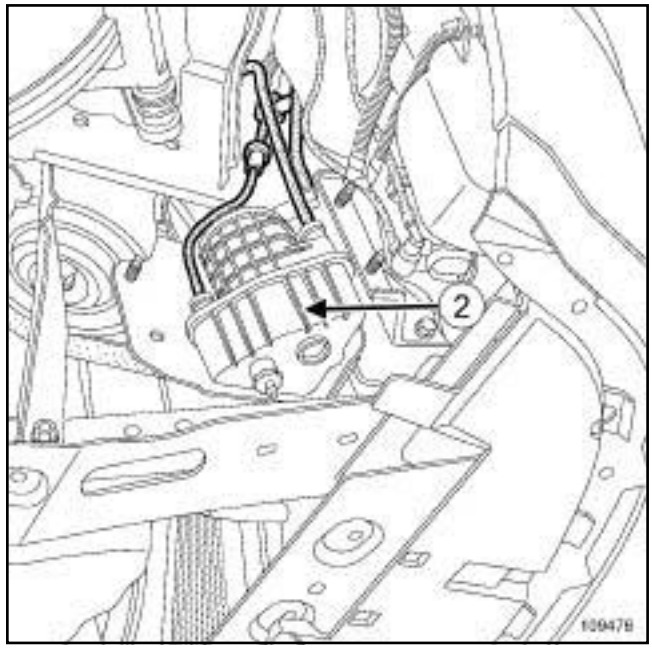
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the right-hand wheel arch (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



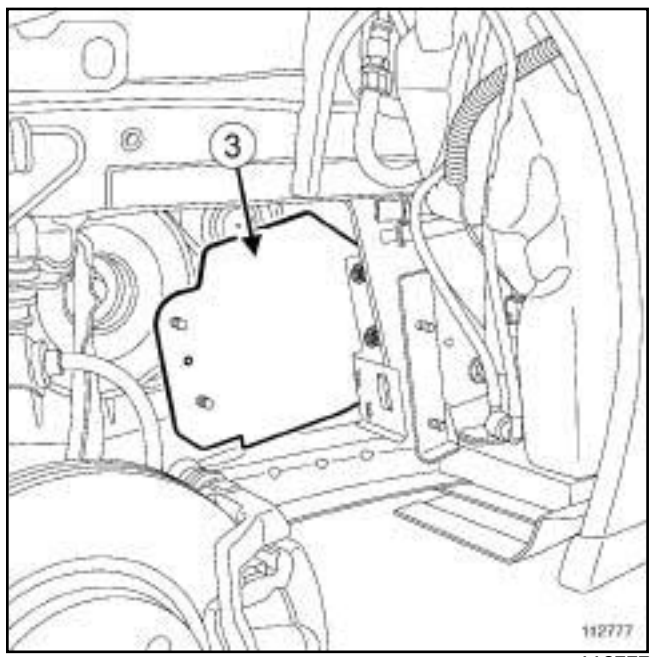
112778

❏ Remove the protector (**1**) in front of the diesel filter.



109476

❏ Lift the diesel filter (**2**) and fasten it to a suspension spring.



112777

❏ Remove:

- the protector (**3**) behind the diesel filter,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the accessories belt tensioning roller.

K9K

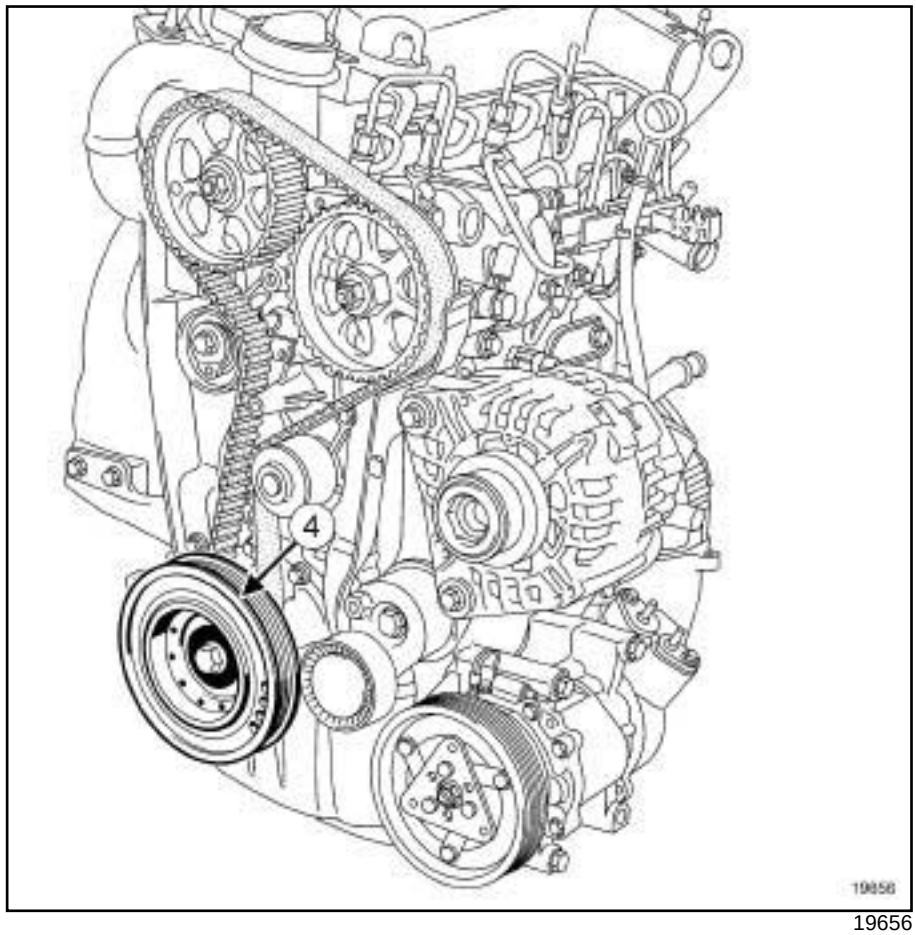
TL4

❑ Lock the flywheel using a flat-blade screwdriver positioned in the window under the starter.

JA5 or JH3 or JR5

❑ Immobilise the flywheel using a flat-blade screwdriver positioned in the window located in the clutch housing, at the rear of the engine.

II - OPERATION FOR REMOVAL OF PART CONCERNED



19656

❑ Remove the bolt (**4**) then the crankshaft accessories pulley.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ If reusing the crankshaft accessories pulley, clean the pulley V-grooves with a brush to eliminate any deposits.

❑ Refit the crankshaft accessories pulley.

TL4

❑ Lock the flywheel using a flat-blade screwdriver positioned in the window under the starter.

JA5 or JH3 or JR5

❑ Immobilise the flywheel using a flat-blade screwdriver positioned in the window located in the clutch housing, at the rear of the engine.

❑ Torque tighten the **M12 bolt of the crankshaft accessories pulley (60 N.m +100°)** or the **M14 bolt of the crankshaft accessories pulley (120 N.m + 95° ± 15°)**.

II - FINAL OPERATION

❑ Refit:

- the accessories belt tensioning roller,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the protector behind the diesel filter.

❑ Detach the diesel filter from the suspension spring and put it back into position.

❑ Refit:

- the protector in front of the diesel filter,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Special tooling required	
Mot. 1789	Tool for immobilising the crankshaft pulley, timing end

Equipment required
two-claw extractor for exterior socket

Tightening torques ▽	
crankshaft pulley bolt (initial torque)	**68 N.m**
crankshaft accessories pulley bolt	**30 N.m + 60°**
subframe bolt on the body	**105 N.m**

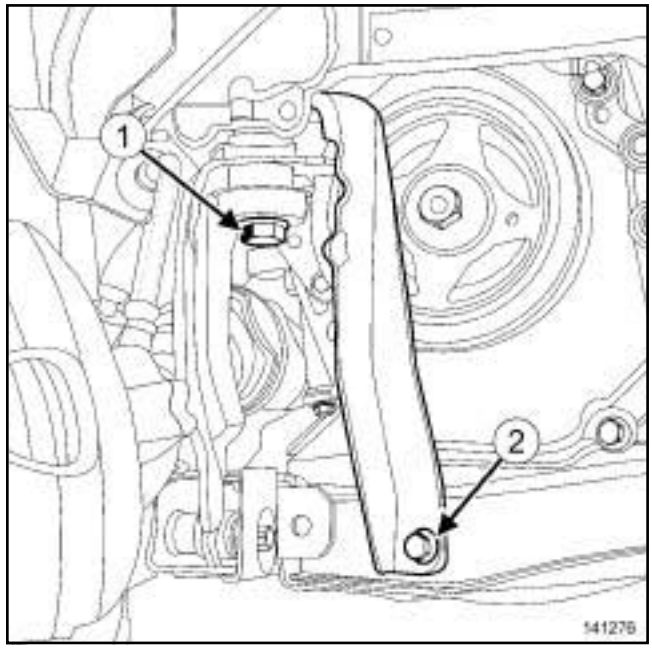
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



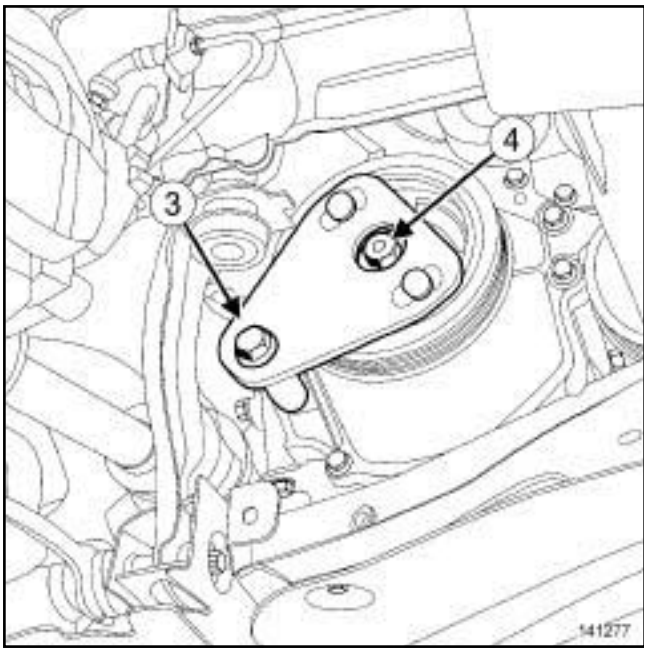
141276

❑ Remove:

- the subframe bolt (**1**) on the body,
- the side reinforcement bolt (**2**) ,
- the side reinforcement.

M4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



141277

❏ Position the **(Mot. 1789)** (**3**) to lock the crankshaft accessories pulley.

❏ Loosen the crankshaft accessories pulley bolt (**4**) .

❏ Remove:

- the **(Mot. 1789)**,
- the crankshaft accessories pulley bolt,
- the crankshaft pulley using a **two-claw extractor for exterior socket**.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Crankshaft accessories pulley**,

parts always to be replaced: Crankshaft accessories pulley bolts..

parts always to be replaced: Front sub-frame bolt.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- a new crankshaft accessories pulley,
- a new crankshaft accessories pulley bolt,
- the **(Mot. 1789)**.

❏ Torque tighten the **crankshaft pulley bolt (initial torque) (68 N.m)**.

❏ Loosen the crankshaft accessories pulley bolts.

❏ Torque and angle tighten the **crankshaft accessories pulley bolt (30 N.m + 60°)**.

❏ Remove the tool **(Mot. 1789)**.

III - FINAL OPERATION

❏ Refit the side reinforcement.

❏ Torque tighten the **subframe bolt on the body (105 N.m)**.

❏ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

F4R

Tightening torques ▽	
crankshaft accessories pulley bolt	**40 Nm + 110° ± 10°**

REMOVAL

I - REFITTING PREPARATIONS OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393 Bodywork, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) (MR 392, 11A, Top and front of engine).

❑ Lock the flywheel using a screwdriver.

II - REMOVAL OF PART CONCERNED

❑ Remove:

- the crankshaft accessories pulley bolt,
- the crankshaft accessories pulley.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

WARNING
The crankshaft accessories pulley bolt must always be replaced with a new one.

Note:
Always degrease:
- the end of the crankshaft,
- the bearing face of the crankshaft accessories pulley.

This is to avoid timing slippage.

Note:
Never turn the engine in the opposite direction to its normal operating direction.

II - REFITTING PART CONCERNED

❑ Refit the crankshaft accessories pulley.

❑ Torque and angle tighten the **crankshaft accessories pulley bolt (40 Nm + 110° ± 10°)**.

III - FINAL OPERATION.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) (MR 392, 11A, Top and front of engine),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393 Bodywork, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Tightening torques ▽	
crankshaft accessories pulley bolt	**40 Nm +100° ± 6°**

REMOVAL

I - REMOVAL PREPARATION OPERATION

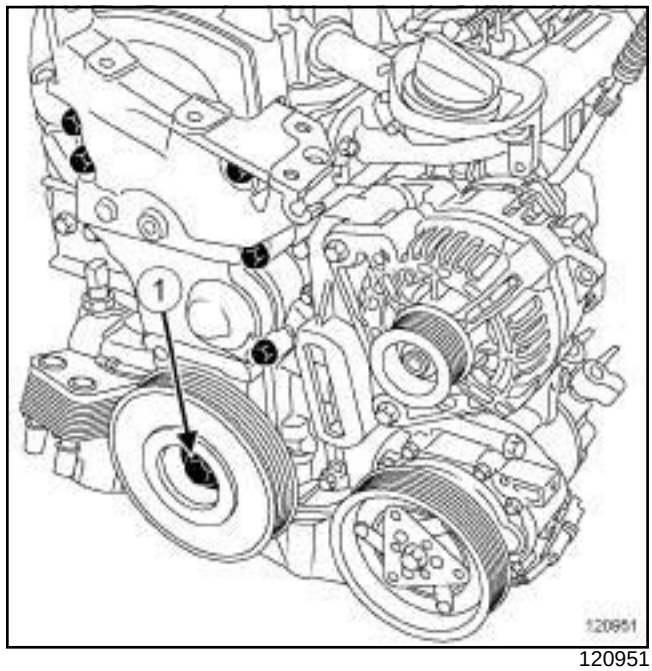
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



120951

❏ Lock the flywheel using a large flat screwdriver by inserting it into the gearbox opening (this operation requires two people).

❏ Remove:

- the bolt (**1**) from the crankshaft accessories pulley,
- the washer,
- the crankshaft accessories pulley.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ The crankshaft accessories pulley bolt must always be replaced with a new one.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the crankshaft accessories pulley,
- the washer,
- the crankshaft accessories pulley bolt.

❏ Lock the flywheel using a large flat screwdriver by inserting it into the gearbox opening (this operation requires two people).

❏ Torque tighten the **crankshaft accessories pulley bolt (40 Nm +100° ± 6°)**.

D4F, and 784 or 786

III - FINAL OPERATION.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

❑ Connect the battery (see) (MR 392, 80A, Battery).

K4M, and 862

Tightening torques ▽	
new crankshaft accessories pulley bolt	**40 N.m + 145° ± 15°**

IMPORTANT
Wear protective gloves during the operation.

WARNING
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

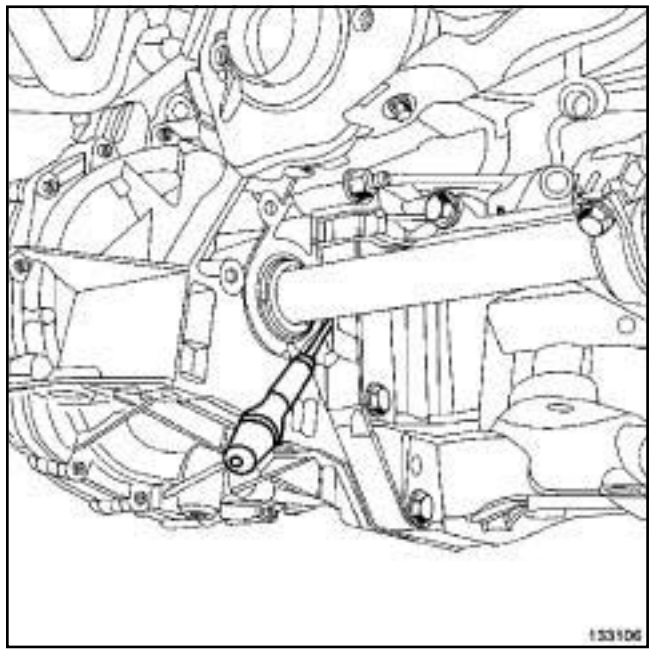
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

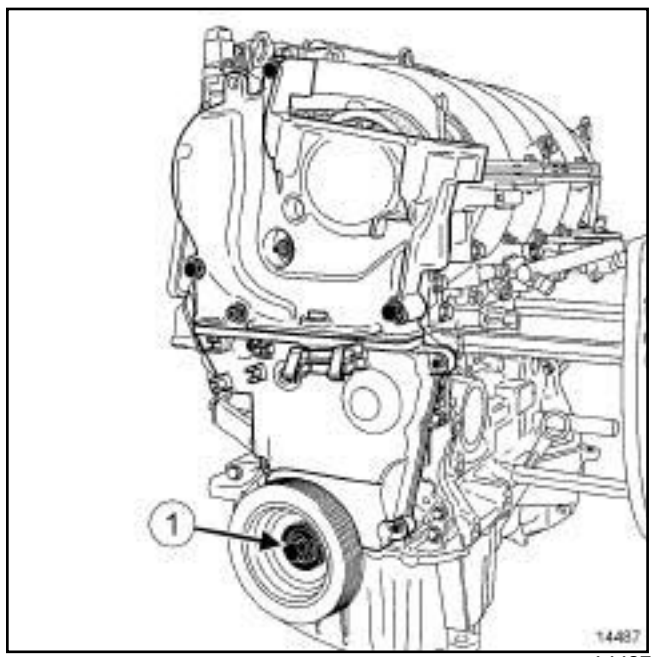
❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



133106



14487

❏ Remove:

- the bolt (**1**) from the crankshaft accessories pulley by locking the flywheel using a screwdriver,
- the crankshaft accessories pulley.

K4M, and 862

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Crankshaft accessories pulley bolts**.

❑ Use a brush to clean the crankshaft accessories pulley v-grooves.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the crankshaft accessories pulley.

❑ Torque and angle tighten the **new crankshaft accessories pulley bolt (40 N.m + 145° ± 15°)**.

III - FINAL OPERATION

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

F4R, and STANDARD HEATING

Tightening torques ▽	
dummy pulley bolts	**21 N.m**

REMOVAL

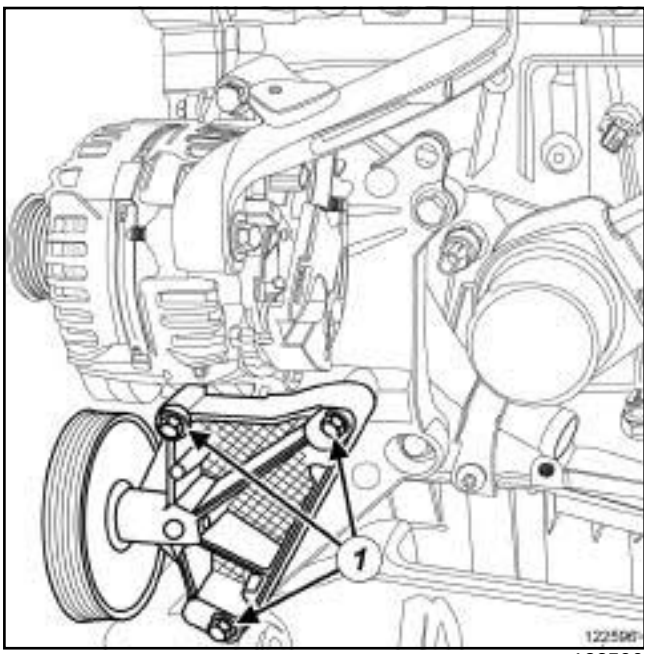
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine undertray bolts,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



122596

❑ Remove:

- the dummy pulley bolts (**1**) ,
- the dummy pulley.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the dummy pulley,
- the dummy pulley bolts.

❑ Torque tighten the **dummy pulley bolts (21 N.m)**.

II - FINAL OPERATION.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

D4F

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 1054	TDC setting pin.
Mot. 799-01	Timing gear wheel immobiliser.

Tightening torques ▽	
timing tensioning roller nut	**24 Nm**
lower timing cover bolt	**10 Nm**
timing intermediate housing bolts	**10 Nm**
upper timing cover bolts	**33 Nm**

REMOVAL

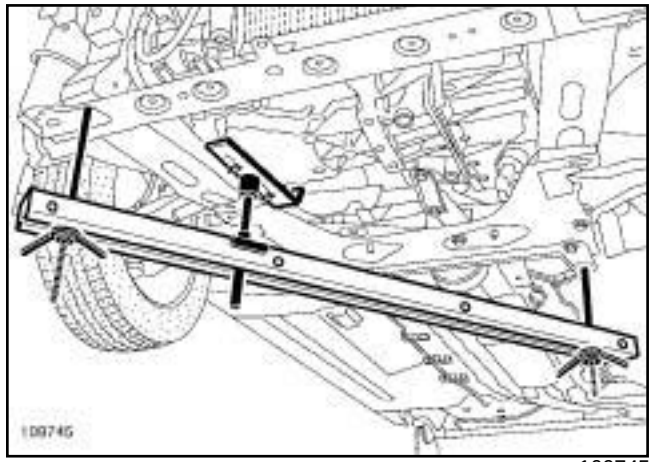
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



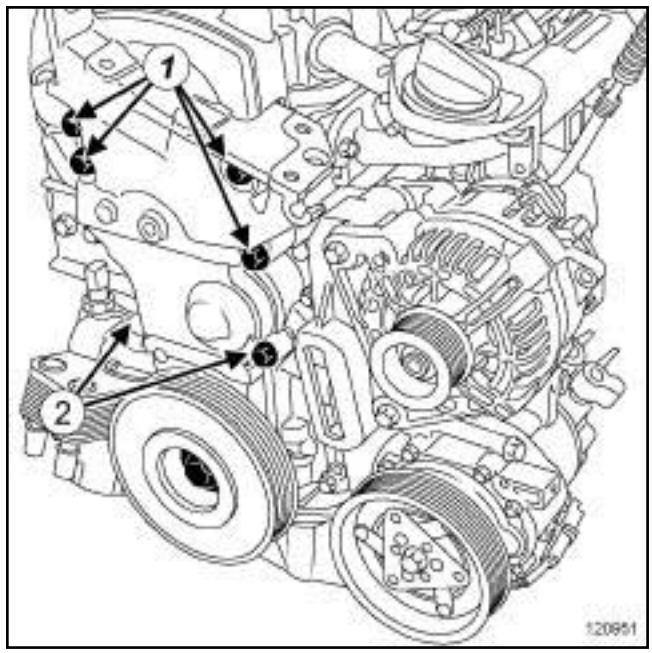
109745

❏ Fit the engine support tool **(Mot. 1672)** under the lower cover.

❏ Remove:

- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



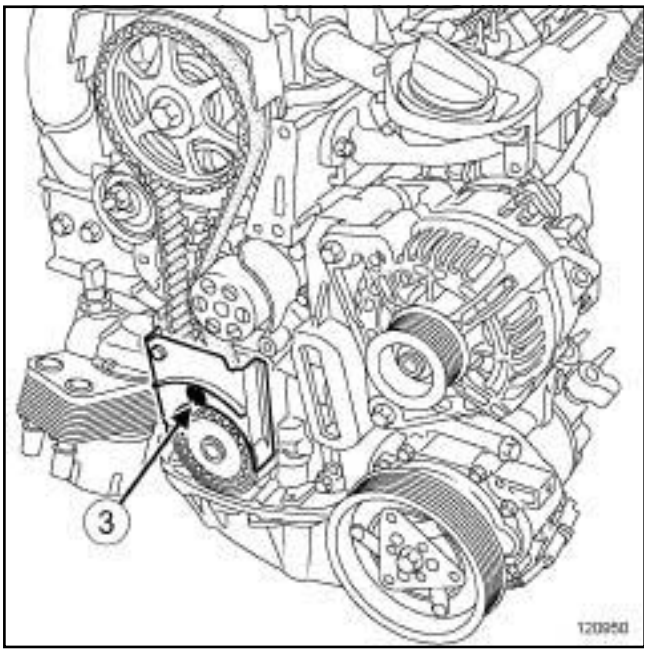
120951

❏ Remove:

- the bolts (**1**) from the upper timing cover,
- the upper timing cover,

D4F

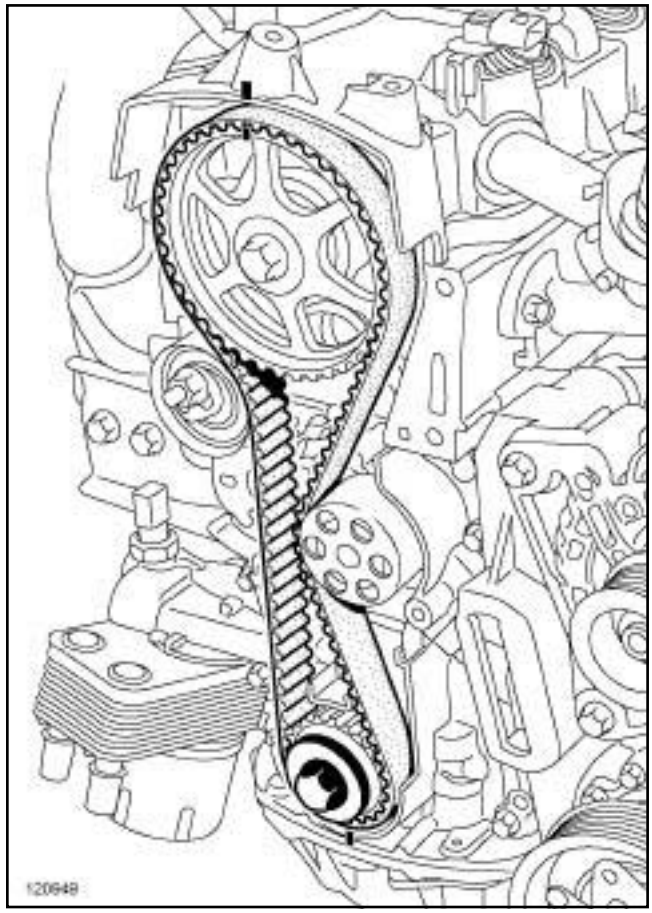
- the bolts (**2**) from the timing intermediate housing,
- the middle timing cover.



120950

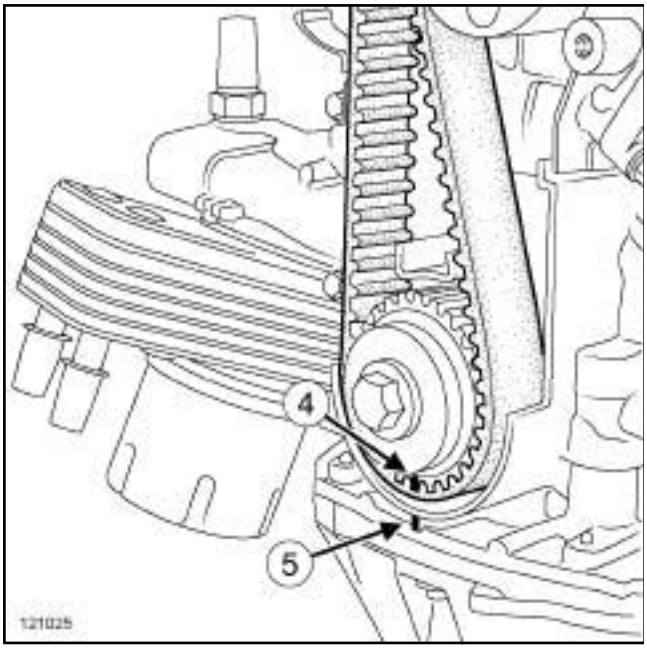
❑ Remove:

- the lower timing cover bolt (**3**) ,
- the lower timing cover.



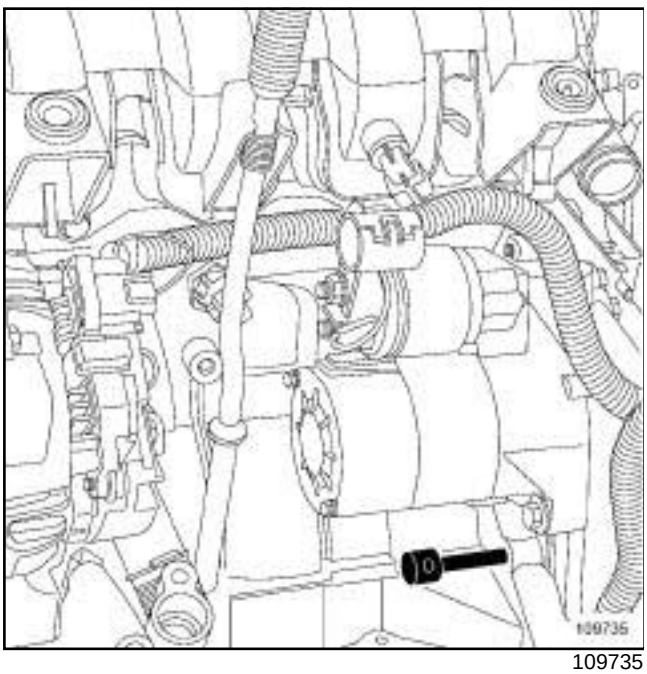
120949

❑ Refit the crankshaft accessories pulley bolt and its retaining washer.



121025

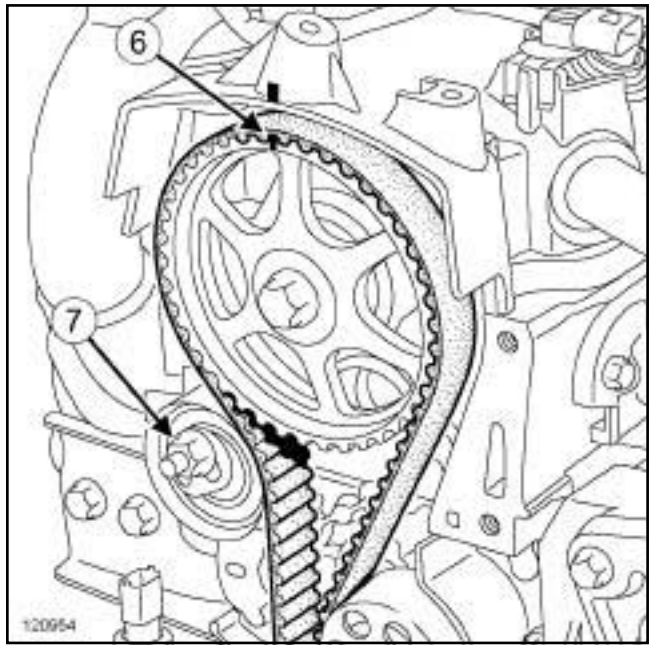
❑ Turn the crankshaft clockwise (timing end) to position the crankshaft sprocket marking (**4**) half a tooth in front of the alignment of the fixed marking (**5**) on the oil pump casing.



109735

❑ Insert **(Mot. 1054)**.

❑ Turn the crankshaft clockwise until it is stopped.



120954

❑ Check that mark (**6**) of the camshaft sprocket is vertical to the engine and aligned with the rocker cover mark.

❑ Undo the timing tension wheel nut (**7**) .

❑ Loosen the timing tension wheel by turning the eccentric cam using a **6 mm** Allen key.

❑ Remove:

- the timing belt,
- the timing tensioning roller nut,
- the timing tensioning roller.

REFITTING

I - REFITTING PREPARATIONS OPERATION

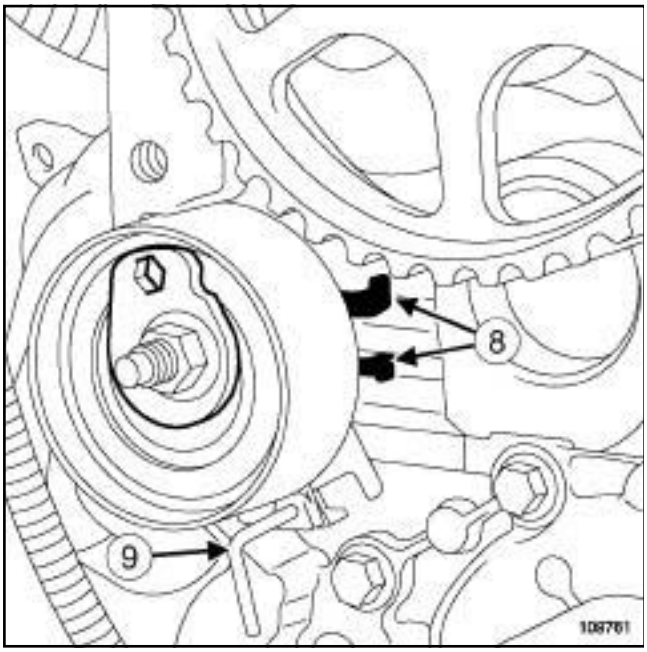
❑ **parts always to be replaced: Timing belt**.

❑ **parts always to be replaced: Timing belt tensioning roller**.

❑ **parts always to be replaced: Crankshaft accessories pulley bolts**

D4F

II - REFITTING OPERATION FOR PART CONCERNED

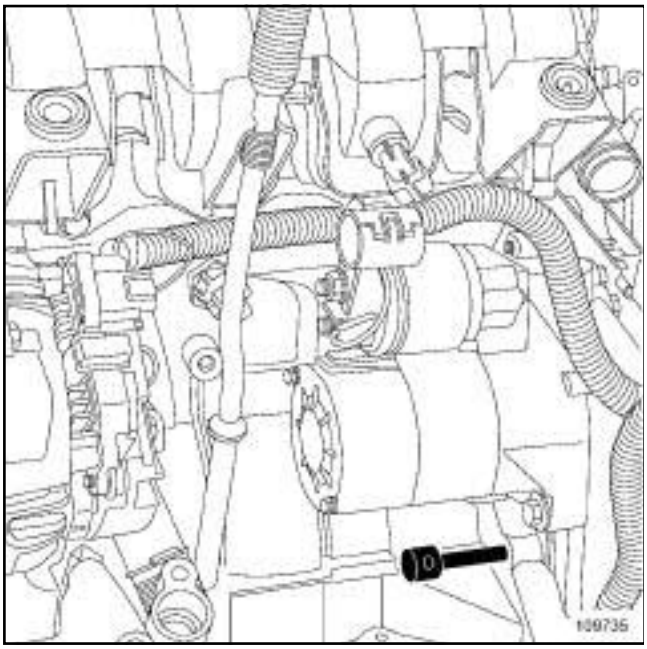


109761

❏ Refit the new tensioning roller.

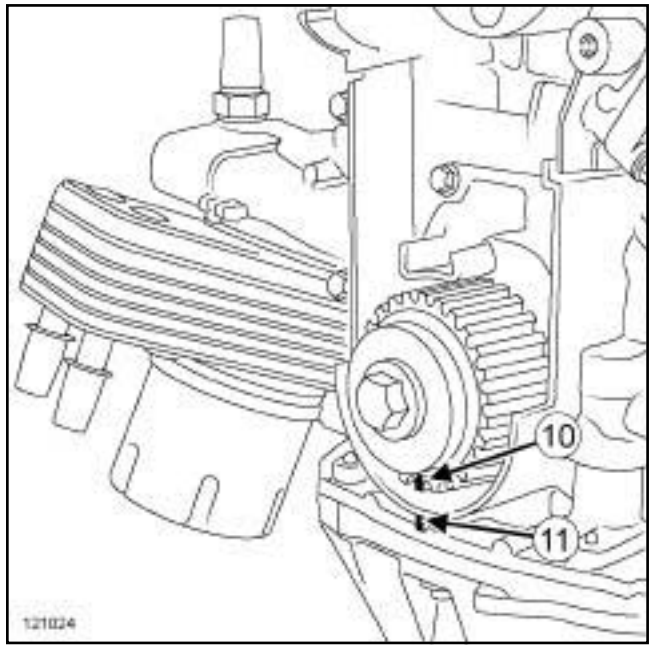
❏ Position both indexes (**8**) between the cylinder head groove.

❏ Do not remove the pin (**9**) before refitting the timing belt.



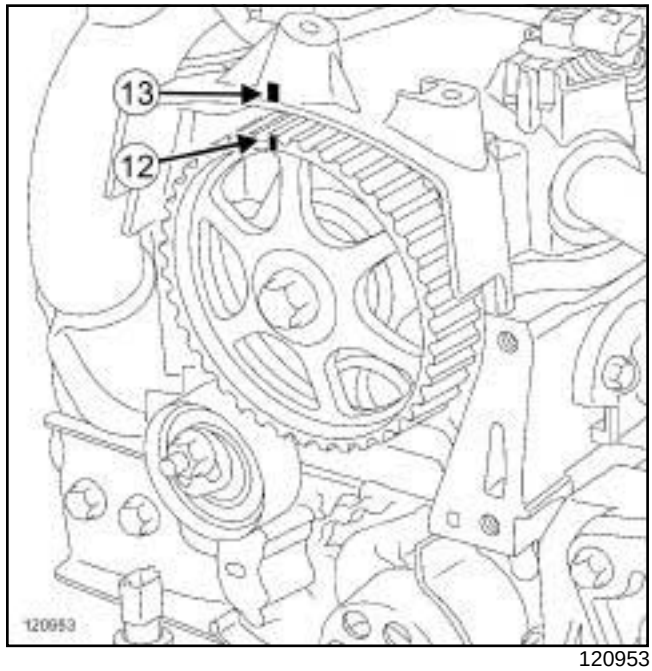
109735

❏ Check that the crankshaft is at its setting point using the **(Mot. 1054)**.



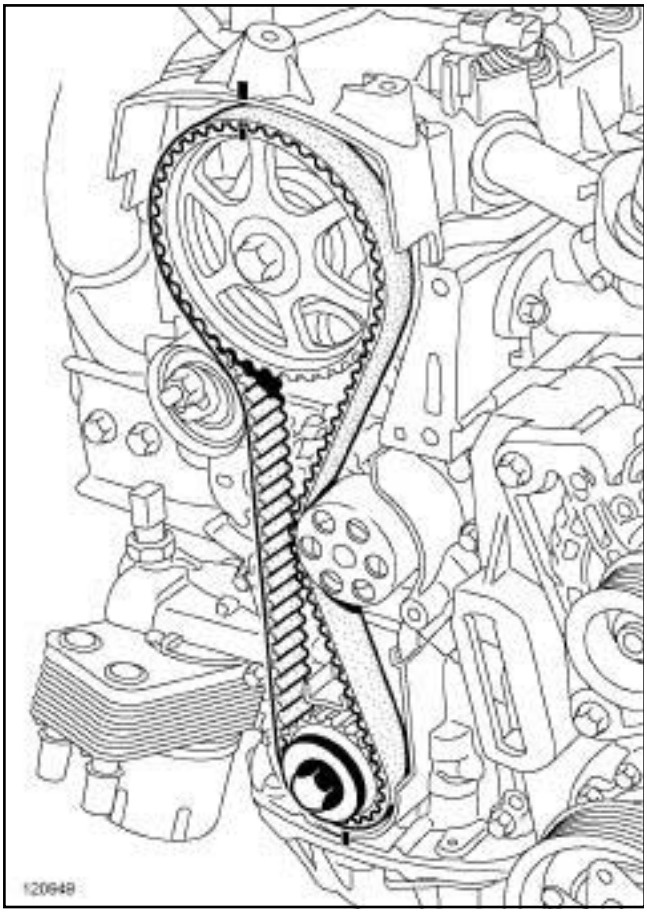
121024

❏ The mark on the crankshaft sprocket (**10**) must be aligned with the fixed marking (**11**) on the oil pump casing.



120953

❏ Align the mark on the camshaft sprocket (**12**) with the fixed marking (**13**) on the rocker cover using the **(Mot. 799-01)**.

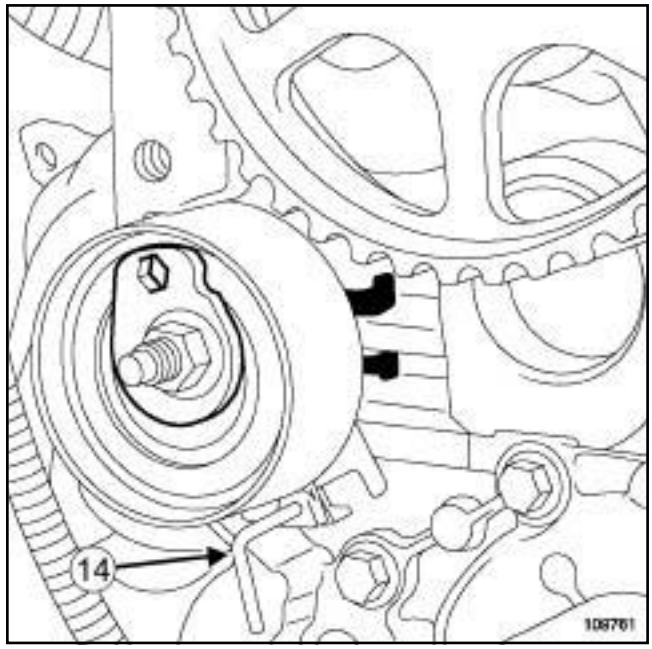


120949

❏ Torque tighten the **crankshaft accessories pulley bolt (15 Nm)**.

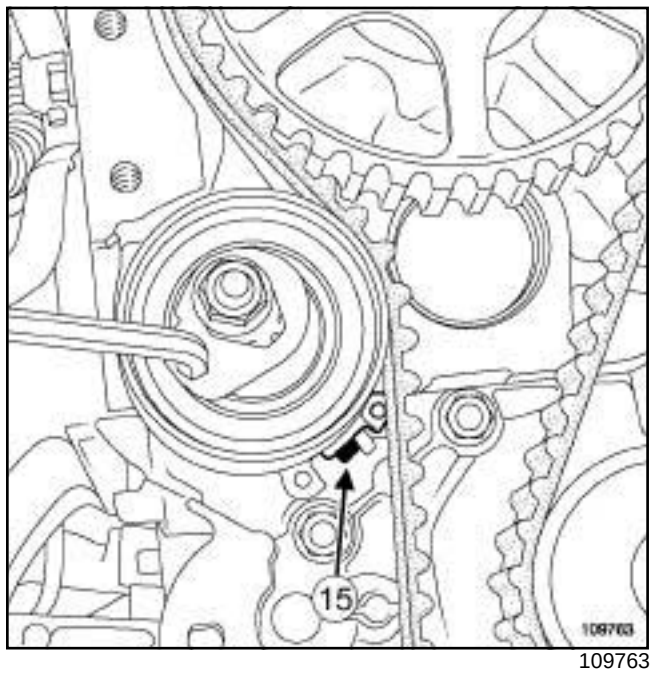
❏ Fit the timing belt, aligning the marks on the belt with those on the crankshaft sprocket and camshaft sprocket.

❏ Remove the **(Mot. 1054)**.



109761

❏ Remove the pin (**14**) from the timing tensioning roller.



109763

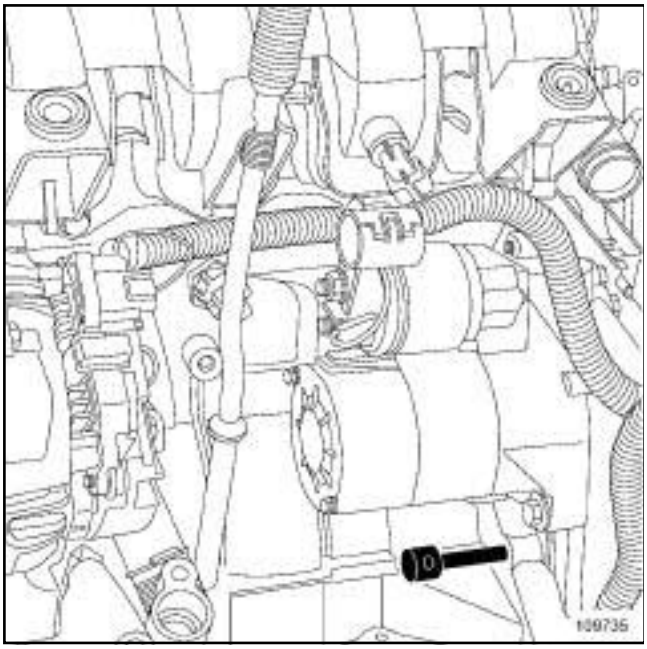
❏ Turn the tensioning roller eccentric in an anti-clockwise direction using a **6 mm** Allen key.

❏ Move the adjustable index (**15**) on the tensioning roller into the position indicated above.

❏ Torque tighten the **timing tensioning roller nut (24 Nm)**.

❏ Rotate the crankshaft through six revolutions in a clockwise direction (timing end).

D4F



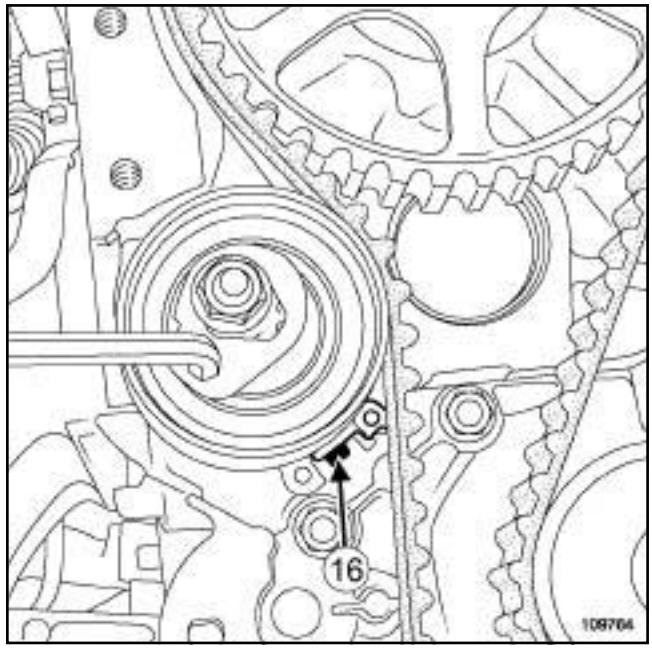
109735

❏ Insert **(Mot. 1054)**.

❏ Rotate the crankshaft to the setting point.

❏ Check that the camshaft and crankshaft sprockets markings are correctly aligned with the fixed markings.

❏ Remove the **(Mot. 1054)**.



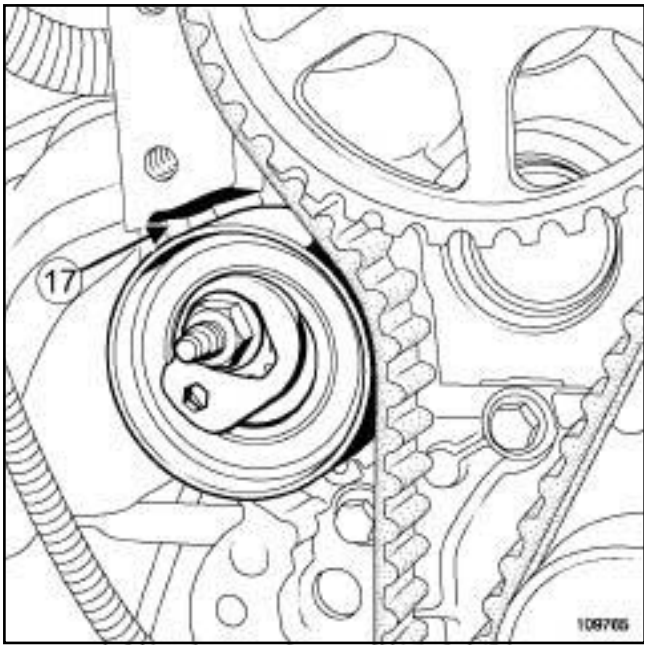
109764

❏ Loosen the tensioning roller nut by up to one turn, holding the eccentric with a **6 mm** Allen key.

❏ Turn the adjustable index (**16**) on the tensioning roller in a clockwise direction into the position indicated above.

❏ Tighten to torque the **timing tensioning roller nut (24 Nm)**.

D4F



109765

❑ Check that the tensioning roller does not come into contact with the cylinder head (**17**) .

Note:

If the tensioning roller is in contact with the cylinder head:

- set the engine to Top Dead Centre,
- remove the tensioning roller and the timing belt,
- reposition the tensioning roller pin,
- repeat the timing belt refitting procedure, step by step, from the beginning.

❑ Remove the crankshaft accessories pulley bolt.

❑ Refit:

- the lower timing cover,
- the lower timing cover bolt.

❑ Torque tighten the **lower timing cover bolt (10 Nm)**.

❑ Refit:

- the timing intermediate housing,
- the timing intermediate housing bolts.

❑ Torque tighten the **timing intermediate housing bolts (10 Nm)**.

❑ Refit:

- the upper timing cover,
- the upper timing cover.

❑ Tighten to torque the **upper timing cover bolts (33 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❑ Remove the lower engine support tool **(Mot. 1672)**.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M

Special tooling required	
Mot. 1368	Tool for tightening eccentric tensioning roller bolt. 8 mm Torx wrench and 12.7 mm square.
Mot. 799-01	Timing gear wheel immobiliser.
Mot. 1496	Camshaft timing tool.
Mot. 1750	Additional tool to support the camshaft adjusting tool, Mot. 1496.
Mot. 1489	TDC locating pin.
Mot. 1490-01	For locking and adjusting the camshaft pulleys.
Mot. 1487	Tool for refitting camshaft covers (57 mm diameter).
Mot. 1488	Tool for refitting camshaft covers (43 mm diameter).

Tightening torques ▽	
timing tension wheel nut	**27 N.m**
timing fixed roller bolt	**50 N.m**
lower timing cover bolts	**12 N.m**
new crankshaft accessories pulley bolt	**40 N.m + 145° ± 15°**
exhaust camshaft sprocket nut	**30 N.m + 84° ± 4**
camshaft dephaser bolt	**100 N.m**
TDC pin plug	**20 N.m**
upper timing cover bolts	**46 N.m**
upper timing cover nuts	**46 N.m**
dipstick guide tube bolt	**10 N.m**
flywheel end lifting eye bolts	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

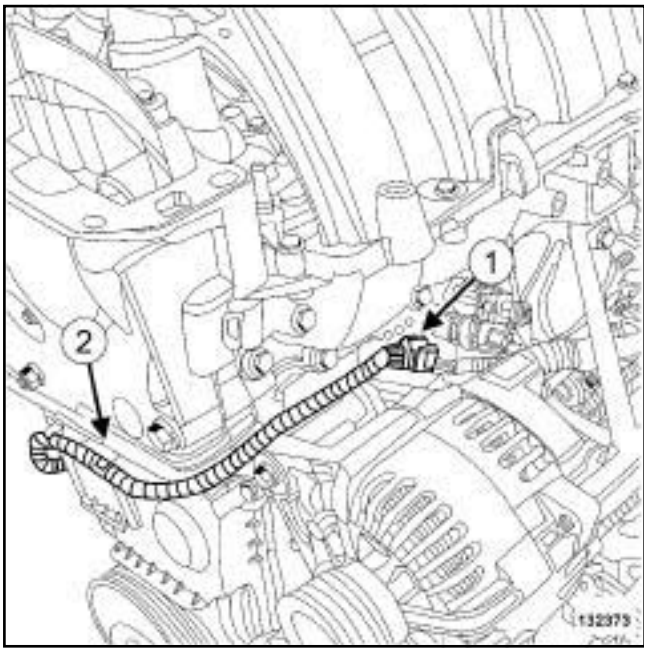
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

K4M

K4M, and 862

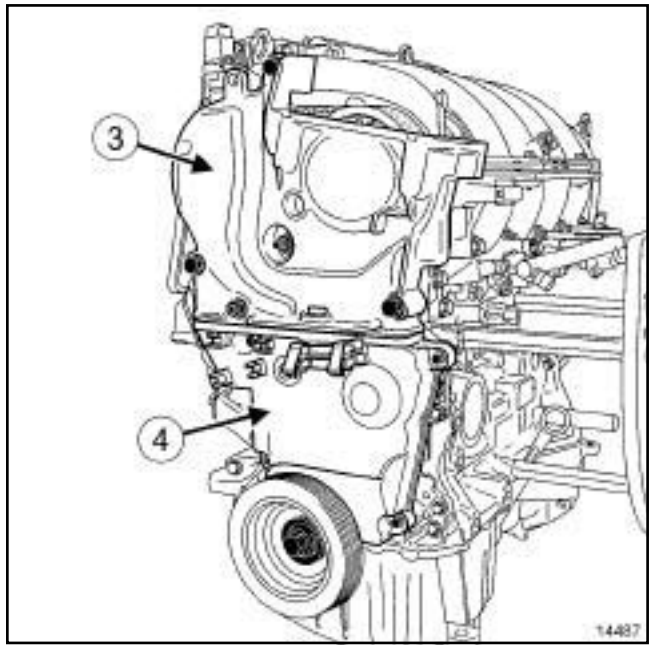


132373

❏ Disconnect the upstream oxygen sensor connector (**1**) .

❏ Unclip the wiring from the upstream oxygen sensor at (**2**) .

❏ Move the upstream oxygen sensor wiring aside.



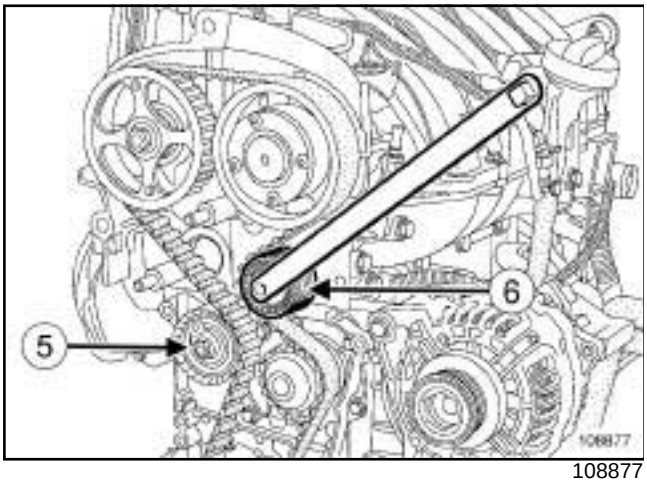
14487

❏ Remove:

- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the upper timing cover bolts,
- the upper timing cover nuts,
- the upper timing cover (**3**) ,
- the lower timing cover bolts,
- the lower timing cover (**4**) .

K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED



108877

❑ Loosen the nut (**5**) of the timing tensioning roller.

> Note:
>
> Do not drop the crankshaft timing sprocket when removing the timing belt.

❑ Remove:

- the timing fixed roller bolt (**6**) using the tool **(Mot. 1368)**,
- the timing fixed roller,
- the timing belt,
- the timing tensioning roller nut,
- the timing tensioning roller,
- the crankshaft timing sprocket.

REFITTING - PROCEDURE 1

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Timing belt**,

parts always to be replaced: Timing belt tensioning roller,

parts always to be replaced: Timing fixed roller,

parts always to be replaced: Crankshaft accessories pulley bolts,

parts always to be replaced: Inlet camshaft cap,

parts always to be replaced: Exhaust camshaft cap.

II - REFITTING OPERATION FOR PART CONCERNED

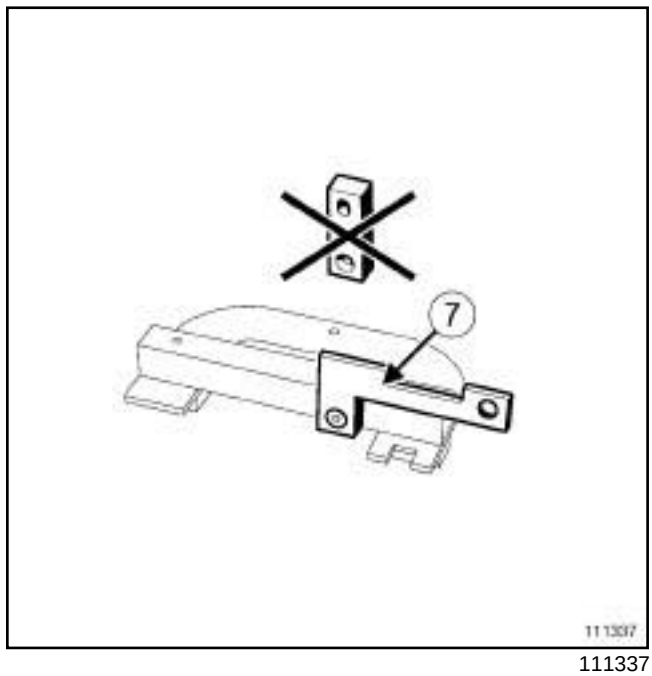
❑ The first procedure applies to replacing any timing face component which has a crankshaft timing sprocket without a collet and which does not require the exhaust camshaft sprocket or camshaft dephaser to be loosened.

1 - Adjusting the timing

❑

> **WARNING**
>
> Be sure to degrease:
>
> - the end of the crankshaft (timing end),
> - the timing sprocket pressure faces and bore of the crankshaft,
> - the crankshaft accessories pulley bearing faces,
> - the camshaft ends (timing end),
> - the camshaft sprocket bores and bearing faces.
>
> This is to avoid timing slippage.
>
> This slippage leads to engine damage.

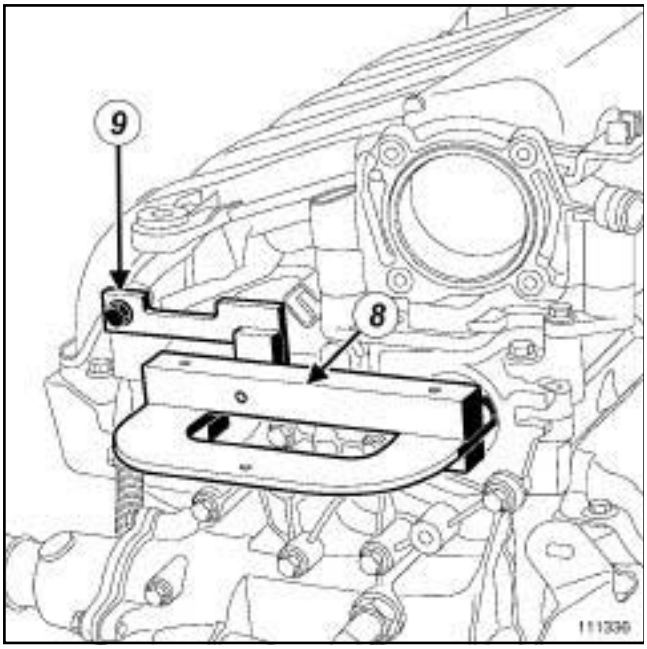
❑ Set the camshaft grooves horizontally and below the centre line by turning the camshafts with the **(Mot. 799-01)** if necessary.



111337

❑ Fit the **(Mot. 1496)** with the **(Mot. 1750)** (**7**) .

K4M

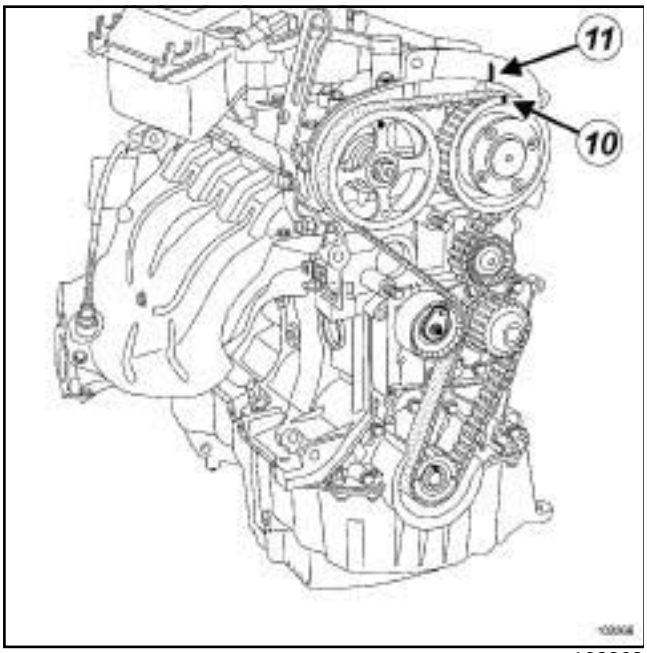


111336

❏ Fit:

- the **(Mot. 1496)** (**8**) fitted with the **(Mot. 1750)** on the end of the camshaft,

- a lifting eye bolt (**9**) to secure the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)**.

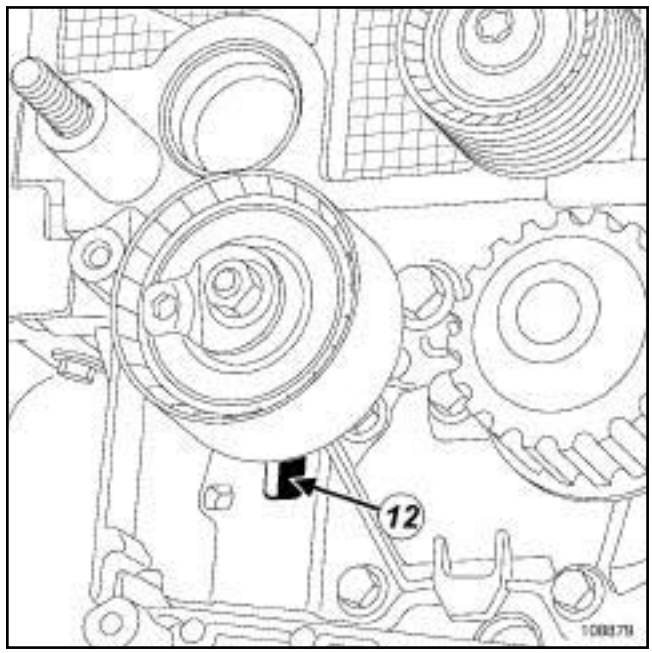


103268

❏ Check that the mark (**10**) on the camshaft dephaser is vertical and pointing upwards.

❏ Make a mark (**11**) with a pencil between the camshaft dephaser gear and the rocker cover.

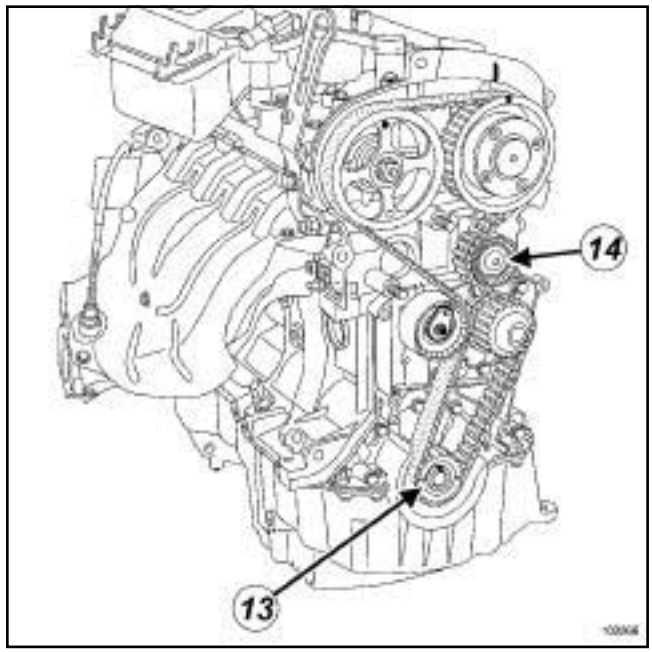
2 - Refitting



108879

❏ Refit a new timing tensioning roller by positioning the lug of the timing tensioning roller in the groove (**12**) .

❏ Screw on the timing tensioning roller nut without tightening it.



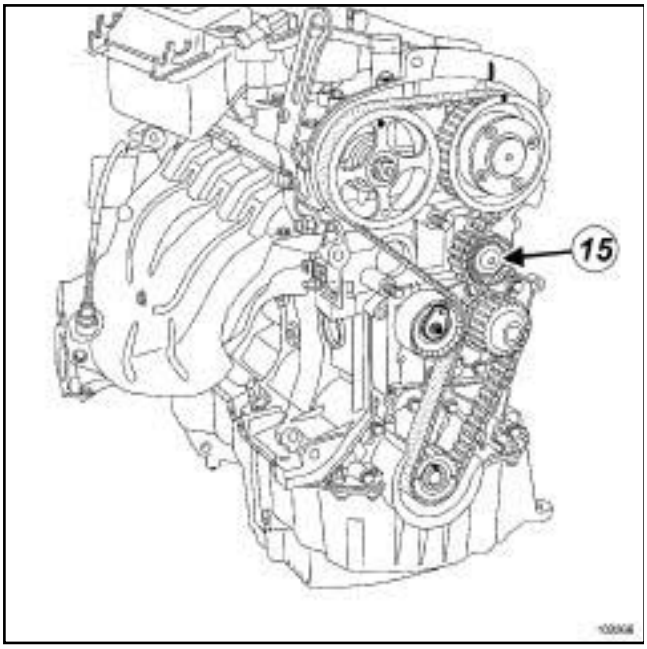
103268

❏ Refit:

- the crankshaft timing sprocket (**13**) ,

- a new timing belt,

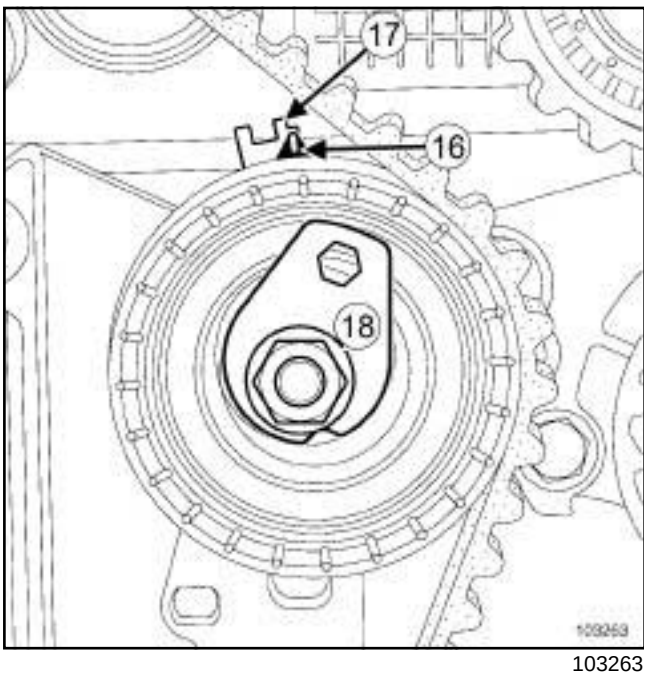
- a new timing fixed roller (**14**) .



103268

❏ Torque tighten the **timing fixed roller bolt (50 N.m)** (**15**) .

3 - Timing belt tension



103263

❏ Position the adjustable index (**16**) opposite the mark (**17**) , by turning the eccentric (**18**) clockwise using a **6 mm** Allen key.

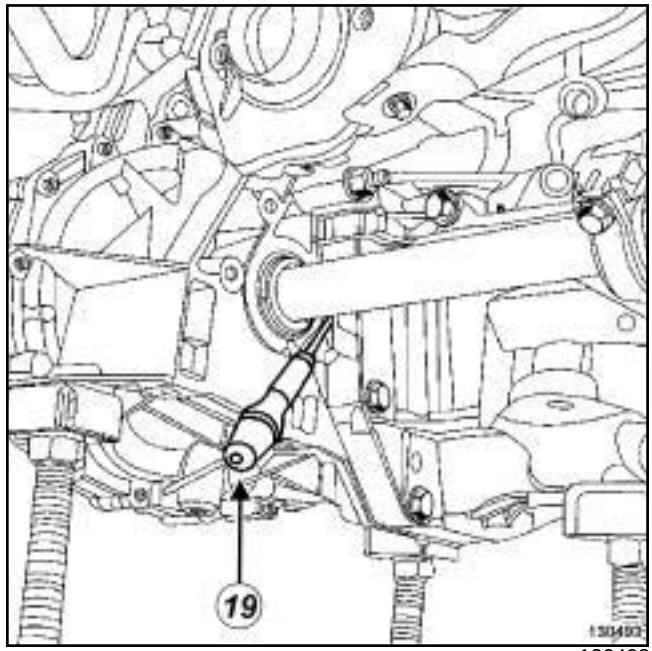
❏ Torque tighten the **timing tensioning roller nut (7 N.m)**.

❏ Refit:

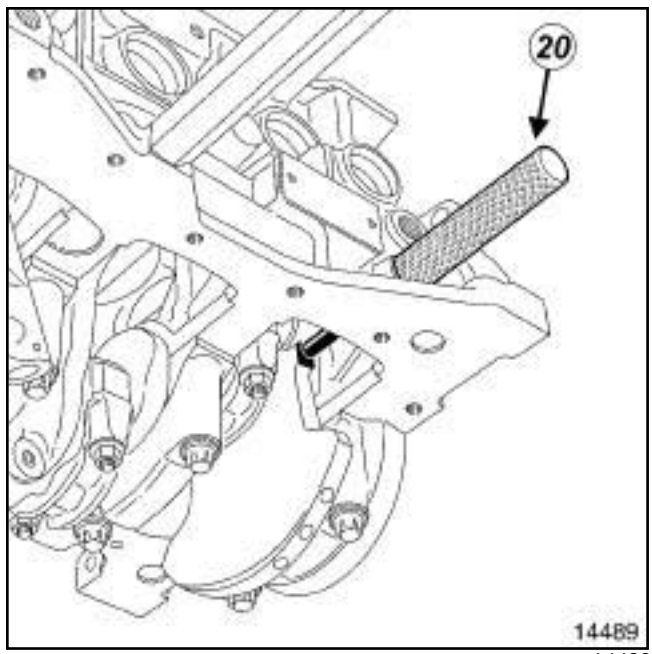
- the tool **(Mot. 1489)** in the cylinder block,
- the lower timing cover,

❏ Tighten to torque the **lower timing cover bolts (12 N.m)**.

❏ Refit a new crankshaft accessories pulley.



130493

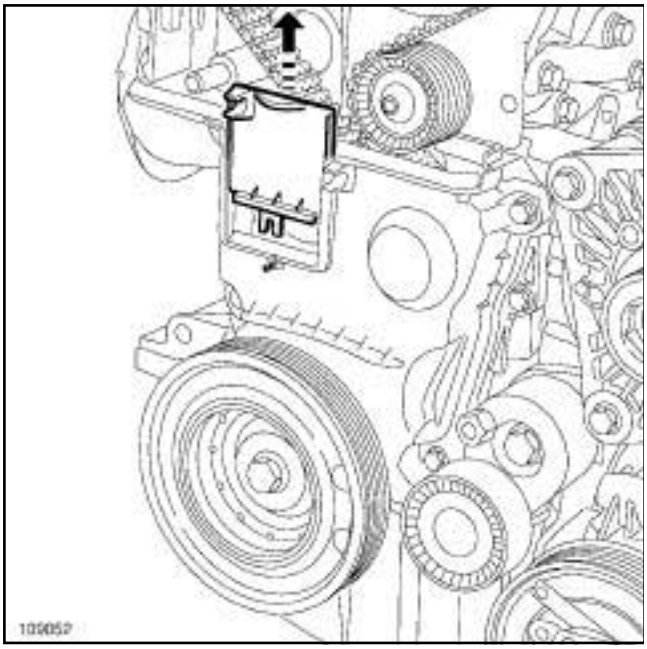


14489

❏ Use a screwdriver (**19**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the tool **(Mot. 1489)** (**20**) using the screwdriver; the crankshaft groove should be at the top.

❏ Torque and angle tighten a **new crankshaft accessories pulley bolt (40 N.m + 145° ± 15°)** (crankshaft in contact with the tool **(Mot. 1489)**).

K4M



109052

❑ Remove:

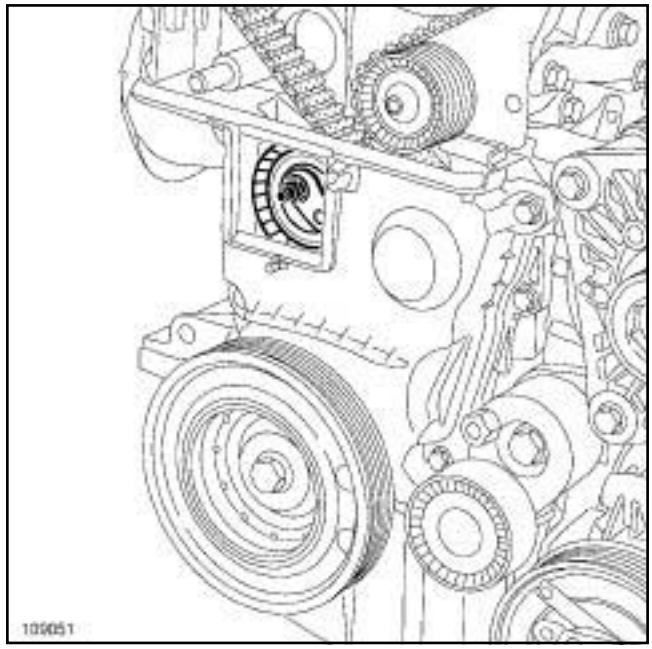
- the timing flap from the lower timing cover,
- the lifting eye bolt from the **(Mot. 1496)**,
- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.

4 - Checking the tension

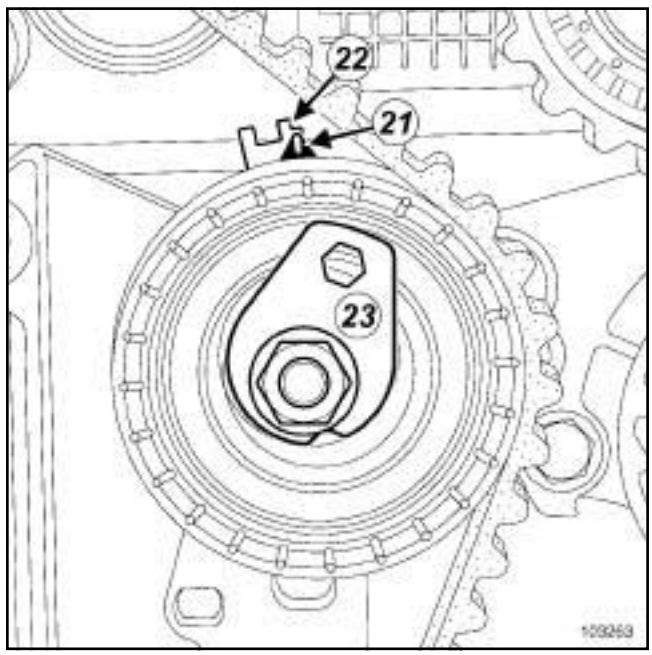
❑ Rotate the crankshaft twice clockwise at the timing end and before aligning the marks made previously by the operator (on the camshaft dephaser), screw the tool **(Mot. 1489)** into the cylinder block.

❑ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.

❑ Remove the tool **(Mot. 1489)** from the cylinder block.



109051



103263

❑ Check through the lower timing cover window that the adjustable index (**21**) is opposite the notch (**22**) , if this is not the case:

- loosen the timing tensioning roller nut by up to one turn while holding the eccentric with a **6 mm** Allen key,
- gradually move the adjustable index marker (**21**) opposite the mark (**22**) turning the eccentric cam (**23**) clockwise.

❑ Torque tighten the **timing tension wheel nut (27 N.m)**.

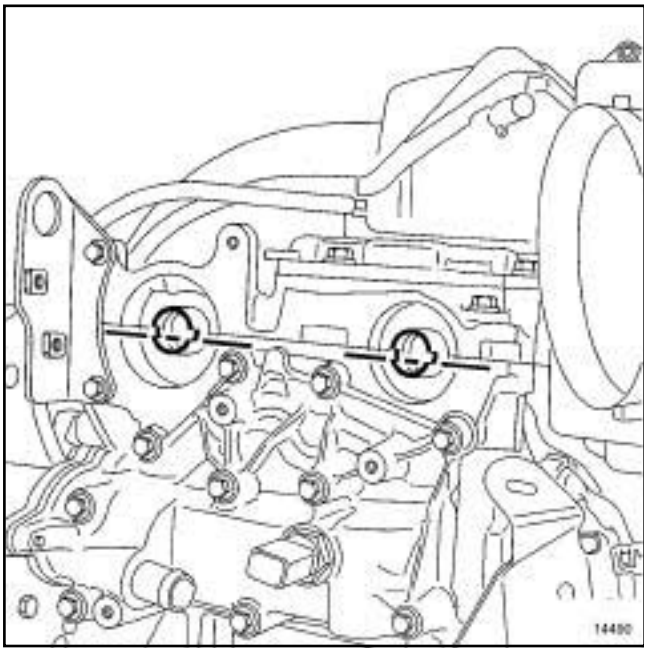
K4M

5 - Checking the timing

❑ Ensure that the index and the notch on the timing tensioning roller are in the correct position before checking the timing.

❑ Screw tool **(Mot. 1489)** into the cylinder block.

❑ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.



14490

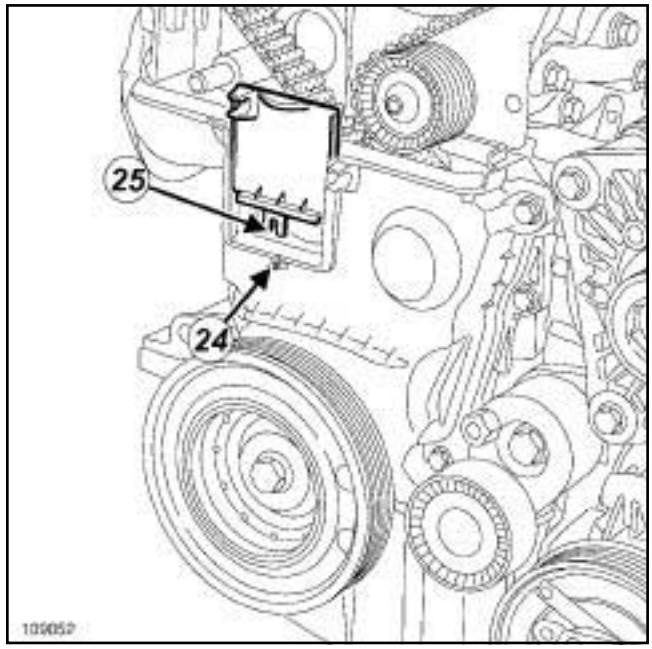
❑ Position (without forcing) the camshaft setting tool **(Mot. 1496)** fitted with the **(Mot. 1750)** (the camshaft end grooves must be horizontal and offset towards the bottom).

Note:

The timing adjustment and tensioning operation must be repeated if the camshaft setting tool does not engage.

❑ Remove:

- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.



109052

❑ Refit the lower timing cover flap, checking that the locating pin (**24**) fits properly in the notch (**25**) .

REFITTING -PROCEDURE 2

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Timing belt**,

parts always to be replaced: Timing belt tensioning roller,

parts always to be replaced: Timing fixed roller,

parts always to be replaced: Crankshaft accessories pulley,

parts always to be replaced: Crankshaft accessories pulley bolts,

parts always to be replaced: Inlet camshaft cap,

parts always to be replaced: Exhaust camshaft cap.

II - REFITTING OPERATION FOR PART CONCERNED

❑ The second procedure is used when replacing any timing face component which has a crankshaft timing sprocket with or without a collet, that requires the exhaust camshaft sprocket or camshaft dephaser to be loosened.

❑ Remove the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) .

K4M

1 - Adjusting the timing

❑

Note:

If the stud loosens with the nut (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) (Technical Note 3887A,11A, Top and front of engine).

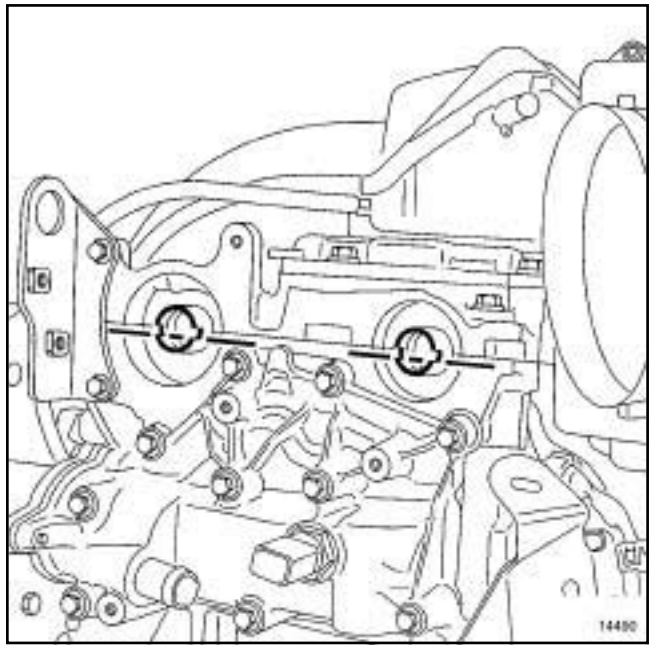
WARNING

Always degrease:

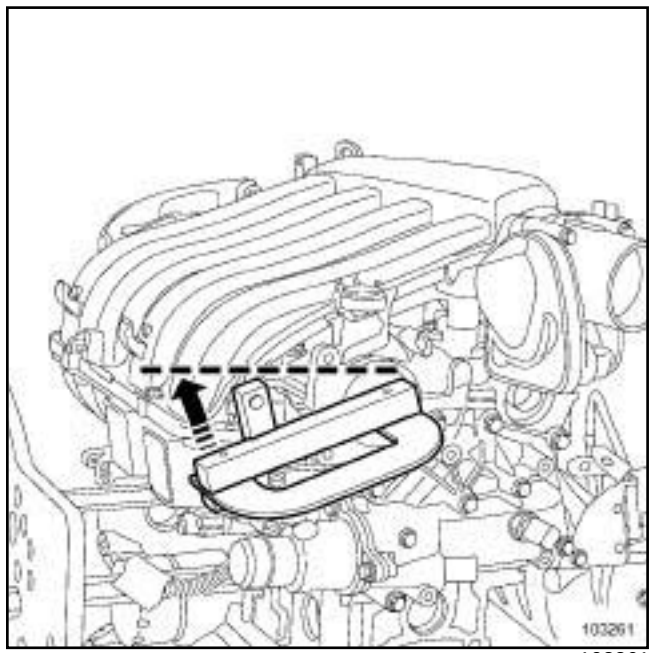
- the end of the crankshaft (timing end),
- the timing sprocket pressure faces and bore of the crankshaft,
- the crankshaft accessories pulley bearing faces,
- the camshaft ends (timing end),
- the camshaft sprocket bores and bearing faces.

This is to avoid timing slippage.

This slippage leads to engine damage.



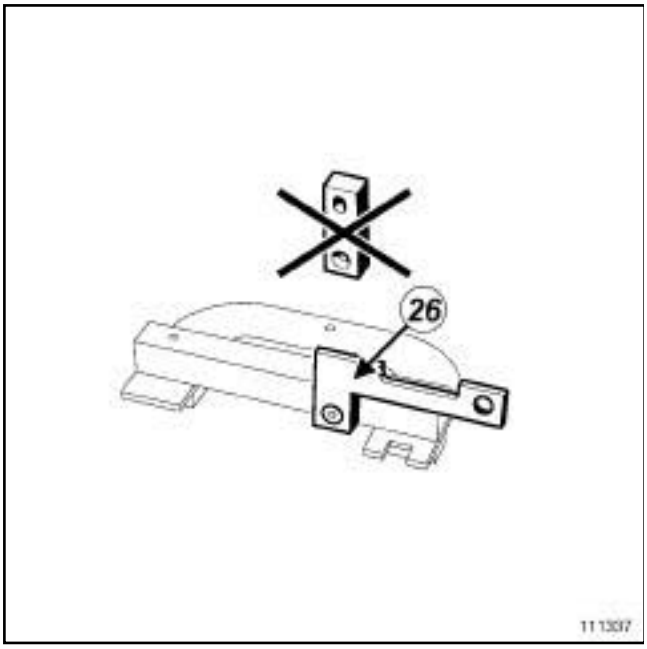
14490



103261

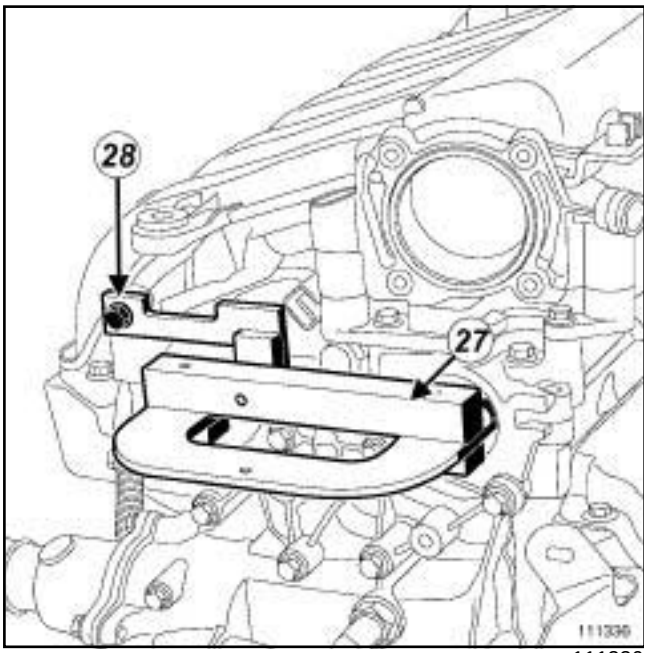
❑ Position the camshaft grooves horizontally and below the centre line, by turning the camshafts with the **(Mot. 1496)** if necessary.

K4M



111337

❏ Fit the **(Mot. 1496)** with the **(Mot. 1750)** (**26**) .



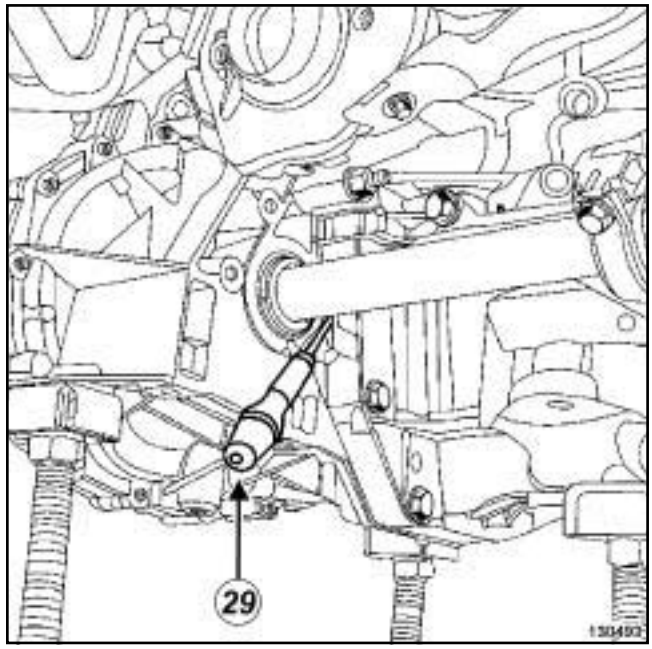
111336

❏ Fit:

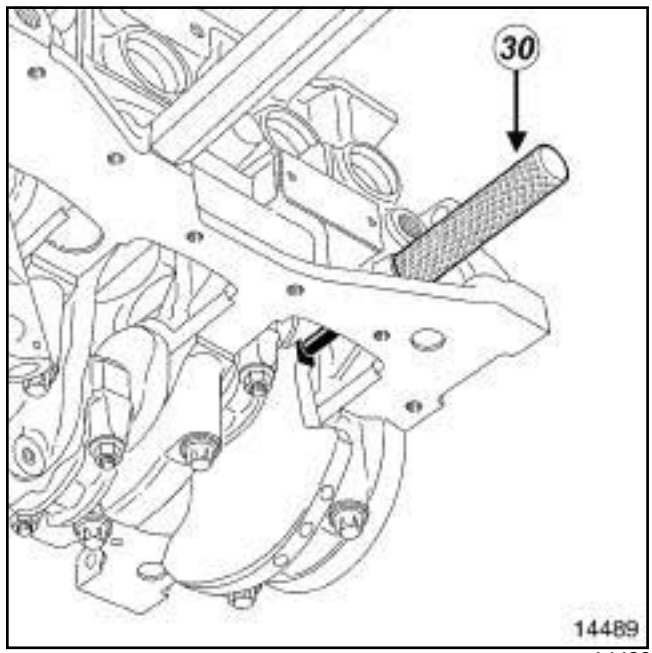
- the **(Mot. 1496)** (**27**) fitted with the **(Mot. 1750)** on the end of the camshaft,
- a lifting eye bolt (**28**) to secure the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)**.

❏ Refit:

- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the crankshaft timing sprocket.



130493

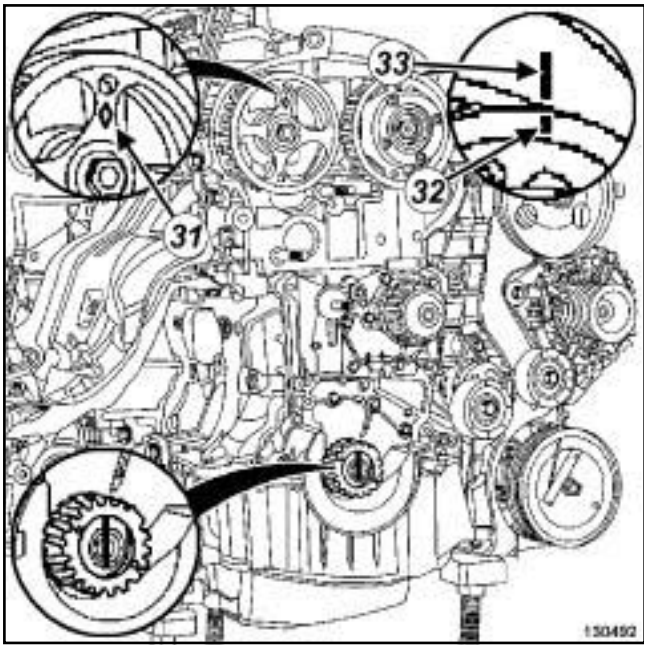


14489

❏ Refit the tool **(Mot. 1489)** on the cylinder block.

❏ Use a screwdriver (**29**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the tool **(Mot. 1489)** (**30**) using the screwdriver; the crankshaft groove should be at the top.

K4M



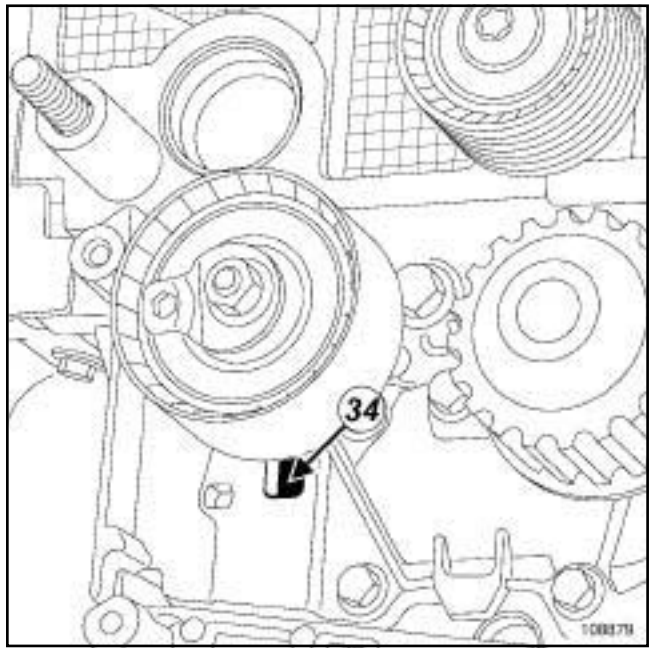
130492

❑ Position:

- the RENAULT badge (**31**) etched on the stem of the exhaust camshaft sprocket vertically and pointing upwards,
- the camshaft dephaser mark (**32**) vertically and pointing upwards.

❑ Make a mark (**33**) with a pencil between the camshaft dephaser gear and the rocker cover.

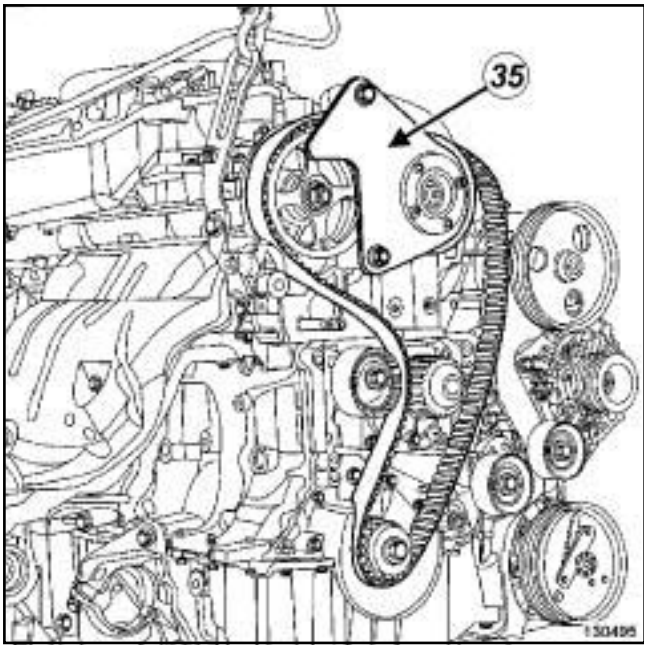
2 - Refitting



108879

❑ Refit a new timing tensioning roller by positioning the lug of the timing tensioning roller in the groove (**34**) .

❑ Screw on the timing tensioning roller nut without tightening it.



130495

❏ Refit a new timing belt starting with the sprocket of each camshaft (without moving the sprocket of each camshaft).

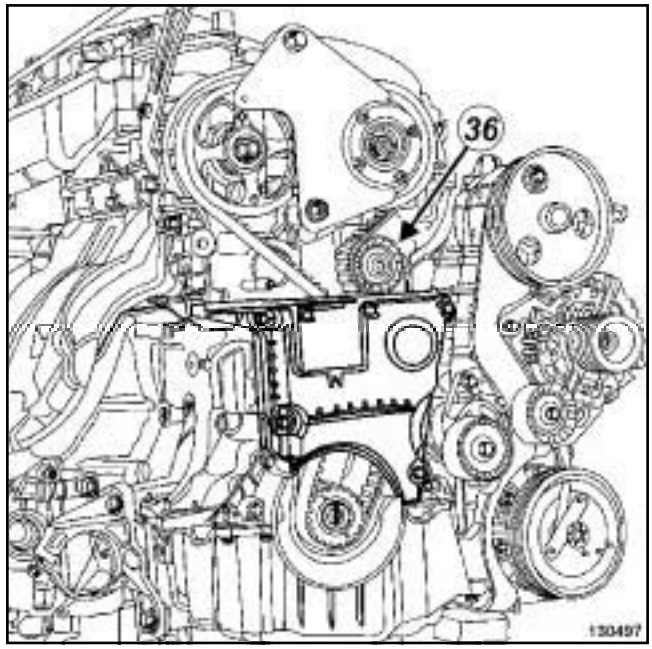
❏ Fit the tool **(Mot. 1490-01)** (**35**) on the camshaft sprockets (use the bolt and nut of the upper timing cover to fit the tool **(Mot. 1490-01)**).

Note:

Take care to properly tighten the timing belt between the two camshaft sprockets.

Note:

If the engine is equipped with a crankshaft timing sprocket with a collet, take care to properly tighten the timing belt between the exhaust camshaft sprocket and the crankshaft timing sprocket.

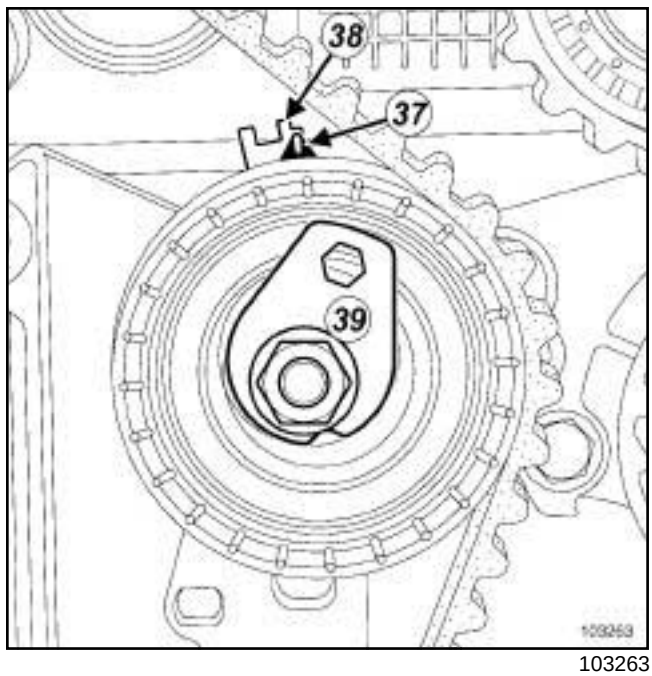


130497

❏ Refit a new timing fixed roller (**36**) .

❏ Torque tighten the **timing fixed roller bolt (50 N.m)**.

3 - Timing belt tension

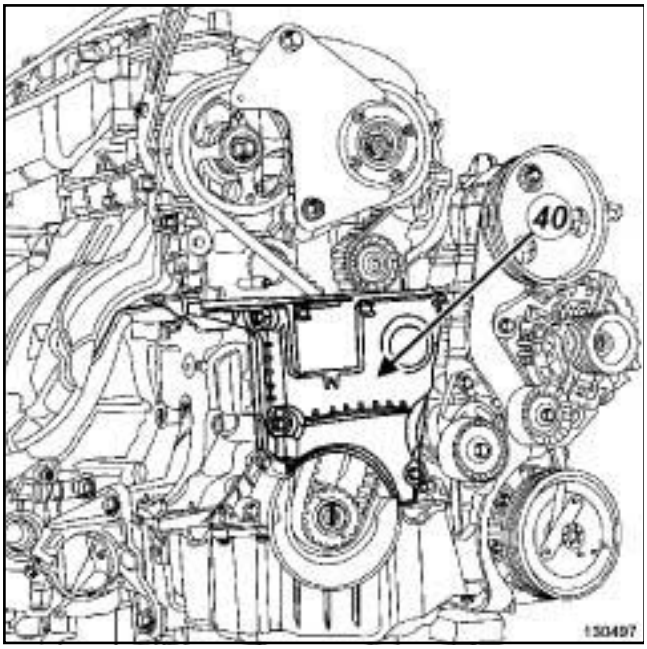


103263

❏ Position the adjustable index (**37**) opposite the mark (**38**) , by turning the eccentric (**39**) clockwise using an Allen key.

❏ Torque tighten the **timing tensioning roller nut (7 N.m)**.

K4M



130497

❏ Refit the lower timing cover (**40**) .

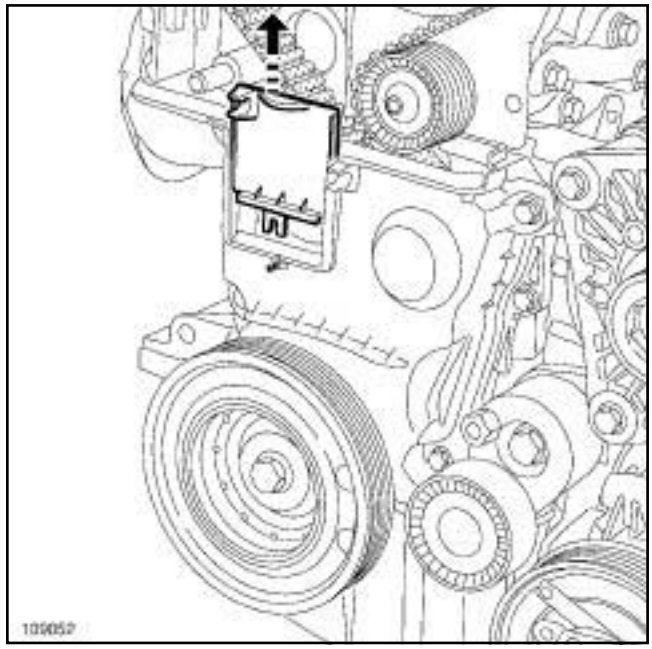
❏ Tighten to torque the **lower timing cover bolts (12 N.m)**.

❏ Refit a new crankshaft accessories pulley.

❏ Torque tighten:

- and angle tighten a **new crankshaft accessories pulley bolt (40 N.m + 145° ± 15°)**,
- and angle tighten the **exhaust camshaft sprocket nut (30 N.m + 84° ± 4)**,
- the **camshaft dephaser bolt (100 N.m)**.

❏ Refit the camshaft dephaser plug.



109052

❏ Remove:

- the timing flap from the lower timing cover.
- the lifting eye bolt from the **(Mot. 1496)**,
- the **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the tool **(Mot. 1489)** from the cylinder block,
- the **(Mot. 1490-01)**.

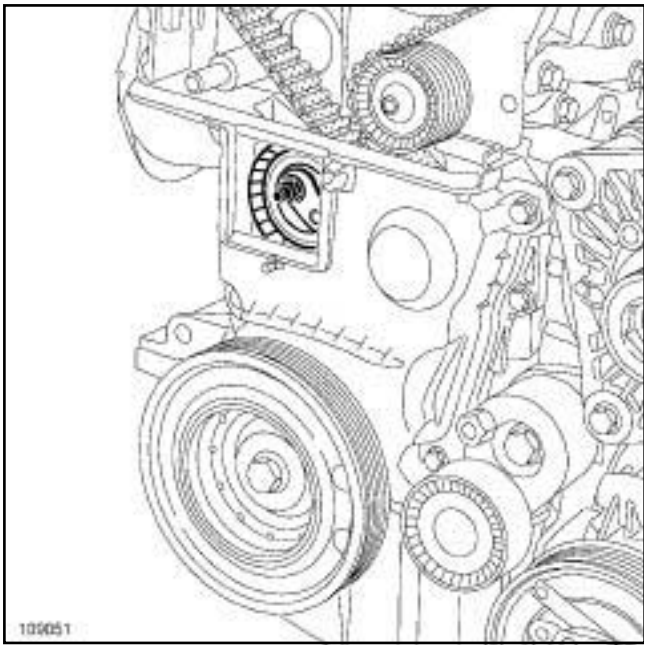
4 - Checking the tension

❏ Rotate the crankshaft twice clockwise at the timing end and before aligning the marks made previously by the operator (on the camshaft dephaser), screw the tool **(Mot. 1489)** into the cylinder block.

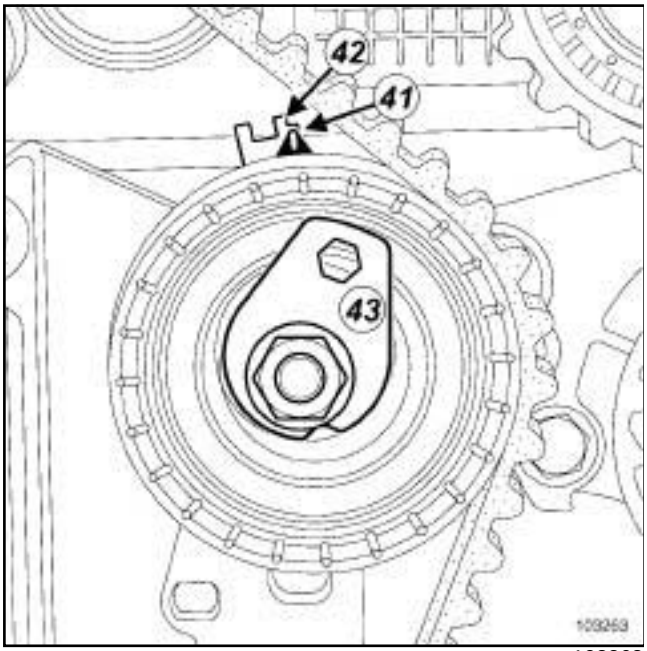
❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.

❏ Remove the tool **(Mot. 1489)**.

K4M



109051



103263

❏ Check through the lower timing cover window that the adjustable index (**41**) is opposite the notch (**42**) , if this is not the case:

- loosen the timing tensioning roller nut by up to one turn while holding the eccentric with an Allen key,
- gradually move the adjustable index marker (**41**) opposite the mark (**42**) turning the eccentric cam (**43**) clockwise.

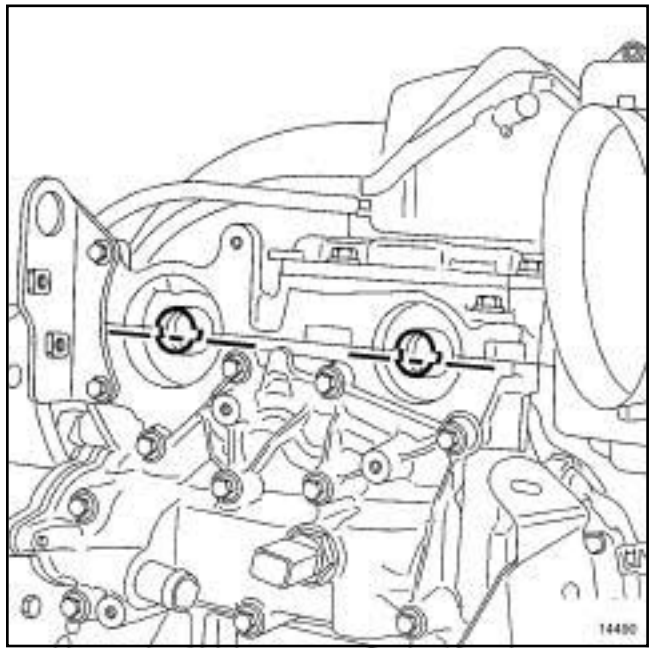
❏ Torque tighten the **timing tensioning roller nut (27 N.m)**.

5 - Checking the timing

❏ Ensure that the index and the notch on the timing tensioning roller are in the correct position before checking the timing.

❏ Screw tool **(Mot. 1489)** into the cylinder block.

❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.



14490

❏ Position (without forcing) the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)** (the camshaft end grooves must be horizontal and offset downwards).

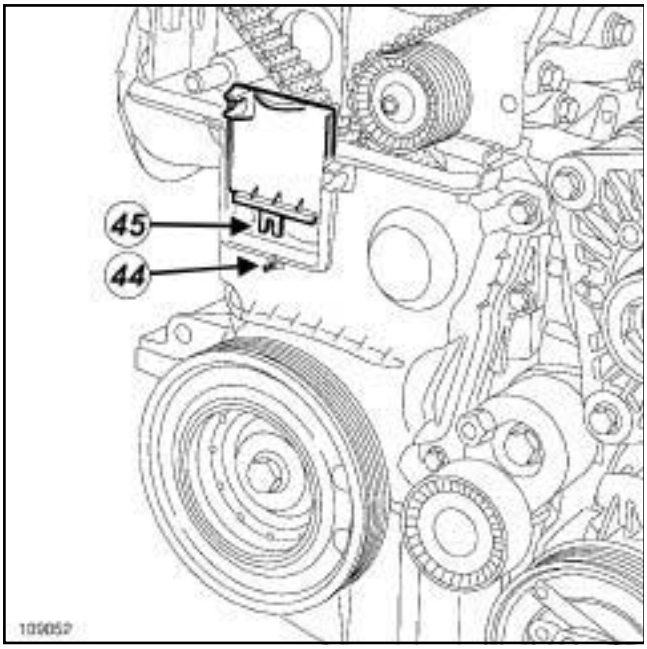
Note:

If the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)** cannot be engaged, readjust the timing and the tension.

❏ Remove:

- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.

K4M



109052

❏ Refit the lower timing cover flap, checking that the locating pin (**44**) fits properly in the notch (**45**) .

III - FINAL OPERATION

❏ Refit:

- a new inlet camshaft plug using the **(Mot. 1487)**,
- a new exhaust camshaft plug using the tool **(Mot. 1488)**.

❏ Apply a drop of **SILICONE ADHESIVE SEALANT** (see) (04B, Consumables - Products) to the thread of the TDC pin plug.

❏ Tighten to torque the **TDC pin plug (20 N.m)**.

❏ Refit the upper timing cover.

❏ Torque tighten:

- the **upper timing cover bolts (46 N.m)**,
- the **upper timing cover nuts (46 N.m)**.

❏ Refit the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Refit:

- the engine wiring,
- the lifting eye on the flywheel end,
- the dipstick guide.

❏ Torque tighten:

- the **dipstick guide tube bolt (10 N.m)**,
- the **flywheel end lifting eye bolts (10 N.m)**.

❏ Clip on the lifting eye connector.

K4M, and 862

❏ Position the wiring of the upstream oxygen sensor.

❏ Clip the wiring to the oxygen sensor.

❏ Connect the oxygen sensor connector.

❏ Refit:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine undertray.

K9K, and 766 or 768

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1489	TDC locating pin.
Mot. 1430	Set of 5 crankshaft and camshaft pulley timing pins.

Equipment required
safety strap(s)
protective gloves
1/2" female torx socket (12.7 mm square drive)
torque wrench
offset spanner
torque/angle wrench
cylinder head bolt tightening gauge (angular measuring type)

Tightening torques ▽	
tensioning roller bolt	**27 Nm**
camshaft timing sprocket crown bolts	**14 Nm**
crankshaft accessories pulley bolt M14	**120 Nm + 95° ± 15°**
TDC setting pin plug	**25 Nm**
cylinder head suspended mounting bolts	**25 Nm**
camshaft position sensor bolt	**8 Nm**

IMPORTANT
Wear protective gloves during the operation.

WARNING
Never rotate the engine anti-clockwise (timing end).

WARNING
Do not run the engine without the accessories belt so as not to damage the crankshaft accessories pulley.

I - PARTS TO BE SYSTEMATICALLY REPLACED

❑ - the timing belt,

- the timing belt tensioning roller,

- the crankshaft accessories pulley bolt.

II - CONSUMABLES FOR REPAIR

❑ - **SILICONE ADHESIVE SEAL** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

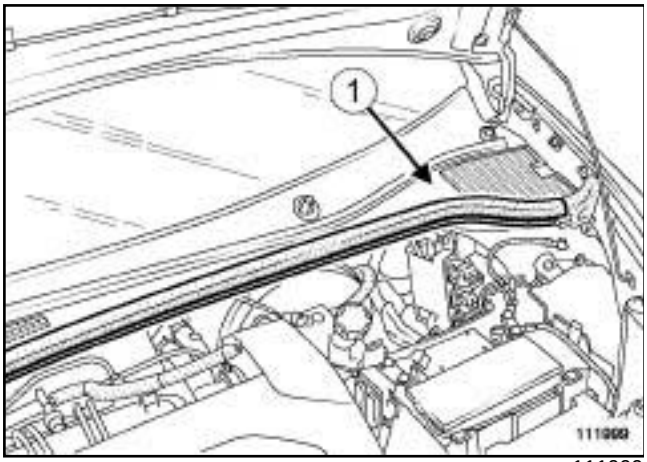
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

- the engine undertray,

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

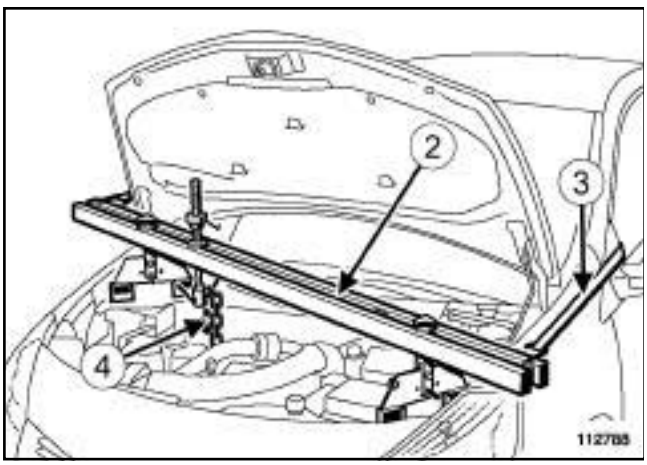
K9K, and 766 or 768



111999

❑ Remove:

- the engine cover,
- the scuttle panel grille (**1**) (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



112788

❑ Position the **(Mot. 1453)** (**2**) and hold it in place using a **safety strap(s)** (**3**) .

❑ Fit a chain (**4**) on the lifting eye of the crankshaft end to enable the engine to be lifted using the **(Mot. 1453)**.

❑ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

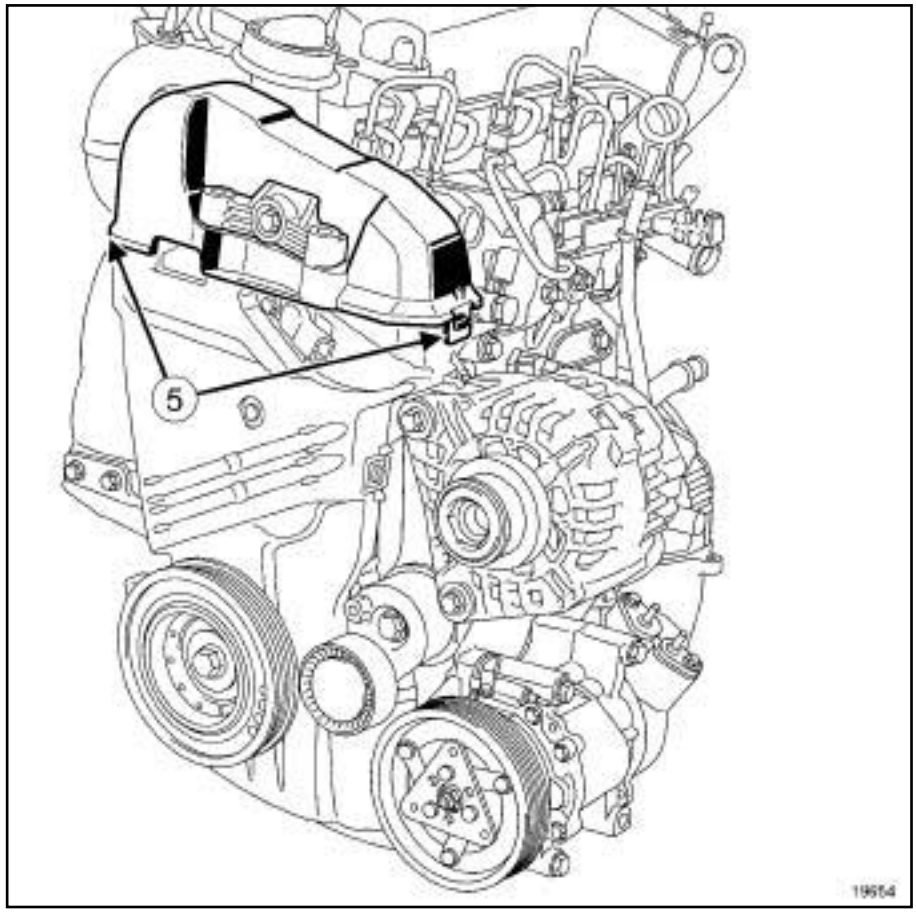
Note:

Do not damage the air conditioning pipes.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Fit **protective gloves**.

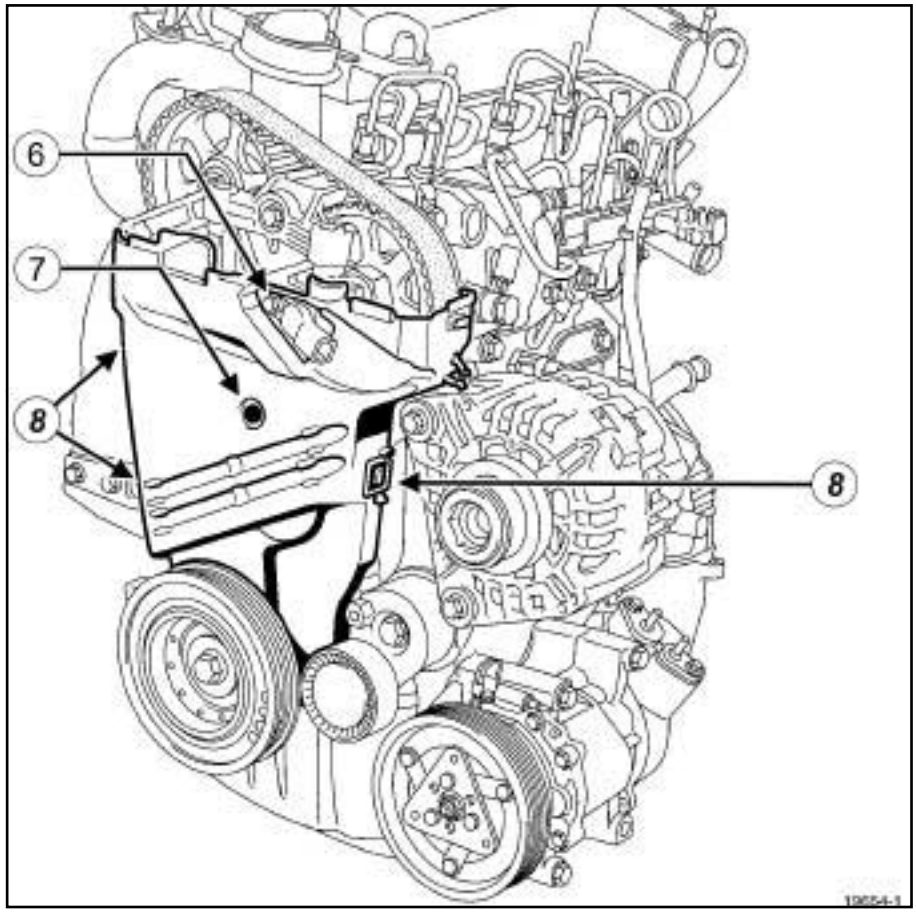
K9K, and 766 or 768



19654

❑ Remove the upper timing cover by unclipping both tabs (**5**) .

K9K, and 766 or 768



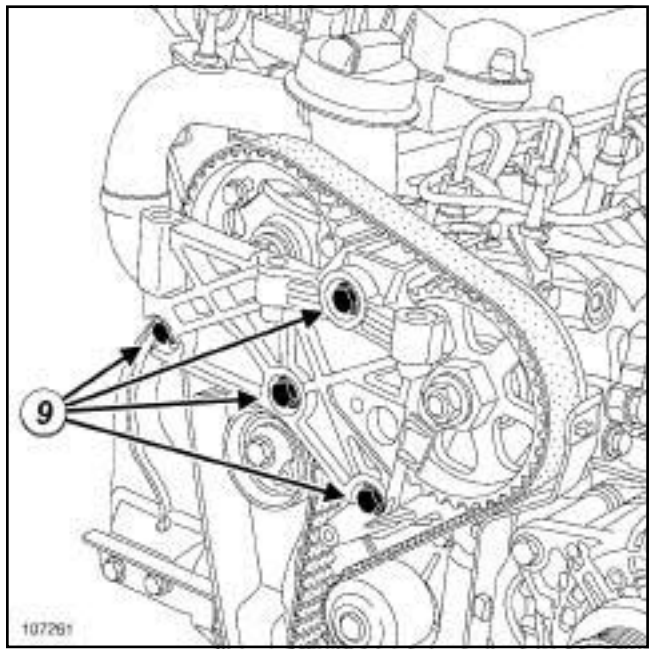
19654-1

❏ Remove:

- the camshaft position sensor (**6**) ,
- the plastic bolt (**7**) .

❏ Unclip the three tabs (**8**) .

❏ Remove the lower timing cover.

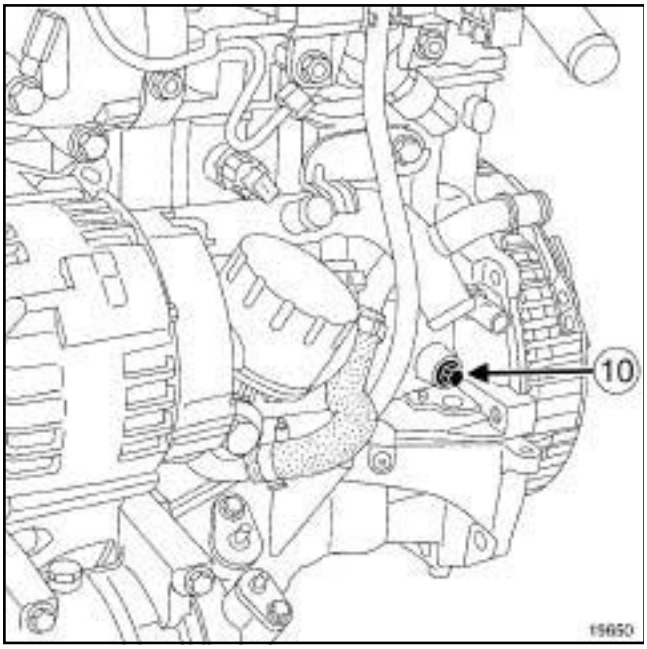


107261

❏ Remove:

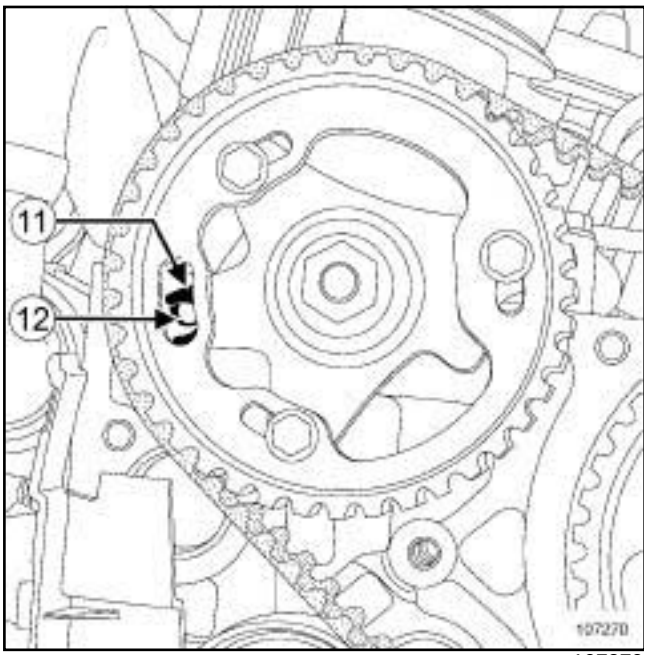
- the bolts (**9**) from the cylinder head suspended mounting,
- the cylinder head suspended mounting.

K9K, and 766 or 768



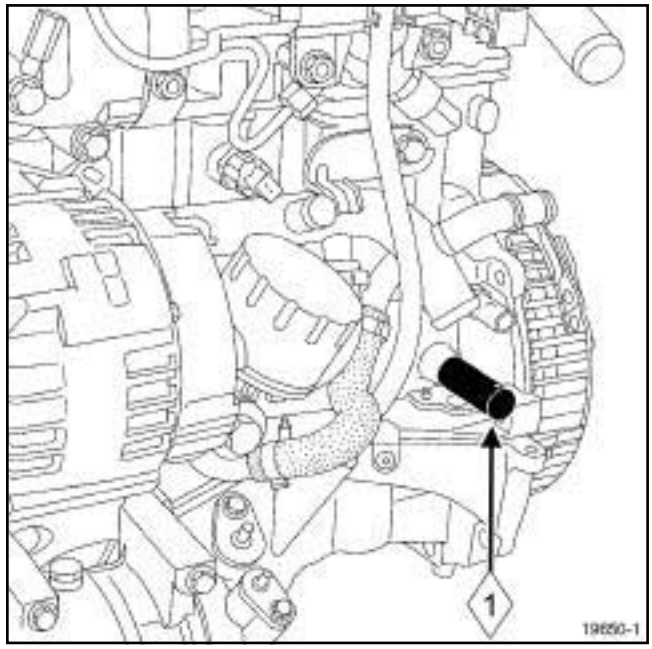
19650

❑ Remove the TDC pin plug (**10**) using a **1/2" female torx socket (12.7 mm square drive) (14)**.



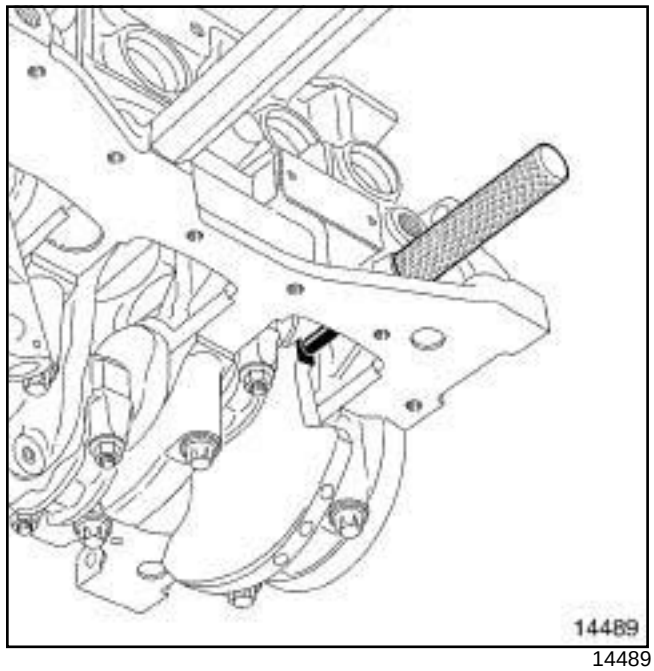
107270

❑ Rotate the crankshaft clockwise (timing end) to position the hole (**11**) in the camshaft timing sprocket almost opposite the hole (**12**) in the cylinder head.



19650-1

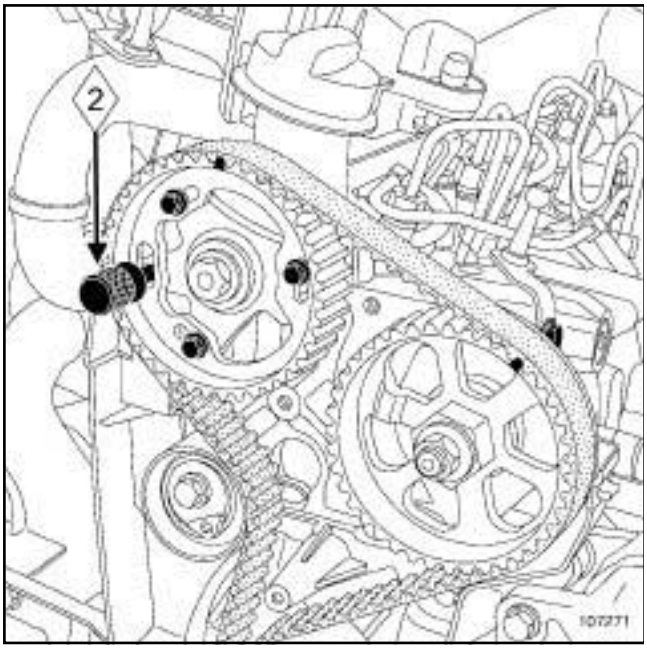
❑ Screw in the TDC setting pin (**1**) **(Mot. 1489)**.



14489

❑ Turn the crankshaft clockwise (timing end) smoothly until the crankshaft comes into contact with the TDC setting pin.

K9K, and 766 or 768

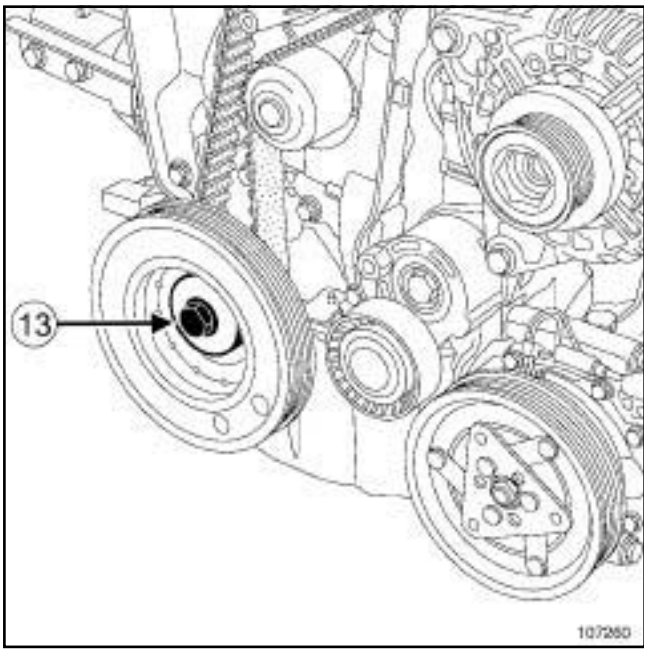


107271

❏ Engage the pin (**2**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes.

❏ Remove:

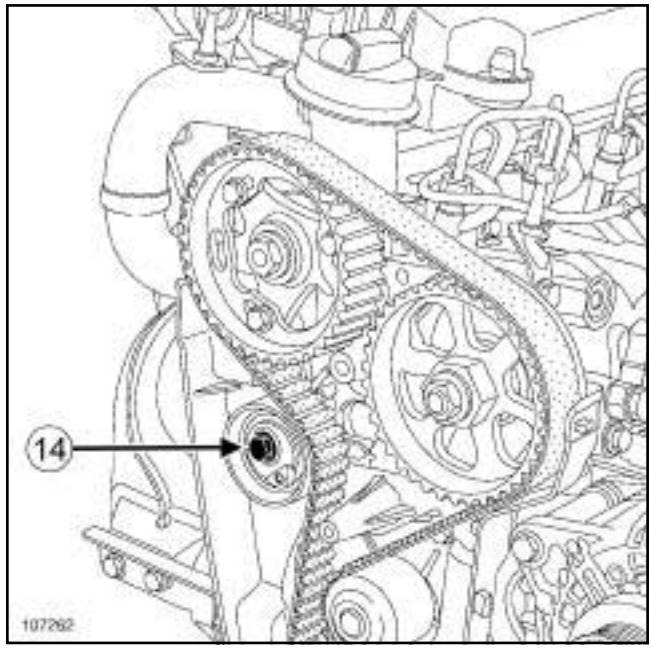
- the camshaft timing sprocket setting pin **(Mot. 1430)**,
- the TDC setting pin **(Mot. 1489)**.



107260

❏ Remove:

- the bolt (**13**) from the crankshaft accessories pulley, locking the engine flywheel with a large flat-blade screwdriver,
- the crankshaft accessories pulley.



107262

❏ Undo the tensioning roller bolt (**14**) .

❏ Loosen the timing tension wheel by turning the eccentric cam using a **6 mm** Allen key.

❏ Remove:

- the timing belt,
- the timing tensioning roller.

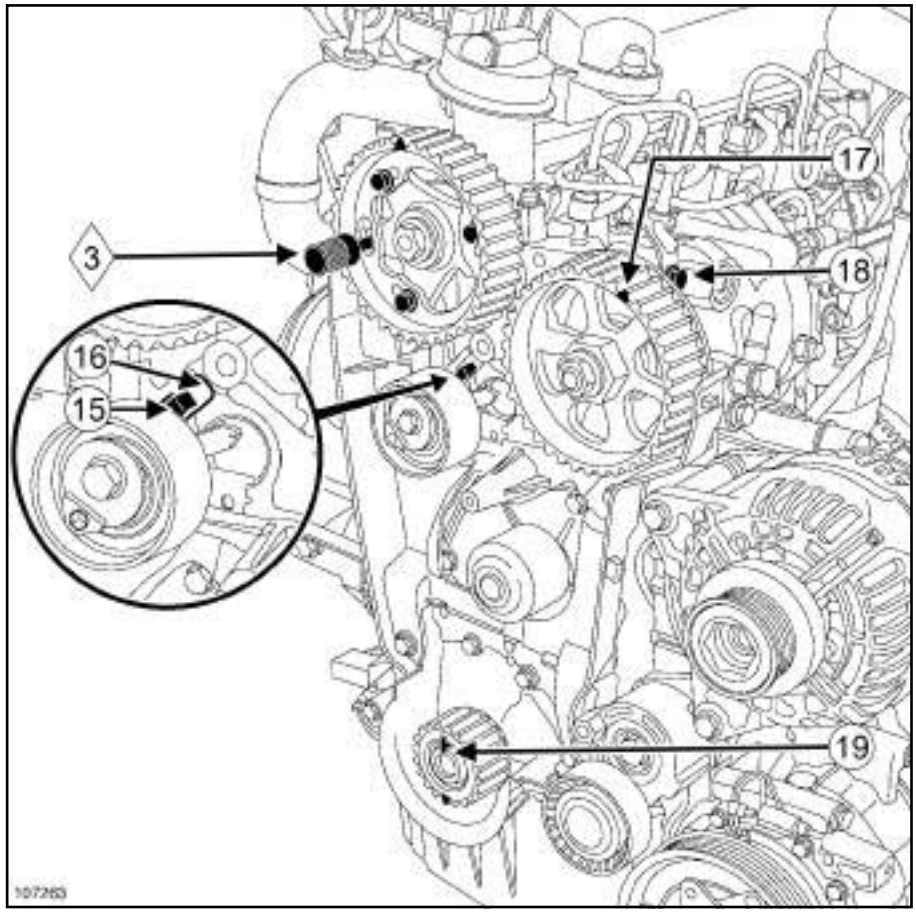
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Check:

- that there is no oil leak from the camshaft and crankshaft seals,
- the condition of the coolant pump (hard seal, play in the shaft, fluid leak, shaft rotation, (see **Technical Note 3175A, Cooling system fault finding, 19A, Cooling, Cooling system - Fault finding chart ALP 8**).

K9K, and 766 or 768



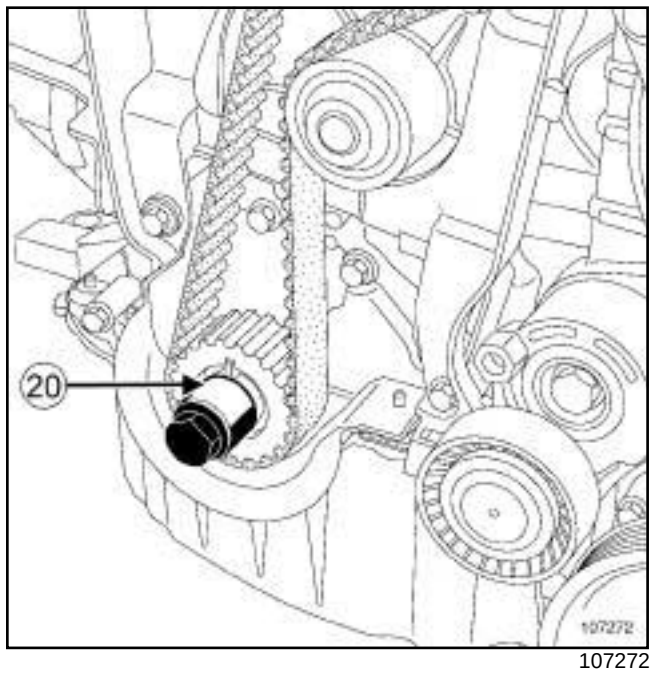
107263

❏ Refit the timing tension wheel.

❏ Put the tensioning roller lug (**15**) in the cylinder head groove (**16**) .

❏ Engage the pin (**3**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes, turning the camshaft using an **18 mm** offset spanner if necessary.

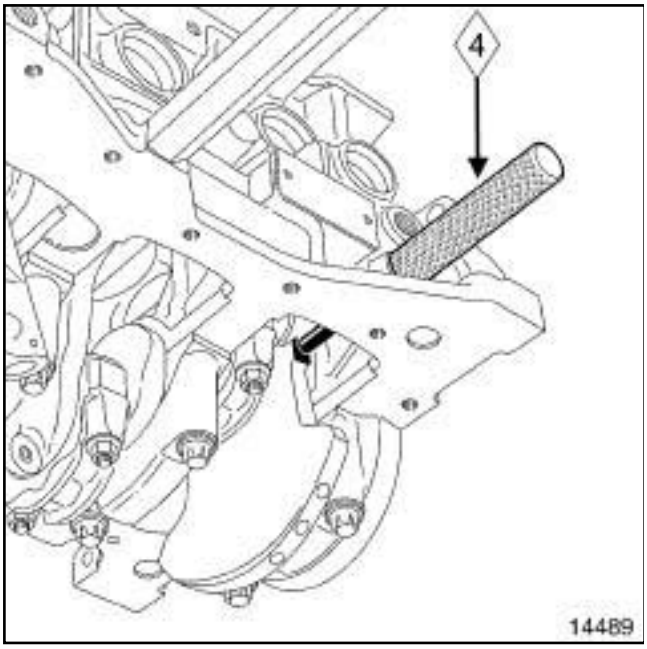
❏ Check that the mark on the high pressure pump (**17**) is opposite the bolt head (**18**) .



107272

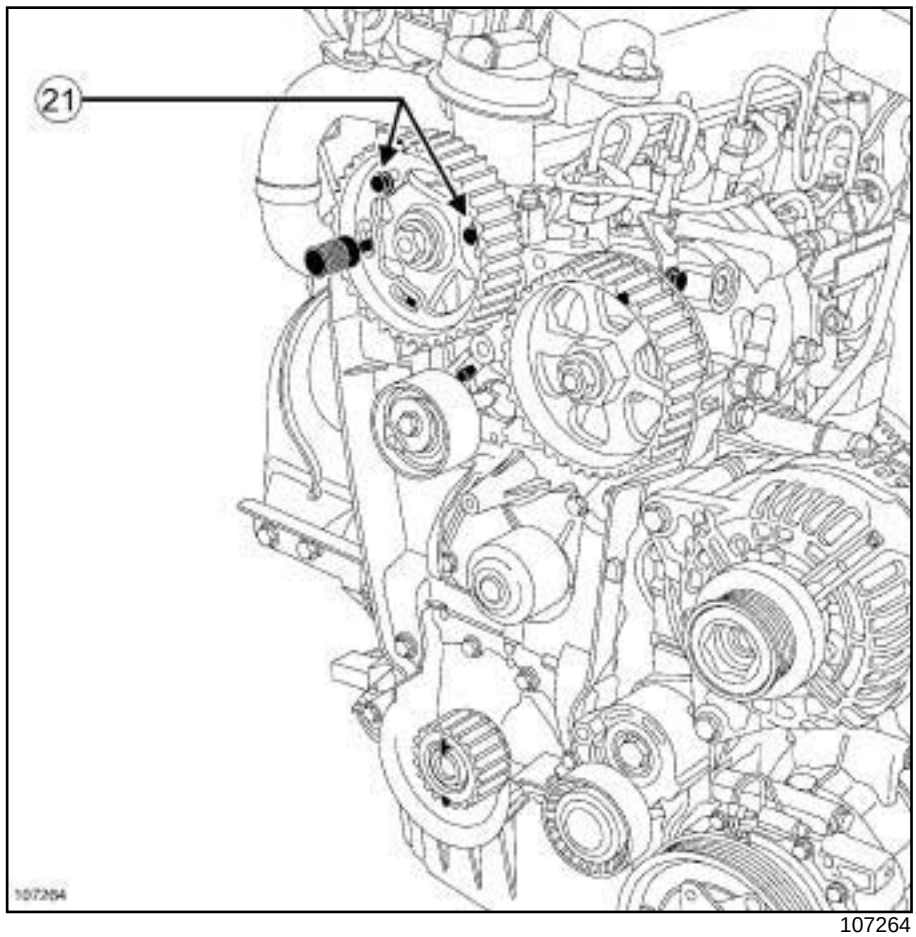
❏ Screw the old crankshaft accessories pulley bolt fitted with a spacer (**20**) (which does not cover the timing sprocket mark) into the crankshaft.

K9K, and 766 or 768



14489

❑ Position the crankshaft so that it presses against the TDC setting pin (**4**) **(Mot. 1489)** (the crankshaft sprocket collet ***(19)*** must face upwards).

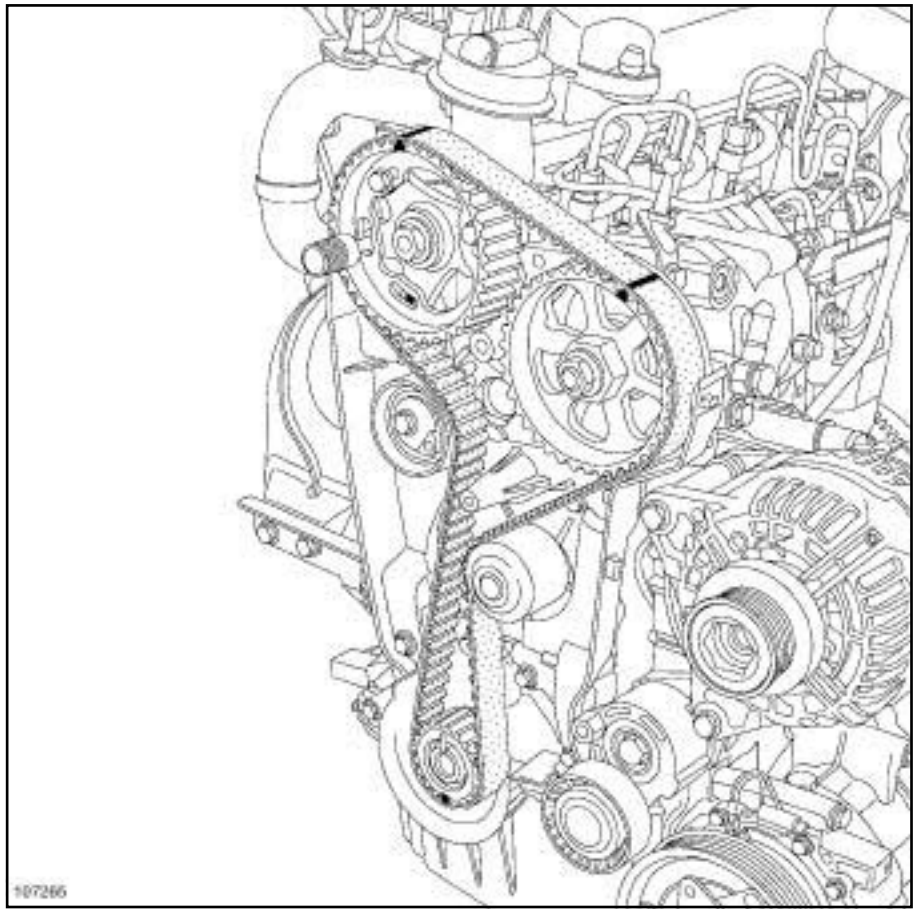


107264

❑ Remove one bolt from the camshaft timing sprocket crown.

❑ Loosen the other two camshaft timing sprocket crown bolts (**21**) by one turn.

K9K, and 766 or 768



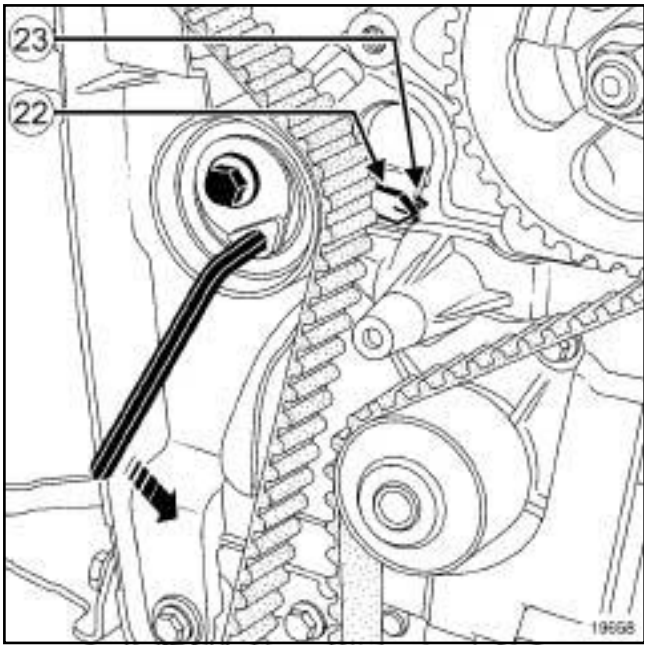
107265

❑ Fit the timing belt, starting with the crankshaft sprocket, by aligning the marks on the belt with those on the crankshaft and camshaft sprockets, and the high pressure pump pinion.

Note:

There should be 19 belt tooth grooves between the marks on the camshaft sprocket and the high pressure pump pinion, and 51 belt tooth grooves between the crankshaft sprocket and the high pressure pump pinion.

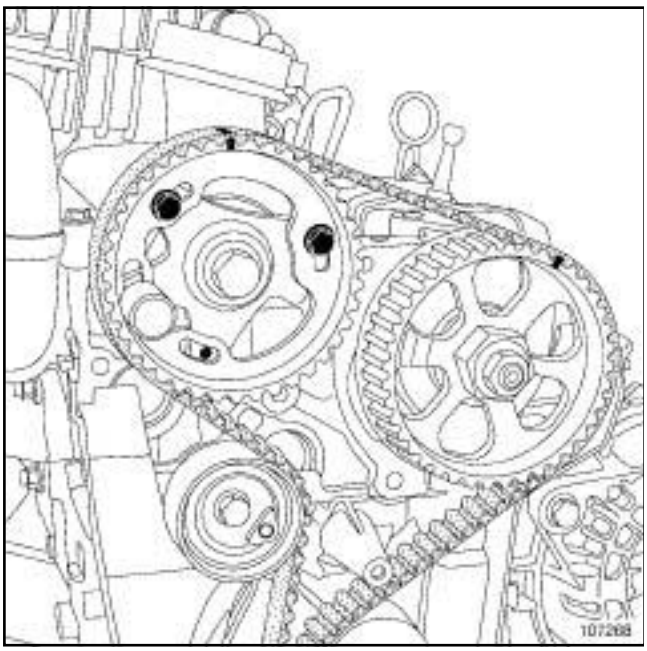
K9K, and 766 or 768



19658

❏ Position the tensioning roller adjustable index marker (**22**) opposite the lug (**23**) , turning the eccentric cam anti-clockwise using a **6 mm** Allen key.

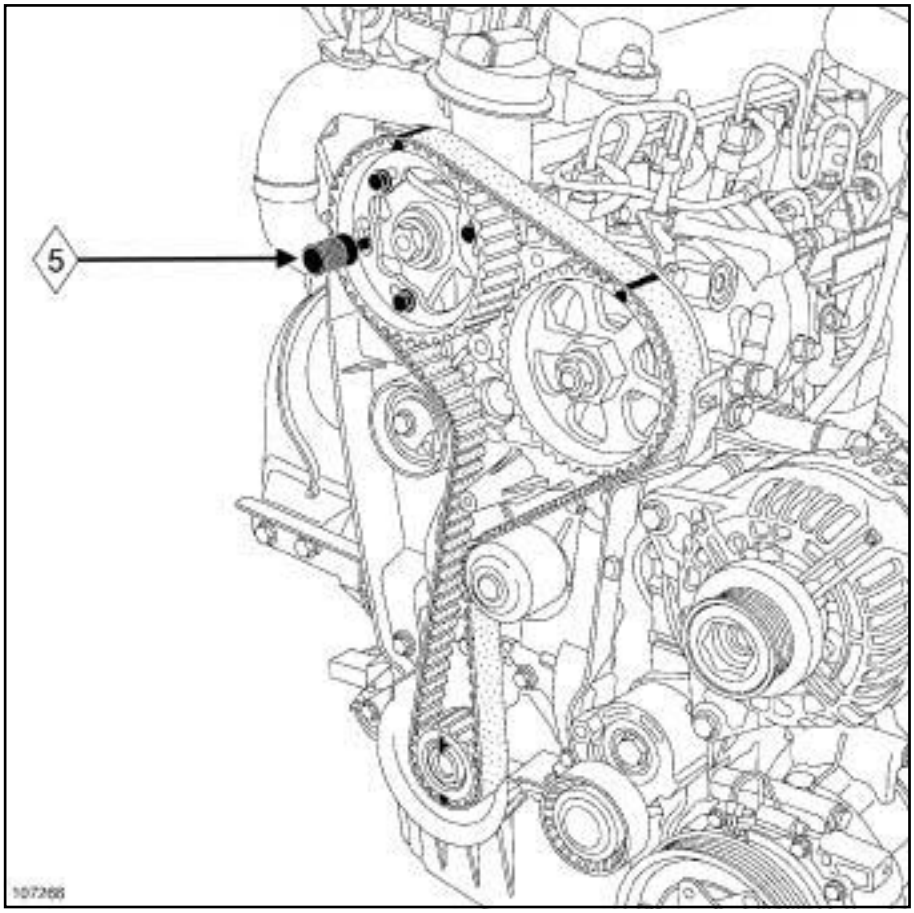
❏ Torque tighten the **tensioning roller bolt (27 Nm)** using a **torque wrench**.



107268

❏ Check that the camshaft timing sprocket crown bolts are not fully locked against the camshaft timing sprocket crown. If they are, repeat the timing belt refitting procedure.

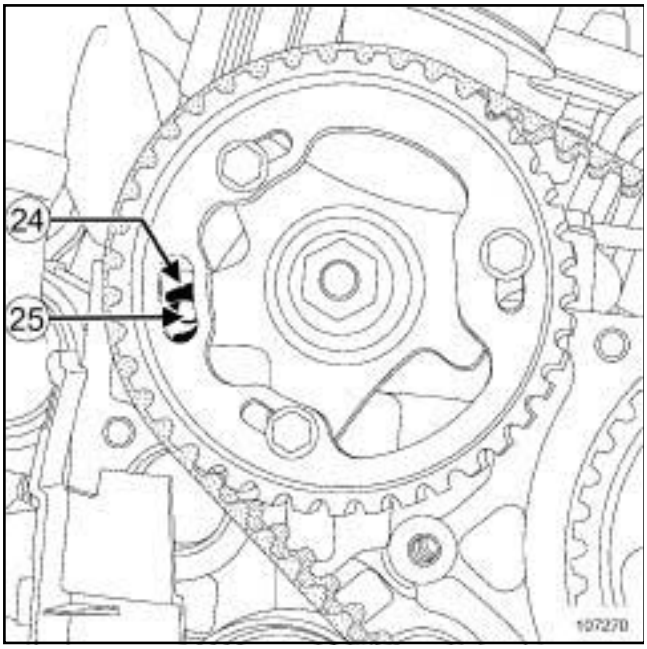
K9K, and 766 or 768



107266

- ❏ Refit the bolt from the camshaft timing sprocket crown.
- ❏ Torque tighten the **camshaft timing sprocket crown bolts (14 Nm)** using a **torque wrench**.
- ❏ Remove:
  - the TDC setting pin **(Mot. 1489)**,
  - the camshaft timing sprocket setting pin ***(5)*** **(Mot. 1430)**.

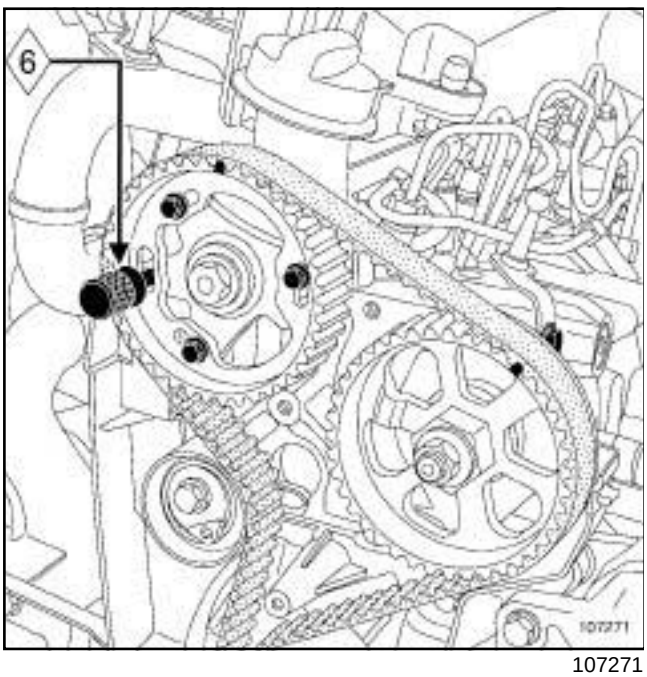
K9K, and 766 or 768



107270

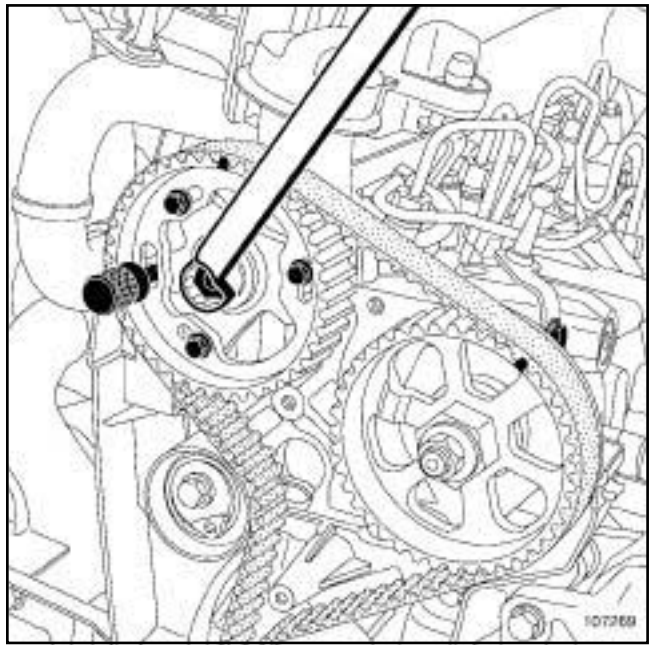
❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole (**24**) in the camshaft timing sprocket is opposite the hole (**25**) in the cylinder head:

- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



107271

❏ Lock the camshaft timing sprocket using the (**6**) **(Mot. 1430)**.



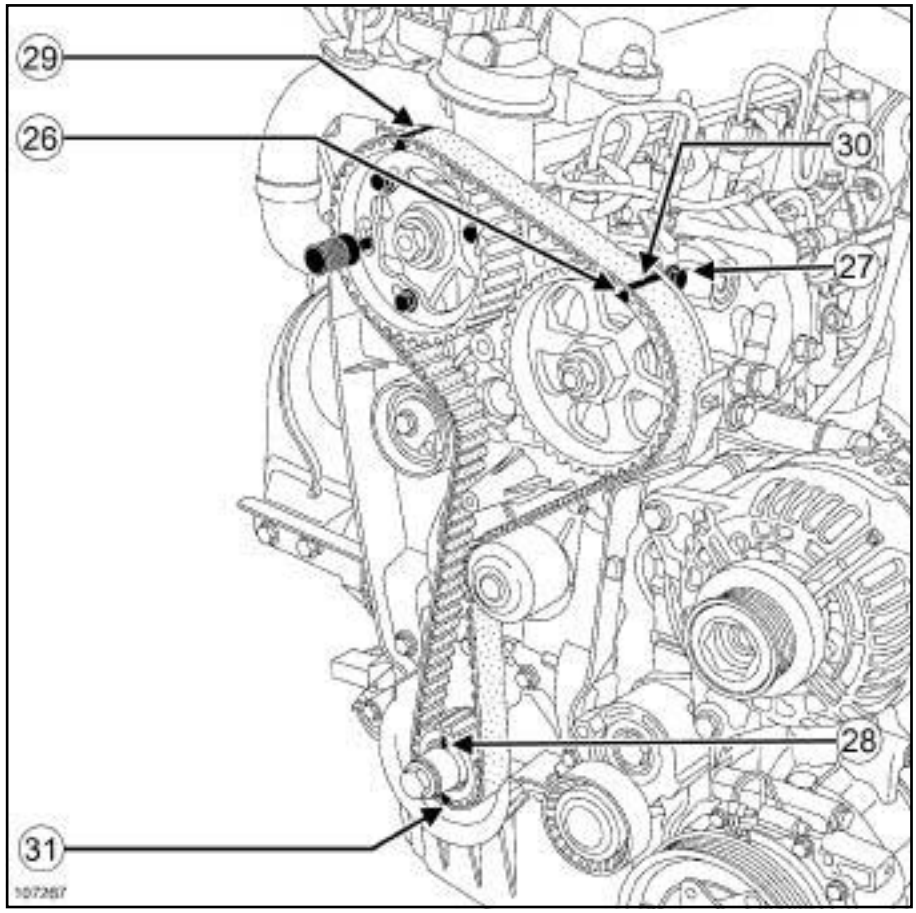
107269

❏ If the pin **(Mot. 1430)** does not engage:

- loosen the camshaft timing sprocket crown bolts by a maximum of one turn,
- turn the camshaft timing sprocket hub using a **offset spanner (18 mm)** to set the camshaft timing sprocket hub,
- do not retighten the camshaft timing sprocket crown bolts.

❏ Loosen the camshaft timing sprocket crown bolts by a maximum of one turn.

K9K, and 766 or 768



107267

❏ Check:

- that the high pressure pump pinion mark (**26**) is opposite the bolt head (**27**) ,
- that the crankshaft timing sprocket collet (**28**) is positioned vertically at the top,
- that there are 19 belt tooth grooves between the marks on the camshaft sprocket (**29**) and the high pressure pump pinion (**30**) ,
- that there are 51 belt tooth grooves between the crankshaft sprocket marks (**31**) and the high pressure pump pinion (**30**) .

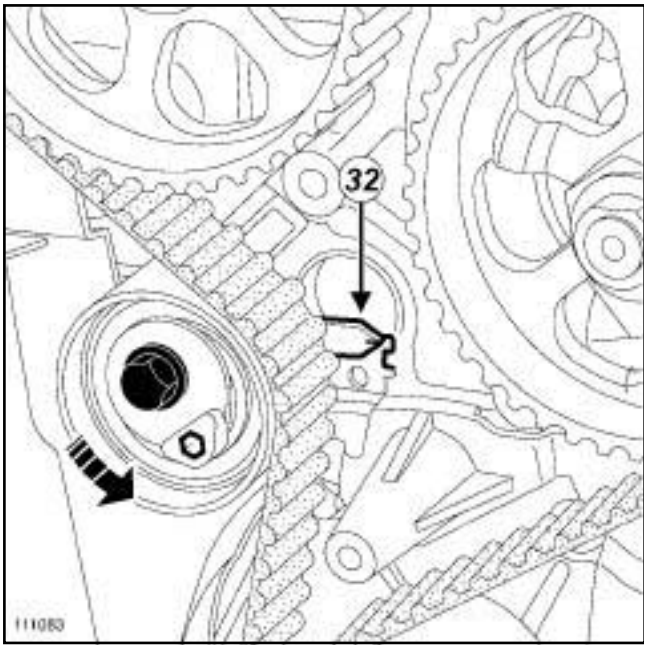
Note:

After two turns, the tensioning roller index markers may be in two different positions.

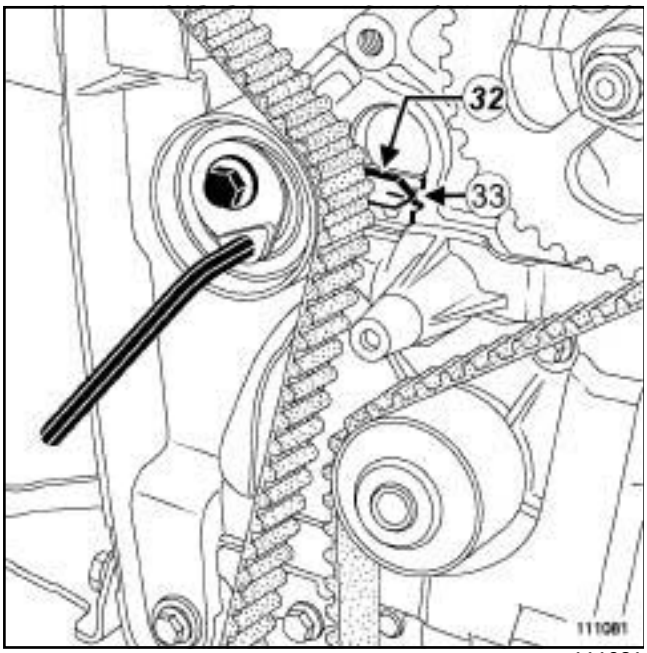
The rotation of the tensioning roller eccentric depends on the position.

K9K, and 766 or 768

First position



111083



111081

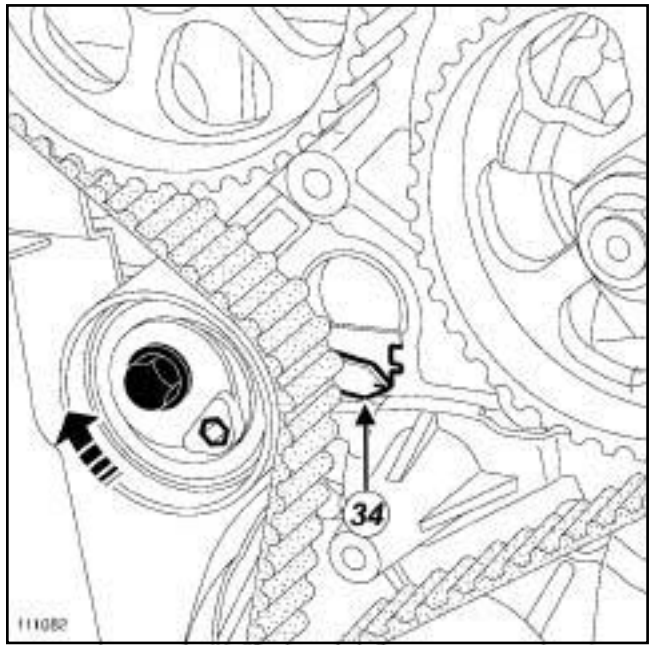
❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**32**) in the middle of the timing window (**33**) , turning the key anti-clockwise.

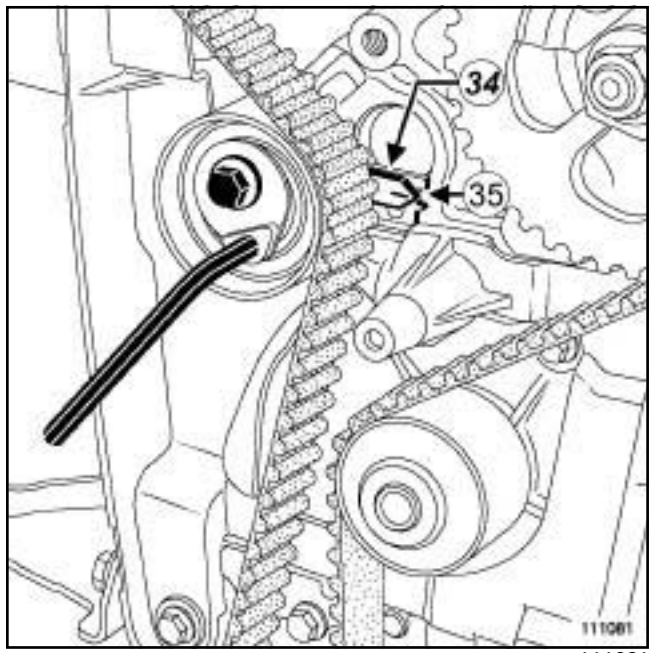
❏ Torque tighten:

- the **tensioning roller bolt (27 Nm)** using a **torque wrench**.
- the **camshaft timing sprocket crown bolts (14 Nm)** using a **torque wrench**.

Second position



111082



111081

❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**34**) in the middle of the timing window (**35**) , turning the key clockwise.

❏ Torque tighten:

- the **tensioning roller bolt (27 Nm)** using a **torque wrench**,
- the **camshaft timing sprocket crown bolts (14 Nm)** using a **torque wrench**.

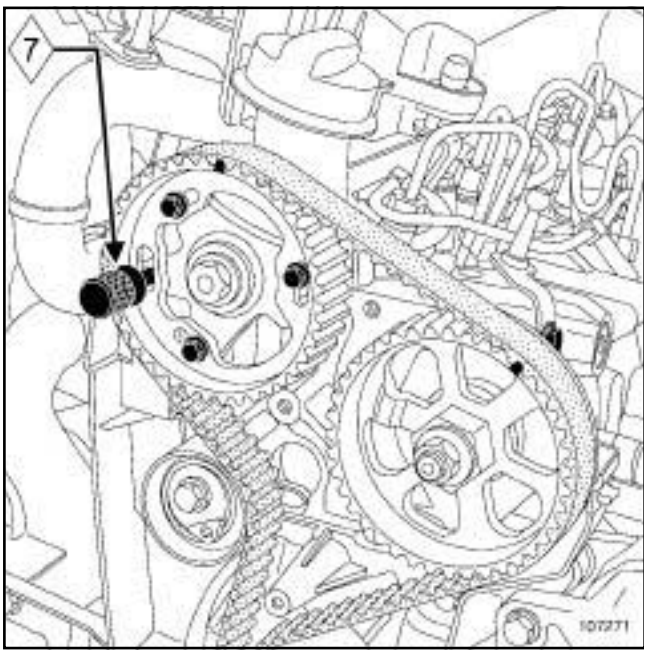
K9K, and 766 or 768

❏ Remove the following tools:

- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole in the camshaft timing sprocket is opposite the hole in the cylinder head:

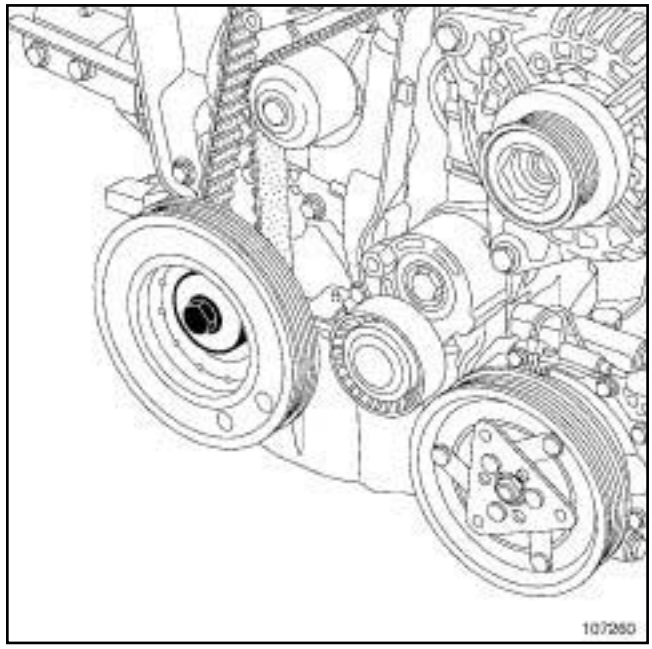
- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



107271

❏ Lock the camshaft timing sprocket using the (**7**) **(Mot. 1430)**.

❏ If the pin does not engage, repeat the timing belt refitting operation.



107260

❏ Refit the accessories crankshaft pulley with a new bolt.

❏ Tighten to torque and angle (crankshaft in contact with the TDC setting pin) the **crankshaft accessories pulley bolt M14 (120 Nm + 95° ± 15°)** using a **torque/angle wrench** or a **torque wrench** and a **cylinder head bolt tightening gauge (angular measuring type)**.

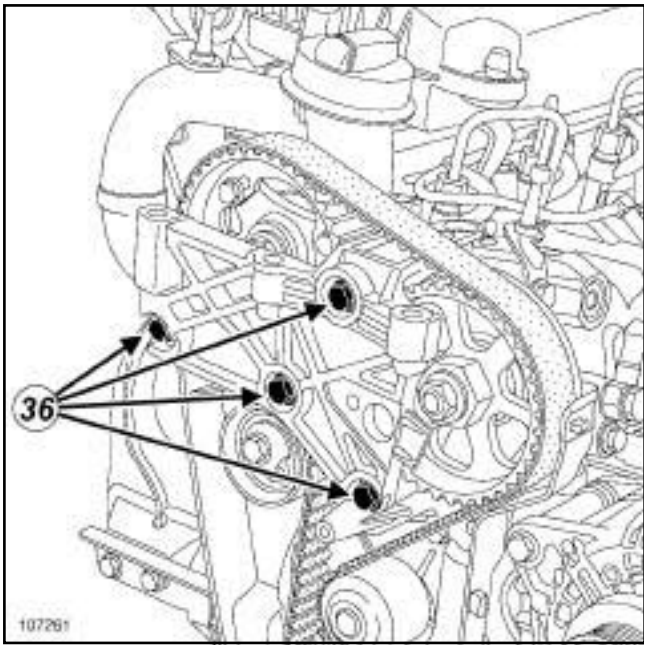
❏ Remove the following tools:

- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❏ Refit the TDC pin plug, coating the threading with **SILICONE ADHESIVE SEALANT**.

❏ Torque tighten the **TDC setting pin plug (25 Nm)** using a **torque wrench**.

K9K, and 766 or 768



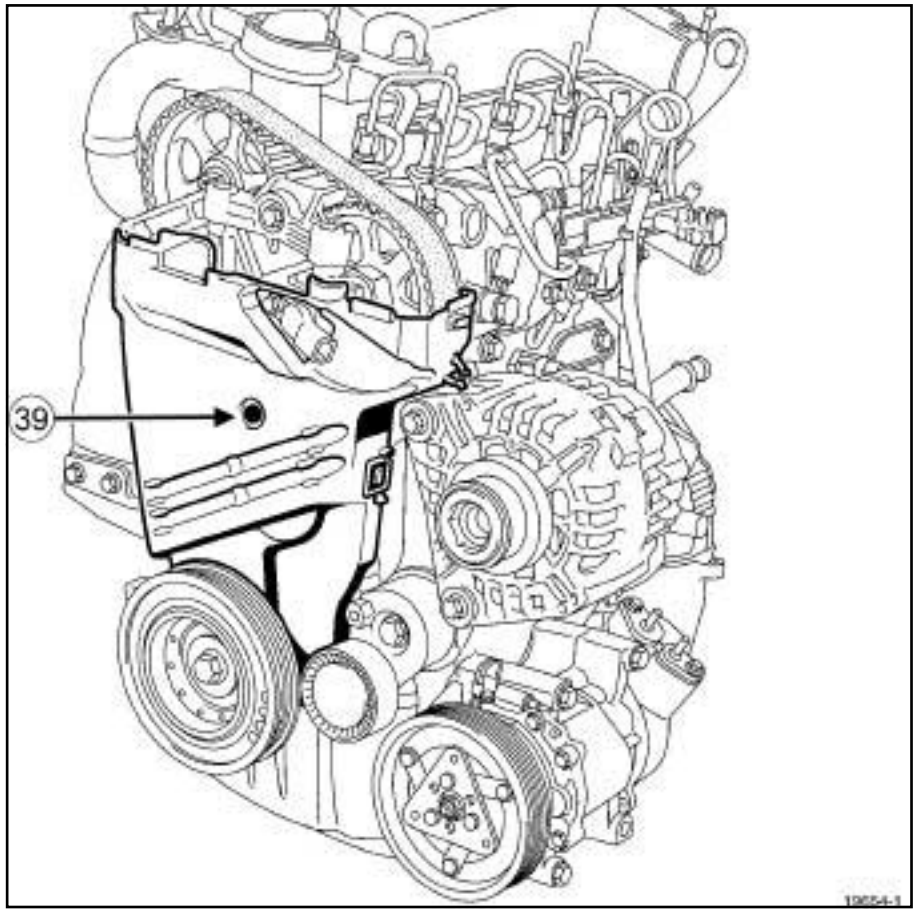
107261

❑ Refit:

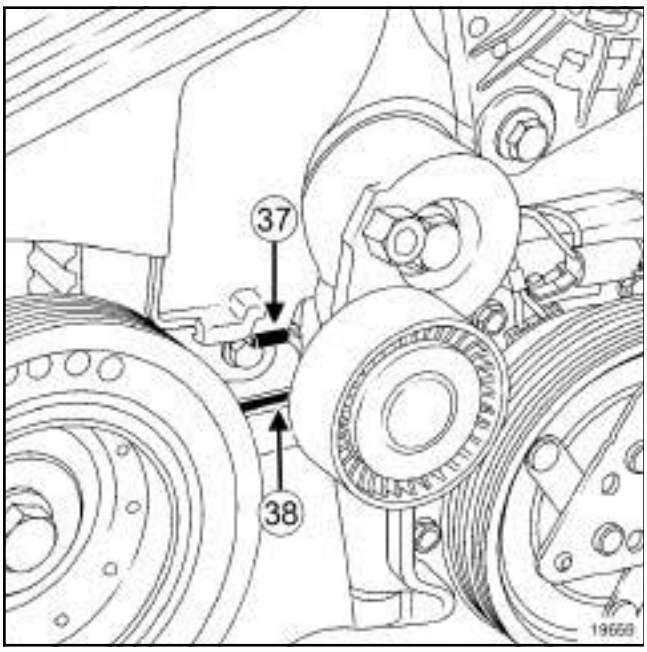
- the cylinder head suspended mounting support,
- the cylinder head suspended mounting bolts (**36**) ,

❑ Torque tighten the **cylinder head suspended mounting bolts (25 Nm)** using a **torque wrench**.

K9K, and 766 or 768



19654-1

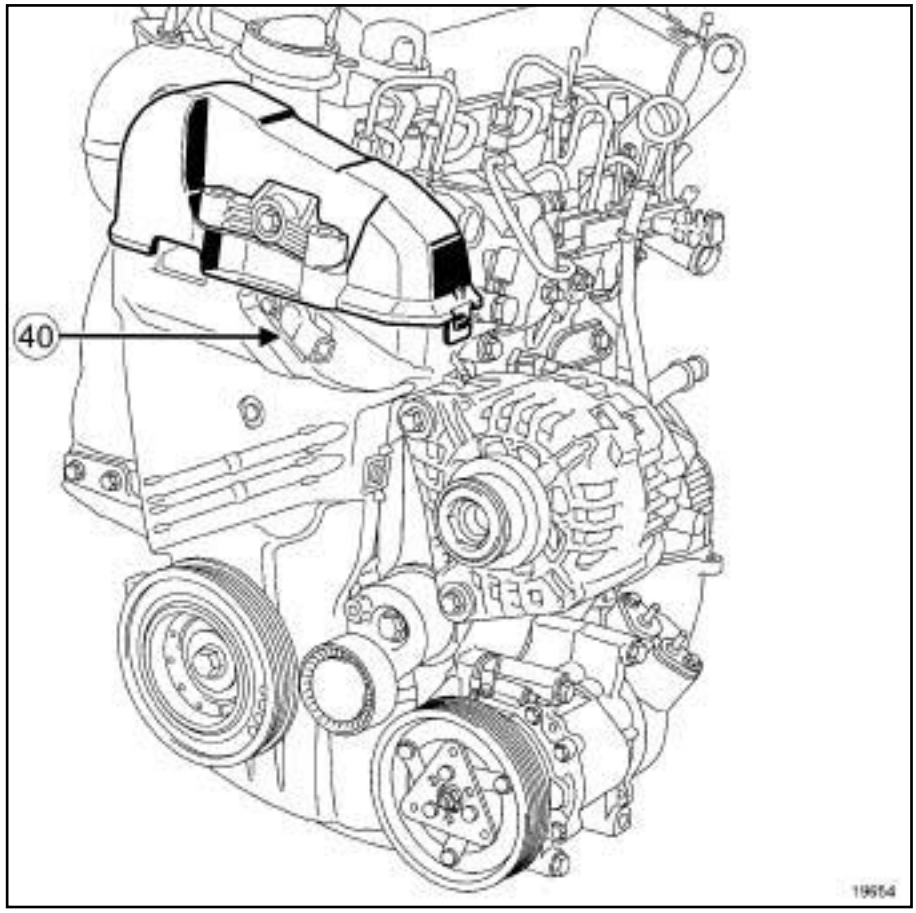


19659

❑ Refit:

- the lower timing cover, positioning the tab (**37**) in the inner timing cover hole (**38**) ,
- the timing cover plastic bolt (**39**) .

K9K, and 766 or 768



19654

❑ Refit the high pressure pump position sensor (**40**) .

❑ Torque tighten the **camshaft position sensor bolt (8 Nm)** using a **torque wrench**.

❑ Refit the upper timing cover.

II - FINAL OPERATION

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,

Remove:

- the chain,
- the **safety strap(s)**,
- the **(Mot. 1453)**,

Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover,

K9K, and 766 or 768

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the engine undertray,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J

Special tooling required	
Mot. 1368	Tool for tightening eccentric tensioning roller bolt. 8 mm Torx wrench and 12.7 mm square.
Mot. 799-01	Timing gear wheel immobiliser.
Mot. 1496	Camshaft timing tool.
Mot. 1750	Additional tool to support the camshaft adjusting tool, Mot. 1496.
Mot. 1489	TDC locating pin.
Mot. 1490-01	For locking and adjusting the camshaft pulleys.
Mot. 1487	Tool for refitting camshaft covers (57 mm diameter).
Mot. 1488	Tool for refitting camshaft covers (43 mm diameter).

Tightening torques ▽	
new crankshaft accessories pulley bolt	**40 N.m + 145° ± 15°**
timing tension wheel nut	**27 N.m**
timing fixed roller bolt	**50 N.m**
lower timing cover bolts	**12 N.m**
nut of each camshaft sprocket	**30 N.m + 84° ± 4°**
TDC pin plug	**20 N.m**
upper timing cover bolts	**46 N.m**
upper timing cover nuts	**46 N.m**
dipstick guide tube bolt	**10 N.m**
flywheel end lifting eye bolts	**10 N.m**

REMOVAL

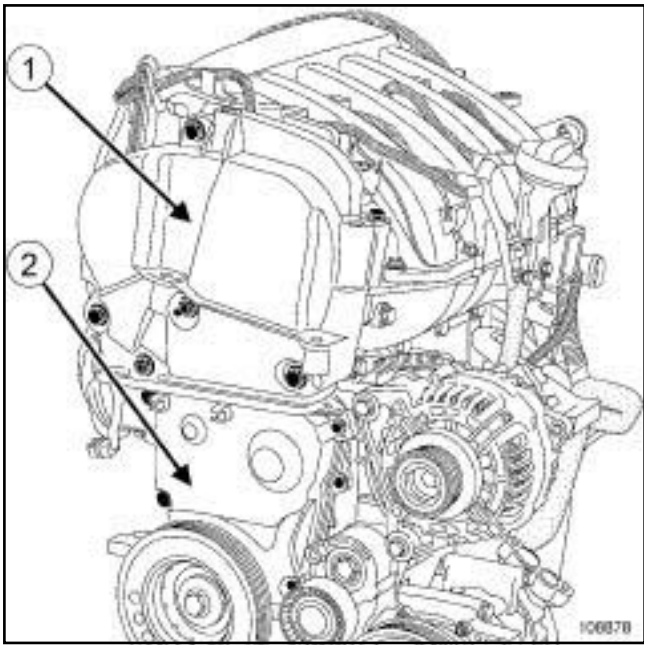
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air inlet duct clips,
- the air inlet duct,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

K4J

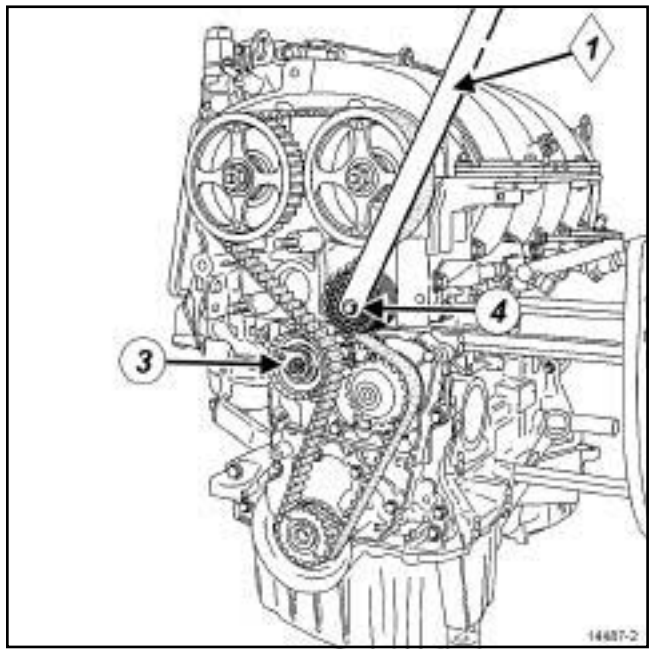


108878

❑ Remove:

- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the upper timing cover bolts,
- the upper timing cover nuts,
- the upper timing cover (**1**) ,
- the lower timing cover bolts,
- the lower timing cover (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



14487-2

❑ Loosen the nut (**3**) of the timing tensioning roller.

Note:

Do not drop the crankshaft timing sprocket when removing the timing belt.

❑ Remove:

- the timing fixed roller bolt (**4**) using the tool **(Mot. 1368)** (**1**) ,
- the timing fixed roller,
- the timing belt,
- the timing tensioning roller nut,
- the timing tensioning roller,
- the crankshaft timing sprocket.

K4J

REFITTING - PROCEDURE 1

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Timing belt**,

parts always to be replaced: Timing belt tensioning roller,

parts always to be replaced: Timing fixed roller,

parts always to be replaced: Crankshaft accessories pulley,

parts always to be replaced: Crankshaft accessories pulley bolts,

parts always to be replaced: Inlet camshaft cap,

parts always to be replaced: Exhaust camshaft cap.

II - REFITTING OPERATION FOR PART CONCERNED

❑ The first procedure applies to replacing any timing face component which has a crankshaft timing sprocket without a collet and which does not require one or more of the camshaft sprockets to be loosened.

1 - Adjusting the timing

❑

WARNING

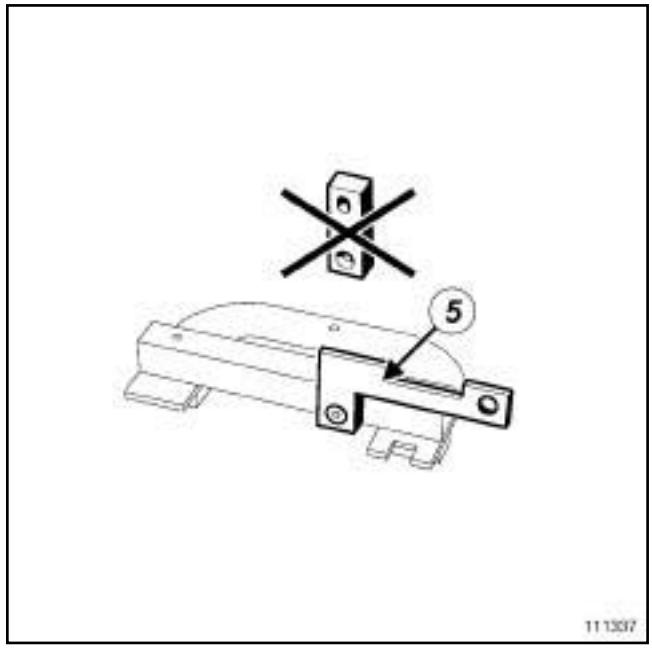
Be sure to degrease:

- the end of the crankshaft (timing end),
- the timing sprocket pressure faces and bore of the crankshaft,
- the crankshaft accessories pulley bearing faces,
- the camshaft ends (timing end),
- the camshaft sprocket bores and bearing faces.

This is to avoid timing slippage.

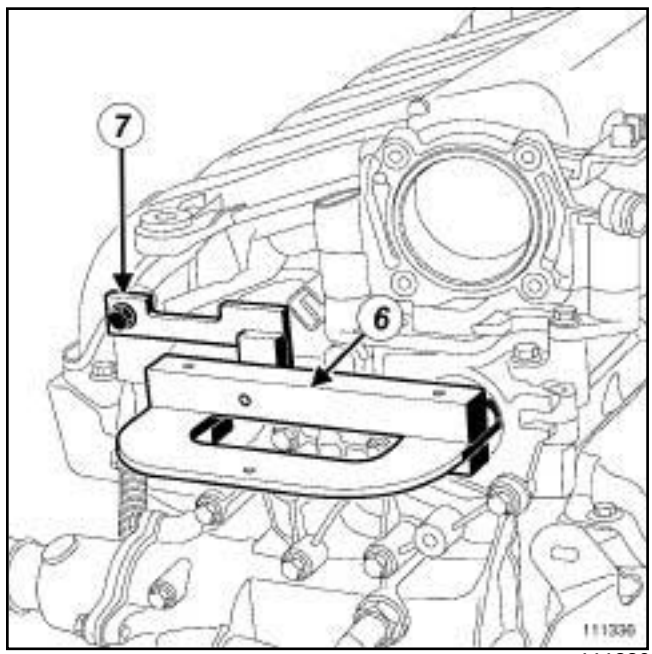
This slippage leads to engine damage.

❑ Set the camshaft grooves horizontally and below the centre line by turning the camshafts with the **(Mot. 799-01)** if necessary.



111337

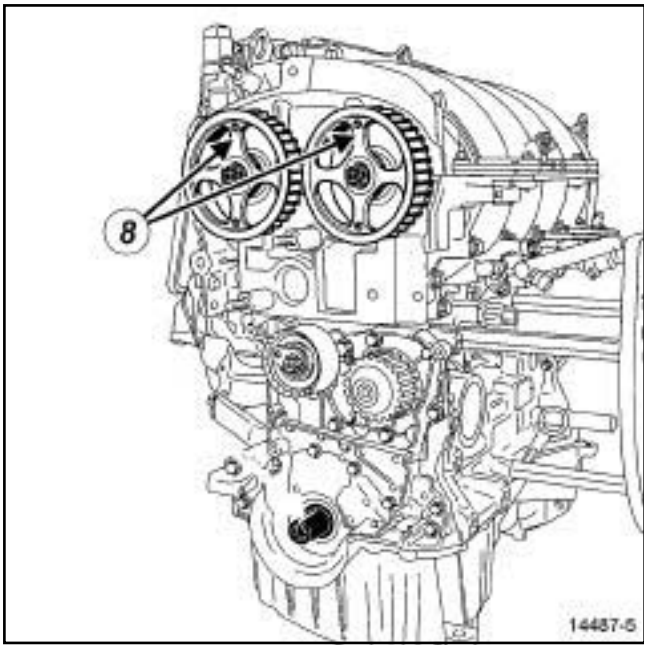
❑ Fit the **(Mot. 1496)** with the **(Mot. 1750)** (**5**) .



111336

❑ Fit:

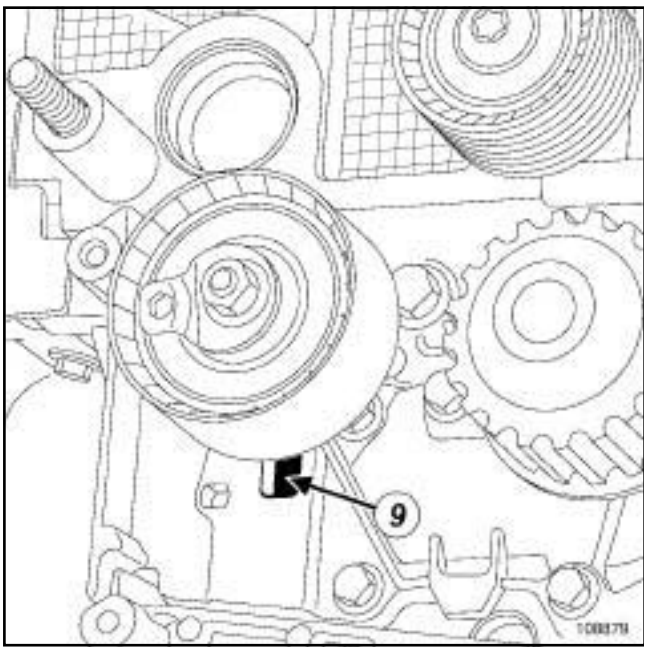
- the **(Mot. 1496)** (**6**) fitted with the **(Mot. 1750)** on the end of the camshaft,
- a lifting eye bolt (**7**) to secure the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)**.



14487-5

❏ Position the RENAULT badge (**8**) engraved on the stem of each camshaft sprocket vertically and pointing upwards.

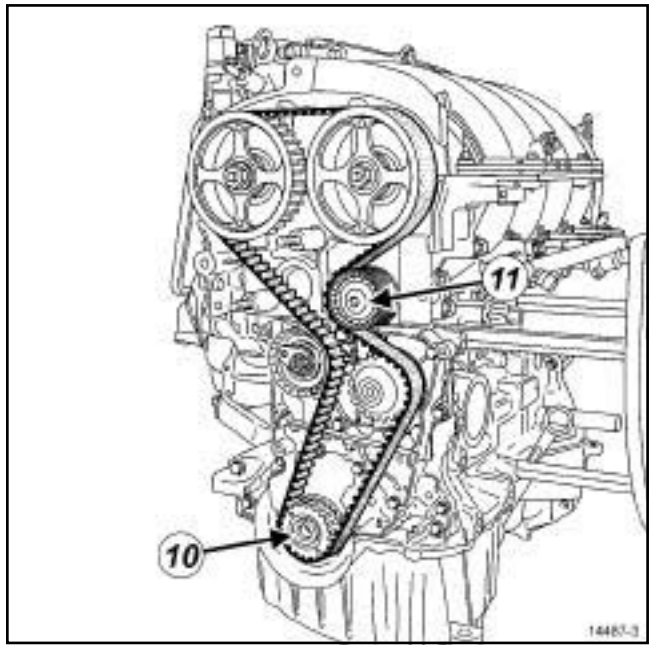
2 - Refitting



108879

❏ Refit a new timing tensioning roller by positioning the lug of the timing tensioning roller in the groove (**9**) .

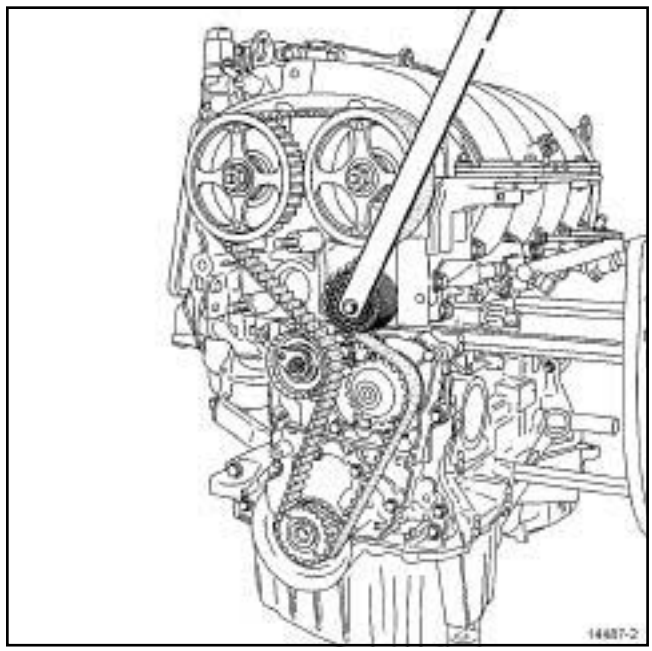
❏ Screw on the timing tensioning roller nut without tightening it.



14487-3

❏ Refit:

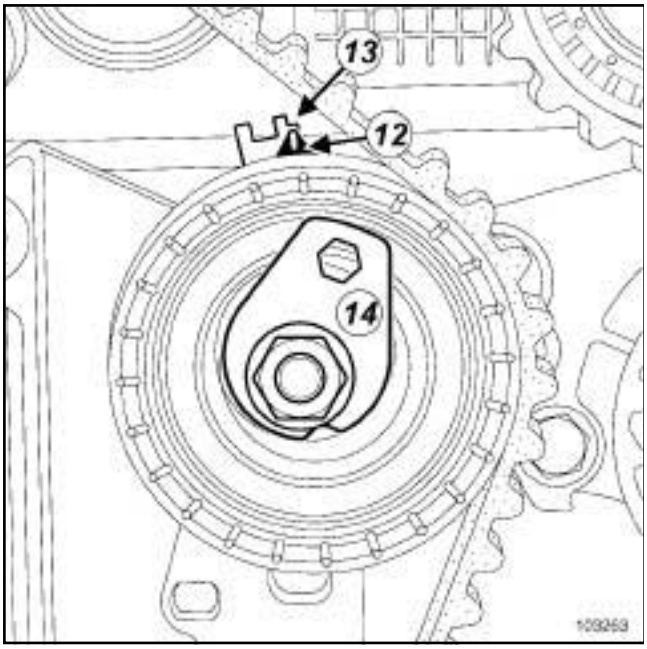
- the crankshaft timing sprocket (**10**) ,
- a new timing belt,
- a new timing fixed roller (**11**) .



14487-2

❏ Torque tighten the **timing fixed roller bolt (50 N.m)** using the tool **(Mot. 1368)**.

K4J

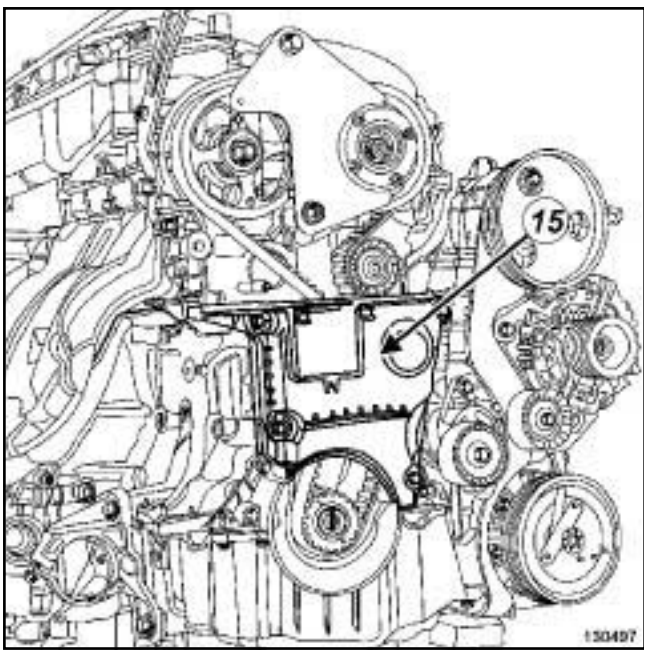


103263

❏ Position the adjustable index (**12**) opposite the mark (**13**) , by turning the eccentric (**14**) clockwise using a **6 mm** Allen key.

❏ Torque tighten the **timing tensioning roller nut (7 N.m)**.

❏ Refit the tool **(Mot. 1489)** on the cylinder block.

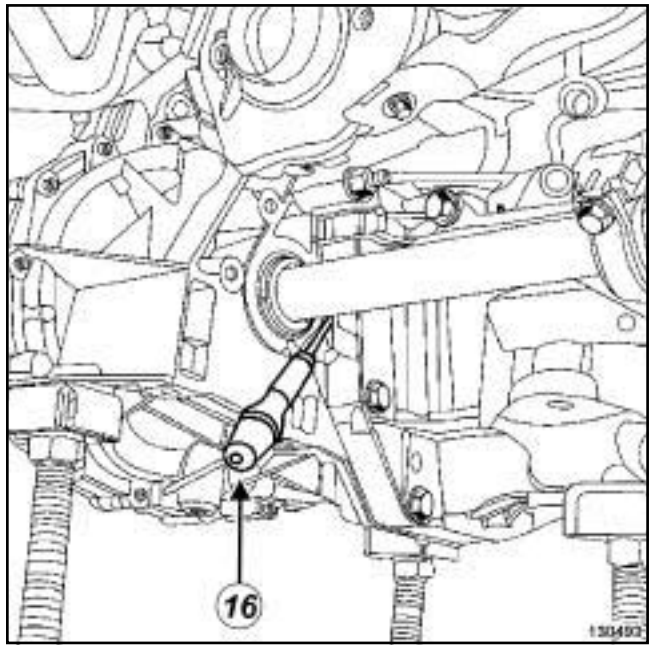


130497

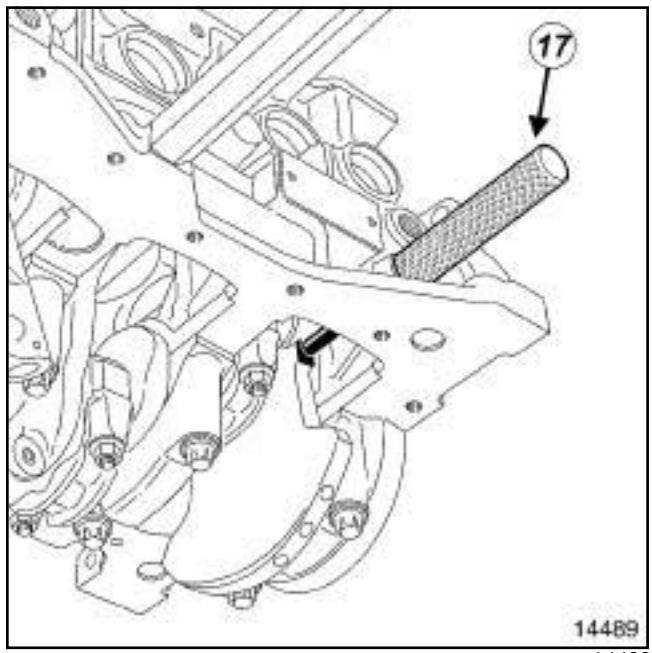
❏ Refit the lower timing cover (**15**) .

❏ Tighten to torque the **lower timing cover bolts (12 N.m)**.

❏ Refit a new crankshaft accessories pulley.



130493

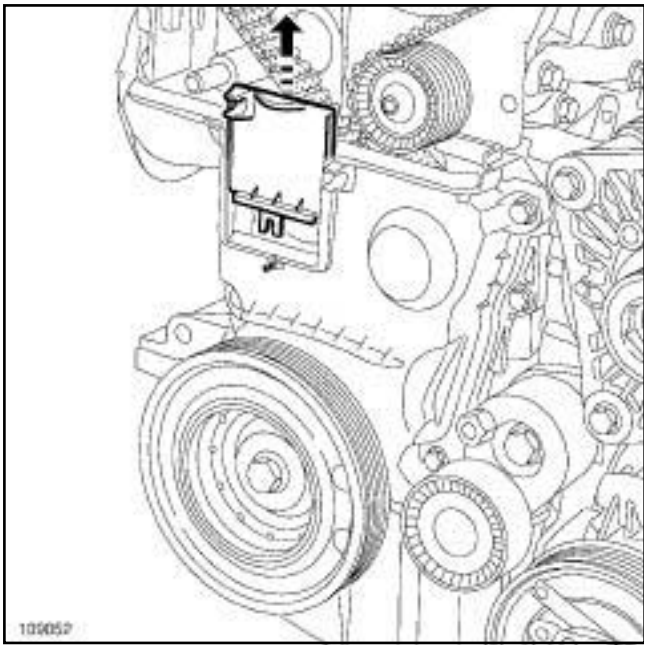


14489

❏ Use a screwdriver (**16**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the tool **(Mot. 1489)** (**17**) using the screwdriver; the crankshaft groove should be at the top.

❏ Torque and angle tighten a **new crankshaft accessories pulley bolt (40 N.m + 145° ± 15°)** (crankshaft in contact with the tool **(Mot. 1489)**).

K4J



109052

❏ Remove:

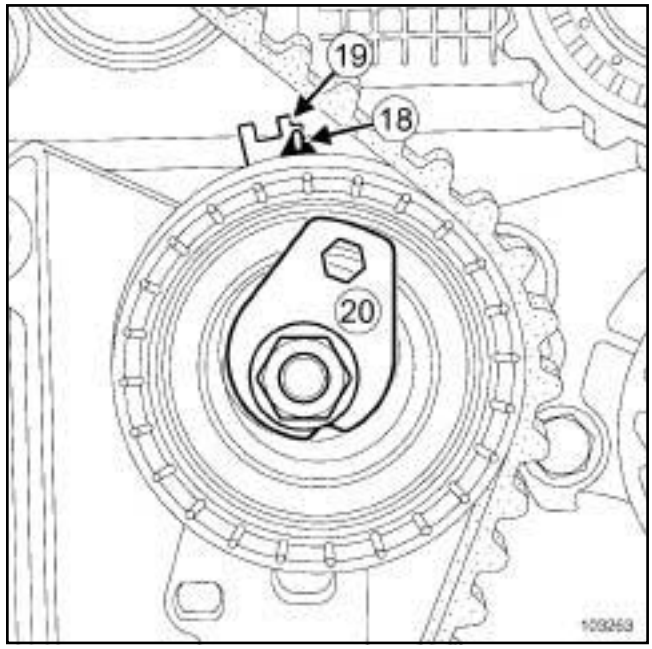
- the timing flap from the lower timing cover,
- the lifting eye bolt from the **(Mot. 1496)**,
- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.

3 - Checking the tension

❏ Rotate the crankshaft twice clockwise at the timing end and before aligning the marks made previously by the operator (on the camshaft dephaser), screw the tool **(Mot. 1489)** into the cylinder block.

❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.

❏ Remove the tool **(Mot. 1489)** from the cylinder block.



103263

❏ Check that the adjustable index (**18**) is opposite the notch (**19**) , if this is not the case:

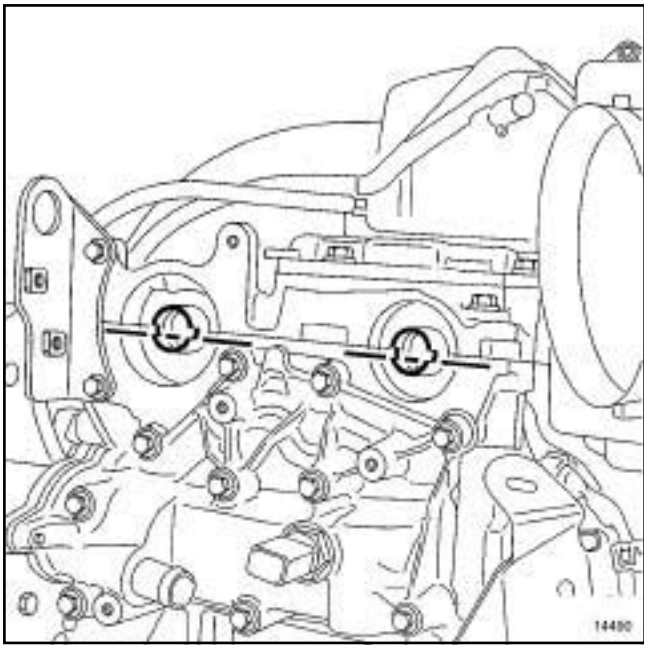
- loosen the timing tensioning roller nut by up to one turn while holding the eccentric with a **6 mm** Allen key,
- gradually move the adjustable index marker (**18**) opposite the mark (**19**) turning the eccentric cam (**20**) clockwise.

❏ Torque tighten the **timing tension wheel nut (27 N.m)**.

4 - Checking the timing

❏ Ensure that the index and the notch on the timing tensioning roller are in the correct position before checking the timing.

❏ Screw tool **(Mot. 1489)** into the cylinder block.



14490

❏ Position (without forcing) the camshaft setting tool **(Mot. 1496)** fitted with the **(Mot. 1750)** (the camshaft end grooves must be horizontal and offset towards the bottom).

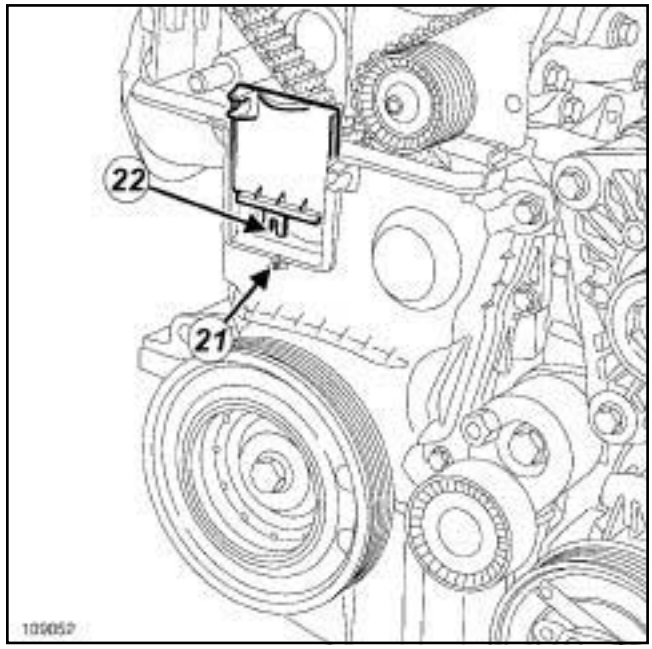
Note:

The timing adjustment and tensioning operation must be repeated if the camshaft setting tool does not engage.

❏ Remove:

- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.

❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.



109052

❏ Refit the lower timing cover flap, checking that the locating pin (**21**) fits properly in the notch (**22**) .

REFITTING -PROCEDURE 2

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Timing belt**,

parts always to be replaced: Timing belt tensioning roller,

parts always to be replaced: Timing fixed roller,

parts always to be replaced: Crankshaft accessories pulley bolts,

parts always to be replaced: camshaft timing sprocket nut,

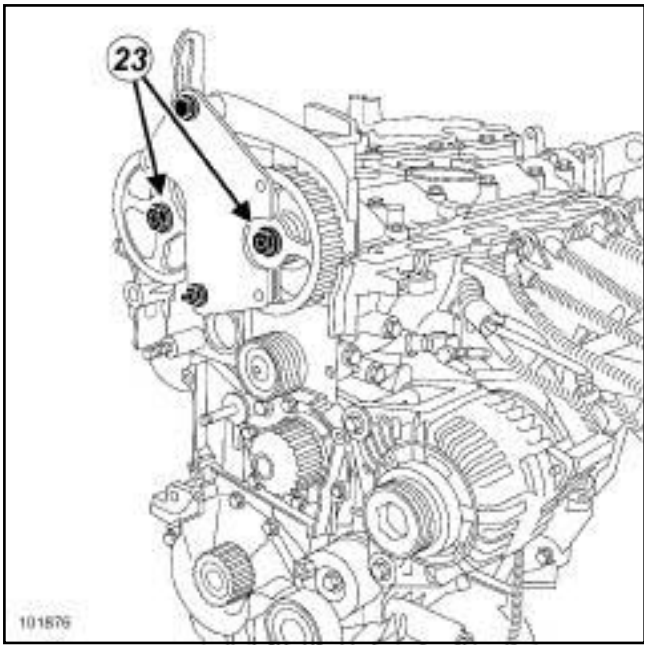
parts always to be replaced: Inlet camshaft cap,

parts always to be replaced: Exhaust camshaft cap.

II - REFITTING OPERATION FOR PART CONCERNED

❏ The second procedure is used when replacing any timing face component which has a crankshaft timing sprocket with or without a collet, that requires one or more of the camshaft sprockets to be loosened.

K4J



101876

❑ Fit the tool **(Mot. 1490-01)** on the camshaft sprockets using the tool **(Mot. 799-01)**.

❑ Loosen the nuts (**23**) of each camshaft sprocket.

❑ Remove:

- the tool **(Mot. 1490-01)** from the cylinder block,
- every camshaft sprocket nut,
- the camshaft sprockets.

1 - Adjusting the timing

❑

Note:

If the stud loosens with the nut (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) (Technical Note 3887A,11A, Top and front of engine).

WARNING

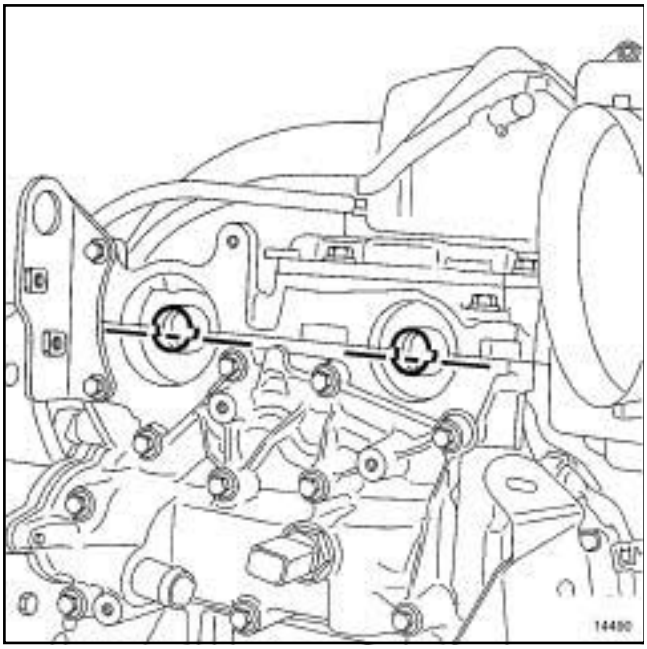
Always degrease:

- the end of the crankshaft (timing end),
- the timing sprocket pressure faces and bore of the crankshaft,
- the crankshaft accessories pulley bearing faces,
- the camshaft ends (timing end),
- the camshaft sprocket bores and bearing faces.

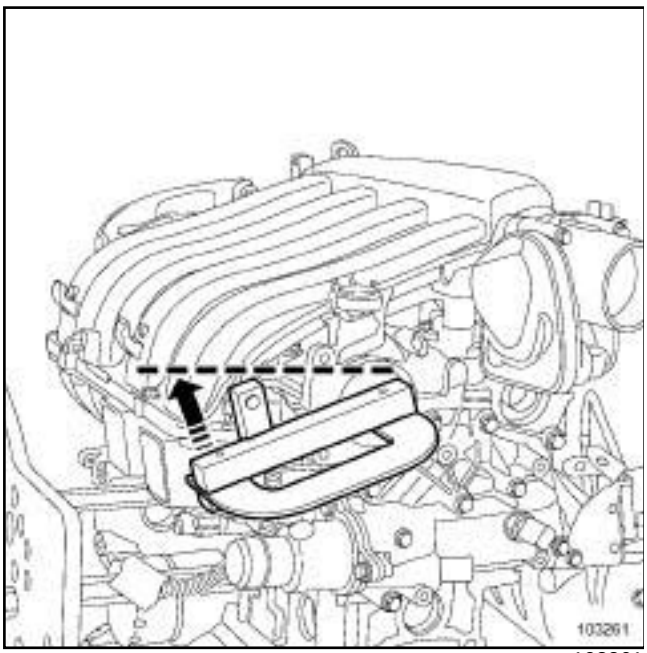
This is to avoid timing slippage.

This slippage leads to engine damage.

K4J

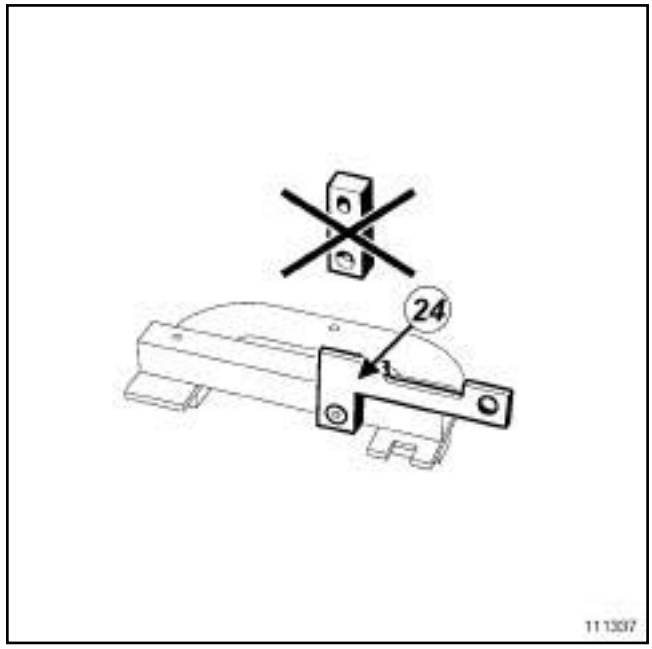


14490



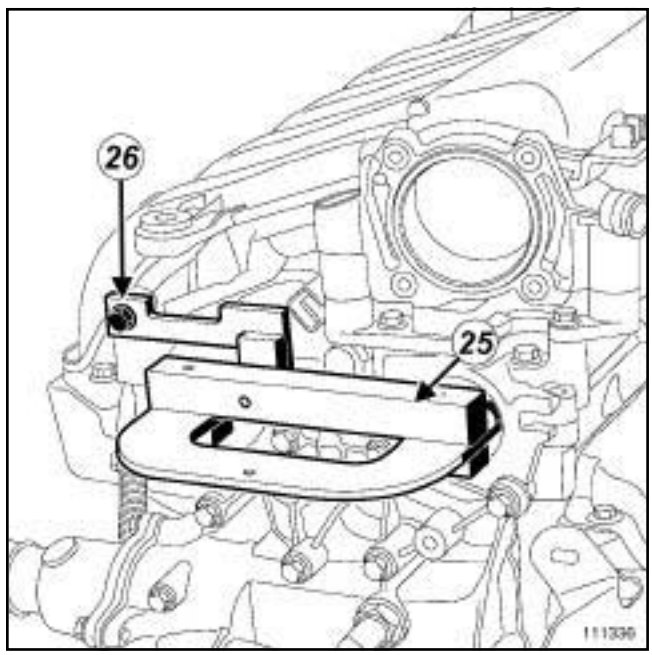
103261

❑ Position the camshaft grooves horizontally and below the centre line, by turning the camshafts with the **(Mot. 1496)** if necessary.



111337

❑ Fit the **(Mot. 1496)** with the **(Mot. 1750)** (**24**) .



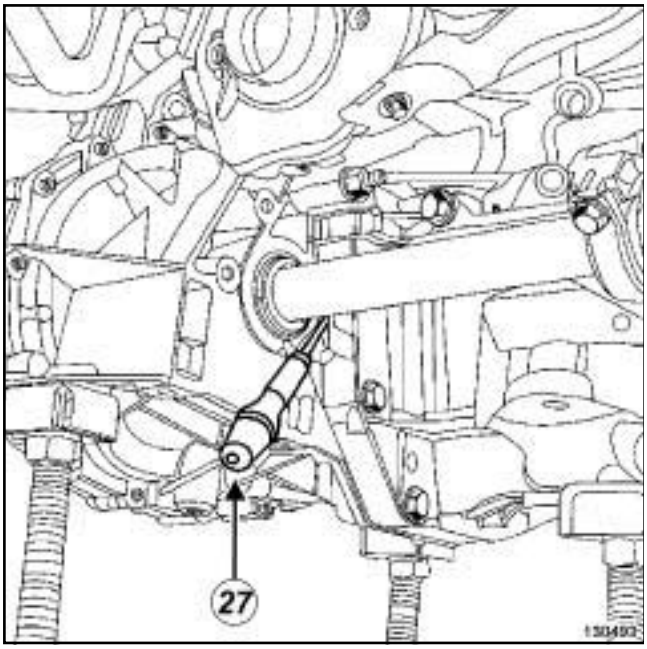
111336

❑ Fit:

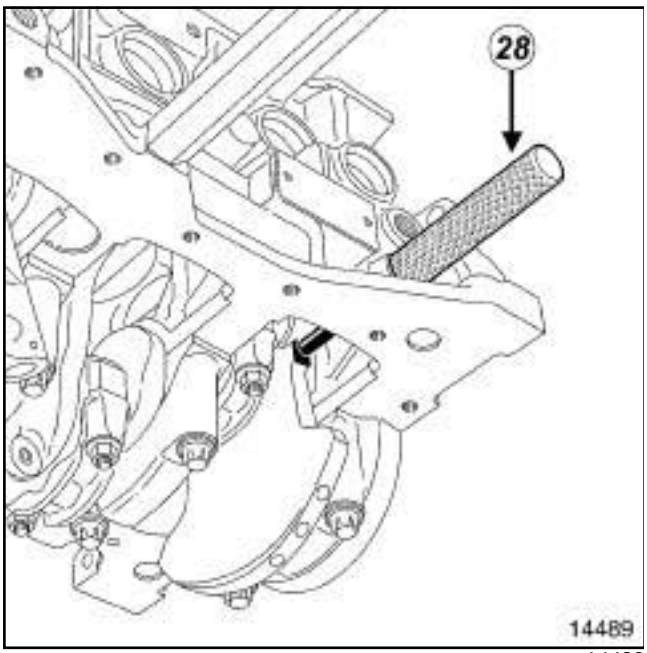
- the **(Mot. 1496)** (**25**) fitted with the **(Mot. 1750)** on the end of the camshaft,
- a lifting eye bolt (**26**) to secure the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)**.

❑ Refit:

- the crankshaft timing sprocket,
- the camshaft sprockets,
- every camshaft sprocket nut.



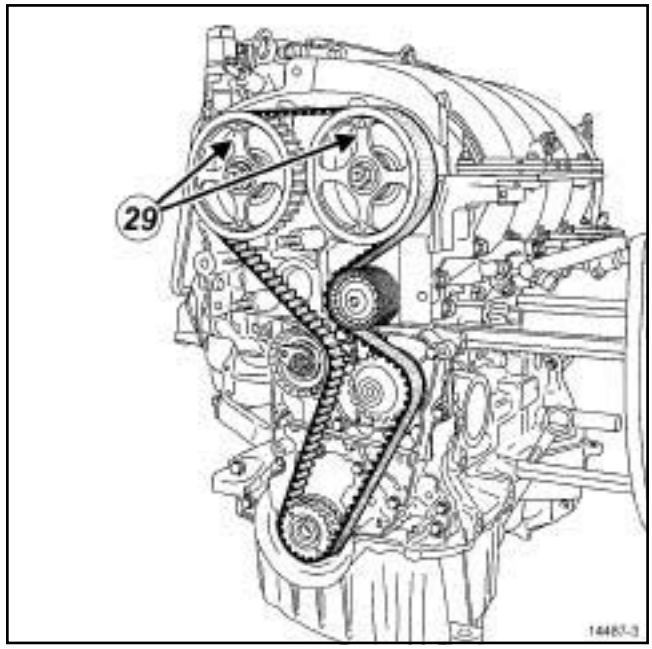
130493



14489

❏ Refit the tool **(Mot. 1489)** on the cylinder block.

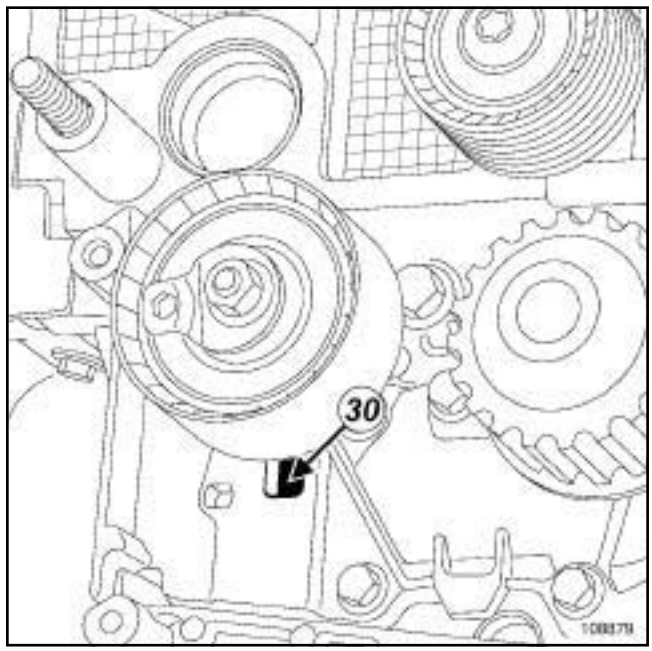
❏ Use a screwdriver (**27**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the tool **(Mot. 1489)** (**28**) using the screwdriver; the crankshaft groove should be at the top.



14487-3

❏ Position the RENAULT badge (**29**) etched on the stem of each camshaft sprocket vertically and pointing upwards.

2 - Refitting

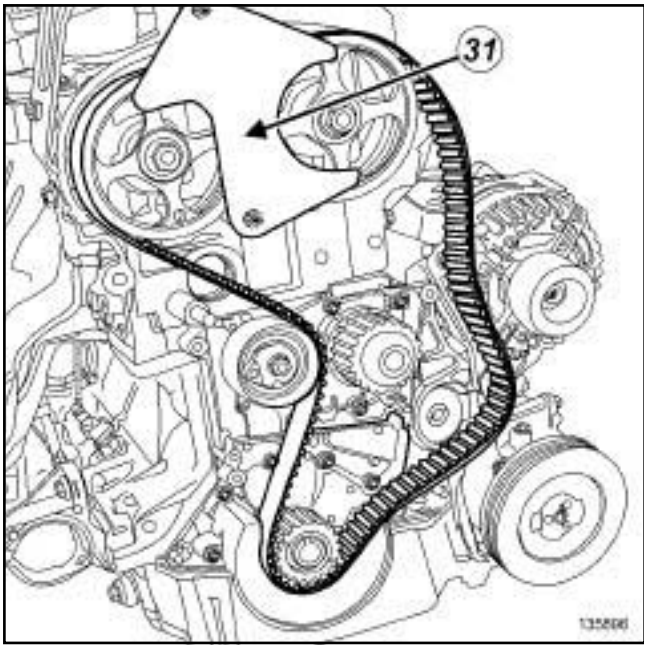


108879

❏ Refit a new timing tensioning roller by positioning the lug of the timing tensioning roller in the groove (**30**) .

❏ Screw on the timing tensioning roller nut without tightening it.

K4J



135896

❑ Refit a new timing belt starting with the sprocket of each camshaft (without moving the sprocket of each camshaft).

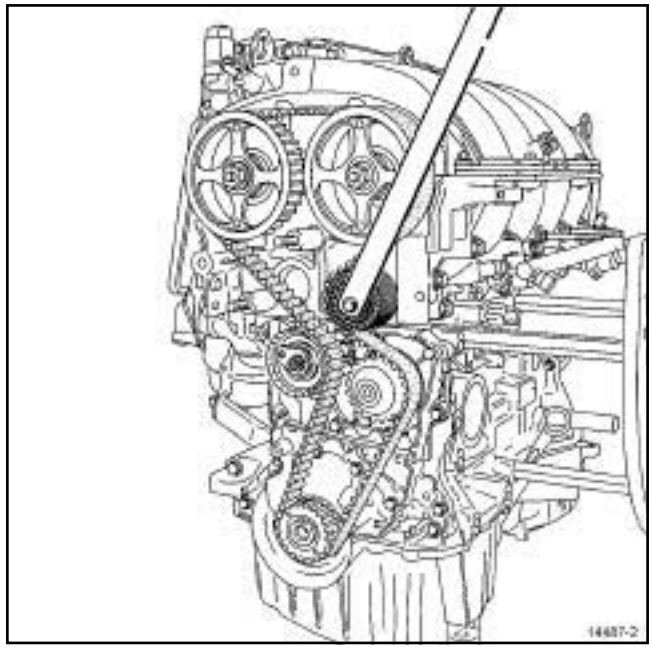
❑ Fit the tool **(Mot. 1490-01)** (**31**) on the camshaft sprockets (use the bolt and nut of the upper timing cover to fit the tool **(Mot. 1490-01)**).

Note:

Take care to properly tighten the timing belt between the two camshaft sprockets.

Note:

If the engine is equipped with a crankshaft timing sprocket with a collet, take care to properly tighten the timing belt between the exhaust camshaft sprocket and the crankshaft timing sprocket.

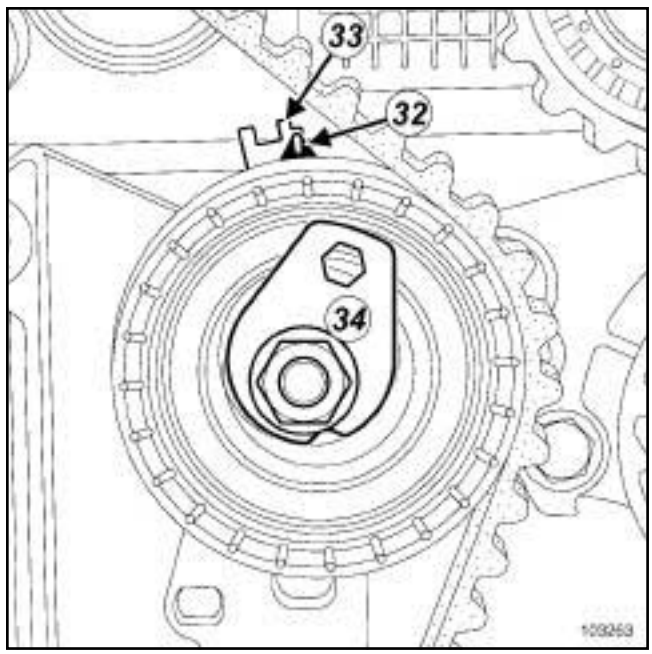


14487-2

❑ Refit a new timing fixed roller.

❑ Torque tighten the **timing fixed roller bolt (50 N.m)** using the tool **(Mot. 1368)**.

3 - Timing belt tension

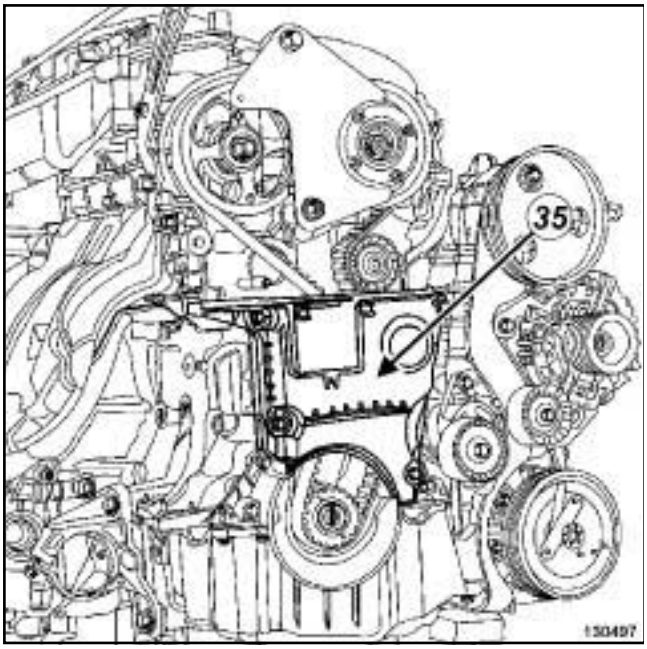


103263

❑ Position the adjustable index (**32**) opposite the mark (**33**) , by turning the eccentric (**34**) clockwise using an Allen key.

❑ Torque tighten the **timing tensioning roller nut (7 N.m)**.

K4J



130497

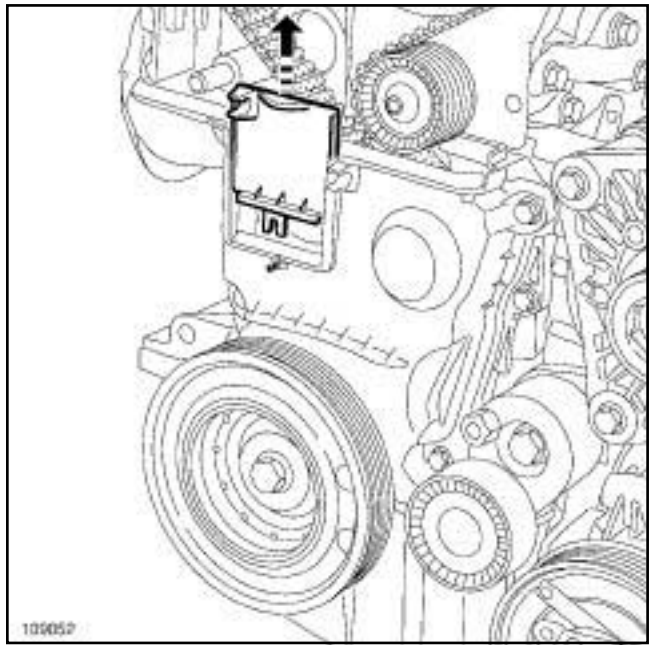
❏ Refit the lower timing cover (**35**) .

❏ Tighten to torque the **lower timing cover bolts (12 N.m)**.

❏ Refit a new crankshaft accessories pulley.

❏ Torque and angle tighten:

- the **new bolt of the crankshaft accessories pulley (40 N.m + 145° ± 15°)**,
- the **nut of each camshaft sprocket (30 N.m + 84° ± 4°)**.



109052

❏ Remove:

- the timing flap from the lower timing cover,
- the lifting eye bolt from the **(Mot. 1496)**,
- the **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the tool **(Mot. 1489)** from the cylinder block,
- the **(Mot. 1490-01)**.

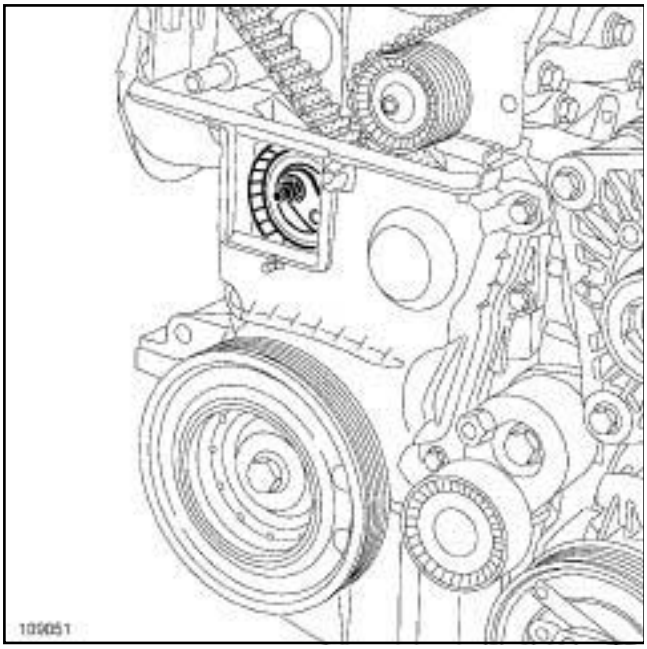
4 - Checking the tension

❏ Rotate the crankshaft twice clockwise at the timing end and before aligning the marks made previously by the operator (on the camshaft dephaser), screw the tool **(Mot. 1489)** into the cylinder block.

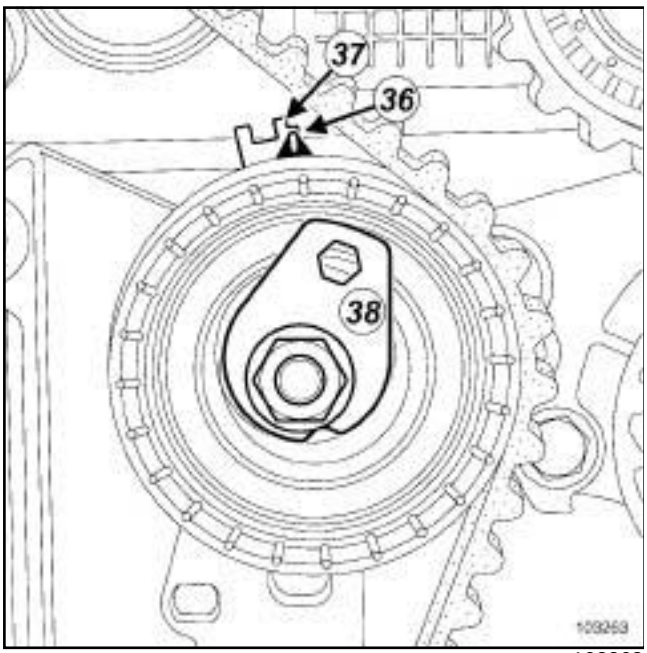
❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.

❏ Remove the tool **(Mot. 1489)** from the cylinder block.

K4J



109051



103263

❏ Check that the adjustable index (**36**) is opposite the notch (**37**) , if this is not the case:

- loosen the timing tensioning roller nut by up to one turn while holding the eccentric with an Allen key,
- gradually move the adjustable index marker (**36**) opposite the mark (**37**) turning the eccentric cam (**38**) clockwise.

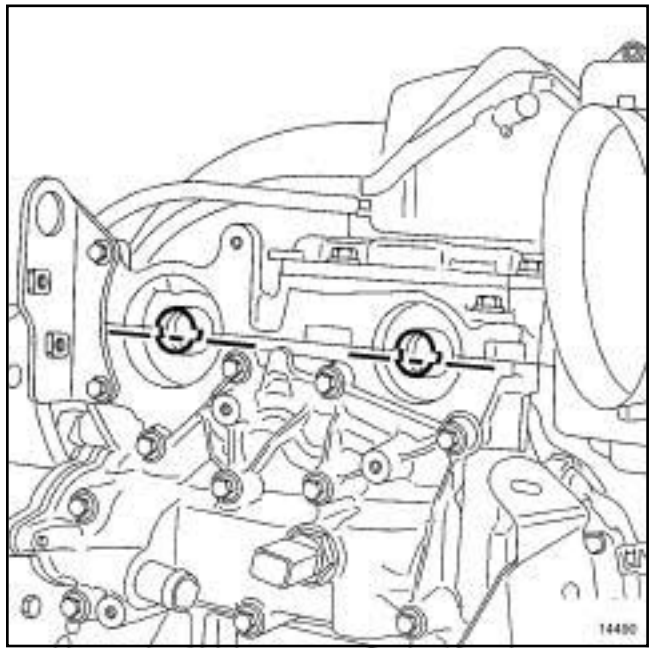
❏ Torque tighten the **timing tensioning roller nut (27 N.m)**.

5 - Checking the timing

❏ Ensure that the index and the notch on the timing tensioning roller are in the correct position before checking the timing.

❏ Screw tool **(Mot. 1489)** into the cylinder block.

❏ Move the crankshaft slowly and smoothly until it comes into contact with the tool **(Mot. 1489)**.



14490

❏ Position (without forcing) the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)** (the camshaft end grooves must be horizontal and offset downwards).

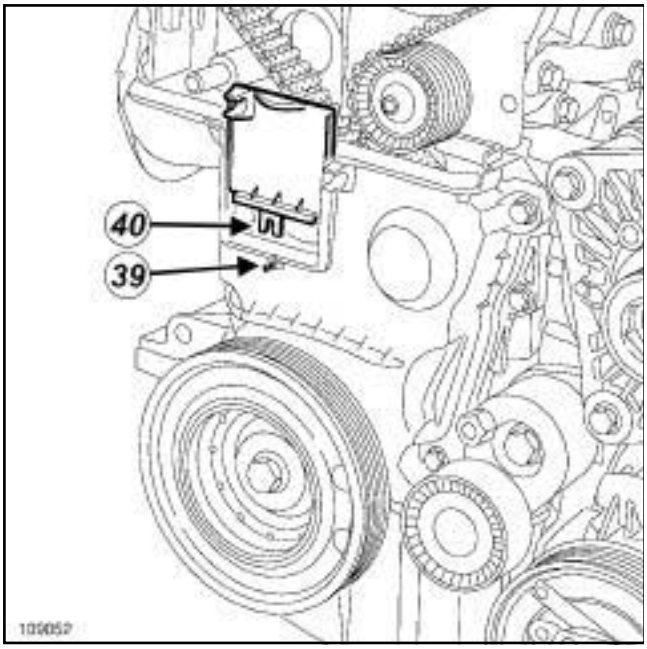
Note:

If the tool **(Mot. 1496)** equipped with the tool **(Mot. 1750)** cannot be engaged, readjust the timing and the tension.

❏ Remove:

- the timing tool **(Mot. 1496)** fitted with the **(Mot. 1750)**,
- the **(Mot. 1489)** from the cylinder block.

K4J



109052

❏ Refit the lower timing cover flap, checking that the locating pin (**39**) fits properly in the notch (**40**) .

III - FINAL OPERATION

❏ Refit:

- a new inlet camshaft plug using the **(Mot. 1487)**,
- a new exhaust camshaft plug using the tool **(Mot. 1488)**.

❏ Apply a drop of **SILICONE ADHESIVE SEALANT** (see) (04B, Consumables - Products) to the thread of the TDC pin plug.

❏ Tighten to torque the **TDC pin plug (20 N.m)**.

❏ Refit the upper timing cover.

❏ Torque tighten:

- the **upper timing cover bolts (46 N.m)**,
- the **upper timing cover nuts (46 N.m)**.

❏ Refit the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Refit:

- the engine wiring,
- the lifting eye on the flywheel end,
- the dipstick guide.

❏ Torque tighten:

- the **dipstick guide tube bolt (10 N.m)**,
- the **flywheel end lifting eye bolts (10 N.m)**.

❏ Clip on the lifting eye connector.

❏ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the air inlet duct,
- the air inlet duct clips,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

F4R

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.
Mot. 1672	Lower engine support.
Mot. 1054	TDC setting pin.
Mot. 1496	Camshaft timing tool.
Mot. 1801	Camshaft sprocket locking tool F4 engines.
Mot. 1509-01	Adapter kit for tool Mot.1509 or Mot.1801
Mot. 1487	Tool for refitting camshaft covers (57 mm diameter).
Mot. 1488	Tool for refitting camshaft covers (43 mm diameter).

Tightening torques ▽	
toothed sprocket nuts	**80 N.m**
fixed roller bolt	**50 N.m**
tensioning roller nut	**7 N.m**
toothed sprocket nuts	**80 N.m**
old inlet camshaft dephaser bolt	**30 N.m**
old exhaust camshaft pulley nut	**30 N.m**
tensioning roller nut	**32 N.m**
toothed sprocket nuts	**80 N.m**
new inlet camshaft dephaser bolt	**30 N.m**
new exhaust camshaft pulley nut	**30 N.m**
new inlet camshaft dephaser bolt	**90 N.m**
inlet camshaft dephaser pulley blanking cover	**15 N.m**

Tightening torques ▽	
new exhaust camshaft pulley nut	**86° ± 6°**
lower timing cover bolts	**9 N.m**
upper timing cover bolts	**38 N.m**
new bolt on the crankshaft accessories pulley	**40 N.m + 110° ± 10°**

WARNING

Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

Note:

Two different engine support tools can be used to remove the right-hand suspended engine mounting:

- the **(Mot. 1453)** fitted with the **(Mot. 1453-01)** used only for standard removal and refitting of the timing belt,
- the **(Mot. 1672)** used for removing and refitting the timing belt followed by removal and refitting of the cylinder head, which releases the lifting eyes for the cylinder head to be removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

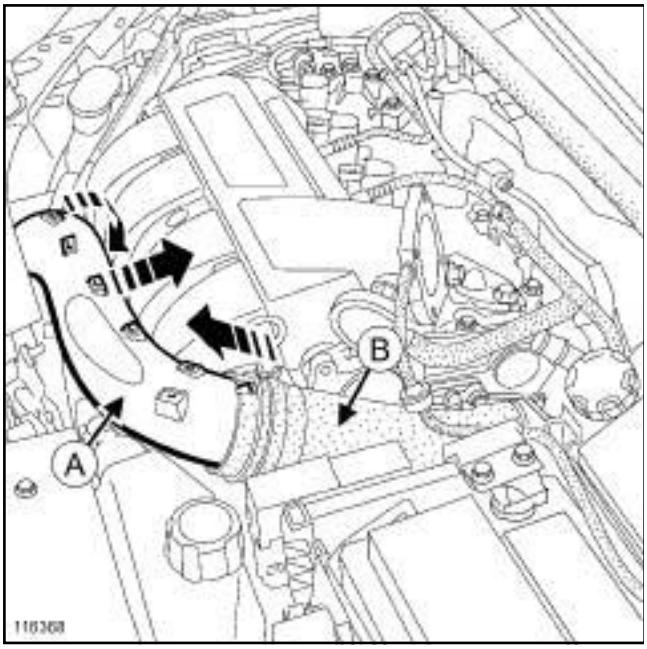
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

F4R



116368

❏ Remove the air inlet duct (**A**) :

- unclip it from the front end panel,
- turn it and disconnect it.

❏ Disconnect the duct (**B**) :

- from the air resonator,
- from the air filter unit.

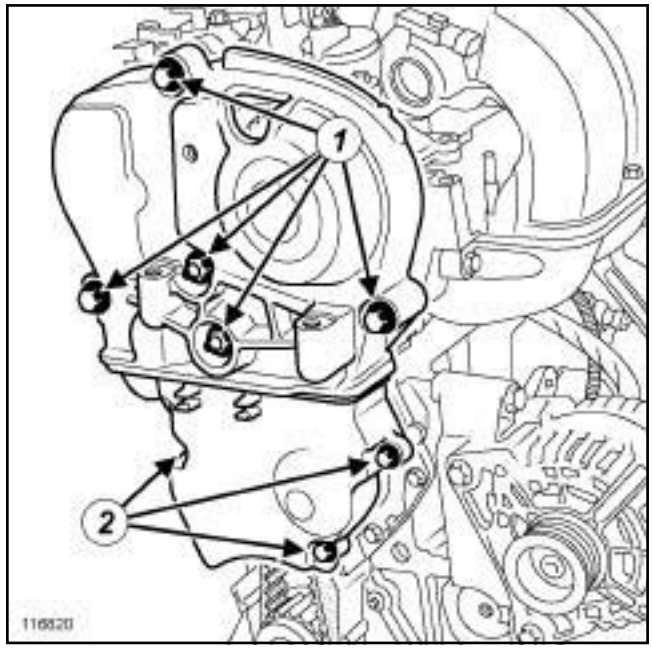
❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the engine undertray.

❏ Remove the crankshaft accessories pulley, locking the flywheel with a screwdriver.

❏ Fit the timing end lifting eye (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

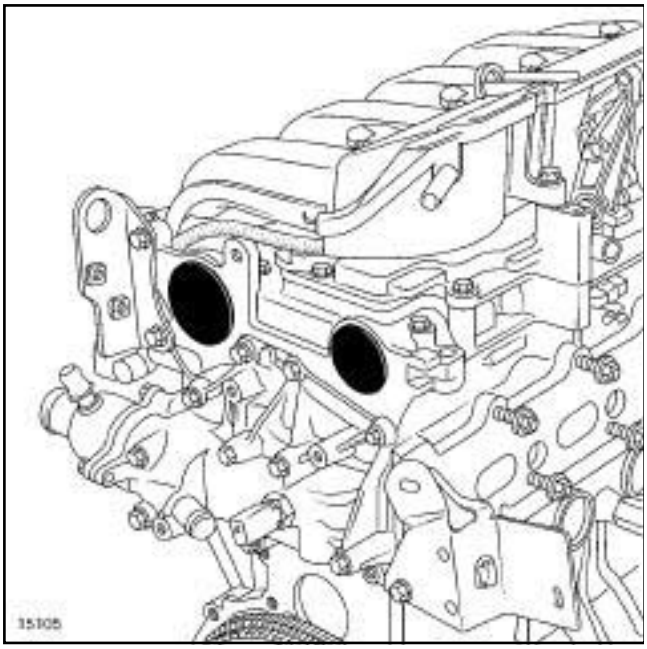
❏ Fit the **(Mot. 1453)** with the **(Mot. 1453-01)** and with retaining belts.



116820

❏ Remove:

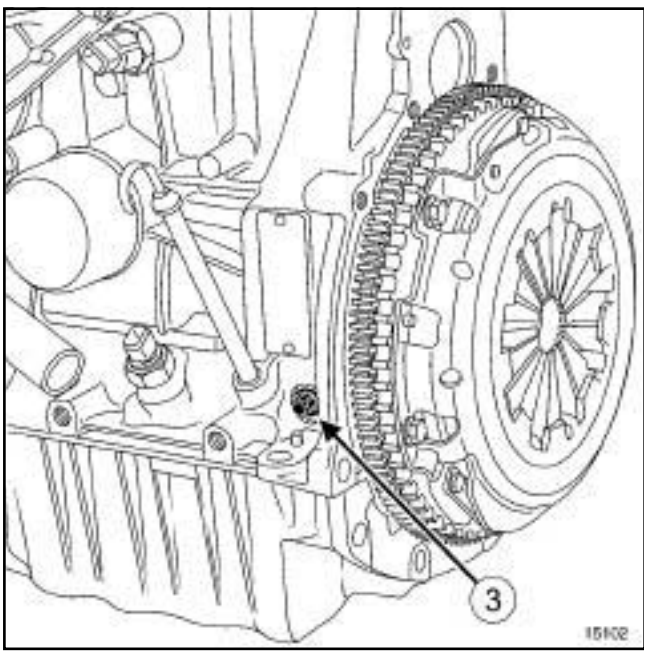
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the nuts and bolts (**1**) on the upper timing cover,
- the upper timing cover,
- the bolts (**2**) on the lower timing cover,
- the lower timing cover.



15105

❏ Use a screwdriver to make a hole in the middle of the camshaft sealing plugs.

❏ Remove the camshaft sealing plugs.



15102

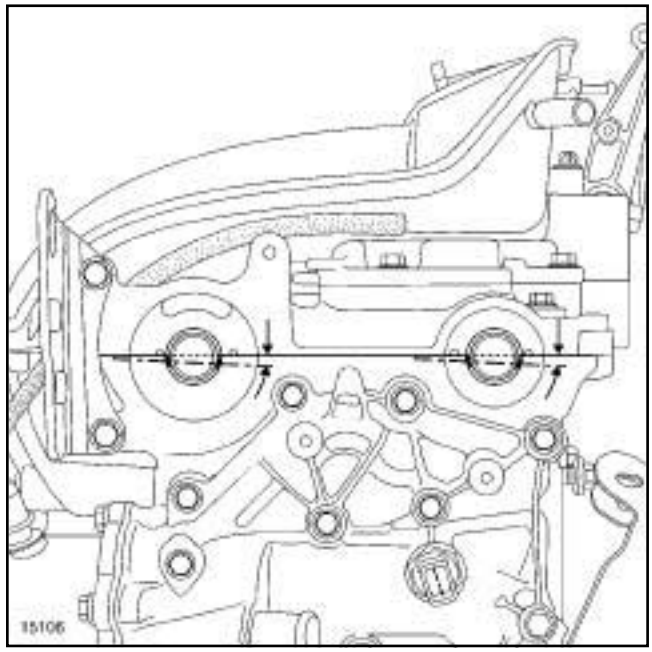
❏ Remove the TDC setting pin plug (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - ADJUSTING THE TIMING

❏ Refit:

- the crankshaft accessories pulley,
- the crankshaft accessories pulley bolt.

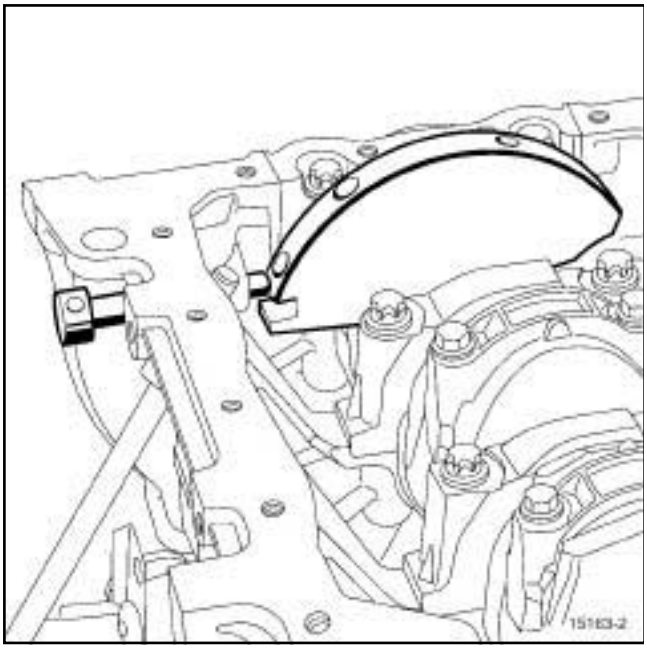


15106

❏ Rotate the engine clockwise (timing end) so that the camshaft grooves are offset below the centre line and almost horizontal.

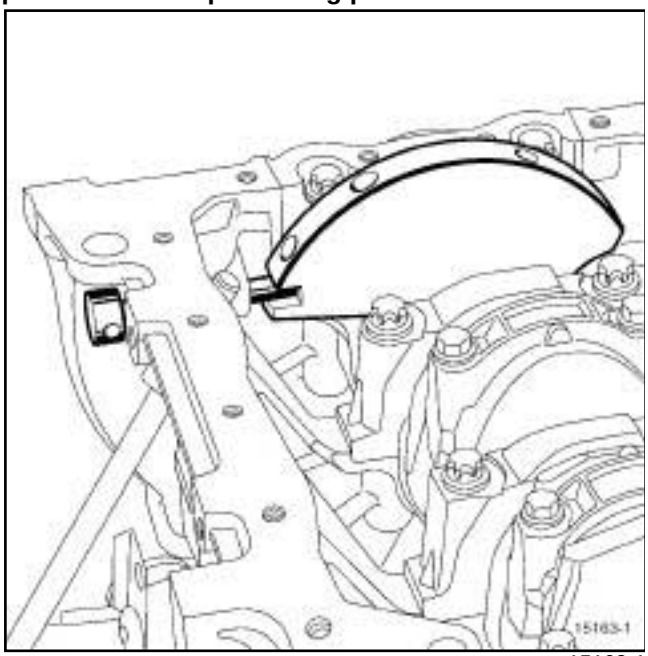
F4R

position of TDC pin before setting point



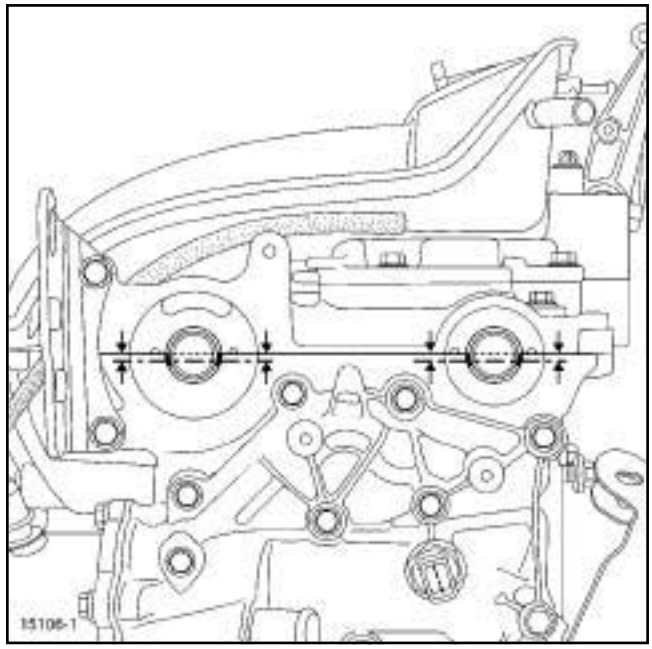
15163-2

position of TDC pin setting point



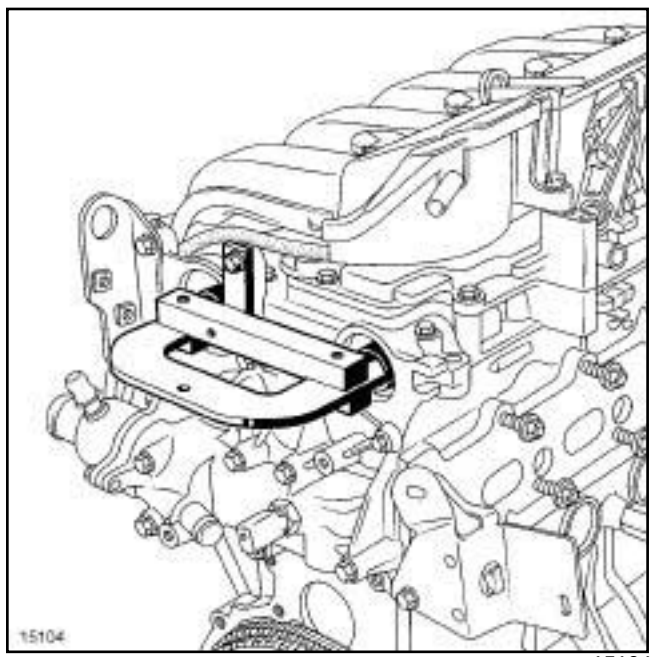
15163-1

❏ Insert the TDC setting pin **(Mot. 1054)** and rotate the engine slightly clockwise (timing end) until the setting point is reached.



15106-1

❏ At the setting point the camshaft grooves must be horizontal and offset below the centre line.



15104

❏ Fit the **(Mot. 1496)** onto the ends of the camshafts.

❏ Remove:

- the crankshaft accessories pulley bolt,
- the crankshaft accessories pulley.

F4R

2 - REMOVING THE TIMING BELT

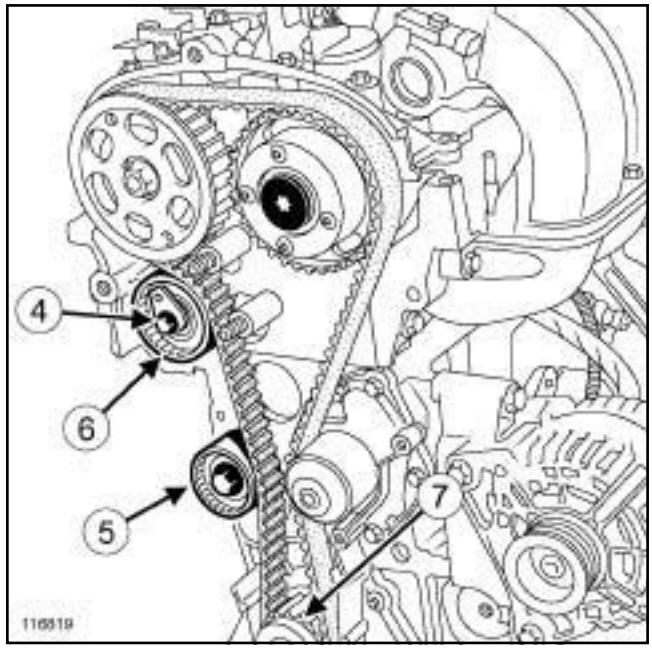
❑

WARNING
Never turn the engine against its operating direction.

WARNING
The belt must be replaced with a new one if it has been removed.

WARNING
When replacing the belt, be sure to replace the tensioning rollers and fixed rollers.

Note:
Always replace the inlet camshaft dephaser bolt and the exhaust camshaft pulley nut after checking the tension of the timing belt.



116819

❑ Slacken the timing belt by undoing the tensioning roller nut (**4**) .

❑ Remove:

- the fixed roller (**5**) fitted with its bolt and spacer,
- the timing belt,
- the tensioning roller (**6**) fitted with its nut,
- the crankshaft sprocket (**7**) ,

❑ Check that the ring of the camshaft dephaser is correctly locked (no rotation of the ring to the left or to the right); if it is not, replace the inlet camshaft dephaser.

❑

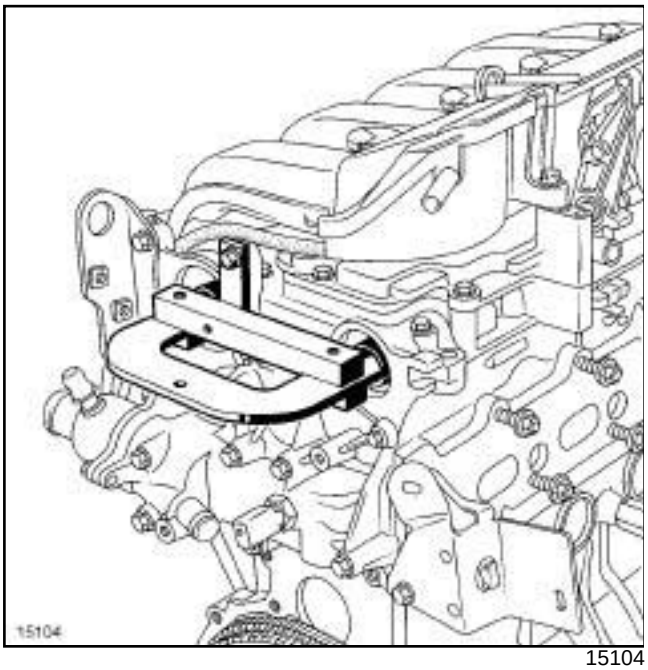
Note:
If the inlet camshaft dephaser must be removed, follow the removal-refitting procedure for the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) . Always lock the inlet camshaft dephaser when replacing it.

F4R

REFITTING

I - OPERATION FOR REFITTING THE TIMING BELT

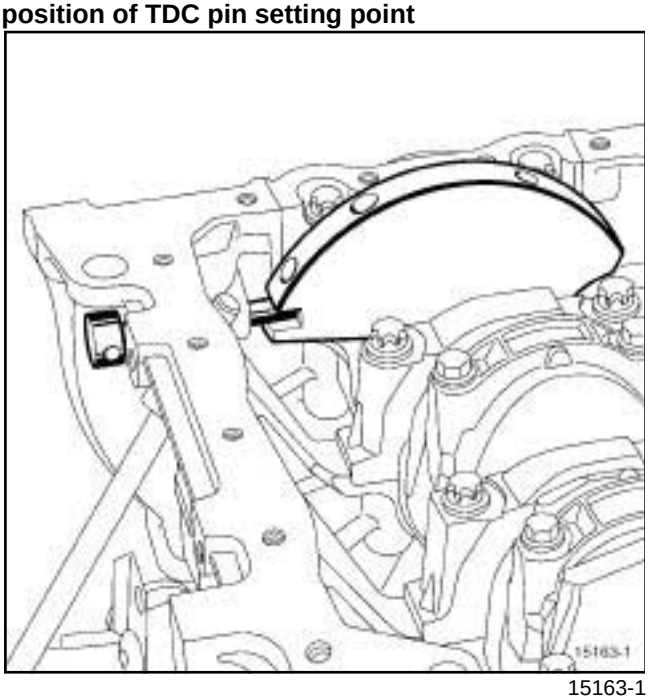
1 - ADJUSTING THE TIMING



15104

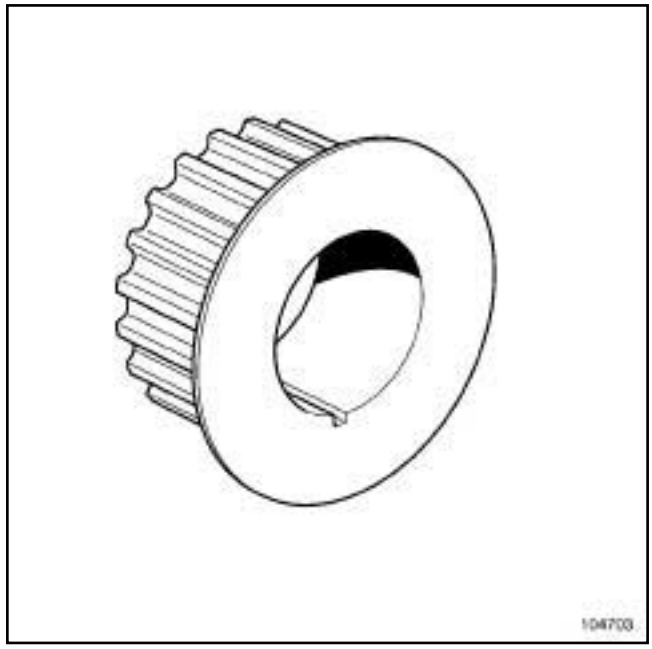
❑ Check that camshaft setting tool **(Mot. 1496)** is still in place.

position of TDC pin setting point



15163-1

❑ Check that the TDC pin **(Mot. 1054)** is still in place and that the crankshaft is set.



104703

❑

WARNING

Always degrease:

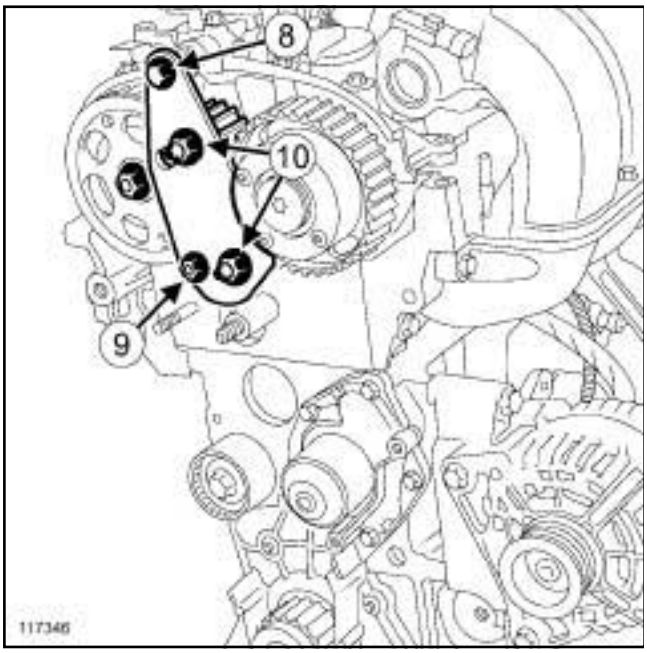
- the end of the crankshaft (timing end),
- the timing sprocket bore and contact surfaces,
- the bearing faces of the crankshaft accessories pulley.

This is to avoid timing slippage.

This slippage causes engine damage.

F4R

2 - TIMING BELT REFITTING PREPARATION OPERATION



117346

❏ Fit:

- the **(Mot. 1801)** fitted with the sprocket **(Mot. 1509-01)**,
- the upper bolt (**8**) on the upper timing cover and the collar nut (**9**) .

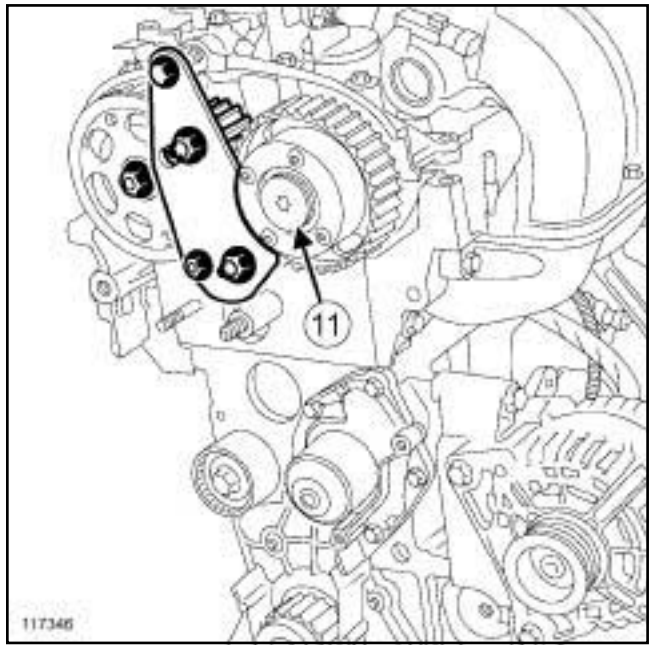
❏ Tighten the upper bolt on the upper timing cover and the collar nut.

❏ Bring the toothed sprockets of the tool into contact with the camshaft pulleys.

❏ Torque tighten the **toothed sprocket nuts (80 N.m)** (**10**) .

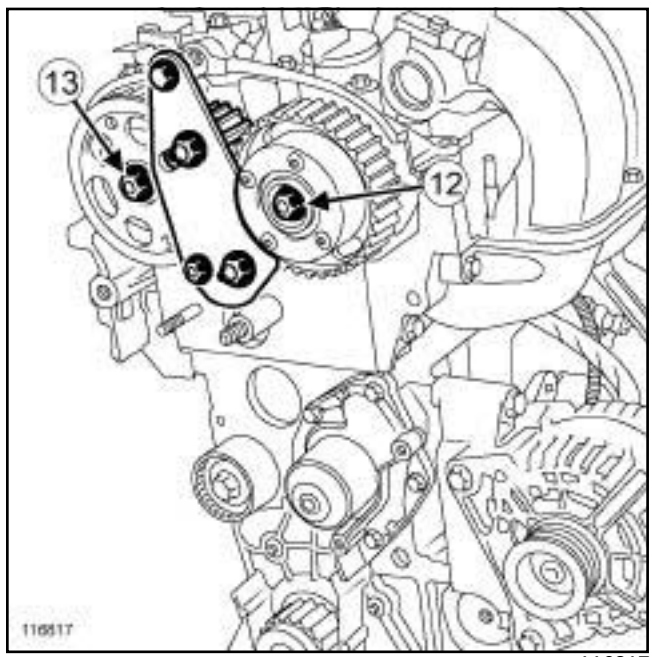
Note:

Beware of oil running out when removing the blanking cover from the camshaft dephaser and when removing the camshaft dephaser.



117346

❏ Remove the inlet camshaft dephaser blanking cover (**11**) .



116817

❏ Release by a single turn:

- the old inlet camshaft dephaser bolt (**12**) ,
- the old exhaust camshaft pulley nut (**13**) .

❏ Remove the **(Mot. 1801)** fitted with sprocket **(Mot. 1509-01)**.

F4R

3 - REFITTING THE TIMING BELT

❑

WARNING
Never turn the engine against its operating direction.

WARNING
The belt must be replaced with a new one if it has been removed.

WARNING
When replacing the belt, be sure to replace the tensioning rollers and fixed rollers.

Note:
Always replace the inlet camshaft dephaser bolt and the exhaust camshaft pulley nut after checking the tension of the timing belt.

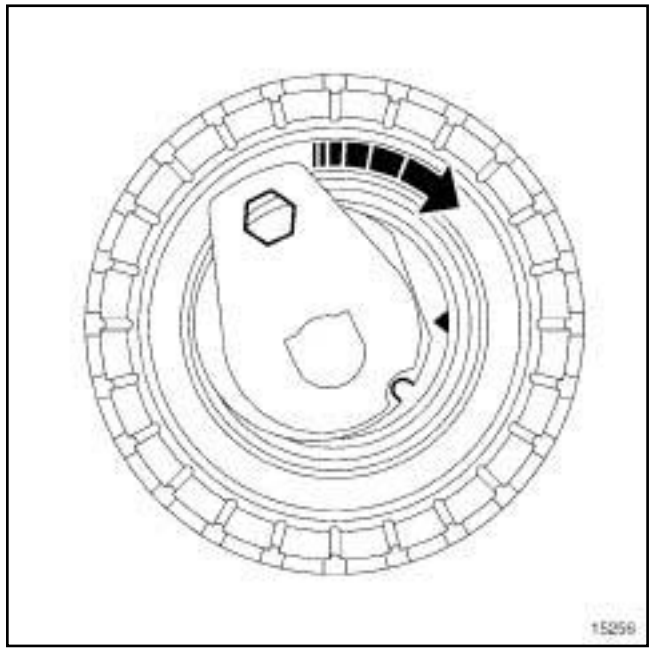
❑ Refit:
- the timing sprocket on the crankshaft,
- the new tensioning roller.

Note:
Ensure that the **(Mot. 1496)** is correctly fitted and that the inlet camshaft dephaser and the exhaust camshaft pulley can rotate freely so that the timing belt tension is correct.

❑ Refit:
- the new timing belt,
- the new fixed roller.

❑ Torque tighten the **fixed roller bolt (50 N.m)**.

4 - BELT TENSION



15256

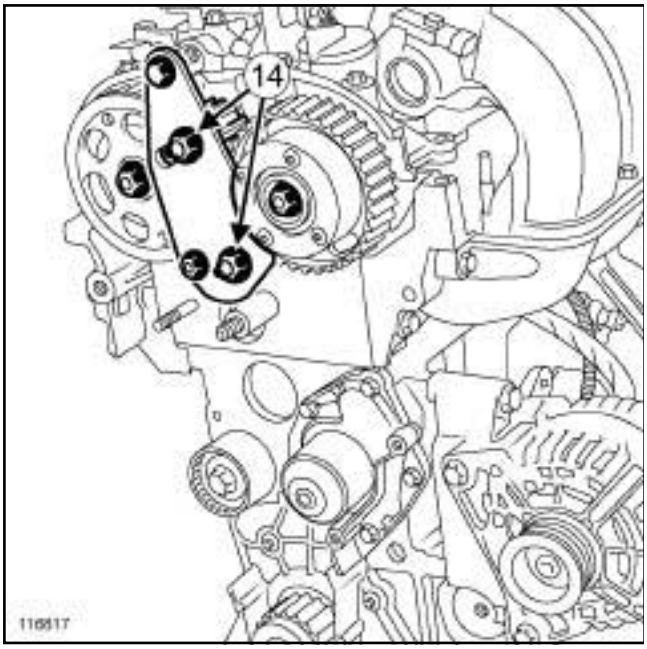
❑

Note:
When tightening the tensioning roller, use a 6mm Allen key to stop the roller moving during the operation.

❑ Align the marks on the tensioning roller using a **6mm** Allen key.

❑ Torque tighten the **tensioning roller nut (7 N.m)**.

F4R



116817

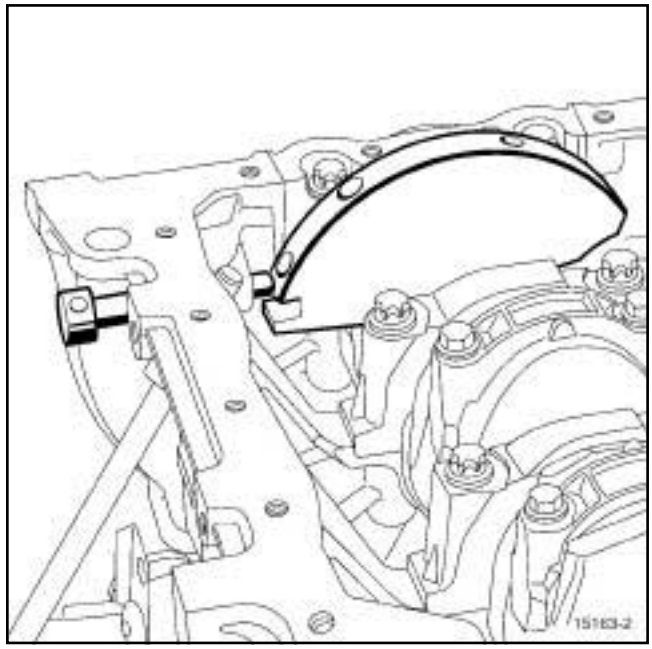
- ❏ Fit the **(Mot. 1801)** fitted with the sprocket **(Mot. 1509-01)**.
- ❏ Bring the upper bolt on the upper timing cover into contact with the collar nut.
- ❏ Tighten the upper bolt on the upper timing cover and the collar nut.
- ❏ Bring the sprockets into contact with the camshaft pulleys.
- ❏ Tighten to torque:
  - the **toothed sprocket nuts (80 N.m)** (**14**) ,
  - the **old inlet camshaft dephaser bolt (30 N.m)**,
  - the **old exhaust camshaft pulley nut (30 N.m)**.
- ❏ Remove the **(Mot. 1801)**.
- ❏ Remove:
  - the TDC setting pin **(Mot. 1054)**,
  - the camshaft setting tool **(Mot. 1496)**.

5 - CHECKING THE TIMING AND THE TENSION OF THE TIMING BELT

a - Checking the timing

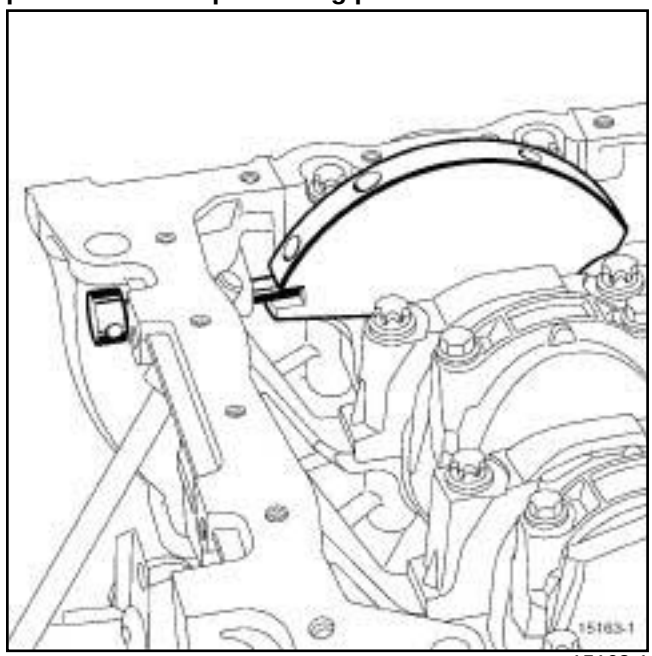
- ❏ Refit:
  - the crankshaft accessories pulley,
  - the new crankshaft accessories pulley bolt.

position of TDC pin before setting point



15163-2

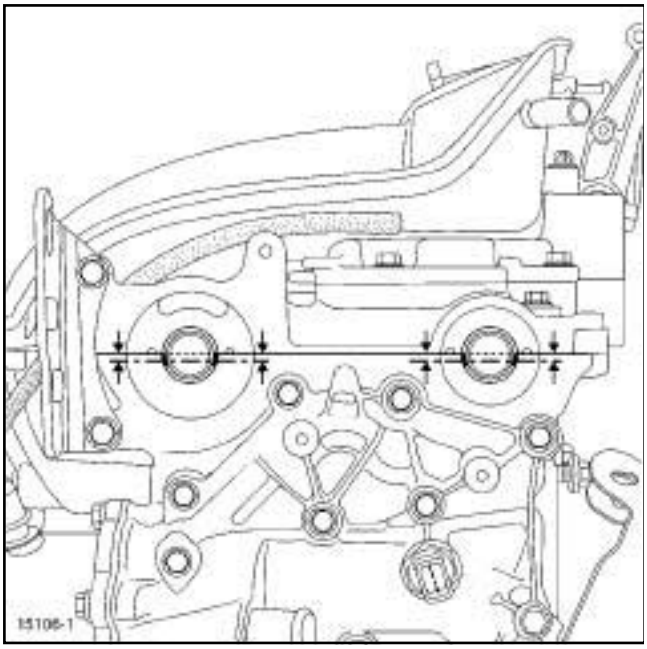
position of TDC pin setting point



15163-1

- ❏ Rotate the crankshaft clockwise by two turns (timing end), and before the end of the two turns insert the TDC pin **(Mot. 1054)** then move the crankshaft to its setting point.

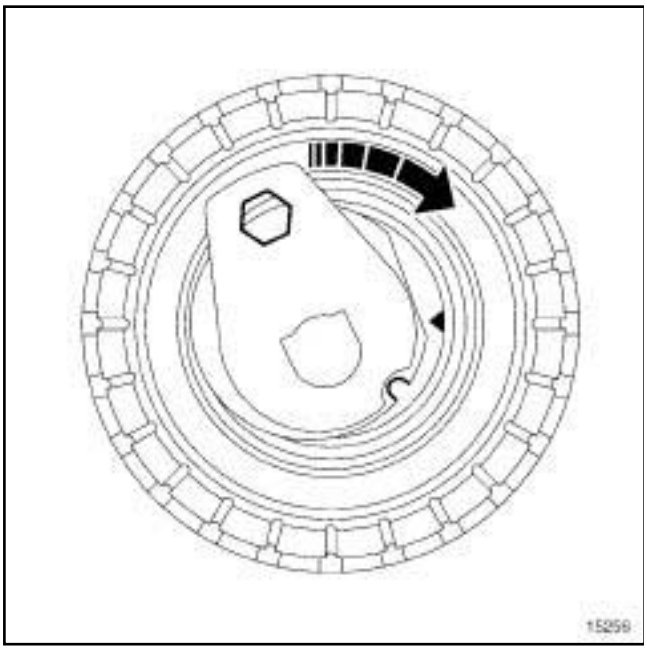
position of camshaft setting point



15106-1

❑ Fit the camshaft setting tool **(Mot. 1496)** (without forcing it).

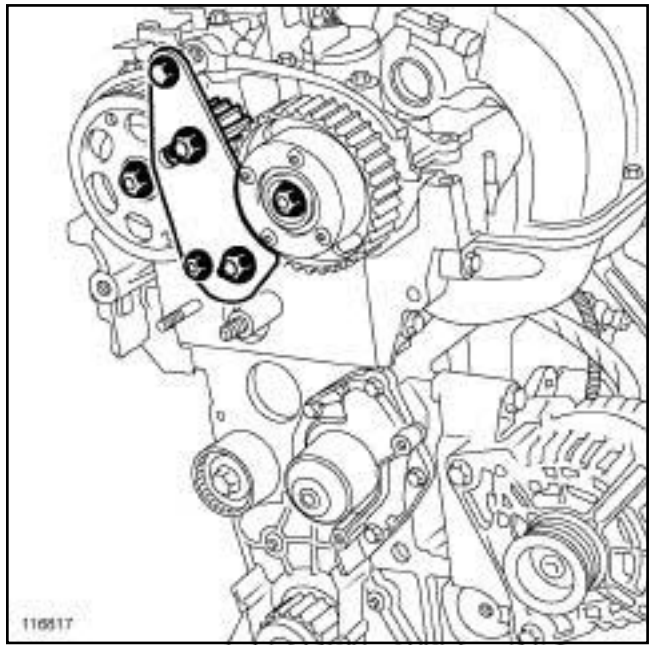
b - Checking the tension



15256

❑ After the engine has been rotated twice, check that the tensioning roller marks are correctly aligned; if they are not aligned return to the timing belt tension step.

❑ Torque tighten the **tensioning roller nut (32 N.m)**.



116817

❑ Position the **(Mot. 1801)**.

❑ Bring the upper bolt on the upper timing cover into contact with the collar nut.

❑ Tighten the upper bolt on the upper timing cover and the collar nut.

❑ Bring the sprockets into contact with the camshaft pulleys.

❑ Torque tighten the **toothed sprocket nuts (80 N.m)**.

❑ Undo:

- the old inlet camshaft dephaser pulley mounting bolt,
- the old exhaust camshaft pulley nut.

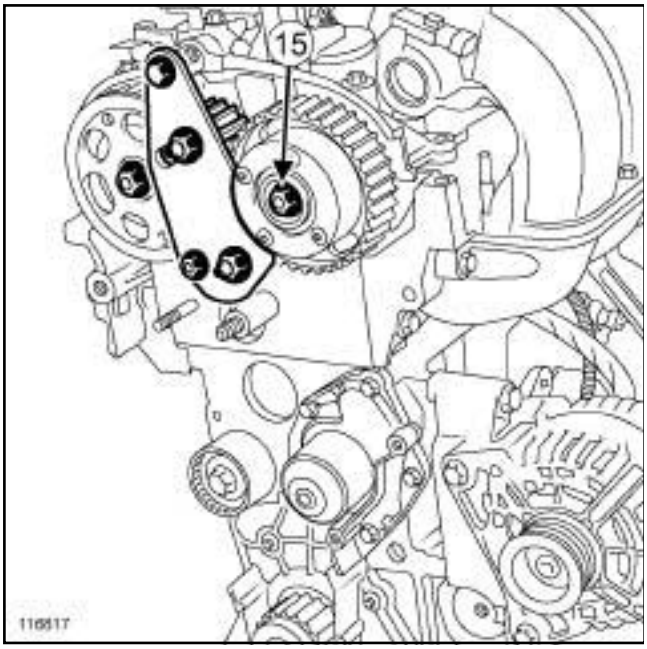
❑ Fit without tightening:

- the new inlet camshaft dephaser bolt,
- the new exhaust camshaft pulley nut.

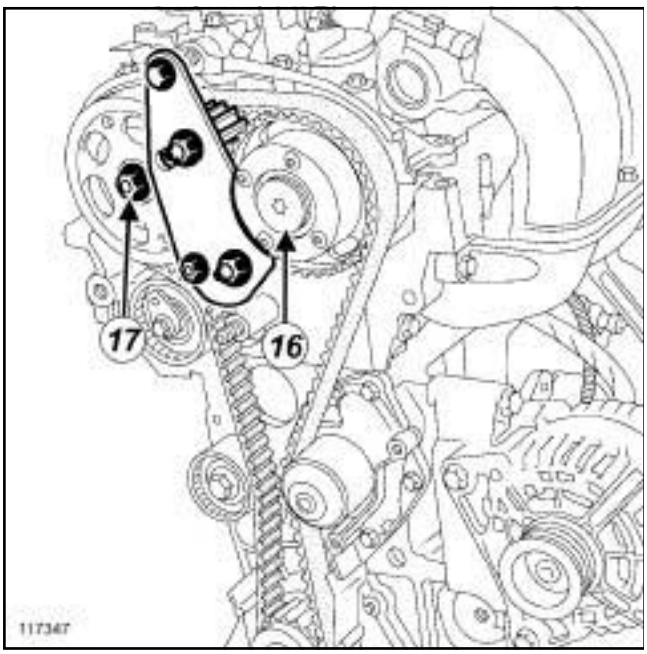
❑ Tighten to torque:

- the **new inlet camshaft dephaser bolt (30 N.m)**,
- the **new exhaust camshaft pulley nut (30 N.m)**.

F4R



116817



117347

❏ Remove the camshaft setting tool **(Mot. 1496)**.

❏ Tighten to torque:

- the **new inlet camshaft dephaser bolt (90 N.m)** (**15**) ,
- the **inlet camshaft dephaser pulley blanking cover (15 N.m)** (**16**) .

❏ Tighten to angle the **new exhaust camshaft pulley nut (86° ± 6°)** (**17**) .

❏ Remove:

- the **(Mot. 1801)**,
- the TDC setting pin **(Mot. 1054)**.

❏ Refit the new sealing plugs:

- at the inlet camshaft end using the **(Mot. 1487)**,
- at the exhaust camshaft end using the **(Mot. 1488)**.

II - FINAL OPERATION.

❏ Refit:

- the crankshaft TDC pin plug applying a drop of **MASTIXO** to the threading,
- the lower timing cover,
- the lower timing cover bolts.

❏ Torque tighten the **lower timing cover bolts (9 N.m)**.

❏ Refit:

- the upper timing cover,
- the upper timing cover.

❏ Torque tighten the **upper timing cover bolts (38 N.m)**.

❏ Refit the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❏ Remove the **(Mot. 1453)** fitted with the **(Mot. 1453-01)**.

❏ Remove the engine lifting eye at the timing end (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

❏ Torque tighten the **new bolt on the crankshaft accessories pulley (40 N.m + 110° ± 10°)**.

❏ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

- the engine undertray,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air inlet duct on the air resonator and the air filter unit,
- the air inlet duct by clipping it onto the front end panel.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 750 or 752

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1489	TDC locating pin.
Mot. 1430	Set of 5 crankshaft and camshaft pulley timing pins.

Equipment required
safety strap(s)
protective gloves
1/2" female torx socket (12.7 mm square drive)
hexagonal socket
roll pin punch
offset spanner
torque wrench
torque/angle wrench
cylinder head bolt tightening gauge (angular measuring type)

Tightening torques ▽	
crankshaft accessories pulley M12 bolt	**60 N.m + 100° ± 10°**
tensioning roller bolt	**27 N.m**
camshaft timing sprocket crown bolts	**14 N.m**
crankshaft accessories pulley M 14 bolt	**120 N.m + 95° ± 15°**
TDC pin plug	**25 N.m**
cylinder head suspended mounting bolts	**25 N.m**
camshaft position sensor bolt	**8 N.m**

IMPORTANT
Wear protective gloves during the operation.

WARNING
Never rotate the engine anti-clockwise (timing end).

WARNING
Do not run the engine without the accessories belt, to avoid breaking the crankshaft accessories pulley.

❑ **Parts always to be replaced**

- Timing belt,
- Timing belt tensioning roller,
- Crankshaft accessories pulley bolt.

❑ **Consumables**

- Silicone adhesive sealant (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B Consumables - Products)
- Surface cleaner (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B Consumables - Products).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

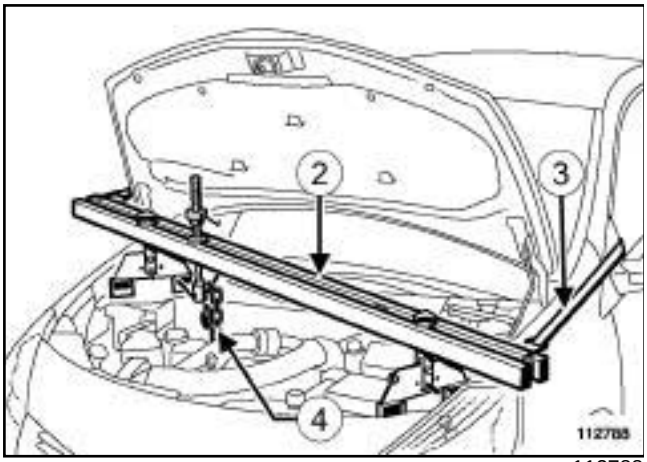
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.

❑ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

K9K, and 750 or 752



112788

❏ Position the **(Mot. 1453)** (**2**) and hold it in place using a **safety strap(s)** (**3**) .

❏ Fit a chain (**4**) on the lifting eye of the crankshaft end to enable the engine to be lifted using the **(Mot. 1453)**.

❏

Note:

Do not damage the air conditioning pipes.

Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .
- the engine undertray,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏

Note:

There are two types of timing belt assembly.

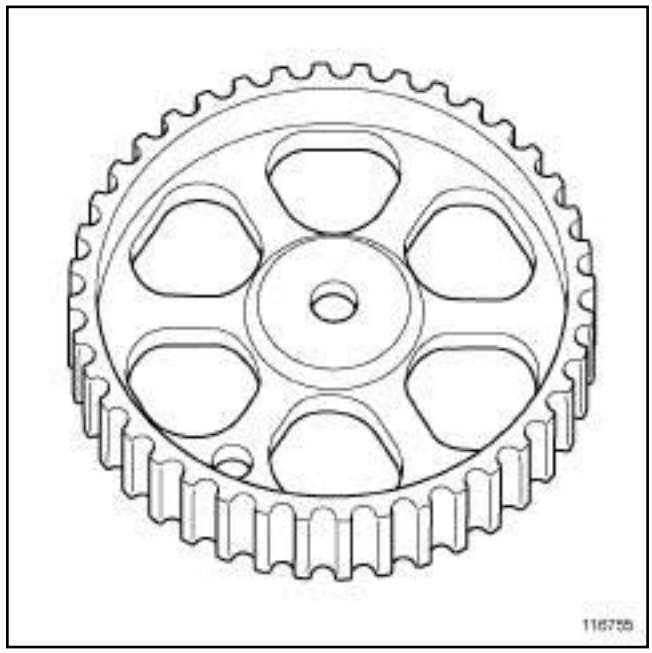
III - FIRST FITTING

Recommendations for repair

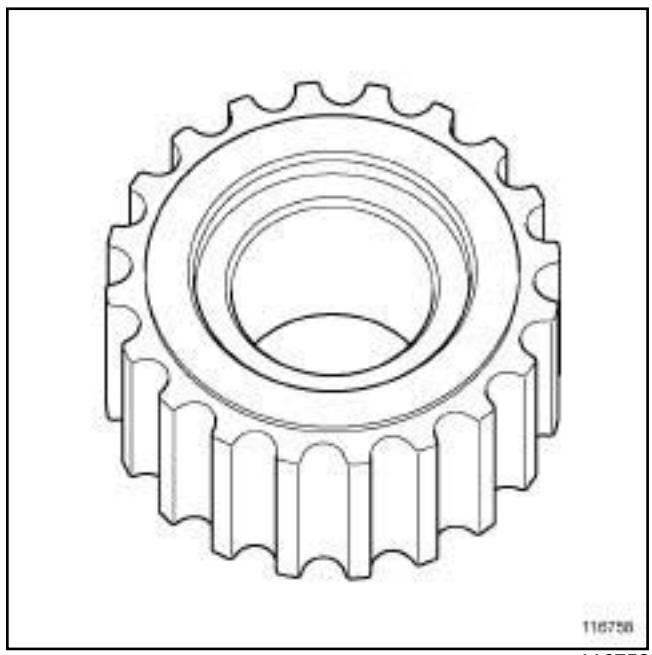
❏

Note:

This procedure is applicable to engines manufactured up to 02/12/2005 fitted with a single unit camshaft timing sprocket and a crankshaft timing sprocket without collet.



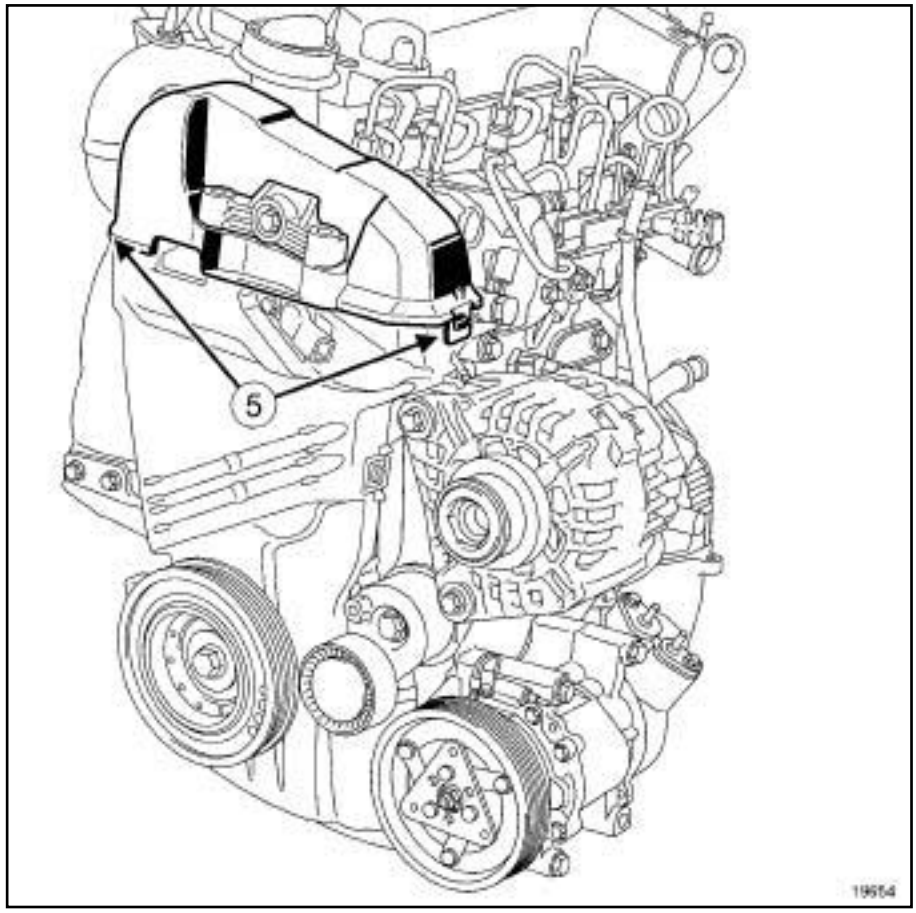
116755



116758

❏ Wear **protective gloves** during the operation.

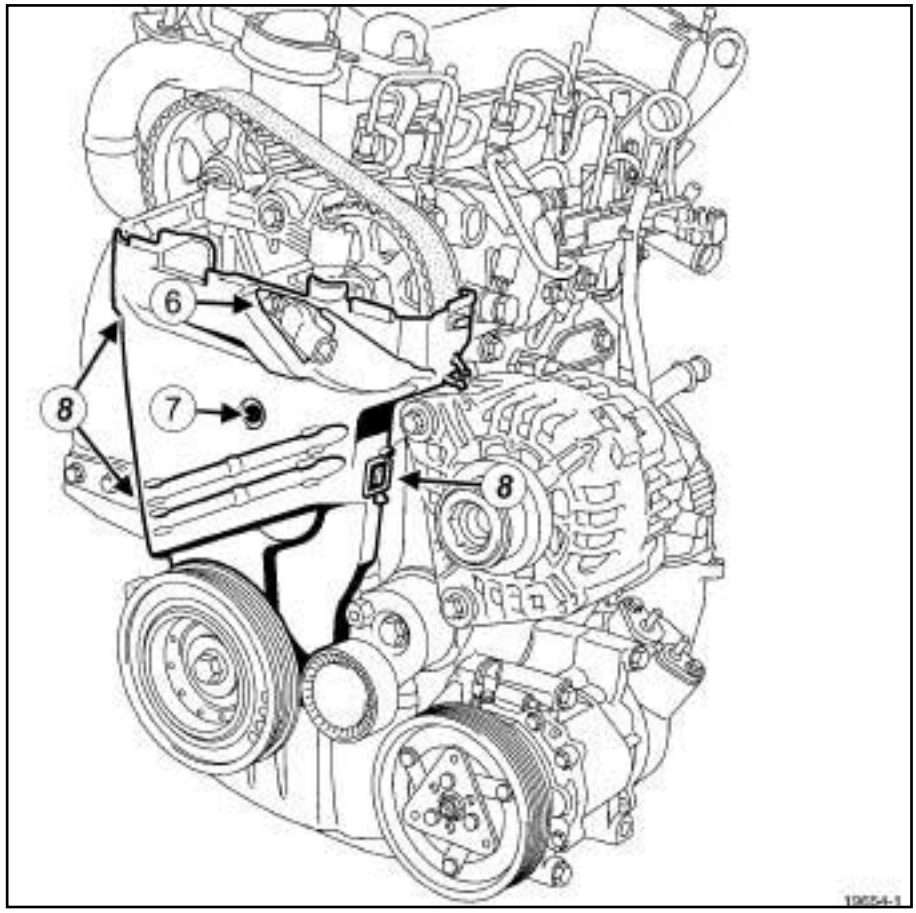
K9K, and 750 or 752



19654

❑ Remove the upper timing cover by unclipping both tabs (**5**) .

K9K, and 750 or 752



19654-1

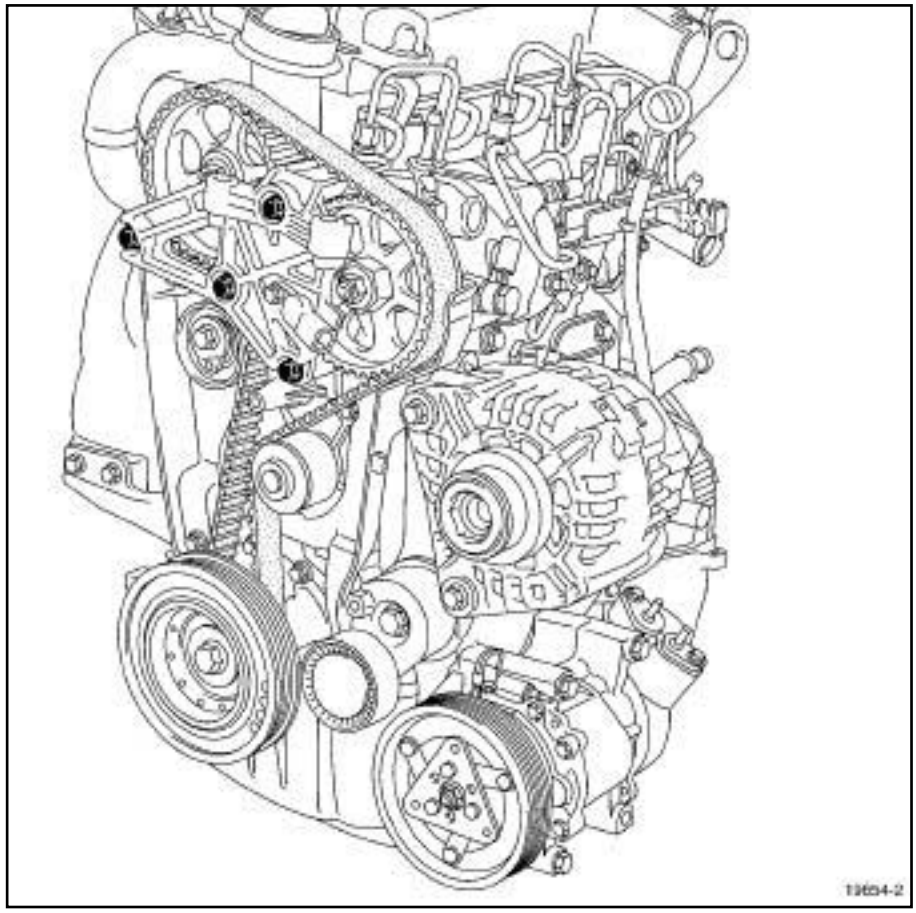
❏ Remove:

- the camshaft position sensor (**6**) ,
- the plastic bolt (**7**) .

❏ Unclip the three tabs (**8**) .

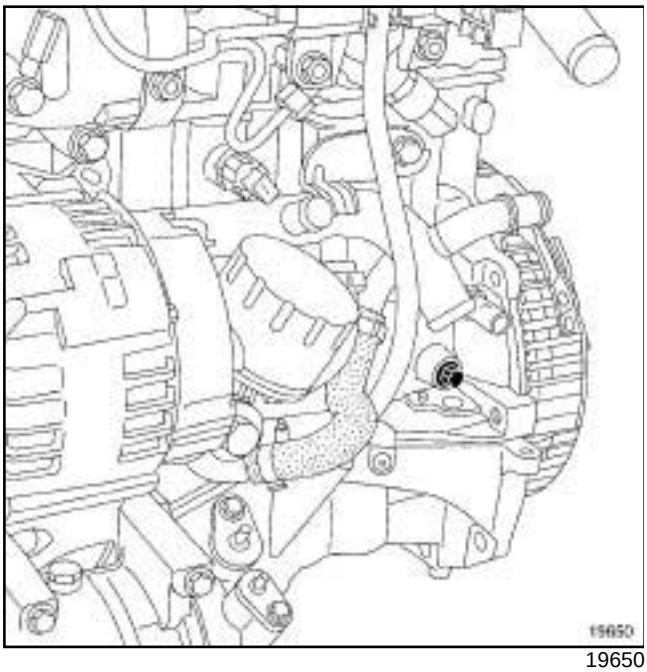
❏ Remove the lower timing cover.

K9K, and 750 or 752



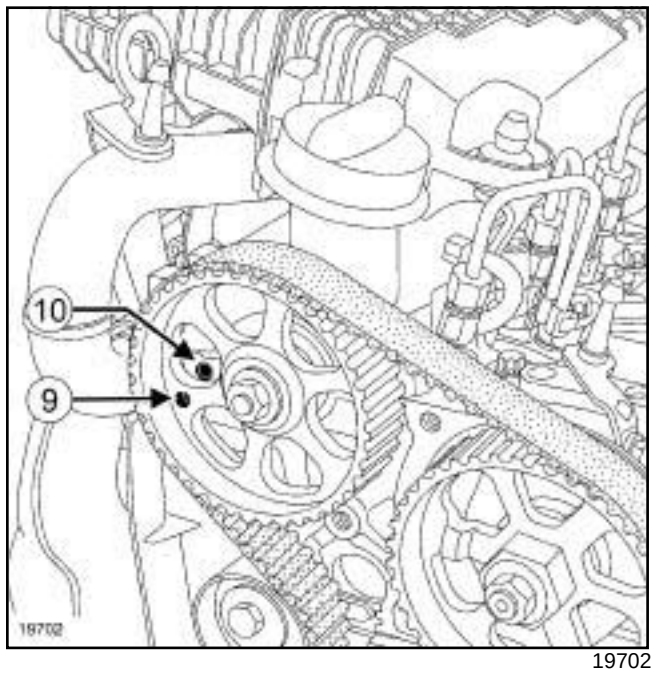
19654-2

❑ Remove the cylinder head suspended mounting .



19650

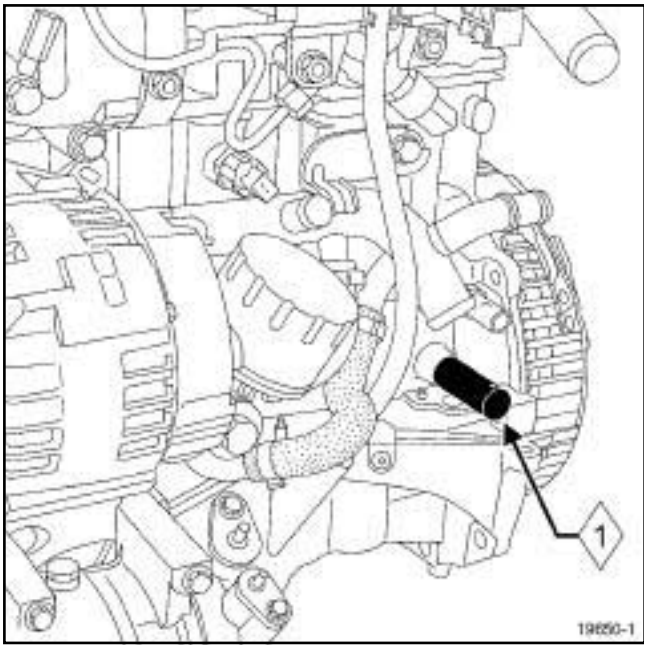
❑ Remove the TDC pin plug using a **1/2" female torx socket (12.7 mm square drive) (14)**.



19702

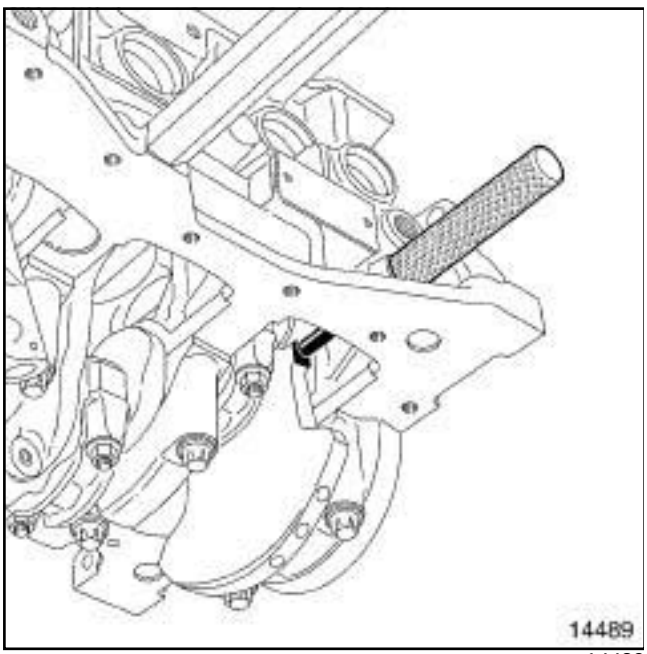
❑ Rotate the crankshaft clockwise (timing end) to position the hole (**9**) in the camshaft timing sprocket almost opposite the hole (**10**) in the cylinder head.

K9K, and 750 or 752



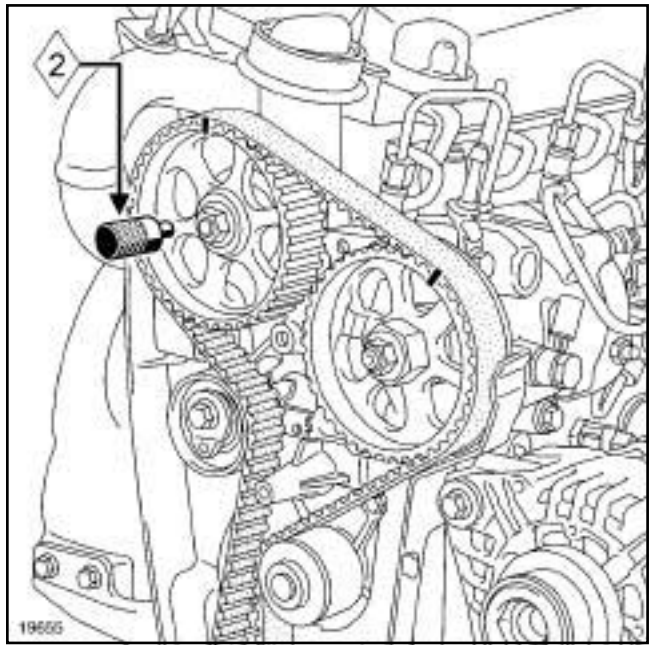
19650-1

❏ Screw in the TDC setting pin (**1**) **(Mot. 1489)**.



14489

❏ Turn the crankshaft clockwise (timing end) smoothly until the crankshaft comes in contact with the TDC setting pin.



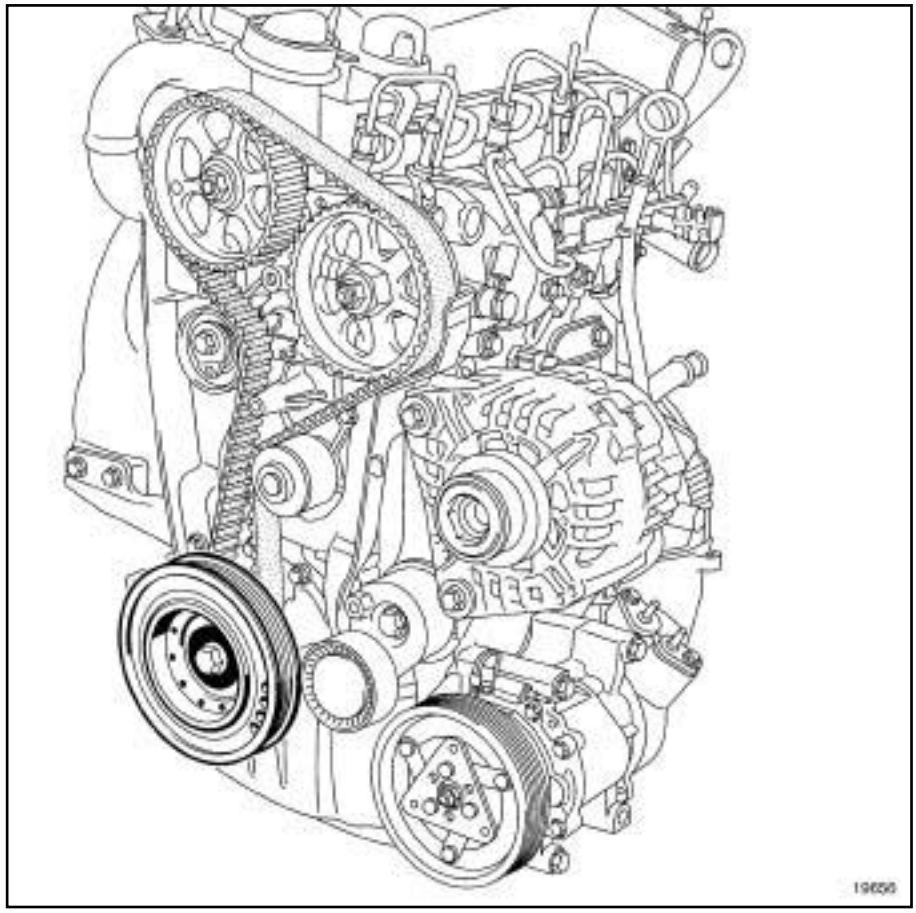
19655

❏ Engage the pin (**2**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes.

❏ Remove:

- the camshaft timing sprocket setting pin **(Mot. 1430)**,
- the TDC setting pin **(Mot. 1489)**.

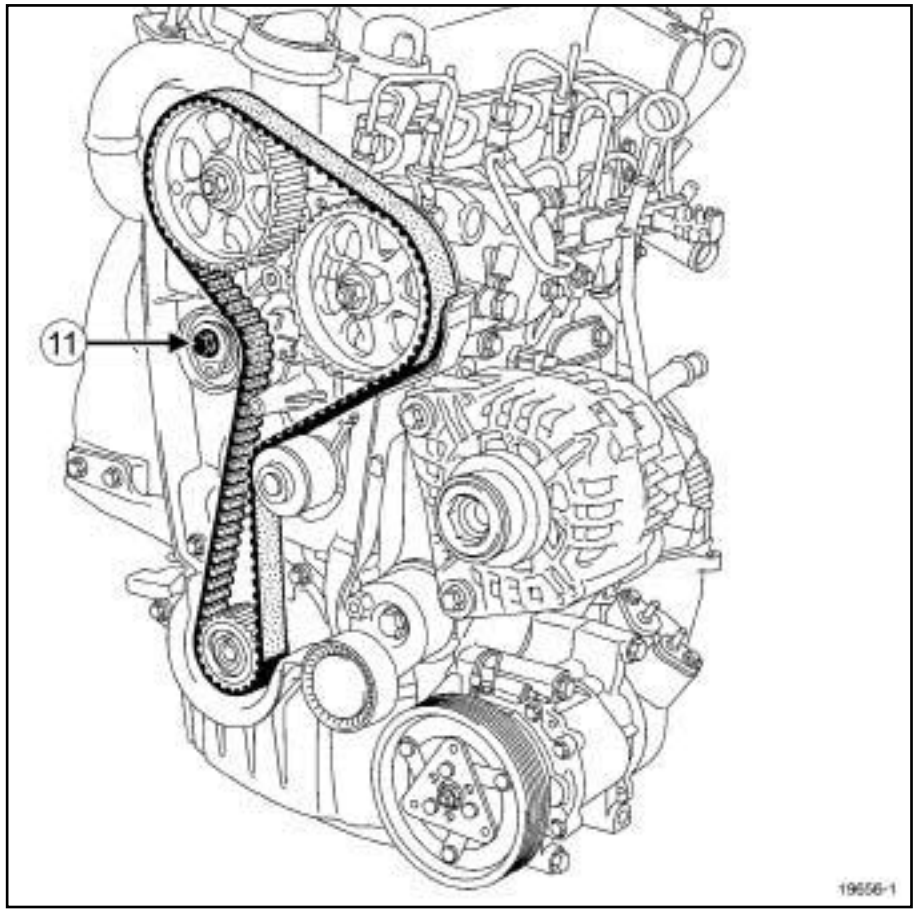
K9K, and 750 or 752



19656

❏ Remove the crankshaft accessories pulley by locking the flywheel with a large flat-blade screwdriver.

K9K, and 750 or 752



19656-1

❑ Slacken the tensioning roller bolt (**11**) .

❑ Loosen the timing tension wheel by turning the eccentric using a **6 mm hexagonal socket**.

❑ Remove:

- the timing belt taking care not to let the crankshaft timing sprocket fall out,
- the timing tensioning roller,
- the timing sprocket.

IV - SECOND FITTING

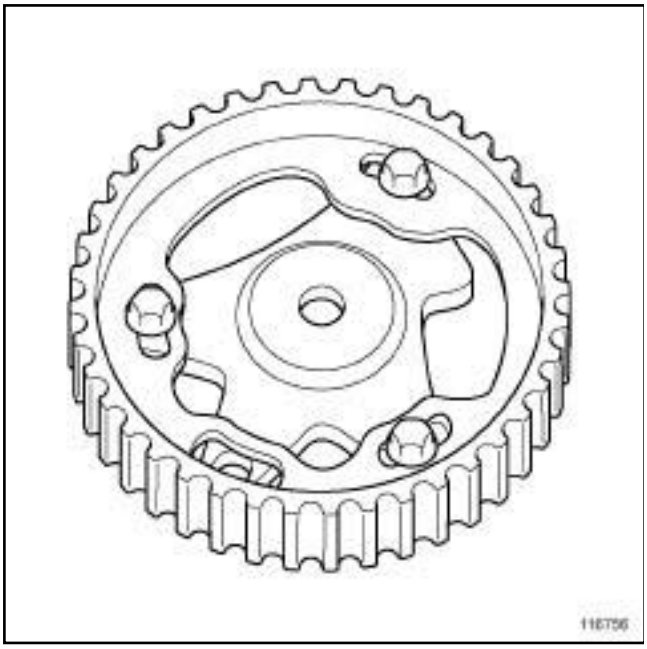
Recommendations for repair

❑

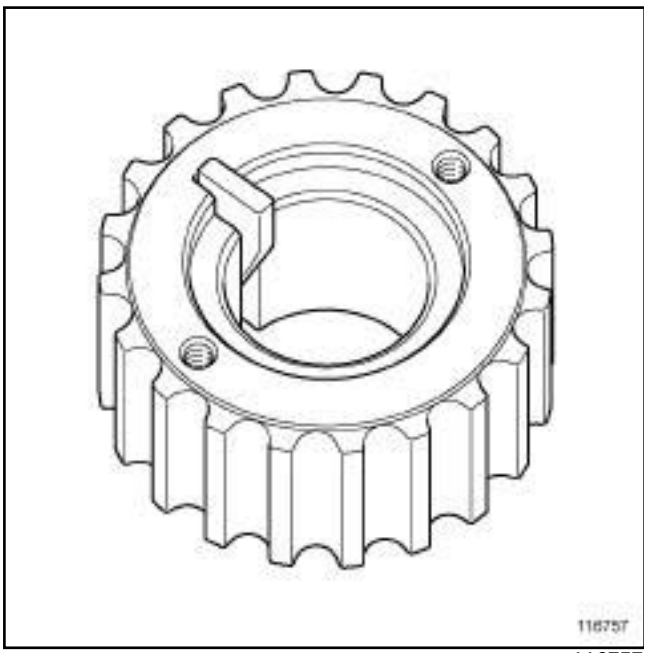
Note:

This procedure is applicable to engines manufactured from 02/12/2005 fitted with a two-part camshaft timing sprocket and a crankshaft timing sprocket with collet.

K9K, and 750 or 752



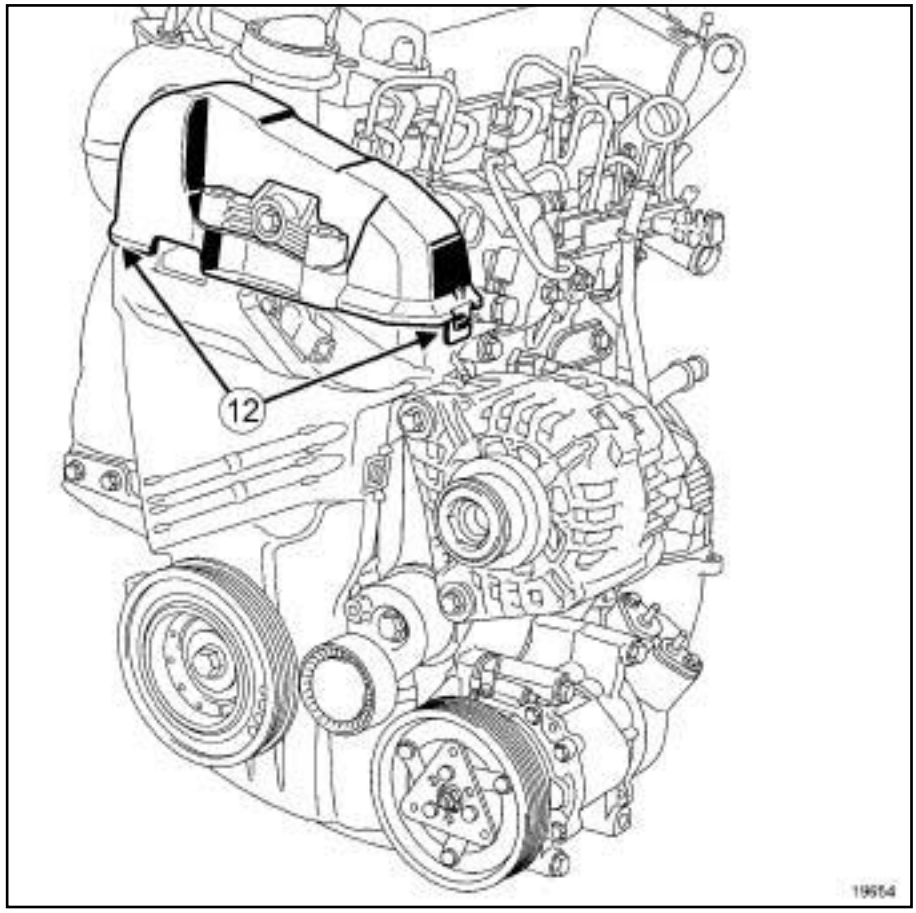
116756



116757

❑ Wear **protective gloves** during the operation.

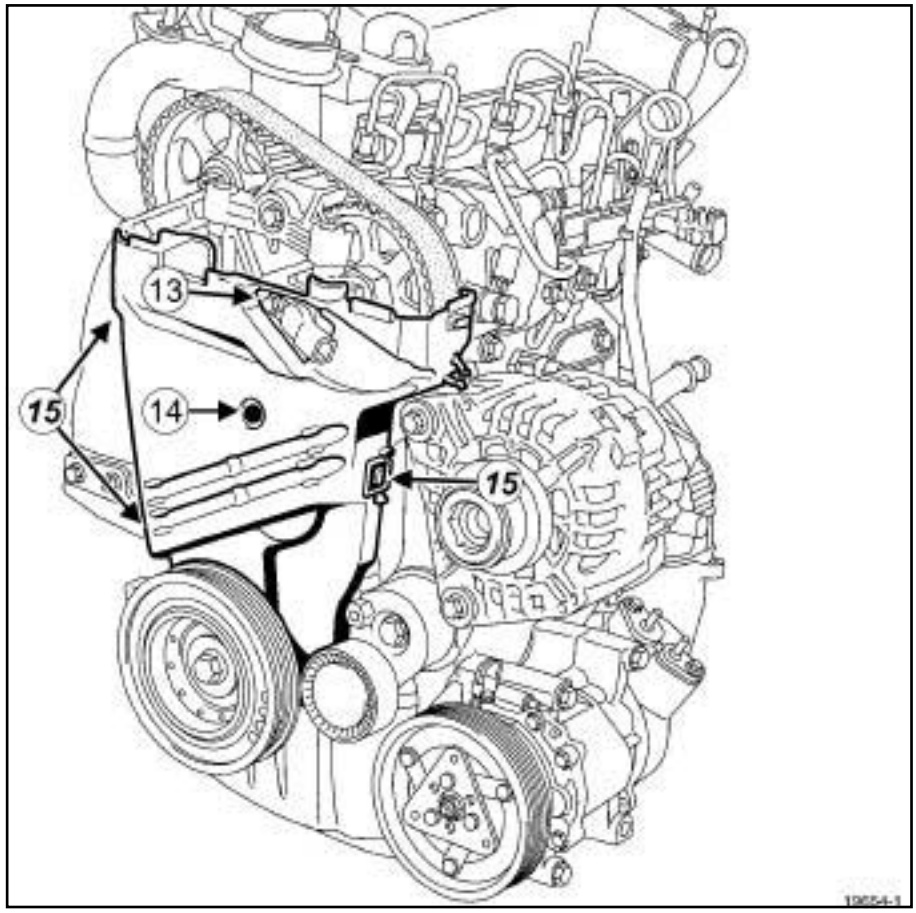
K9K, and 750 or 752



19654

❑ Remove the upper timing cover by unclipping both tabs (**12**) .

K9K, and 750 or 752



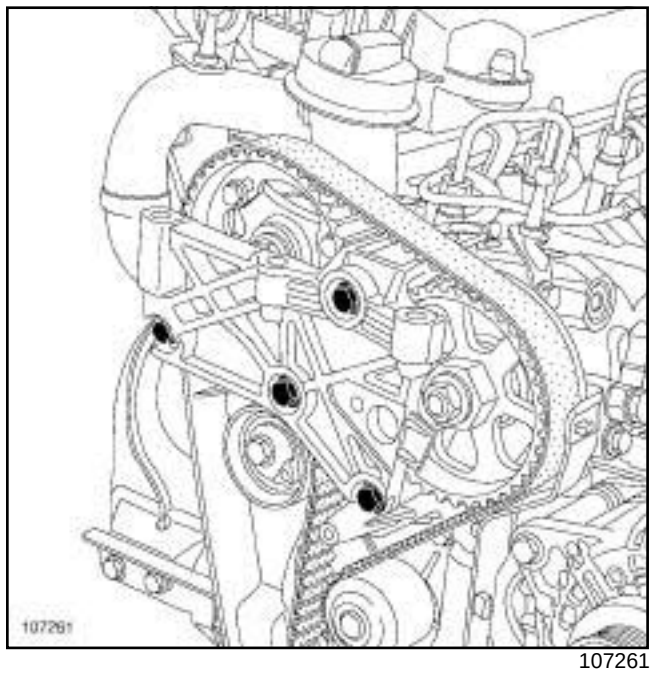
19654-1

❏ Remove:

- the camshaft position sensor (**13**) ,
- the plastic bolt (**14**) .

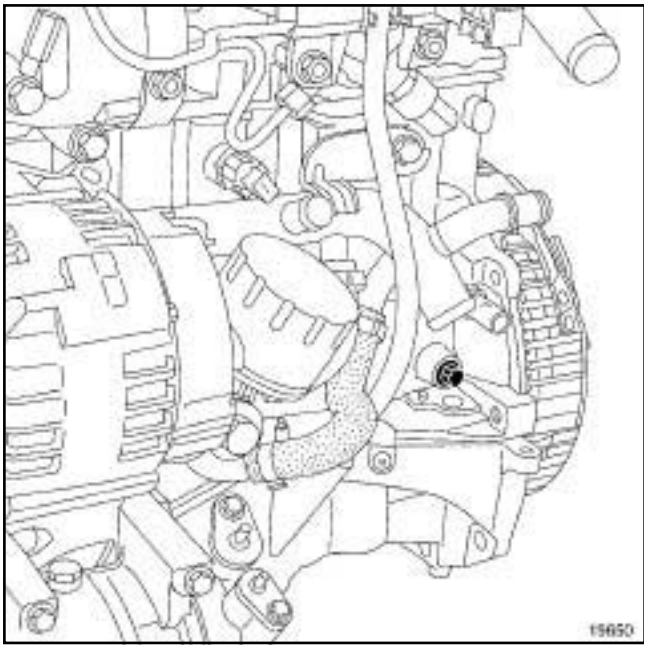
❏ Unclip the three tabs (**15**) .

❏ Remove the lower timing cover.


107261

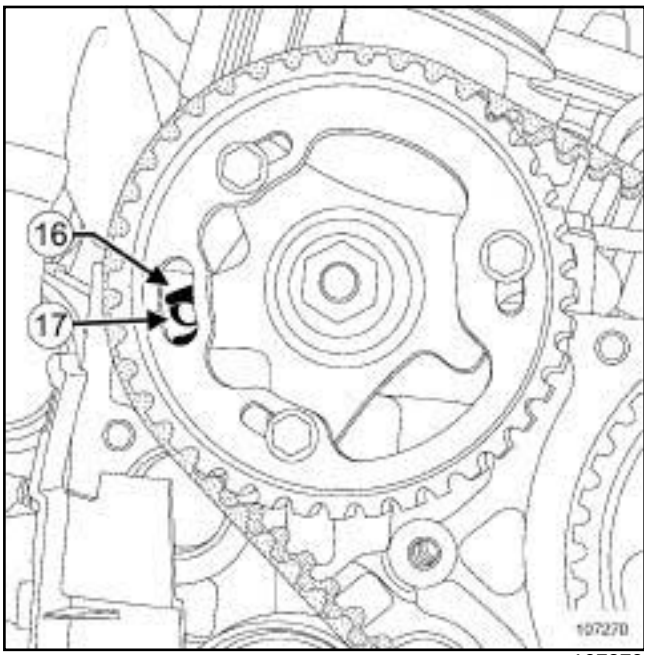
❏ Remove the cylinder head suspended mounting .

K9K, and 750 or 752



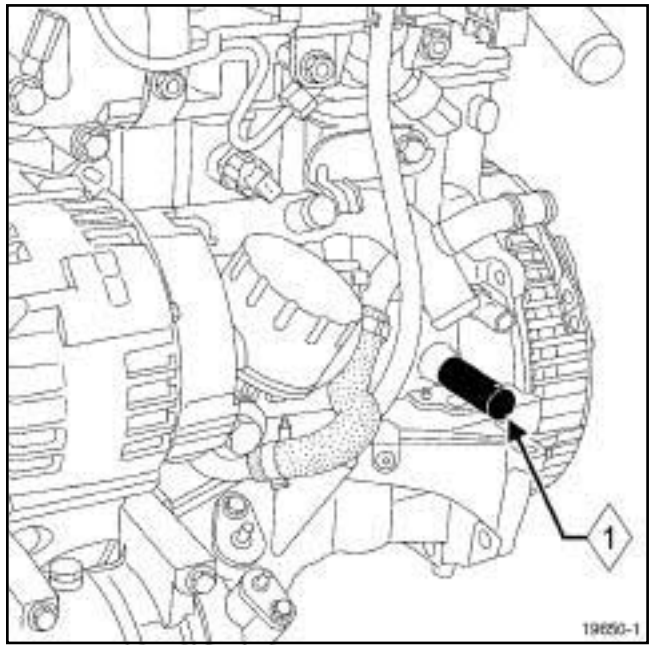
19650

❑ Remove the TDC pin plug using a **1/2" female torx socket (12.7 mm square drive) (14)**.



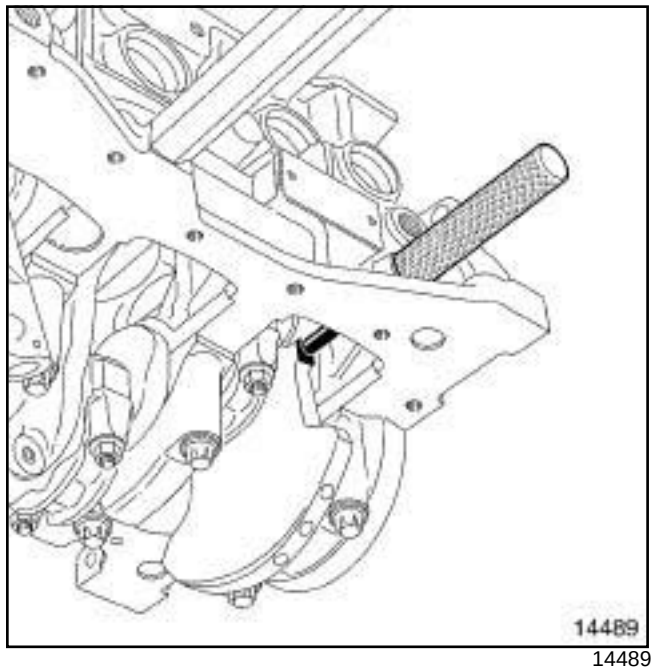
107270

❑ Rotate the crankshaft clockwise (timing end) to position the hole (**16**) in the camshaft timing sprocket almost opposite the hole (**17**) in the cylinder head.



19650-1

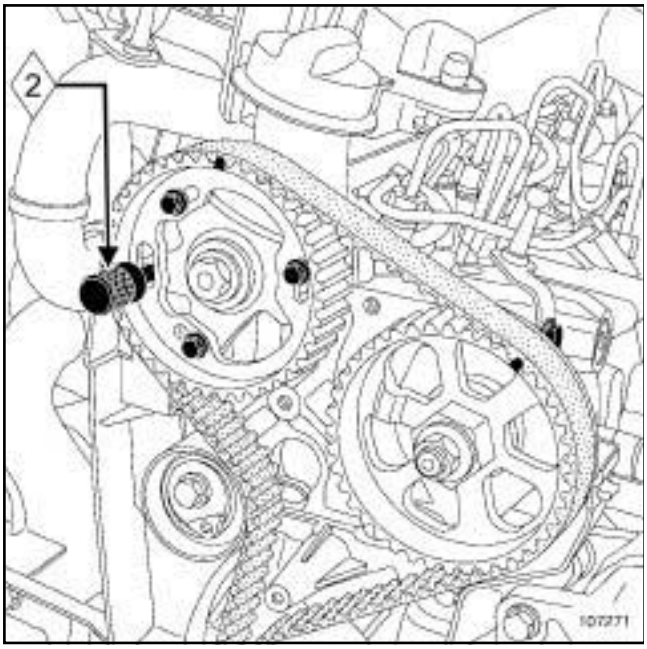
❑ Screw in the TDC setting pin (**1**) **(Mot. 1489)**.



14489

❑ Turn the crankshaft clockwise (timing end) smoothly until the crankshaft comes in contact with the TDC setting pin.

K9K, and 750 or 752

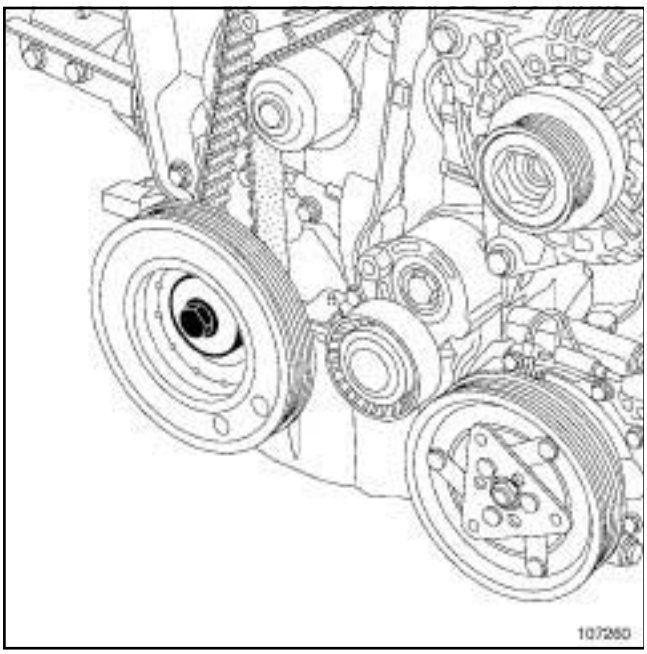


107271

❏ Engage the pin (**2**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes.

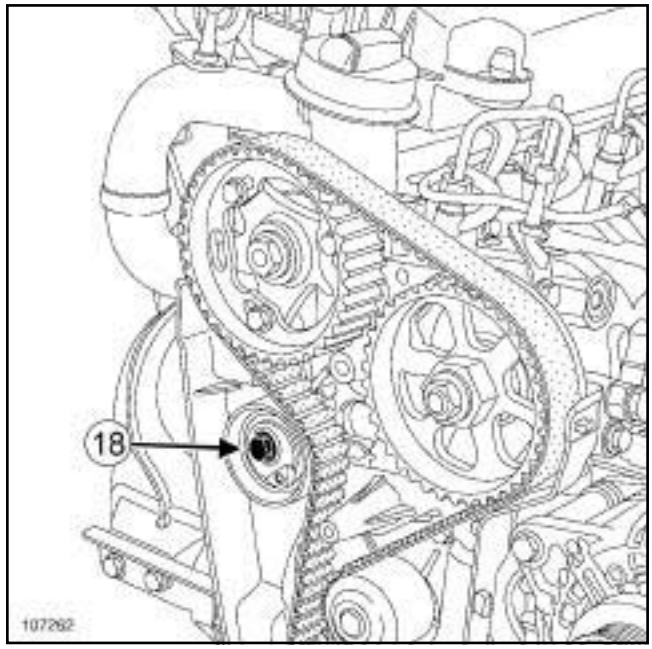
❏ Remove:

- the camshaft timing sprocket setting pin **(Mot. 1430)**,
- the TDC setting pin **(Mot. 1489)**.



107260

❏ Remove the crankshaft accessories pulley by locking the flywheel with a large flat-blade screwdriver.



107262

❏ Slacken the tensioning roller bolt (**18**) .

❏ Loosen the timing tension wheel by turning the eccentric using a **6 mm hexagonal socket**.

❏ Remove:

- the timing belt taking care not to let the crankshaft timing sprocket fall out,
- the timing tensioning roller,
- the timing sprocket.

REFITTING

❏ Check:

- that there is no oil leak from the camshaft and crankshaft seals,
- the condition of the coolant pump (hard seal, play in the shaft, fluid leak, shaft rotation, (see **Technical Note 3175A, Cooling system fault finding, 19A, Cooling, Cooling system - Fault finding chart ALP 8**).

❏

WARNING

It is essential to remove the grease from the end of the crankshaft, the camshaft timing sprocket and the bearing face of the crankshaft accessories pulley. This is to avoid timing slippage.

K9K, and 750 or 752

I - REFITTING OPERATION FOR PART CONCERNED

❑

Note:

There are two types of timing belt assembly.

II - FIRST FITTING

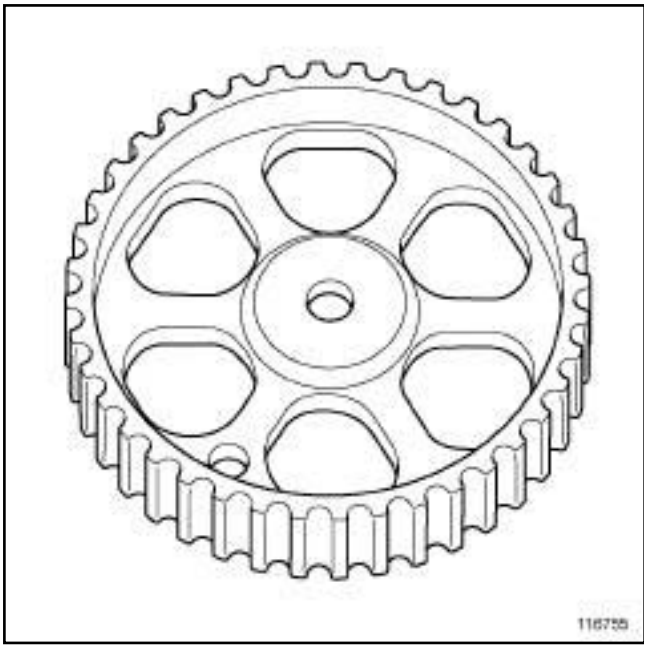
1 - Recommendations for repair

❑

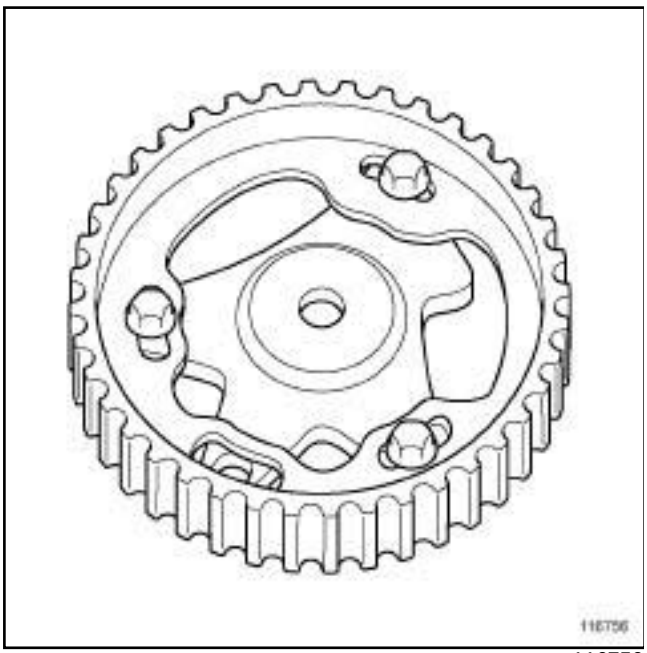
Note:

This procedure is applicable to engines manufactured up to 02/12/2005 fitted with a single unit or two-part camshaft timing sprocket and a crankshaft timing sprocket without collet.

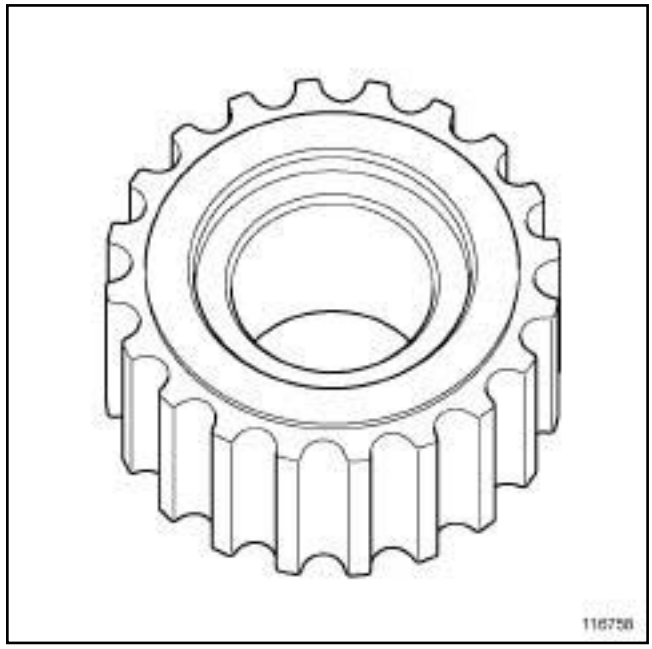
K9K, and 750 or 752



116755



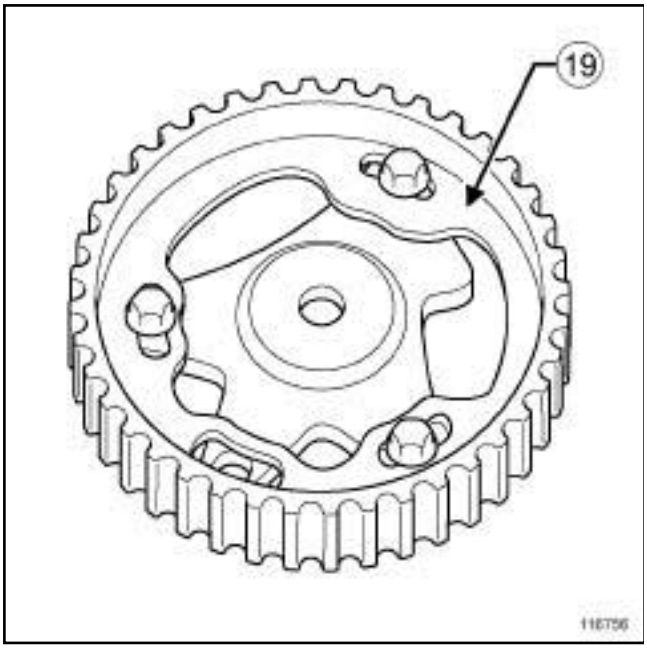
116756



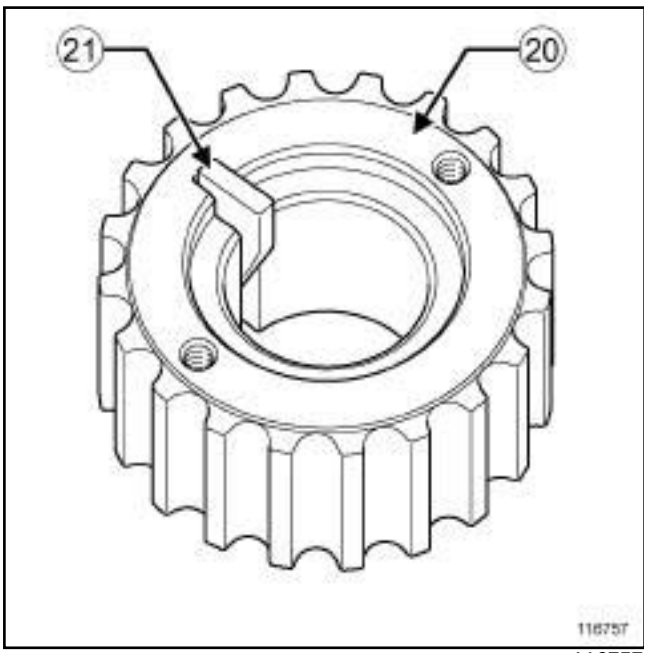
116758

❑ Wear **protective gloves** during the operation.

K9K, and 750 or 752



116756



116757

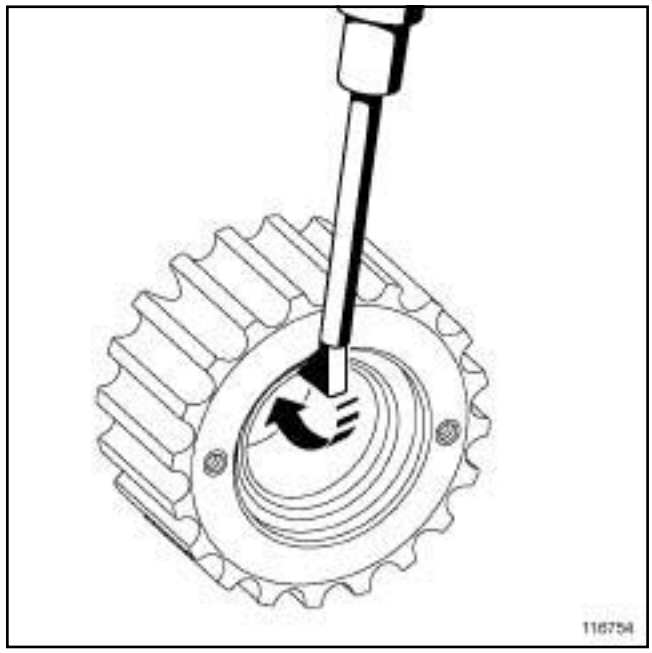
❏ In the event of replacement:

- of a camshaft timing sprocket, the Parts Department will only supply a two-part camshaft timing sprocket (**19**) ,
- of a crankshaft timing sprocket, the Parts Department will only supply a crankshaft timing sprocket with collet (**20**) .

❏ Before refitting the crankshaft timing sprocket; it is essential to remove the crankshaft timing sprocket collet (**21**) .

❏ Place the crankshaft timing sprocket on a wooden stand to avoid damaging its teeth.

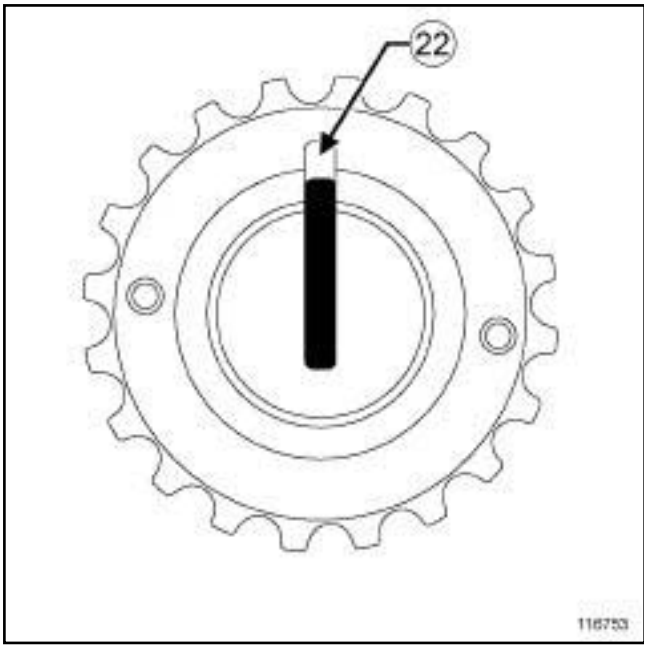
❏ When extracting the crankshaft timing sprocket collet, take care not to mark the crankshaft timing sprocket bore.



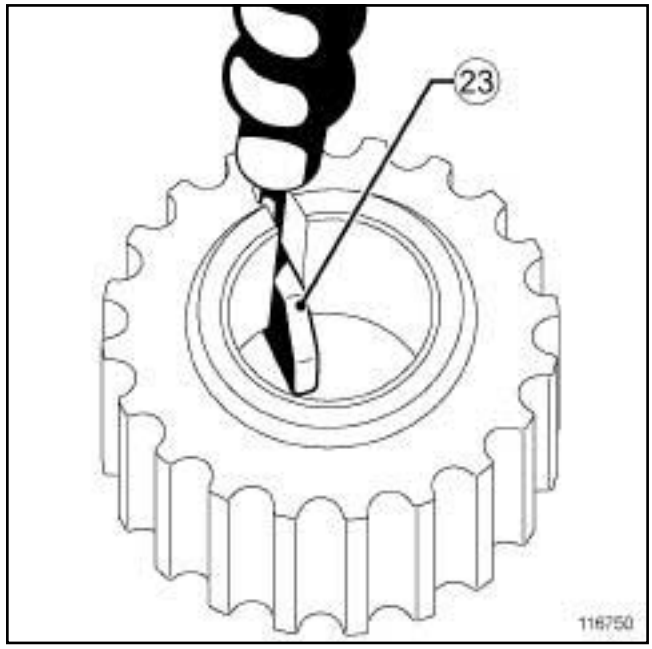
116754

❏ Pivot the collet towards the interior of the crankshaft timing sprocket using a **roll pin punch** with a diameter of **5 mm** and a mallet.

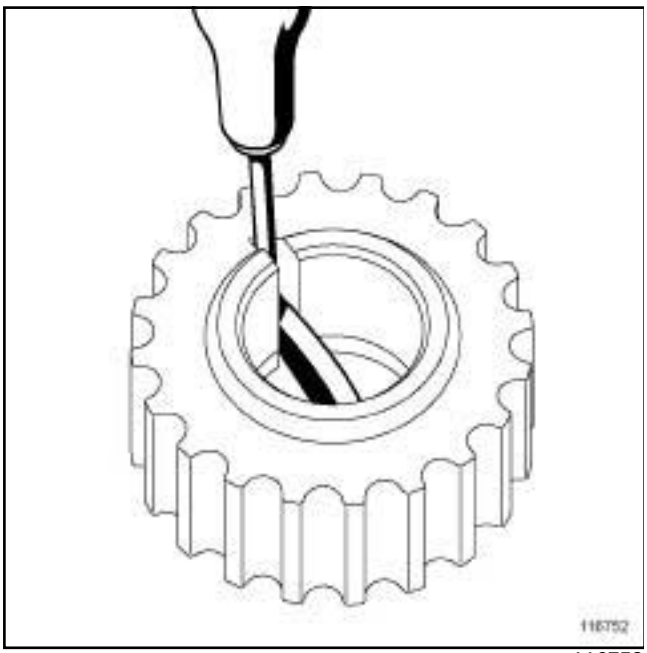
K9K, and 750 or 752



116753

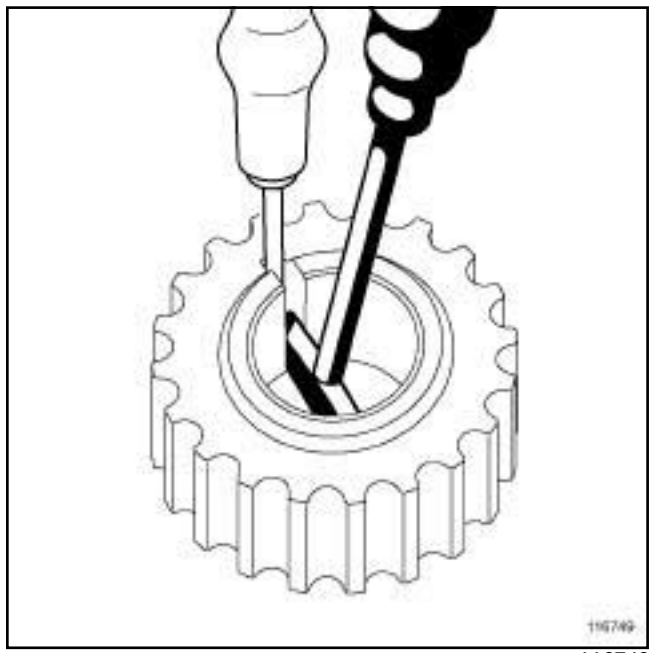


116750



116752

❑ Slide a **roll pin punch** with a diameter of **3 mm** into the crankshaft timing sprocket groove (**22**) .

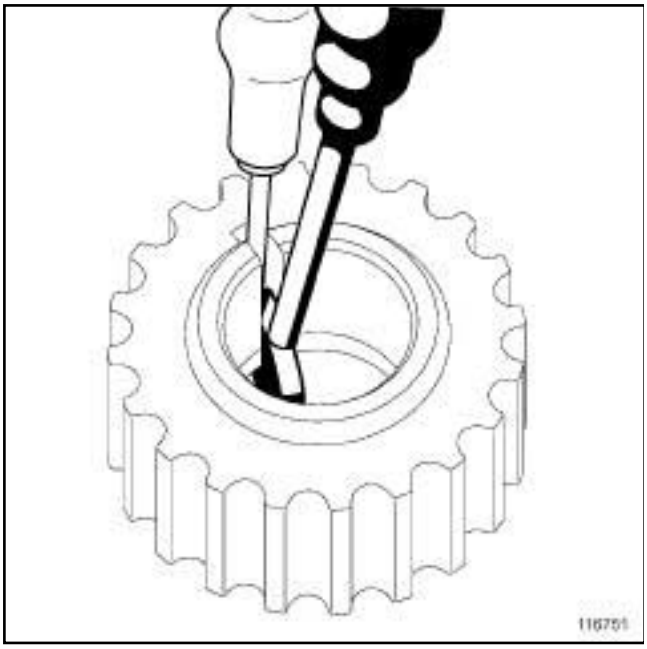


116749

❑ Position the **roll pin punch** with a diameter of **5 mm** at (**23**) on the collet.

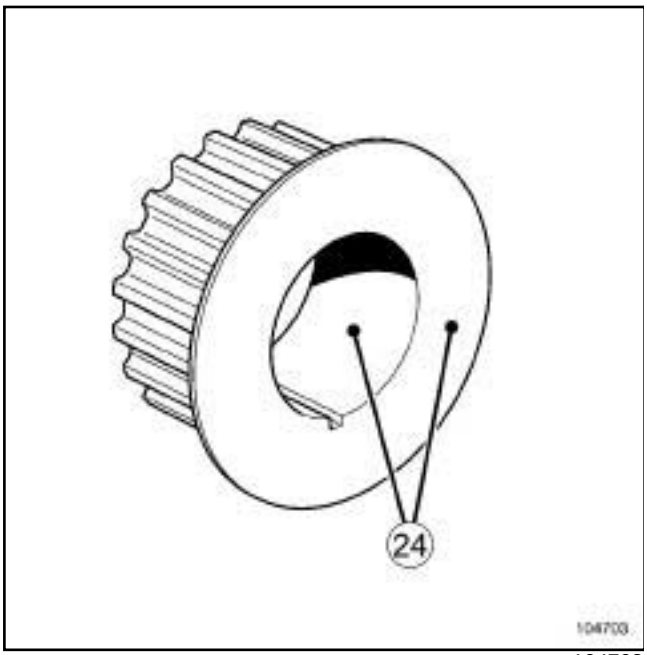
❑ Pivot the collet to position it vertically.

K9K, and 750 or 752



116751

❏ Extract the crankshaft timing sprocket collet using a **roll pin punch** and a mallet.



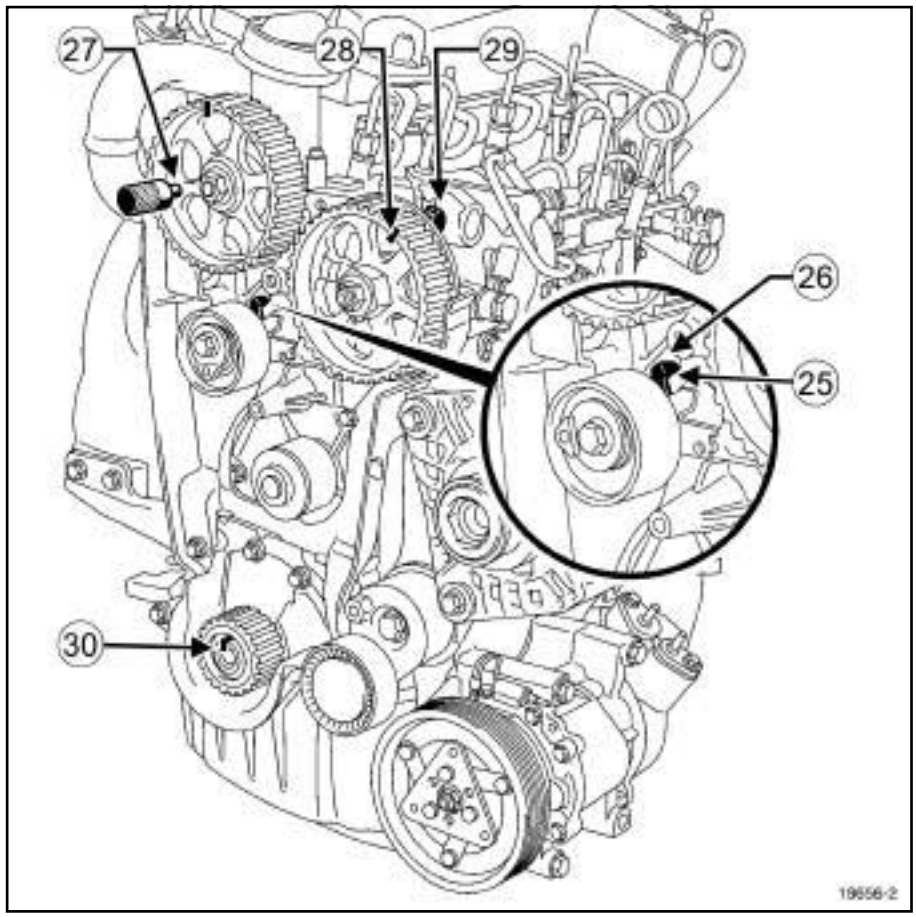
104703

❏ Use surface cleaner to degrease:

- the end of the crankshaft (timing end),
- the crankshaft timing sprocket bore and pressure faces at (**24**) ,
- the contact surfaces of the crankshaft accessories pulley.

K9K, and 750 or 752

2 - Timing belt fitting procedure for engines fitted with a single unit camshaft timing sprocket



19656-2

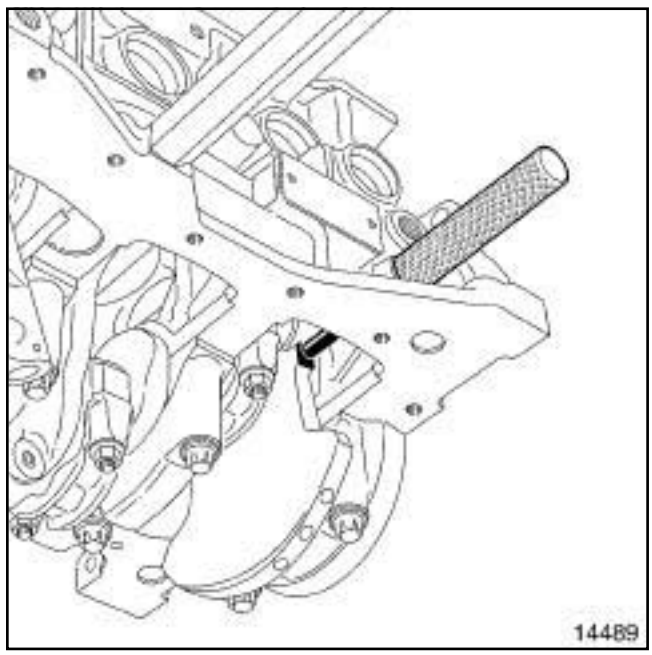
❏ Refit:

- the crankshaft timing sprocket,
- the timing tensioning roller.

❏ Put the tensioning roller lug (**25**) in the cylinder head groove (**26**) .

❏ Engage the pin **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes at (**27**) , turning the camshaft using a **offset spanner (18 mm)** if necessary.

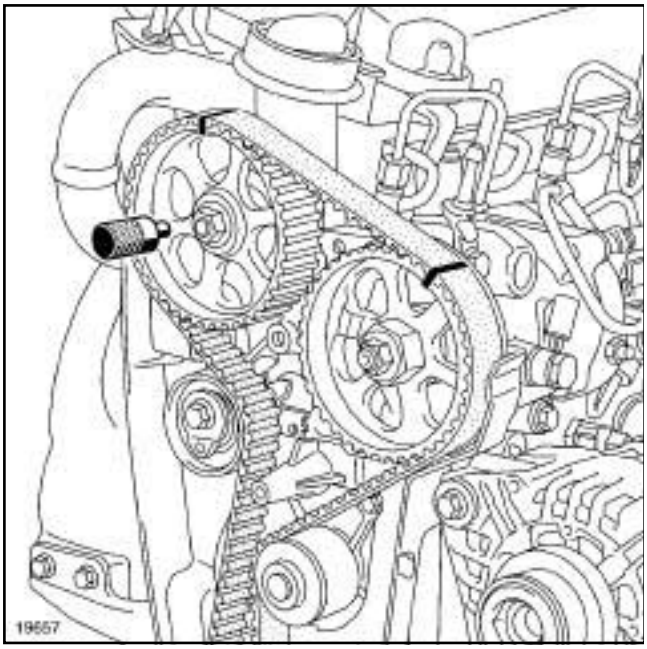
❏ Check that the mark on the high pressure pump pinion (**28**) is opposite the bolt head (**29**) .



14489

❏ Position the crankshaft so that it presses against the TDC setting pin **(Mot. 1489)** (the crankshaft groove ***(30)*** must face upwards).

K9K, and 750 or 752



19657

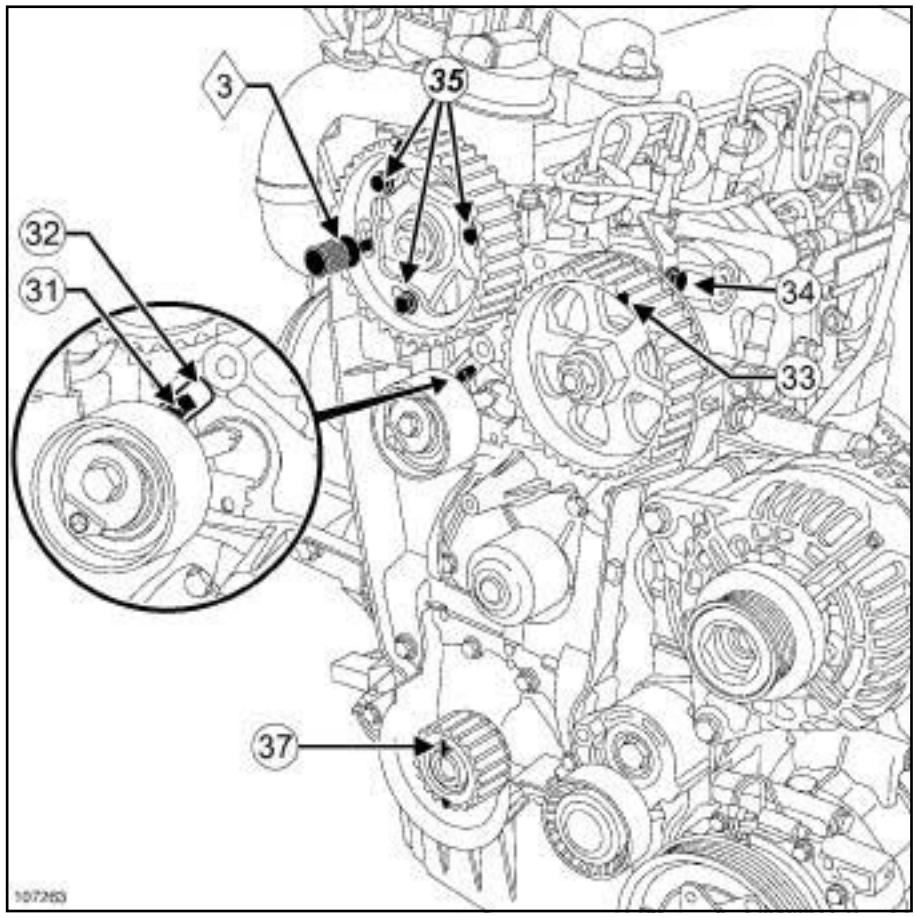
❑ Fit the timing belt, starting with the crankshaft timing sprocket, by aligning the marks on the timing belt with those on the camshaft sprocket and the high pressure pump pinion.

Note:

There should be 19 timing belt tooth spaces between the marks on the camshaft sprocket and the high pressure pump pinion.

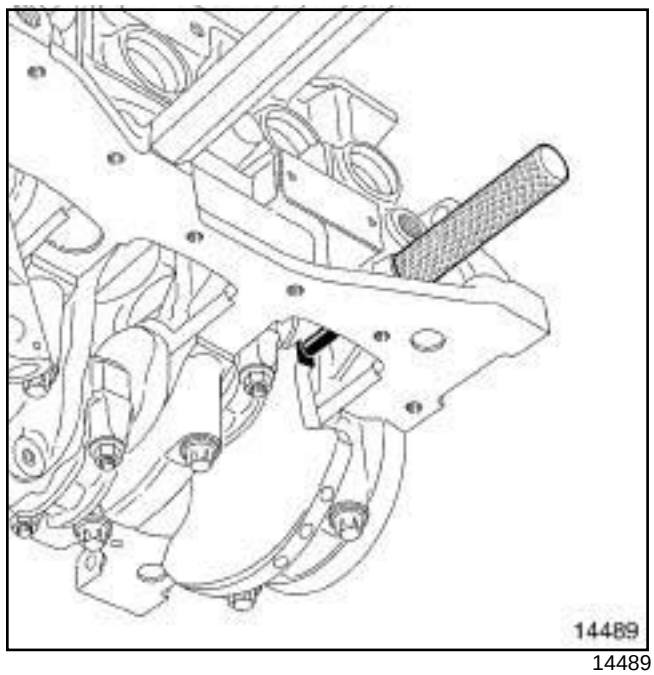
K9K, and 750 or 752

3 - Timing belt fitting procedure for engines fitted with a two-part camshaft timing sprocket



107263

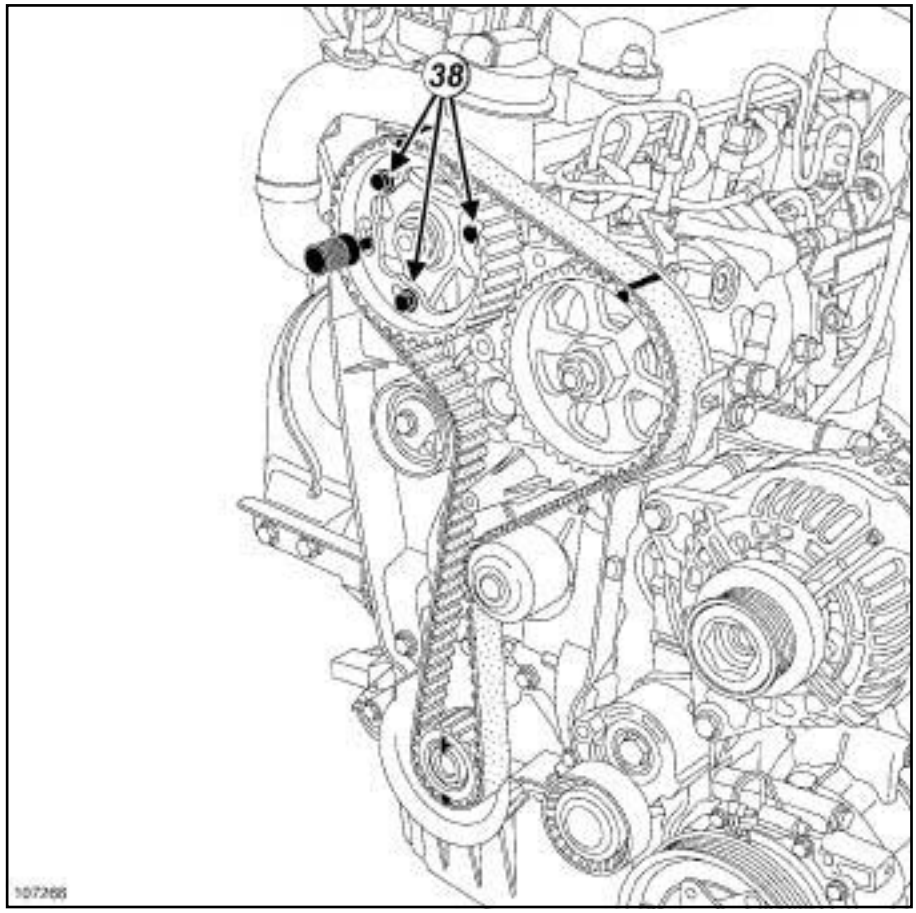
- ❏ Refit the timing tensioning roller.
- ❏ Put the tensioning roller lug (**31**) in the cylinder head groove (**32**) .
- ❏ Engage the pin (**3**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes, turning the camshaft using a **offset spanner (18 mm)** if necessary.
- ❏ Check that the mark on the high pressure pump pinion (**33**) is opposite the bolt head (**34**) .
- ❏ Loosen the three camshaft timing sprocket crown bolts (**35**) by one turn.



14489

- ❏ Position the crankshaft so that it presses against the TDC setting pin **(Mot. 1489)** (the crankshaft groove ***(37)*** must face upwards).

K9K, and 750 or 752



107266

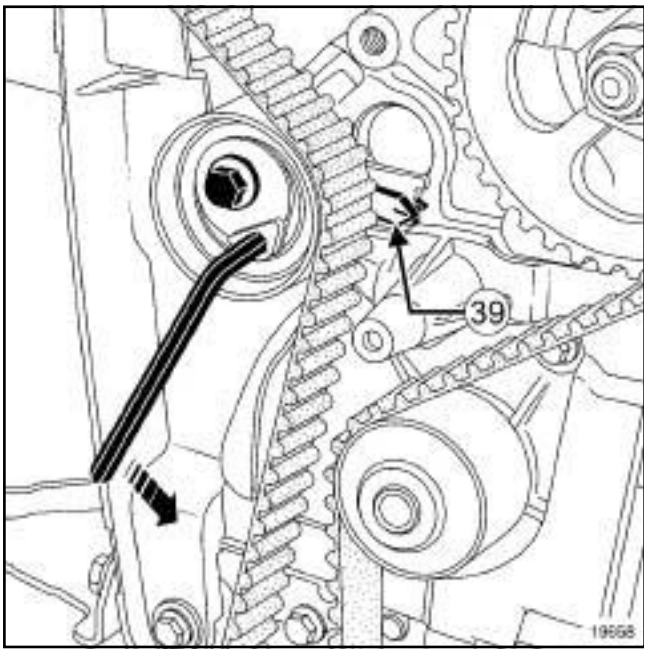
❑ Fit the timing belt, starting with the crankshaft timing sprocket, by aligning the marks on the timing belt with those on the camshaft sprocket and the high pressure pump pinion.

> Note:
>
> There should be 19 timing belt tooth spaces between the marks on the camshaft sprocket and the high pressure pump pinion.

❑ Use a **torque wrench** to torque tighten the **camshaft timing sprocket crown bolts (14 N.m)** (**38**) .

K9K, and 750 or 752

4 - Second part of the timing procedure for engines fitted with a single unit or two-part camshaft timing sprocket



19658

❏ Position the tensioning roller adjustable index marker (**39**) opposite the lug **, turning the eccentric cam anti-clockwise using a 6 mm** Allen key.

❏ Use a **torque wrench** to torque tighten the **tensioning roller bolt (27 N.m)**.

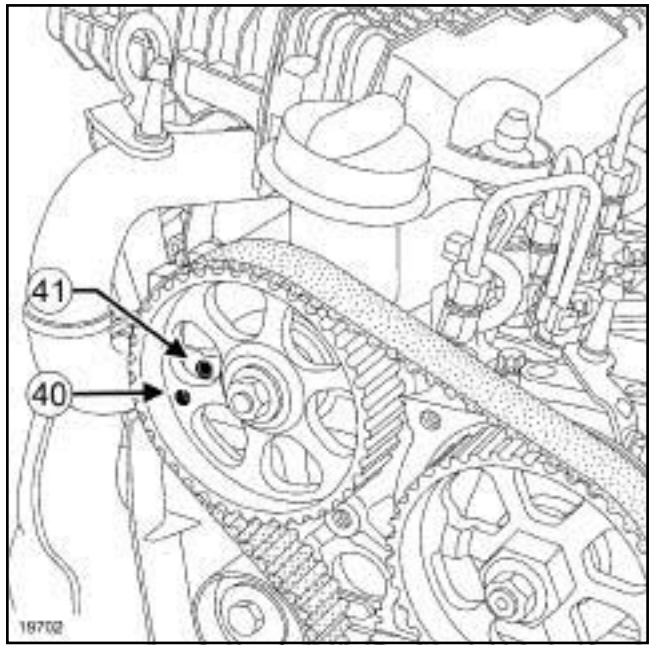
❏ Refit the accessories crankshaft pulley with a new bolt.

❏ Torque and angle tighten using a **torque/angle wrench** or a **torque wrench** and a **cylinder head bolt tightening gauge (angular measuring type)** (crankshaft against the TDC setting pin):

- the **crankshaft accessories pulley M12 bolt (60 N.m + 100° ± 10°)**,
- the **crankshaft accessories pulley M14 bolt (120 N.m + 95° ± 15°)**

❏ Remove the following tools:

- the camshaft timing sprocket setting pin **(Mot. 1430)**,
- the TDC setting pin **(Mot. 1489)**.

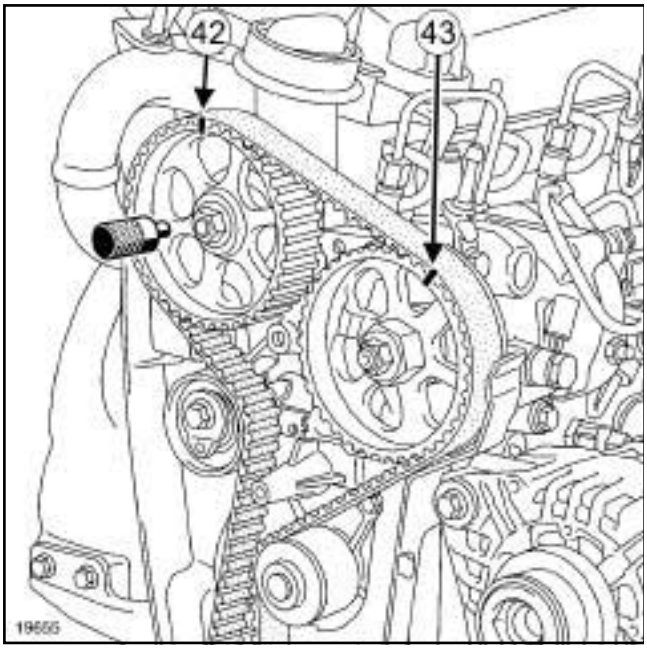


19702

❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole (**40**) in the camshaft timing sprocket is opposite the hole (**41**) in the cylinder head:

- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.

K9K, and 750 or 752



19655

❏ Lock the camshaft timing sprocket using the **(Mot. 1430)**.

Note:

There should be 19 timing belt tooth grooves between the marks on the camshaft sprocket (**42**) and the high pressure pump pinion (**43**)

❏ Remove:

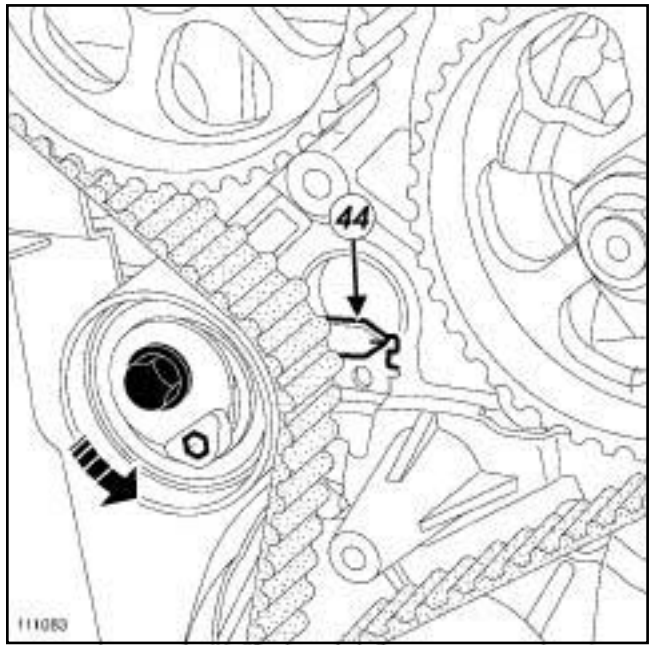
- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.

Note:

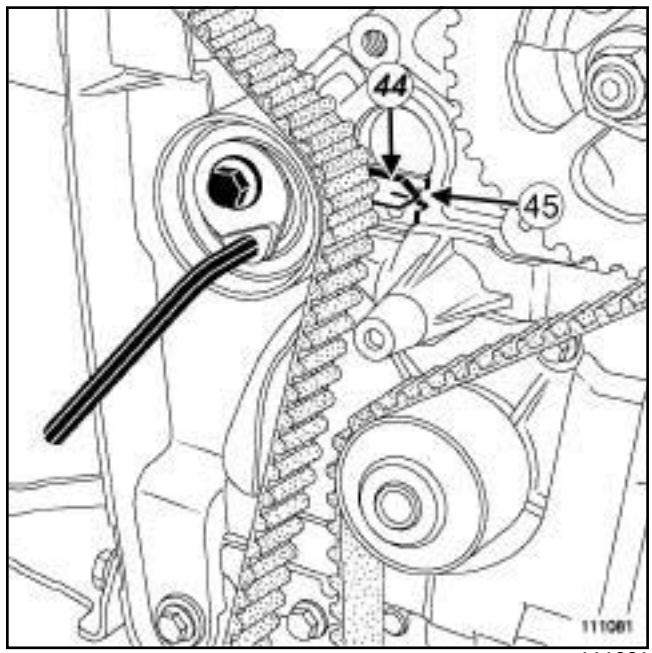
After two turns, the tension wheel index markers may be in two different positions.

The rotation of the tension wheel eccentric depends on the position.

First position



111083



111081

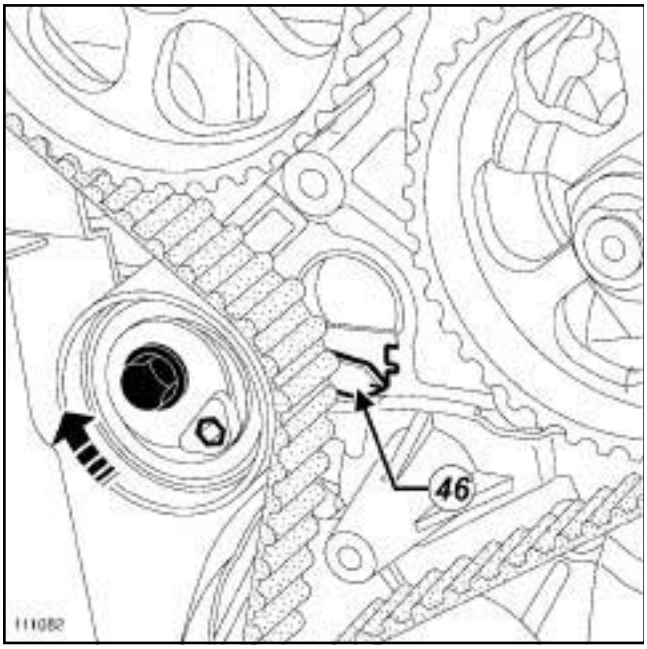
❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**44**) in the middle of the timing window (**45**) , **turning the key anti-clockwise**.

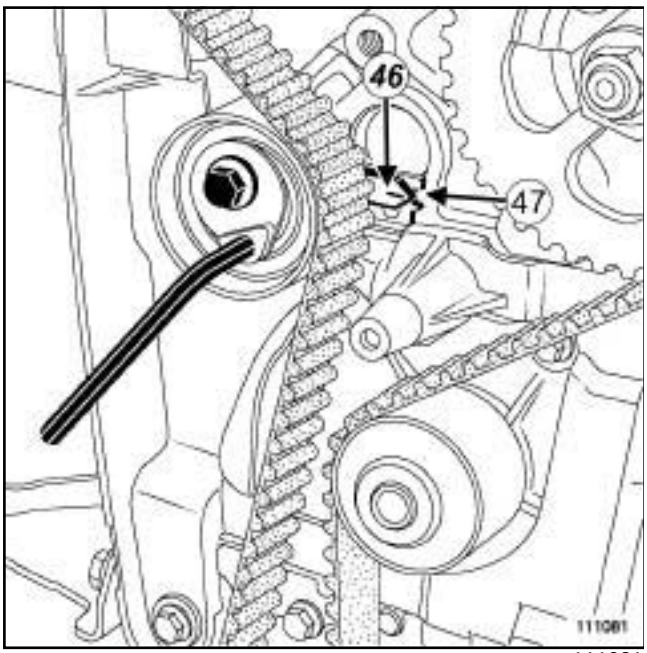
❏ Use a **torque wrench** to torque tighten the **tensioning roller bolt (27 N.m)**.

K9K, and 750 or 752

Second position



111082



111081

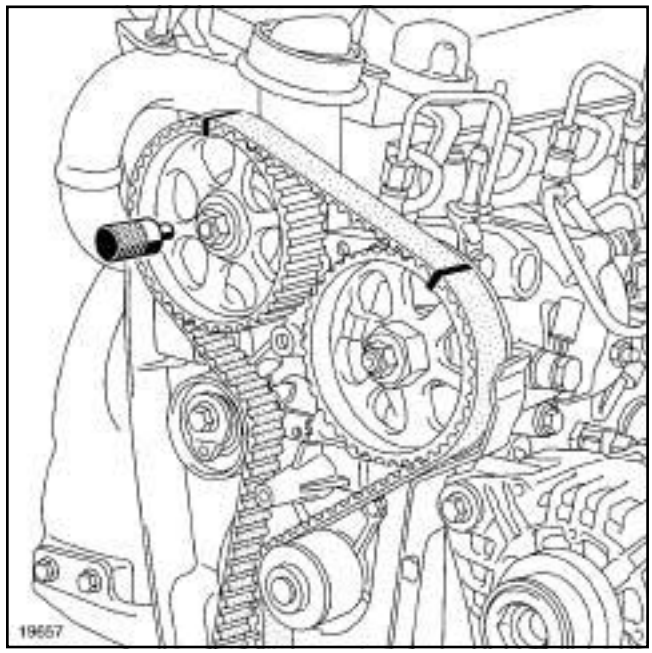
❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**46**) in the middle of the timing window (**47**) , **turning the key clockwise**.

❏ Use a **torque wrench** to torque tighten the **tensioning roller bolt (27 N.m)**.

❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole in the camshaft timing sprocket is opposite the hole in the cylinder head:

- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



19657

❏ Lock the camshaft timing sprocket using the **(Mot. 1430)**.

❏ If the pin does not engage, repeat the timing belt refitting operation.

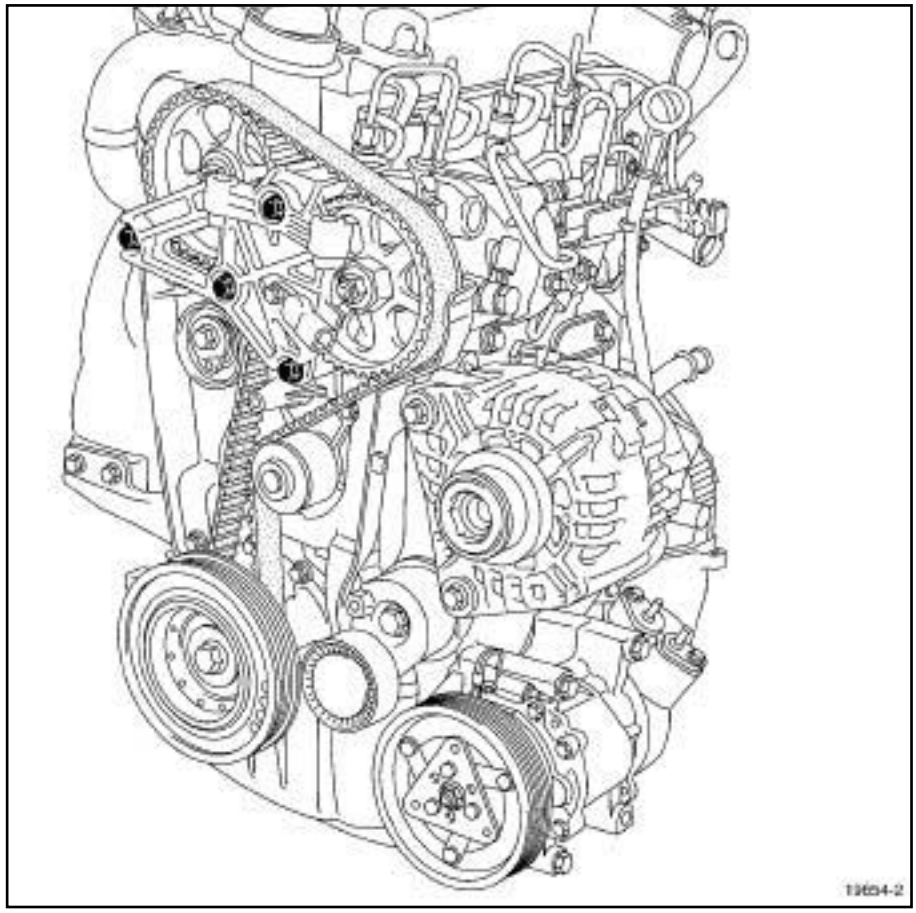
❏ Remove the following tools:

- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**

❏ Apply a drop of **SILICONE ADHESIVE SEALANT** to the threading of the TDC pin plug.

❏ Use a **torque wrench** to torque tighten the **TDC pin plug (25 N.m)**.

K9K, and 750 or 752

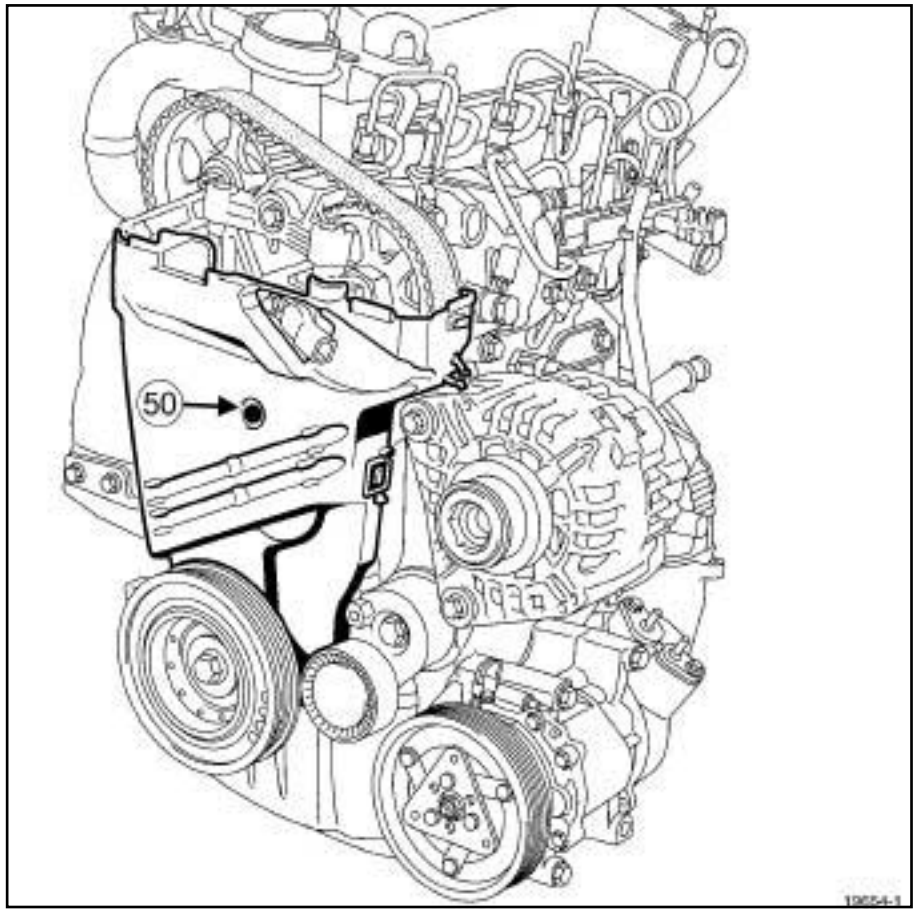


19654-2

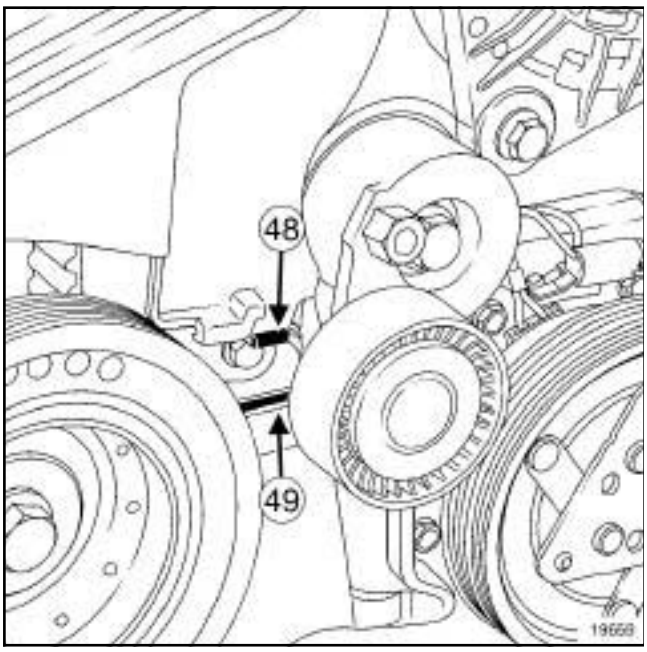
❏ Refit the cylinder head suspended mounting.

❏ Use a **torque wrench** to torque tighten the **cylinder head suspended mounting bolts (25 N.m)**.

K9K, and 750 or 752



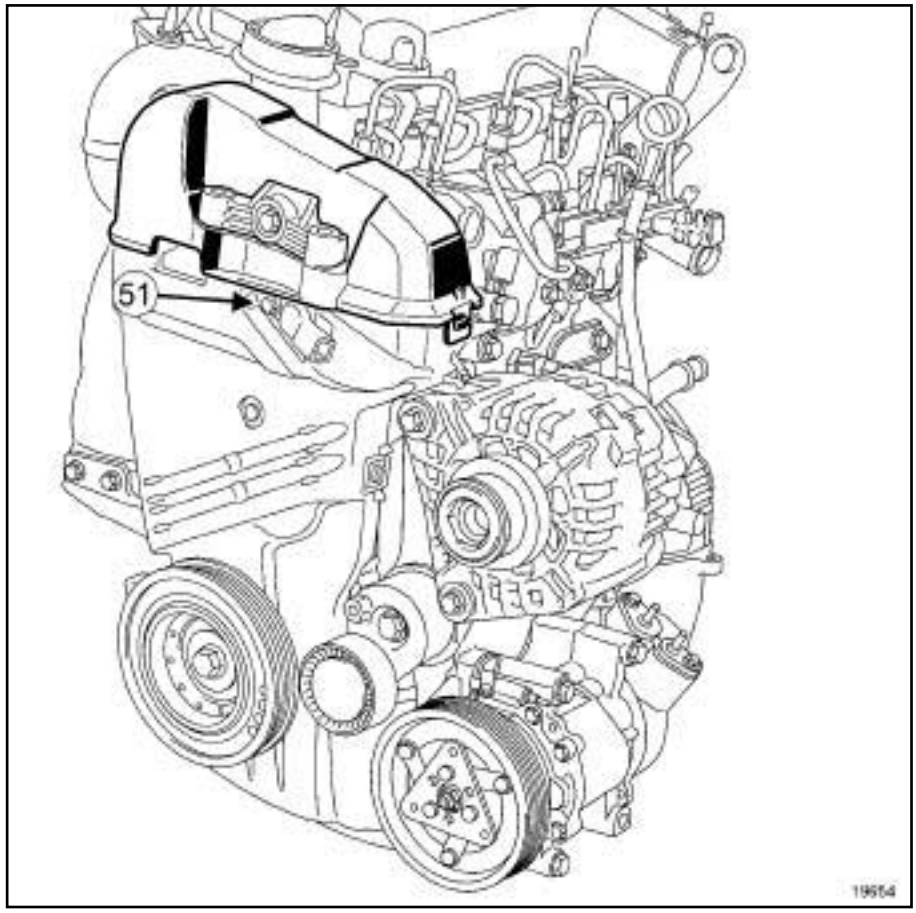
19654-1



19659

❑ Refit:

- the timing cover, positioning the tab (**48**) in the inner timing cover hole (**49**) ,
- the timing cover plastic bolt (**50**) .



19654

❑ Refit the camshaft position sensor (**51**) .

❑ Use a **torque wrench** to torque tighten the **camshaft position sensor bolt (8 N.m)**.

❑ Refit the upper timing cover.

III - SECOND FITTING

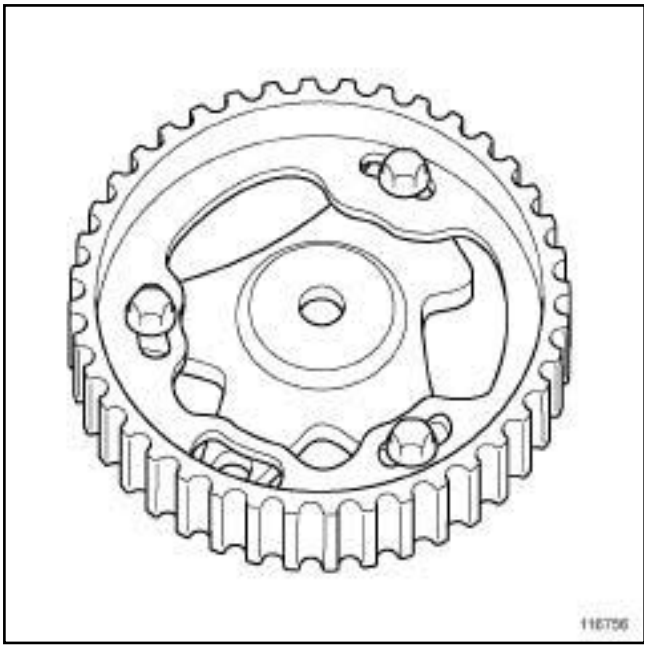
Recommendations for repair

❑

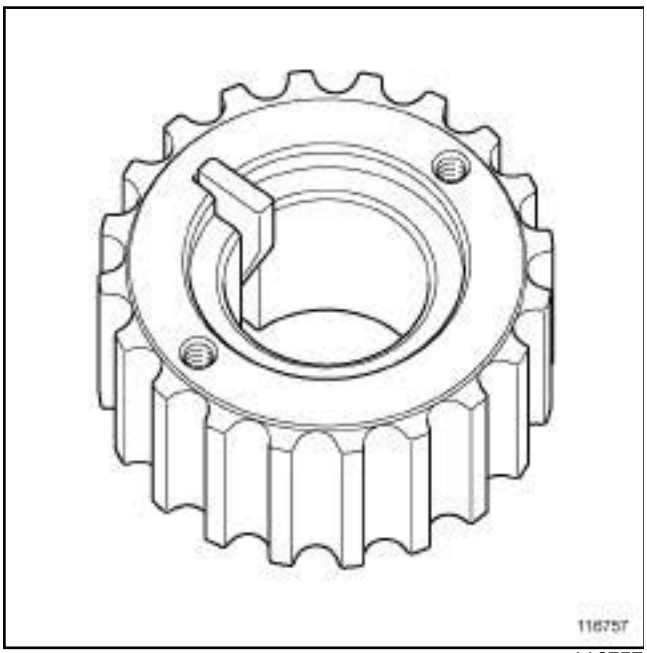
Note:

This procedure is applicable to engines manufactured from 02/12/2005 fitted with a two-part camshaft timing sprocket and a crankshaft timing sprocket with collet.

K9K, and 750 or 752



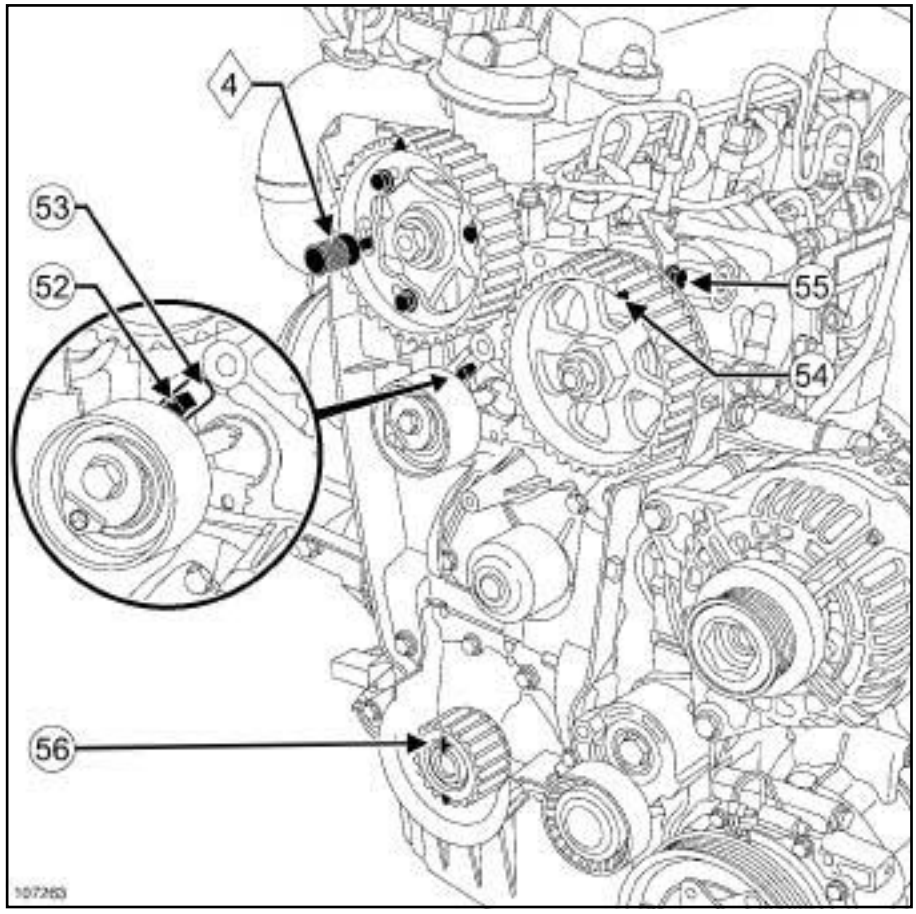
116756



116757

❑ Wear **protective gloves** during the operation.

K9K, and 750 or 752



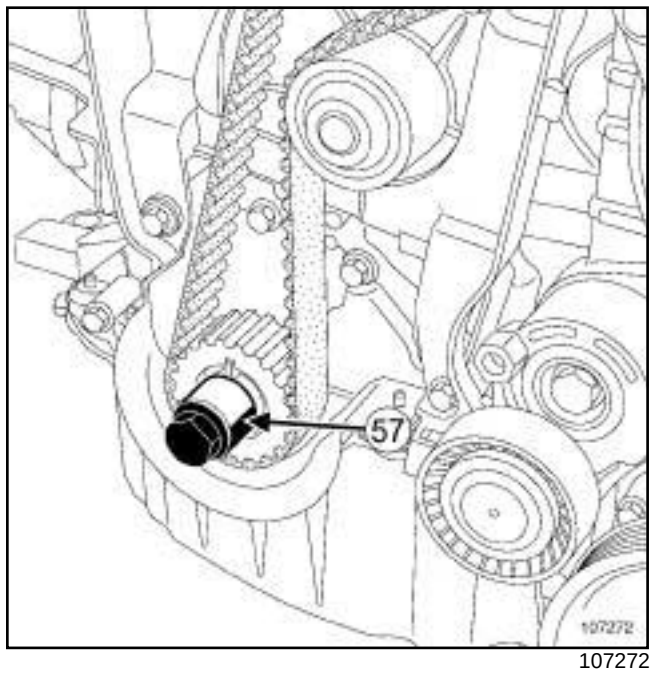
107263

❏ Refit the timing tensioning roller.

❏ Put the tensioning roller lug (**52**) in the cylinder head groove (**53**) .

❏ Engage the pin (**4**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes, turning the camshaft using a **offset spanner (18 mm)** if necessary.

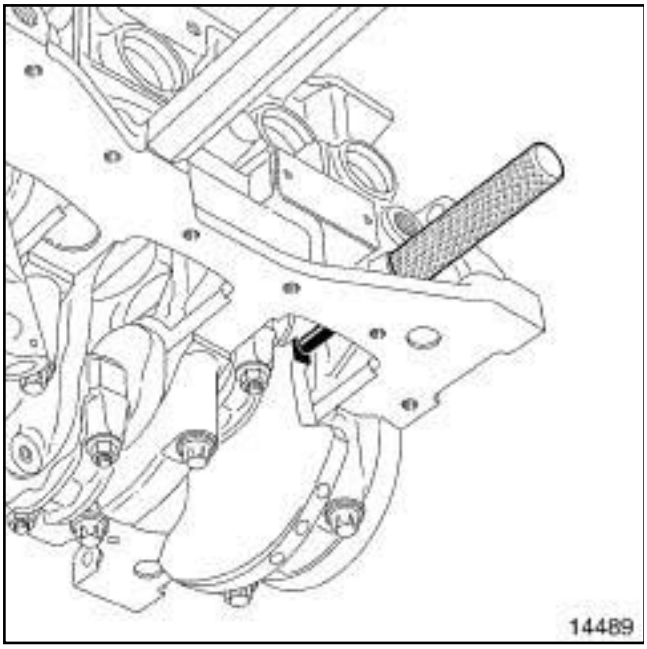
❏ Check that the mark on the high pressure pump (**54**) is opposite the bolt head (**55**) .



107272

❏ Tighten the old crankshaft accessories pulley bolt fitted with a spacer (which does not cover the timing sprocket mark) (**57**) onto the crankshaft.

K9K, and 750 or 752



14489

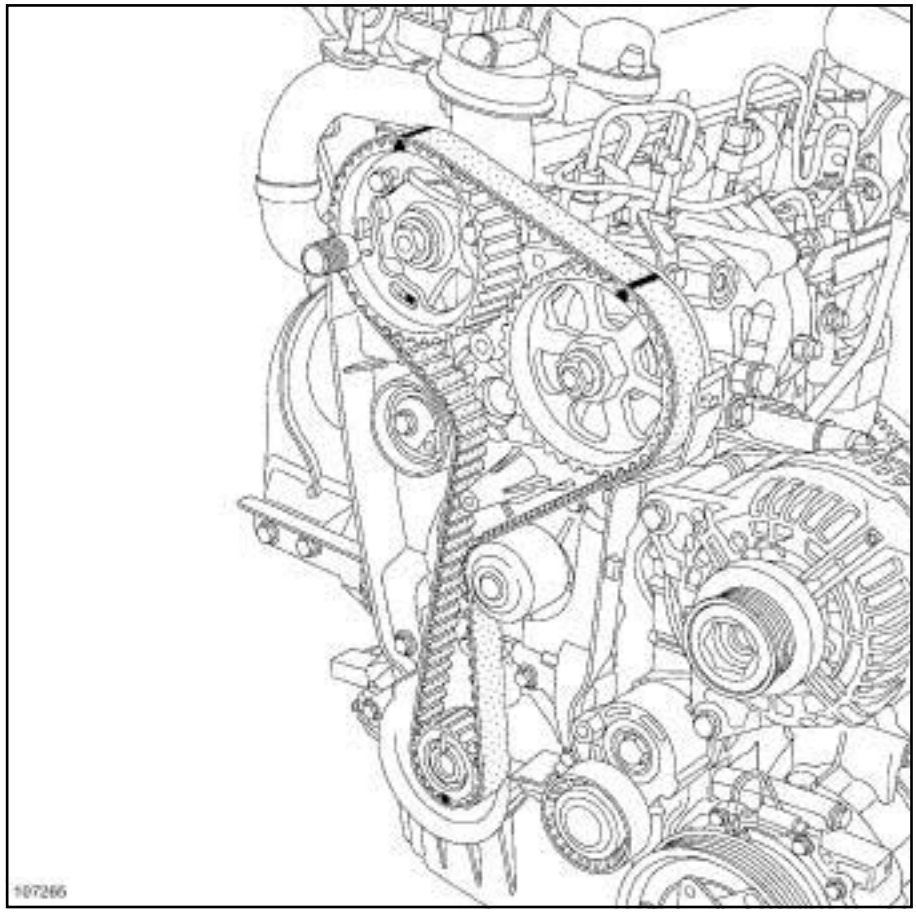
❏ Position the crankshaft so that it presses against the TDC setting pin **(Mot. 1489)** (the crankshaft sprocket ***(56)*** collet must face upwards).

107264

❏ Remove one bolt from the camshaft timing sprocket crown.

❏ Loosen the other two camshaft timing sprocket crown bolts (**58**) by one turn.

K9K, and 750 or 752

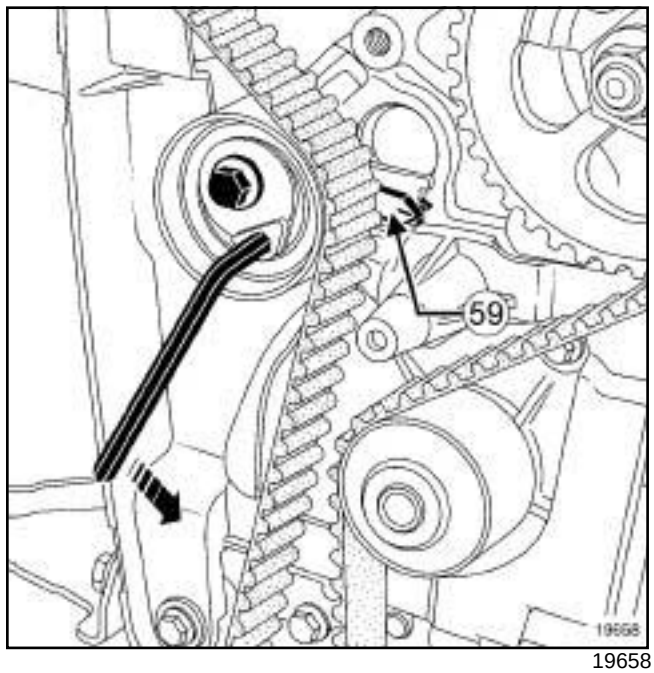


107265

❑ Fit the timing belt, starting with the crankshaft sprocket, by aligning the marks on the timing belt with those on the crankshaft sprockets and camshaft and high pressure pump pinions.

Note:

There should be 19 timing belt tooth grooves between the marks on the camshaft sprocket and the high pressure pump pinion, and 51 timing belt tooth grooves between the crankshaft sprocket and the high pressure pump pinion.

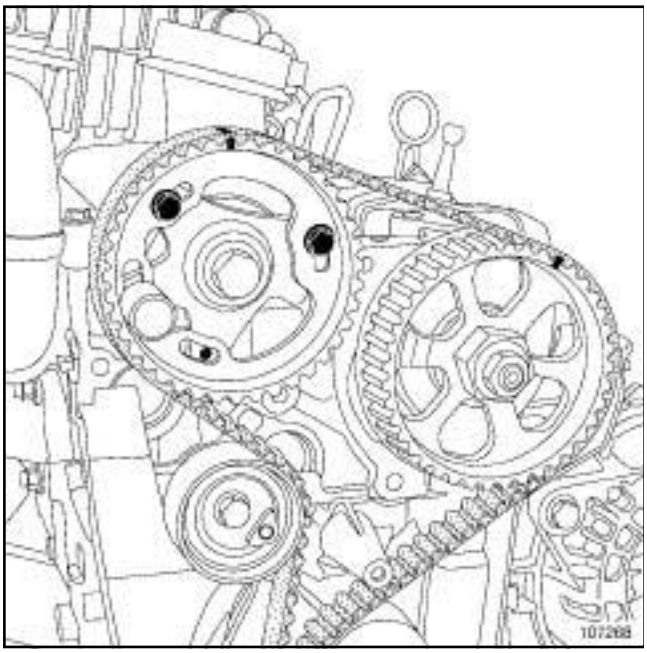


19658

❑ Position the tensioning roller adjustable index marker (**59**) opposite the lug **, turning the eccentric cam anti-clockwise using a 6 mm** Allen key.

K9K, and 750 or 752

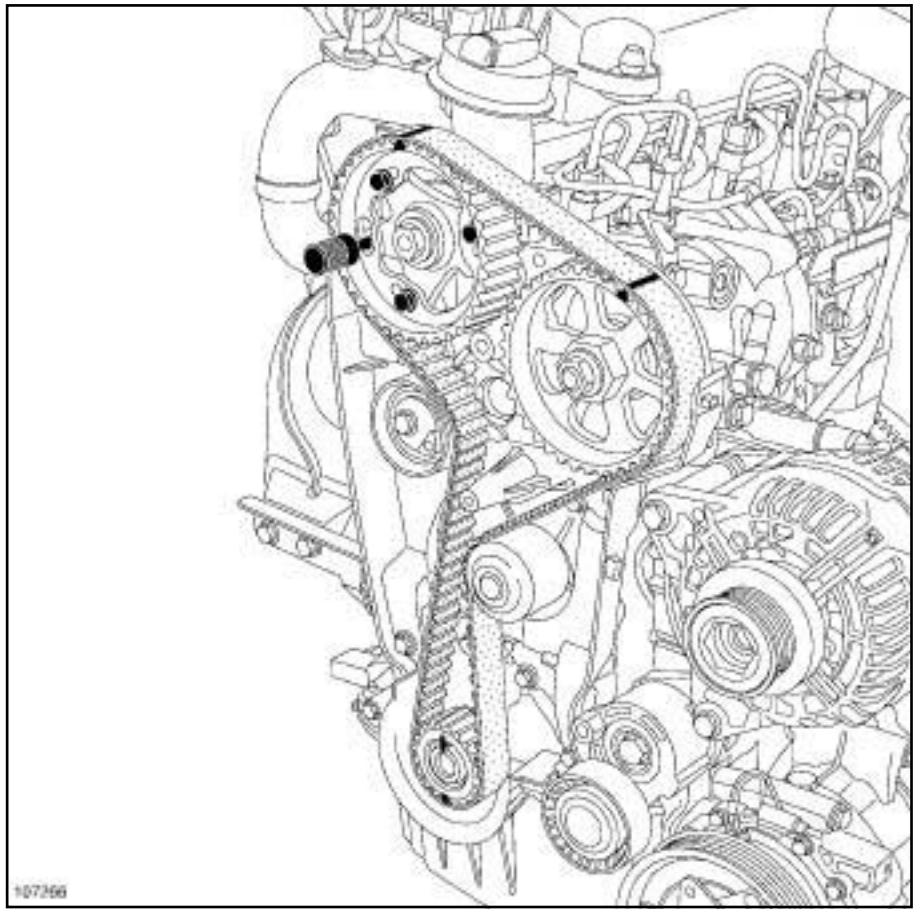
❏ Use a **torque wrench** to torque tighten the **tensioning roller bolt (27 N.m)**.



107268

❏ Check that the camshaft timing sprocket crown bolts are not fully locked against the camshaft timing sprocket crown. If they are, repeat the timing belt refitting procedure.

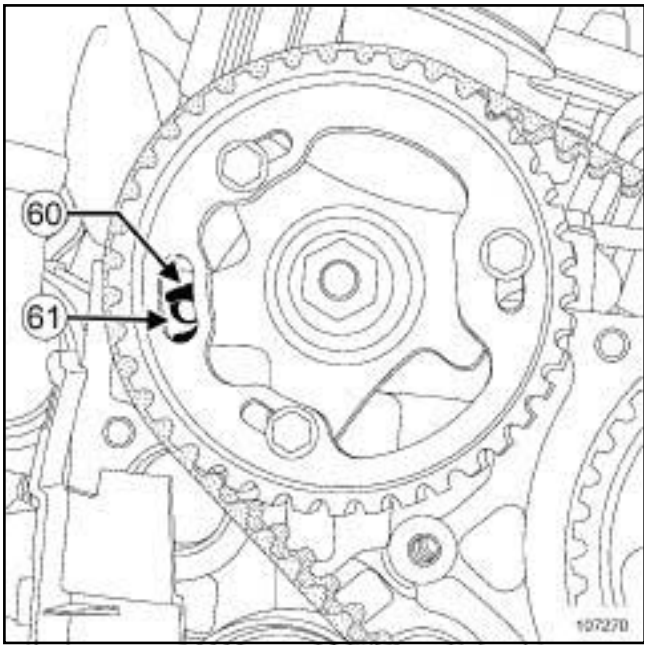
K9K, and 750 or 752



107266

- ❏ Refit the bolt from the camshaft timing sprocket crown.
- ❏ Use a **torque wrench** to torque tighten the **camshaft timing sprocket crown bolts (14 N.m)**.
- ❏ Remove:
  - the TDC setting pin **(Mot. 1489)**,
  - the camshaft timing sprocket setting pin **(Mot. 1430)**.

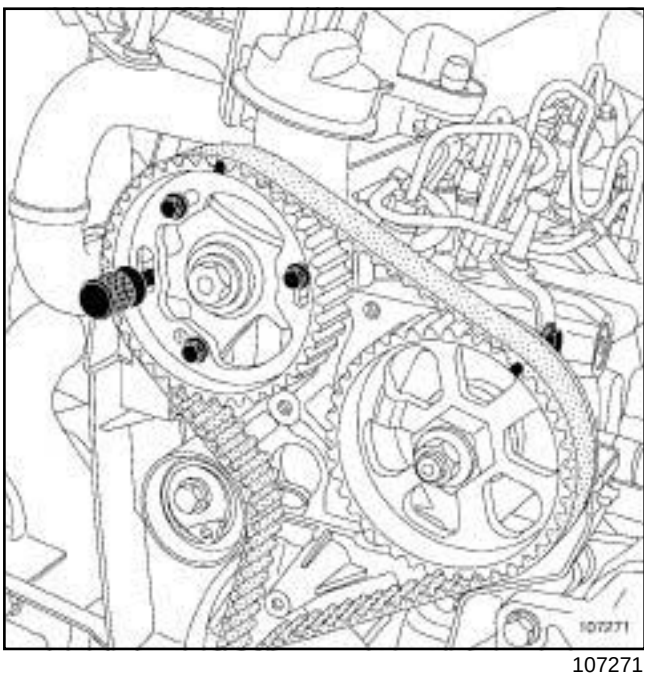
K9K, and 750 or 752



107270

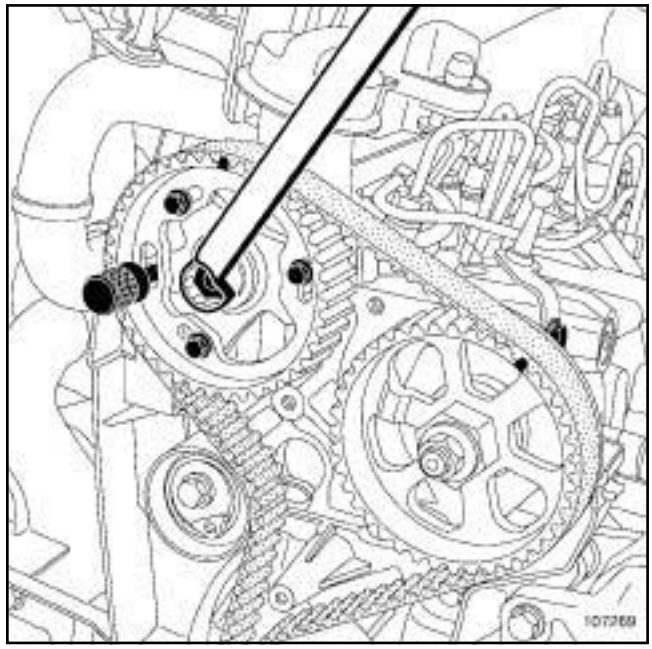
❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole (**60**) in the camshaft timing sprocket is opposite the hole (**61**) in the cylinder head:

- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



107271

❏ Lock the camshaft timing sprocket using the **(Mot. 1430)**.



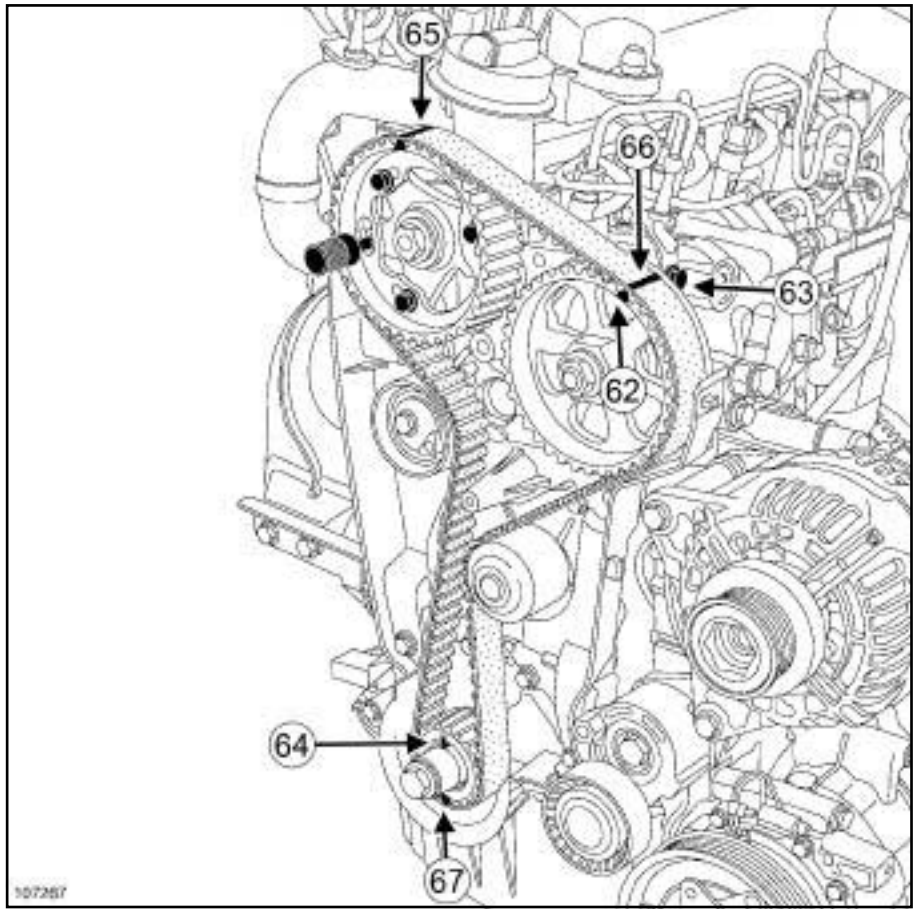
107269

❏ If the pin **(Mot. 1430)** does not engage:

- loosen the camshaft timing sprocket crown bolts by a maximum of one turn,
- turn the camshaft timing sprocket hub using a **offset spanner (18 mm)** to set the camshaft timing sprocket hub,
- do not retighten the camshaft timing sprocket crown bolts.

❏ Undo the camshaft timing sprocket crown bolts.

K9K, and 750 or 752



107267

❑ Check:

- that the high pressure pump pinion mark (**62**) is opposite the bolt head (**63**) ,
- that the crankshaft timing sprocket collet (**64**) is positioned vertically at the top,
- that there are 19 belt tooth grooves between the marks on the camshaft sprocket (**65**) and the high pressure pump pinion (**66**) ,
- that there are 51 belt tooth grooves between the marks on the crankshaft sprocket (**67**) and the high pressure pump pinion (**66**) .

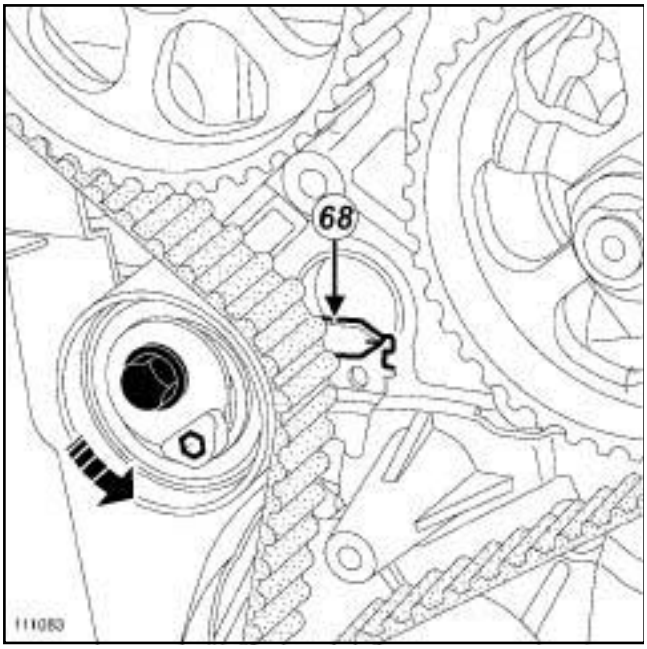
Note:

After two turns, the tension wheel index markers may be in two different positions.

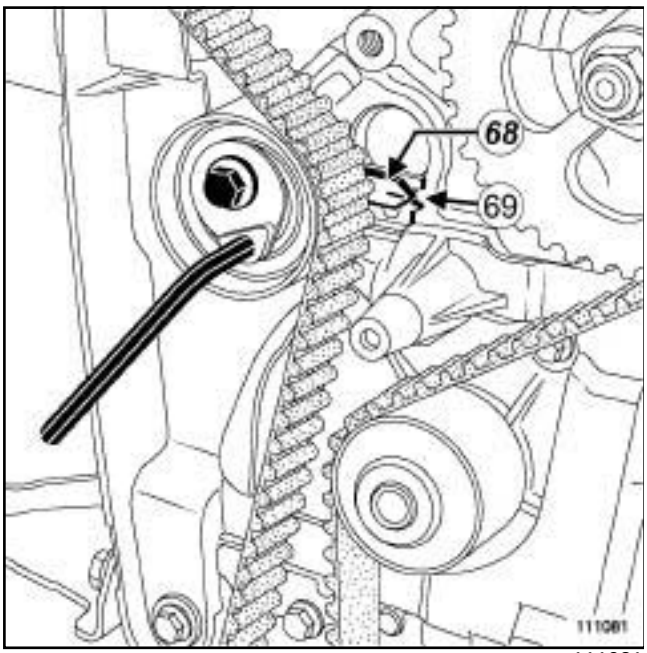
The rotation of the tension wheel eccentric depends on the position.

K9K, and 750 or 752

First position



111083



111081

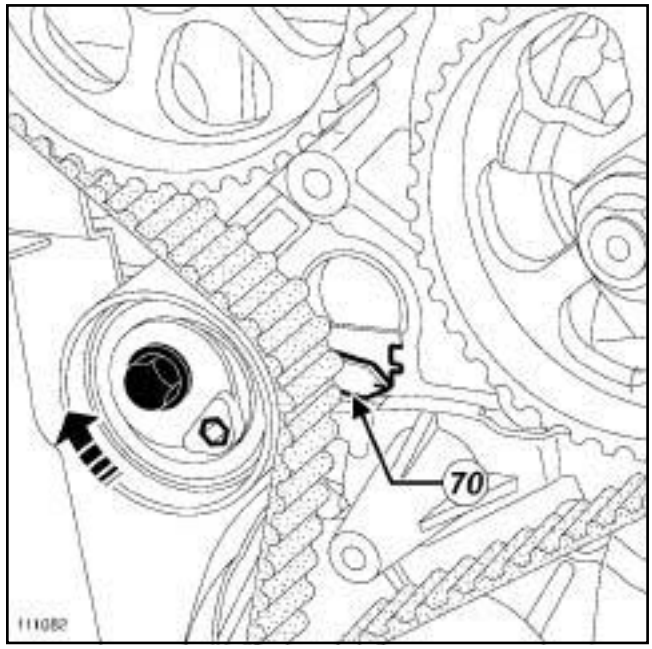
❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**68**) in the middle of the timing window (**69**) , **turning the key anti-clockwise**.

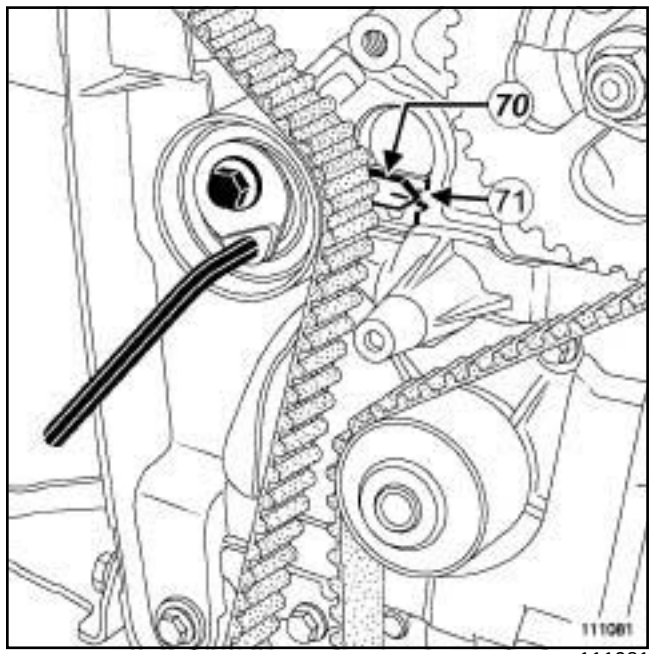
❏ Use a **torque wrench** to torque tighten:

- the **tensioning roller bolt (27 N.m)**,
- the **camshaft timing sprocket crown bolts (14 N.m)**.

Second position



111082



111081

❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**70**) in the middle of the timing window (**71**) , **turning the key clockwise**.

❏ Use a **torque wrench** to torque tighten:

- the **tensioning roller bolt (27 N.m)**,
- the **camshaft timing sprocket crown bolts (14 N.m)**.

❏ Remove the following tools:

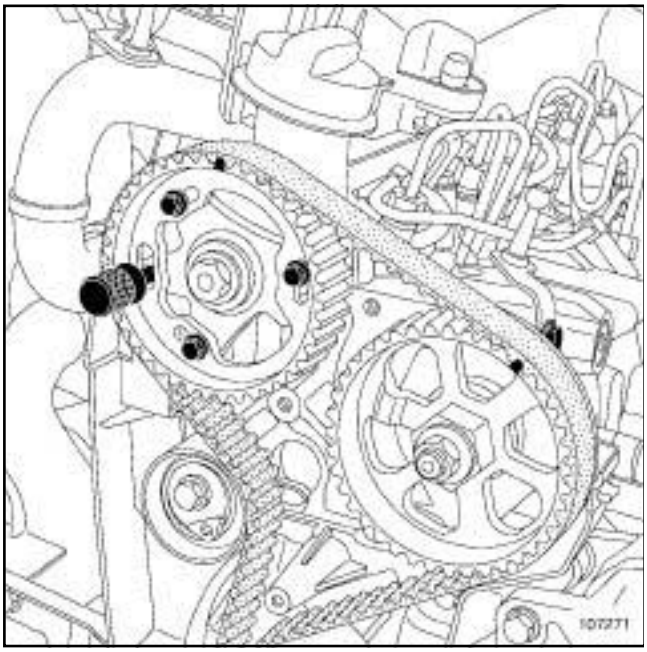
- the TDC setting pin **(Mot. 1489)**,

K9K, and 750 or 752

- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❑ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole in the camshaft timing sprocket is opposite the hole in the cylinder head:

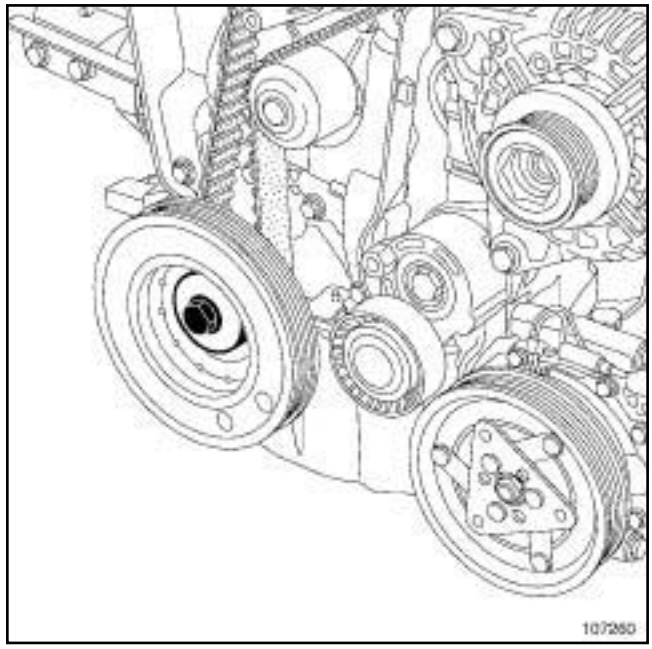
- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



107271

❑ Lock the camshaft timing sprocket using the **(Mot. 1430)**.

❑ If the pin does not engage, repeat the timing belt refitting operation.



107260

❑ Refit the accessories crankshaft pulley with a new bolt.

❑ Use a **torque/angle wrench** or a **torque wrench** and a **cylinder head bolt tightening gauge (angular measuring type)** (crankshaft against the TDC setting pin) to torque and angle tighten the **crankshaft accessories pulley M 14 bolt (120 N.m + 95° ± 15°)**.

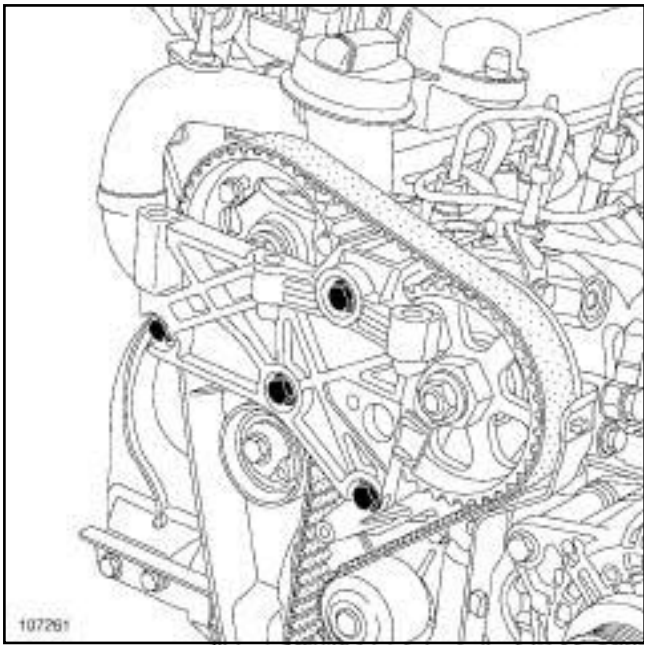
❑ Remove the following tools:

- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❑ Refit the TDC pin plug, coating the threading with **SILICONE ADHESIVE SEALANT**.

❑ Use a **torque wrench** to torque tighten the **TDC pin plug (25 N.m)**.

K9K, and 750 or 752

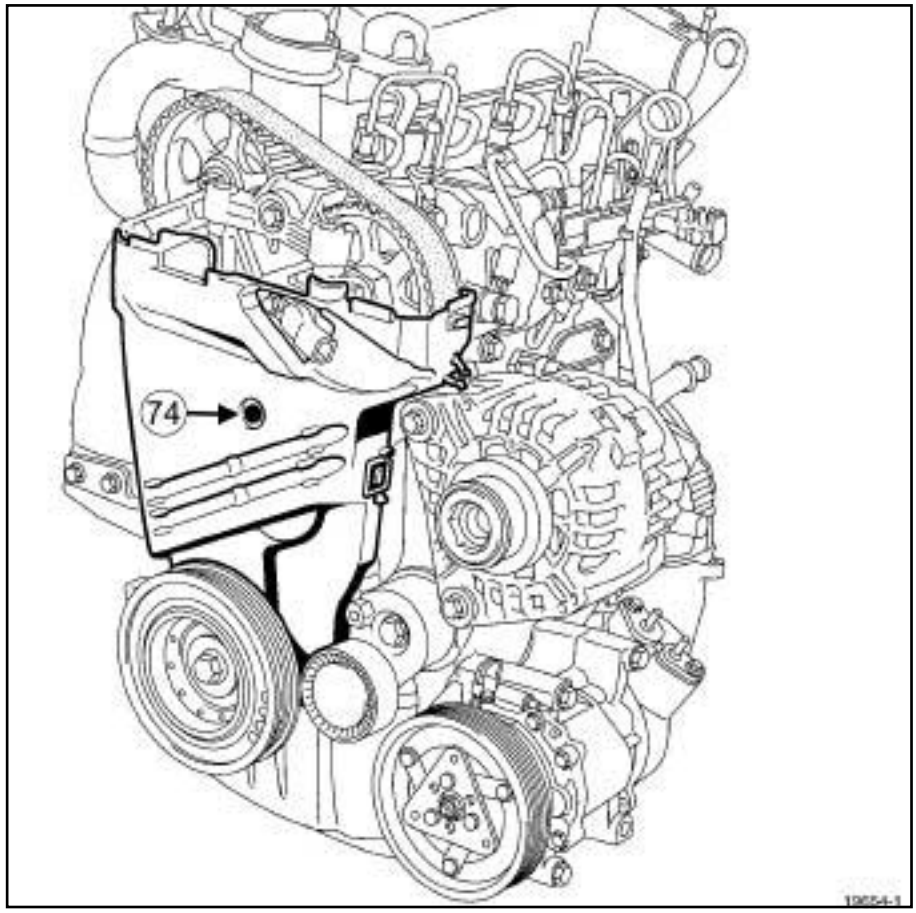


107261

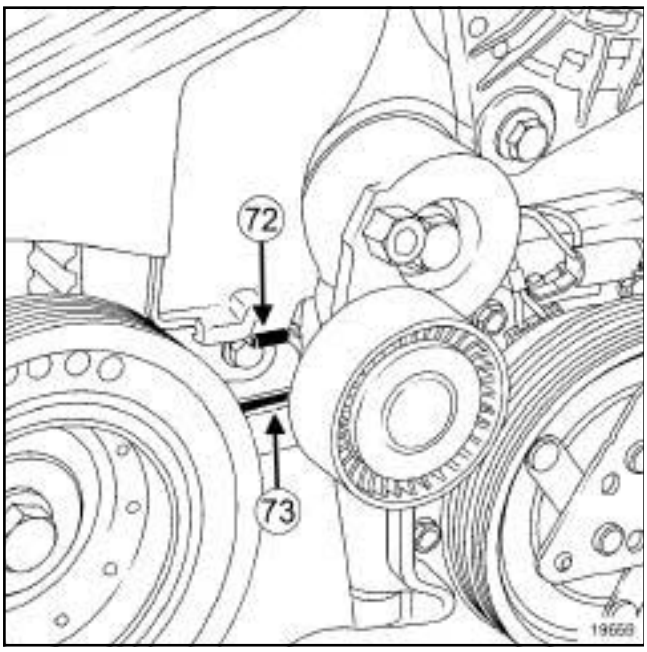
❏ Refit the cylinder head suspended mounting .

❏ Use a **torque wrench** to torque tighten the **cylinder head suspended mounting bolts (25 N.m)**.

K9K, and 750 or 752



19654-1

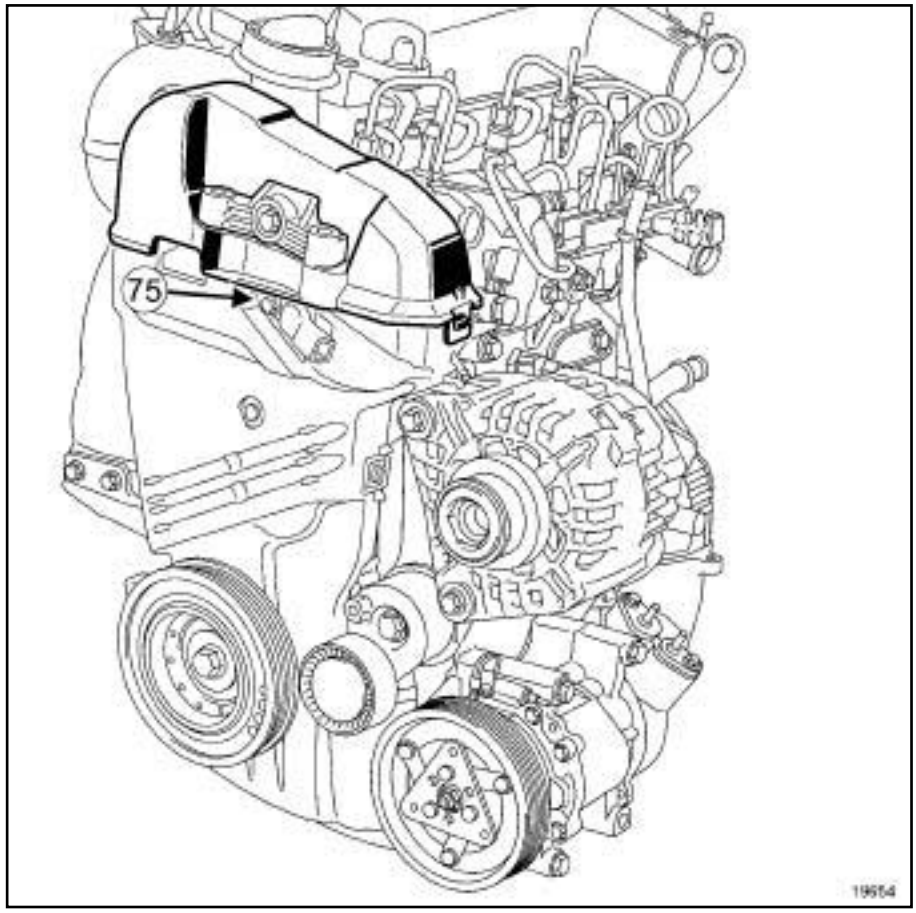


19659

❑ Refit:

- the lower timing cover, positioning the tab (**72**) in the inner timing cover hole (**73**) ,
- the timing cover plastic bolt (**74**) .

K9K, and 750 or 752



19654

❑ Refit the camshaft position sensor (**75**) .

❑ Use a **torque wrench** to torque tighten the **camshaft position sensor bolt (8 N.m)**.

❑ Refit the upper timing cover.

IV - FINAL OPERATION

❑ Refit:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the engine undertray.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,

❑ Remove:

- the chain,
- the **safety strap(s)**,
- the **(Mot. 1453)**.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 772

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1489	TDC locating pin.
Mot. 1430	Set of 5 crankshaft and camshaft pulley timing pins.

Equipment required
protective gloves
safety strap(s)
1/2" female torx socket (12.7 mm square drive)
offset spanner
torque/angle wrench
torque wrench
cylinder head bolt tightening gauge (angular measuring type)

Tightening torques ▽	
tensioning roller bolt	**27 N.m**
camshaft timing sprocket crown bolts	**14 N.m**
crankshaft accessories pulley M14 bolt	**120 N.m + 95°± 15°**
TDC setting pin plug	**25 N.m**
cylinder head suspended mounting bolts	**25 N.m**

IMPORTANT
Wear **protective gloves** during the operation.

WARNING
Never rotate the engine anti-clockwise (timing end).

WARNING
Do not run the engine without the accessories belt, to avoid breaking the crankshaft accessories pulley.

PARTS AND CONSUMABLES FOR THE REPAIR WORK

❑ **Parts always to be replaced**

- Timing belt,
- Timing belt tensioning roller,
- Crankshaft accessories pulley bolt.

❑ **Consumables**

- Silicone adhesive sealant (see **Vehicle: Parts and consumables for the repair**) (MR392, 04B, Consumables - Products).

REMOVAL

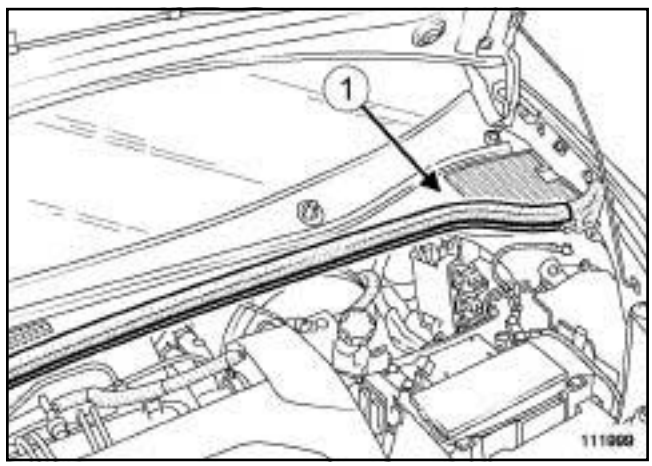
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .



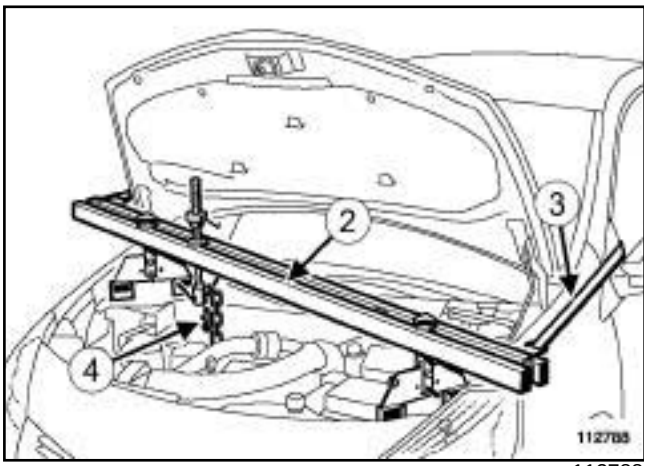
111999

❑ Remove:

- the engine cover,

K9K, and 764 or 772

- the scuttle panel grille (**1**) (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



112788

❏ Position the **(Mot. 1453)** (**2**) and hold it in place using a **safety strap(s)** (**3**) .

❏ Fit a chain (**4**) on the lifting eye of the crankshaft end to enable the engine to be lifted using the **(Mot. 1453)**.

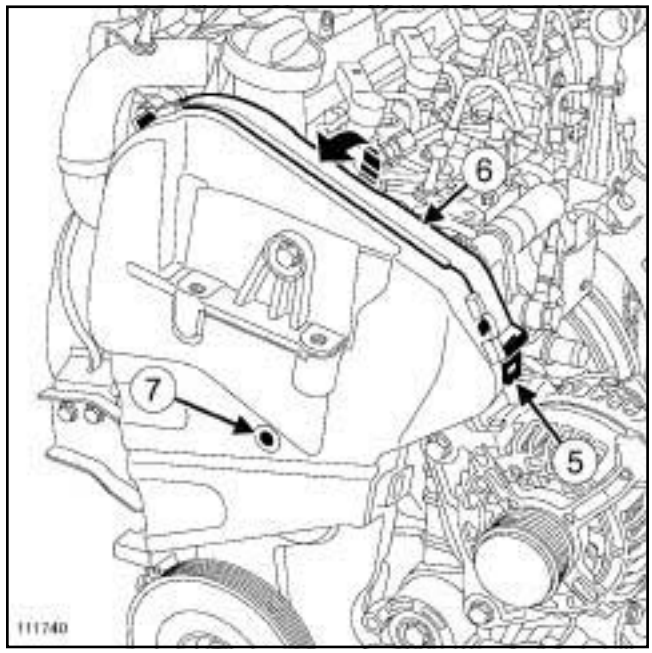
❏ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

Note:

Do not damage the air conditioning pipes.

II - OPERATION FOR REMOVAL OF PART CONCERNED

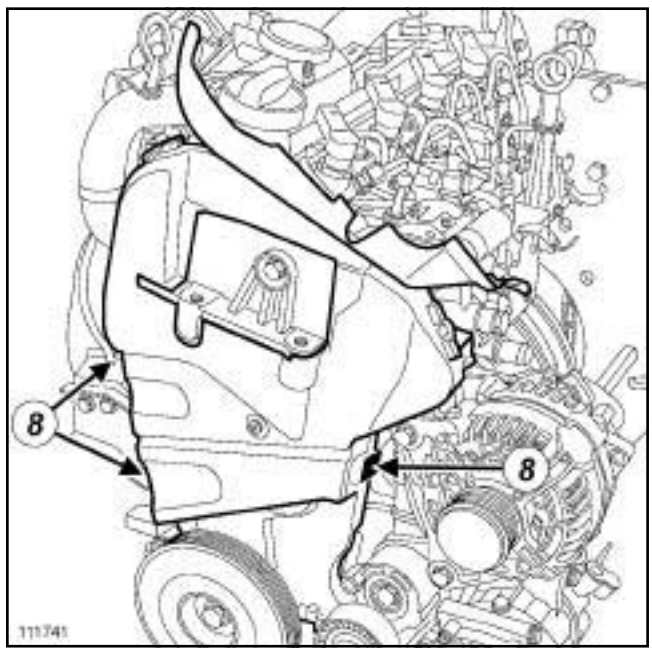


111740

❏ Unclip the tab (**5**) .

❏ Rotate the timing cover (**6**) in the direction of the arrow.

❏ Remove the plastic bolt (**7**) .

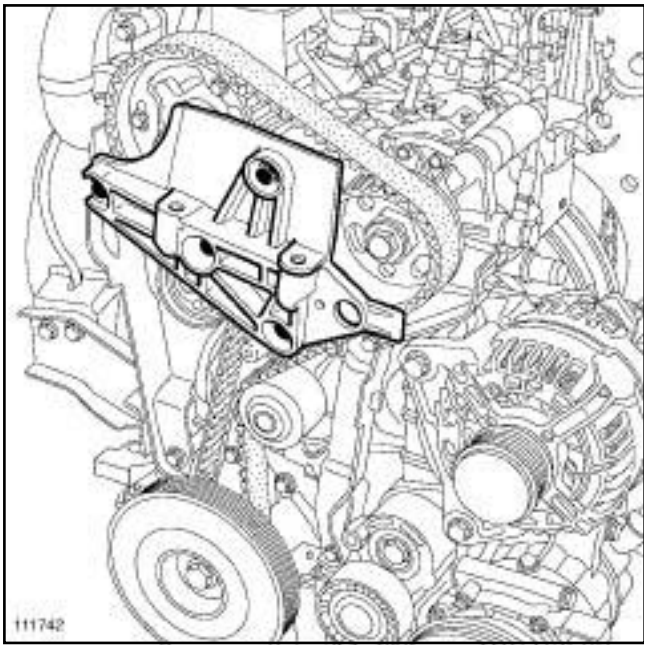


111741

❏ Unclip the three tabs (**8**) .

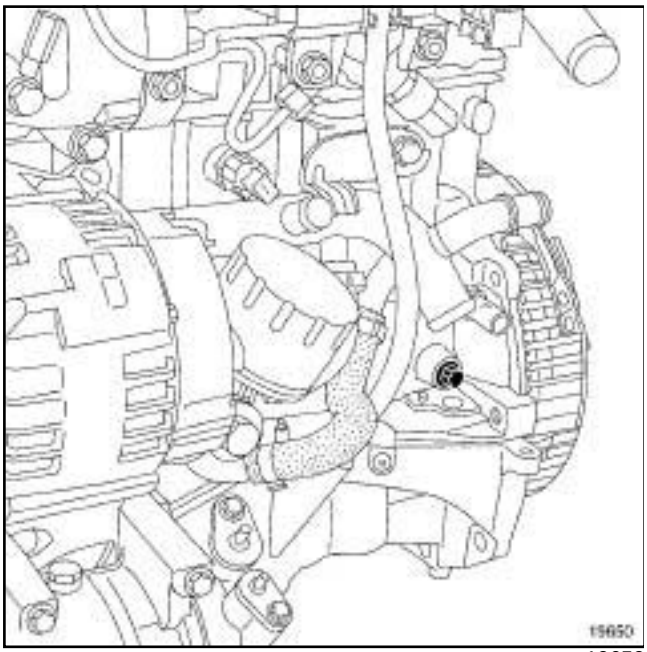
❏ Remove the timing cover.

K9K, and 764 or 772



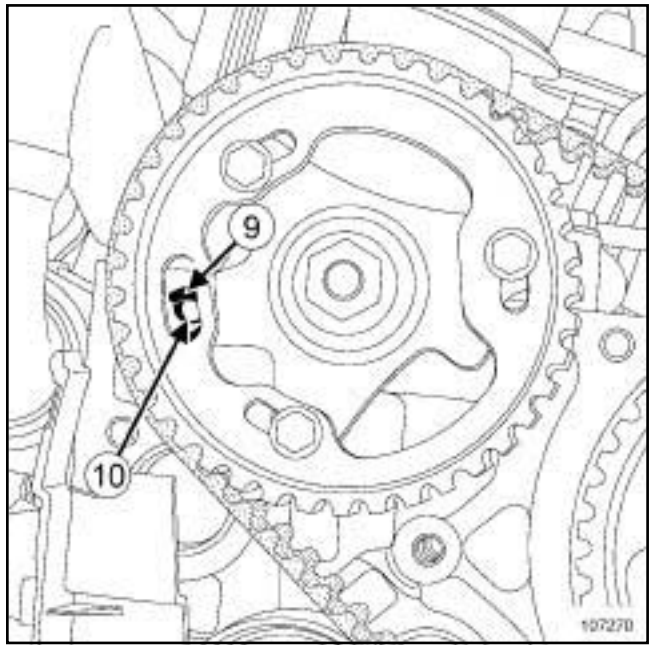
111742

❏ Remove the cylinder head suspended mounting .



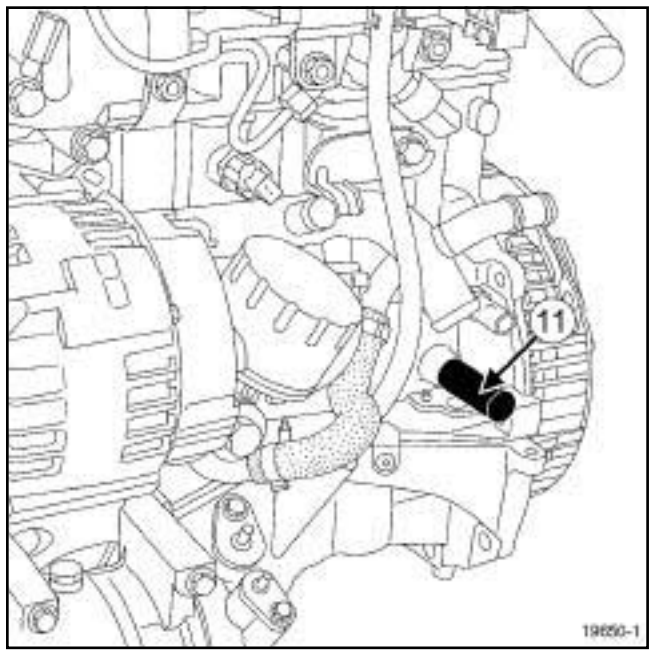
19650

❏ Remove the TDC pin plug using a **1/2" female torx socket (12.7 mm square drive) (14)**.



107270

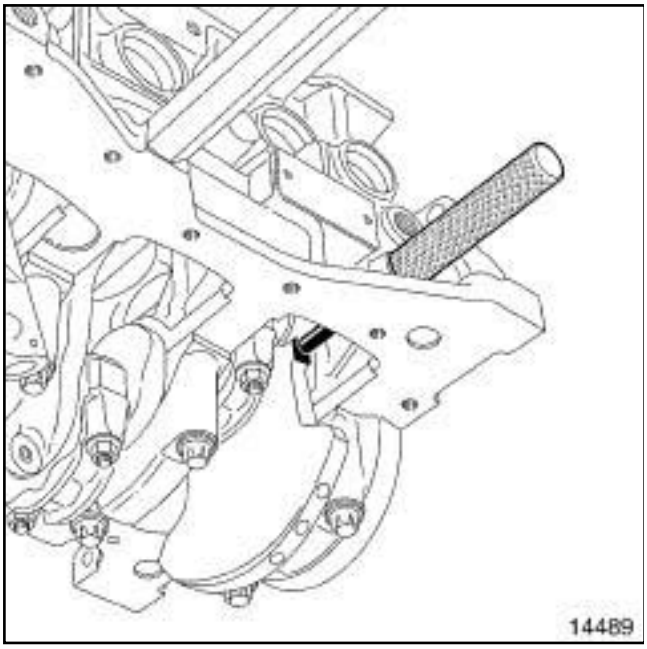
❏ Rotate the crankshaft clockwise (timing end) to position the hole (**9**) in the camshaft timing sprocket almost opposite the hole (**10**) in the cylinder head.



19650-1

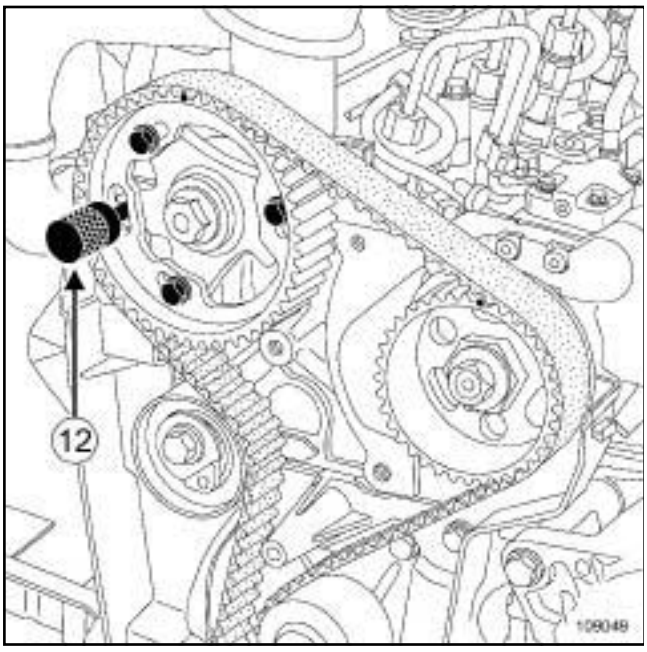
❏ Screw in the TDC setting pin (**11**) **(Mot. 1489)**.

K9K, and 764 or 772



14489

❏ Turn the crankshaft clockwise (timing end) smoothly until the crankshaft comes into contact with the TDC setting pin.



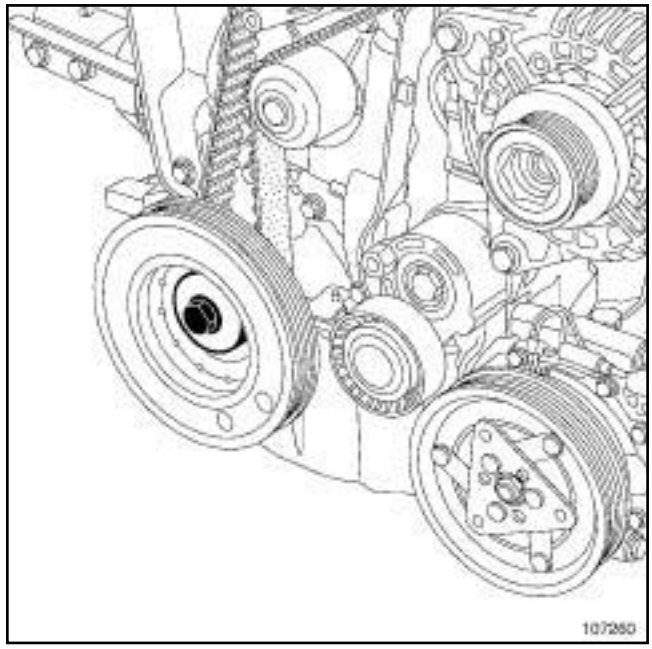
109049

❏ Engage the pin (**12**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes.

❏ Remove:

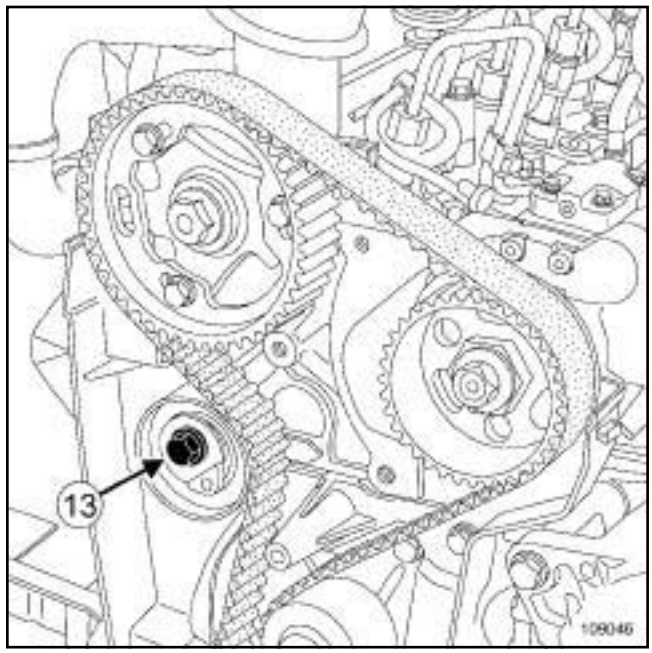
- the camshaft timing sprocket setting pin **(Mot. 1430)**,
- the TDC setting pin **(Mot. 1489)**.

❏ Remove the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) .



107260

❏ Remove the crankshaft accessories pulley by locking the flywheel with a large flat-blade screwdriver and passing via the starter location.



109046

❏ Slacken the tensioning roller bolt (**13**) .

❏ Slacken the timing tension wheel by turning the eccentric cam using a **6 mm** Allen key.

❏ Remove:

- the timing belt,
- the timing tensioning roller.

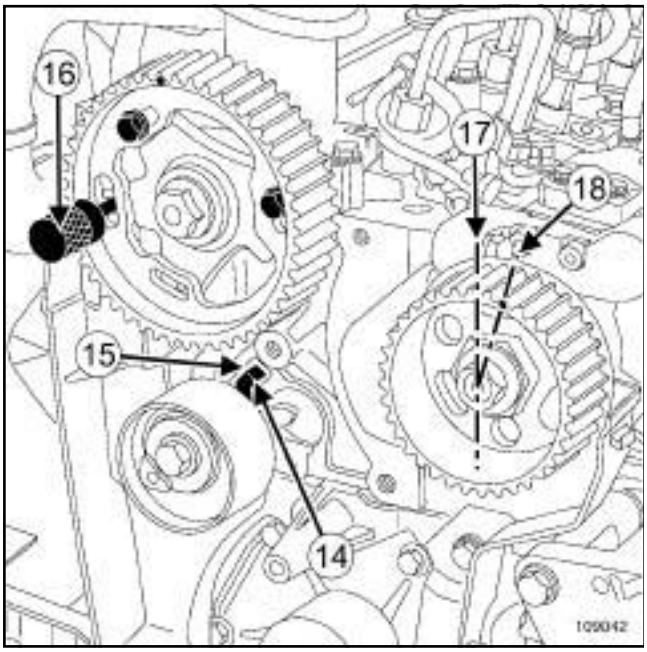
K9K, and 764 or 772

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Check:

- that there is no oil leak from the camshaft and crankshaft seals,
- the condition of the coolant pump (hard seal, play in the shaft, fluid leak, shaft rotation, (see **Technical Note 3175A, Cooling system fault finding, 19A, Cooling, Cooling system - Fault finding chart ALP 8**).



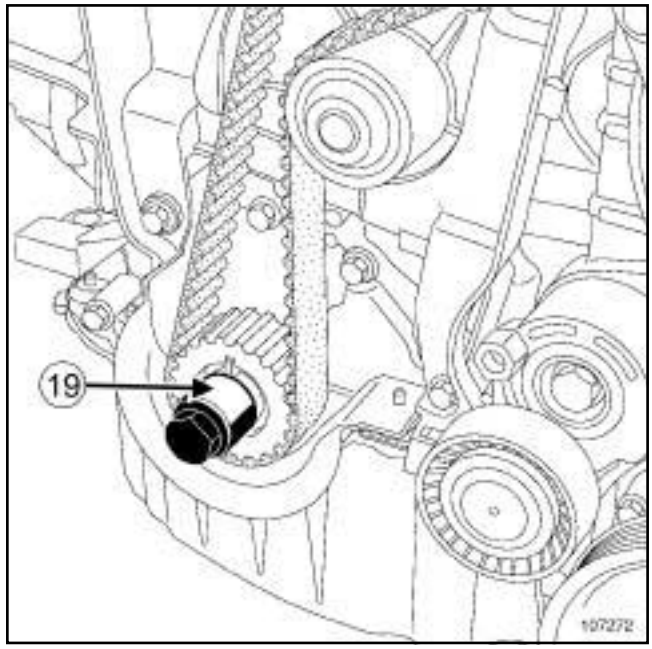
109042

❏ Refit the timing tensioning roller.

❏ Put the tensioning roller lug (**14**) in the cylinder head groove (**15**) .

❏ Engage the pin (**16**) **(Mot. 1430)** in the camshaft timing sprocket and cylinder head holes, turning the camshaft using a **offset spanner (18 mm)** if necessary.

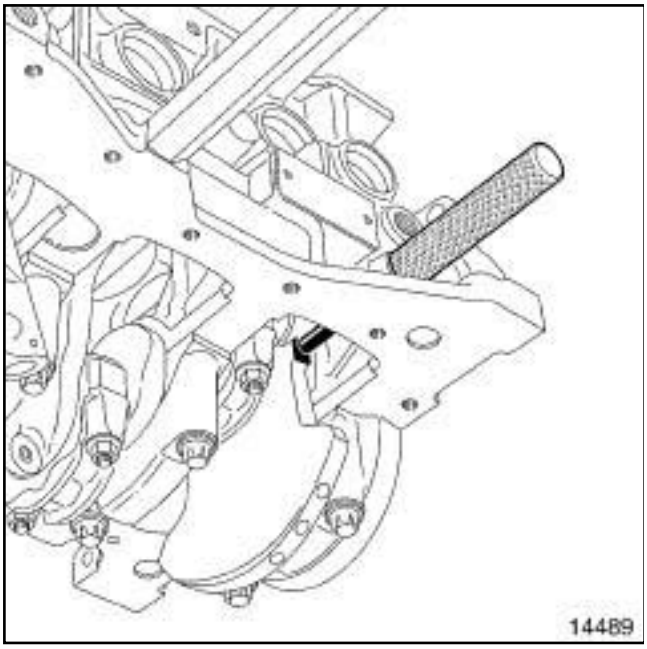
❏ Check that the high pressure pump mark (**18**) has shifted one tooth to the right of the vertical axle (**17**) .



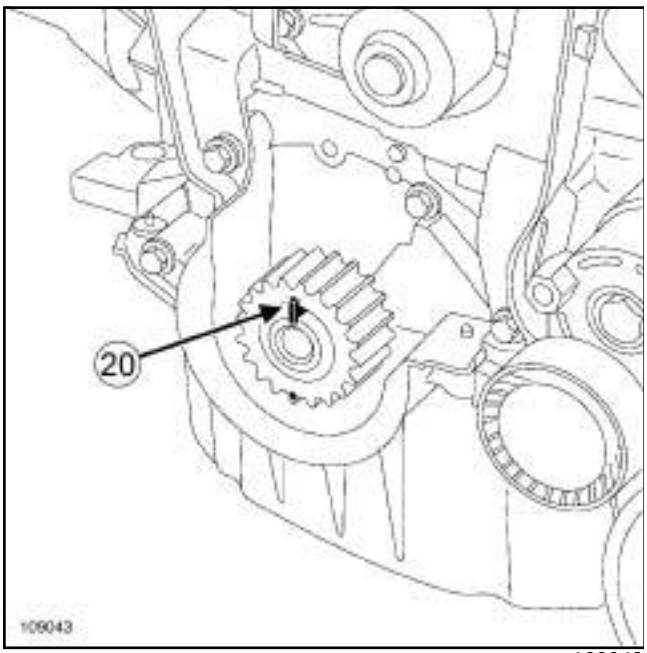
107272

❏ Tighten the old crankshaft accessories pulley bolt fitted with a spacer (which does not cover the timing sprocket mark) (**19**) onto the crankshaft.

K9K, and 764 or 772

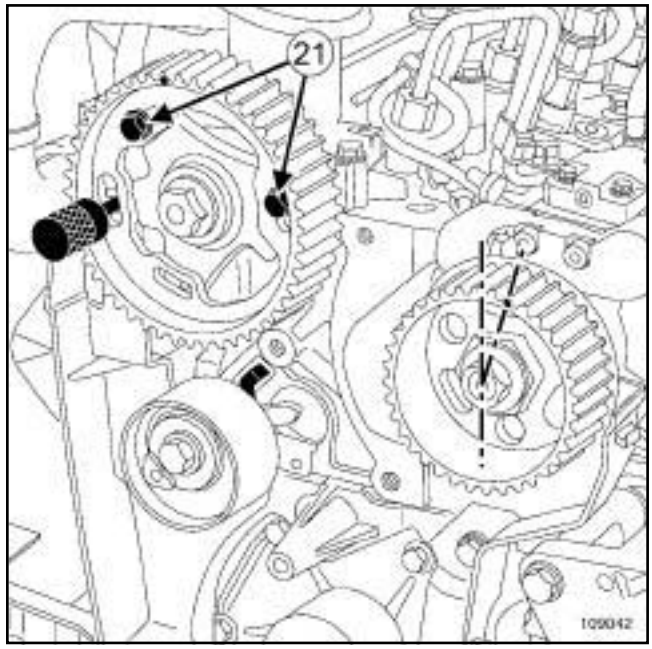


14489



109043

❑ Position the crankshaft so that it presses on the TDC setting pin **(Mot. 1489)** (the crankshaft timing sprocket collet (**20**) must face upwards).

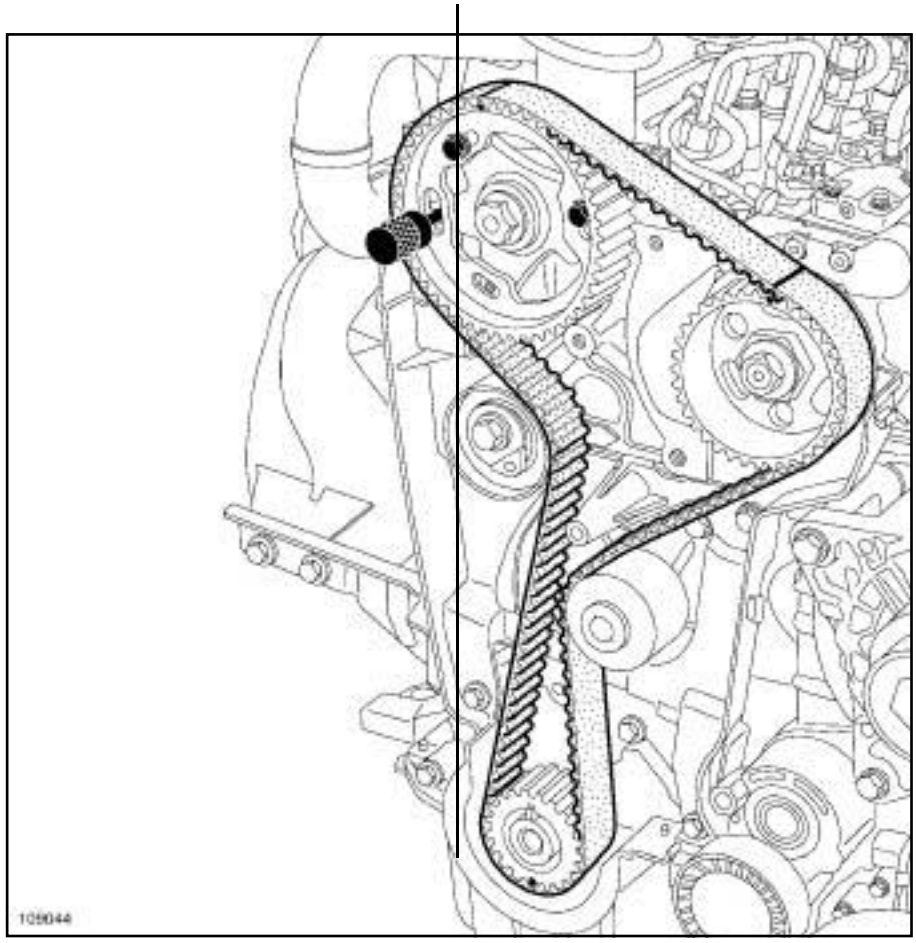


109042

❑ Remove one of the camshaft timing sprocket crown bolts to prevent full lock during the following actions.

❑ Loosen the other two camshaft timing sprocket crown bolts (**21**) by one turn.

K9K, and 764 or 772

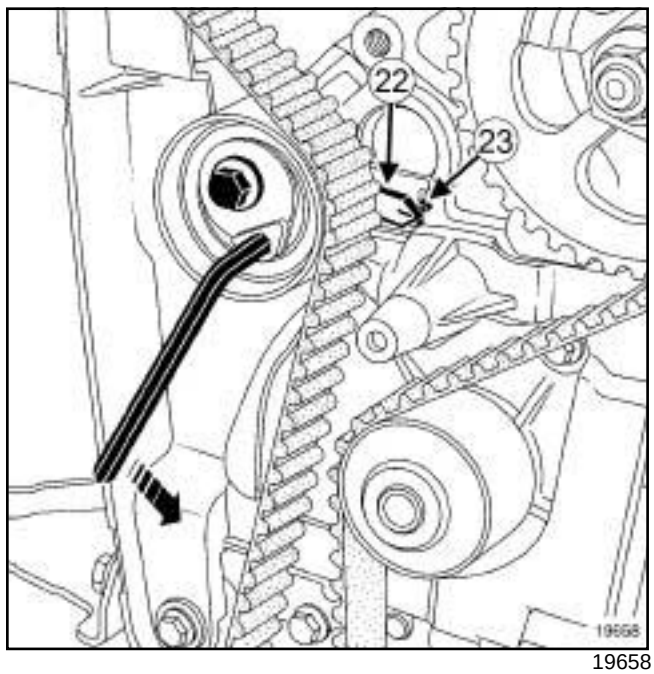


109044

❑ Fit the timing belt, starting with the crankshaft sprocket, by aligning the marks on the belt with those on the crankshaft and camshaft sprockets, and the high pressure pump pinion.

Note:

There should be 19 tooth valleys on the belt between the camshaft sprocket marks and the high-pressure pump, and 51 tooth valleys between the crankshaft sprockets and the high-pressure pump.

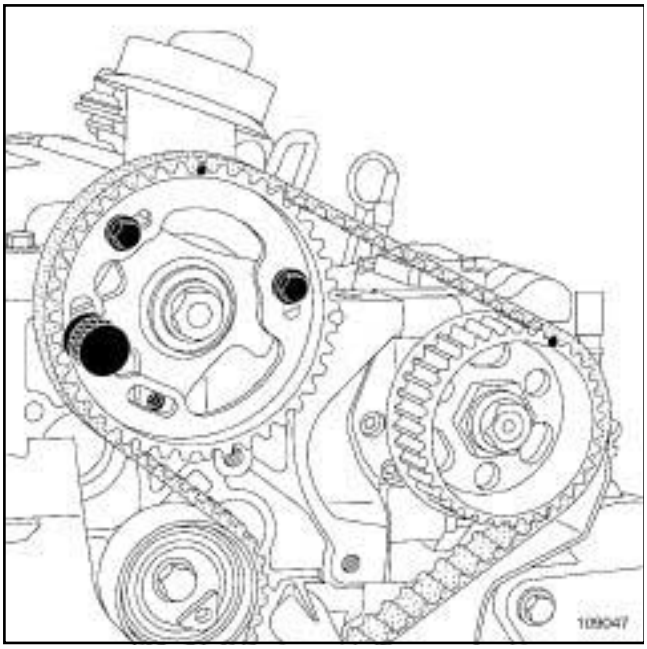


19658

❑ Position the tensioning roller adjustable index marker (**22**) opposite the lug (**23**) , turning the eccentric cam anti-clockwise using a **6 mm** Allen key.

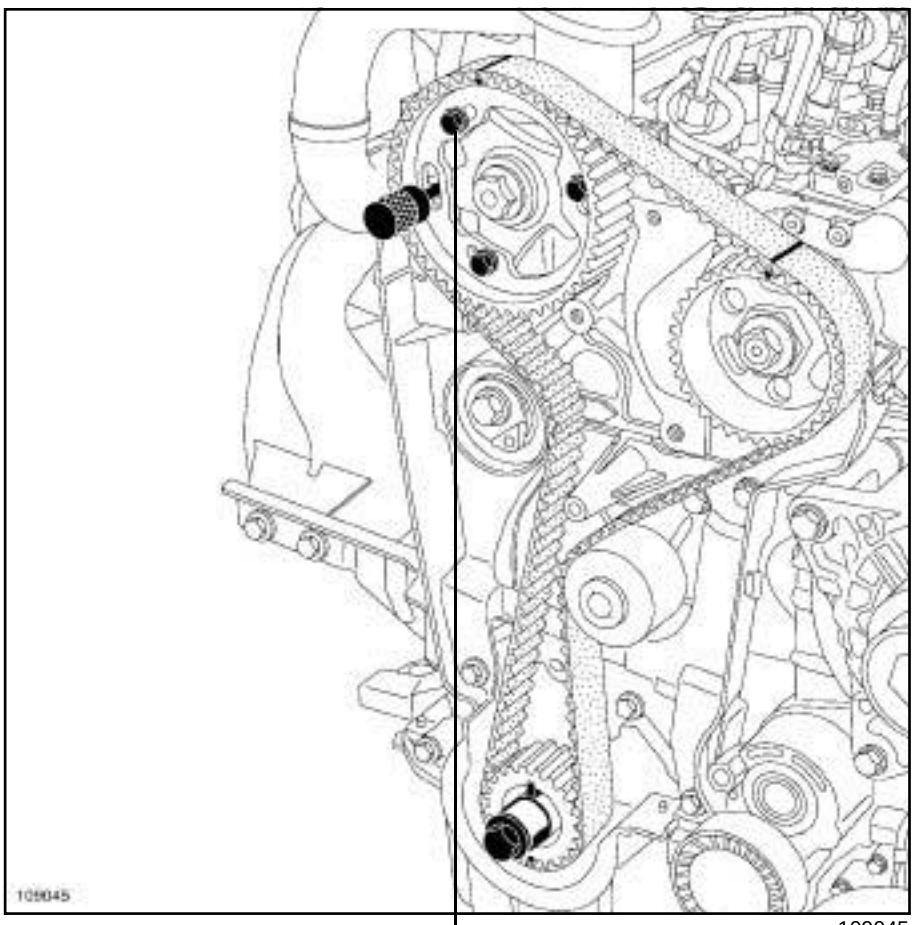
❑ Torque tighten the **tensioning roller bolt (27 N.m)**.

K9K, and 764 or 772



109047

❑ Check that the camshaft timing sprocket crown bolts are not fully locked against the camshaft timing sprocket crown. If they are, repeat the timing belt re-fitting procedure.



109045

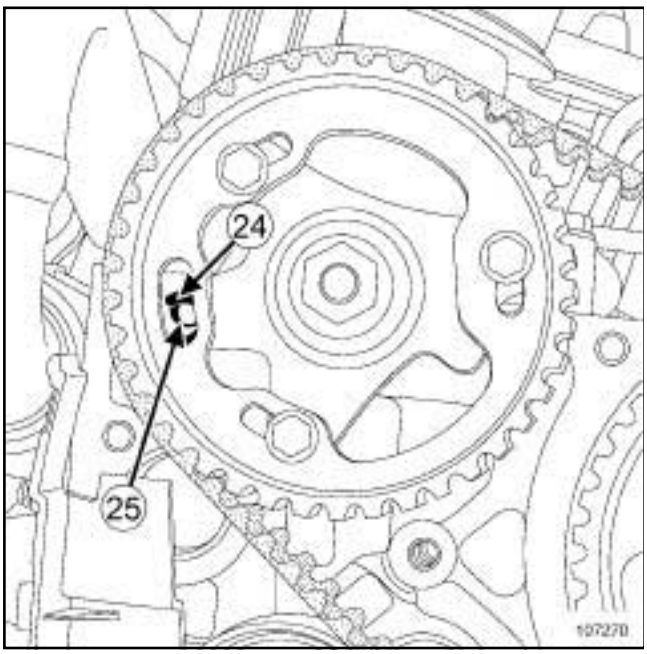
❑ Refit the bolt from the camshaft timing sprocket crown.

K9K, and 764 or 772

❏ Torque tighten the **camshaft timing sprocket crown bolts (14 N.m)**.

❏ Remove:

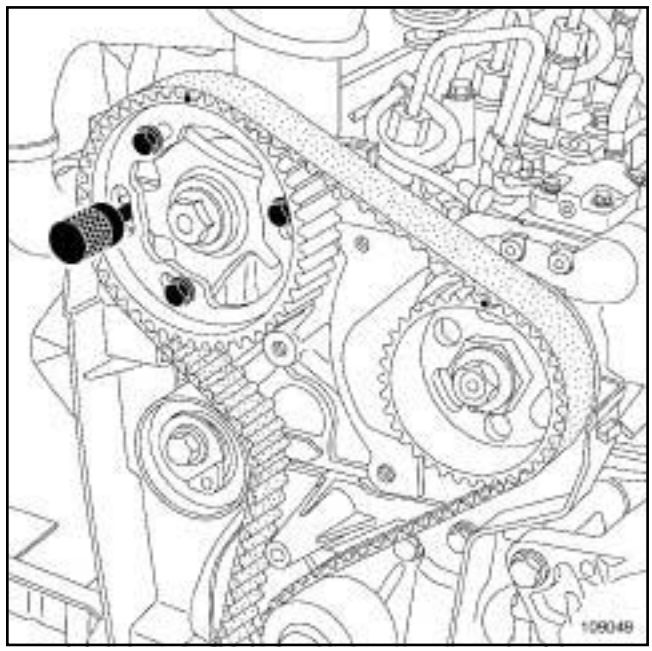
- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.



107270

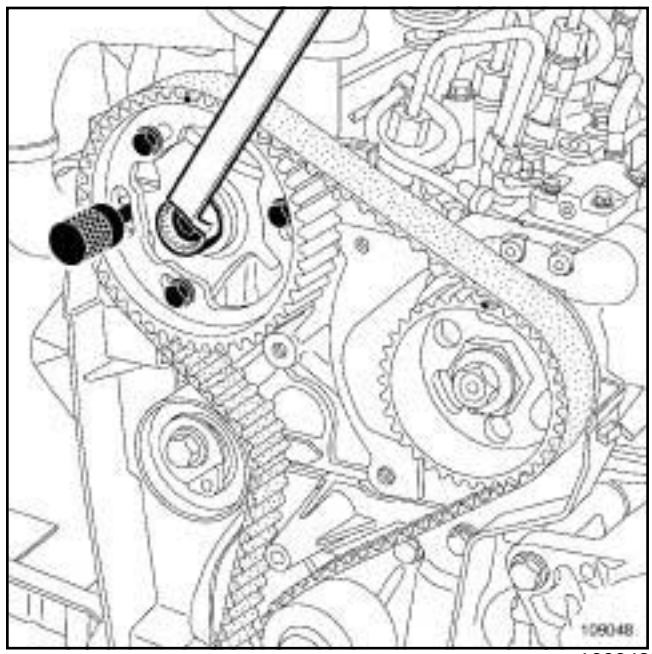
❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole (**24**) in the camshaft timing sprocket is opposite the hole (**25**) in the cylinder head:

- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



109049

❏ Lock the camshaft timing sprocket using the **(Mot. 1430)**.



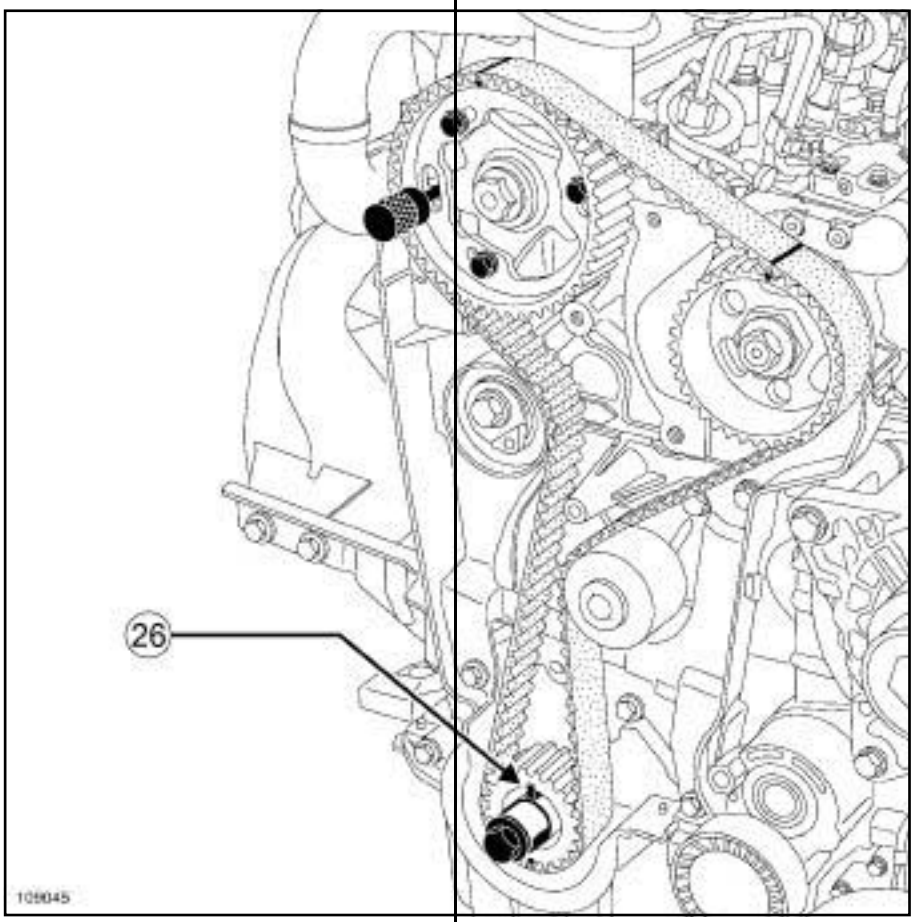
109048

❏ If the pin **(Mot. 1430)** does not engage:

- loosen the camshaft timing sprocket crown bolts by a maximum of one turn,
- turn the camshaft timing sprocket hub using an **18 mm** offset spanner to facilitate setting of the camshaft timing sprocket hub,
- do not retighten the camshaft timing sprocket crown bolts.

K9K, and 764 or 772

❑ Loosen the camshaft timing sprocket crown bolts by a maximum of one turn.



109045

❑ Check that the crankshaft timing sprocket collet (**26**) is positioned vertically at the top.

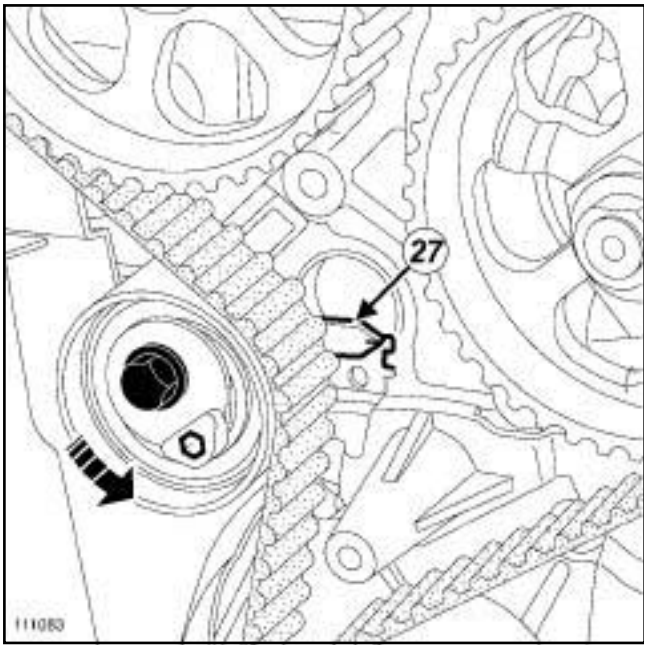
Note:

After two turns, the tension wheel index markers may be in two different positions.

The rotation of the tension wheel eccentric depends on the position.

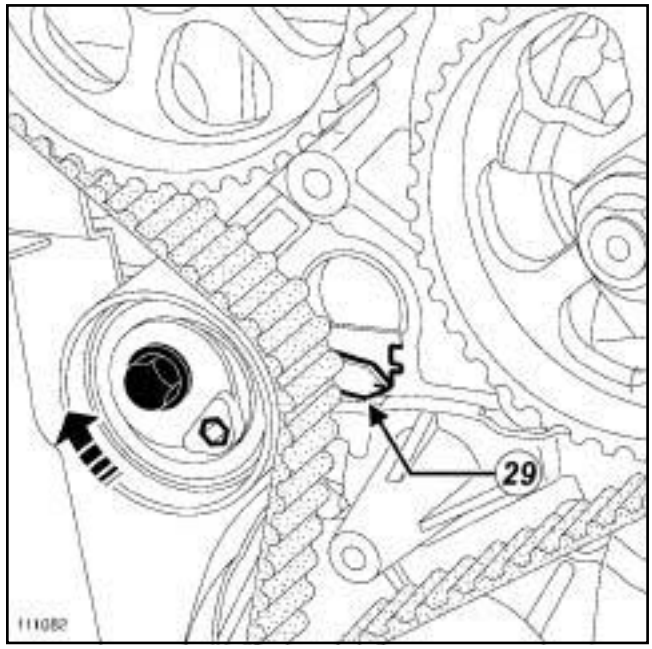
K9K, and 764 or 772

First position

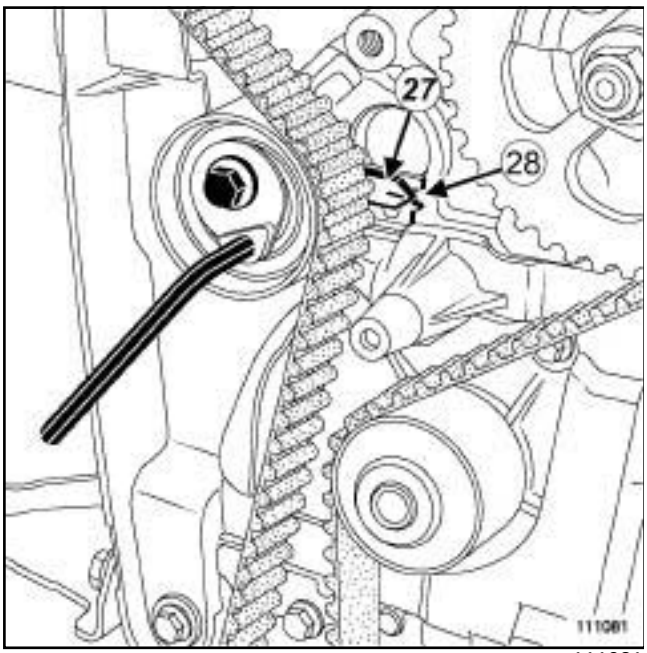


111083

Second position



111082



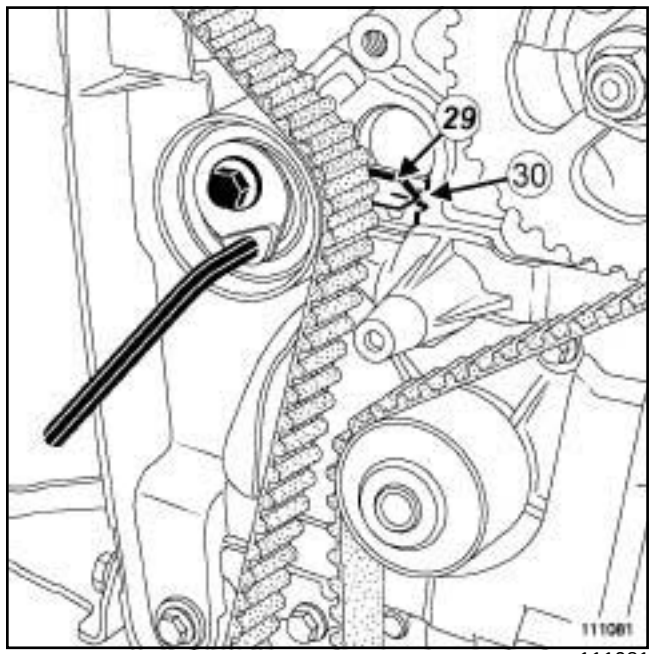
111081

❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**27**) in the middle of the timing window (**28**) , turning the key anti-clockwise.

❏ Torque tighten:

- the **tensioning roller bolt (27 N.m)**,
- the **camshaft timing sprocket crown bolts (14 N.m)**.



111081

❏ Loosen the tensioning roller bolt by no more than one turn, holding it with a **6 mm** Allen key.

❏ Gradually align the adjustable index (**29**) in the middle of the timing window (**30**) , turning the key clockwise.

❏ Torque tighten:

- the **tensioning roller bolt (27 N.m)**,
- the **camshaft timing sprocket crown bolts (14 N.m)**.

❏ Remove the following tools:

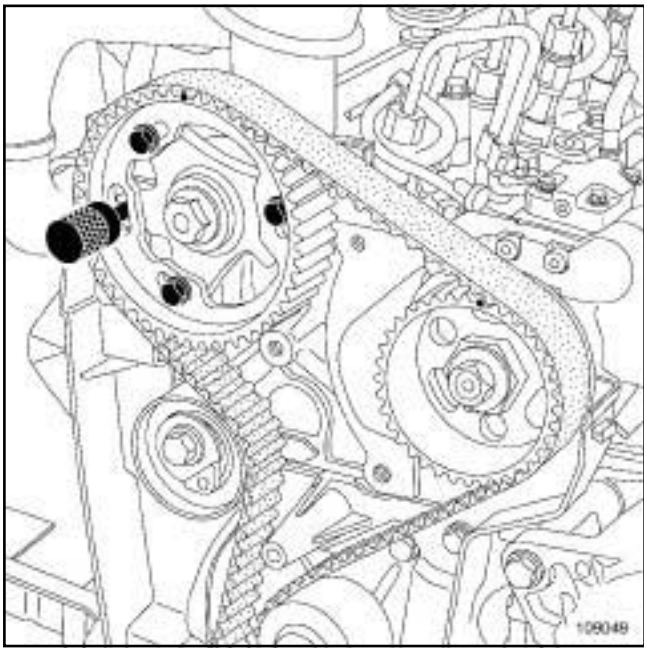
- the TDC setting pin **(Mot. 1489)**,

K9K, and 764 or 772

- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❏ Rotate the crankshaft clockwise through two revolutions (timing end). Before the hole in the camshaft timing sprocket is opposite the hole in the cylinder head:

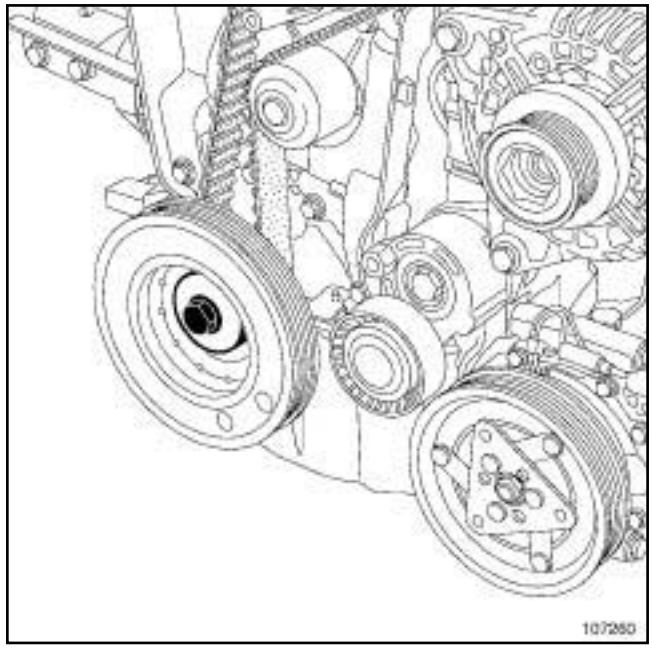
- screw the TDC setting pin **(Mot. 1489)** into the cylinder block,
- bring the crankshaft slowly and smoothly against the TDC setting pin.



109049

❏ Lock the camshaft timing sprocket using the **(Mot. 1430)**.

❏ If the pin does not engage, repeat the timing belt refitting operation.



107260

❏ Refit the accessories crankshaft pulley with a new bolt.

❏ Torque and angle tighten (crankshaft against the TDC setting pin) the **crankshaft accessories pulley M14 bolt (120 N.m + 95°± 15°)** using a **torque/angle wrench** or a **torque wrench** fitted with a **cylinder head bolt tightening gauge (angular measuring type)**.

❏ Remove the following tools:

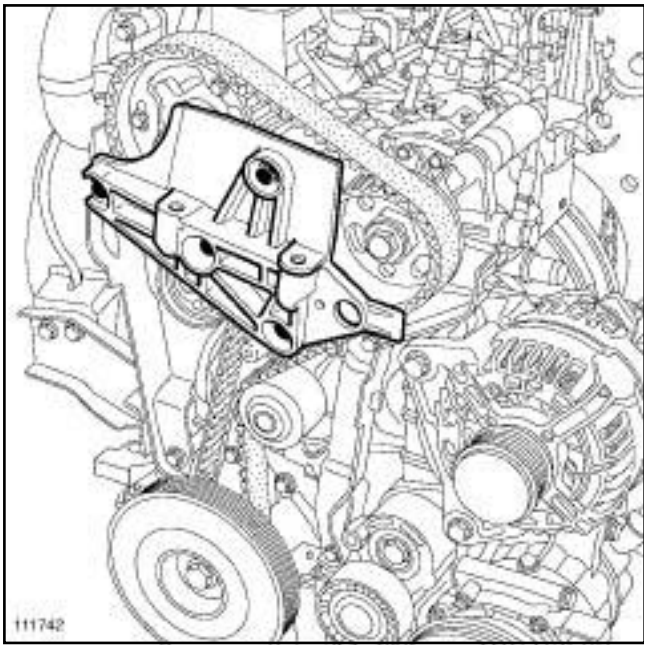
- the TDC setting pin **(Mot. 1489)**,
- the camshaft timing sprocket setting pin **(Mot. 1430)**.

❏ Refit the TDC pin plug, coating the threading with **SILICONE ADHESIVE SEALANT**.

❏ Torque tighten the **TDC setting pin plug (25 N.m)**.

❏ Refit the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-23**) .

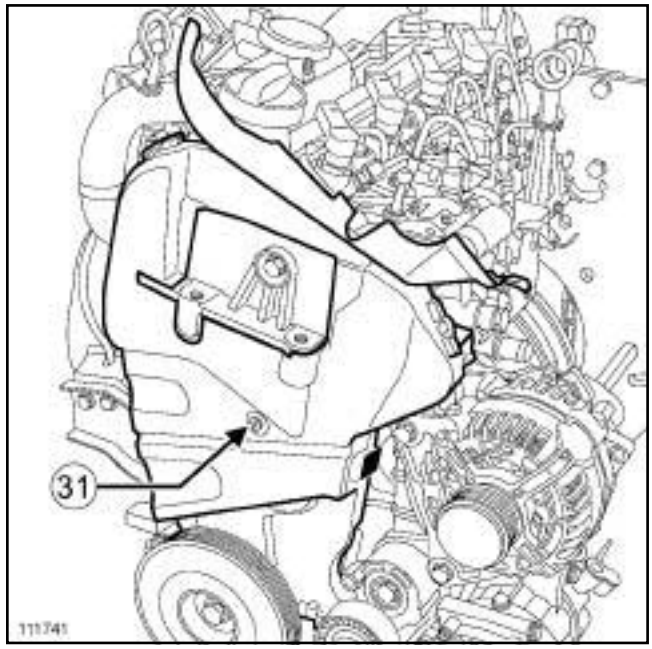
K9K, and 764 or 772



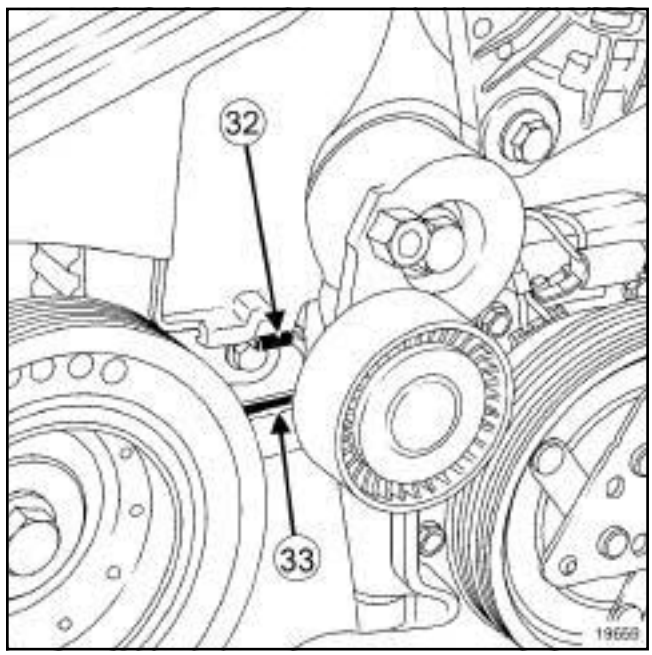
111742

❑ Refit the cylinder head suspended mounting .

❑ Torque tighten the **cylinder head suspended mounting bolts (25 N.m)**.



111741



19659

❑ Refit:

- the timing cover, positioning the tab (**32**) in the inner timing cover hole (**33**) ,
- the timing cover plastic bolt (**31**) .

II - FINAL OPERATION

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,

K9K, and 764 or 772

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,

❑ Remove:

- the **safety strap(s)**,
- the chain,
- the **(Mot. 1453)**.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the engine undertray.
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 772

M4R

Special tooling required	
Mot. 919-02	Flywheel locking tool.
Mot. 1716	Removes housing with silicone seals.

Tightening torques ▽	
timing chain guide bolts	**25 N.m**
bolt of the timing chain tensioner pad	**25 N.m**
timing chain tensioner bolts	**10 N.m**
timing cover M5 bolts	**7 N.m**
timing cover M6 bolts	**25 N.m**
timing cover M10 bolts	**55 N.m**
timing cover M12 bolts	**75 N.m**
camshaft dephaser solenoid valve bolt	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **Engine: Precautions for the repair**) .

WARNING
Applying pressure to the engine oil sump is strictly forbidden. Any damage to the sump may also damage the engine.

❑ Remove the « engine and gearbox » assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .

M4R, and 700

❑ Disconnect the manual gearbox from the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

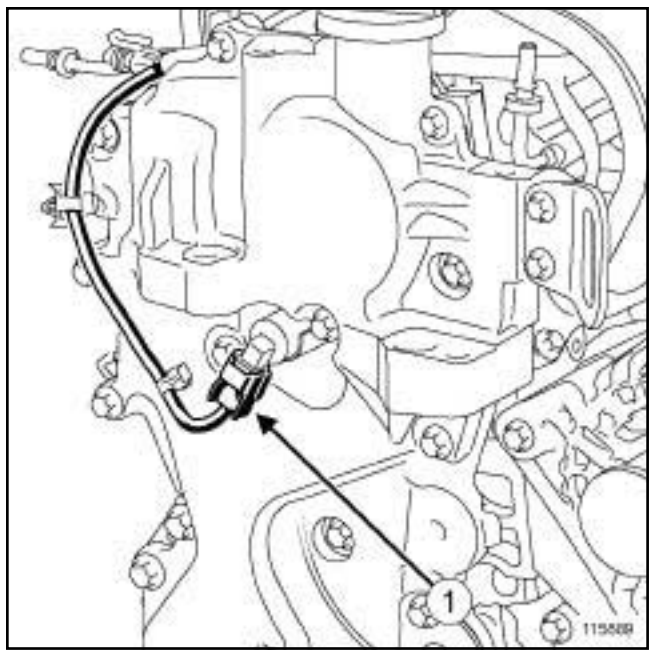
M4R, and 701

❑ Disconnect the automatic gearbox from the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

❑ Place the engine on the component support (see **Engine support equipment: Use**) .

❑ Drain the engine (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

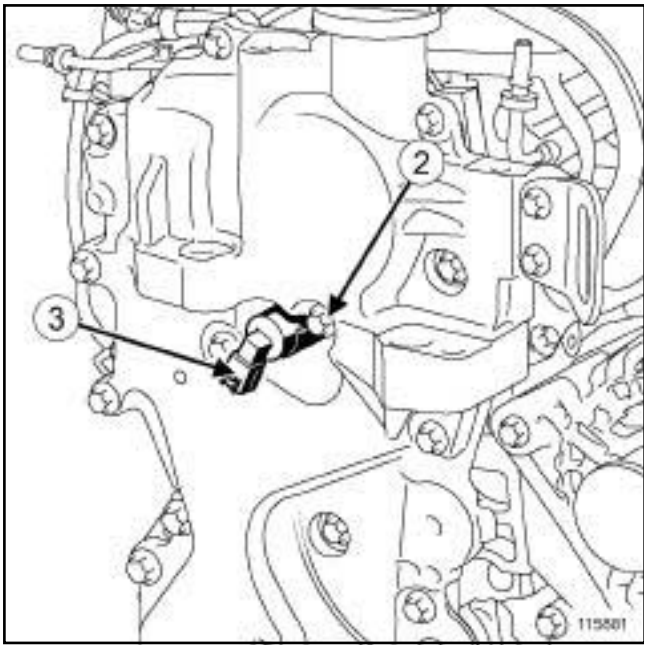
❑ Remove the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



115889

❑ Disconnect the wiring (**1**) from the camshaft dephaser solenoid valve.

M4R

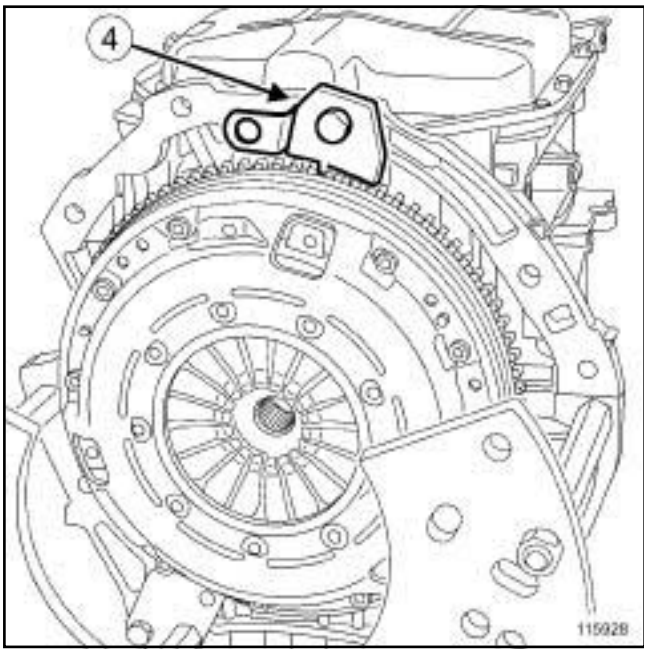


115881

❑ Remove:

- the bolt (**2**) from the camshaft dephaser solenoid valve,
- the camshaft dephaser solenoid valve (**3**) .

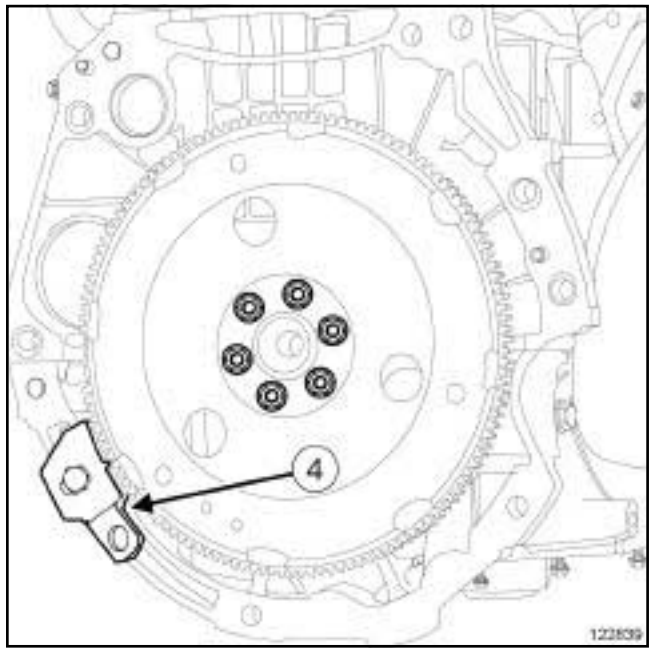
M4R, and 700



115928

❑ Fit the flywheel locking tool **(Mot. 919-02)** (**4**) onto the cylinder block.

M4R, and 701



122839

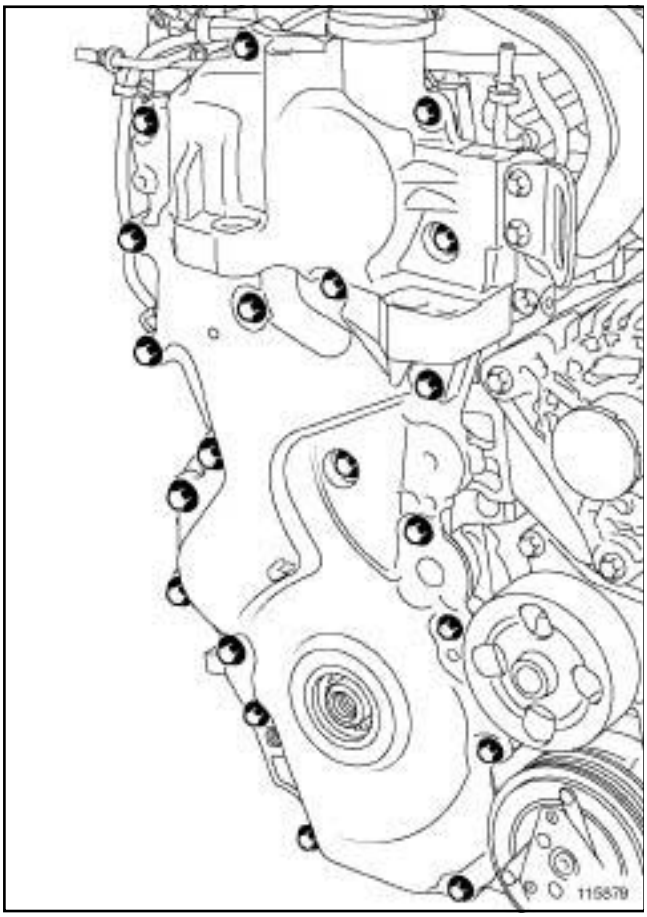
❑ Fit the drive plate locking tool **(Mot. 919-02)** (**4**) on the cylinder block.

❑ Remove:

- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the crankshaft seal on the timing side (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) .

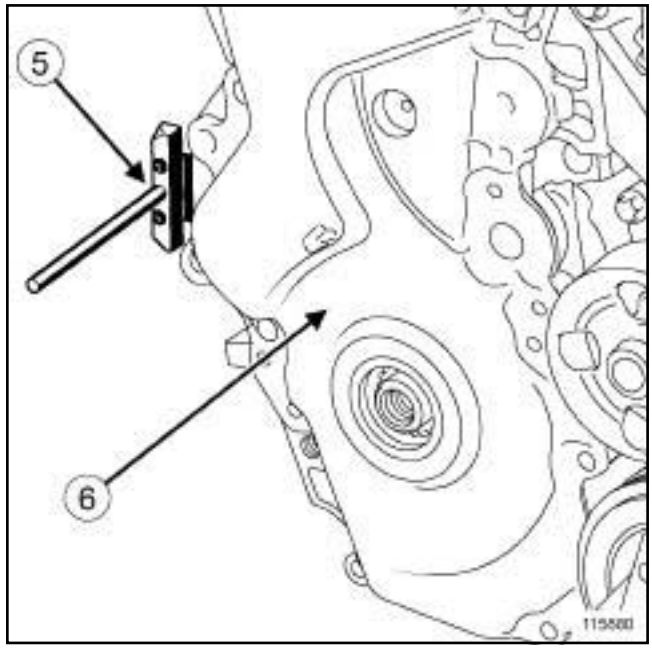
M4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



115879

❑ Remove the bolts from the timing cover, marking the position of the bolts.



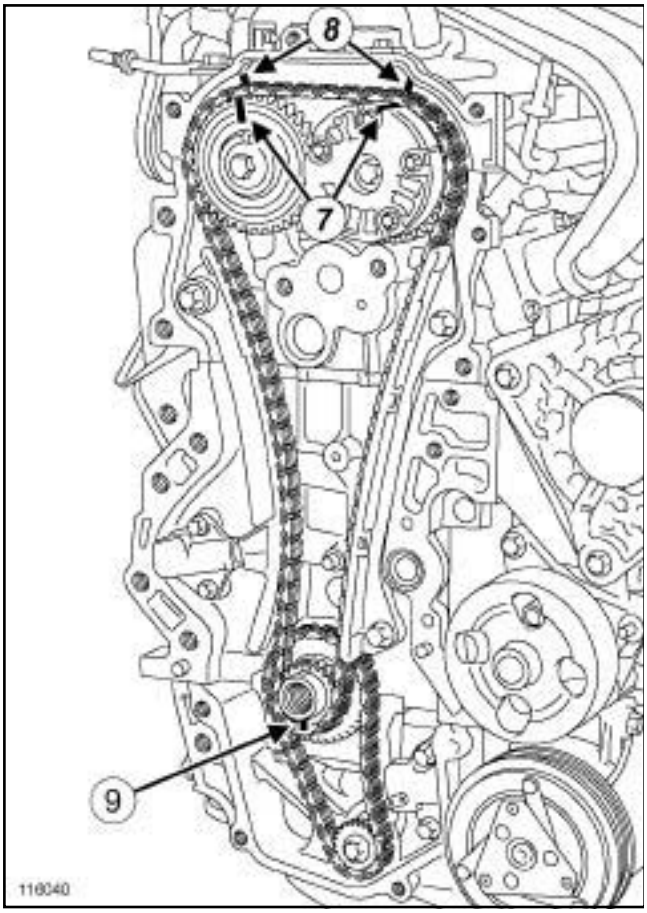
115880

❑ Remove the timing cover using the **(Mot. 1716)** (**5**) .

❑ Remove the timing cover (**6**) .

❑ Tighten the crankshaft accessories pulley bolt fitted with a spacer (which does not cover the timing sprocket mark) onto the crankshaft.

❑ Remove the tool **(Mot. 919-02)**.

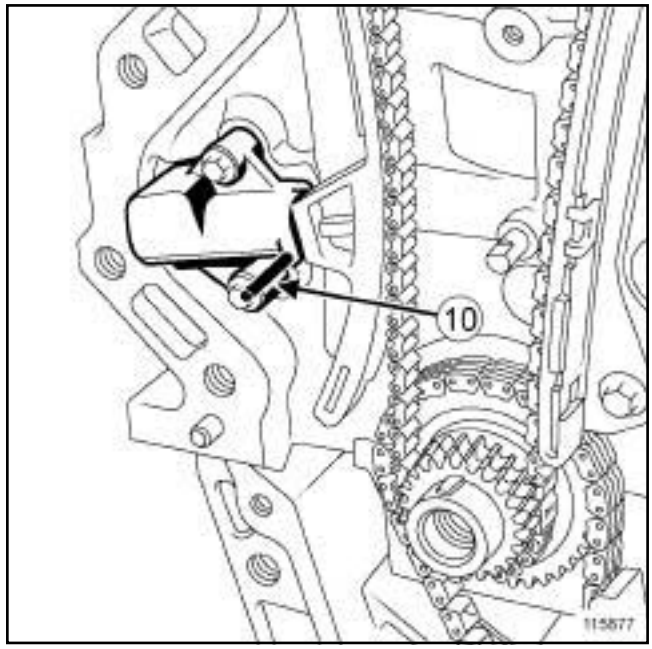


116040

❏ With a smooth action, turn the crankshaft clockwise (timing end) so that marks (**7**) of the camshaft sprockets are aligned with marks (**8**) on the cylinder head cover, and ensure that mark (**9**) on the crankshaft sprocket is in the lower vertical position.

❏ Position the **(Mot. 919-02)**.

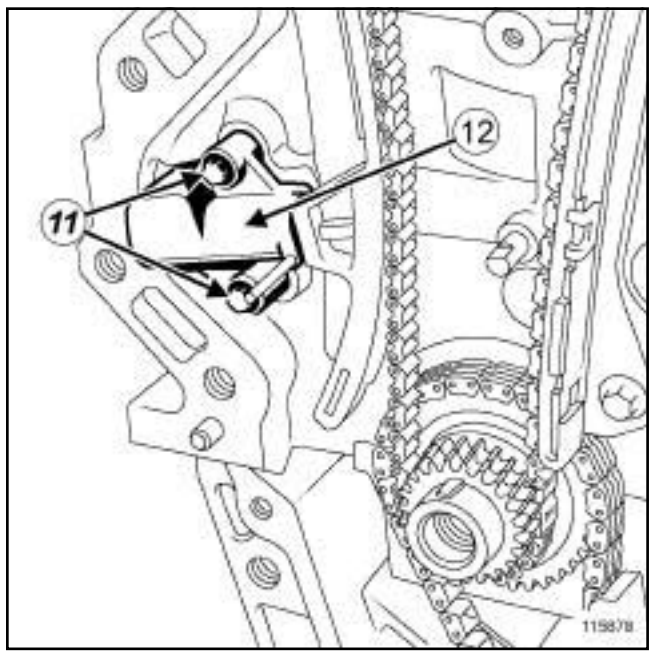
❏ Remove the crankshaft accessories pulley bolt.



115877

❏ Engage the timing chain tensioner.

❏ Put a metal rod (**10**) into the tensioner to keep the chain loose.

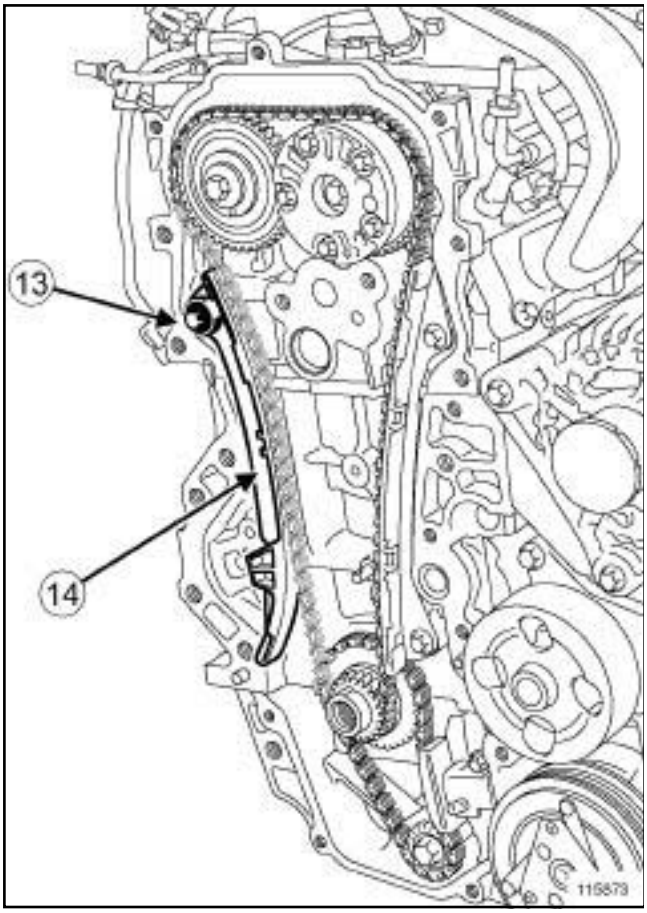


115878

❏ Remove:

- the timing chain tensioner bolts (**11**) ,
- the timing chain tensioner (**12**) .

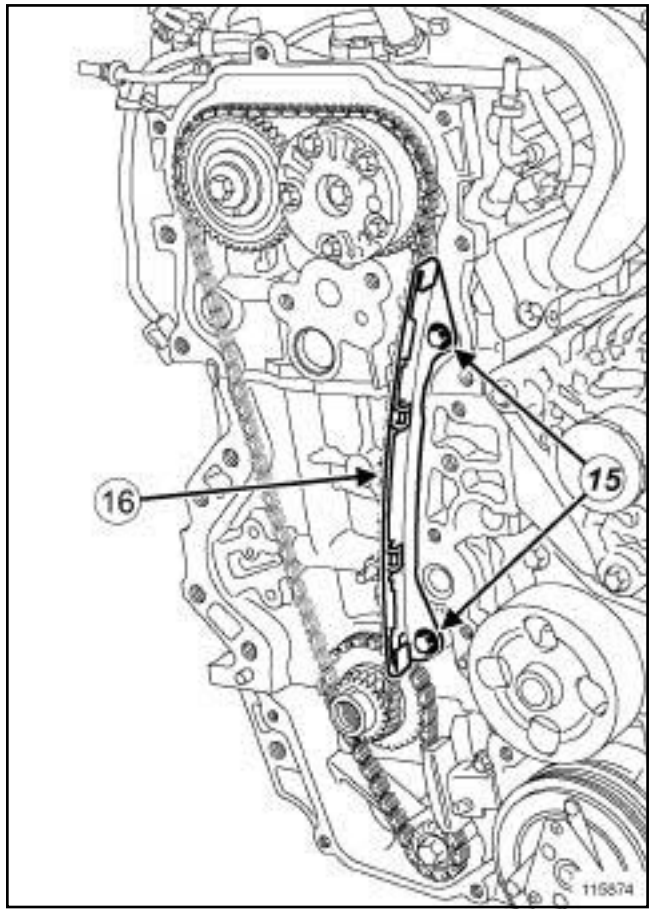
M4R



115873

❑ Remove:

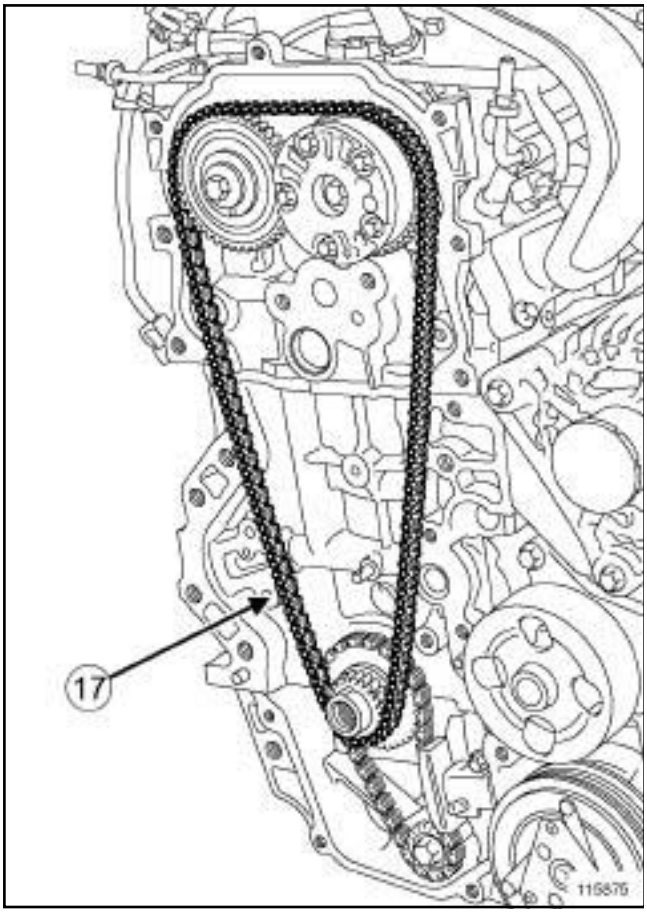
- the bolt (**13**) of the timing chain tensioner pad,
- the timing chain tensioner pad (**14**) .



115874

❑ Remove:

- the timing chain guide bolts (**15**) ,
- the timing chain guide (**16**) .



115875

❑ Remove the timing chain (**17**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

❑ Clean the joint faces of the timing cover using **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Remove the residue using a plastic spatula.

❑ Finish cleaning the joint faces using a **GREY ABRASIVE PAD**, part number **77 01 405 943**.

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

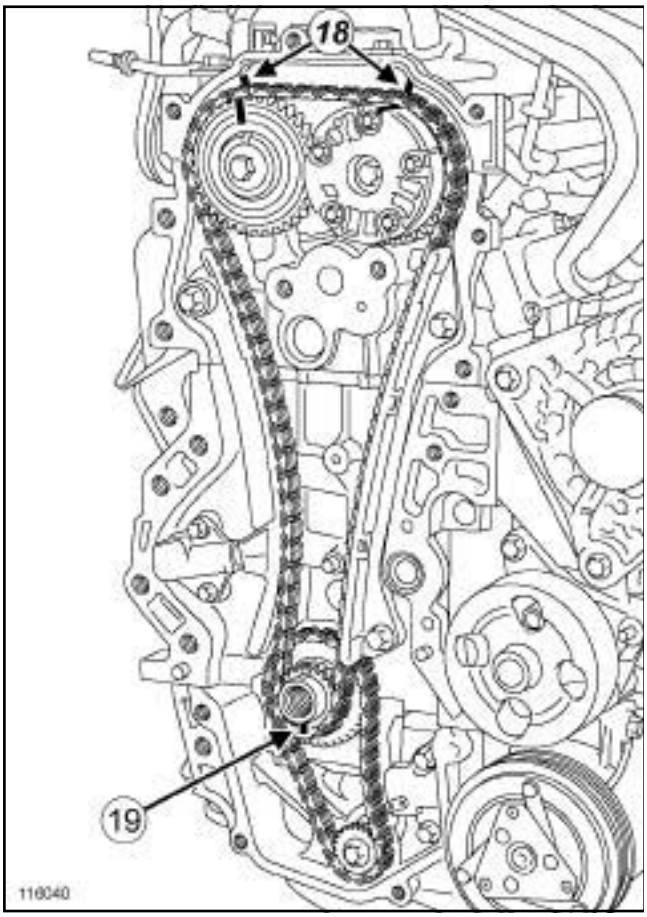
❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:

- the joint face of the timing cover on the cylinder block and on the cylinder head,
- the timing cover.

❑ Parts always to be replaced:

- the crankshaft accessories pulley bolt,
- the timing chain tensioner pad,
- the timing chain tensioner,
- the timing chain,
- the crankshaft seal on the timing side,
- the timing chain guide.

II - REFITTING OPERATION FOR PART CONCERNED

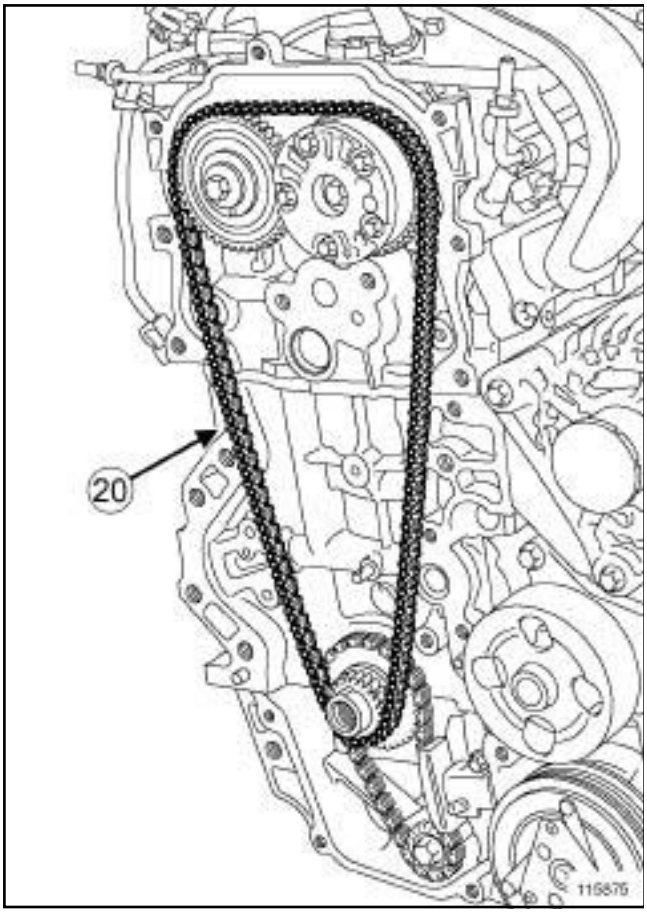


116040

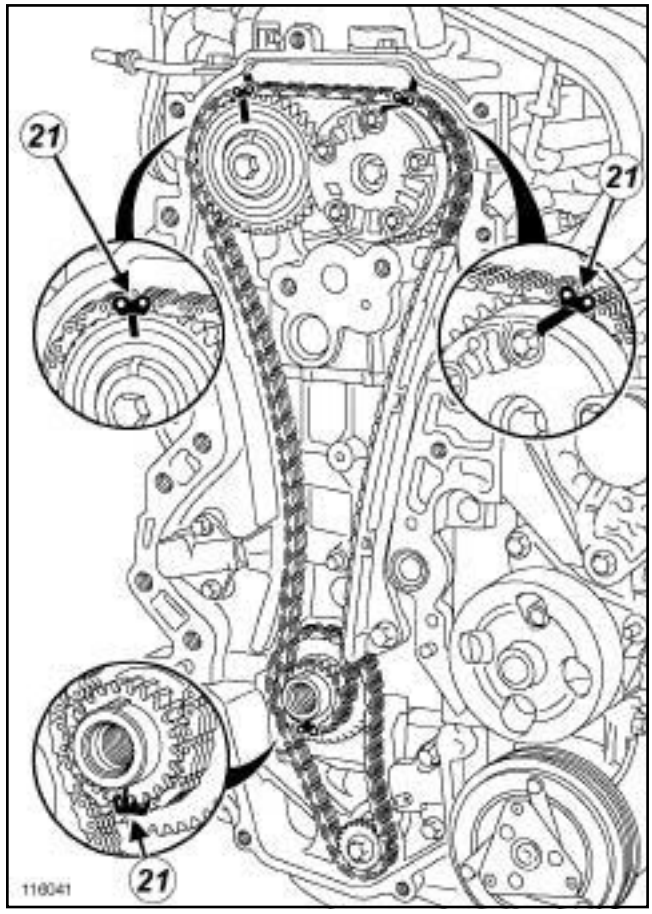
❏ Check that:

- the marks (**18**) on the cylinder head cover are aligned with those on the camshaft sprockets,
- the mark on the crankshaft sprocket (**19**) is in the lower vertical position.

❏ Set the engine at top dead centre.



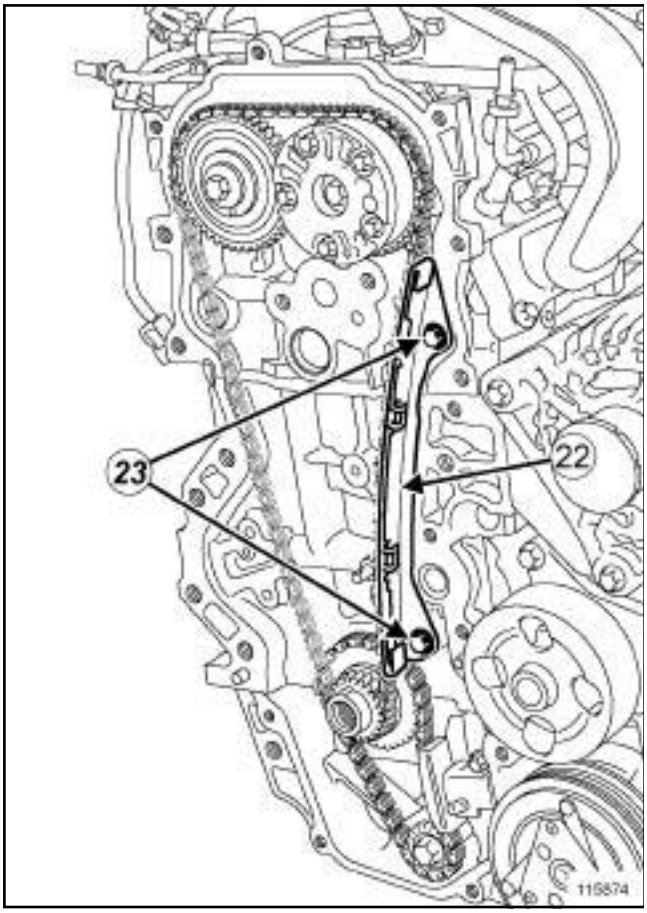
115875



116041

❑ Fit the new timing chain (**20**) so that the marks on the timing chain (**21**) are aligned with the marks on each of the sprockets.

M4R

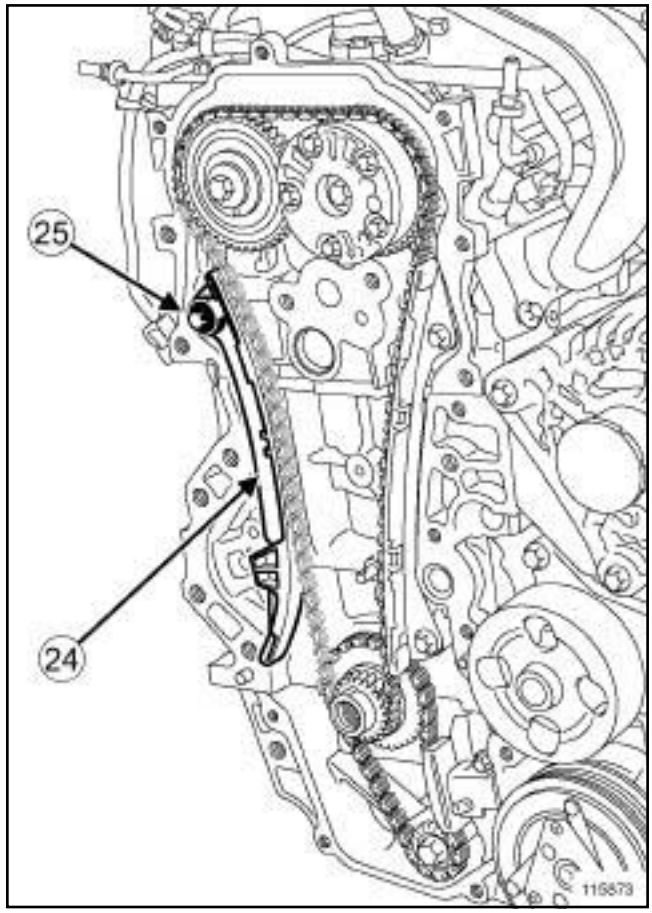


115874

❑ Refit:

- the new timing chain guide (**22**) ,
- the timing chain guide bolts (**23**) .

❑ Torque tighten the **timing chain guide bolts (25 N.m)**.



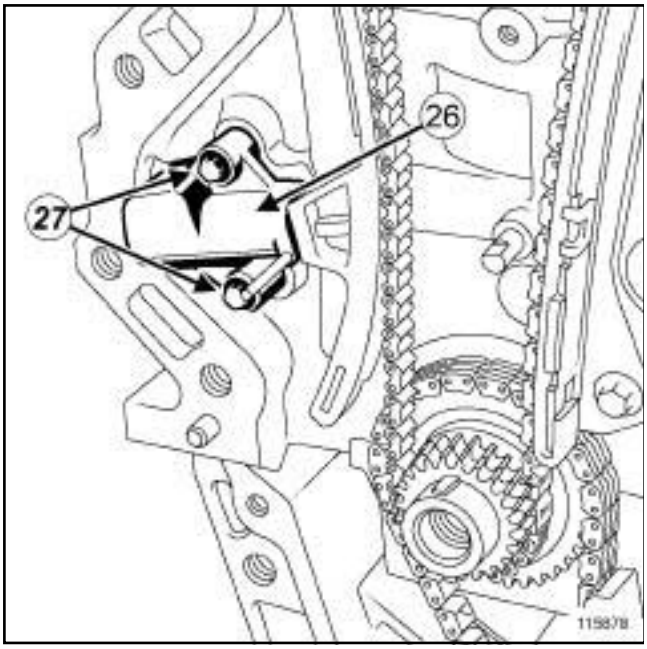
115873

❑ Refit:

- the new timing chain tensioner pad (**24**) ,
- the bolts (**25**) of the timing chain tensioner pad.

❑ Torque tighten the **bolt of the timing chain tensioner pad (25 N.m)**.

M4R

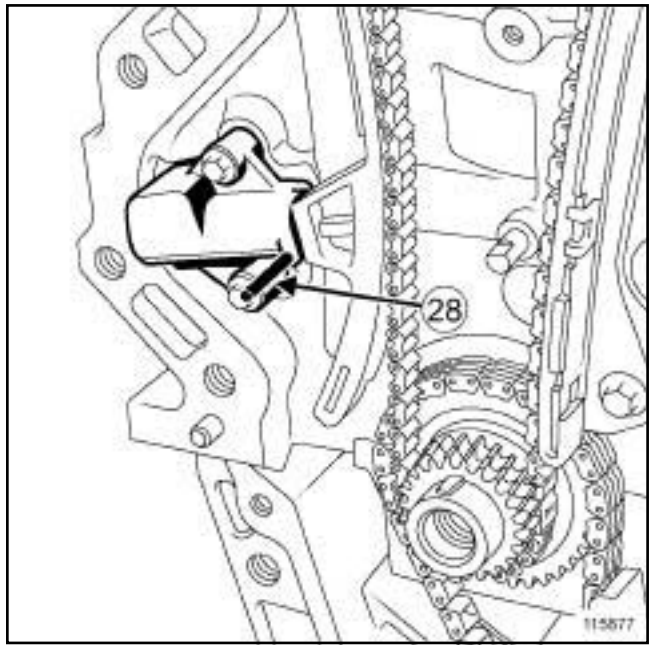


115878

❏ Refit:

- the new timing chain tensioner (**26**) ,
- the timing chain tensioner bolts (**27**) .

❏ Torque tighten the **timing chain tensioner bolts (10 N.m)**.



115877

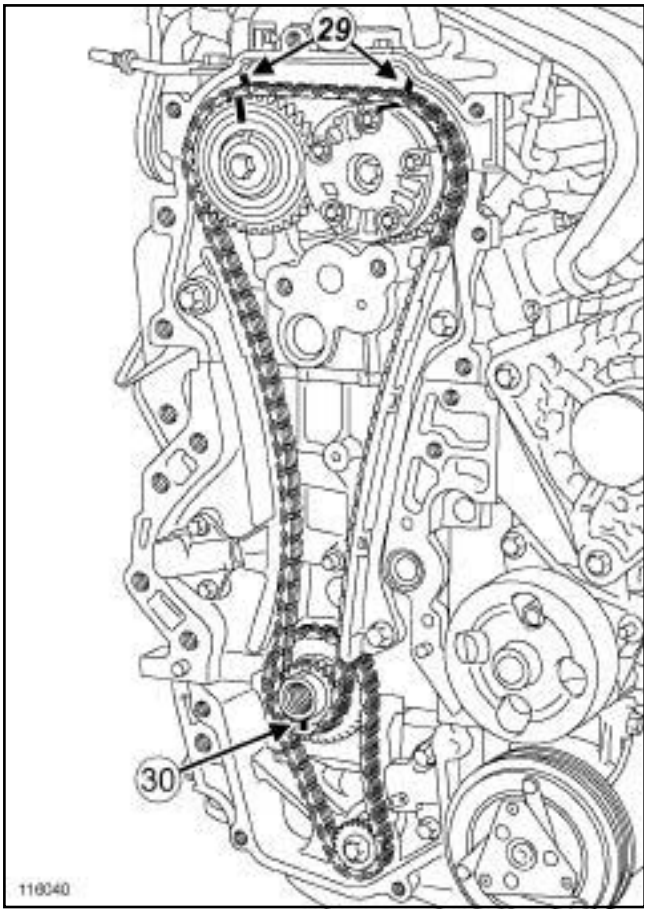
❏ Remove the metal rod (**28**) in order to release the timing chain tensioner.

❏ Tighten the old crankshaft accessories pulley bolt fitted with a spacer (which does not cover the timing sprocket mark) onto the crankshaft.

❏ Remove the tool **(Mot. 919-02)**.

❏ Rotate the crankshaft clockwise through two revolutions (timing end).

M4R



116040

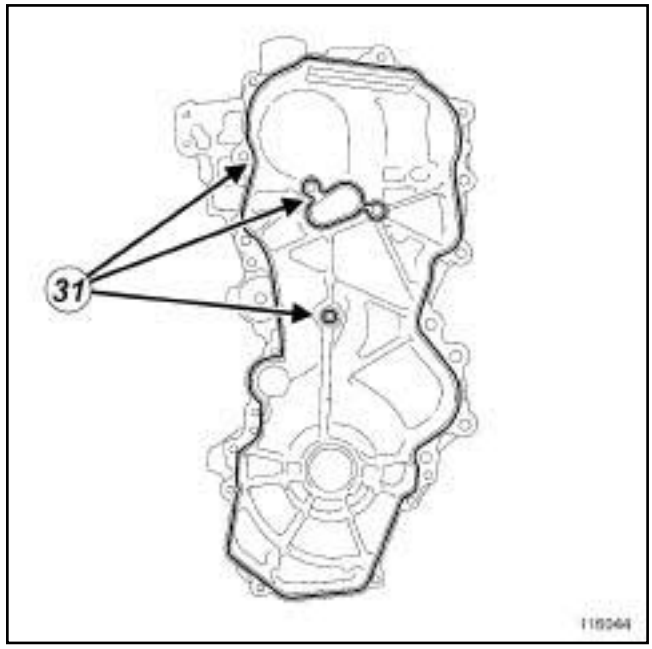
❏ Check that:

- the marks on the camshaft sprockets are correctly aligned with the marks on the cylinder head cover (**29**) ,
- the crankshaft sprocket mark is in the lower vertical position (**30**) .

❏ Immobilise the flywheel or the drive plate using the tool **(Mot. 919-02)**.

❏ Remove the old crankshaft pulley bolt and spacer.

❏ Remove the tool **(Mot. 919-02)**.



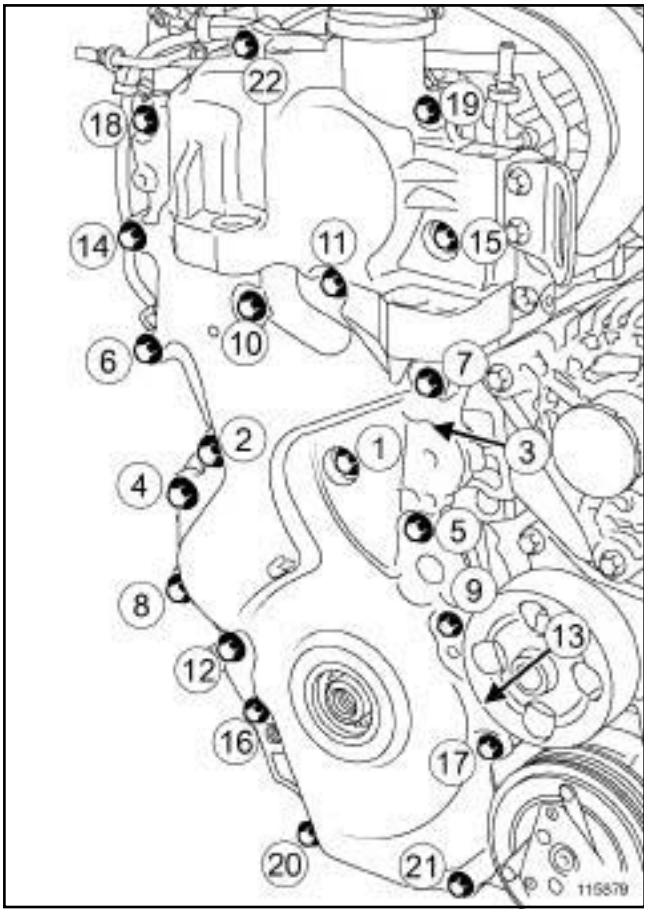
116044

❏

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

❏ Apply a bead of **SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and consumables for the repair**) (04B, Ingredients - Products) **4 mm** in diameter on the perimeter of the timing cover joint face (**31**) .



115879

❑ Refit:

- the timing cover,
- the timing cover bolts.

❑ Torque tighten in order:

- the **timing cover M5 bolts (7 N.m)**,
- the **timing cover M6 bolts (25 N.m)**,
- the **timing cover M10 bolts (55 N.m)**,
- the **timing cover M12 bolts (75 N.m)**.

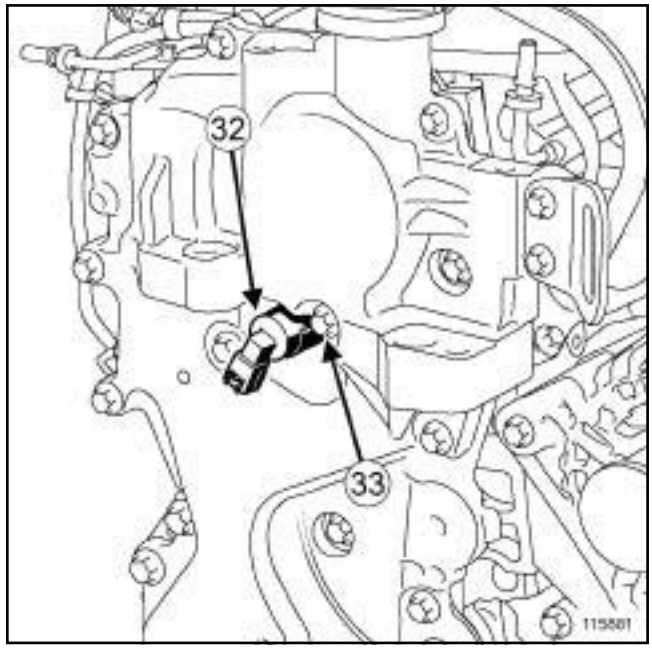
III - FINAL OPERATION

❑ Refit the crankshaft seal on the timing end (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) .

❑ Immobilise the flywheel or the drive plate using the tool **(Mot. 919-02)**.

❑ Refit the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) .

❑ Remove the tool **(Mot. 919-02)**.

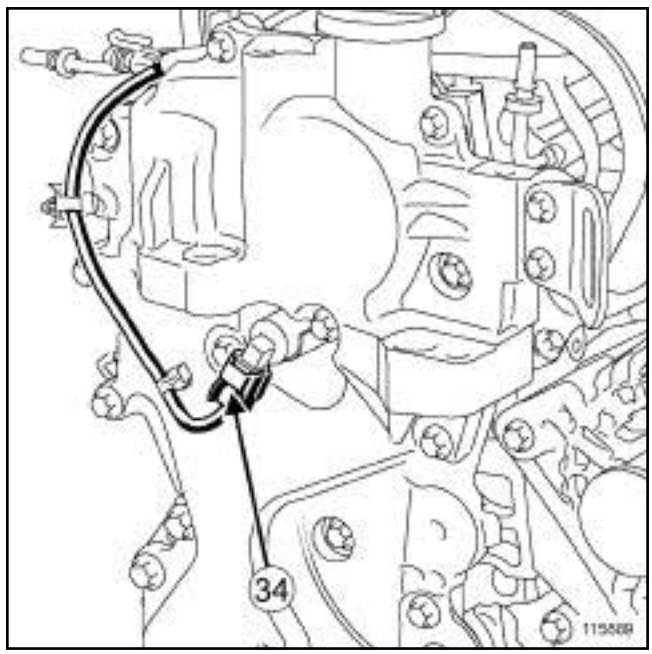


115881

❑ Refit:

- the camshaft dephaser solenoid valve (**32**) ,
- the bolt (**33**) of the camshaft dephaser solenoid valve.

❑ Torque tighten the **camshaft dephaser solenoid valve bolt (10 N.m)**.



115889

❑ Connect the wiring (**34**) of the camshaft dephaser solenoid valve.

❑ Refit the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

M4R

❏ Remove the engine from the component support (see **Engine support equipment: Use**) .

M4R, and 700

❏ Connect the manual gearbox to the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

M4R, and 701

❏ Connect the automatic gearbox to the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

❏ Refit the « engine and gearbox» assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .

❏ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

D4F, and 740 or 742 or 764

Tightening torques ▽	
rocker cover mounting bolts	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

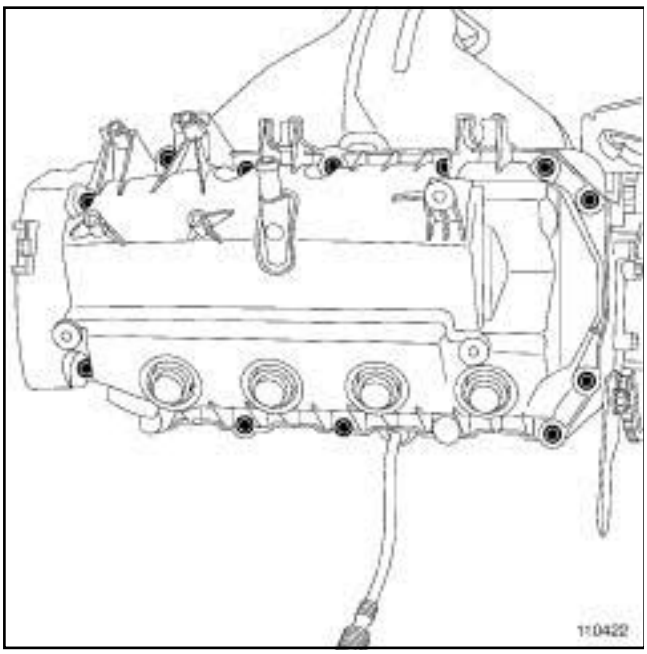
❏ Remove:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

❏ Remove the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

❏ Unclip the rocker cover electric wiring harnesses.

II - OPERATION FOR REMOVAL OF PART CONCERNED



110422

❏ Remove:

- the rocker cover mounting bolts,
- the rocker cover,
- the rocker cover gasket.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the gasket faces with **DECAPJOINT** to dissolve off any part of the gasket still attached.

WARNING

do not allow solvent to drip on the paintwork.

Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

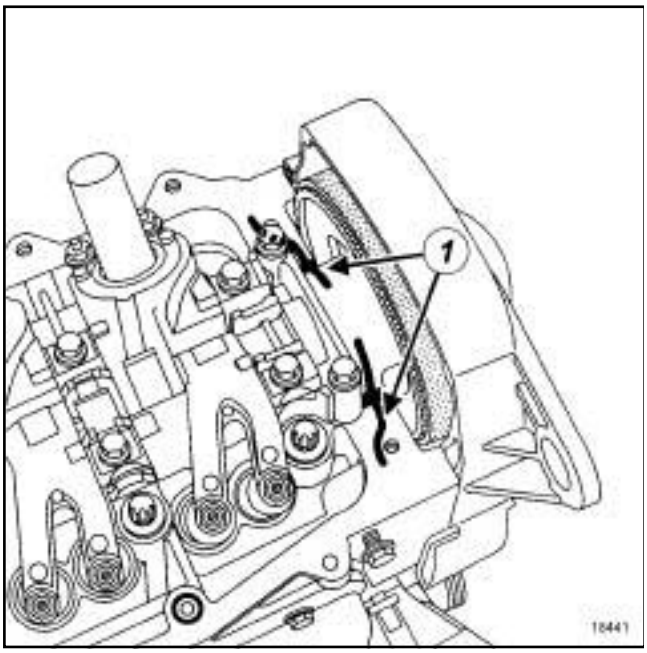
Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

WARNING

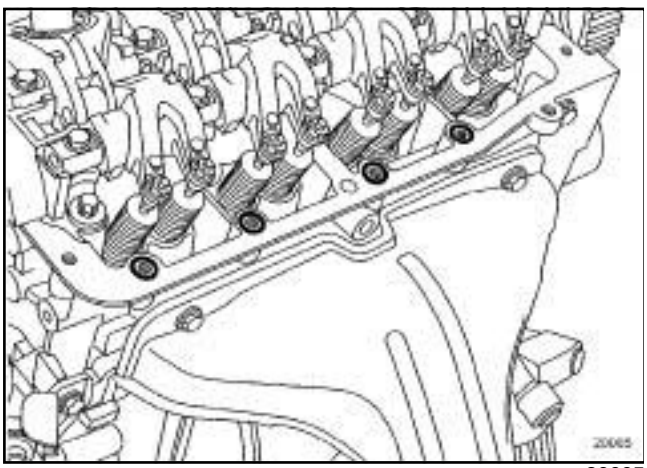
Be sure to replace all seals that have been removed.

D4F, and 740 or 742 or 764

II - REFITTING OPERATION FOR PART CONCERNED



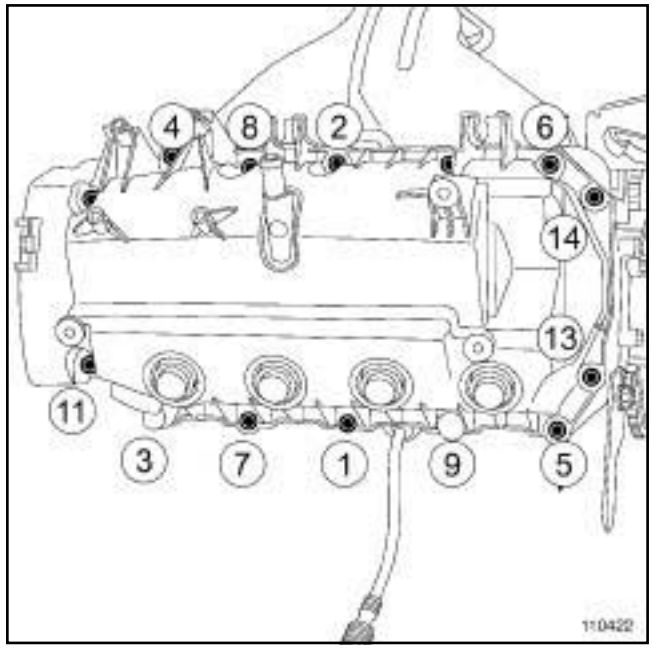
18441



20005

❑ Apply a bead ***(1)*** of **SILICONE ADHESIVE SEALANT 77 11 227 484** to camshaft bearings 1 and 5, and around the rear rocker cover mounting bolts.

❑ Fit the rocker cover with a new gasket.



110422

❑ Torque tighten in order the **rocker cover mounting bolts (10 N.m)**.

III - FINAL OPERATION.

❑ Clip the electric wiring harnesses onto the rocker cover.

❑ Refit:

- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see) (MR 392, 80A, Battery).

K4M

Tightening torques ▽	
rocker cover mounting bolts 1 to 17 and 20 to 22	**14 N.m**
mounting bolts 18, 19, 23, 24	**12 N.m**
camshaft position sensor mounting bolt	**8 N.m**

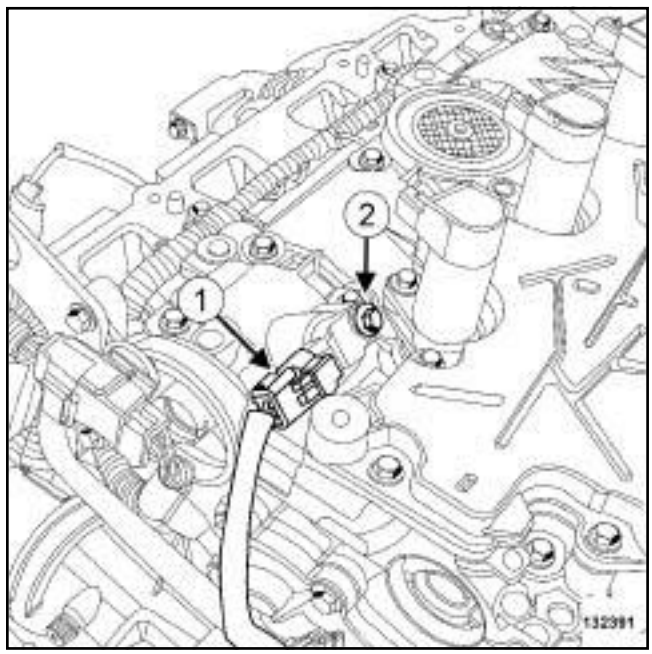
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) .



132391

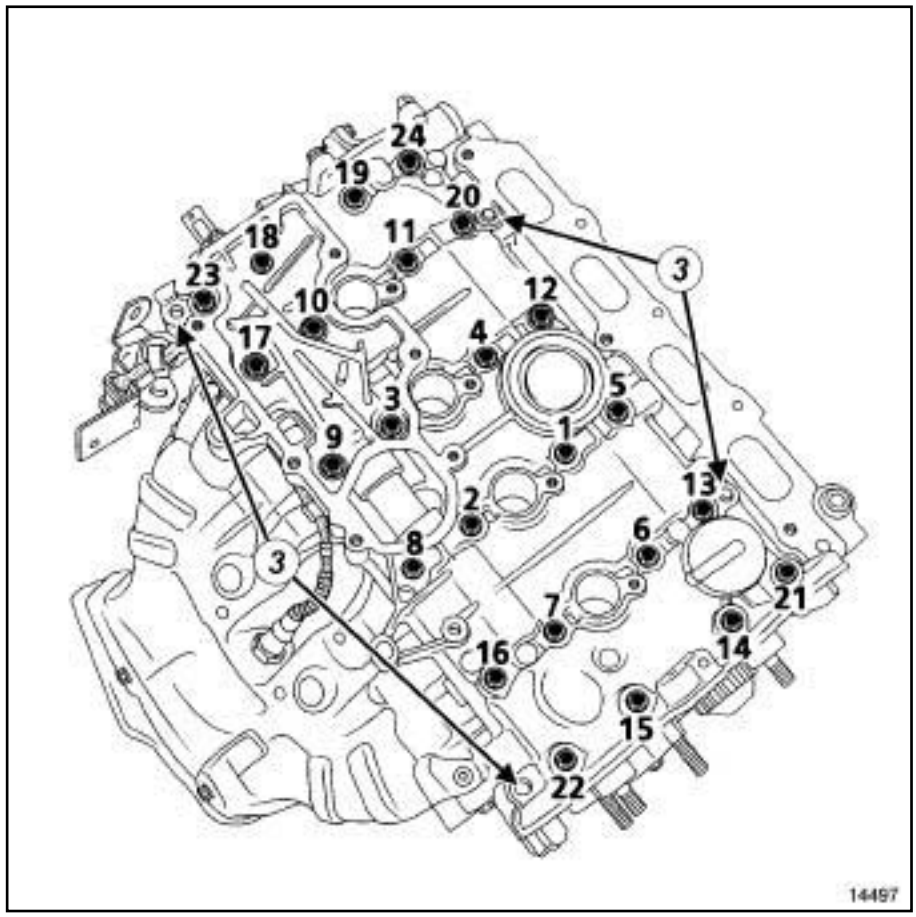
❏ Disconnect the connector (**1**) from the camshaft position sensor.

❏ Remove:

- the bolt (**2**) from the camshaft position sensor,
- the camshaft position sensor,
- the camshaft position sensor seal,
- the camshaft dephaser solenoid valve (see) ,
- the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) .

K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED



14497

- ❏ Remove the rocker cover bolts.
- ❏ Remove the rocker cover vertically by tapping the lugs (**3**) with a screwdriver.
- ❏ Remove:
  - the rocker cover,
  - the camshaft seals on the timing end.

REFITTING

I - REFITTING PREPARATION OPERATION

- ❏ **parts always to be replaced: Camshaft seal on timing end**.
- ❏ **parts always to be replaced: camshaft sensor seal**.

K4M

K4M, and 800 or 801 or 804

❑ Remove the square cam tappet (see) (Technical Note 6023A, 10A, Engine and cylinder block assembly).

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

WARNING

Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to avoid any foreign bodies entering the oil return and supply pipes.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

❑ Clean the joint face of the rocker cover with **SUPER CLEANING AGENT FOR JOINT FACES** (see) (04B, Consumables - Products) to dissolve any seal still adhering.

❑ Apply the product to the section to be cleaned; wait approximately ten minutes, then remove the residue using a wooden spatula.

WARNING

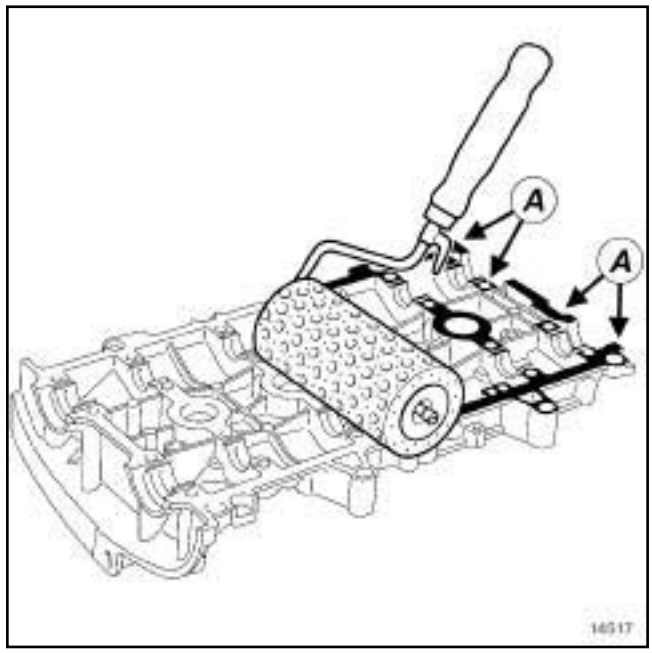
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Lubricate the cylinder head camshaft bearings with engine oil.

Note:

Do not put oil on the joint face of the cylinder head rocker cover.

❑ Refit the square cam tappet (see) (Technical Note 6023A, 10A, Engine and cylinder block assembly).



14517

❑ Use a stipple roller to apply **SEALING RESIN** (see) (04B, Consumables - Products) on the section (**A**) of the rocker cover joint face until the joint face is correctly coated.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

K4M

K4M, and 862

❑

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

WARNING
Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to avoid any foreign bodies entering the oil return and supply pipes.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

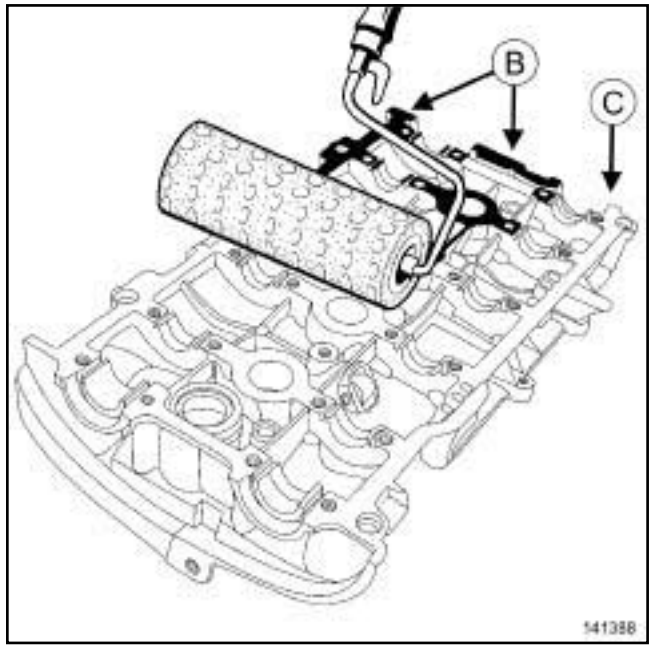
Clean the joint face of the rocker cover with **SUPER CLEANING AGENT FOR JOINT FACES** (see) (04B, Consumables - Products) to dissolve any seal still adhering.

❑ Apply the product to the section to be cleaned; wait approximately ten minutes, then remove the residue using a wooden spatula.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Lubricate the cylinder head camshaft bearings with engine oil.

Note:
Do not put oil on the joint face of the cylinder head rocker cover.



141388

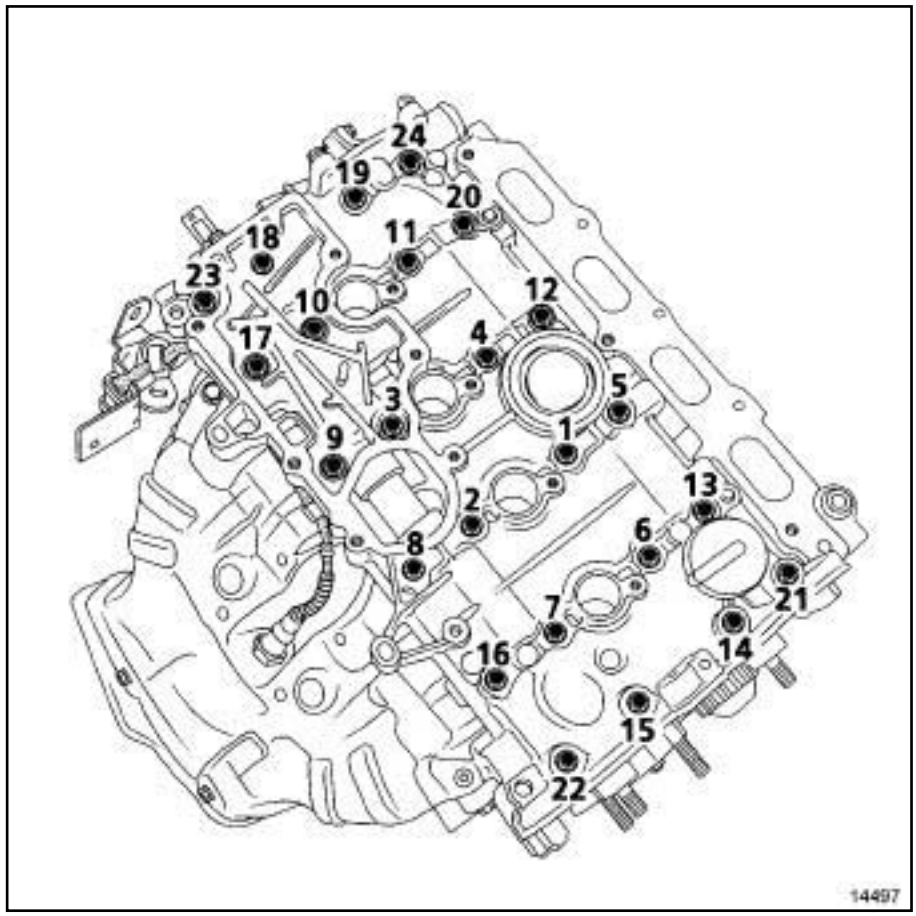
❑ Use a stipple roller to apply **SEALING RESIN** (see) (04B, Consumables - Products) on the section (**B**) of the rocker cover joint face until the joint face is correctly coated.

❑ Apply a bead of **SILICONE ADHESIVE SEALANT** (see) (04B, Consumables - Products) with a diameter of **1 to 2 mm** on the section (**C**) of the rocker cover joint face.

WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

K4M

II - REFITTING OPERATION FOR PART CONCERNED



14497

❑ Refit the rocker cover.

❑ Tighten to torque and in order:

- **rocker cover mounting bolts 1 to 17 and 20 to 22 (14 N.m)**,
- **mounting bolts 18, 19, 23, 24 (12 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the camshaft seals on the timing end (see **11A**, **Top and front of engine**, **Camshaft seal, timing end: Removal - Refitting**, page **11A-284**) ,
- the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the camshaft dephaser solenoid valve (see) ,
- the camshaft position sensor fitted with a new seal.

❑ Torque tighten the **camshaft position sensor mounting bolt (8 N.m)**.

❑ Refit:

- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**)
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

K4M

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine undertray.

K4J

Special tooling required	
Mot. 1490-01	For locking and adjusting the camshaft pulleys.
Mot. 1503	Tool for fitting rocker cover adjuster.
Mot. 1632	Tool for fitting camshaft PTFE seal

Tightening torques ▽	
new mounting bolts for the oil separator in the untapped holes	**15 Nm**
new mounting bolts for the oil separator in the tapped holes	**10 Nm**

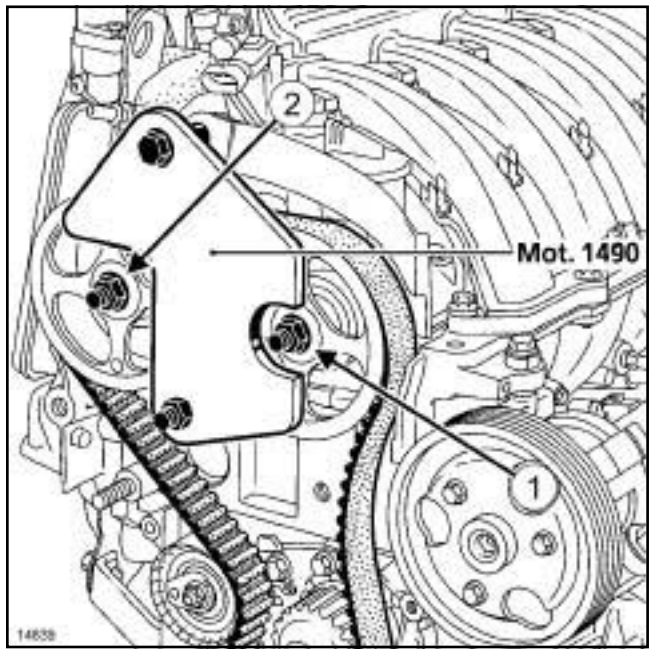
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see) (MR 392, 80A, Battery),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



14839

❏ Position the **(Mot. 1490-01)** on the camshaft pulleys.

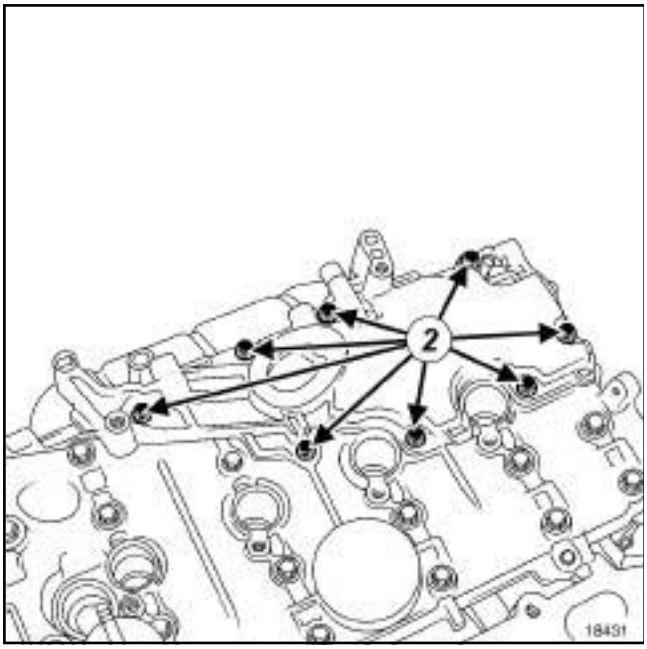
❏ Remove:

- the nut from the inlet camshaft pulley (**1**) and from the exhaust camshaft pulley (**2**) ,
- the **(Mot. 1490-01)**,
- the camshaft pulleys.

❏ Remove:

- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) .

K4J

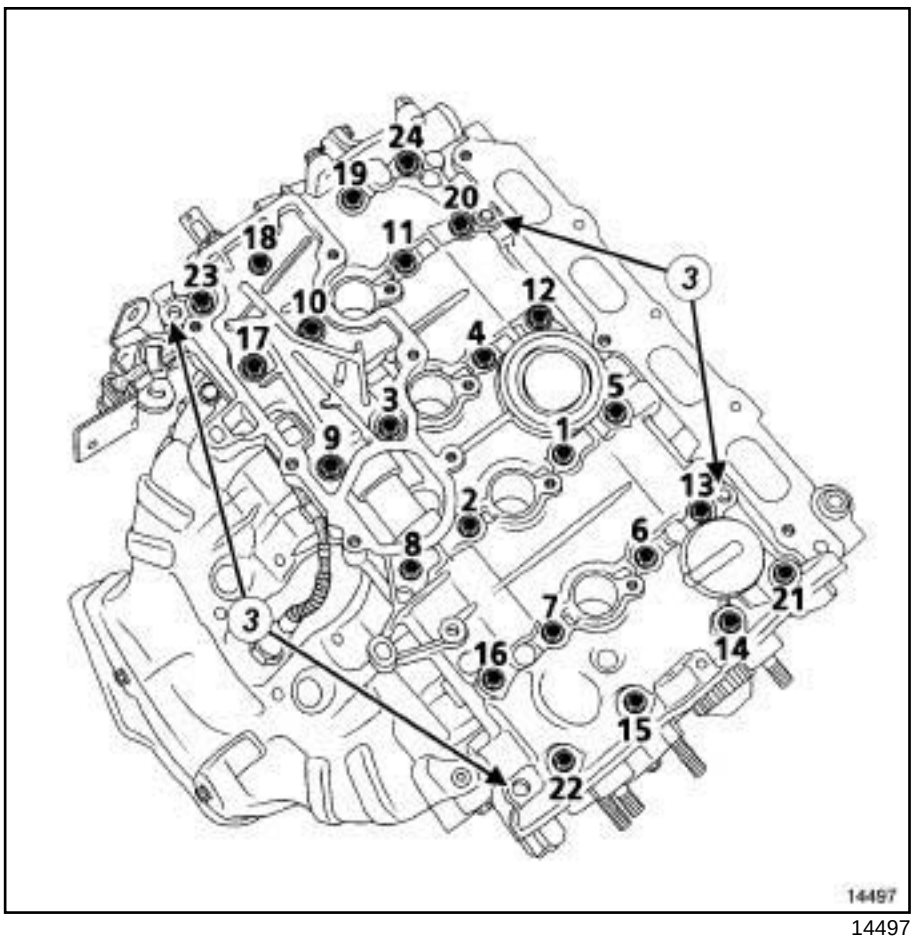


18431

❏ Remove:

- the engine lifting eye at the timing end,
- the mounting bolts (**2**) from the oil decanter,
- the oil decanter.

II - OPERATION FOR REMOVAL OF PART CONCERNED



14497

❏ Remove the rocker cover mounting bolts.

❏ Detach the rocker cover vertically by tapping the lugs (**3**) with a copper hammer.

❏ Remove the rocker cover.

K4J

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

IMPORTANT

Do not scratch the aluminium sealing surfaces.

Wear goggles.

Wear gloves during the operation.

WARNING

Do not allow this product to drip onto the paintwork.

Take care when cleaning to prevent any foreign bodies entering the oil pipes supplying oil under pressure to the hydraulic tappets, the camshafts (oil galleries are located both in the cylinder block and the cylinder head), and the oil return pipes.

Failure to follow this advice could block the oilways, and rapidly destroy the engine.

❑ Clean the rocker cover gasket face with **DECAP-JOINT** to dissolve any gasket still adhering.

❑ Apply the product to the section to be cleaned; wait approximately ten minutes, then remove the residue using a wooden spatula.

Note:

The gasket faces on the rocker cover must be clean, dry and free from grease (avoid finger marks).

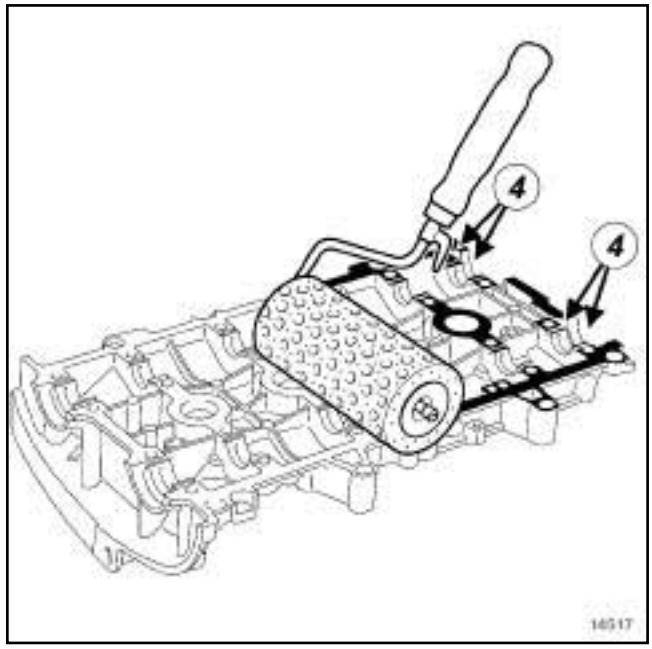
❑ Lubricate the cylinder head camshaft bearings with engine oil.

WARNING

Do not put oil on the cylinder head rocker cover.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. The mixture of sealant and fluid may damage some components (engine, radiator, etc.).



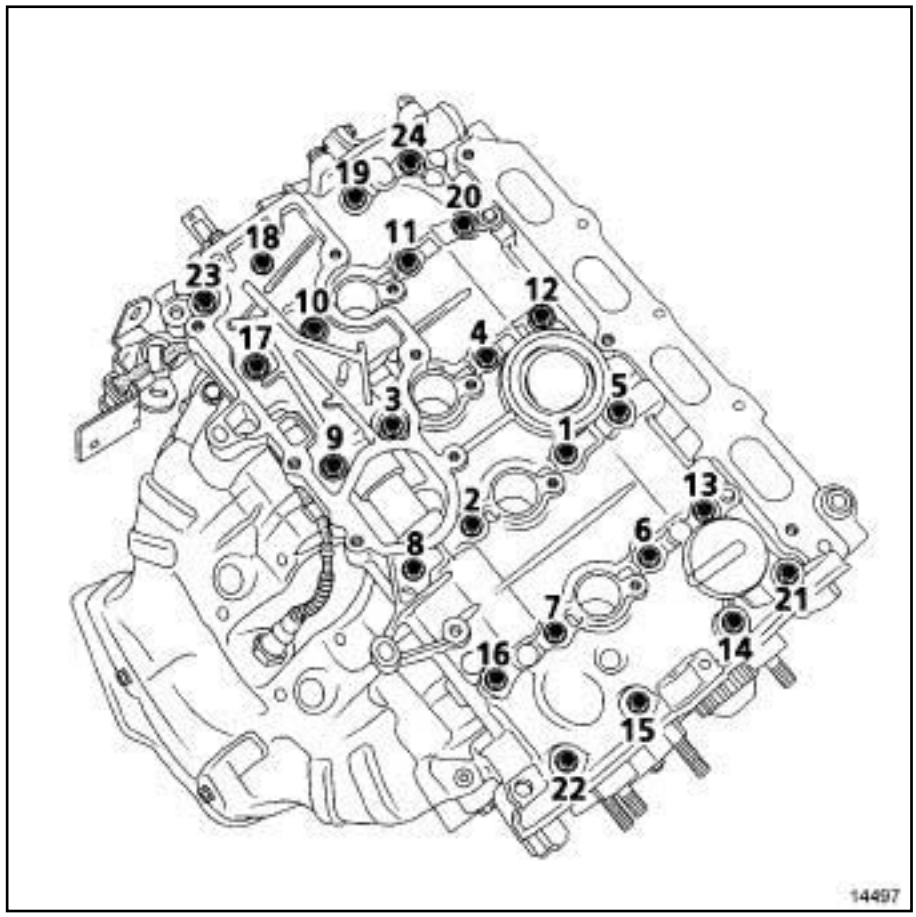
14517

❑ Using a stipple roller, apply **LOCTITE 518** to the gasket face until it turns reddish in colour.

❑ Use a cloth to remove any **LOCTITE 518** in the six bearing channels (**4**) on the rocker cover.

K4J

II - REFITTING OPERATION FOR PART CONCERNED



14497

- ❑ Refit the rocker cover.
- ❑ Tighten to torque and in order:
  - bolts 22, 23, 20, 13 **(8 Nm)**,
  - bolts 1 to 12, 14 to 19 and 21 to 24 **(14.5 Nm)**.
- ❑ Slacken bolts 22, 23, 20 and 13, in order.
- ❑ Tighten to torque and in order bolts 22, 23, 20, 13 **(14.5 Nm)**

III - FINAL OPERATION.

❑

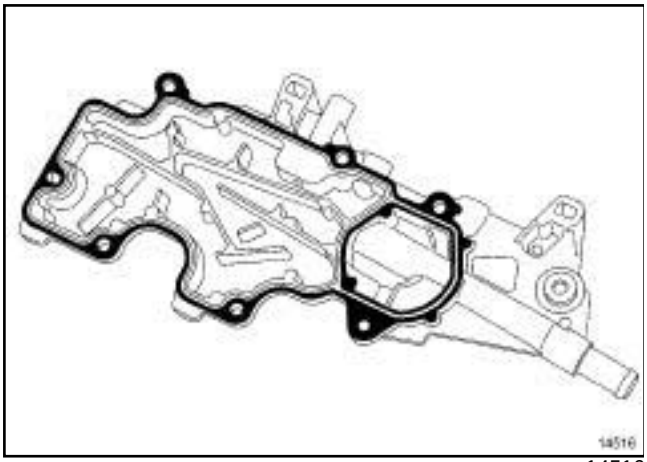
Note:

The gasket face on the oil decanter must be clean, dry and free from grease (avoid finger marks).'

WARNING

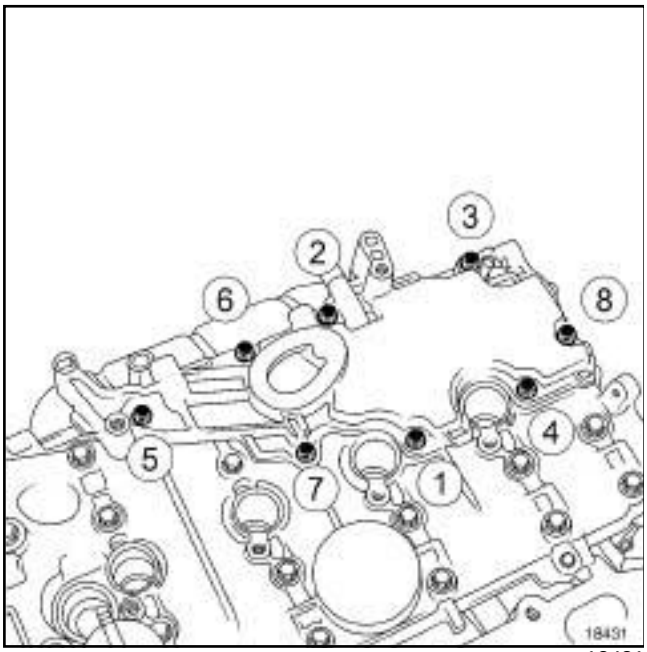
Applying excess sealant could cause it to be squeezed out when parts are tightened. The mixture of sealant and fluid may damage some components (engine, radiator, etc.).

K4J


14516

14516

❑ Using a stipple roller, apply **LOCTITE 518** to the gasket face until it turns reddish in colour.



18431

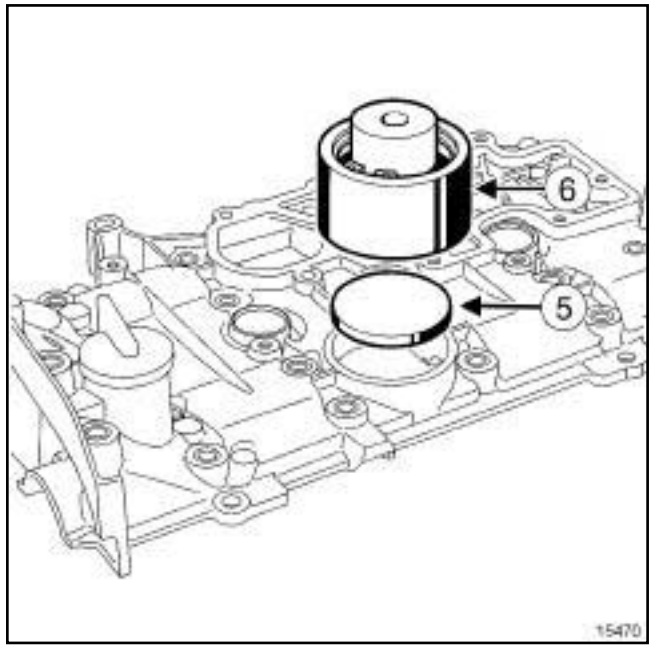
18431

❑ Refit the oil decanter.

❑ Torque tighten and in order:

- the **new mounting bolts for the oil separator in the untapped holes (15 Nm)**,
- the **new mounting bolts for the oil separator in the tapped holes (10 Nm)**.

❑ Refit the engine lifting eye at the engine timing end.



15470

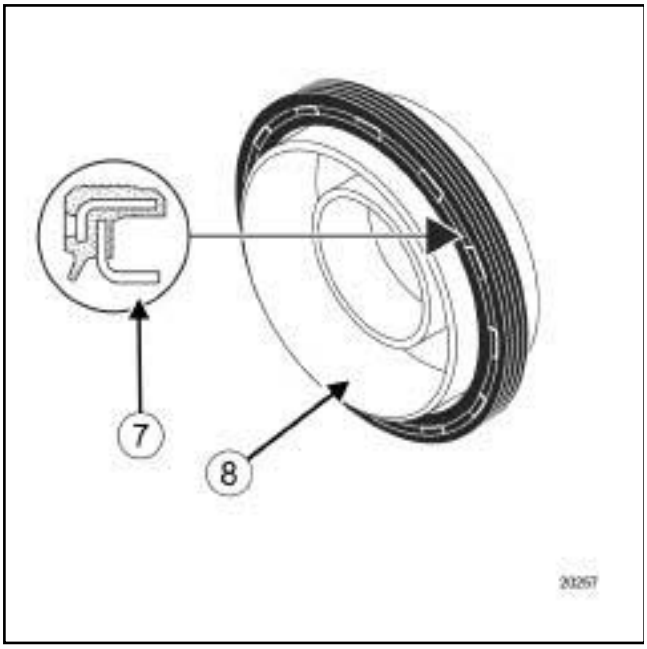
15470

❑ Refit:

- the rocker cover disc (**5**) using the **(Mot. 1503)** (**6**) ,
- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

K4J

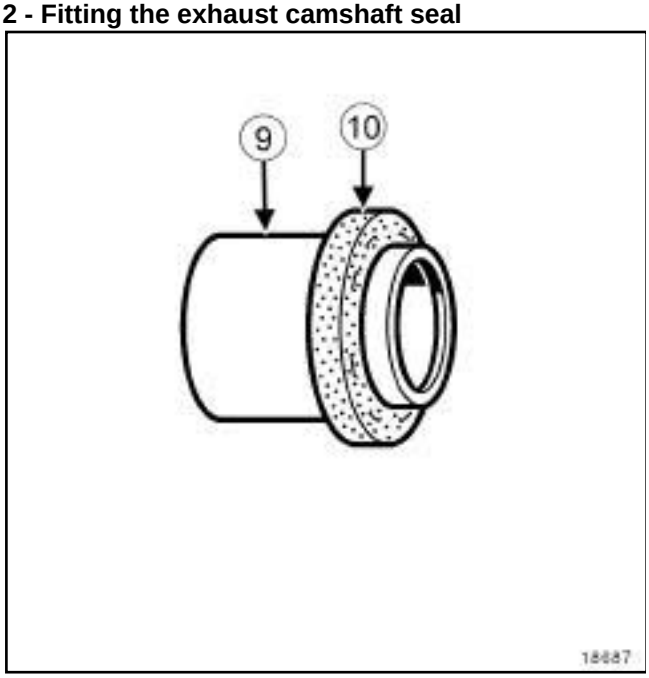
1 - Fitting the camshaft gaskets



20257

❑ The elastomer seals on these engines come fitted with a flat lip seal (**7**) and a protector (**8**) (also used to fit the seal on the engine).

2 - Fitting the exhaust camshaft seal

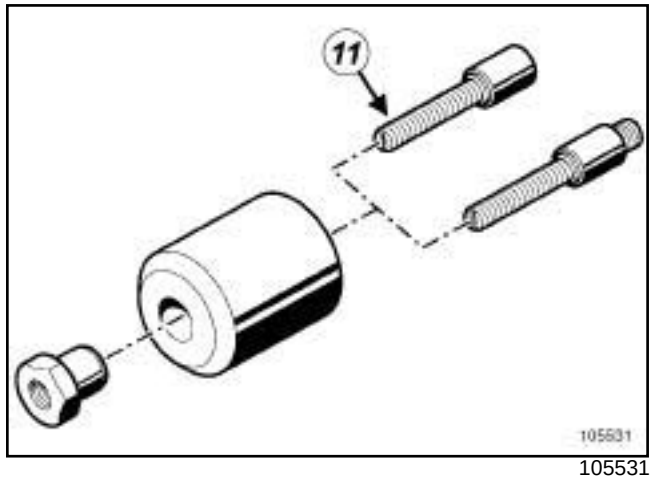


18687

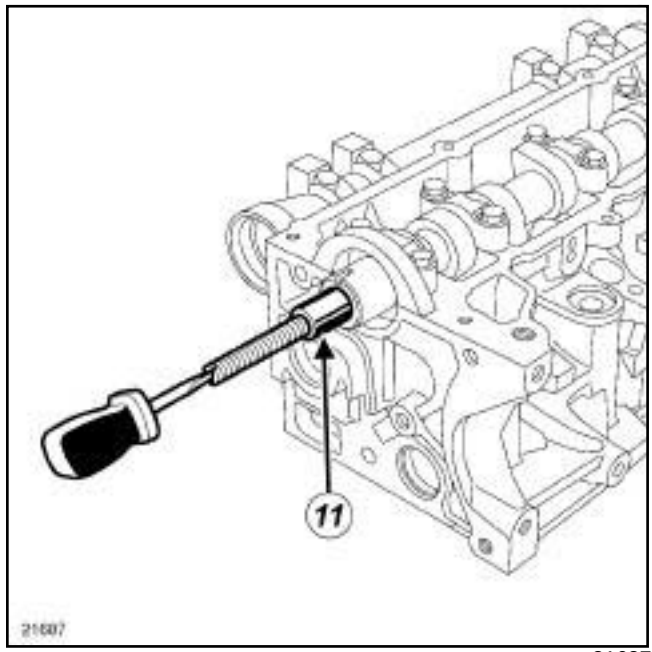
❑

WARNING

When handling, be sure to hold the seal by the protector (**9**) , as this type of seal is highly FRAGILE. It is strictly forbidden to touch the elastomer seal (**10**) in order to prevent any oil leaks once the seal is fitted to the engine.



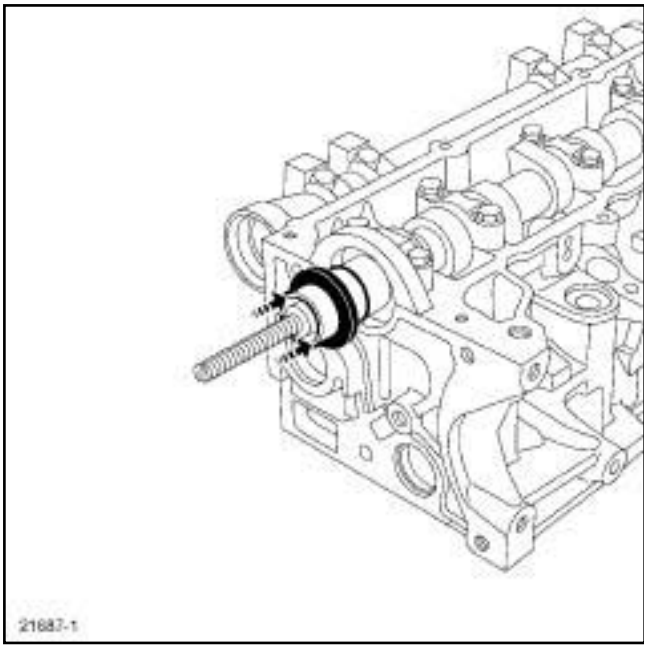
105531



21687

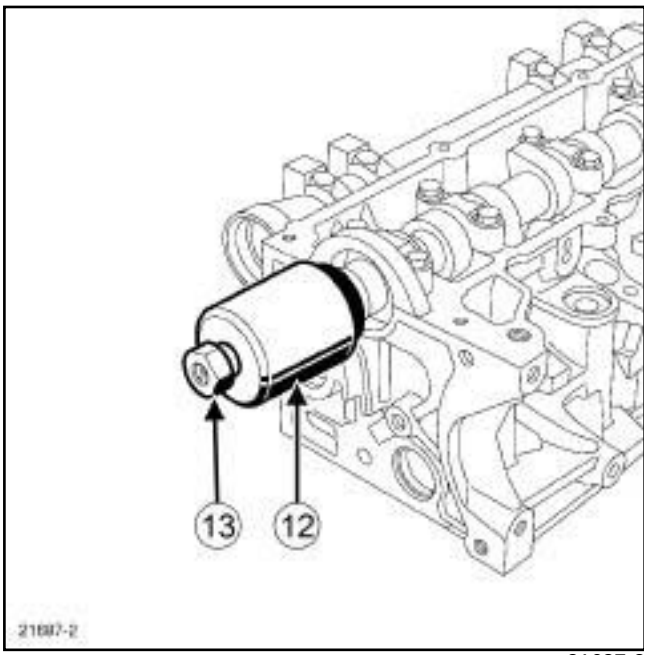
❑ Screw the stud (**11**) of the **(Mot. 1632)** onto the camshaft.

K4J



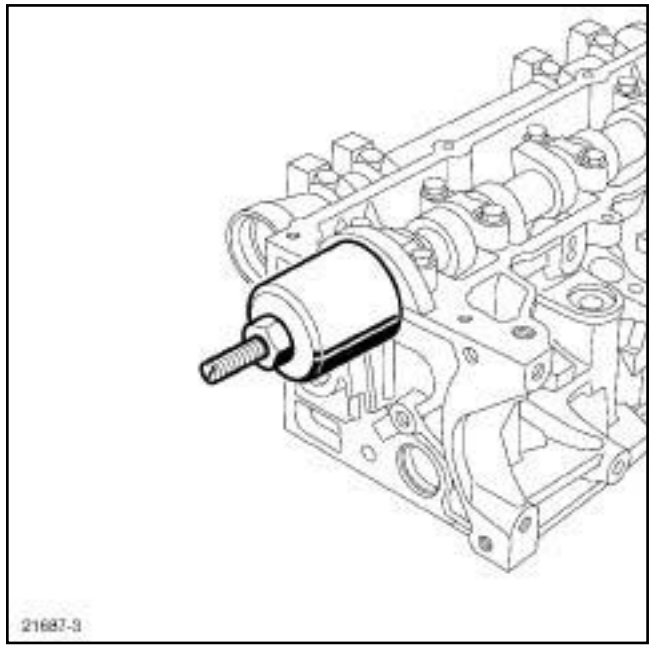
21687-1

❏ Mount the protector with its gasket in place onto the camshaft (taking care not to touch the gasket).



21687-2

❏ Fit the cover (**12**) and the collar nut (**13**) of the **(Mot. 1632)**.

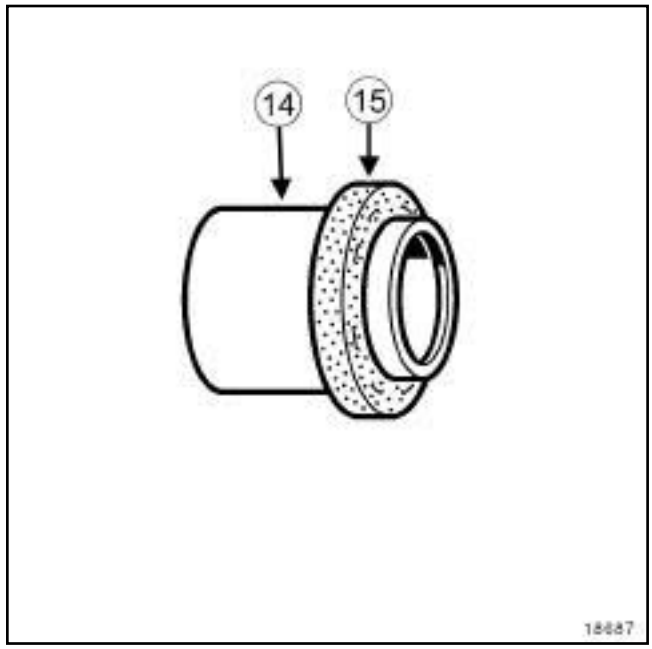


21687-3

❏ Screw on the collar nut until the cover touches the cylinder head.

❏ Remove the nut, cover, protector and threaded rod.

3 Fitting the inlet camshaft seal



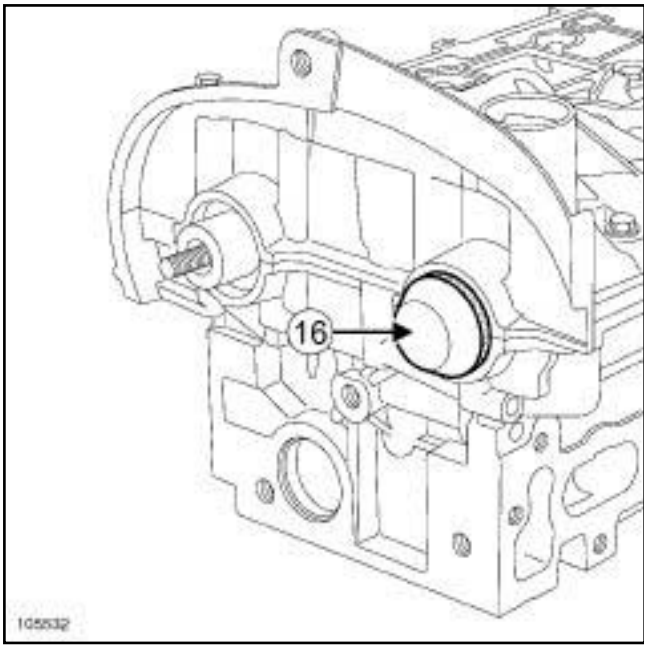
18687

❏

WARNING

When handling, be sure to hold the seal by the protector (**14**) , as this type of seal is highly FRAGILE. It is strictly forbidden to touch the elastomer seal (**15**) in order to prevent any oil leaks once the seal is fitted to the engine.

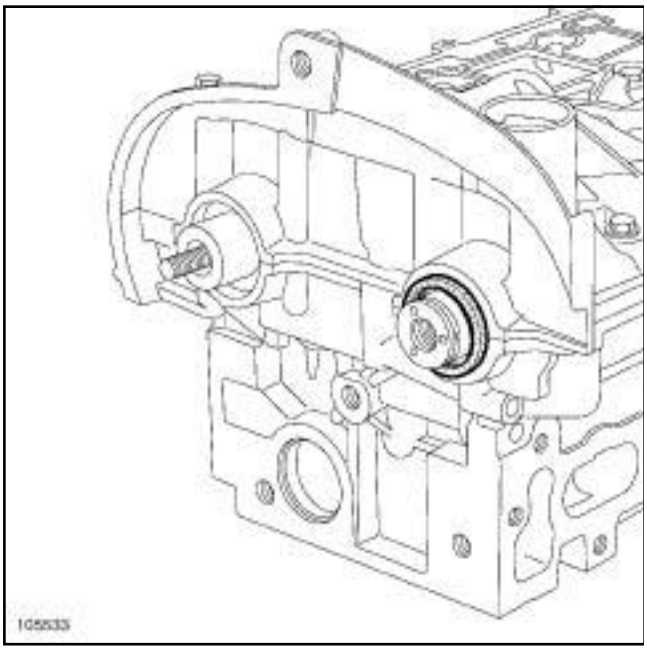
K4J



105532

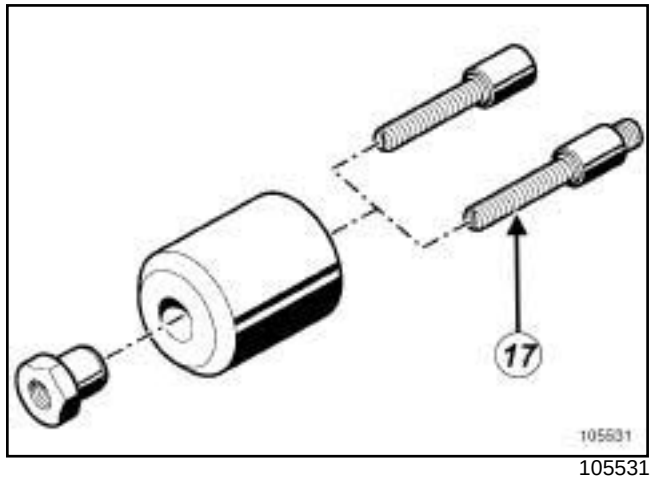
❑ Fit the protector (**16**) fitted with the seal onto the camshaft (taking care not to touch the seal).

❑ Push the centre of the protector to force the seal into its housing.

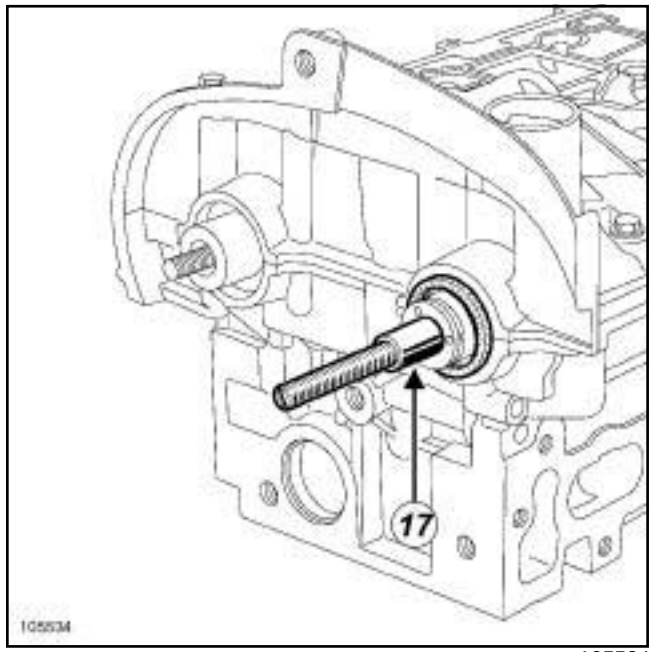


105533

❑ Remove the seal protector, taking care not to drop the seal.



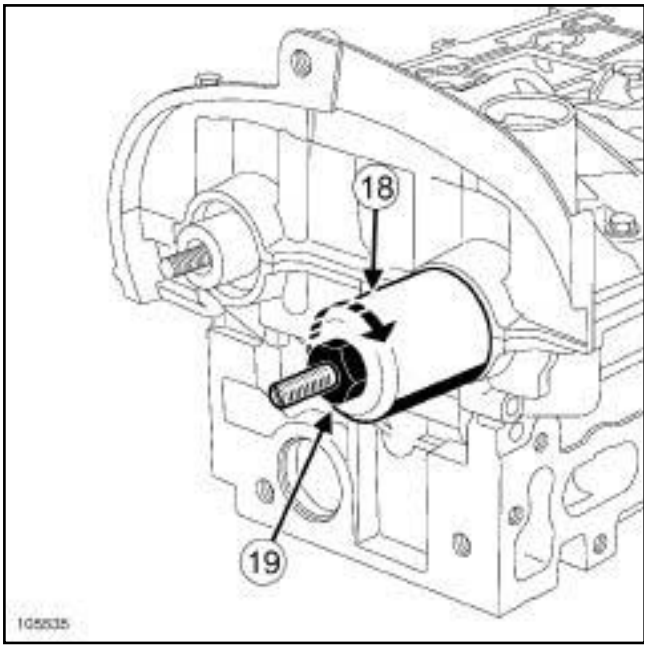
105531



105534

❑ Fit the stud (**17**) on the camshaft using the **(Mot. 1632)**.

K4J



105535

❏ Fit the cover (**18**) and the collar nut (**19**) of the **(Mot. 1632)**.

❏ Screw on the collar nut until the cover touches the cylinder head.

❏ Remove the nut, cover and threaded rod.

❏ Refit the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

WARNING
Follow the second procedure for refitting the timing belt.

❏ Refit:

- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery tray (see) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 766 or 768

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
rocker cover bolts	**10 N.m**
nut mounting the inter-cooler air inlet pipe on the alternator	**8 N.m**

REMOVAL

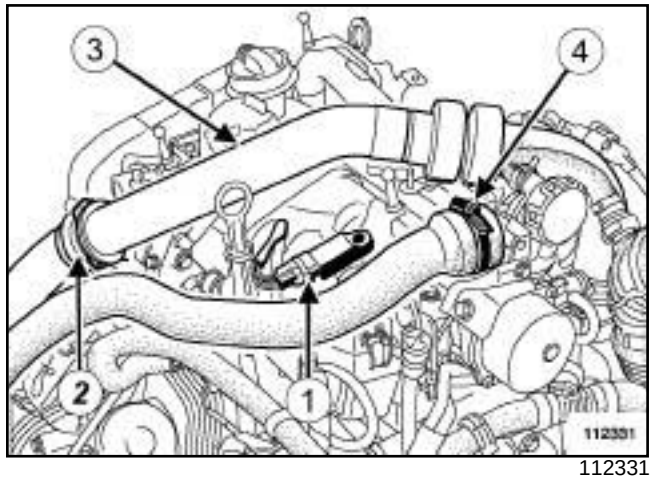
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

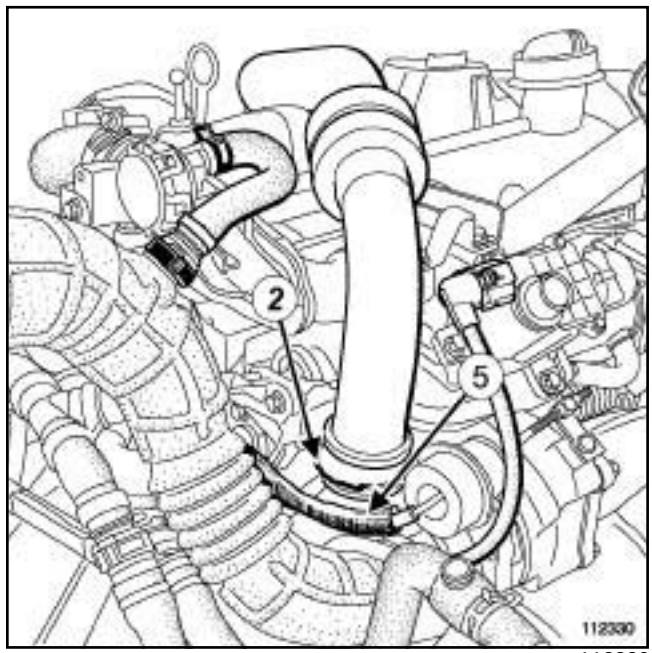
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the air inlet duct,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112331



112330

❏ Disconnect:

- the pressure sensor (**1**) on the inlet duct,
- the turbocharger pressure regulation pipe (**5**) .

❏ Cut the Rislan clip.

❏ Pull the clips (**2**) from the air duct.

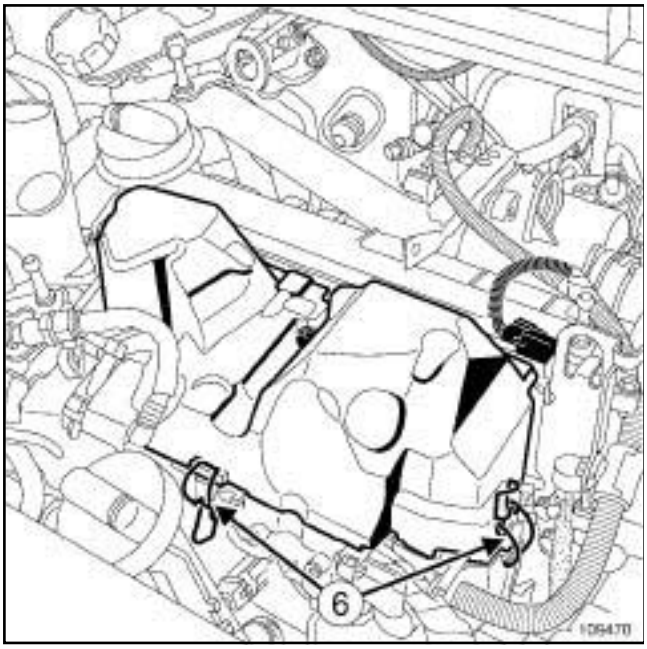
❏ Remove:

- the air pipe mounting nut on the alternator,
- the air duct bolt on the rocker cover,
- the air duct (**3**) .

❏ Undo the clip (**4**) from the intercooler tube on the inlet side.

❏ Remove the intercooler tube on the inlet side.

K9K, and 766 or 768

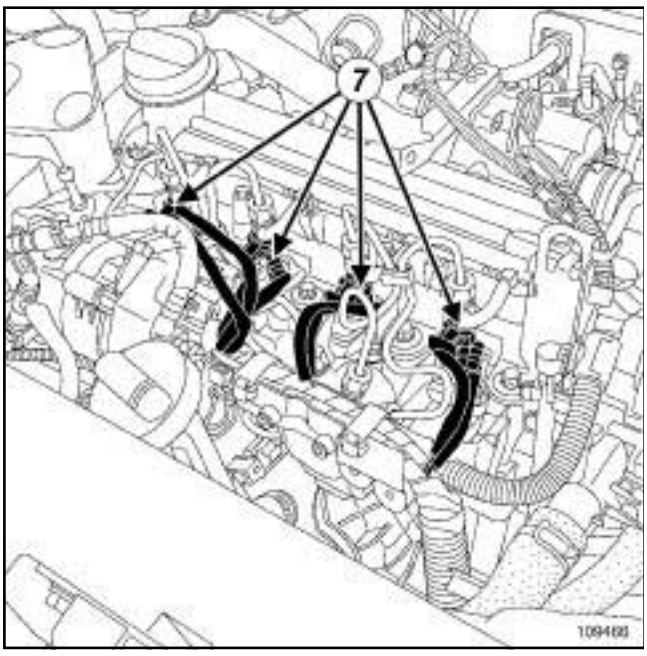


109470

❏ Unclip the clips (**6**) from the rail protector.

❏ Remove:

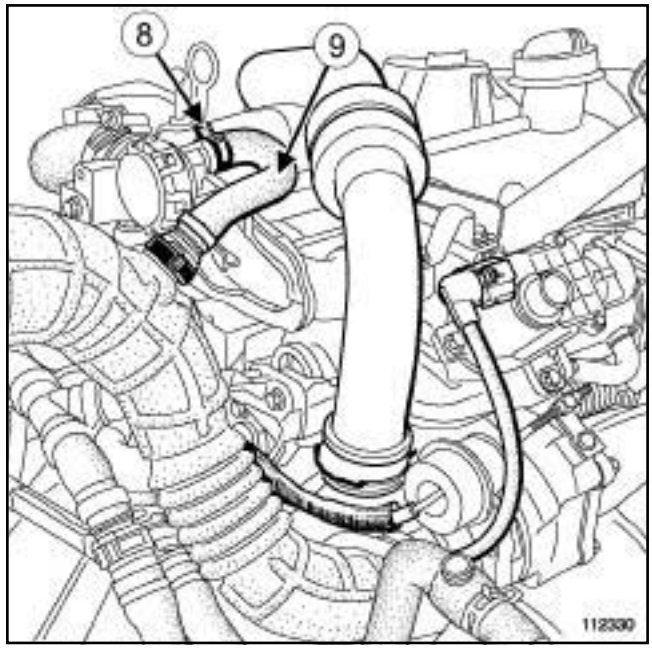
- the rail protector mountings,
- the retaining bracket of the engine cover on the gearbox side,
- the rail protector.



109466

❏ Disconnect:

- the heater plugs (**7**)
- the injector connectors.

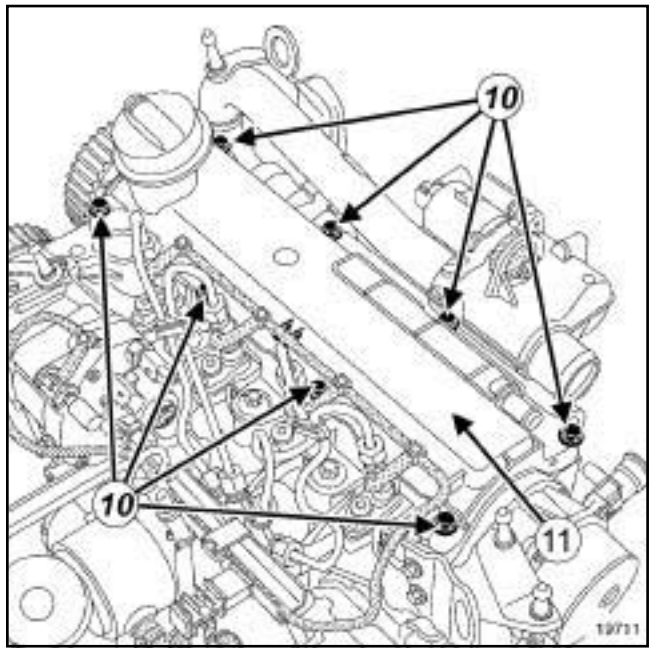


112330

❏ Undo the clip (**8**) from the oil vapour rebreathing pipe using the **(Mot. 1448)**.

❏ Disconnect the oil vapour rebreathing pipe (**9**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



19711

❏ Remove:

- the mounting bolts (**10**) from the rocker cover,
- the rocker cover (**11**) .

K9K, and 766 or 768

REFITTING

I - REFITTING PREPARATION OPERATION

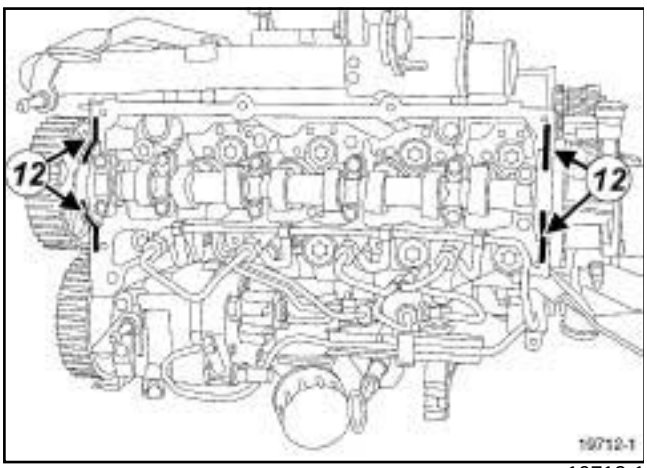
❑ Be sure to replace the rocker cover seal.

Note:

The cylinder head gasket and rocker cover faces must be clean, dry and free of grease (avoid finger marks).

Note:

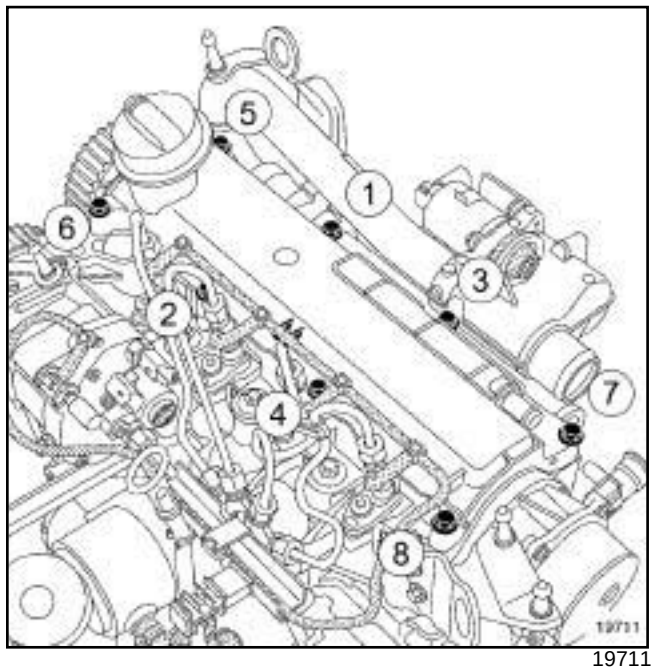
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.)



19712-1

❑ Apply **LOCTITE 518** (**12**) , **2 mm** in diameter

II - REFITTING OPERATION FOR PART CONCERNED



19711

❑ Refit the rocker cover, fitted with a new gasket.

❑ Torque tighten in order the **rocker cover bolts (10 N.m)**.

III - FINAL OPERATION

❑ Connect the oil vapour rebreathing pipe.

❑ Unclip the clip from the oil vapour rebreathing pipe using the tool **(Mot. 1448)**.

❑ Refit the inner timing cover.

❑ Connect:

- the injector connectors,
- the heater plugs.

❑ Refit:

- the rail protector,
- the retaining bracket of the engine cover on the gearbox side,
- the rail protector mountings,
- the intercooler tube on the inlet side.

❑ Fasten the clip on the intercooler tube on the inlet side.

❑ Fit the air duct between the turbocharger and the air pipe at the intercooler inlet.

❑ Clip the air duct on the turbocharger and the inlet pipe of the intercooler.

K9K, and 766 or 768

❑ Refit:

- the air duct bolt on the rocker cover,
- the air pipe mounting nut on the alternator,
- a Rislan clip.

❑ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 N.m)**.

❑ Connect:

- the turbocharger pressure regulation pipe,
- the pressure sensor on the inlet tube.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the air inlet duct,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 772

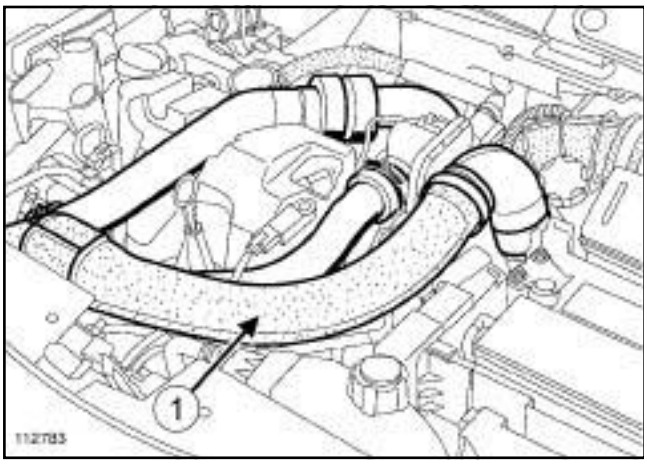
Tightening torques ▽	
rocker cover bolts	**11 N.m**
injector rail protector cover bolt	**8 N.m**
injector rail protector cover nut	**8 N.m**
intercooler outlet air pipe clip	**5.5 N.m**
the intercooler inlet and outlet pipe nut on the alternator	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

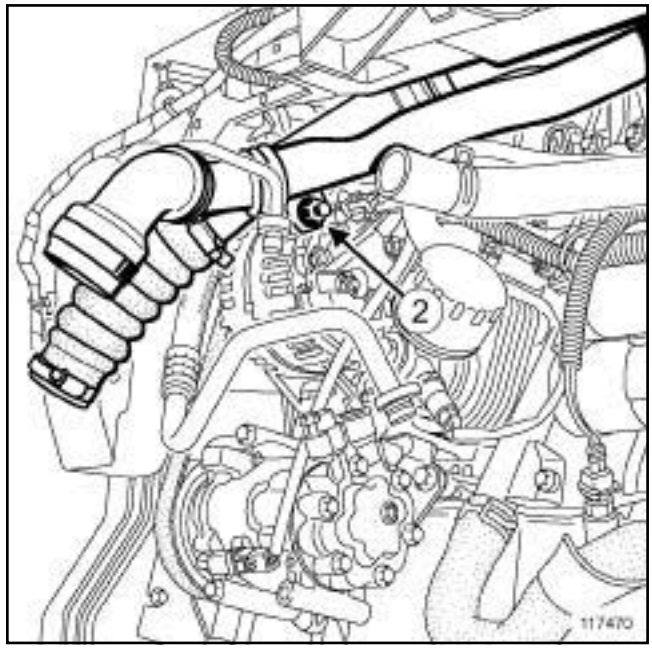
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover.



112783

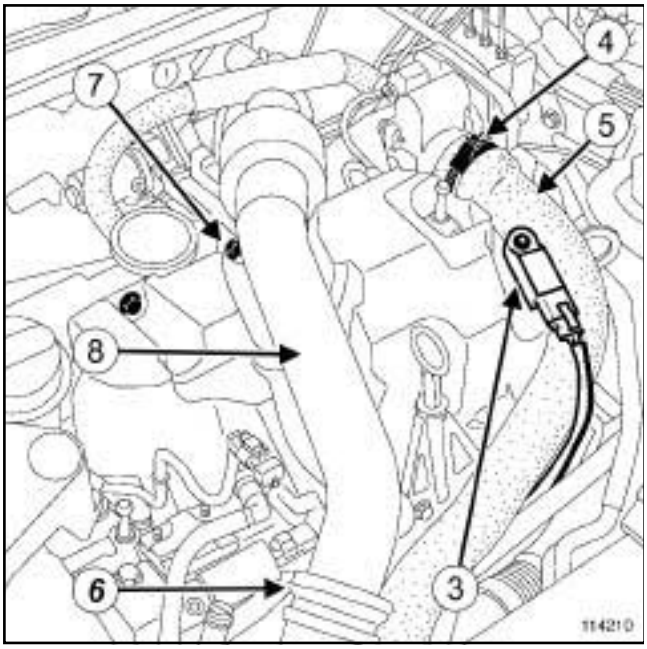
❏ Remove the air filter box air inlet pipe (**1**) .



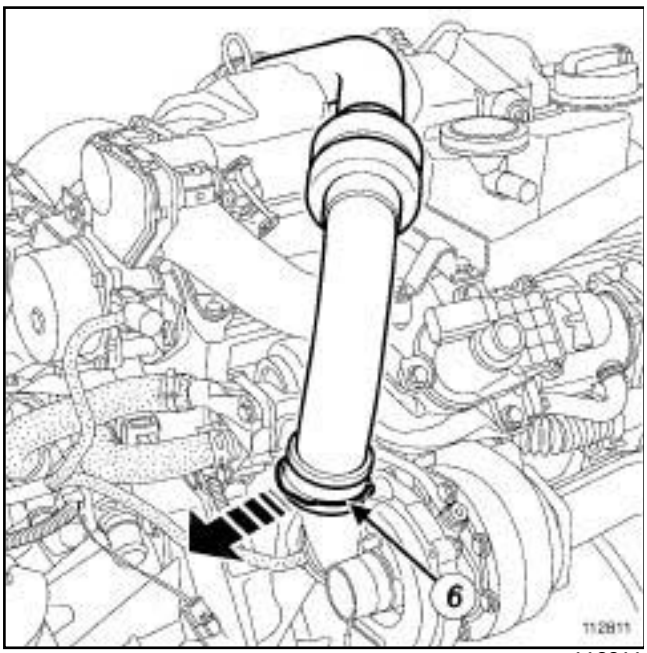
117470

❏ Remove the intercooler inlet and outlet pipe nuts (**2**) on the alternator.

K9K, and 764 or 772



114210



112811

❏ Disconnect the connector (**3**) from the inlet air pressure sensor.

K9K, and 764

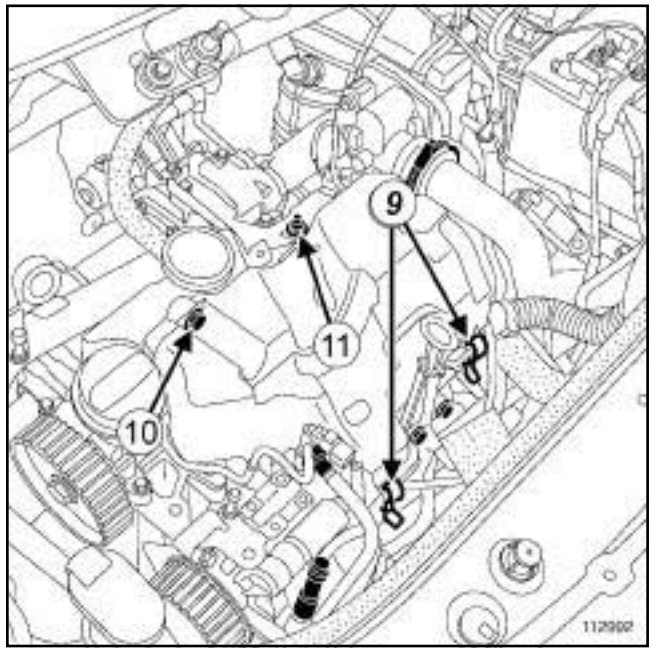
❏ Disconnect the turbocharger pressure regulation pipe.

❏ Undo the clip ***(4)*** from the intercooler outlet pipe.

❏ Move the intercooler outlet air pipe to one side ***(5)*** .

❏ Remove:

- the clips ***(6)*** from the intercooler inlet air pipe,
- the bolt (**7**) on the rocker cover,
- the intercooler air inlet pipe ***(8)*** .



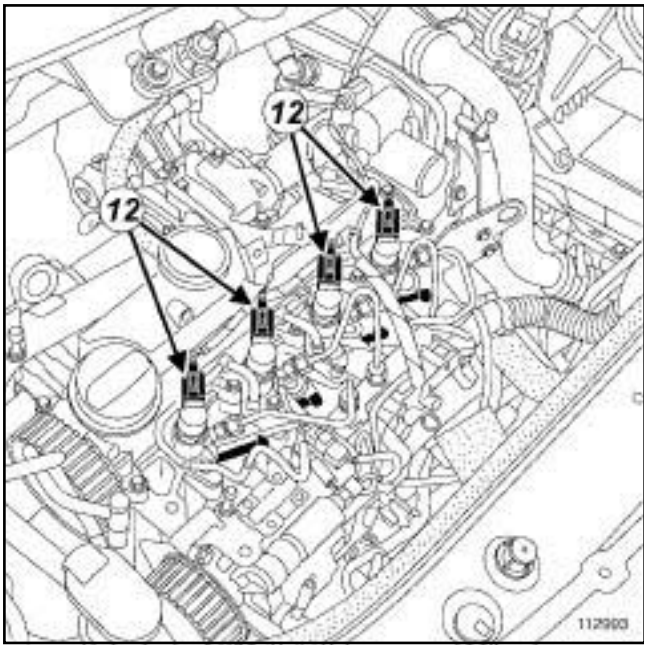
112992

❏ Unclip the clips (**9**) from the injector rail protector cover.

❏ Remove:

- the injector rail protector cover bolt (**10**) ,
- the injector rail protector cover nut (**11**) ,
- the injector rail protector cover.

K9K, and 764 or 772



112993

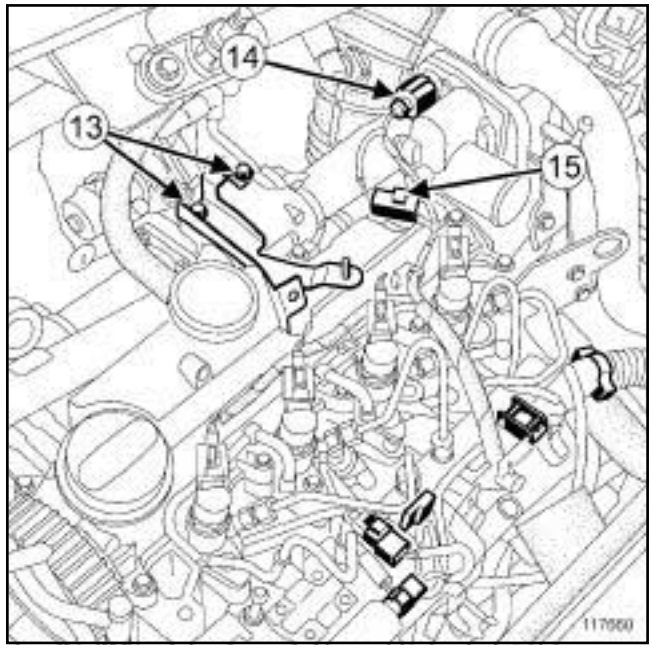
❏ Disconnect the injector connectors (**12**) .

❏ Move the injector harness to one side.

❏ Unclip the diesel return pipe.

K9K, and 772

❏ Detach the turbocharger front temperature sensor wiring harness on the injector rail protector mounting.



117660

❏ Remove:

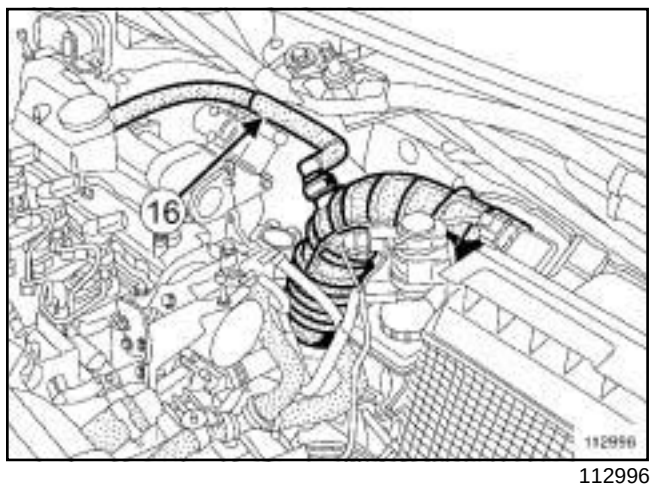
- the injector rail protector mounting bolts (**13**) ,
- the injector rail protector support.

❏ Disconnect:

- the damper valve connector (**14**) (if equipped),
- the camshaft position sensor connector (**15**) .

❏ Remove:

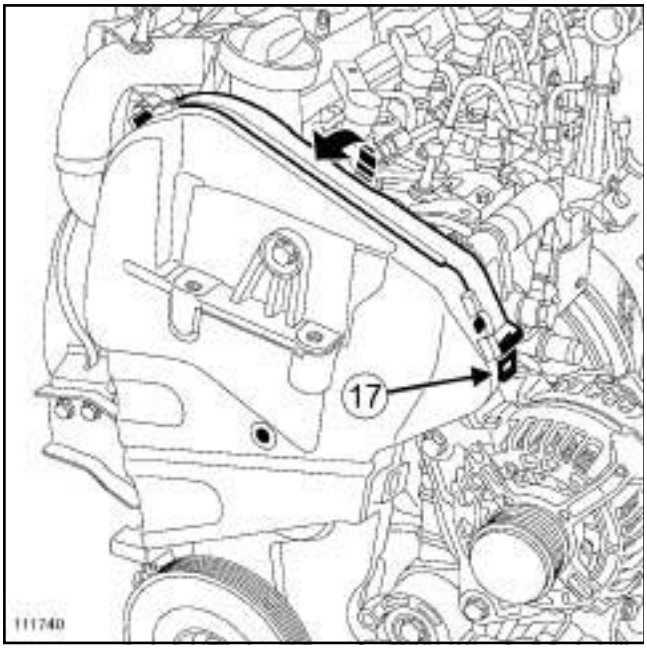
- the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (if equipped),
- the camshaft position sensor.



112996

❏ Disconnect the oil vapour rebreathing pipe (**16**) on the rocker cover side.

K9K, and 764 or 772

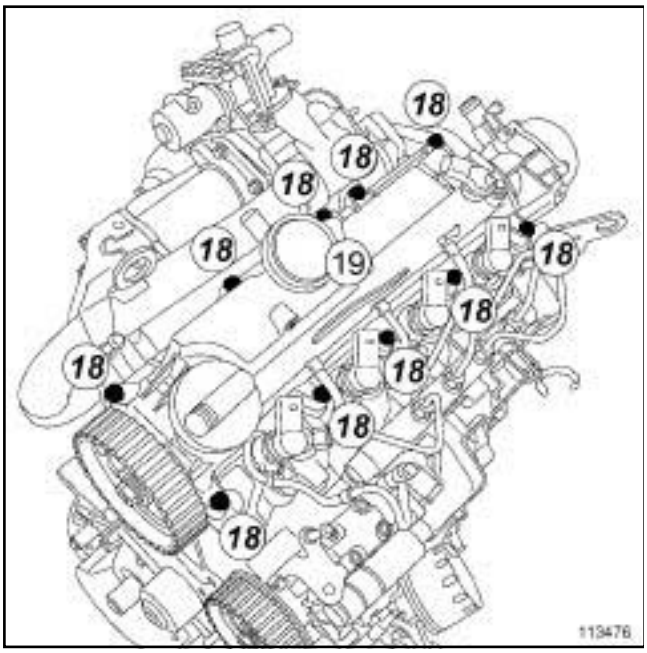


111740

❑ Unclip the tab (**17**) .

❑ Swivel the timing cover in the direction of the arrow.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113476

❑ Remove:

- the rocker cover bolts (**18**) ,
- the rocker cover (**19**) .

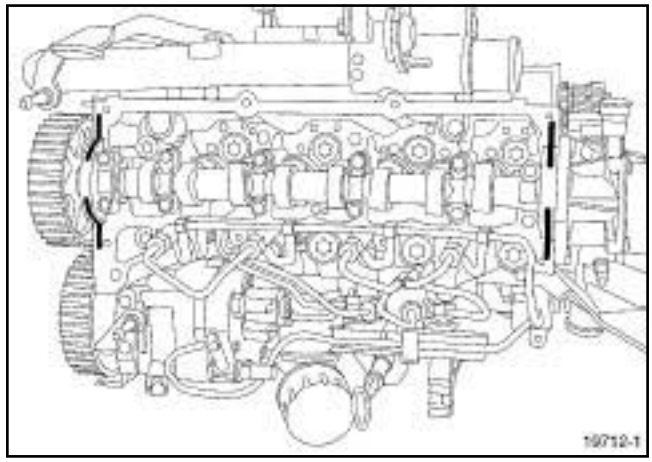
REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the rocker cover seal.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).



19712-1

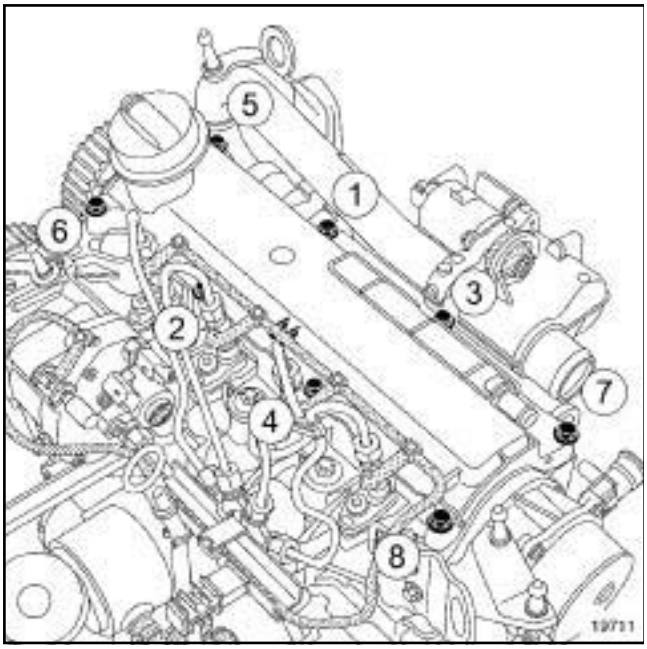
❑ Apply **RESIN ADHESIVE** (diameter **2 mm**).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the rocker cover,
- the rocker cover bolts.

K9K, and 764 or 772



19711

❏ Tighten to torque and in order the **rocker cover bolts (11 N.m)**.

III - FINAL OPERATION

❏ Fit the timing cover.

❏ Clip on the tab.

❏ Connect the oil vapour rebreathing pipe on the rocker cover side.

❏ Refit:

- the cylinder marking sensor,
- the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (if equipped).

❏ Connect:

- the damper valve connector (**14**) (if equipped),
- the camshaft position sensor connector (**15**) .

❏ Refit:

- the injector rail protector support,
- the injector rail protector mounting bolts.

K9K, and 772

❏ Clip on the turbocharger front temperature sensor wiring harness on the rail protector mounting.

❏ Clip on the diesel return pipe.

❏ Connect the injector connectors (**12**) .

❏ Position the injector wiring harness.

❏ Refit:

- the injector rail protector cover,
- the injector rail protector cover nut,
- the injector rail protector cover bolt.

❏ Torque tighten:

- the **injector rail protector cover bolt (8 N.m)**,
- the **injector rail protector cover nut (8 N.m)**.

❏ Fasten the clips of the injector rail protector cover.

❏ Refit:

- the intercooler air inlet pipe,
- the clips to the intercooler inlet air pipe,
- the bolt on the rocker cover.

❏ Fit the intercooler outlet air pipe.

❏ Torque tighten the **intercooler outlet air pipe clip (5.5 N.m)**.

K9K, and 764

❏ Connect the turbocharger pressure regulation pipe.

❏ Refit the intercooler inlet and outlet pipe nut on the alternator.

❏ Torque tighten **the intercooler inlet and outlet pipe nut on the alternator (8 N.m)**.

❏ Refit:

- the air filter unit air inlet pipe,
- the engine cover.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

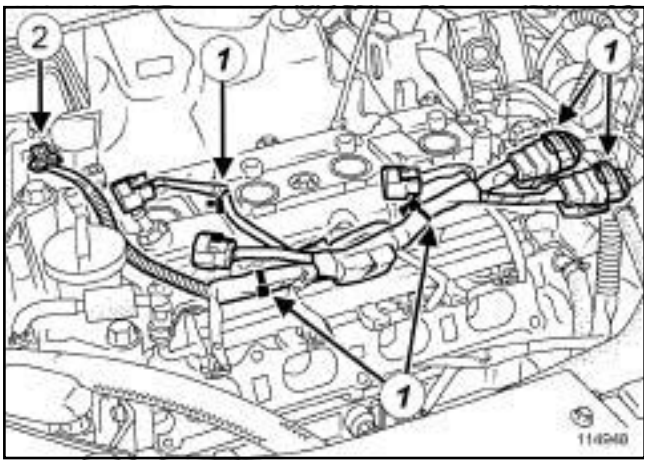
Tightening torques ▽	
rocker cover mounting bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

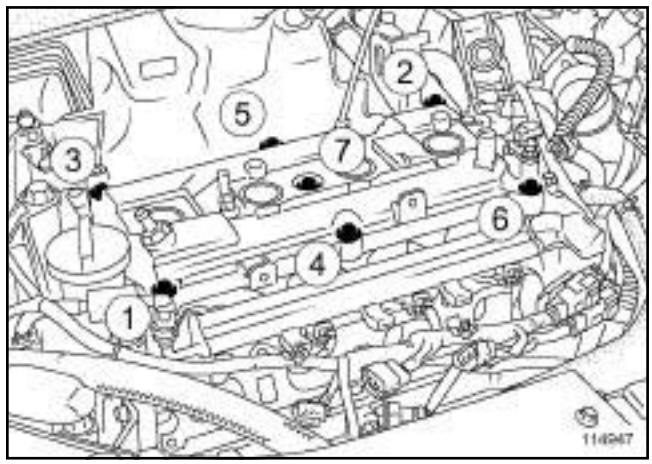


❏ Unclip:

- the wiring harness at (**1**) ,
- the atmospheric pressure sensor (**2**) .

❏ Move the wiring harness to one side.

II - REMOVAL OF PART CONCERNED



❏ Remove:

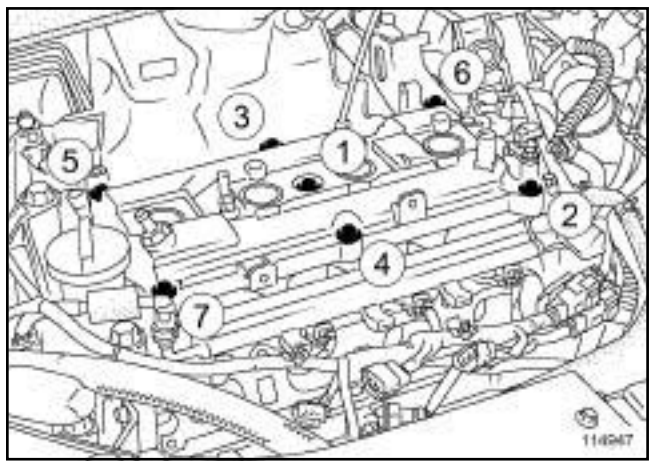
- in order, the rocker cover mounting bolts,
- the rocker cover,
- the rocker cover seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ The rocker cover seal must always be replaced.

II - REFITTING THE PART CONCERNED



❏ Fit the rocker cover.

❏ Tighten to torque and in order the **rocker cover mounting bolts (2 Nm)**.

❏ Tighten to torque and in order the **rocker cover mounting bolts (8 Nm)**.

M4R

III - FINAL OPERATION

❑ Clip:

- the atmospheric pressure sensor,
- the wiring harness.

❑ Refit the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

Rocker cover: Removal - Refitting

F4R

Special tooling required	
Mot. 1716	Removes housing with silicone seals.

Equipment required
Diagnostic tool

Tightening torques ▽	
rocker cover mounting bolts (22), (23), (20), (13)	**8 Nm**
rocker cover mounting bolts (1) to (12), (14) to (19), (21) and (24)	**12 Nm**
rocker cover mounting bolts (22), (23), (20), (13)	**12 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

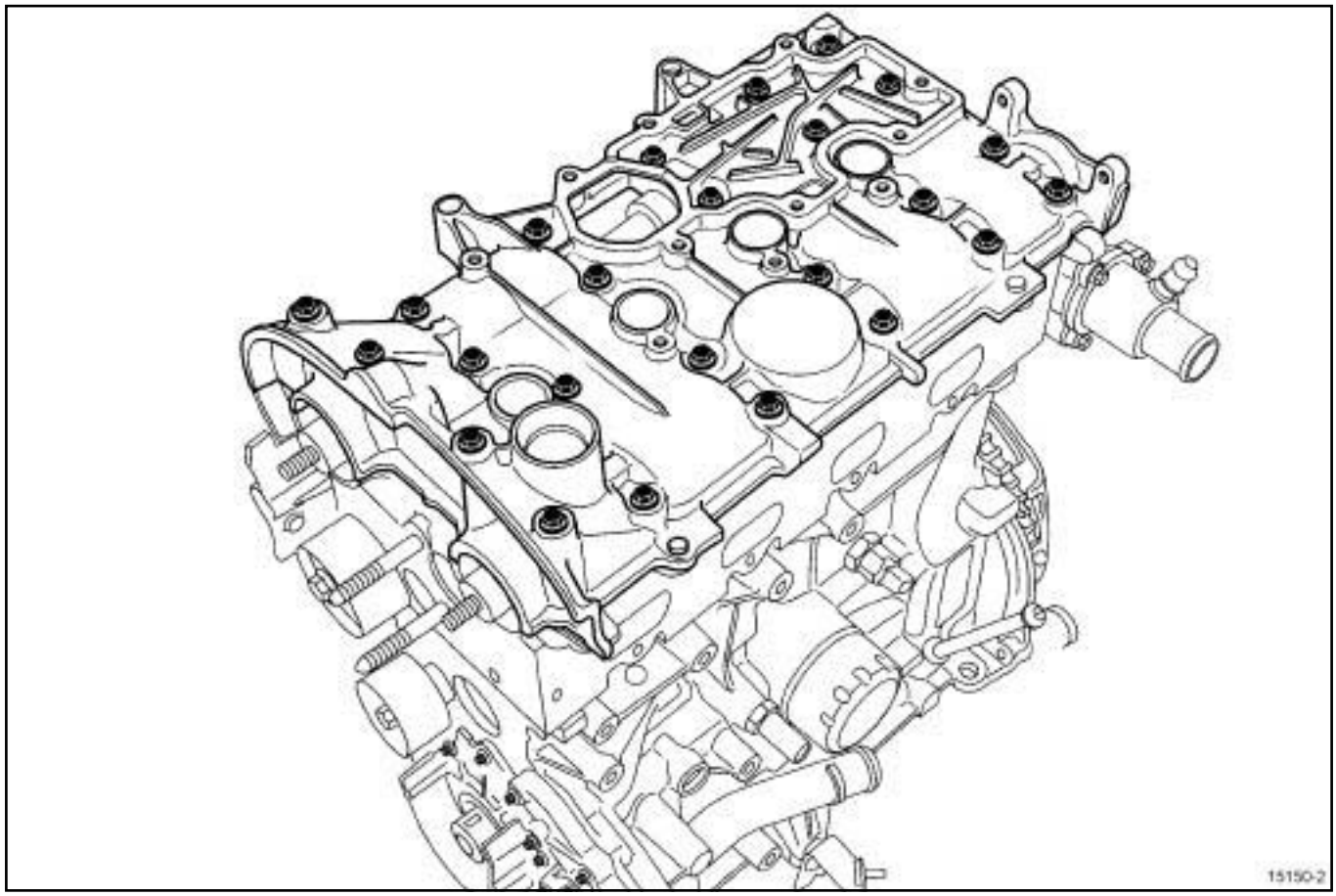
❑ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**)

❑ Remove:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the oil decanter (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the battery (see **80A, Battery, Battery: Removal - Refitting**),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel (see **35A, Wheels and tyres: Wheel: Removal - Refitting**),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED

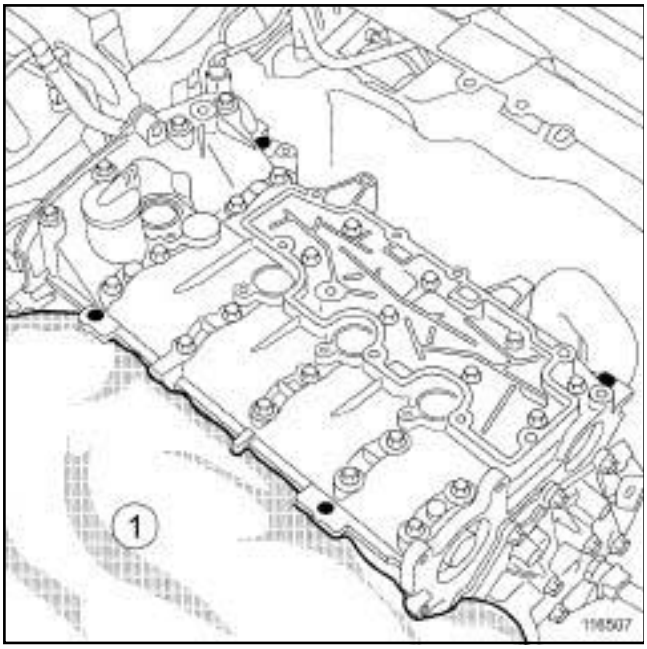


15150-2

❏ Undo all the mounting bolts from the rocker cover.

❏ Remove the rocker cover bolts.

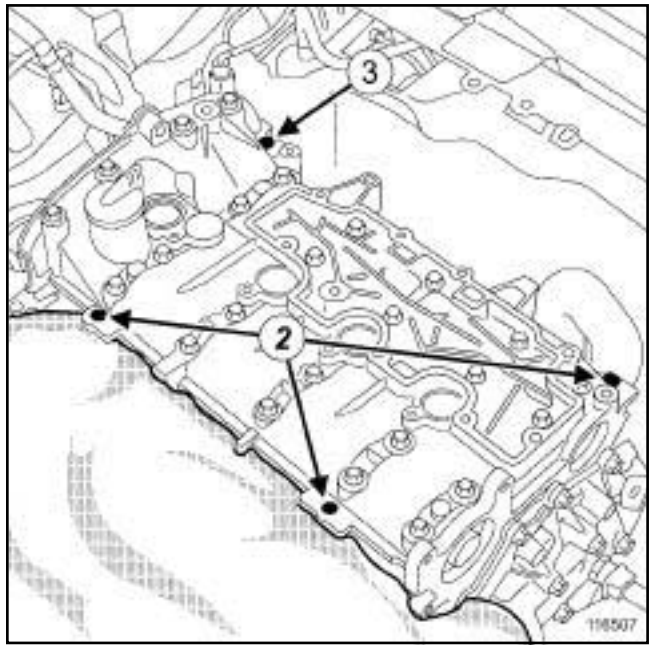
F4R



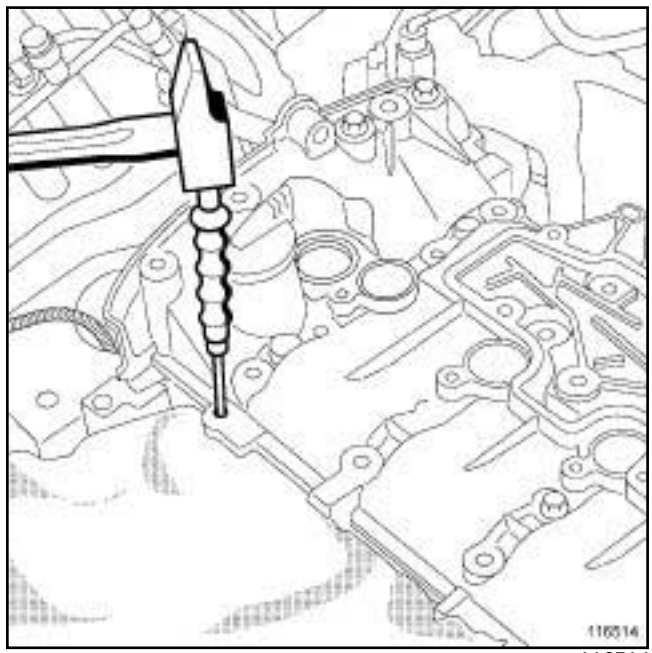
116507

❑ Using a clean cloth (**1**) , protect:

- the injector holder plate pipe openings to prevent any impurities from entering,
- the injector rail,
- the camshaft position sensor location.



116507



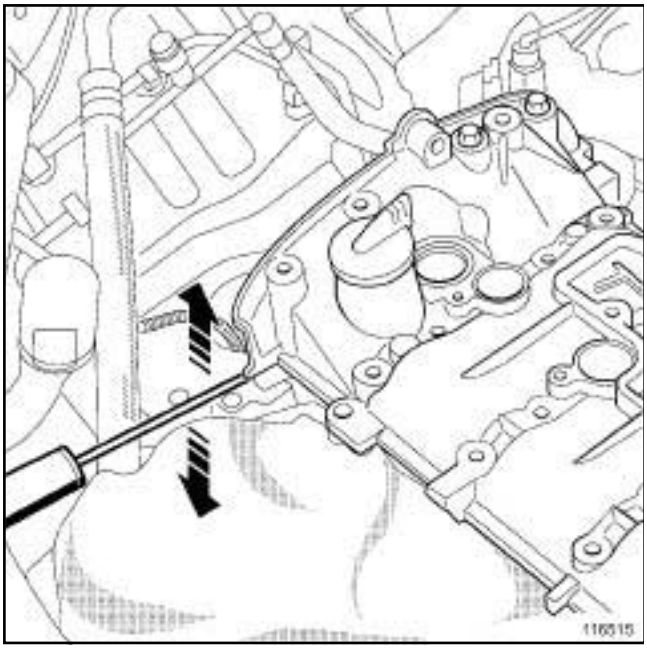
116514

❑ Remove the rocker cover centring devices (**2**) using a hammer and a drift to knock them out from above.

Note:

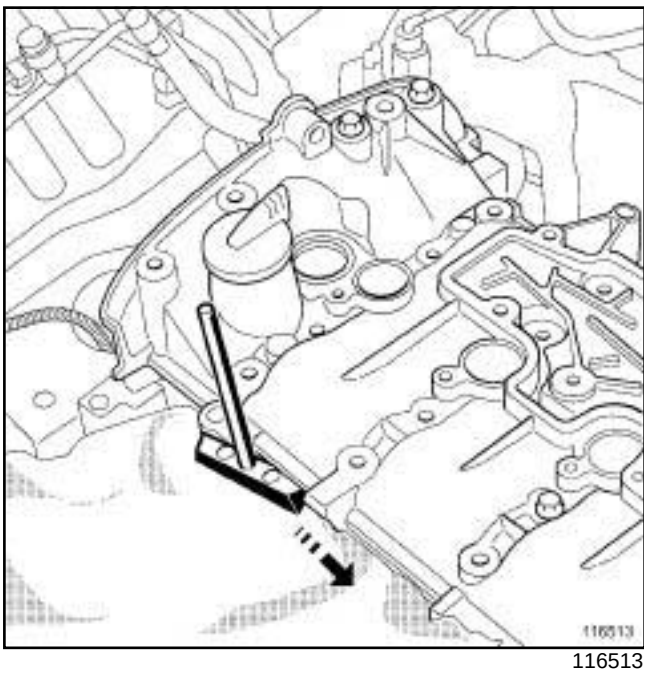
The centring device (**3**) must not be removed under any circumstances. Not following these instructions could damage the cylinder head.

F4R



116515

❑ Press a flat-blade screwdriver onto the injector holder plate and use it to gently remove the adhesive from the rocker cover.



116513

❑ Remove the rocker cover using the **(Mot. 1716)**.

❑ Remove the rocker cover.

REFITTING

I - REFITTING PREPARATION OPERATION

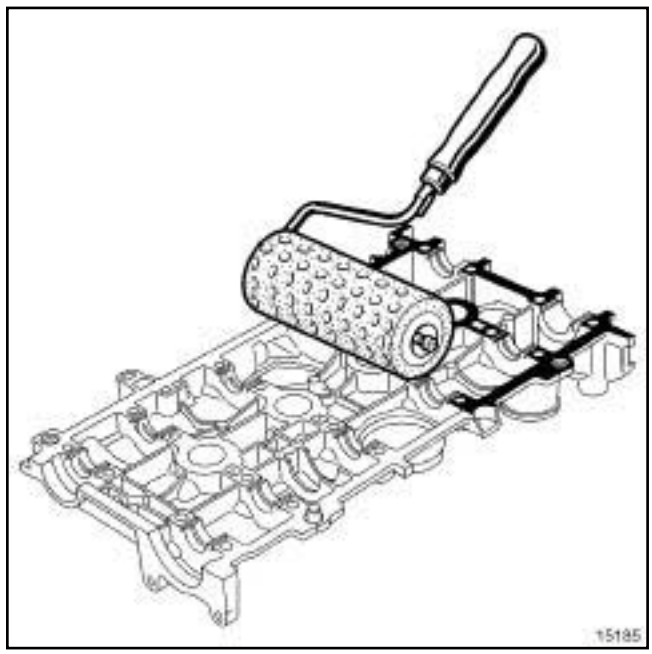
❑ Refit the centring devices on the cylinder head using a hammer and drift.

Note:

The seal faces must be clean, dry and free from grease (avoid finger marks).

Excess sealant could be squeezed out when the parts are tightened. The product-fluid mix may damage some components (engine, radiator).

II - REFITTING OPERATION FOR PART CONCERNED



15185

❑ Apply some **RESIN ADHESIVE** to the rocker cover gasket face using a stipple roller.

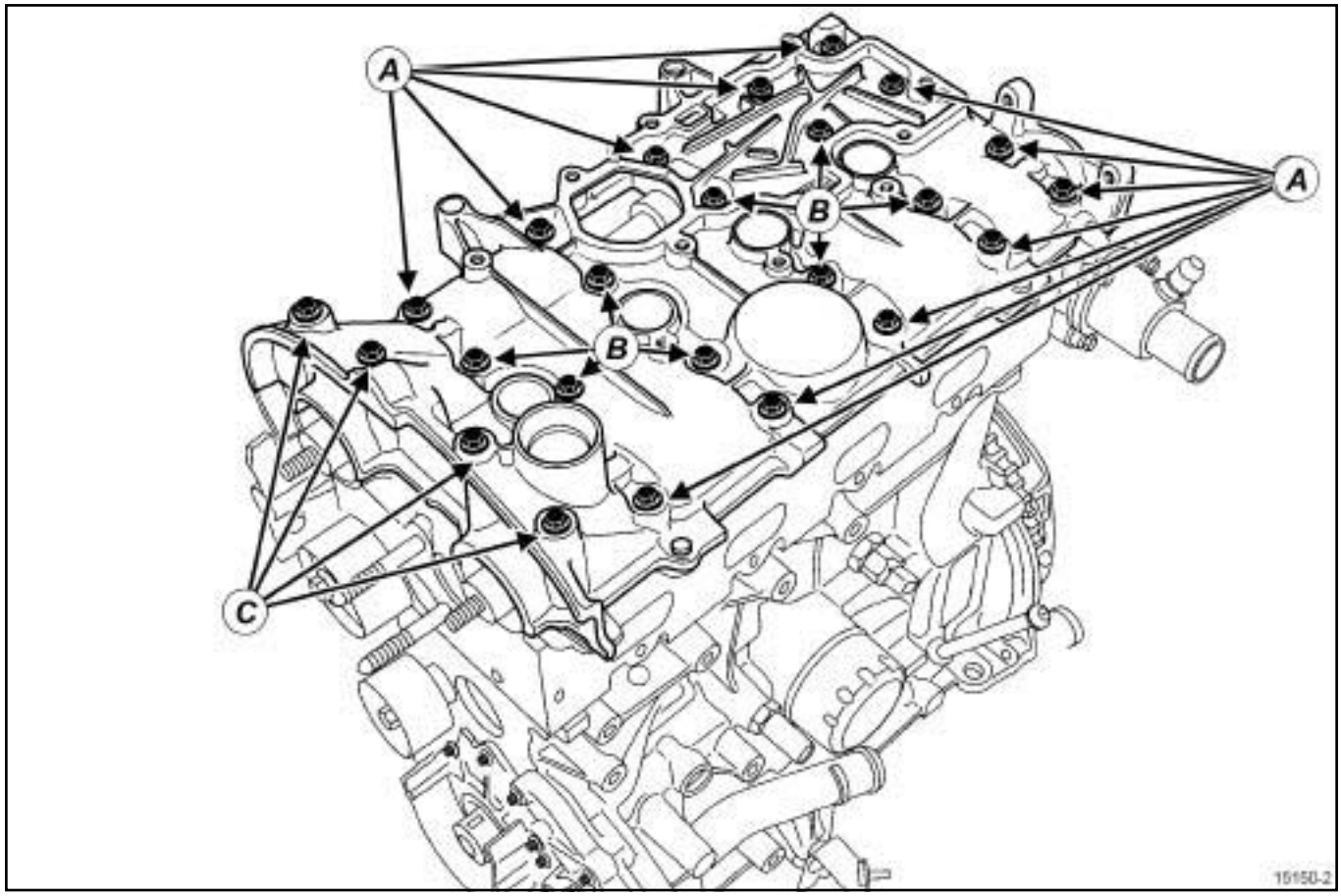
Note:

Use a cloth to remove any **RESIN ADHESIVE** on the rocker cover bearings.

❑ Fit the rocker cover.

F4R

mounting bolt location



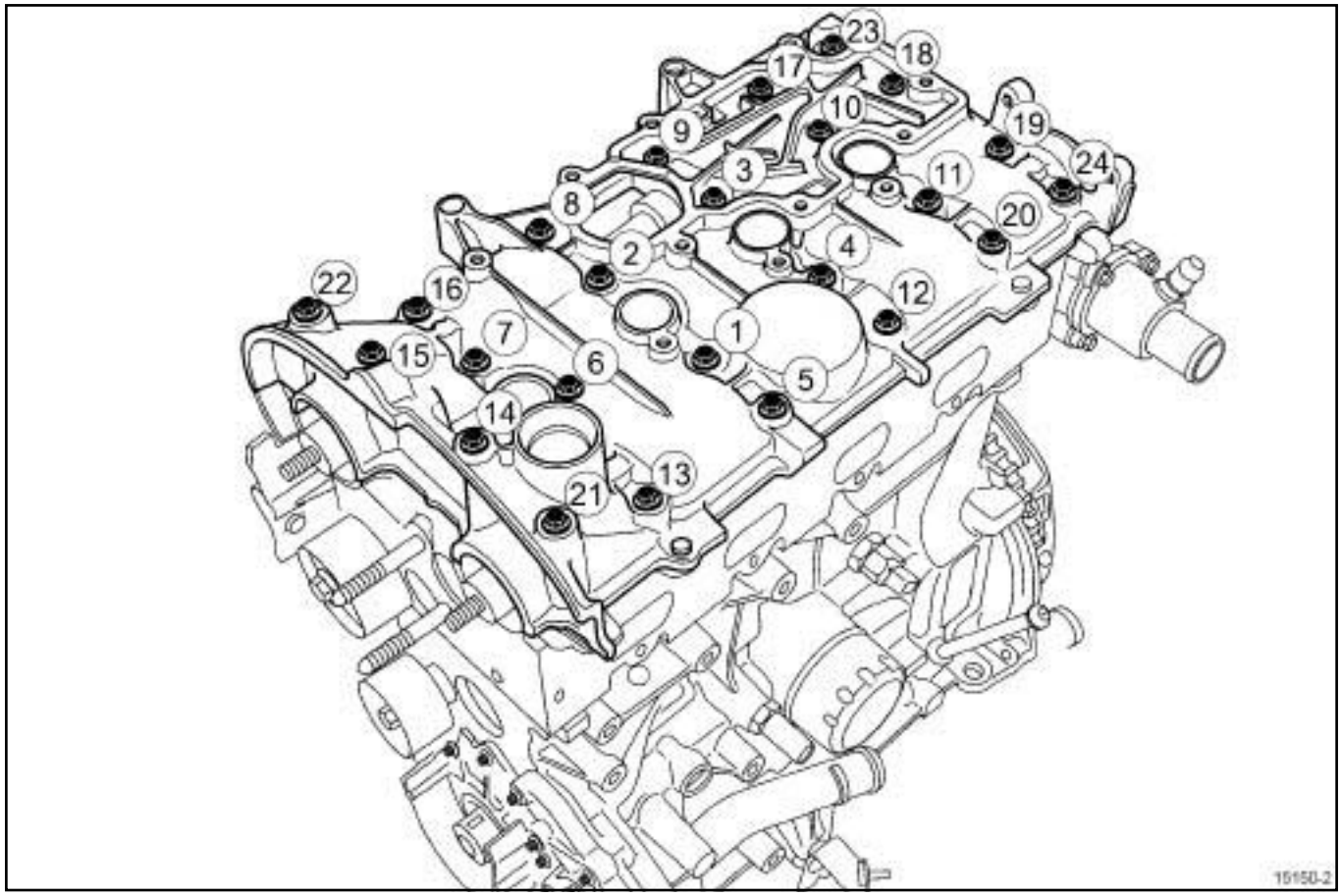
15150-2

(**A**) short bolts
(**B**) medium bolts
(**C**) long bolts

❑ Insert all the rocker cover mounting bolts.

F4R

tightening order for rocker cover mounting bolts



15150-2

❏ Tighten in order and to torque the **rocker cover mounting bolts (22), (23), (20), (13) (8 Nm)** to correctly fit the rocker cover.

❏ Tighten in order and to torque the **rocker cover mounting bolts (1) to (12), (14) to (19), (21) and (24) (12 Nm)**.

❏ Loosen rocker cover mounting bolts (22), (23), (20) and (13).

❏ Tighten in order and to torque **rocker cover mounting bolts (22), (23), (20), (13) (12 Nm)**.

III - FINAL OPERATION

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel (see **35A, Wheels and tyres: Wheel: Removal - Refitting**),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the oil decanter (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**),

❏ Using the **Diagnostic tool**, check that there are no faults stored by the injection computer and clear them if necessary.

K9K, and 750 or 752

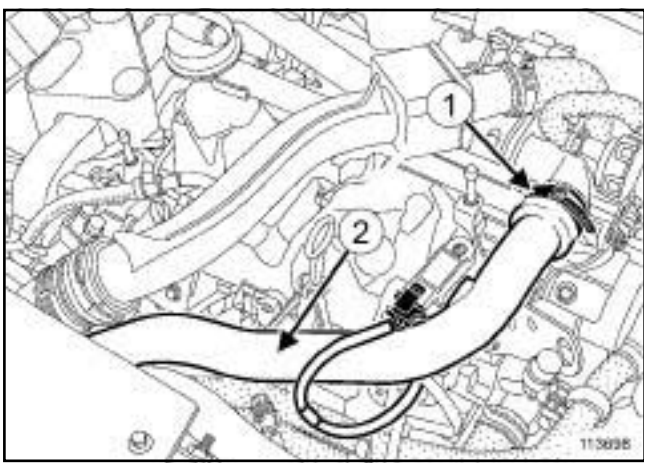
Tightening torques ▽	
rocker cover bolts	**11 N.m**
EGR solenoid valve strut nuts	**12 N.m**
injector rail protector bolt	**8 N.m**
gearbox side lifting eye bolts	**21 N.m**
nut mounting the inter-cooler inlet air pipe on the alternator	**8 N.m**
intercooler outlet air pipe clip	**5.5 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

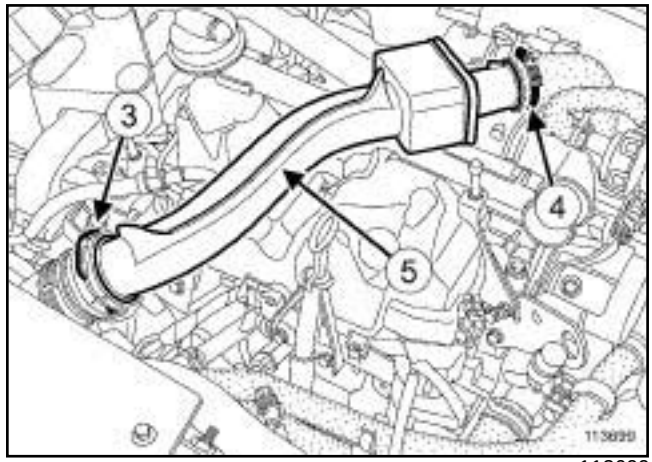
K9K, and 750



113698

❏ Undo the clip (**1**) from the intercooler outlet pipe.

❏ Move the intercooler outlet air pipe to one side (**2**) .



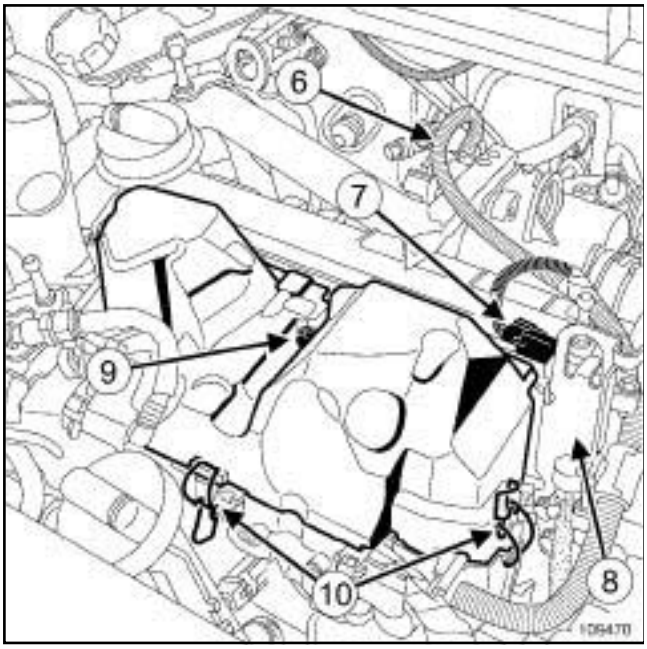
113699

❏ Remove the turbocharger outlet air pipe retaining pin (**3**) .

❏ Loosen the turbocharger outlet air pipe clip (**4**) .

❏ Remove the turbocharger air outlet pipe (**5**) .

K9K, and 750 or 752



109470

❏ Disconnect:

- the oil vapour rebreathing pipe,
- the connector (**6**) from the EGR solenoid valve,
- the air pressure sensor connector (**7**) .

❏ Unclip the breather pipe from the gearbox.

❏ Remove:

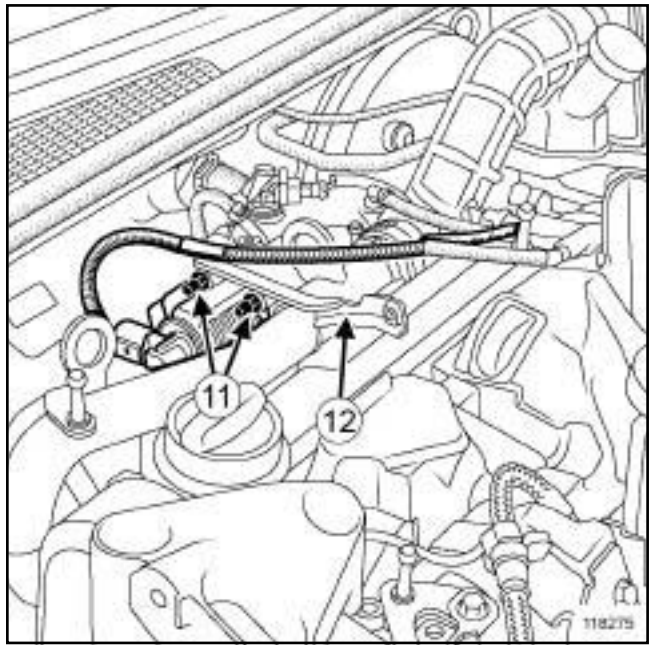
- the lifting eye bolts (**8**) on the gearbox side,
- the gearbox side lifting eye.

❏ Move the wiring harness to one side.

❏ Unclip the clips (**9**) from the injector rail protector.

❏ Remove:

- the injector rail protector bolt (**10**) ,
- the injector rail protector.

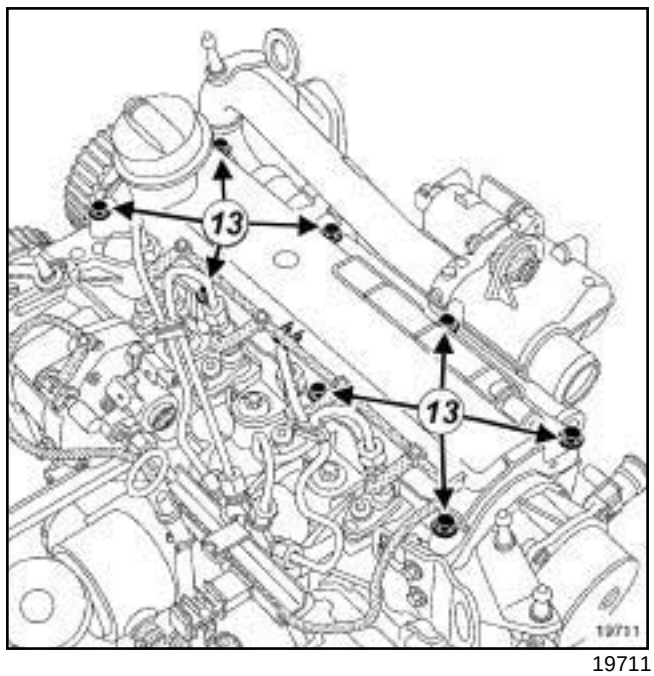


118275

❏ Remove:

- the nuts (**11**) from the EGR solenoid valve strut (**12**) ,
- the strut on the EGR solenoid valve.

II - OPERATION FOR REMOVAL OF PART CONCERNED



19711

❏ Remove:

- the rocker cover bolts (**13**) ,
- the rocker cover.

K9K, and 750 or 752

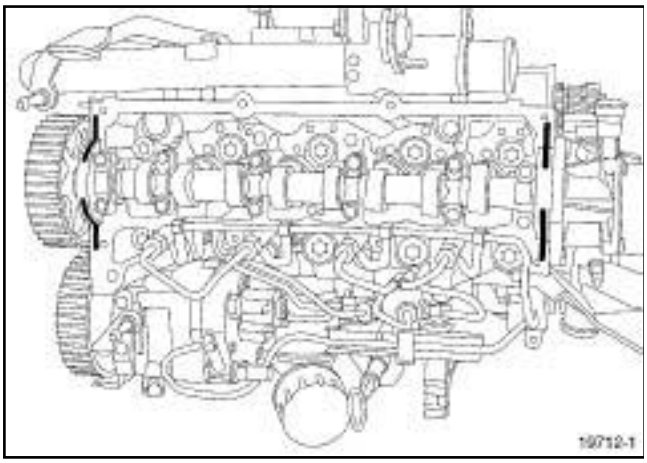
REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

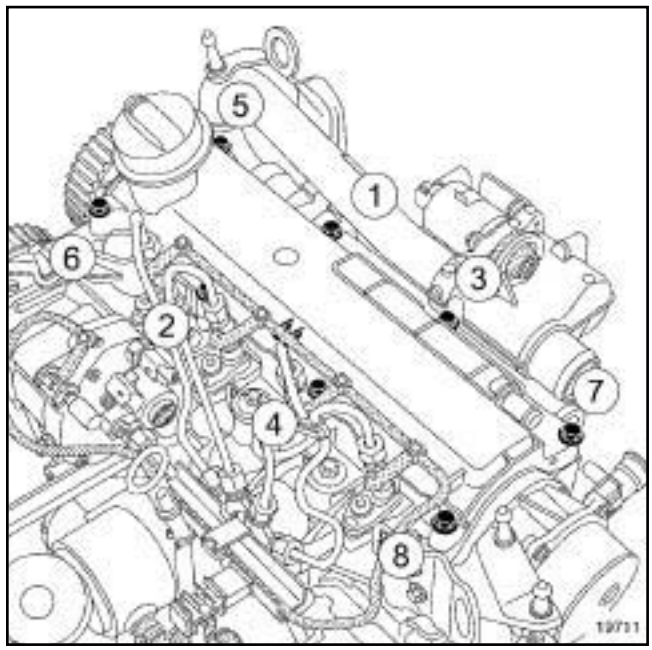
WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).



19712-1

❑ Apply **RESIN ADHESIVE**, **2 mm** in diameter.

II - REFITTING OPERATION FOR PART CONCERNED



19711

❑ Refit the rocker cover, fitted with a new gasket.

❑ Fit without tightening the rocker cover bolts.

❑ Tighten to torque and in order the **rocker cover bolts (11 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the strut on the EGR solenoid valve,
- the EGR solenoid valve strut nuts.

❑ Tighten to torque the **EGR solenoid valve strut nuts (12 N.m)**.

❑ Refit:

- the injector rail protector,
- the injector rail protector bolt.

❑ Torque tighten the **injector rail protector bolt (8 N.m)**.

❑ Clip the clips onto the injector rail protector.

❑ Refit:

- the gearbox side lifting eye,
- the gearbox side lifting eye bolts.

❑ Fit the wiring harness.

❑ Connect:

- the air pressure sensor connector.

K9K, and 750 or 752

- the exhaust gas recirculation solenoid valve connector,
- the oil vapour rebreathing pipe .

❏ Clip the breather pipe to the gearbox.

❏ Tighten to torque the **gearbox side lifting eye bolts (21 N.m)**.

K9K, and 750

❏ Loosen the intercooler inlet air pipe nut on the alternator.

❏ Fit:

- the turbocharger air outlet pipe,
- the turbocharger outlet air pipe retaining pins.

❏ Click into place the turbocharger outlet air pipe.

❏ Tighten the turbocharger outlet air pipe bolt on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❏ Fit the intercooler outlet air pipe.

❏ Torque tighten the **intercooler outlet air pipe clip (5.5 N.m)**.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

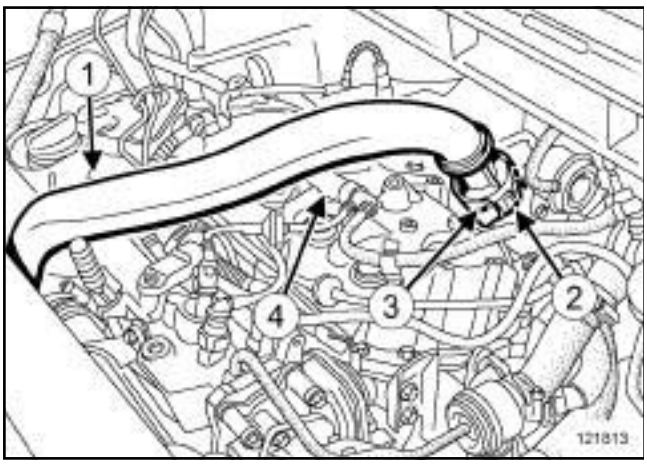
Tightening torques ▽	
rocker cover bolts (initial torque)	**5 Nm**
rocker cover bolts	**13 Nm**
heat shield bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover



121813

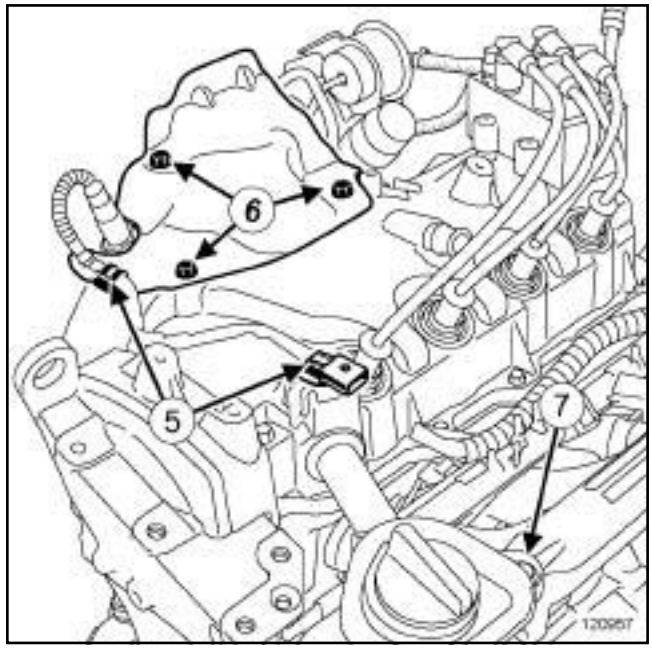
❏ Remove the bolt (**1**) from the intercooler air inlet pipe on the intake distributor.

❏ Remove the intercooler air inlet pipe clip (**2**) on the turbocharger.

> Note:
>
> If the clip (**3**) is removed from the heat resistant protector, the latter must be replaced.

❏ Move the intercooler inlet air pipe to one side.

❏ Disconnect the oil vapour rebreathing circuit union (**4**) .



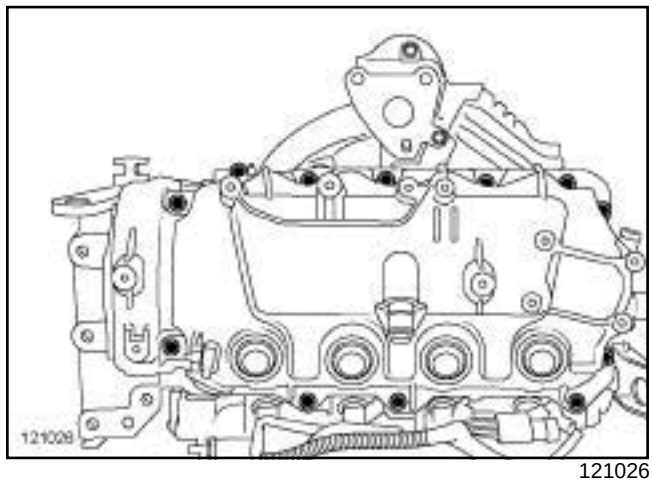
120957

❏ Unpick the wiring harness from the upstream oxygen sensor at (**5**) .

❏ Remove:

- the bolts (**6**) from the heat shield,
- the heat shield,
- the filler neck bolt (**7**) ,
- the filler neck,
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



121026

❏ Remove:

- the rocker cover bolts,

D4F, and 784 or 786

- the rocker cover,
- the rocker cover gasket.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Clean the joint faces using **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) to dissolve the part of the seal which is still attached.

WARNING

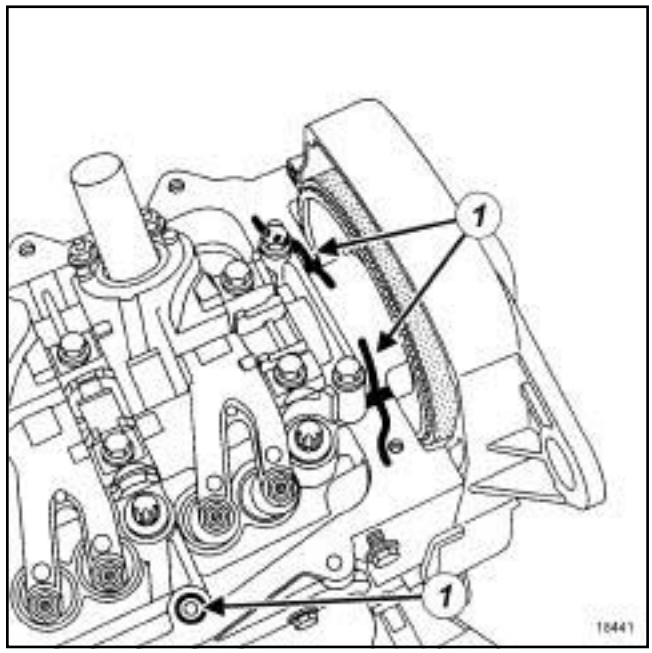
Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

❑ Replace the rocker cover seal.

II - REFITTING OPERATION FOR PART CONCERNED



18441

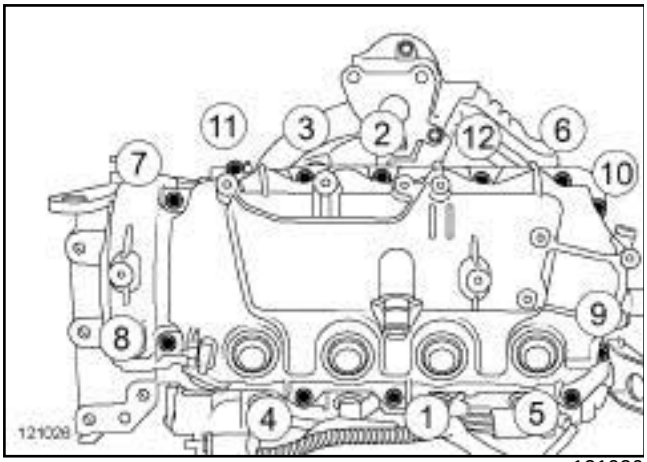
❑ Apply beads (**1**) of **MASTIXO** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) around the 4 rocker cover bolts (lower bolts, exhaust side) and on camshaft bearing **no.5**.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

❑ Fit the new rocker cover seal, starting with bearing **No. 5**, then gradually insert the seal studs as the rocker cover fits into the groove.

D4F, and 784 or 786



121026

❏ Refit:

- the rocker cover fitted with a new seal,
- the rocker cover bolts.

❏ Pretighten to torque and in order the **rocker cover bolts (initial torque) (5 Nm)**.

❏ Torque tighten in order the **rocker cover bolts (13 Nm)**.

III - FINAL OPERATION.

❏ Remove:

- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the filler neck,
- the filler neck bolt,
- the heat shield,
- the heat shield bolts.

❏ Torque tighten the **heat shield bolts (8 Nm)**.

❏ Connect the oil vapour rebreathing circuit union.

❏ Clip the upstream oxygen sensor wiring harness into place.

❏ Refit the intercooler air inlet pipe.

❏ Clip the intercooler air inlet pipe onto the turbocharger.

❏ Refit the intercooler air inlet pipe bolt on the intake distributor.

❏ Refit the engine cover.

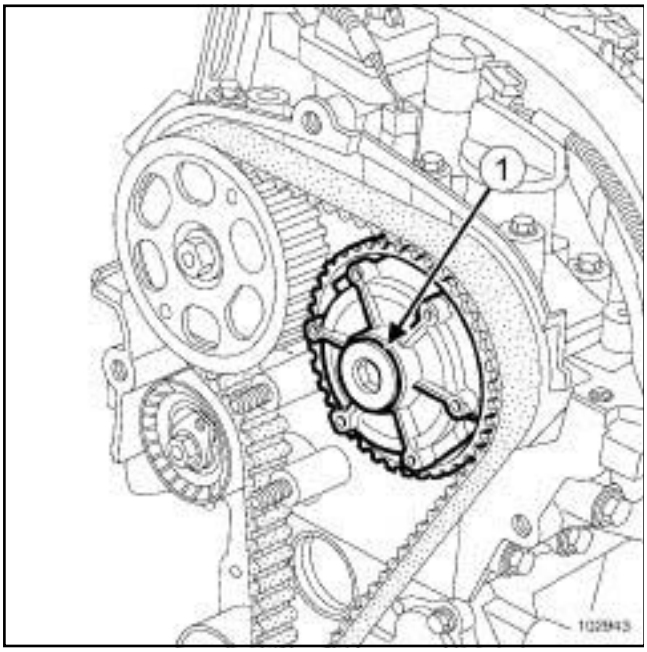
❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M

I - SPECIAL NOTES

Its role is to modify the valve timing.

To improve cylinder filling at all engine speeds, the engine is fitted with an inlet camshaft dephaser (**1**) .



102943

Dephasing at the moment when the inlet valves close optimises filling according to engine speed. Torque at midrange engine speed and output at high engine speed are improved.

Leaving the inlet valves open for longer at high engine speed allows the mixture to be continually admitted thanks to its high speed.

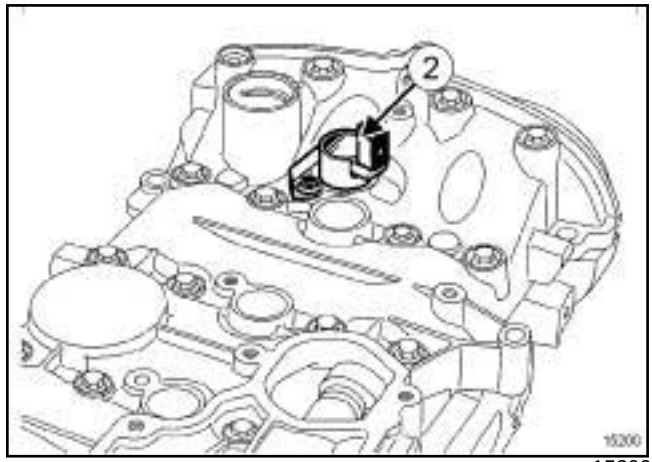
However, at lower engine speeds the gases do not have a high level of inertia. It is therefore preferable to close the inlet valves earlier to avoid incorrect filling and a loss of torque due to the reflux of fresh gases.

The higher the engine speed, the later the inlet valves must be closed.

II - OPERATION AND PROGRAMMING

The oil is supplied to the dephaser by a solenoid valve (**2**) located on the cylinder head.

The supply by a variable OCR signal (amplitude **12 V**, frequency **250 Hz**) enables oil to be distributed to the mechanism and the dephaser angle to be adjusted.

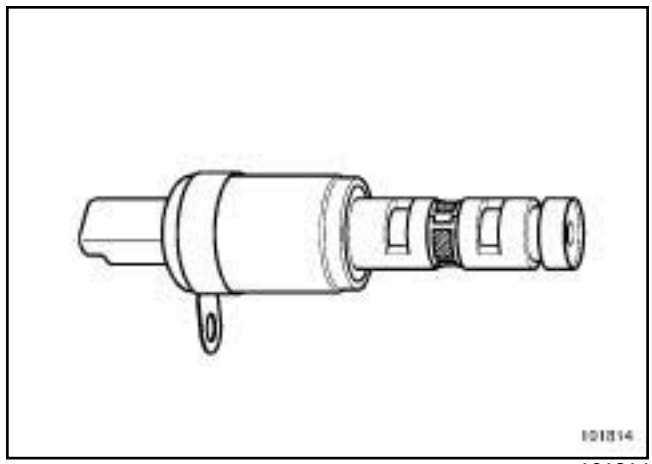


15200

The operation of the camshaft dephaser varies continuously.

The computer supplies the solenoid valve (**2**) with a variable opening cyclic ratio proportional to the desired dephasing.

Dephasing is varied continuously from **0 to 43°** of the crankshaft.



101814

The camshaft dephaser control solenoid valve is controlled if the following conditions are met:

- no speed sensor fault
- no camshaft position sensor fault
- no injection system faults,
- after the engine has started,
- outside idling speed and no load,
- threshold of mapping according to load and engine speed reached,
- coolant temperature between **10 and 120°C**,
- engine oil temperature too high.

Camshaft dephaser: Function

K4M

Defect modes:

- dephaser returns to initial position,
- zero dephasing.

WARNING

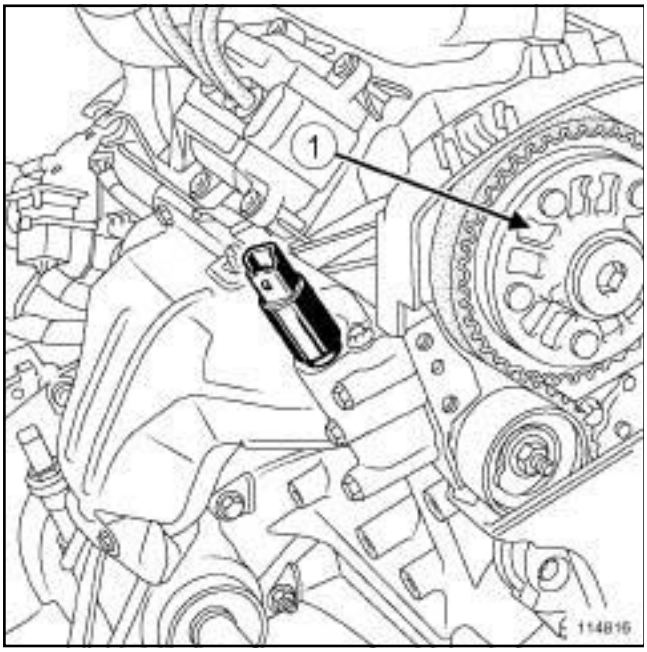
A solenoid valve jammed open causes an unstable idle speed, manifold pressure which is too high at idle speed and significant engine operating noise.

D4F, and 764

I - SPECIAL NOTES

Its role is to modify the valve timing.

To improve cylinder filling at all engine speeds, the engine is fitted with a camshaft dephaser (**1**) .



114816

Dephasing at the moment when the inlet valves close optimises filling according to engine speed. Torque at midrange engine speed and output at high engine speed are improved.

Leaving the inlet valves open for longer at high engine speed allows the mixture to be continually admitted thanks to its high speed.

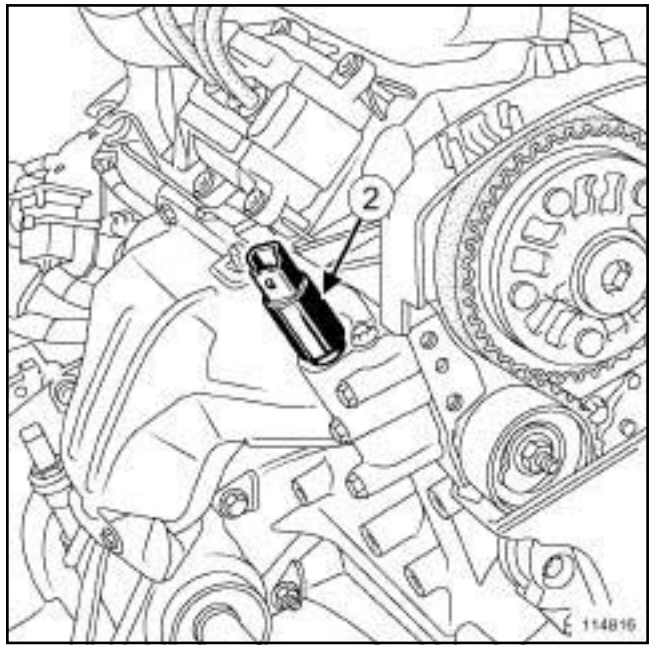
However, at lower engine speeds the gases do not have a high level of inertia. It is therefore preferable to close the inlet valves earlier to avoid incorrect filling and a loss of torque due to the reflux of fresh gases.

The higher the engine speed, the later the inlet valves must be closed.

II - OPERATION AND PROGRAMMING

The oil is supplied to the dephaser by a solenoid valve (**2**) located on the cylinder head.

The supply by a variable OCR signal (amplitude **12 V**, frequency **250 Hz**) enables oil to be distributed to the mechanism and the dephaser angle to be adjusted.

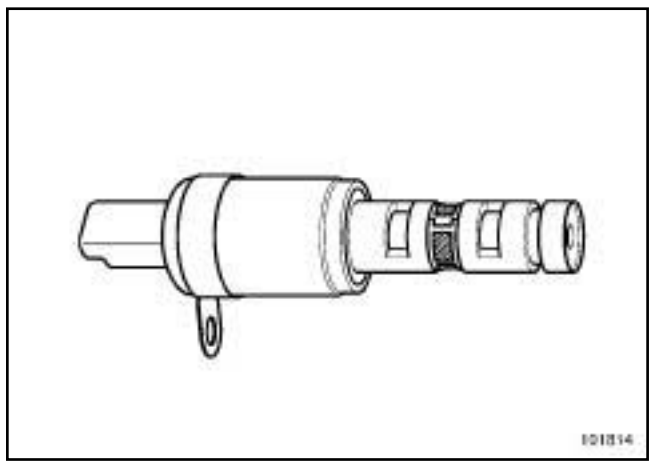


114816

The operation of the camshaft dephaser varies continuously.

The computer supplies the solenoid valve (**2**) with a variable opening cyclic ratio proportional to the desired dephasing.

Dephasing is varied continuously from **0 to 43°** of the crankshaft.



101814

The camshaft dephaser control solenoid valve is controlled if the following conditions are met:

- no speed sensor fault
- no camshaft position sensor fault
- no injection system faults,
- after the engine has started,
- outside idling speed and no load,

D4F, and 764

- threshold of mapping according to load and engine speed reached,
- coolant temperature between **10 and 120°C**,
- engine oil temperature too high.

Defect modes:

- dephaser returns to initial position,
- zero dephasing.

Note:

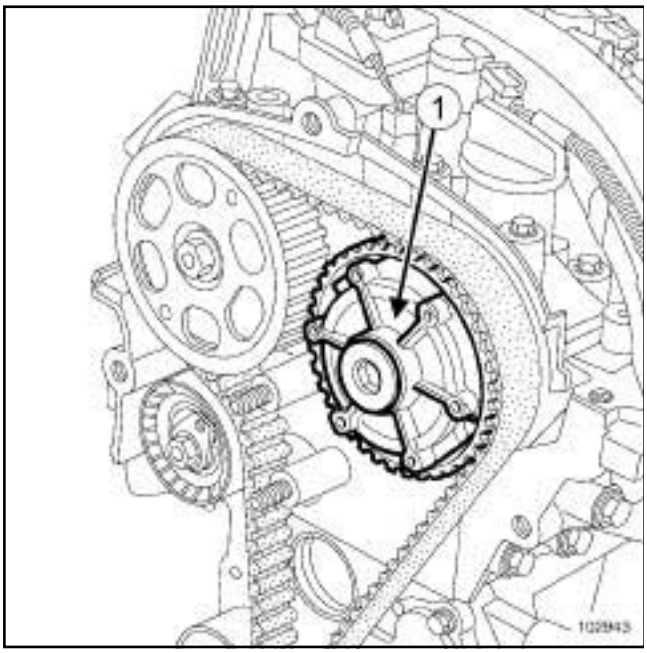
A solenoid valve jammed in the open position causes:

- rough idle speed,
- high pressure in the intake distributor,
- significant engine operating noises.

K4M

I - SPECIAL NOTES

Its role is to modify the valve timing.



102943

To improve cylinder filling at all engine speeds, the engine is fitted with an inlet camshaft dephaser (**1**) .

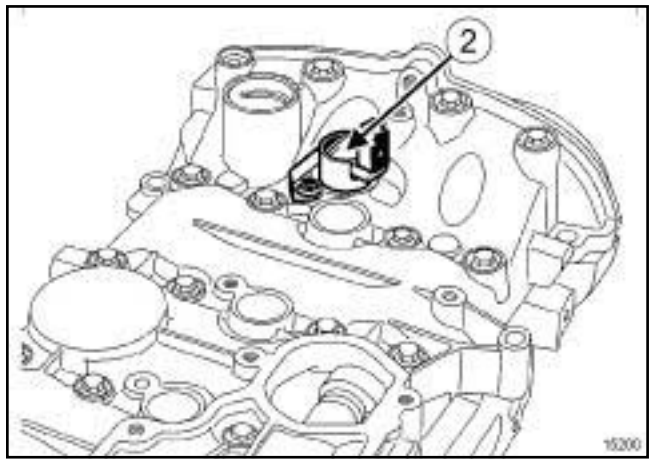
Dephasing at the moment when the inlet valves close optimises filling according to engine speed. Midrange torque and output are improved.

Leaving the inlet valves open for longer at high engine speed allows the mixture to be continually admitted thanks to its high speed.

However, at lower engine speeds the gas has low inertia. It is therefore preferable to close the inlet valves earlier to avoid incorrect filling and a loss of torque due to the reflux of cold gases.

The higher the engine speed, the later the inlet valves must be closed.

II - OPERATION AND PROGRAMMING



15200

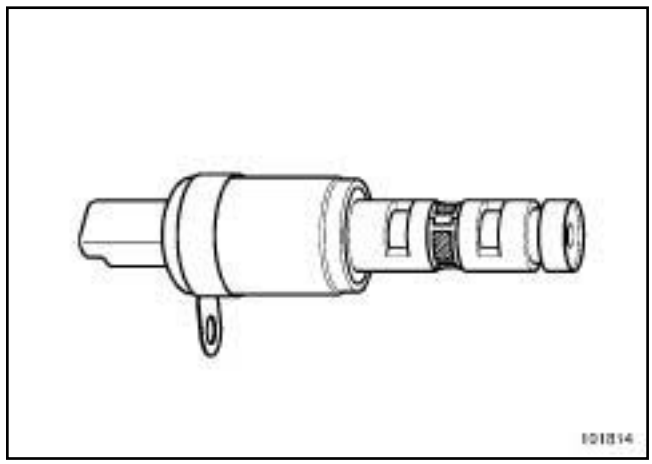
The oil is supplied to the dephaser by a solenoid valve (**2**) located on the cylinder head.

The supply by a variable OCR signal (amplitude **12 V**, frequency **250 Hz**) enables oil to be distributed to the mechanism and the dephaser angle to be adjusted.

The operation of the camshaft dephaser varies continuously.

The computer supplies the solenoid valve (**2**) with a variable opening cyclic ratio proportional to the desired dephasing.

Dephasing is varied continuously from **0 to 43°** of the crankshaft.



101814

The camshaft dephaser control solenoid valve is controlled if the following conditions are met:

- no speed sensor fault
- no camshaft position sensor fault
- no injection system faults,
- after the engine has started,
- outside idling speed and no load,

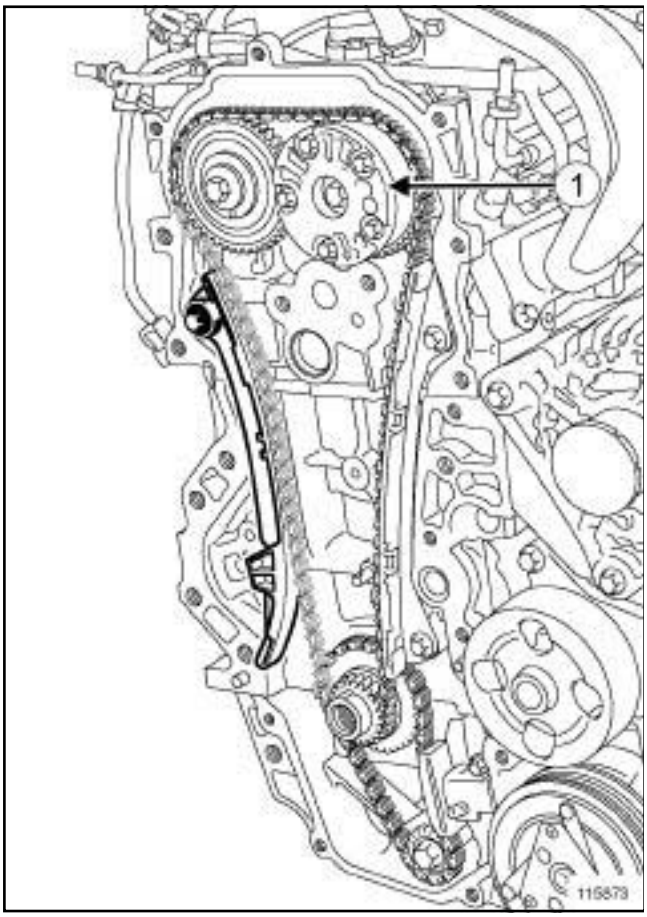
K4M

- threshold of mapping according to load and engine speed reached,
- coolant temperature between **10 and 120°C**,

M4R

I - SPECIAL NOTES

The camshaft dephaser modifies the valve timing.



115873

To improve cylinder filling at all engine speeds, the engine is fitted with an inlet camshaft dephaser (**1**) .

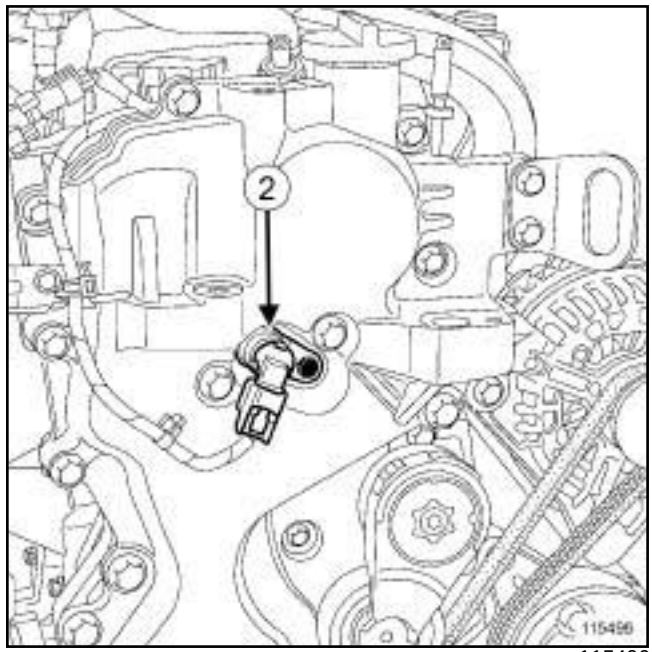
Dephasing at the moment when the inlet valves close optimises filling according to engine speed. Torque at midrange engine speed and output at high engine speed are improved.

Leaving the inlet valves open for longer at high engine speed allows the mixture to be continually admitted thanks to its high speed.

However, at lower engine speeds the gases do not have a high level of inertia. It is therefore preferable to close the inlet valves earlier to avoid incorrect filling and a loss of torque due to the reflux of fresh gases.

The higher the engine speed, the later the inlet valves must be closed.

II - OPERATION AND PROGRAMMING



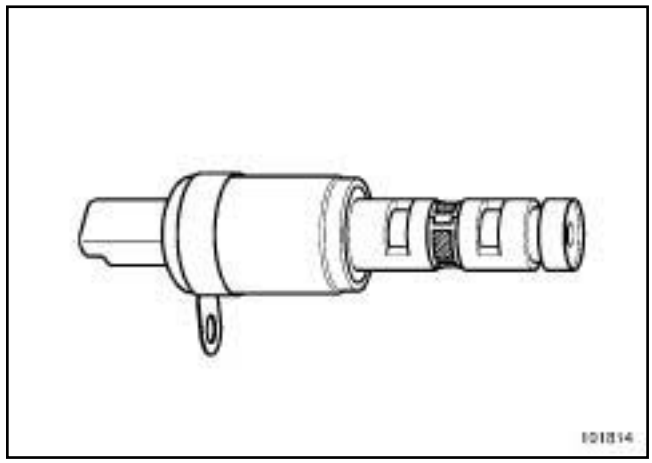
115496

The oil is supplied to the dephaser by a solenoid valve (**2**) located on the timing cover.

Supply by a variable opening cyclic ratio signal enables oil to be distributed to the mechanism and the dephaser angle to be adjusted.

The operation of the camshaft dephaser varies continuously.

The computer supplies the solenoid valve with a variable opening cyclic ratio proportional to the desired dephasing.



101814

The camshaft dephaser control solenoid valve is controlled if the following conditions are met:

- no engine speed sensor fault
- no camshaft position sensor fault
- no injection system faults,

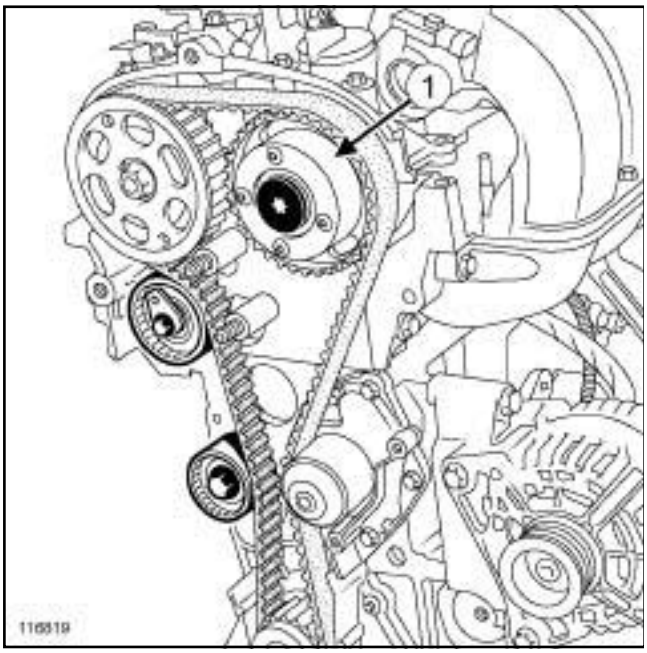
M4R

- after the engine has started,
- outside idling speed and no load,
- threshold of mapping according to load and engine speed reached,
- threshold of mapping according to the coolant temperature.

F4R

I - SPECIAL NOTES

The camshaft dephaser modifies the valve timing.



116819

To improve cylinder filling at all engine speeds, the engine is fitted with an inlet camshaft dephaser (**1**) .

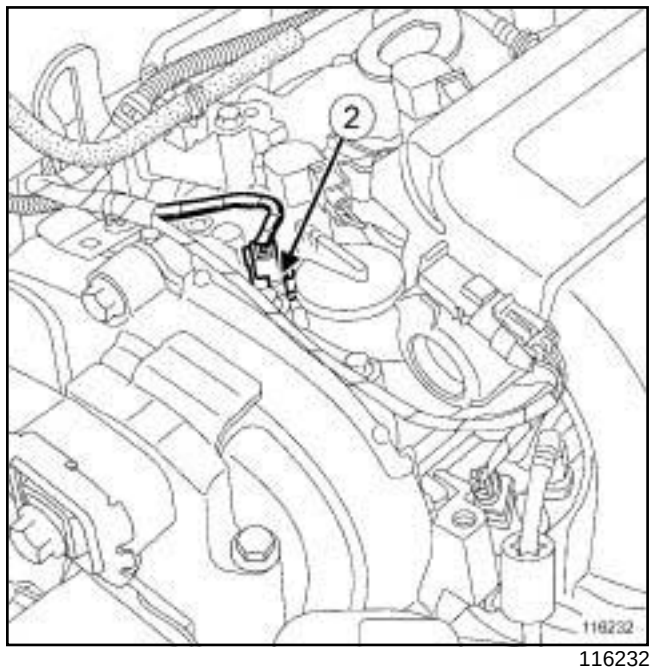
Dephasing at the moment when the inlet valves close optimises filling according to engine speed. Torque at midrange engine speed and output at high engine speed are improved.

Leaving the inlet valves open for longer at high engine speed allows the mixture to be continually admitted thanks to its high speed.

However, at lower engine speeds the gases do not have a high level of inertia. It is therefore preferable to close the inlet valves earlier to avoid incorrect filling and a loss of torque due to the reflux of fresh gases.

The higher the engine speed, the later the inlet valves must be closed.

II - OPERATION AND PROGRAMMING



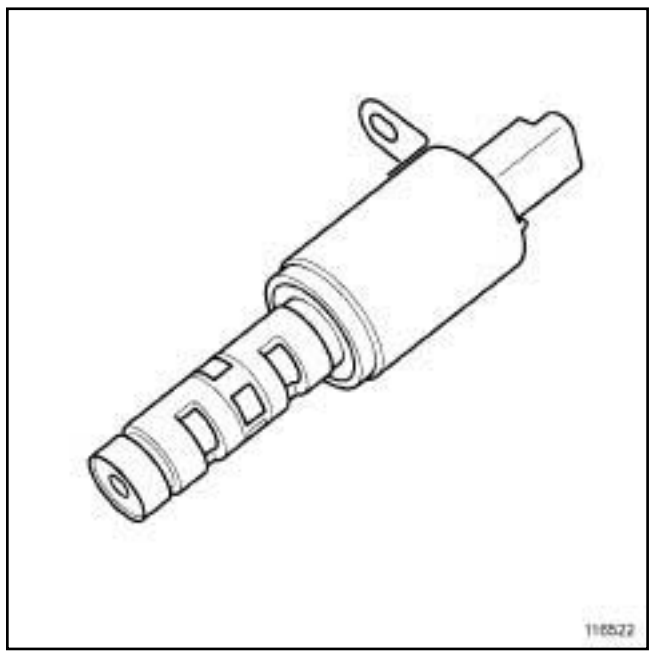
116232

The oil is supplied to the dephaser by a solenoid valve (**2**) located on the timing cover.

Supply by a variable opening cyclic ratio signal enables oil to be distributed to the mechanism and the dephaser angle to be adjusted.

The operation of the camshaft dephaser varies continuously.

The computer supplies the solenoid valve with a variable opening cyclic ratio proportional to the desired dephasing.



116522

Camshaft dephaser: Function

F4R

The camshaft dephaser control solenoid valve is controlled if the following conditions are met:

- no speed sensor fault
- no camshaft position sensor fault
- no injection system faults,
- after the engine has started,
- outside idling speed and no load,
- threshold of mapping according to load and engine speed reached,
- threshold of mapping according to the coolant temperature.

Camshaft dephaser: Removal - Refitting

M4R

- The engine and gearbox assembly must be removed to remove/refit the camshaft dephaser (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-112**) .
- For the camshaft dephaser removal-refitting procedure (see) (Technical Note 6020A, 10A, Engine and peripherals) and (see) (Technical Note 6020A, 10A, Engine and peripherals).

K4M

Special tooling required	
Mot. 1490-01	For locking and adjusting the camshaft pulleys.

Tightening torques ▽	
camshaft dephaser pulley bolt	**100 N.m**
exhaust camshaft pulley nut	**30 N.m + 84° ± 4°**
blanking cover of the camshaft dephaser	**15 N.m ± 3 N.m**

REMOVAL

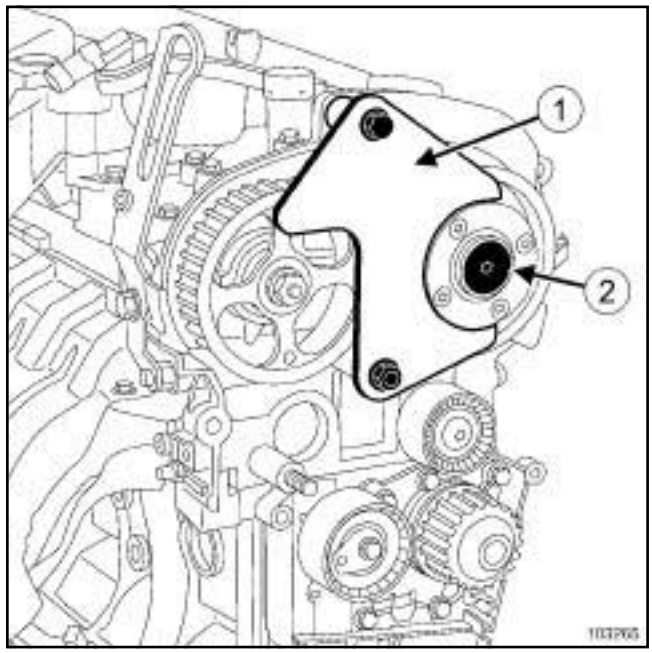
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery)
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

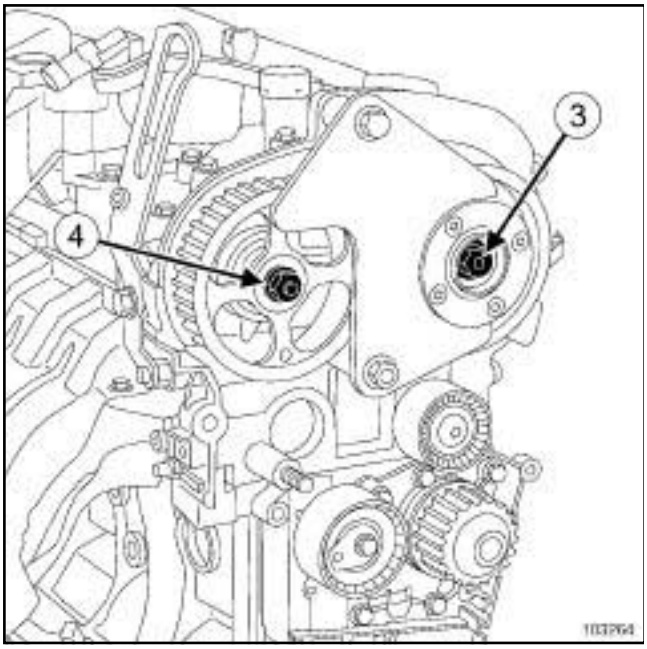
II - OPERATION FOR REMOVAL OF PART CONCERNED



103265

❏ Position the **(Mot. 1490-01)** (**1**) .

❏ Remove the camshaft dephaser blanking cover (**2**) .



103264

❑ Remove:

- the bolt (**3**) from the camshaft pulley dephaser,
- the exhaust camshaft pulley nut (**4**) ,
- the **(Mot. 1490-01)**,
- the exhaust camshaft pulley.
- the camshaft dephaser pulley.

REFITTING

I - REFITTING PREPARATION OPERATION

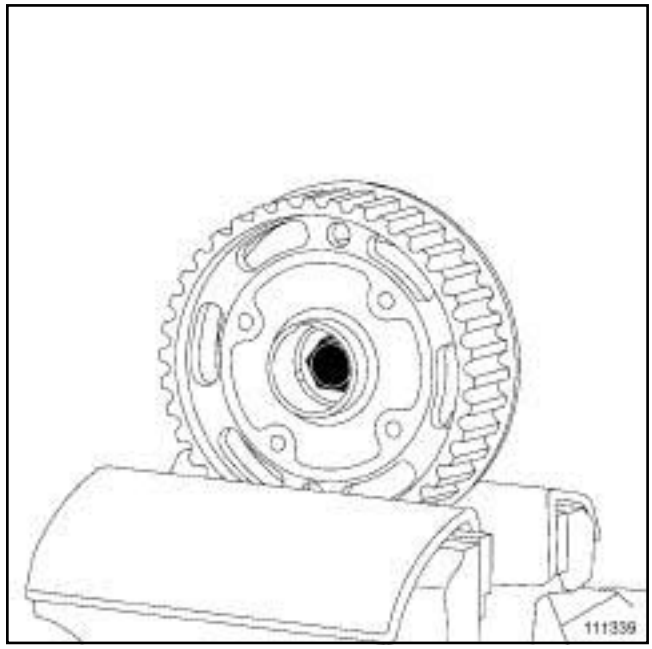
❑ **parts always to be replaced: Exhaust camshaft pulley nut**.

❑ **parts always to be replaced: Camshaft dephaser sprocket bolt**.

WARNING
Failure to adhere to the following procedure may cause the timing belt to be incorrectly timed.

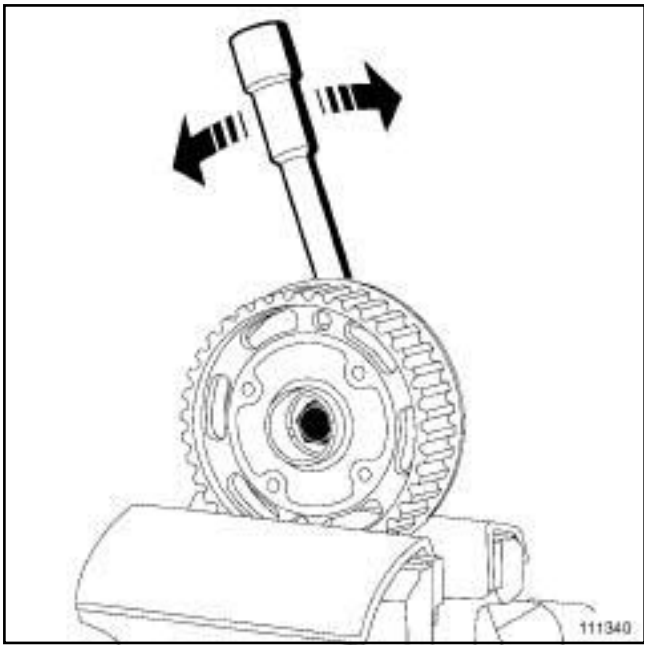
❑ If fitting a new camshaft dephaser, check that it is locked by following the procedure described below.

❑ Fit a stud to the camshaft dephaser hub and tighten it.


111339

❑ Place the camshaft dephaser in a vice fitted with jaws.

K4M



111340

❏ Mechanically lock the camshaft dephaser by rotating it to the left or right using a tubular hexagon box spanner.

❏ Check that the camshaft dephaser is correctly locked (no rotation of the hub in relation to the wheel to the left or right).

❏ If there is a rotation of the hub in relation to the wheel, the camshaft dephaser is faulty and must be replaced.

❏ Degrease the end of the inlet camshaft (timing end) and clean the bores and bearing faces of the camshaft dephaser.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the exhaust camshaft pulley.
- the camshaft dephaser pulley,
- a new nut on the exhaust camshaft pulley,
- a new bolt on the camshaft dephaser pulley.

❏ Position the tool **(Mot. 1490-01)** on the camshaft pulleys.

❏ Tighten to torque:

- the **camshaft dephaser pulley bolt (100 N.m)**,
- the **exhaust camshaft pulley nut (30 N.m + 84° ± 4°)**.

❏ Fit a new blanking cover on the camshaft dephaser.

❏ Torque tighten the **blanking cover of the camshaft dephaser (15 N.m ± 3 N.m)**.

❏ Remove the **(Mot. 1490-01)**.

III - FINAL OPERATION

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery)
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine undertray.

F4R

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.
Mot. 1496	Camshaft timing tool.
Mot. 1054	TDC setting pin.
Mot. 1801	Camshaft sprocket locking tool F4 engines.
Mot. 1509-01	Adapter kit for tool Mot.1509 or Mot.1801

Tightening torques ▽	
toothed sprocket nuts	**80 Nm**
old inlet camshaft dephaser bolt	**30 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the engine undertray.

❑ Fit the timing end lifting eye (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

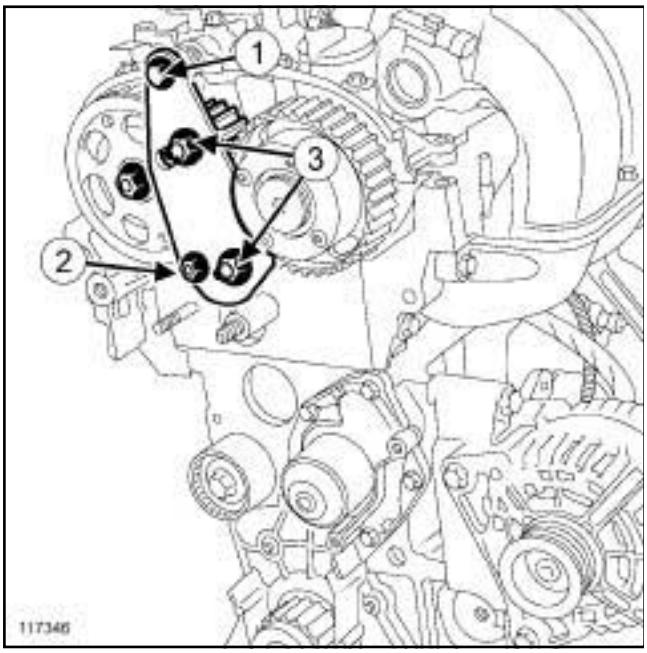
❑ Fit the **(Mot. 1453)** fitted with the **(Mot. 1453-01)**.

❑ Remove the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



117346

❏ Check that camshaft setting tool **(Mot. 1496)** is still in place.

❏ Check that the TDC pin **(Mot. 1054)** is still in place and that the crankshaft is set.

❏ Fit:

- the **(Mot. 1801)** fitted with the sprocket **(Mot. 1509-01)**,
- the upper bolt (**1**) on the upper timing cover and the collar nut (**2**) .

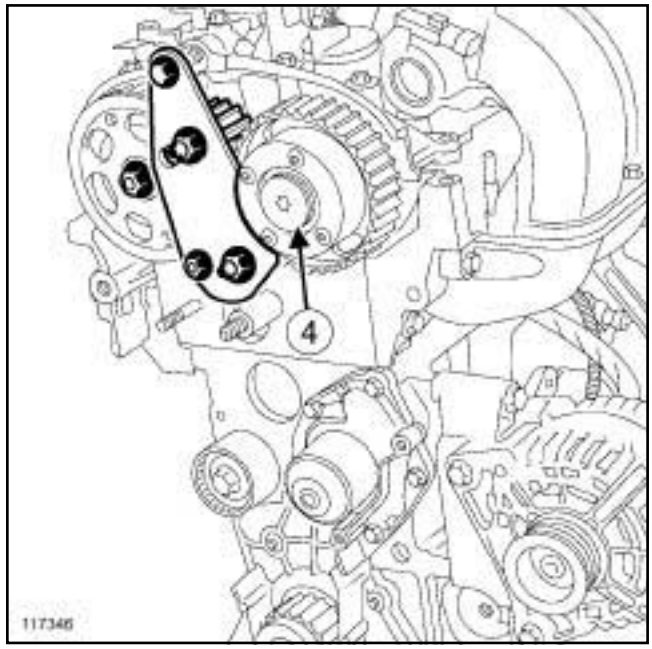
❏ Tighten the upper bolt on the upper timing cover and the collar nut.

❏ Bring the toothed sprockets of the tool into contact with the camshaft pulleys.

❏ Torque tighten the **toothed sprocket nuts (80 Nm)** (**3**) .

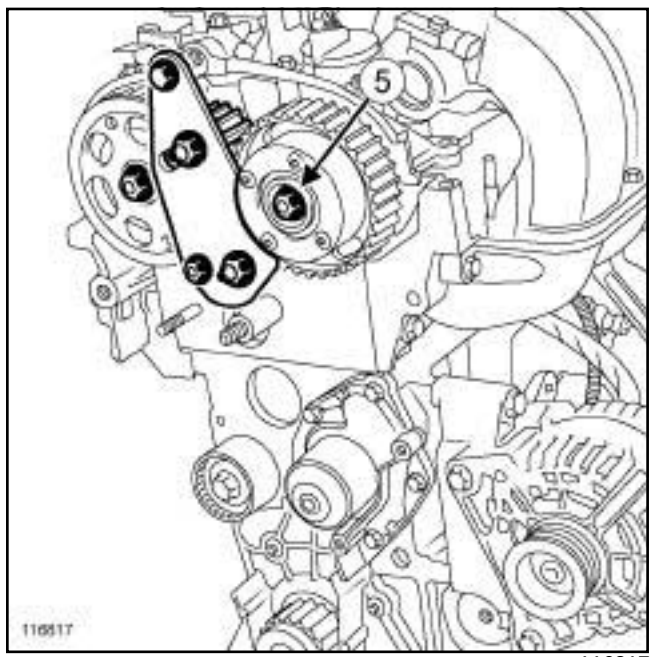
Note:

Beware of oil running out when removing the blanking cover from the camshaft dephaser and when removing the camshaft dephaser.



117346

❏ Remove the inlet camshaft dephaser blanking cover (**4**) .



116817

❏ Remove:

- the inlet camshaft dephaser bolt (**5**) ,
- the **(Mot. 1801)** fitted with the sprocket **(Mot. 1509-01)**,
- the inlet camshaft dephaser.

F4R

REFITTING

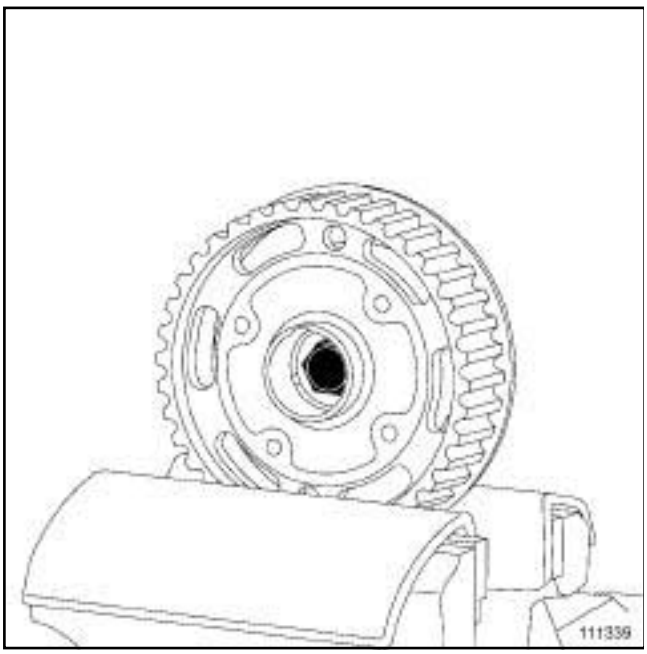
I - REFITTING PREPARATIONS OPERATION

❑

WARNING
Failure to observe the following procedure can lead to the destruction of the engine.

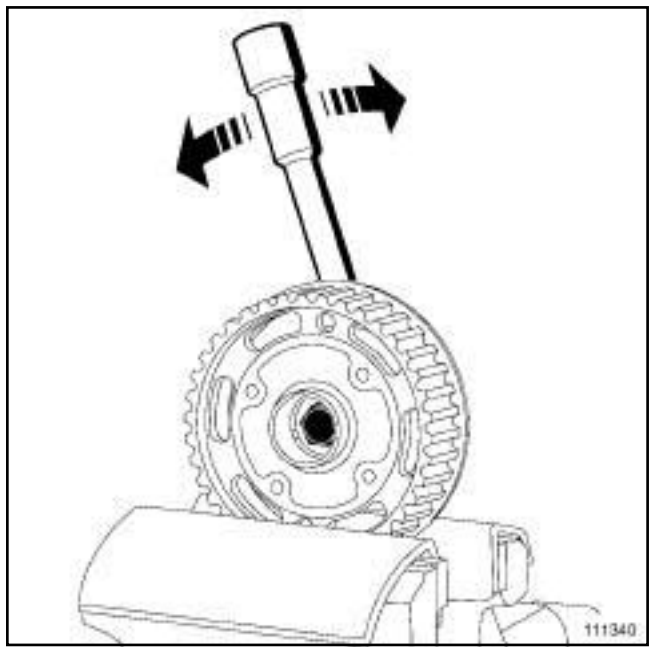
❑ If fitting a new inlet camshaft dephaser, check that it is locked by following the procedure described below:

❑ Fit a stud in the dephaser hub and tighten it.



111339

❑ Place the inlet camshaft dephaser in a vice fitted with jaws.



111340

❑ Mechanically lock the dephaser by rotating it to the left or to the right using a tubular hexagon box spanner.

❑ Check that the inlet camshaft dephaser is correctly locked (no rotation of the hub in relation to the wheel to the left or right).

❑ If there is a rotation of the hub in relation to the wheel, the camshaft dephaser is faulty and must be replaced.

❑ Grease the end of the inlet camshaft (timing end) and clean the bores and bearing faces of the inlet camshaft dephaser.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the inlet camshaft dephaser,
- the old inlet camshaft dephaser bolt.

❑ Tighten to torque the **old inlet camshaft dephaser bolt (30 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

F4R

❏ Remove:

- the **(Mot. 1453)** fitted with the **(Mot. 1453-01)**,
- the lifting eye on the timing end (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Refit:

- the engine undertray,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 764

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 1054	TDC setting pin.

Tightening torques ▽	
camshaft dephaser bolt	**75 Nm**
camshaft dephaser blanking cover	**15 Nm**
lower timing cover bolt	**10 Nm**
timing intermediate housing bolts	**10 Nm**
upper timing cover bolts	**33 Nm**

REMOVAL

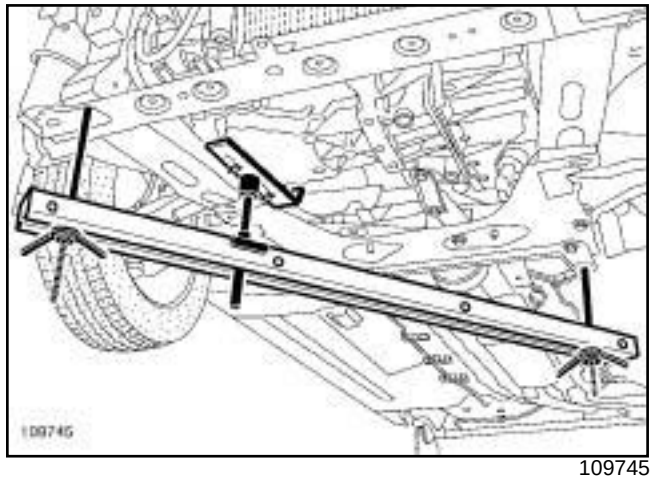
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

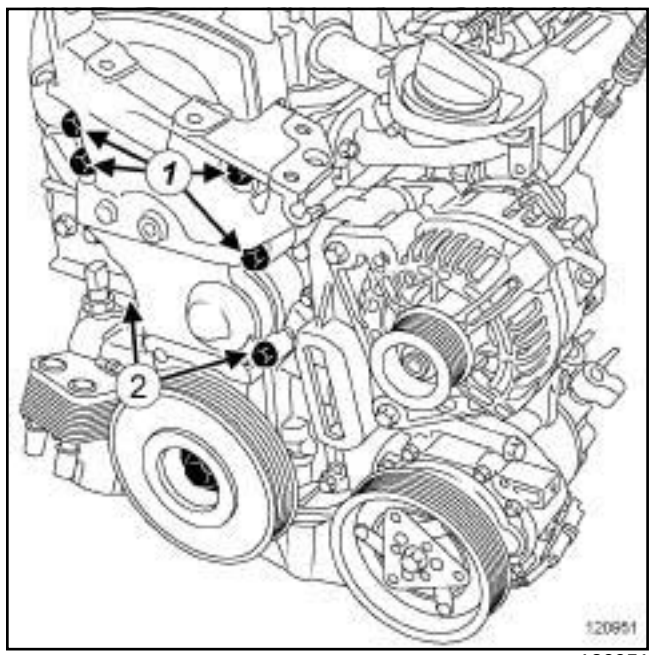
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



109745

❑ Fit the engine support tool **(Mot. 1672)** under the lower cover.

❑ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

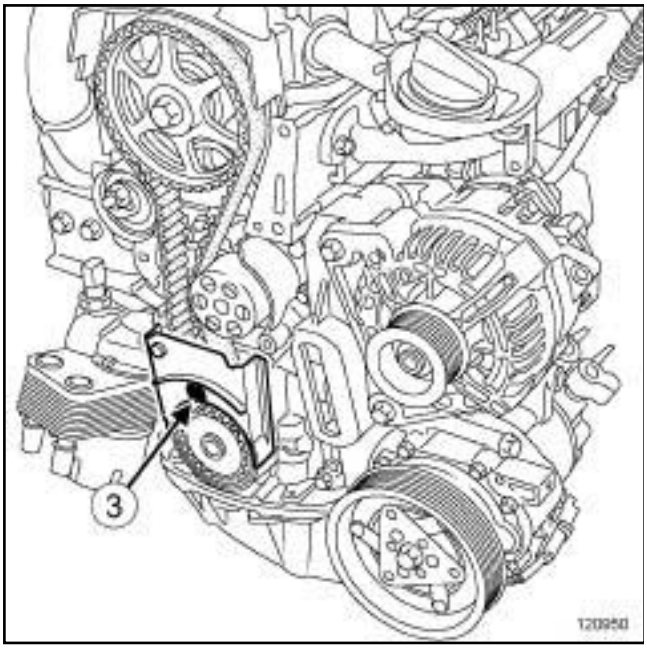


120951

❑ Remove:

- the bolts (**1**) from the upper timing cover,
- the upper timing cover,
- the bolts (**2**) from the timing intermediate housing,
- the timing intermediate housing,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) .

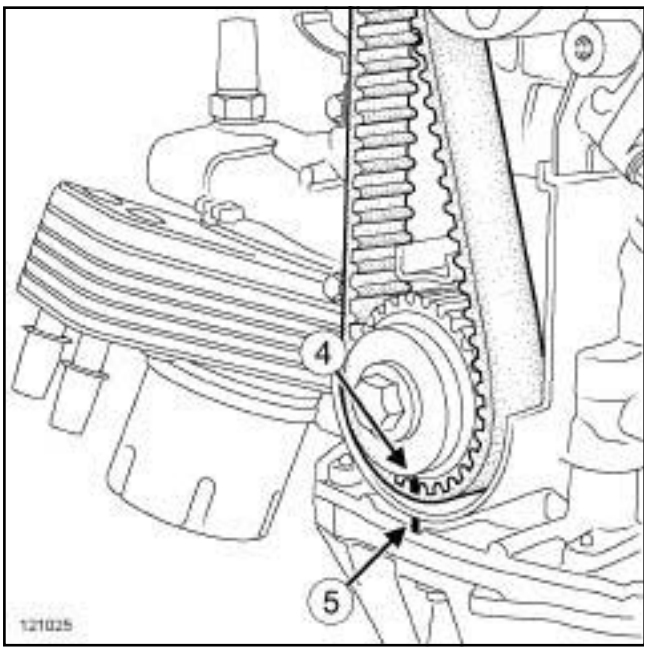
D4F, and 764



120950

❑ Remove:

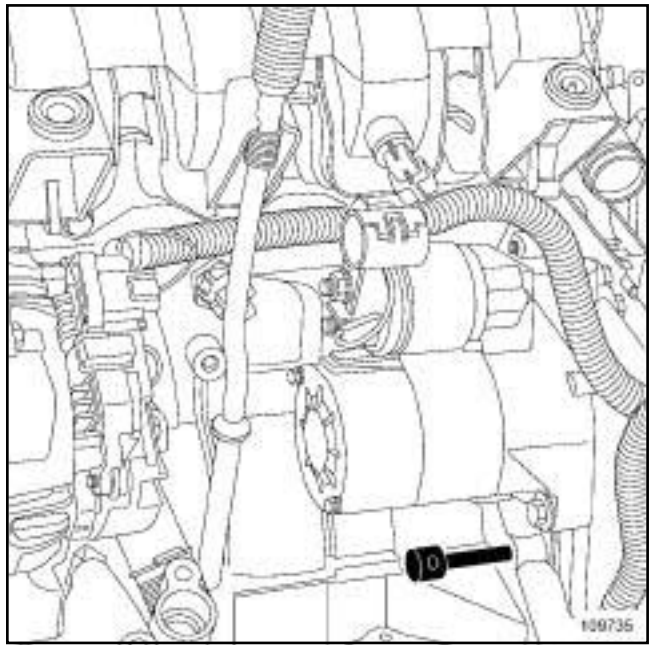
- the lower timing cover bolt (**3**) ,
- the lower timing cover.



121025

❑ Refit the crankshaft accessories pulley bolt and its retaining washer.

❑ Turn the crankshaft clockwise (timing end) to position the crankshaft sprocket marking (**4**) half a tooth in front of the alignment of the fixed marking (**5**) on the oil pump casing.



109735

❑ Insert **(Mot. 1054)**.

❑ Turn the crankshaft clockwise until it is stopped.

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Dephaser removal with timing belt present

❑

Note:

With the timing belt present, use it to loosen then torque tighten the camshaft dephaser bolt.

❑ Remove the camshaft dephaser blanking cover.

❑ Undo the camshaft dephaser bolt.

❑ Remove:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser bolt,
- the camshaft dephaser.

D4F, and 764

2 - Dephaser removal without timing belt

❑

Note:

If the timing belt is missing or broken, without damage to the engine, a used timing belt must be fitted before carrying out this procedure, to allow the dephaser bolt to be loosened then tightened.

❑ Refit the used timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

❑ Remove the camshaft dephaser blanking cover.

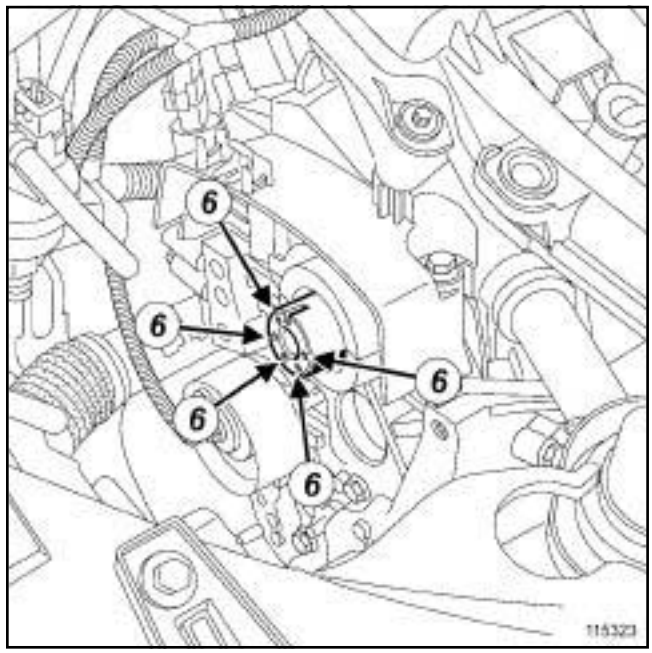
❑ Undo the camshaft dephaser bolt.

❑ Remove:

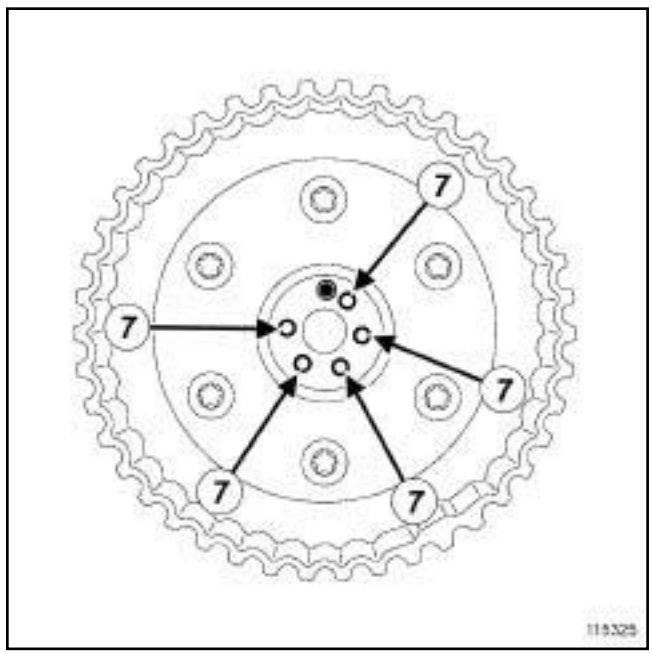
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser bolt,
- the camshaft dephaser.

REFITTING

I - REFITTING PREPARATIONS OPERATION



115323



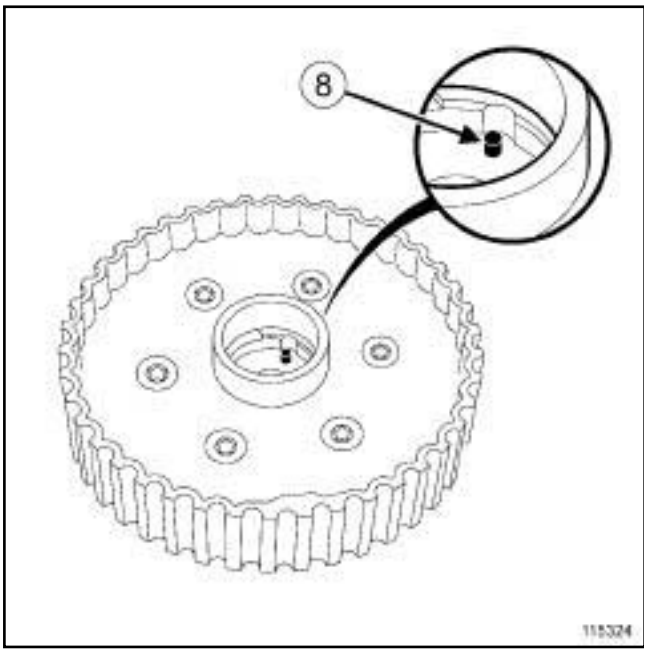
115325

❑ Check:

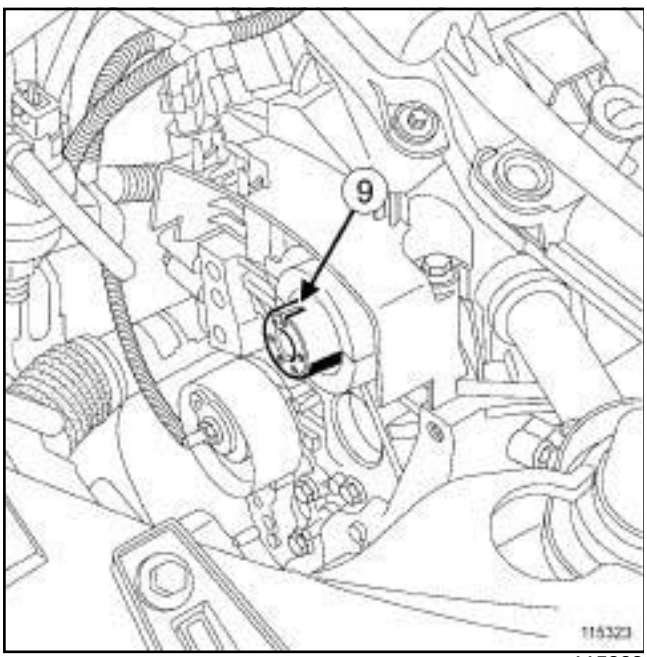
- that the camshaft dephaser wheel is correctly locked (wheel does not rotate right or left),
- that the camshaft dephaser bearing face is clean and in good condition,
- that there are no foreign bodies in the camshaft oil ducts (**6**) and in the camshaft dephaser oil ducts (**7**) .

D4F, and 764

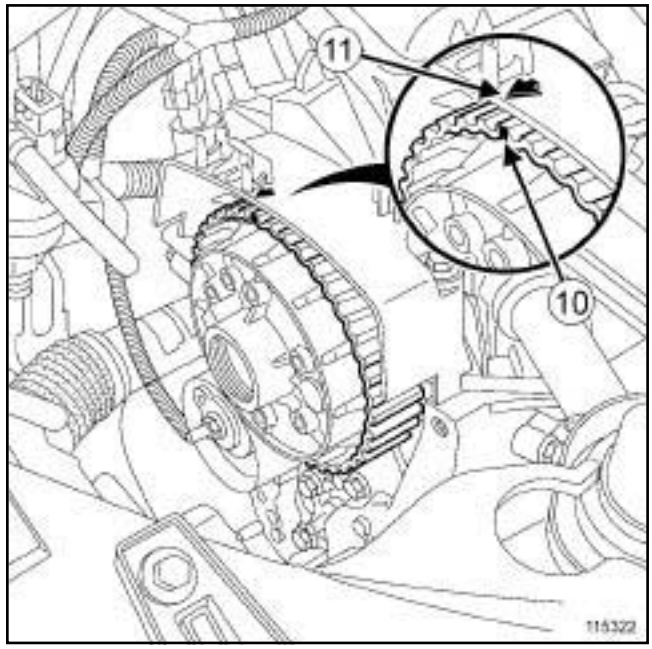
II - REFITTING OPERATION FOR PART CONCERNED



115324



115323



115322

❑ Fit the camshaft dephaser.

Note:

Check that the camshaft dephaser is correctly positioned in relation to the camshaft:

- the oil ducts should match,
- the dephaser spigot (**8**) should fit into the camshaft groove (**9**) ,
- the mark (**10**) on the camshaft dephaser and the fixed marking (**11**) must be aligned.

Failure to respect these instructions could result in destruction of the engine.

❑ Refit:

- the camshaft dephaser bolt,
- a used timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

Note:

The **(Mot. 1054)** must be in place.

❑ Torque tighten the **camshaft dephaser bolt (75 Nm)**.

❑ Remove the used timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

D4F, and 764

❑ Fit the new timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

❑ Refit the new camshaft dephaser blanking cover.

❑ Torque tighten the **camshaft dephaser blanking cover (15 Nm)**.

❑ Remove the **(Mot. 1054)**.

III - FINAL OPERATION.

❑ Refit:

- the lower timing cover,
- the lower timing cover bolt.

❑ Torque tighten the **lower timing cover bolt (10 Nm)**.

❑ Refit:

- the timing intermediate housing,
- the timing intermediate housing bolts.

❑ Torque tighten the **timing intermediate housing bolts (10 Nm)**.

❑ Refit:

- the upper timing cover,
- the upper timing cover.

❑ Tighten to torque the **upper timing cover bolts (33 Nm)**.

❑ Refit the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the engine support tool **(Mot. 1672)**.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 740 or 742 or 764

Special tooling required	
Mot. 799-01	Timing gear wheel immobiliser.
Mot. 1381	Camshaft seal extractor tool 30 x 42 x 7.
Mot. 1605	Tool for fitting cylinder head plugs.
Mot. 1587	Tool for fitting camshaft "PTFE" seal.

Tightening torques ▽	
mounting bolts of camshaft bearing cap no. 5	**9 N.m**
camshaft bearing cap mounting bolt	**7 N.m + 50° ± 6°**
camshaft pulley mounting bolt	**30 N.m + 45° ± 6**

REMOVAL

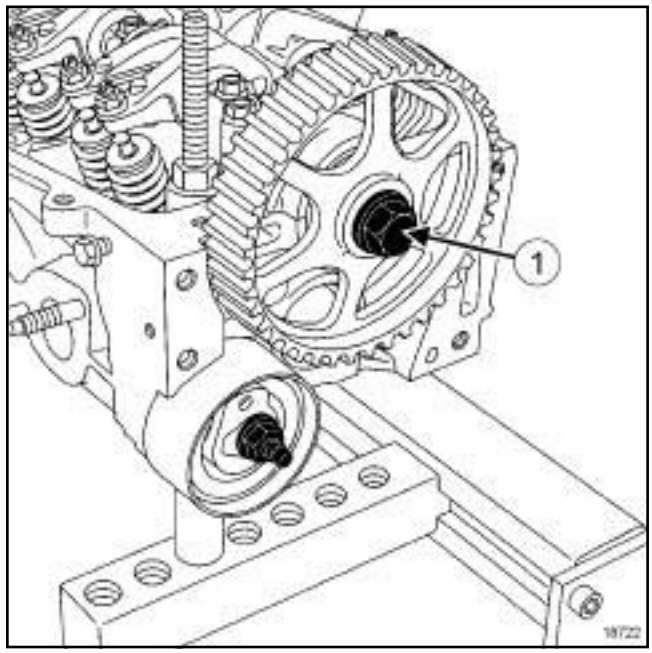
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

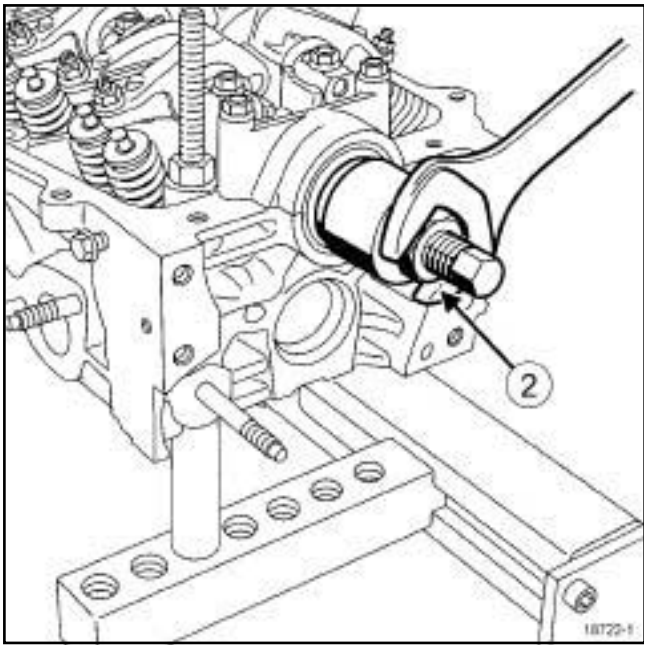
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .



❏ Remove:

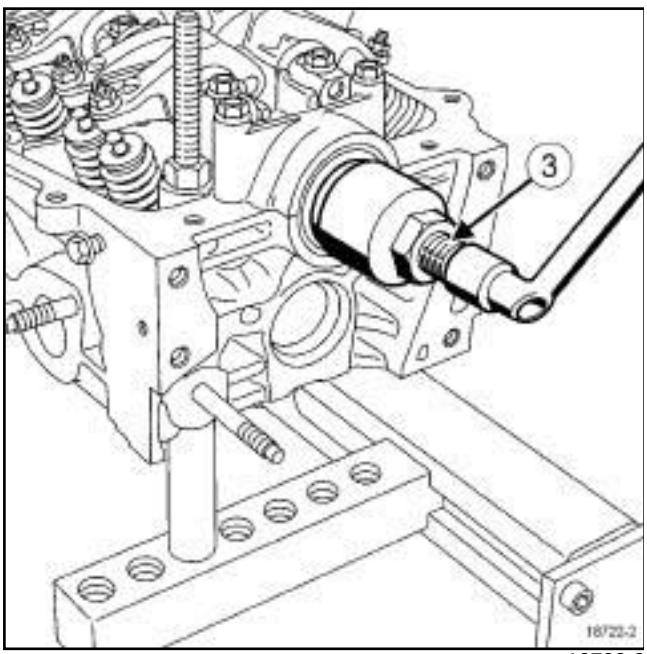
- the camshaft pulley mounting bolt using the **(Mot. 799-01)**,
- the camshaft pulley.

D4F, and 740 or 742 or 764



18722-1

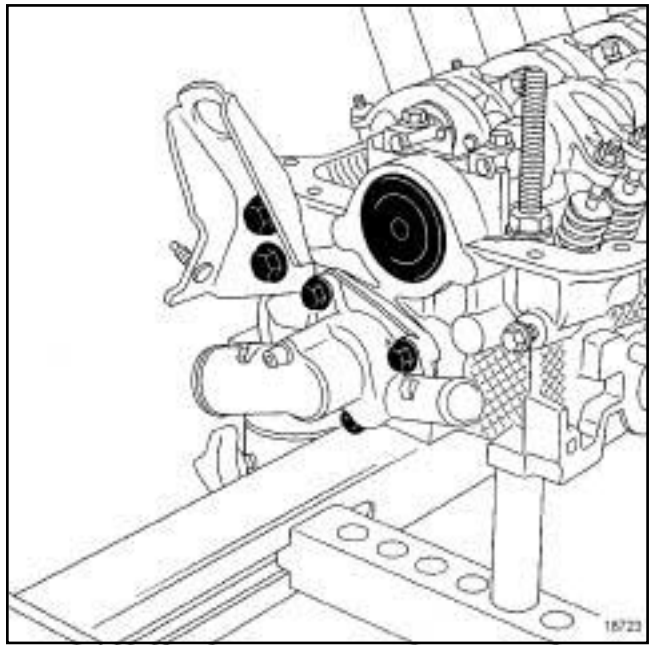
❏ Position the **(Mot. 1381)** (**2**) .



18722-2

❏ Tighten the bolt (**3**) of the **(Mot. 1381)**.

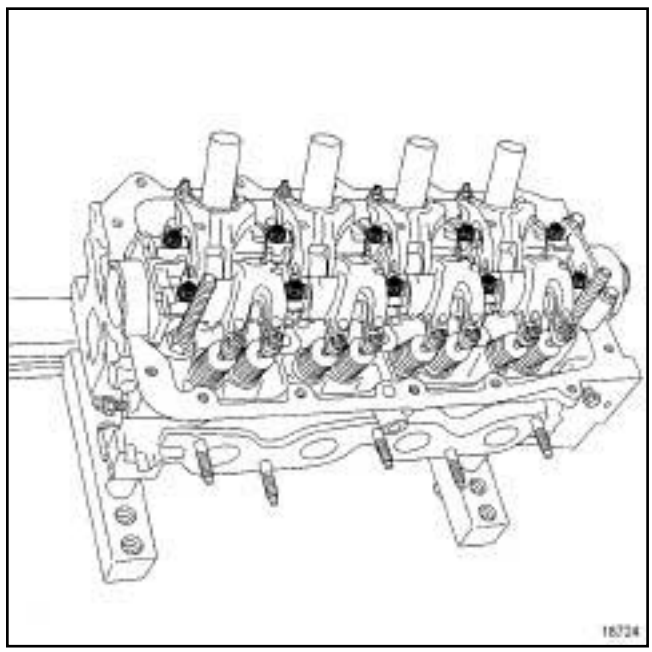
❏ Remove the lip seal.



18723

❏ Remove the camshaft seal cap.

II - OPERATION FOR REMOVAL OF PART CONCERNED

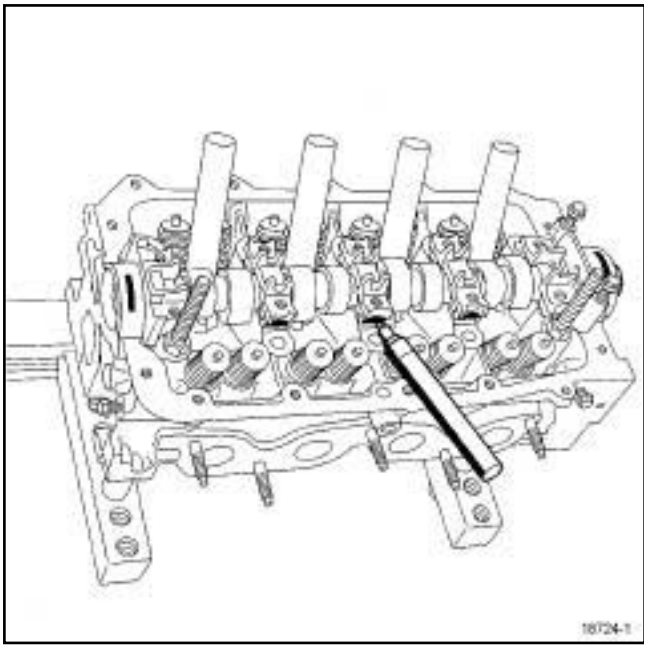


18724

❏ Remove:

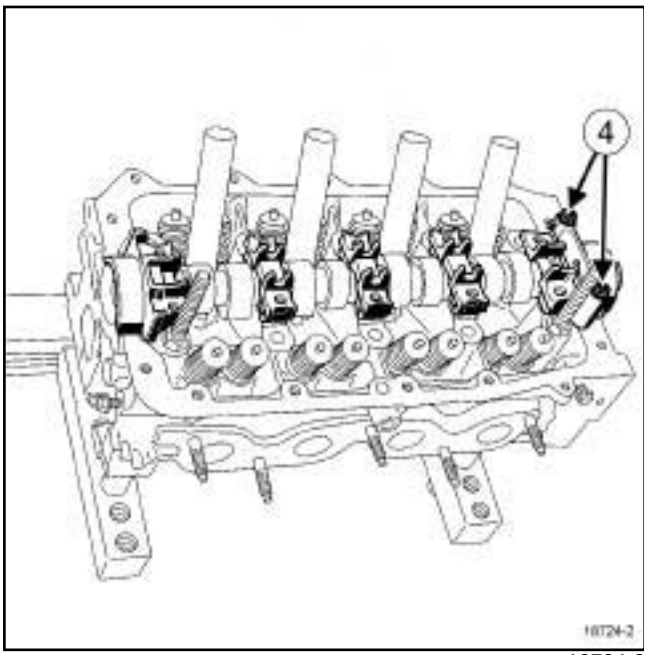
- the camshaft mounting bolts,
- the camshafts.

D4F, and 740 or 742 or 764



18724-1

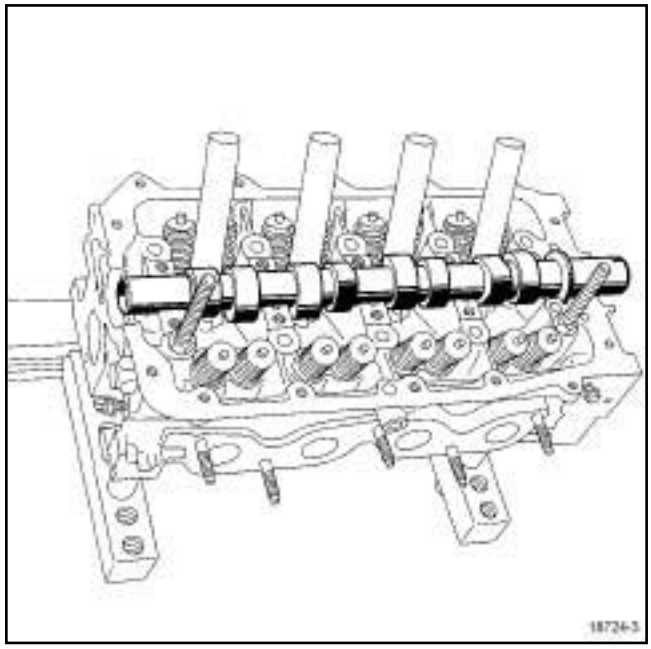
❏ Mark the camshaft bearing caps with an indelible marker pen.



18724-2

❏ Remove:

- the mounting bolts (**4**) from camshaft bearing cap no. 5,
- the camshaft bearing caps.



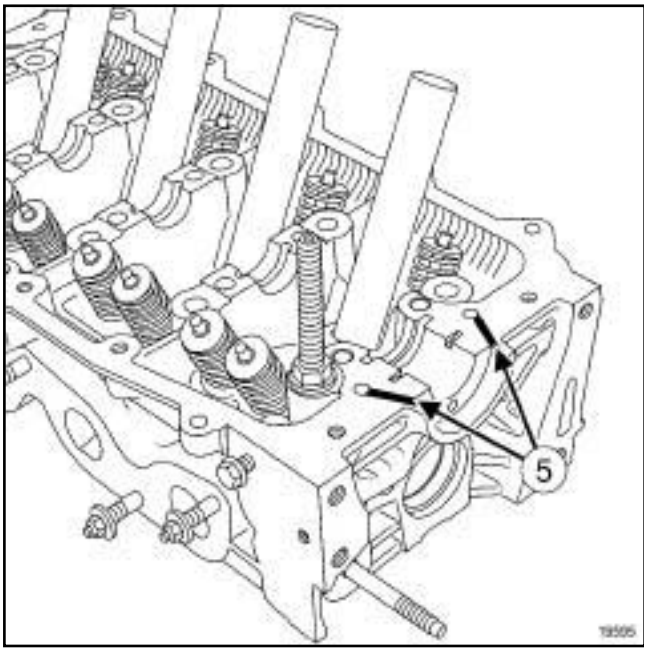
18724-3

❏ Remove the camshaft.

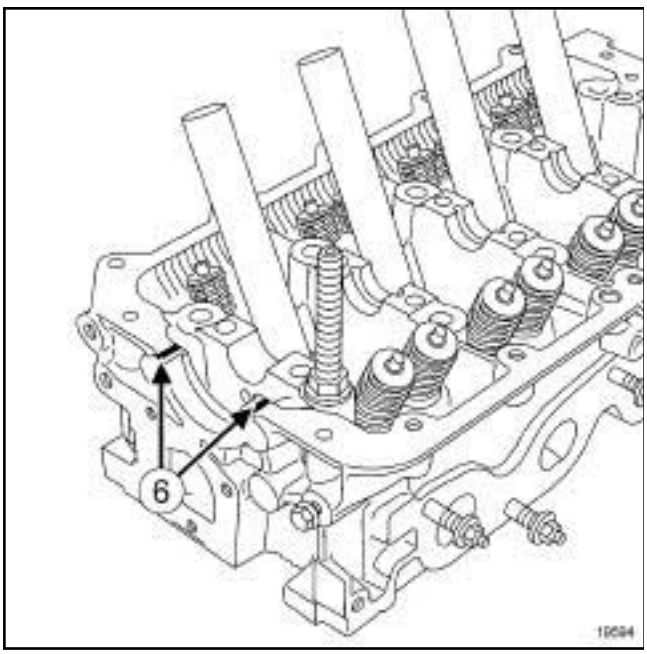
D4F, and 740 or 742 or 764

REFITTING

I - REFITTING PREPARATION OPERATION



19595



19594

❑ Apply:

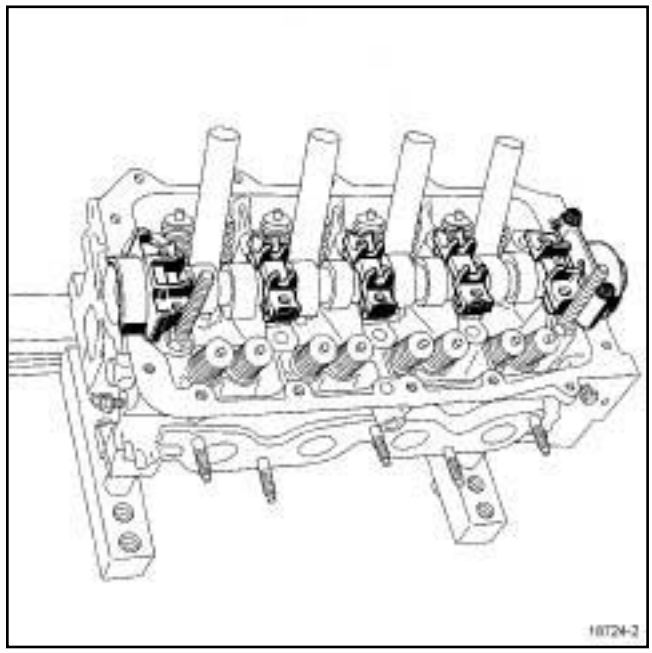
- two beads (**5**) of **RHODORSEAL 5661** with a width of **2 mm** on cylinder head bearing no. 5,
- two drops (**6**) of **RHODORSEAL 5661** to cylinder head bearing no. 1.

❑ Apply a blob of oil to the camshaft bearings.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

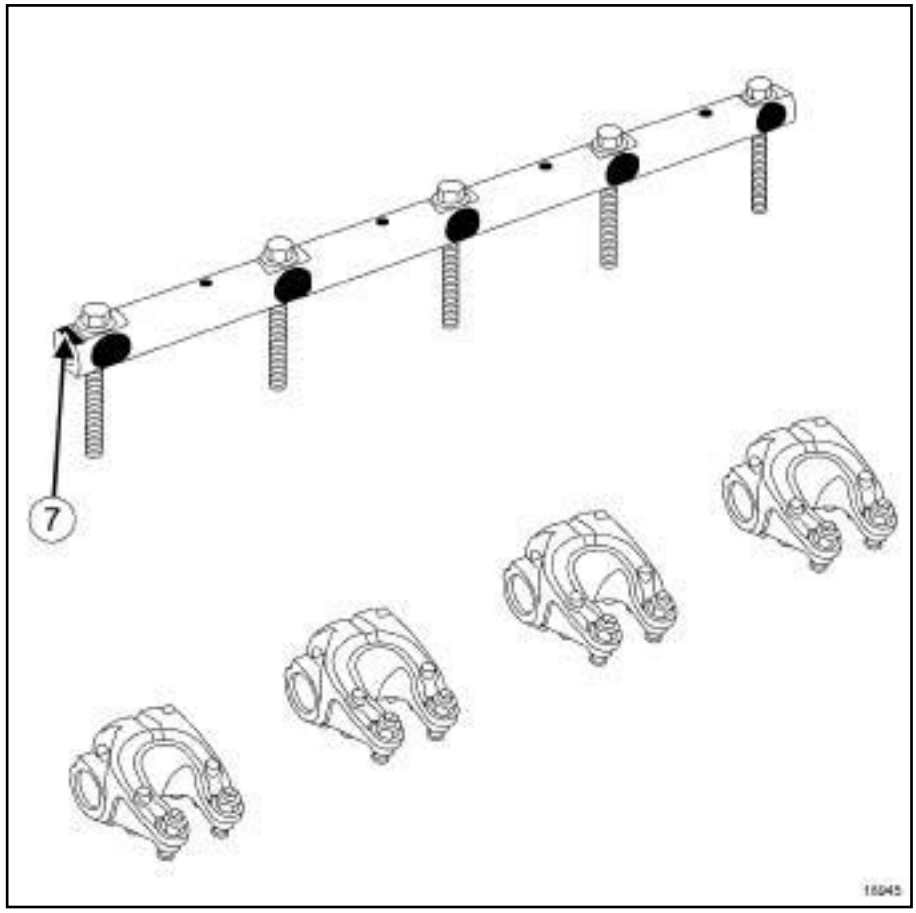
- the camshaft,
- the camshaft bearing caps.



18724-2

❑ Torque tighten the **mounting bolts of camshaft bearing cap no. 5 (9 N.m)**.

D4F, and 740 or 742 or 764

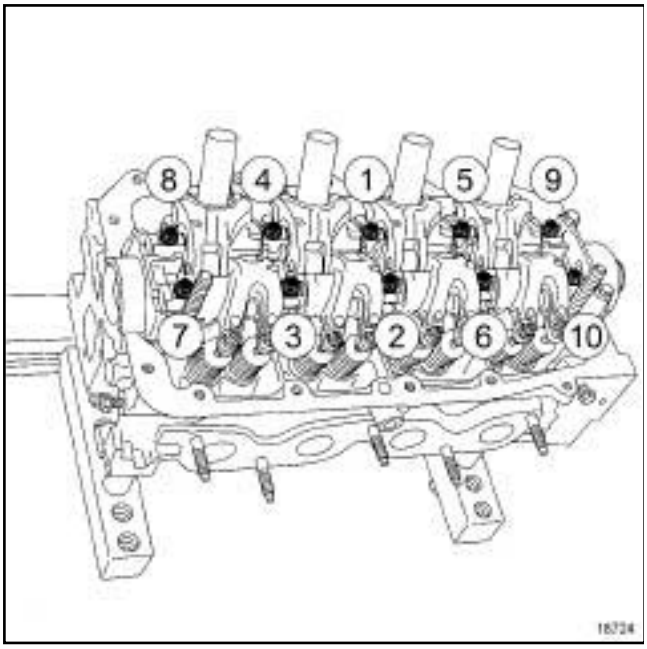


18945

❑ Refit the camshafts, positioning:

- the rails in relation to the tappets,
- the marks (**7**) on the flywheel end.

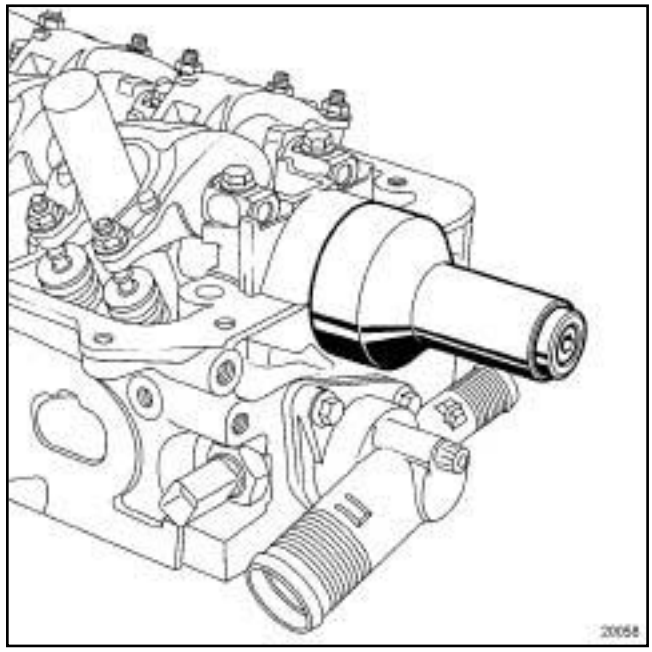
D4F, and 740 or 742 or 764



18724

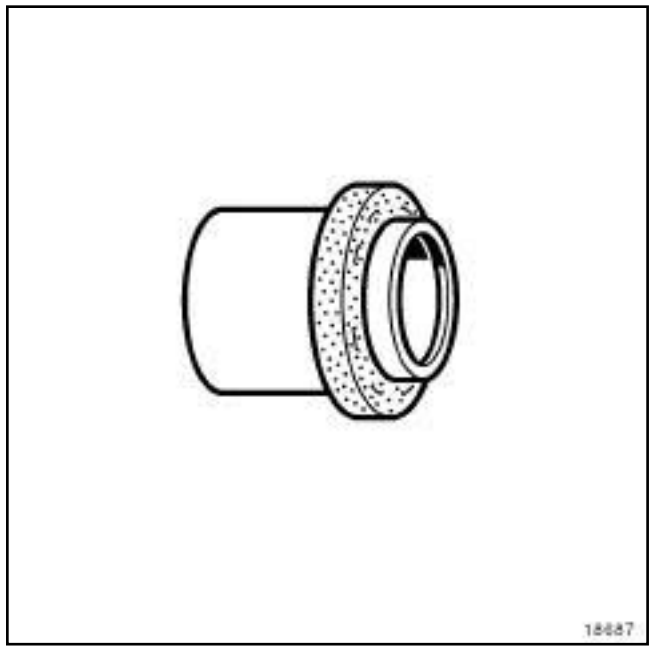
- ❏ Pretighten in order and to torque the mounting bolts of the camshaft bearing caps **(5 N.m)**.
- ❏ Loosen the mounting bolt (**1**) .
- ❏ Torque and angle tighten the **camshaft bearing cap mounting bolt (7 N.m + 50° ± 6°)**.
- ❏ Repeat these two operations for each bolt from (**2**) to (**10**) .

III - FINAL REFITTING



20058

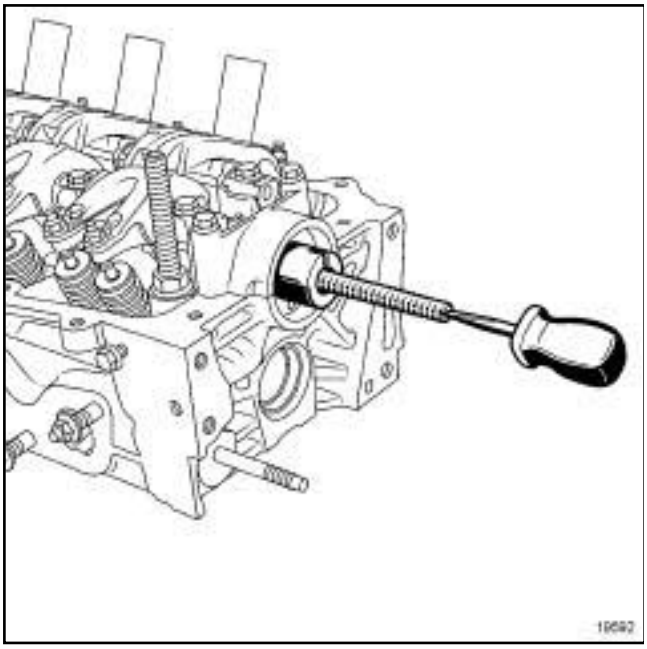
- ❏ Ensure that the seal bearing surfaces are clean.
- ❏ Refit the seal cap to the end of the camshaft using the **(Mot. 1605)**.



18687

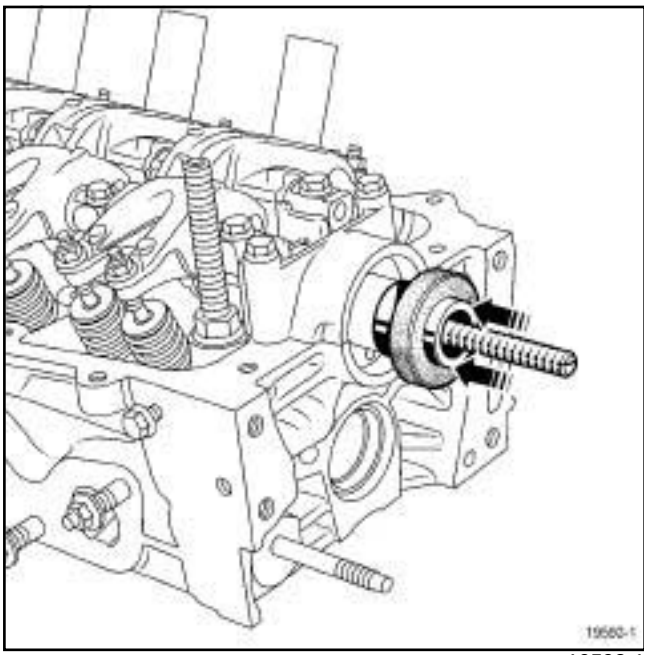
- ❏ Fit the lip seal.

D4F, and 740 or 742 or 764



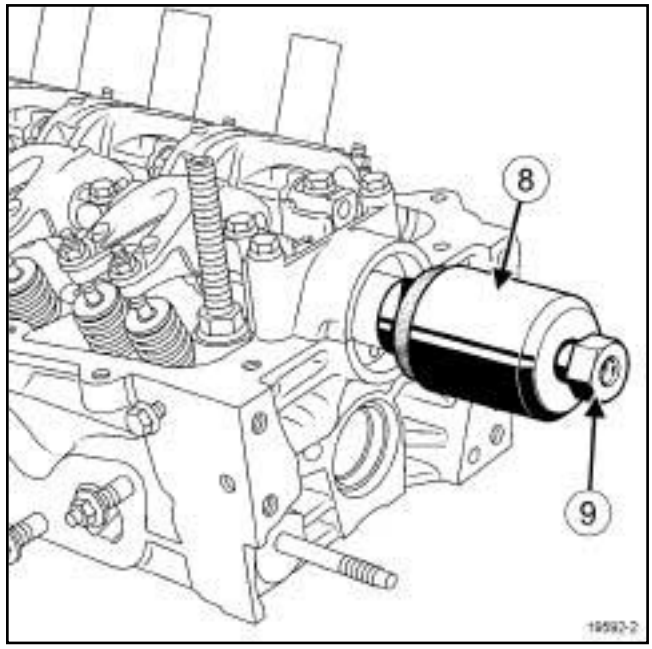
19592

❑ Screw the threaded rod of the **(Mot. 1587)** into the camshaft.



19592-1

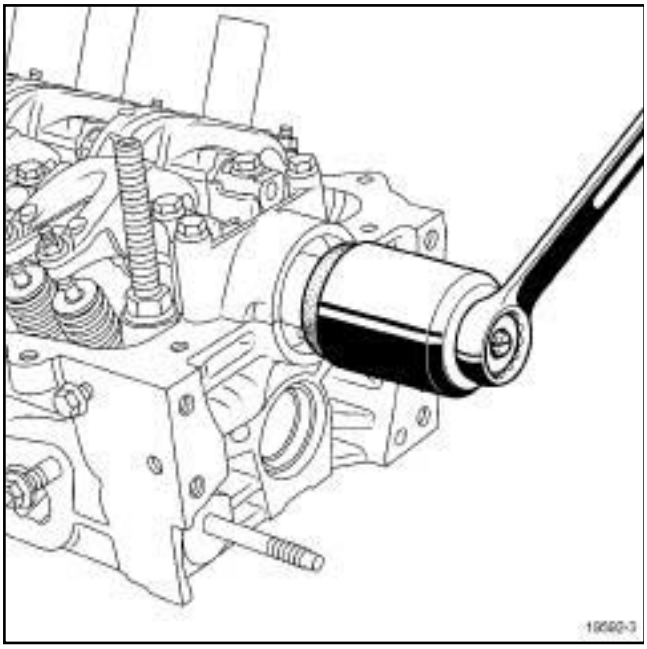
❑ Fit the seal gasket and protector on the camshaft. Be careful not to touch the seal.



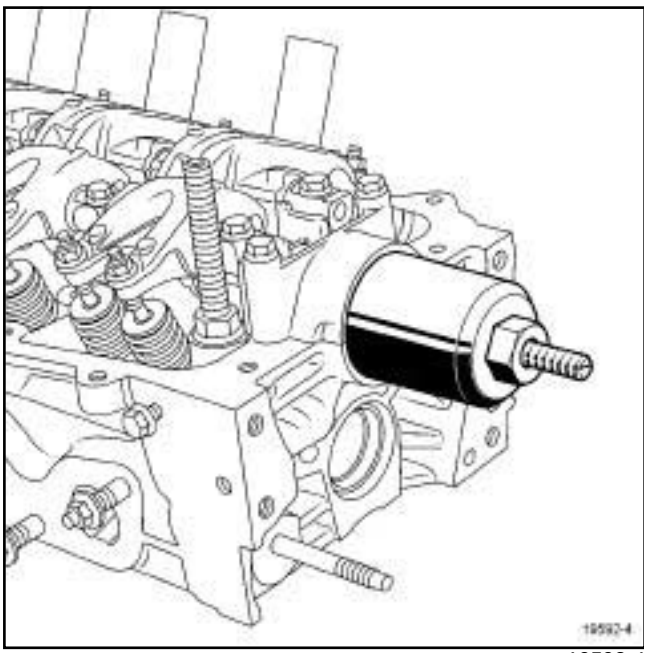
19592-2

❑ Fit the cover (**8**) and the collar nut (**9**) of the **(Mot. 1587)**.

D4F, and 740 or 742 or 764

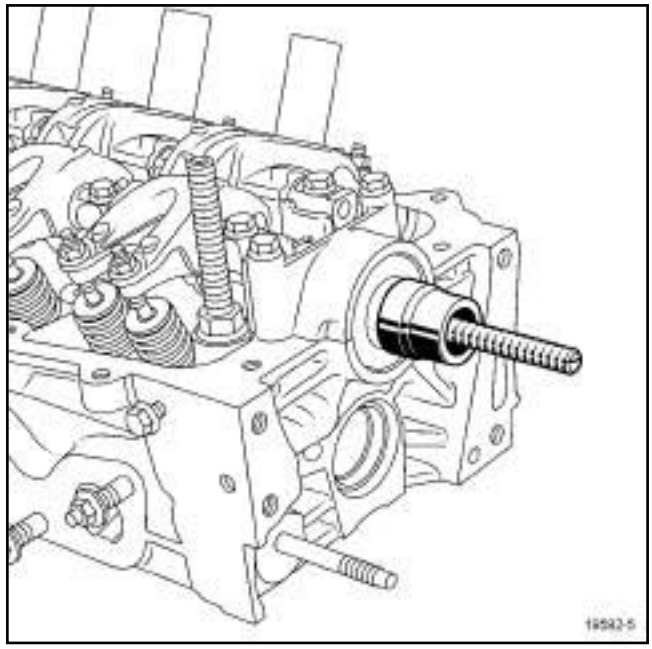


19592-3



19592-4

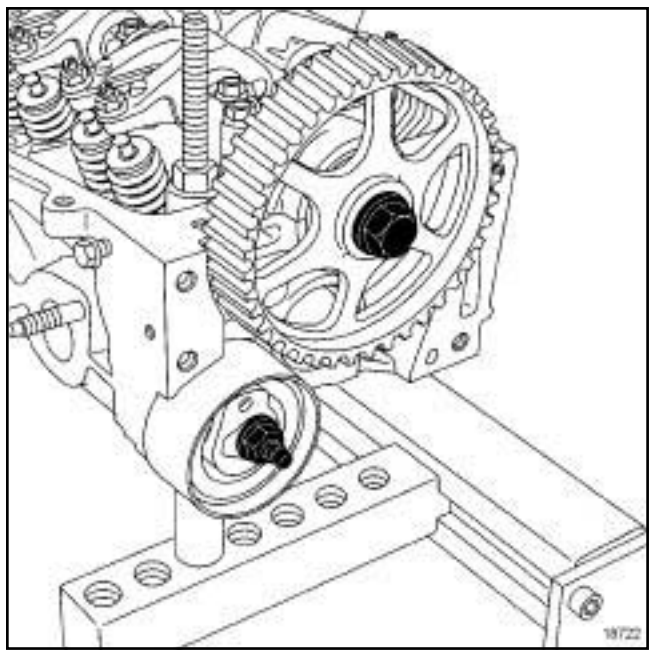
❑ Screw on the collar nut until the cover touches the cylinder head.



19592-5

❑ Remove:

- the nut from the,
- the cover from the,
- the seal protector,
- the threaded rod of the.



18722

❑ The camshaft pulley mounting bolt must always be replaced.

❑ Refit the camshaft pulley.

❑ Torque tighten the **camshaft pulley mounting bolt (30 N.m + 45° ± 6)** using the **(Mot. 799-01)**.

D4F, and 740 or 742 or 764

❑ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M

Equipment required
roller-type stud removal tool

Tightening torques ▽	
camshaft dowel	**0.8 daN.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

K4M, and 862

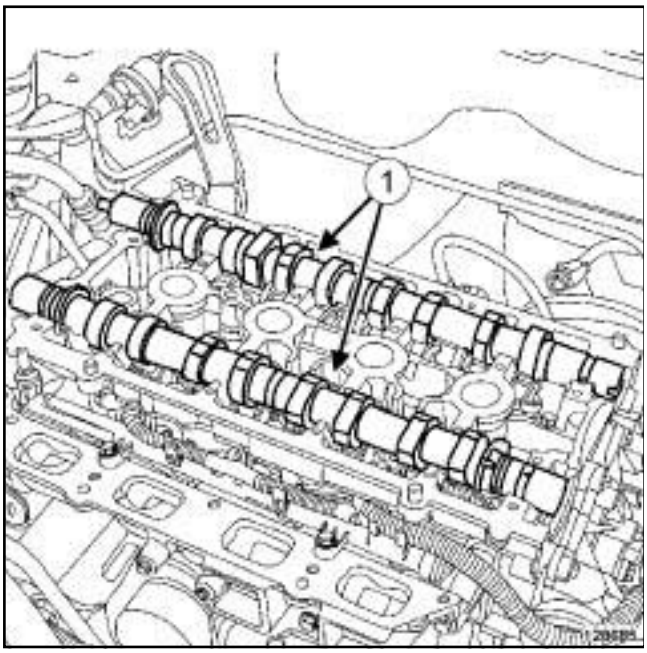
❑ Remove the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) .

❑ Remove:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

K4M

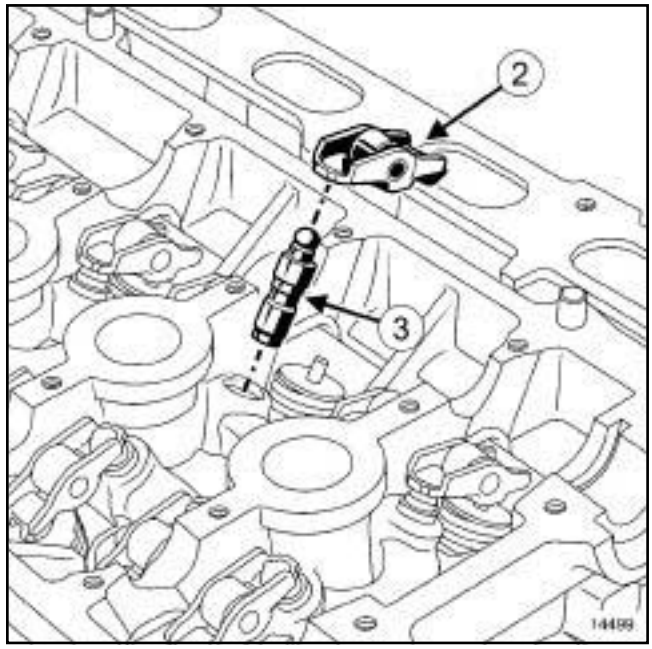
II - OPERATION FOR REMOVAL OF PART CONCERNED



128685

❑ Remove:

- the camshafts (**1**) ,
- the camshaft seals on the timing end.



14499

❑ Remove:

- the valve rockers (**2**) ,
- the hydraulic tappets (**3**) .

Note:

Always keep the hydraulic tappets vertical or immerse them in a bath of clean engine oil or diesel to avoid any risk of depriming the hydraulic tappets.

REFITTING

I - REFITTING PREPARATION OPERATION

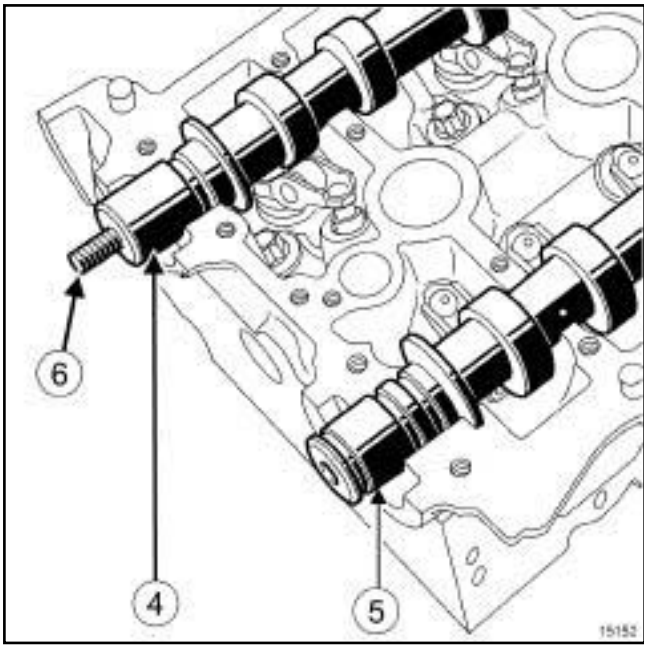
❑

Note:

It is essential to reprime the hydraulic tappets as these may become drained if removed for a long time.

To check if re-priming is necessary, press the top of the tappet with your thumb. If the tappet piston de-presses, immerse the tappets in a container full of new oil or diesel, then reprime them.

K4M



15152

(**4**) Exhaust camshaft

(**5**) Inlet camshaft

❑

Note:

The camshafts are identified by the pulley mountings.

Replacing a camshaft dowel

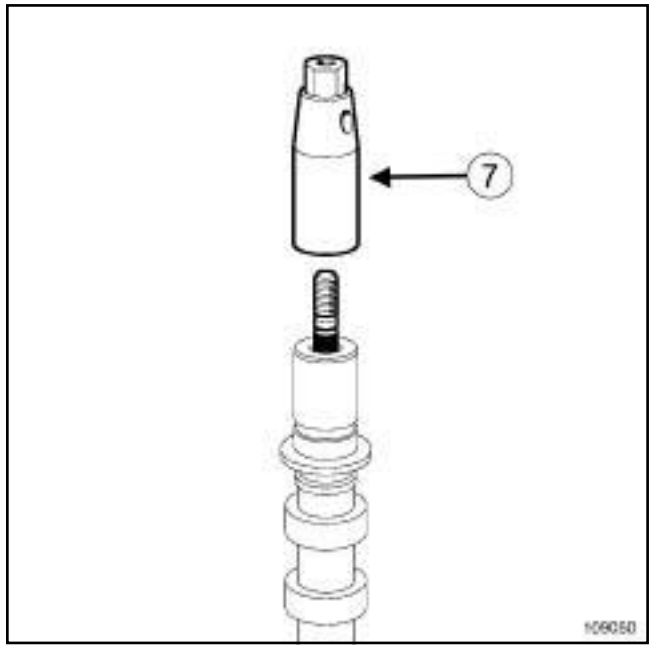
❑

Note:

It is essential to replace the camshaft dowel ***(6)*** if it comes loose at the same time as the nut.

a - Removal

❑ Place the camshaft in a vice with aluminium jaws.



109050

❑ Remove the dowel using a **roller-type stud removal tool** (**7**) .

b - Cleaning the camshaft

❑

Note:

Clean the thread hole of the camshaft carefully to prevent foreign bodies from entering the latter.

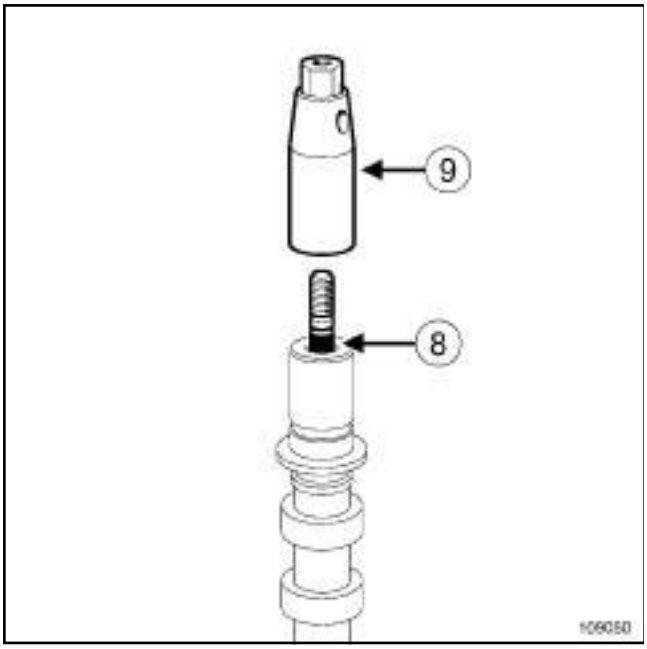
WARNING

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

c - Refitting

❑ Place the camshaft in a vice with aluminium jaws.

K4M



109050

❏ Refit the new camshaft dowel (precoated section (**8**) on the camshaft side).

❏ Torque tighten the **camshaft dowel (0.8 daN.m)** using a **roller-type stud removal tool** (**9**) .

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the hydraulic tappets,
- the valve rockers,
- the inlet camshaft, by lubricating the inlet camshaft bearings,
- the exhaust camshaft, by lubricating the exhaust camshaft bearings.

III - FINAL OPERATION

❏ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the camshaft seals on the timing end (see **11A**, **Top and front of engine**, **Camshaft seal, timing end: Removal - Refitting**, page **11A-284**) ,
- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

K4M, and 862

❏ Refit the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) .

❏ Refit:

- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine undertray.

K4J

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,

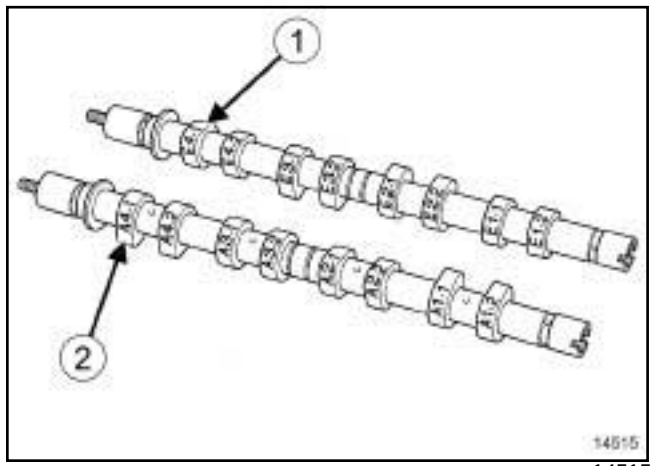
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the inlet camshaft,
- the exhaust camshaft.

REFITTING

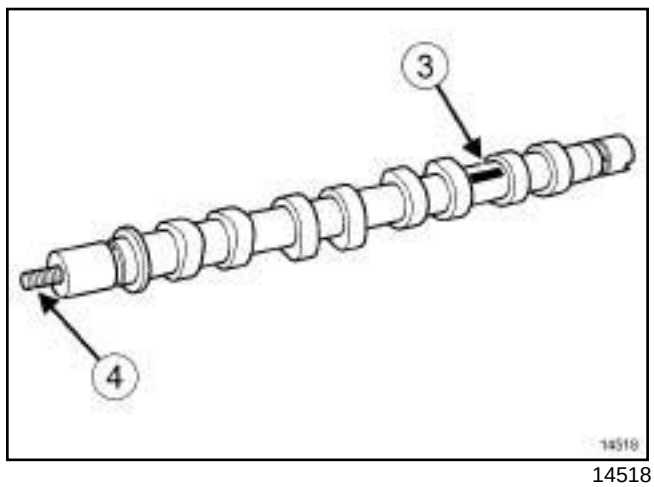
I - REFITTING PREPARATIONS OPERATION



14515

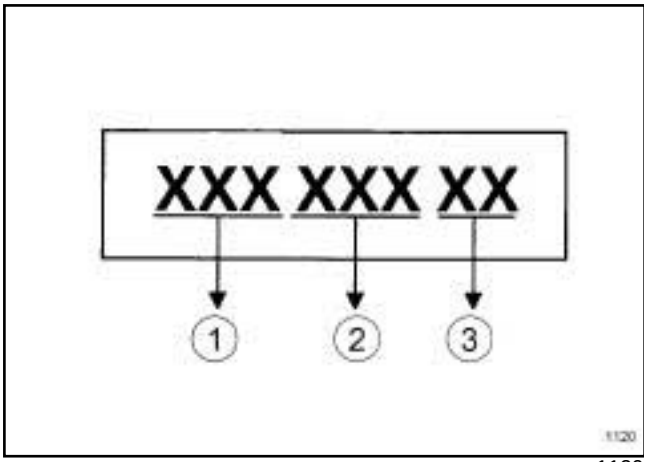
(**1**) E 4 -1 = Exhaust camshaft

(**2**) A 4 - 1 = Inlet camshaft



14518

❑ The camshaft can be identified by an etching (**3**) .



1120

❏ Numbers (**1**) and (**2**) are only used by the supplier.

❏ Number (**3**) identifies the camshafts:

- AM = Inlet
- EM = Exhaust

❏ It is essential to replace the camshaft stud (**4**) if the stud becomes loose with the nut (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) (Technical Note 3887A, 11A, Top and front of engine).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the inlet camshaft,
- the exhaust camshaft.

III - FINAL OPERATION

❏ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the spark plugs (see **17A**, **Ignition**, **Plugs: Removal - Refitting**, page **17A-11**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended mounting support (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K

Special tooling required	
Mot. 799-01	Timing gear wheel immobiliser.

Tightening torques ▽	
camshaft bearing bolts	**10 N.m**
camshaft pulley nut	**30 N.m + 86° ± 6°**
camshaft hub nut	**30 N.m + 86° ± 6°**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

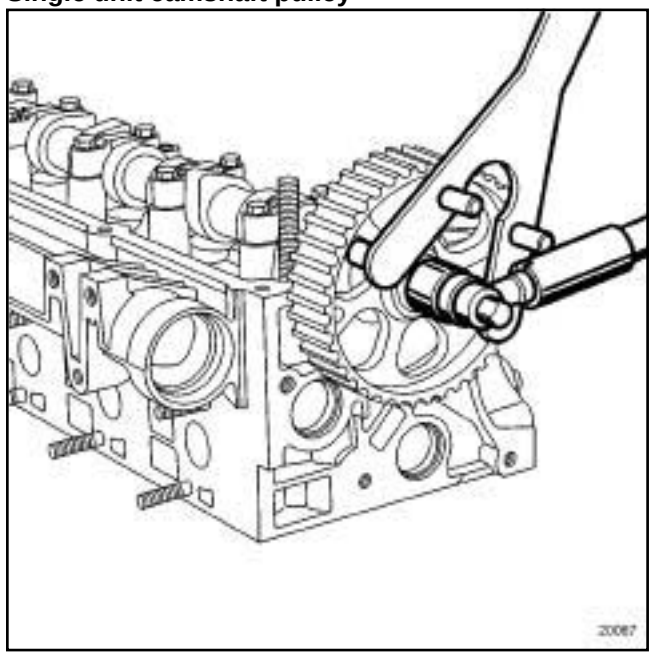
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (K9K/764, 772, if equipped),
- the vacuum pump (see **Vacuum pump: Removal - Refitting**) (MR 392, 37A, Mechanical component controls),
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

1 - First fitting of camshaft pulley

Single unit camshaft pulley



20067

❏ Immobilise the single unit camshaft pulley using the tool **(Mot. 799-01)**.

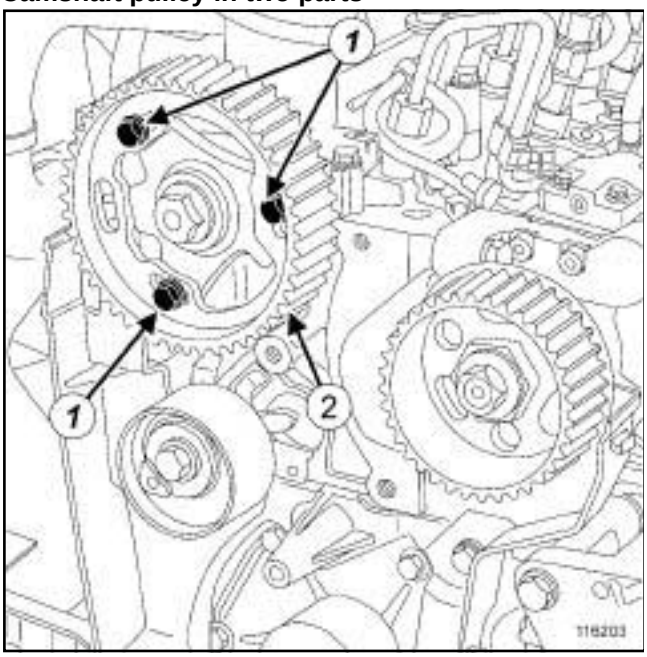
❏ Remove:

- the nut from the camshaft pulley,
- the camshaft pulley.

K9K

2 - Second fitting of camshaft pulley

Camshaft pulley in two parts

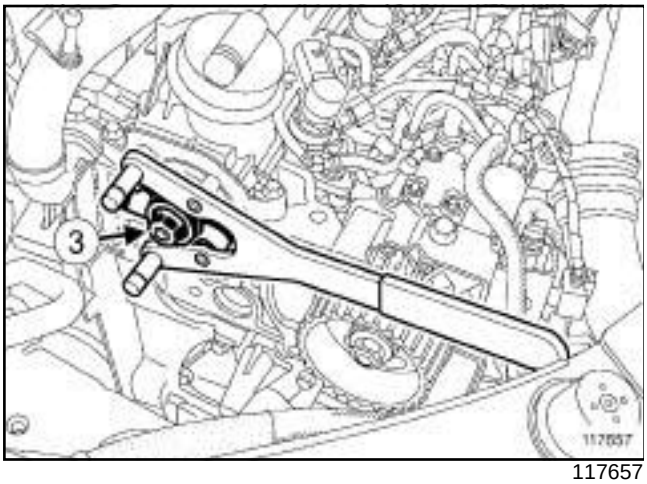


116203

❏ Remove:

- the camshaft pulley wheel bolts (**1**) ,
- the camshaft pulley wheel (**2**) .

❏ Gently turn the camshaft anti-clockwise.

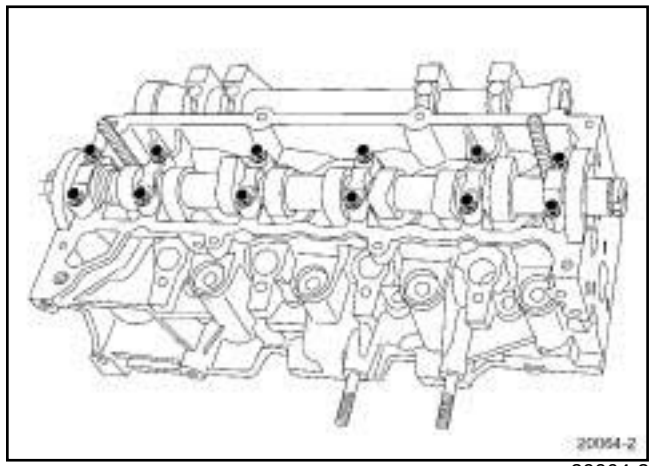


117657

❏ Remove:

- the camshaft hub nut (**3**) using the **(Mot. 799-01)**,
- the camshaft hub.

II - OPERATION FOR REMOVAL OF PART CONCERNED



20064-2

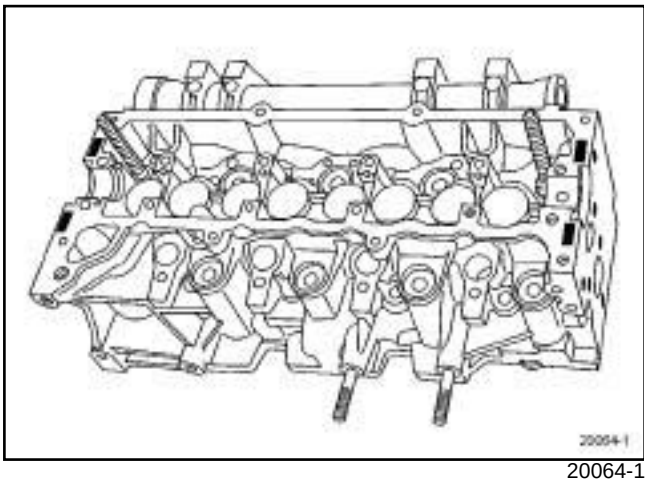
❏ Remove:

- the camshaft bearing bolts,
- the camshaft bearings,
- the camshaft,
- the camshaft seal.

K9K

REFITTING

I - REFITTING PREPARATION OPERATION


20064-1

20064-1

❑ It is essential to replace the camshaft stud if the stud becomes loose with the nut (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) (Technical Note 3887A, 11A, Top and front of engine).

Note:

The cylinder head gasket faces and camshaft bearings No.1 and No.6 must be clean, dry and free of grease (avoid finger marks).

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

❑ Apply four beads of **RESIN ADHESIVE**, **1 mm** wide to cylinder head bearings no.1 and no.6.

II - REFITTING OPERATION FOR PART CONCERNED

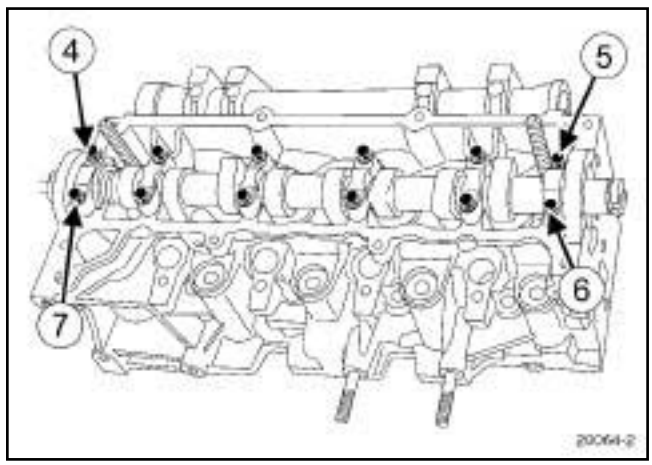
❑ Refit:

- the camshaft,
- the camshaft bearings (observing their original positions, no.1 flywheel end).

Note:

Always replace any camshaft pulley studs which were loosened during the operation.

Do not touch or soil the pre-coated section of the new stud as this may cause oil to leak out from the camshaft. In this case, torque tighten the **camshaft stud 12 N.m**.



20064-2

20064-2

❑ Pretighten camshaft bearing bolts (**4**) , (**5**) , (**6**) and (**7**) .

❑ Tighten to torque **bolts** (**4**) , (**5**) , (**6**) and (**7**) **on the camshaft bearings** (**10 N.m**).

❑ Pretighten the camshaft intermediate bearing bolts.

❑ Torque tighten the **camshaft bearing bolts (10 N.m)**.

III - FINAL OPERATION

❑ Refit the camshaft seal (see **11A**, **Top and front of engine**, **Camshaft seal, timing end: Removal - Refitting**, page **11A-284**) .

K9K

1 - First fitting of camshaft pulley

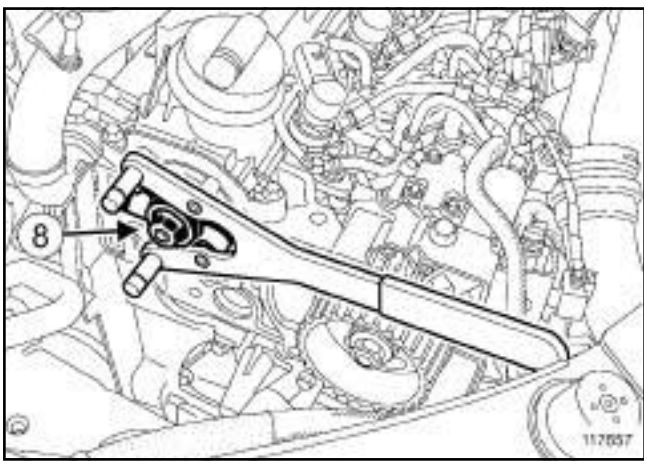
❑ Refit:

- the camshaft pulley,
- a new nut on the camshaft pulley.

> Note:
>
> When replacing the camshaft pulley, the Parts Department supplies a camshaft pulley in two parts.

❑ Torque and angle tighten the **camshaft pulley nut (30 N.m + 86° ± 6°)**, locking the pulley with the tool **(Mot. 799-01)**.

2 - Second fitting of camshaft pulley

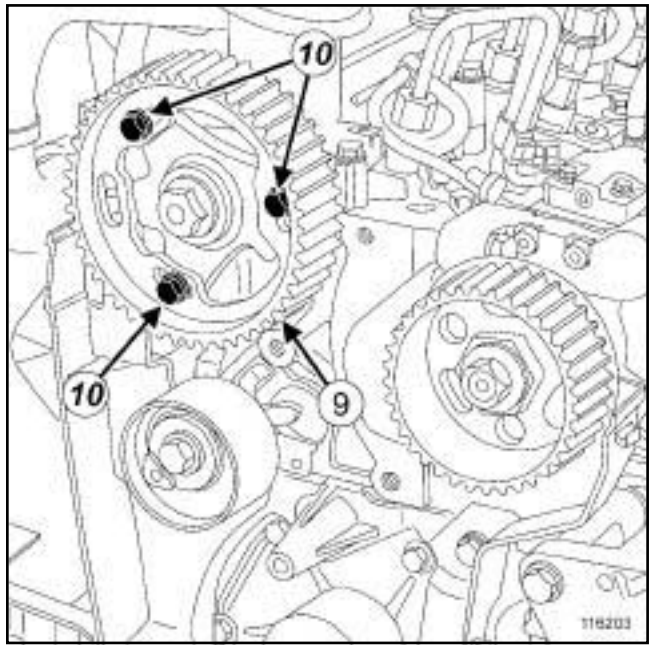


117657

❑ The camshaft hub nut (**8**) must always be replaced.

❑ Refit the camshaft hub.

❑ Torque and angle tighten the **camshaft hub nut (30 N.m + 86° ± 6°)**, locking the hub using the tool **(Mot. 799-01)**.



116203

❑ Refit:

- the camshaft pulley wheel (**9**) ,
- the camshaft pulley wheel bolts (**10**) .

❑ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the vacuum pump (see **Vacuum pump: Removal - Refitting**) (MR 392, 37A, Mechanical component controls),
- the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (K9K/764, 772, if equipped),
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 799-01	Timing gear wheel immobiliser.
Mot. 1381	Camshaft seal extractor tool 30 x 42 x 7.
Mot. 1587	Tool for fitting camshaft "PTFE" seal.

Tightening torques ▽	
bolts on camshaft bearing No.5	**9 Nm**
camshaft bearing cap bolt	**7 Nm + 50° ± 6°**
camshaft pulley bolt	**30 Nm + 45° ± 6°**
heat shield bolts	**8 Nm**

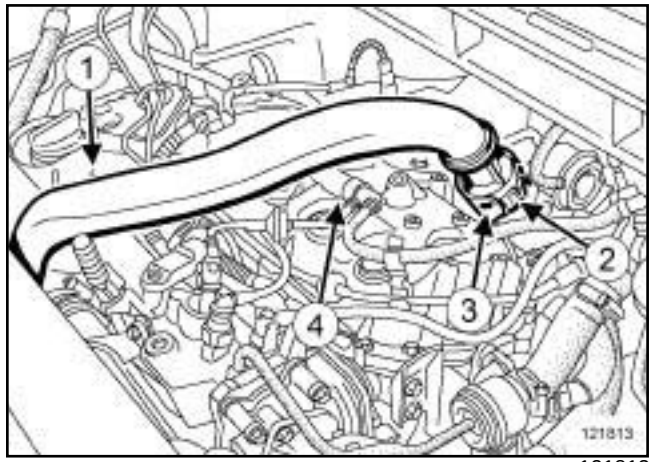
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.



121813

❑ Remove the bolt (**1**) from the intercooler air inlet pipe on the intake distributor.

❑ Remove the intercooler inlet pipe clip (**2**) from the turbocharger.

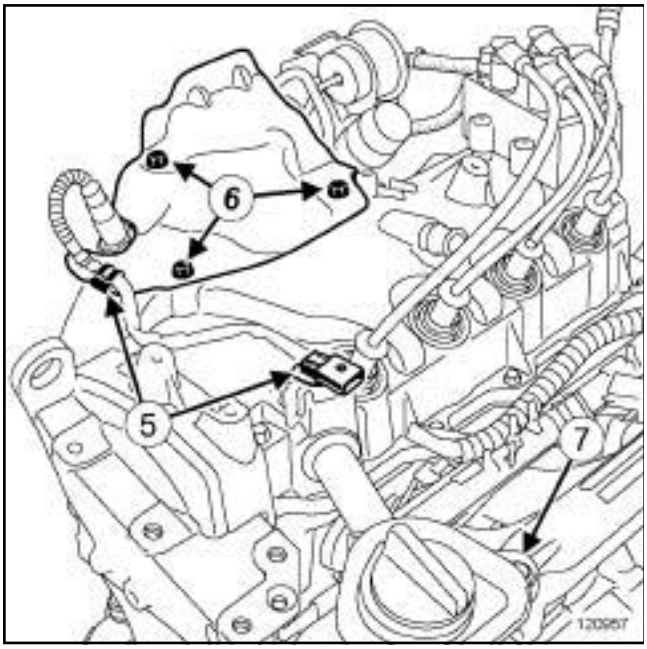
Note:

If the thermal protection clip (**3**) is removed, the intercooler air inlet pipe must also be replaced.

❑ Move the intercooler inlet air pipe to one side.

❑ Disconnect the oil vapour rebreathing circuit union (**4**) .

D4F, and 784 or 786



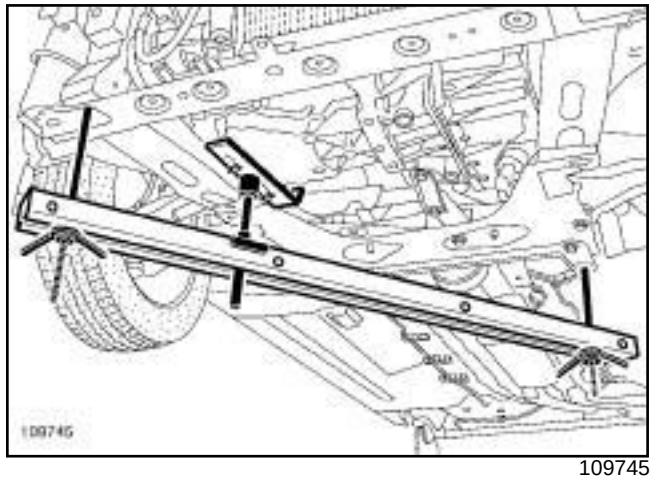
120957

❏ Disconnect the upstream oxygen sensor connector.

❏ Unpick the wiring harness from the upstream oxygen sensor at (**5**) .

❏ Remove:

- the bolts (**6**) from the heat shield,
- the heat shield,
- the filler neck bolt (**7**) ,
- the filler neck,
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

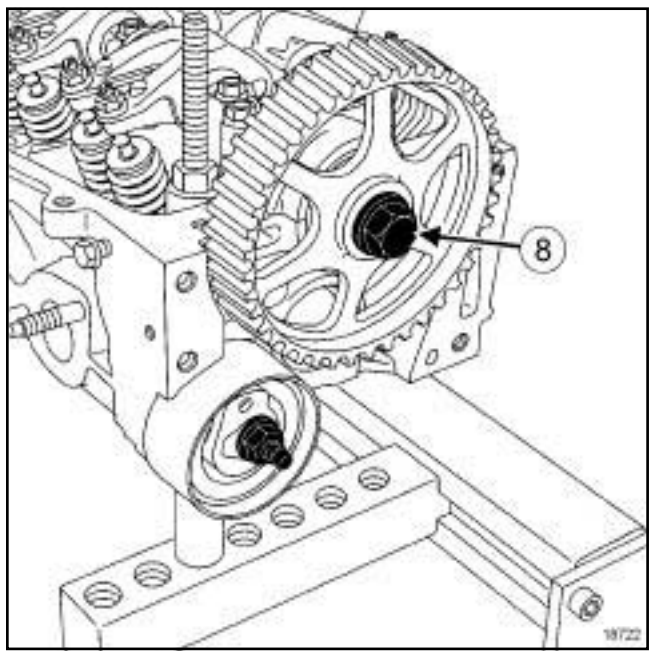


109745

❏ Set up engine support tool **(Mot. 1672)**.

❏ Remove:

- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

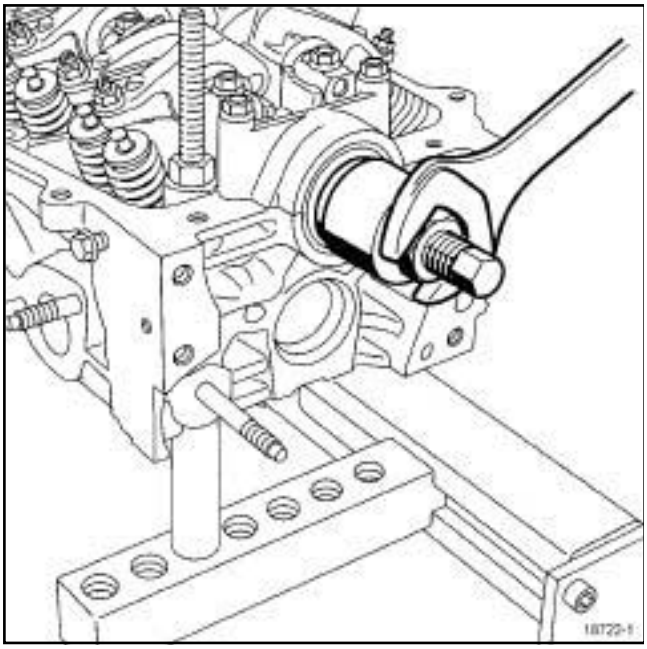


18722

❏ Remove:

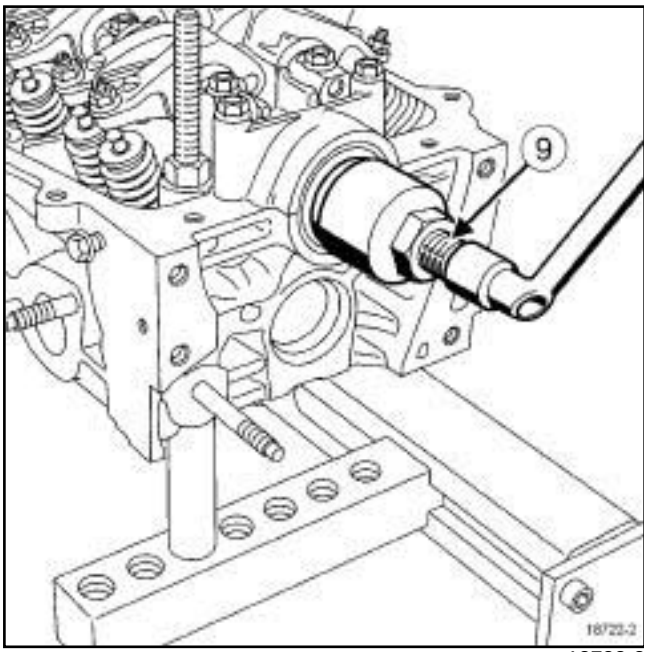
- the camshaft pulley bolt (**8**) using the **(Mot. 799-01)**,
- the camshaft pulley.

D4F, and 784 or 786



18722-1

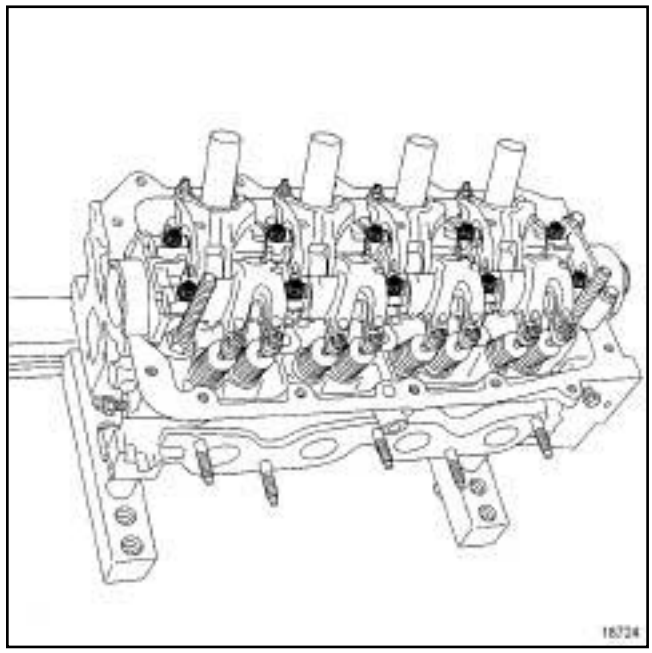
❏ Position the **(Mot. 1381)**.



18722-2

❏ Remove the seal by tightening the bolt (**9**) on the **(Mot. 1381)**.

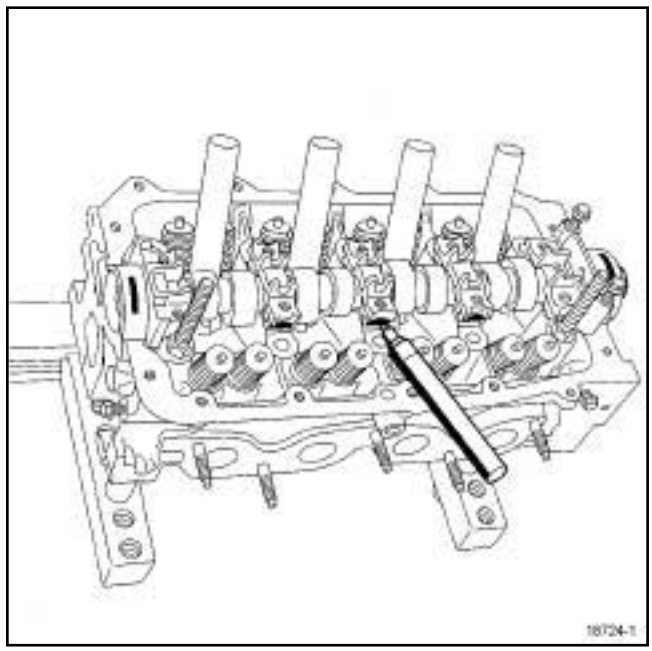
II - OPERATION FOR REMOVAL OF PART CONCERNED



18724

❏ Remove:

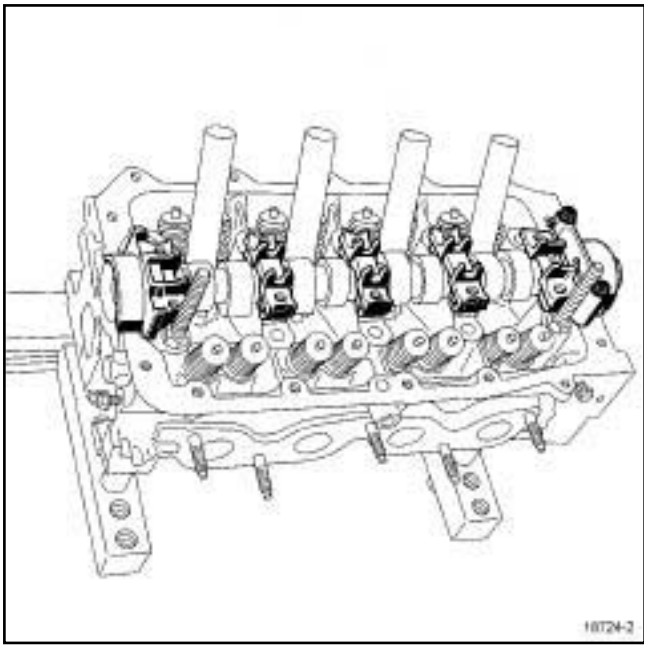
- the camshaft bolts,
- the camshafts.



18724-1

❏ Mark the camshaft bearing caps with a permanent marker pen.

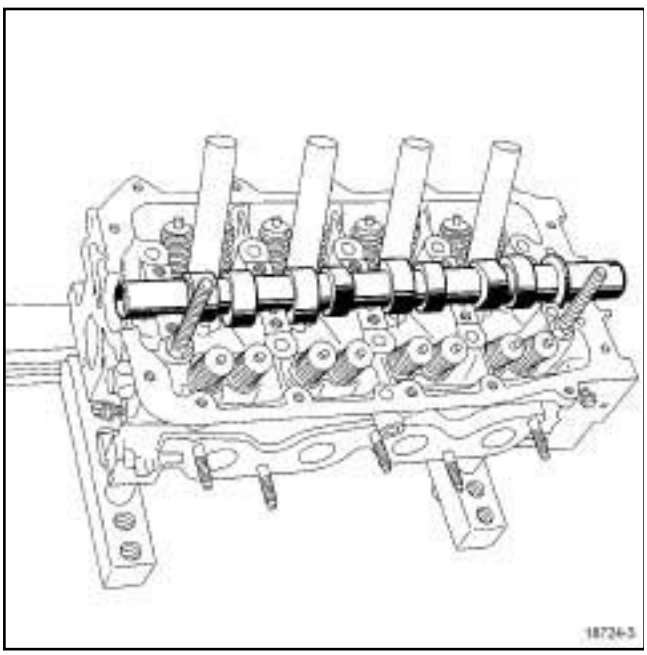
D4F, and 784 or 786



18724-2

18724-2

❑ Remove the camshaft bearing caps.



18724-3

18724-3

❑ Remove the camshaft.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Always replace:

- the camshaft seal,
- the camshaft pulley bolt.

❑ Clean the joint faces with **SUPER CLEANER FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) to dissolve any part of the joint still remaining.

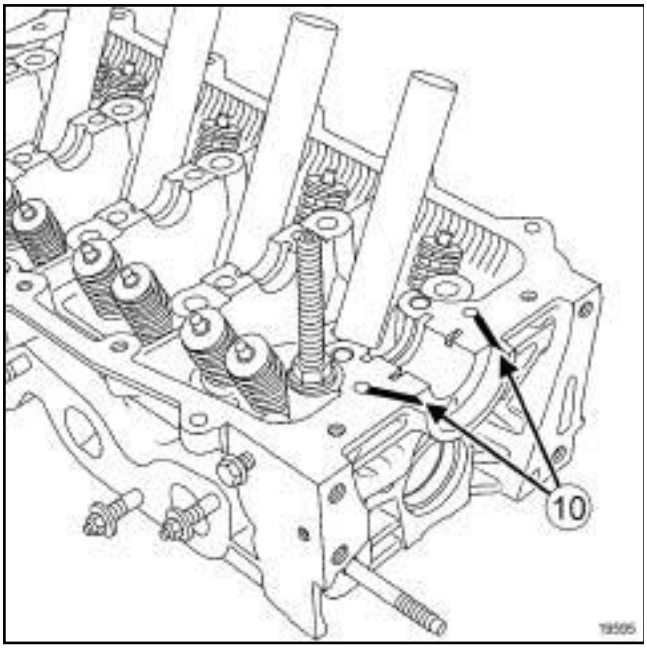
WARNING

Do not allow this product to drip onto the paintwork.

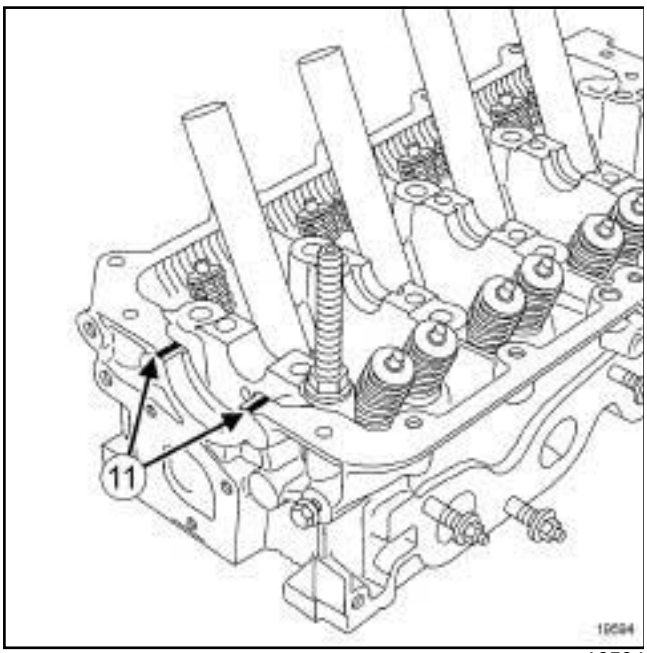
Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

D4F, and 784 or 786



19595



19594

❑ Apply:

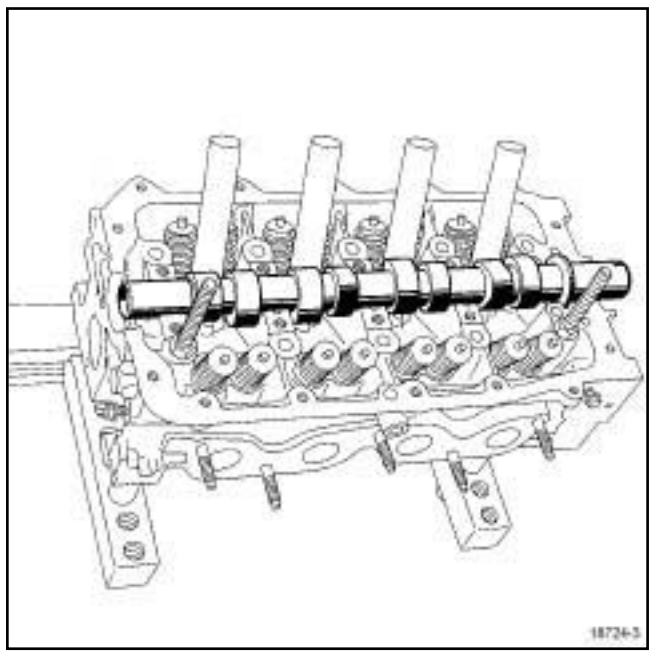
- two beads (**10**) of **MASTIXO** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) with a width of **2 mm** to bearing No.5 on the cylinder head,
- two drops (**11**) of **MASTIXO** to bearing No.1 on the cylinder head.

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

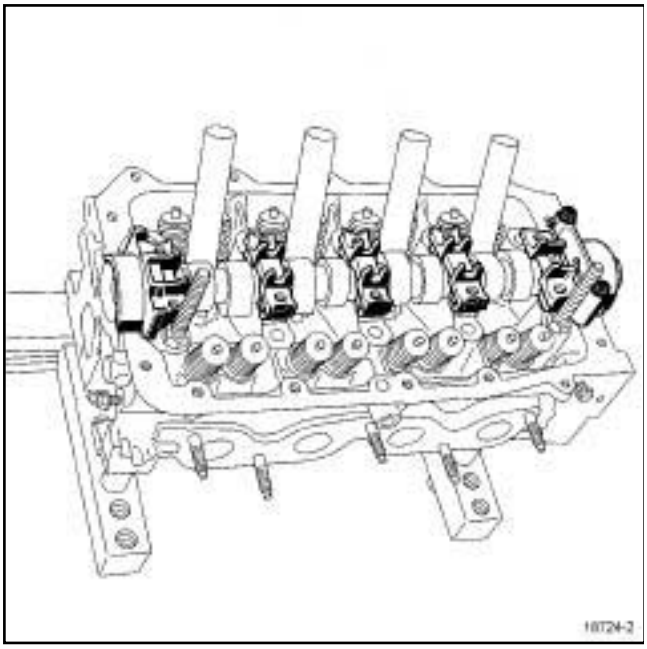
❑ Apply a blob of oil to the camshaft bearings.

II - REFITTING OPERATION FOR PART CONCERNED


18724-3

❑ Refit the camshaft.

D4F, and 784 or 786



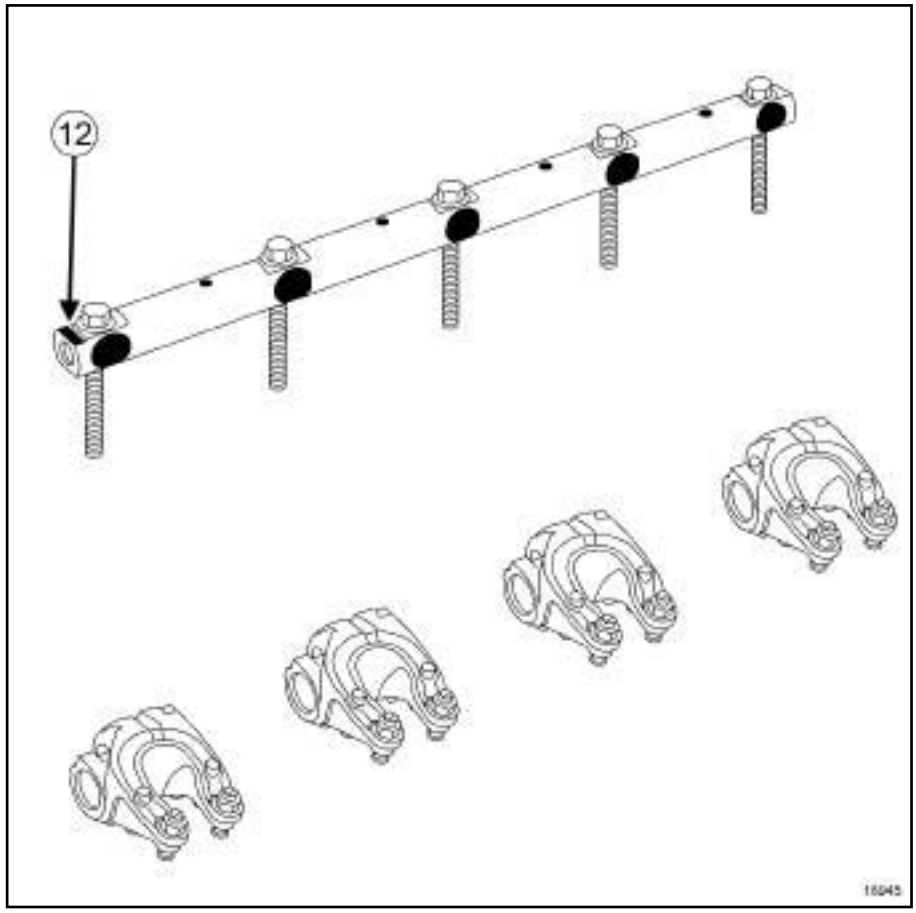
18724-2

❏ Refit the camshaft bearing caps.

❏ Torque tighten the **bolts on camshaft bearing No.5 (9 Nm)**.

D4F, and 784 or 786

Inlet camshaft



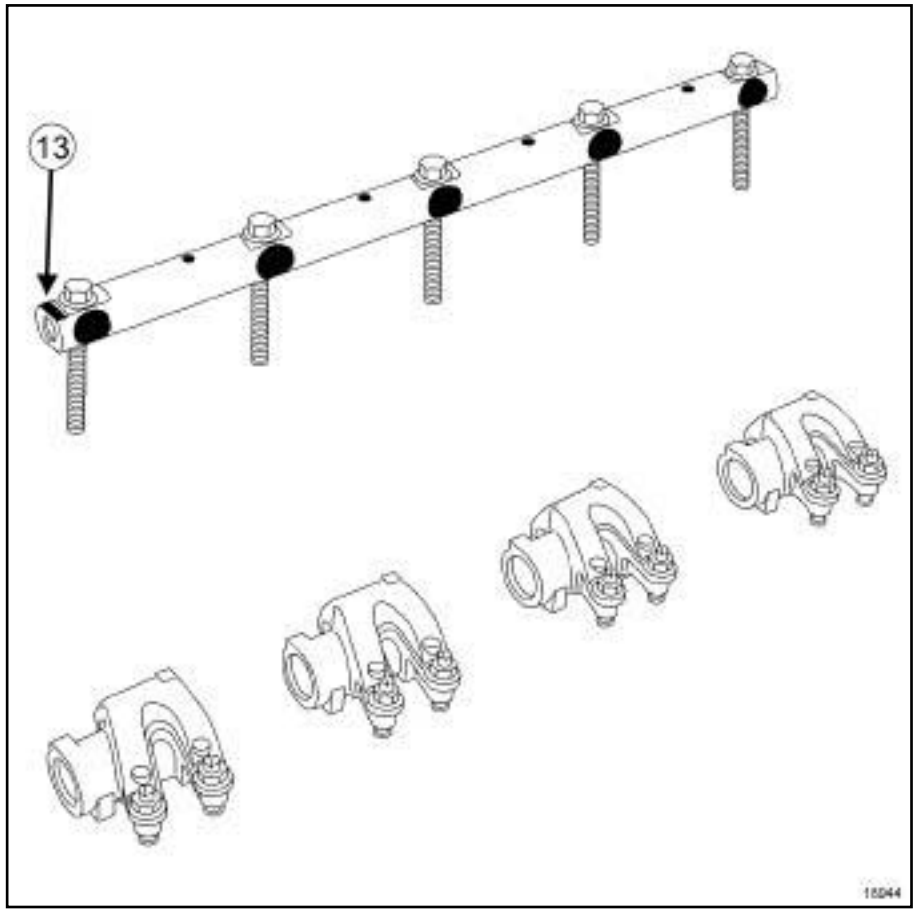
18945

❏ Refit the inlet camshaft by positioning:

- the rails in relation to the tappets,
- the marking (**12**) on the timing end.

D4F, and 784 or 786

Exhaust camshaft

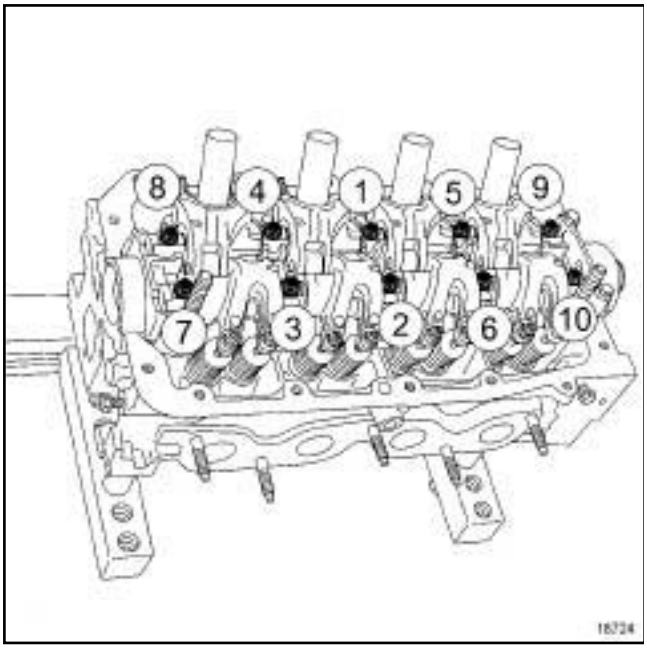


18944

❑ Refit the exhaust camshaft by positioning:

- the rails in relation to the tappets,
- the marking (**13**) on the flywheel end.

D4F, and 784 or 786



18724

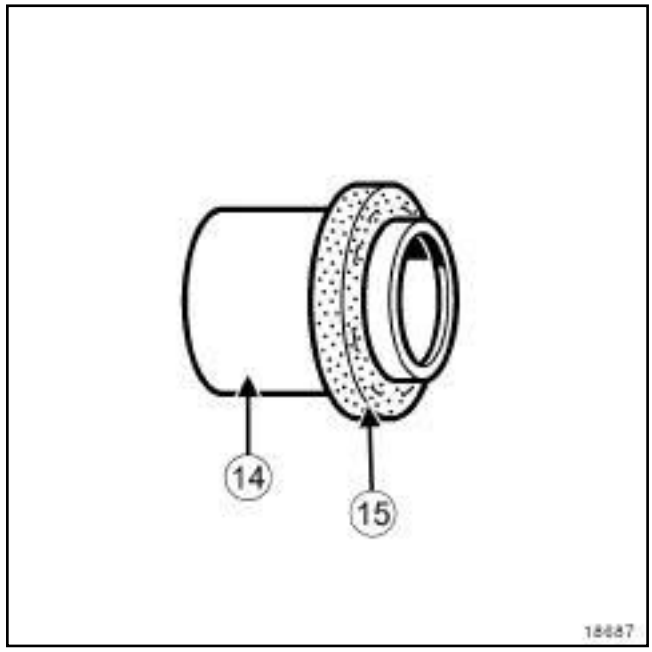
❏ Tighten to torque and in order the **camshaft bearing cap bolts (5 Nm)**.

❏ Completely loosen bolt (**1**) .

❏ Torque and angle tighten the **camshaft bearing cap bolt (7 Nm + 50° ± 6°)**.

❏ Carry out the previous operations for each bolt from (**2**) to (**10**) .

III - FINAL OPERATION.



18687

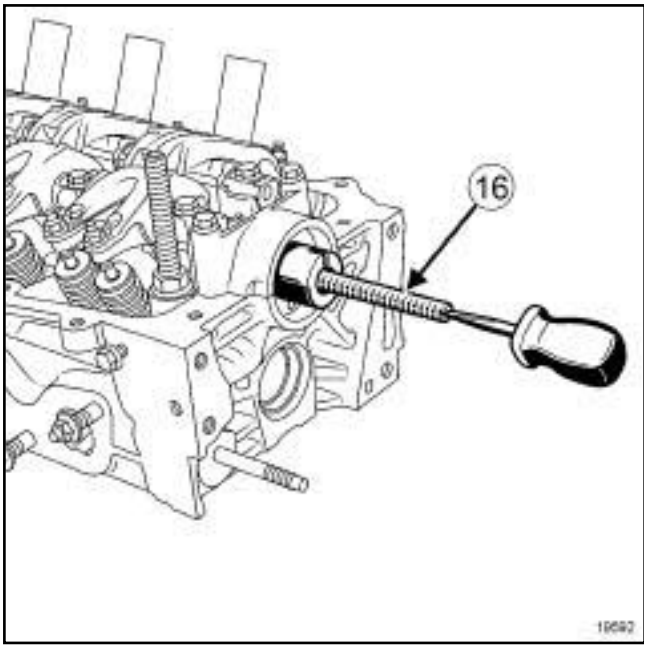
❏ Prepare the camshaft seal with its protector.

Note:

This type of seal is extremely fragile. Only touch the protective part (**14**) when handling the gasket. It is strictly forbidden to touch the seal (**15**) ; this is to prevent any oil leaks once the oil seal is fitted to the engine.

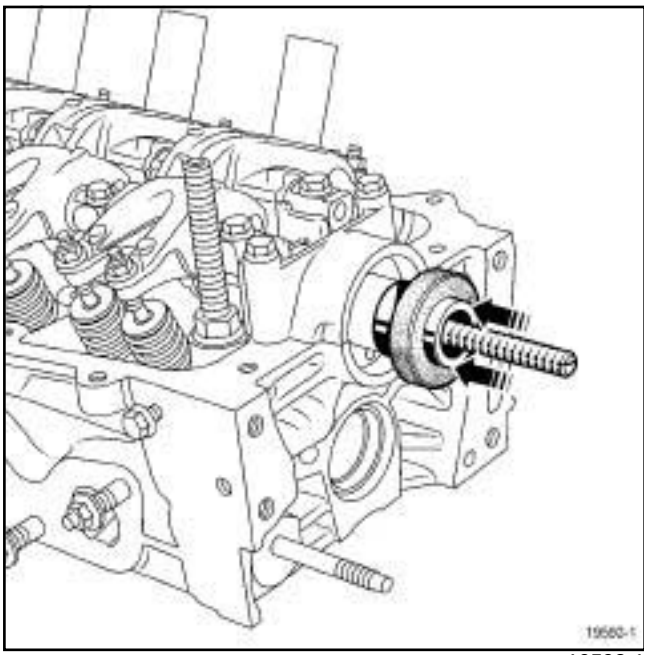
❏ Fit the seal using the **(Mot. 1587)**.

D4F, and 784 or 786



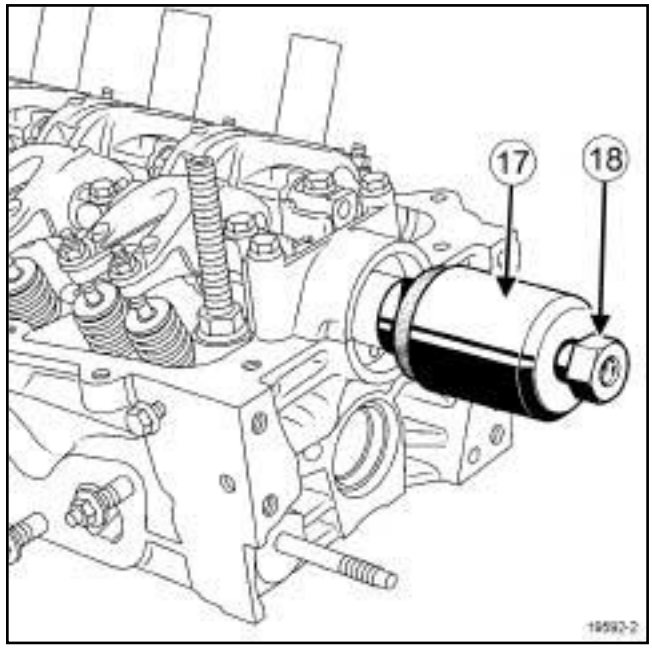
19592

❑ Fit the threaded rod (**16**) of the **(Mot. 1587)** into the camshaft.



19592-1

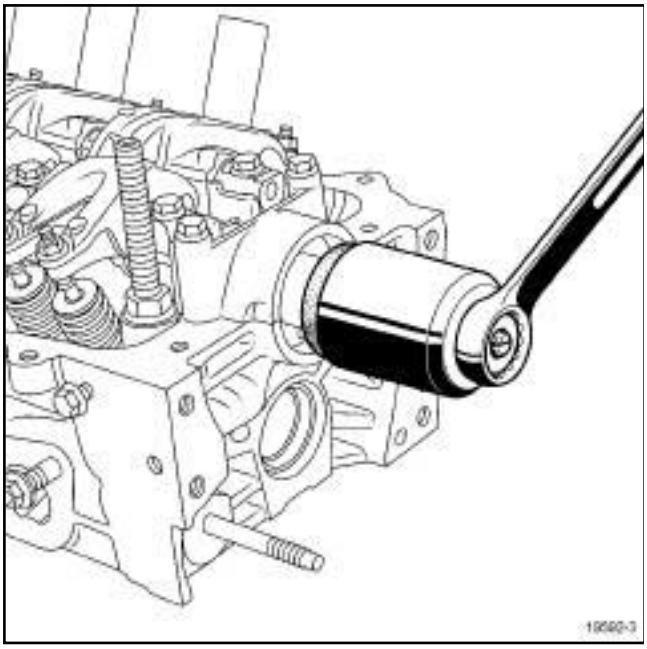
❑ Fit the seal gasket and protector on the camshaft. Be careful not to touch the seal.



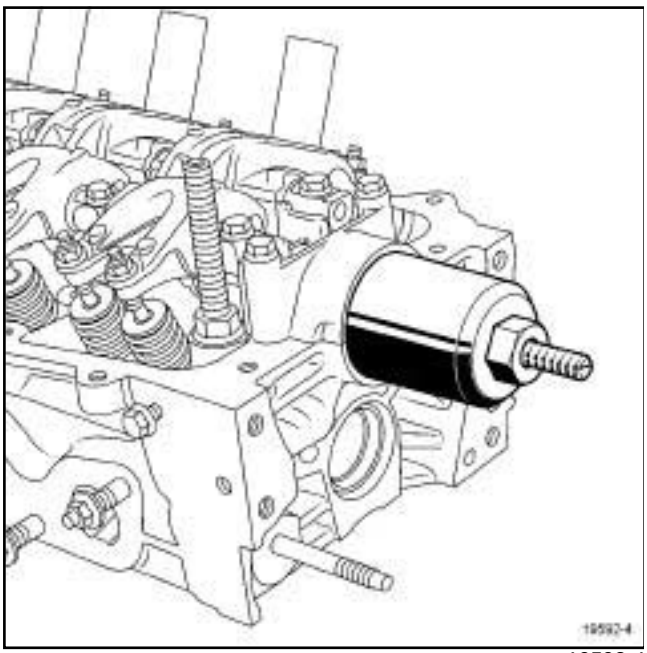
19592-2

❑ Fit the cover (**17**) and the collar nut (**18**) of the **(Mot. 1587)**.

D4F, and 784 or 786

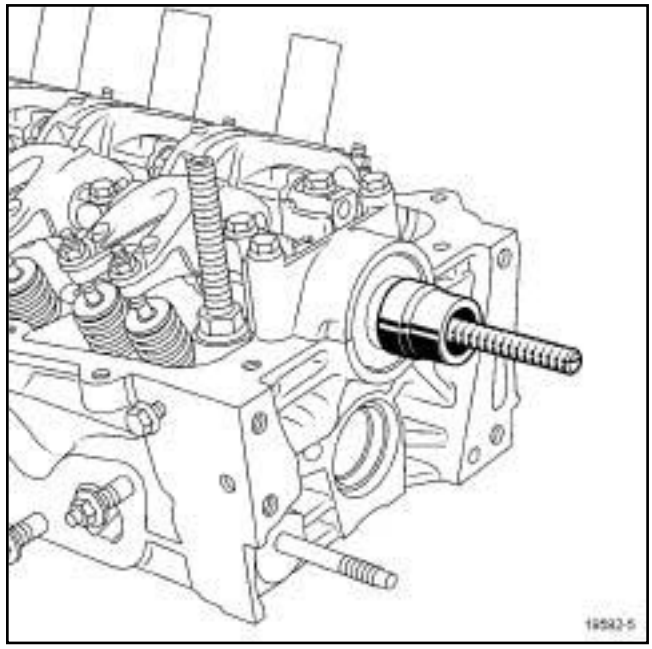

19592-3

19592-3


19592-4

19592-4

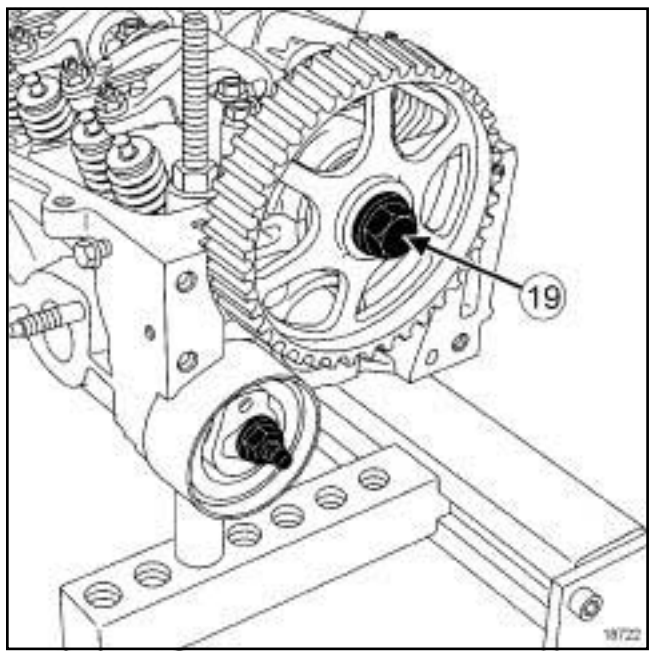
❑ Tighten the collar nut until the cover comes into contact with the cylinder head.


19592-5

19592-5

❑ Remove:

- the nut ***(18)*** ,
- the cover ***(17)*** ,
- the guard ***(14)*** ,
- the threaded rod ***(16)*** .



18722

18722

❑ Refit:

- the camshaft pulley,
- the new camshaft pulley bolt (**19**) .

❑ Torque and angle tighten the **camshaft pulley bolt (30 Nm + 45° ± 6°)** using the **(Mot. 799-01)**.

D4F, and 784 or 786

❑ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Remove the engine support tool **(Mot. 1672)**.

❑ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the filler neck,
- the filler neck bolt,
- the heat shield,
- the heat shield bolts.

❑ Torque tighten the **heat shield bolts (8 Nm)**.

❑ Clip the upstream oxygen sensor wiring harness into place.

❑ Connect:

- upstream oxygen sensor connector,
- the oil vapour rebreathing circuit union.

❑ Refit the intercooler air inlet pipe.

❑ Clip the intercooler air inlet pipe onto the turbocharger.

❑ Refit:

- the intercooler air inlet pipe bolt on the intake distributor,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Special tooling required	
Mot. 919-02	Flywheel locking tool.
Mot. 1716	Removes housing with silicone seals.

Tightening torques ▽	
cylinder head cover bolts (first initial torque)	**2 N.m**
cylinder head cover bolts (second initial torque)	**6 N.m**
cylinder head cover bolts	**10 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **Engine: Precautions for the repair**) .

WARNING

It is strictly forbidden to apply any pressure to the engine oil sump. Damage to the sump will irreparably damage the engine by:

- blocking the strainer,
- raising the oil level above maximum, with a risk of engine racing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the « engine and gearbox » assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .

M4R, and 700

❏ Disconnect the manual gearbox from the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

M4R, and 701

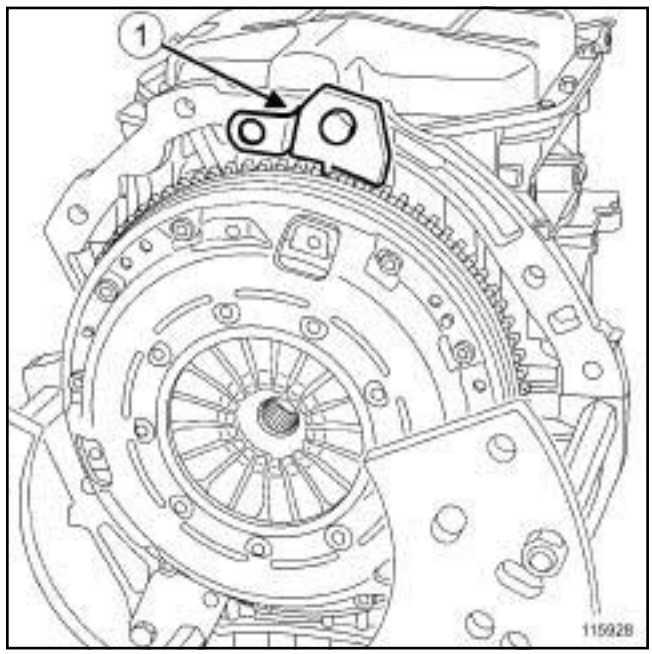
❏ Disconnect the automatic gearbox from the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

❏ Place the engine on the component support (see **Engine support equipment: Use**) .

❏ Drain the engine (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

M4R, and 700

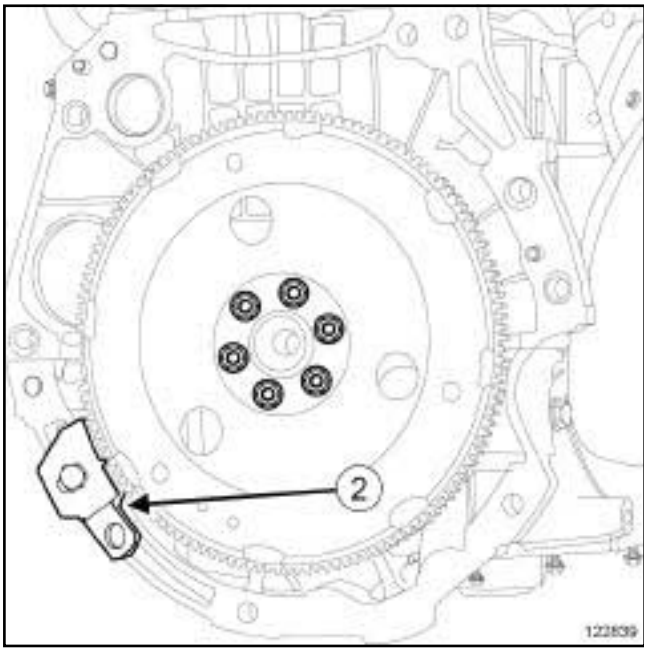


115928

❏ Immobilise the flywheel by fitting the tool **(Mot. 919-02)** (**1**) on the cylinder block.

M4R

M4R, and 701



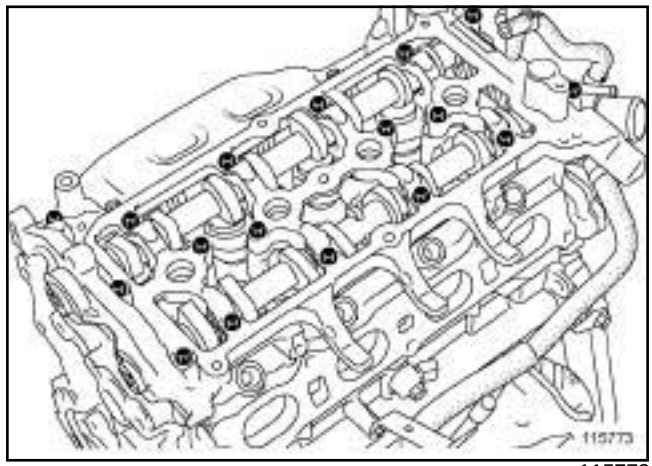
122839

❏ Immobilise the drive plate by fitting the tool **(Mot. 919-02)** (**2**) on the cylinder block.

❏ Remove:

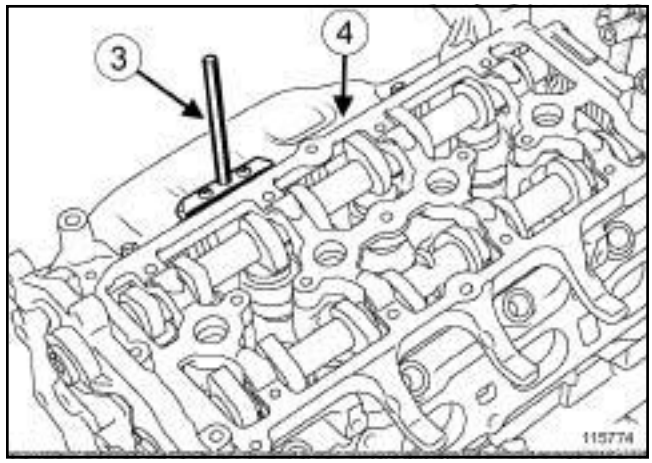
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the **(Mot. 919-02)**,
- the crankshaft seal on the timing side (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) ,
- the timing chain (see **11A**, **Top and front of engine**, **Timing chain: Removal - Refitting**, page **11A-170**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing sprockets (see **Timing sprocket: Removal - Refitting**) ,
- the injector rail (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



115773

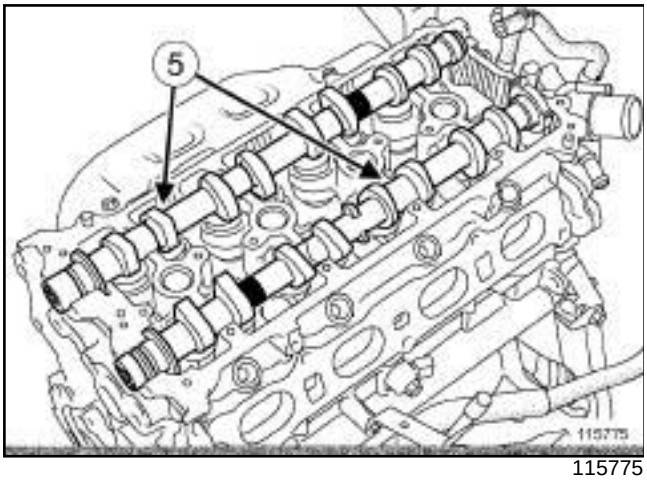
❏ Remove the cylinder head cover bolts.



115774

❏ Detach the cylinder head cover using the tool **(Mot. 1716)** (**3**) .

❏ Remove the cylinder head cover (**4**) .



115775

❑ Remove the camshafts (**5**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

❑ Clean the joint faces of the cylinder head cover with **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Remove the residue using a plastic spatula.

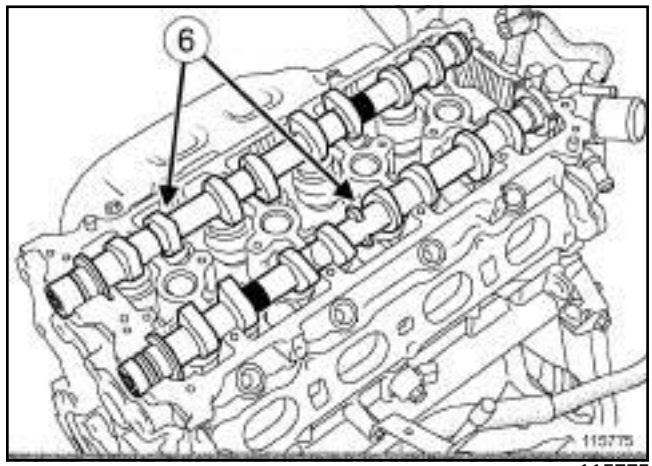
❑ Finish cleaning the joint faces using a **GREY ABRASIVE PAD**, part number **77 01 405 943**.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

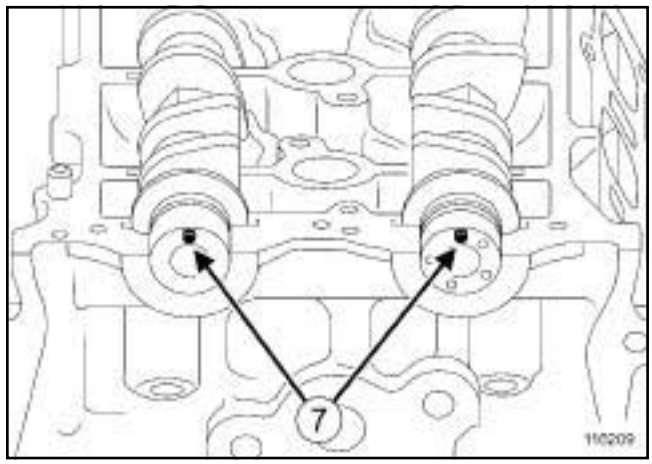
❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:

- the cylinder head cover,
- the camshafts.

II - REFITTING OPERATION FOR PART CONCERNED

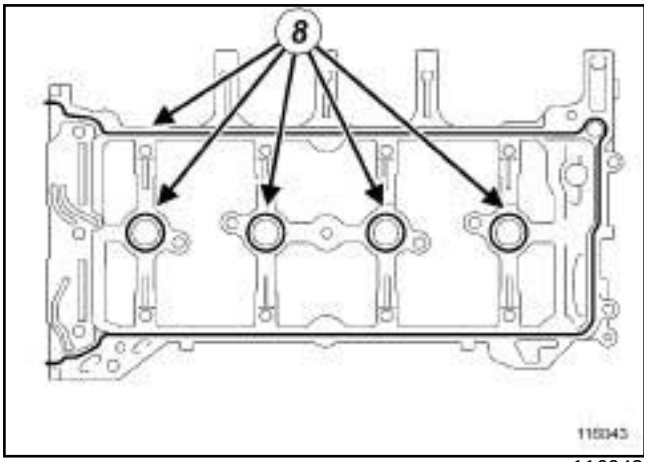


115775



116209

❑ Refit the camshafts (**6**) (see **Camshaft: Check**) , placing the lugs (**7**) upwards.



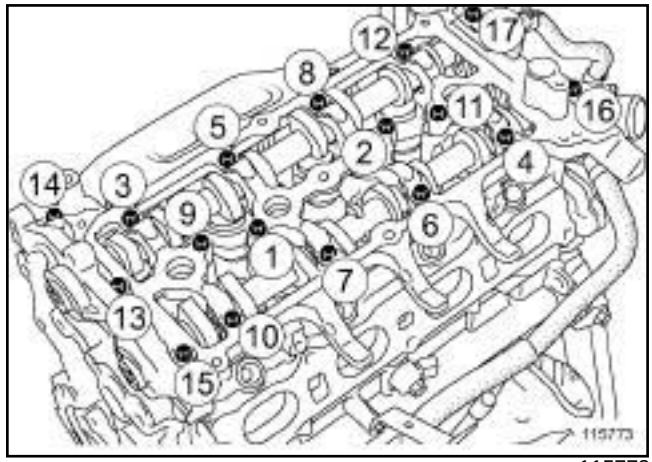
116043

❑

WARNING

Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

❑ Apply a bead of **SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) with a diameter of **4 mm** (**8**) around the edge of the joint face of the cylinder head cover and the plug wells.



115773

❑ Refit:

- the cylinder head cover,
- the cylinder head cover bolts.

❑ Pretighten to torque and in order:

- the **cylinder head cover bolts (first initial torque) (2 N.m)**,
- the **cylinder head cover bolts (second initial torque) (6 N.m)**.

❑ Torque tighten in order the **cylinder head cover bolts (10 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the injector rail (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) ,
- the timing sprockets (see **Timing sprocket: Removal - Refitting**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the timing chain (see **11A**, **Top and front of engine**, **Timing chain: Removal - Refitting**, page **11A-170**) ,
- the crankshaft seal on the timing side (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) .

M4R

- ❏ Immobilise the flywheel or the drive plate using the tool **(Mot. 919-02)**.
- ❏ Refit the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) .
- ❏ Remove the tool **(Mot. 919-02)**.
- ❏ Refit the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .
- ❏ Remove the engine from the component support (see **Engine support equipment: Use**) .

M4R, and 700

- ❏ Connect the manual gearbox to the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

M4R, and 701

- ❏ Connect the automatic gearbox to the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

- ❏ Refit the « engine and gearbox» assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .
- ❏ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

Camshaft seal, timing end: Removal - Refitting

K9K

Special tooling required	
Mot. 799-01	Timing gear wheel immobiliser.
Mot. 1577	Lip seal extractor (shaft diameter 28 mm to 42 mm).
Mot. 1632	Tool for fitting camshaft PTFE seal

Tightening torques ▽	
camshaft hub bolt	**30 N.m + 86° ± 6°**
camshaft hub bolt	**30 N.m + 86° ± 6°**
camshaft pulley bolts	**14 N.m**

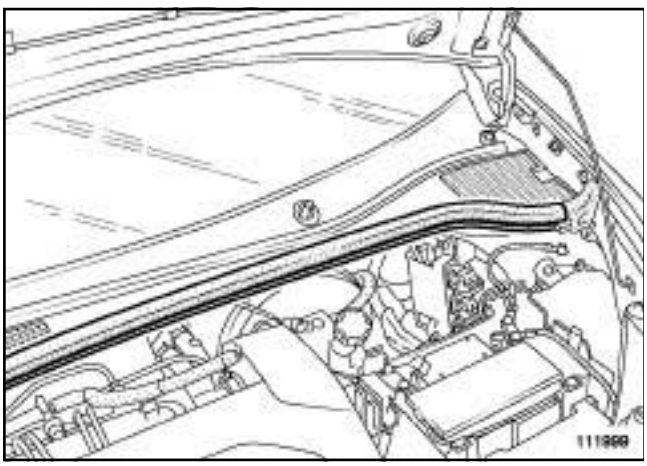
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.



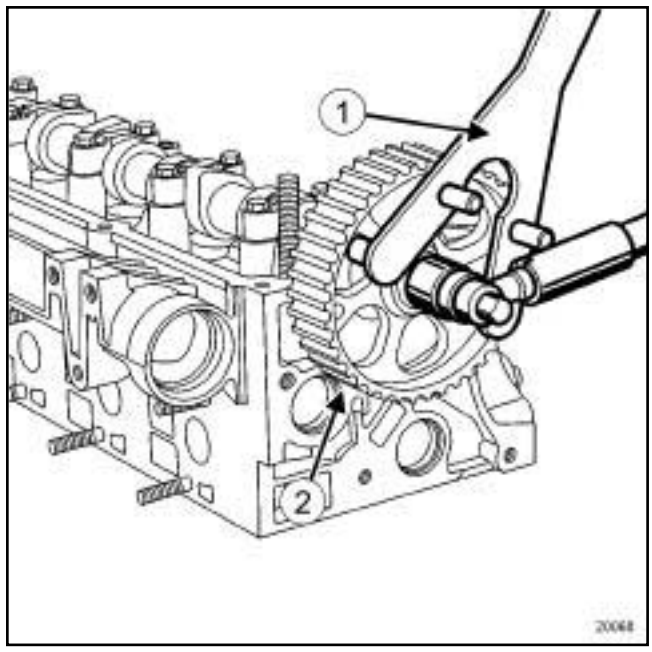
111999

❑ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

FACTORY FITTING:



20068

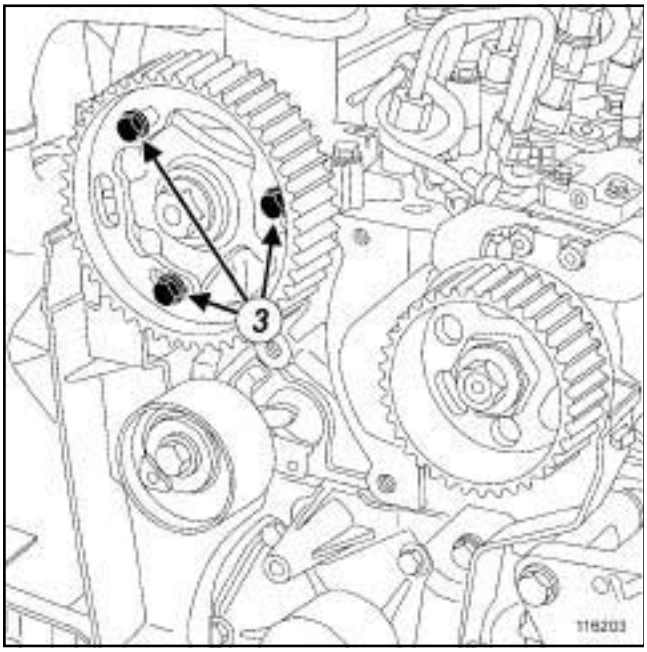
❑ Immobilise the camshaft hub using the **(Mot. 799-01)** (**1**) .

❑ Remove:

- the nut from the camshaft pulley,
- the camshaft pulley (**2**) .

K9K

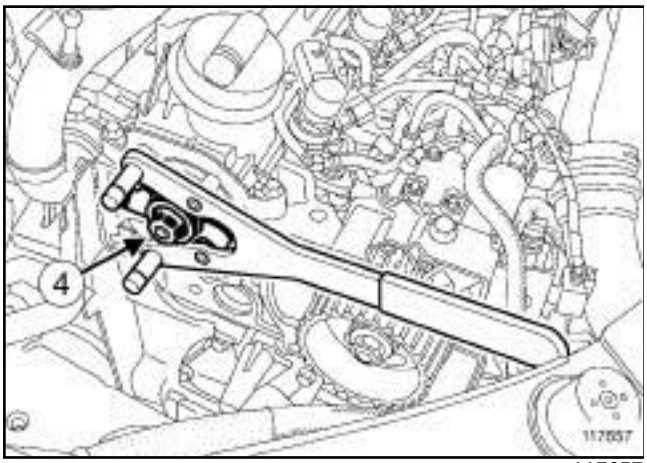
RETRO-FITTING:



116203

❏ Remove:

- the camshaft pulley bolts (**3**) ,
- the camshaft pulley.



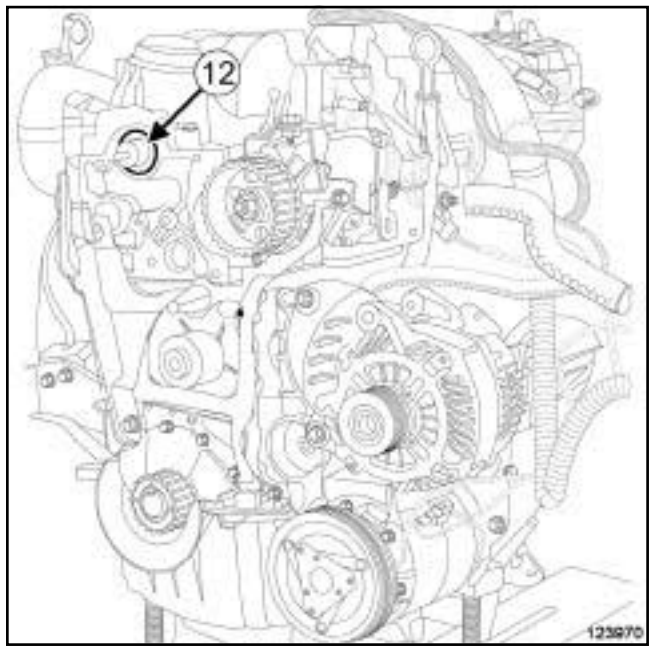
117657

❏ Immobilise the camshaft hub using the **(Mot. 799-01)**.

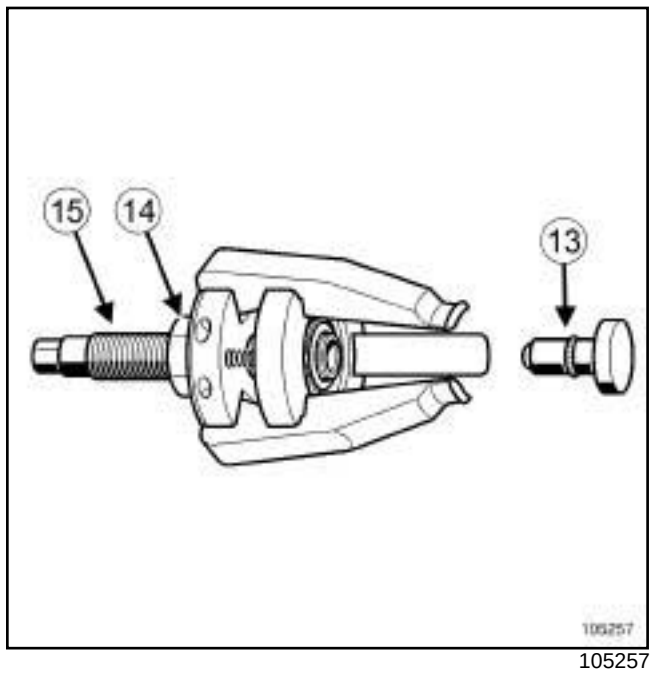
❏ Remove:

- the camshaft hub nut (**4**) ,
- the camshaft hub.

REMOVAL OPERATION FOR THE PART CONCERNED, FOR BOTH FITTINGS



123970



105257

❏

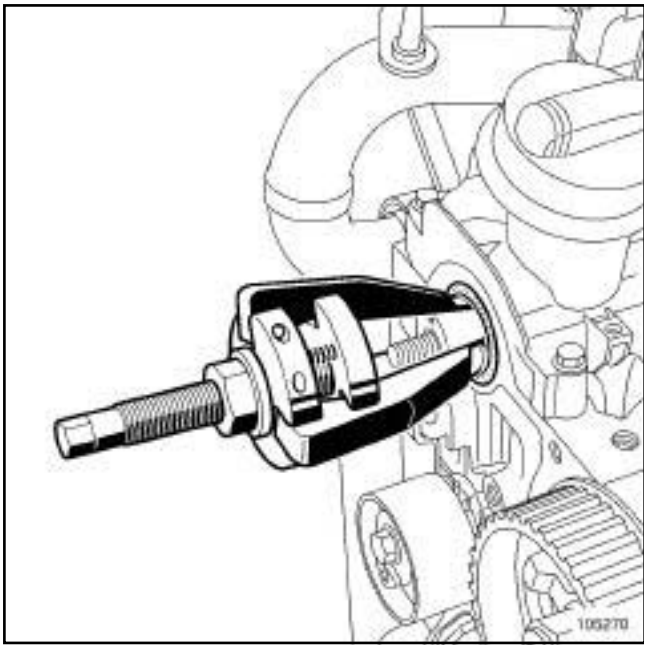
Note:

The camshaft seal is removed using the **(Mot. 1577)**.

❏ Remove the camshaft seal (**12**) making sure that the end piece (**13**) of the tool **(Mot. 1577)** is always removed.

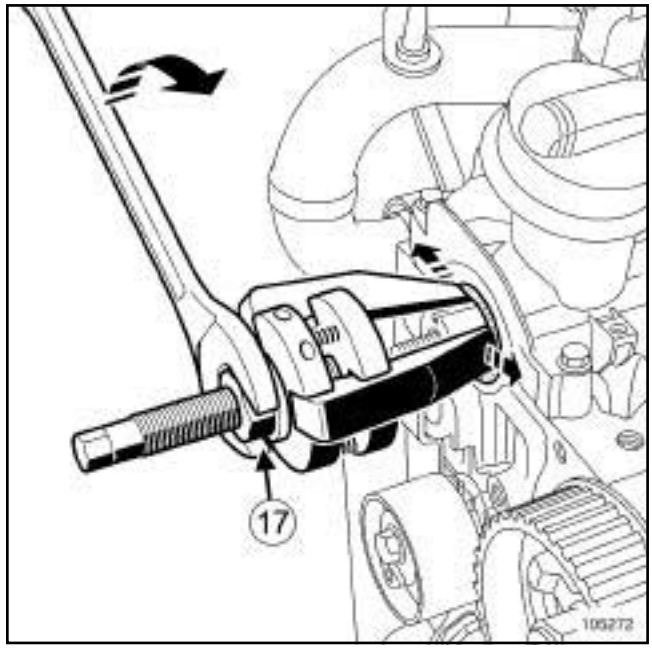
❏ Loosen bolts (**14**) and (**15**) fully from the **(Mot. 1577)**.

K9K



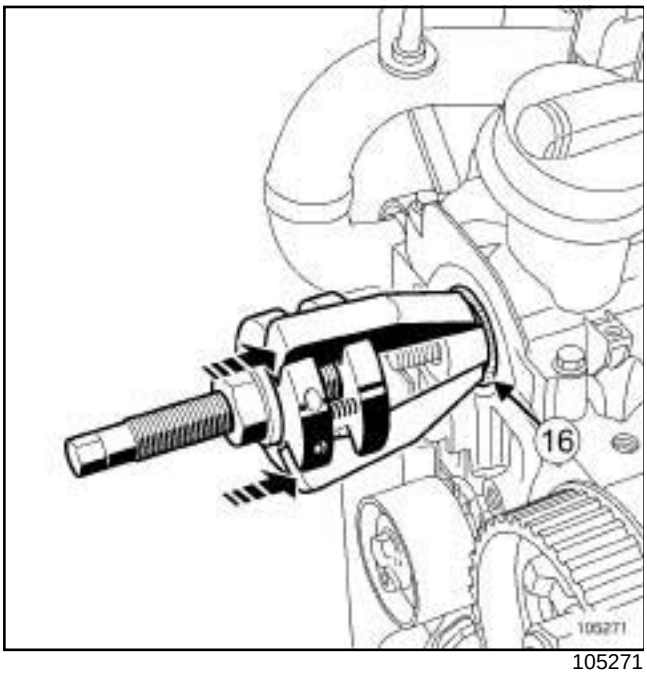
105270

❑ Position the claws of the **(Mot. 1577)** on the camshaft.



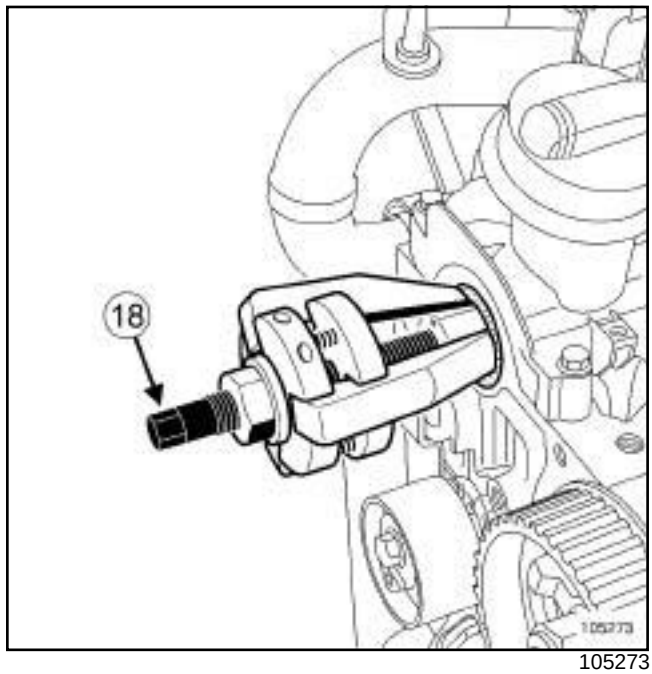
105272

❑ Separate the claws by turning the bolt (**17**) clockwise using an open-jawed spanner.



105271

❑ Push the tool **(Mot. 1577)** until contact is made between the ends (**16**) of the claws and the camshaft seal.



105273

❑ Remove the camshaft seal by turning the bolt (**18**) clockwise.

K9K

REFITTING

I - REFITTING PREPARATION OPERATION

❑ It is essential to replace the camshaft seal.

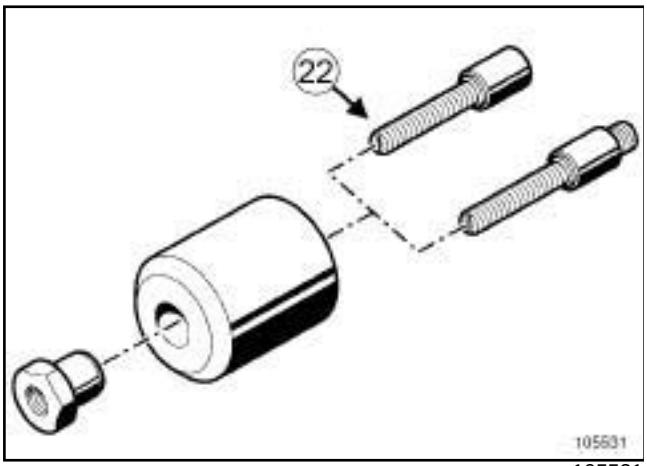
Note:

Always replace any camshaft pulley studs which were loosened during the operation.

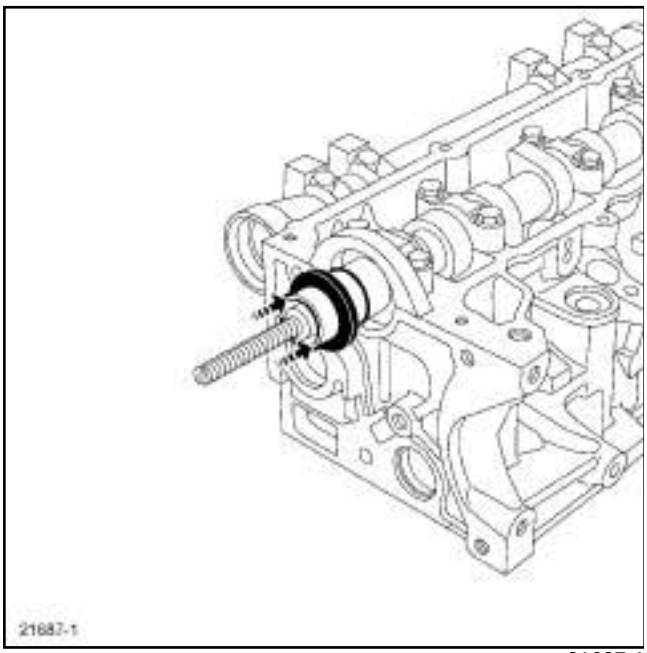
Do not touch or soil the pre-coated section of the new stud as this may cause oil to leak out from the camshaft. In this case, torque tighten the **camshaft stud 12 N.m**.

K9K

II - REFITTING OPERATION FOR PART CONCERNED



105531



21687-1

❏ Screw the stud (**22**) of the **(Mot. 1632)** onto the camshaft.

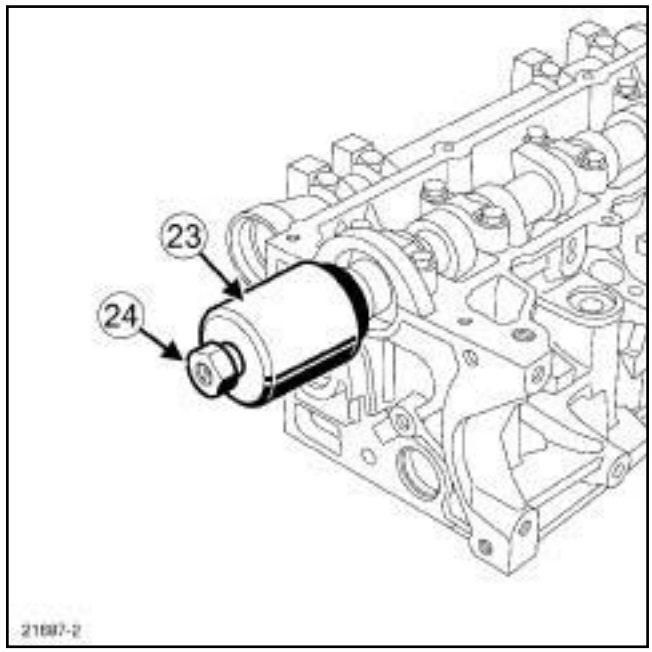
❏ Fit a new camshaft seal on the camshaft.

Note:

For camshaft seals delivered fitted to a protective sleeve:

- do not remove the camshaft seal from its protective sleeve,
- fit the sleeve fitted with the camshaft seal to the camshaft,
- push the protective sleeve towards the cylinder head until the camshaft seal reaches its limit on the cylinder head,
- fit the seal on the camshaft by following the recommendations below.

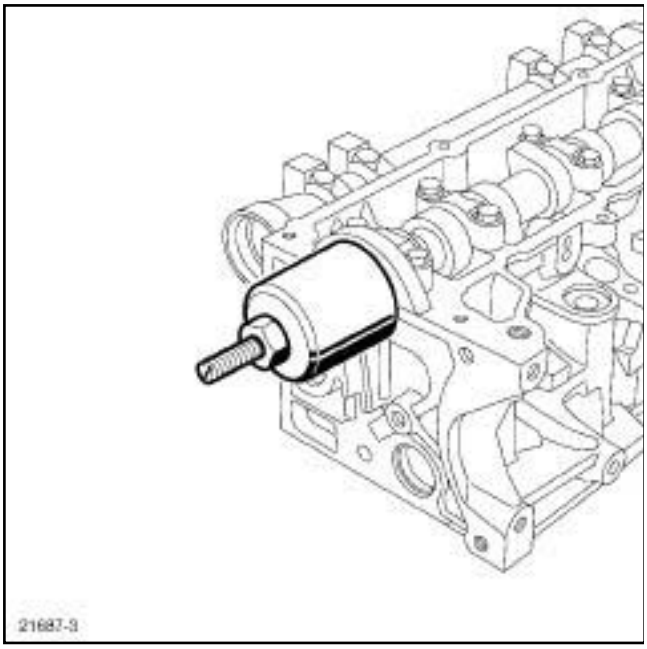
1 - First fitting of the camshaft seal



21687-2

❏ Fit the cover (**23**) and the collar nut (**24**) of the **(Mot. 1632)**.

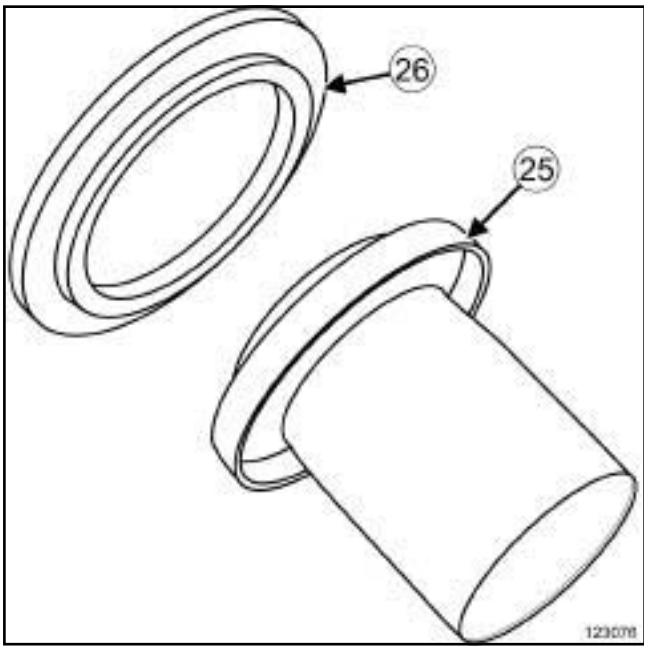
K9K



21687-3

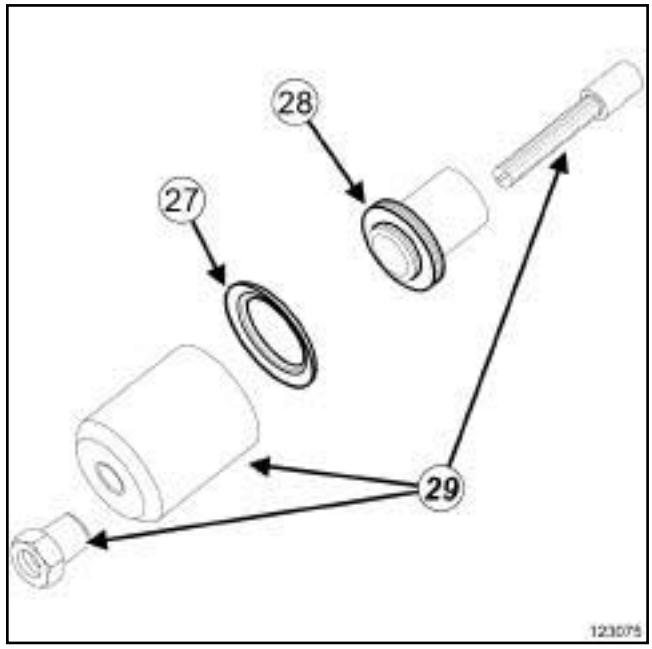
❏ Screw on the collar nut until the cover touches the cylinder head.

2 - Second fitting of the camshaft seal



123076

❏ Depending on the case, the Parts Department delivers seals (**25**) equipped with a spacer (**26**) amongst other things.



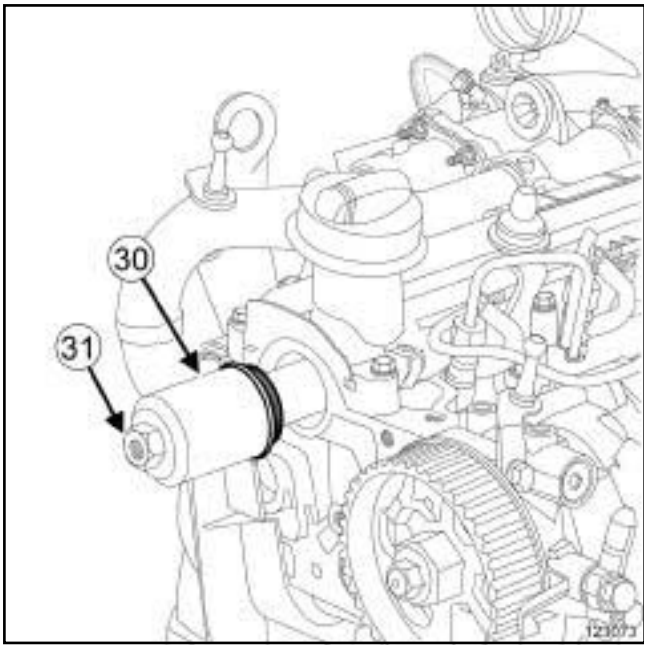
123075

❏

Note:

The spacer (**27**) is used to fit the seal (**28**) and is used in addition to the tool **(Mot. 1632)** (**29**) .

K9K

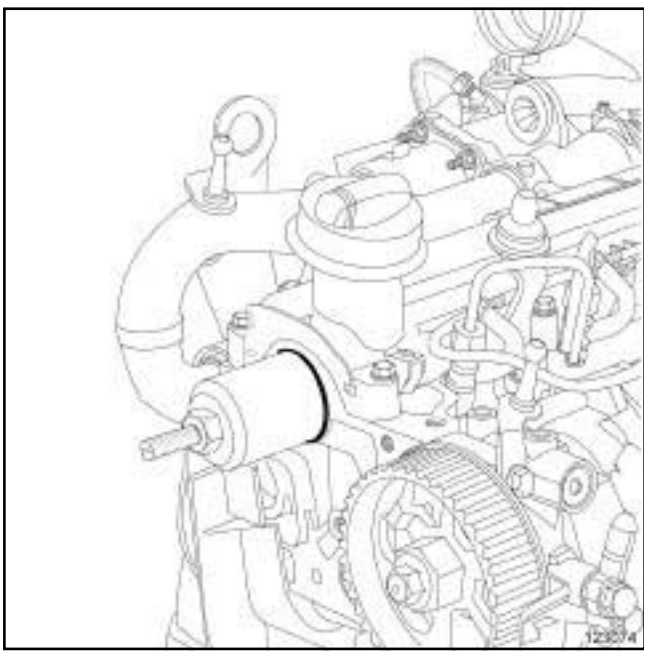


123073

❑ Position the bell (**30**) fitted with the spacer on the camshaft seal side and then position the collared nut (**31**) of the tool **(Mot. 1632)**.

Note:

The spacer fits on the bell of the tool **(Mot. 1632)** so that the internal edge of the spacer is on the side of the camshaft seal.


123074

❑ Screw on the collar nut until the spacer fitted on the cover touches the cylinder head.

3 - Continued for both methods

❑ Remove:

- the collar nut from the **(Mot. 1632)**,
- the cover from the **(Mot. 1632)**,
- the stud of the **(Mot. 1632)**,
- the protective sleeve and the spacer, if fitted then throw them away.

FACTORY FITTING:

❑ Refit:

- the camshaft pulley,
- the camshaft pulley nut.

Note:

When replacing the camshaft pulley, the Parts Department supplies a camshaft pulley in two parts.

❑ Immobilise the camshaft hub using the **(Mot. 799-01)**.

❑ Torque tighten the **camshaft hub bolt (30 N.m + 86° ± 6°)**, locking the hub using the tool **(Mot. 799-01)**.

RETRO-FITTING:

❑ Refit:

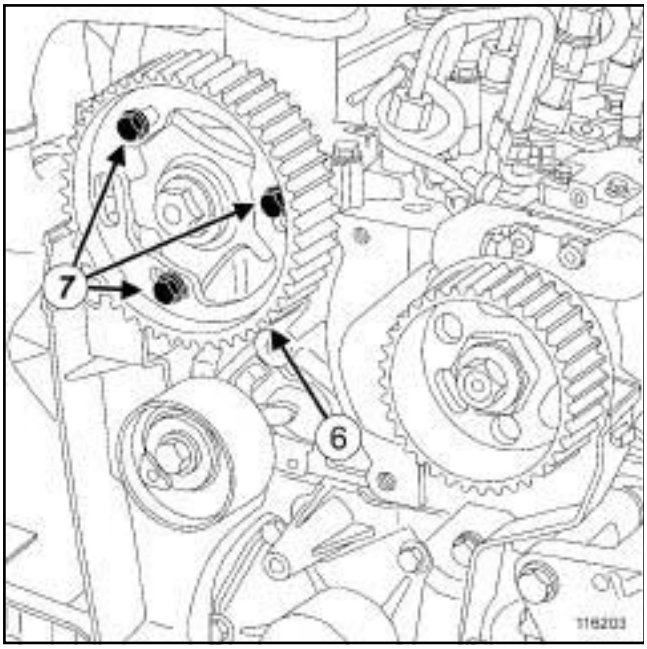
- the camshaft hub,
- the camshaft hub nut.

❑ Immobilise the camshaft hub using the **(Mot. 799-01)**.

❑ Torque tighten the **camshaft hub bolt (30 N.m + 86° ± 6°)**, locking the hub using the tool **(Mot. 799-01)**.

❑ Refit:

- the camshaft pulley,
- the camshaft pulley bolts.



116203

❑ Position the pulley (**6**) in the centre of the ellipses (**7**) .

❑ Tighten to torque the **camshaft pulley bolts (14 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

❑ Refit the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Camshaft seal, timing end: Removal - Refitting

F4R

Special tooling required	
Mot. 1801	Camshaft sprocket locking tool F4 engines.
Mot. 1509-01	Adapter kit for tool Mot.1509 or Mot.1801
Mot. 1577	Lip seal extractor (shaft diameter 28 mm to 42 mm).
Mot. 1814	Tool for fitting the PTFE seal to the inlet camshaft F4R/830
Mot. 1512	Tool for fitting exhaust camshaft seals (28 x 47).

Tightening torques ▽	
toothed sprocket nuts	**80 Nm**
exhaust camshaft pulley nut	**30 Nm**
intake camshaft pulley nut	**30 Nm**
inlet camshaft dephaser blanking cover	**25 Nm**

REMOVAL

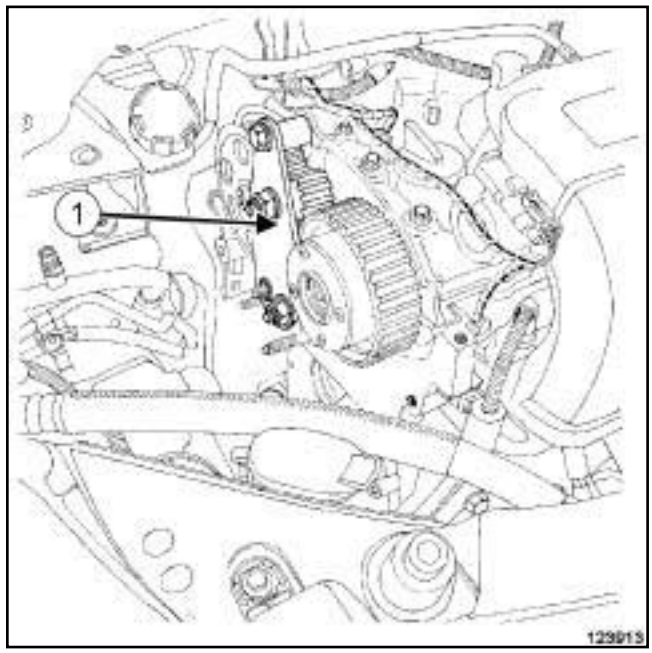
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the right-hand protector bolts,
- the right-hand protector,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



123913

❏ Position the **(Mot. 1801)** (**1**)

equipped with the tool **(Mot. 1509-01)**.

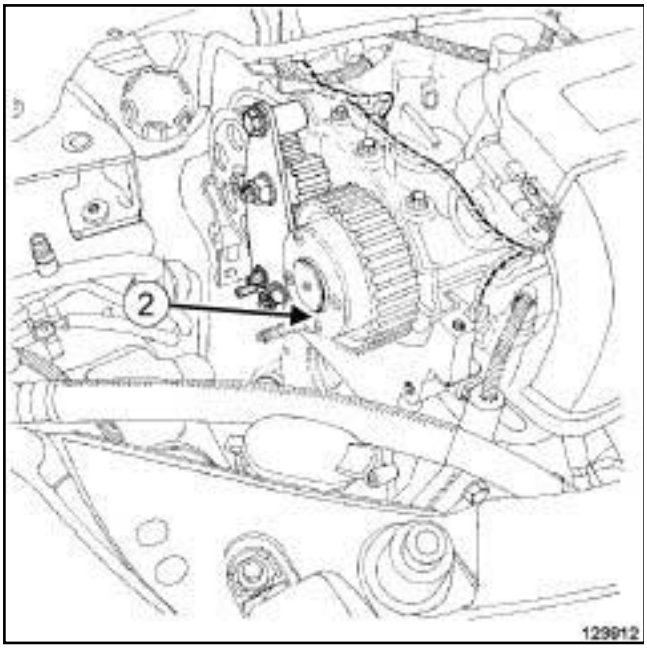
❏ Tighten the bolt and the collar nut.

❏ Torque tighten the **toothed sprocket nuts (80 Nm)**.

❏ Remove:

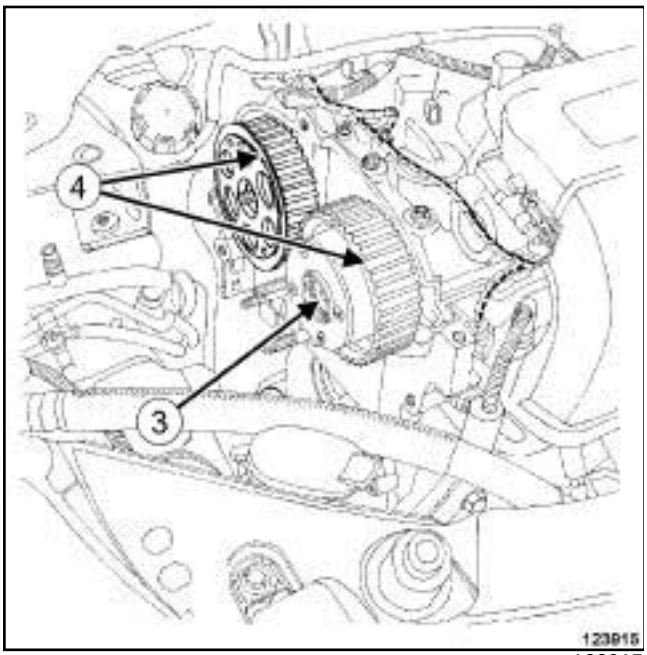
- the camshaft pulley nuts,
- the **(Mot. 1801)** fitted with the **(Mot. 1509-01)**,
- the camshaft pulleys.

F4R



123912

❏ Remove the intake camshaft dephaser blanking cover (**2**) .

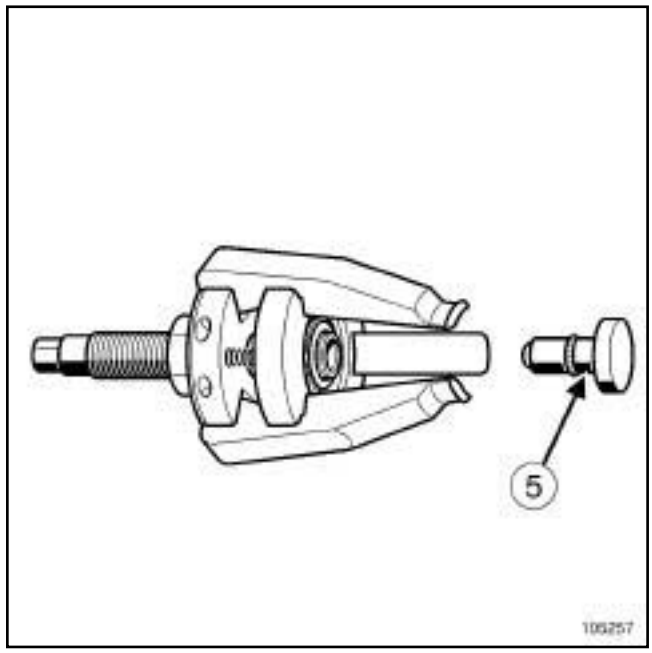


123915

❏ Remove:

- the camshaft pulley nuts (**3**) ,
- the **(Mot. 1801)** fitted with the **(Mot. 1509-01)**,
- the camshaft pulleys (**4**) .

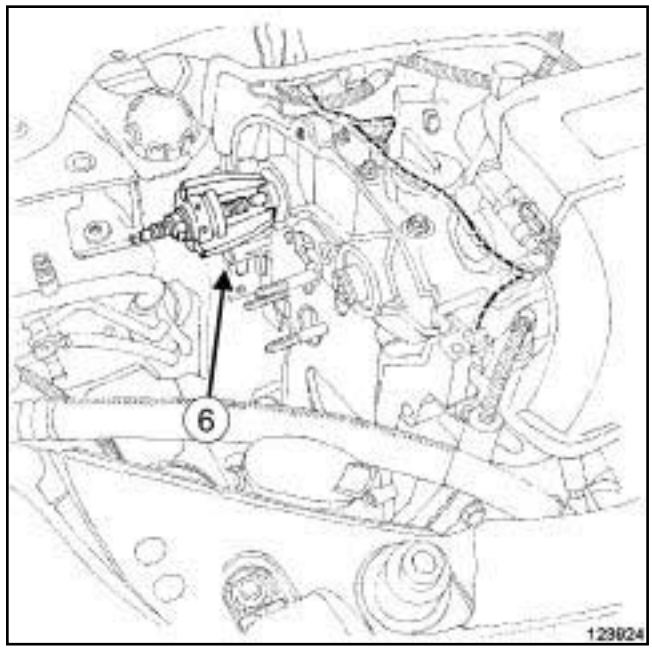
II - OPERATION FOR REMOVAL OF PART CONCERNED



105257

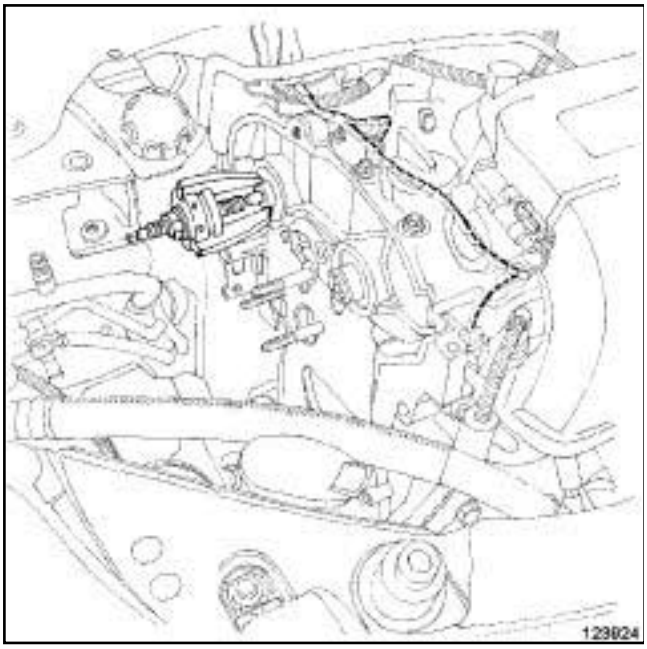
❏ Remove the end piece (**5**) from the **(Mot. 1577)**.

❏ Position the **(Mot. 1577)**.

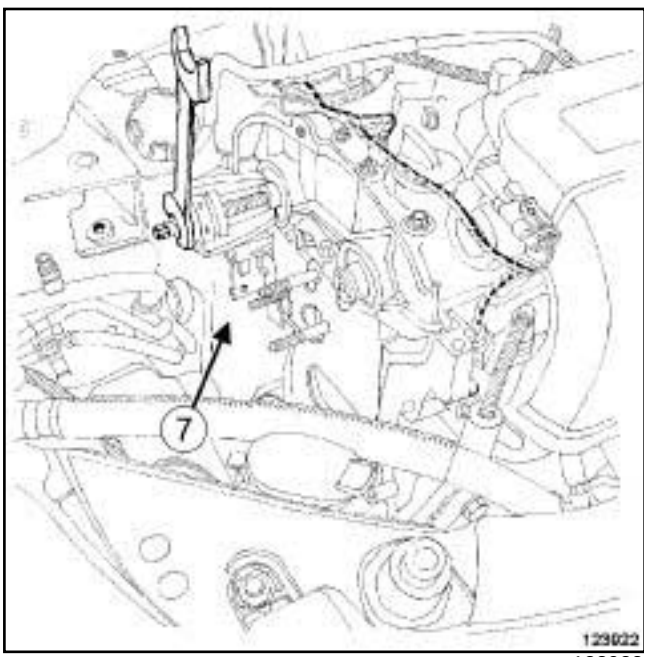


123924

❏ Position the claws (**6**) of the tool **(Mot. 1577)** on the camshaft.

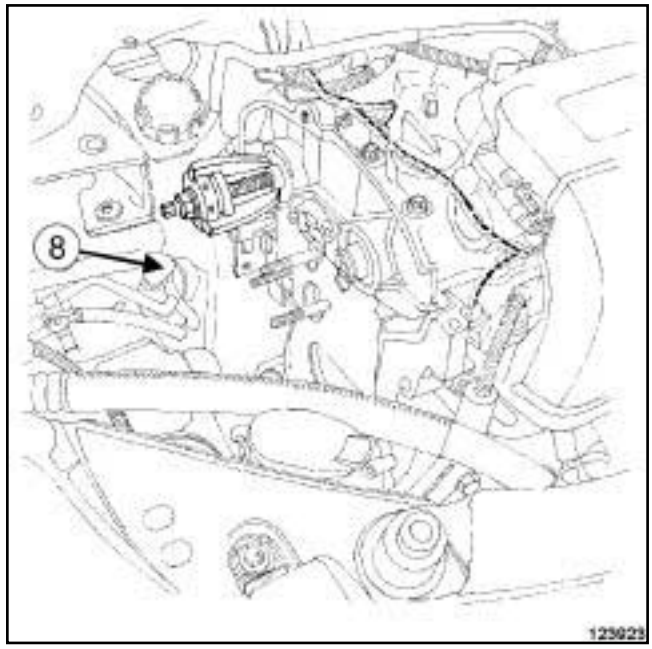

123924

❑ Push the tool **(Mot. 1577)** until contact is made between the ends of the claws and the camshaft seal.



123922

❑ Separate the claws by screwing the bolt using an open-jawed spanner (**7**) .



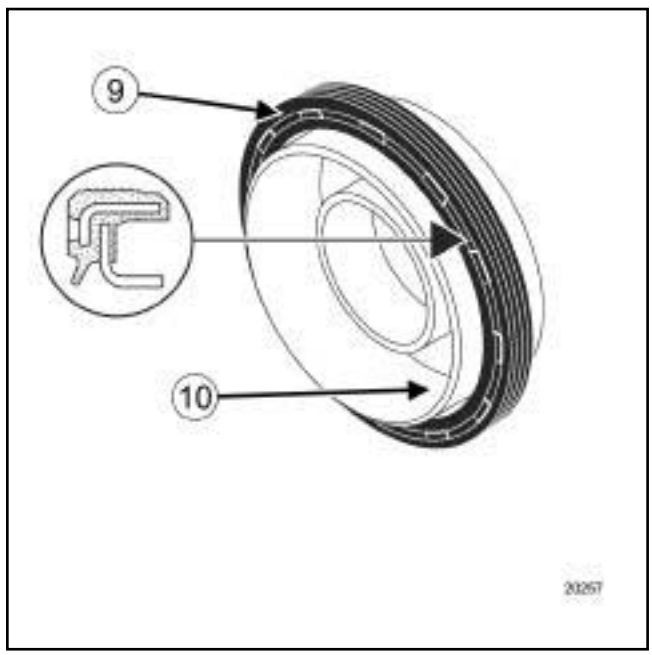
123923

❑ Remove the camshaft seal by screwing the bolt (**8**) .

❑ Repeat the previous operations in order to remove the other camshaft seal.

REFITTING

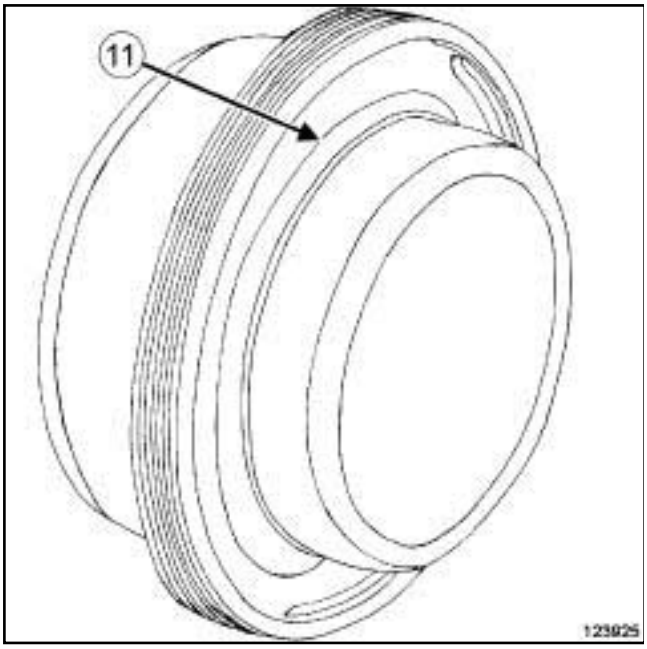
I - REFITTING PREPARATION OPERATION



20257

❑ The seals on these engines come fitted with an elastomer flat lip seal (**9**) and a protector (**10**) (also used to fit the seal on the engine).

F4R



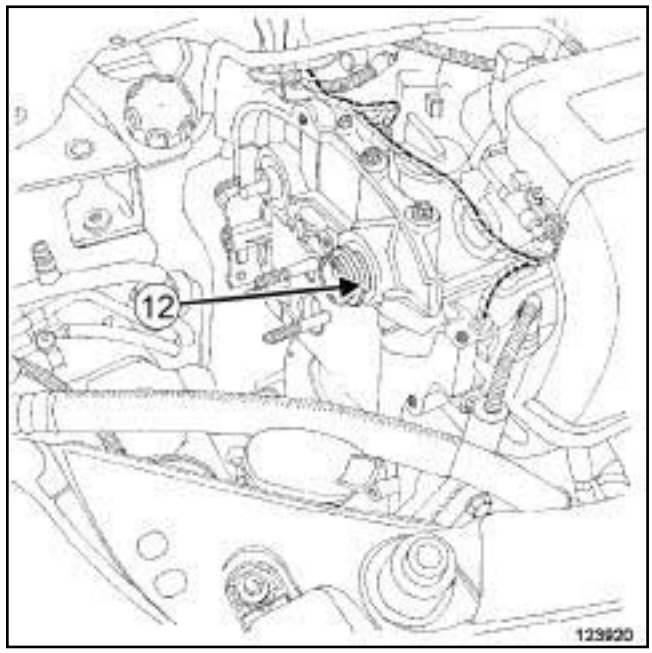
123925

❑

Note:

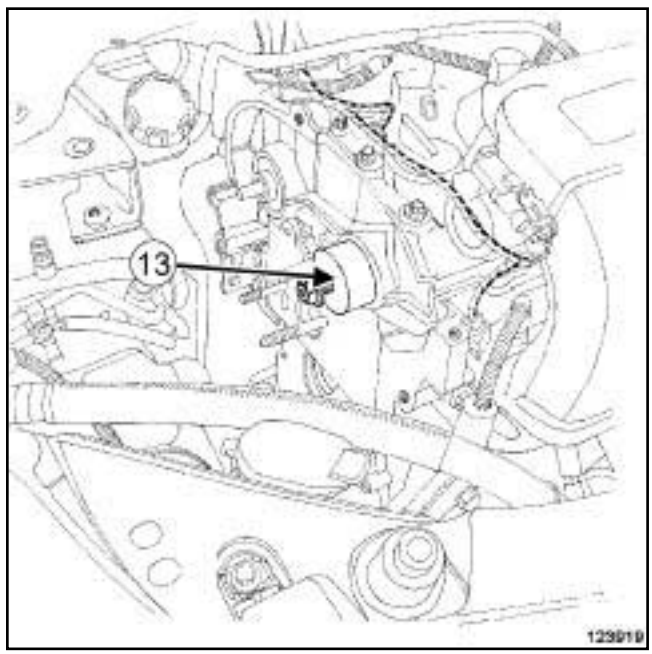
This type of seal is very delicate. When handling, it is essential to grip the seal using its protector. It is strictly forbidden to touch seal; (**11**) this is to prevent any oil leaks once the oil seal is fitted to the engine.

II - REFITTING OPERATION FOR PART CONCERNED



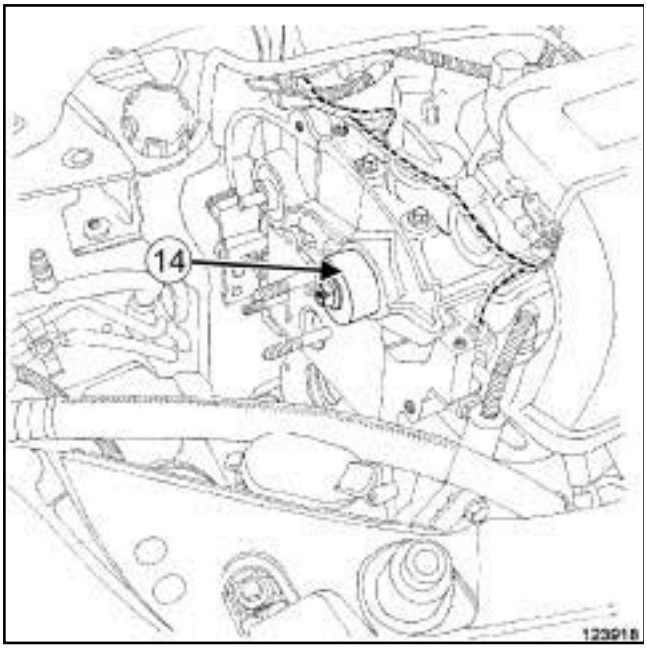
123920

❑ Fit the seal (**12**) and protector on the camshaft, being careful not to touch the seal.



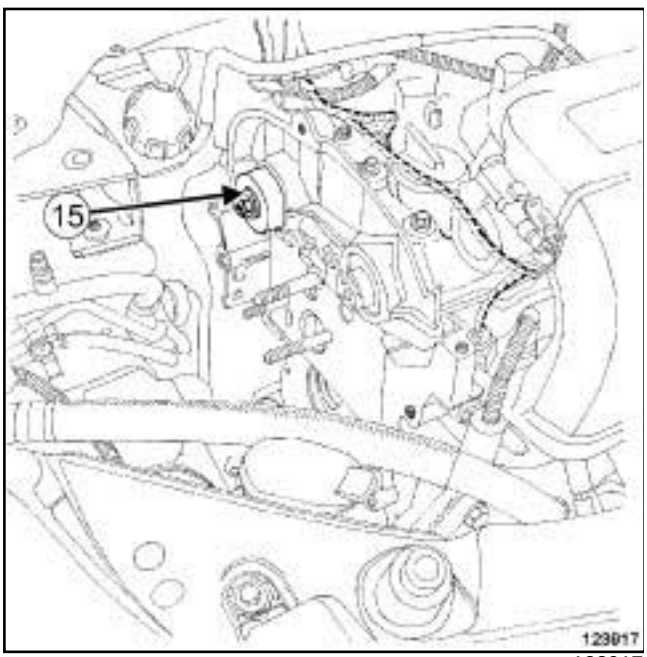
123919

❑ Position the **(Mot. 1814)** (**13**) .



123918

❏ Tighten the nut (**14**) until the tool comes in contact against the cylinder head.



123917

❏ Repeat the previous operations for refitting the exhaust camshaft seal with the tool **(Mot. 1512)**.

❏ Remove:

- the **(Mot. 1814)**,
- the tool **(Mot. 1512)**.,

III - FINAL OPERATION.

❏ Refit:

- the camshaft pulleys,
- the **(Mot. 1801)** fitted with the **(Mot. 1509-01)**,
- the camshaft pulley nuts.

❏ Tighten to torque:

- the **exhaust camshaft pulley nut (30 Nm)**,
- the **intake camshaft pulley nut (30 Nm)**.

❏ Refit the inlet camshaft dephaser blanking cover.

❏ Torque tighten the **inlet camshaft dephaser blanking cover (25 Nm)**.

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the rear suspended engine mounting (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand protector,
- the right-hand protector bolts,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 392, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 393, 35A, Wheels and tyres),
- the engine undertray,
- the engine undertray bolts.

❏ Connect the battery (see) (MR 392, 80A, Battery).

K4M

Special tooling required	
Mot. 1577	Lip seal extractor (shaft diameter 28 mm to 42 mm).
Mot. 1632	Tool for fitting camshaft PTFE seal

REMOVAL

I - REMOVAL PREPARATION OPERATION

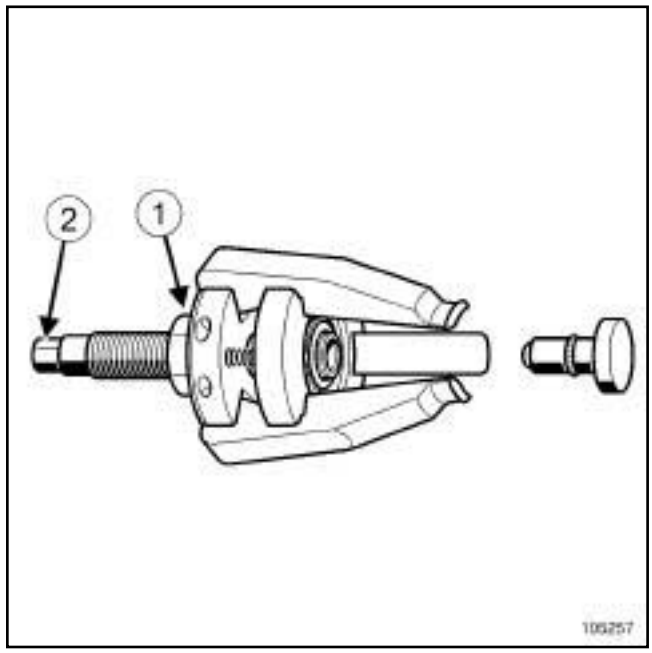
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the engine undertray bolts,
- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



105257

❑

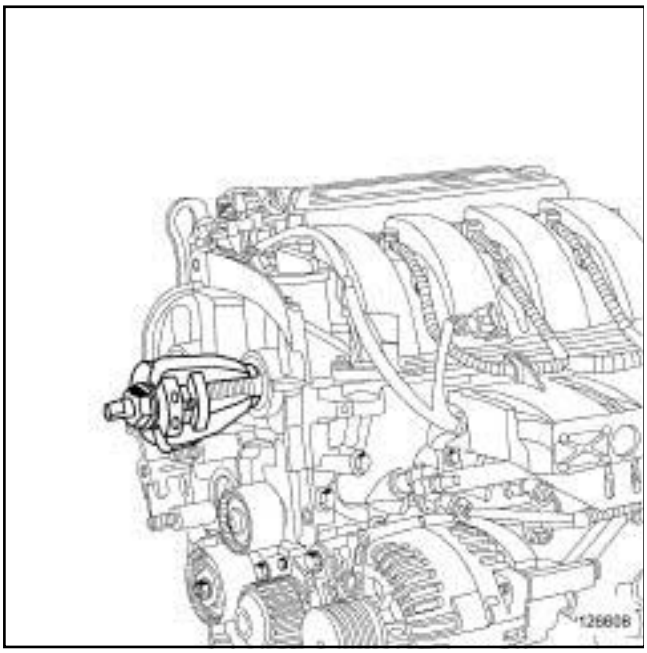
Note:

The camshaft seal is removed from the timing end using the **(Mot. 1577)**.

❑ Completely unscrew the nut (**1**) and the bolt **(Mot. 1577)** of the (**2**) .

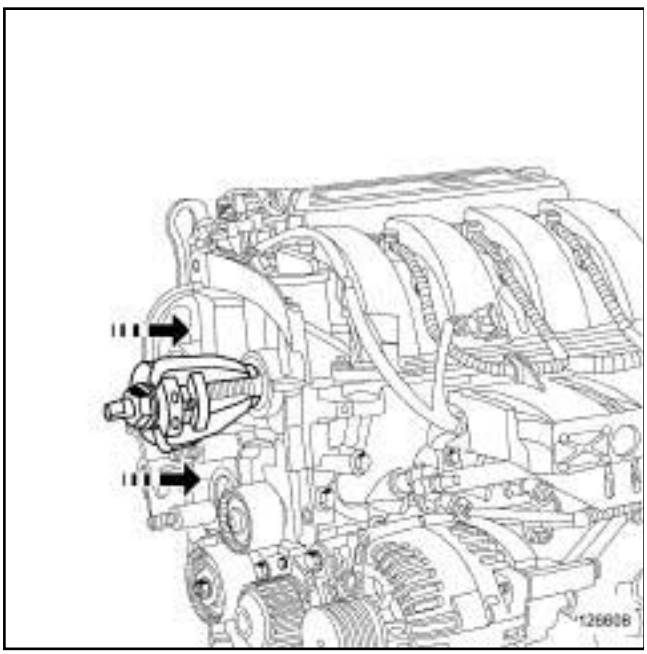
K4M

Removing the seal on the exhaust side and inlet side



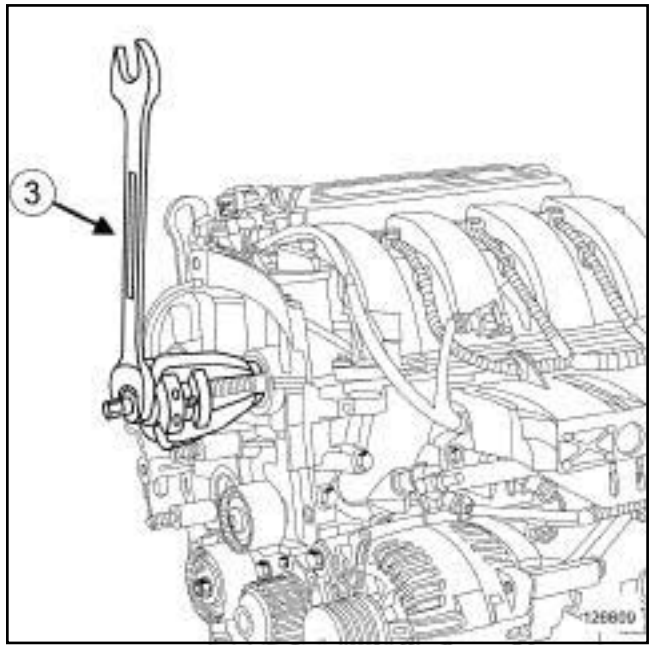
126608

❑ Position the claws of the **(Mot. 1577)** on the camshaft.



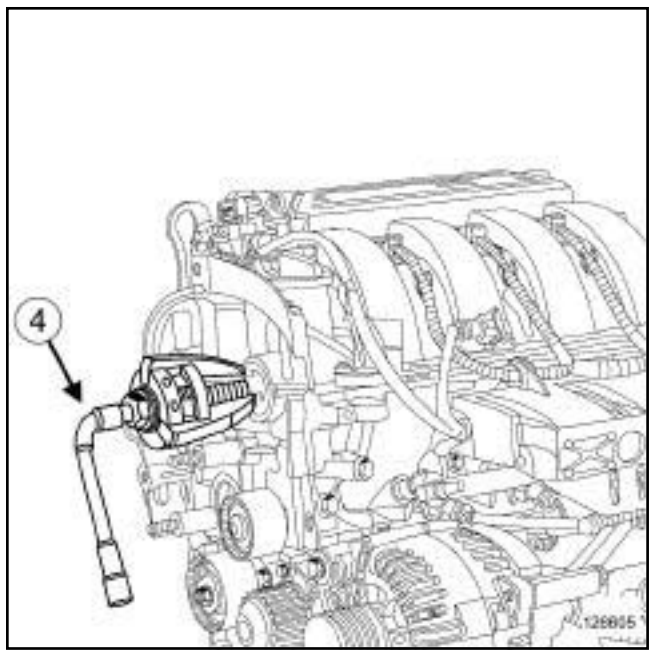
126608

❑ Push the tool **(Mot. 1577)** until contact is made between the ends of the claws and the camshaft seal.



126609

❑ Separate the claws by turning the nut (**3**) clockwise using an open-jawed spanner.



126605

❑ Remove the camshaft seal by turning the bolt clockwise using a spanner (**4**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Camshaft seal on timing end**.

K4M

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the seal mating face of each camshaft,
- the camshaft seal housings.

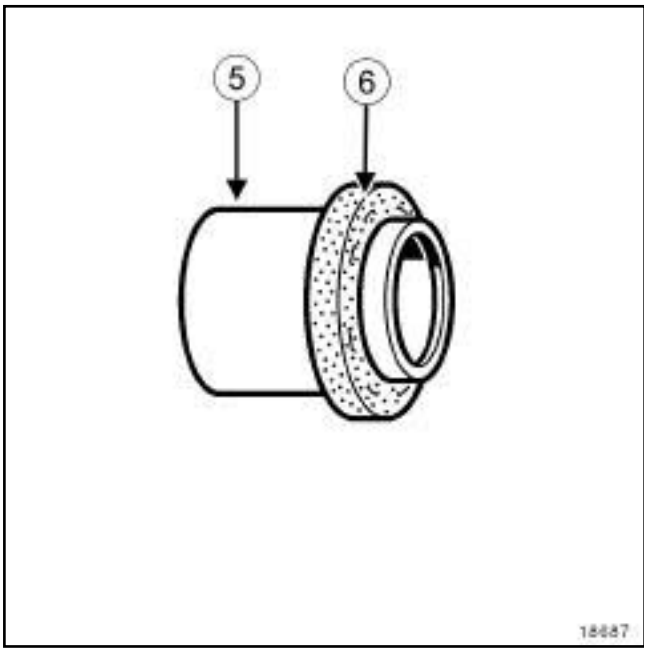
WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

II - REFITTING OPERATION FOR PART CONCERNED



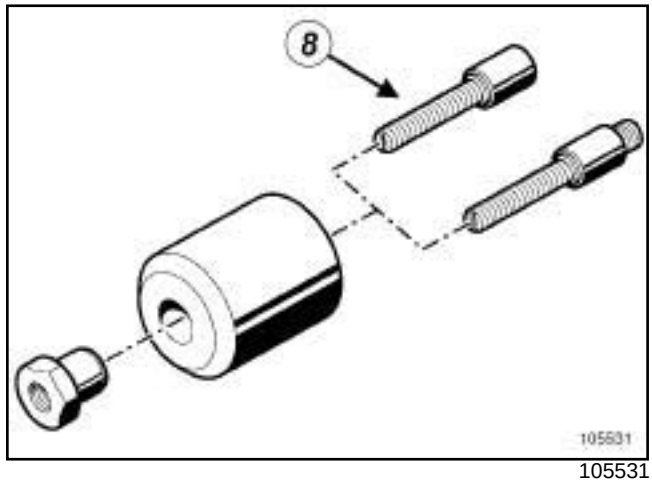
18687

❑

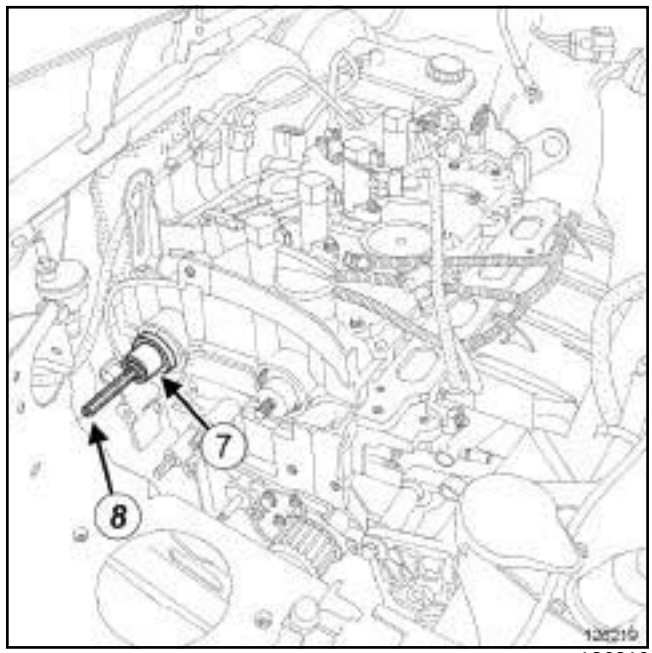
Note:

Always hold the camshaft seal with the protector (**5**) when handling, as this type of camshaft seal is very FRAGILE. Touching the camshaft seal **6**) is strictly forbidden in order to avoid any oil leaks once the camshaft seal is fitted on the engine.

1 - Refitting the exhaust side seal



105531

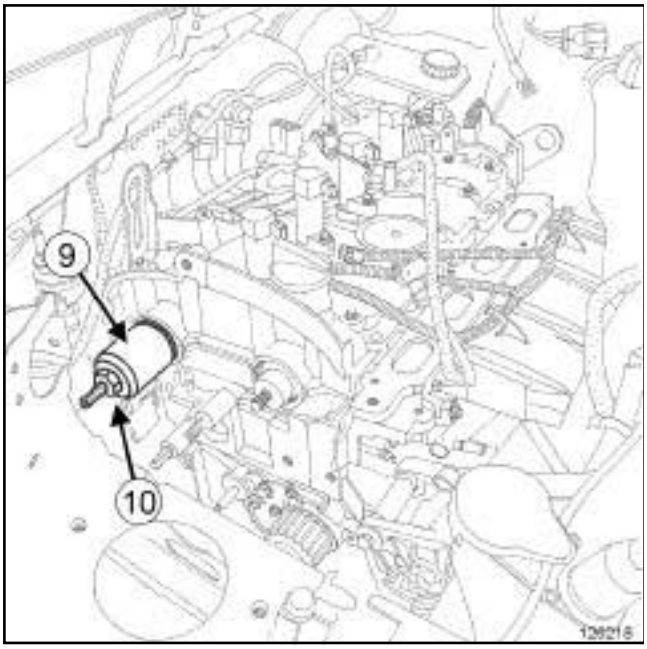


126219

❑ Position the protector fitted with a new seal (**7**) on the camshaft (taking care not to touch the seal).

❑ Screw the stud (**8**) of the **(Mot. 1632)** onto the camshaft.

K4M



126218

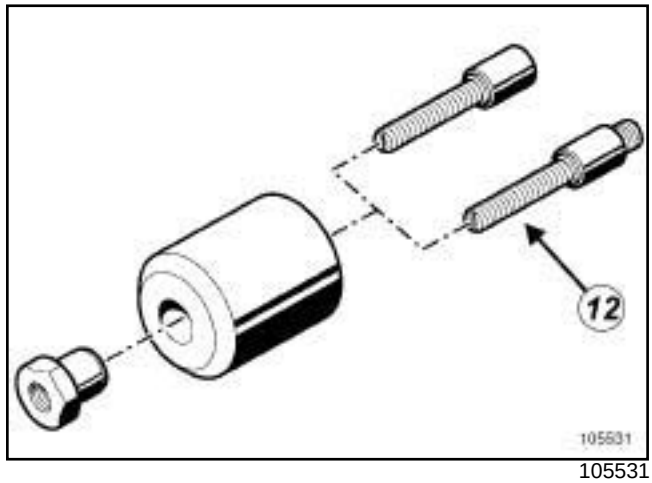
❏ Fit the cover (**9**) and the collar nut (**10**) of the **(Mot. 1632)**.

❏ Screw on the collar nut until the cover touches the cylinder head.

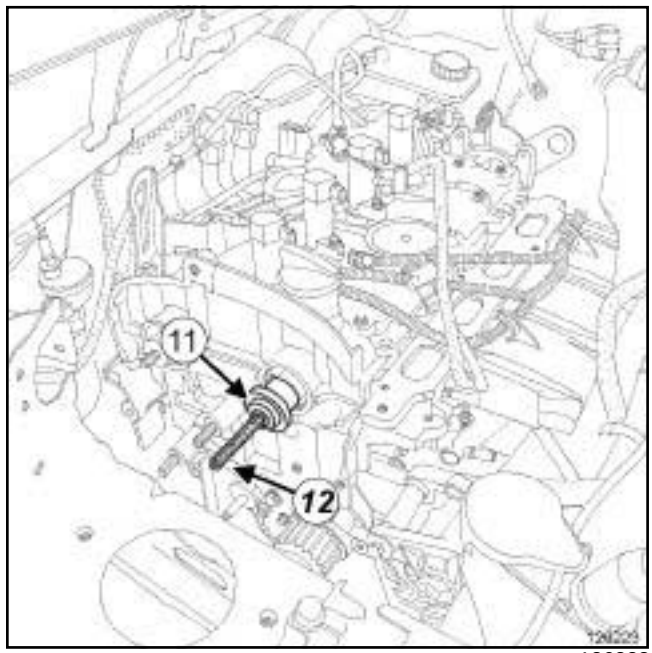
❏ Remove:

- the collar nut from the **(Mot. 1632)**,
- the cover from the **(Mot. 1632)**,
- the stud of the **(Mot. 1632)**,
- the camshaft seal protector.

2 - Refitting the inlet side seal



105531



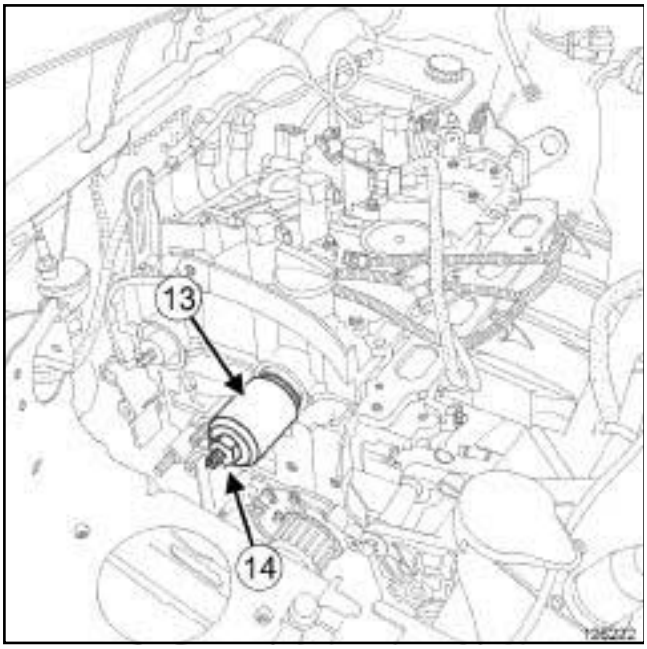
126223

❏ Position the protector fitted with a new seal (**11**) on the camshaft (taking care not to touch the seal).

❏ Remove the camshaft seal protector.

❏ Screw the stud (**12**) of the **(Mot. 1632)** onto the camshaft.

K4M



126222

❏ Fit the cover (**13**) and the collar nut (**14**) of the **(Mot. 1632)**.

❏ Screw on the collar nut until the cover touches the cylinder head.

❏ Remove:

- the collar nut from the **(Mot. 1632)**,
- the cover from the **(Mot. 1632)**,
- the stud from the **(Mot. 1632)**.

III - FINAL OPERATION

❏ Refit:

- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-234**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

F4R

Tightening torques ▽	
oil decanter mounting bolts	13 Nm

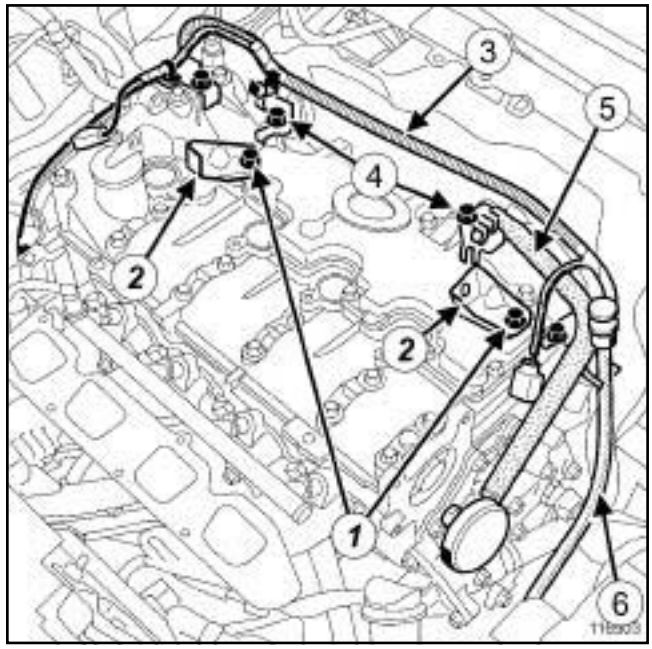
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils from cylinders 2, 3 and 4 (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .



116503

❏ Remove:

- the inlet manifold retaining bracket mounting bolts (**1**) ,
- the inlet manifold retaining brackets (**2**) .

❏ Unclip the petrol vapour rebreathing solenoid valve wiring harness (**3**) .

❏ Remove:

- the retaining bracket mounting bolts (**4**) ,
- the retaining brackets.

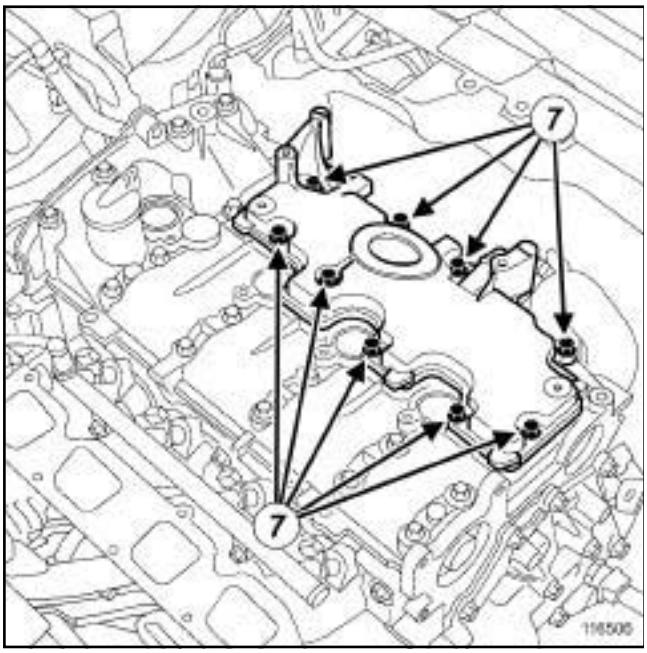
❏ Disconnect the oil vapour rebreathing pipe (**5**) from the oil decanter.

❏ Remove the oil vapour rebreathing pipe.

❏ Unclip the breather hose (**6**) from the gearbox.

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116506

❑ Remove:

- the mounting bolts (**7**) from the oil separator,
- the oil decanter.

REFITTING

I - REFITTING PREPARATIONS OPERATION

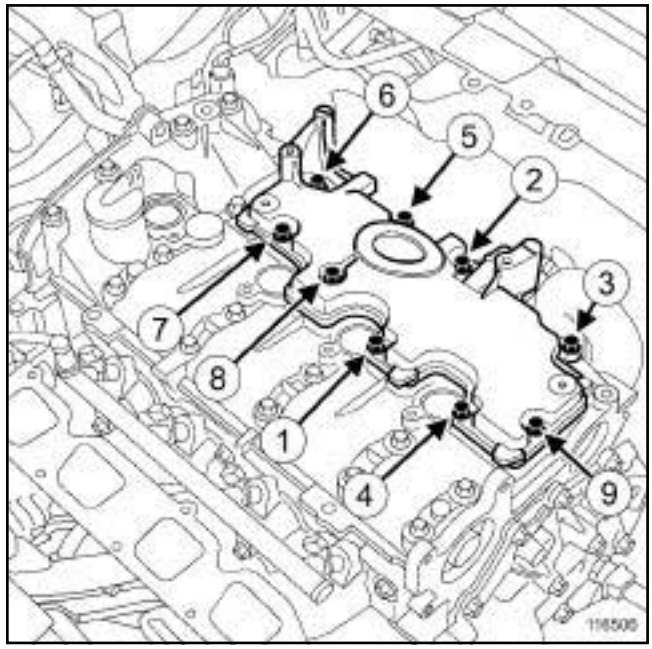
❑ Clean the joint faces.

> **WARNING**
> The joint faces must be clean, dry and free from grease (avoid finger marks).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the oil decanter fitted with a new seal,
- the oil decanter mounting bolts.



116506

❑ Tighten to torque and in order the **oil decanter mounting bolts (13 Nm)**.

III - FINAL OPERATION.

❑ Refit the oil vapour rebreathing pipe.

❑ Connect the oil decanter oil vapour rebreathing hose.

❑ Refit:

- the retaining brackets,
- the retaining bracket mounting bolts.

❑ Connect the petrol vapour rebreathing solenoid valve wiring harness.

❑ Refit:

- the inlet manifold retaining brackets,
- the inlet manifold retaining bracket mounting bolts,
- the ignition coils for cylinders 2, 3 and 4 (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M

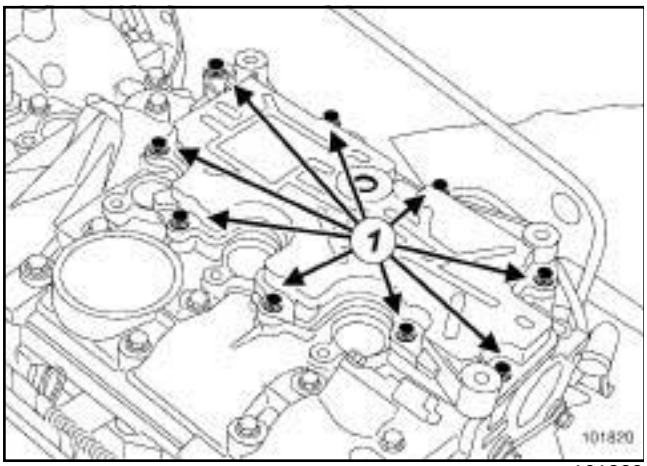
Tightening torques ▽	
oil separator bolts	**15 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the intake distributor (see) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101820

❏ Remove:

- the bolts (**1**) from the oil separator,
- the oil separator,
- the oil separator seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: oil decanter bolt**.

parts always to be replaced: Oil decanter seal.

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

❏ Use **SUPER CLEANING AGENT FOR JOINT FACES** (see) (04B, Consumables - Products) to clean:

- the oil separator joint face if it is to be re-used,
- the rocker cover joint face.

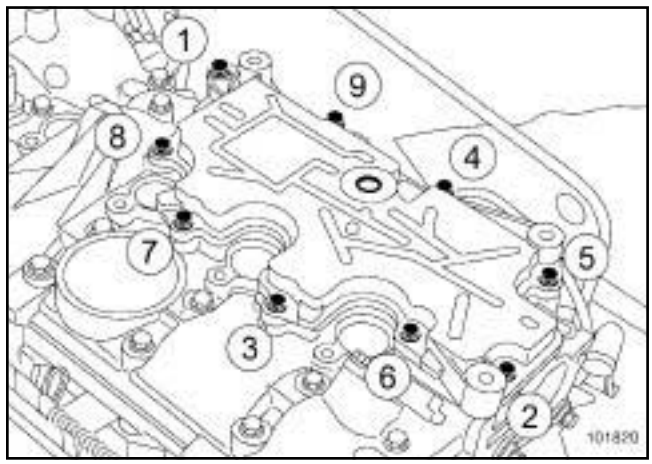
❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to degrease:

- the oil separator joint face if it is to be re-used,
- the rocker cover joint face.

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

II - REFITTING OPERATION FOR PART CONCERNED



101820

❏ Refit:

- a new seal on the oil separator,
- the oil separator,
- new oil separator bolts.

❏ Torque tighten in order the **oil separator bolts (15 N.m)**.

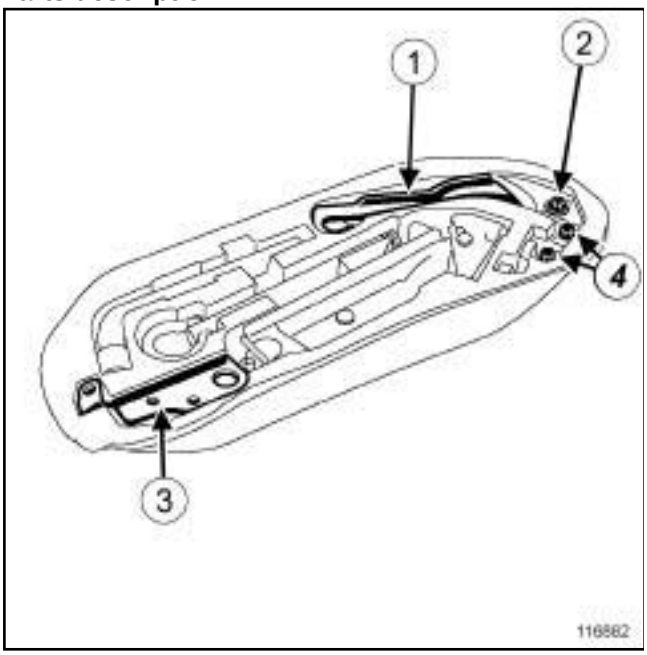
III - FINAL OPERATION

❏ Refit the intake distributor (see) .

F4R

IDENTIFICATION

Parts description



116882

(**1**) timing end lifting eye

(**2**) timing end lifting eye mounting bolt

(**3**) gearbox side lifting eye

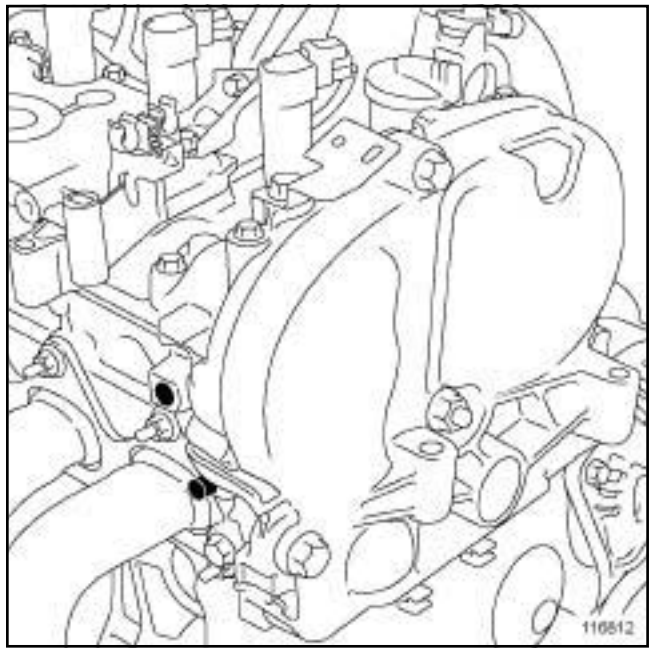
(**4**) gearbox side lifting eye mounting bolt

❑ The lifting eyes and their mounting bolts are in the tool tray under the carpet in the bottom of the luggage compartment.

> Note:
>
> The lifting eyes fitted must be removed and put back in the vehicle once the operation is completed.

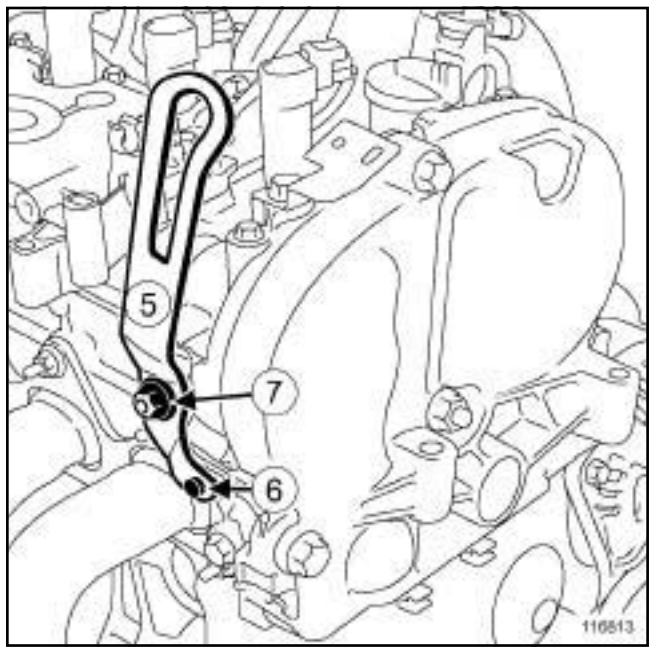
REMOVAL - REFITTING

I - FITTING THE TIMING END LIFTING EYE



116812

❑ Obtain the timing end lifting eye and its mounting bolt.



116813

❑ Position the lifting eye (**5**) in the cylinder head centring device (**6**) .

❑ Tighten the lifting eye mounting bolt (**7**) .

F4R

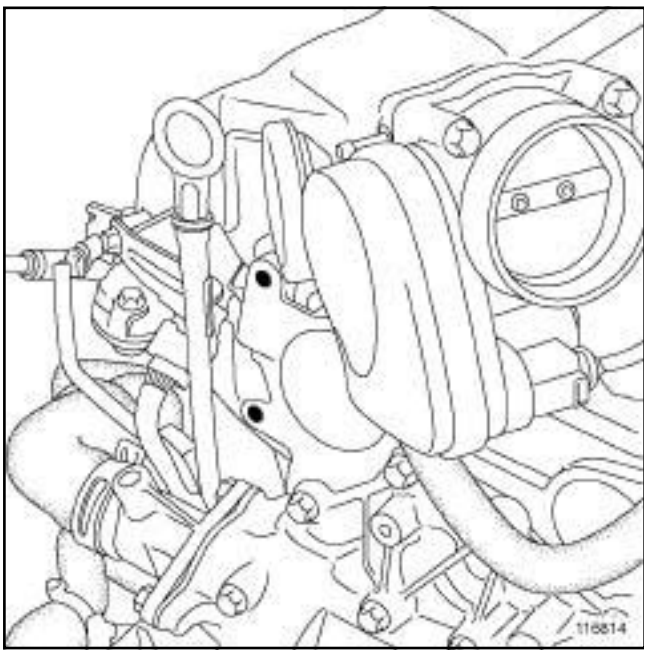
II - REMOVING THE TIMING END LIFTING EYE

❑ Remove:

- the timing end lifting eye mounting bolt,
- the lifting eye on the timing end.

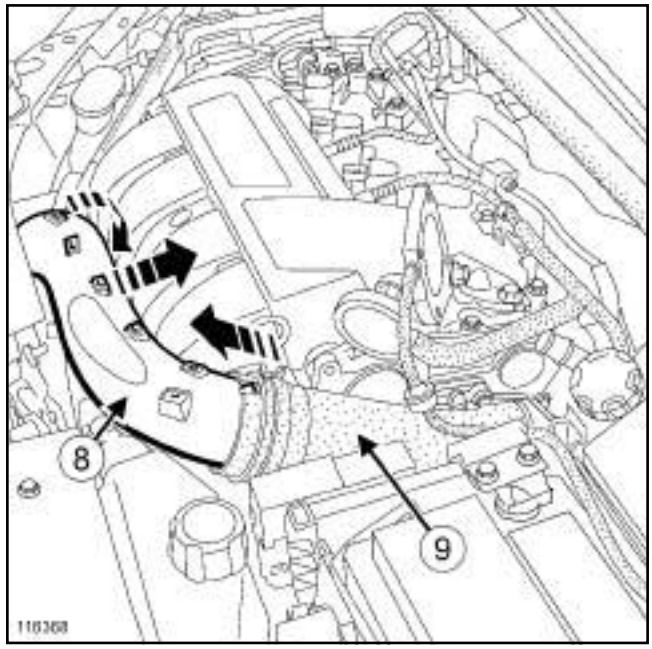
❑ Put the lifting eye and mounting bolt back in the tool tray.

III - FITTING THE GEARBOX SIDE LIFTING EYE.



116814

❑ Obtain the lifting eye and its mounting bolt.



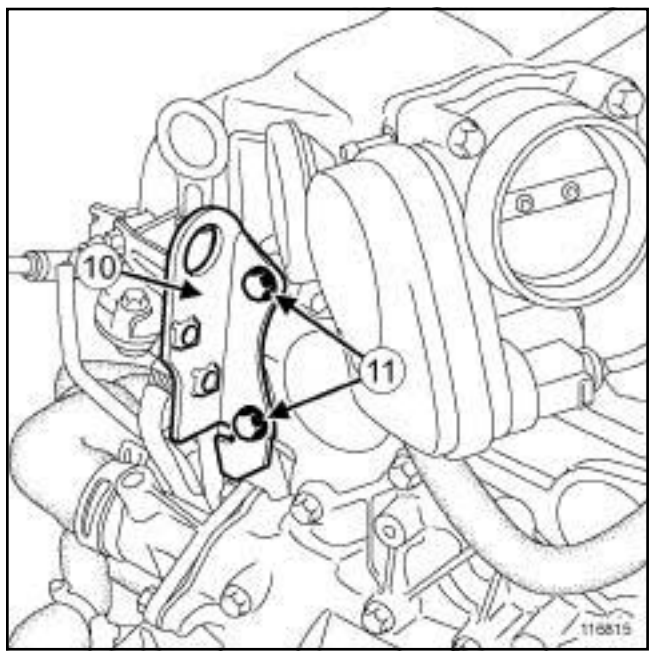
116368

❑ Remove the air inlet duct (**8**) :

- by unclipping it from the front end panel,
- by rotating it and disconnecting it.

❑ Disconnect the duct (**9**) :

- air resonator side,
- air filter unit side.



116815

❑ Fit the timing end lifting eye (**10**) .

❑ Tighten the timing end lifting eye mounting bolts (**11**) .

F4R

IV - REMOVING THE GEARBOX SIDE LIFTING EYE

❏ Remove:

- the gearbox side lifting eye mounting bolts,
- the gearbox side lifting eye.

❏ Put the lifting eye and mounting bolts back in the tool tray.

D4F, and 740 or 742 or 764

Equipment required
cylinder head testing tools

Tightening torques ▽	
cylinder head bolts (initial torque)	**20 N.m**
cylinder head bolts	**230° ± 6°**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

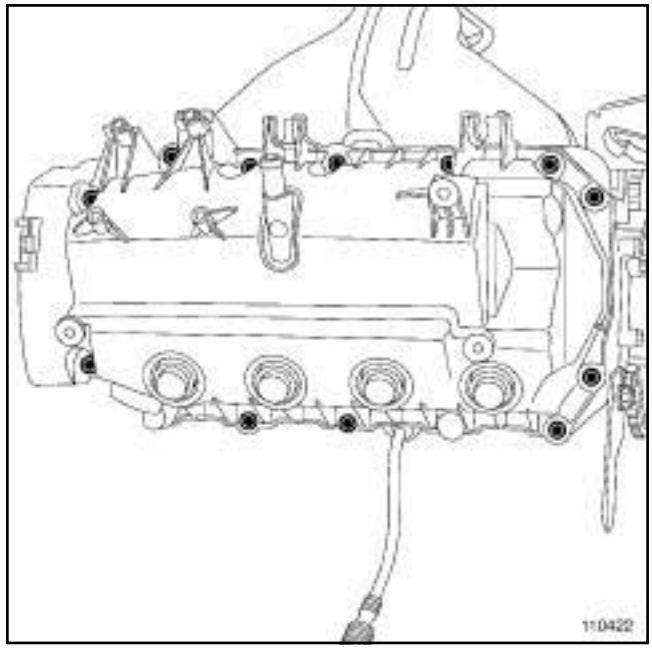
❏ Remove the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove:

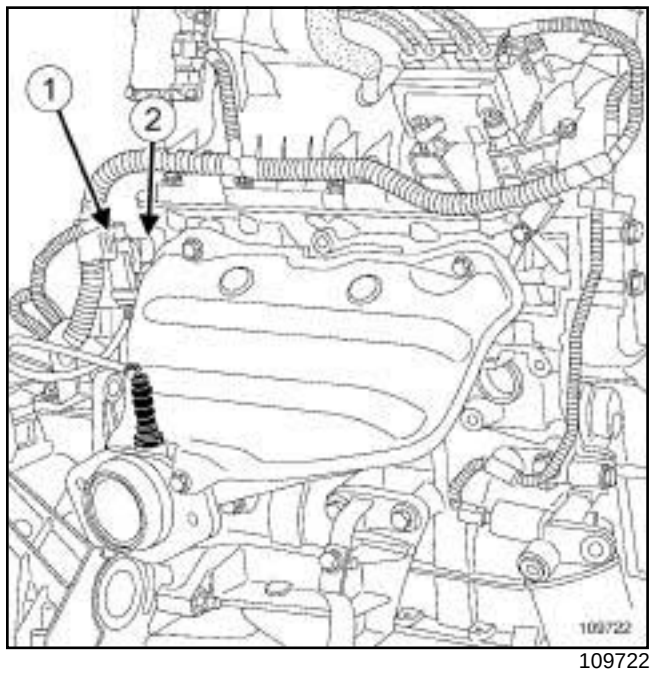
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

❏ Unclip the electrical wiring from the rocker cover.



110422

❏ Remove the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

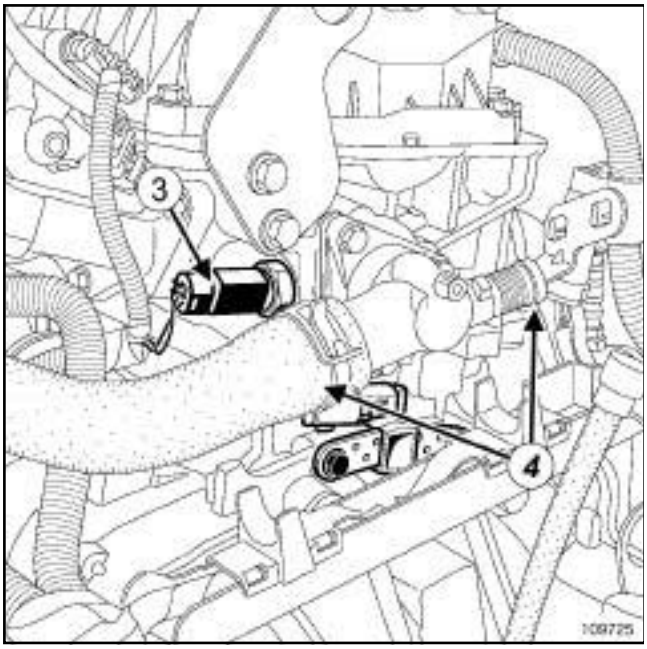


109722

❏ Disconnect the upstream oxygen sensor connector (**1**) .

❏ Remove the mounting (**2**) from the upstream oxygen sensor connector.

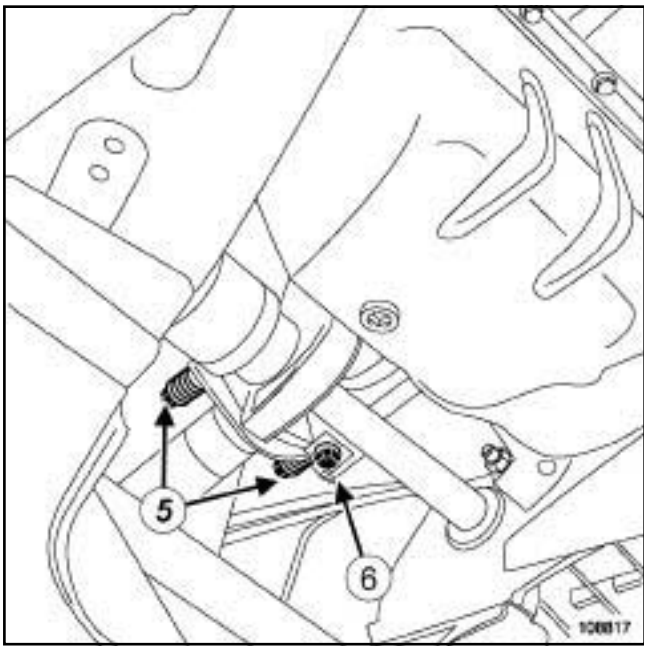
D4F, and 740 or 742 or 764



109725

❏ Disconnect the coolant temperature sensor connector (**3**) .

❏ Remove the cooling hoses (**4**) on the water chamber.

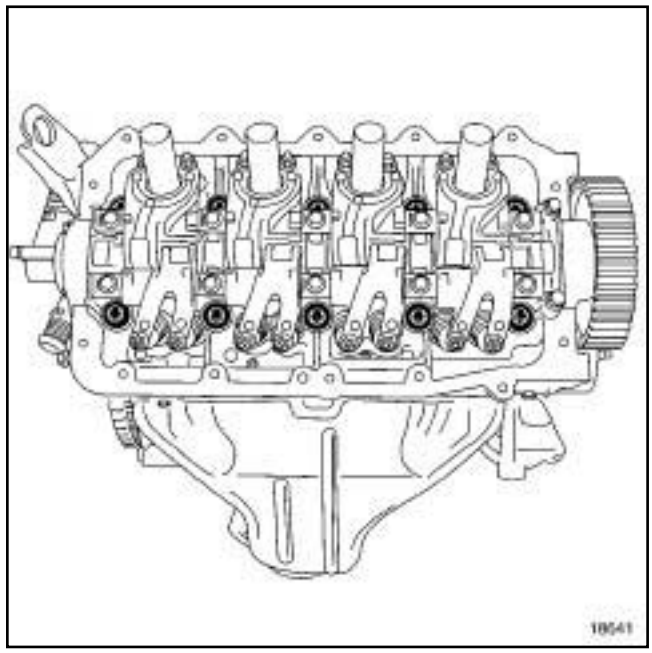


108817

❏ Remove:

- the bolts (**5**) from the exhaust flange,
- the strut bolt (**6**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



18641

❏ Remove:

- the cylinder head bolts,
- the cylinder head,
- the cylinder head gasket.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Cylinder head gasket**.

❏ **parts always to be replaced: cylinder head bolts**.

D4F, and 740 or 742 or 764

1 - Cleaning the cylinder head

❑ Clean the cylinder head.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

❑ Clean the joint faces with **SUPER CLEANER FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to dissolve any part of the seal still adhering.

❑ Apply the product to the part to be cleaned. Wait approximately ten minutes, then remove the residue using a wooden spatula.

WARNING
Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

2 - Checking the gasket face

❑ With a ruler and shim set, check for cylinder head gasket face bow.

The maximum deformation is **0.05 mm**.

WARNING
No regrinding of the cylinder head is permitted.

❑ Test the cylinder head for any cracks using the **cylinder head testing tools** (see **garage equipment catalogue**).

❑ Strip the cylinder head (see) (Technical Note 6004A, 10A, Engine and peripherals).

❑ Adjust the valve clearances (see **10A**, **Engine and cylinder block assembly**, **Valves: Adjustment**, page **10A-231**) .

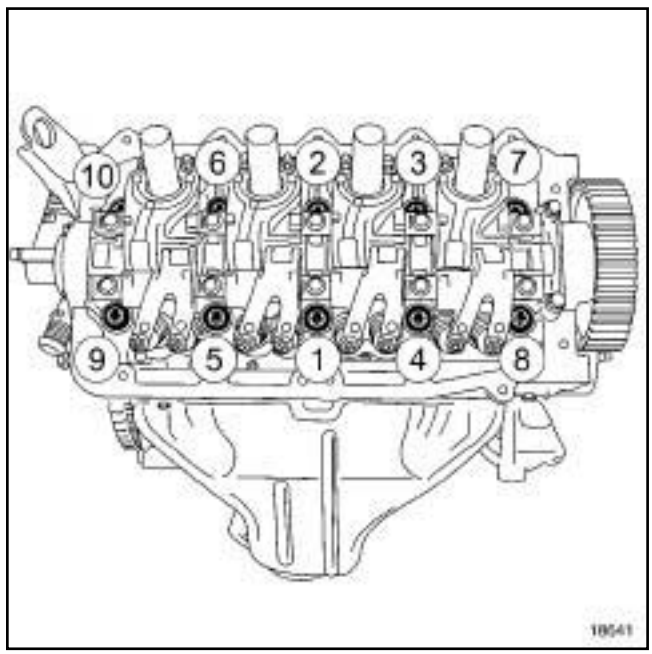
WARNING
In order to ensure that the bolts are correctly tightened, use a syringe to remove any oil which may be in the cylinder head mounting holes.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Bring the pistons to mid-stroke position to prevent them from coming into contact with the valves during the tightening of the cylinder head.

❑ Fit the cylinder head with a new gasket.

❑ Refit new cylinder head bolts.



18641

❑ Tightening the cylinder head:

- pretighten to torque and in order the **cylinder head bolts (initial torque) (20 N.m)**,
- check that all of the cylinder head bolts are tightened to the correct torque,
- angle tighten in order the **cylinder head bolts (230° ± 6°)**.

III - FINAL OPERATION

❑ Refit the upstream oxygen sensor connector attachment.

❑ Connect:

- the upstream oxygen sensor connector,

D4F, and 740 or 742 or 764

- the coolant temperature sensor connector.

❑ Refit:

- the water chamber cooling hoses,
- the exhaust clamp mounting bolts,
- the strut bolt.
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

❑ Clip the electrical wiring onto the rocker cover.

❑ Refit:

- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see) (80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K4J or K4M

Special tooling required	
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1672	Lower engine support.
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1573	Cylinder head support
Mot. 104	Cylinder head gasket centring pins

Equipment required
cylinder head test tank

Tightening torques ▽	
cylinder head bolts	**20 N.m**
cylinder head bolts	**240° ± 6°**
exhaust manifold studs	**8 N.m**
exhaust manifold nuts	**26 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter: Removal - Refitting**, page **12A-15**) ,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove:

- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

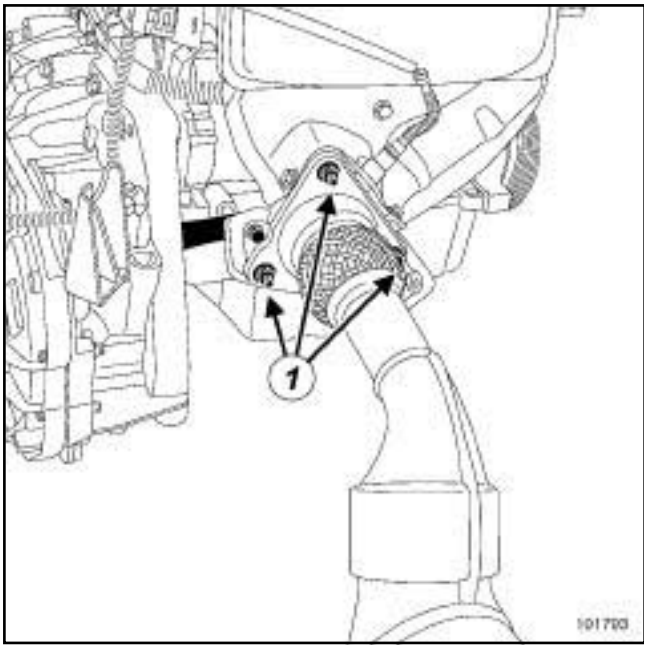
K4M, and 862

❑ Remove the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) .

❑ Remove:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

K4J or K4M



101793

❏ Remove the nuts (**1**) from the exhaust flange.

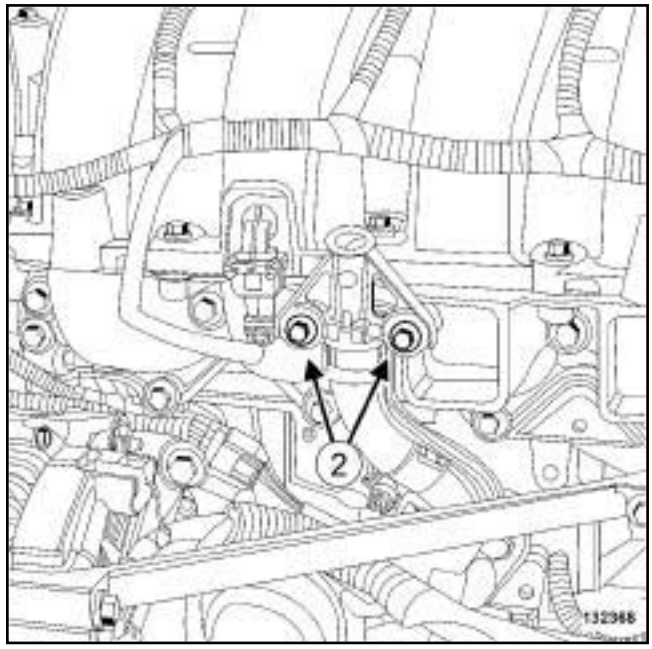
❏ Disconnect the oxygen sensor connectors .

K4M, and 862

❏ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❏ Remove:

- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .



132368

❏ Remove:

- the dipstick,
- the dipstick guide bolts (**2**) .

❏ Move aside the dipstick guide.

❏ Disconnect:

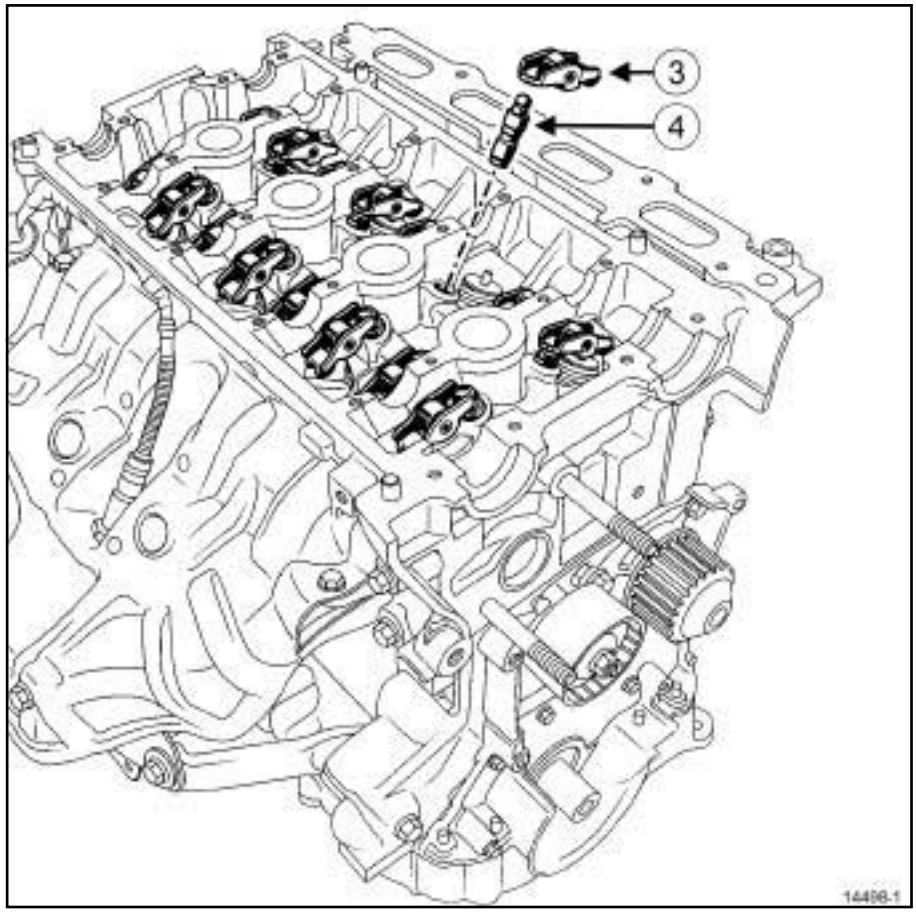
- the coolant temperature sensor connector,
- the coolant hoses using the tool **(Mot. 1202-01)** or the tool **(Mot. 1202-02)** or the tool **(Mot. 1448)** on the cylinder head coolant unit.

❏ Move the electrical wiringto one side.

❏ Remove:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the inlet camshaft,
- the exhaust camshaft.

K4J or K4M



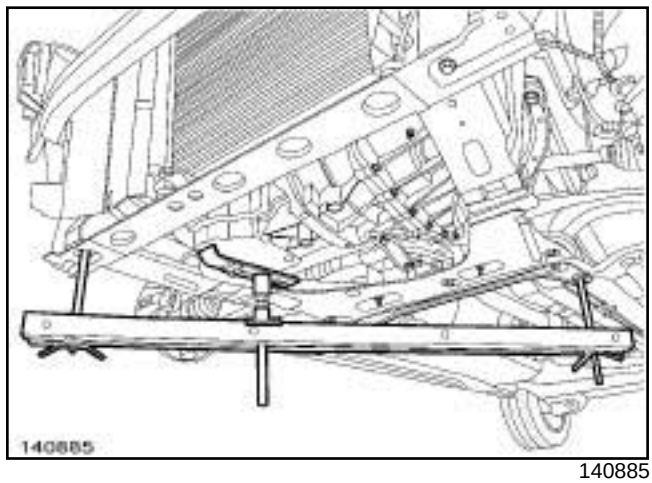
14498-1

❏ Remove:

- the valve rockers (**3**) ,
- the hydraulic tappets (**4**) .

Note:

To prevent any risk of unpriming the hydraulic tappets make sure that they are vertical.



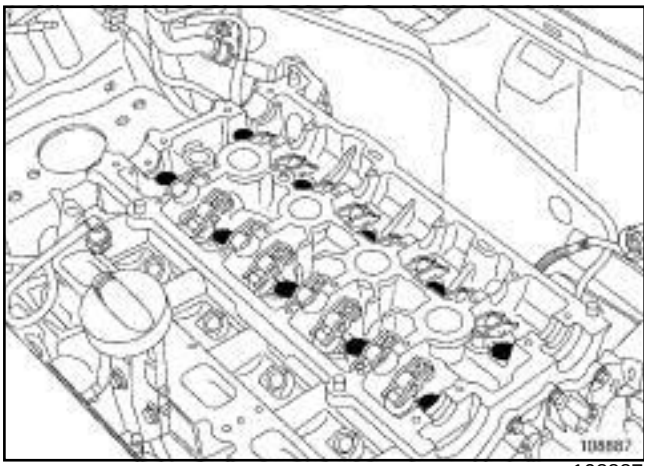
140885

❏ Position the **(Mot. 1672)**.

❏ Remove the **(Mot. 1453)**.

K4J or K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED



108887

❑ Remove:

- the cylinder head bolts,
- the cylinder head.

❑ Mount the cylinder head on the cylinder head support **(Mot. 1573)**.

❑ Remove the cylinder head gasket from the cylinder block.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Cylinder head gasket**.

❑ **parts always to be replaced: cylinder head bolts**.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear protective gloves during the operation.

WARNING
Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to avoid any foreign bodies entering the oil return and supply pipes.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Apply **SUPER CLEANER FOR JOINT FACES** (see) (04B, Consumables - Products) on the parts to be cleaned (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Leave for approximately ten minutes.

❑ Remove residues with a wooden spatula.

❑ Finish cleaning the parts using a **GREY ABRASIVE PAD**.

❑ Use a ruler and set of feeler gauges to check that there is no gasket face bow.

Maximum distortion: **0.05 mm**

WARNING
No regrinding of the cylinder head is permitted.

❑ Test the cylinder head to detect any possible cracks using a **cylinder head test tank**.

K4J or K4M

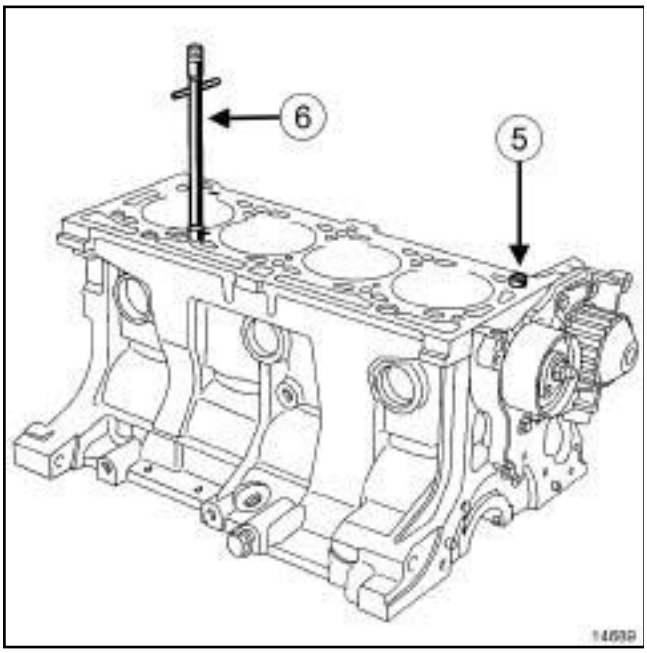
❏ For the procedure of stripping down the cylinder head (see) (Technical Note 6006A, 10A, Engine and peripherals).

❏ Position the pistons at mid-stroke to prevent any contact with the valves when refitting the camshafts.

❏ Be sure to degrease:

- the combustion side of the cylinder head,

- the combustion side of the cylinder block.



14689

❏ Check that the centring dowel (**5**) is on the cylinder block.

❏ Set up tool **(Mot. 104)** (**6**) on the cylinder block.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit a new cylinder head gasket.

❏ Refit the cylinder head.

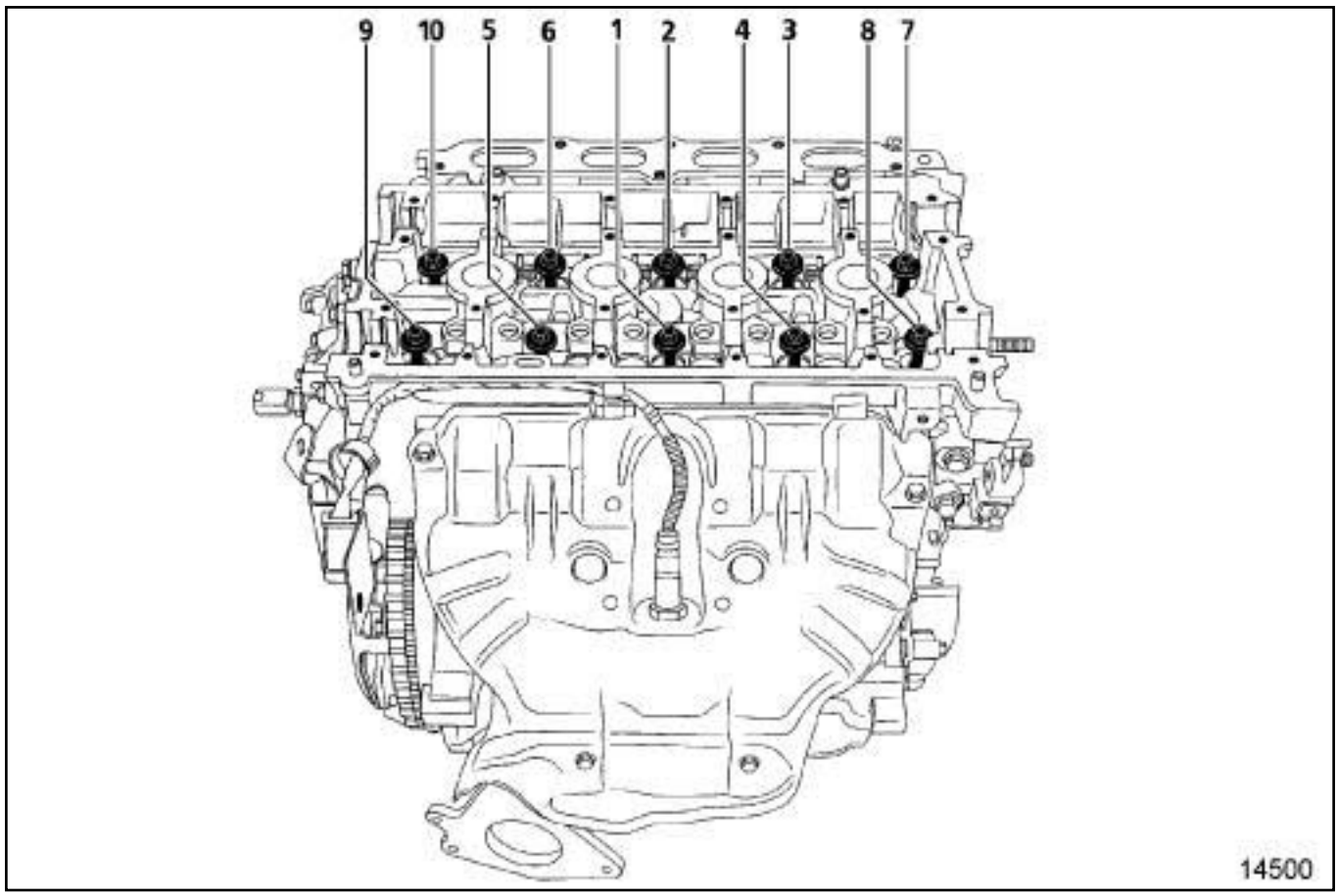
WARNING

In order to ensure that the bolts are correctly tightened, use a syringe to remove any oil which may be in the cylinder head mounting holes.

WARNING

Do not oil the new bolts. Be sure to oil bolts being reused.

K4J or K4M



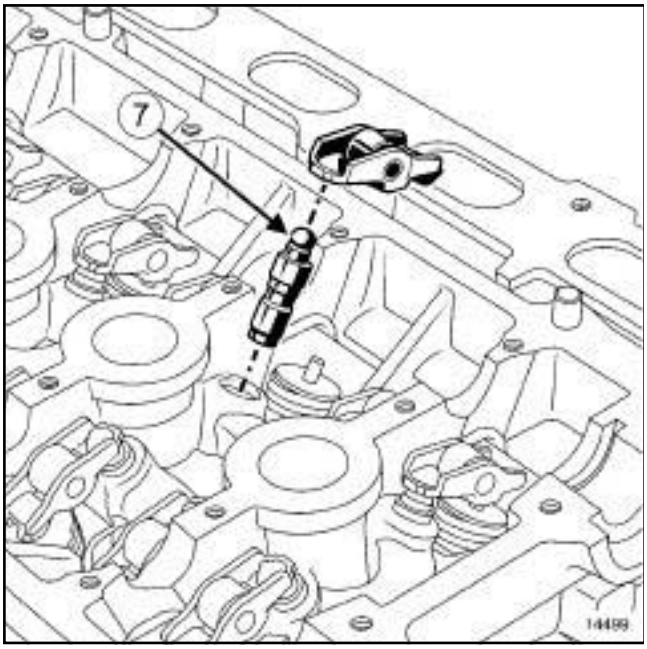
14500

- ❑ Pretighten to torque and in order the **cylinder head bolts (20 N.m)**.
- ❑ Check that all the cylinder head bolts are tightened to the correct torque of **20 N.m**.
- ❑ Angle tighten in order the **cylinder head bolts (240° ± 6°)**.

III - FINAL OPERATION

- ❑ Position the **(Mot. 1453)**.
- ❑ Remove the **(Mot. 1672)**.

K4J or K4M



14499

❏ Reprime the hydraulic tappets (hydraulic tappets may empty after a long down time).

To check if repriming is necessary, press the top of the tappet (**7**) with your thumb.

If the tappet piston depresses:

- immerse the tappets in a container of diesel fuel,
- refit the hydraulic tappets.

❏ Refit:

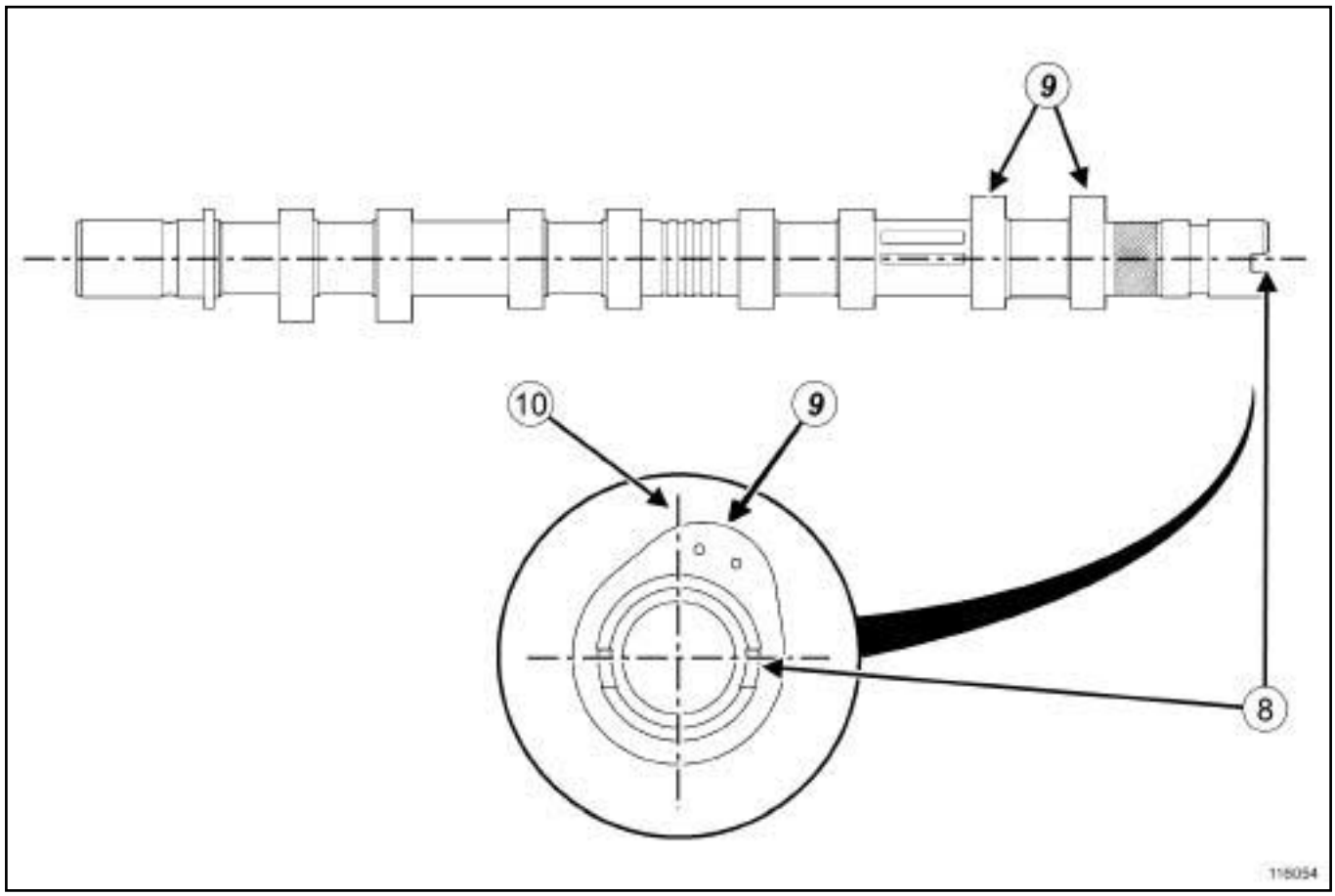
- the hydraulic tappets,
- the valve rockers.

K4J or K4M

Camshaft marking

K4J

Inlet camshaft



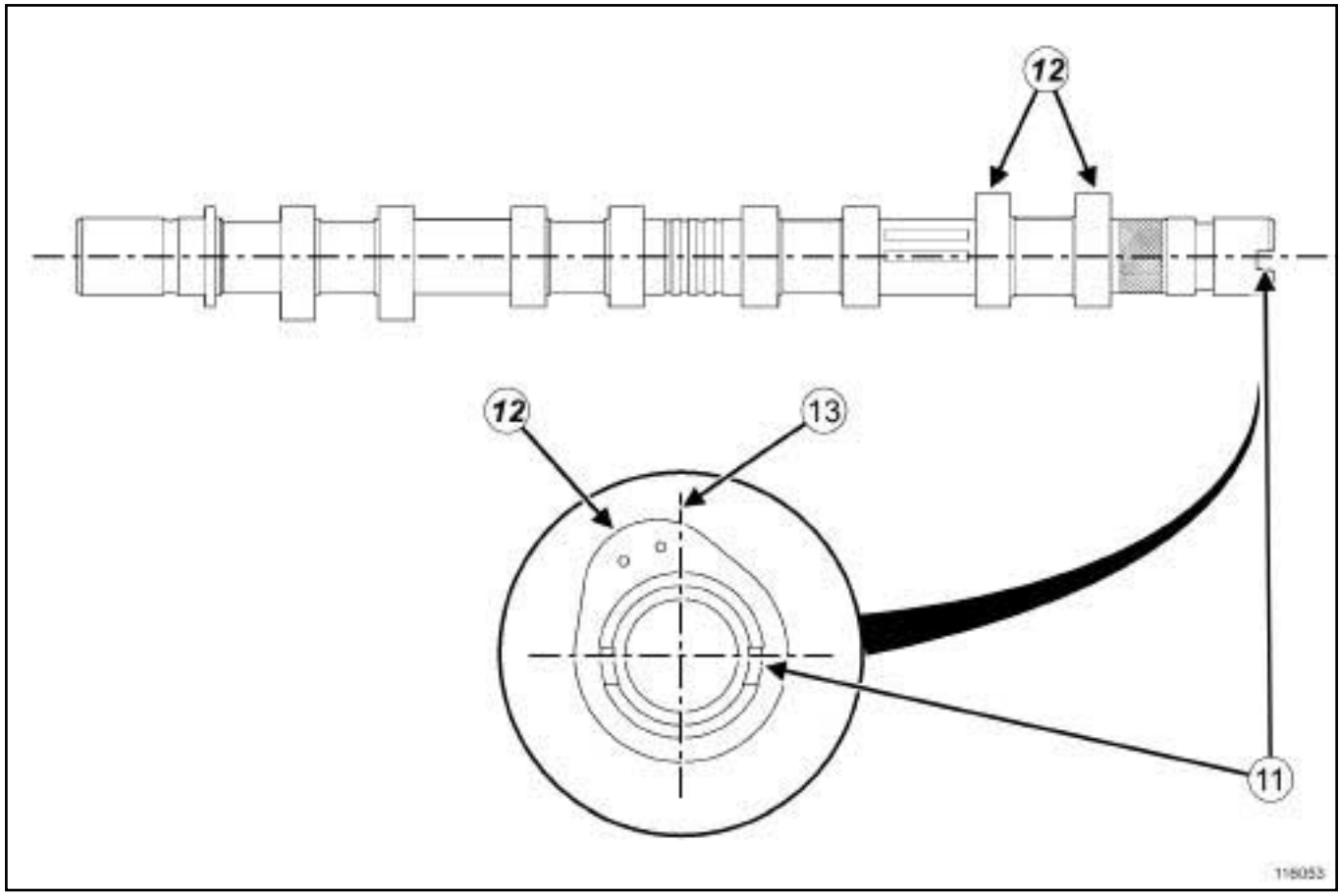
116054

❑ Position the groove (**8**) at the end of the camshaft so that it is horizontal and offset downwards.

The cams (**9**) for cylinder 1 must be located to the right of the vertical axis (**10**) , flywheel end view.

K4J or K4M

Exhaust camshaft



116053

❏ Position the groove (**11**) at the end of the camshaft so that it is horizontal and offset downwards.

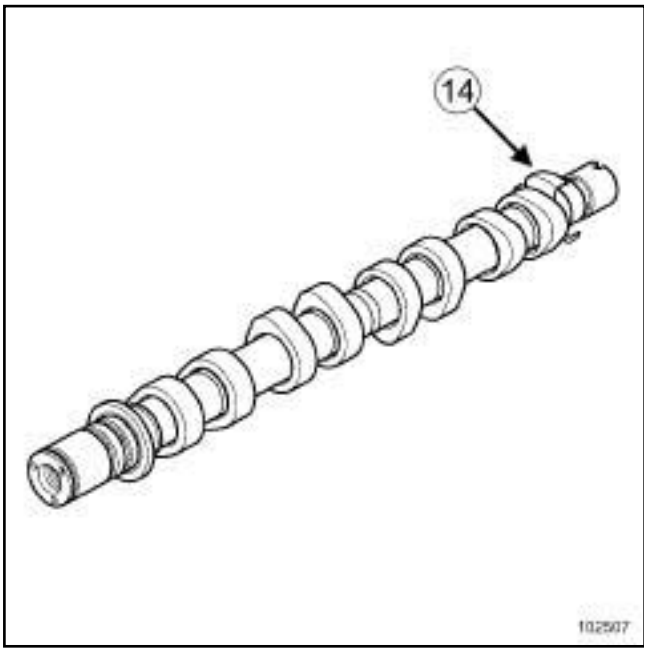
The cams (**12**) for cylinder 1 must be located to the left of the vertical axis (**13**) , flywheel end view.

❏ Refit the camshafts, oiling the bearings.

K4J or K4M

K4M

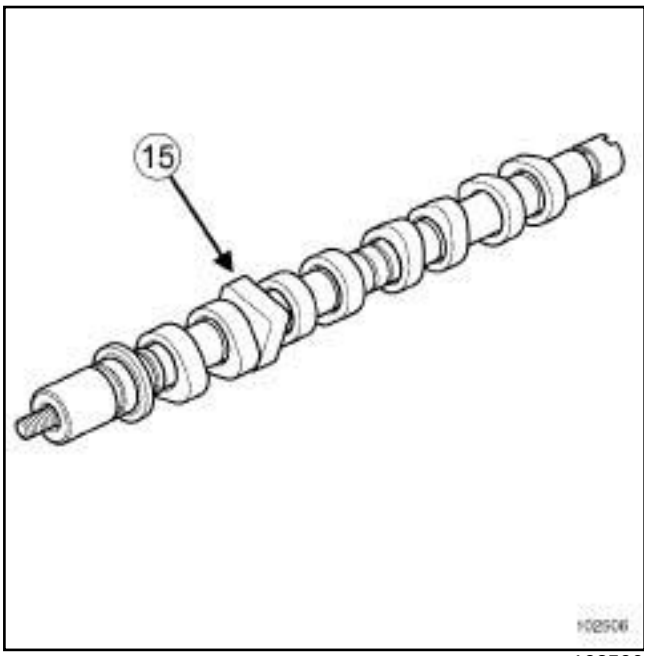
Inlet camshaft



102507

(**14**) The inlet camshaft is fitted with the camshaft sensor target

Exhaust camshaft



102506

(**15**) The exhaust camshaft is fitted with the square cam

❏ Refit the camshafts, oiling the bearings.

❏ Refit the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

❏ Connect:

- the coolant hoses using the tool **(Mot. 1202-01)** or the tool **(Mot. 1202-02)** or the tool **(Mot. 1448)** on the cylinder head coolant unit.
- the coolant temperature sensor connector.

K4M, and 862

❏ Refit:

- the dipstick guide,
- the dipstick,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

❏ Fill the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❏ Connect the oxygen sensor connectors.

❏ Refit the exhaust flange nuts.

❏ Tighten to torque:

- the **exhaust manifold studs (8 N.m)**.
- the **exhaust manifold nuts (26 N.m)**,

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,

K4J or K4M

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

K4M, and 862

❑ Refit the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) .

❑ Refit:

- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the engine cover.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K9K, and 764 or 772

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Equipment required
workshop hoist
cylinder head testing tools

Tightening torques ▽	
cylinder head bolts (initial torque)	**25 N.m**
cylinder head bolts	**270° ± 10°**
inner timing cover bolts	**9 N.m**
alternator bolts	**21 N.m**
subframe tie-rod bolt on the left-hand side	**105 N.m**
radiator mounting cross member bolt on the right-hand side	**105 N.m**
turbocharger oil return pipe bolts on the turbocharger	**12 N.m**
studs of the catalytic converter (K9K*764) or of the catalytic pre-converter (K9K*772) on the turbocharger	**7 N.m**
nuts of the catalytic converter (K9K*764) or of the catalytic pre-converter (K9K*772) on the turbocharger	**26 N.m**
downstream strut lower bolt	**44 N.m**
downstream strut upper bolts	**26 N.m**

Tightening torques ▽	
upstream strut bolt on the cylinder block	**21 N.m**
upstream strut nut on the cylinder block	**21 N.m**
bolt of the upstream strut on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772)	**21 N.m**
studs of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772)	**7 N.m**
nuts of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772)	**21 N.m**
timing side lifting eye bolts	**10 N.m**
clip of the air filter unit air outlet pipe	**5.5 N.m**
intercooler air outlet pipe clip	**5.5 N.m**
exchanger inlet air pipe nut on the alternator	**8 N.m**

REMOVAL

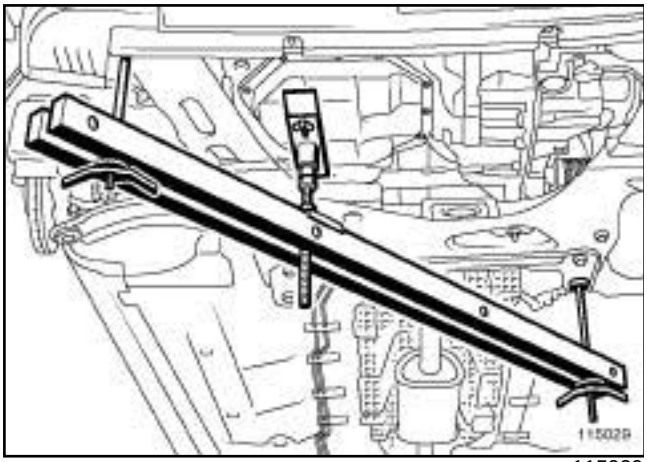
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

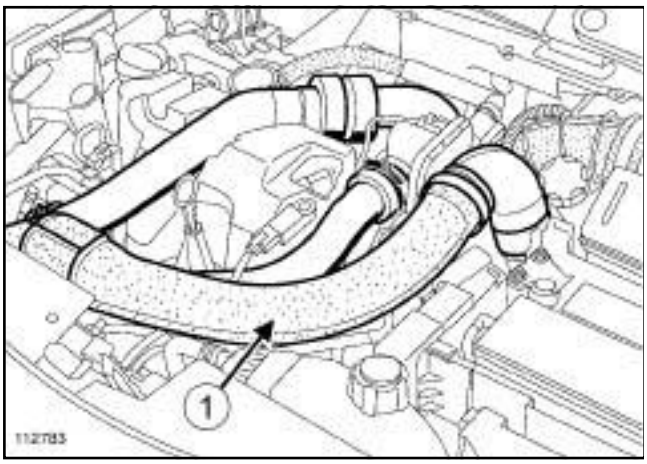
❑ Remove:

- the engine cover,
- the engine undertray,
- the radiator mounting cross member bolt on the right-hand side,
- the subframe tie-rod bolt on the left-hand side.

K9K, and 764 or 772


115029

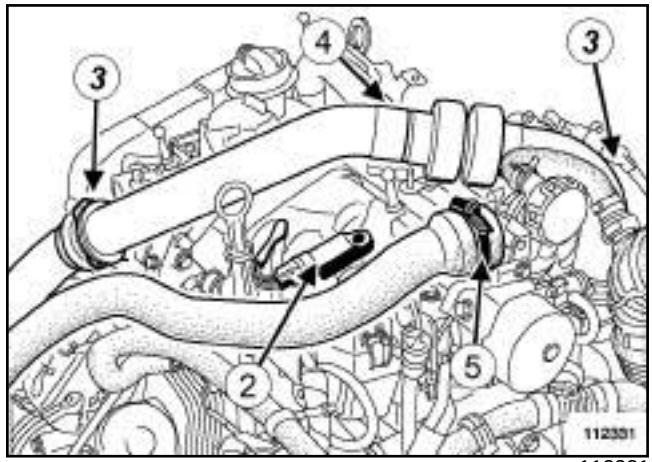
❏ Fit the lower engine support tool **(Mot. 1672)**.



112783

❏ Remove:

- the air filter unit air inlet pipe (**1**) ,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .



112331

❏ Disconnect the connector (**2**) from the inlet air pressure sensor.

❏ Move aside the turbocharger air outlet pipe retaining pins (**3**) .

❏ Remove:

- the bolt (**4**) from the turbocharger air outlet pipe,
- the turbocharger air outlet pipe.

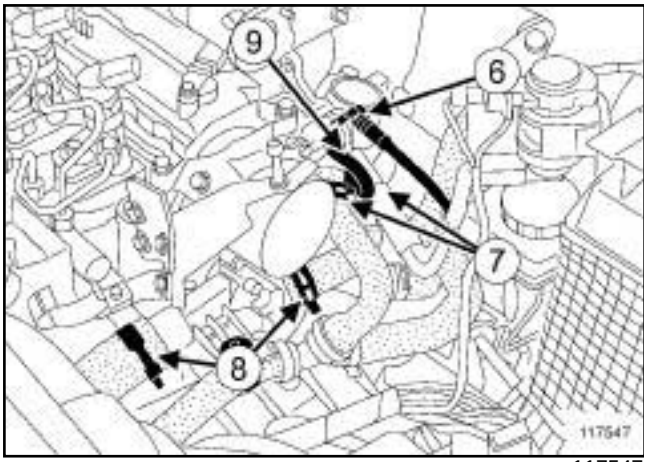
❏ Loosen the clip (**5**) on the intercooler air outlet pipe.

❏ Disconnect the intercooler air outlet pipe.

❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K9K, and 764 or 772



117547

❏ Disconnect the vacuum pipe union (**6**) from the vacuum pump.

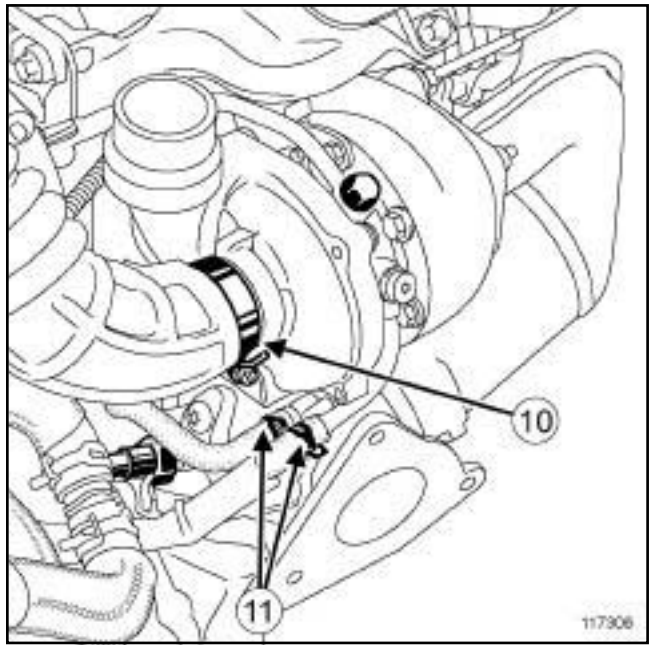
❏ Separate the clip (**7**) on the EGR cooler hoses using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the EGR cooler hoses.

❏ Separate the clip (**8**) on the water chamber hoses using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect:

- the water chamber hoses,
- the coolant temperature sensor connector (**9**) .



117306

❏ Disconnect:

- the oil vapour rebreathing pipe on the rocker cover,
- the turbocharging pressure regulation valve pipe.

❏ Loosen the clip (**10**) of the air outlet pipe on the air filter unit.

❏ Disconnect the air outlet pipe from the air filter unit.

❏ Remove the air outlet pipe from the air filter box.

K9K, and 772

❏ Remove the turbocharger cooling hose clip (**11**) using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

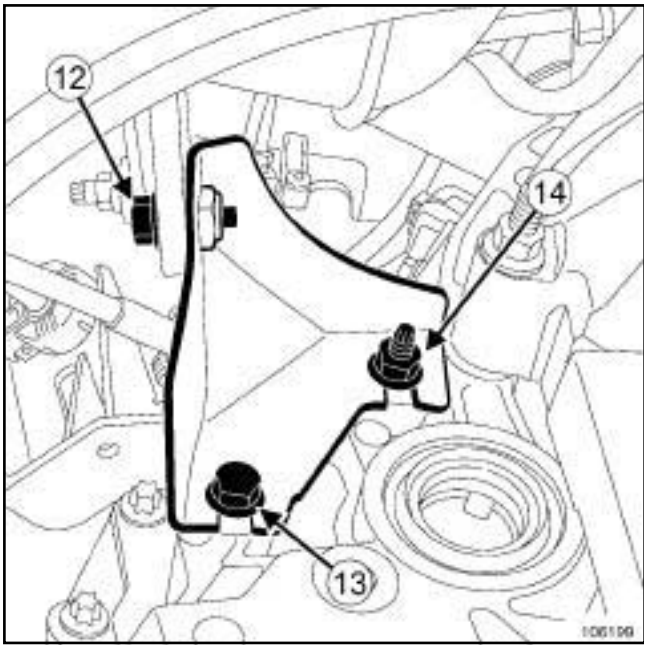
❏ Disconnect the turbocharger cooling hoses.

❏ Remove the nuts from the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Move aside the connecting hose.

❏ Remove the seal between the connecting hose and the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772).

K9K, and 764 or 772



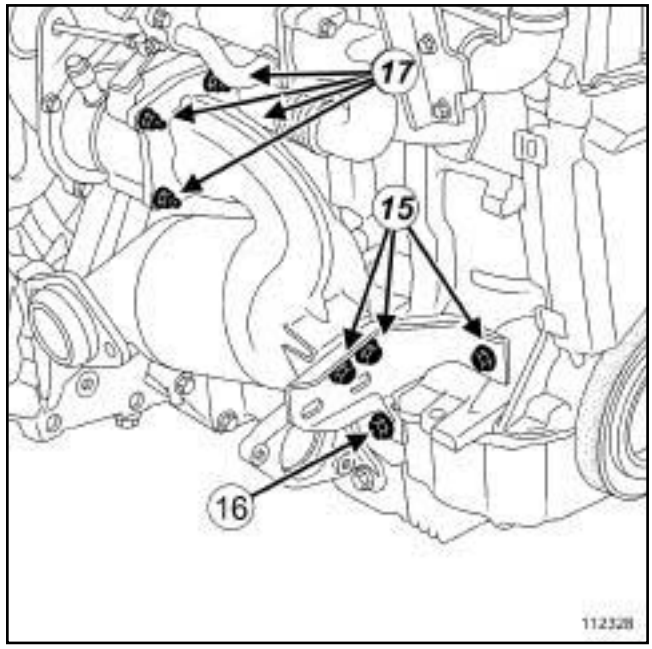
106199

❏ Remove the bolt (**12**) from the upstream strut on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Undo:

- the upstream strut bolt (**13**) on the cylinder block,
- the upstream strut nut (**14**) on the cylinder block.

❏ Remove the upstream strut.



112328

❏ Remove:

- the bolts from the lifting eye, timing end,
- the lifting eye on the timing end,
- the upper bolts (**15**) from the downstream strut on the catalytic converter (K9K*764) or catalytic pre-converter (K9K*772).

❏ Undo the downstream strut lower bolt (**16**) .

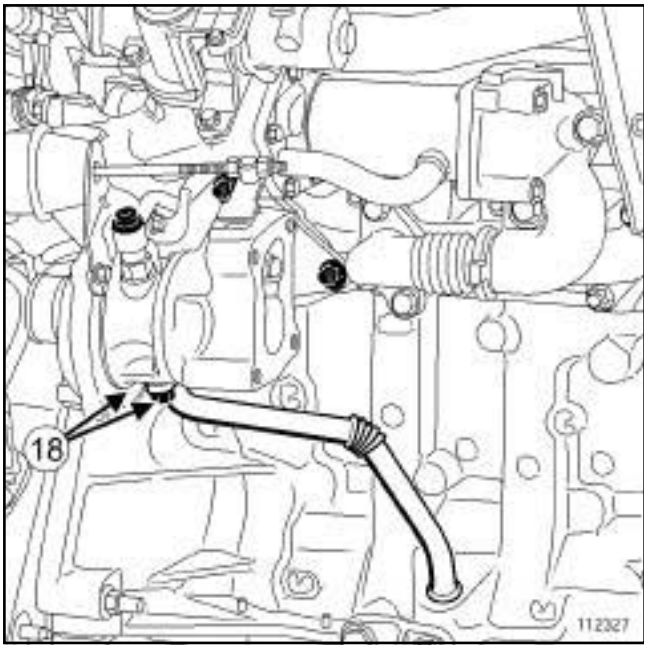
❏ Remove:

- the downstream strut,
- the nuts (**17**) from the catalytic converter (K9K*764) or from the catalytic pre-converter (K9K*772) on the turbocharger.

❏ Move the catalytic pre-converter towards the timing.

❏ Remove the seal between the turbocharger and the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772).

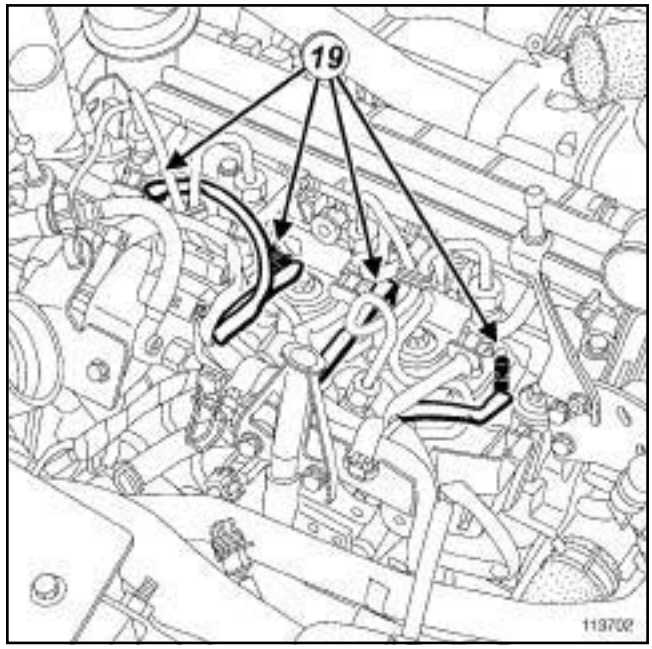
K9K, and 764 or 772



112327

❏ Remove:

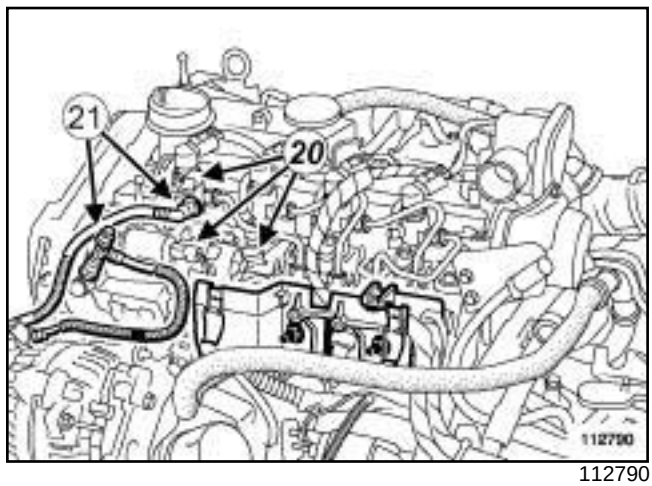
- the bolts (**18**) from the turbocharger oil return pipe,
- the turbocharger oil return pipe,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .



113702

❏ Disconnect:

- the heater plugs (**19**) ,
- the exhaust gas recirculation solenoid valve connector,
- the damper valve connector (if fitted).



112790

❏ Disconnect the high pressure pump connectors (**20**) .

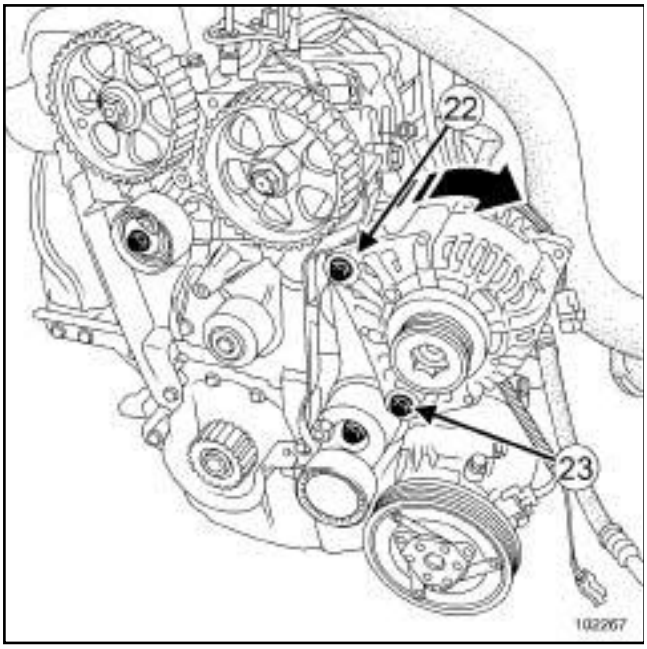
❏ Unclip the clip on the injector rail protector mounting.

❏ Move aside the wiring of the injector rail protector mounting.

❏ Disconnect the diesel supply and return pipes (**21**) from the high pressure pump then fit the blanking plugs.

❏ Plug the openings.

K9K, and 764 or 772



102267

❏ Disconnect the alternator connector.

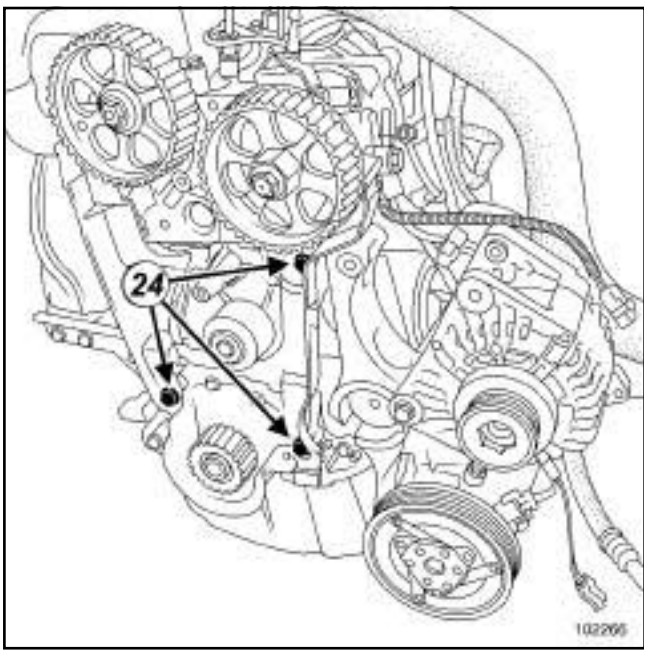
❏ Remove the alternator electrical wiring nut.

❏ Move aside the alternator electrical wiring.

❏ Remove the alternator upper bolt (**22**) .

❏ Loosen the alternator lower bolt (**23**) .

❏ Tilt the alternator forward.



102266

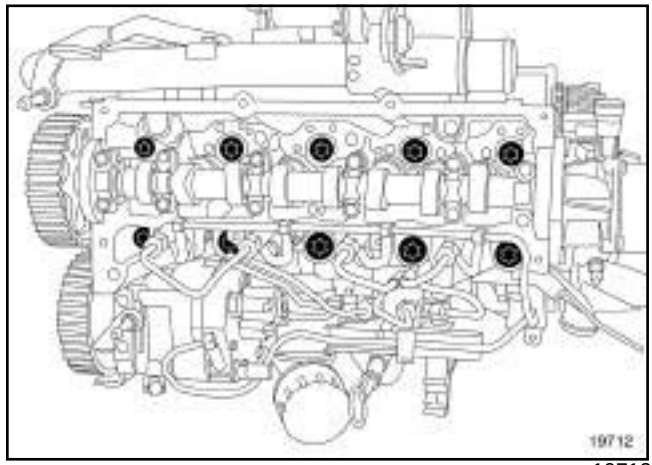
❏ Remove:

- the inner timing cover bolts (**24**) ,
- the inner timing cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Refit:

- the lifting eye on the timing end,
- the timing end lifting eye bolts.



19712

❏ Remove the cylinder head bolts.

❏ Fit **workshop hoist**.

❏ Remove the cylinder head.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Cylinder head gasket**.

❏ **parts always to be replaced: seal between turbocharger and catalytic converter**.

❏ **parts always to be replaced: cylinder head bolts**.

❏ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear gloves during this operation.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

K9K, and 764 or 772

❑ Use a **GREY ABRASIVE PAD** to clean the joint faces of:

- the cylinder head,

- the cylinder block

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to degrease the joint faces of:

- the cylinder head,

- the cylinder block.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING
Protect the oilway so that foreign bodies do not enter the oil pipes in the cylinder head.

Failure to follow this instruction could lead to the blocking of the oilways, resulting in a rapid deterioration of the camshaft.

❑ Check for gasket face deformation using a ruler and a set of shims.

❑ The maximum deformation is **0.05 mm**.

WARNING
No regrinding of the cylinder head is permitted.

❑ Test the cylinder head to detect any possible cracks using **cylinder head testing tools**.

❑ Strip down the cylinder head (see) (Technical Note 6006A, 10A, Engine and peripherals).

WARNING
In order to ensure that the bolts are correctly tightened, use a syringe to remove any oil which may be in the cylinder head mounting holes.

❑ Fit a new cylinder head seal, centred by two dowels.

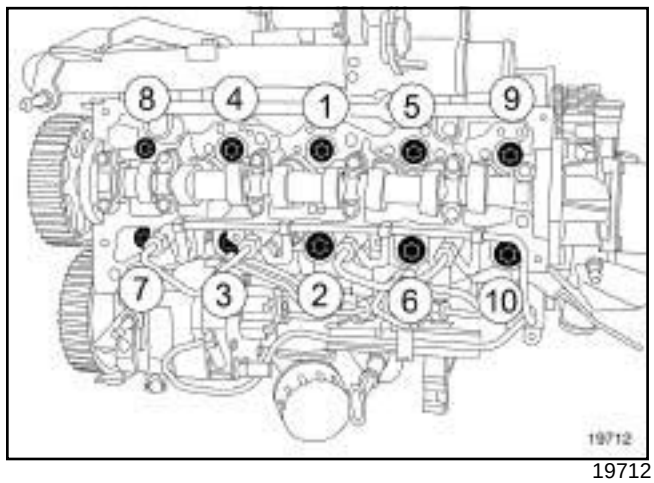
❑ Bring the pistons to mid-stroke position to prevent any risk of contact with the valves when tightening the cylinder head.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the cylinder head.

WARNING
Do not retighten the cylinder head bolts after applying this procedure.

❑ Remove **workshop hoist**.



19712

❑ Refit new cylinder head bolts.

❑ Pretighten to torque and in order the **cylinder head bolts (initial torque) (25 N.m)**.

❑ Check that all of the cylinder head bolts are tightened to the correct torque.

❑ Angle tighten in order the **cylinder head bolts (270° ± 10°)**.

III - FINAL OPERATION

❑ Refit:

- the inner timing cover,

- the inner timing cover bolts.

❑ Tighten to torque the **inner timing cover bolts (9 N.m)**.

❑ Fit the alternator in place.

❑ Refit the alternator upper bolt.

❑ Torque tighten the **alternator bolts (21 N.m)**.

❑ Refit the alternator electrical wiring nut.

❑ Connect the alternator connector.

❑ Fit the wiring of the injector rail protector mounting.

❑ Clip the clip onto the injector rail protector mounting.

❑ Remove the blanking plugs from the openings.

K9K, and 764 or 772

❏ Connect:

- the diesel supply and return pipes on the high pressure pump,
- the high pressure pump connectors.
- the exhaust gas recirculation solenoid valve connector,
- the heater plugs,
- the damper valve (if equipped).

❏ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Refit:

- the subframe tie-rod bolt on the left-hand side,
- the radiator mounting cross member bolt on the right-hand side.

❏ Torque tighten:

- the **subframe tie-rod bolt on the left-hand side (105 N.m)**,
- the **radiator mounting cross member bolt on the right-hand side (105 N.m)**.

❏ Refit the turbocharger oil return pipe with its new seals, starting at the inlet in the cylinder block.

WARNING

Ensure that no foreign bodies enter the turbine or compressor during the refitting operation.

Check that the turbocharger oil return pipe is not completely or partially blocked by scale. Check that there are no leaks. If there are, replace the part.

Note:

During this operation, make sure that the turbocharger oil return pipe does not fold.

Respect the direction of fitting of the turbocharger oil return pipe seal.

❏ Fit without tightening the turbocharger oil return pipe bolts on the turbocharger.

❏ Tighten to torque the **turbocharger oil return pipe bolts on the turbocharger (12 N.m)**.

❏ Remove:

- the bolts from the lifting eye, timing end,
- the lifting eye on the timing end.

❏ Refit the studs of the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772) on the turbocharger.

❏ Torque tighten the **studs of the catalytic converter (K9K*764) or of the catalytic pre-converter (K9K*772) on the turbocharger (7 N.m)**.

❏ Refit a new seal between the turbocharger and the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772).

❏ Fit the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772).

❏ Refit the nuts of the catalytic converter (K9K*764) or of the catalytic pre-converter (K9K*772) on the turbocharger.

❏ Torque tighten the **nuts of the catalytic converter (K9K*764) or of the catalytic pre-converter (K9K*772) on the turbocharger (26 N.m)**.

❏ Refit the downstream strut.

❏ Fit without tightening:

- the downstream strut lower bolt,
- the downstream strut upper bolts.

❏ Refit the upstream strut.

❏ Fit without tightening the upstream strut bolts on the cylinder block.

❏ Fit without tightening:

- the upstream strut bolt on the cylinder block,
- the upstream strut nut on the cylinder block.

❏ Refit the bolt of the upstream strut on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Refit without tightening the bolt of the upstream strut on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Torque tighten:

- the **downstream strut lower bolt (44 N.m)**,
- the **downstream strut upper bolts (26 N.m)**,
- the **upstream strut bolt on the cylinder block (21 N.m)**,
- the **upstream strut nut on the cylinder block (21 N.m)**,

K9K, and 764 or 772

- the **bolt of the upstream strut on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772) (21 N.m)**.

❏ Refit the studs of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Torque tighten the **studs of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772) (7 N.m)**.

❏ Refit:

- a new seal between the hose and the catalytic converter (K9K*764) or the catalytic pre-converter (K9K*772),
- the nuts of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772).

❏ Torque tighten the **nuts of the connecting hose on the catalytic converter (K9K*764) or on the catalytic pre-converter (K9K*772) (21 N.m)**.

❏ Refit:

- the lifting eye on the timing end,
- the timing end lifting eye bolts.

❏ Tighten to torque the **timing side lifting eye bolts (10 N.m)**.

K9K, and 772

❏ Connect the turbocharger cooling hoses.

❏ Fit the turbocharger cooling hose clip using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

K9K, and 764 or 772

❑ Refit the air outlet pipe onto the air filter unit.

❑ Connect the air outlet pipe of the air filter unit.

❑ Torque tighten the **clip of the air filter unit air outlet pipe (5.5 N.m)**.

❑ Connect:

- the oil vapour rebreathing pipe on the rocker cover,
- the turbocharging pressure regulation valve pipe.

❑ Connect:

- the coolant temperature sensor connector,
- the water chamber hoses.

❑ Fit the water chamber hose clips using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Connect the exhaust gas cooler hoses.

❑ Fit the clip of the exhaust gas cooler hose using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Connect the vacuum pipe to the vacuum pump.

❑ Refit the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Connect the intercooler air outlet pipe.

❑ Torque tighten the **intercooler air outlet pipe clip (5.5 N.m)**.

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit:

- the turbocharger air outlet pipe,
- the turbocharger air outlet pipe retaining pins.

❑ Snap on the turbocharger air outlet pipe.

❑ Tighten the turbocharger outlet air pipe bolt on the rocker cover.

❑ Torque tighten the **exchanger inlet air pipe nut on the alternator (8 N.m)**.

❑ Connect the air inlet pressure sensor connector.

❑ Refit:

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit air inlet pipe,
- the engine undertray,
- the engine cover.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1672	Lower engine support.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Equipment required
workshop hoist
cylinder head testing tools

Tightening torques ▽	
cylinder head bolts (initial torque)	**25 N.m**
cylinder head bolts	**270° ± 10°**
inner timing cover bolts	**9 N.m**
alternator bolts	**21 N.m**
injector rail protector mounting bolts	**21 N.m**
high pressure pump protector bolts	**21 N.m**
turbocharger oil return pipe bolts	**12 N.m**
subframe tie-rod bolt on the left-hand side	**105 N.m**
radiator mounting cross member bolt on the right-hand side	**105 N.m**

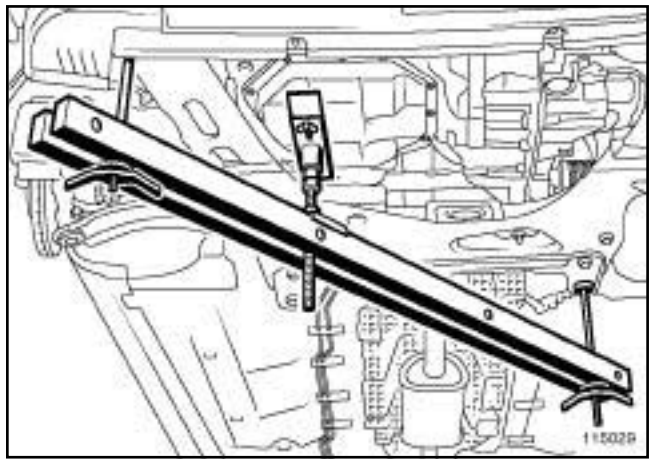
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray,
- the radiator mounting cross member bolt on the right-hand side,
- the subframe tie-rod bolt on the left-hand side.



115029

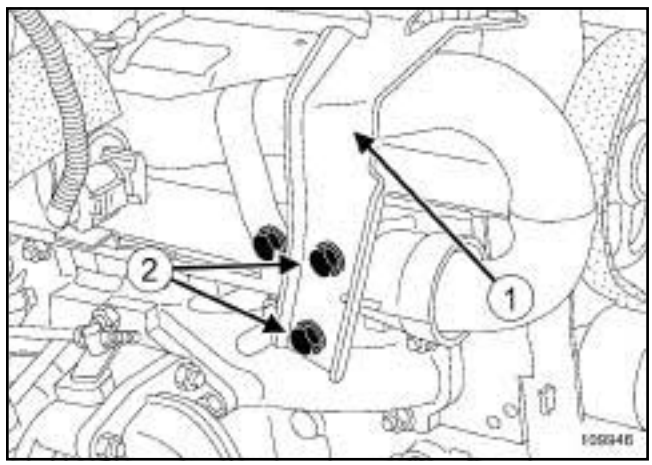
❏ Fit the lower engine support tool **(Mot. 1672)**.

❏ Remove:

- the air filter unit air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

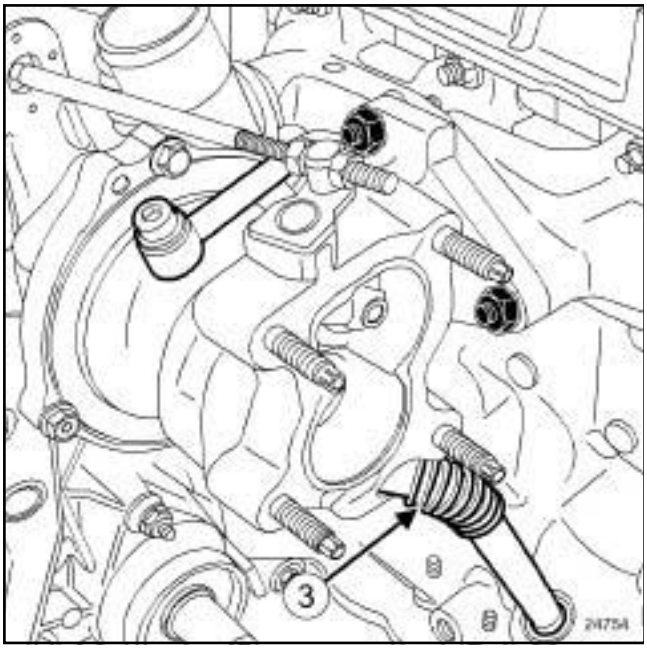


109946

❏ Refit:

- the timing end lifting eye (**1**) ,
- the timing end lifting eye bolts (**2**) .

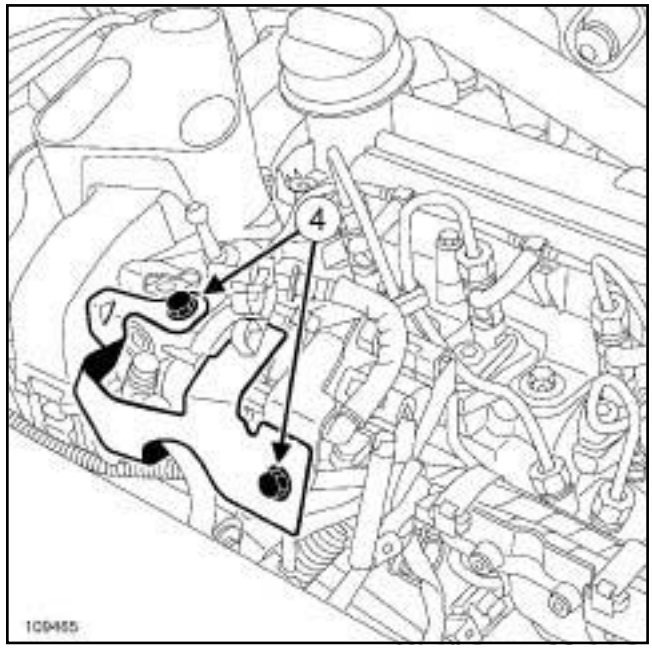
K9K, and 750 or 752 or 766 or 768



24754

❏ Remove:

- the turbocharger oil return pipe bolts
- the turbocharger oil return pipe (**3**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

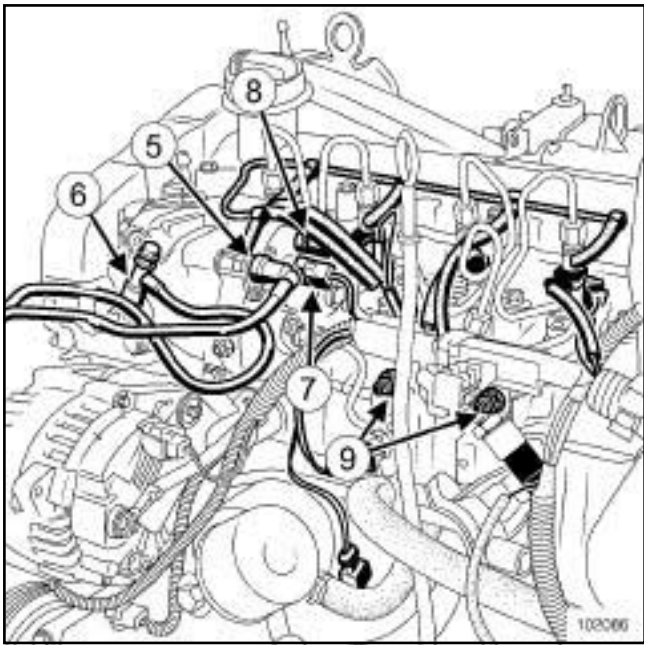


109465

❏ Remove:

- the bolts (**4**) from the high pressure pump protector,
- the high pressure pump protector.

K9K, and 750 or 752 or 766 or 768



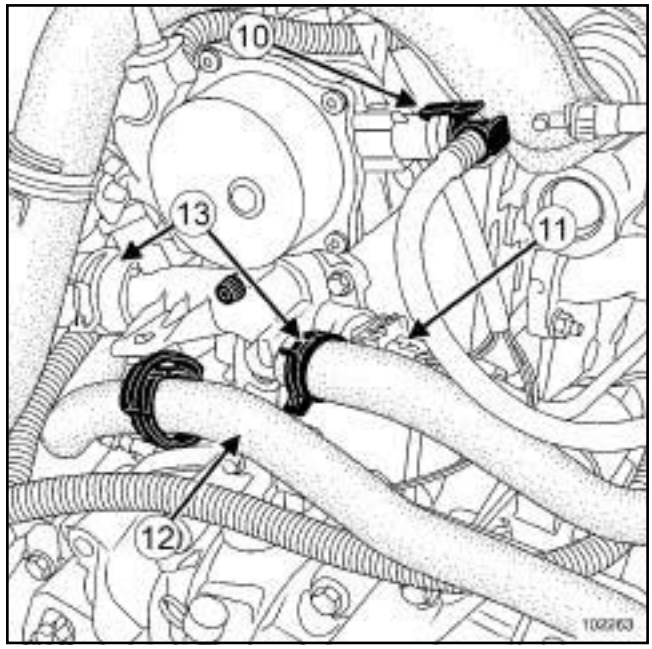
102086

❏ Disconnect:

- the fuel supply pipe (**5**) ,
- the fuel return pipe (**6**) ,
- the fuel flow actuator connector (**7**) ,
- the diesel temperature sensor connector (**8**) ,
- the injector connectors,
- the heater plug connectors.

❏ Remove the injector rail protector mounting bolts (**9**) .

❏ Move aside the injector rail protector mounting.



102263

❏ Disconnect:

- the brake servo pipe union (**10**) from the vacuum pump,
- the temperature sensor connector (**11**) on the water chamber.

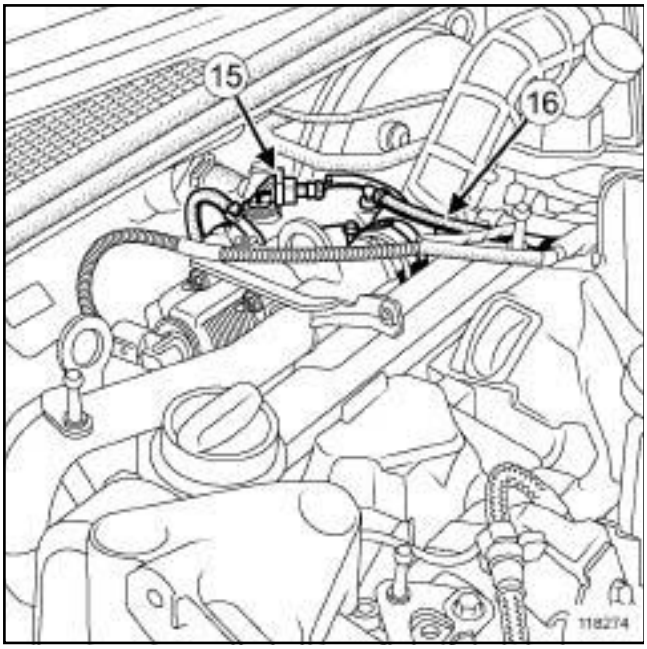
❏ Unclip the cooling hose (**12**) .

❏ Separate the water chamber inlet and outlet hose clip (**13**) using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the water chamber inlet and outlet hoses.

❏ Disconnect the crankshaft position sensor connector.

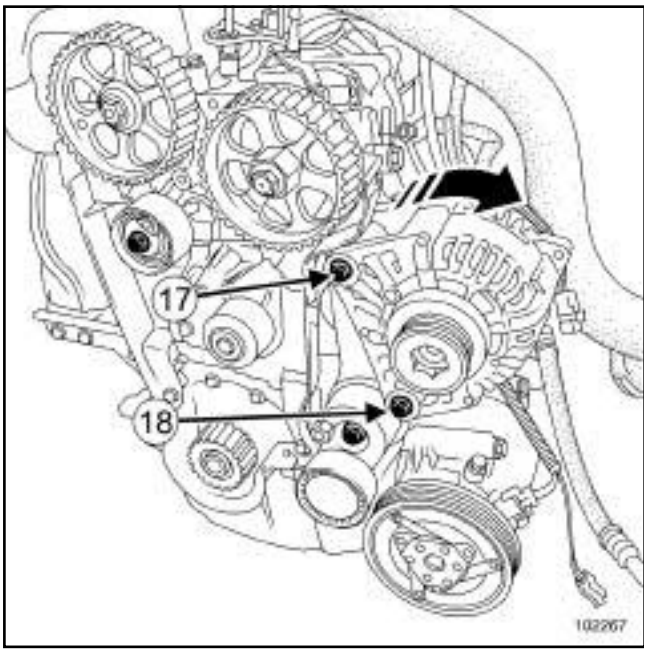
K9K, and 750 or 752 or 766 or 768



118274

❏ Disconnect:

- the air temperature sensor connector (**15**) ,
- the vacuum pipe (**16**) between the pressure sensor and the turbocharger air outlet pipe.



102267

❏ Disconnect the alternator connector.

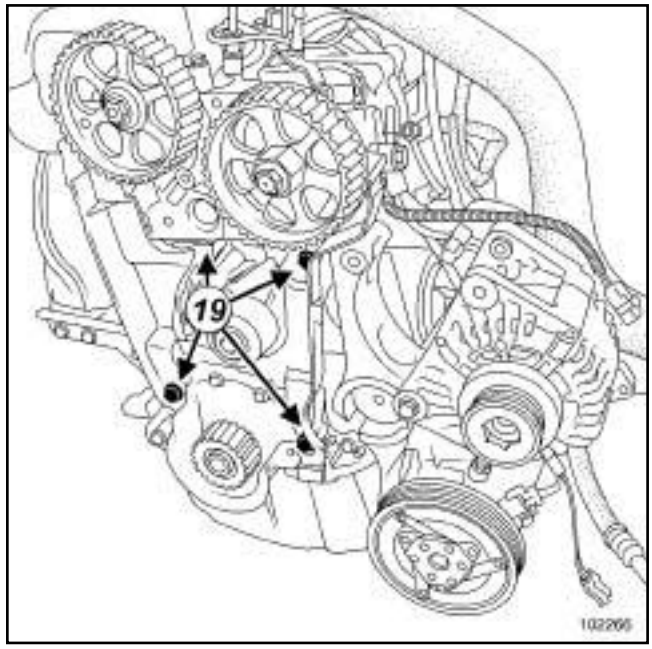
❏ Remove the alternator electrical wiring nut.

❏ Move aside the alternator electrical wiring.

❏ Remove the alternator upper bolt (**17**) .

❏ Loosen the alternator lower bolt (**18**) .

❏ Tilt the alternator forward.

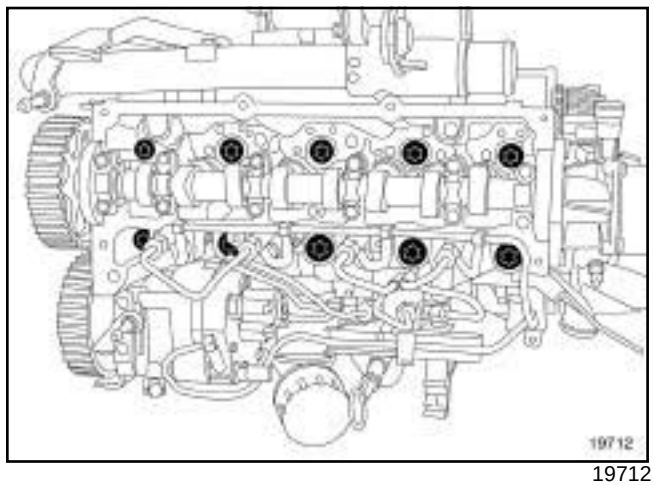


102266

❏ Remove:

- the inner timing cover bolts (**19**) ,
- the inner timing cover.

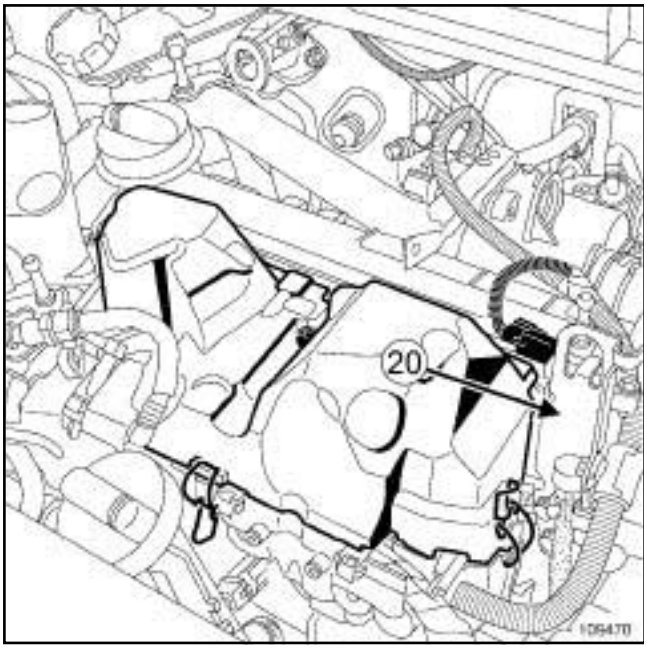
II - OPERATION FOR REMOVAL OF PART CONCERNED



19712

❏ Remove the cylinder head bolts.

K9K, and 750 or 752 or 766 or 768



109470

❑ Refit:

- the lifting eye (**20**) on the gearbox side,
- the gearbox side lifting eye bolts.

❑ Fit **workshop hoist**.

❑ Remove the cylinder head.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Cylinder head gasket**.

❑ **parts always to be replaced: cylinder head bolts**.

❑ **parts always to be replaced: seal between turbocharger and catalytic converter**.

❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose**.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear gloves during this operation.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

❑ Use a **GREY ABRASIVE PAD** to clean the joint faces of the cylinder head and cylinder block.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to degrease the joint face of the cylinder head and cylinder block.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING
Protect the oilway so that foreign bodies do not enter the oil pipes in the cylinder head.

Failure to follow this advice could block the oil supply pipes, causing rapid camshaft damage.

❑ Check for gasket face deformation using a ruler and a set of shims.

❑ The maximum deformation is **0.05 mm**.

WARNING
No regrinding of the cylinder head is permitted.

❑ Test the cylinder head to detect any possible cracks using **cylinder head testing tools**.

K9K, and 750 or 752 or 766 or 768

❑ Strip down the cylinder head (see) (Technical Note 6006A, 10A, Engine and peripherals).

WARNING

In order to ensure that the bolts are correctly tightened, use a syringe to remove any oil which may be in the cylinder head mounting holes.

❑ Fit a new cylinder head seal, centred by two dowels.

❑ Bring the pistons to mid-stroke position to prevent any risk of contact with the valves when tightening the cylinder head.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the cylinder head.

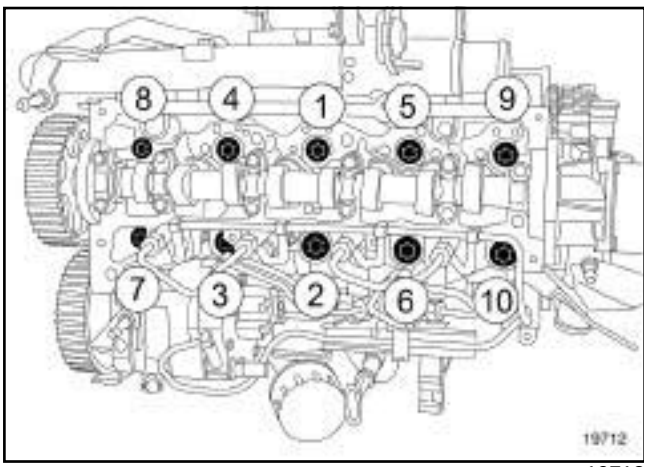
WARNING

Do not retighten the cylinder head bolts after applying this procedure.

❑ Remove **workshop hoist**.

❑ Remove:

- the gearbox side lifting eye bolts,
- the gearbox side lifting eye.



19712

❑ Refit new cylinder head bolts.

❑ Pretighten to torque and in order the **cylinder head bolts (initial torque) (25 N.m)**.

❑ Check that all of the cylinder head bolts are tightened to the correct torque.

❑ Angle tighten in order the **cylinder head bolts (270° ± 10°)**.

III - FINAL OPERATION

❑ Refit:

- the inner timing cover,
- the inner timing cover bolts.

❑ Tighten to torque the **inner timing cover bolts (9 N.m)**.

❑ Fit the alternator in place.

❑ Refit the alternator upper bolt.

❑ Torque tighten the **alternator bolts (21 N.m)**.

❑ Connect:

- the alternator connector,
- the crankshaft position sensor,
- the vacuum pipe between the pressure sensor and the turbocharger air outlet pipe,
- the air temperature sensor connector,
- the water chamber inlet and outlet hoses.

❑ Fit the water chamber inlet and outlet hose clip using the tool **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Clip on the cooling hose.

❑ Connect:

- the brake servo pipe union onto the vacuum pump,
- the temperature sensor connector.

❑ Fit the injector rail protector mounting.

❑ Refit the injector rail protector mounting bolts.

❑ Tighten to torque the **injector rail protector mounting bolts (21 N.m)**.

❑ Connect:

- the heater plug connectors,
- the injector connectors,
- the diesel temperature sensor connector ,
- the fuel flow actuator connector,
- the fuel return pipe,
- the fuel supply pipe.

❑ Refit:

- the high pressure pump protector,
- the bolts of the high pressure pump protector.

❑ Torque tighten the **high pressure pump protector bolts (21 N.m)**.

K9K, and 750 or 752 or 766 or 768

❑ Refit:

- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the turbocharger oil return pipe,
- the turbocharger oil return pipe bolts.

❑ Torque tighten the **turbocharger oil return pipe bolts (12 N.m)**.

❑ Remove:

- the bolts from the lifting eye, timing end,
- the lifting eye on the timing end.

❑ Refit:

- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the air filter unit air inlet pipe,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove the lower engine support tool **(Mot. 1672)**.

❑ Refit:

- the subframe tie-rod bolt on the left-hand side,
- the radiator mounting cross member bolt on the right-hand side.

❑ Torque tighten:

- the **subframe tie-rod bolt on the left-hand side (105 N.m)**,
- the **radiator mounting cross member bolt on the right-hand side (105 N.m)**.

❑ Refit the engine undertray.

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

D4F, and 784 or 786

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Equipment required
cylinder head testing tools

Tightening torques ▽	
cylinder head bolts (initial torque)	**20 N.m**
cylinder head bolts	**230°± 6**

REMOVAL

I - REMOVAL PREPARATION OPERATION

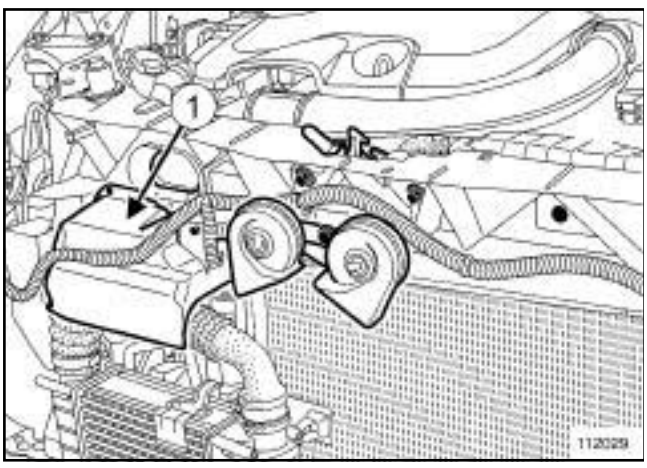
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove:

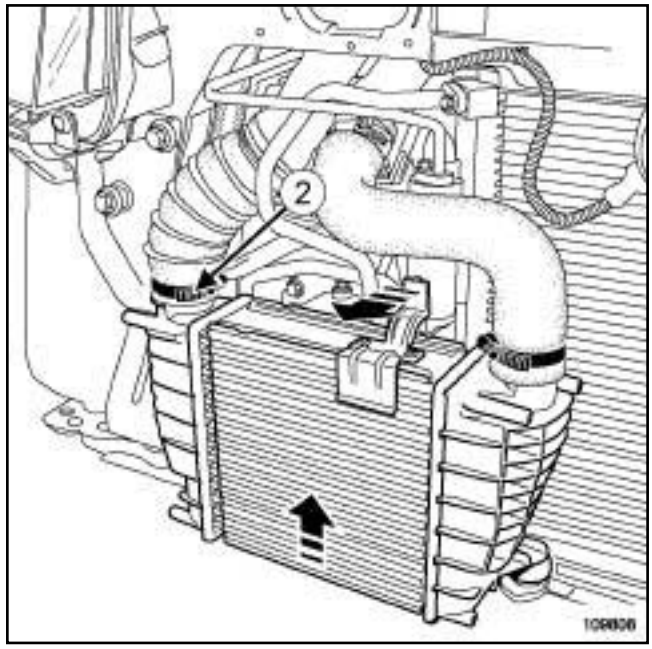
- the engine undertray,
- the engine cover,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



112029

❏ Remove the air deflector (**1**) .

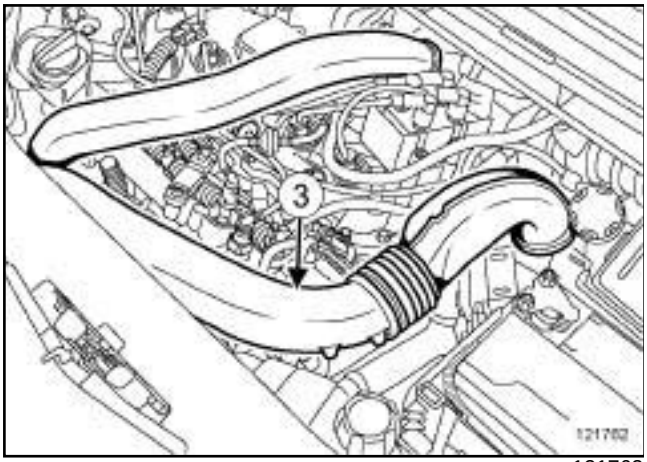


109808

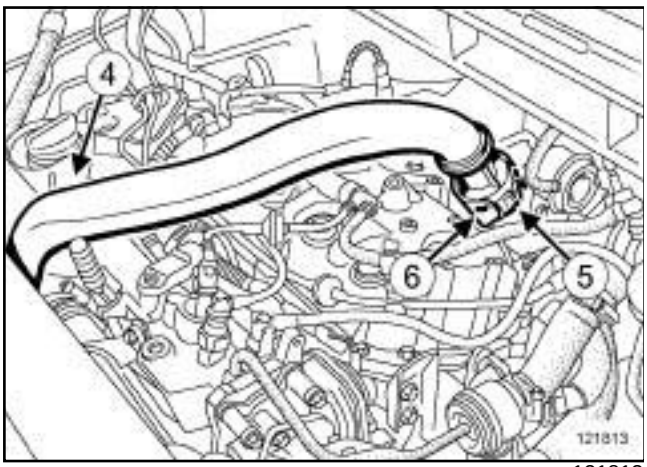
❏ Undo the intercooler air inlet pipe clip (**2**) .

❏ Disconnect the intercooler air inlet pipe from the intercooler.

D4F, and 784 or 786



121762



121813

❏ Remove:

- the air pipe (**3**) from the air filter box inlet,
- the bolt (**4**) from the intercooler air inlet pipe on the inlet distributor.

❏ Remove the intercooler air inlet pipe clip (**5**) on the turbocharger.

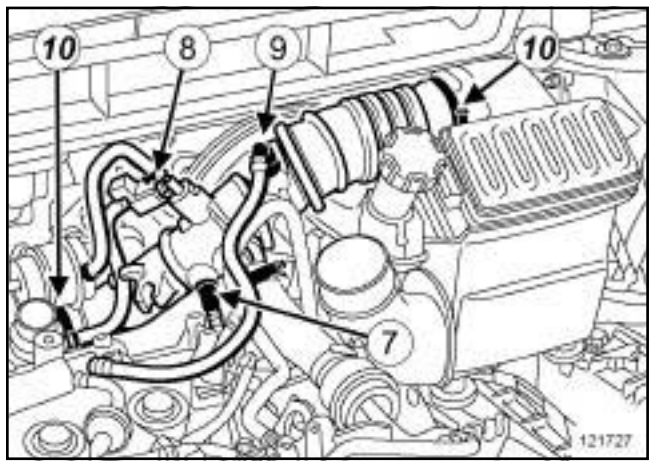
Note:

If the clip (**6**) is removed from the heat resistant protector, the latter must be replaced.

❏ Remove the intercooler air inlet pipe.

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) ,
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .



121727

❏ Disconnect:

- the fuel vapour recirculation pipe (**7**) from the air filter box air outlet pipe,
- the oil vapour rebreathing pipe (**9**) from the air filter unit air outlet pipe,
- the turbocharging pressure relief valve (**8**) from the air filter unit air outlet pipe.

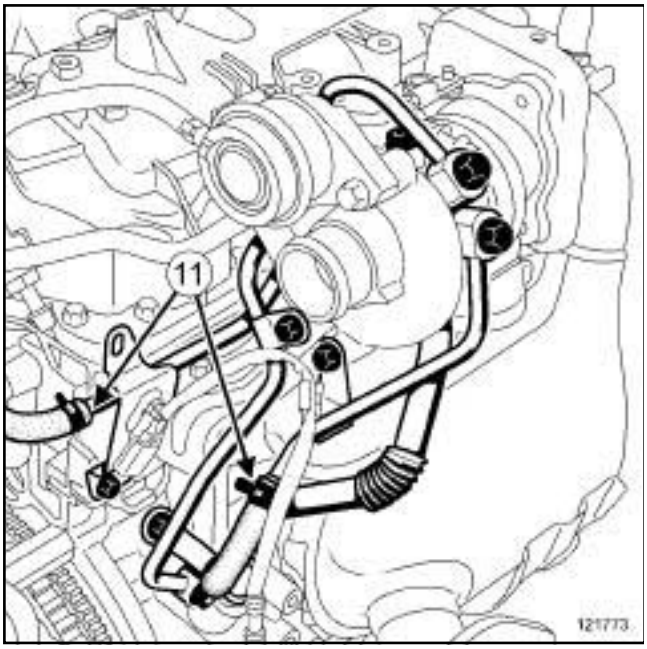
❏ Undo the air filter unit air outlet pipe clips (**10**) .

❏ Disconnect:

- the turbocharging pressure relief valve control pipes,
- the air filter unit air outlet pipe.

❏ Remove the air filter box air outlet pipe.

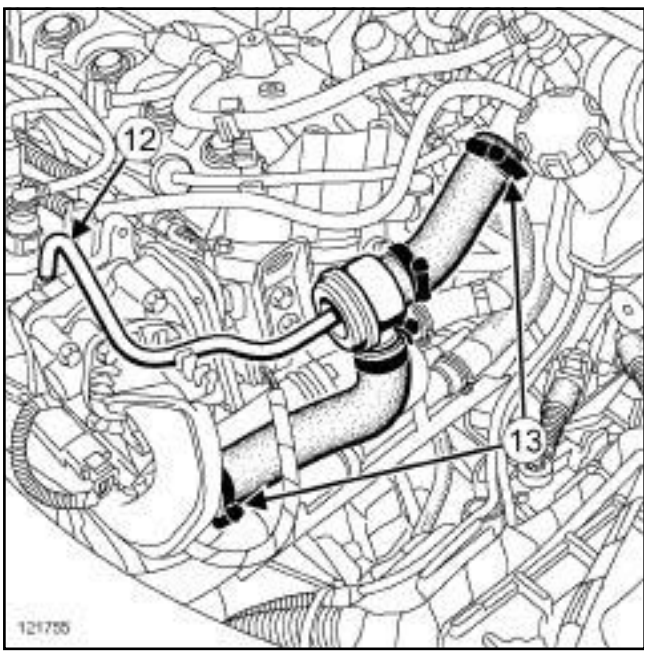
D4F, and 784 or 786



121773

❏ Move the clips (**11**) on the turbocharger cooling hoses to one side, using the **(Mot. 1448)**.

❏ Disconnect the turbocharger cooling hoses.

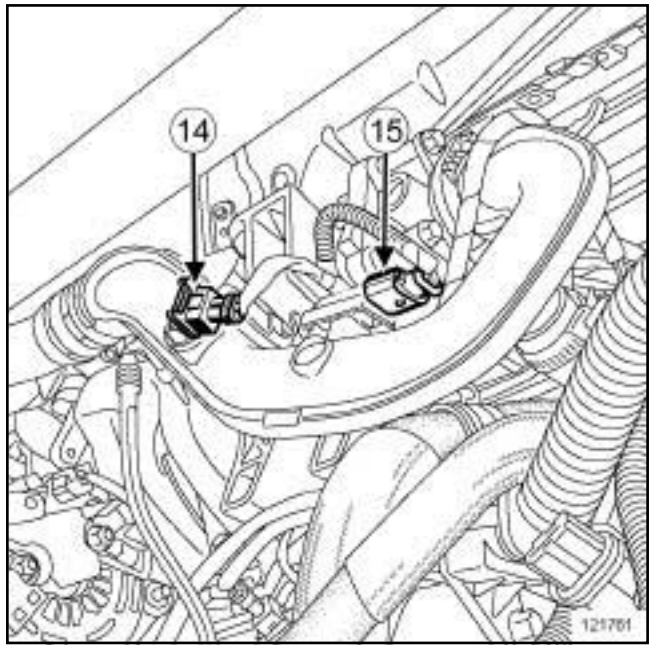


121755

❏ Disconnect the inlet distributor vacuum hose (**12**) .

❏ Undo the clips (**13**) on the compressor discharge valve air pipe.

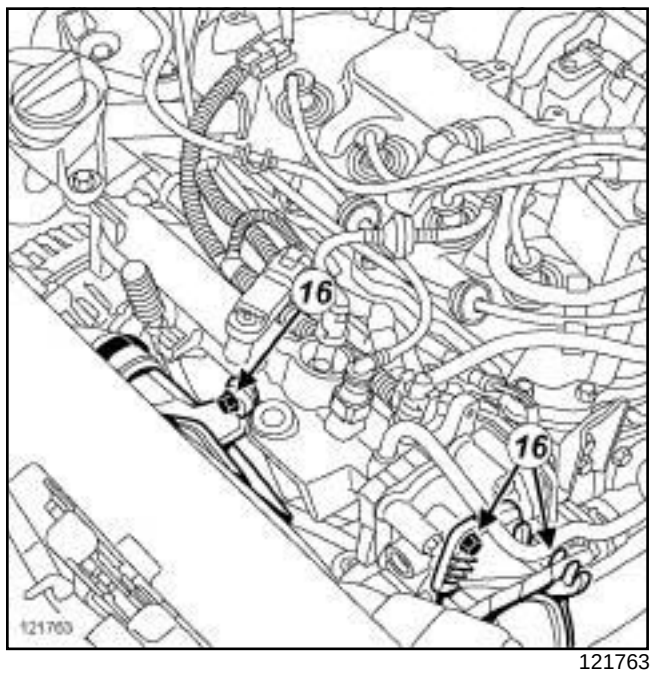
❏ Remove the compressor discharge valve air pipe.



121761

❏ Disconnect:

- the connector (**14**) from the air temperature sensor,
- the air pressure sensor connector (**15**) .

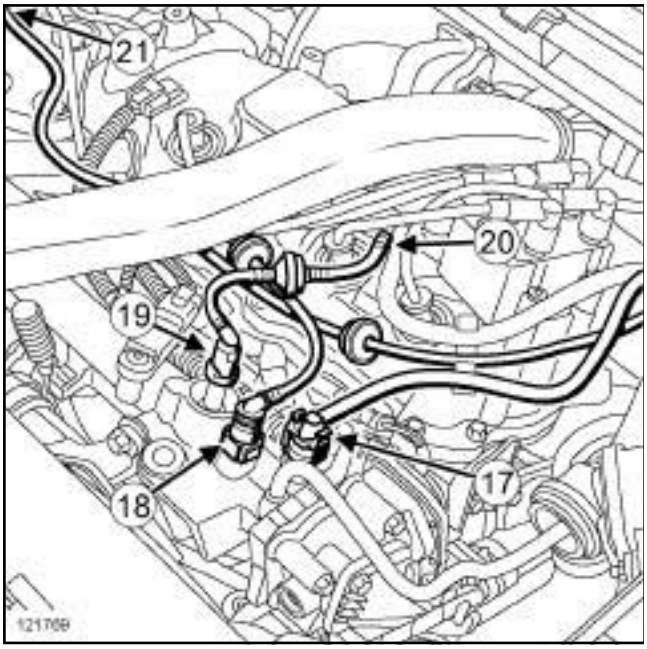


121763

❏ Remove the intercooler air outlet pipe bolts (**16**) .

❏ Move the intercooler air outlet pipe towards the front of the vehicle.

D4F, and 784 or 786



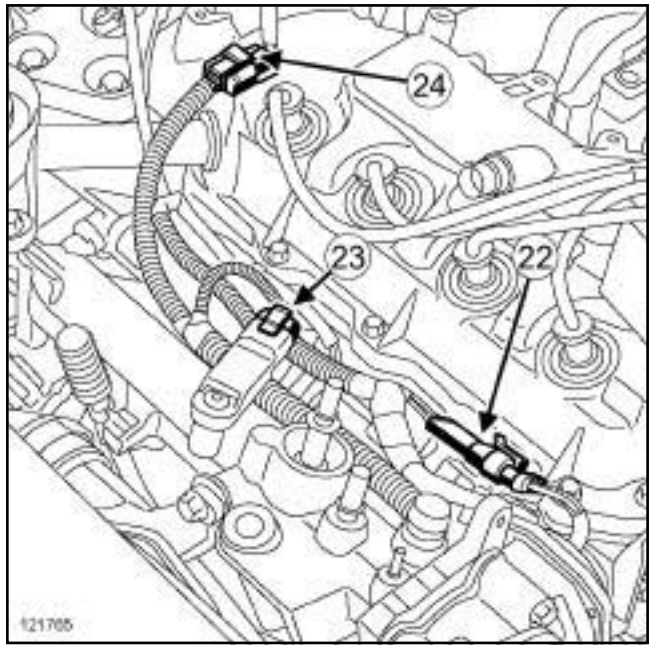
121769

❑ Disconnect:

- the brake servo non-return valve pipe (**17**) ,
- the petrol vapour rebreathing pipe (**18**) from the inlet distributor,
- the oil vapour rebreathing pipe (**19**) on the inlet distributor,
- the oil vapour rebreathing pipe (**20**) on the rocker cover,
- the petrol vapour rebreathing pipe (**21**) from the petrol vapour rebreathing solenoid valve.

❑ Remove:

- the oil vapour rebreathing pipe,
- the petrol vapour rebreather pipe.



121765

❑ Disconnect:

- the injector rail - injector wiring harness connector (**22**) ,
- the air inlet pressure connector (**23**) ,
- the upstream oxygen sensor connector (**24**) ,
- the petrol vapour rebreathing solenoid valve connector,
- the coolant temperature sensor connector.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear latex gloves during the operation.

WARNING

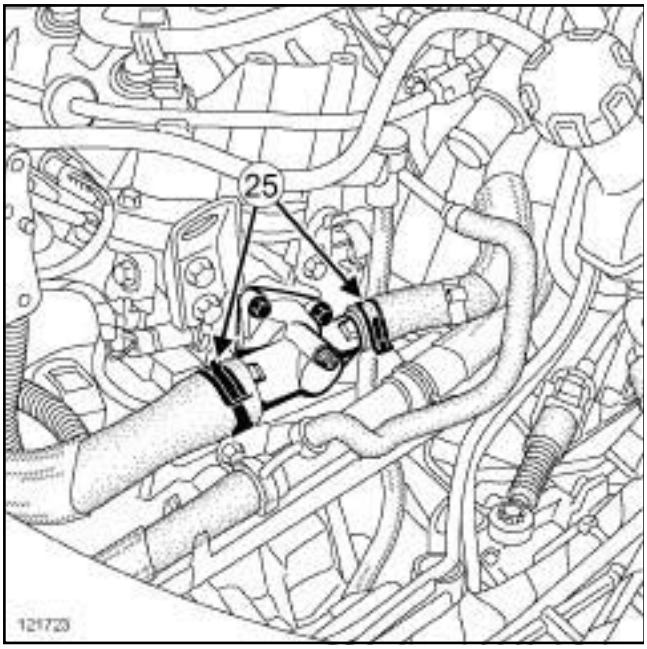
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❑ Disconnect the petrol supply union on the injector rail - injector.

❑ Plug the openings.

❑ Move the wiring harness away from the engine.

D4F, and 784 or 786



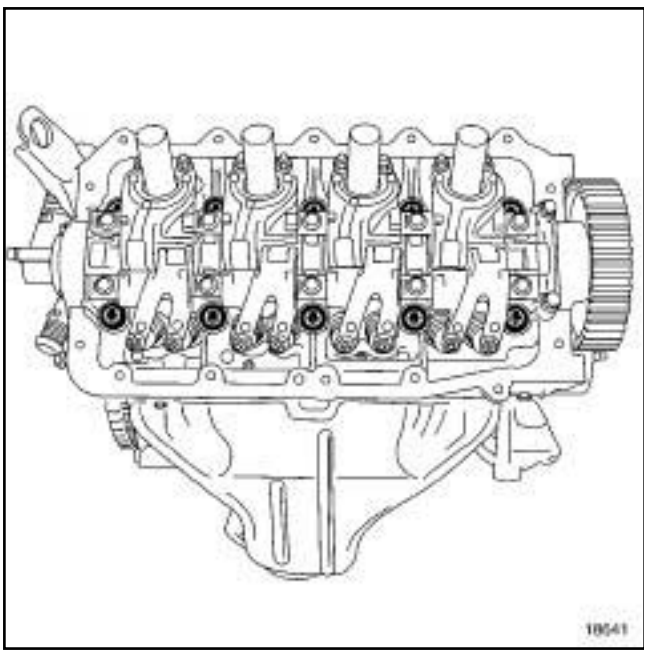
121723

❑ Remove the clips (**25**) from the cooling hoses using the **(Mot. 1448)**.

❑ Disconnect the cooling hoses.

❑ Remove the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



18641

❑ Remove:

- the cylinder head bolts,
- the cylinder head,
- the cylinder head gasket.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the cylinder head with **SUPER CLEANER FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products).

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

Do not allow this product to drip onto the paintwork.

Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

Note:

The cylinder head bolts must be replaced each time they are removed and should not be oiled before being fitted.

❑ Always replace:

- the cylinder head bolts,
- the cylinder head gasket.

D4F, and 784 or 786

1 - Checking the gasket face

❏ With a ruler and shim set, check for cylinder head gasket face bow.

The maximum deformation is **0.05 mm**.

WARNING
No regrinding of the cylinder head is permitted.

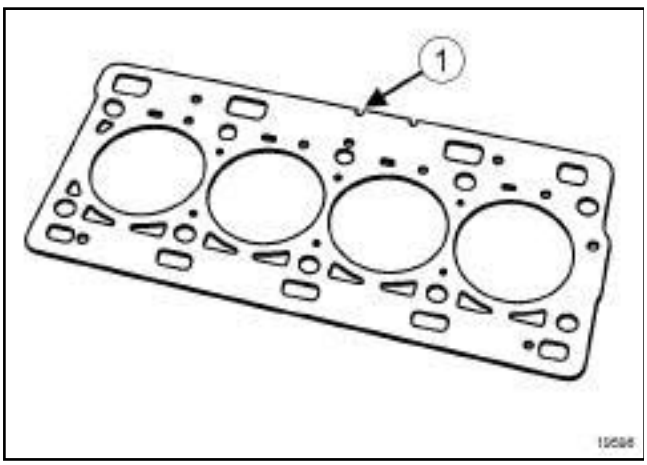
❏ Test the cylinder head for any cracks using the **cylinder head testing tools** (see **Garage Equipment Catalogue**).

❏ Strip the cylinder head (see) (Technical Note 6004A, 10A, Engine and peripherals).

2 - If replacing the cylinder head

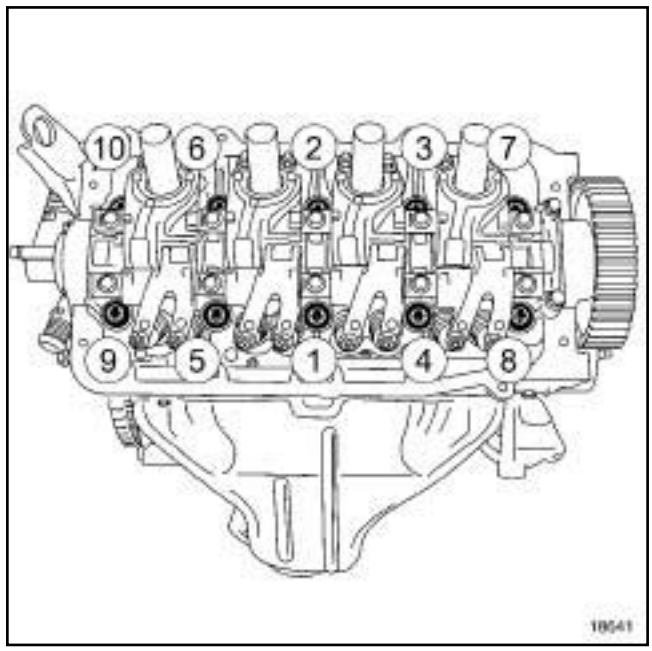
❏ Rebuild the cylinder head (see) (Technical Note 6004A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED



19598

❏ Fit the new cylinder head gasket onto the cylinder block, positioning the marking (**1**) on the oil filter side.



18641

❏ Refit:

- the cylinder head,
- the new cylinder head bolts.

❏ Pretighten to torque and in order the **cylinder head bolts (initial torque) (20 N.m)**.

❏ Check that all the cylinder head bolts are tightened to **20 N.m**.

❏ Angle tighten, in order the **cylinder head bolts (230°± 6)**.

III - FINAL OPERATION

❏ Refit the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

❏ Connect the cooling hoses.

❏ Refit:

- the cooling radiator hose clips using the **(Mot. 1448)**,
- the engine wiring harness.

❏ Remove the blanking plugs.

❏ Connect:

- the petrol inlet union on the injector rail - injectors.
- the coolant temperature sensor connector,
- the petrol vapour rebreathing solenoid valve connector,
- the upstream oxygen sensor connector,

D4F, and 784 or 786

- the air inlet pressure connector.
- the injector rail - injector wiring harness connector.

❏ Refit:

- the petrol vapour rebreathing pipe,
- the oil vapour rebreathing pipe .

❏ Connect:

- the petrol vapour rebreathing pipe to the solenoid valve,
- the oil vapour rebreathing pipe on the rocker cover,
- the oil vapour rebreathing pipe from the inlet distributor,
- the petrol vapour rebreather pipe from the inlet distributor,
- the brake servo non-return valve pipe.

❏ Refit the air filter unit air outlet pipe.

❏ Connect:

- the air filter box air outlet pipe,
- the turbocharging pressure relief valve control pipes.

❏ Tighten:

- the clips on the air filter box outlet air pipe,
- the turbocharging pressure relief valve control pipe clips.

❏ Connect:

- the oil vapour rebreathing pipe to the air filter box air outlet pipe.
- the petrol vapour rebreathing pipe to the air filter unit air outlet pipe.

❏ Refit:

- the intercooler outlet air pipe,
- the intercooler air outlet pipe bolts.

❏ Connect:

- air pressure sensor connector,
- the air temperature sensor connector.

❏ Refit the compressor discharge valve air pipe.

❏ Tighten the compressor discharge valve pipe clips.

❏ Connect:

- the vacuum hose on the inlet distributor,
- the turbocharger cooling hoses.

❏ Refit:

- the turbocharger cooling hose clips using the **(Mot. 1448)**,
- the ignition coil (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the engine undertray,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Refit the intercooler air inlet pipe.

❏ Clip the intercooler air inlet pipe onto the turbocharger.

❏ Refit:

- the intercooler air inlet pipe bolt on the inlet distributor,
- the air filter unit air inlet pipe.

❏ Connect the intercooler air inlet pipe to the intercooler.

❏ Tighten the intercooler inlet pipe clip.

❏ Refit:

- the air deflector,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine cover,
- the engine undertray.

❏ Connect the battery (see) (MR 392, 80A, Battery).

❏ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

M4R

Special tooling required	
Mot. 919-02	Flywheel locking tool.

Equipment required
1/2" female torx socket (12.7 mm square drive)

Tightening torques ▽	
cylinder head bolts (1st tightening)	**40 N.m**
cylinder head bolts (2nd tightening)	**100°**
cylinder head bolts (3rd tightening)	**100°**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **Engine: Precautions for the repair**) .

WARNING

It is strictly forbidden to apply any pressure to the engine oil sump. Damage to the sump will irreparably damage the engine by:

- blocking the strainer,
- raising the oil level above maximum, with a risk of engine racing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the « engine and gearbox » assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .

M4R, and 700

❏ Disconnect the manual gearbox from the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

M4R, and 701

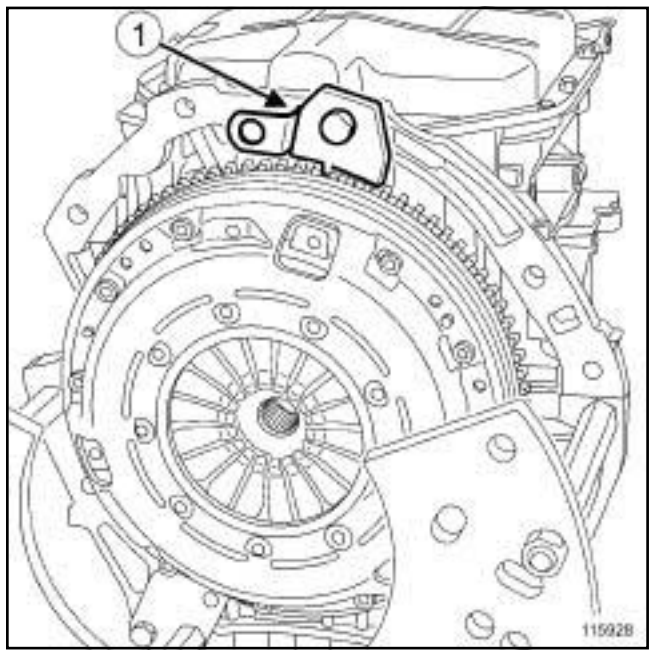
❏ Disconnect the automatic gearbox from the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

❏ Place the engine on the component support (see **Engine support equipment: Use**) .

❏ Drain the engine (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

❏ Remove the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

M4R, and 700

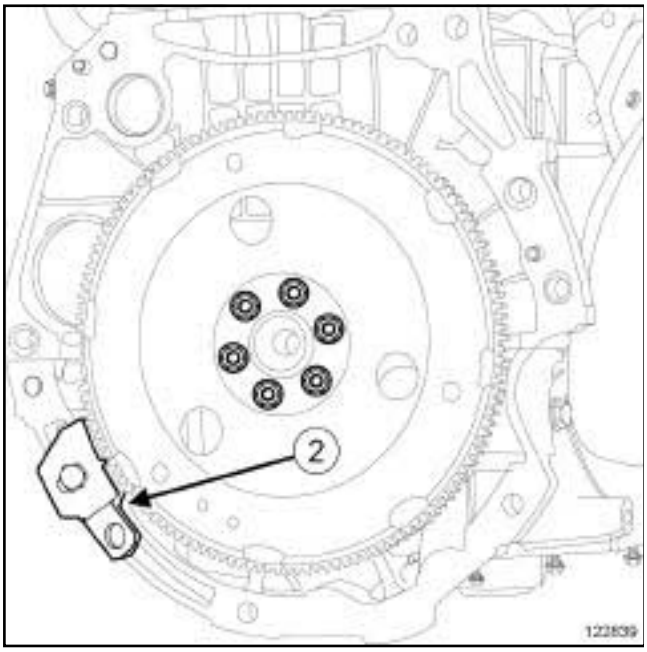


115928

❏ Immobilise the flywheel by fitting the tool **(Mot. 919-02)** (**1**) on the cylinder block.

M4R

M4R, and 701



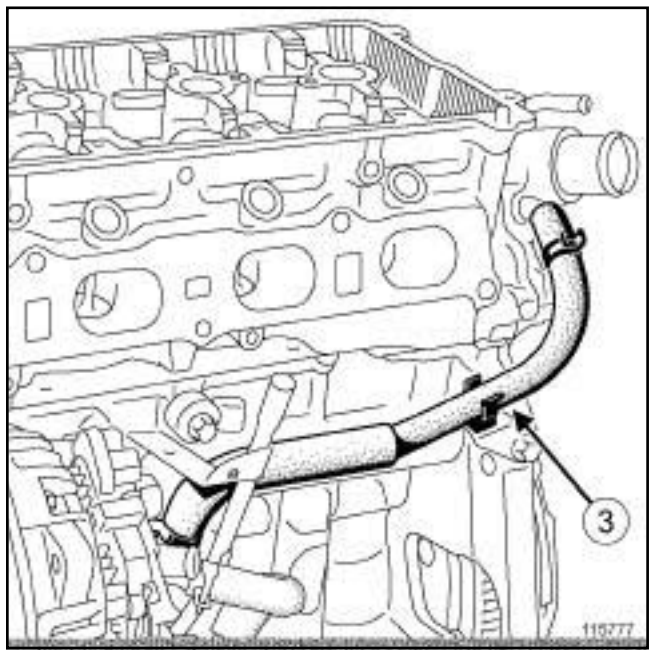
122839

❏ Immobilise the drive plate by fitting the tool **(Mot. 919-02)** (**2**) on the cylinder block.

❏ Remove:

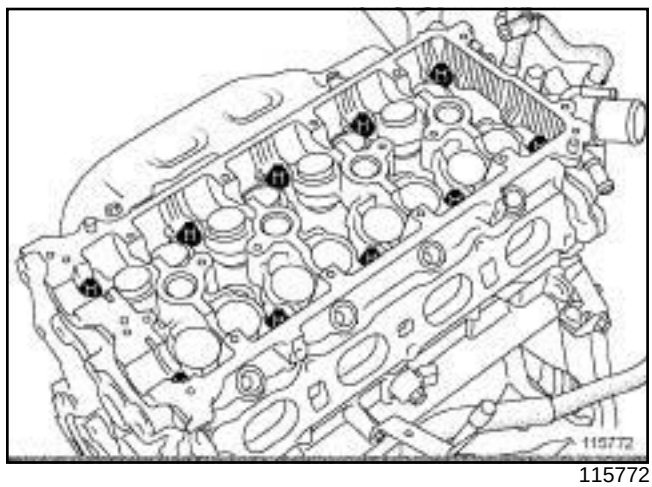
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) ,
- the **(Mot. 919-02)**,
- the crankshaft seal on the timing side (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) ,
- the timing chain (see **11A**, **Top and front of engine**, **Timing chain: Removal - Refitting**, page **11A-170**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the timing sprockets (see **Timing sprocket: Removal - Refitting**) ,
- the injector rail (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) ,
- the camshafts (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) .

II - REMOVAL OF CYLINDER HEAD



115777

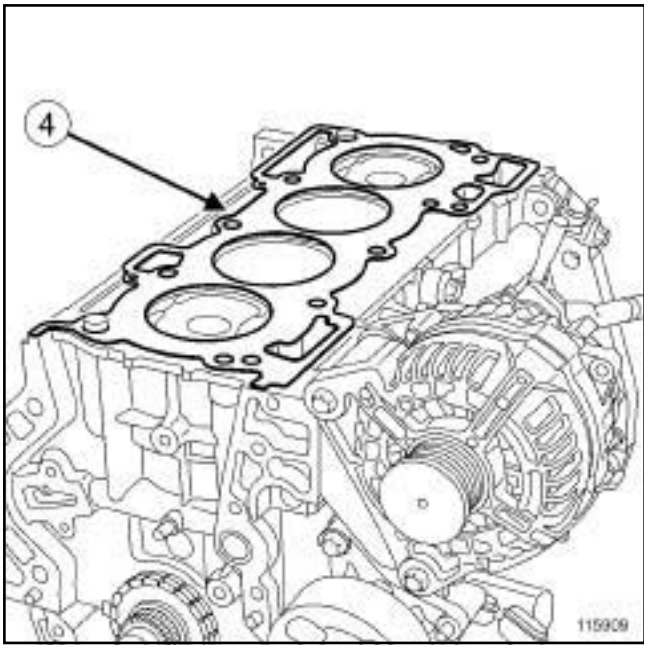
❏ Remove the cooling hose (**3**) .



115772

❏ Remove:

- the cylinder head bolts using a **1/2" female torx socket (12.7 mm square drive)**,
- the cylinder head.



115909

❑ Remove the cylinder head gasket (**4**) from the cylinder block.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING

Protect the oilway so that foreign bodies do not enter the oil pipes in the cylinder head.

Failure to follow this instruction could lead to the blocking of the oilways, resulting in a rapid deterioration of the camshaft.

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

❑ Use **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:

- the cylinder block gasket face,
- the cylinder head joint face.

❑ Remove the residue using a plastic spatula.

❑ Finish cleaning the joint faces using a **GREY ABRASIVE PAD** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:

- the cylinder block gasket face,
- the cylinder head joint face.

❑ Parts always to be replaced:

- the cylinder head gasket,
- the cylinder head bolts.

II - OPERATION FOR REFITTING THE CYLINDER HEAD

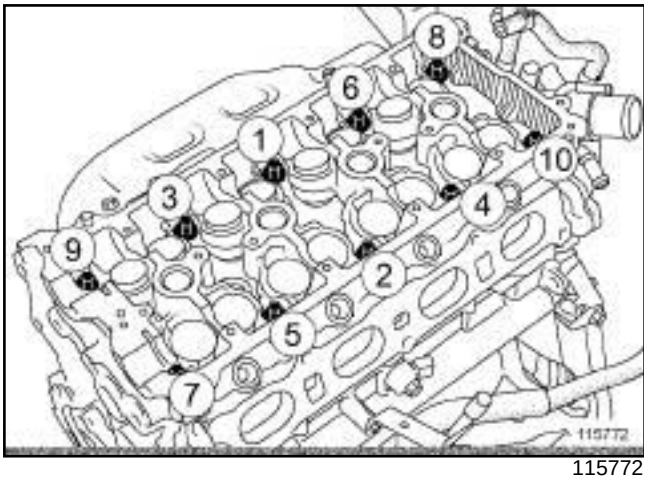
❑ Position piston 1 at Top Dead Centre.

❑ Check for the cylinder head centring dowels on the cylinder block.

❑ Refit:

- the new cylinder head gasket on the cylinder block,
- the cylinder head,
- the new cylinder head bolts.

M4R



115772

❑

Note:

Do not retighten the cylinder head bolts after applying this procedure.

❑ Tighten in order and to torque the cylinder head bolts **(40 N.m)**.

❑ Tighten to angle and in order the cylinder head bolts **(100°)**.

❑ Loosen all the cylinder head bolts.

❑ Tighten in order and to torque the **cylinder head bolts (1st tightening) (40 N.m)**.

❑ Tighten to angle and in order the **cylinder head bolts (2nd tightening) (100°)**.

❑ Retighten to angle and in order the **cylinder head bolts (3rd tightening) (100°)**.

❑ Refit the cooling hose ***(3)*** .

❑ Oil the camshaft bearings.

III - FINAL OPERATION

❑ Refit:

- the camshafts (see **11A**, **Top and front of engine**, **Camshaft: Removal - Refitting**, page **11A-247**) ,
- the injector rail (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) ,
- the timing sprockets (see **Timing sprocket: Removal - Refitting**) ,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the timing chain (see **11A**, **Top and front of engine**, **Timing chain: Removal - Refitting**, page **11A-170**) ,
- the crankshaft seal on the timing side (see **10A**, **Engine and cylinder block assembly**, **Crankshaft seal on timing end: Removal - Refitting**, page **10A-1**) .

❑ Immobilise the flywheel or the drive plate using the tool **(Mot. 919-02)**.

❑ Refit the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-31**) .

❑ Remove the tool **(Mot. 919-02)**.

❑ Refit the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❑ Remove the engine from the component support (see **Engine support equipment: Use**) .

M4R, and 700

❑ Connect the manual gearbox to the engine (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).

M4R, and 701

❑ Connect the automatic gearbox to the engine (see **Automatic gearbox: Removal - Refitting**) (23A, Automatic transmission).

❑ Refit the « engine and gearbox» assembly (see **10A**, **Engine and cylinder block assembly**, **Engine - gearbox assembly: Removal - Refitting**, page **10A-161**) .

❑ Top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

F4R

Equipment required
Diagnostic tool

Tightening torques ▽	
cylinder head bolts	**30 N.m**
cylinder head bolts	**30 N.m**
cylinder head bolts	**180° ± 25°**
exhaust manifold nuts	**30 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

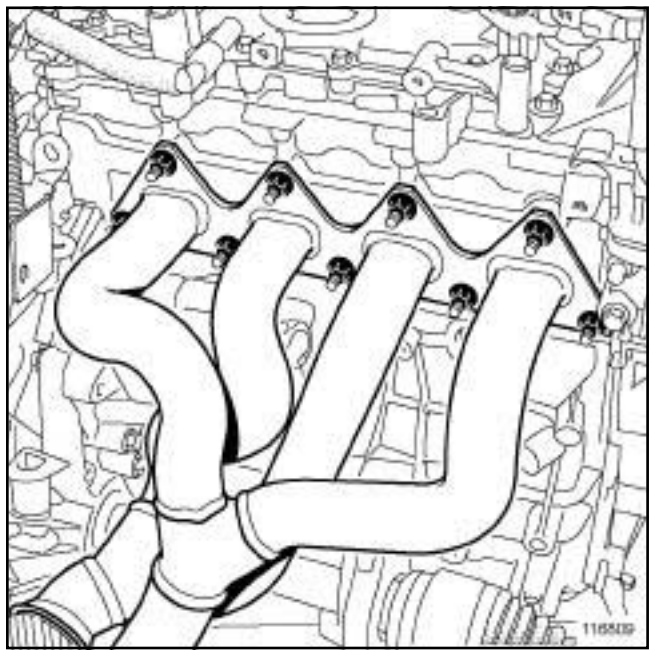
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the injector holder plate equipped with the injector rail (see **12A**, **Fuel mixture**, **Injector holder shim: Removal - Refitting**, page **12A-69**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



116809

❏ Remove the exhaust manifold nuts.

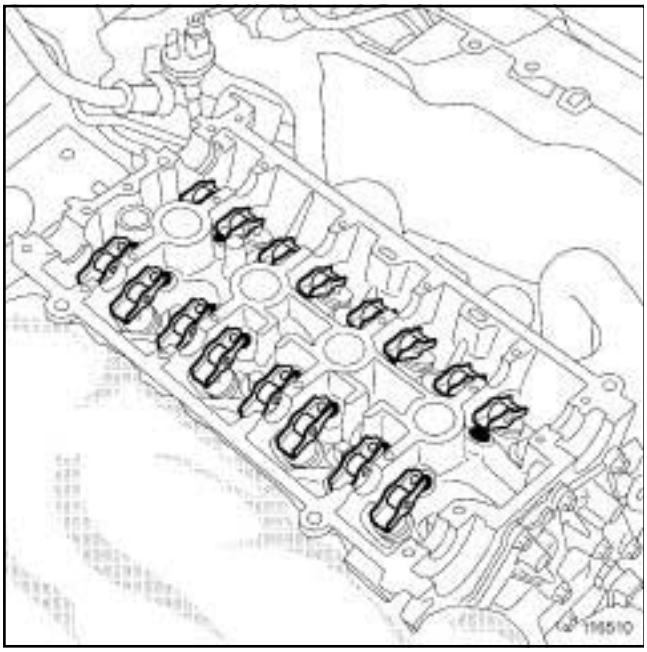
❏ Move aside the exhaust manifold.

❏ Remove:

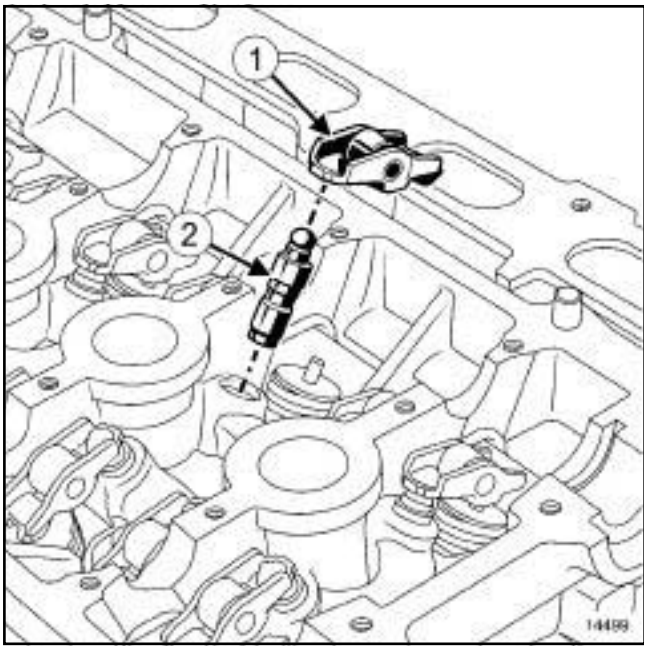
- the exhaust manifold gasket,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the inlet and exhaust camshafts.

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116510



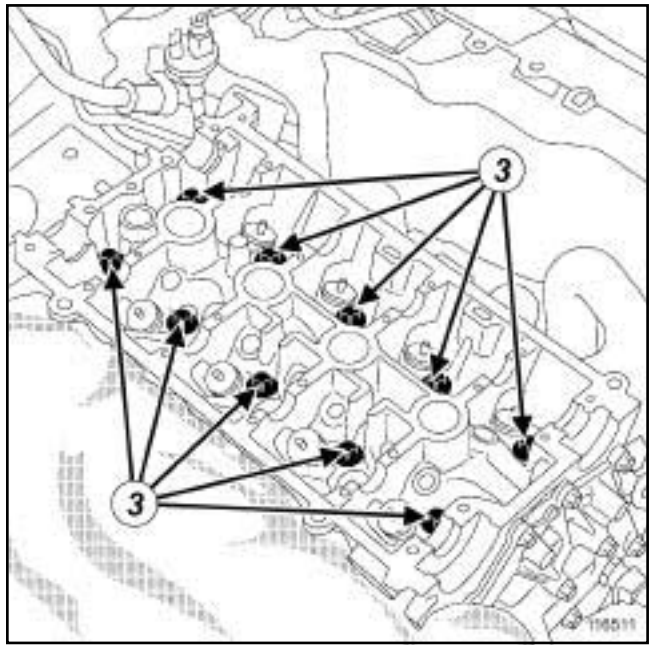
14499

❑ Remove:

- the valve rockers (**1**) ,
- the hydraulic tappets (**2**) .

Note:

To prevent any risk of unpriming the hydraulic tappets make sure that they are vertical.



116511

❑ Remove:

- the cylinder head bolts (**3**) ,
- the cylinder head.

❑ Mount the cylinder head on the cylinder head support.

❑ Remove the cylinder head seal.

REFITTING

I - REFITTING PREPARATION OPERATION

1 - CLEANING THE CYLINDER HEAD

❑ **parts always to be replaced: cylinder head bolts**.

❑ **parts always to be replaced: Cylinder head gasket**.

❑ **parts always to be replaced: exhaust manifold seal**.

F4R

❑ Clean the cylinder head.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING
Do not allow this product to drip onto the paintwork.

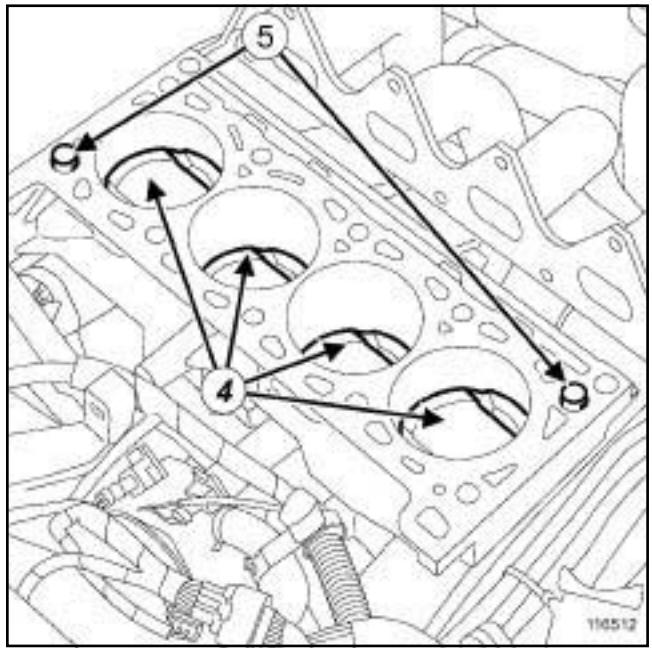
Clean the cylinder head carefully to avoid any foreign bodies entering the oil return and supply pipes.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

❑ Clean the joint faces using **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to dissolve the part of the seal that is still attached to the cylinder head and the cylinder block.

❑ Apply the product to the part to be cleaned, wait approximately ten minutes then remove the residue with a wooden spatula.

2 - PREPARING TO FIT THE CYLINDER HEAD



116512

❑ Place the pistons at (**4**) half stroke.

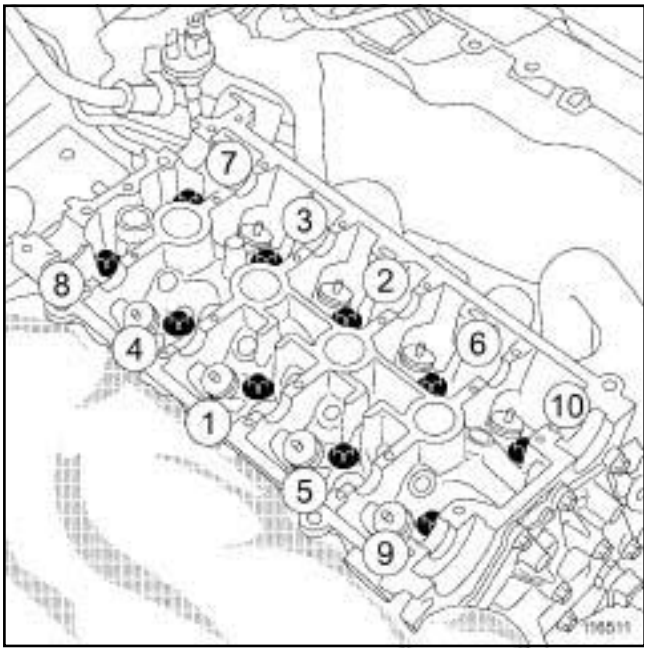
❑ Check that the centring devices (**5**) are present and in good condition on the cylinder block.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new cylinder head gasket,
- the cylinder head,
- new cylinder head bolts.

Tightening the cylinder head



116511

❏ Torque tighten (initial tightening) in order the **cylinder head bolts (30 N.m)**.

❏ Torque tighten (second tightening) in order the **cylinder head bolts (30 N.m)**.

❏ Angle tighten in order the **cylinder head bolts (180° ± 25°)**.

> Note:
>
> Do not retighten the cylinder head bolts after applying this procedure.

III - FINAL OPERATION

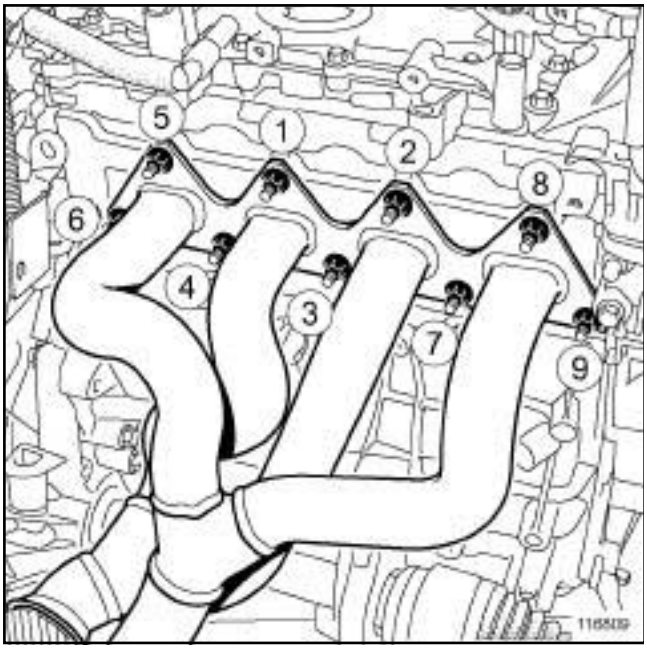
❏ Refit:

- the hydraulic tappets,
- the valve rockers,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

❏ Fit:

- a new exhaust manifold gasket,
- the exhaust manifold.

F4R



116809

❏ Refit the exhaust manifold nuts.

❏ Torque tighten in order the **exhaust manifold nuts (30 N.m)**.

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the oil separator (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the injector holder plate equipped with the injector rail (see **12A**, **Fuel mixture**, **Injector holder shim: Removal - Refitting**, page **12A-69**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❏ Perform the following operations:

- top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- fill and bleed the coolant circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Refit the engine undertray.

❏ Using the **Diagnostic tool**, check that there are no faults stored by the injection computer and clear them if necessary.

F4R, and 830

Equipment required
Diagnostic tool

Tightening torques ▽	
cylinder head mounting bolts	**30 Nm**
cylinder head mounting bolts	**180° ± 25°**
exhaust manifold mounting nuts	**18 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

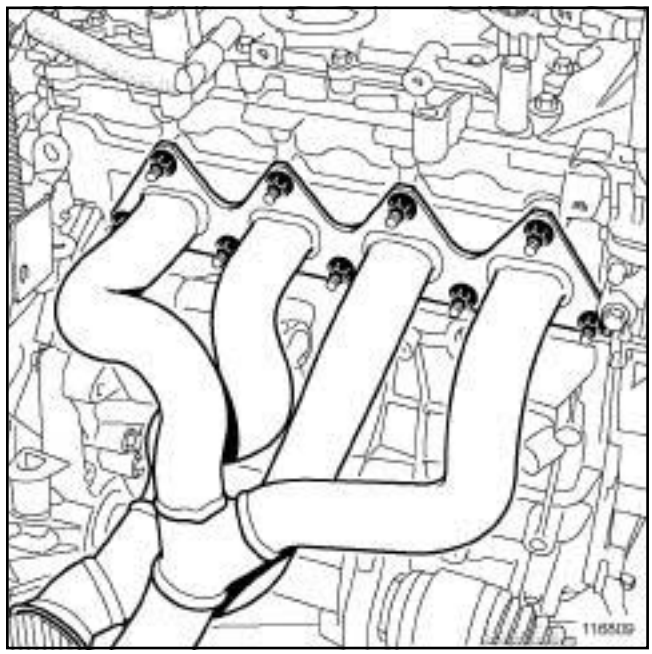
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Perform the following operations:

- drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the injector holder plate equipped with the injector rail (see **12A**, **Fuel mixture**, **Injector holder shim: Removal - Refitting**, page **12A-69**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the oil decanter (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, Bodywork, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



116809

❏ Remove the mounting nuts from the exhaust manifold.

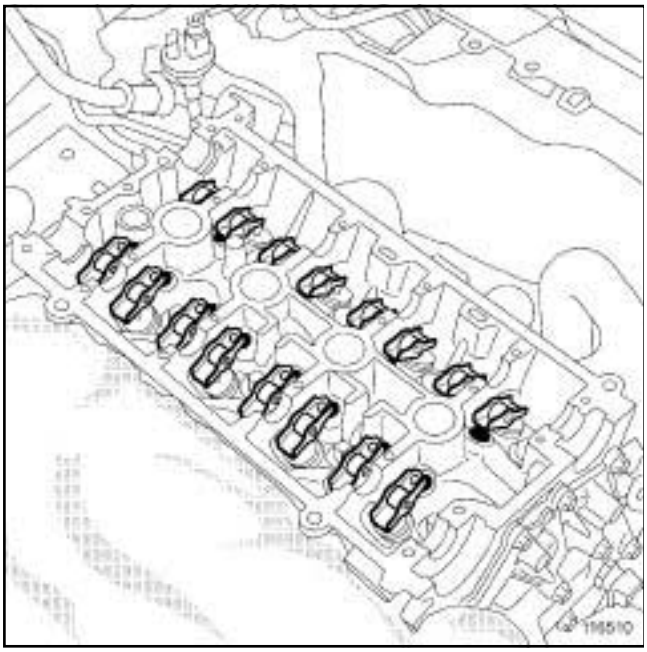
❏ Move aside the exhaust manifold.

❏ Remove:

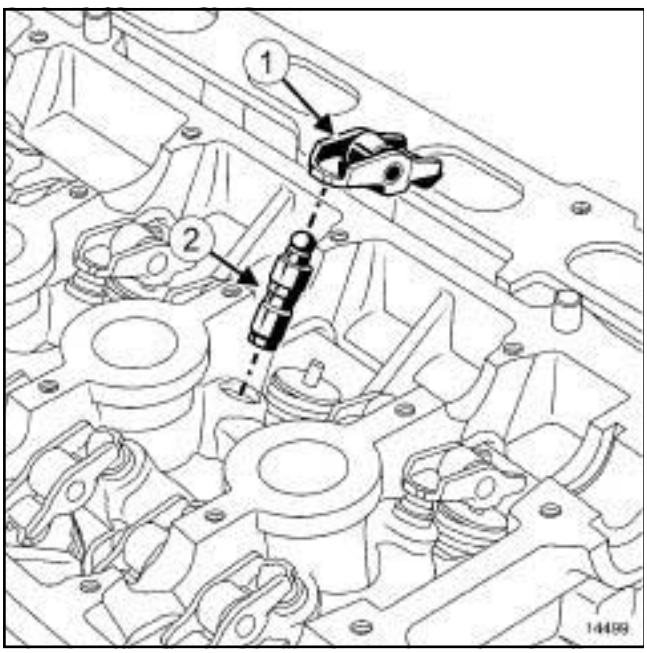
- the exhaust manifold gasket,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) ,
- the inlet and exhaust camshafts.

F4R, and 830

II - OPERATION FOR REMOVAL OF PART CONCERNED



116510



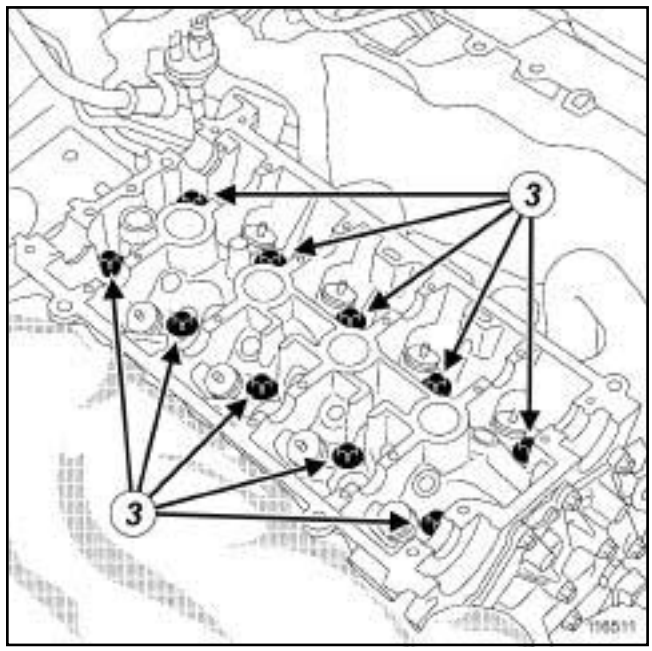
14499

❑ Remove:

- the valve rockers (**1**) ,
- the hydraulic tappets (**2**) .

Note:

To prevent any risk of unpriming the hydraulic tappets make sure that they are vertical.



116511

❑ Remove:

- the cylinder head mounting bolts (**3**) ,
- the cylinder head.

❑ Mount the cylinder head on the cylinder head support.

❑ Remove the cylinder head gasket.

F4R, and 830

REFITTING

I - REFITTING PREPARATIONS OPERATION

1 - CLEANING THE CYLINDER HEAD

❑ Clean the cylinder head.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear latex gloves during the operation.

WARNING
Do not scratch the aluminium joint faces: any surface damage to the joint faces may cause leaks.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

WARNING
Do not allow this product to drip onto the paintwork.

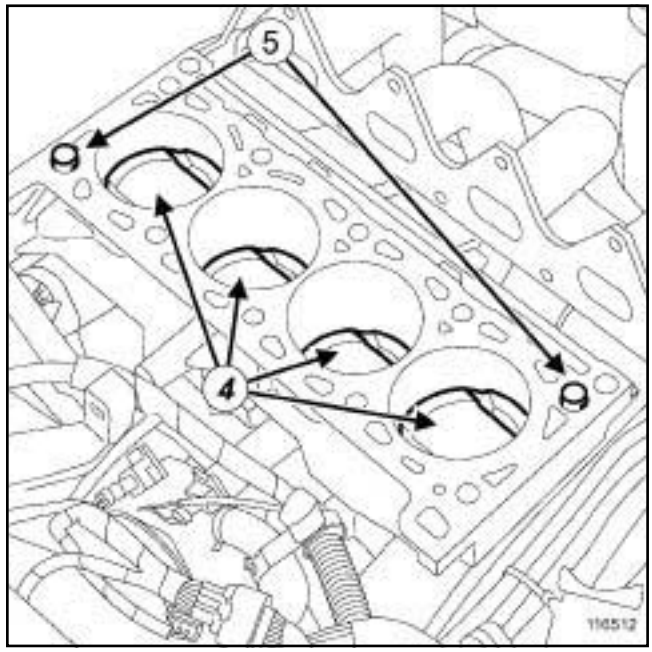
Clean the cylinder head carefully to prevent foreign bodies from entering the oil supply and return galleries.

Failure to follow this advice could lead to the blocking of the various oil inlet galleries, which would quickly result in engine damage.

❑ Clean the joint faces with **SUPER CLEANER FOR JOINT FACES** to dissolve any part of the seal still remaining on the cylinder head and cylinder block.

Apply the product to the part to be cleaned, wait approximately ten minutes then remove the residue with a wooden spatula.

2 - PREPARING TO FIT THE CYLINDER HEAD



116512

❑ Place the pistons at (**4**) half stroke.

❑ Check that the centring devices (**5**) are present and in good condition on the cylinder block.

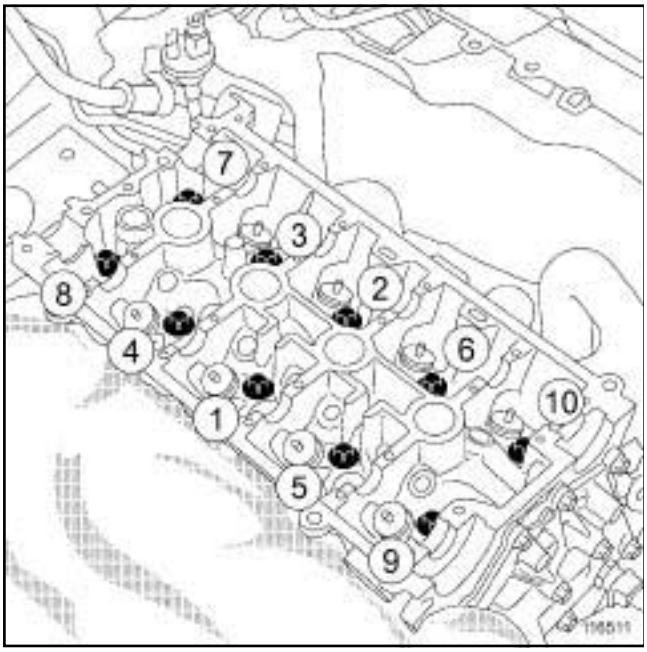
II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new cylinder head gasket,
- the cylinder head,
- the new cylinder head bolts.

F4R, and 830

Tightening the cylinder head:



116511

❏ First, torque tighten, in order the **cylinder head mounting bolts (30 Nm)**.

❏ Then torque tighten, in order the cylinder head mounting bolts again **(30 Nm)**.

❏ Angle tighten in order the **cylinder head mounting bolts (180° ± 25°)**.

Note:

Do not retighten the cylinder head mounting bolts after applying this procedure.

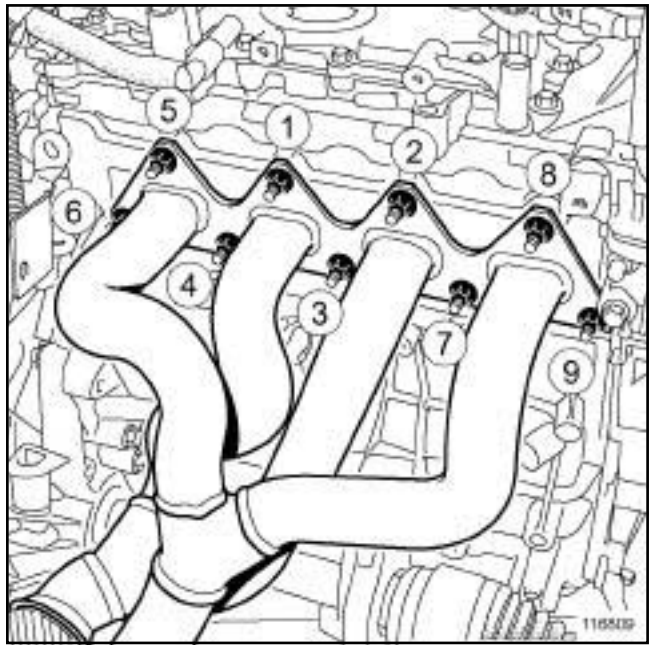
III - FINAL OPERATION.

❏ Refit:

- the hydraulic tappets,
- the valve rockers,
- the rocker cover (see **11A**, **Top and front of engine**, **Rocker cover: Removal - Refitting**, page **11A-183**) .

❏ Fit:

- the new exhaust manifold gasket,
- the exhaust manifold.



116809

❏ Refit the exhaust manifold mounting nuts.

❏ Torque tighten in order the **exhaust manifold mounting nuts (18 Nm)**.

❏ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, Bodywork, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the oil decanter (see **11A**, **Top and front of engine**, **Oil decanter: Removal - Refitting**, page **11A-302**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the injector holder plate equipped with the injector rail (see **12A**, **Fuel mixture**, **Injector holder shim: Removal - Refitting**, page **12A-69**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,

F4R, and 830

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,

❏ Perform the following operations:

- top up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) ,
- refill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

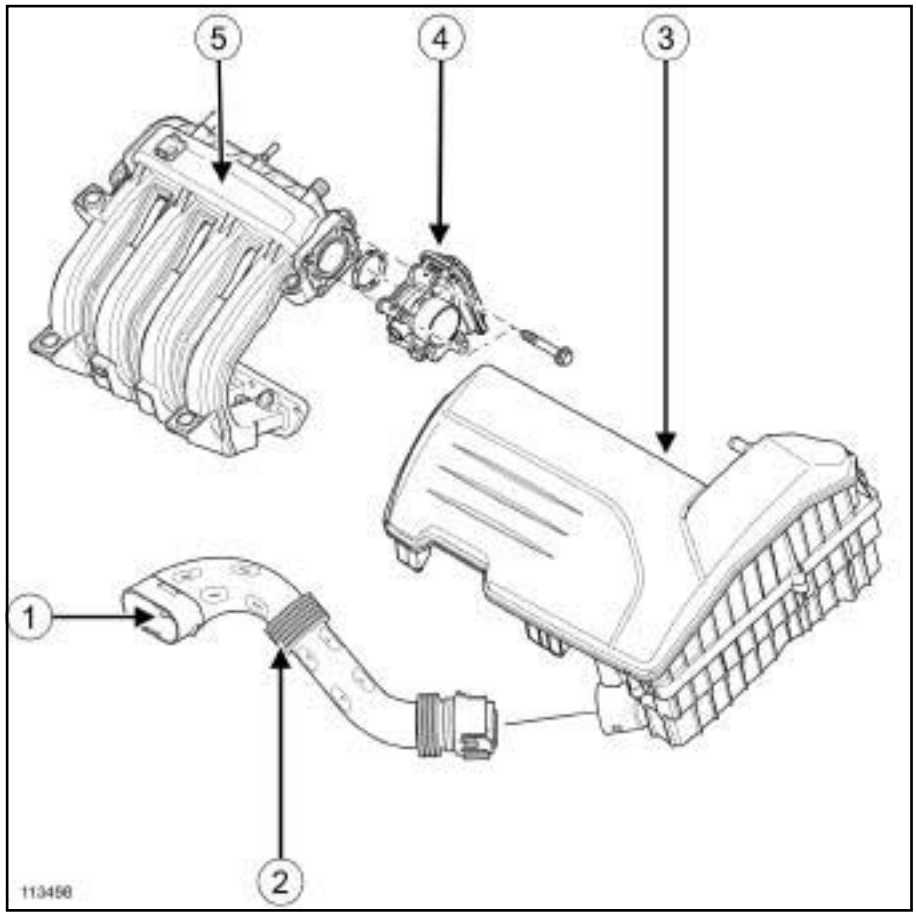
❏ Bleed the cooling system (see) .

❏ Refit the engine undertray.

❏ Using the **Diagnostic tool**, check that there are no faults stored by the injection computer and clear them if necessary.

D4F

D4F, and 740 or 742 or 764

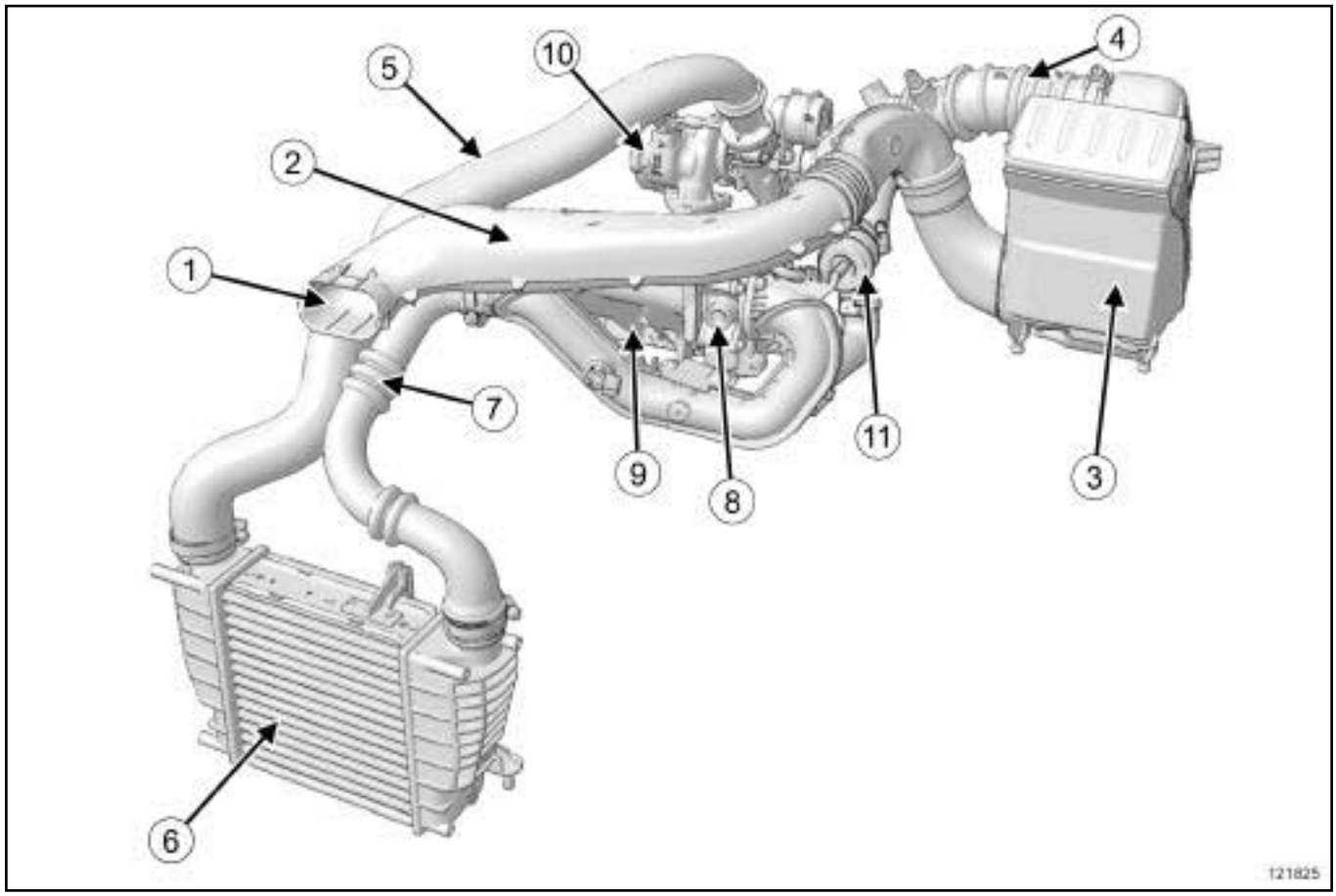


113498

(**1**) Air inlet
(**2**) Air inlet trunking
(**3**) Air filter unit
(**4**) Motorised throttle valve
(**5**) Inlet manifold

D4F

D4F, and 784

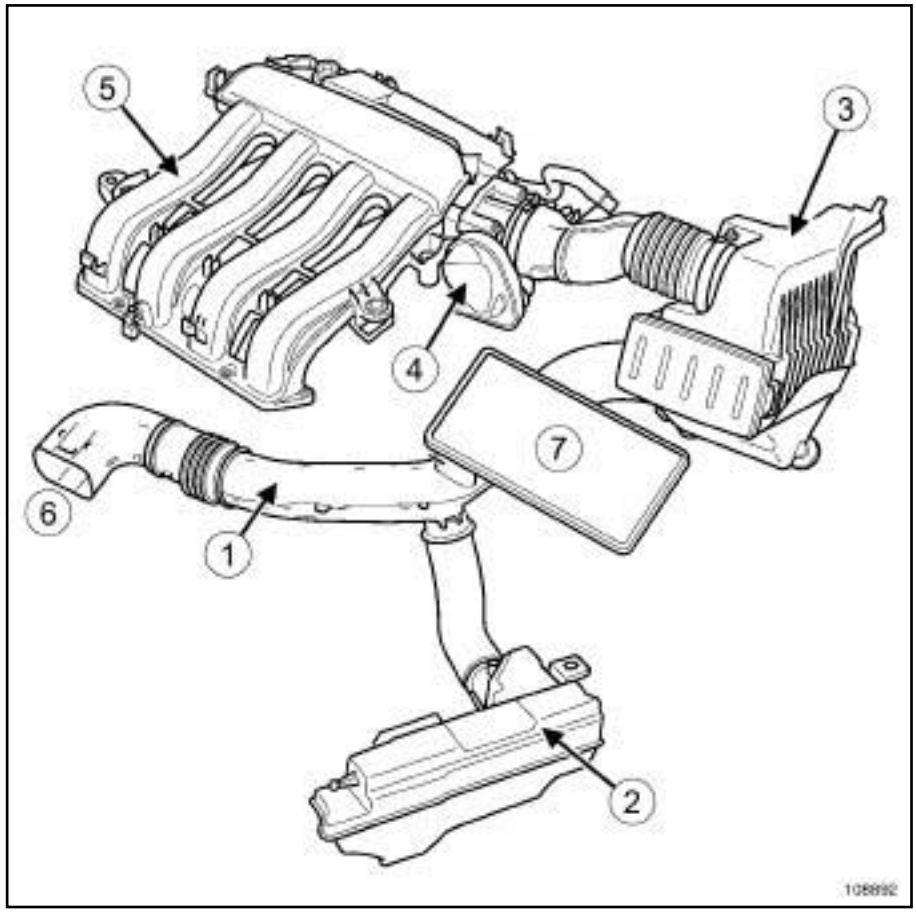


121825

(**1**)	air inlet
(**2**)	Air filter box air inlet pipe
(**3**)	Air filter unit
(**4**)	Air filter box outlet air pipe
(**5**)	Turbocharger air outlet pipe
(**6**)	Intercooler
(**7**)	Intercooler air outlet pipe
(**8**)	Motorised throttle valve
(**9**)	Inlet manifold
(**10**)	Turbocharger
(**11**)	Compressor discharge valve

K4J or K4M

Diagram of the air inlet circuit

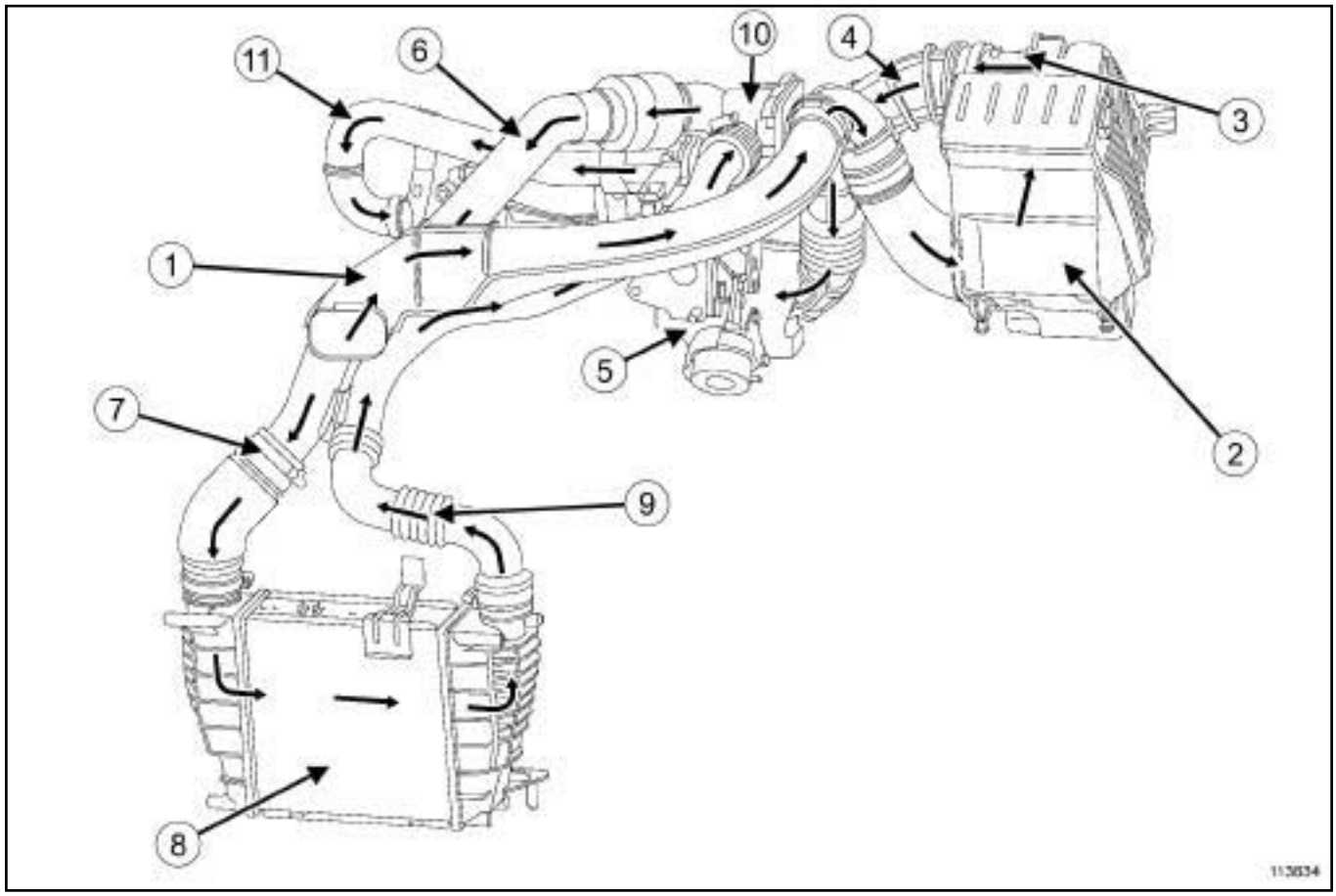


108892

(**1**) Air inlet sleeve
(**2**) Air resonator
(**3**) Air filter unit
(**4**) Throttle valve
(**5**) Plenum chamber
(**6**) Air inlet
(**7**) Air resonator

K9K

K9K, and 764 or 772

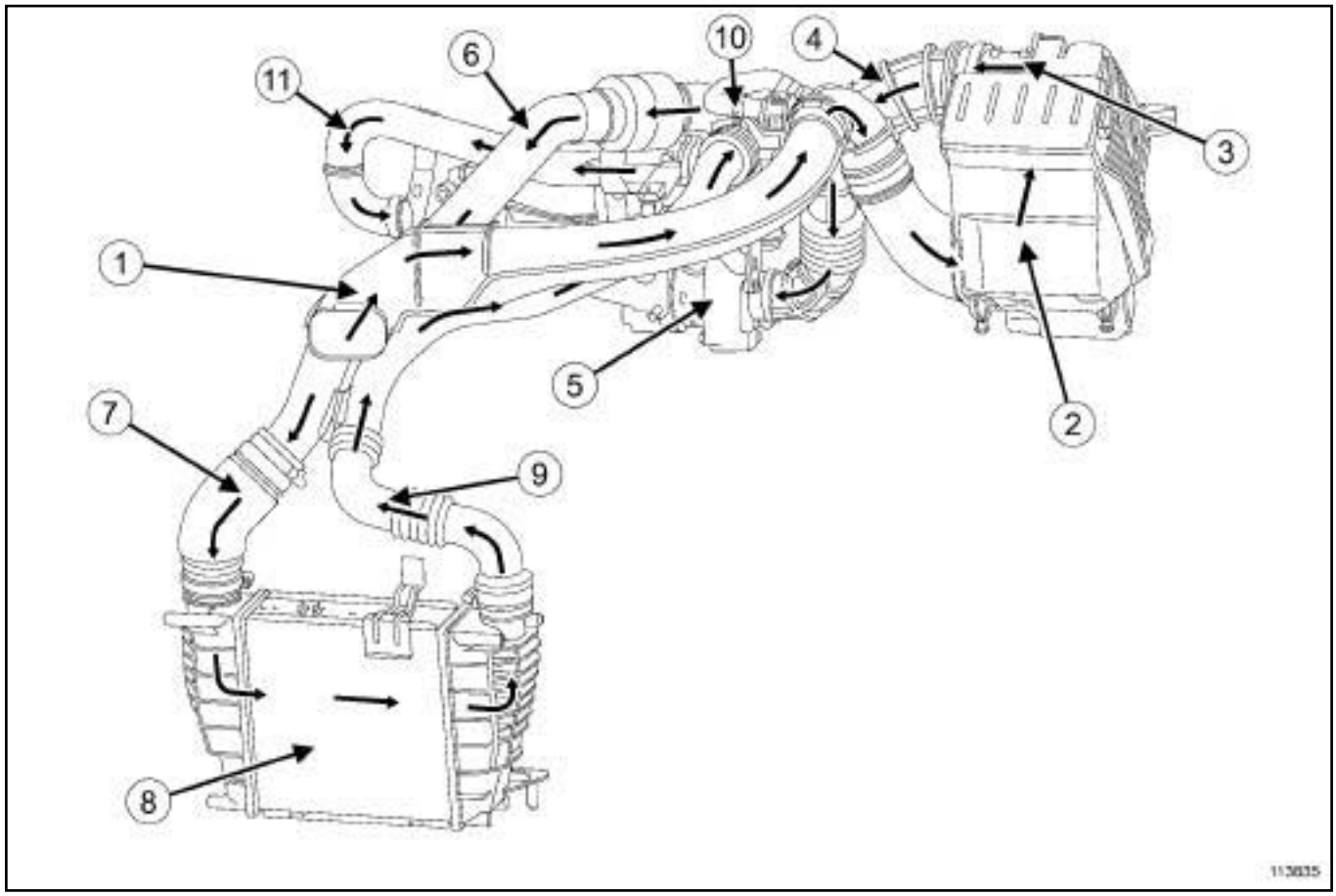


113834

(**1**) Air filter unit air inlet pipe
(**2**) Air filter unit
(**3**) Air flowmeter
(**4**) Air filter unit air outlet pipe
(**5**) Turbocharger
(**6**) Turbocharger air outlet pipe
(**7**) Intercooler air inlet pipe
(**8**) Intercooler
(**9**) Intercooler air outlet pipe
(**10**) Damper valve
(**11**) Metal air inlet tube

K9K

K9K, and 766

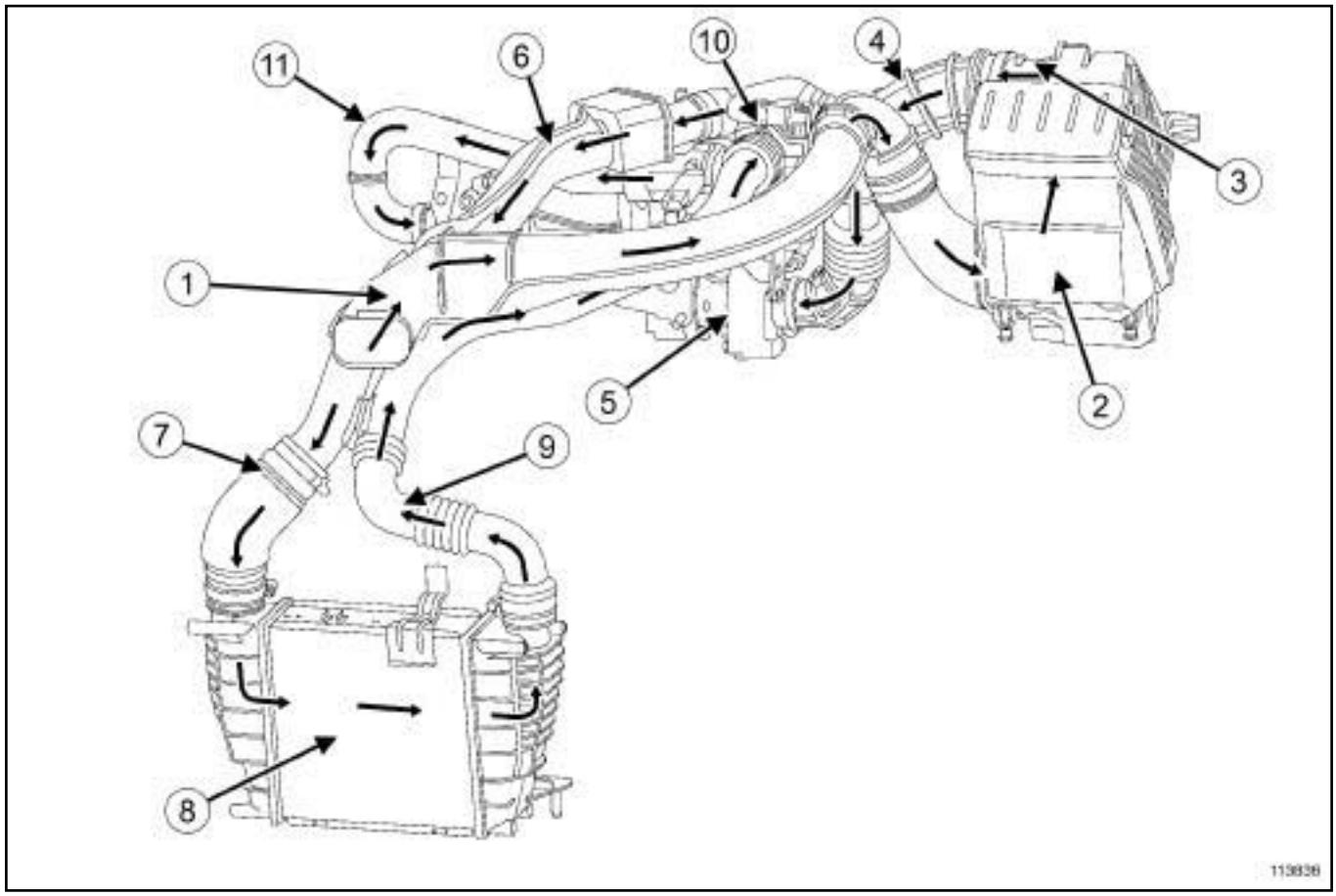


113835

(**1**)	Air filter unit air inlet pipe
(**2**)	Air filter unit
(**3**)	Air flowmeter
(**4**)	Air filter unit air outlet pipe
(**5**)	Turbocharger
(**6**)	Turbocharger air outlet pipe
(**7**)	Intercooler air inlet pipe
(**8**)	Intercooler
(**9**)	Intercooler air outlet pipe
(**10**)	Oil vapour recirculation valve
(**11**)	Metal air inlet tube

K9K

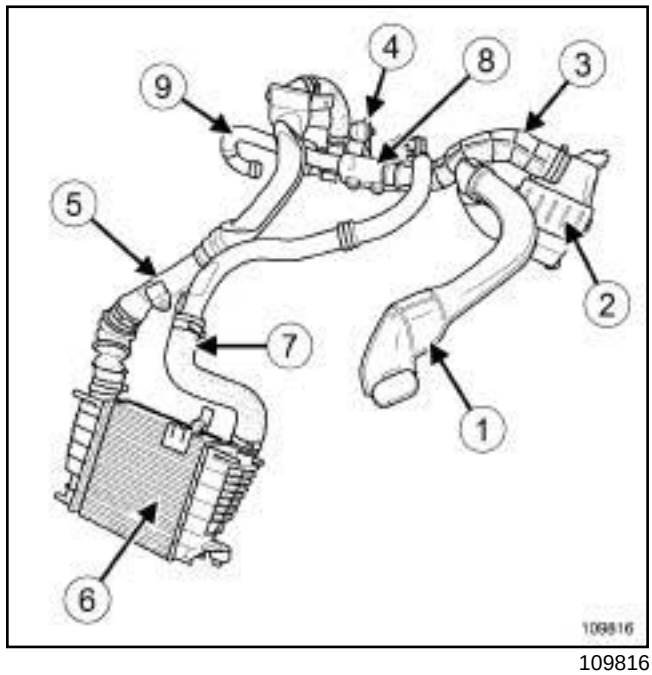
K9K, and 768



113836

(**1**) Air filter unit air inlet pipe
(**2**) Air filter unit
(**3**) Air flowmeter
(**4**) Air filter unit air outlet pipe
(**5**) Turbocharger
(**6**) Turbocharger air outlet pipe
(**7**) Intercooler air inlet pipe
(**8**) Intercooler (if equipped)
(**9**) Intercooler air outlet pipe
(**10**) Oil vapour recirculation valve
(**11**) Metal air inlet tube

K9K, and 750

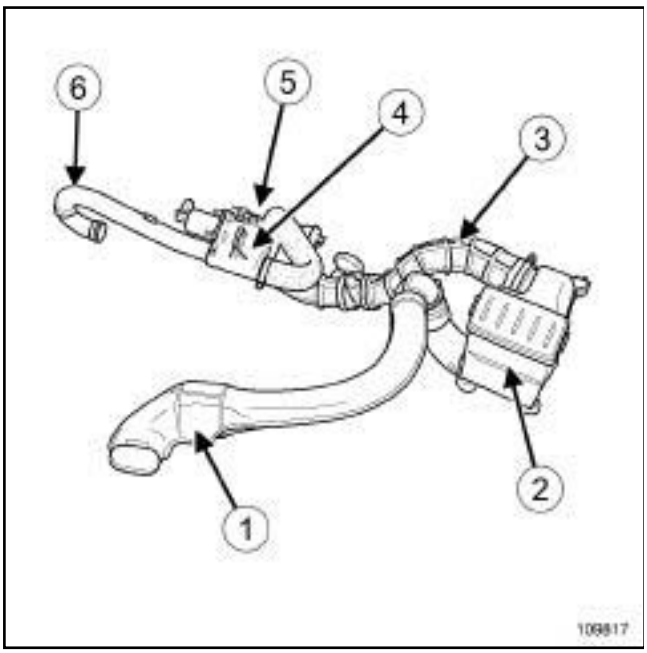


109816

K9K

(**1**) Air filter unit air inlet pipe
(**2**) Air filter unit
(**3**) Air filter unit air outlet pipe
(**4**) Turbocharger
(**5**) Intercooler air inlet pipe
(**6**) Intercooler
(**7**) Intercooler air outlet pipe
(**8**) Exhaust gas recirculation unit
(**9**) Metal air inlet tube

K9K, and 752

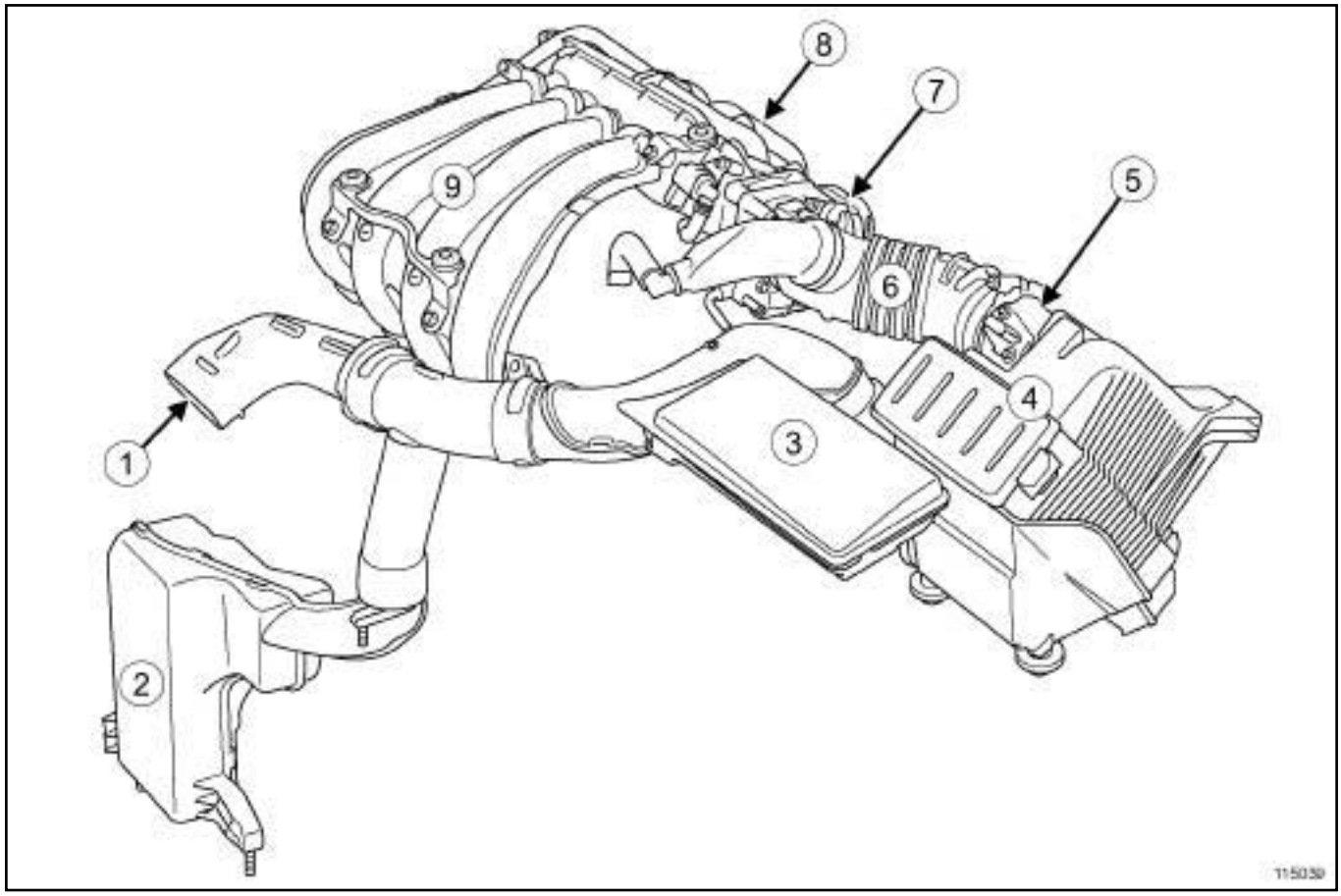


109817

(**1**) Air filter unit air inlet pipe
(**2**) Air filter unit
(**3**) Air filter unit air outlet pipe
(**4**) Exhaust gas recirculation unit
(**5**) Turbocharger
(**6**) Metal air inlet tube

M4R

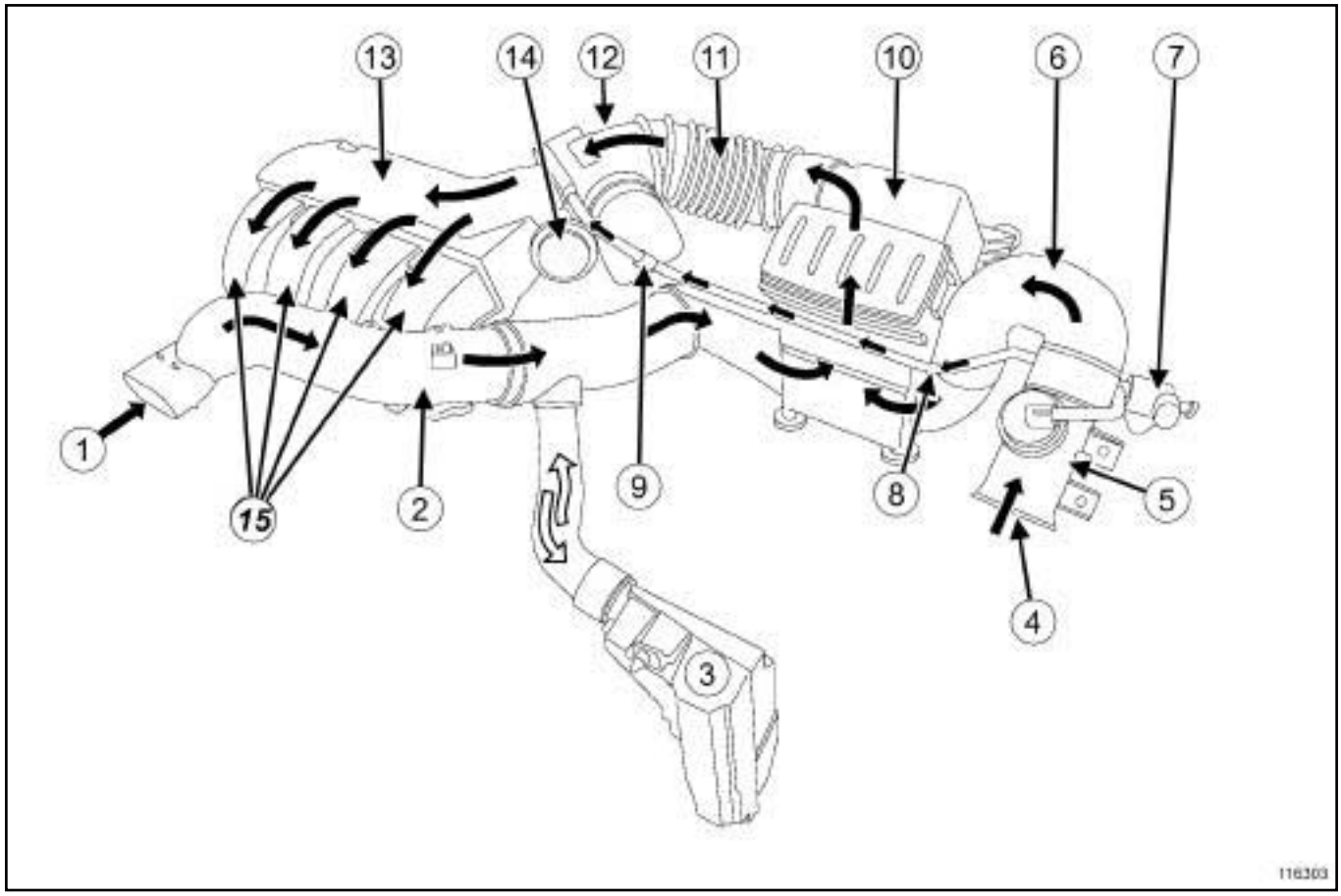
Air inlet circuit



115039

(**1**)	Air inlet sleeve
(**2**)	Air resonator on front end panel
(**3**)	Air resonator on battery
(**4**)	Air filter unit
(**5**)	Air flowmeter
(**6**)	Air inlet duct
(**7**)	Motorised throttle valve
(**8**)	Air resonator on inlet manifold
(**9**)	Inlet manifold

F4R



116303

(**1**) main air inlet
(**2**) main inlet trunking
(**3**) air resonator
(**4**) soundproofing unit air inlet
(**5**) soundproofing unit
(**6**) soundproofing unit duct
(**7**) soundproofing unit control solenoid valve
(**8**) soundproofing unit control vacuum hose
(**9**) anti-return valve
(**10**) air filter box
(**11**) air inlet duct
(**12**) throttle valve
(**13**) inlet manifold
(**14**) oil vapour rebreathing unit
(**15**) outlets to injector holder plate then to cylinder head

I - AT LOW SPEED

The soundproofing unit control solenoid valve ***(6)*** controls the soundproofing unit valve, which is in the closed position. Air enters only via the main air inlet ***(1)*** .

II - AT HIGH SPEED

The soundproofing unit control solenoid valve ***(6)*** no longer controls the soundproofing unit valve, which is in the open position. Air enters via the main air inlet ***(1)*** and the soundproofing unit air inlet ***(4)*** at a ratio of 60% for the main air inlet and 40% for the soundproofing unit air inlet.

Note:

In rest position the soundproofing unit valve is open; if the control circuit is not correctly sealed, the valve will be in the rest position.

K4M – F4R

REMOVAL

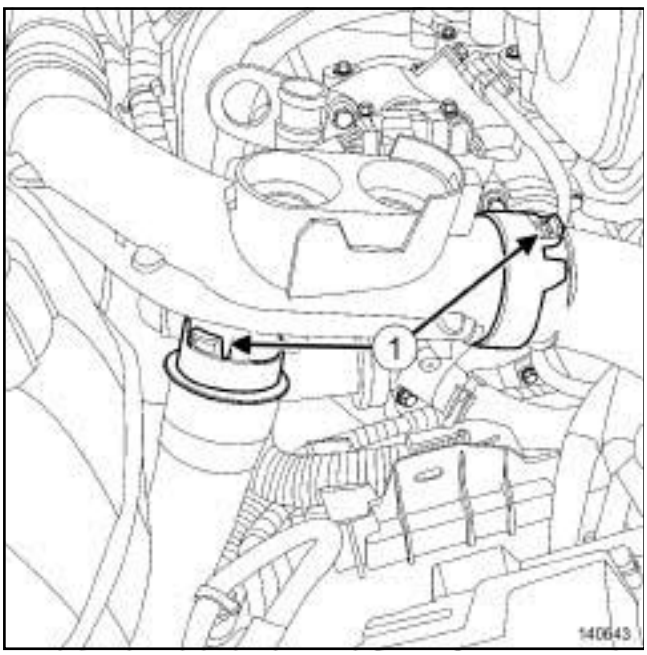
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine cover,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

K4M, and 862

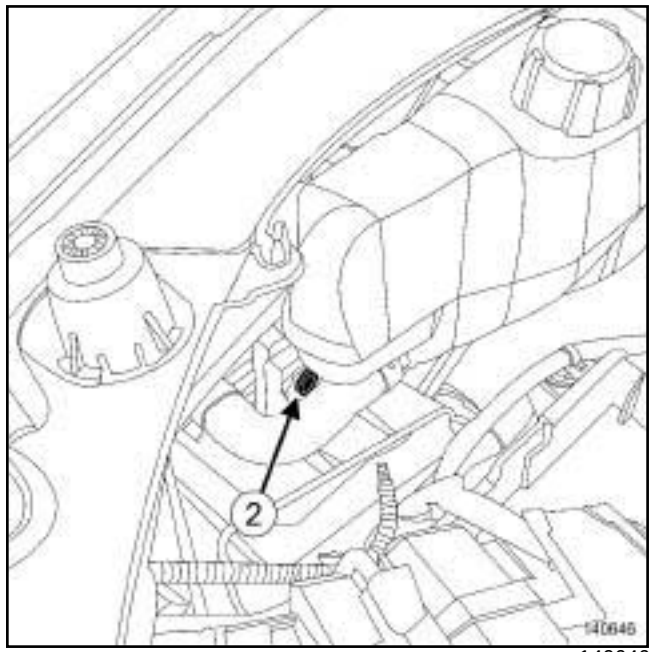


140643

❑ Unclip the air inlet pipe from the air filter unit (**1**) .

❑ Move aside the air filter unit air inlet pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



140646

❑ Remove:

- the air resonator upper mounting (**2**) ,
- the air resonator.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the air resonator,
- the air resonator upper mounting.

II - FINAL OPERATION

K4M, and 862

❑ Refit the air filter unit air inlet pipe.

❑ Refit:

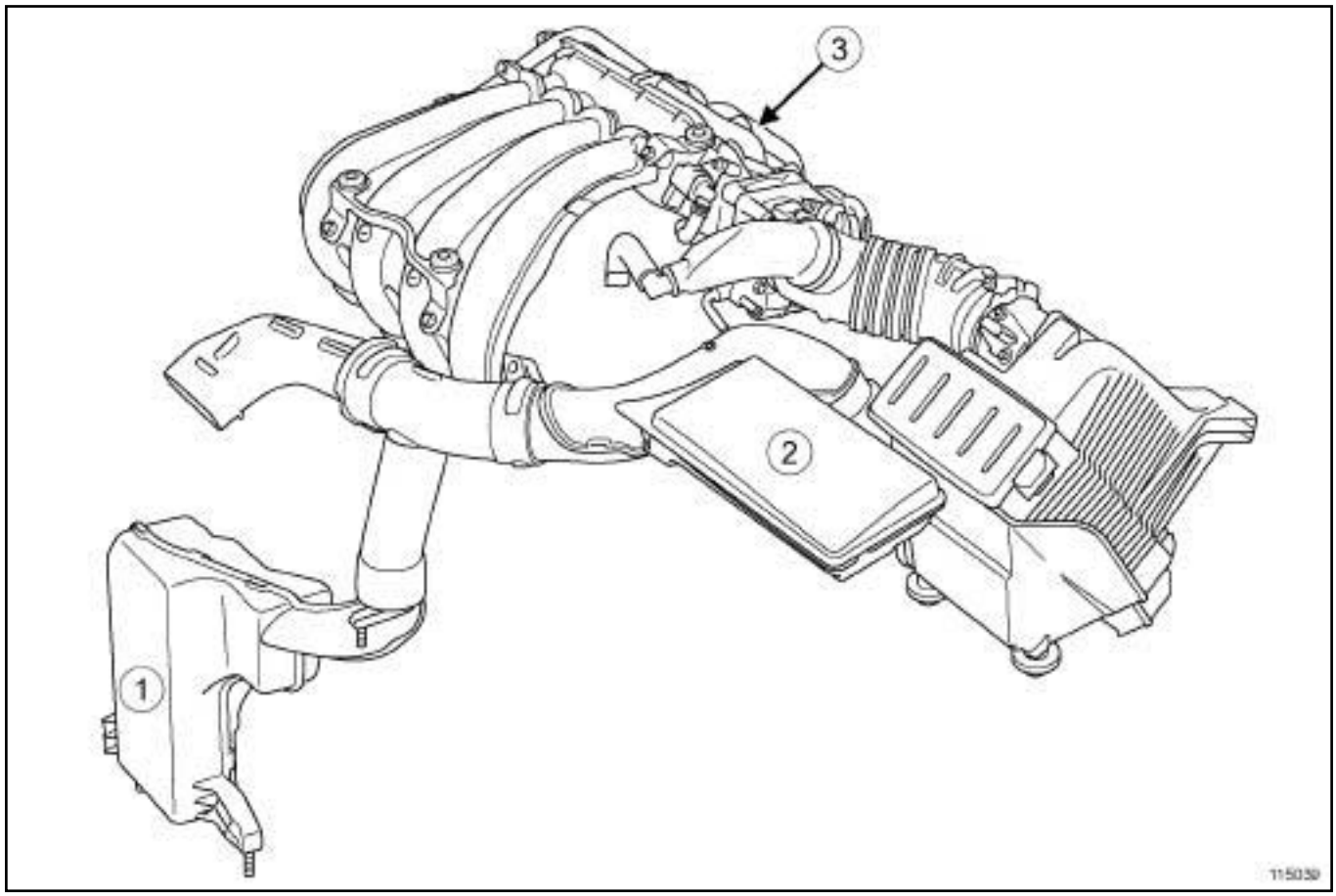
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air inlet duct,
- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R

Tightening torques ▽	
air resonator mounting bolt on the intake distributor	**11 Nm**

Note:

The vehicle has three air resonators.



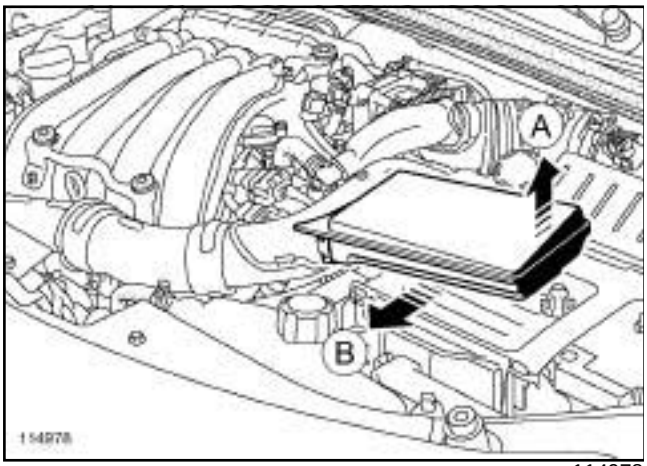
115039

(**1**) Air resonator on front end panel
(**2**) Air resonator on battery
(**3**) Air resonator on inlet manifold

M4R

REMOVING THE AIR RESONATOR ON THE FRONT END PANEL

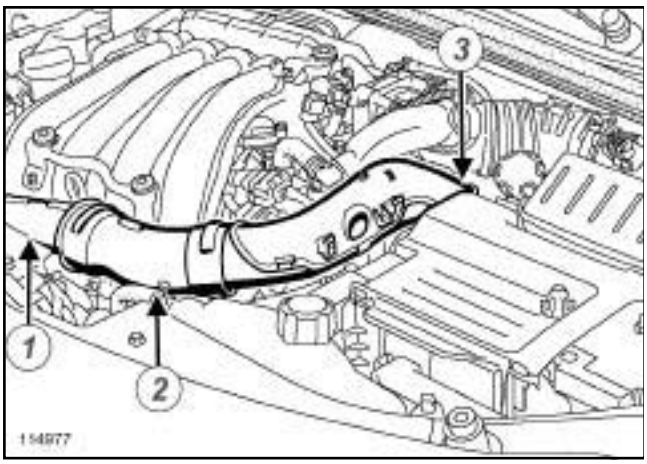
I - REMOVAL PREPARATION OPERATION



114978

❏ Lift the air resonator (**A**) to remove it from the battery cover.

❏ Pull the air resonator towards the front of the vehicle (**B**) to remove it.



114977

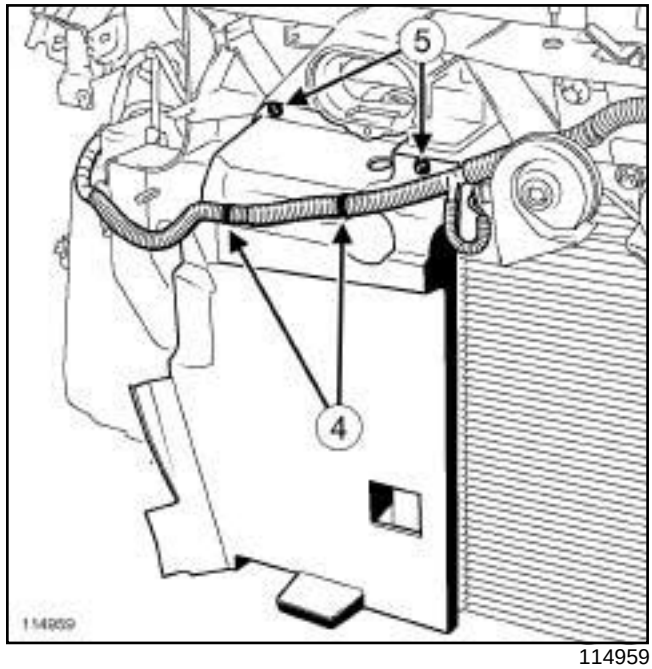
❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove the air intake sleeve.

❏ Remove the front bumper (see) (MR 393, 55A, Exterior protection).

❏ Remove the frontal impact cross member (see) (MR 393, 41A, Front lower structure).



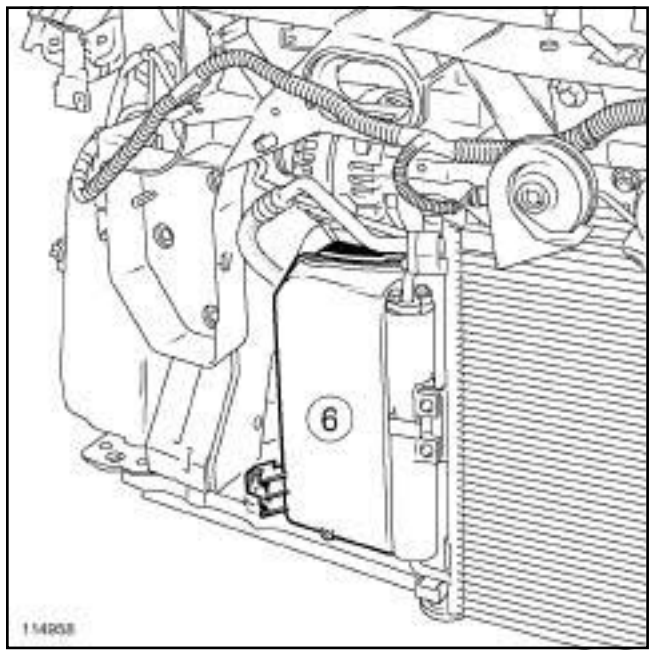
114959

❏ Unclip the wiring harness at (**4**) .

❏ Remove:

- plastic rivets (**5**) ,
- the air deflector.

II - REMOVAL OF PART CONCERNED



114958

❏ Lift the air resonator on the front end panel (**6**) to remove it from the mountings.

❏ Remove the air resonator on the front end panel.

M4R

REFITTING THE AIR RESONATOR ON THE FRONT END PANEL

I - REFITTING PREPARATIONS OPERATION

❏ Check that there are three air resonator mountings on the front end panel.

II - REFITTING PART CONCERNED

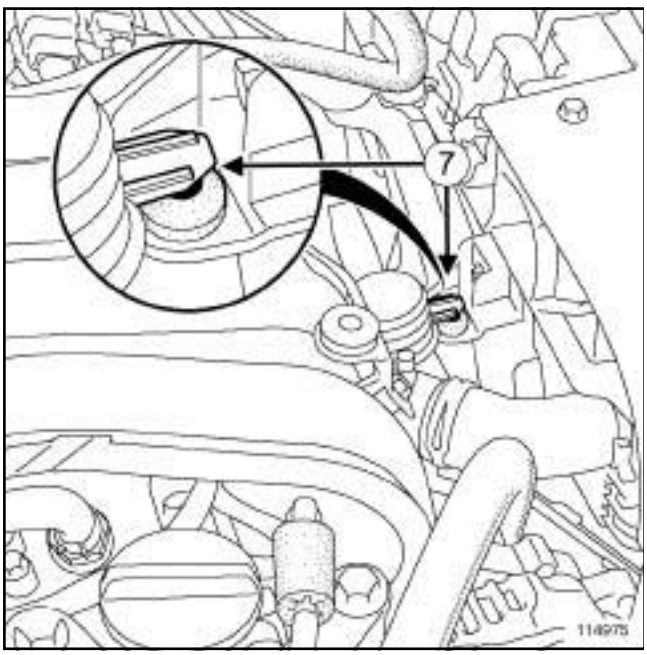
❏ Refit the air resonator on the front end panel.

III - FINAL OPERATION.

❏ Refit the air deflector.

❏ Refit the frontal impact cross member (see) (MR 393, 41A, Front lower structure).

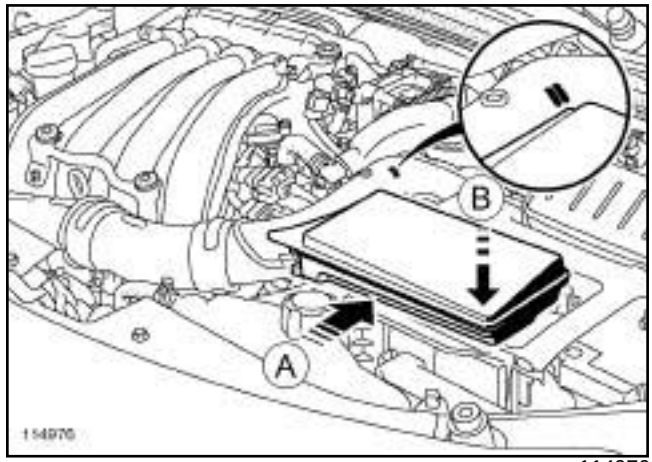
❏ Refit the front bumper (see) (MR 393, 55A, Exterior protection).



114975

❏ Before refitting the air intake sleeve, check that the air resonator's upper mounting in the front end panel is correctly clipped at (**7**) .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle (**A**) until the air resonator's rear face is located between the two marks on the air intake sleeve.

❏ Push the air resonator (**B**) to fit it onto the battery cover.

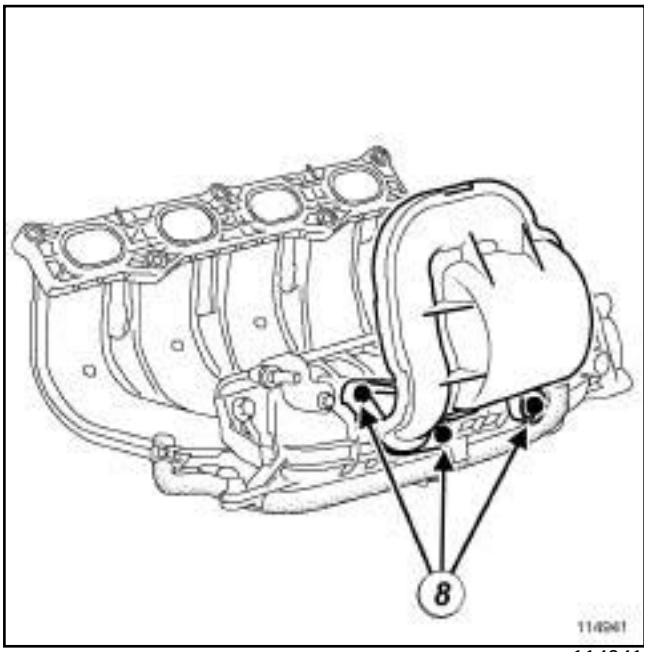
REMOVING THE AIR RESONATOR ON THE INLET MANIFOLD

I - REMOVAL PREPARATION OPERATION

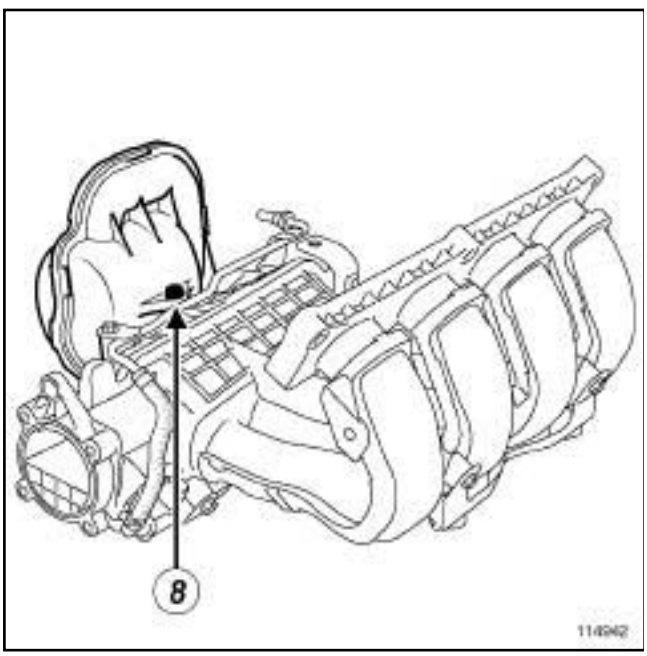
❏ Remove the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

M4R

II - REMOVAL OF PART CONCERNED



114941



114942

❑ Remove the mounting bolts (**8**) from the air resonator on the intake distributor.

REFITTING THE AIR RESONATOR ON THE INLET MANIFOLD

I - REFITTING PREPARATIONS OPERATION

❑ The O-ring of the air resonator on the inlet manifold must always be replaced.

II - REFITTING PART CONCERNED

❑ Torque tighten the **air resonator mounting bolt on the intake distributor (11 Nm)**.

III - FINAL OPERATION.

❑ Refit the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

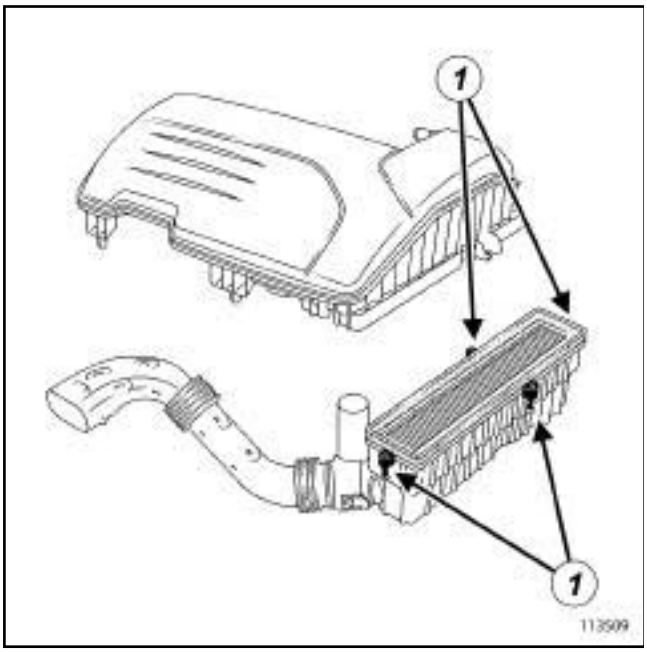
D4F, and 740 or 742 or 764

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113509

❑ Remove:

- the mounting bolts (**1**) from the air filter unit cover,
- the air filter.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the air filter housing.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the air filter,
- the bolts mounting the air filter unit cover.

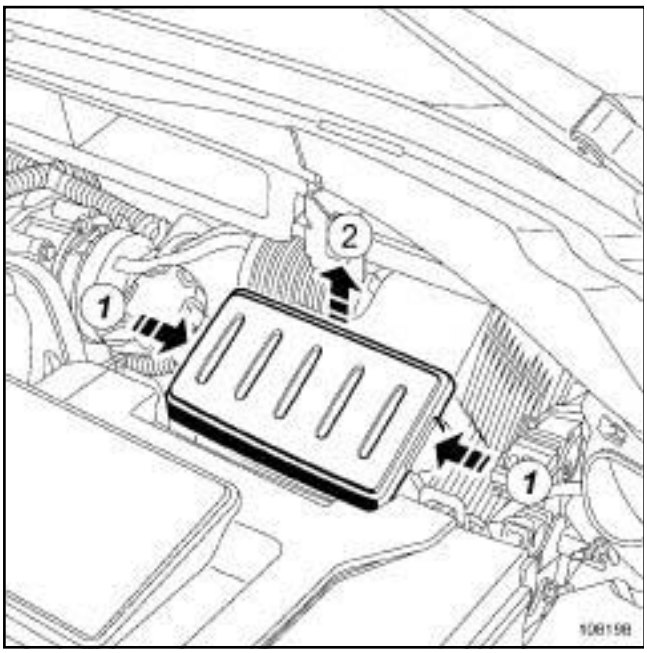
III - FINAL OPERATION.

❑ Refit the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

F4R or K4J or K4M or K9K or M4R – D4F, and 784 or 786

REMOVAL

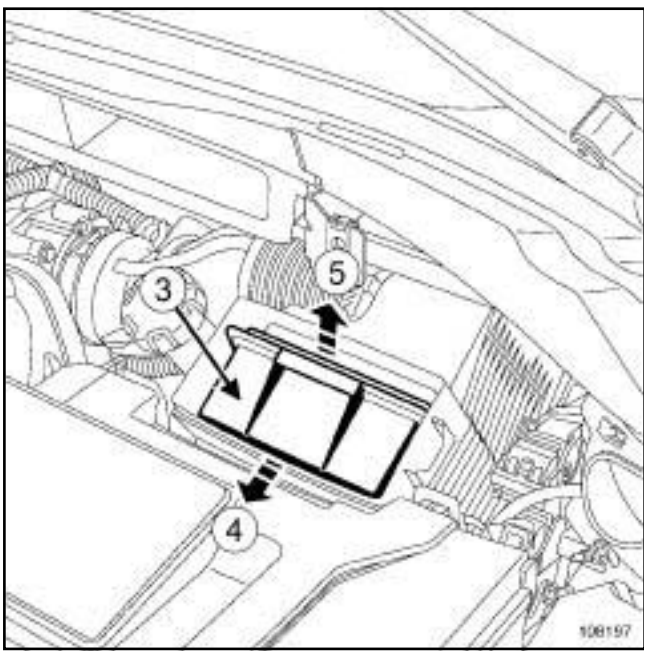
I - REMOVAL PREPARATION OPERATION



108198

❑ Remove the air filter cover in the order of the arrows as shown above.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108197

❑ Remove:

- the air filter (**3**) in the order of the arrows as shown above,
- the air filter from the air filter unit.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the air filter unit.

II - REFITTING OPERATION FOR THE PART IN QUESTION

❑ Reinsert the air filter into the air filter unit correctly.

WARNING
If the air filter is fitted incorrectly in the air filter unit, unfiltered air may enter the engine.

❑ Press down firmly on the air filter and then pull it down.

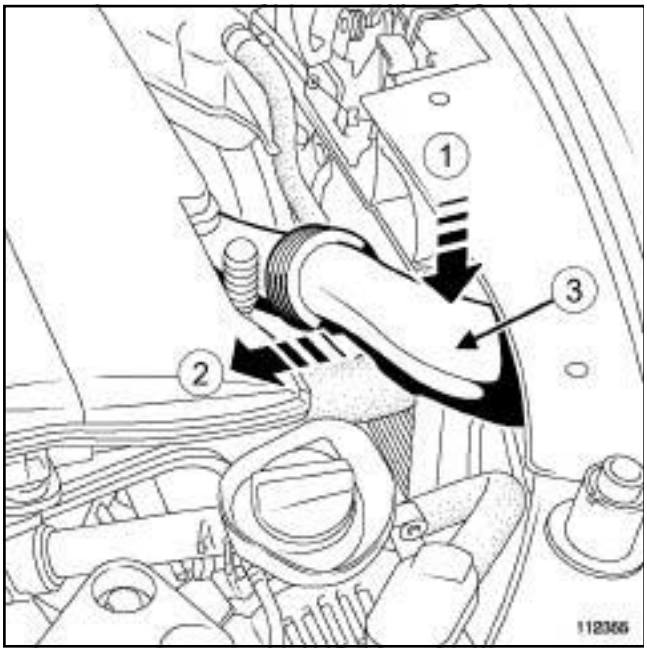
III - FINAL OPERATION

❑ Refit the cover on the air filter unit.

D4F, and 740 or 742 or 764

REMOVAL

I - REMOVAL PREPARATION OPERATION

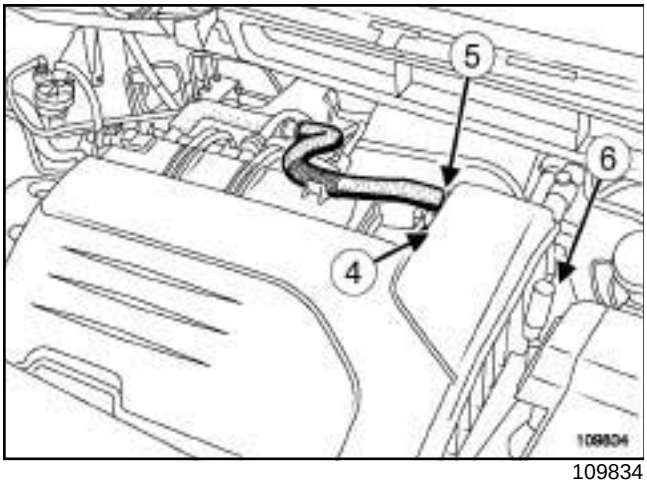


112355

❏ Apply pressure to (**1**) .

❏ Pull at (**2**) .

❏ Remove the air breather sleeve ***(3)*** from the front end panel.



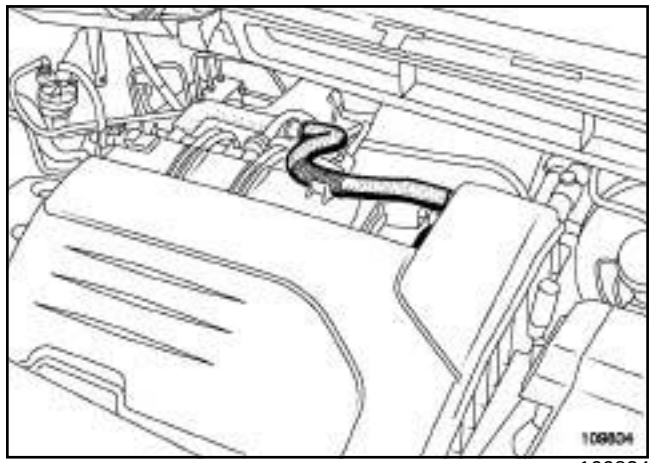
109834

❏ Undo the clip ***(4)*** mounting the air filter unit to the motorised throttle valve.

❏ Disconnect the oil vapour rebreathing hoses at ***(5)*** .

❏ Unclip the gearbox breather at ***(6)*** .

II - OPERATION FOR REMOVAL OF PART CONCERNED

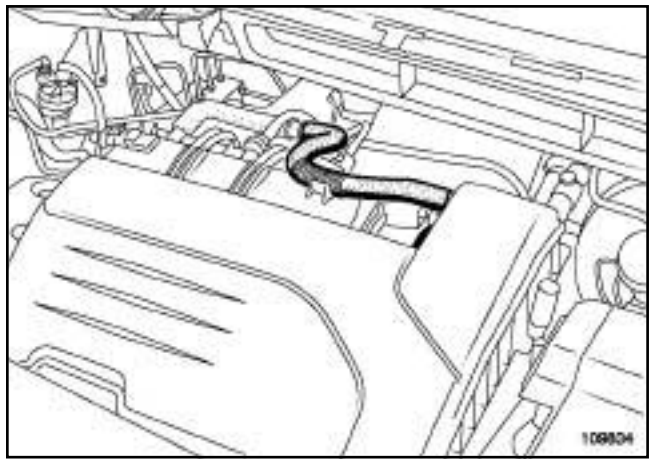

109834

❏ Remove the air filter unit:

- lift out the air filter unit to remove it from the rocker cover,
- push the air filter unit towards the right to remove it from the motorised throttle valve.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED


109834

❏ Refitting the air filter unit:

- push the air filter unit towards the left to attach it to the motorised throttle valve,
- lower the air filter unit to attach it to the rocker cover.

II - FINAL OPERATION.

❏ Retighten the clip securing the air filter unit onto the motorised throttle valve.

D4F, and 740 or 742 or 764

- ❏ Connect the oil vapour rebreathing hoses.
- ❏ Clip the gearbox breather into place.
- ❏ Connect the breather sleeve onto the front end panel.

K4J or K4M or K9K or M4R – D4F, and 784 or 786

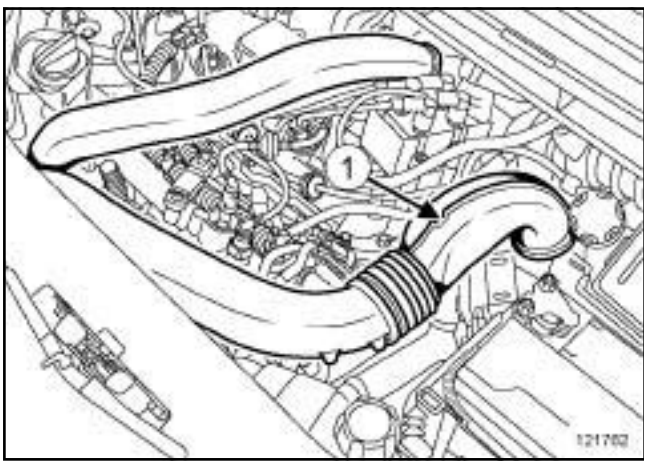
Tightening torques ▽	
air inlet duct clip	**6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).

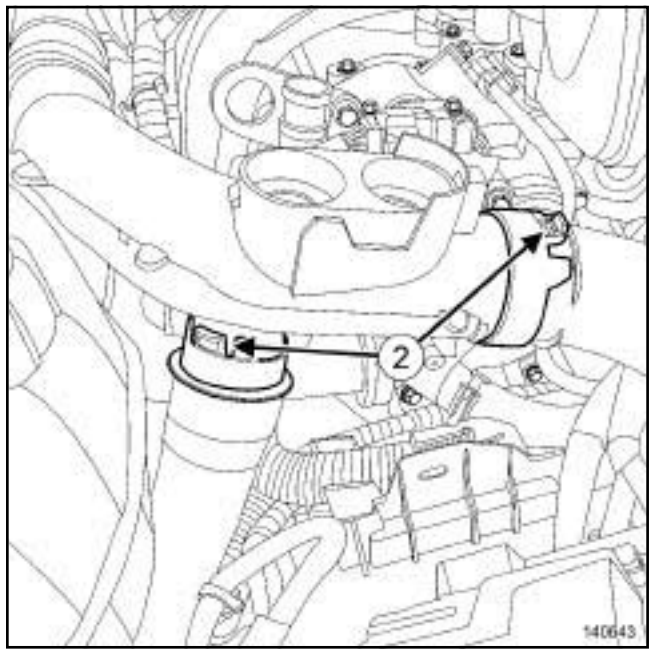
K4J or K9K or M4R – D4F, and 784 – K4M, and 800 or 801 or 804



121762

❏ Disconnect the air inlet pipe (**1**) from the air filter unit.

K4M, and 862



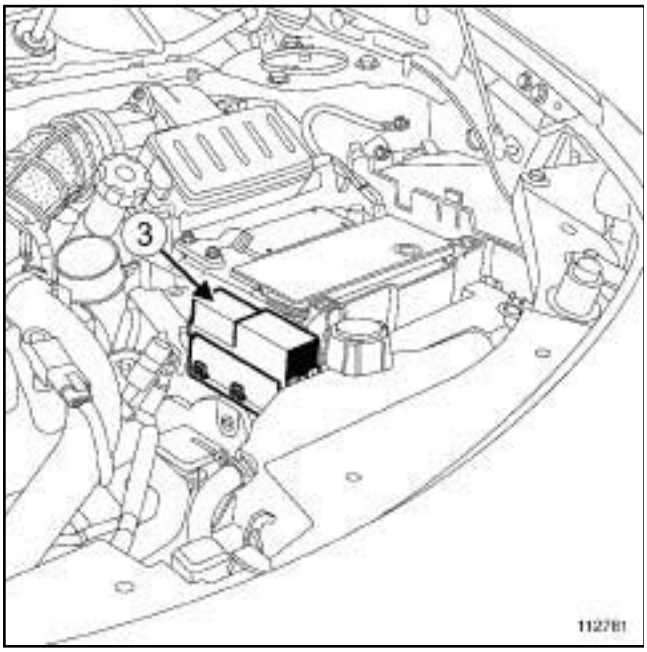
140643

❏ Unclip the air inlet pipe from the air filter unit at (**2**) .

❏ Move aside the air inlet pipe from the air filter unit.

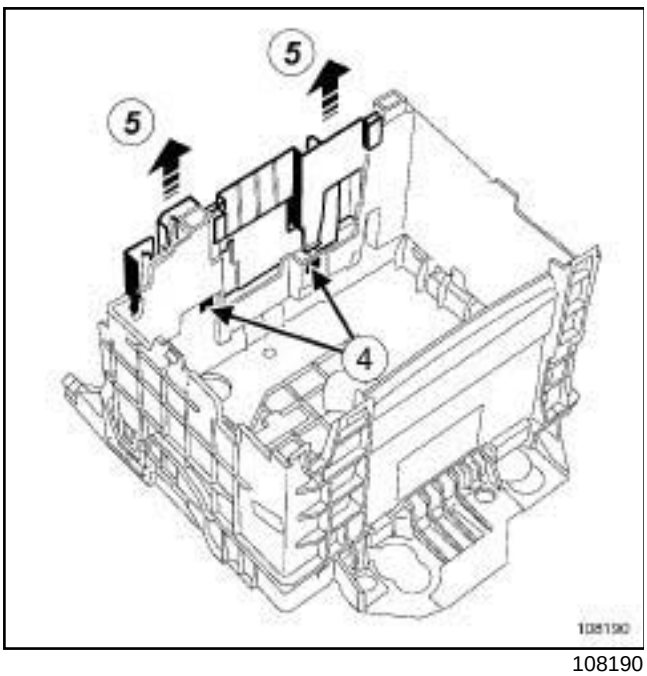
K4J or K4M or K9K or M4R – D4F, and 784 or 786

K4J or K4M or K9K or M4R



112781

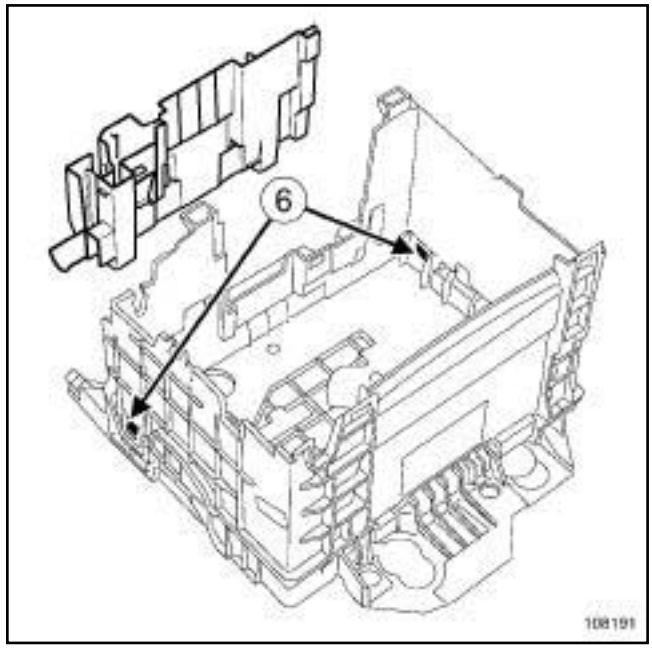
❏ Remove the relay unit (**3**) from the thermal protection tray.



108190

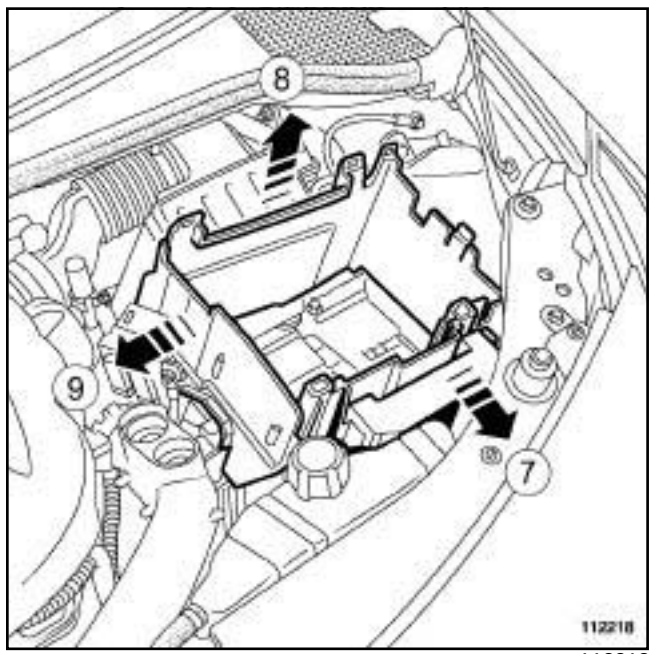
❏ Unclip the power feed fuse board support at (**4**) .

❏ Move aside the power feed fuse board support at (**5**) .



108191

❏ Unclip the thermal protection shield at (**6**) .



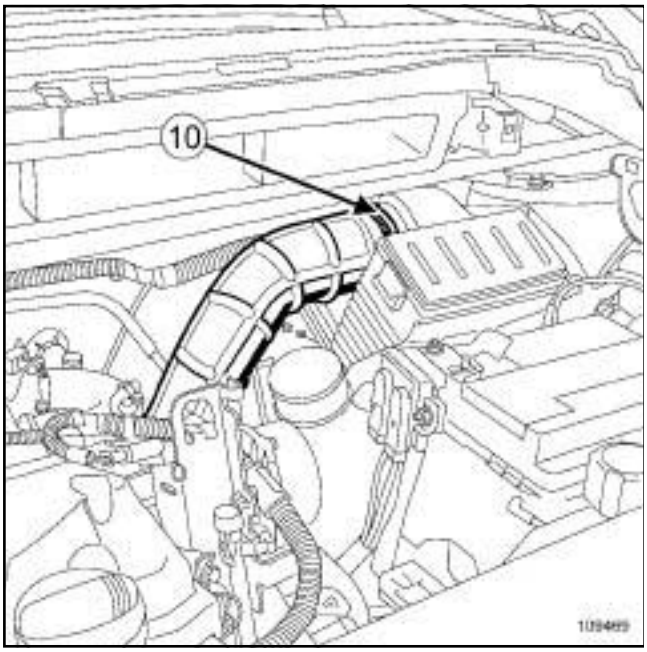
112218

❏ Hold the power feed fuse board mounting aside at (**7**) .

❏ Remove the thermal protection tray at (**8**) and (**9**) .

K4J or K4M or K9K or M4R – D4F, and 784 or 786

K4J or K9K or M4R – D4F, and 784 – K4M, and 800 or 801 or 804

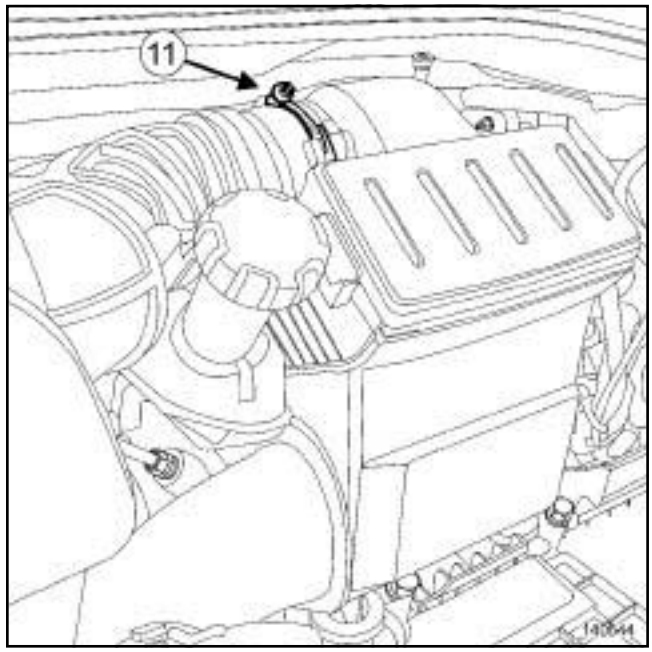


109469

❏ Loosen the air inlet duct clip (**10**) .

❏ Disconnect the air inlet duct.

K4M, and 862



140644

❏ Loosen the air inlet duct clip (**11**) .

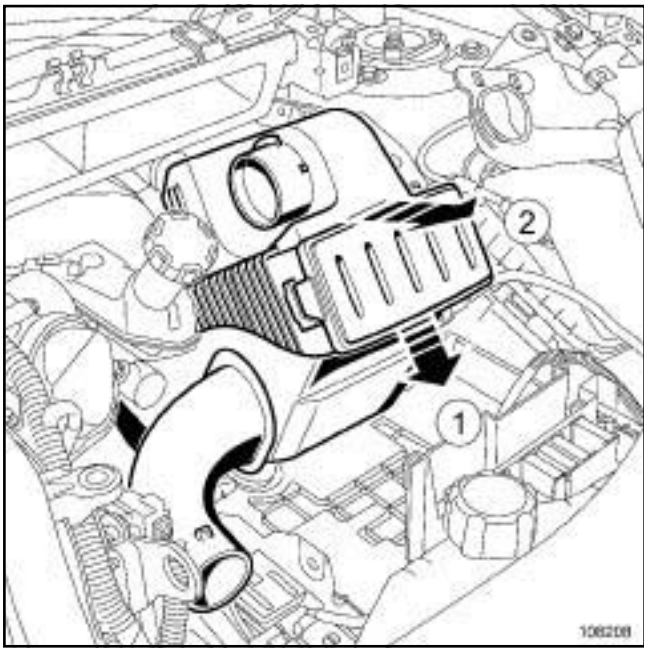
❏ Disconnect the pipe from the air inlet duct.

K9K or M4R

❏ Disconnect the air flowmeter connector.

K4J or K4M or K9K or M4R – D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



108208

❏ Remove the air filter box in the direction of the arrows (**1**) and (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the air filter unit.

II - FINAL OPERATION

K9K or M4R

❏ Connect the air flowmeter connector.

❏ Connect the air inlet duct.

❏ Torque tighten the **air inlet duct clip (6 N.m)**.

❏ Refit the thermal protection shield.

❏ Clip on the thermal protection shield.

❏ Refit the power feed fuse board mounting.

❏ Clip on the power feed fuse board support.

K4J or K4M or K9K or M4R

❏ Refit the relay unit on the thermal protection tray.

❏ Connect the air inlet pipe to the air filter unit.

❏ Refit the battery (see **Battery: Removal - Refitting**) (80A, Battery).

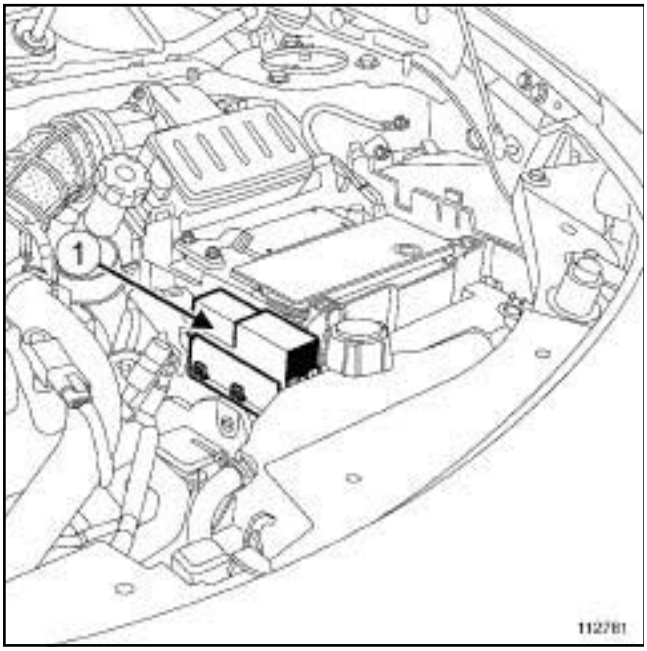
F4R

Tightening torques ▽	
air duct clips between the throttle valve and the air filter box	**5.5 Nm**

REMOVAL

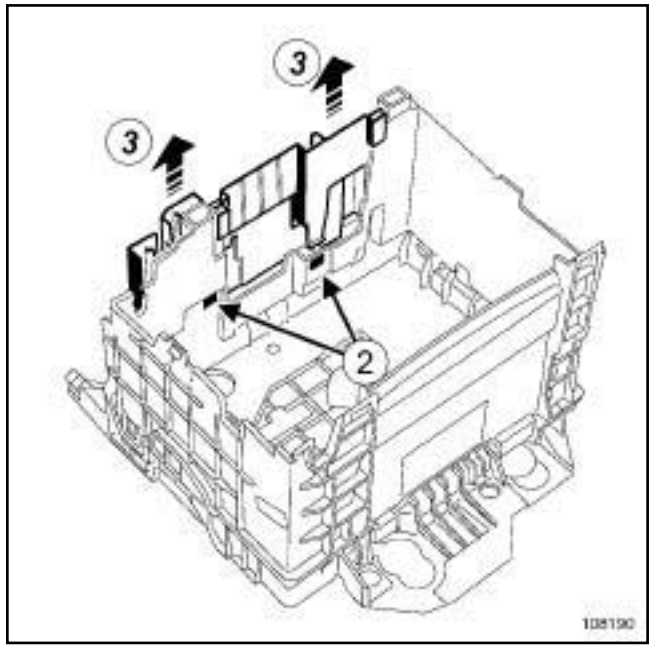
I - REFITTING PREPARATIONS OPERATION

❏ Remove the battery (see **Battery: Removal - Refitting**) ((MR 392, 80A, Battery).



112781

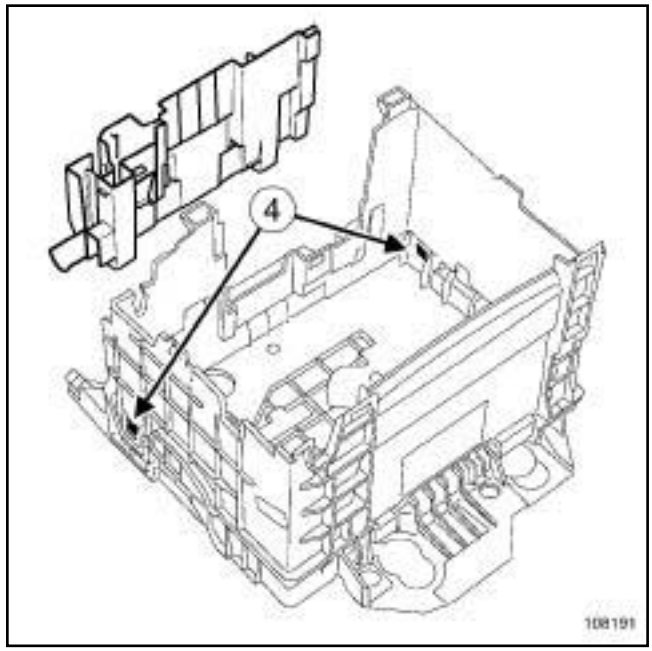
❏ Unclip the relay unit from the thermal protection shield (**1**) .



108190

❏ Unclip the power feed fuse board support at (**2**) .

❏ Move aside the power feed fuse board support at (**3**) .



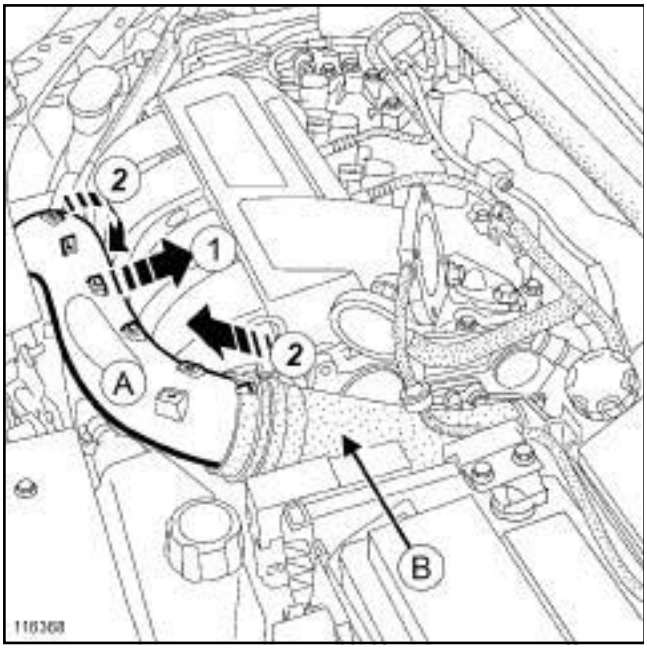
108191

❏ Unclip the thermal protection shield at (**4**) .

❏ Hold the power feed fuse board support aside.

❏ Remove the thermal protection shield.

F4R

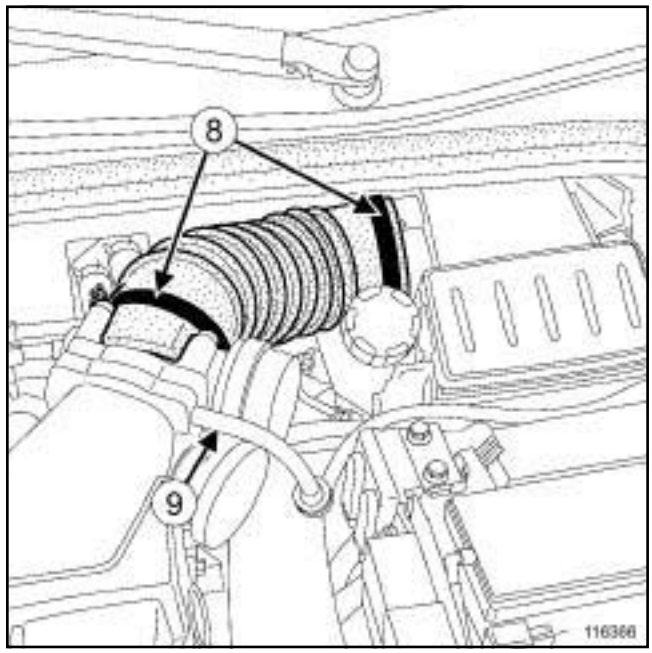


116368

❏ Remove:

- the air inlet duct (**A**) :
  - unclip it from the front end panel (**1**) ,
  - turn it and disconnect it (**2**) .
- the air inlet pipe (**B**) :
  - air resonator side,
  - air filter unit side.

II - OPERATION FOR REMOVAL OF PART CONCERNED

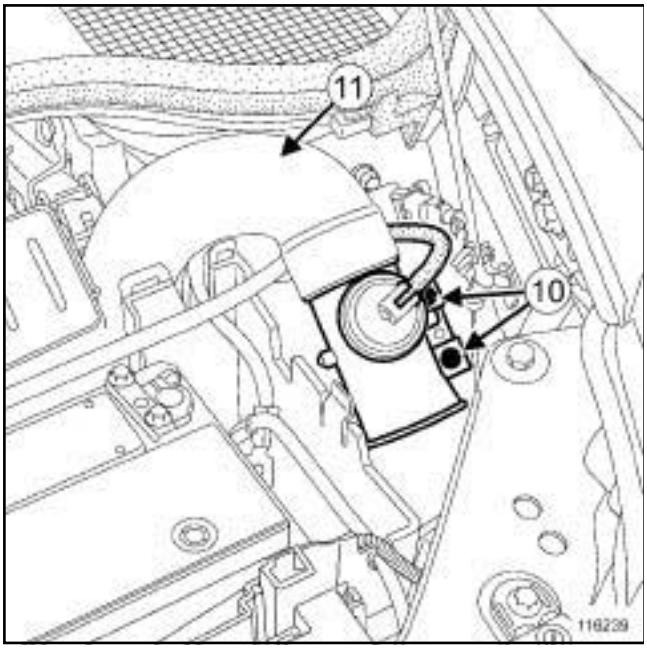


116366

❏ Unfasten the clips (**8**) .

❏ Remove the air inlet pipe between the throttle valve and the air filter box.

❏ Disconnect the vacuum pipe (**9**) from the throttle valve.

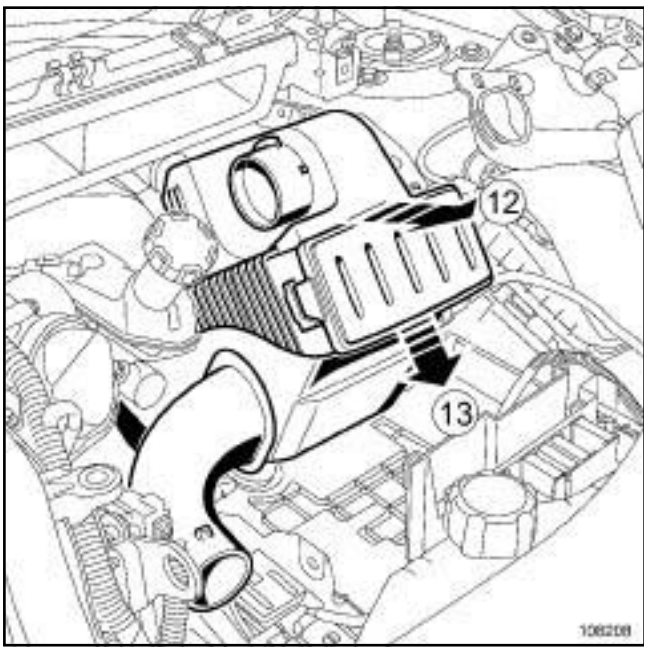


116239

❏ Remove the mounting nuts (**10**) from the soundproofing unit.

❏ Disconnect the air inlet pipe (**11**) .

❏ Move aside the « soundproofing unit - secondary pipe » assembly.



108208

❏ Remove the air filter box in the direction of the arrows (**12**) and (**13**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the air filter box.

❏ Fit the soundproofing unit in place.

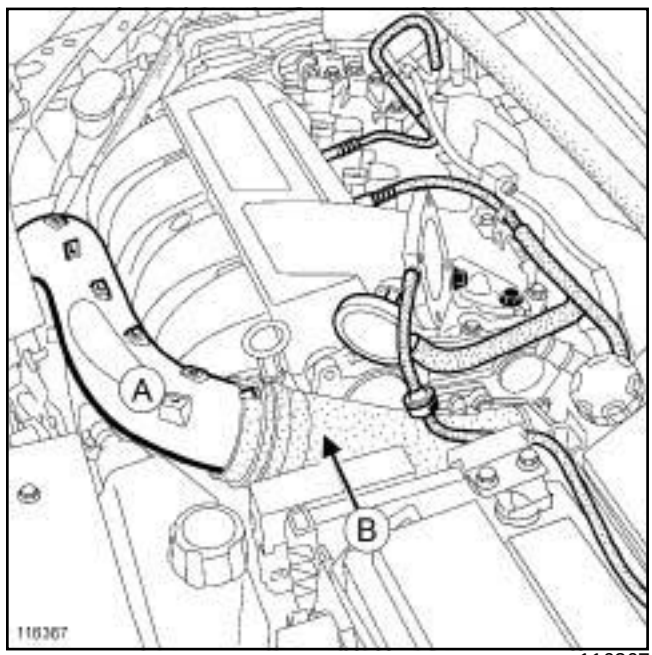
❏ Refit the soundproofing unit mounting nuts.

❏ Connect the vacuum pipe to the throttle valve.

❏ Refit the air inlet pipe between the throttle valve and the air filter box.

❏ Torque tighten the **air duct clips between the throttle valve and the air filter box (5.5 Nm)**.

II - FINAL OPERATION.



116367

❏ Refit:

- the air inlet pipe (**B**) ,
- the air filter box,
- the air resonator.
- the air inlet pipe (**A**) .

❏ Fit the thermal protection shield in place.

❏ Clip on the thermal protection shield.

❏ Fit the power feed fuse board support in place.

❏ Clip on:

- the power feed fuse board support to the thermal protection shield,
- the relay unit to the thermal protection shield.

F4R

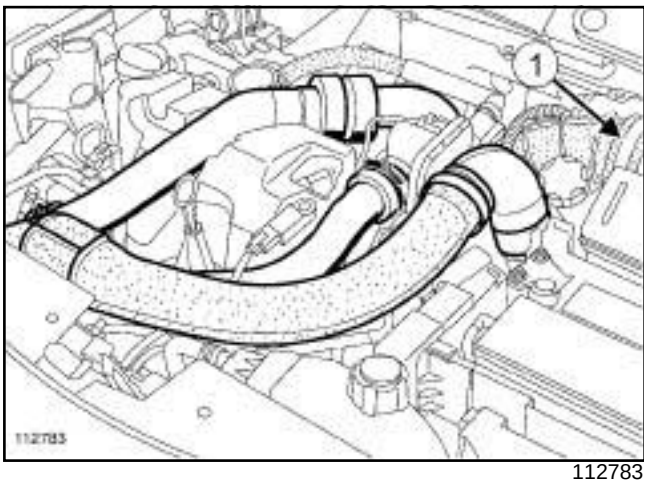
❑ Refit the battery (see **Battery: Removal - Refitting**) ((MR 392, 80A, Battery).

K9K

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .



112783

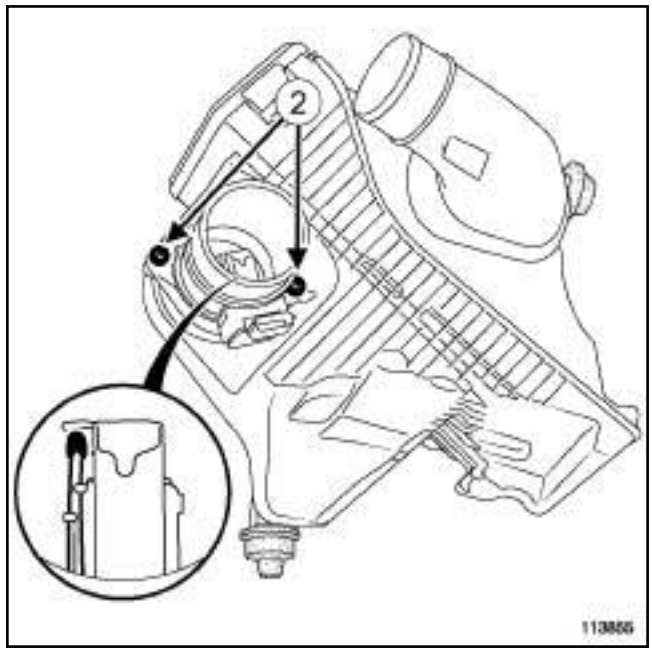
❏ Loosen the clip (**1**) between the air duct and the air flowmeter.

❏ Disconnect the air flowmeter connector.

❏ Unfasten the air duct and remove it.

❏ Disconnect the air flowmeter connector.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113855

❏ Remove:

- the bolts (**2**) securing the air flowmeter onto the air filter unit,
- the air flowmeter.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the air flowmeter.
- the bolts securing the air flowmeter.

> Note:
> Be sure not to damage the air flowmeter seal.
> Replace it if necessary.

II - FINAL OPERATION

❏ Connect the air flowmeter connector.

Refit:

- the air duct,
- the clip between the air duct and the air flowmeter.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1608	Torque screwdriver 1 to 6.6 N.m.

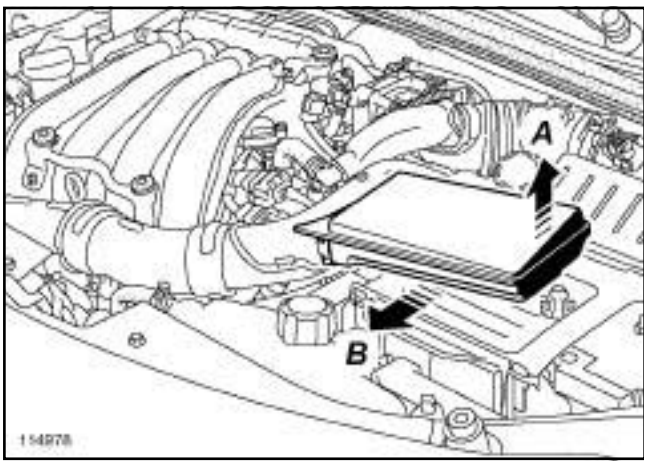
Tightening torques ▽	
air flow sensor mounting bolts	**4 Nm**
air inlet duct clips	**6 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the engine cover.

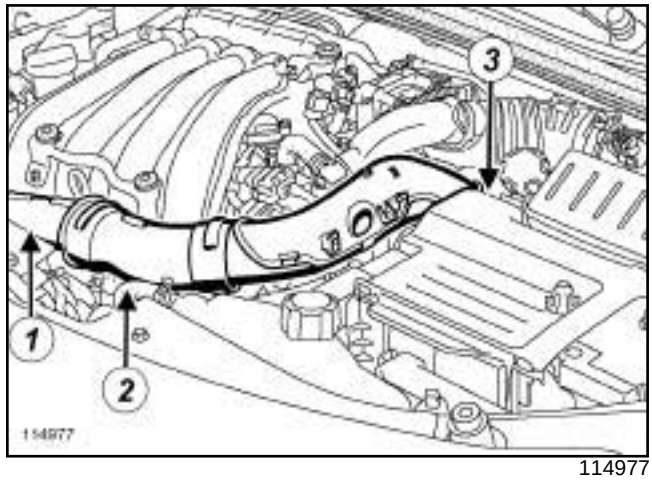
❏ Disconnect the battery (see) .



114978

❏ Lift the air resonator to remove it from the battery cover (**A**) .

❏ Pull the air resonator towards the front of the vehicle (**B**) to remove it.

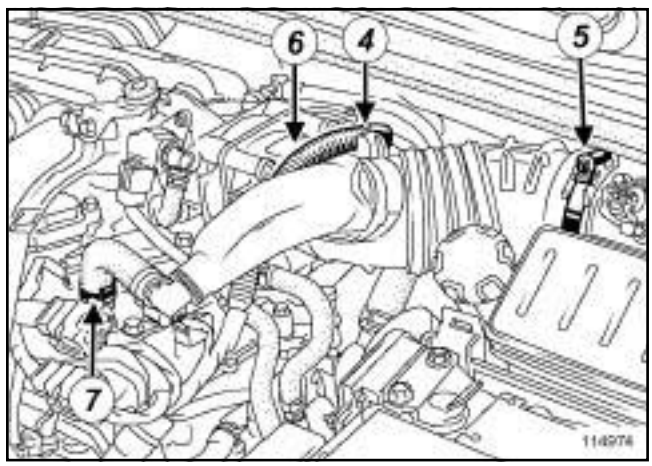


114977

❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove the air intake sleeve.



114974

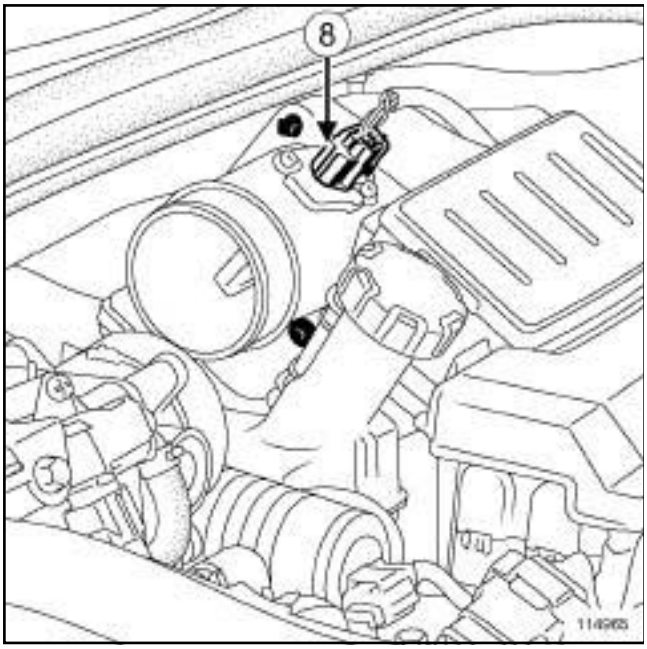
❏ Detach the wiring harness from the air inlet duct at (**4**) .

❏ Undo the air duct mounting clips:

- on the air flow sensor (**5**) ,
- on the motorised throttle valve (**6**) .

❏ Disconnect the oil vapour rebreather duct (**7**) from the rocker cover using the **(Mot. 1448)**.

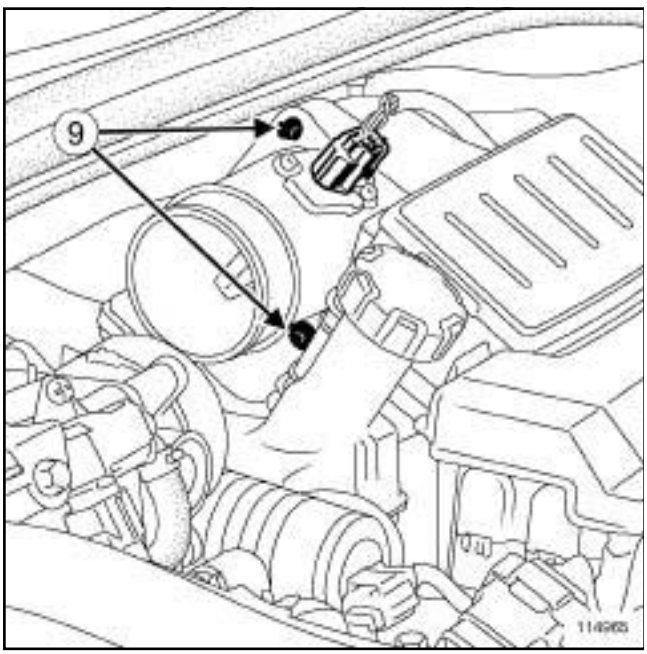
❏ Remove the air inlet duct.



114965

❑ Disconnect the air flow sensor connector (**8**) .

II - REMOVAL OF PART CONCERNED



114965

❑ Remove:

- the air flow sensor mounting bolts (**9**) ,
- the air flow sensor,
- the air flow sensor seal.

REFITTING

I - REFITTING PREPARATION OPERATION

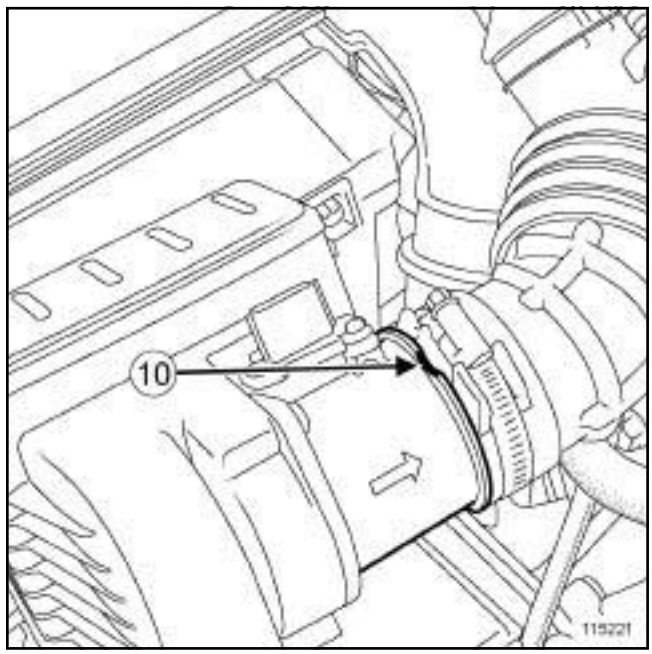
❑ The air flow sensor seal must be replaced.

II - REFITTING THE PART CONCERNED

❑ Refit the air flow sensor.

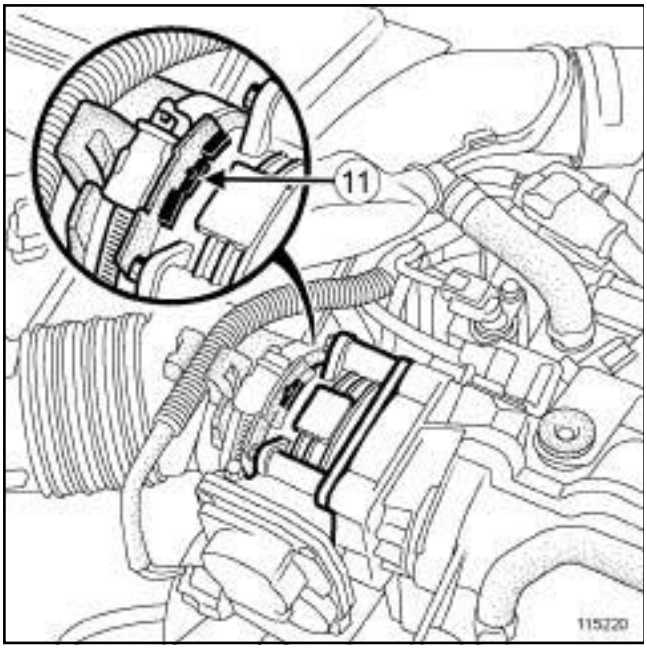
❑ Tighten to torque the **air flow sensor mounting bolts (4 Nm)** using the **(Mot. 1608)**.

III - FINAL OPERATION



115221

❑ Fit the air inlet duct on the air flow sensor, paying attention to the fitting mark (**10**) .



115220

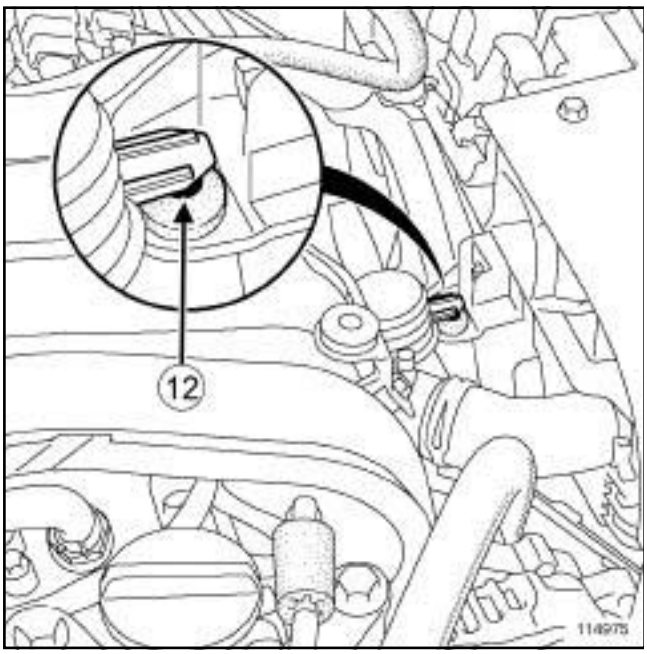
❏ Fit the air inlet duct on the motorised throttle valve, paying attention to the fitting mark (**11**) .

❏ Connect the oil vapour rebreather duct on the rocker cover.

❏ Tighten to torque the **air inlet duct clips (6 Nm)**.

❏ Clip the wiring harness on the air inlet duct.

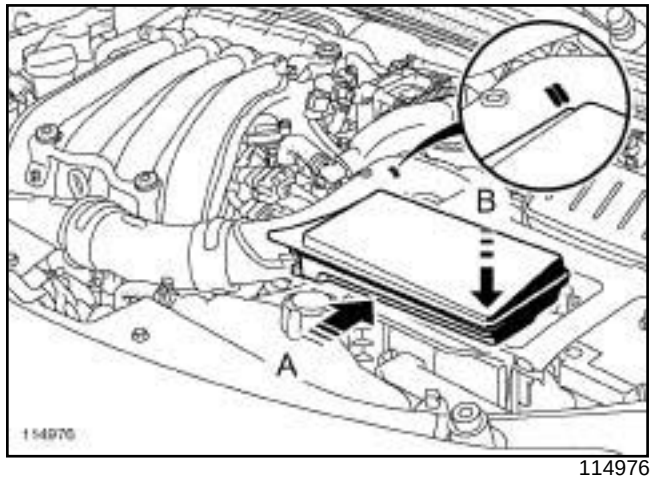
❏ Connect the air flow sensor connector.



114975

❏ Before refitting the air intake sleeve, check that the front end panel air resonator's upper mounting is correctly clipped at (**12**) .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle (**A**) until the air resonator's rear face is located between the two marks on the air intake sleeve.

❏ Push the air resonator (**B**) to fit it onto the battery cover.

❏ Connect the battery (see) .

❏ Refit the engine cover.

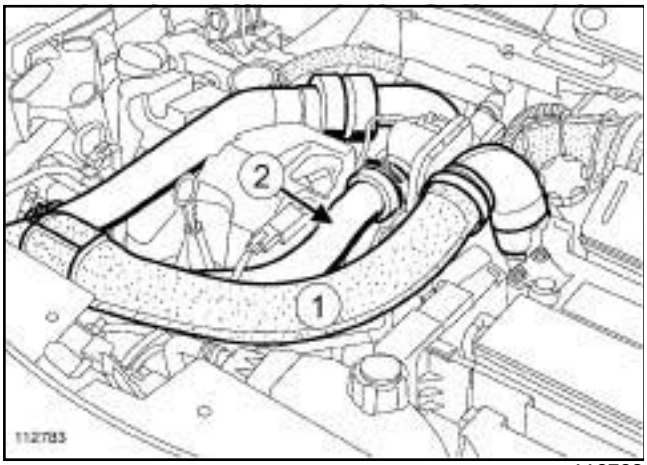
K9K

Tightening torques ▽	
damper valve mounting nuts	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

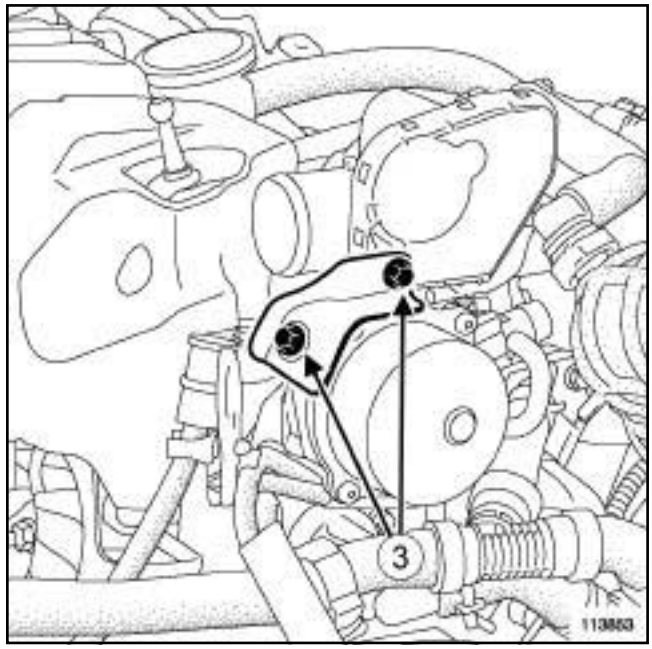
❑ Disconnect the battery (see **Battery: Removal - Refitting**)



112783

❑ Remove:

- the air inlet duct (**1**) ,
- the damper valve duct (**2**) .

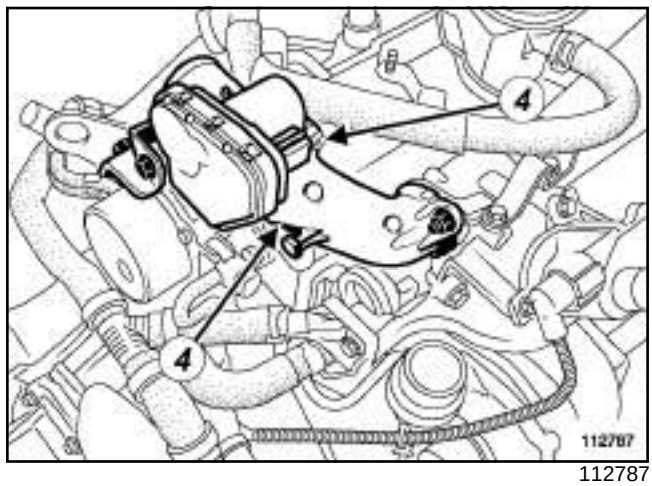


113853

❑ Remove:

- the retaining bracket bolts (**3**) ,
- the retaining bracket.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112787

❑ Remove:

- the damper valve connector,
- the damper valve mounting bolts (**4**) ,
- the damper valve.

K9K

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the contact surfaces.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new seal,
- the damper valve,
- the damper valve mounting nuts,
- the connector to the damper valve.

❑ Torque tighten the **damper valve mounting nuts (12 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the damper valve bracket,
- the damper valve bracket mounting bolts,
- the damper valve duct,
- the outer air inlet duct.

❑ Connect the battery (see **Battery: Removal - Refitting**) .

D4F, and 740 or 742 or 764

Tightening torques ▽	
motorised throttle valve mounting bolts	**9 N.m**

REMOVAL

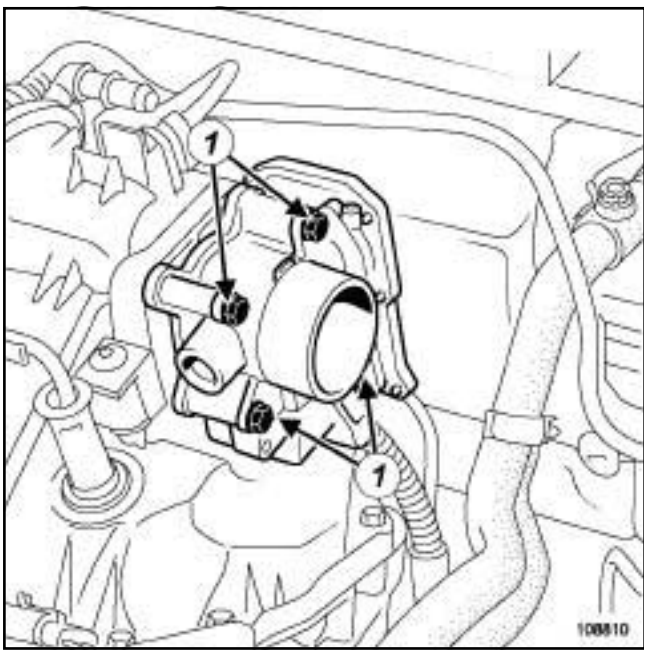
I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) .

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Disconnect the motorised throttle valve connector.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108810

❑ Remove:

- the motorised throttle valve mounting bolts (**1**) ,
- the motorised throttle valve,
- the motorised throttle valve seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Be sure to replace the seal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the motorised throttle seal.
- the motorised throttle valve,
- the motorised throttle valve mounting bolts,

❑ Torque tighten the **motorised throttle valve mounting bolts (9 N.m)**.

III - FINAL OPERATION.

❑ Connect the motorised throttle valve connector.

❑ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

❑ Reinitialise the programming for the stops (see **MR 394 Fault finding, 17B, Replacement of components, Motorised throttle valve replacement operation**).

K4J or K4M

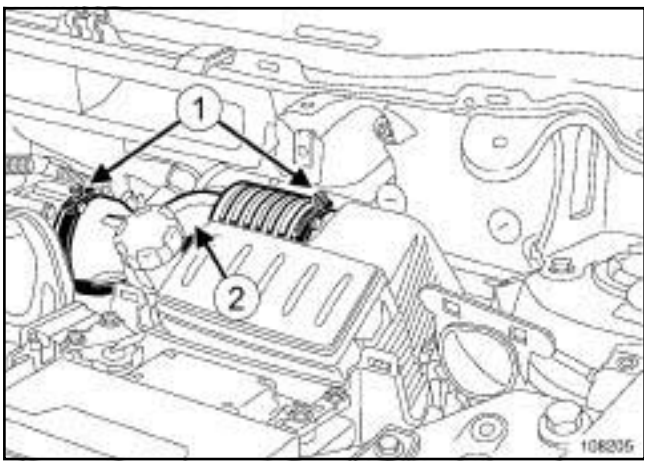
Tightening torques ▽	
throttle valve bolts	**10 N.m**
inlet duct clips	**6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K4J – K4M, and 800 or 801 or 804

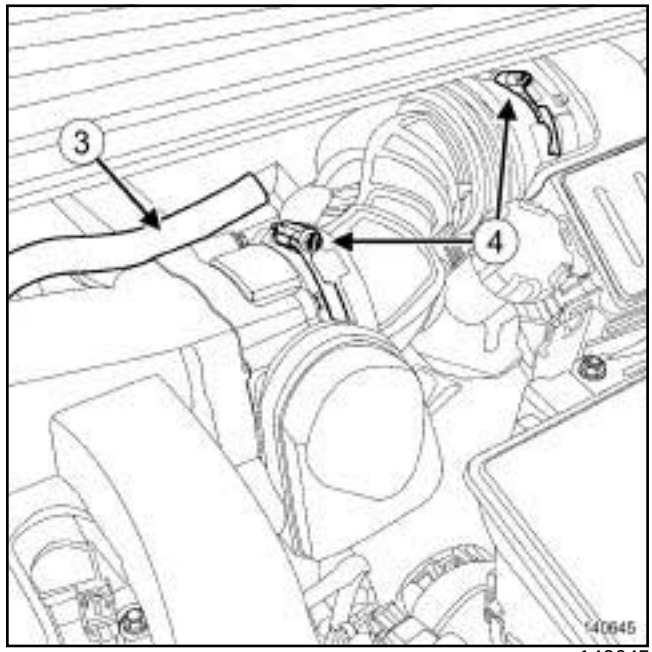


108205

❑ Remove:

- the air inlet duct clips (**1**) ,
- the air inlet duct (**2**) .

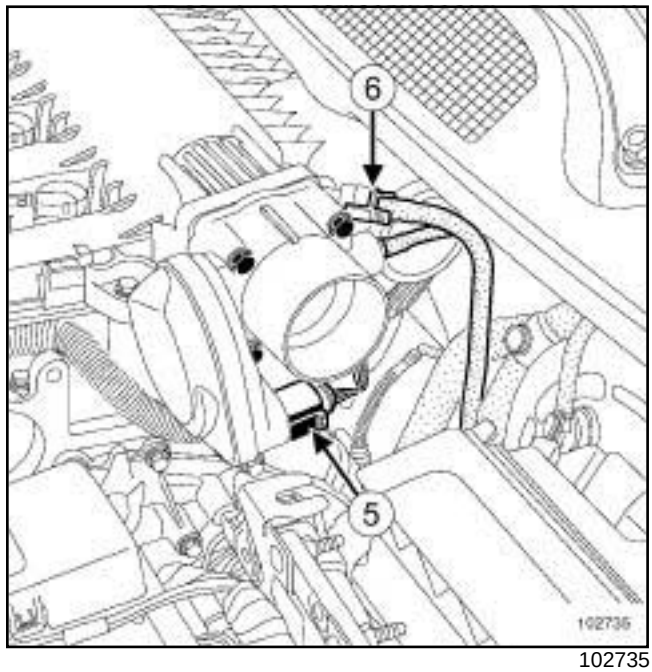
K4M, and 862



140645

❑ Remove:

- the oil vapour rebreathing pipe (**3**) ,
- the air inlet duct clips (**4**) ,
- the air inlet duct.



102735

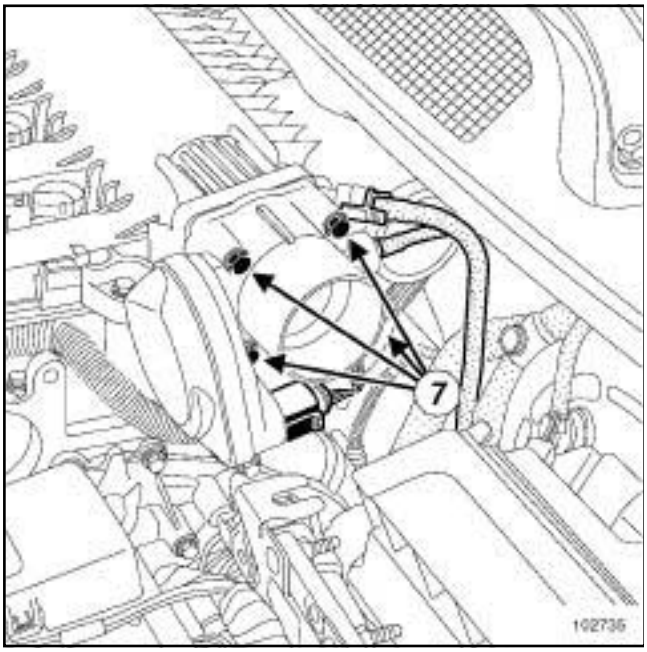
❑ Disconnect:

- the throttle valve connector (**5**) ,

K4J or K4M

- the fuel vapour recirculation solenoid valve pipe (**6**)
.

II - OPERATION FOR REMOVAL OF PART CONCERNED



102735

❏ Remove:

- the throttle valve bolts (**7**) ,
- the throttle valve.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Throttle valve seal**.

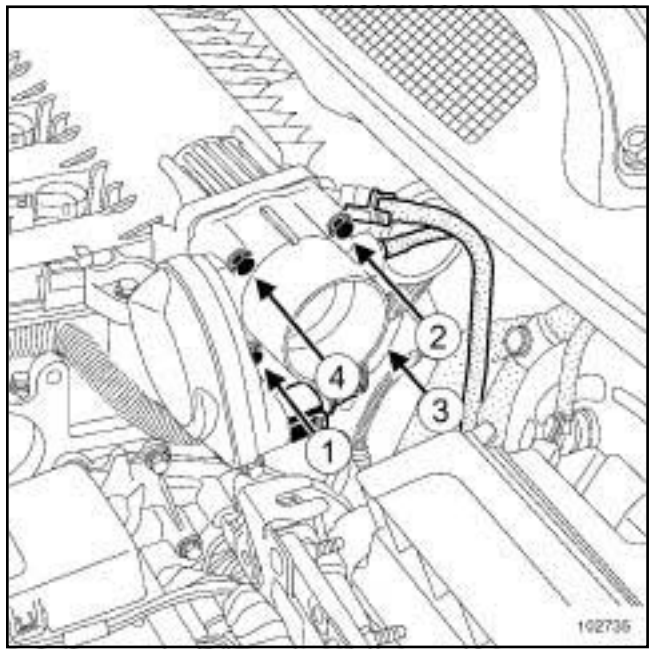
❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the throttle valve joint face if it is to be re-used,
- the inlet distributor seal housing.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

II - REFITTING OPERATION FOR PART CONCERNED



102735

❏ Refit the throttle valve, fitted with a new seal.

❏ In order, torque tighten the **throttle valve bolts (10 N.m)**.

III - FINAL OPERATION

❏ Connect:

- the fuel vapour recirculation solenoid valve pipe,
- the throttle valve connector.

❏ Refit:

- the air inlet duct,
- the air inlet duct clips.

❏ Torque tighten the **inlet duct clips (6 N.m)**.

K4M, and 862

❏ Refit the oil vapour rebreathing pipe.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

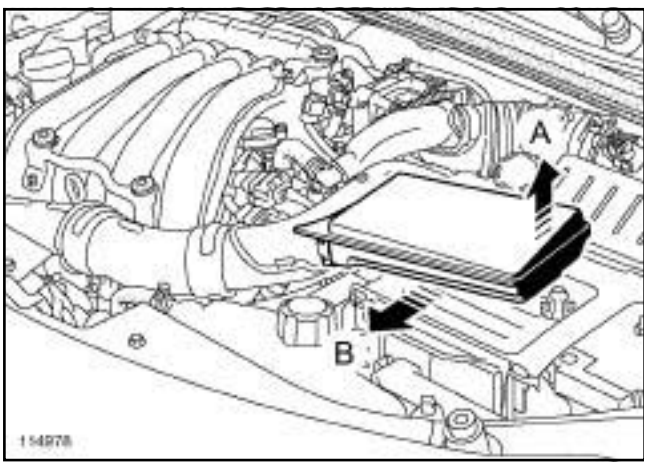
Tightening torques ▽	
motorised throttle valve mounting bolts	**10 N.m**
air inlet duct clips	**6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the engine cover.

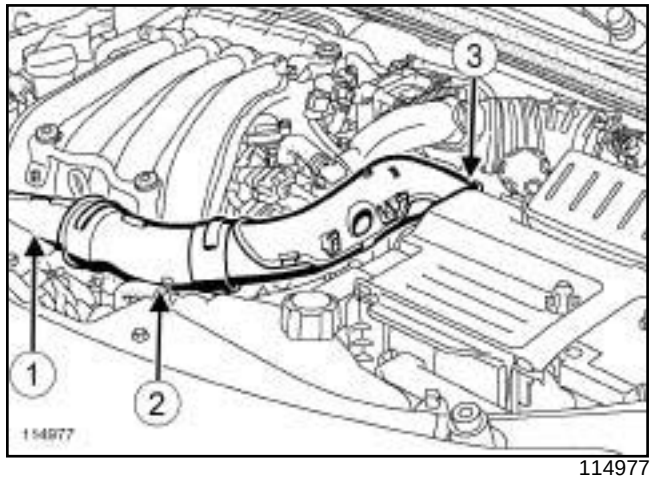
❏ Disconnect the battery (see) .



114978

❏ Lift the air resonator (**A**) to remove it from the battery cover.

❏ Pull the air resonator towards the front of the vehicle (**B**) to remove it.

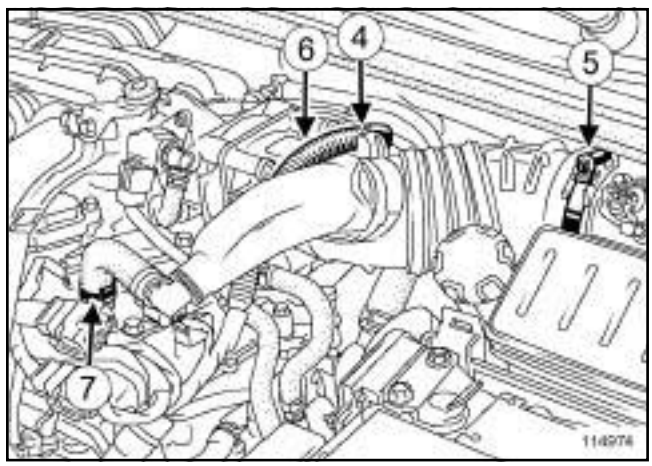


114977

❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove the air inlet sleeve.



114974

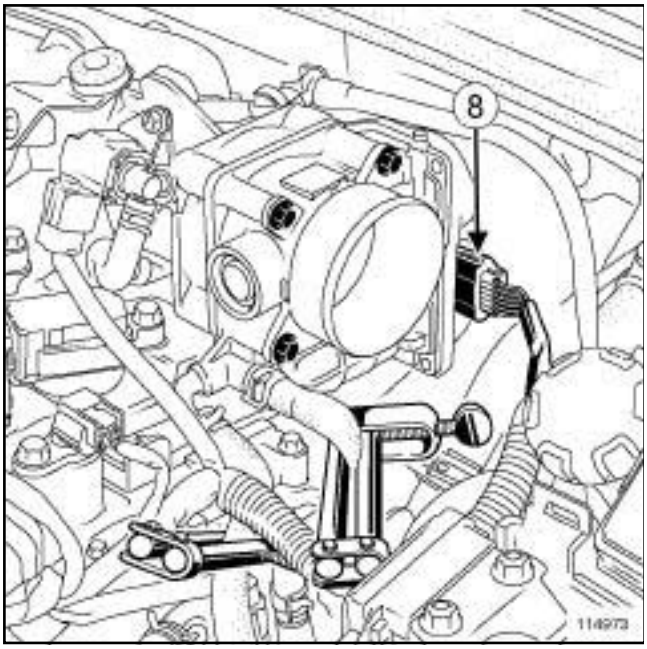
❏ Detach the wiring harness from the air inlet duct at (**4**) .

❏ Undo the air duct mounting clips:

- on the air flow sensor (**5**) ,
- on the motorised throttle valve (**6**) .

❏ Remove the oil vapour rebreather duct (**7**) from the rocker cover using the **(Mot. 1448)**.

❏ Remove the air inlet duct.



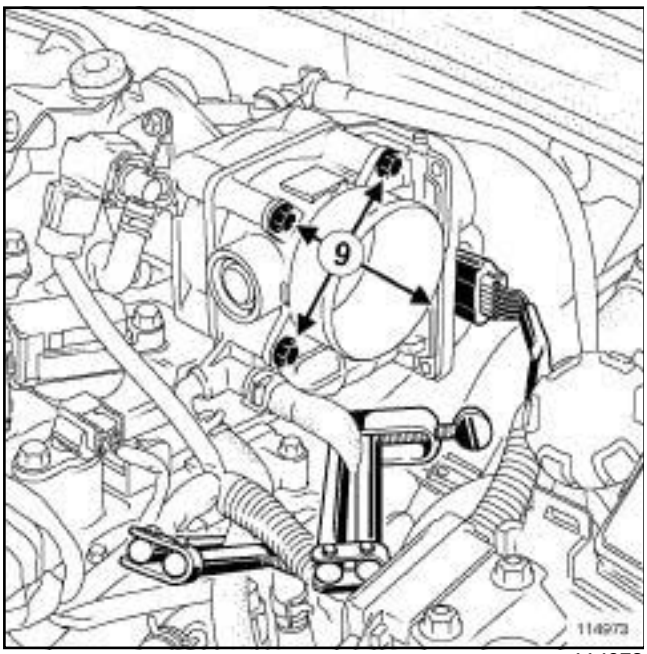
114973

❑ Fit hose clamps on the motorised throttle valve hoses.

❑ Remove the hoses from the motorised throttle valve using the **(Mot. 1448)**.

❑ Disconnect the motorised throttle valve connector (**8**) .

II - REMOVAL OF PART CONCERNED



114973

❑ Remove:

- the motorised throttle valve mounting bolts (**9**) ,
- the motorised throttle valve,
- the inlet distributor gasket.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ The motorised throttle valve seal must always be replaced.

II - REFITTING PART CONCERNED

❑ Finger tighten the motorised throttle valve mounting bolts.

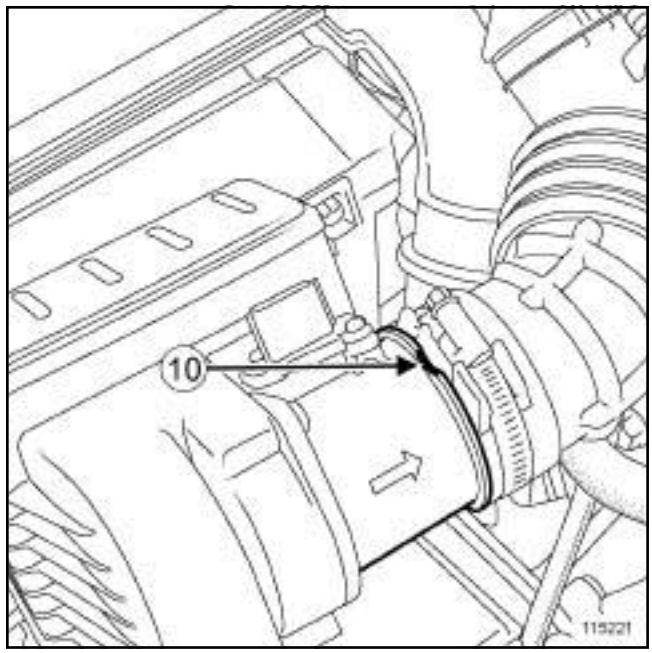
❑ Torque tighten the **motorised throttle valve mounting bolts (10 N.m)**.

III - FINAL OPERATION

❑ Connect the motorised throttle valve connector.

❑ Connect the motorised throttle valve hoses using the **(Mot. 1448)**.

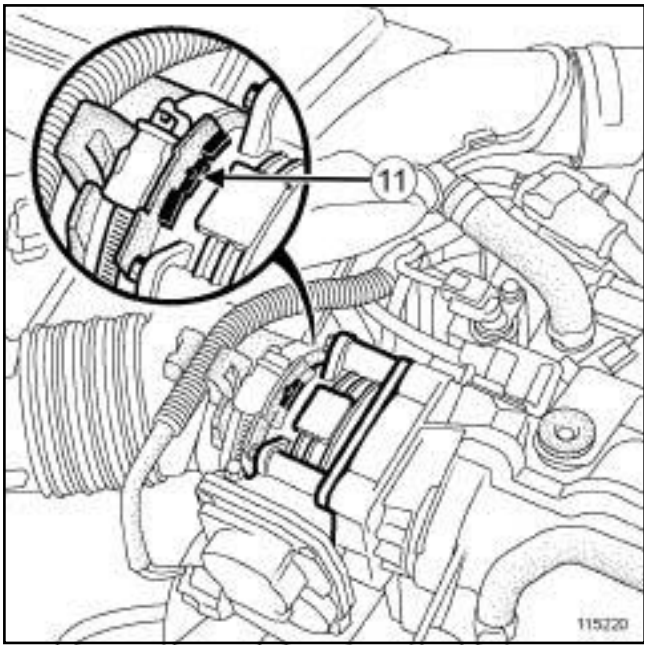
❑ Remove the hose clamps from the motorised throttle valve hoses.



115221

❑ Fit the air inlet duct on the air flow sensor, paying attention to the fitting mark (**10**) .

M4R



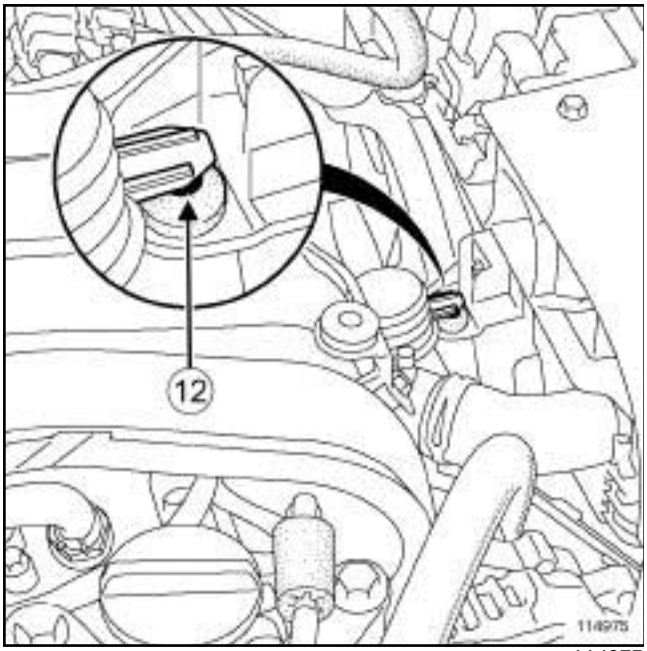
115220

❏ Fit the air inlet duct on the motorised throttle valve, paying attention to the fitting mark (**11**) .

❏ Connect the oil vapour rebreather duct on the rocker cover using the **(Mot. 1448)**.

❏ Torque tighten the **air inlet duct clips (6 N.m)**.

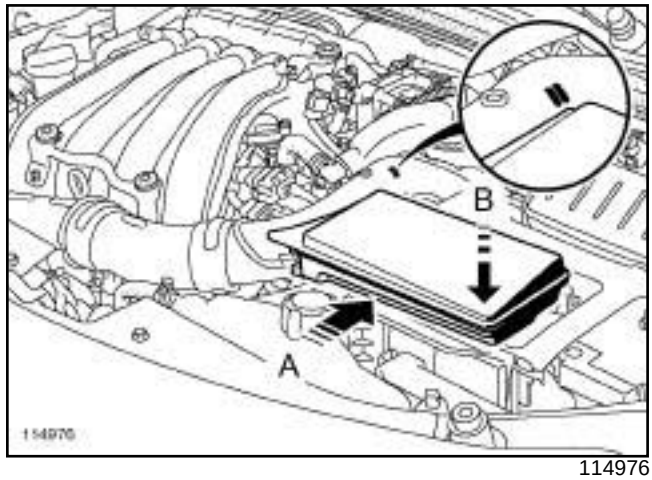
❏ Clip the wiring harness on the air inlet duct.



114975

❏ Before refitting the air intake sleeve, check that the front end panel air resonator's upper mounting is correctly clipped at (**12**) .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle (**A**) until the air resonator's rear face is located between the two marks on the air intake sleeve.

❏ Push the air resonator (**B**) to fit it onto the battery cover.

❏ Connect the battery (see) .

❏ Bleed the cooling circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit the engine cover.

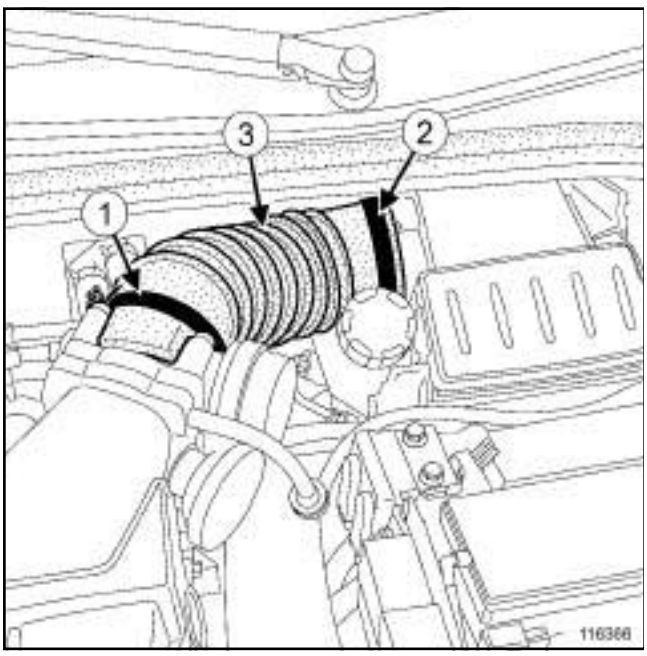
F4R

Equipment required
Diagnostic tool

Tightening torques ▽	
bolt of the reinforcement bracket on the throttle valve	**12 N.m**
nut of the reinforcement bracket	**9 N.m**
throttle valve bolts	**10 N.m**
air inlet pipe clips between the air filter unit and the throttle valve	**6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION



116366

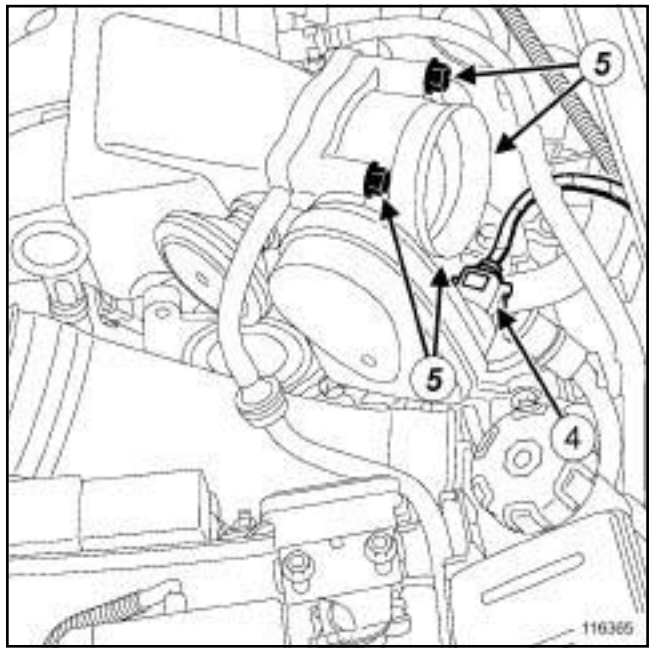
❏ Undo:

- the clip (**1**) on the air inlet pipe between the air filter box and the throttle valve on the damper valve side,
- the clip (**2**) on the air inlet pipe between the air filter box and the throttle valve on the air filter box side.

❏ Remove the air inlet pipe (**3**) between the air filter box and the throttle valve.

II - OPERATION FOR REMOVAL OF PART CONCERNED

F4R, and 830

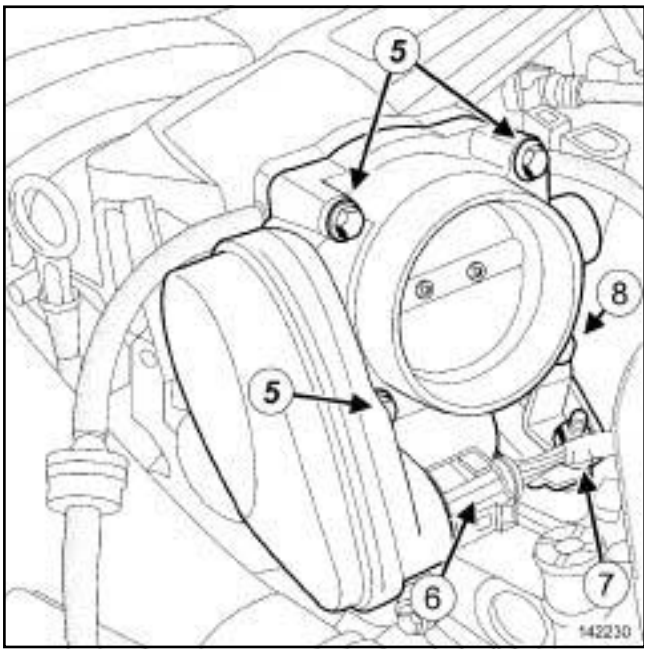


116365

❏ Disconnect the connector (**4**) from the throttle valve.

F4R

F4R, and 832



142230

❏ Disconnect the connector (**6**) from the throttle valve.

❏ Remove:

- the nut (**7**) of the reinforcement bracket on the oil separator,
- the bolt (**8**) of the reinforcement bracket on the throttle valve,
- the reinforcement bracket.

❏ Remove:

- the throttle valve bolts ***(5)*** ,
- the throttle valve.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Throttle valve seal**.

❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the throttle valve joint face if it is to be re-used,
- the seal housing on the inlet distributor.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the throttle valve, fitted with a new seal.

F4R, and 832

❏ Refit:

- the reinforcement bracket,
- the bolt of the reinforcement bracket on the throttle valve,
- the nut of the reinforcement bracket on the oil separator.

❏ Torque tighten:

- the **bolt of the reinforcement bracket on the throttle valve (12 N.m)**,
- the **nut of the reinforcement bracket (9 N.m)**.

❏ Refit the throttle valve bolts.

❏ Torque tighten the **throttle valve bolts (10 N.m)**.

❏ Connect the throttle valve connector.

III - FINAL OPERATION

❏ Refit the air inlet duct between the throttle valve and the air filter box.

❏ Torque tighten the **air inlet pipe clips between the air filter unit and the throttle valve (6 N.m)**.

❏ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.

D4F, and 784 or 786

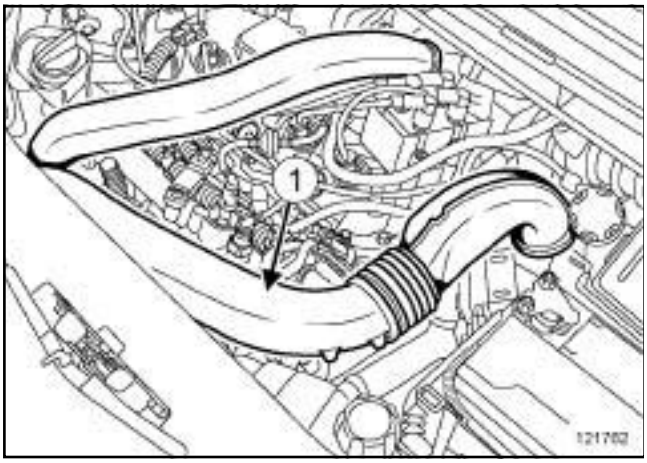
Tightening torques ▽	
throttle valve bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

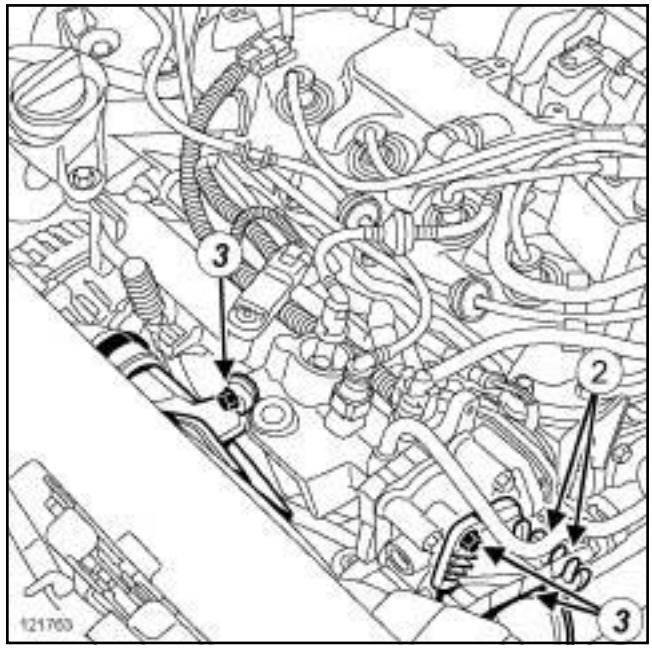
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover.



121762

❏ Disconnect the air filter unit air inlet pipe (**1**) .



121763

❏ Detach at (**2**) :

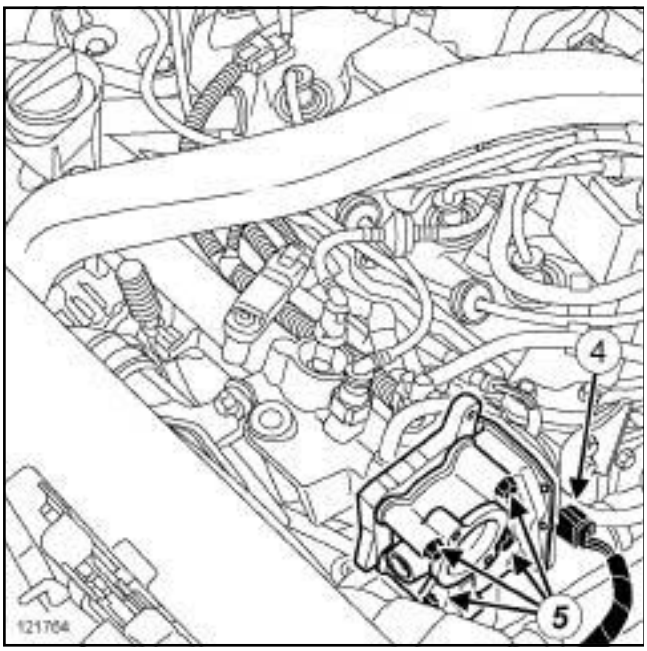
- the wiring harness,
- the vacuum pipe.

❏ Remove the intercooler air outlet pipe bolts (**3**) .

❏ Move the intercooler outlet air pipe to one side.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



121764

❏ Disconnect the connector (**4**) from the throttle valve.

❏ Remove:

- the throttle valve bolts (**5**) ,
- the throttle valve,
- the throttle valve seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Replace the throttle valve seal.

❏ Use abrasive pads to clean the bearing faces of:

- the intake distributor - throttle valve,
- the throttle valve - intercooler air outlet pipe.

❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 398, 04B, Consumables - Products) and clean cloths to de-grease the bearing faces:

- the intake distributor - throttle valve,
- the throttle valve - intercooler air outlet pipe.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the throttle valve seal,
- the throttle valve,
- the throttle valve bolts.

❏ Torque tighten the **throttle valve bolts (10 Nm)**.

❏ Connect the throttle valve connector.

III - FINAL OPERATION.

❏ Refit:

- the intercooler outlet air pipe,
- the intercooler air outlet pipe bolts.

❏ Clip:

- the vacuum pipe,
- the harness.

❏ Connect:

- the air filter box air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the engine cover.

❏ Program the motorised throttle valve (see **Fault finding - Replacement of components**)(MR387, 17B, Petrol injection).

D4F or F4R or K4J or K4M or M4R

Equipment required
compressed air nozzle

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT
Always wear protective gear (gloves, goggles and breathing masks).

Note:
Be sure to work in a clean environment so as not to allow any contamination of the throttle valve.

CLEANING

I - CLEANING PREPARATION OPERATION

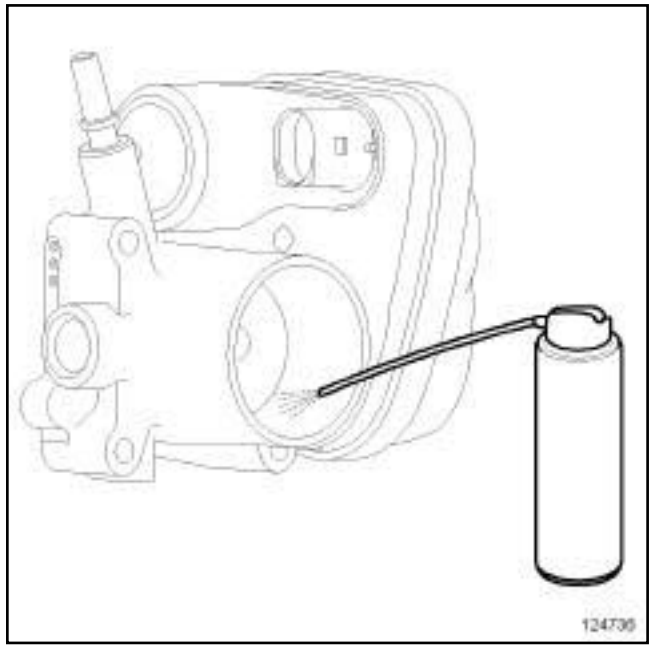
❑ Remove the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

II - CLEANING THE PART CONCERNED

❑

Note:
The **CARBURETTOR CLEANING** product damages the seals.

❑ Remove the seal(s) of the throttle valve.



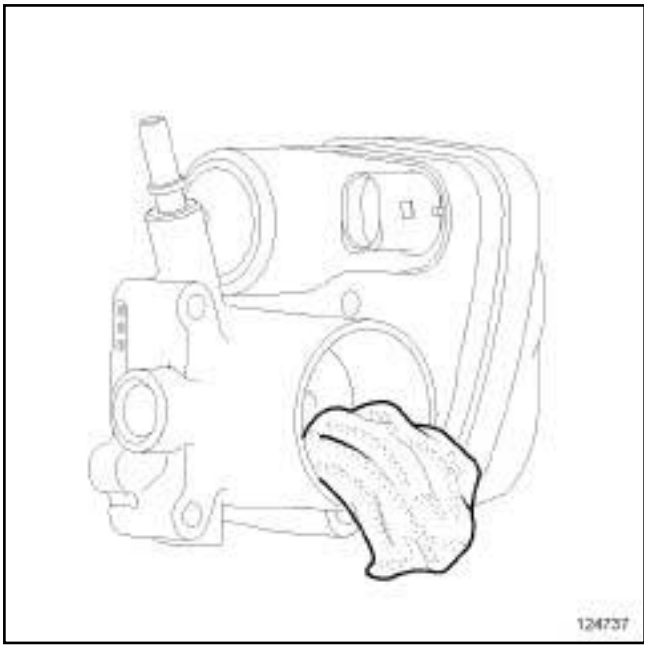
124736

❑ Hold the throttle valve flap open manually.

Note:
Do not spray any cleaning product onto the outside of the cylinder, inside the spring housing or onto the connector.

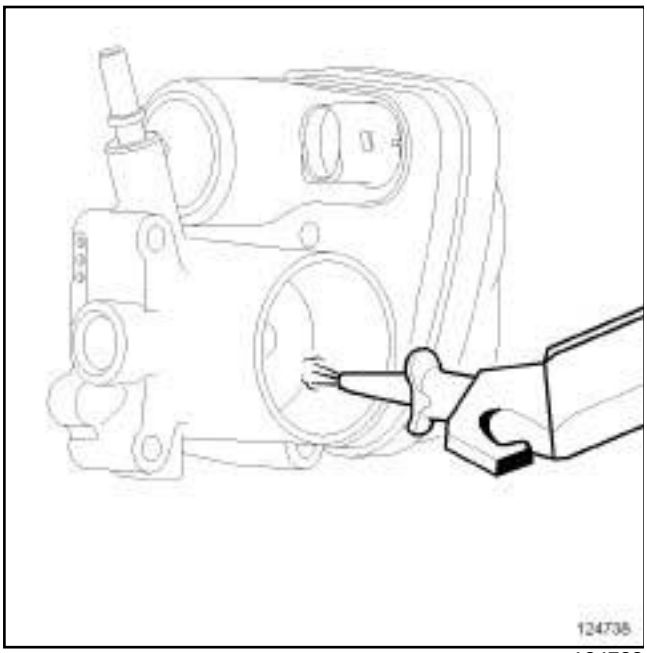
❑ Spray **CARBURETTOR CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) into the air vent until all traces of clogging have disappeared.

D4F or F4R or K4J or K4M or M4R



124737

❑ Remove the residues of **CARBURETTOR CLEANER** and the residual dirt using a **LINT-FREE CLOTH** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



124738

❑ Use a **compressed air nozzle** to blast the throttle valve edges and the air vent.

parts always to be replaced: Throttle valve seal.

Note:

If the throttle valve is dropped or receives any other impact, it will need to be replaced.

III - FINAL OPERATION

❑ Refit the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

D4F, and 740 or 742 or 764

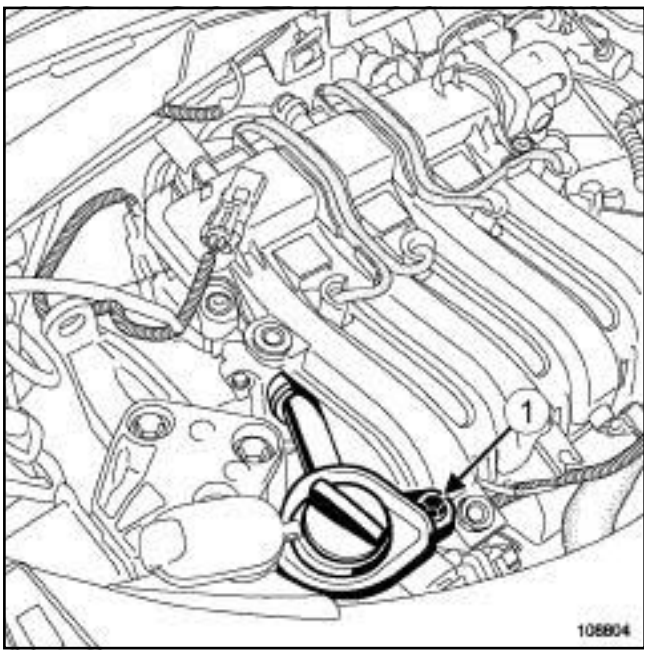
Tightening torques ▽	
intake distributor mounting bolts on the cylinder head	**10 N.m**
intake distributor mounting bolts on the rocker cover	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) .

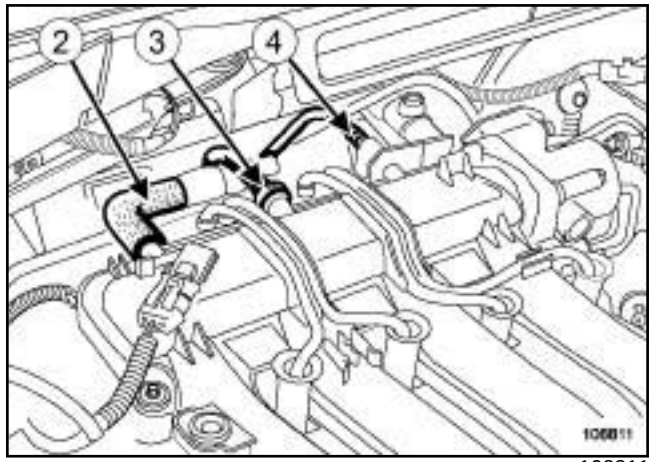
❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .



108804

❑ Remove:

- the oil filler neck mounting bolt (**1**) ,
- the oil filler neck.

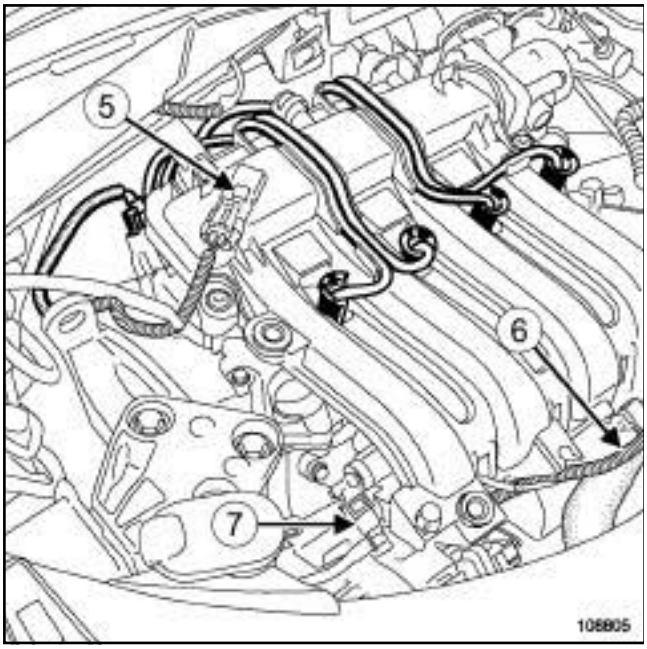


108811

❑ Disconnect:

- the oil vapour rebreathing pipe (**2**) ,
- the brake servo pipe (**3**) ,
- the petrol vapour rebreather pipe (**4**) .

D4F, and 740 or 742 or 764



108805

❑ Disconnect:

- the inlet air vacuum sensor connector (**5**) ,
- the air temperature sensor connector (**6**) ,
- the injector connector,
- the motorised throttle valve connector.

❑ Disconnect the petrol supply pipe from the injector rail (**7**) .

IMPORTANT

During this operation, it is essential to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

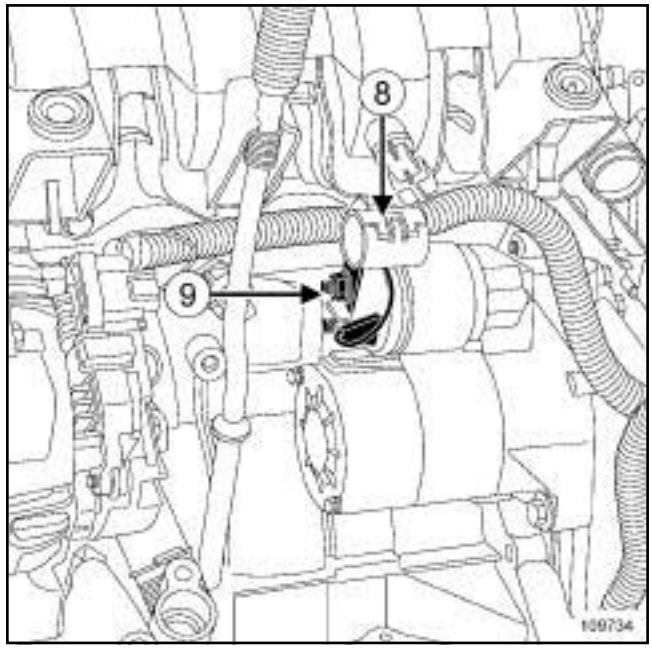
IMPORTANT

Wear gloves during the operation.

❑ Disconnect the spark plug leads.

WARNING

Pull on the connectors and not the leads to disconnect the spark plug leads.



109734

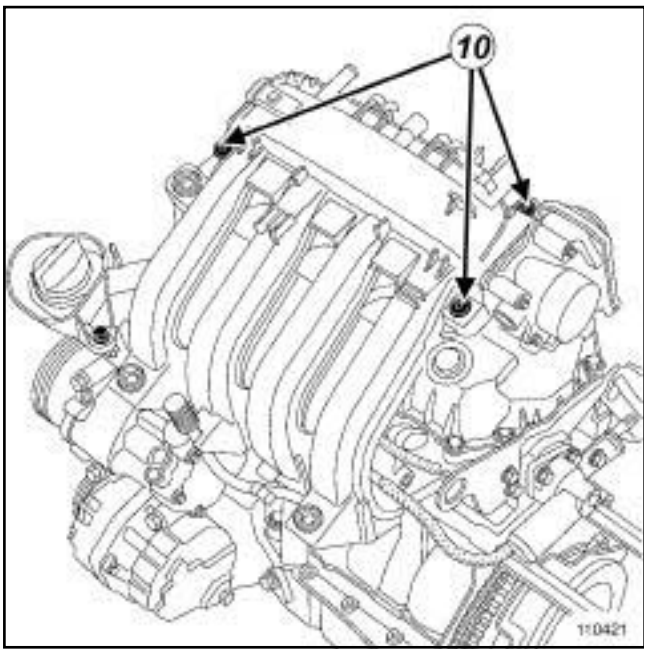
❑ Unclip the following from the inlet manifold:

- the spark plug leads,
- the wiring harness (**8**) ,
- the oil level dipstick.

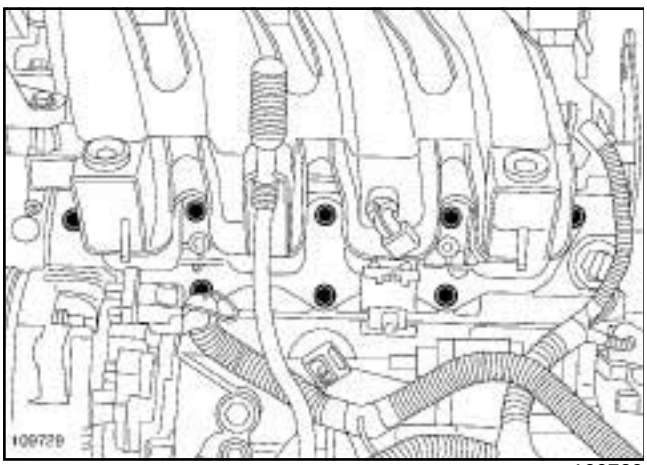
❑ Remove the starter supply terminal (**9**) ,

D4F, and 740 or 742 or 764

II - OPERATION FOR REMOVAL OF PART CONCERNED



110421



109729

❑ Remove:

- the inlet manifold mounting bolts from the rocker cover (**10**) ,
- the inlet manifold mounting bolts on the cylinder head,
- the plenum chamber - motorised throttle valve assembly,
- the inlet manifold gasket.

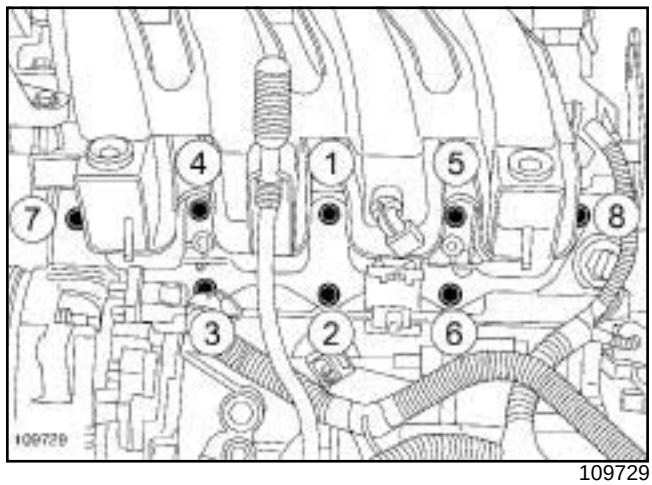
REFITTING

I - REFITTING PREPARATION OPERATION

❑ It is essential to replace the sealing rings.

II - REFITTING STAGE FOR THE PART IN QUESTION

❑ Refitting the plenum chamber gasket



109729

❑ Apply **LOCTITE FRENETANCH** to the intake distributor mounting bolts on the cylinder head.

❑ Pretighten all the **intake distributor mounting bolts (6 N.m).**

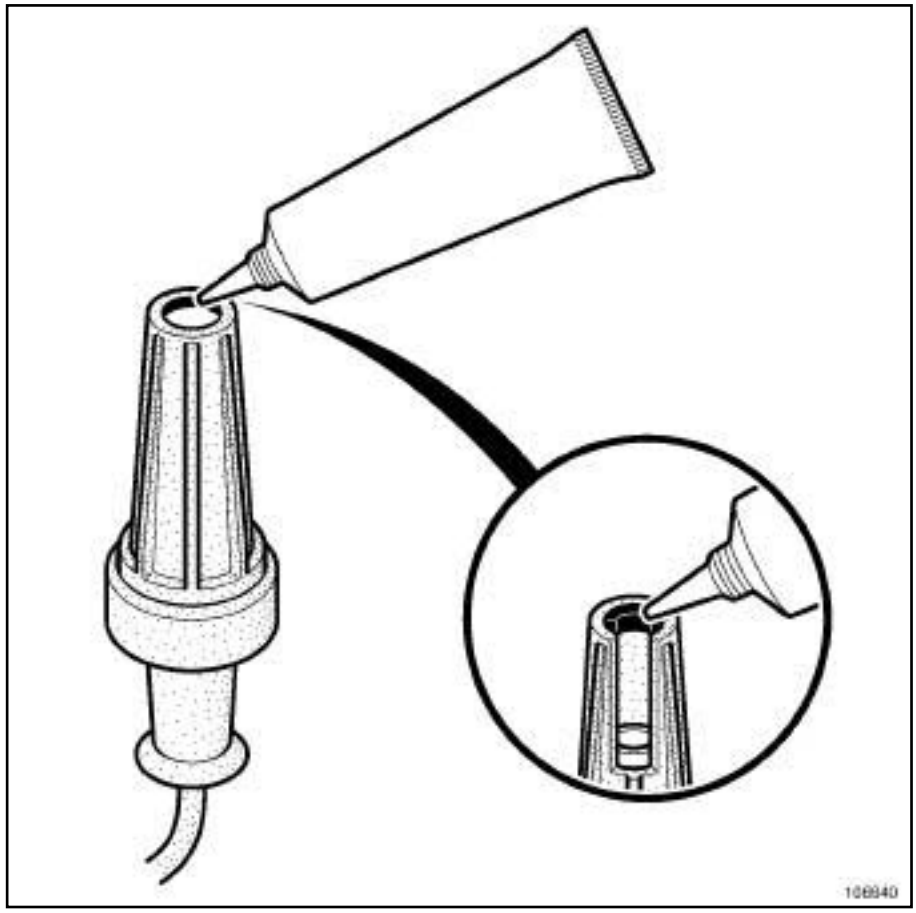
❑ Tighten to torque and in order:

- the **intake distributor mounting bolts on the cylinder head (10 N.m)**,
- the **intake distributor mounting bolts on the rocker cover (10 N.m)**.

III - FINAL OPERATION.

❑ Clip the dipstick onto the plenum chamber

D4F, and 740 or 742 or 764



106640

❑ When refitting the spark plug feed wires a bead of **FLUORINATED GREASE (PART NO. 82 00 168 855)** with a diameter of **2 mm** must be applied to the inner edge of the high-tension caps.

❑ Refit:

- the spark plug leads,
- the wiring harness,
- the starter supply terminal,
- the oil filler neck.

❑ Reconnect:

- the injector rail petrol supply pipe,
- the motorised throttle valve connector,
- the injector connector,
- the air temperature sensor connector,
- the inlet air depression sensor connector,
- the oil vapour rebreathing pipe.
- the brake servo pipe ,
- the petrol vapour rebreather pipe.

❑ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

K4J or K4M

Tightening torques ▽	
bolts of the inlet distributor on the injector holder shim	**10 N.m**
inlet distributor bolts on the oil separator	**12 N.m**

WARNING
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

WARNING
To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

REMOVAL

I - REMOVAL PREPARATION OPERATION

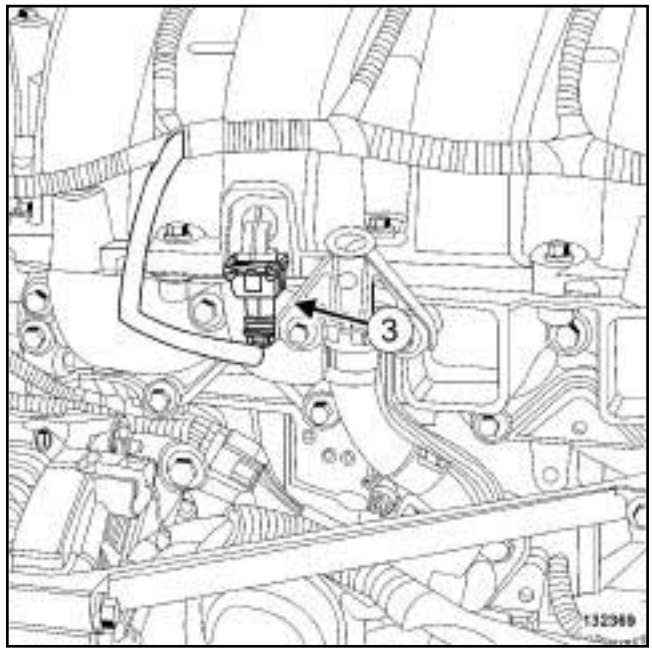
❏ Remove the front engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

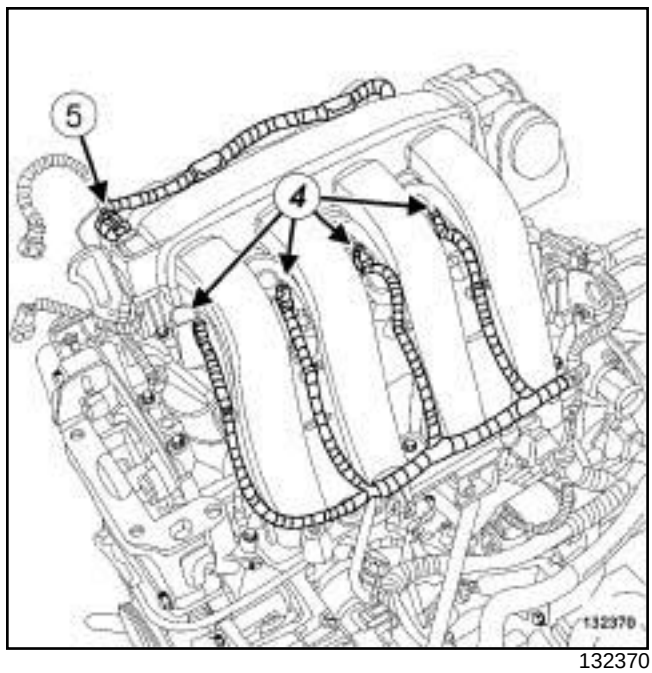
- the air inlet duct clips on the throttle valve side and the air filter unit clips,
- the air inlet duct,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

K4M, and 862



132369

❏ Disconnect the air temperature sensor connector (**3**) .



132370

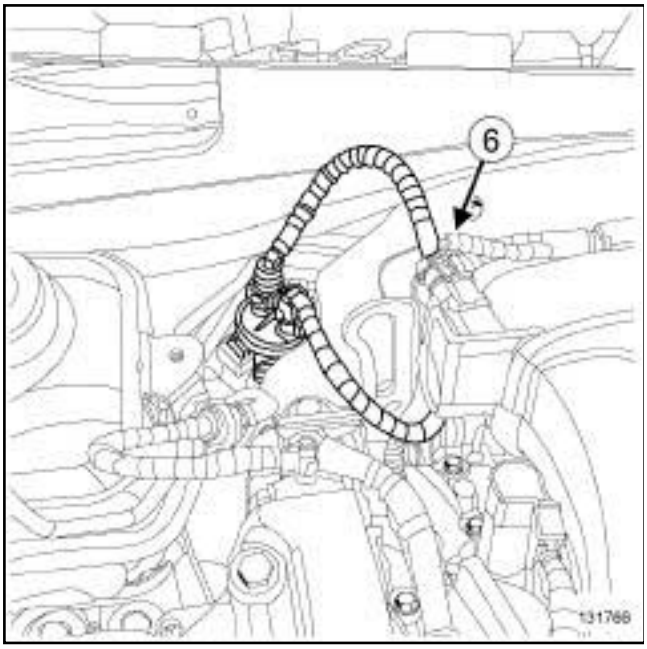
❏ Disconnect:

- the connectors (**4**) from the coils,
- the connector (**5**) of the inlet air pressure sensor.

❏ Unclip the electrical wiring.

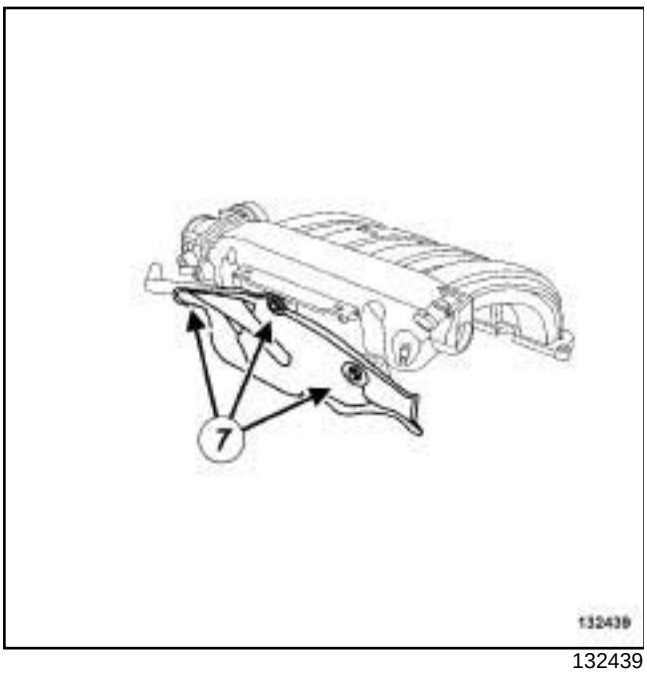
❏ Move the electrical wiringto one side.

K4J or K4M



131766

❏ Disconnect the petrol vapour recirculation pipe (**6**) .



132439

❏

WARNING

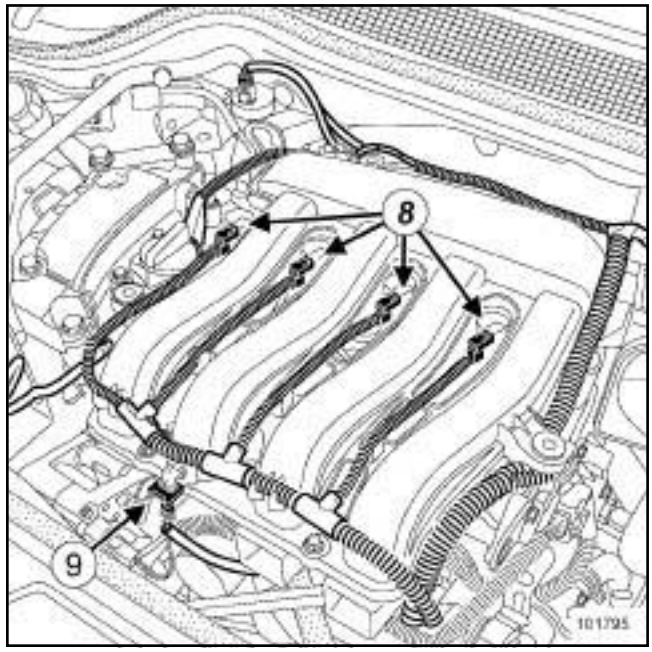
To prevent the surrounding components from overheating, do not damage (tear, pierce, bend, etc.) a heat shield.

Any damaged heat shields must be replaced.

❏ Remove:

- the bolts (**7**) from the heat shield,
- the heat shield.

K4J



101795

❏ Disconnect:

- the connectors (**8**) from the coils,
- the connector (**9**) from the air temperature sensor,
- the inlet air pressure sensor.

❏ Unclip the electrical wiring.

❏ Move the electrical wiringto one side.

❏ Disconnect the fuel supply pipe from the injection rail.

IMPORTANT

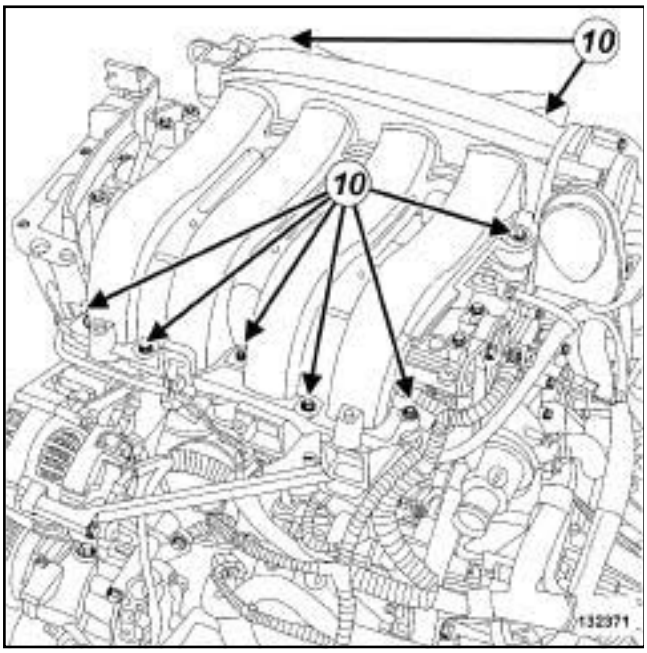
During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

❏ Unclip the fuel vapour recirculation pipe from the inlet distributor.

K4J or K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED



132371

❑ Remove:

- the inlet distributor bolts (**10**) ,
- the inlet distributor,
- the inlet distributor seal.

❑ When replacing the inlet distributor, remove:

- the air temperature sensor,
- the inlet air pressure sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: inlet distributor seal**

❑

WARNING

Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the inlet distributor joint face,
- the joint face of the injector holder shim.

WARNING

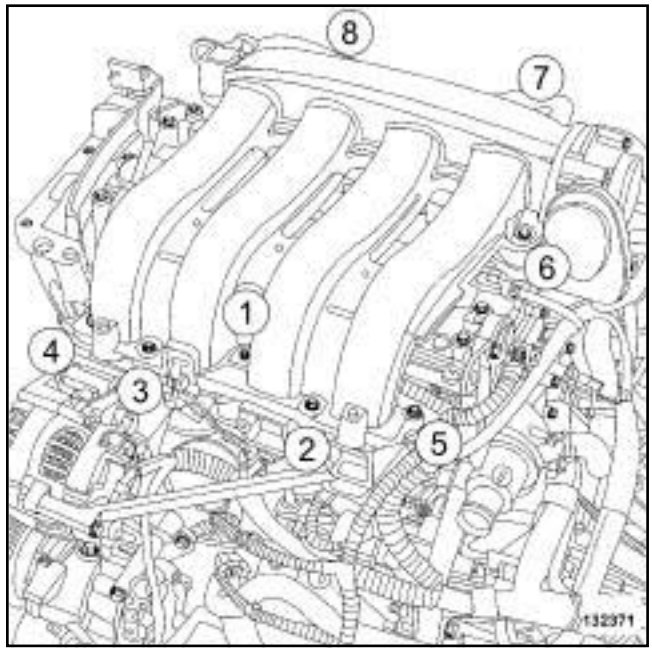
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

❑ When replacing the inlet distributor, refit:

- the air temperature sensor,
- the inlet air pressure sensor.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the inlet distributor, with a new seal.



132371

❑ Tighten in order (**1**) , (**2**) , (**3**) , (**4**) , (**5**) , (**1**) , (**6**) , (**7**) and (**8**) .

❑ Tighten to torque:

- the **bolts of the inlet distributor on the injector holder shim (10 N.m)**,

K4J or K4M

- the **inlet distributor bolts on the oil separator (12 N.m)**.

III - FINAL OPERATION

❏ Clip the fuel vapour recirculation pipe onto the inlet distributor.

❏ Connect the petrol supply pipe to the injector rail.

❏ Clip on the electrical wiring.

❏ Connect:

- the inlet air pressure sensor.
- the air temperature sensor connector,
- the coil connectors.

❏ Refit:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the engine cover.

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

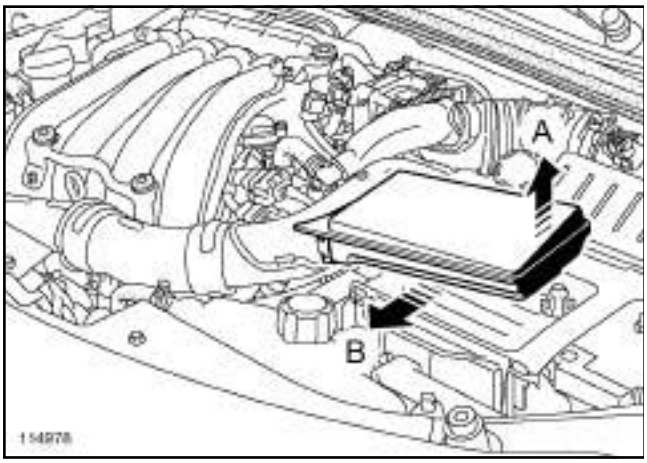
Tightening torques ▽	
inlet distributor mounting bolts	**27 N.m**
upper mounting bolts of the inlet distributor	**20 N.m**
motorised throttle valve mounting bolts	**10 N.m**
air inlet duct clips	**6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the engine cover.

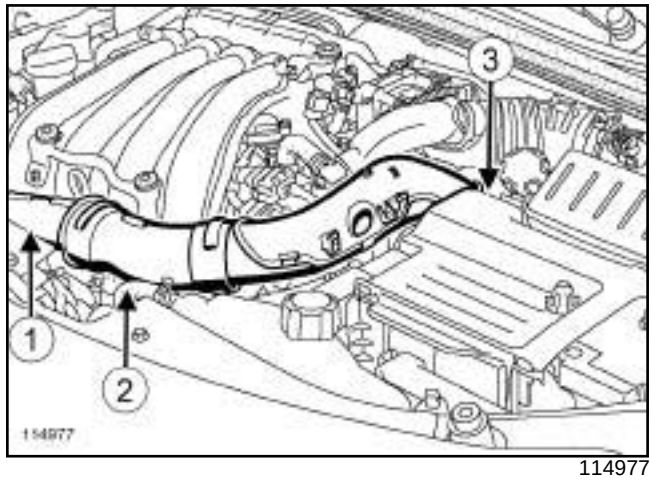
❏ Disconnect the battery (see) (80A, Battery).



114978

❏ Lift the air resonator to remove it from the battery cover (**A**) .

❏ Pull the air resonator towards the front of the vehicle (**B**) to remove it.



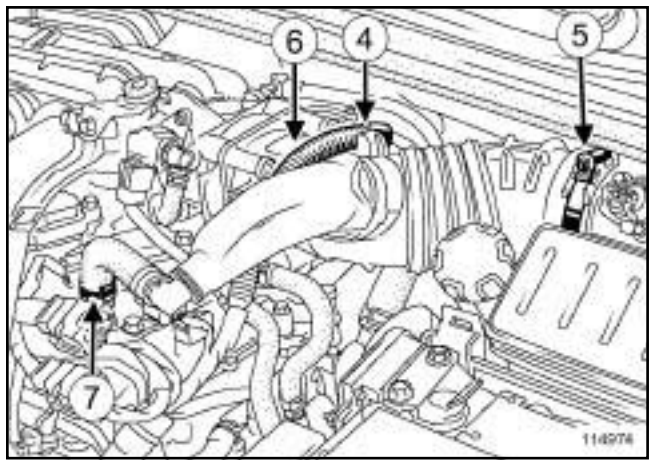
114977

❏ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❏ Remove:

- the air inlet sleeve,
- the dipstick.



114974

❏ Detach the wiring harness from the air inlet duct at (**4**) .

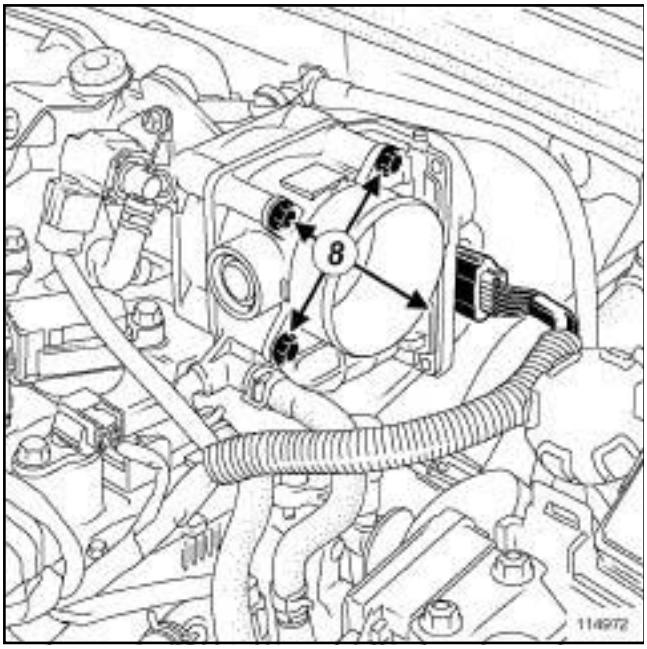
❏ Undo the air duct mounting clips:

- on the air flow sensor (**5**) ,
- on the motorised throttle valve (**6**) .

❏ Disconnect the oil vapour rebreather duct (**7**) from the rocker cover using the **(Mot. 1448)**.

❏ Remove the air inlet duct.

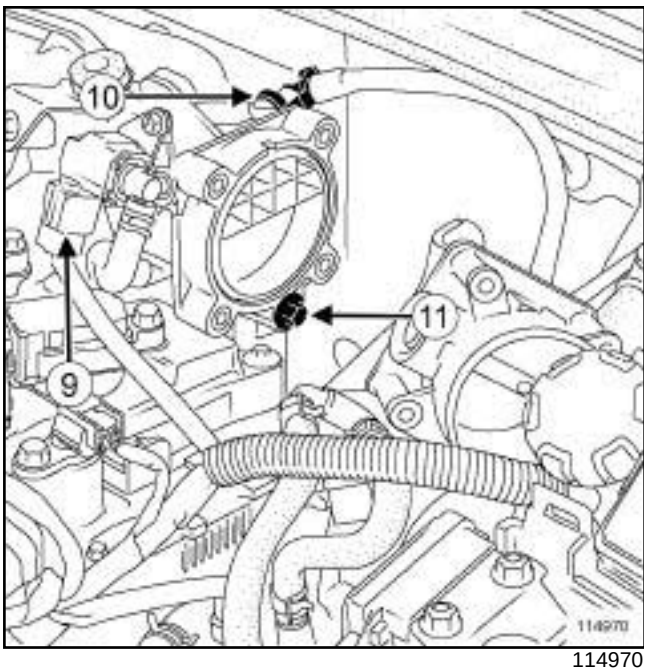
M4R



114972

❏ Remove the motorised throttle valve mounting bolts (**8**) .

❏ Move the motorised throttle valve aside.

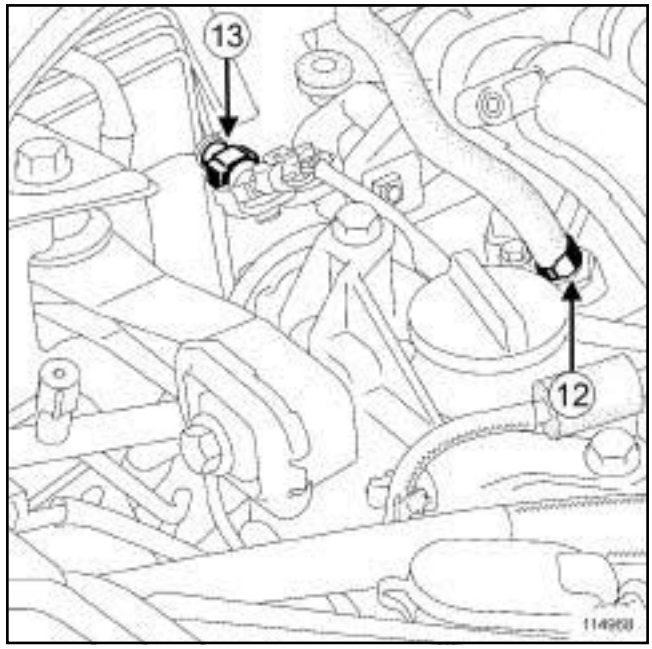


114970

❏ Disconnect:

- the petrol vapour rebreathing solenoid valve connector (**9**) ,
- the brake servo pipe (**10**) from the inlet distributor.

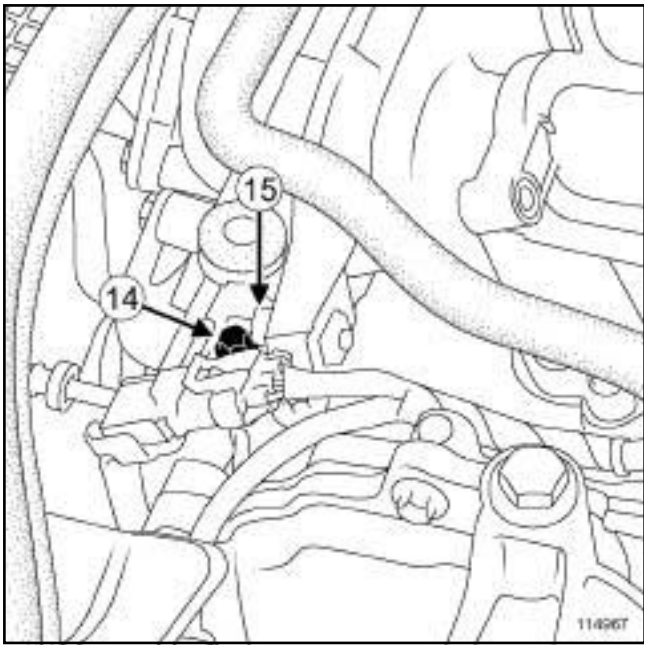
❏ Remove the inlet distributor upper mounting bolt (**11**) .



114968

❏ Disconnect:

- the oil vapour rebreather duct (**12**) from the rocker cover,
- the petrol vapour rebreather pipe (**13**) .

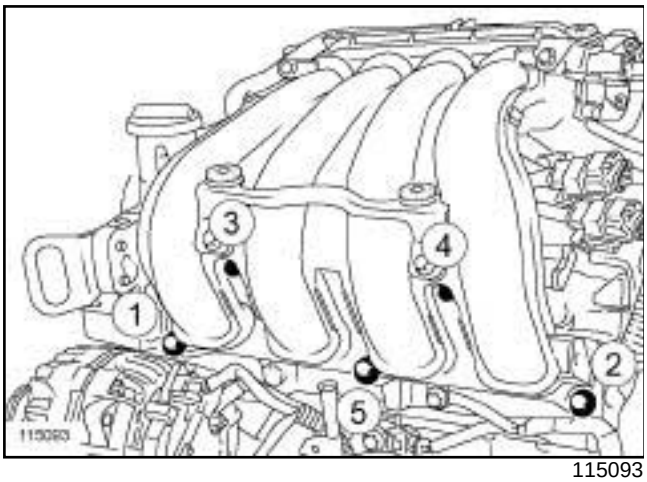


114967

❑ Remove the inlet distributor upper mounting bolt (**14**) .

> Note:
>
> Do not remove the mounting bolt (**15**) from the manifold rear mounting bracket; removing this bolt may lead to destruction of the injector connections when the manifold is removed.

II - OPERATION FOR REMOVAL OF PART CONCERNED



115093

❑ Remove the inlet distributor mounting bolts in order.

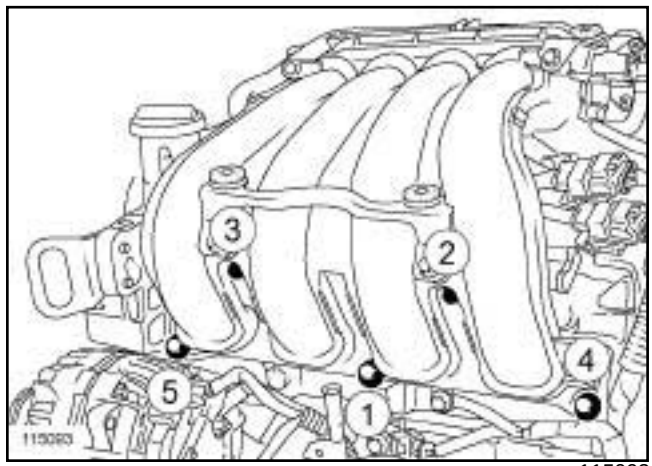
REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the inlet distributor gasket,
- the motorised throttle valve seal.

II - REFITTING OPERATION FOR PART CONCERNED



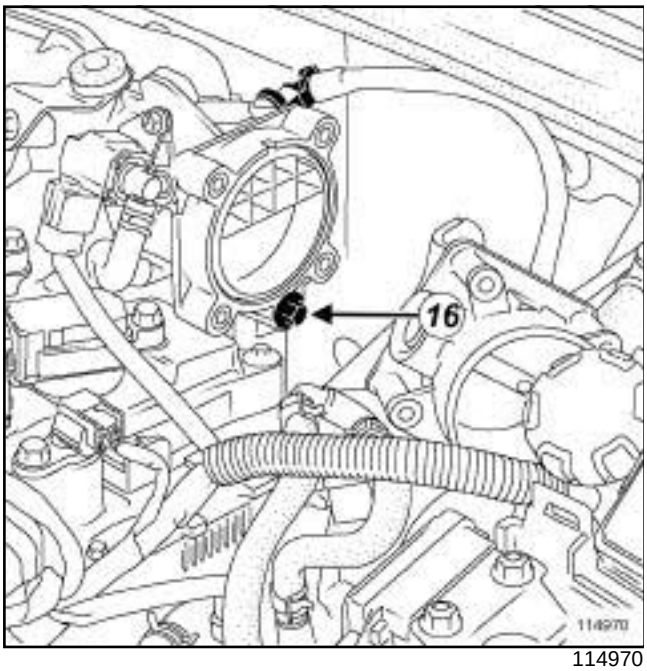
115093

❑ Finger tighten the inlet distributor mounting bolts.

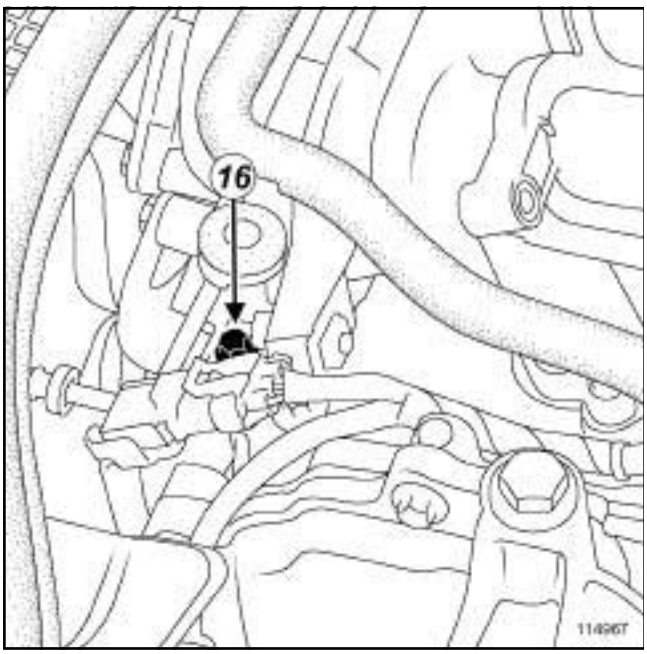
❑ Torque tighten in order the **inlet distributor mounting bolts (27 N.m)**.

M4R

III - FINAL OPERATION



114970



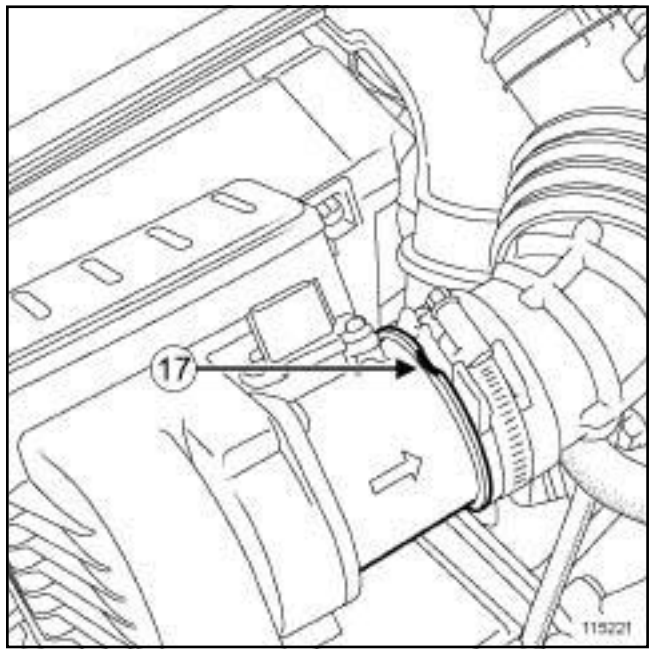
114967

❑ Torque tighten the **upper mounting bolts of the inlet distributor (20 N.m)** at (**16**) .

❑ Connect:

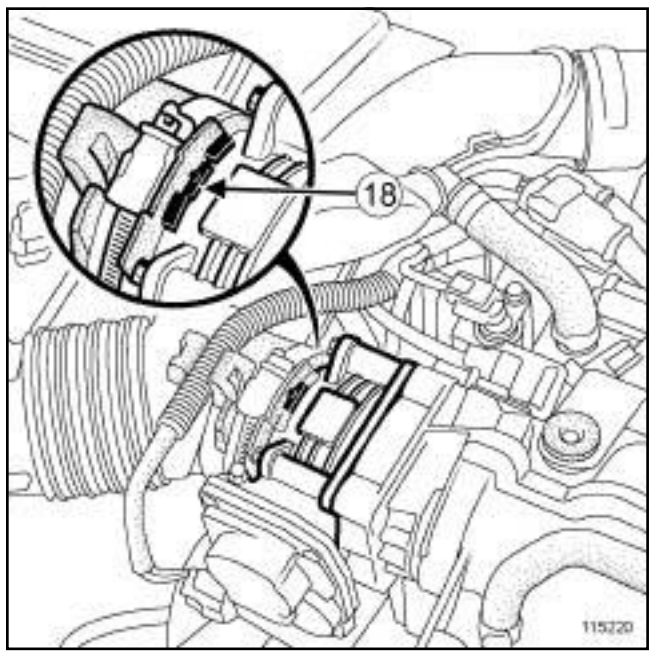
- the oil vapour rebreather duct on the rocker cover using the **(Mot. 1448)**,
- the petrol vapour rebreathing pipe,
- the brake servo pipe on the inlet distributor,
- the petrol vapour rebreathing solenoid valve connector.

❑ Torque tighten the **motorised throttle valve mounting bolts (10 N.m)**.



115221

❑ Fit the air inlet duct on the air flow sensor, paying attention to the fitting mark (**17**) .

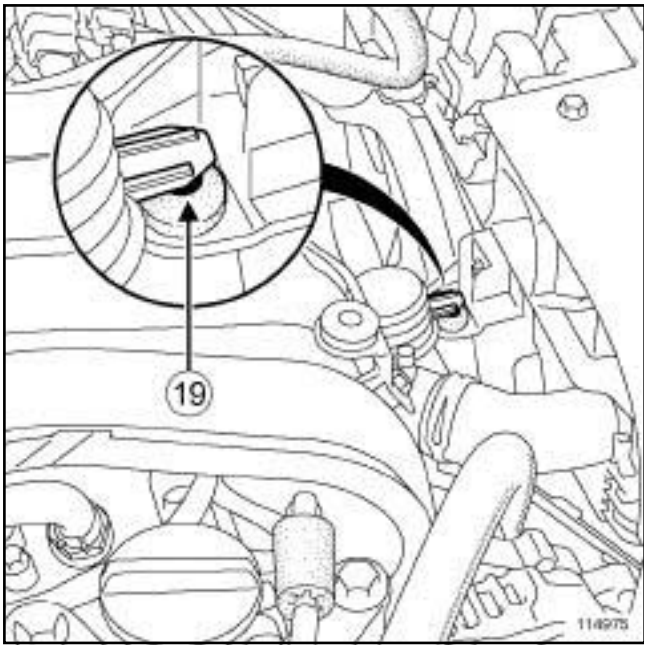


115220

❑ Fit the air inlet duct on the motorised throttle valve, paying attention to the fitting mark (**18**) .

❑ Torque tighten the **air inlet duct clips (6 N.m)**.

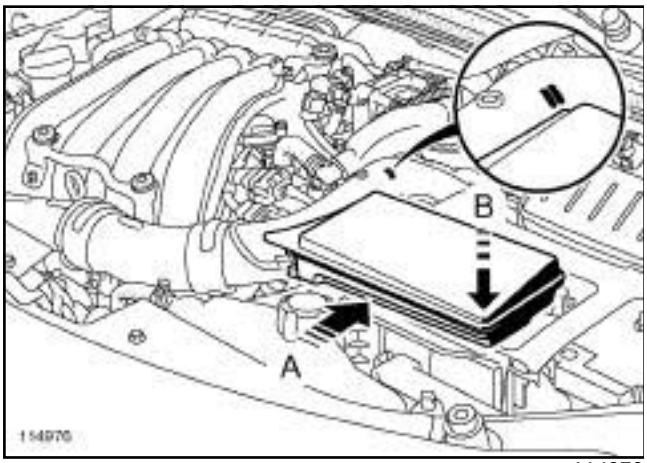
❑ Clip the wiring harness on the air inlet duct.



114975

❏ Before refitting the air intake sleeve, check that the front end panel air resonator upper mounting is correctly clipped at (**19**) .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle (**A**) until the rear face of the air resonator is located between the two marks on the air intake sleeve.

❏ Push the air resonator (**B**) to fit it onto the battery cover.

❏ Refit the dipstick.

❏ Connect the battery (see) (80A, Battery).

❏ Refit the engine cover.

F4R

Equipment required
Diagnostic tool

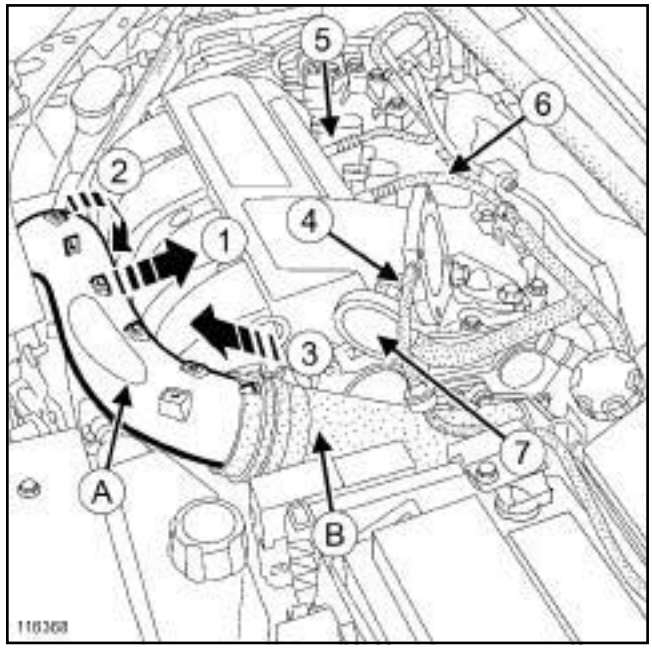
Tightening torques ▽	
inlet manifold mounting bolts	**15 Nm**
inlet manifold retaining bracket mounting bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .



116368

❑ Remove:

- the air inlet pipe (**A**) :
  - • unclip it from the front end panel (**1**) ,
  - • turn it (**2**) and disconnect it (**3**) .
- the air inlet pipe (**B**) :
  - • air resonator side,
  - • air filter unit side.

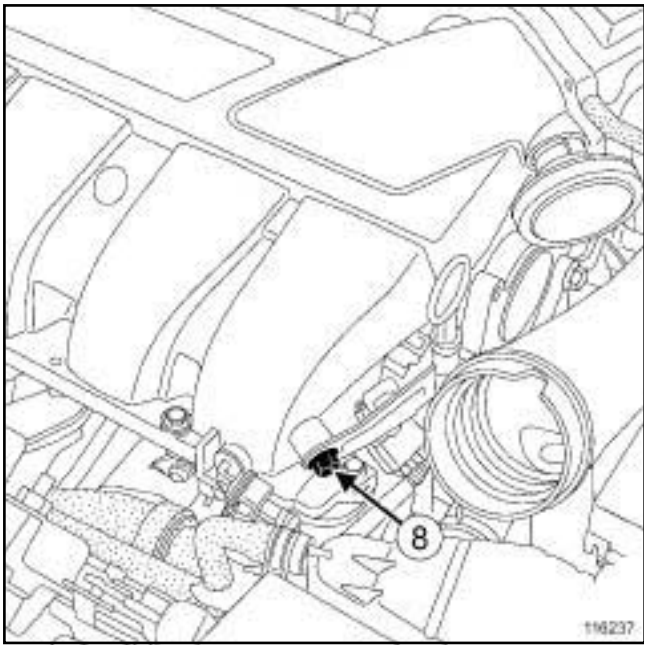
❑ Disconnect:

- the soundproofing unit control solenoid valve pipe (**4**) on the inlet manifold side,
- the fuel vapour rebreather pipe (**5**) on the inlet manifold side,
- the brake servo pipe (**6**) on the inlet manifold side.

❑ Remove:

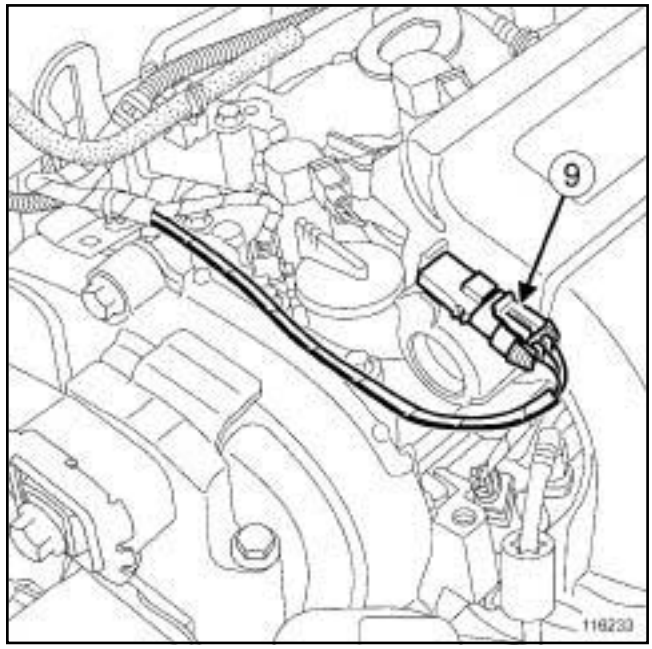
- the oil vapour rebreather unit (**7**) on the inlet manifold, moving the mounting clips slightly to one side,
- the dipstick.

F4R

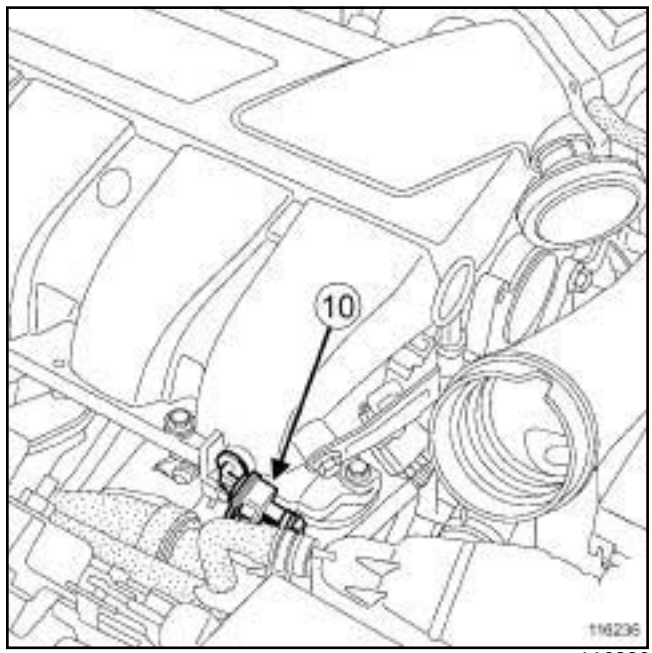


116237

❑ Remove the dipstick tube mounting bolt (**8**) .



116233



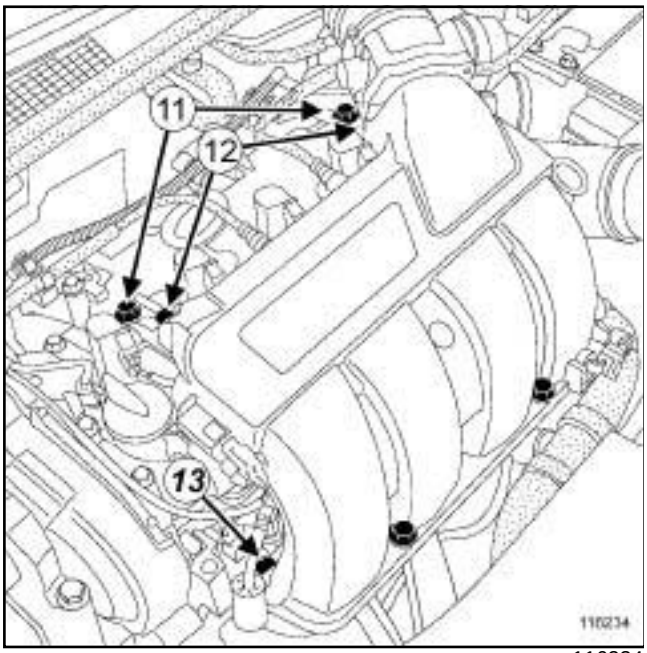
116236

❑ Disconnect:

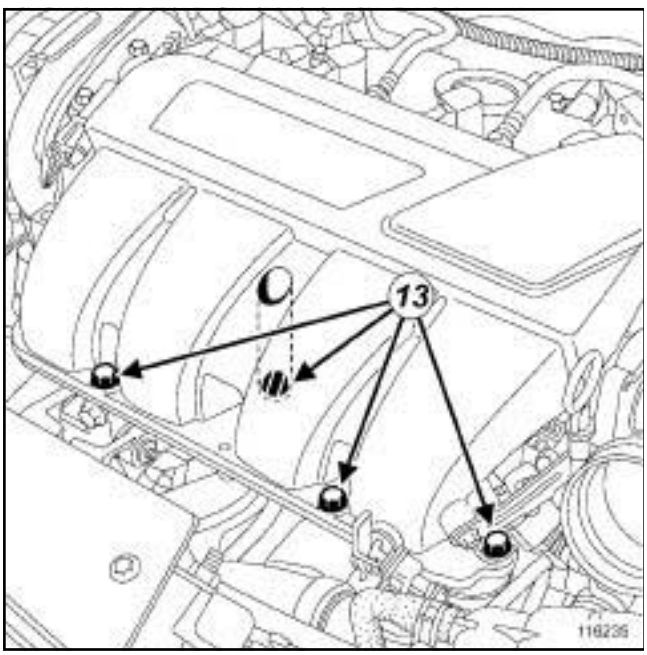
- the inlet air pressure sensor connector (**9**) ,
- the inlet air temperature sensor connector (**10**) .

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116234



116235

❏ Unscrew by several turns the inlet manifold retaining bracket mounting bolts (**11**) on the oil decanter.

❏ Remove:

- the inlet manifold retaining bracket mounting bolts (**12**) ,
- the inlet manifold mounting bolts (**13**) ,
- the intake distributor.

When replacing the inlet manifold

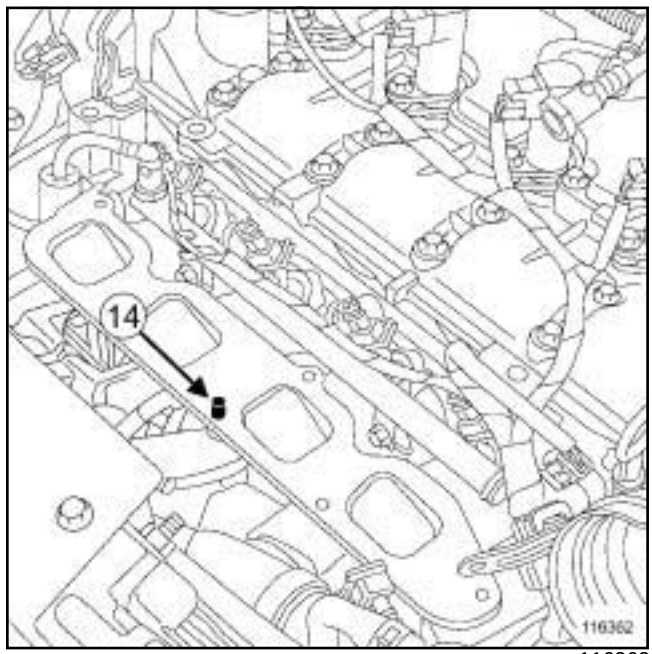
❏ Remove:

- the inlet air pressure sensor.
- the inlet air temperature sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Carefully clean the joint faces.



116362

❏ Always check that the centring device (**14**) is fitted onto the injector holder plate or the inlet manifold. It can be ordered from the Parts Department if not.

> Note:
>
> If there is no centring device fitted this can cause the throttle valve to wear prematurely.

❏ Always replace all of the seals with new ones.

When replacing the inlet manifold

❏ Refit:

- the inlet air temperature sensor,
- the new inlet air pressure sensor.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the inlet manifold fitted with a new seal,

- the inlet manifold mounting bolts,
- the inlet manifold retaining bracket mounting bolts.

❏ Torque tighten and in order:

- the **inlet manifold mounting bolts (15 Nm)**,
- the **inlet manifold retaining bracket mounting bolts (10 Nm)**.

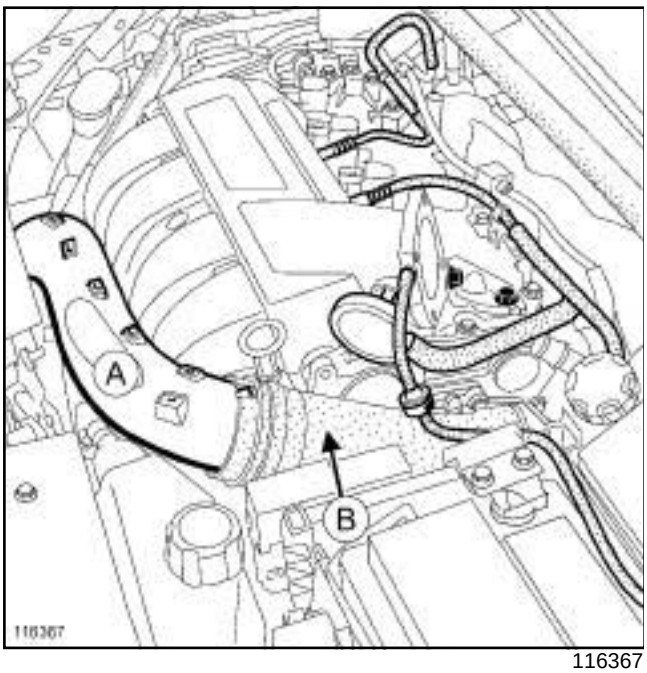
❏ Refit:

- the dipstick guide tube mounting bolt,
- the dipstick,
- the oil vapour rebreather unit on the inlet manifold fitted with a new seal.

❏ Connect:

- the soundproofing unit control solenoid valve pipe on the inlet manifold side,
- the inlet air temperature sensor connector.
- the air inlet pressure sensor connector,
- the fuel vapour rebreathing pipe onto the inlet manifold,
- the brake servo pipe on the inlet manifold side.

III - FINAL OPERATION.



116367

❏ Refit:

- the air inlet pipe (**B**) ,
- the air inlet pipe (**A**) .

❏ Refit the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

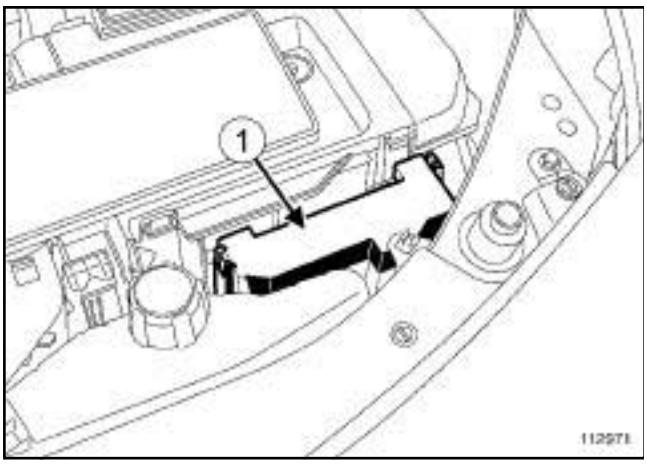
Tightening torques ▽	
throttle valve bolts	**10 N.m**
injector rail - injector bolts	**5 N.m**
inlet distributor bolts (initial torque)	**4 N.m**
inlet distributor bolts	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

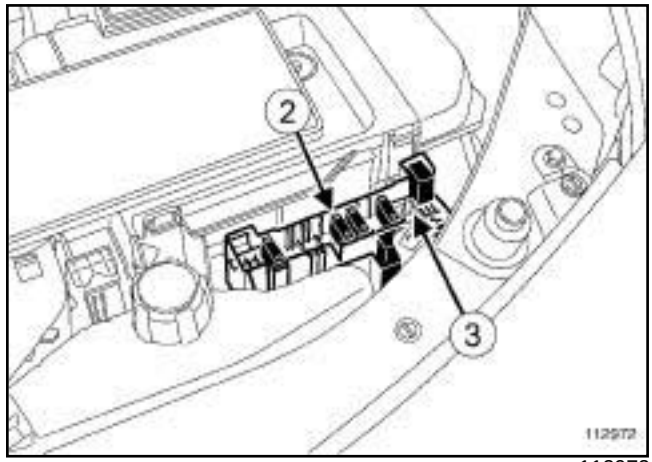
❏ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front engine cover.



112971

❏ Remove the cover (**1**) from the power feed fuse board mounting.



112972

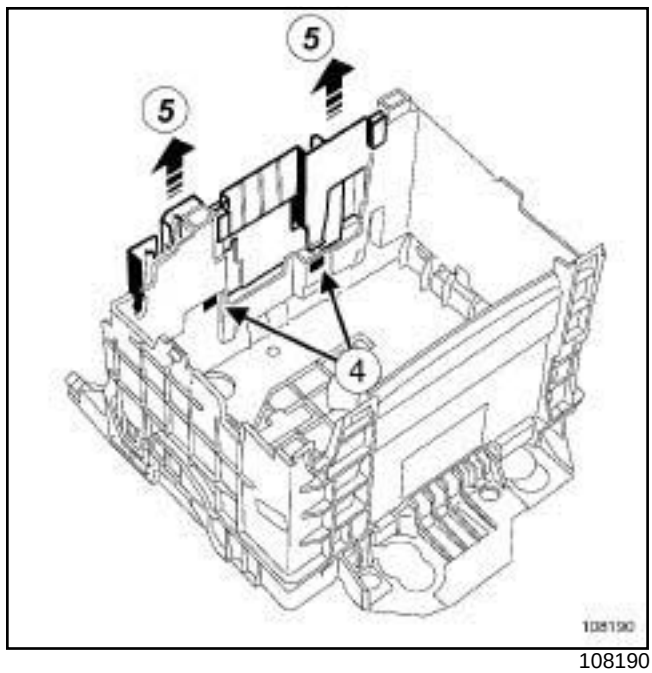
❏ Remove the green fuse (**2**) **(30 A)**.

❏ Detach the fuse connector from the fuse mounting.

❏ Remove the power wiring nut on the fuse mounting (**3**) .

❏ Move the power wiring away from the fuse mounting.

❏ Detach the fuse board.

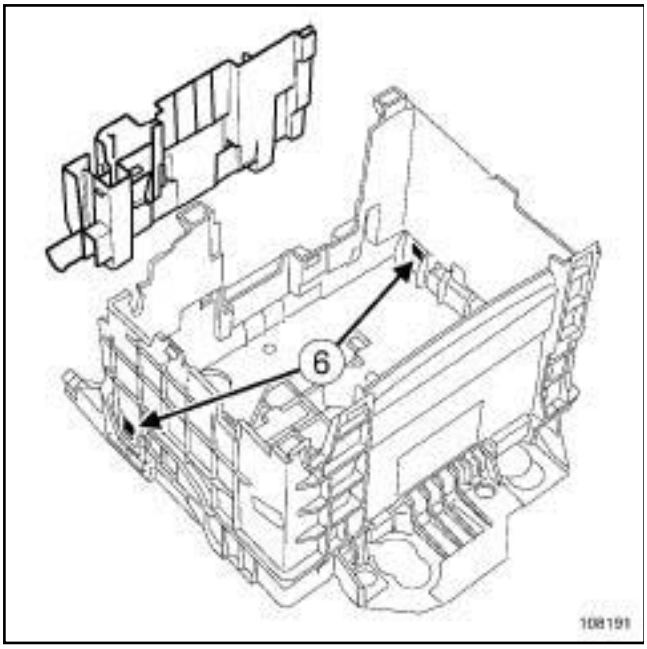


108190

❏ Unclip the power feed fuse board support at (**4**) .

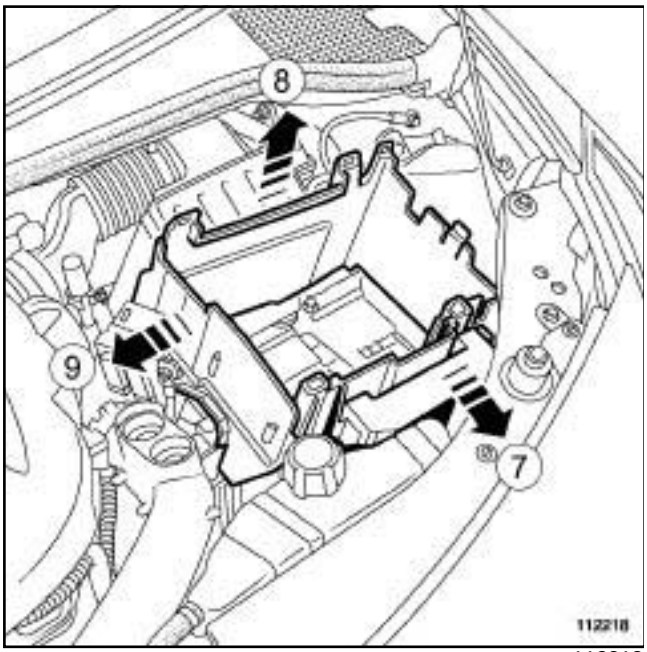
❏ Move aside the power feed fuse board support at (**5**) .

D4F, and 784 or 786



108191

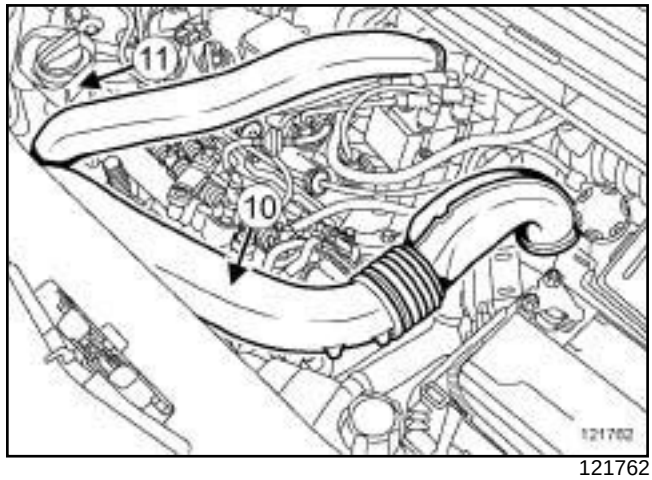
❏ Unclip the thermal protection shield at (**6**) .



112218

❏ Hold the power feed fuse board mounting aside at (**7**) .

❏ Remove the thermal protection tray at (**8**) and (**9**) .

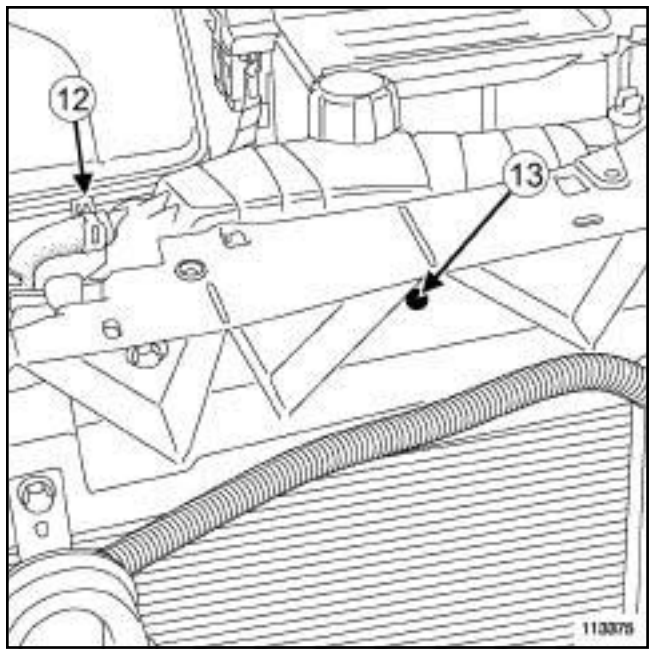


121762

❏ Disconnect the air inlet pipe (**10**) from the air filter box.

❏ Remove:

- the bolt (**11**) from the engine oil filler neck,
- the engine oil filler neck,
- the dipstick,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



113375

❏ Fit a hose clamp **(Ms. 583)** on the hose (**12**) .

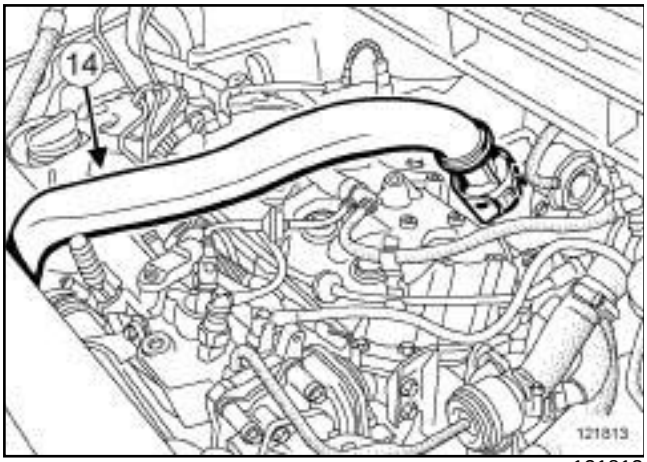
❏ Separate the clip on the hose using the tool **(Mot. 1448)**.

❏ Disconnect the hose.

❏ Remove clip (**13**) .

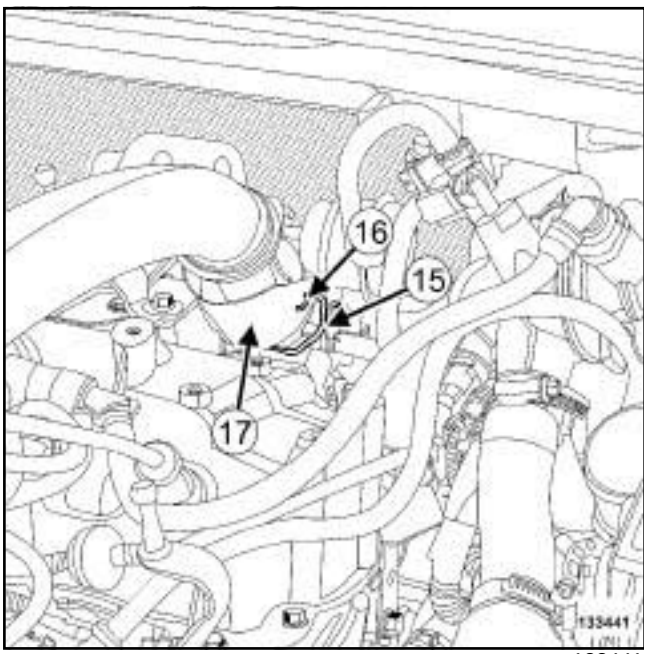
❏ Remove the expansion bottle.

D4F, and 784 or 786



121813

❏ Remove the bolt (**14**) from the turbocharger air outlet pipe on the inlet distributor.



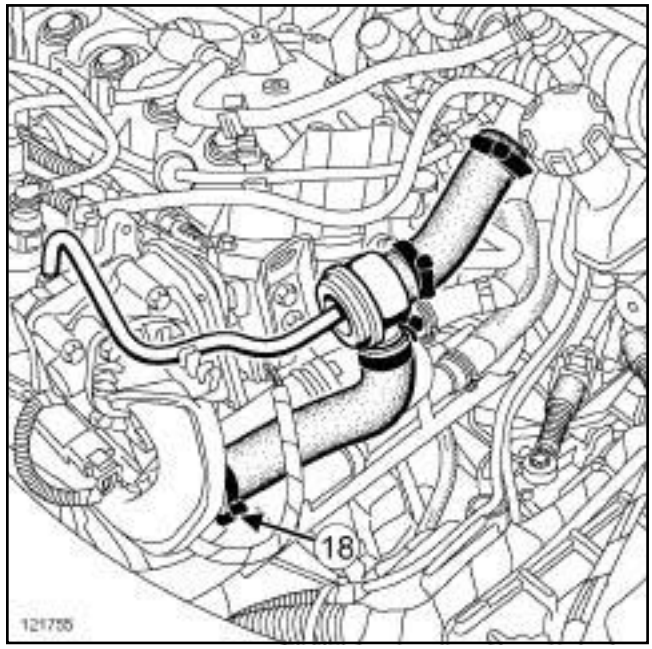
133441

❏ Separate the clip (**15**) on the turbocharger air outlet pipe.

Note:

If the clip (**16**) is removed from the flexible heat shield (**17**) , the latter must be replaced.

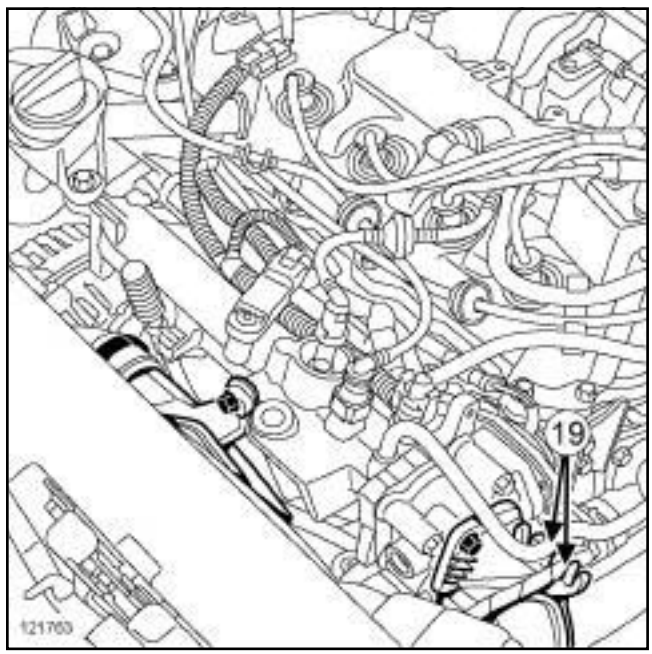
❏ Move aside the turbocharger air outlet pipe.



121755

❏ Undo the compressor discharge valve air pipe clip (**18**) .

❏ Disconnect the compressor discharge valve air pipe.



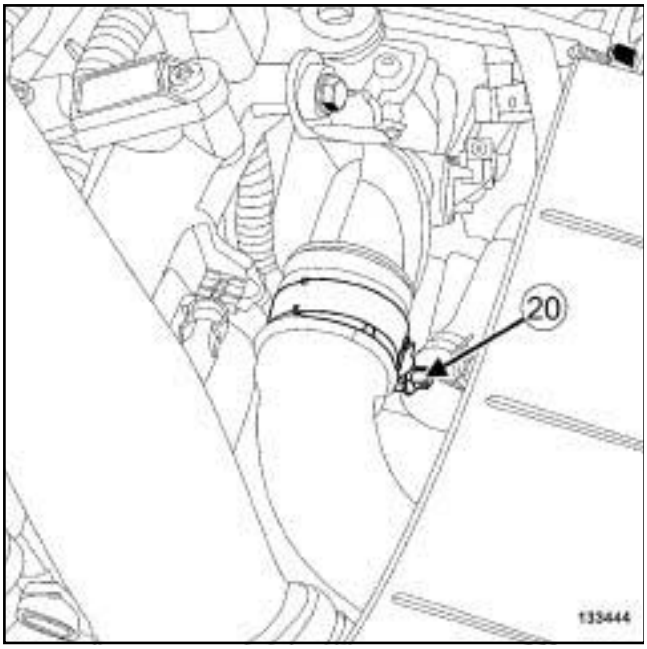
121763

❏ Detach at (**19**) :

- the vacuum pipe,
- the throttle valve electrical wiring.

❏ Disconnect the throttle valve connector.

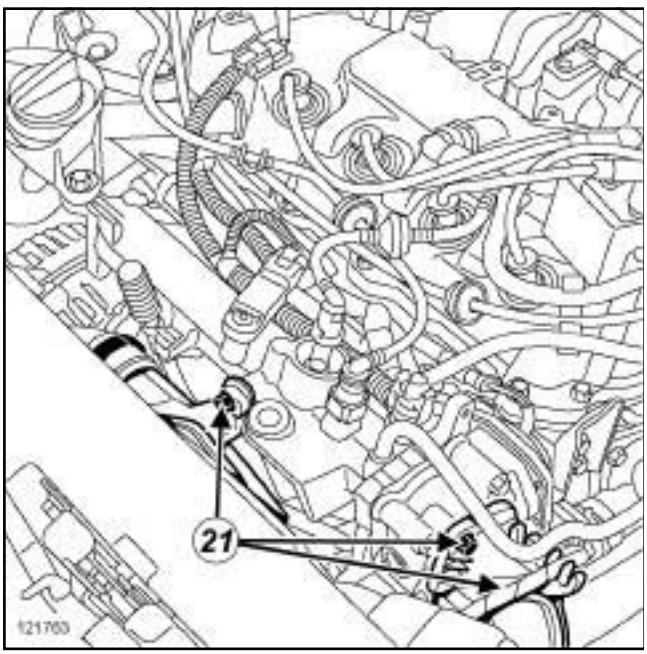
D4F, and 784 or 786



133444

❏ Loosen the clip (**20**) on the intercooler intermediate pipe.

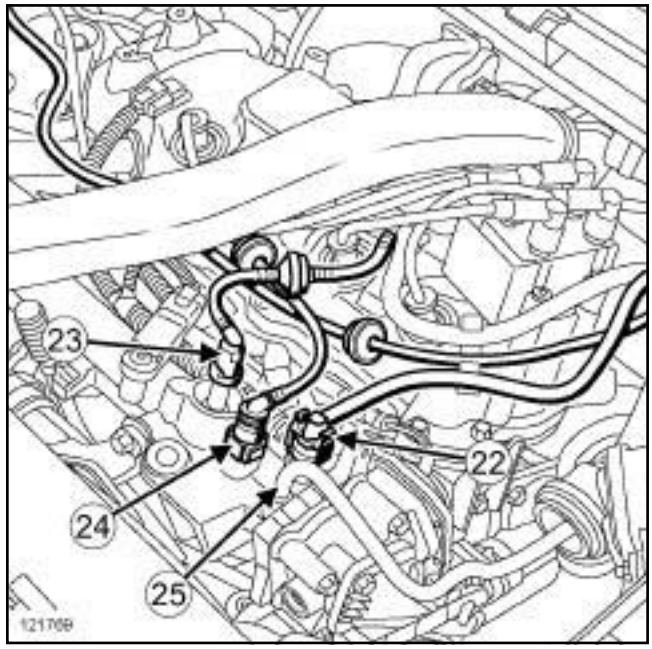
❏ Disconnect the intercooler intermediate pipe.



121763

❏ Remove:

- the bolts (**21**) of the intermediate pipe at the inlet of the inlet distributor,
- the intermediate pipe at the intercooler outlet.



121769

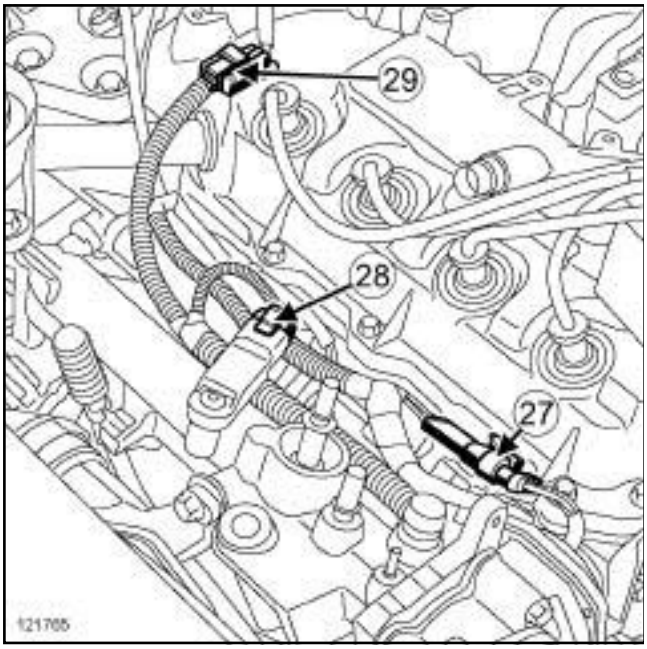
❏ Disconnect:

- the brake servo non-return valve (**22**) ,
- the oil vapour rebreathing pipe (**23**) ,
- the petrol vapour rebreathing pipe (**24**) ,
- the compressor discharge valve vacuum pipe (**25**) .

133356

❏ Disconnect the connector (**26**) from the fuel heater (if equipped).

D4F, and 784 or 786



121765

❑ Disconnect:

- the injector rail connector (**27**) ,
- the pressure sensor connector (**28**) ,
- the catalytic pre-converter upstream oxygen sensor connector (**29**) ,
- the petrol vapour recirculation solenoid valve connector.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT

Wear goggles with side protectors for this operation.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

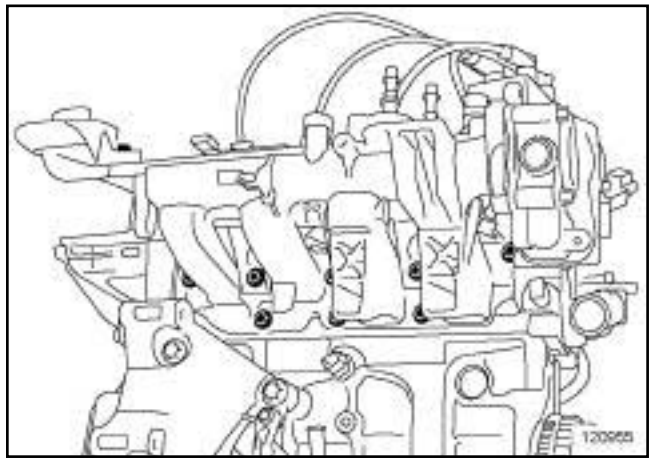
❑ Disconnect the fuel inlet pipe on the injector rail.

❑ Fit blanking plugs.

❑ Unclip the electrical wiring.

❑ Move the electrical wiringto one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



120955

❑ Remove:

- the inlet distributor bolts,
- the inlet distributor,
- the inlet distributor seal.

When replacing the inlet distributor

❑ Remove:

- the « injection rail - injector » bolts,
- the « injection rail - injector » by pulling it gently,
- the throttle valve bolts,
- the throttle valve,
- the pressure sensor,
- the electric heater (if fitted).

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: inlet distributor seal**.

❑ Use a **GREY ABRASIVE PAD** (see) (04B, Consumables - Products) to clean the bearing faces on:

- the inlet distributor,
- the cylinder head.

D4F, and 784 or 786

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) and clean cloths to degrease the mating faces on:

- the inlet distributor,
- the cylinder head.

❑ Lubricate the injector seals with **SILICONE FREE LUBRICANT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

When replacing the inlet distributor

❑ **parts always to be replaced: injector seal**.

❑ **parts always to be replaced: Throttle valve seal**.

❑ Always replace the heater seal.

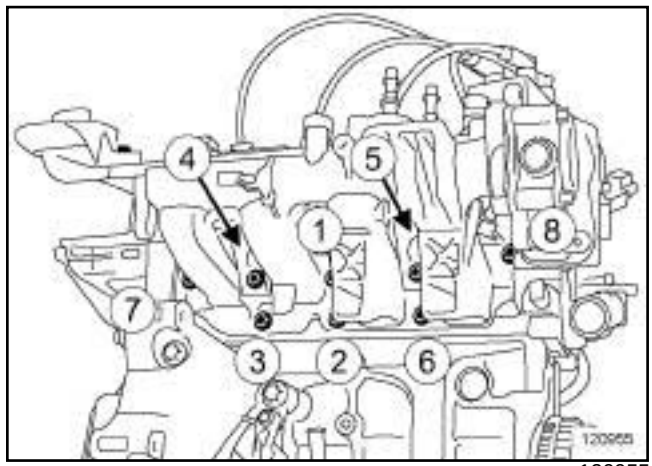
❑ Refit:

- the throttle valve,
- the throttle valve bolts,
- the « injector rail - injectors » carefully,
- the « injection rail - injector » bolts.

❑ Tighten to torque:

- the **throttle valve bolts (10 N.m)**,
- the **injector rail - injector bolts (5 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED



120955

❑ Apply a drop of **FRENETANCHE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the inlet distributor bolts.

❑ Refit:

- the inlet distributor fitted with a new seal,
- the inlet distributor bolts.

❑ Pretighten to torque and in order the **inlet distributor bolts (initial torque) (4 N.m)**.

❑ Tighten to torque and in order the **inlet distributor bolts (12 N.m)**.

III - FINAL OPERATION

❑ Clip on the electric wiring.

❑ Remove the blanking plugs.

❑ Connect:

- the fuel supply pipe on the injector rail,
- the petrol vapour recirculation solenoid valve connector.
- the catalytic pre-converter upstream oxygen sensor connector,
- the pressure sensor connector,
- the injector rail connector,
- the fuel heater connector,
- the compressor discharge valve vacuum pipe,
- the petrol vapour rebreathing pipe,
- the oil vapour rebreathing pipe,
- the brake servo non-return valve.

D4F, and 784 or 786

❏ Refit:

- the intermediate pipe at the inlet of the inlet distributor,
- the bolts for the intermediate pipe at the inlet of the inlet distributor.

❏ Connect the intermediate pipe at the intercooler outlet.

❏ Tighten the clip of the intermediate pipe at the intercooler outlet.

❏ Connect the throttle valve connector.

❏ Clip:

- the vacuum pipe,
- the throttle valve electrical wiring.

❏ Connect the compressor discharge valve air pipe.

❏ Tighten the compressor discharge valve air pipe clip.

❏ Connect:

- the air temperature sensor connector,
- the air pressure sensor connector.

❏ Refit the turbocharger air outlet pipe.

❏ Clip the turbocharger air outlet pipe onto the turbocharger.

❏ Refit:

- the turbocharger air outlet pipe bolt on the inlet distributor,
- the expansion bottle,
- the clip.

❏ Connect the hose.

❏ Refit the clip using the **(Mot. 1448)**.

❏ Remove the hose clamps.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the dipstick,
- the engine oil filler neck,
- the engine oil filler neck bolt.

❏ Connect the air inlet pipe to the air filter box.

❏ Refit the thermal protection shield.

❏ Clip on the thermal protection shield.

❏ Refit the power feed fuse board mounting.

❏ Clip on the power feed fuse board support.

❏ Refit the power wiring nut on the fuse mounting.

❏ Attach the fuse connector to the fuse mounting.

❏ Refit:

- the green fuse **(30A)**,
- the power feed fuse board mounting,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Refit the engine cover.

K4J or K4M

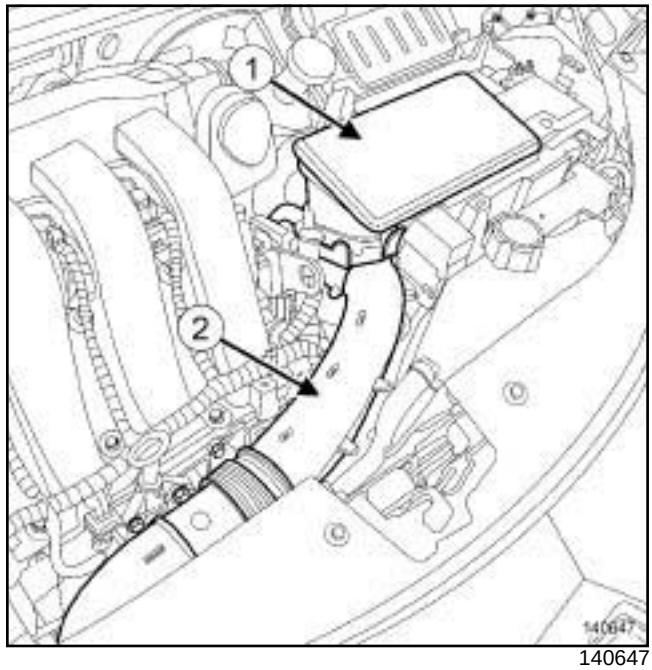
Tightening torques ▽	
bolts 1 and 2 on the injector holder shim	**30 N.m**
bolts 3 to 10 on the injector holder shim	**25 N.m**
upper timing cover bolt	**46 N.m**
right-hand pendulum suspension bolt	**62 N.m**

REMOVAL

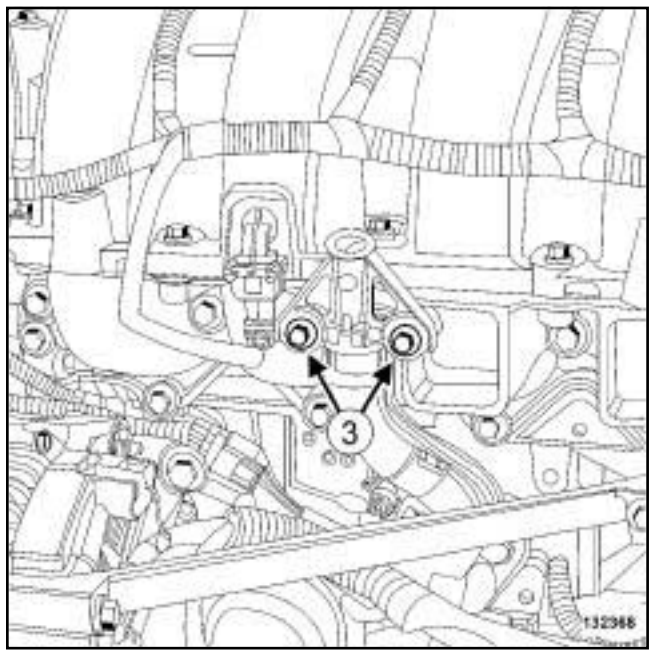
I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K4M, and 862



140647



132368

❑ Remove:

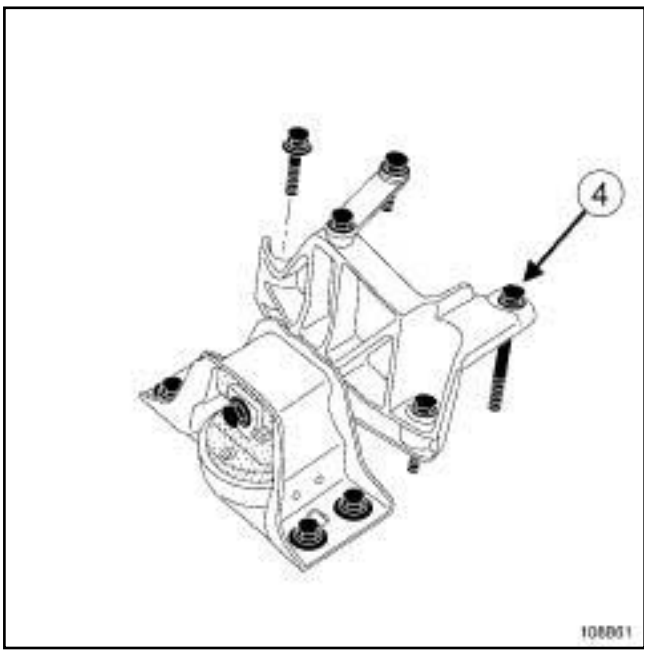
- the air resonator (**1**) .
- the air filter unit air inlet pipe (**2**) ,
- the dipstick,
- the dipstick guide bolts (**3**) .

❑ Move aside the dipstick guide.

K4J or K4M

❑ Remove:

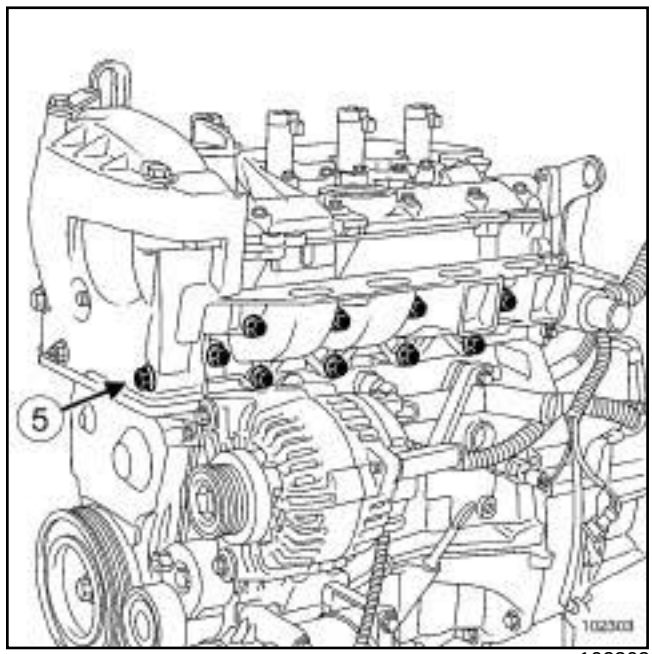
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the injector rail (see **13A**, **Fuel supply**, **Injector rail - Injectors: Removal - Refitting**, page **13A-11**) .



108861

❑ Remove the bolt (**4**) from the right-hand suspended engine mounting.

II - OPERATION FOR REMOVAL OF PART CONCERNED



102303

❑ Remove:

- the bolt (**5**) from the upper timing cover,
- the injector holder shim bolts,
- the injector holder shim,
- the injector holder shim seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Inlet shim seal**.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the gasket face of the injector holder shim, in case of reuse.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

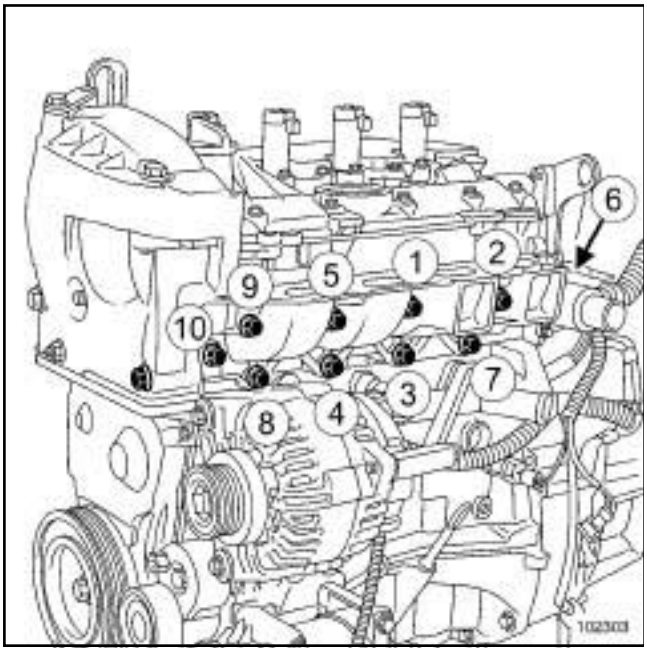
WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

K4J or K4M

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new seal on the injector holder shim,
- the injector holder shim.



102303

❑ Fit all the bolts.

❑ Place the injector holder shim against:

- the timing upper cover by manually bringing the bolt closer,
- the right-hand suspended engine mounting by tightening the bolt by hand.

❑ Tighten to torque and in order:

- **bolts 1 and 2 on the injector holder shim (30 N.m)**,
- **bolts 3 to 10 on the injector holder shim (25 N.m)**.

III - FINAL OPERATION

❑ Torque tighten:

- the **upper timing cover bolt (46 N.m)**,
- the **right-hand pendulum suspension bolt (62 N.m)**.

❑ Refit:

- the injector rail (see **13A**, **Fuel supply**, **Injector rail - Injectors: Removal - Refitting**, page **13A-11**) ,
- the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

K4M, and 862

❑ Refit:

- the dipstick guide bolts,
- the dipstick,
- the air filter unit air inlet pipe,
- the air resonator.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

F4R

Equipment required
Diagnostic tool

Tightening torques ▽	
injector holder plate mounting bolts	**21 Nm**
stay mounting bolt between the alternator and the injector holder plate	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the motorised throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

❑

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

IMPORTANT

This procedure must be carried out with the ignition off.

IMPORTANT

Wear gloves during this operation.

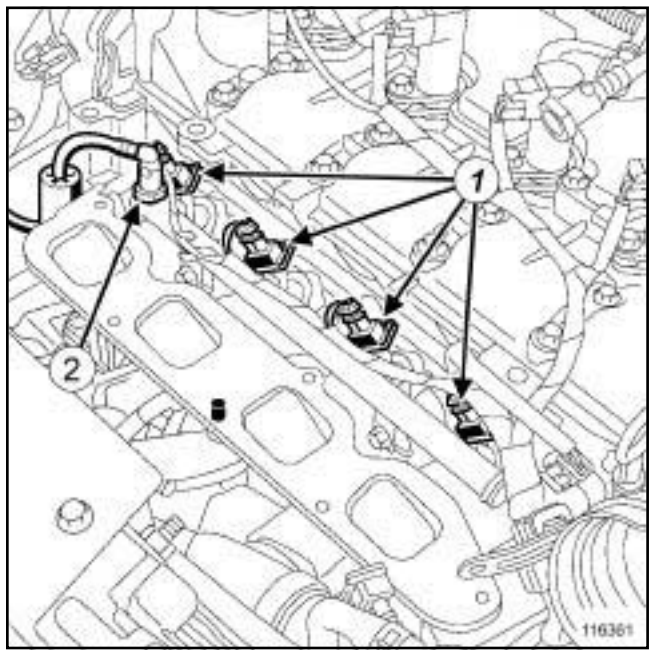
IMPORTANT

Beware of fuel outflow and splashes on the sensitive areas of the vehicle.

1 - When replacing the injector holder plate

❑ Remove the injector rail fitted with its injectors (see **13A**, **Fuel supply**, **Injector rail - Injectors: Removal - Refitting**, page **13A-11**) .

2 - removing a single injector holder plate



116361

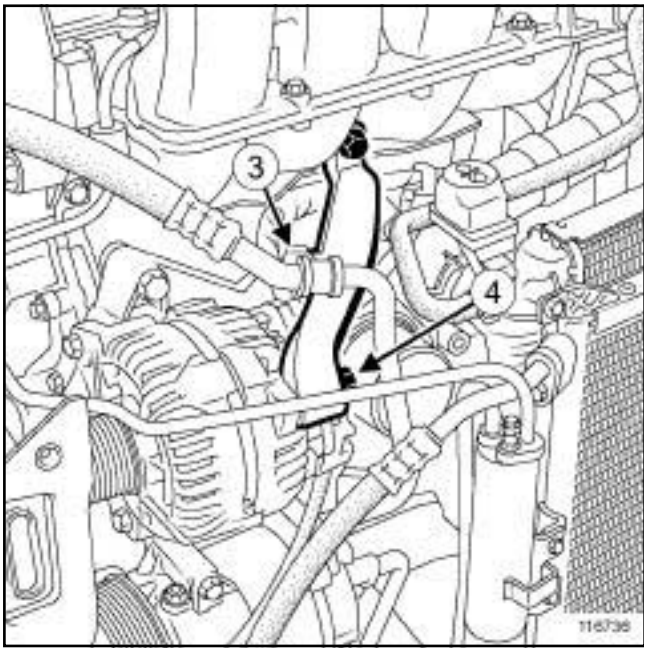
❑ Disconnect:

- the injector connectors (**1**) ,
- the fuel inlet union (**2**) on the injector rail.

❑ Move the injector wiring harness to one side.

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116736

❑ remove the mounting bolt (**3**) from the pipe connecting the « expansion valve - compressor » on the stay.

❑ Loosen the lower mounting bolt (**4**) of the stay sufficiently between the alternator and the injector holder plate.

❑ Remove:

- the injector holder plate mounting bolts,
- the injector holder plate, moving aside the stay between the alternator and the injector holder plate.

Note:

Mark the length of the mounting bolts when they are removed.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Carefully clean the joint faces.

❑ Always replace all of the seals with new ones.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Move the top of the stay aside.

❑ Bring the injector holder plate and the stay alongside each other so that the upper mounting hole on the stay and the mounting hole on the injector holder plate are aligned.

❑ Pull back the injector holder plate - stay assembly.

❑ Refit the injector holder plate mounting bolts.

❑ Torque tighten the **injector holder plate mounting bolts (21 Nm)**.

❑ Torque tighten the **stay mounting bolt between the alternator and the injector holder plate (21 Nm)**

1 - When replacing the injector holder plate

❑ Refit the injector rail fitted with its injectors (see **13A**, **Fuel supply**, **Injector rail - Injectors: Removal - Refitting**, page **13A-11**) .

2 - refitting a single injector holder plate

❑ Position the injector wiring harness.

❑ Connect:

- the injector connectors,
- the fuel supply union on the injector rail.

III - FINAL OPERATION.

❑ Refit:

- the mounting bolts on the pipe connecting the « expansion valve - compressor » ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.

D4F, and 740 or 742 or 764

Tightening torques ▽	
manifold mounting stud	**9 N.m**
exhaust manifold mounting nuts	**25 N.m**
exhaust bracket mounting bolts	**25 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

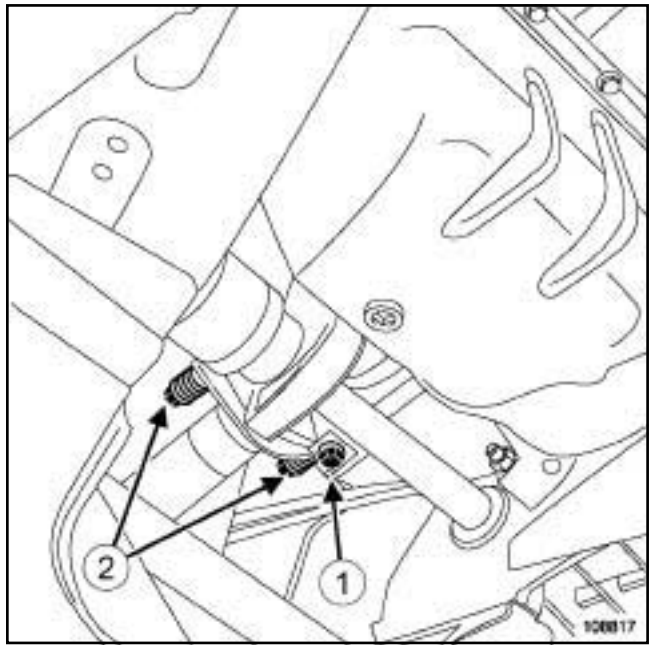
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR392, 80A, Battery).

❑ Remove:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the engine undertray.

❑ Unclip the wiring harness from the downstream oxygen sensor.

❑ Disconnect the connector from the downstream oxygen sensor.

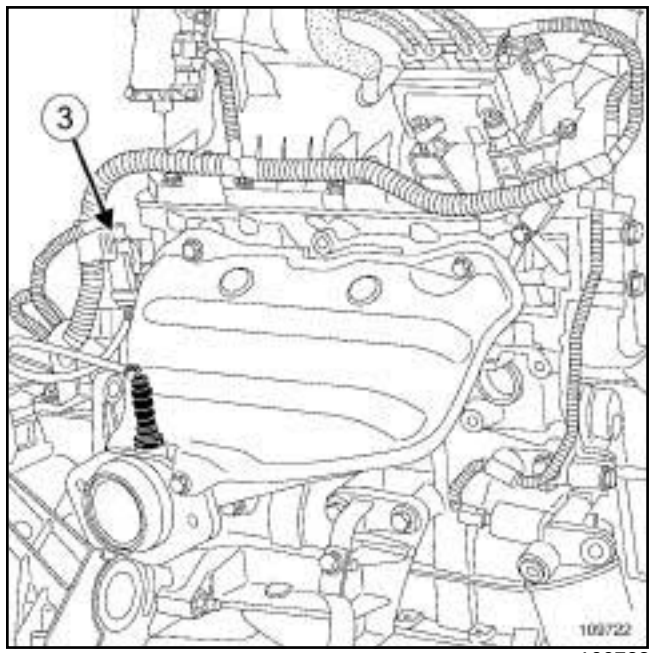


108817

❑ Remove:

- the exhaust manifold retaining strut mounting bolt ***(1)*** ,
- the exhaust bracket mounting bolts ***(2)*** .

❑ Remove the exhaust pipe towards the rear of the vehicle.

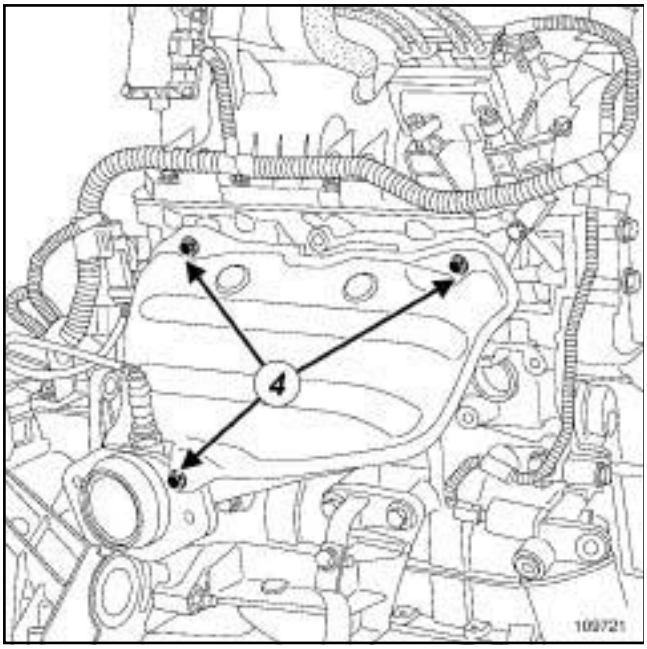


109722

❑ Unclip the upstream oxygen sensor electrical wiring harness at the cylinder head.

❑ Disconnect the upstream oxygen sensor connector (**3**) .

D4F, and 740 or 742 or 764

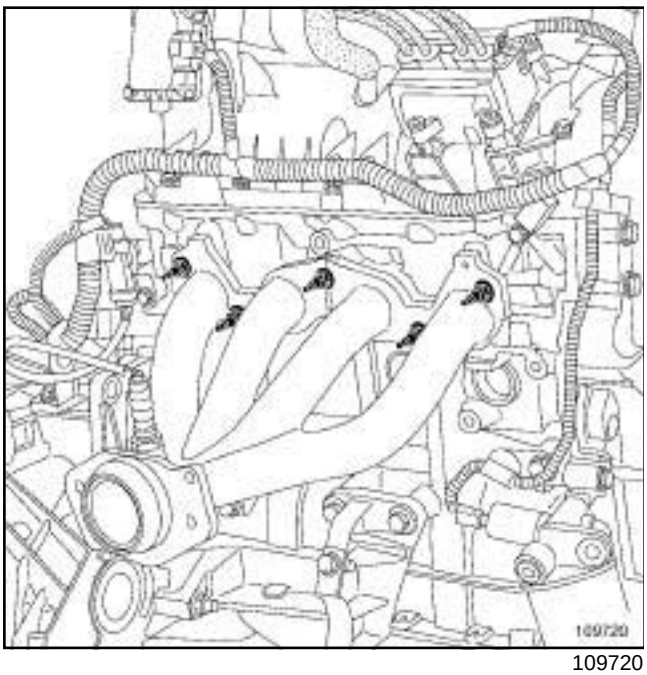


109721

❏ Remove:

- the heat shield mounting bolts ***(4)*** ,
- heat shield.

II - OPERATION FOR REMOVAL OF PART CONCERNED



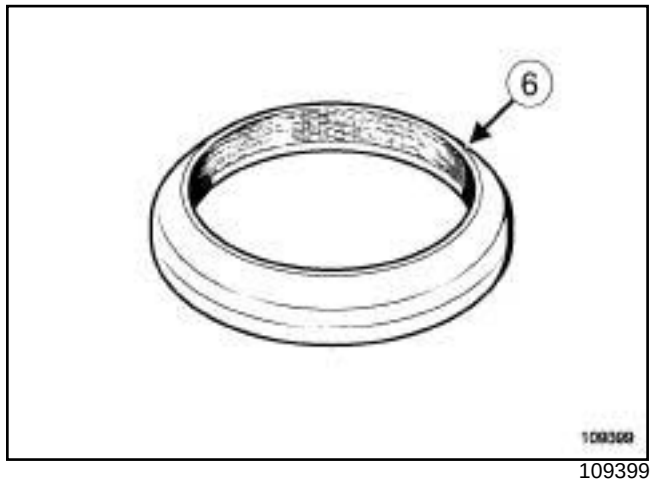
109720

❏ Remove:

- the exhaust manifold mounting nuts,
- the exhaust manifold,
- the exhaust manifold gasket.

REFITTING

I - REFITTING PREPARATION OPERATION



109399

❏ Always replace:

- the sealing ring (**6**) between the exhaust manifold and the catalytic converter,
- the exhaust manifold seal.

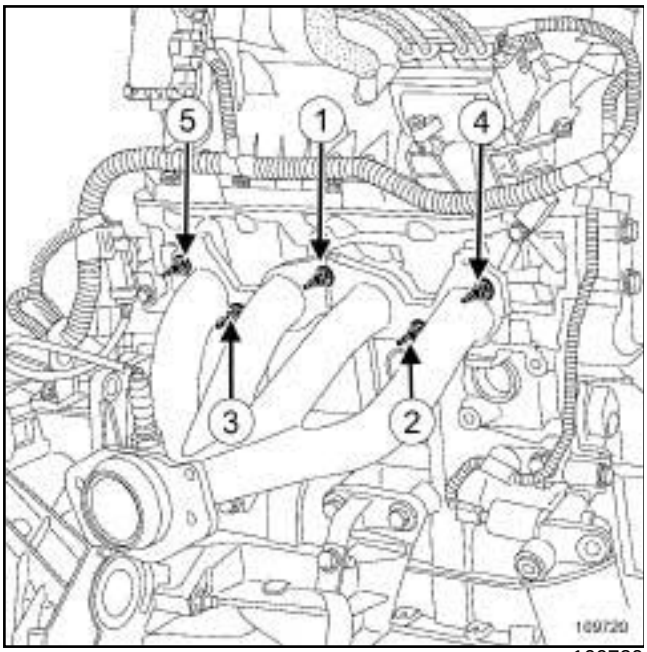
Note:

If a stud becomes loose during this operation, coat it with **LOCTITE FRENBLOC**.

Torque tighten the **manifold mounting stud (9 N.m)**.

D4F, and 740 or 742 or 764

II - REFITTING OPERATION FOR PART CONCERNED



109720

❏ Pre-tighten to torque and in order the **exhaust manifold mounting nuts (10 N.m)**.

❏ Tighten to torque and in order the **exhaust manifold mounting nuts (25 N.m)**.

III - FINAL OPERATION.

❏ Refit:

- heat shield.
- the heat shield mounting bolts,

WARNING
Any damaged heat shields must be replaced.

❏ Clip the wiring harness to the downstream oxygen sensor.

❏ Connect the downstream oxygen sensor connector.

❏ Refit the exhaust manifold retaining strut bolt.

❏ Torque tighten the **exhaust bracket mounting bolts (25 N.m)**.

❏ Connect the upstream oxygen sensor connector.

❏ Clip the upstream oxygen sensor wiring harness into place at the cylinder head.

❏ Refit:

- the engine undertray,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR392, 80A, Battery).

K9K

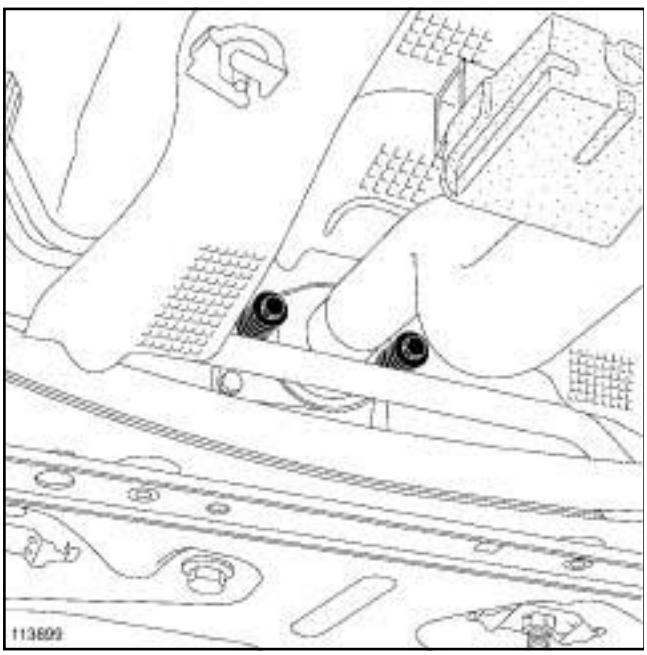
Tightening torques ▽	
exhaust manifold studs	**10 Nm**
exhaust manifold mounting nuts	**26 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the engine undertray.



113899

❑ Remove:

- the exhaust downpipe bolts,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the turbocharger (see **12B**, **Turbocharging**, **Turbocharger: Removal - Refitting**, page **12B-4**) ,

II - OPERATION FOR REMOVAL OF PART CONCERNED

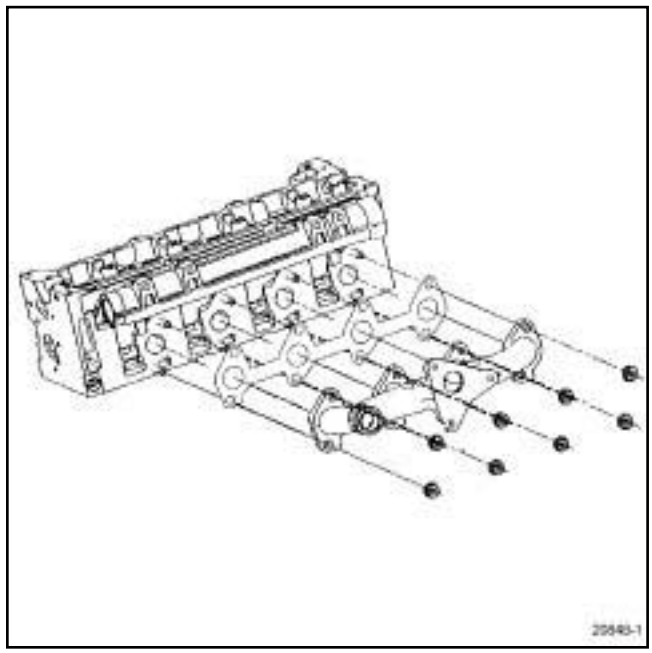
❑ Remove:

- the exhaust manifold mounting nuts,
- the exhaust manifold.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the joint faces.



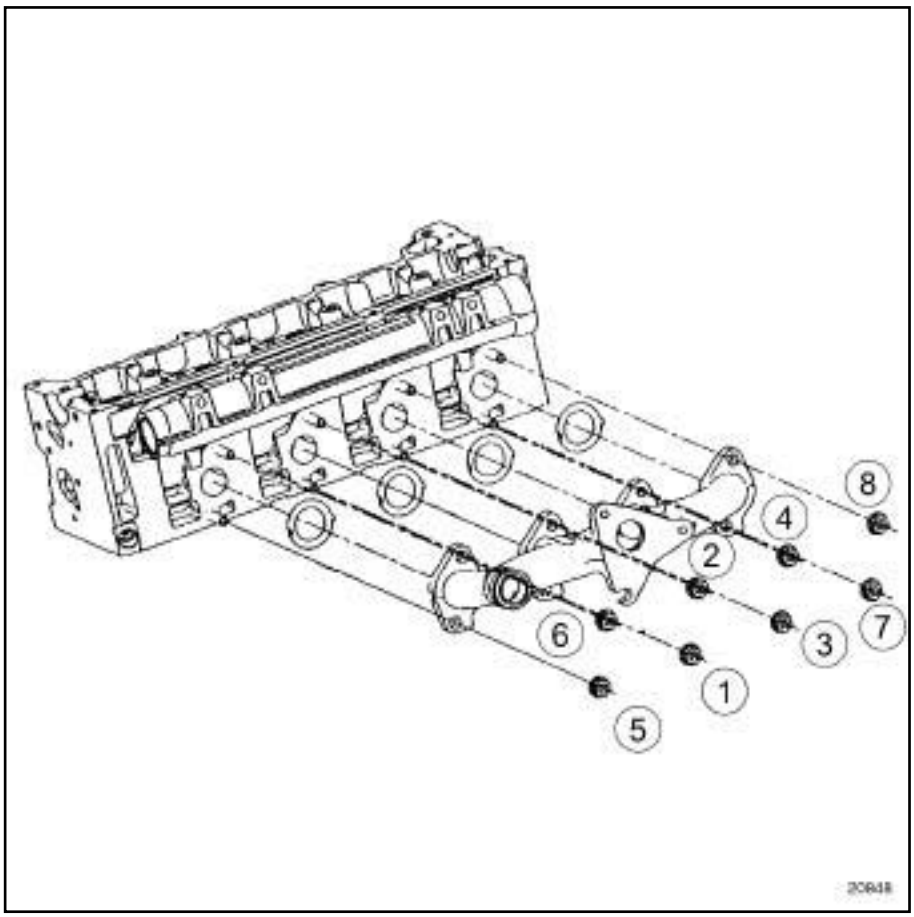
20848-1

❑

WARNING
It is essential to replace the seal with a new one.

K9K

II - REFITTING OPERATION FOR PART CONCERNED



20848

❑ If replacing, torque tighten the **exhaust manifold studs (10 Nm)**

❑ refit:

- the exhaust manifold,
- the exhaust manifold mounting nuts.

❑ Torque tighten in order the **exhaust manifold mounting nuts (26 Nm)**.

III - FINAL OPERATION.

❑ refit:

- the turbocharger (see **12B**, **Turbocharging**, **Turbocharger: Removal - Refitting**, page **12B-4**) ,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the exhaust downpipe,
- the engine undertray.

K4J or K4M

Tightening torques ▽	
exhaust manifold stud	**8 N.m**
lower heat shield bolts	**12 N.m**
exhaust manifold nuts	**26 N.m**
exhaust manifold nuts	**26 N.m**
exhaust manifold upstream and downstream stays	**44 N.m**
exhaust manifold upper heat shield bolts	**12 N.m**
upstream oxygen sensor	**44 N.m**
exhaust pipe support bolt on the body	**21 N.m**
exhaust flange bolts	**21 N.m**

IMPORTANT
Wear protective gloves during the operation.

WARNING
To prevent the surrounding components from overheating, do not damage (tear, pierce, bend, etc.) a heat shield.

Any damaged heat shields must be replaced.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

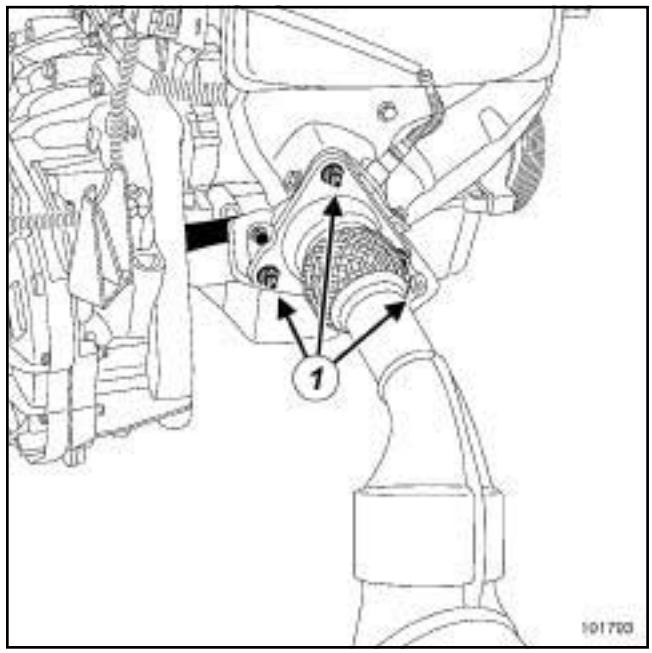
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K4M, and 862

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Remove the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .



101793

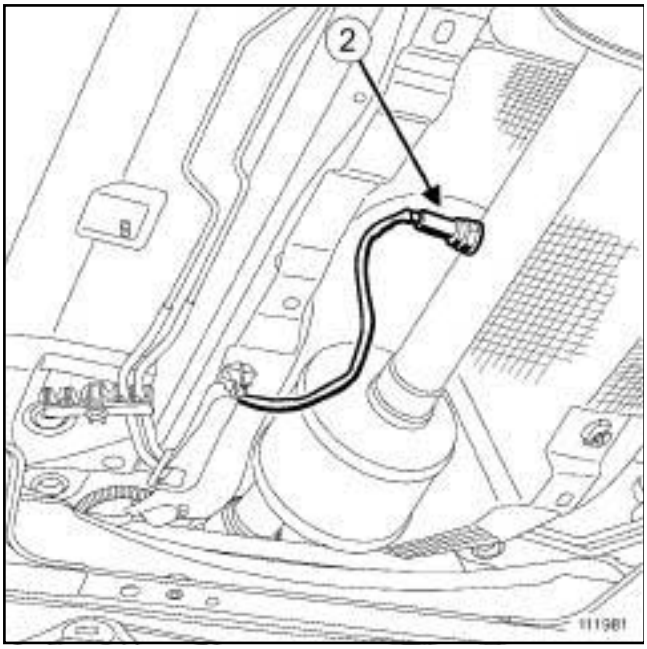
❑ Remove the bolts (**1**) from the exhaust bracket.

K4J – K4M, and 800 or 801 or 804

❑ Remove the exhaust pipe rubber mounting bush support bolt on the body.

Note:
Mark with a pen the position of the exhaust silentbloc supports on the vehicle body.

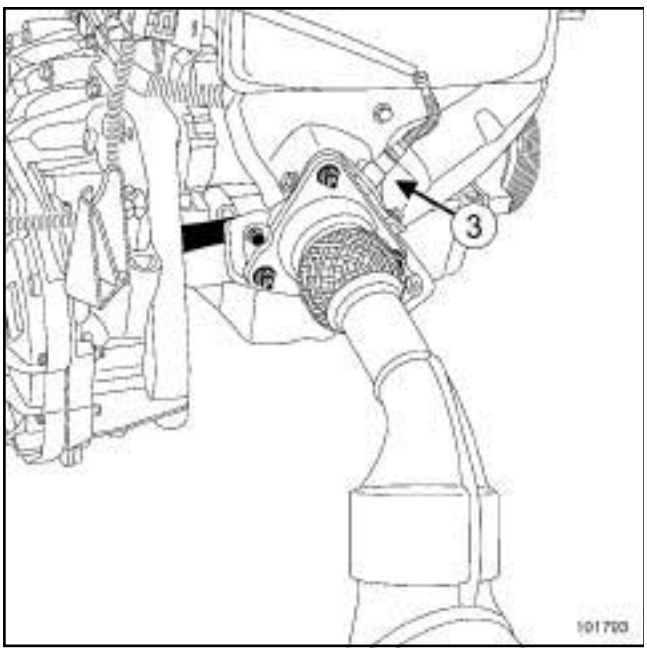
K4J or K4M



111981

❑ Disconnect the downstream oxygen sensor connector at (**2**) .

❑ Withdraw the exhaust pipe towards the rear of the vehicle.



101793

❑ Disconnect the upstream oxygen sensor connector.

❑ Remove:

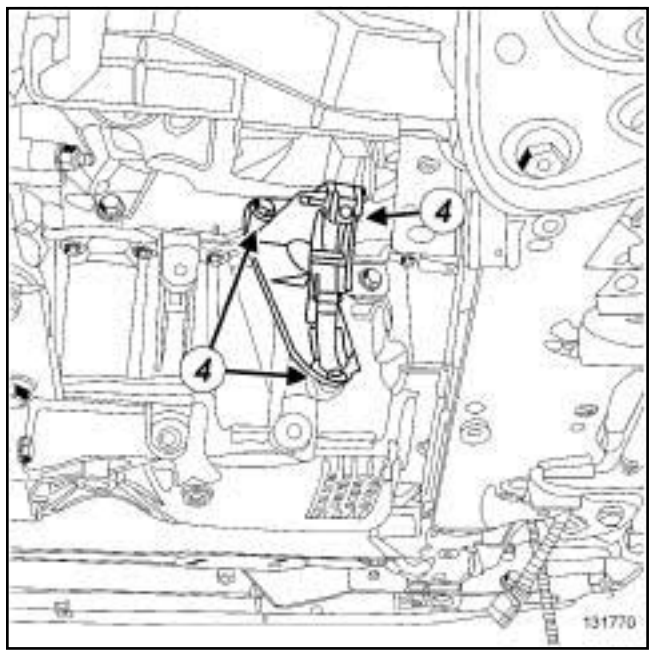
- the upstream oxygen sensor (**3**) ,
- the upper heat shield from the exhaust manifold.

K4M, and 862

❑ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❑ Remove:

- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the differential output seal (see **Differential output seal: Removal - Refitting**) (21A, Manual gearbox).
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

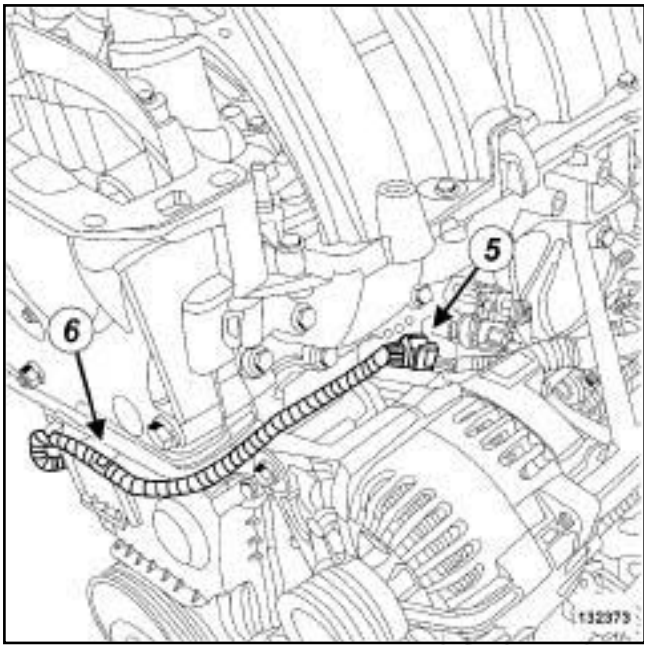


131770

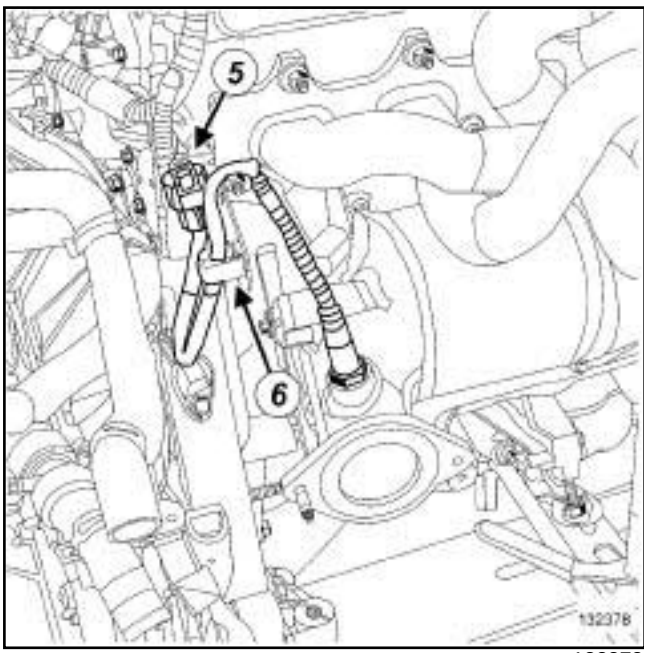
❑ Remove:

- the bolts (**4**) from the front right-hand wheel driveshaft relay bearing,
- the front right-hand wheel driveshaft relay bearing.

K4J or K4M



132373



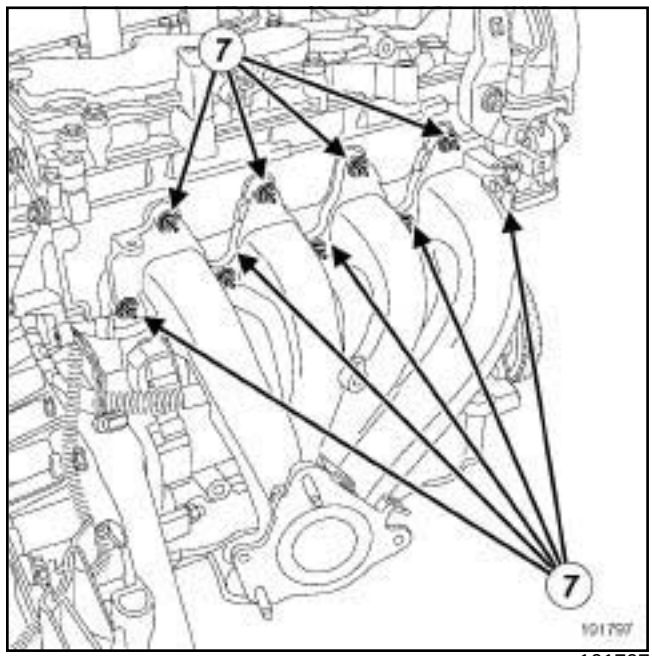
132378

❏ Disconnect the oxygen sensor connectors (**5**) .

❏ Unclip the oxygen sensor wiring (**6**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

K4J – K4M, and 800 or 801 or 804

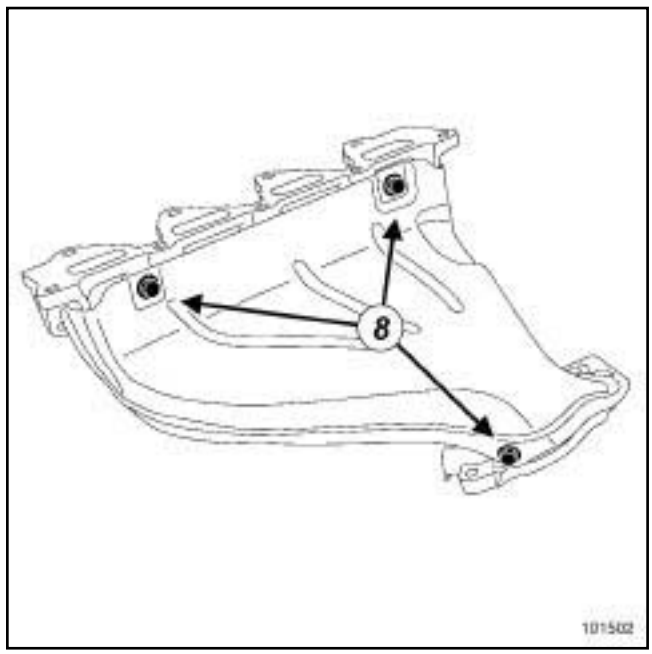


101797

❏ Remove:

- the nuts (**7**) from the exhaust manifold,

- the exhaust manifold.



101502

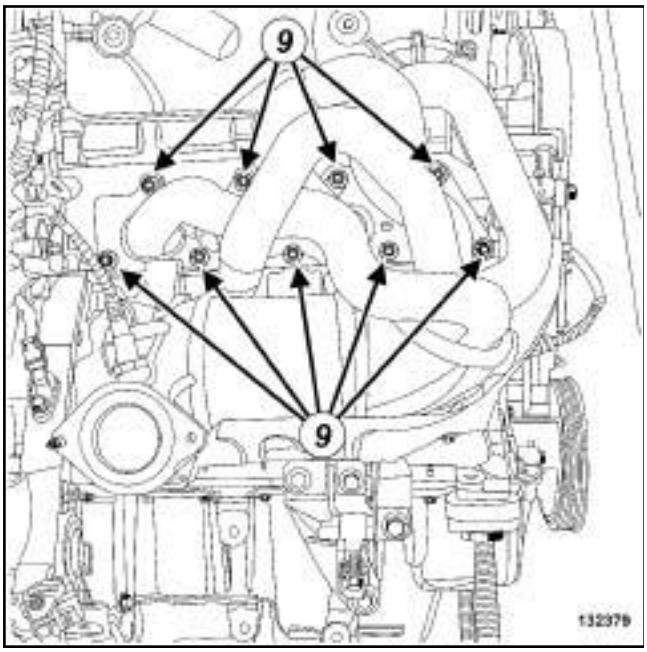
❏ Using the workbench, remove:

- the lower heat shield bolts,

K4J or K4M

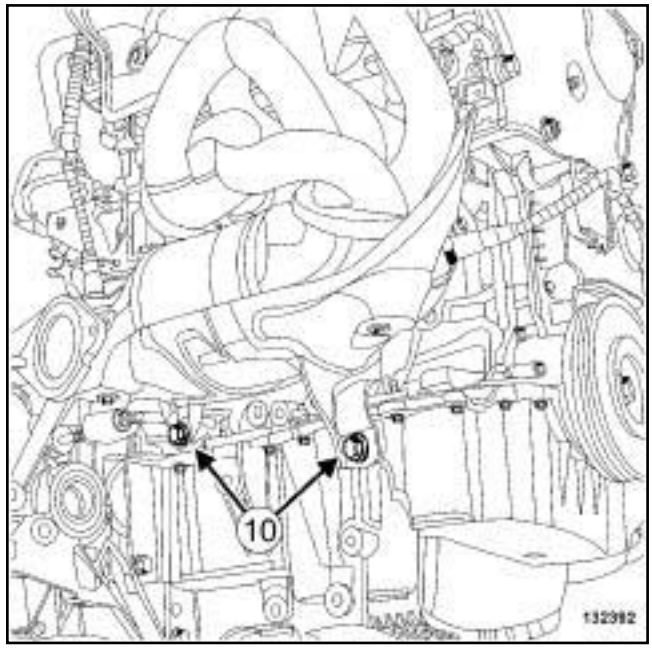
- the lower heat shield.

K4M, and 862

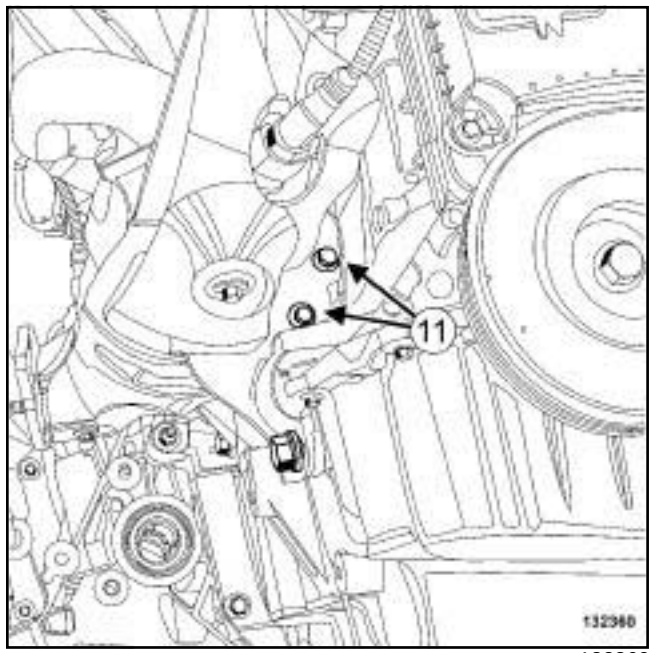


132379

❑ Remove the exhaust manifold nuts (**9**) .



132392



132360

❑ Remove:

- the downstream stay bolts (**10**) of the exhaust manifold,
- the upstream stay bolts (**11**) of the exhaust manifold,
- the exhaust manifold,
- the exhaust manifold gasket.

K4J or K4M

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: exhaust manifold seal**

❑ Part always to be replaced: Exhaust bracket seal.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the exhaust manifold joint face if it is to be re-used,
- the cylinder head joint face.

Note:

If a stud becomes loose during this operation, coat the stud with **LOCTITE HIGH STRENGTH THREAD LOCK** (see) (04B, Consumables - Products). Torque tighten the **exhaust manifold stud (8 N.m)**.

K4J – K4M, and 800 or 801 or 804

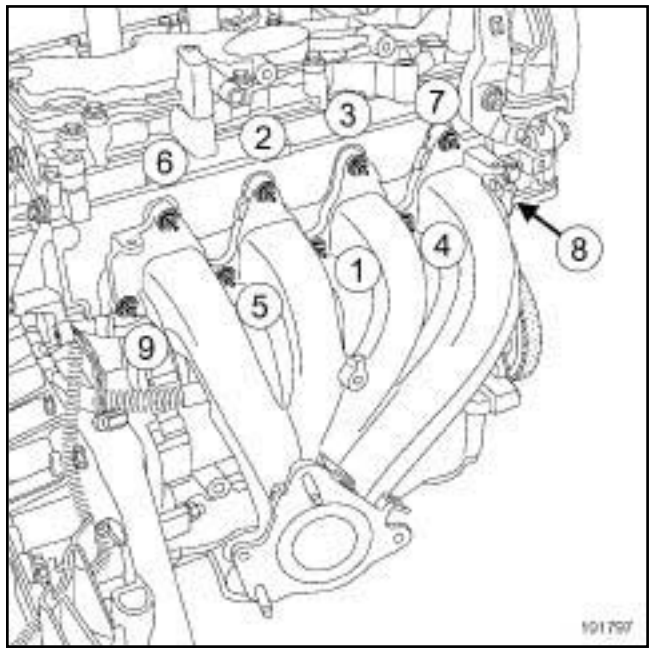
❑ Refit the lower heat shield.

❑ Torque tighten the **lower heat shield bolts (12 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the exhaust manifold with a new seal.

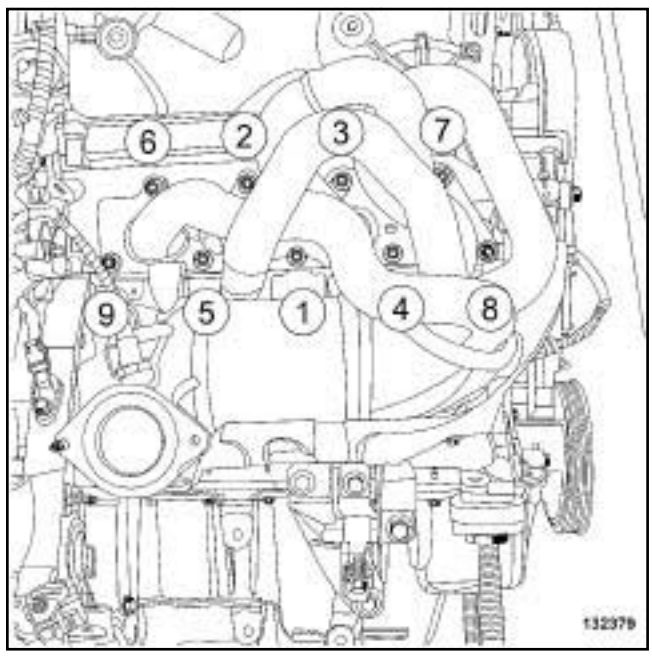
K4J – K4M, and 800 or 801 or 804



101797

❑ Torque tighten in order the **exhaust manifold nuts (26 N.m)**.

K4M, and 862



132379

❑ Tighten to torque and in order:

- the **exhaust manifold nuts (26 N.m)**,

K4J or K4M

- the bolts of the **exhaust manifold upstream and downstream stays (44 N.m)**.

III - FINAL OPERATION

K4M, and 862

❑ Clip on the oxygen sensor wiring.

❑ Connect the oxygen sensor connectors.

❑ Refit:

- the front right-hand wheel driveshaft relay bearing,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the differential output seal (see **Differential output seal: Removal - Refitting**) (21A, Manual gearbox),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

❑ Fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

❑ Refit the exhaust manifold upper heat shield.

❑ Torque tighten the **exhaust manifold upper heat shield bolts (12 N.m)**.

❑ Refit the upstream oxygen sensor.

❑ Torque tighten the **upstream oxygen sensor (44 N.m)**.

❑ Connect the oxygen sensors.

K4J – K4M, and 800 or 801 or 804

❑ Refit the exhaust pipe rubber mounting bush support bolt on the body.

❑ Torque tighten the **exhaust pipe support bolt on the body (21 N.m)**.

❑ Refit a new exhaust flange.

❑ Torque tighten the **exhaust flange bolts (21 N.m)**.

❑ Refit the inlet distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

K4M, and 862

❑ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R

Tightening torques ▽	
exhaust manifold mounting studs	**8 Nm**
exhaust manifold mounting nuts	**33 Nm**
exhaust manifold heat shield mounting bolts	**6 Nm**
exhaust manifold stay mounting bolts	**43 Nm**
exhaust bracket mounting bolts	**21 Nm**

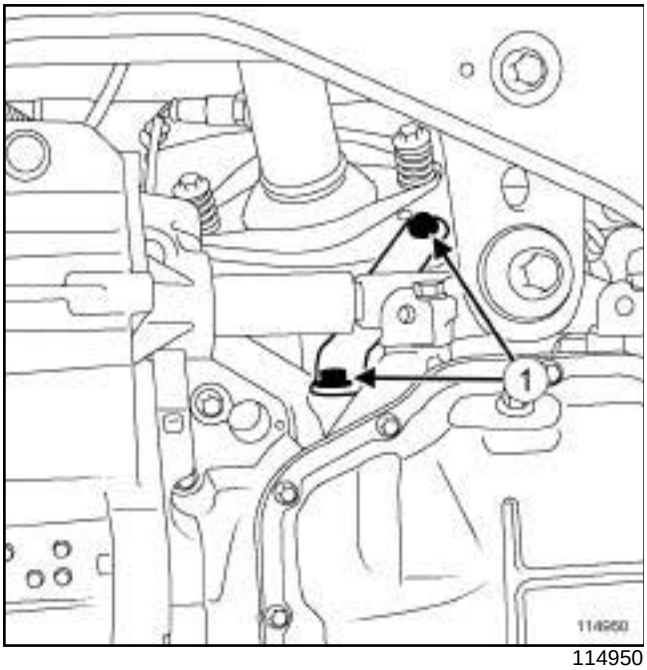
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the engine cover.

❏ Disconnect the battery (see) .

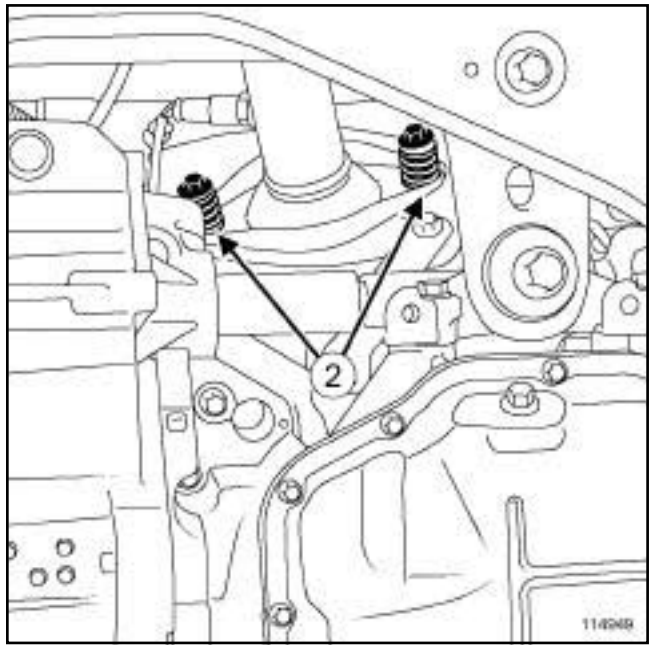
❏ Remove the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .



114950

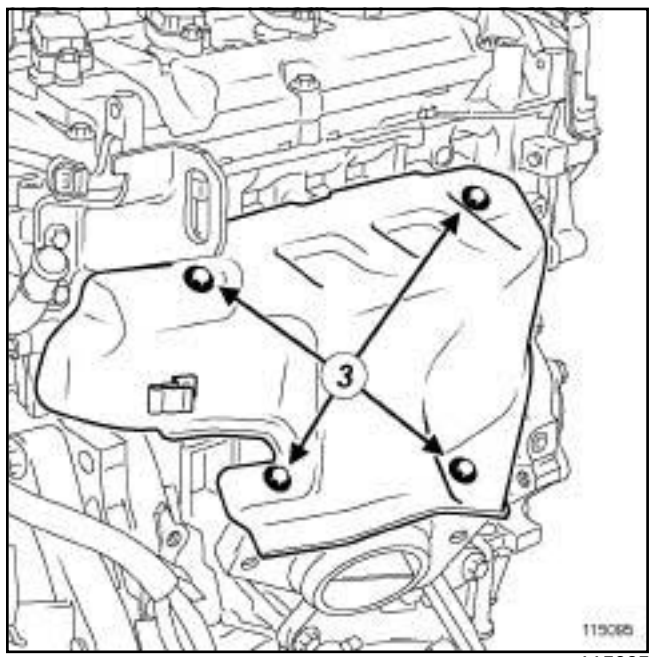
❏ Remove:

- the exhaust manifold stay mounting bolts (**1**) ,
- the exhaust manifold stay.



114949

❏ Remove the mounting bolts (**2**) from the exhaust bracket.



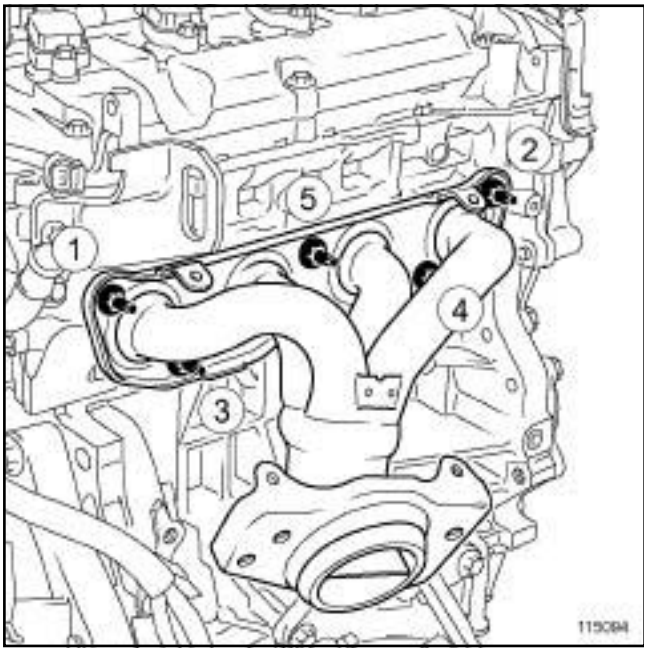
115095

❏ Remove:

- the mounting bolts from the exhaust manifold heat shield (**3**) ,
- the exhaust manifold heat shield.

M4R

II - REMOVAL OF PART CONCERNED



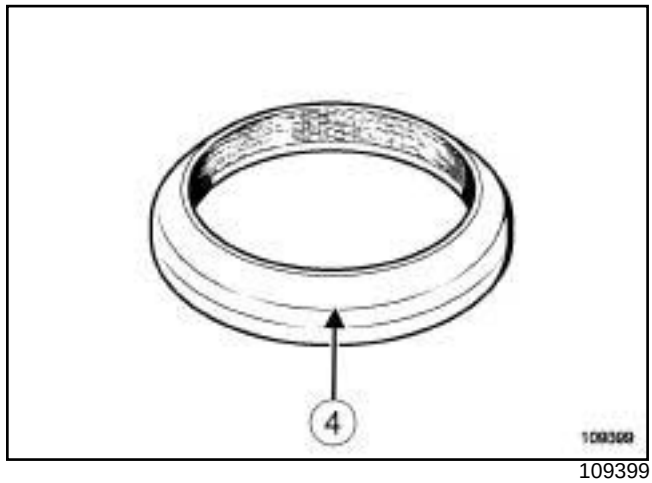
115094

❑ Remove:

- the exhaust manifold mounting nuts, in order,
- the exhaust manifold,
- the exhaust manifold seal.

REFITTING

I - REFITTING PREPARATION OPERATION



109399

❑ Always replace:

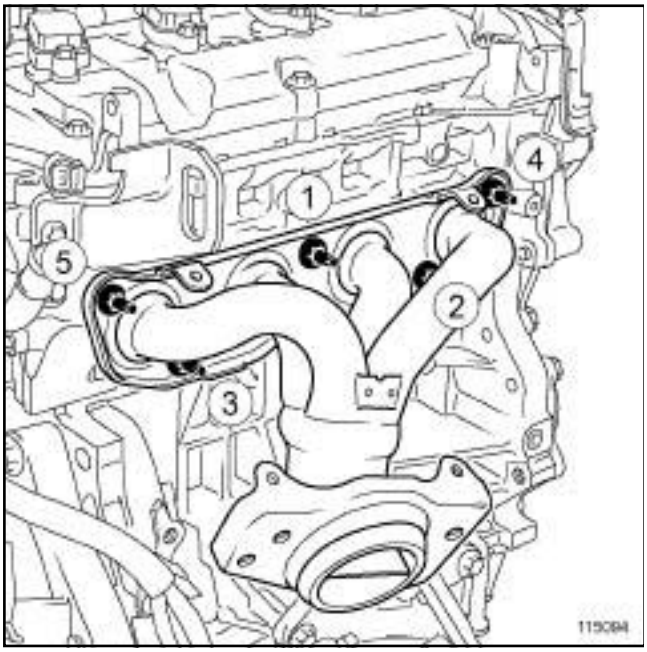
- the sealing ring (**4**) between the exhaust manifold and the catalytic converter,
- the exhaust manifold seal.

> Note:
>
> If a stud loosens during this operation, it should be coated with **LOCTITE FRENBLOC**.

❑ Tighten to torque the **exhaust manifold mounting studs (8 Nm)**.

M4R

II - REFITTING THE PART CONCERNED



115094

- ❏ Finger tighten the mounting nuts until they are in contact with the exhaust manifold.
- ❏ Tighten to torque and in order the **exhaust manifold mounting nuts (33 Nm)**.

III - FINAL OPERATION

- ❏ Refit the exhaust manifold heat shield.
- ❏ Tighten to torque the **exhaust manifold heat shield mounting bolts (6 Nm)**.
- ❏ Refit the exhaust manifold stay.
- ❏ Tighten to torque:
  - the **exhaust manifold stay mounting bolts (43 Nm)**,
  - the **exhaust bracket mounting bolts (21 Nm)**.
- ❏ Refit the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .
- ❏ Connect the battery (see) .
- ❏ Refit the engine cover.

F4R

Tightening torques ▽	
exhaust manifold stud	**9 N.m**
upstream oxygen sensor	**44 N.m**
exhaust manifold nuts	**30 N.m**

Note:

When removing and refitting the exhaust manifold, remove the «manifold - catalytic converter» assembly.

REMOVAL

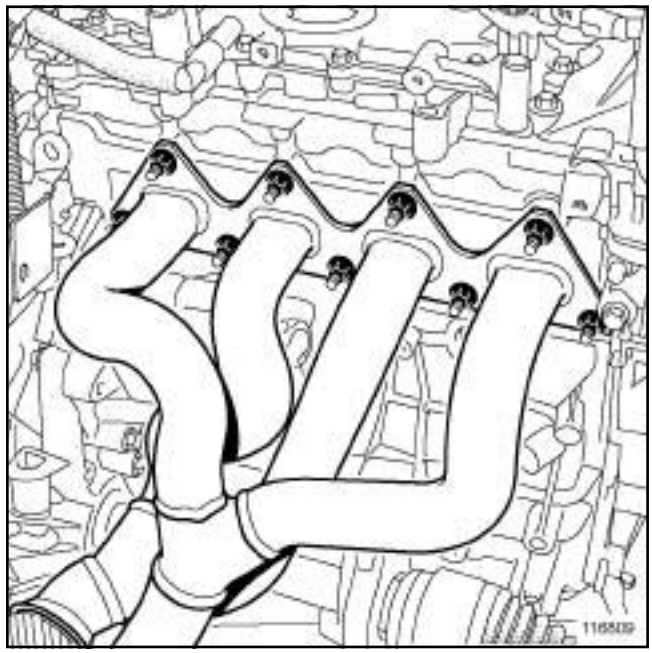
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).

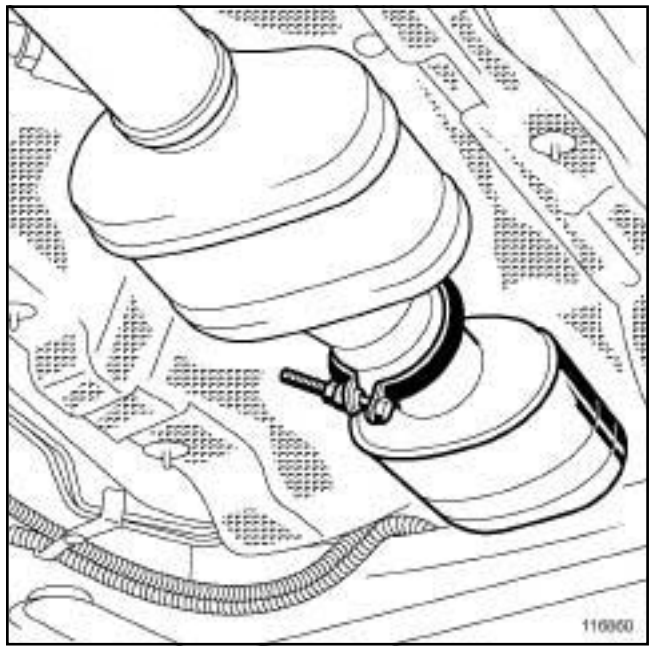
II - OPERATION FOR REMOVAL OF PART CONCERNED



116809

❏ Remove the exhaust manifold nuts.

❏ Disconnect the upstream oxygen sensor connector.



116860

❏ Remove:

- the clip connecting the catalytic converter and the expansion chamber,
- the « manifold - catalytic converter » assembly.

F4R

When replacing the exhaust manifold

❑ On the workbench:

- clamp the « manifold - catalytic converter » assembly in a vice to hold it in place,
- remove the upstream oxygen sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: exhaust manifold seal**.

❑ **parts always to be replaced: Catalytic converter clip**.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the joint faces of the manifold if it is being reused,
- the cylinder head joint faces.

> Note:
>
> If a stud is loosened during this operation, coat the stud with **HIGH STRENGTH BOLT LOCKING PRODUCT**.
>
> Torque tighten the **exhaust manifold stud (9 N.m)**.

When replacing the exhaust manifold

❑ On the workbench:

- clamp the « manifold - catalytic converter » assembly in a vice to hold it in place.
- refit the upstream oxygen sensor.

> Note:
>
> Be careful not to damage the « manifold - catalytic converter » pipes during this operation.

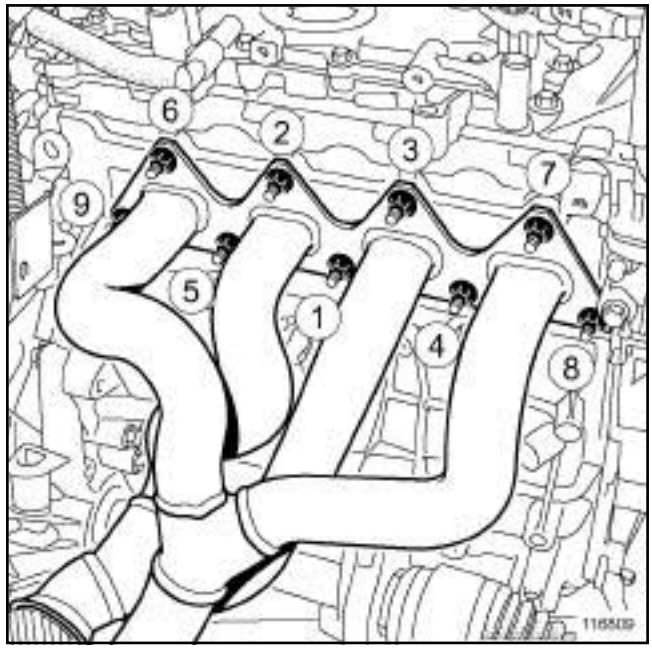
❑ Torque tighten the **upstream oxygen sensor (44 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the new exhaust manifold gasket.

❑ Refit:

- the « manifold - catalytic converter » assembly.
- the exhaust manifold nuts.



116809

❑ Torque tighten in order the **exhaust manifold nuts (30 N.m)**.

❑ Refit the new clip connecting the catalytic converter and the expansion chamber.

❑ Connect the upstream oxygen sensor connector.

III - FINAL OPERATION

❑ Refit the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Check that there are no exhaust gas leaks.

❑ Check the axle assembly values (see **Front axle assembly: Adjustment values**) (30A, General information).

D4F, and 784 or 786

Tightening torques ▽	
exhaust manifold heat shield bolts	**18 Nm**
exhaust manifold nuts (initial torque)	**20 Nm**
exhaust manifold nuts	**30 Nm**

IMPORTANT
Wear protective gloves during the operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

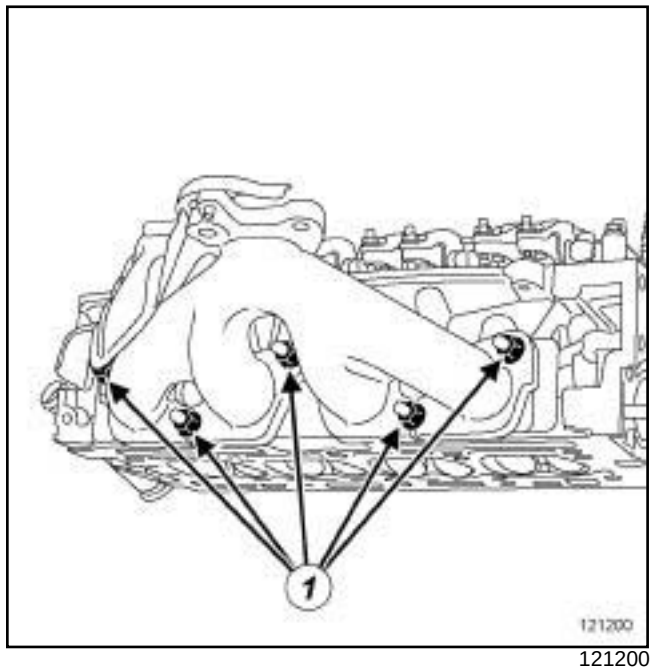
- the engine undertray,
- the engine cover.

❏ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).

❏ Remove:

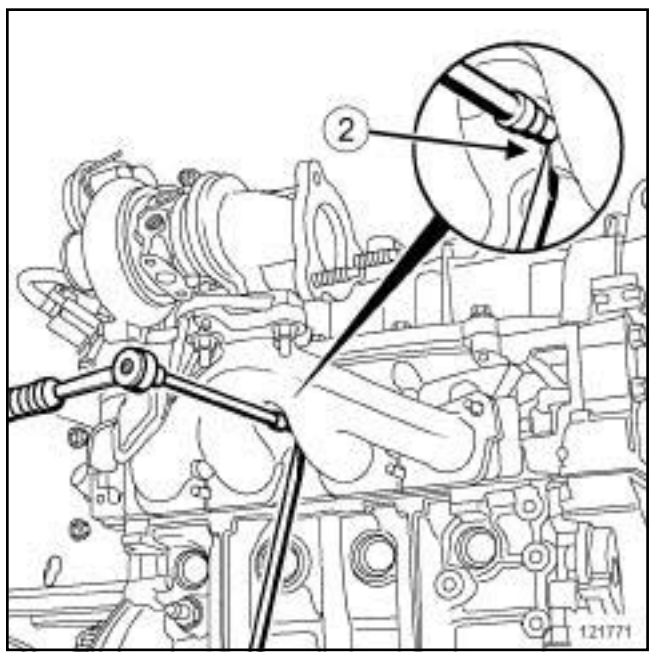
- the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) ,
- the turbocharger (see **12B**, **Turbocharging**, **Turbocharger: Removal - Refitting**, page **12B-4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



121200

❏ Remove the exhaust manifold nuts (**1**) .



121771

❏ Remove:

- the exhaust manifold by holding the centre stud with a male torx socket and removing the manifold with a larger screwdriver as shown at (**2**) ,
- the exhaust manifold heat shield bolts,
- the exhaust manifold heat shield.

D4F, and 784 or 786

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Use abrasive pads to clean the bearing faces of:

- the exhaust manifold - cylinder head,
- the exhaust manifold - turbocharger.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 398, 04B, Consumables - Products) and clean cloths to degrease the bearing faces:

- the exhaust manifold - cylinder head,
- the exhaust manifold - turbocharger.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

❑ Be sure to replace the exhaust manifold gasket.

WARNING
Any damaged heat shields must be replaced.

The sealing between the exhaust manifold sealing surface and the catalytic converter must be perfect.

Always replace all seals and exhaust pipe to rubber mounting bush mounting bolts whenever they are removed.

The catalytic converter must not be subjected to mechanical impacts during removal or refitting, as this could damage it.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the exhaust manifold heat shield,
- the exhaust manifold heat shield bolts.

IMPORTANT
Wear protective gloves during the operation.

❑ Torque tighten the **exhaust manifold heat shield bolts (18 Nm)**.

❑ Refit:

- the new exhaust manifold gasket,
- the exhaust manifold,
- the exhaust manifold nuts.

❑ Pretighten to torque the **exhaust manifold nuts (initial torque) (20 Nm)**.

❑ Torque tighten the **exhaust manifold nuts (30 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the turbocharger (see **12B**, **Turbocharging**, **Turbocharger: Removal - Refitting**, page **12B-4**) ,
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) ,
- the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).

❑ Fill the gearbox with oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).

❑ Refit:

- the engine undertray,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F or K9K

Equipment required
parts washer

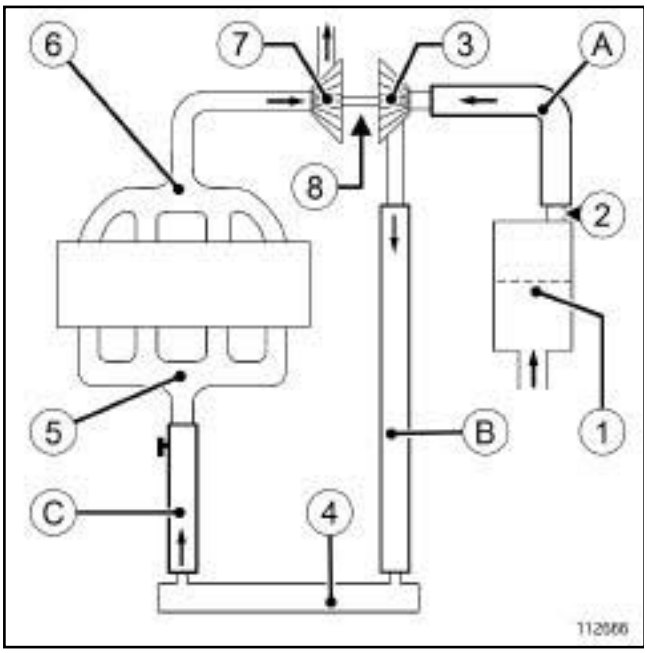
I - TURBOCHARGER: GENERAL INSTRUCTIONS

For the turbocharging pressure regulator check (see **Fault finding - Tests**) (Technical Note 3419A, 12B, Turbocharging).

WARNING

The turbocharger pressure regulator rod must not be adjusted.

II - TURBOCHARGER CIRCUIT DIAGRAM



112666

(**1**) Air filter unit
(**2**) Air flowmeter
(**3**) Compressor wheel
(**4**) Intercooler
(**5**) Inlet distributor
(**6**) Exhaust manifold
(**7**) Turbine wheel
(**8**) Bearing system (bearing + wheel shaft)
(**A**) Air filter box air outlet pipe
(**B**) Turbocharger air outlet pipe
(**C**) Intercooler air outlet pipe

III - APPLICATION CONDITIONS OF INSTRUCTIONS

The instructions below must be followed when replacing a turbocharger due to mechanical damage:

- damage to the bearing system,
- broken shaft or turbine wheel,
- compressor wheel rubbing against the turbocharger casing,
- broken or damaged compressor wheel,
- extensive clogging of the turbine wheel casing (hard deposits).

FOR THE AIR CIRCUIT:

- Consequences:
  - swarf or metal objects in the turbocharger inlet and outlet pipes,
  - oil in the air circuit (collected in the intercooler).
- Risks (after replacing the turbocharger):
  - metal objects sucked in by the compressor wheel (destruction of the turbocharger).

FOR THE LUBRICATION CIRCUIT:

- Consequences:
  - swarf found in the engine oil circuit,
  - circulation of swarf within the circuit.
- Risks (after replacing the turbocharger):
  - premature wear on the bearing system (destruction of turbocharger).

WARNING

Metal objects may enter the oil and air circuits as a result of a broken turbocharger.

Failure to follow the INSTRUCTIONS listed will lead to the turbocharger breaking again.

INSTRUCTIONS:

- Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**)
- Replace the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .
- Replace the seals and fittings,
- Carry out the following only if the compressor wheel is broken or rubbing against the turbocharger casing:
  - Drain the intercooler,

D4F or K9K

• Clean the turbocharger air pipes.

Note:

When carrying out an operation on the air or lubrication circuit, it is necessary to plug the open holes to prevent any risk of foreign bodies entering the system.

IV - AIR CIRCUIT*: INSTRUCTIONS FOLLOWING MECHANICAL DAMAGE TO THE TURBOCHARGER

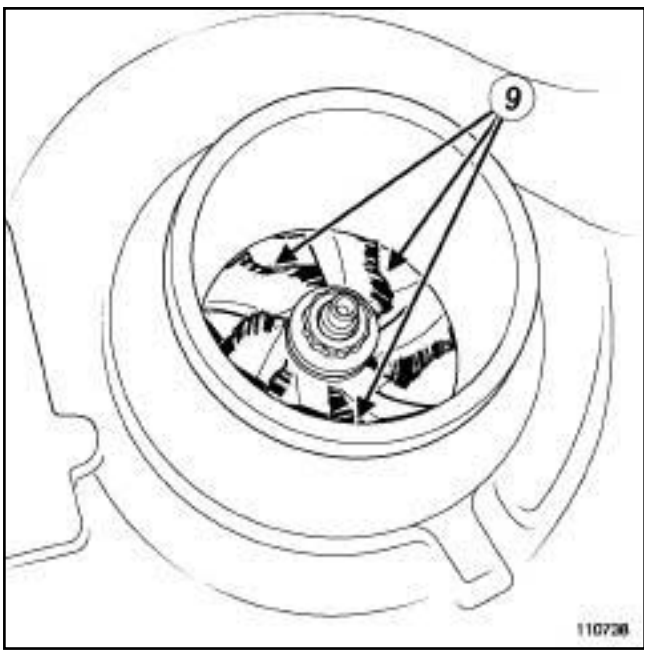
Note:

(*) These instructions for the air circuit are only to be followed in the case of:

- broken compressor wheel,
- compressor wheel rubbing against the turbocharger casing.

Remove the intercooler if fitted to the vehicle (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

Turn the intercooler over and allow the oil inside to drain out.



110738

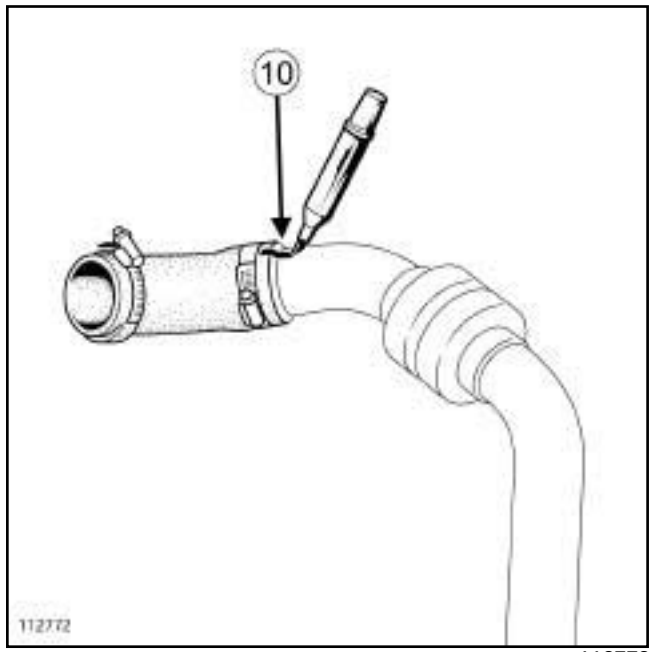
Note:

If the compressor wheel (**9**) is damaged, metal objects are ejected inside the air pipes.

Check that there are no metal objects inside the air flowmeter ***(2)*** .

Remove:

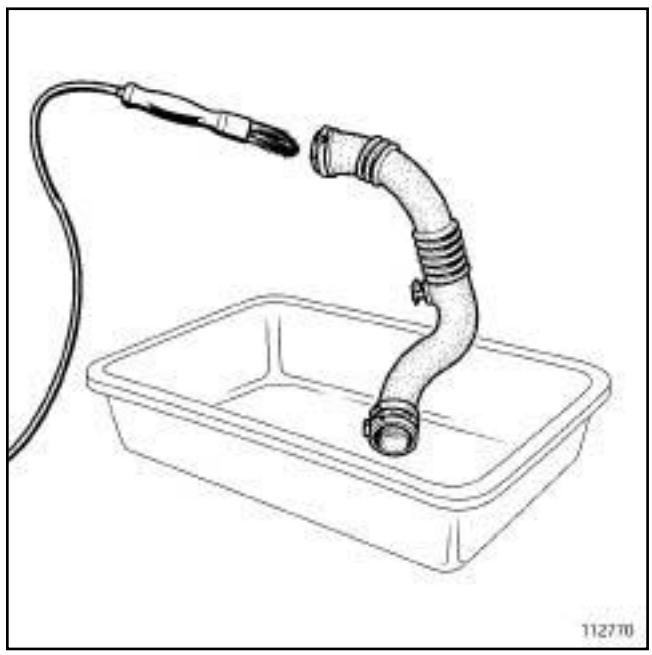
- the air pipe(between the air filter unit and the turbocharger) ***(A)*** ,
- the air pipe ***(B)*** (between the turbocharger and the intercooler).



112772

For air pipes comprising several components:

- mark (**10**) the fitting position of each component,
- separate all the components.

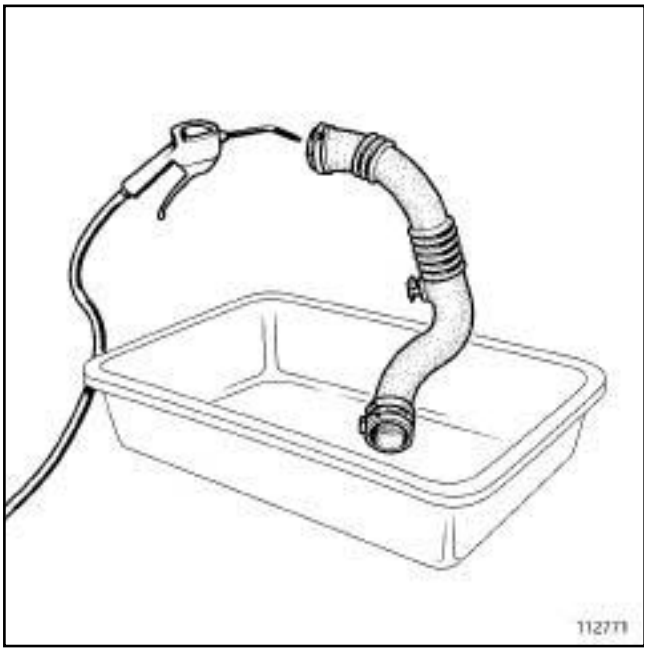


112770

D4F or K9K

One by one, clean the pipes removed with the **parts washer** :

- brush as much of the inside of the pipe as possible (only use brushes with plastic bristles),
- wash plenty of cleaning product from the cleaning station through the pipe,
- allow the cleaned pipe to drain by standing it upright,
- ensure the cleaning product has drained out completely (check areas where liquid may be retained, e.g. gaiters, resonators etc.).



112771

Dry the pipes one by one using a compressed air spray gun.

For pipes comprising several components:

- assemble the components, taking note of their correct fitting position ***(10)*** .

Refit:

- the air pipe(between the air filter unit and the turbocharger) ***(A)*** ,
- the air pipe ***(B)*** (between the turbocharger and the intercooler).

Refit the intercooler, if fitted to the vehicle (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

V - LUBRICATION CIRCUIT: INSTRUCTIONS FOLLOWING MECHANICAL DAMAGE TO THE TURBOCHARGER**

Note:

(**) These instructions relating to the lubrication circuit must always be followed in all cases of mechanical damage as listed above.

Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-12**) .

Replace the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-19**) .

Only fill the engine with a suitable oil type (see **Engine oil: Specifications**) (Technical Note 6013A, 04A, Lubricants).

VI - GENERAL INSTRUCTIONS TO BE FOLLOWED WHEN REMOVING A TURBOCHARGER

Always replace:

- the oil supply pipe:
  - if the pipe is blocked, even partially (due to scale, carbonised oil etc.),
  - if the pipe is fitted with self-retaining seals.
- the oil return pipe:
  - if the pipe is blocked, even partially (due to scale, carbonised oil etc.),
  - if the pipe is fitted with self-retaining seals.
- all seals that have been removed,
- all fittings that have been removed.

WARNING
Failure to observe the following procedure may lead to destruction of the turbocharger.

When starting the engine:

- do not accelerate,
- allow the engine to run for **1 minute**,the time taken for the oil circuit pressure to increase (until the oil pressure warning light on the instrument panel goes out),
- accelerate several times at no load,
- check the air circuit and the oil circuit for leaks.

K9K, and 750 or 752 or 764 or 766 or 768

Equipment required
Diagnostic tool

Tightening torques ▽	
turbocharger studs on the exhaust manifold	**9 N.m**
turbocharger stud on the turbocharger	**9 N.m**
turbocharger lower nut on the exhaust manifold	**28 N.m**
turbocharger upper nuts on the exhaust manifold	**28 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the tray under the battery (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) .

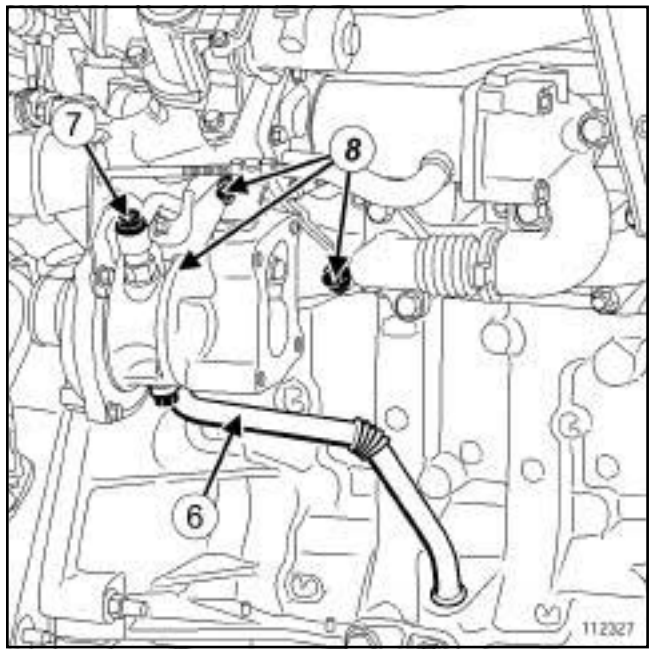
K9K, and 764

❏ Remove the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (if equipped).

K9K, and 764 or 766 or 768

❏ Remove the exhaust gas recirculation solenoid valve (see **14A**, **Antipollution**, **Exhaust gas recirculation solenoid valve: Removal - Refitting**, page **14A-3**) .

II - REMOVAL OF THE PART CONCERNED



112327

❏ Remove:

- the turbocharger mounting nuts (**8**) ,
- the turbocharger.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: seal between exhaust manifold and turbocharger**

parts always to be replaced: Turbocharger oil supply pipe bolt

parts always to be replaced: Turbocharger oil pipe

K9K, and 750 or 752 or 764 or 766 or 768

❑

WARNING

- Ensure that no foreign bodies enter the turbine or compressor during the refitting operation.
- Check that the turbocharger oil return pipe is not completely or partially blocked by scale. Check that it is not leaking; if it is, replace it.
- Always replace:
  - all of the O-rings and both copper seals on the turbocharger oil supply pipe,
  - the exhaust flange seal.
  - any damaged heat shield.

❑ If there has been a fault in the turbocharger, check that the intercooler is not full of oil. If it is, remove and rinse it with the cleaning agent, then let it drip dry.

❑ Clean the bearing faces using **ABRASIVE PADS** on:

- the exhaust manifold in contact with the turbocharger,
- the catalytic converter in contact with the turbocharger.

❑ Next, degrease these bearing faces using **SURFACE CLEANER** (see) (04B, Consumables - Products) and clean cloths.

❑ If a replacement has been carried out, torque tighten:

- the **turbocharger studs on the exhaust manifold (9 N.m)**,
- the **turbocharger stud on the turbocharger (9 N.m)**.

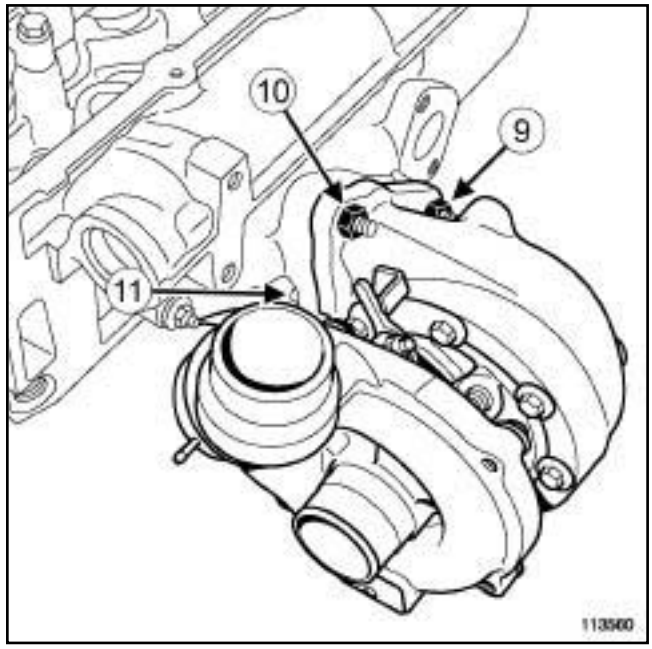
II - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING

Ensure that no foreign bodies enter the turbine or compressor during the refitting operation.

Check that the turbocharger oil return pipe is not partially or completely blocked by scale. Check that there are no leaks. If there are, replace the part.



113560

❑ Fit the turbocharger with new seals on the exhaust manifold.

❑ Bolt without tightening the turbocharger nuts using an open-jawed spanner (the turbocharger must rest on the manifold and the spanner must no longer turn without effort).

❑ Put a paint mark on the turbocharger coinciding with a crest of the turbocharger lower nut (**11**) .

❑ Tighten the turbocharger lower nut until the next nut crest coincides with the paint mark made on the turbocharger (the final angle achieved is **60°**).

❑ Torque tighten:

- the **turbocharger lower nut on the exhaust manifold (28 N.m)** (**9**) ,
- the **turbocharger upper nuts on the exhaust manifold (28 N.m)** (**10**) .

III - FINAL OPERATION

❑ Refit:

- the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) ,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

K9K, and 750 or 752 or 764 or 766 or 768

K9K, and 764

❑ Refit the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (if equipped).

K9K, and 764 or 766 or 768

❑ Refit the exhaust gas recirculation solenoid valve (see) .

❑ Refit:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Connect the air flowmeter connector.

❑ Refit:

- the air inlet duct,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine cover.

Check

❑ Disconnect the connector from the crankshaft position sensor.

❑ Run the starter motor until the oil pressure warning light goes out (wait for a few seconds).

❑ Switch off the ignition.

❑ Make sure that there are no oil leaks.

❑ Connect the crankshaft position sensor.

❑ Connect the **Diagnostic tool** and clear the stored faults.

❑ Refit the engine undertray.

K9K, and 772

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

Equipment required
Diagnostic tool

Tightening torques ▽	
turbocharger studs on the exhaust manifold	**9 N.m**
turbocharger stud on the turbocharger	**9 N.m**
nut for the exhaust gas temperature sensor upstream of the turbocharger	**32 N.m**
turbocharger lower nut on the exhaust manifold	**26 N.m**
turbocharger upper nuts on the exhaust manifold	**26 N.m**

PARTS AND CONSUMABLES FOR THE REPAIR WORK

❑ Parts always to be replaced:

- seal between the exhaust manifold and the turbocharger,
- seal between the turbocharger and the catalytic pre-converter,
- seal for the oil turbocharger return pipe on the cylinder block,
- turbocharger oil return pipe seal on the turbocharger,
- turbocharger oil supply pipe,
- oil supply hollow bolt on the turbocharger.

❑ Consumables:

- **ABRASIVE PAD**
- **SURFACE CLEANER**
- **COPPER ANTI-SEIZE AGENT**
- **COPPER-ALUMINIUM LUBRICANT**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

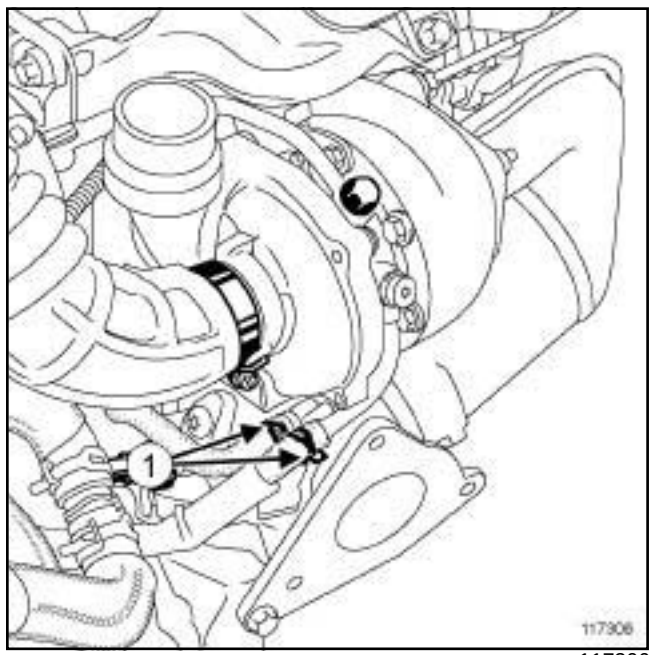
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the engine cover,
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Disconnect the turbocharging pressure regulation valve control hose .



117306

❑ Position the **(Ms. 583)** or a hose clamp on the turbocharger cooling hoses.

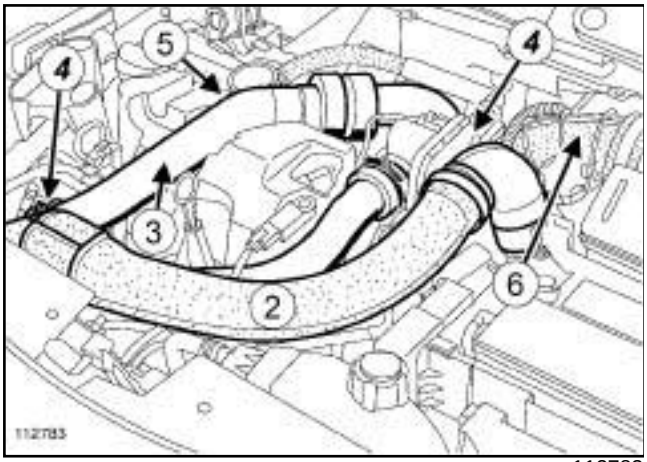
❑ Move the clips (**1**) on the turbocharger cooling hoses to one side, using the **(Mot. 1448)**.

❑ Disconnect the turbocharger cooling hoses.

Note:

Prepare for coolant outflow when the cooling hoses are disconnected from the turbocharger.

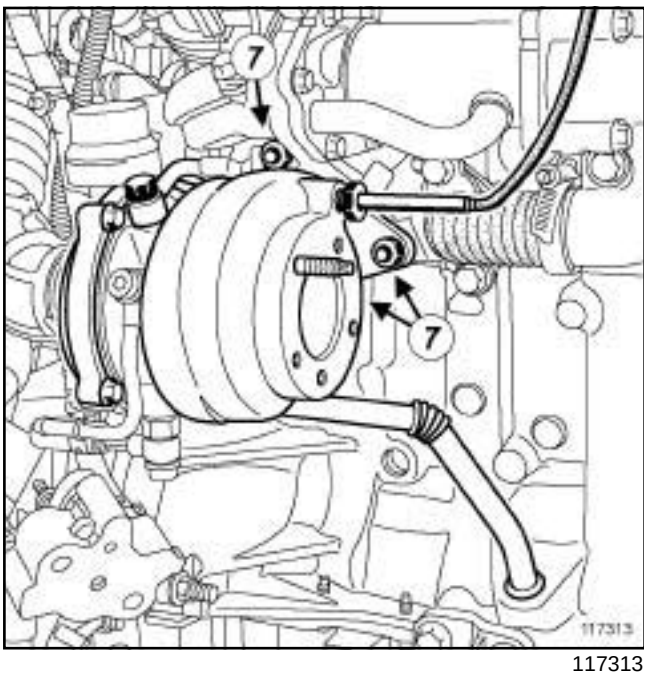
K9K, and 772



112783

❑ Remove:

- the air duct (**2**) from the air filter unit inlet,
- the upper section (**3**) of the air inlet duct between the turbocharger and the intercooler by moving the clips to one side (**4**) and by removing the bolt (**5**) ,
- the air inlet duct (**6**) between the air filter unit outlet and the turbocharger inlet.



117313

❑ Remove the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) .

❑ Remove:

- the nuts (**7**) from the turbocharger on the exhaust manifold,
- the turbocharger by moving the engine forwards,
- the seal between the exhaust manifold and the turbocharger,
- the turbocharger oil supply pipe and discard it.

❑ If the turbocharger is being replaced, remove the turbocharger temperature sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: seal between exhaust manifold and turbocharger**

parts always to be replaced: Turbocharger oil supply pipe bolt

parts always to be replaced: Turbocharger oil pipe

❑ Following a turbocharger fault, check that the intercooler and the air circuit assembly are not full of oil. In this case, remove them and clean them using a cleaning container or a cleaning fountain and then dry them using a compressed air gun.

> Note:
>
> If the turbocharger is to be re-used, clean it completely using a cleaning container or a cleaning fountain and then dry it using a compressed air gun and let it drip dry.

❑ Using a buffer pad, clean the pressure faces of the:

- the manifold and the turbocharger,
- turbocharger and the catalytic converter.

❑ Afterwards, degrease these bearing faces using **SURFACE CLEANER** and clean cloths.

❑ If a replacement has been carried out, torque tighten:

- the **turbocharger studs on the exhaust manifold (9 N.m)**,
- the **turbocharger stud on the turbocharger (9 N.m)**.

K9K, and 772

❑ If the turbocharger is being replaced:

- clean the exhaust gas temperature sensor upstream of the turbocharger using a clean, dry and lint-free cloth, if the turbocharger is to be re-used
- coat the temperature sensor threading with high temperature **COPPER ANTI-SEIZE AGENT** grease or **COPPER-ALUMINIUM LUBRICANT**,
- Insert the exhaust gas temperature sensor upstream of the turbocharger in its housing on the turbocharger,
- refit the nut for the exhaust gas temperature sensor upstream of the turbocharger,
- tighten to torque the **nut for the exhaust gas temperature sensor upstream of the turbocharger (32 N.m)** using an open-ended spanner.

Note:

The new exhaust gas temperature sensors upstream of the turbocharger supplied by the Parts Department are sold pre-coated. In this case, do not coat them but refit them directly, respecting the tightening torque.

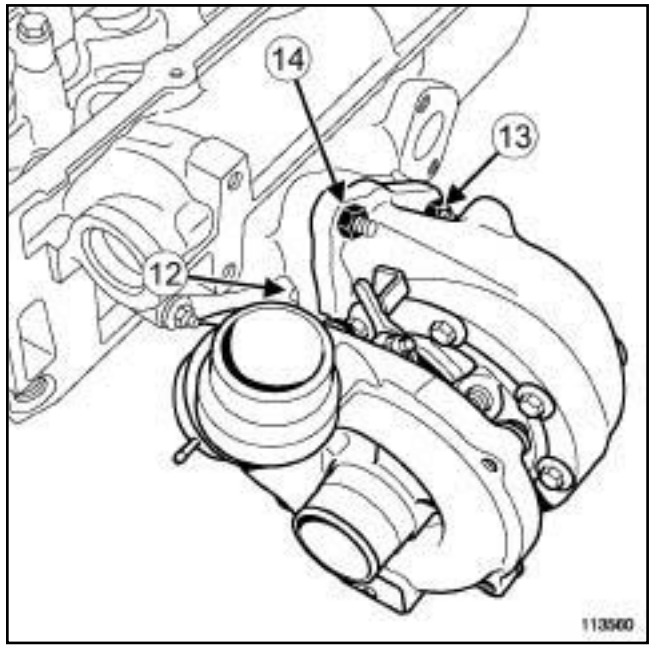
II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new seal to the exhaust manifold,
- the turbocharger by moving the engine forwards,
- the upper and lower turbocharger nuts on the exhaust manifold.

WARNING

Ensure that no foreign bodies enter the turbine or compressor during the refitting operation.



113560

❑ Fit the turbocharger with new seals on the exhaust manifold.

❑ Bolt without tightening the turbocharger nuts using an open-jawed spanner (the turbocharger must rest on the manifold and the spanner must no longer turn without effort).

❑ Put a paint mark on the turbocharger coinciding with a crest of the turbocharger lower nut (**12**) .

❑ Tighten the turbocharger lower nut until the next nut crest coincides with the paint mark made on the turbocharger (the final angle achieved is **60°**).

❑ Torque tighten:

- the **turbocharger lower nut on the exhaust manifold (26 N.m)** (**13**) ,
- the **turbocharger upper nuts on the exhaust manifold (26 N.m)** (**14**) .

❑ Connect the cooling hoses to the turbocharger.

❑ Fit the clips using the **(Mot. 1448)**.

❑ Remove the hose clamp.

❑ Connect the turbocharging pressure regulation valve control hose.

WARNING

Check that the turbocharger oil return pipe is not partially or completely blocked. Check that there are no leaks. If there are, replace the pipe.

K9K, and 772

❑ Refit the turbocharger oil return pipe with its new seals, starting at the inlet in the cylinder block.

WARNING
During this operation, make sure that the turbocharger oil return pipe does not fold.

WARNING
Respect the direction of fitting of the turbocharger oil return pipe seal.

❑ Refit the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) .

❑ Connect the turbocharging pressure regulation valve control hose.

III - FINAL OPERATION

❑ Refit the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

WARNING
Make sure that the recommendations for refitting the catalytic pre-converter are always followed closely.

❑ Refit:

- the air inlet duct between the air filter unit outlet and the turbocharger inlet,
- the upper section of the air inlet duct between the turbocharger and the intercooler,
- the air duct at the air filter unit inlet.

1 - Check

❑ Disconnect the crankshaft position sensor connector.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Run the starter motor until the oil pressure warning light goes out (wait for a few seconds).

❑ Switch off the ignition.

❑ Make sure that there are no oil leaks.

❑ Connect the **Diagnostic tool** and clear the stored faults.

❑ Connect the crankshaft position sensor connector.

2 - Final operation

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the engine undertray,
- the engine cover.

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

Equipment required
set of feeler gauges

Tightening torques ▽	
turbocharger nuts	**21 N.m**
turbocharger cooling pipe hollow bolts	**30 N.m**
turbocharger cooling pipe bracket bolts	**10 N.m**

REMOVAL

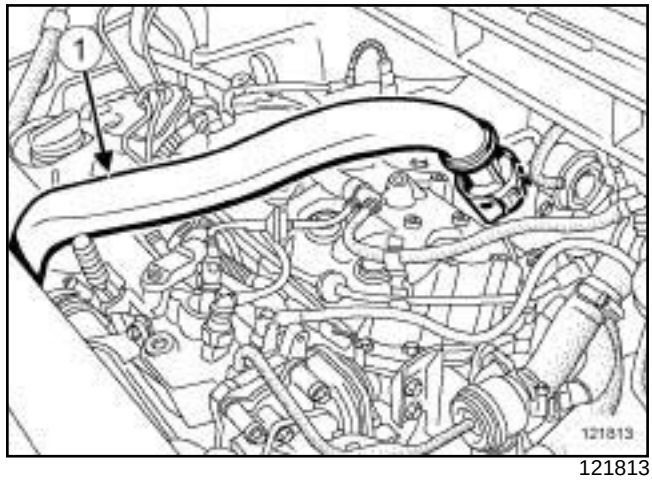
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

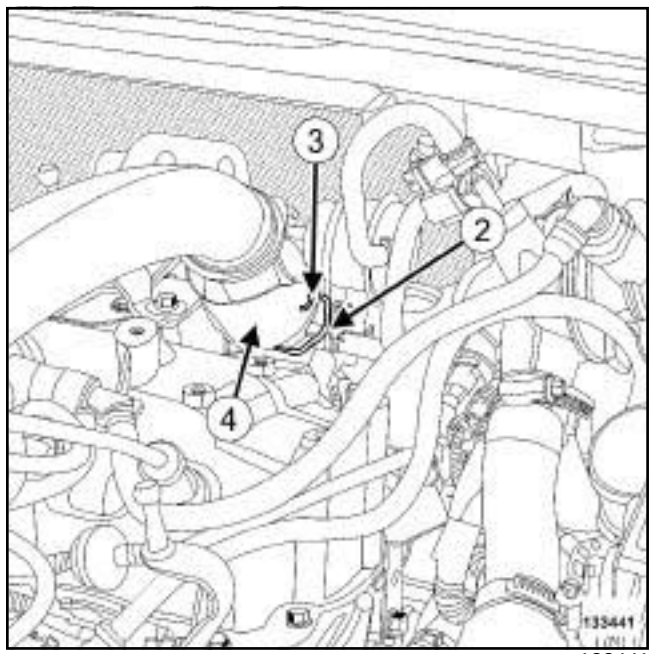
❏ Remove:

- the engine cover,
- the engine undertray,
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) ,
- the turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) .



121813

❏ Remove the bolt (**1**) from the turbocharger air outlet pipe on the inlet distributor.



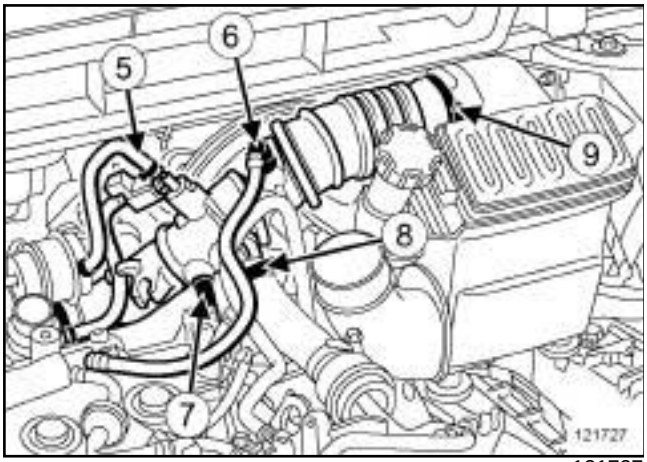
133441

❏ Separate the clip (**2**) from the turbocharger air outlet pipe.

> Note:
>
> If the clip (**3**) is removed from the flexible heat shield (**4**) , the latter must be replaced.

❏ Move aside the turbocharger air outlet pipe.

D4F, and 784 or 786



121727

❏ Disconnect:

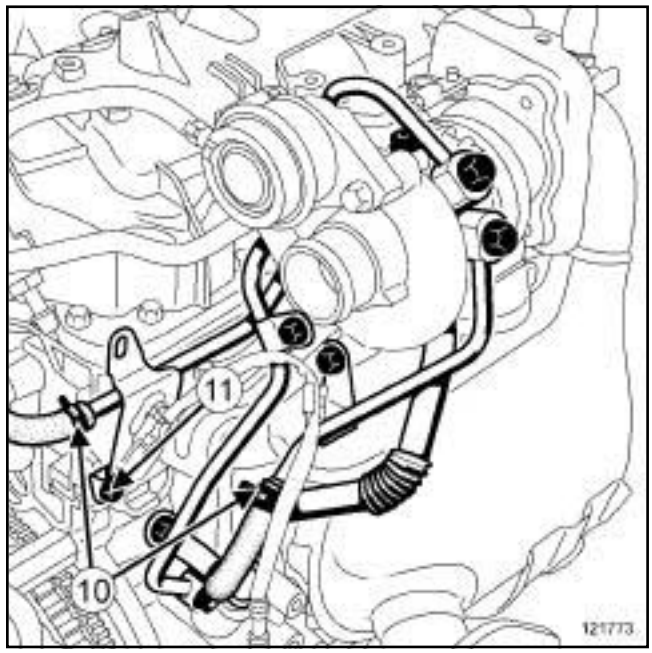
- the turbocharging pressure release valve (**5**) ,
- the oil vapour rebreathing pipe (**6**) ,
- the fuel vapour recirculation pipe (**7**) .

❏ Undo:

- the clip (**8**) of the compressor discharge air pipe,
- the clips (**9**) of the air outlet pipe of the air filter unit.

❏ Disconnect the air outlet pipe from the air filter unit.

II - OPERATION FOR REMOVAL OF PART CONCERNED



121773

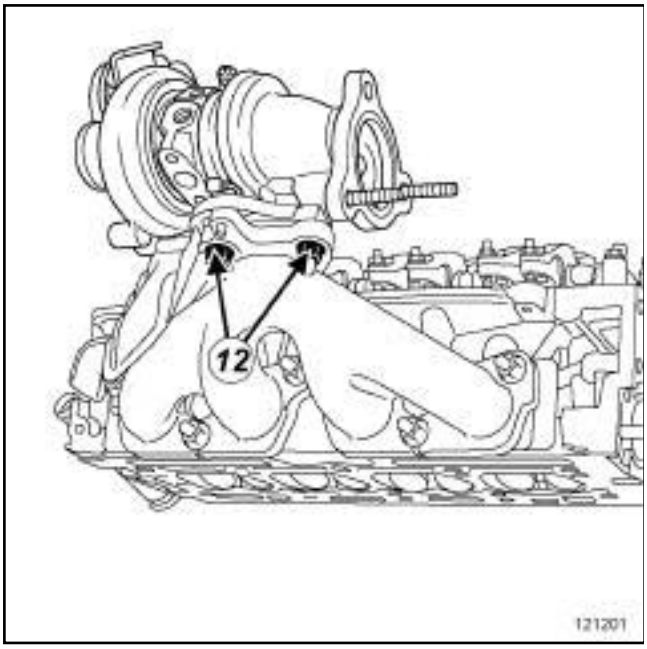
❏ Position the tool **(Ms. 583)** on the turbocharger cooling hoses (**10**) .

❏ Remove the turbocharger cooling hose clips using the tool **(Mot. 1448)**.

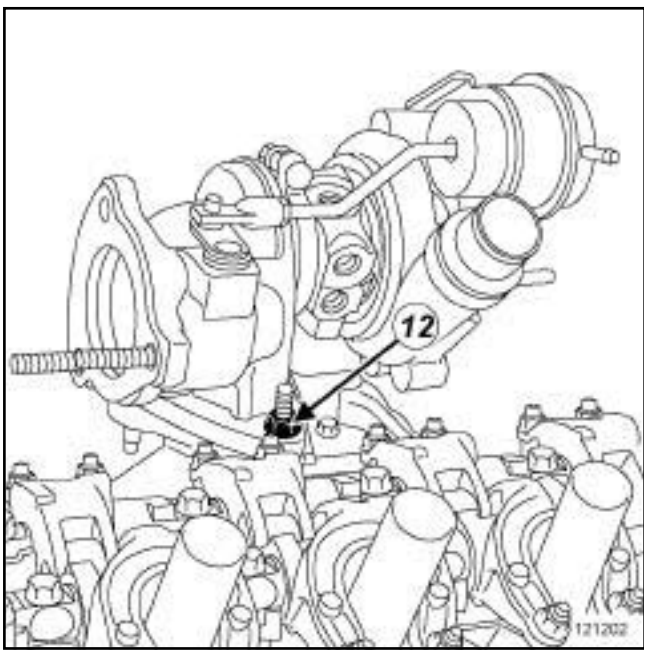
❏ Disconnect the turbocharger cooling hoses.

❏ Remove the turbocharger cooling pipe strut bolt (**11**) .

D4F, and 784 or 786



121201



121202

❑ Remove:

- the turbocharger nuts (**12**) ,
- the turbocharger,
- the turbocharger seal.

If replacing the turbocharger

❑ Undo the turbocharging pressure relief valve pipe clips.

❑ Disconnect the turbocharging pressure relief valve pipes.

❑ Remove

- the turbocharger cooling pipe bracket bolt,
- the turbocharger cooling hollow pipe bolts,
- the turbocharger cooling pipes.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Turbocharger nut**.

❑ **parts always to be replaced: seal between turbocharger and catalytic converter**.

❑ **parts always to be replaced: Turbocharger coolant pipe**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new turbocharger seal,
- the turbocharger,
- new turbocharger nuts.

❑ Torque tighten the **turbocharger nuts (21 N.m)**.

1 - If the turbocharger is not being replaced

❑ Refit the turbocharger cooling pipe strut bolt.

❑ Connect the turbocharger cooling hoses.

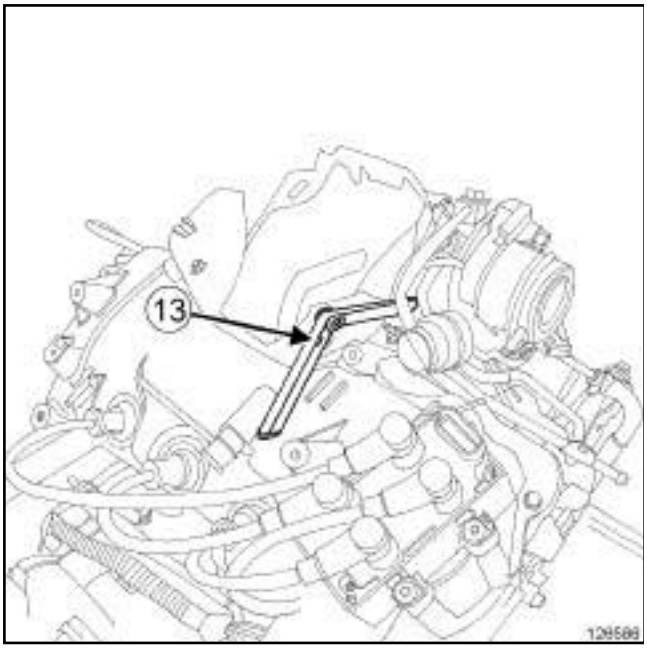
❑ Fit the turbocharger cooling hose clips.

❑ Remove the tool **(Ms. 583)**.

2 - If replacing the turbocharger

❑ Refit the turbocharger cooling pipes.

D4F, and 784 or 786



126586

❑ Position a **3 mm set of feeler gauges** (**13**) between the compressor cooling pipe and the compressor heat shield.

❑ Tighten to torque:

- the **turbocharger cooling pipe hollow bolts (30 N.m)**,
- the **turbocharger cooling pipe bracket bolts (10 N.m)**.

❑ Connect the turbocharging pressure relief valve pipes.

❑ Tighten the turbocharging pressure relief valve pipe clips.

III - FINAL OPERATION

❑ Connect the air outlet pipe of the air filter unit.

❑ Tighten:

- the clips of the air outlet pipe of the air filter unit,
- the compressor discharge air pipe clip.

❑ Connect:

- fuel vapour recirculation pipe,
- the oil vapour rebreathing pipe,
- the turbocharging pressure relief valve.

❑ Refit the turbocharger air outlet pipe.

❑ Clip the turbocharger air outlet pipe onto the turbocharger.

❑ Refit:

- the turbocharger air outlet pipe bolt,
- new turbocharger oil pipes (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-15**) ,
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) ,
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Check that there are no leaks:

- start the engine,
- check that the oil pressure warning light has gone out,
- leave the engine to idle,
- accelerate several times at no load,
- check that there are no leaks.

❑ Refit:

- the engine undertray,
- the engine cover.

D4F, and 784 or 786

Tightening torques ▽	
turbocharger oil return pipe bolts	**10 Nm**
turbocharger oil supply pipe bolt on the cylinder block	**19 Nm**
turbocharger oil supply pipe bolt on the turbo-charger	**19 Nm**
turbocharger oil supply pipe bracket bolt	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

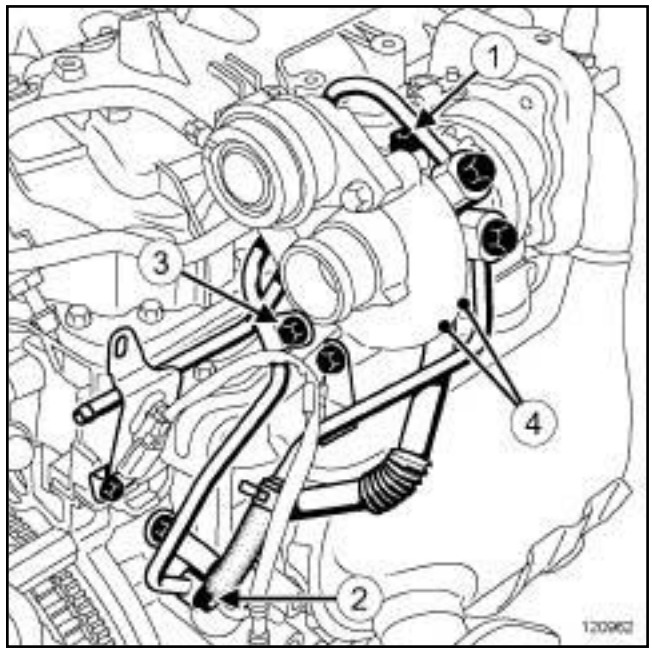
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the engine undertray,
- the front-right hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, driveshafts),
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



120962

❑ Remove:

- the bolt (**1**) from the turbocharger oil supply pipe on the turbocharger,
- the bolt (**2**) on the turbocharger oil supply pipe on the cylinder block,
- the bracket bolt (**3**) from the turbocharger oil supply pipe,
- the turbocharger oil supply pipe,
- the bolts (**4**) from the turbocharger oil return pipe,
- the turbocharger oil return pipe.

❑ Fit a blanking plug to the opening on the cylinder block after removal of the turbocharger oil return pipe.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Always replace the turbocharger oil pipes.

❑ Remove the protective plug from the opening on the cylinder block.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new turbocharger oil return pipe fitted with new seals,

D4F, and 784 or 786

- the turbocharger oil return pipe bolts.

❏ Torque tighten the **turbocharger oil return pipe bolts (10 Nm)**.

❏ Refit:

- the new turbocharger oil supply pipe fitted with its new seals,
- the turbocharger oil supply pipe bolt on the cylinder block,
- the turbocharger oil supply pipe bolt on the turbocharger,
- the turbocharger oil supply pipe bracket bolt.

❏ Torque tighten:

- the **turbocharger oil supply pipe bolt on the cylinder block (19 Nm)**,
- the **turbocharger oil supply pipe bolt on the turbocharger (19 Nm)**,
- the **turbocharger oil supply pipe bracket bolt (10 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) ,
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, driveshafts).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Check that there are no leaks:

- start the engine,
- check that the oil pressure warning light has gone out,
- leave the engine to idle,
- accelerate several times at no load,
- check that there are no oil leaks.

❏ Refit:

- the engine undertray,
- the engine cover.

Turbocharger oil pipe: Removal - Refitting

K9K

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
turbocharger oil supply pipe hollow bolt (turbocharger end)	**torx head bolt 18 N.m or bolt with head type H 14 N.m**
turbocharger oil supply pipe nut (cylinder head side)collar nut 35 N.m or non-collar nut	**23 N.m**
turbocharger oil return pipe bolts	**12 N.m**

IMPORTANT

Wear protective gloves during the operation.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

Note:

This procedure deals with removing and refitting the turbocharger oil return pipe and the turbocharger oil supply pipe.

REMOVING THE TURBOCHARGER OIL SUPPLY PIPE

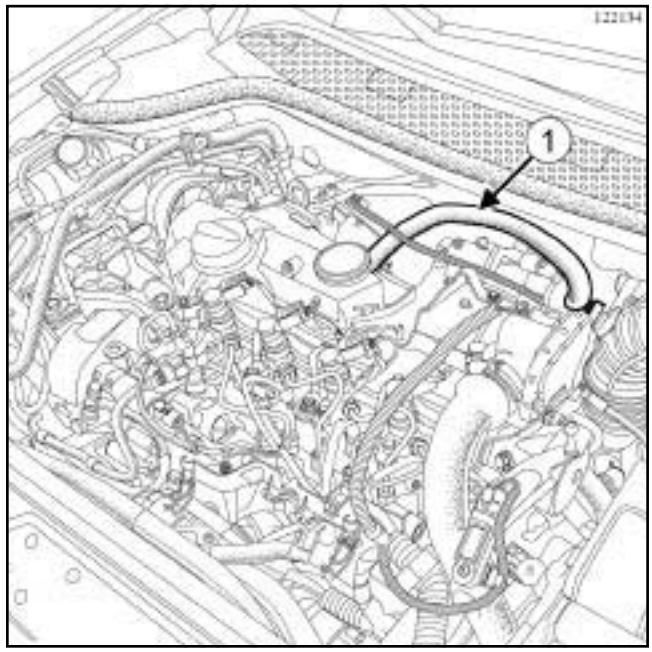
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) .

K9K, and 764 or 772



122134

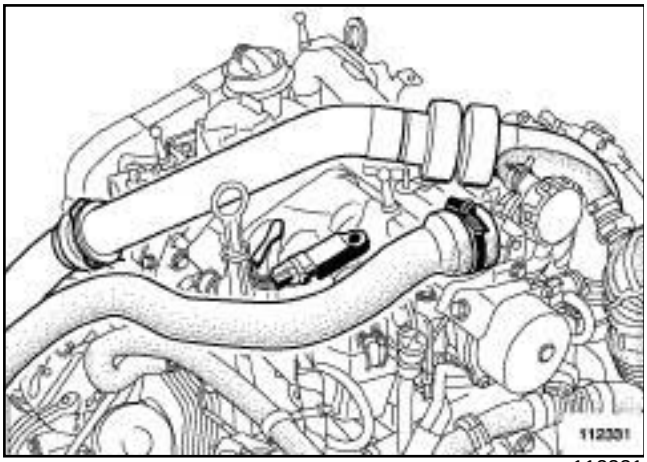
❑ Disconnect the oil vapour rebreathing pipe (**1**) on the rocker cover side.

❑ Undo the clips on the air outlet pipe of the air filter unit.

❑ Disconnect the air outlet pipe from the air filter unit.

❑ Remove the air outlet pipe from the air filter box.

K9K



112331

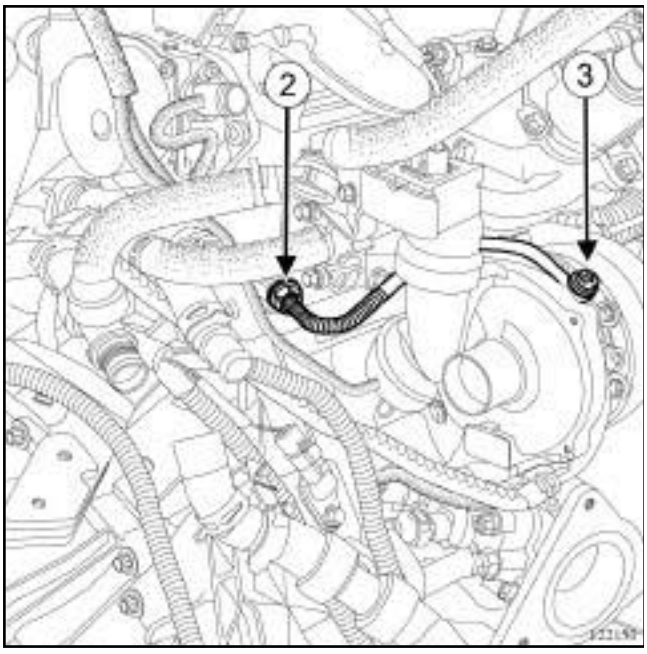
❏ Remove the air pipe between the turbocharger outlet and the air pipe at the intercooler inlet.

❏ Remove the mounting nut from the intercooler air inlet pipe on the alternator using a ratchet spanner equipped with an extension piece and a universal joint.

❏ Move aside the intercooler air inlet pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Move the cooling hoses away from the cylinder head water chamber.



122150

❏ Undo the turbocharger oil supply pipe nut (**2**) from the cylinder head using the **(Mot. 1746)**.

❏ Remove:

- the turbocharger oil supply pipe hollow bolt (**3**) ,
- the turbocharger oil supply pipe.

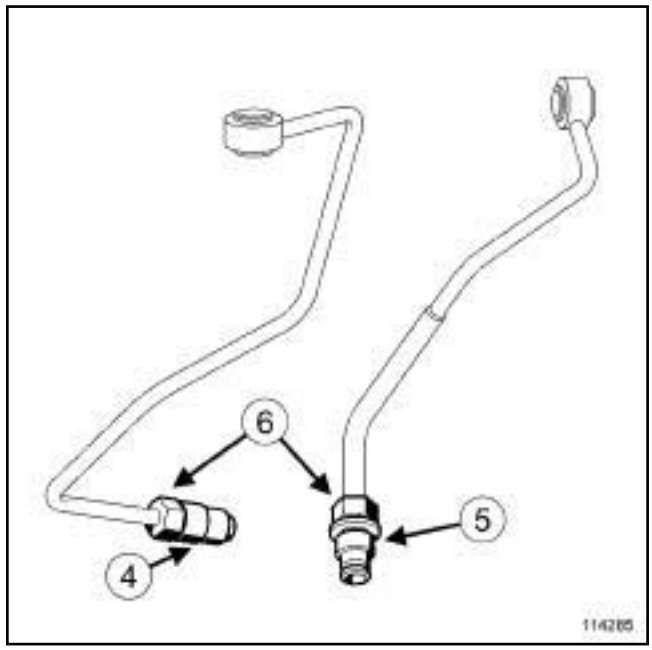
REFITTING THE TURBOCHARGER OIL SUPPLY PIPE

REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: turbocharger oil supply pipe**

parts always to be replaced: Turbocharger oil supply pipe bolt

I - REFITTING OPERATION FOR PART CONCERNED



114285

❏

Note:

These two turbocharger oil supply pipes may be used on the same engine. The tightening torque of the end pieces (**6**) on the cylinder head is different, depending on the following:

- if the end piece is shouldered (**5**) , in this case there will be no need to place the high-resistance bolt locking product on the end piece thread,
- if the end piece is not shouldered (**4**) , it is essential to apply high-strength threadlock to the end piece threading.

❏ Refit a new turbocharger oil supply pipe.

K9K

❑ Fit without tightening:

- the turbocharger oil supply pipe nut on the cylinder head,
- the turbocharger oil supply pipe hollow bolt.

❑ Torque tighten:

- the **turbocharger oil supply pipe hollow bolt (turbocharger end) (torx head bolt 18 N.m or bolt with head type H 14 N.m)**,
- the **turbocharger oil supply pipe nut (cylinder head side)collar nut 35 N.m or non-collar nut (23 N.m)** using tool **(Mot. 1746)**.

❑ Clip the cooling hoses onto the cylinder head water chamber.

II - FINAL OPERATION

❑ Fit:

- the turbocharger air outlet pipe,
- the retaining pins of the turbocharger air outlet pipe.

❑ Snap on the turbocharger air outlet pipe.

❑ Tighten the turbocharger air outlet pipe bolt on the rocker cover.

❑ Tighten the mounting nut of the intercooler air inlet pipe on the alternator using a ratchet spanner equipped with an extension piece and a universal joint.

K9K, and 764 or 772

❑ Connect the oil vapour rebreathing pipe on the rocker cover side.

❑ Refit:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine cover.

Check

❑ Disconnect the crankshaft position sensor connector.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Run the starter motor until the oil pressure warning light goes out (wait for a few seconds).

❑ Switch off the ignition.

❑ Make sure that there are no oil leaks.

❑ Connect the **Diagnostic tool** and clear the stored faults.

❑ Connect the crankshaft position sensor connector.

REMOVING THE TURBOCHARGER OIL RETURN PIPE

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the engine undertray bolts,
- the engine undertray,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

K9K, and 750 or 752 or 760 or 762 or 764 or 766 or 768

❑ Remove the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

K9K, and 772

❑ Remove the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

K9K

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the turbocharger oil return pipe bolts on the turbocharger,
- the turbocharger oil return pipe by extracting it from the cylinder block.

REFITTING THE TURBOCHARGER OIL RETURN PIPE

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: turbocharger oil pipe seal**

❑ Oil the turbocharger oil return pipe O-ring.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit new seals on the turbocharger oil return pipe.

❑ Fit the turbocharger oil return pipe, first positioning it in the cylinder block.

❑ Torque tighten the **turbocharger oil return pipe bolts (12 N.m)**.

III - FINAL OPERATION

K9K, and 750 or 752 or 760 or 762 or 764 or 766 or 768

❑ Refit the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

K9K, and 772

❑ Refit the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

❑ Refit:

- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the engine undertray,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

Check

❑ Disconnect the crankshaft position sensor connector.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Run the starter motor until the oil pressure warning light goes out (wait for a few seconds).

❑ Switch off the ignition.

❑ Make sure that there are no oil leaks.

❑ Connect the **Diagnostic tool** and clear the stored faults.

❑ Connect the crankshaft position sensor connector.

K9K – D4F, and 784 or 786

Equipment required
cleaning trough
parts washer
compressed air nozzle

Note:

Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

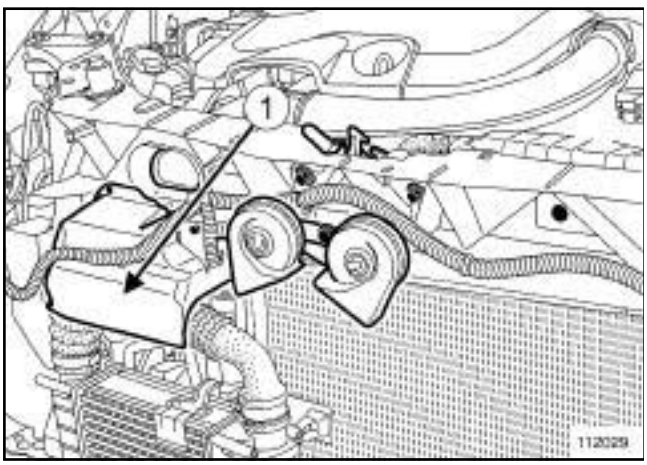
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

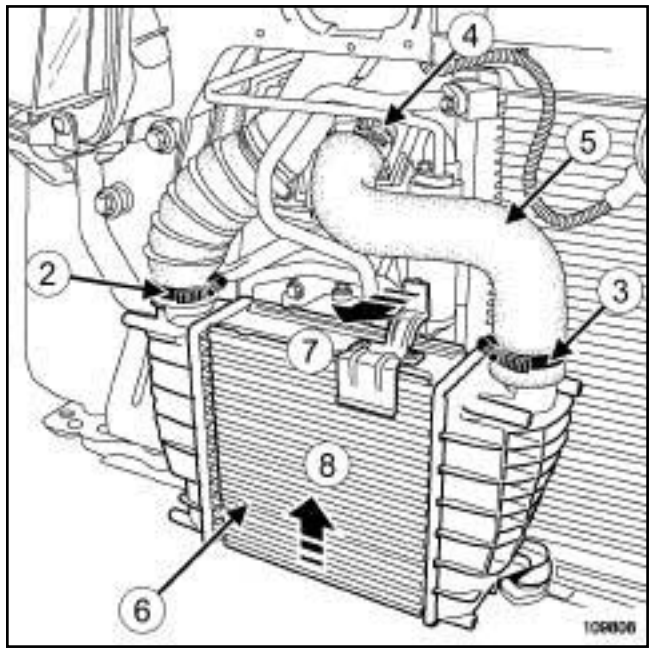
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



112029

❏ Remove the air deflector (**1**) from the intercooler.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109808

❏ Loosen the clips (**2**) , (**3**) and (**4**) of the intercooler air inlet and outlet pipes.

Note:

Whenever the clip (**3**) of the intercooler air outlet pipe is removed, only the flexible part (**5**) of the pipe must be replaced.

❏ Disconnect the intercooler air inlet and outlet pipes.

❏ Move aside the intercooler air inlet and outlet pipes.

❏ Remove the flexible part of the intercooler outlet pipe (**5**) .

❏ Remove the intercooler (**6**) in the direction of the arrows (**7**) and (**8**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the intercooler is not full of oil. If it is, clean it with a **cleaning trough** or with a **parts washer** then dry it with a **compressed air nozzle**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the flexible part of the intercooler air outlet pipe.

❏ Tighten the clip ***(4)*** of the flexible part of the intercooler air outlet pipe.

K9K – D4F, and 784 or 786

❑ Refit the intercooler.

❑ Connect the intercooler air inlet and outlet pipes.

❑ Tighten the clips of the intercooler air inlet and outlet pipes.

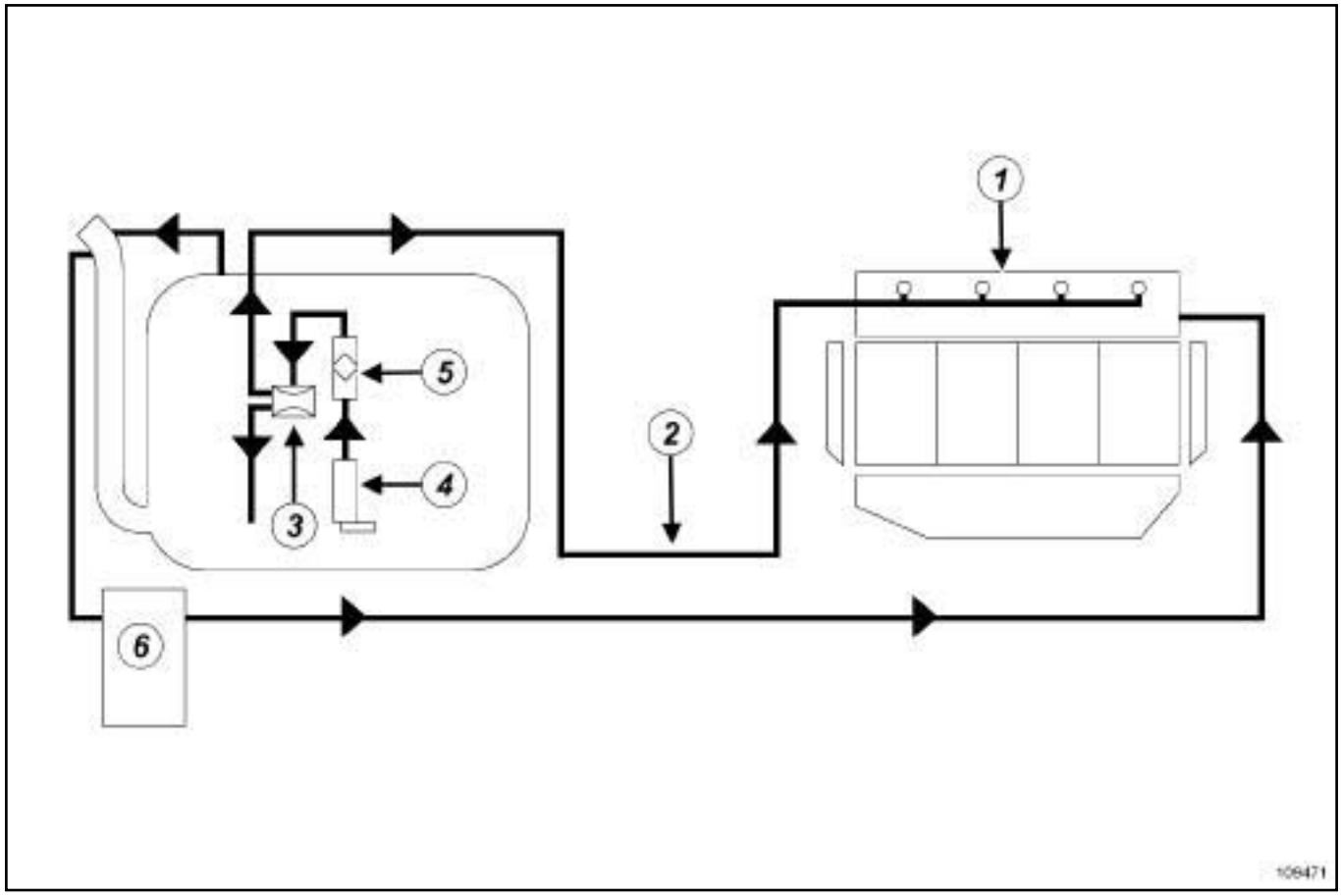
III - FINAL OPERATION

❑ Refit:

- the intercooler air deflector,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

D4F or F4R or K4J or K4M

Operating diagram of the petrol supply circuit (« pump - sender - fuel filter » assembly).



109471

The fuel system does not have a return.

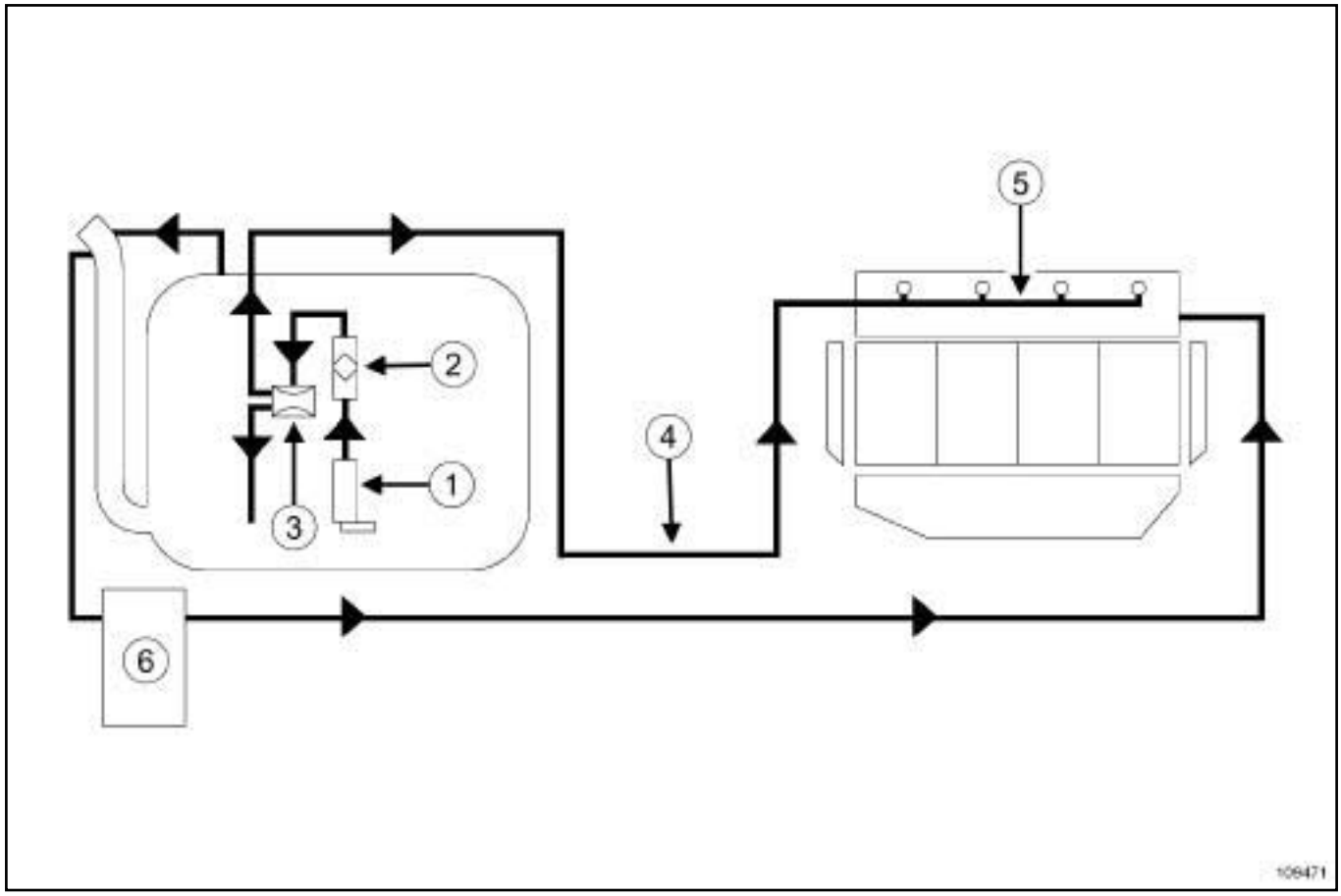
The fuel pressure does not vary with engine load.

The circuit comprises:

- a rail (**1**) without a return pipe union and without a supply pressure regulator,
- a single pipe (**2**) coming from the tank,
- a « pump - sender - fuel filter » petrol supply assembly fitted with a pressure regulator (**3**) , pump (**4**) and fuel filter (**5**) (all located in the tank),
- a fuel vapour recirculation tank (**6**) .

M4R

Operating diagram of the petrol supply circuit



109471

The fuel supply circuit does not have a return.

The fuel pressure does not vary with engine load.

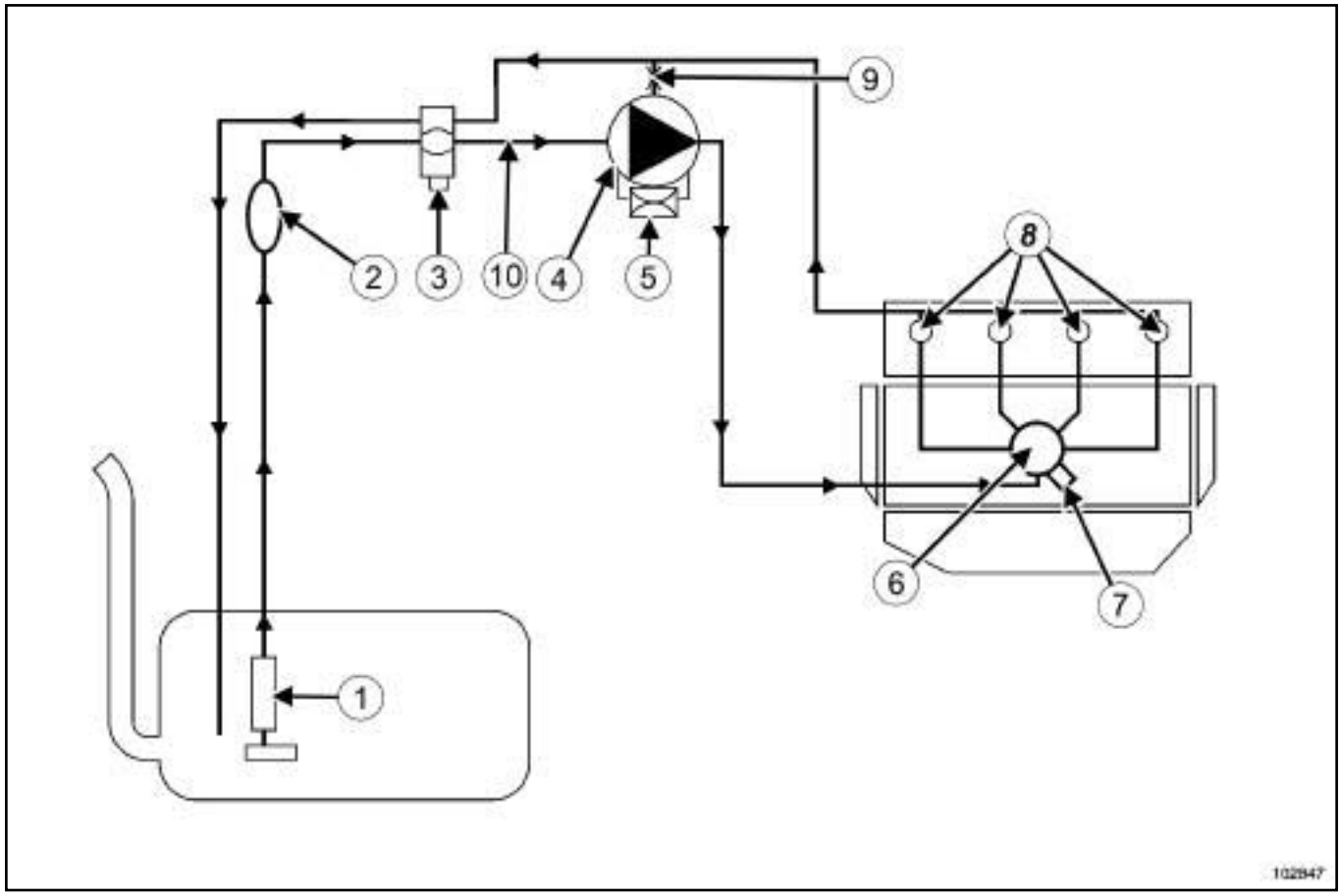
The circuit comprises:

- a « pump-sender-filter » fuel supply assembly located in the tank; it is equipped with the pump (**1**) , the filter (**2**) and the pressure regulator (**3**) ,
- a single pipe (**4**) coming from the tank,
- a rail (**5**) with no return pipe and no pressure regulator,
- a petrol vapour recirculation reservoir (**6**) connected to the inlet manifold by a pipe and a solenoid valve.

Diesel supply circuit: Operating diagram

K9K, and 750 or 752 or 766 or 768

Operating diagram of the diesel fuel supply circuit



102847

The circuit comprises:

- a sender (**1**) ,
- a priming bulb (**2**) ,
- a fuel filter (**3**) that can be fitted with a water detection sensor,
- a high pressure pump (**4**) with a built-in mechanical low pressure pump (transfer pump),
- a fuel flow actuator (**5**) ,
- an injector rail (**6**) fitted with a diesel pressure sensor (**7**) ,
- four injectors (**8**) ,
- a venturi tube (**9**) ,
- a bleed screw (**10**) ,
- various sensors,
- an injection computer.

IMPORTANT

Loosening a high-pressure pipe union when the engine is running is strictly prohibited.

WARNING

It is forbidden:

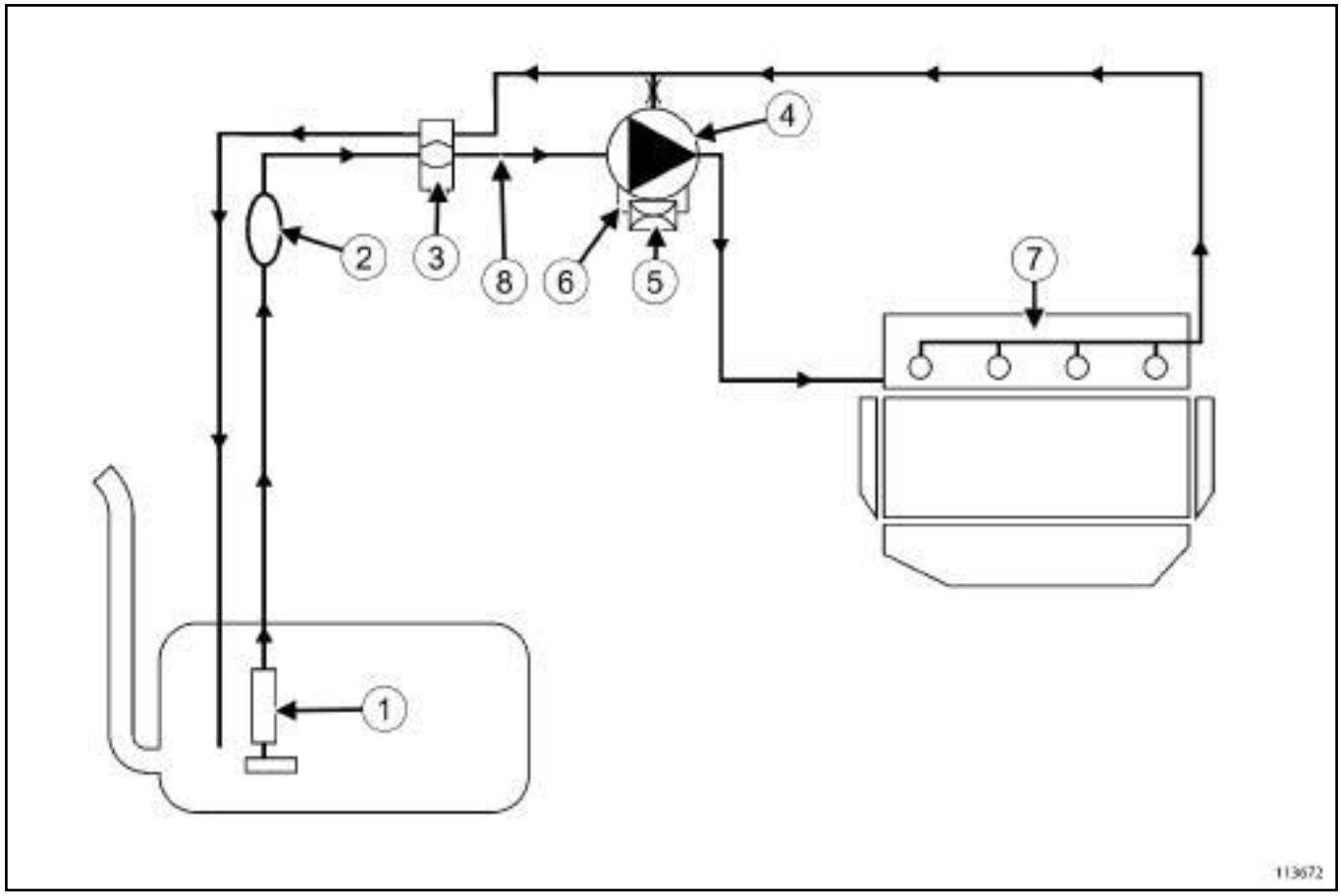
- to dismantle the interior of the pump or injectors. Only the fuel flow actuator, the diesel fuel temperature sensor and the venturi tube can be replaced,
- to remove the pressure sensor from the fuel rail (because of circuit contamination problems). If the pressure sensor fails, the pressure sensor, the rail and the five high pressure pipes must be replaced.

Only the flow actuator, the diesel fuel temperature sensor and the venturi tube can be replaced.

Diesel supply circuit: Operating diagram

K9K, and 764

Operating diagram of the diesel fuel supply circuit



113672

The circuit comprises:

- a sender (**1**) ,
- a priming bulb (**2**) ,
- a fuel filter (**3**) which may be fitted with a water detection sensor,
- a high pressure pump (**4**) with a built-in mechanical low pressure pump (transfer pump),
- a pressure regulator (**5**) , mounted on the high-pressure pump,
- a flow regulator (**6**) , mounted on the high-pressure pump,
- an injector rail (**7**) fitted with a pressure sensor,
- a bleed screw (**8**) ,
- four injectors,
- various sensors,
- an injection computer.

IMPORTANT

Loosening a high pressure pipe union when the engine is running is strictly prohibited.

WARNING

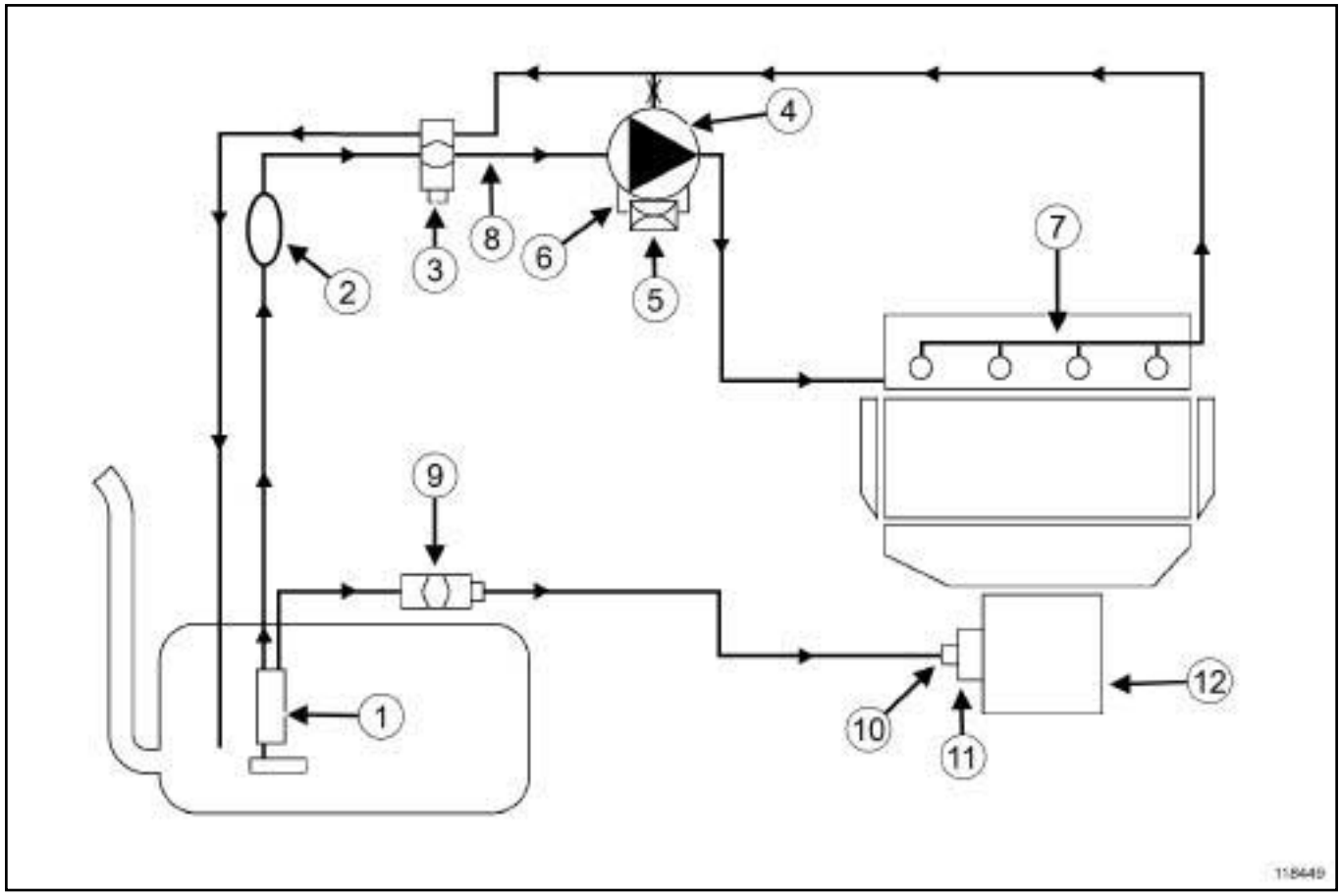
It is forbidden:

- to dismantle the interior of the pump or injectors.
- to remove the pressure sensor from the fuel rail (because of circuit contamination problems). If the pressure sensor fails, the pressure sensor, the rail and the five high pressure pipes must be replaced,
- to dismantle the flow regulator solenoid and the pressure regulator solenoid on the high-pressure pump.

Diesel supply circuit: Operating diagram

K9K, and 772

Operating diagram of the diesel fuel supply circuit



118449

The circuit comprises:

- a pump - sender (**1**) ,
- a priming bulb (**2**) ,
- a fuel filter (**3**) that can be fitted with a water detection sensor,
- a high pressure pump (**4**) with a built-in mechanical low pressure pump (transfer pump),
- a pressure regulator (**5**) mounted on the high pressure pump,
- a flow regulator (**6**) mounted on the high pressure pump,
- an injector rail (**7**) fitted with a pressure sensor,
- a bleed screw (**8**) ,
- four injectors,
- various sensors,
- an injection computer,
- a particle filter injector fuel filter (**9**) ,
- a diesel injector (**10**) on the catalytic pre-converter,
- a diesel injector cooler (**11**) ,
- a catalytic pre-converter (**12**) .

IMPORTANT

Loosening a high-pressure pipe union when the engine is running is strictly prohibited.

WARNING

It is forbidden:

- to dismantle the interior of the pump or injectors.
- to remove the pressure sensor from the fuel rail (because of circuit contamination problems). If the pressure sensor fails, the pressure sensor, the rail and the five high pressure pipes must be replaced,
- to dismantle the flow regulator solenoid valve and the pressure regulator solenoid valve on the high pressure pump.

K9K

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

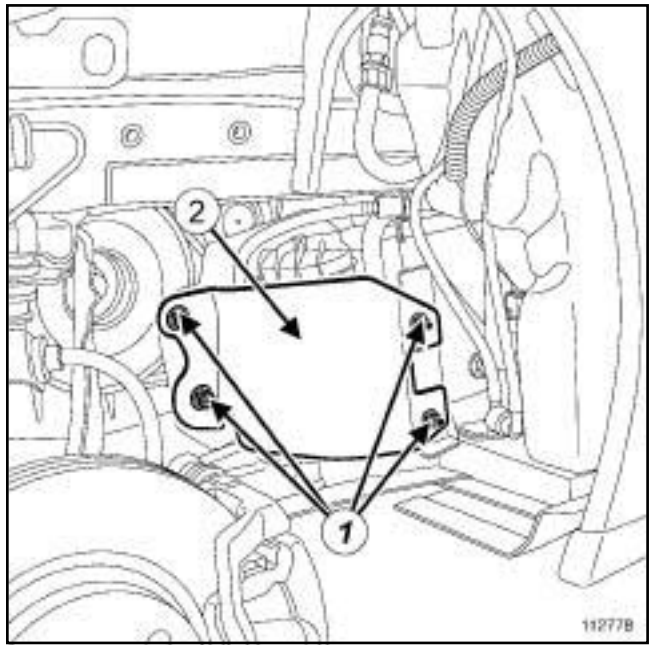
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ The safety advice and cleanliness instructions must be respected (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

Note:

Use only wipes (**77 11 211 707**) to clean the filter and pipes once the fuel circuit is opened.

Be sure to have the new diesel filter to hand before starting work.



112778

❑ Remove:

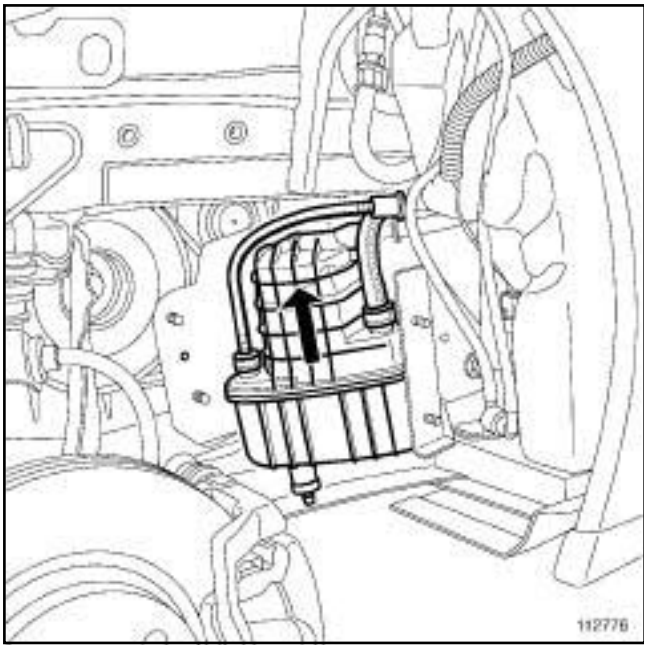
- the mounting nuts (**1**) from the diesel filter protection plate (**2**) ,
- the diesel filter protection plate.

IMPORTANT
Wear gloves during the operation.

IMPORTANT

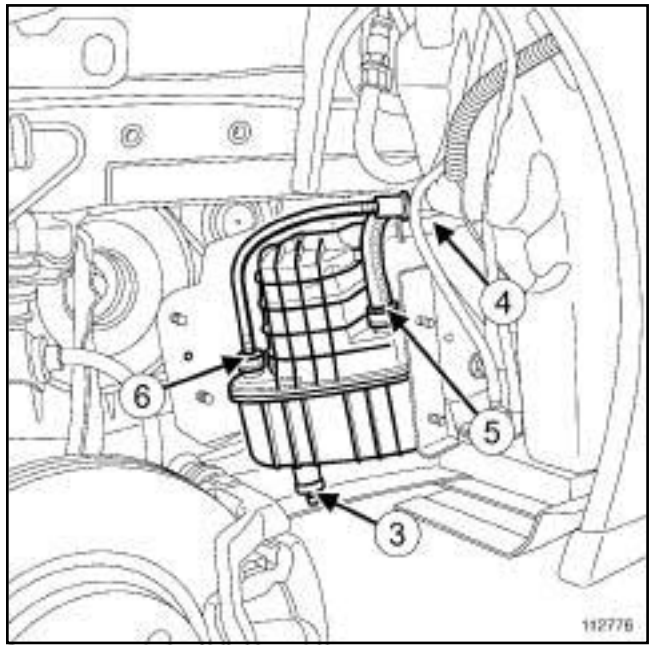
During this operation, it is essential to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.



112776

❏ Push the diesel filter upwards to remove it from its holder.



112776

❏ Place a container under the water separator bleed screw (**3**) to collect the diesel fuel.

❏ Open the bleed screw (**3**) .

❏ Disconnect the pipe unions on the diesel filter in the following order: (**4**) , (**5**) then (**6**) .

WARNING

Prevent the hose unions from coming into contact with a polluted environment.

❏ Remove the diesel filter.

❏ Let the diesel fuel flow out from the various pipes into a container.

Note:

Make preparations for fuel outflow.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the pipe unions on the diesel filter (only remove the caps at the last moment).

❏ Refit:

- the diesel filter,

- the protection plate for the diesel filter.

K9K

SUPPLY CIRCUIT PRIMING PROCEDURE

- ❏ Open the bleed screw located between the filter and the high pressure pump (see **13A**, **Fuel supply**, **Diesel supply circuit: Operating diagram**, page **13A-3**) .
- ❏ Fit a pipe on the bleed screw and set up a container to recover the diesel fuel when priming the circuit.
- ❏ Prime the supply circuit with the priming bulb until diesel starts to run into the container.
- ❏ Close the air bleed screw.
- ❏ Remove the pipe from the bleed.

II - FINAL OPERATION.

- ❏ Refit:
  - the right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
  - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

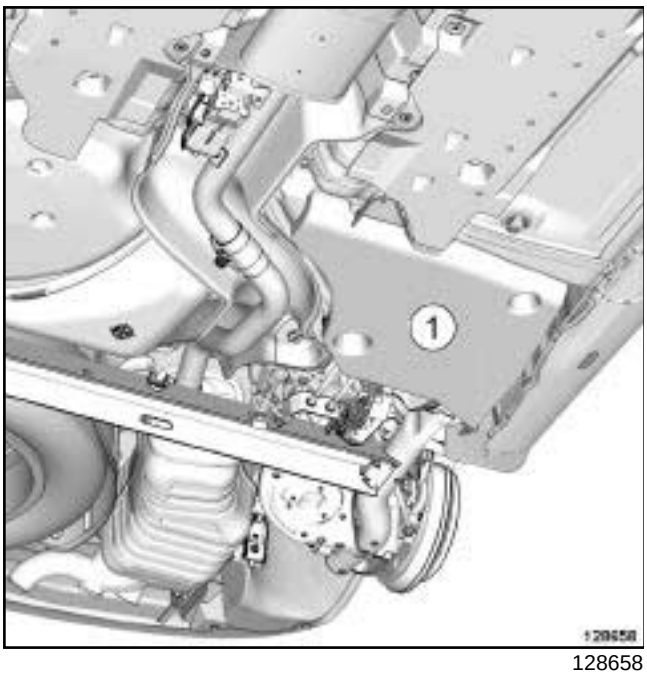
IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

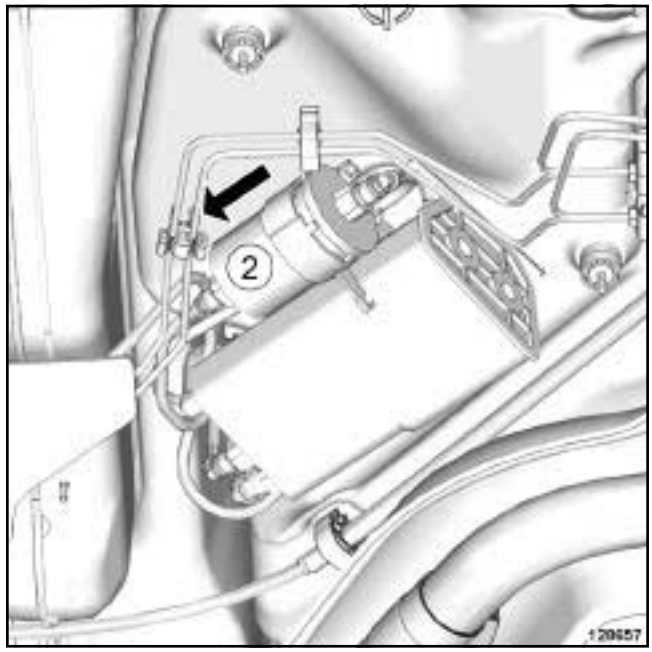
Wear heat protective gloves during the operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED



128658

❑ Remove the fuel filter guard (**1**) .



128657

❑ Unclip the fuel filter (**2**) on the fuel vapour absorber in the direction of the arrow.

❑ Disconnect the fuel filter pipes.

❑ Remove the fuel filter.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the fuel filter.

❑ Connect the fuel filter pipes.

❑ Clip the fuel filter onto the fuel vapour absorber.

❑ Refit the fuel filter guard.

II - FINAL OPERATION.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

Particle filter injector fuel filter: Removal - Refitting

K9K, and 772

REMOVAL

I - OPERATION FOR REMOVAL OF PART CONCERNED

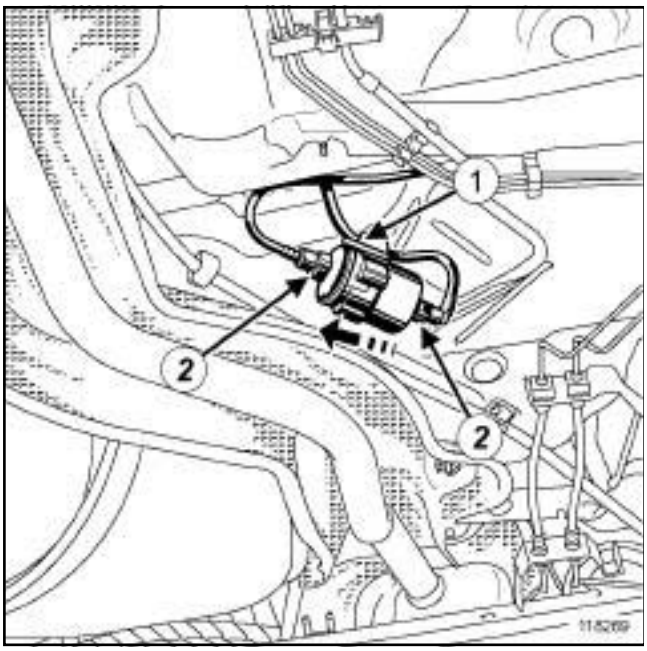
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118269

❑ Separate the tabs (**1**) of the particle filter injector fuel filter holder.

❑ Unclip the particle filter injector fuel filter unions (**2**) .

Note:

Make preparations for fuel outflow.

❑ Remove the particle filter injector fuel filter following the direction of the arrow.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the particle filter injector fuel filter.

❑ Clip on:

- the particle filter injector fuel filter,
- the particle filter injector fuel filter unions.

D4F, and 740 or 742 or 764

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) .

❑ Remove:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

IMPORTANT

During this operation, it is essential to:

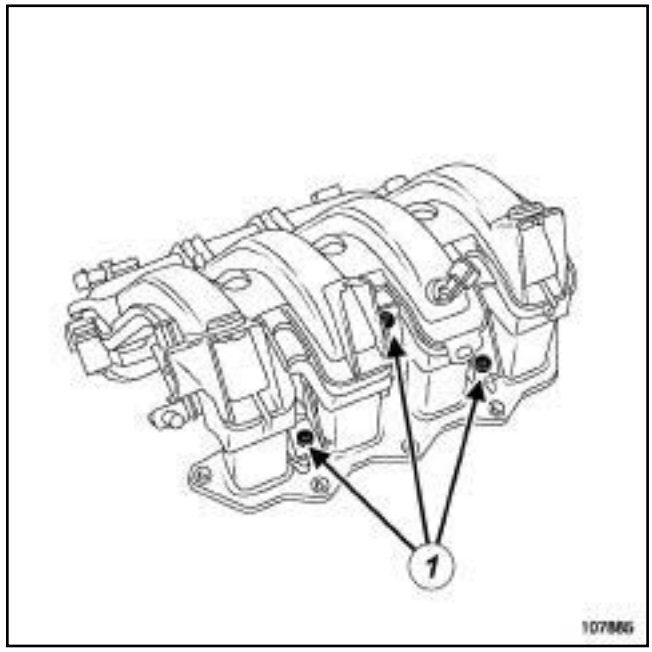
- refrain from smoking or bringing red hot objects close to the working area,
- be aware of fuel splashes when disconnecting the supply union,
- protect sensitive areas from fuel outflow.

IMPORTANT

Wear gloves during the operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED

ON THE WORKBENCH



107885

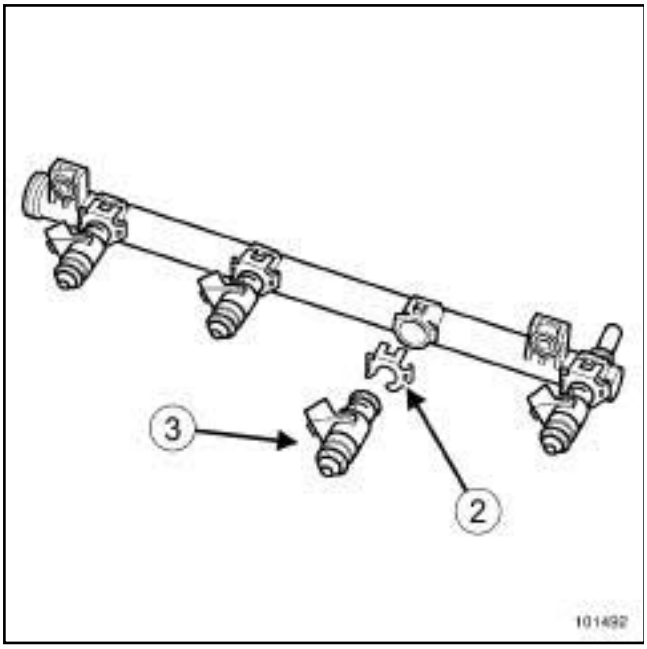
❑ Disconnect the injector wiring harness.

❑ Remove:

- the mounting bolts (**1**) from the injector rail,
- the injector rail.

❑ Remove the injector wiring harness.

D4F, and 740 or 742 or 764



101492

❑ Remove:

- the clips (**2**) from the injectors,
- the injectors (**3**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the injectors' O-rings,
- the injector mounting clips,

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the injectors,
- the injector clips,

❑ Refit the injector wiring harness.

❑ Refit:

- the injector rail,
- the injector rail mounting bolts,

❑ Connect the injector wiring harness.

III - FINAL OPERATION.

❑ Refit:

- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

K4J – K4M

Tightening torques ▽	
injector rail bolts	**10 N.m**

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

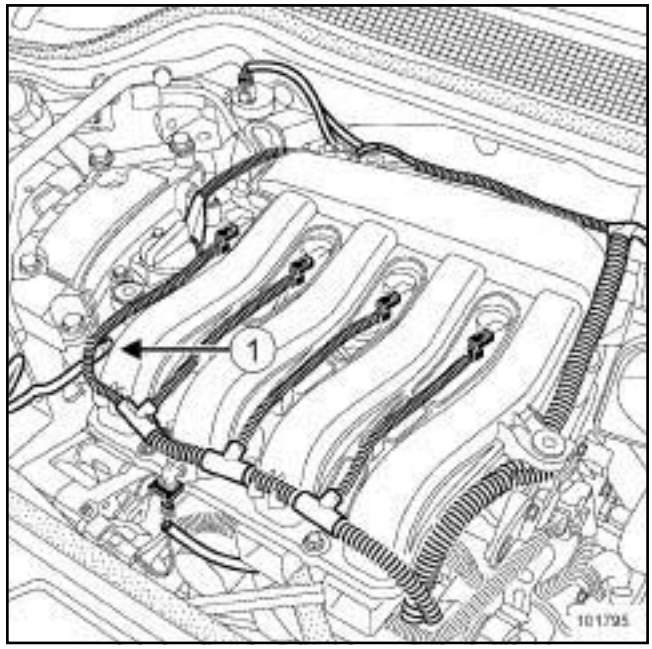
IMPORTANT
Wear goggles with side protectors for this operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .



101795

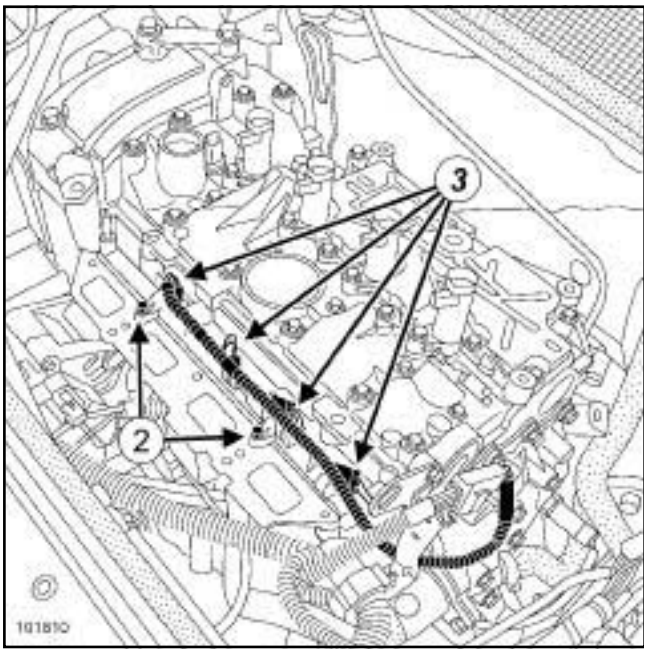
❏ Disconnect the fuel supply pipe union from the injector rail (**1**) .

WARNING
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❏ Insert the blanking plugs.

K4J – K4M

II - OPERATION FOR REMOVAL OF PART CONCERNED

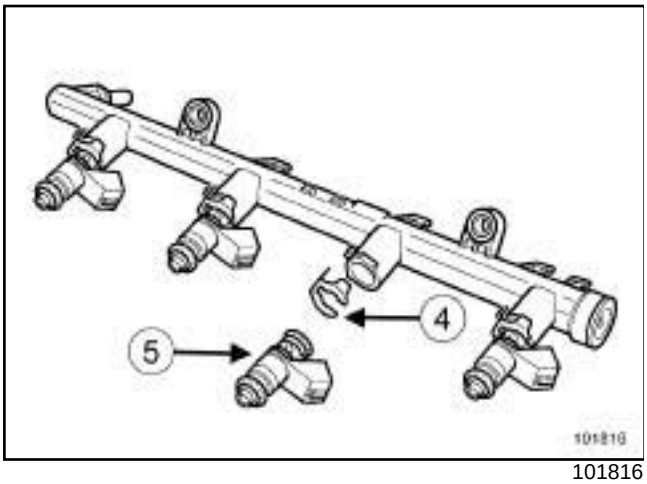


101810

❑ Remove:

- the injector rail bolts (**2**) ,
- the « injector rail-injector» assembly by pulling it carefully towards the front of the vehicle.

❑ Disconnect the connector from each injector (**3**) .



101816

❑ Remove:

- the injector retaining clips (**4**) ,
- the injectors (**5**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: injector clip on injector rail**.

❑ **parts always to be replaced: injector seal**.

II - REFITTING PART CONCERNED

❑ Refit:

- new seals on each injector,
- the injectors on the injector rail,
- a new clip on each injector.

❑ Fit the « injector rail-injector » assembly.

❑ Torque tighten the **injector rail bolts (10 N.m)**.

❑ Connect the connector on each injector.

III - FINAL OPERATION

❑ Remove the blanking plugs.

❑ Connect the fuel supply pipe union on the injector rail.

❑ Refit the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

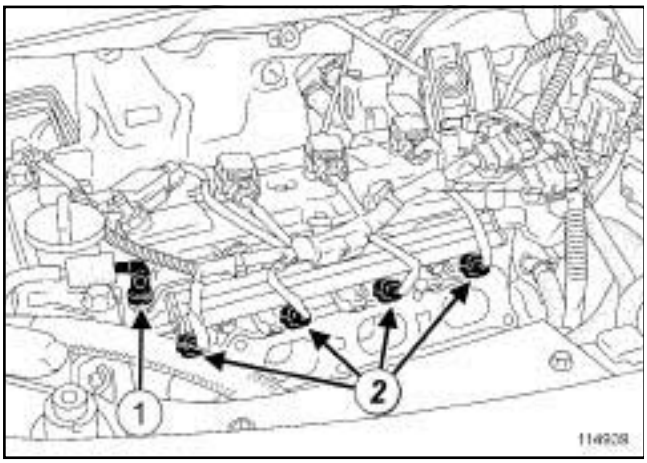
Tightening torques ▽	
injector rail mounting bolts	**25 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .



114939

❏ Disconnect:

- the fuel supply union (**1**) on the injector rail,
- the injector connectors (**2**) .

IMPORTANT

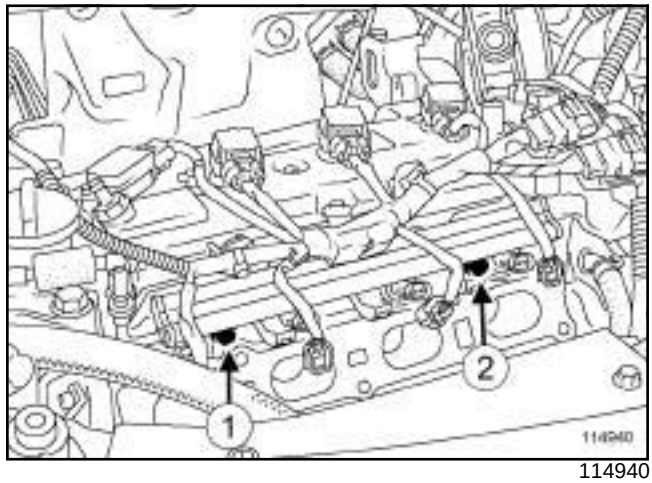
During this operation, it is essential to:

- refrain from smoking or bringing red hot objects near the working area,
- be aware of fuel splashes when disconnecting the supply union,
- protect sensitive areas from fuel outflow.

IMPORTANT

Wear gloves during the operation.

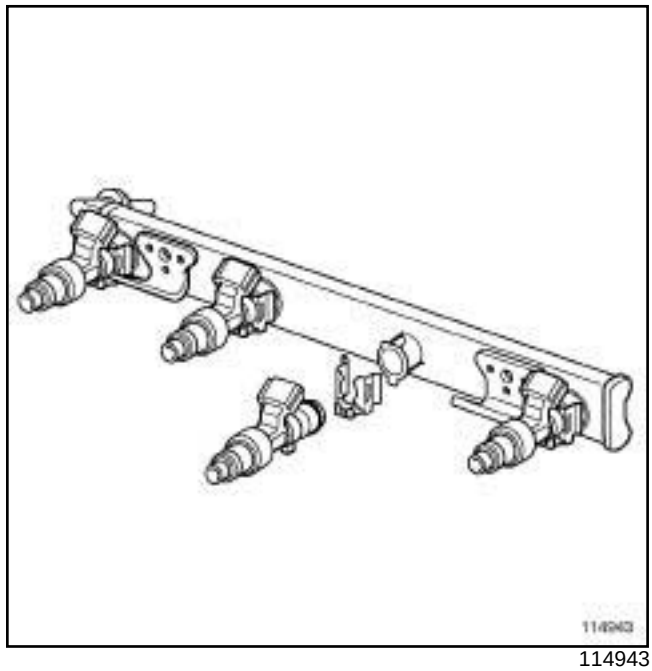
II - REMOVAL OF PART CONCERNED



114940

❏ Remove:

- in order, the injector rail mounting bolts,
- the « injector rail-injector » assembly by pulling carefully towards the front of the vehicle.



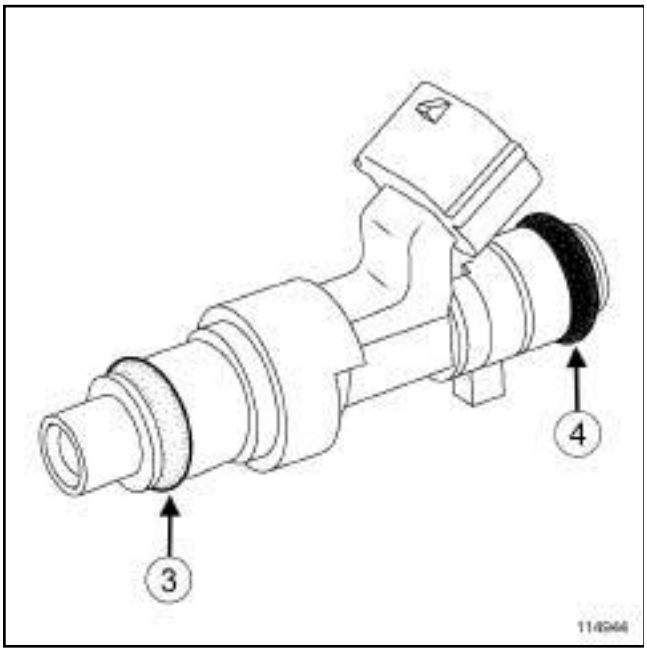
114943

❏ Remove:

- the injector mounting clips,
- the injectors.

REFITTING

I - REFITTING PREPARATION OPERATION



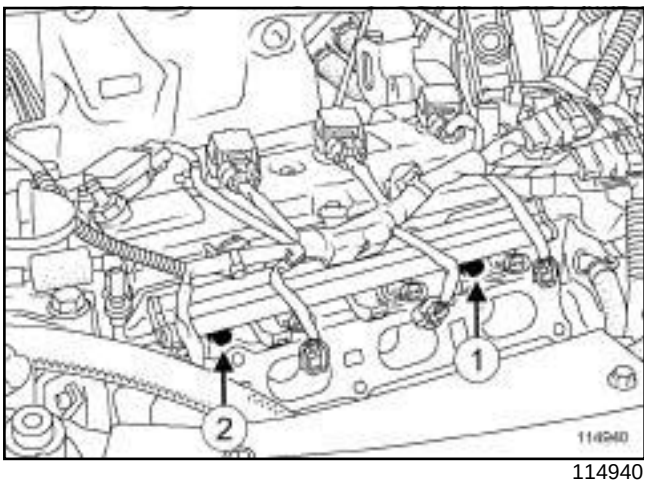
114944

❑ The O-rings and the injector mounting clips must be replaced with new ones.

The O-rings are different, do not mix them up. O-ring (**3**) is green and O-ring (**4**) is black.

II - REFITTING PART CONCERNED

❑ Refit the « injector rail-injector » assembly.



114940

❑ Tighten to torque and in order the **injector rail mounting bolts (25 Nm)**.

III - FINAL OPERATION

❑ Connect:

- the injector connectors,
- the fuel supply union onto the injector rail,

❑ Refit the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

F4R

Equipment required
Diagnostic tool

Tightening torques ▽	
injector rail mounting bolts	**10Nm**

REMOVAL

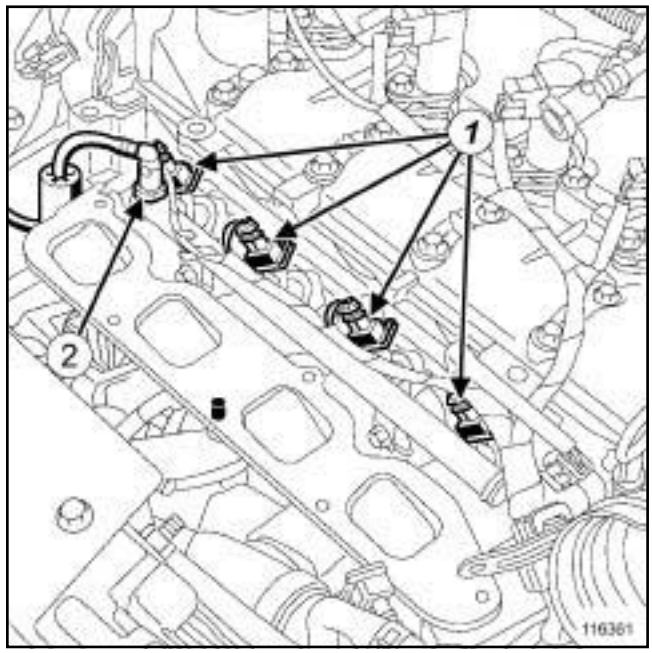
I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the motorised throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116361

❑

IMPORTANT
Wear gloves during the operation.

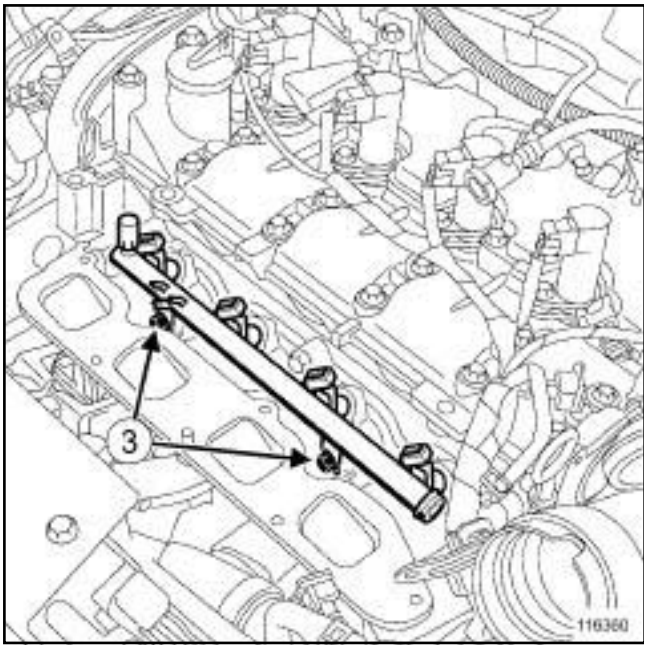
IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

❑ Disconnect:

- the injector connectors (**1**) ,
- the fuel supply union (**2**) on the injector rail.

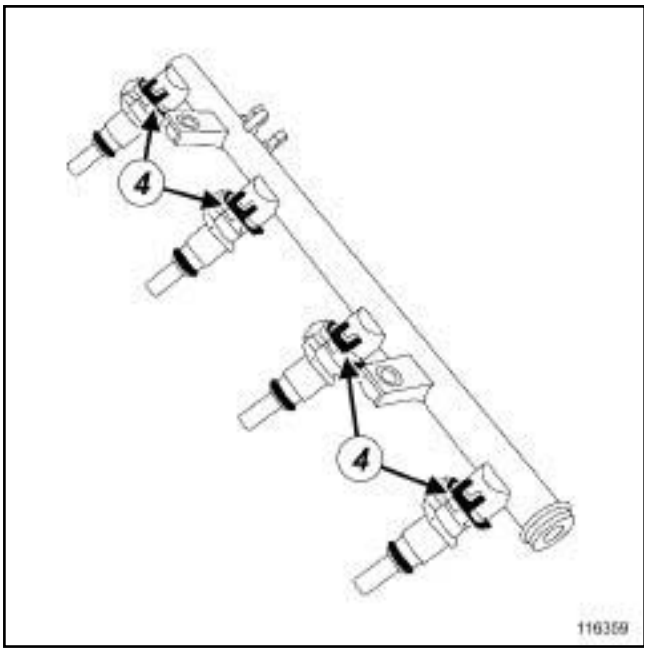


116360

❑ Remove:

- the injector rail mounting bolts (**3**) ,
- the injector rail, pulling it carefully.

Separating the injectors from the injector rail



116359

❑ On a clean workbench:

- remove the retaining clips (**4**) from the injectors,
- separate the injectors from the injector rail.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ The O-rings and the injector mounting clips must be replaced with new ones.

Separating the injectors from the injector rail

❑ On a clean workbench:

- assemble the injectors fitted with new seals on the injector rail,
- refit the injector retaining clips.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the injector rail fitted with its injectors with new seals,
- the injector rail mounting bolts,

❑ Torque tighten the **injector rail mounting bolts (10Nm)**.

❑ Connect:

- the fuel supply union on the injector rail,
- the injector connectors.

III - FINAL OPERATION.

❑ Refit:

- the intake distributor (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Use the **Diagnostic tool** to check that there are no faults stored by the computer; clear any faults if need be.

D4F, and 784 or 786

Tightening torques ▽	
injector rail - injector bolts	**4.5 Nm**

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

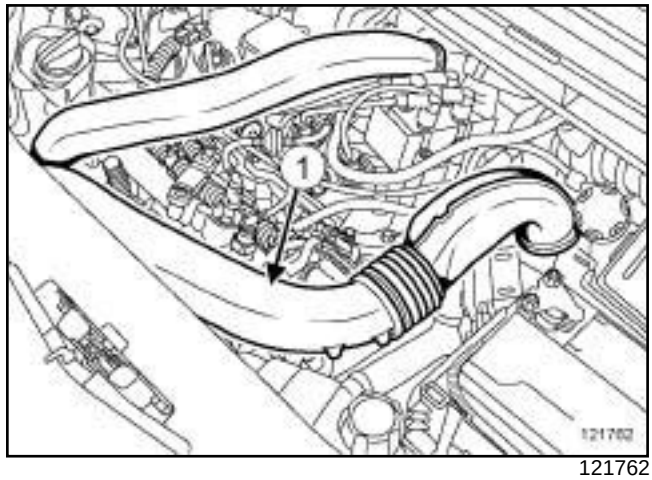
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

REMOVAL

I - REMOVAL PREPARATION OPERATION

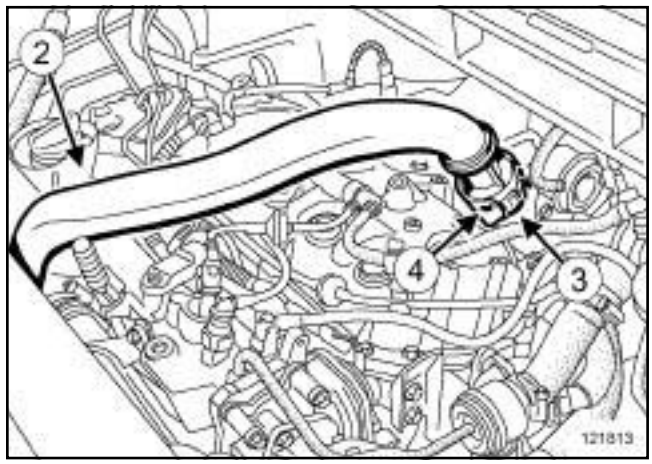
❏ Remove the front engine cover.

❏ Disconnect the battery (see) (MR 392, 80A, Battery).



121762

❏ Disconnect the air filter unit air inlet pipe (**1**) .



121813

❏ Remove the turbocharger air outlet pipe bolt (**2**) from the intake distributor.

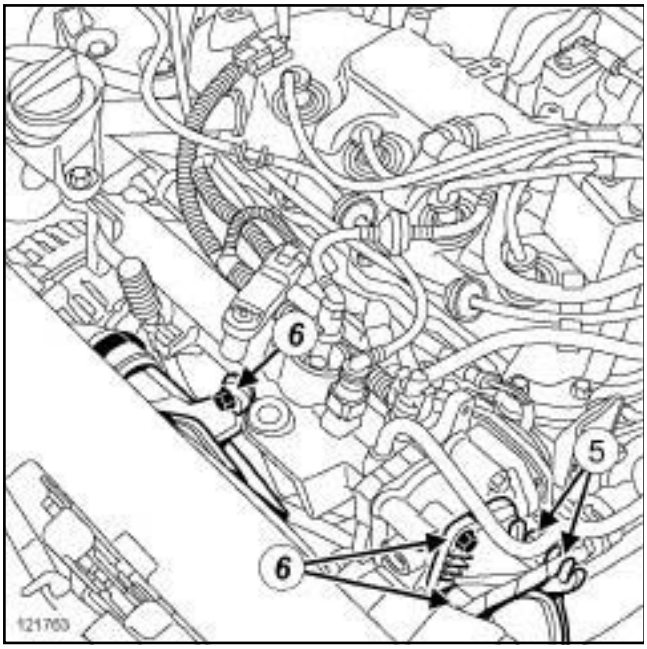
❏ Remove the turbocharger air outlet pipe clip (**3**) from the turbocharger.

Note:

If the clip (**4**) is removed from the heat resistant protector, the latter must be replaced.

❏ Move aside the turbocharger air outlet pipe.

D4F, and 784 or 786



121763

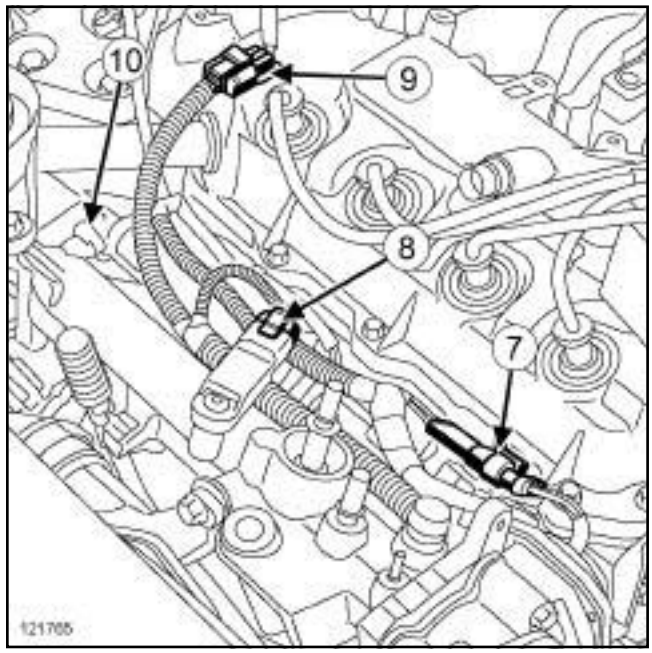
❏ Detach at (**5**) :

- the throttle valve wiring harness,
- the vacuum pipe.

❏ Remove the intercooler air outlet pipe bolts (**6**) .

❏ Move the intercooler outlet air pipe to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED

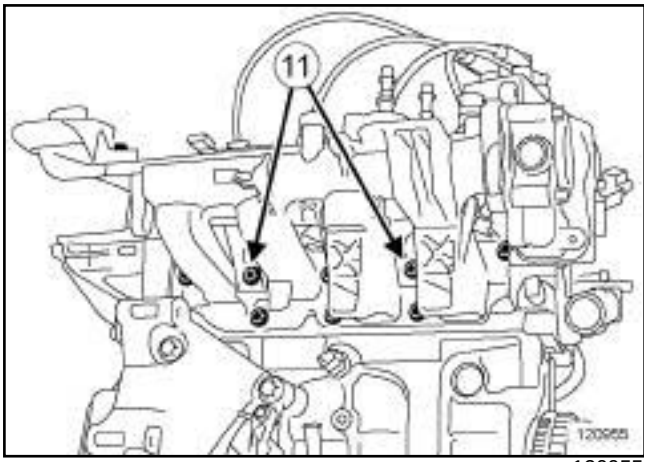


121765

❏ Disconnect:

- the wiring harness connector (**7**) from the injector rail,
- the turbocharger pressure sensor connector (**8**) ,
- the connector (**9**) from the oxygen sensor,
- the petrol inlet duct (**10**) from the injector rail.

D4F, and 784 or 786



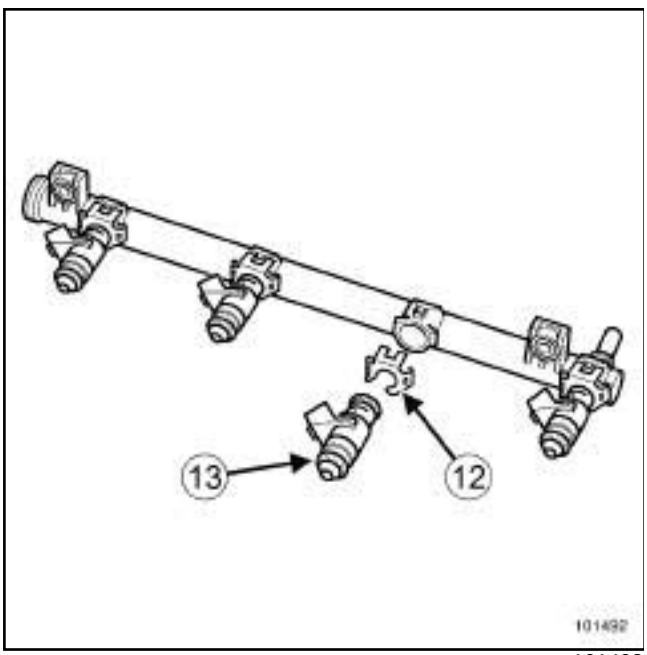
120955

❏ Remove:

- the injector rail bolts (**11**) ,
- the « injector rail - injector » assembly by pulling it gently.

❏ Disconnect the wiring harness connectors on the injectors.

❏ Remove the wiring harness from the « injector rail - injector » assembly.



101492

❏ Remove:

- the clips (**12**) from the injectors,
- the injectors (**13**) .

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Always replace:

- the injectors' O-rings,
- the injector clips,

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the injectors with new seals,
- the new injector clips,
- the injector rail - injector wiring harness.

❏ Connect the injector wiring harness connectors.

❏ Refit:

- the « injector rail - injector » assembly making sure the centring pins are correctly positioned on the intake distributor,
- the « injector rail - injector » assembly bolts.

❏ Torque tighten the **injector rail - injector bolts (4.5 Nm)**.

❏ Connect:

- the petrol inlet duct to the injector rail,
- the oxygen sensor connector,
- the turbocharger pressure sensor connector,
- the wiring harness connector to the injector rail.

III - FINAL OPERATION.

❏ Refit:

- the intercooler outlet air pipe,
- the intercooler air outlet pipe bolts.

❏ Clip:

- the vacuum pipe,
- the throttle valve wiring harness.

❏ Refit the turbocharger air outlet pipe on the turbocharger.

❏ Attach the turbocharger air outlet pipe to the turbocharger.

❏ Refit the turbocharger air outlet pipe bolt on the intake distributor.

❏ Refit the air filter box air inlet pipe.

❏ Connect the battery (see) (MR 392, 80A, Battery).

D4F, and 784 or 786

❑ Refit the engine cover.

Special tooling required	
Mot. 1311-08	Union for taking fuel pressure measurements.

CHECK

❑

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

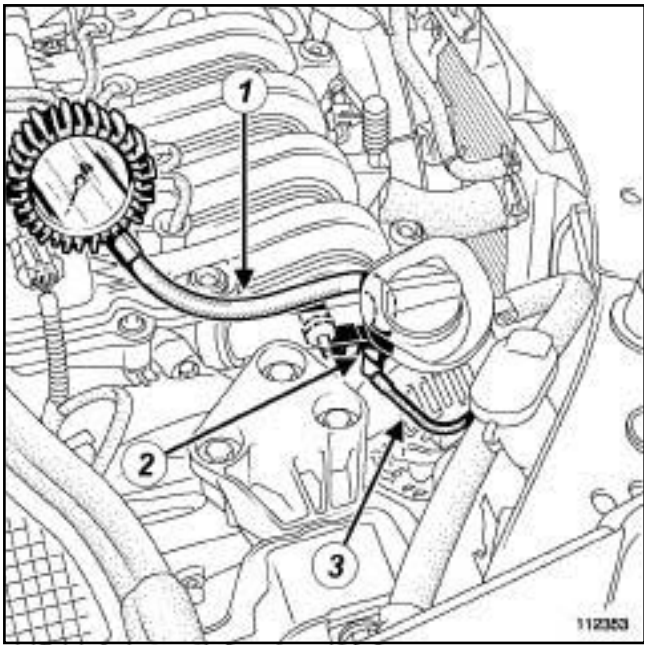
Wear latex gloves during the operation.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

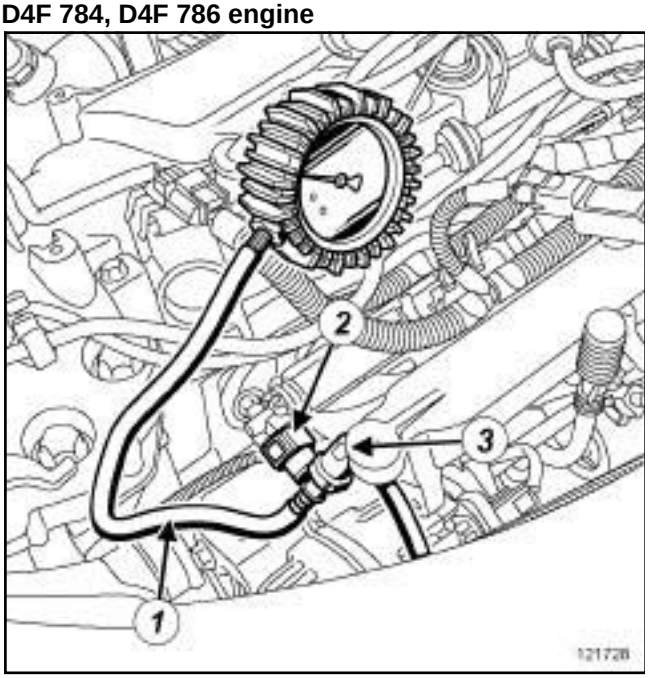
D4F

D4F 740, D4F 742, D4F 764 engine



112353

D4F 784, D4F 786 engine



121728

❏ Disconnect the petrol inlet pipe from the injector rail.

❏ Connect:

- the pipe (**1**) fitted with the pressure gauge contained in the checking kit,with the « T » union (**2**) of the **(Mot. 1311-08)**,
- the « T » unionon the rail,
- the petrol inlet duct (**3**) to the « T » union.

❏ Start the engine.

❏ Determine the pressure.

- the pressure must be constant (**3.5 bars**).
- It may take a few seconds to obtain a correct injector rail pressure reading.

❏ Stop the engine

FINAL OPERATION

❏ Disconnect:

- the petrol inlet duct from the « T » union,
- the « T » union from the rail.

❏ Connect the petrol inlet duct.

K4J or K4M

Special tooling required	
Mot. 1311-01	Pressure gauges and petrol pressure measuring unions.
Mot. 1311-08	Union for taking fuel pressure measurements.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

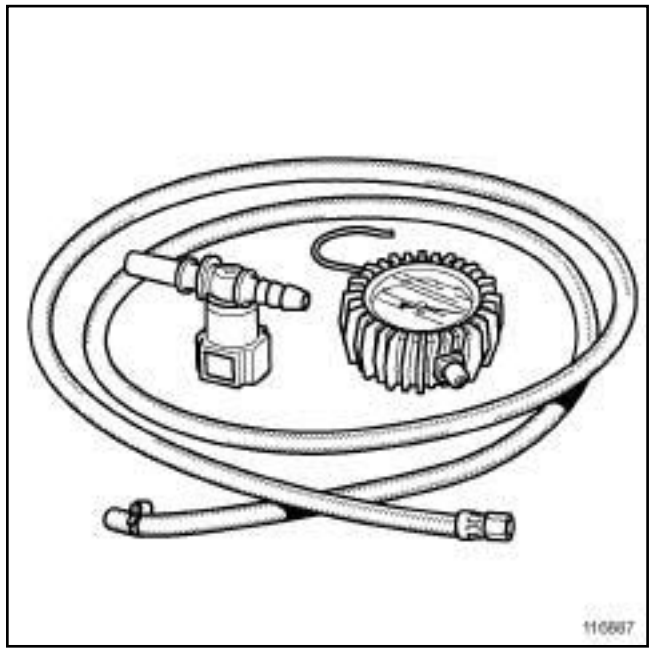
Wear leaktight gloves (Nitrile type) for this operation.

WARNING

Protect sensitive areas from fuel spillage.

CHECK

I - PREPARATION OPERATION FOR CHECK



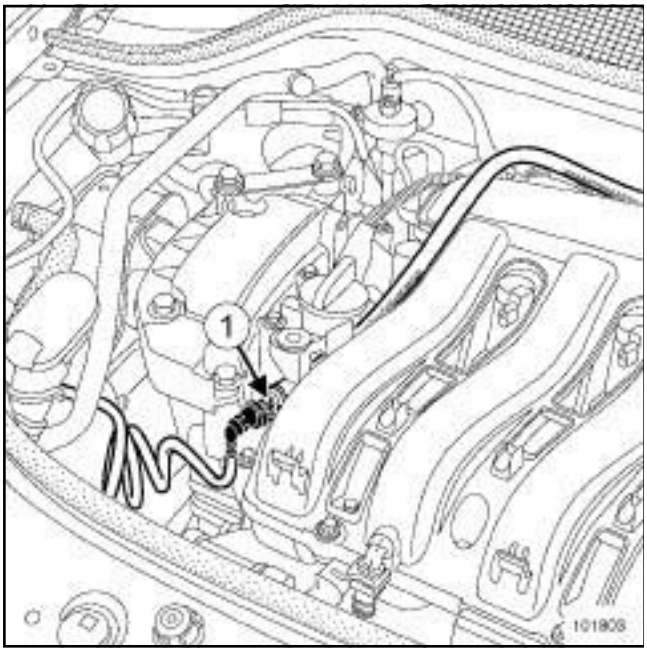
116887

❑ Ensure you have a checking tool **(Mot. 1311-01)** and a « T » union **(Mot. 1311-08)**.

K4J or K4M

II - TEST OPERATION

K4M



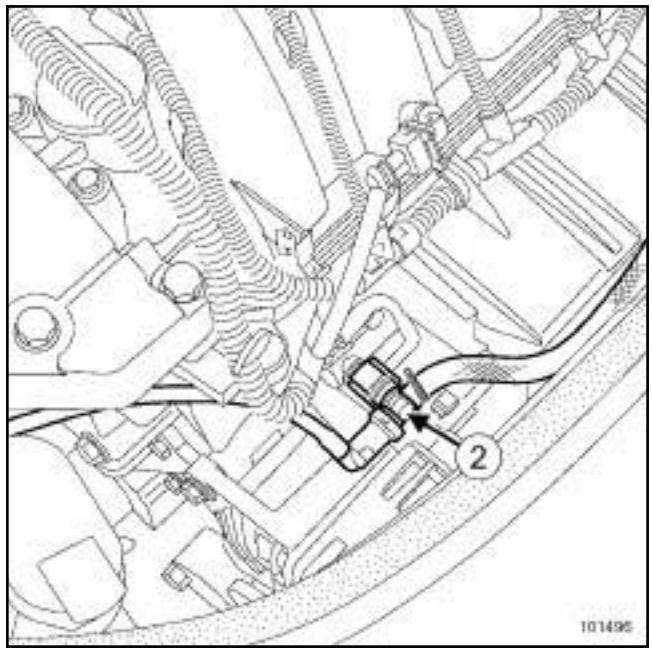
101803

❏ Disconnect the fuel supply union from the injector rail.

❏ Connect:

- the pipe fitted with a test pressure gauge **(Mot. 1311-01)** with the « T » union **(Mot. 1311-08)** (**1**) ,
- the « T » union **(Mot. 1311-08)** to the injector rail,
- the injector rail fuel supply union to the « T » union **(Mot. 1311-08)**.

K4J



101496

❏ Disconnect the fuel supply union from the injector rail.

❏ Connect:

- the pipe fitted with a test pressure gauge **(Mot. 1311-01)** with the « T » union **(Mot. 1311-08)** (**2**) ,
- the « T » union **(Mot. 1311-08)** to the injector rail,
- the injector rail fuel supply union to the « T » union **(Mot. 1311-08)**.

❏ Start the engine.

❏ Record the pressure; this should be constant at **3.5 bar**.

Note:

It may take a few seconds to obtain a correct injector rail pressure reading.

❏ Switch off the engine.

III - FINAL OPERATION

❏ Disconnect the « T » union **(Mot. 1311-08)** from the injector rail.

❏ Separate the test tool **(Mot. 1311-01)** from the « T » union.

K4J or K4M

❑ Connect the fuel supply pipe union on the injector rail.

M4R

Special tooling required	
Mot. 1311-01	Pressure gauges and petrol pressure measuring unions.
Mot. 1311-08	Union for taking fuel pressure measurements.

IMPORTANT

During this operation, it is essential to:

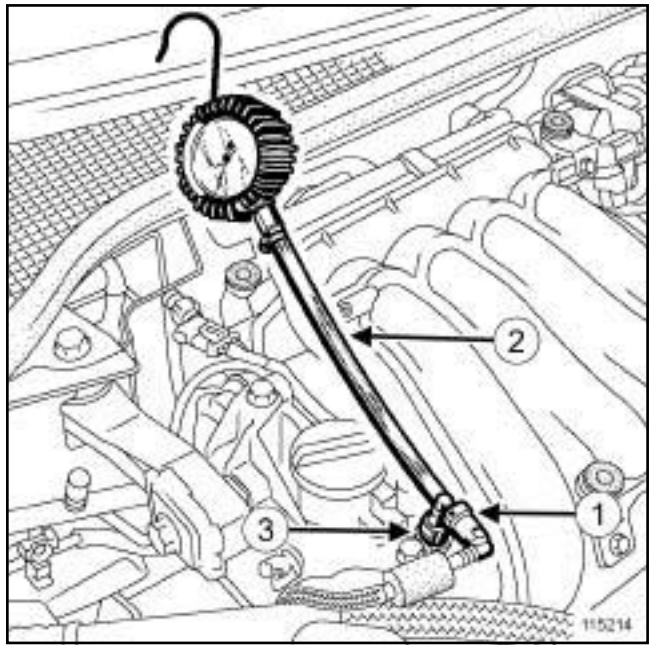
- refrain from smoking or bringing red hot objects near the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear gloves during this operation.



115214

❑ Disconnect fuel supply pipe union (**1**) on the injector rail.

❑ Connect:

- the pipe (**2**) attached to the trolley pressure gauge **(Mot. 1311-01)** with a « T » union (**3**) **(Mot. 1311-08)**,
- the « T » union to the injector rail,
- the injector rail fuel supply union to the « T » union.

❑ Note the fuel pressure.

- The fuel pressure must be constant (**3.5 bar ± 0.06**).
- It may take a few seconds to obtain a correct injector rail pressure reading.

F4R

Special tooling required	
Mot. 1311-01	Pressure gauges and petrol pressure measuring unions.
Mot. 1311-08	Union for taking fuel pressure measurements.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

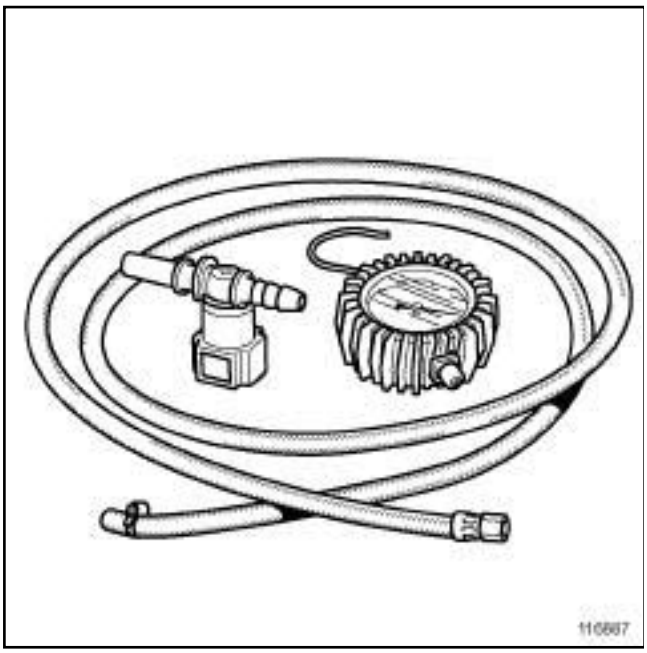
IMPORTANT

Wear gloves during this operation.

IMPORTANT

Wear goggles with side protectors for this operation.

I - REFITTING PREPARATION OPERATION BEFORE CHECK

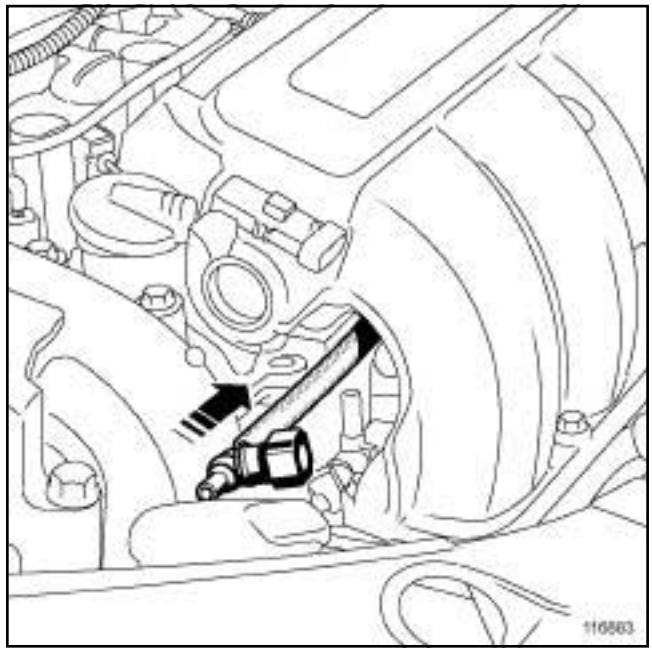


116887

❏ Use the **(Mot. 1311-01)** and the **(Mot. 1311-08)**.

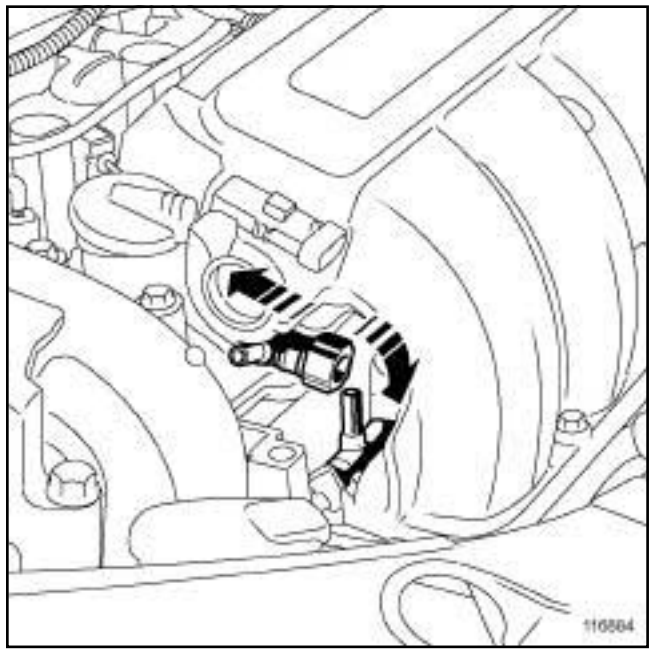
❏ Assemble the long flexible pipe of the **(Mot. 1311-01)** and the **(Mot. 1311-08)**.

❏ Disconnect the fuel supply union on the injector rail.



116883

❏ Pass the flexible pipe of the **(Mot. 1311-01)** fitted with the **(Mot. 1311-08)** under the inlet manifold.



116884

❏ Connect:

- the **(Mot. 1311-08)** onto the injector rail positioning it between the rocker cover and the inlet manifold then pivoting it,
- the fuel supply union on the **(Mot. 1311-08)**,
- the fuel pressure gauge on the flexible pipe.

F4R

II - FUEL PRESSURE CHECK

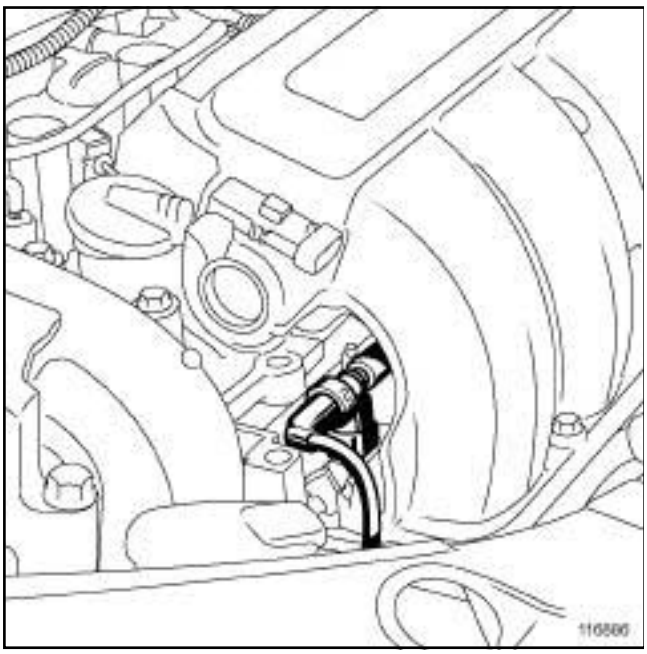
❏ Switch on the ignition.

❏ Measure the fuel pressure.

❏ The value should be **3.5 bar ±0.2**.

> Note:
>
> It may take a few minutes to obtain the correct pressure value.

III - FINAL OPERATION



116886

❏ Disconnect the fuel supply union on the **(Mot. 1311-08)**.

❏ Disconnect:

- the **(Mot. 1311-08)** from the injector rail,
- the fuel pressure gauge on the flexible pipe.

❏ Remove the flexible pipe of the **(Mot. 1311-01)** fitted with the **(Mot. 1311-08)**.

❏ Separate the **(Mot. 1311-01)** from **(Mot. 1311-08)**.

❏ Connect the fuel supply union on the injector rail.

D4F or K4J or K4M or M4R

Special tooling required	
Mot. 1311-08	Union for taking fuel pressure measurements.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

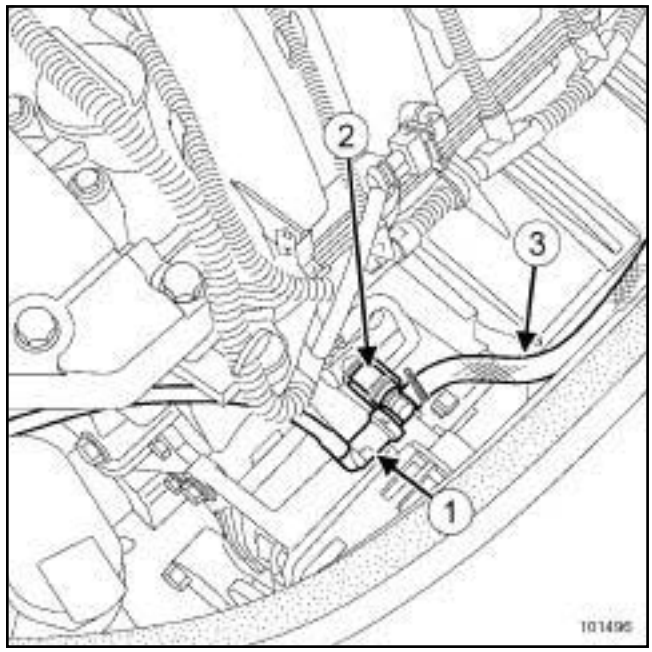
Wear leaktight gloves (Nitrile type) for this operation.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

CHECK

K4J



101496

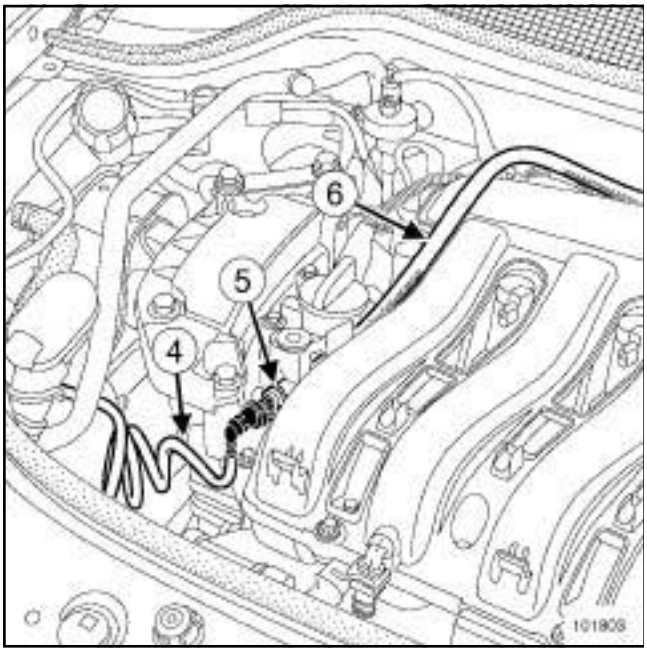
❑ Disconnect the fuel inlet union (**1**) .

❑ Fit a « T » union **(Mot. 1311-08)** (**2**) .

❑ Fit to the « T » union outlet **(Mot. 1311-08)**, a pipe (**3**) which is long enough to drain the pump into a container.

D4F or K4J or K4M or M4R

K4M



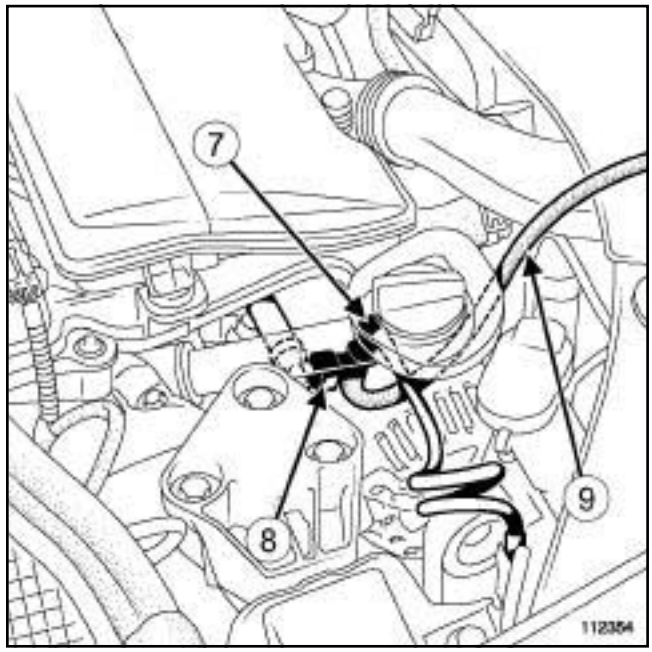
101803

❏ Disconnect the fuel inlet union (**4**) .

❏ Fit a « T » union **(Mot. 1311-08)** (**5**) .

❏ Fit to the « T » union outlet **(Mot. 1311-08)**, a pipe (**6**) which is long enough to drain the pump into a container.

D4F, and 740 or 742 or 764



112354

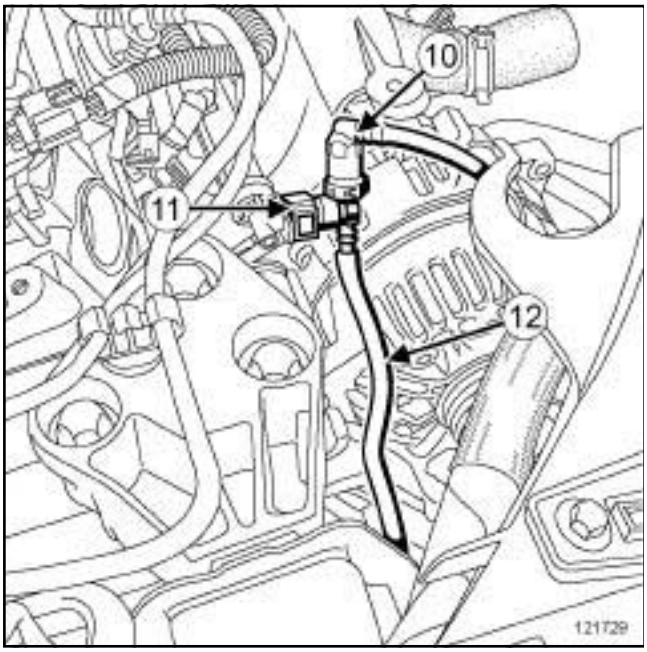
❏ Disconnect the fuel inlet union (**7**) .

❏ Fit a « T » union **(Mot. 1311-08)** (**8**) .

❏ Fit to the « T » union outlet **(Mot. 1311-08)**, a pipe (**9**) which is long enough to drain the pump into a container.

D4F or K4J or K4M or M4R

D4F, and 784 or 786



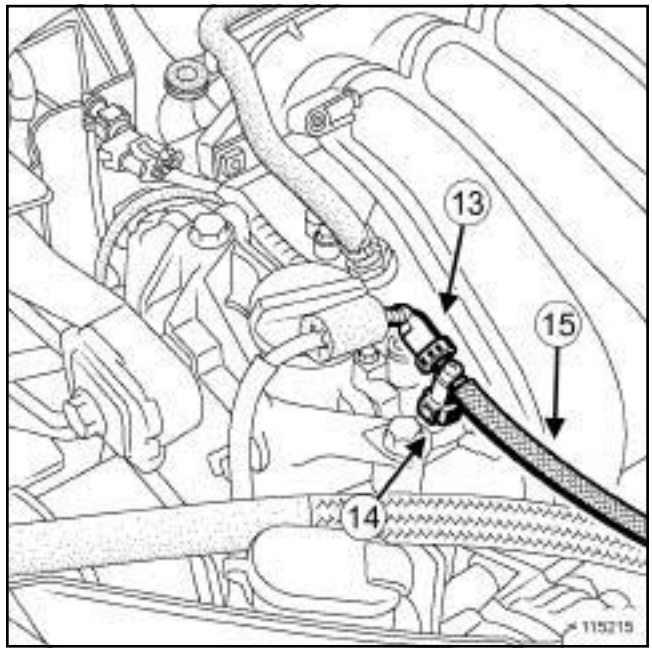
121729

❏ Disconnect the fuel inlet union (**10**) .

❏ Fit a « T » union **(Mot. 1311-08)** (**11**) .

❏ Fit to the « T » union outlet **(Mot. 1311-08)**, a pipe (**12**) which is long enough to drain the pump into a container.

M4R



115215

❏ Disconnect the fuel inlet union (**13**) .

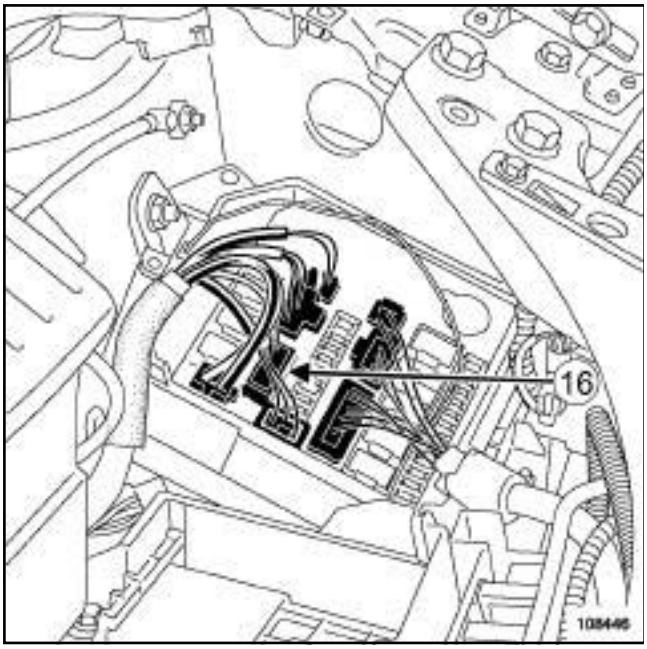
❏ Fit a « T » union **(Mot. 1311-08)** (**14**) .

❏ Fit to the « T » union outlet **(Mot. 1311-08)**, a pipe (**15**) which is long enough to drain the pump into a container.

❏ Insert the pipe into a graduated measuring cylinder (**2000 ml**).

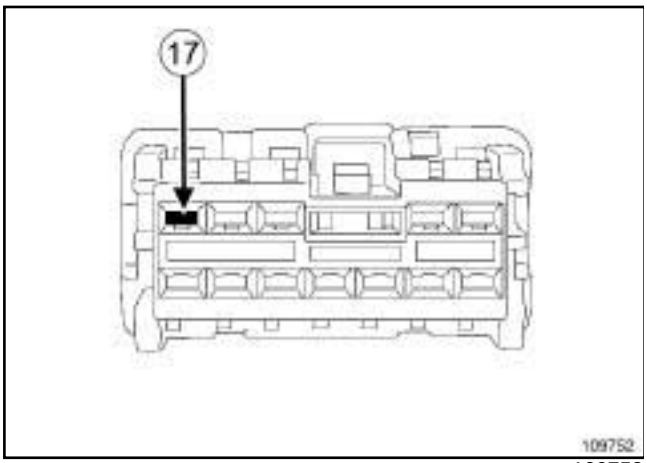
❏ Remove the Protection and Switching Unit cover.

D4F or K4J or K4M or M4R



108446

❏ Remove the brown 12-track connector (**16**) .



109752

❏ Connect the terminal (**17**) of the brown connector to a + battery supply to operate the fuel pump.

Note:

The flow reading should be **80 to 120 l/h**.

❏ Removal the terminal (**17**) of the brown connector from the + battery supply.

❏ Refit the Protection and Switching Unit cover.

❏ Disconnect:

- the petrol inlet duct on the « T » union **(Mot. 1311-08)**,
- the « T » union **(Mot. 1311-08)** on the rail,
- the discharge pipe.

❏ Connect the fuel inlet pipe on the injector rail.

F4R

Special tooling required	
Mot. 1311-01	Pressure gauges and petrol pressure measuring unions.
Mot. 1311-08	Union for taking fuel pressure measurements.

IMPORTANT
This procedure must be carried out with the ignition off.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

IMPORTANT
Wear gloves during this operation.

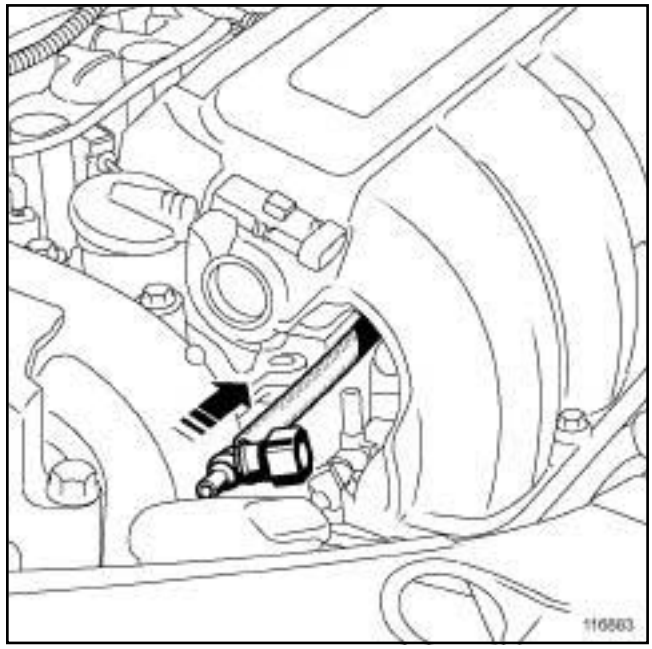
IMPORTANT
Wear goggles with side protectors for this operation.

I - REFITTING PREPARATION OPERATION BEFORE CHECK

❏ Use the **(Mot. 1311-01)** and the **(Mot. 1311-08)**.

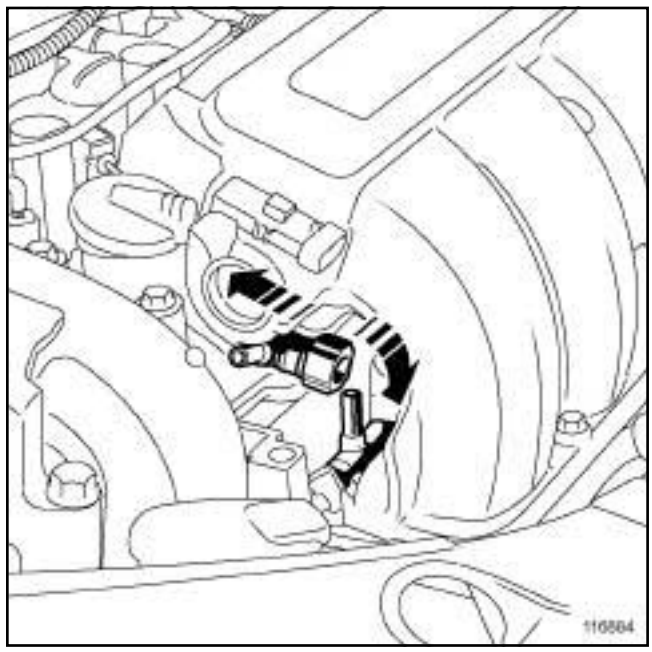
❏ Assemble the long flexible pipe of the **(Mot. 1311-01)** and the **(Mot. 1311-08)**.

❏ Disconnect the fuel supply union on the injector rail.



116883

❏ Pass the flexible pipe of the **(Mot. 1311-01)** fitted with the **(Mot. 1311-08)** under the inlet manifold.



116884

❏ Connect:

- the **(Mot. 1311-08)** onto the injector rail positioning it between the rocker cover and the inlet manifold then pivoting it,
- the fuel supply union on the **(Mot. 1311-08)**.

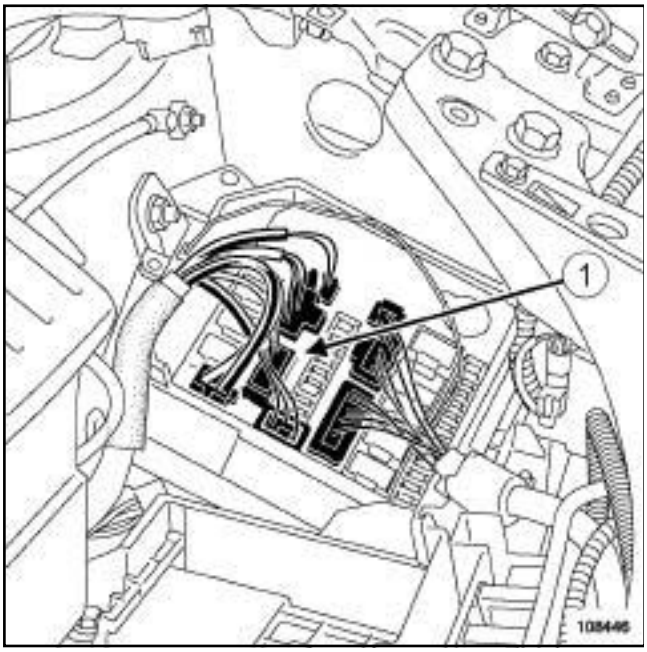
II - FUEL FLOW CHECK

❏ Insert the flexible pipe in a graduated measuring cylinder (**2000 ml**).

F4R

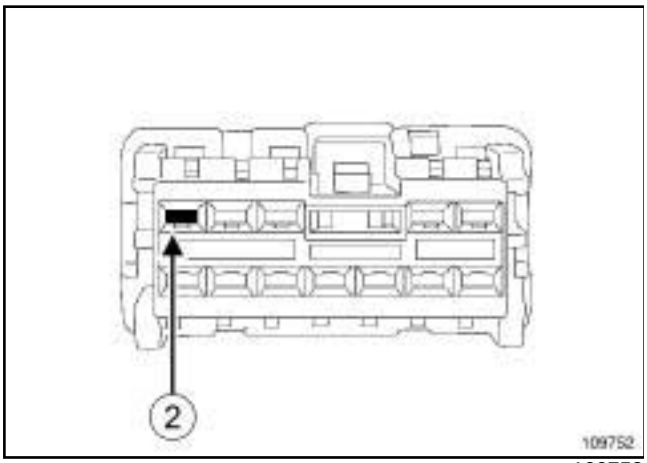
❏ Remove:

- the soundproofing unit,
- the UPC cover.



108446

❏ Disconnect the brown 12-track connector (**1**) .



109752

❏ Connect terminal (**2**) of the brown connector to a + battery supply to operate the fuel pump.

Note:

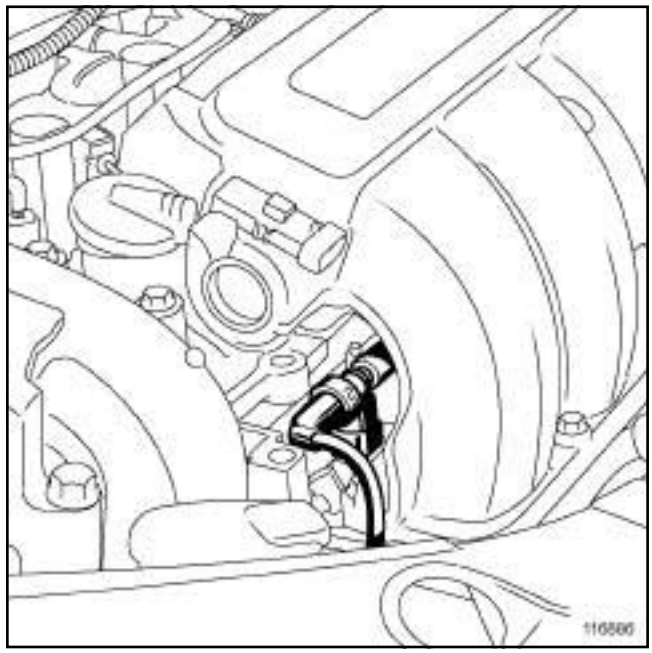
The flow reading should be **80 to 120 l/h**.

❏ Remove the + battery feed brown connector terminal .

III - FINAL OPERATION

❏ Refit:

- the UPC unit cover,
- the soundproofing unit.


116886

❏ Disconnect the fuel supply union on the **(Mot. 1311-08)**.

❏ Disconnect:

- the fuel supply union of the **(Mot. 1311-08)**,
- the **(Mot. 1311-08)** from the injector rail.

❏ Remove the flexible pipe of the **(Mot. 1311-01)** fitted with the **(Mot. 1311-08)**.

❏ Separate the **(Mot. 1311-01)** from **(Mot. 1311-08)**.

❏ Connect the fuel supply union on the injector rail.

K9K

I - RISKS RELATING TO CONTAMINATION

The high-pressure direct injection system is highly sensitive to contamination. The risks caused by contamination are:

- damage to or destruction of the high pressure injection system,
- a component seizing,
- a component not being properly sealed.

All After-Sales operations must be performed under very clean conditions. Having carried out an operation in good conditions means that no impurities (particles a few microns in size) have penetrated the system during dismantling.

The cleanliness principle must be applied from the filter to the injectors.

What are the sources of contamination?

- metal or plastic swarf,
- paint,
- fibres:
  - cardboard,
  - brushes,
  - paper,
  - clothing,
  - cloth,
- foreign bodies such as hair,
- ambient air,
- etc.

WARNING
Do not clean the engine with a high pressure cleaner to prevent damaging the connections.

1 - Cleaning cloths

Use lint-free cleaning cloths (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

It is prohibited to use cloths or ordinary paper towels: these produce lint and lose fibres, which then contaminate the fuel circuit.

Each cloth must only be used once.

2 - Blanking plugs

The blanking plugs are used to cap the fuel circuit once it is opened and to therefore prevent contaminants from entering.

A set of blanking plugs should be used once only and used plugs must be discarded after use: once used, the plugs are soiled and cleaning them is not sufficient to make them reusable.

Unused plugs must also be discarded and must not be used when carrying out work on an injection system.

Part number for set of blanking plugs: (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

Note:
There is no specific set of blanking plugs for S9U and S9W engines. In order to comply with the cleanliness recommendations, use plugs that are compatible with the blanking plug sets for F9Q, G9U, G9T or ZD3 engines.

3 - Protective bags

Use hermetically-resealable plastic bags, using adhesive tape, for example, to store components which will be refitted and reused. Stored parts will therefore be less subject to the risk of contamination.

These are single-use bags: after use they must be discarded.

4 - Cleaning products

Two cleaning products can be used:

- an injector cleaner (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products),
- an aerosol spray brake cleaner (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

To use the injector cleaner, be sure to have a clean brush in good condition (the brush must not lose any bristles) as well as a clean container which has no impurities in it.

Note:
Use a new injector cleaner each time work is carried out (a used cleaning agent will contain impurities).

K9K

II - ADVICE TO BE FOLLOWED BEFORE ANY OPERATION

1) Carry out the work in a clean working area and take care to protect removed components from dust using plastic bags which are hermetically-resealable, for example.

2) Always order the following from the Parts Department before carrying out work:

- **a new set of blanking plugs**, specific to the engine,
- enough lint-free **cleaning cloths**.
- one of the two **cleaning products** for fuel pipe unions,
- **the parts that are always to be replaced** after each removal operation, mentioned in the operational procedures specific to the vehicle (see related Workshop Repair Manual).

3) Wear safety goggles fitted with side shields to prevent the cleaning product from splashing the eyes.

4) Wear leaktight protective gloves (Nitrile type) to avoid prolonged contact with the skin.

Note:

When using leather protective gloves, wear a pair of leaktight protective gloves (Nitrile type) over the top.

5) Before carrying out work on the injection system, use plastic bags or clean rags, for example, to protect:

- the accessories and timing belts,
- the electrical accessories (starter, alternator, power-assisted steering pump, sensors and electrical connectors),
- the flywheel face.

III - INSTRUCTIONS TO BE FOLLOWED DURING THE OPERATION

Wash your hands before and while carrying out the work.

Replace leaktight protective gloves (Nitrile type) when they are soiled or damaged.

All components removed from the injection system must be stored in a hermetically sealed plastic bag once they have been capped.

Reseal the bag hermetically, for example using adhesive tape, even if the bag must be opened shortly afterwards: ambient air can be a source of impurities.

After opening the fuel circuit, the use of brushes, cleaning agents, air blow guns, rifle-type brushes or standard cloths is strictly prohibited: these items are likely to allow impurities to enter the system.

When replacing a component with a new one or when refitting it after storing it in a plastic bag, do not unpack it until it is time to fit it on the vehicle.

IV - CLEANING

There are currently two procedures for cleaning the fuel circuit before opening it in order to carry out work in the workshop.

These procedures enable the fuel circuit to be cleaned to prevent contamination from entering: they both have the same end result and neither is preferred over the other.

1 - Cleaning using injector cleaner

Clear the access to the unions that need opening, following the work procedures specific to the vehicle (see the relevant Workshop Repair Manual).

Protect sections which are sensitive to fuel leaks.

Pour the injector cleaning agent into a container which is free from impurities.

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

Dip a clean brush, which is not shedding bristles, into the container of injector cleaning agent.

IMPORTANT

Wear goggles with side protectors for this operation.

Clean the unions carefully using the brush and the injector cleaning agent.

Blast the components that have been cleaned with compressed air (tools, workbench, and also parts, unions and around the injection system). Check that no bristles from the brush have come away and that the area is clean.

Wipe the sections that were cleaned with fresh cleaning cloths.

Open the circuit at the unions and immediately fit the relevant blanking plugs.

WARNING

To prevent impurities from entering, once the fuel circuit is opened, it must not be blasted with compressed air. Use cleaning cloths only, if necessary.

2 - Using the brake cleaner

Clear the access to the unions that need opening, following the work procedures specific to the vehicle (see the relevant Workshop Repair Manual).

Protect sections which are sensitive to fuel leaks.

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT

Wear goggles with side protectors for this operation.

Spray the brake cleaner onto the unions to be opened.

Clean the unions carefully using fresh cleaning cloths.

Blast the components that have been cleaned with compressed air (tools, workbench, and also parts, unions and around the injection system). Check that no bristles from the brush have come away and that the area is clean.

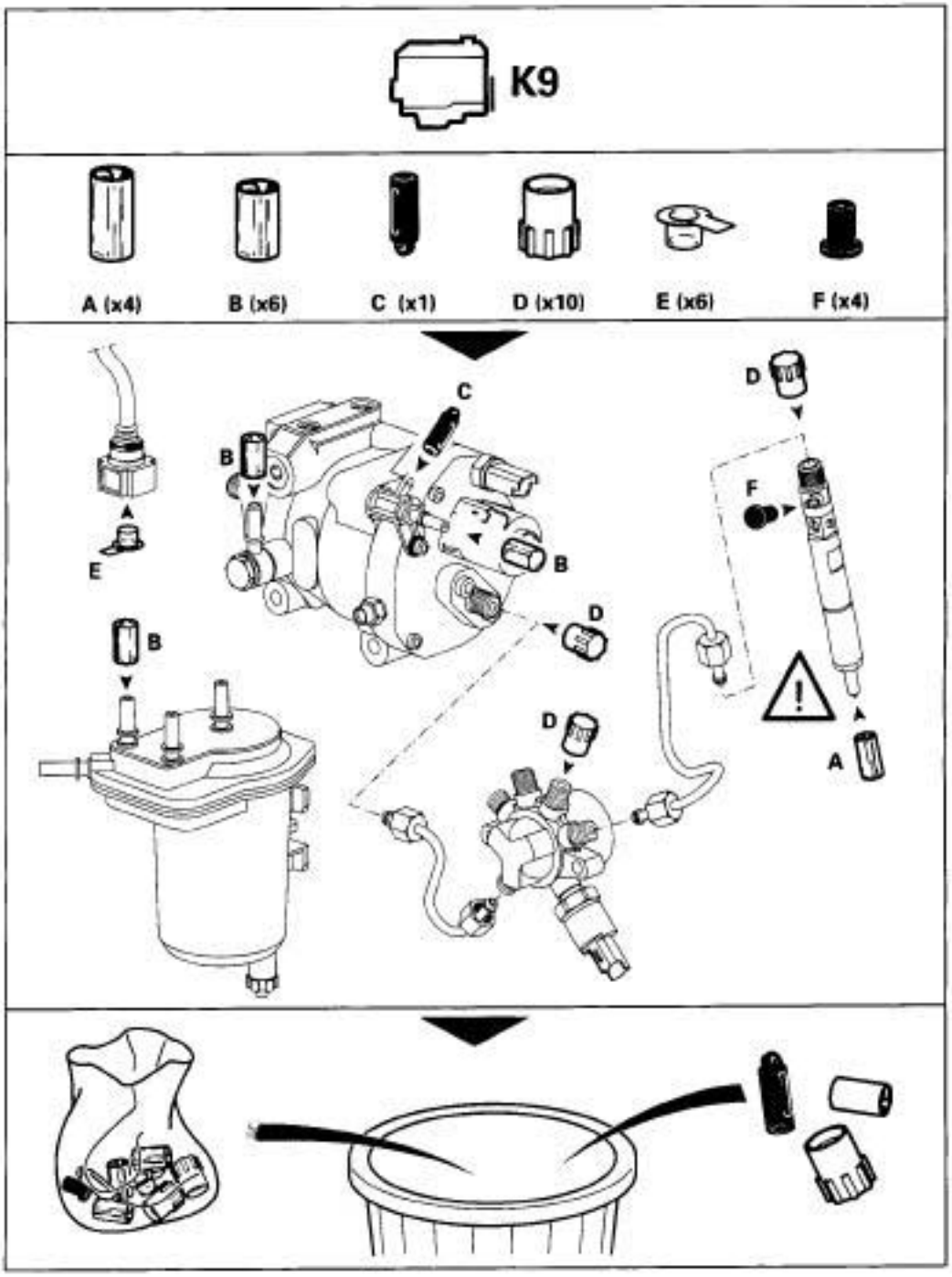
Open the circuit at the unions and immediately fit the relevant blanking plugs.

WARNING

To prevent impurities from entering, once the fuel circuit is opened, it must not be blasted with compressed air. Use cleaning cloths only, if necessary.

K9K

Set of plugs for DELPHI injection:

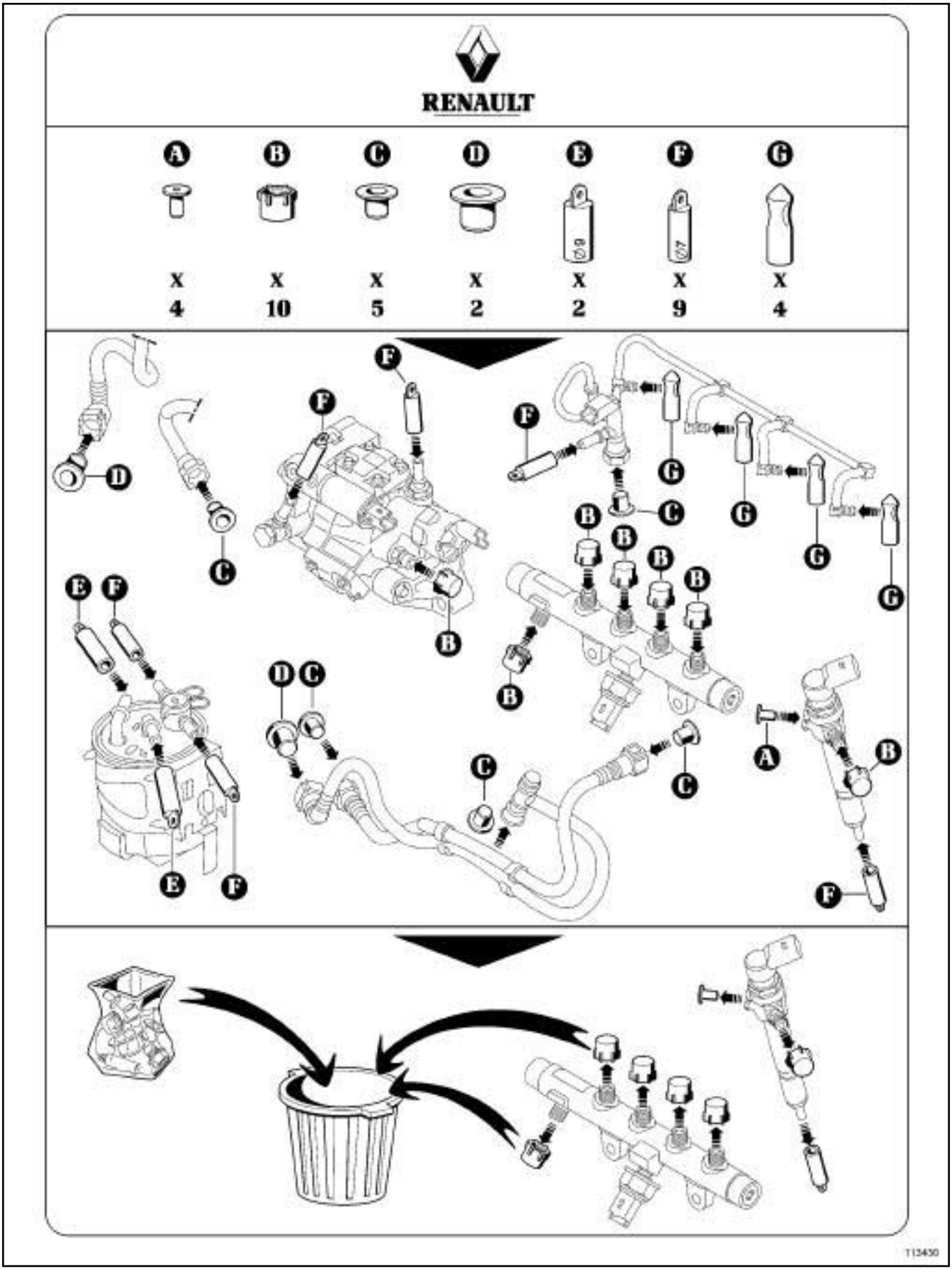


K9K

20977

K9K

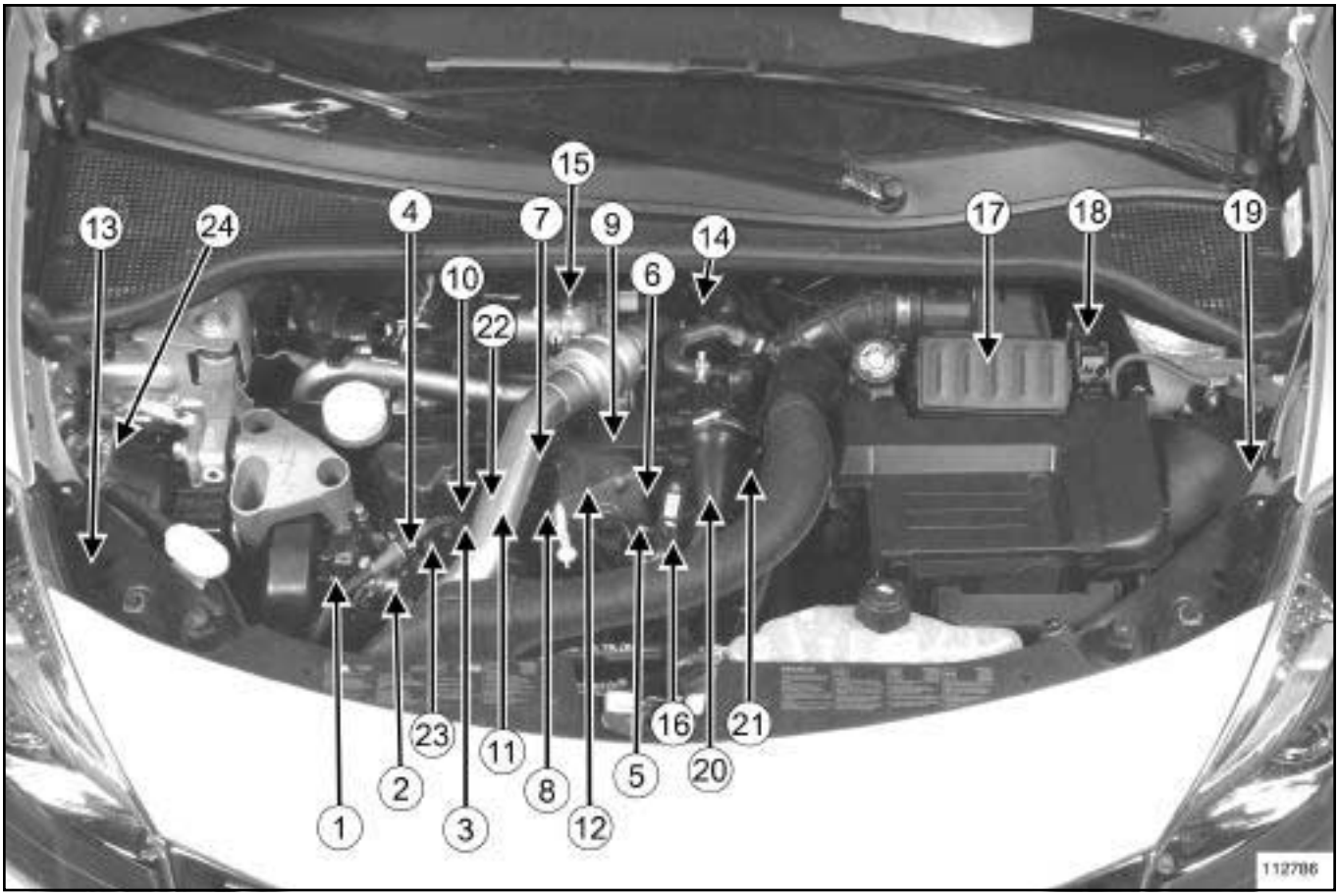
Set of plugs for SIEMENS injection:



K9K

113430

K9K, and 750 or 760 or 762 or 764 or 766 or 768



112786

(**1**) High pressure pump

(**2**) Flow regulation solenoid valve

(**3**) Pressure regulation solenoid valve

(**4**) Diesel temperature sensor

(**5**) Spacer between the cylinder head and the injector clamp

(**6**) Injector clamp

(**7**) Diesel injector fuel return pipe

(**8**) Diesel injector

(**9**) High pressure pipe between the injector rail and the diesel injectors

(**10**) High pressure pipe between the high pressure pump and the rail

(**11**) Injector rail pressure sensor

(**12**) Injector rail

(**13**) Diesel filter (behind the front right-hand wheel arch liner)

(**14**) Turbocharger

(**15**) Exhaust gas recirculation solenoid valve

(**16**) Turbocharging air pressure sensor

(**17**) Air filter unit

(**18**) Injection computer

(**19**) Protection and switching unit

(**20**) Coolant temperature sensor

(**21**) Engine speed and position sensor

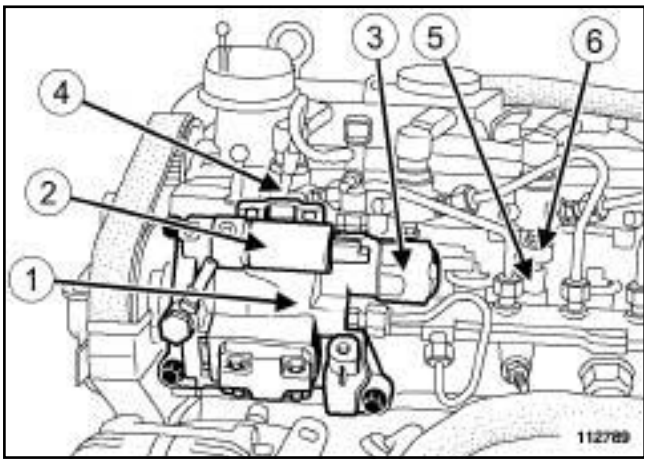
(**22**) Accelerometer

(**23**) Diesel fuel flow actuator

(**24**) Priming pump

K9K, and 750 or 760 or 762 or 764 or 766 or 768

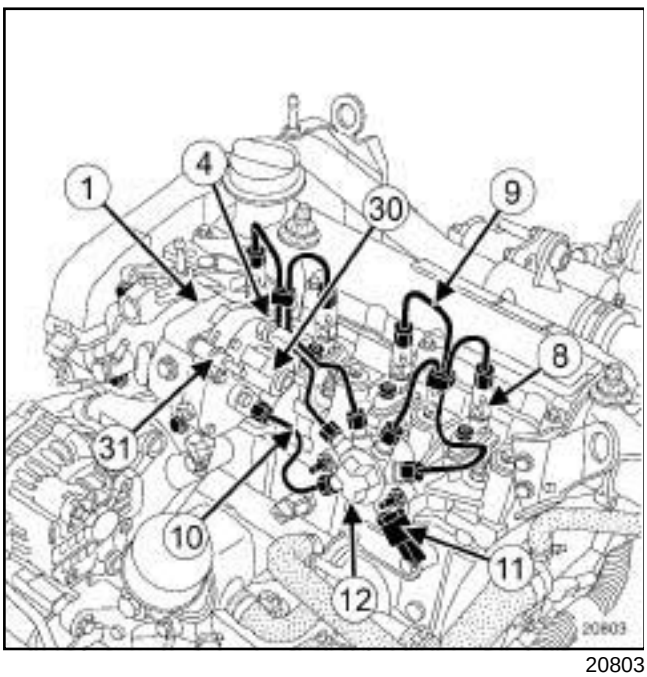
K9K, and 764



112789

(**1**) High pressure pump
(**2**) Flow regulation solenoid valve
(**3**) Pressure regulation solenoid valve
(**4**) Diesel temperature sensor
(**5**) Spacer between the cylinder head and the injector clamp
(**6**) Injector clamp

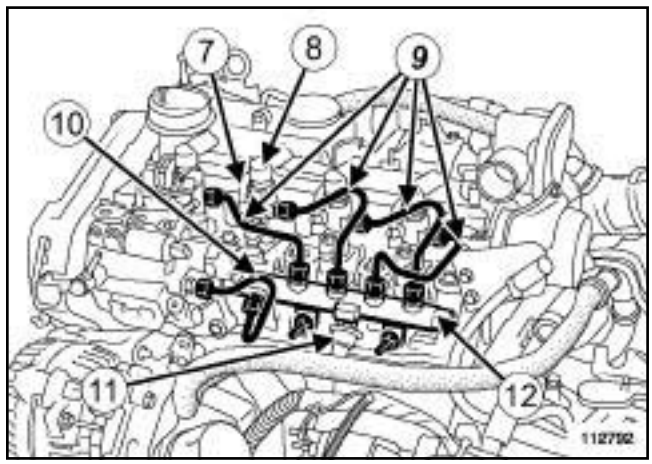
K9K, and 750 or 760 or 762 or 766 or 768



20803

(**1**) High pressure pump
(**4**) Diesel temperature sensor
(**8**) Diesel injector
(**9**) High pressure pipe between the injector rail and the diesel injectors
(**10**) High pressure pipe between the high pressure pump and the rail
(**11**) Injector rail pressure sensor
(**12**) Injector rail
(**30**) Fuel flow actuator
(**31**) Venturi

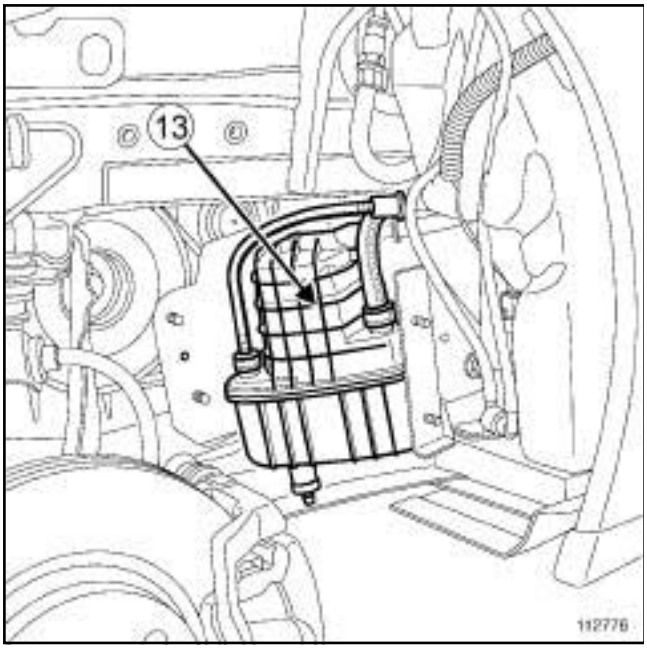
K9K, and 764



112792

(**7**) Diesel injector fuel return pipe
(**8**) Diesel injector
(**9**) High pressure pipe between the injector rail and the diesel injectors
(**10**) High pressure pipe between the high pressure pump and the rail
(**11**) Injector rail pressure sensor
(**12**) Injector rail

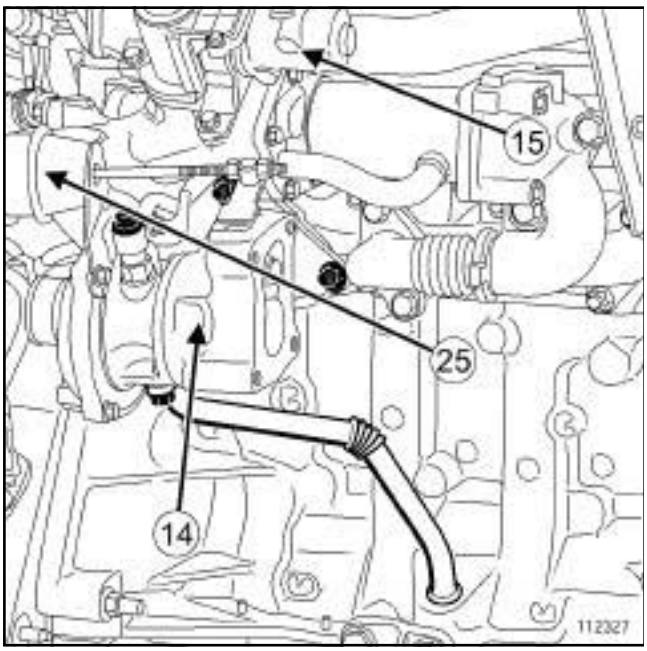
K9K, and 750 or 760 or 762 or 764 or 766 or 768



112776

(**13**) Diesel filter (behind the front right-hand wheel arch liner)

K9K, and 760 or 762 or 764 or 766 or 768



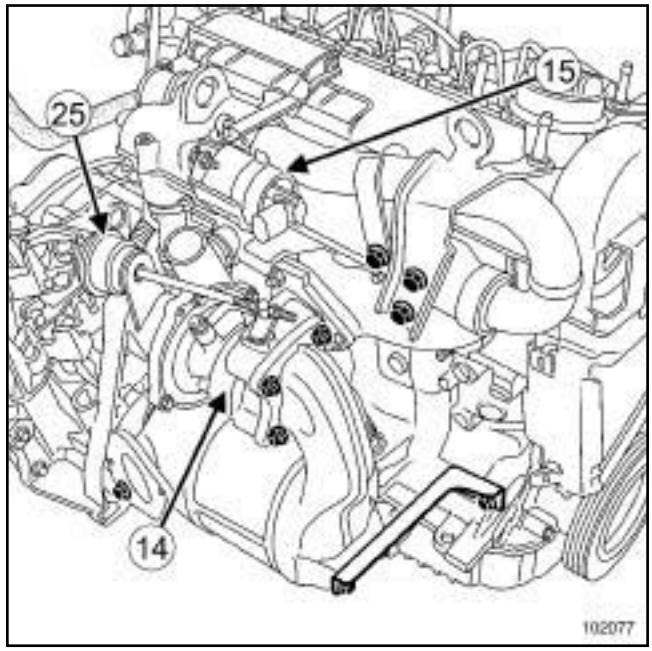
112327

(**14**) Turbocharger

(**15**) Exhaust gas recirculation solenoid valve

(**25**) Turbocharger pressure regulation valve

K9K, and 750

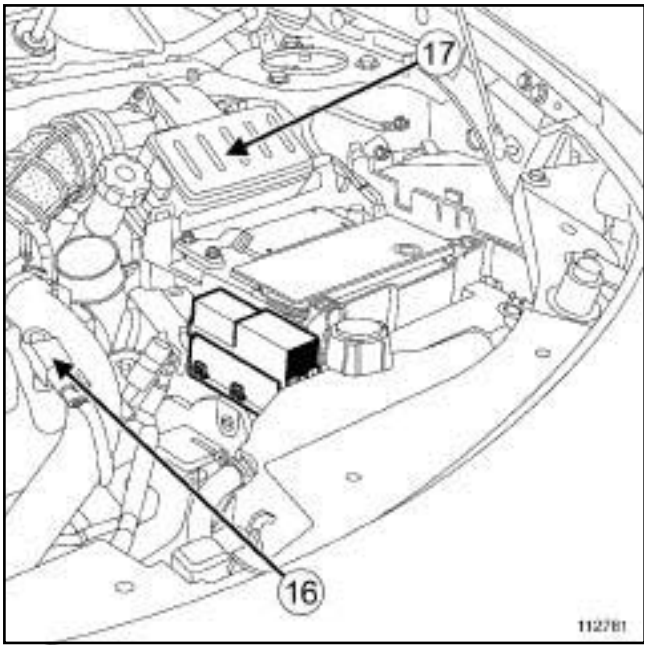


102077

(**14**) Turbocharger

(**15**) Exhaust gas recirculation solenoid valve

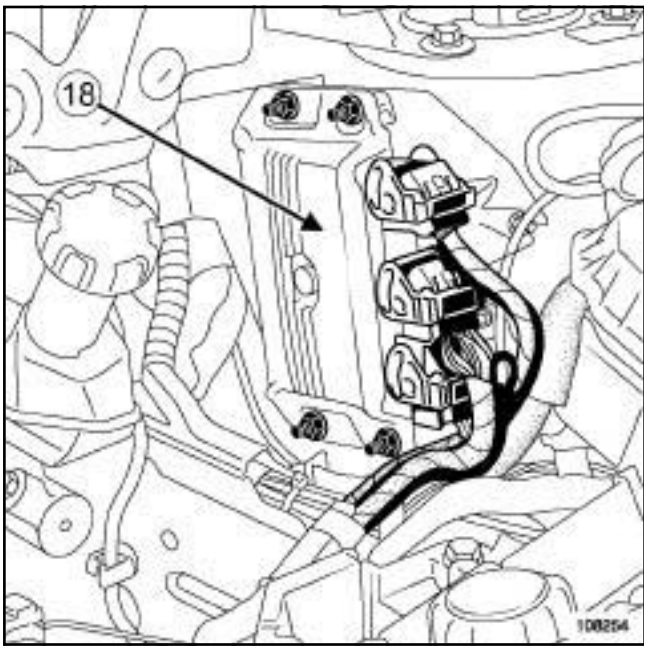
(**25**) Turbocharger pressure regulation valve



112781

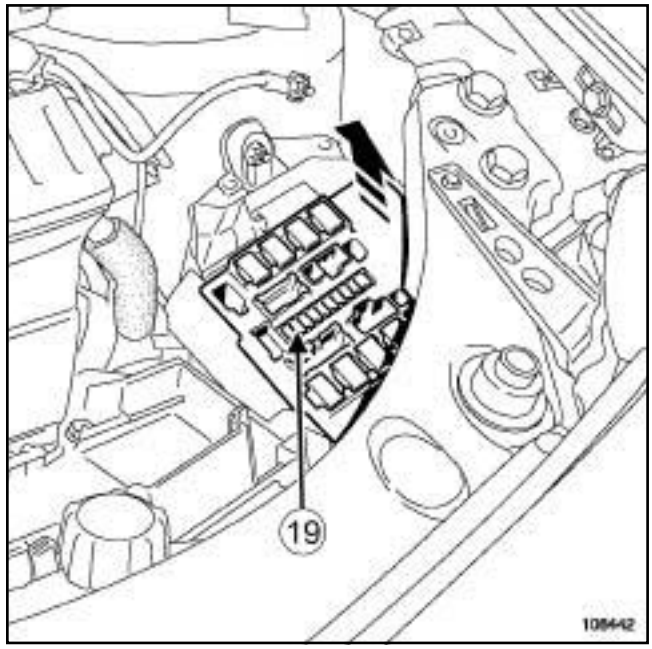
(**16**) Turbocharging air pressure sensor

(**17**) Air filter unit



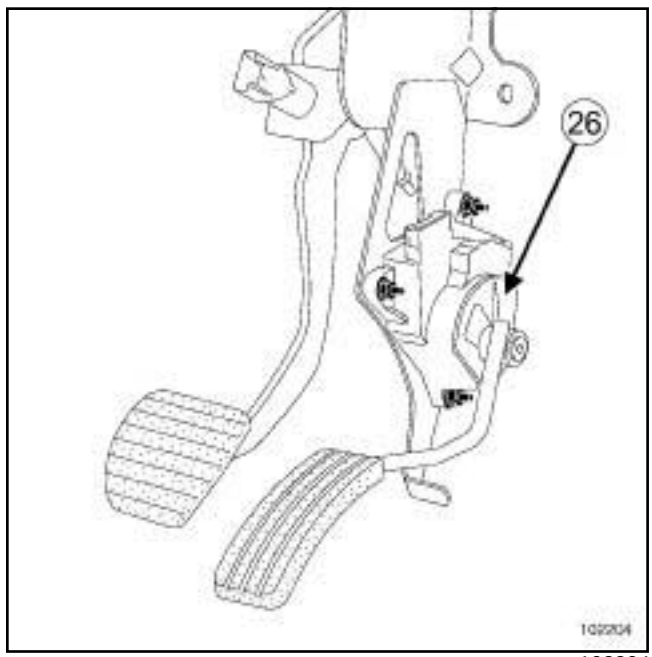
108254

(**18**) Injection computer



108442

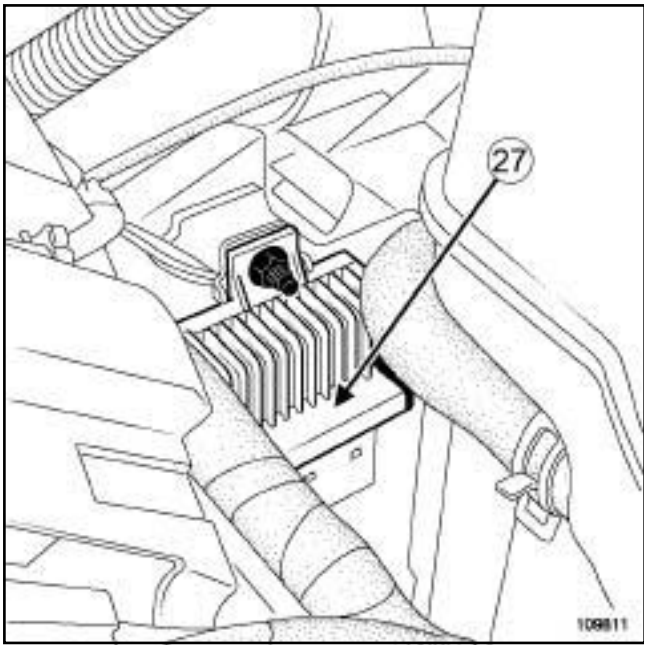
(**19**) Protection and switching unit



102204

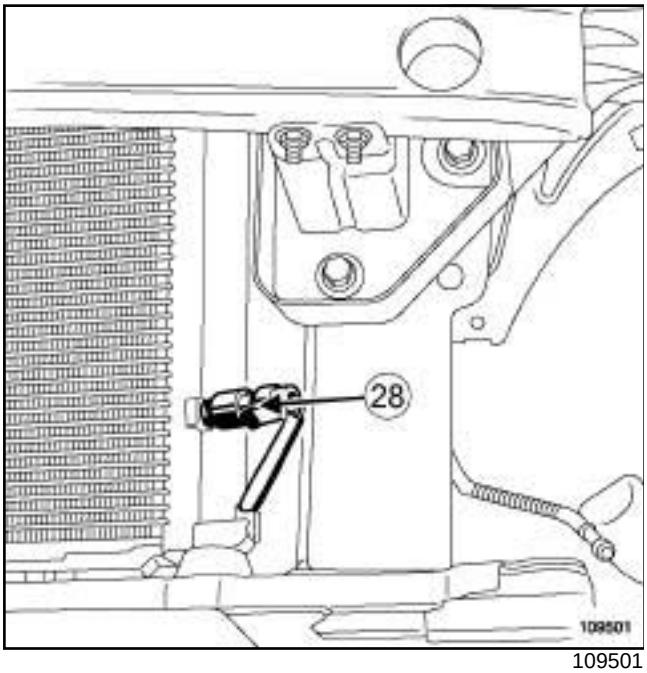
(**26**) Accelerator pedal potentiometer

K9K, and 750 or 760 or 762 or 764 or 766 or 768



109811

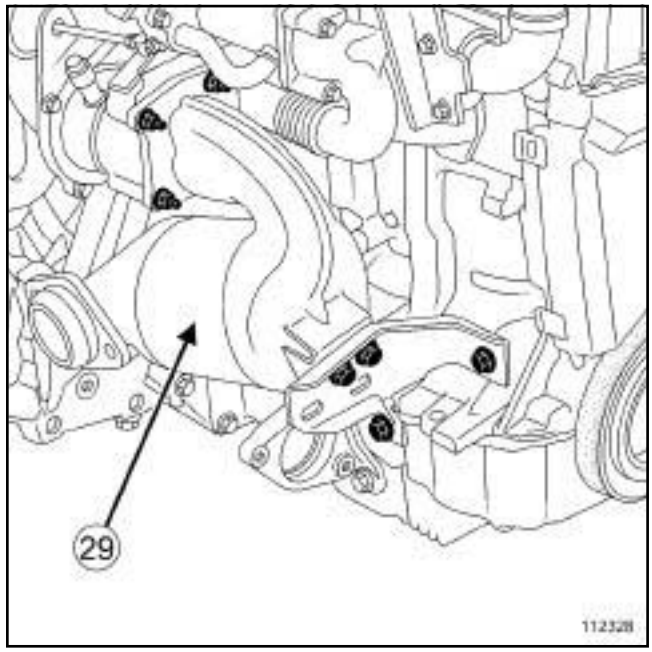
(**27**) Pre-postheating unit



109501

(**28**) Refrigerant fluid sensor

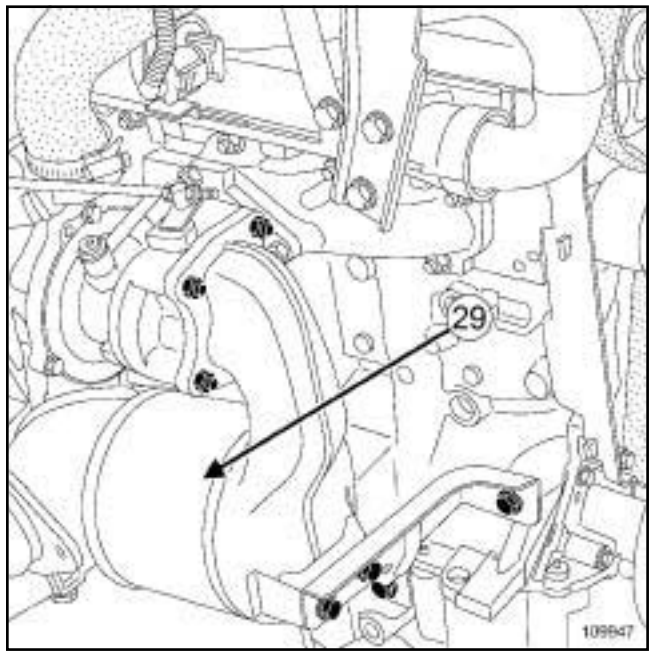
K9K, and 760 or 762 or 764 or 766 or 768



112328

(**29**) Catalytic converter

K9K, and 750

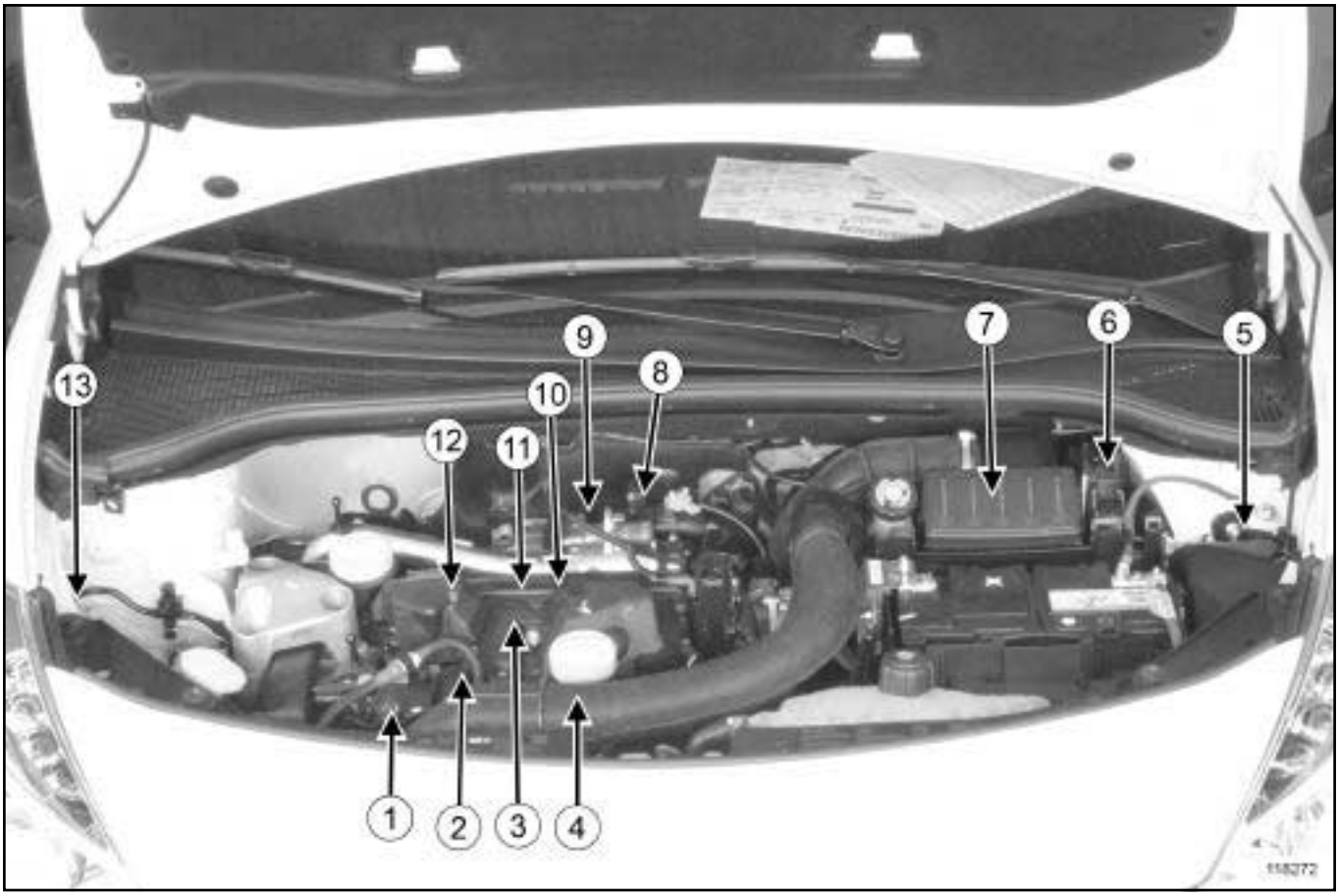


109947

(**29**) Catalytic converter

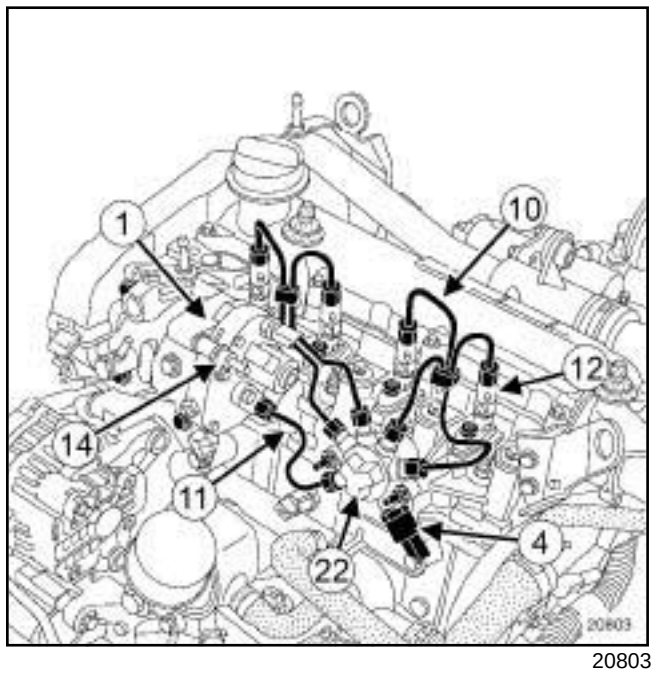
Diesel injection: List and location of components

K9K, and 752



118272

(**1**) High pressure pump
(**2**) Diesel fuel temperature sensor
(**3**) Diesel injector fuel return pipe
(**4**) Injector rail pressure sensor
(**5**) Protection and Switching Unit
(**6**) Injection computer
(**7**) Air filter unit
(**8**) Turbocharger
(**9**) Exhaust gas recirculation solenoid valve
(**10**) High pressure pipe between the injector rail and the diesel injectors
(**11**) High pressure pipe between the pump and the injector rail
(**12**) Diesel injector
(**13**) Diesel filter



20803

(**1**) High pressure pump
(**4**) Injector rail pressure sensor

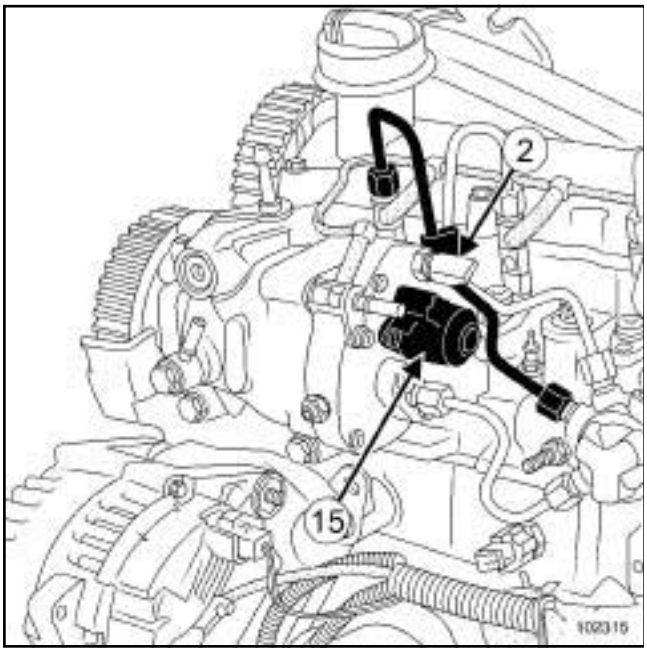
(**10**) High pressure pipe between the injector rail and the diesel injectors

(**11**) High pressure pipe between the pump and the injector rail

(**12**) Diesel injector

(**22**) Spherical injector rail

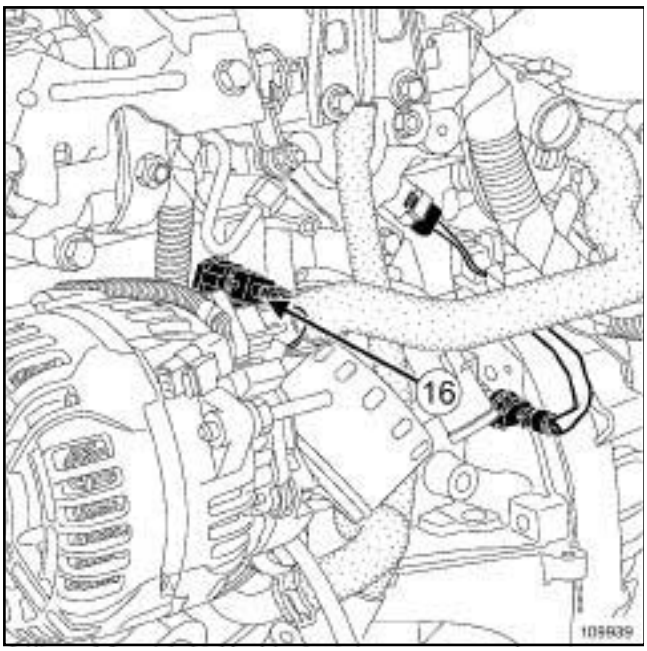
(**14**) Venturi



102315

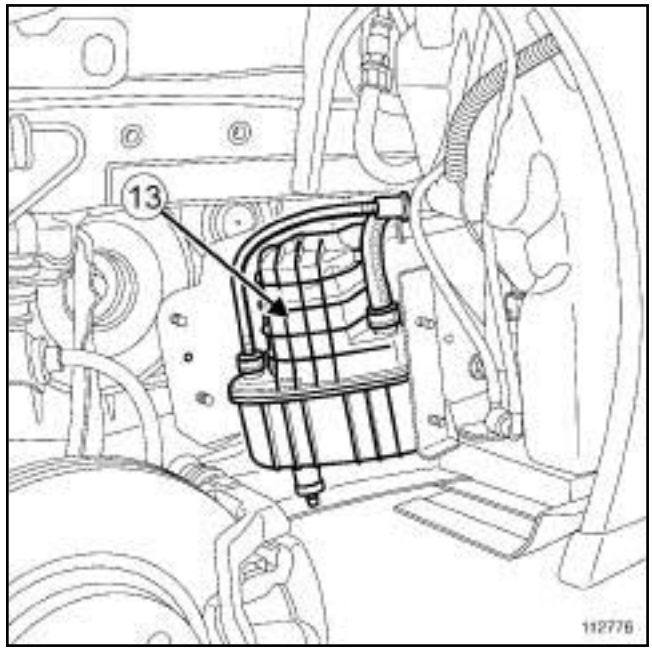
(**2**) Diesel fuel temperature sensor

(**15**) Diesel flow actuator



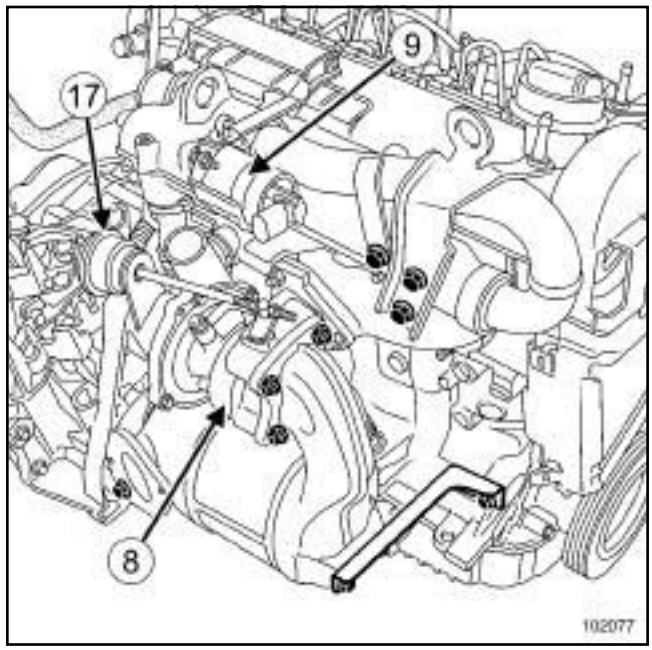
109939

(**16**) Accelerometer



112776

(**13**) Diesel filter

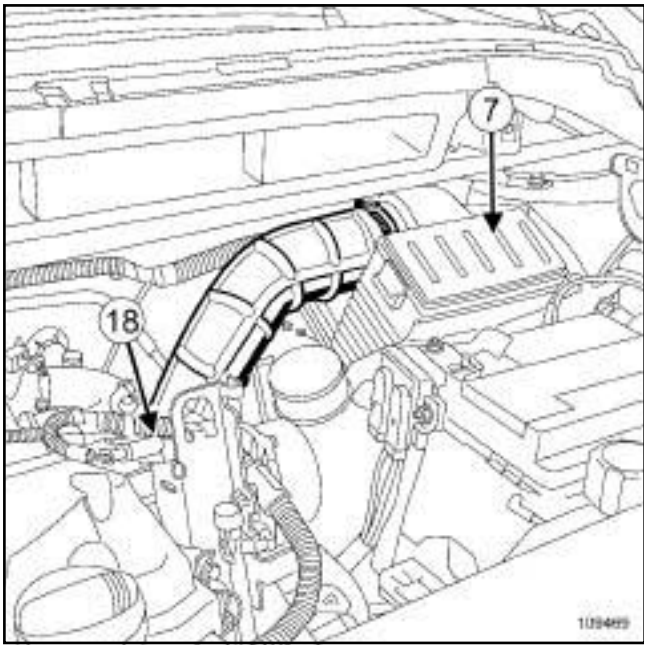


102077

(**8**) Turbocharger

(**9**) Exhaust gas recirculation solenoid valve

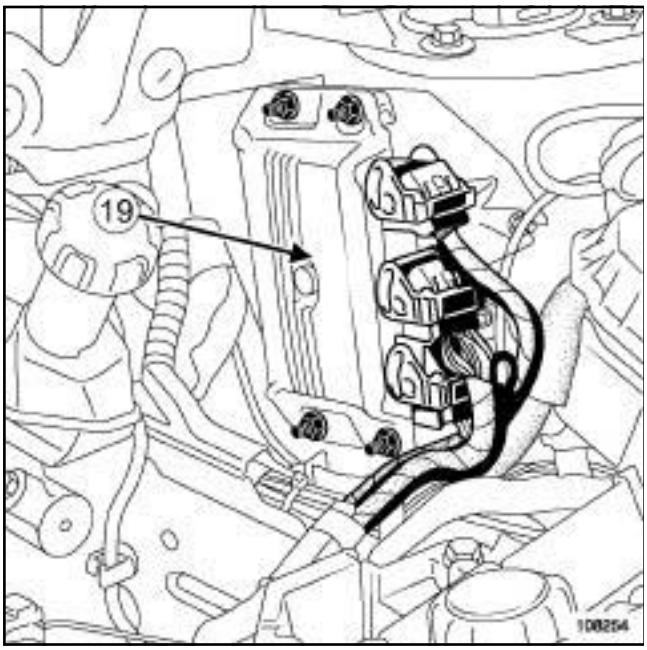
(**17**) Turbocharging pressure regulation valve



109469

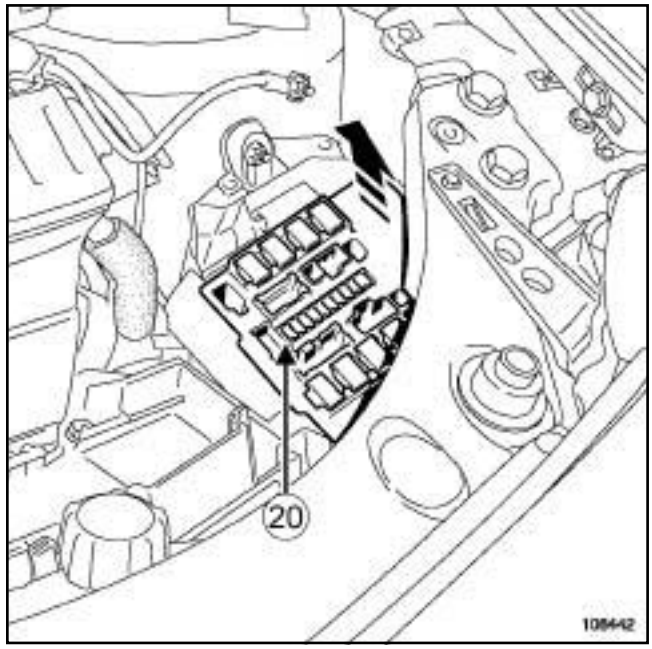
(**7**) Air filter unit

(**18**) Turbocharging air pressure sensor



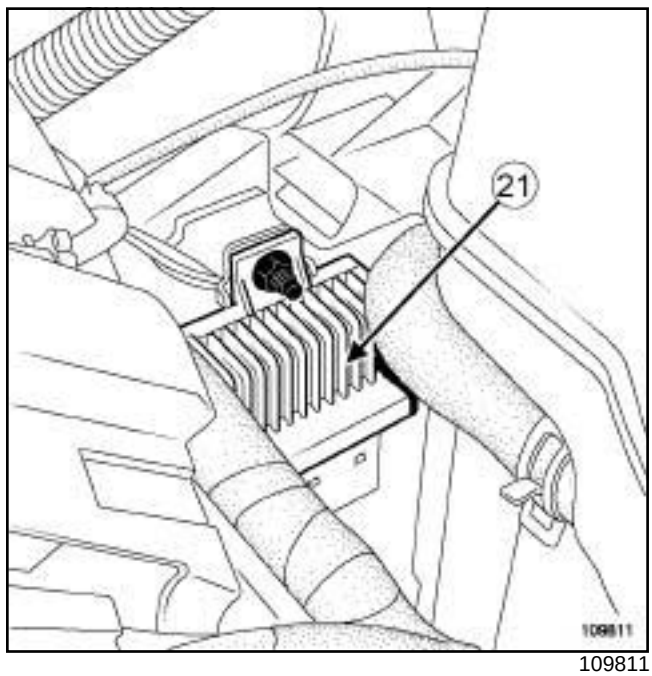
108254

(**19**) Injection computer



108442

(**20**) Protection and Switching Unit



109811

(**21**) Pre-postheating unit

K9K, and 750 or 752 or 764 or 766 or 768

❑ To configure the computer, (see **MR 394 Fault finding, Diesel Injection, Configuration and programming**).

K9K

Tightening torques ▽	
injection computer mounting bolts	**10 Nm**

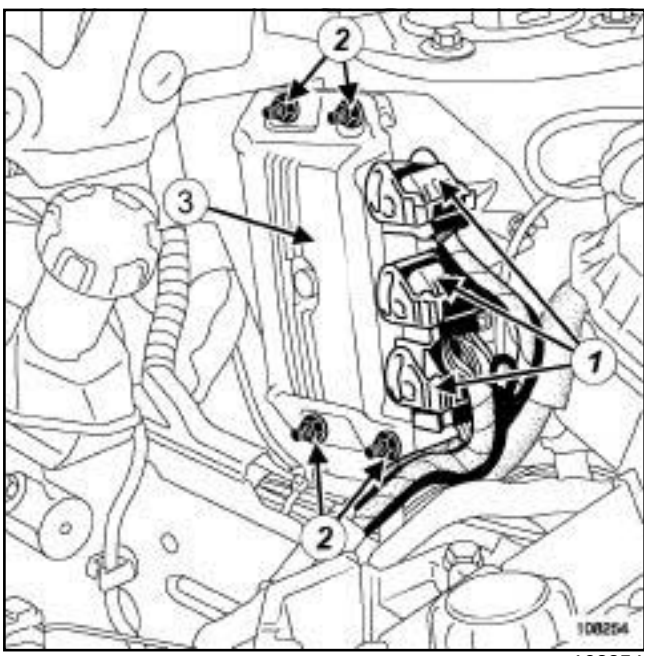
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery heat shield,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

II - REMOVAL OF PART CONCERNED



108254

❏ Disconnect the three connectors (**1**) from the injection computer.

❏ Remove:

- the injection computer mounting bolts (**2**) ,
- the injection computer (**3**) .

REFITTING

I - REFITTING PART CONCERNED

❏ Refit the injection computer.

❏ Torque tighten the **injection computer mounting bolts (10 Nm)**.

II - FINAL OPERATION.

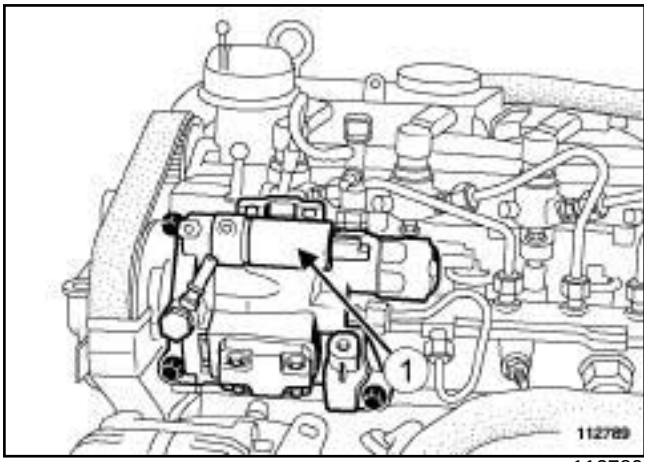
❏ Connect the injection computer connectors.

❏ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Refit the battery heat shield,

❏ Refit the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

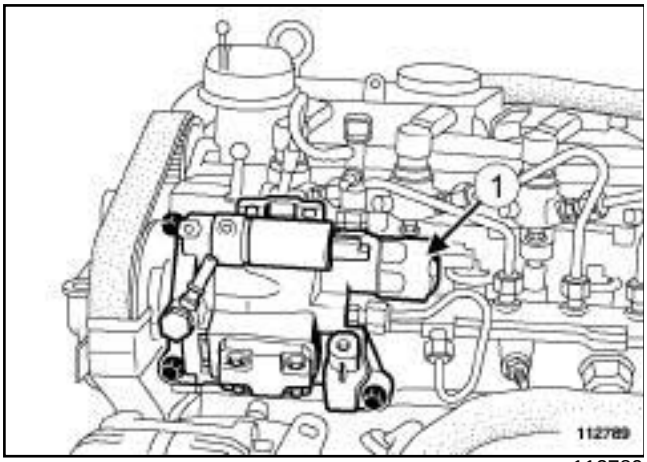
K9K, and 764 or 772



112789

- The flow regulation solenoid valve (**1**) is integral with the high pressure pump.
- Replace the « high pressure pump - flow regulation solenoid valve » assembly in the event of a fault in the flow regulation solenoid valve (see **13B**, **Diesel injection**, **High pressure pump: Removal - Refitting**, page **13B-23**) .

K9K, and 764 or 772



112789

❏ The pressure regulation solenoid valve (**1**) is integral with the high pressure pump.

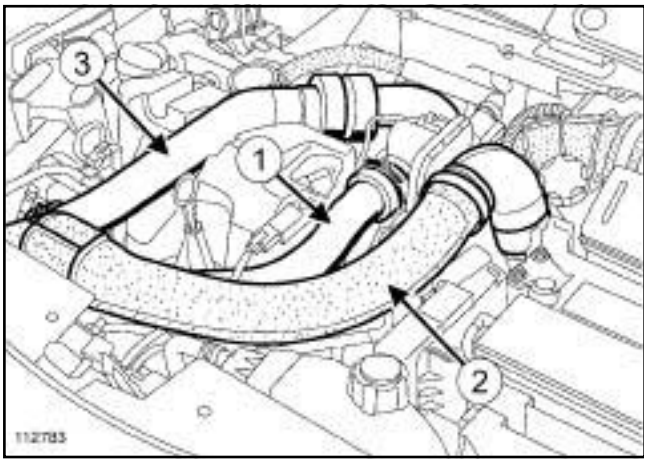
❏ Replace the « high pressure pump - pressure solenoid valve » assembly in the event of a fault in the pressure regulation solenoid valve (see **13B**, **Diesel injection**, **High pressure pump: Removal - Refitting**, page **13B-23**) .

K9K, and 764 or 772

Special tooling required	
Mot. 1771	Kit for measuring SIEMENS injector leakage flow rate.

Tightening torques ▽	
nut mounting the intercooler air inlet pipe on the alternator	**8 Nm**

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

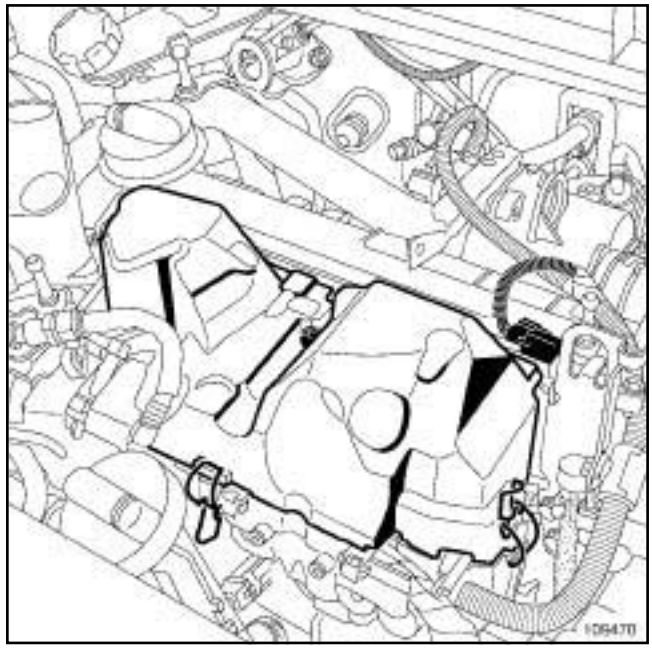


112783

❏ Disconnect the inlet pressure sensor (**1**) .

❏ Remove:

- the air duct (**2**) between the air filter and the intercooler,
- the air duct (**3**) between the intercooler and the turbocharger.



109470

❏ Unclip the diesel anti-splash shield.

❏ Remove:

- the mounting bolt of the injector rail protector cover,
- the rail protector cover.

❏ Disconnect the fuel return pipe from the high-pressure pump.

❏ Place the correct blanking plug on the connector of the high-pressure pump fuel return pipe.

❏ Connect the offset union with a diameter of **8 mm** with its hose and contained in the **(Mot. 1771)** to the high pressure pump fuel return union.

❏ Insert this pipe into the graduated measuring cylinder.

❏ Refit the air duct between the air filter unit and the intercooler.

❏ Loosen the mounting nut of the pipe at the intercooler inlet on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.

❏ Connect:

- the inlet pressure sensor,

K9K, and 764 or 772

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Follow the procedures described in the fault finding repair manual (see **MR 394 Fault finding, 13B, Diesel injection, Fault finding - Tests**) :

- TEST 2: Check internal fuel transfer pump (ITP)

IMPORTANT

Do not leave any object (tools or other) on the side of the engine housing during the entire operation.

Position the tools so that they do not fall during the « engine running » phase of the test.

K9K, and 764 or 772

Special tooling required	
Mot. 855	Tool for locking the timing wheels.
Mot. 1768	Injection pump pulley extraction claws.
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Tightening torques ▽	
high pressure pump pulley	**55 N.m**
high pressure pump mounting bolts	**21 N.m**
high pressure pipe nuts	**24 N.m**
nut mounting the intercooler air inlet pipe on the alternator	**8 N.m**

WARNING

Before starting work on the vehicle, obtain:

- a new plug kit (**PART NO. 77 01 476 857**),
- cleaning cloths (**PART NO. 77 11 211 707**),
- cleaning product (**PART NO. 77 11 224 188**).

WARNING

Parts always to be replaced:

- the high pressure pipe between the injector rail and the high pressure pump.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑

IMPORTANT

Use the diagnostic tool before any operation is carried out on the injection circuit to check:

- that the rail is not under pressure,
- that the fuel temperature is not too high.

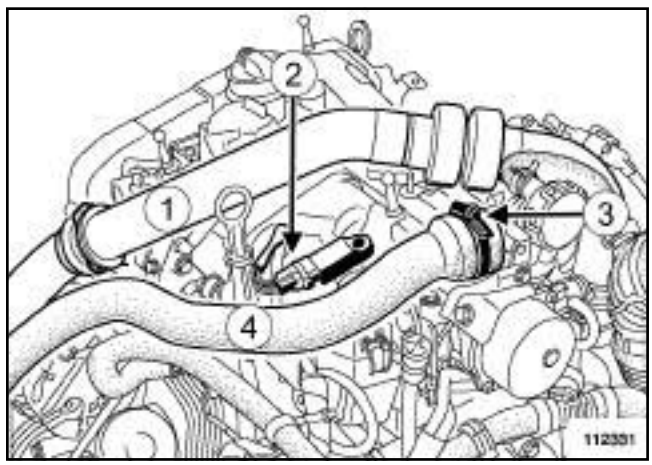
It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Working on the circuit with the engine running is strictly forbidden.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine protector,
- the engine undertray,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



112331

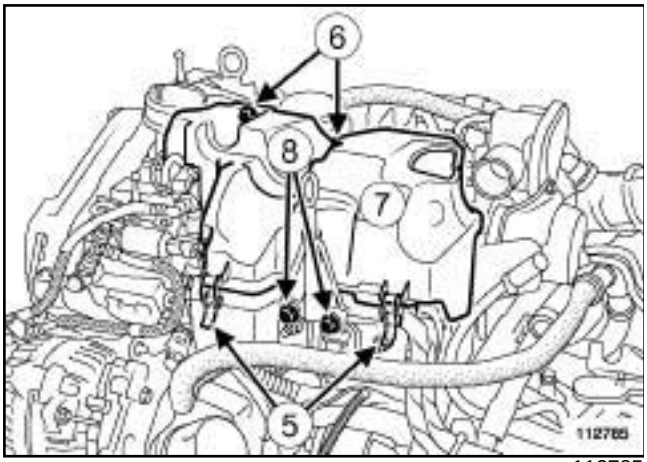
❑ Remove the upper part of the turbocharging duct (**1**) .

❑ Disconnect the inlet air pressure sensor (**2**)

❑ Loosen the clip (**3**) .

❑ Move the inlet duct to one side (**4**) .

K9K, and 764 or 772



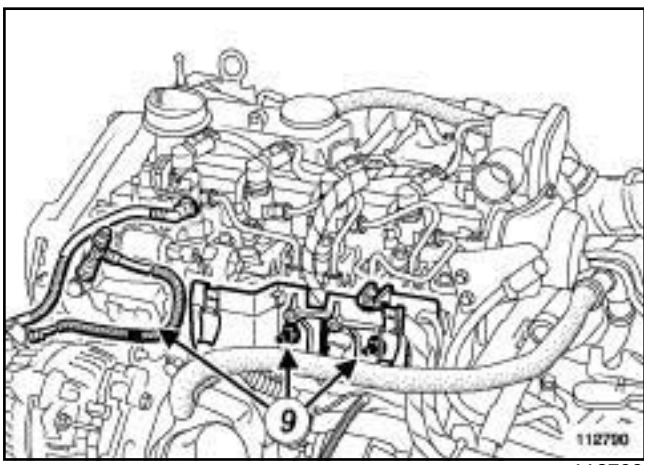
112785

❏ Unclip the clips (**5**) from the injector rail protector cover.

❏ Remove:

- the injector rail protector cover mounting bolts (**6**) ,
- the injector rail protector cover (**7**) ,
- the dipstick,
- the dipstick tube mounting bolts (**8**) .

❏ Move the dipstick duct to one side.



112790

❏ Remove:

- the injector rail protector mounting bolts (**9**) ,
- the injector rail protector.

❏ Protect the alternator from fuel outflow.

❏ Pour cleaning product into a clean container.

IMPORTANT
Wear protective glasses when using cleaning product.

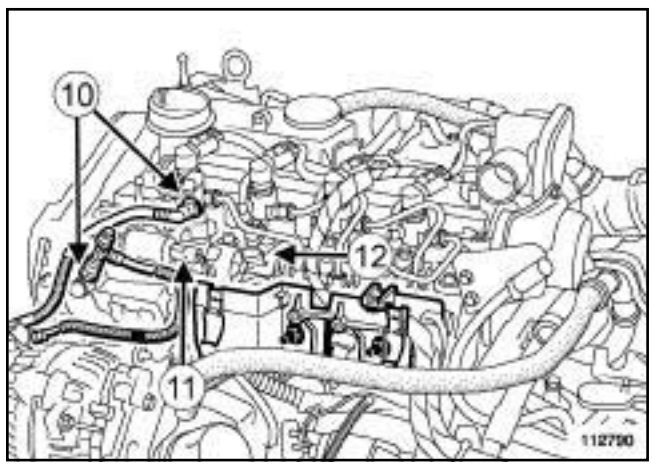
❏ Soak a brush with cleaning product, then clean the unions:

- of the fuel supply pipe fuel on the high pressure pump,
- on the high pressure pump fuel return pipe, taking care not to soak the diesel fuel temperature sensor,
- on the high-pressure pipe and the injector rail.

❏ Blow compressed air into the cleaned areas, then wipe them with new wipes.

IMPORTANT
Wear protective glasses.

WARNING
To prevent impurities from entering, once the fuel circuit is opened, it must not be blasted with compressed air. Use wipes if necessary.



112790

❏ Disconnect the high pressure pump from:

- the diesel fuel supply and return pipes (**10**) ,
- the fuel pressure regulating valve connector (**11**) ,
- the fuel flow regulating valve connector (**12**) .

Note:
Make preparations for fuel outflow. Clean with new cloths.

K9K, and 764 or 772

❑ Remove the high-pressure pipe between the high-pressure pump and the injector rail and discard it.

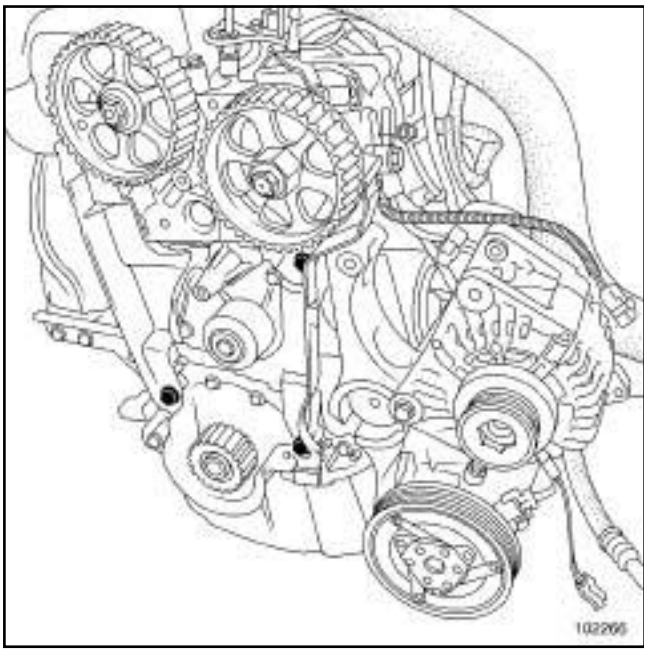
> Note:
>
> Hold the intermediate nut between the pump-rail pipe and the high pressure pump using a lock wrench.

❑ Insert the blanking plugs.

❑ Remove the lower mounting bolt from the alternator.

❑ Undo the alternator's upper mounting bolt.

❑ Tip the alternator towards the front of the vehicle.

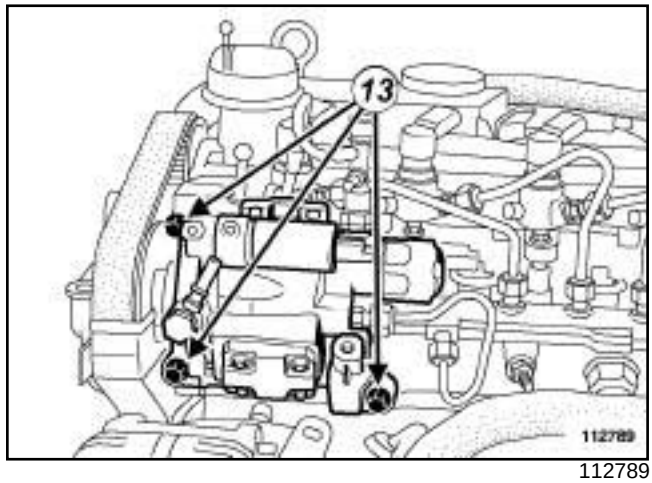


102266

❑ Remove:

- the inner timing cover mounting bolts,
- the inner timing cover.

II - REMOVAL OF PART CONCERNED



112789

❑ Remove:

- the high-pressure pump mounting bolts (**13**) ,
- the high pressure pump.

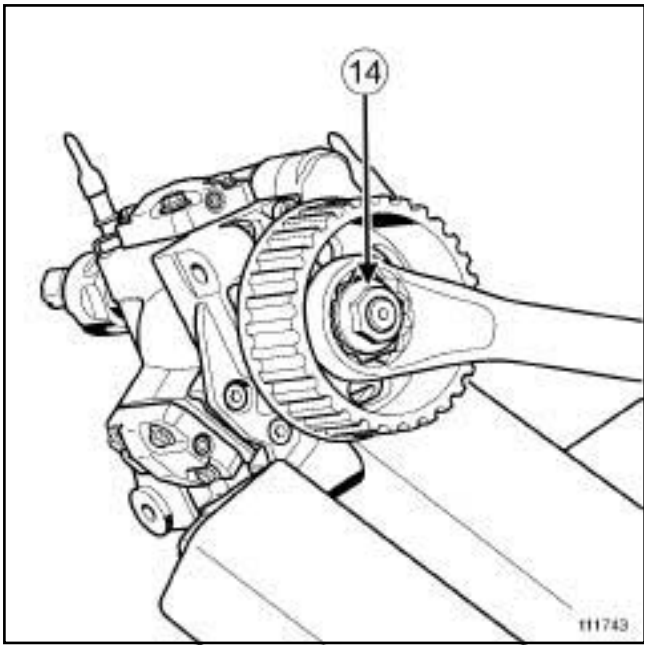
> **WARNING**
>
> If the high-pressure pump is to be reused, keep it in a sealed plastic bag all the time it is disconnected.

Remove the high pressure pump pulley

❑

> **WARNING**
>
> If the high-pressure pump is being replaced, take the high-pressure pump pulley and refit it to the new pump.

K9K, and 764 or 772



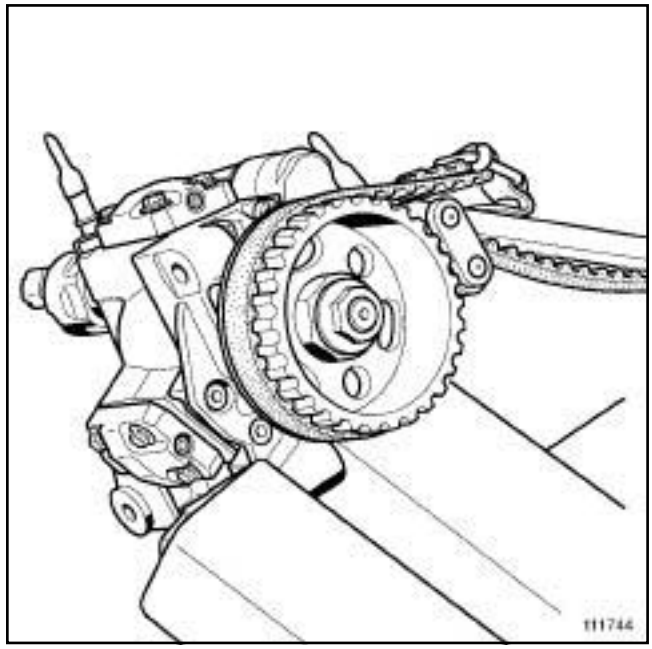
111743

❑ Hold the high pressure pump in a vice, using the lower securing point on the pulley side.

WARNING

Fix jaw covers onto the vice to protect the high-pressure pump.

❑ Hold the high pressure pump pulley with a **32 mm offset wrench** then remove the mounting nut (**14**) from the pulley.



111744

❑

Note:

The high pressure pump pulley can also be held with a **(Mot. 855)**.

❑ Fit the tool **(Mot. 1768)**, as well as the tool **Mot. 1525** without the spacer at the end of threaded rod, on the high pressure pump pulley, then extract the pulley.

WARNING

Take care not to mark the high-pressure pump when removing it.

A damaged high pressure pump pulley must always be replaced.

REFITTING

I - REMOVAL PREPARATION OPERATION

❑

WARNING

- Remove the blanking plugs only before reconnecting the fuel circuit pipes.
- The plugs are single-use. Do not reuse them and throw away the complete kit after opening.

K9K, and 764 or 772

Refitting the high pressure pump pulley

❑ Remove the injector rail from its plastic bag.

> **WARNING**
> If a high pressure pump is being replaced, only remove the new one from its original packaging when it is about to be fitted.

❑ Finger tighten the high-pressure pump pulley mounting nut as far as possible.

❑ Hold the high-pressure pump pulley with the previously used tool.

❑ Torque tighten the **high pressure pump pulley (55 N.m)**.

II - REFITTING PART CONCERNED

❑ Remove the injector rail from its plastic bag.

> **WARNING**
> If a high pressure pump is being replaced, only remove the new one from its original packaging when it is about to be fitted.

❑ Position the high-pressure pump on the cylinder head.

❑ Finger tighten the high-pressure pump mounting bolts as far as possible.

❑ Torque tighten the **high pressure pump mounting bolts (21 N.m)**.

III - FINAL OPERATION

❑ Fit the new high pressure pipe between the injector rail and the high pressure pump.

> Note:
> If the new pipe kit does not contain an applicator, lubrication of the high-pressure nut threads will be unnecessary (as they are self-lubricating pipes).

❑ Hand-tighten the nut on the high-pressure pipe on the pump end, then the one on the rail end.

❑ Tighten to torque the **high pressure pipe nuts (24 N.m)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting with the high pressure pump end.

❑ Disconnect the high pressure pump from:

- the fuel supply and return pipes,
- the fuel pressure regulating valve connector,
- the fuel flow regulating valve connector,

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- loosen the nut mounting the intercooler air inlet pipe to the alternator.
- fit the air duct between the turbocharger and the intercooler air inlet pipe,
- lock the air duct onto the turbocharger and the intercooler air inlet pipe.
- tighten the air duct bolt on the rocker cover,
- torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 N.m)**,
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 750 or 752 or 760 or 762 or 766 or 768

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1430	Set of 5 crankshaft and camshaft pulley timing pins.
Mot. 1606	High pressure pump pulley support tool.
Mot. 1525	Gear extractor for tapered hub injection pump.
Mot. 1525-02	Adapter claws for Mot. 1525.
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
high pressure pump bolts on the cylinder head	**23 N.m**
high pressure pump pulley nut	**55 N.m**
suspended mounting bolts on the cylinder head	**25 N.m**
camshaft position sensor bolt	**8 N.m**
right-hand suspended engine mounting bolts	**62 N.m**
engine tie-bar bolts	**105 N.m**
high pressure pipe unions between the pump and the yellow rail	**24 N.m**
high pressure pipe unions between the pump and the silver rail	**28 N.m**
high pressure pump protection bolts	**21 N.m**

Tightening torques ▽	
dipstick guide tube nuts	**10 N.m**
exchanger inlet air pipe nut on the alternator	**8 N.m**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

REMOVAL

I - PARTS AND CONSUMABLES FOR THE REPAIR

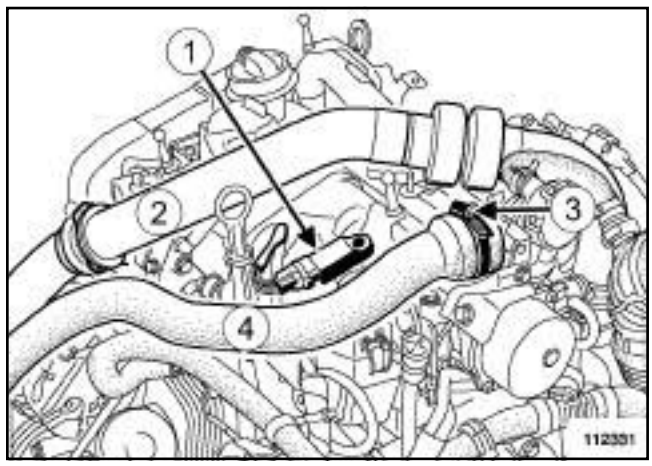
❑ Consumables: (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**)

- Cleaning cloths,
- Set of K9K blanking plugs (injection **DELPHI**).

II - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



112331

❑ Disconnect the inlet air pressure sensor (**1**)

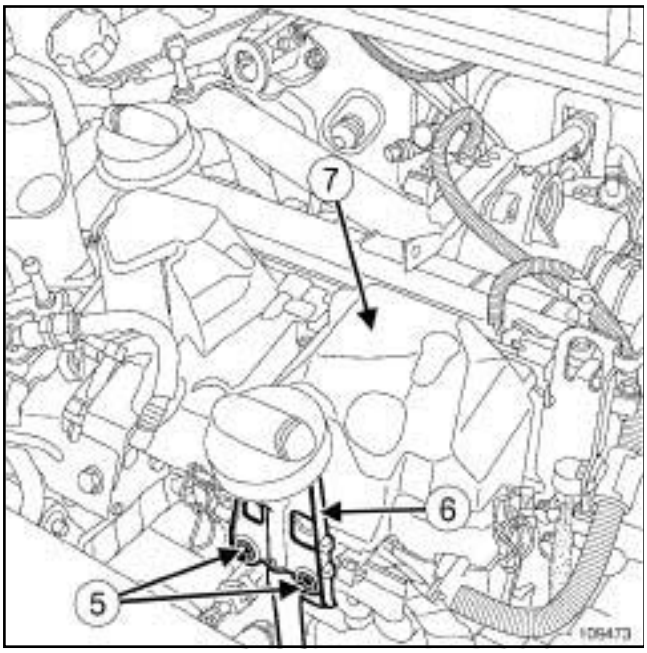
K9K, and 750 or 752 or 760 or 762 or 766 or 768

K9K, and 750 or 766 or 768

❑ Remove the turbocharger outlet air pipe (**2**) .

❑ Loosen the clip (**3**) on the intercooler outlet air pipe.

❑ Move the intercooler outlet air pipe to one side (**4**) .



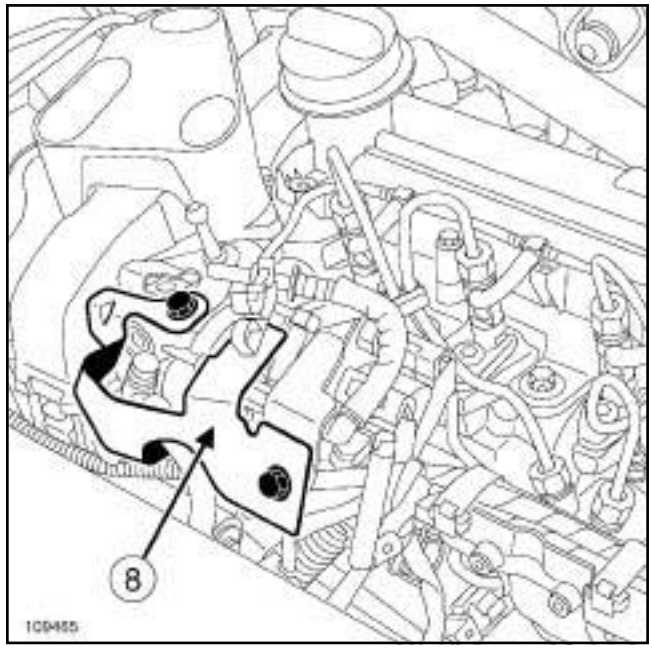
109473

❑ Remove the dipstick.

❑ Remove the engine oil dipstick guide bolts (**5**) .

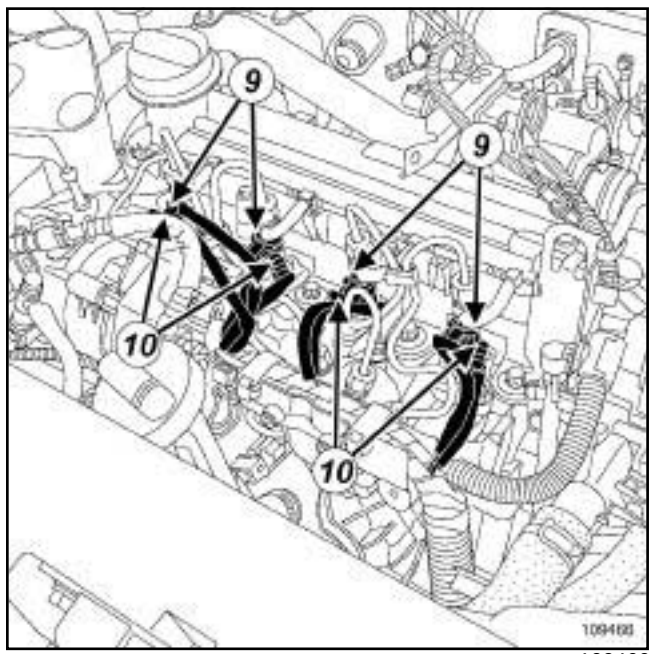
❑ Put the engine oil dipstick guide (**6**) to one side.

❑ Remove the diesel fuel splash plate (**7**) .



109465

❑ Remove the high pressure pump protector (**8**) .



109466

❑ Disconnect:

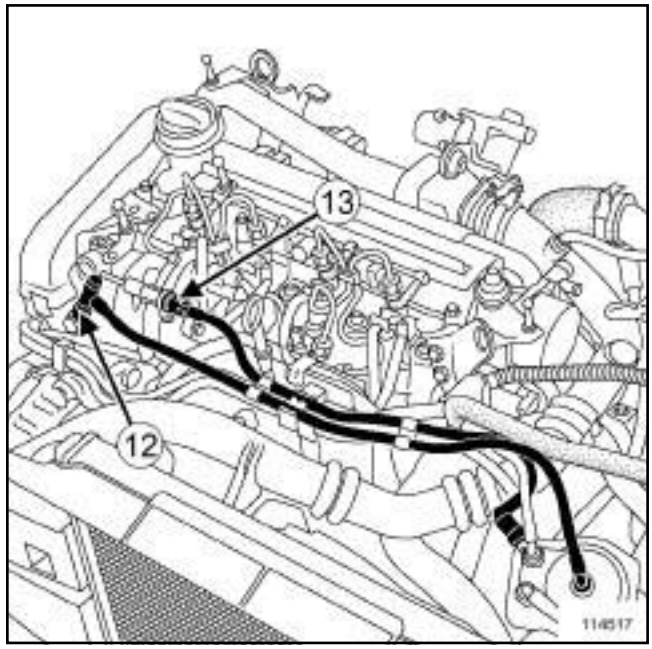
- the heater plugs (**9**) ,
- the injectors (**10**) .

K9K, and 750 or 752 or 760 or 762 or 766 or 768

109467

❏ Disconnect the connectors on the high pressure pump (**11**) .

❏ Protect the alternator from fuel outflow.



114517

❏ Clean the union (**12**) on the diesel supply pipe high pressure pump (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❏ Disconnect the high pressure pump from:

- the diesel supply pipe,

- the diesel return pipe (**13**) to the fuel filter.

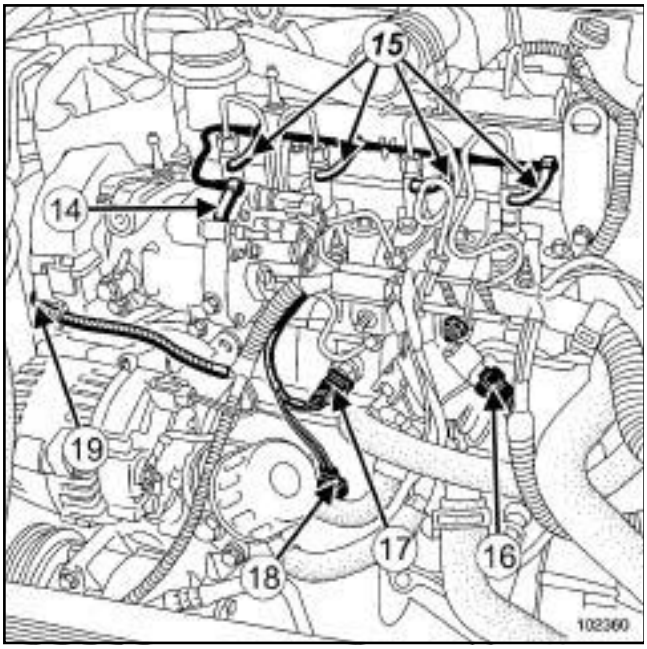
WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❏ Fit the appropriate blanking plugs on the high pressure pump and on the pipes.

❏ Disconnect the diesel supply and return pipes from the injection rail filler neck then move them away from the high pressure pump.

K9K, and 750 or 752 or 760 or 762 or 766 or 768



102360

❏ Disconnect:

- the diesel return pipe (**14**) on the venturi tube fitted to the high pressure pump,
- the diesel return pipes (**15**) on the diesel injectors,
- the rail pressure sensor connector (**16**) ,
- the accelerometer connector (**17**) ,
- the oil level sensor connector (**18**) ,
- the cylinder reference sensor (**19**) connector on the timing cover.

WARNING

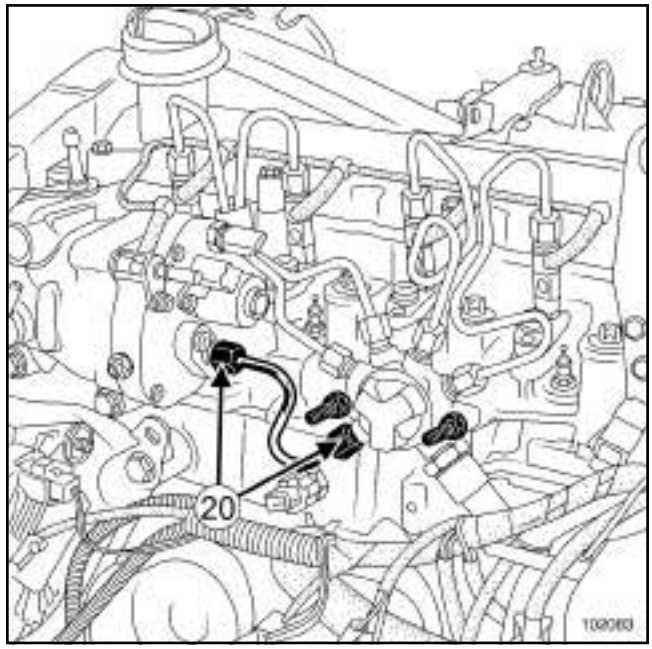
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❏ Fit suitable blanking plugs on:

- the Venturi,
- the diesel injectors.

❏ Unclip and move aside the electric wiring on the injection rail filler neck.

❏ Remove the filler neck on the injector rail.



102083

❏ Clean the high pressure pipe unions (**20**) between the pump and the rail (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❏ Remove the high pressure pipe between the pump and the rail and discard it.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

❏ Fit suitable blanking plugs on:

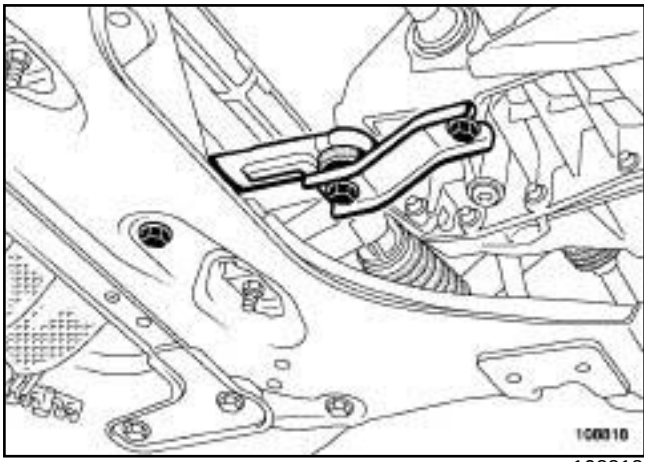
- the high pressure pump,
- the injector rail.

❏ Remove the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) (19D, Engine mounting).

❏ Raise the vehicle.

❏ Remove the engine undertray.

K9K, and 750 or 752 or 760 or 762 or 766 or 768



108818

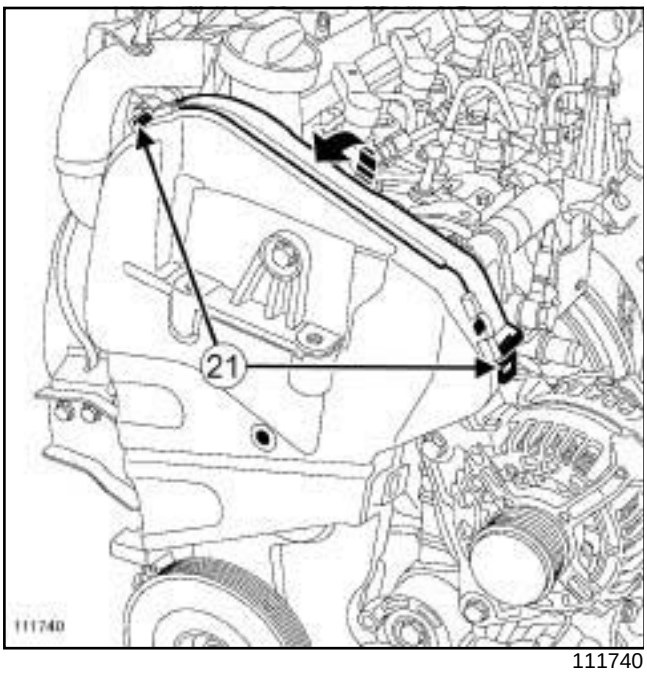
❏ Remove the engine tie-bar.

❏ Lower the vehicle.

❏ Lift the engine a few centimetres using the **(Mot. 1453)**.

Note:

Do not disconnect the right-hand driveshaft when raising the engine.

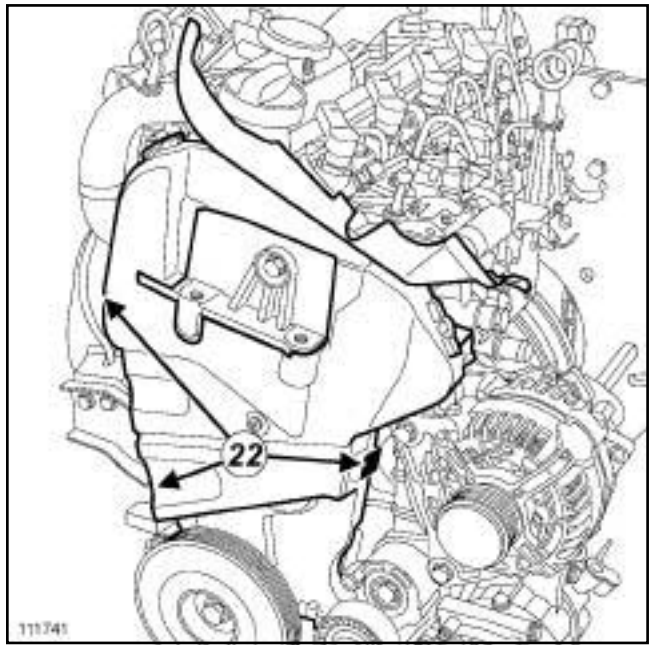


111740

❏ Unclip the upper timing cover tabs (**21**) .

❏ Swivel the timing cover in the direction of the arrow.

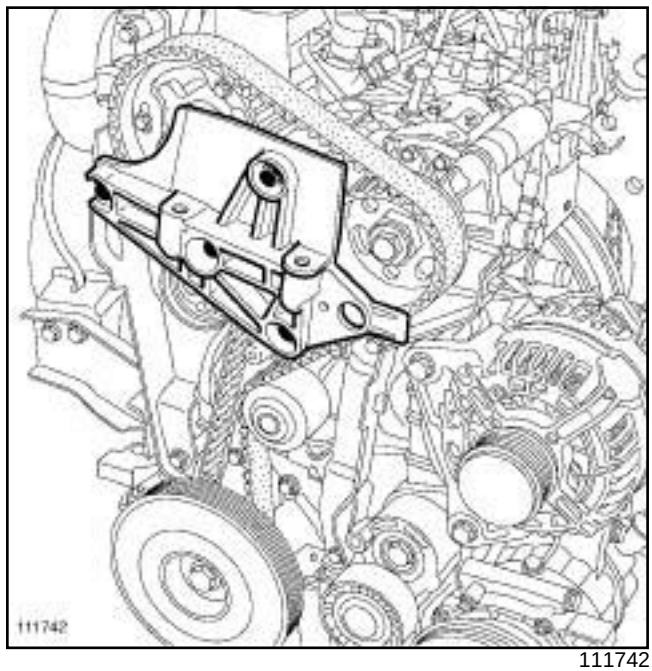
❏ Remove the plastic bolt.



111741

❏ Unclip the three tabs (**22**) .

❏ Remove the timing cover.



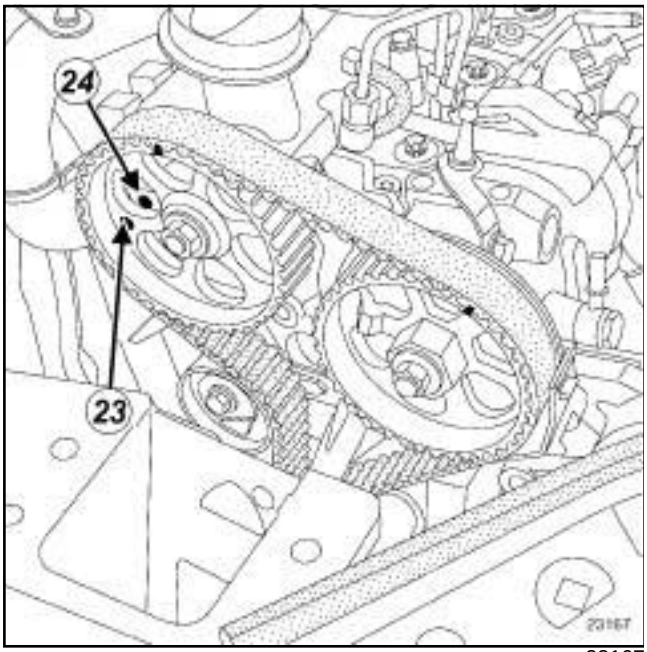
111742

❏ Remove the suspended mounting from the cylinder head.

K9K, and 750 or 752 or 760 or 762 or 766 or 768

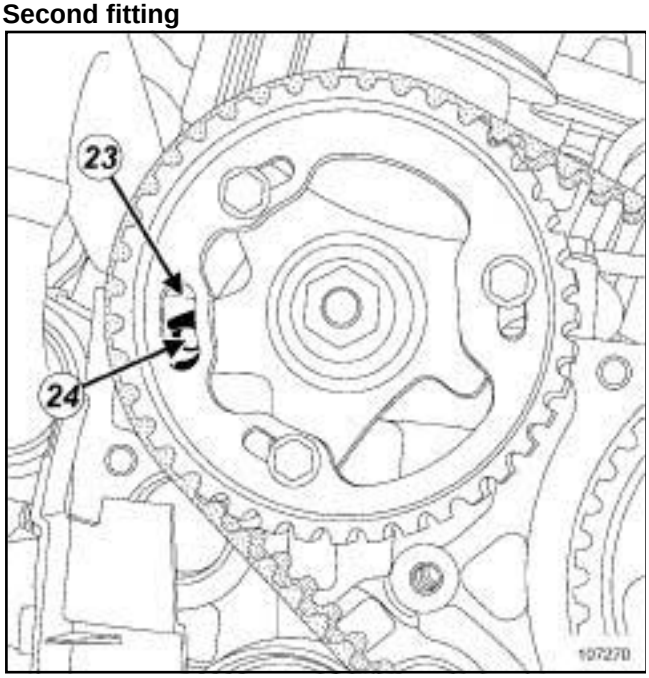
III - OPERATION FOR REMOVAL OF PART CONCERNED

First fitting



23167

Second fitting

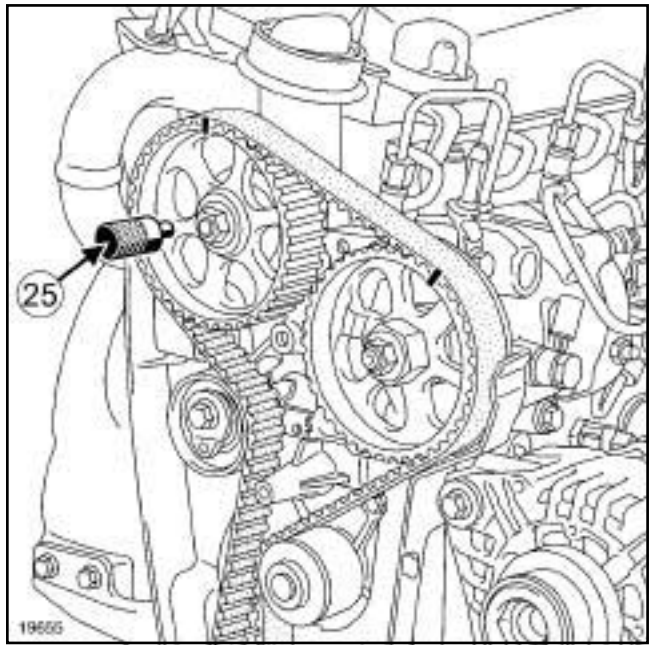


107270

❑ Position the engine at Top Dead Centre. The camshaft pulley hole (**23**) should be opposite the cylinder head hole (**24**) .

Note:

Never turn the engine against its operating direction.

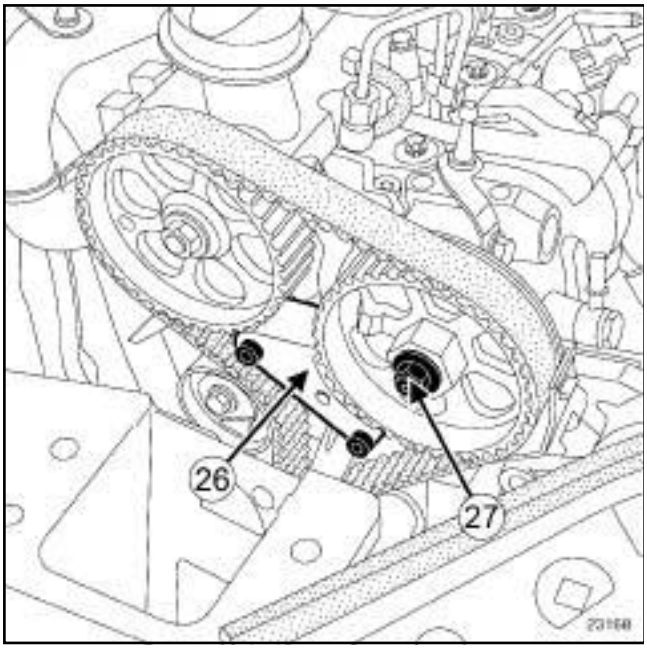


19655

❑ Insert the **(Mot. 1430)** (**25**) in the camshaft pulley hole and in the cylinder head hole to check that the engine operates correctly at top dead centre.

❑ Remove the **(Mot. 1430)** once the engine is in position.

K9K, and 750 or 752 or 760 or 762 or 766 or 768



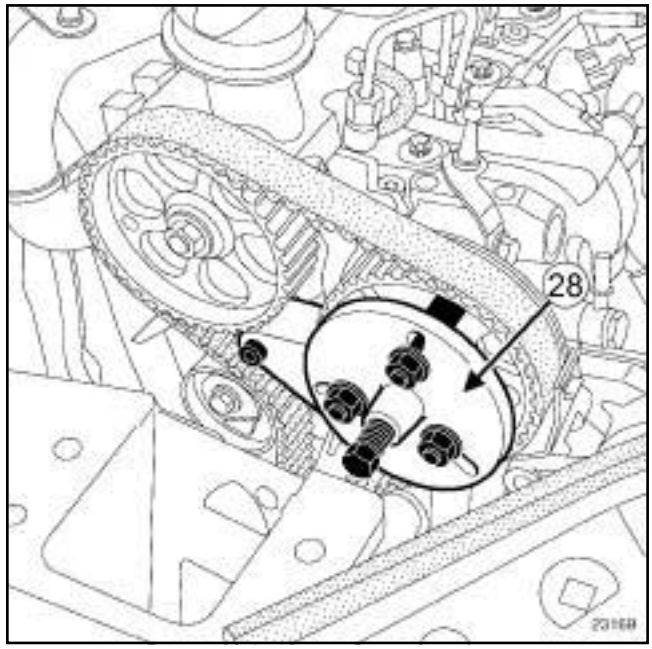
23168

❑ Fit the **(Mot. 1606)** (**26**) on the cylinder head.

Note:

If necessary, turn the engine slowly to adjust the position of the **(Mot. 1606)** on the high pressure pump pulley teeth.

❑ Immobilise the high pressure pump pulley with a **32 mm spanner** then remove the nut (**27**) from the pulley.



23169

❑ Fit the **(Mot. 1525)** (**28**) with the **(Mot. 1525-02)** on the high pressure pump pulley.

Note:

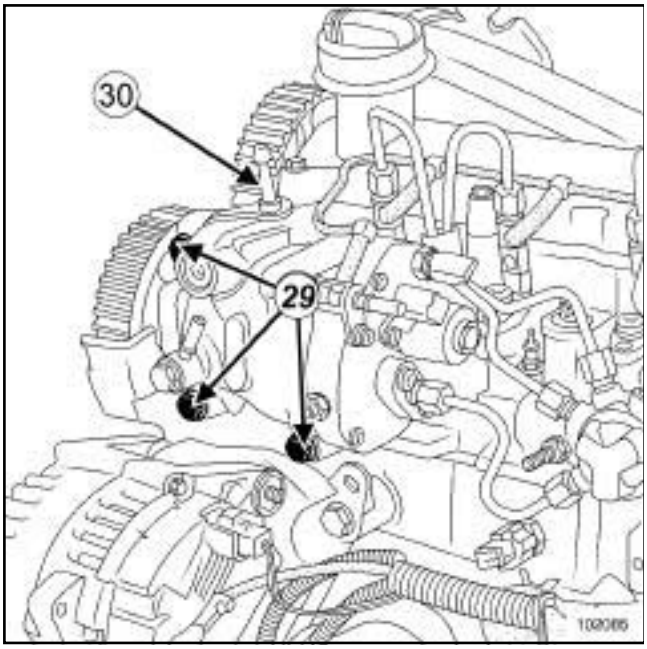
If necessary, remove the spacer at the end pushrod of the **(Mot. 1525)** to improve the positioning.

❑ Screw the **(Mot. 1525)** pushrod until it makes contact with the high pressure pump shaft.

Note:

Check that the **(Mot. 1525)** pushrod is correctly orientated and is pressing against the high pressure pump shaft. adjust the tool if necessary.

K9K, and 750 or 752 or 760 or 762 or 766 or 768



102085

❑ Remove:

- the bolts (**29**) from the high pressure pump on the cylinder head,
- the air filter unit bracket (**30**) .

❑ Gradually screw the pushrod of the **(Mot. 1525)** until the high pressure pump becomes detached.

Note:

Guide and support the high pressure pump with one hand as it is being removed using the **(Mot. 1525)**

❑ Remove the high pressure pump from the engine compartment.

Note:

If the high pressure pump is being reused, keep it in a sealed bag during the removal operation.

❑ Remove the **(Mot. 1525)** and **(Mot. 1525-02)** from the high pressure pump pulley.

REFITTING

I - PRECAUTIONS FOR REPAIR

❑

WARNING

Only remove the blanking plugs from the protected components at the last possible moment.

Also, do not remove the components from their packaging until just before fitting them to the vehicle.

II - PARTS AND CONSUMABLES FOR THE REPAIR

❑ **parts always to be replaced: High pressure pipe between the pump and rail**

III - REFITTING OPERATION FOR PART CONCERNED

❑ Check that there is an indexing pin on the high pressure pump shaft.

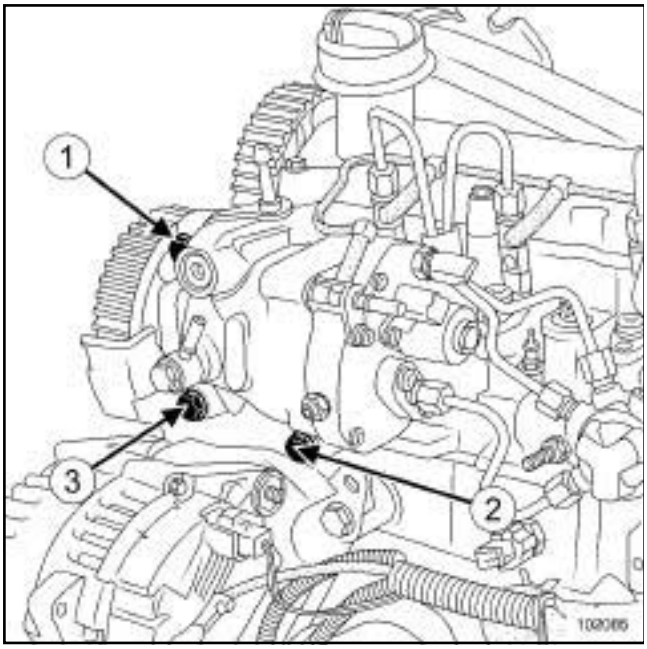
❑ Position the high pressure pump on the cylinder head whilst inserting it in its pulley.

Note:

Check that the high pressure pump shaft is correctly orientated in relation to the pulley.

❑ Fit the air filter unit bracket.

❑ Tighten the high pressure pump bolts until they make contact with the cylinder head.



102085

❏ Tighten to torque and in order the **high pressure pump bolts on the cylinder head (23 N.m)**.

❏ Fit the nut on the high pressure pump pulley.

❏ Torque tighten the **high pressure pump pulley nut (55 N.m)** holding the high pressure pump pulley with a **32 mm** spanner.

Note:

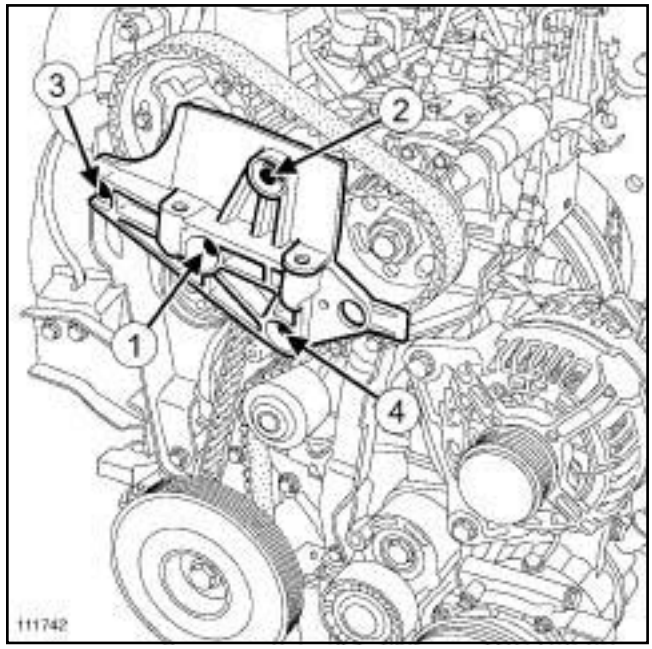
Check that the timing belt is operating correctly and in good condition.

❏ Remove the **(Mot. 1606)** from the cylinder head.

IV - FINAL OPERATION.

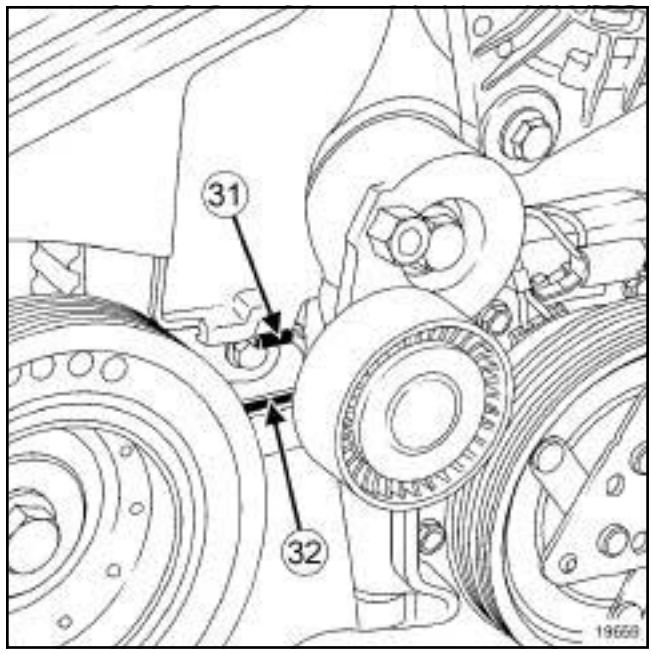
❏ Position the suspended mounting on the cylinder head.

❏ Tighten the suspended mounting bolts onto the cylinder head until they make contact.



111742

❏ Tighten to torque and in order the **suspended mounting bolts on the cylinder head (25 N.m)**.



19659

❏ Refit and clip on the lower timing cover.

Note:

Make sure that the tab (**31**) is positioned opposite the mark (**32**) .

❏ Refit:

- the plastic bolt on the lower timing cover,
- the cylinder position sensor,

K9K, and 750 or 752 or 760 or 762 or 766 or 768

❏ Torque tighten the **camshaft position sensor bolt (8 N.m)**.

❏ Refit and clip on the upper timing cover.

❏ Lower the engine using the **(Mot. 1453)**.

❏ Fit the right-hand suspended engine mounting with its bolts.

❏ Tighten the bolts on the straight suspended engine mounting until they make contact.

❏ Torque tighten the **right-hand suspended engine mounting bolts (62 N.m)**.

❏ Raise the vehicle.

❏ Refit the engine tie-bar.

❏ Torque tighten the **engine tie-bar bolts (105 N.m)**.

❏ Refit then tighten the protector under the engine.

❏ Remove tool **(Mot. 1453)** from the vehicle.

❏ Lower the vehicle.

20960

❏

WARNING

Before fitting a new high-pressure pipe, lightly lubricate the nut threads with the oil from the applicator provided in the new parts kit.

Be careful not to allow oil into the high-pressure pipe.

Do not lubricate high-pressure pipes supplied without an applicator, as these high-pressure pipes are self-lubricating.

❏ Remove and discard the blanking plugs on:

- the high pressure pump,
- the injector rail.

❏ Fit a new high pressure pipe between the pump and the rail.

❏ Tighten the high pressure pipe unions between the pump and the rail until contact is made.

❏ Using the **(Mot. 1746)**, tighten to torque:

- the **high pressure pipe unions between the pump and the yellow rail (24 N.m)**,
- the **high pressure pipe unions between the pump and the silver rail (28 N.m)**,

❏ Refit the neck on the injector rail.

❏ Clip the wiring to the filler neck on the injector rail.

❏ Remove and discard the blanking plugs on:

- the Venturi,
- the diesel injectors.

❏ Connect:

- the cylinder position sensor connector on the timing cover,
- the oil level sensor connector,
- the accelerometer connector,
- the rail pressure sensor connector,
- the diesel return pipes on the fuel injectors,
- the diesel return pipe to the Venturi attached to the high pressure pump.

❏ Clip the high pressure pump diesel supply and return pipes to the filler neck.

❏ Remove the blanking plugs from the high pressure pump and the pipes and discard them.

❏ Connect to the high pressure pump:

- the diesel return pipe to the fuel filter,
- the diesel fuel supply pipe.

❏ Remove the protection on the alternator to prevent fuel flowing out.

❏ Connect the electrical connectors to:

- the diesel temperature sensor,
- the flow actuator,
- the injectors,
- of the heater plugs.

❏ Remove the protection on the inlet opening of the oil level dipstick guide.

K9K, and 750 or 752 or 760 or 762 or 766 or 768

❑ Refit the high pressure pump protection.

❑ Torque tighten the **high pressure pump protection bolts (21 N.m)**.

❑ Refit:

- the diesel splash plate cover,
- dipstick guide ,
- the oil dipstick guide nuts,
- the dipstick.

❑ Torque tighten the **dipstick guide tube nuts (10 N.m)**.

❑ Refit the inlet duct.

❑ Connect the inlet air sensor connector.

K9K, and 750 or 766 or 768

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air pipe on the turbocharger outlet and the air pipe on the intercooler inlet.

❑ Click the turbocharger outlet air pipe on the turbocharger and on the exchanger inlet air pipe.

❑ Tighten the turbocharger outlet air pipe bolt on the rocker cover.

❑ Torque tighten the **exchanger inlet air pipe nut on the alternator (8 N.m)**.

❑ Prime the fuel circuit with the manual priming pump until the disconnected pipes are filled with fuel (automatic degassing).

❑ Check that there are no fuel leaks.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Check the high pressure circuit (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) .

❑ Refit the engine cover.

❑ Using the diagnostic tool, check for stored faults; deal with these and clear them as necessary.

V - REPLACING THE HIGH PRESSURE PUMP

❑ If replacing the high pressure pump, reprime the diesel circuit using the **Diagnostic tool**.

Note:

For VDiag numbers before **Vdiag 48**, it is essential to reprogram the injection computer. **If the computer is not reprogrammed, do not apply the procedure described below but prime the circuit using the manual priming pump.**

Note:

Never start the engine until the pump has been reprimed.

Also comply with the operation instructions provided to prevent the high pressure pump from being damaged internally, due to its running empty and with no diesel lubrication.

❑ Connect the **Diagnostic tool** to the vehicle.

❑ Connect to the diesel injection computer.

❑ Run command **AC212 "NEW PUMP HOUSING FILLING"**.

❑ Follow the instructions on the **Diagnostic tool** until the command is completed.

❑ Start the engine.

Note:

The starting phase can last up to **20 seconds**.

❑ If the engine does not start or if the start-up sequence is interrupted:

- switch off the ignition,
- wait **30s**,
- restart the engine.

❑ Using the **Diagnostic tool**, clear any faults stored in the injection computer.

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1566	Tool for removing high pressure pipes.
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.

Equipment required
Diagnostic tool
torque wrench

Tightening torques ▽	
two fuel flow actuator mounting bolts	**5.5 N.m**
high pressure pipe unions	**24 N.m**
intercooler air inlet pipe nut on the alternator	**8 N.m**

IMPORTANT

Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the injector rail is not under pressure,

- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Loosening a high pressure pipe union when the engine is running is strictly prohibited.

WARNING

Before starting work on the vehicle, obtain:

- a new blanking plug kit (**part no. 77 01 206 804**),

- cleaning cloths (**part no. 77 11 211 707**),

- cleaning product (**part no. 77 11 224 188**).

WARNING

Parts which must always be replaced:

- all the high pressure pipes which have been removed.

Note:

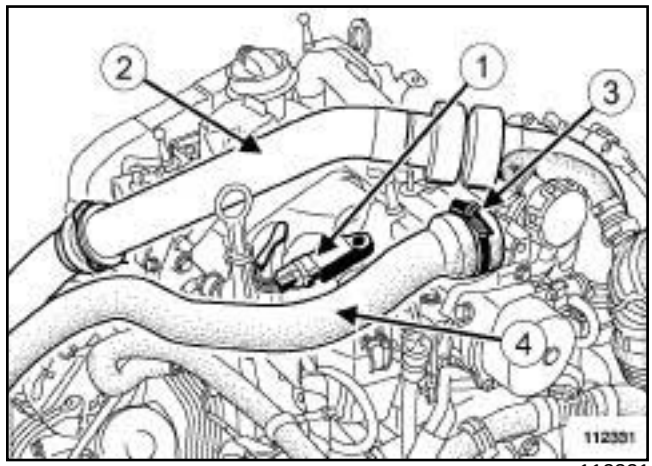
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.



112331

❑ Disconnect the inlet air pressure sensor (**1**) .

K9K, and 750 or 766 or 768

❑ Remove the upper section of the turbocharger air duct (**2**) .

❑ Loosen the clip (**3**) .

❑ Move the inlet air duct to one side (**4**) .

❑ Remove:

- the dipstick,

- the dipstick duct bolts.

❑ Move the dipstick duct to one side.

❑ Unclip the upper section of the injector rail protector.

❑ Unscrew the upper section of the injector rail protector.

❑ Remove:

- the injector rail protector,

- Remove the high pressure pump protector plate.

K9K, and 750 or 752 or 766 or 768

❑ Protect the alternator from fuel outflow.

❑ Pour cleaning product into a container.

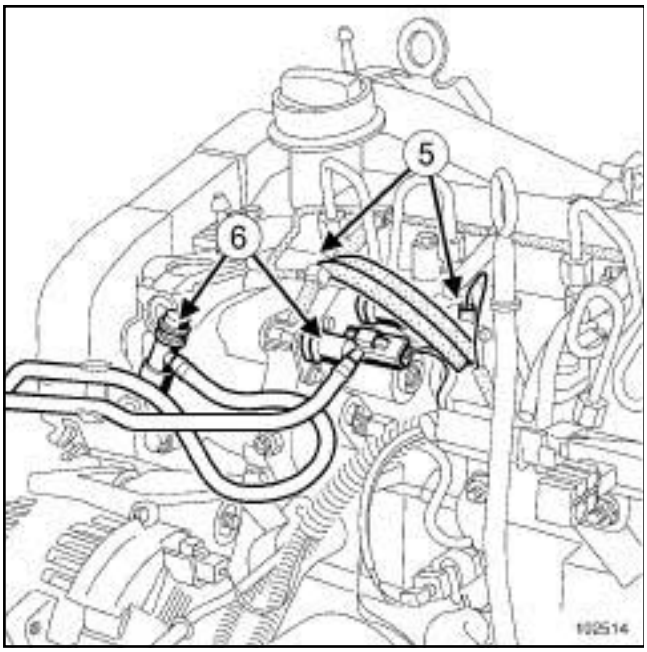
IMPORTANT
Wear protective gloves when using cleaning product.

❑ Soak the brush with cleaning product, then clean the diesel supply and return pipe unions on the high pressure pump.

❑ Blast the cleaned areas with compressed air then dry using new cloths.

IMPORTANT
Wear protective glasses.

WARNING
Do not blow compressed air once the fuel circuit is open, otherwise impurities may enter the system. Use cloths if necessary.



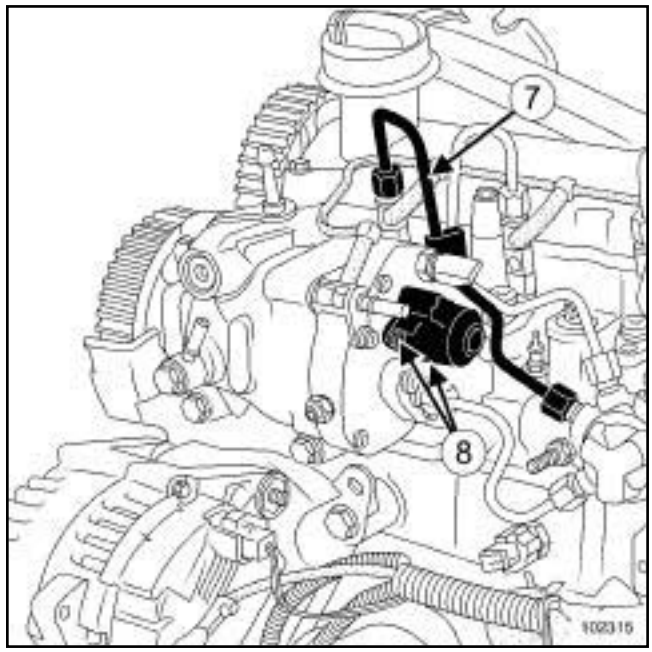
102514

❑ Disconnect:

- the heater plugs on cylinders no. 3 and 4,
- the injector connectors from cylinders no. 3 and 4 (**5**) ,
- the diesel supply and return pipes (**6**) ,
- the high pressure pump electrical connectors.

❑ Fit the correct blanking plugs on:

- the high pressure pump,
- the pipes.



102315

❑ Disconnect:

- the diesel temperature sensor,
- the flow actuator.

❑ Remove the high pressure pipe (**7**) between the rail and injector no.4.

❑ Fit the correct blanking plugs on:

- the rail,
- the injector.

II - REMOVAL OF THE PART CONCERNED

❑ Loosen the two bolts ***(8)*** from the fuel flow actuator.

❑ Withdraw the fuel flow actuator (by hand using small successive turns).

WARNING
Do not use the electrical connector as a lever arm.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Do not remove the blanking plugs from each component until the last moment.

K9K, and 750 or 752 or 766 or 768

❑ Only unpack the new component when you are ready to fit it.

WARNING
Do not damage the seal when refitting.

Note:

Do not lubricate the actuator seals with grease or used diesel oil. Use the applicator provided in the kit for the new part.

II - REFITTING PART CONCERNED

❑ Fit the actuator.

❑ Screw on the two actuator bolts without tightening them.

❑ Tighten to torque the **two fuel flow actuator mounting bolts (5.5 N.m)** using a **torque wrench**.

III - FINAL OPERATION

❑ Fit a new high pressure pipe to injector no. 4 and a new clip.

❑ Torque tighten the **high pressure pipe unions (24 N.m)** using the **(Mot. 1566)** or **(Mot. 1746)**.

❑ Connect:

- the high pressure pump electrical connectors,
- the diesel supply and return pipe,
- the injector connectors from cylinders no. 3 and 4,
- the heater plugs.

❑ Refit:

- the high pressure pump protector plate,
- the upper section of the injector rail protector,
- the dipstick pipe.

❑ Refit the air inlet duct.

❑ Connect the inlet air pressure sensor.

K9K, and 750 or 766 or 768

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Tighten the **intercooler air inlet pipe nut on the alternator (8 N.m)**.

❑ Refit the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Check that there are no diesel leaks:

- Check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) .
- Let the engine run at idle speed until the engine cooling fan starts to operate.
- Accelerate several times at no load.
- Switch off the ignition.
- Check that there is no diesel fuel escaping.

K9K, and 750 or 752 or 766 or 768

Equipment required
Diagnostic tool
torque wrench

Tightening torques ▽	
Venturi bolt	**5.5 N.m**
nut mounting the inter-cooler inlet air pipe on the alternator	**8 N.m**

IMPORTANT

Before carrying out any work on the injection circuit, check using the **Diagnostic tool**

- that the injector rail is not under pressure,

- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Loosening a high pressure pipe union when the engine is running is strictly prohibited.

WARNING

Before starting work on the vehicle, obtain:

- a new blanking plug kit (**part no. 77 01 206 804**),

- cleaning cloths (**part no. 77 11 211 707**),

- cleaning product (**part no. 77 11 224 188**).

Note:

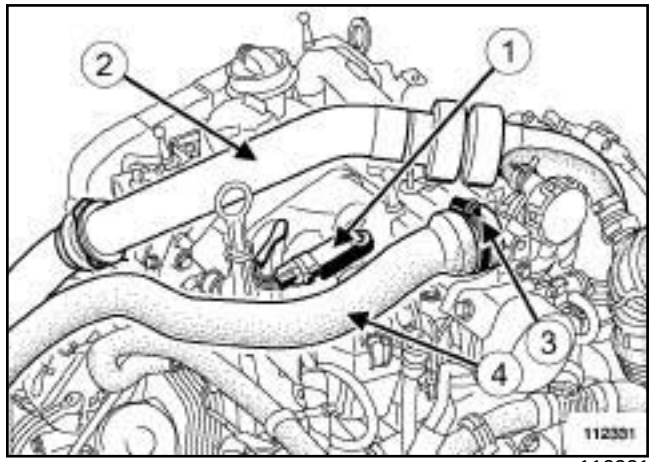
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover.



112331

❏ Disconnect the inlet air pressure sensor (**1**) .

K9K, and 750 or 766 or 768

❏ Remove the upper section of the turbocharger air duct (**2**) .

❏ Loosen the clip (**3**) .

❏ Move the inlet air duct to one side (**4**) .

❏ Remove:

- the dipstick,

- the dipstick duct bolts.

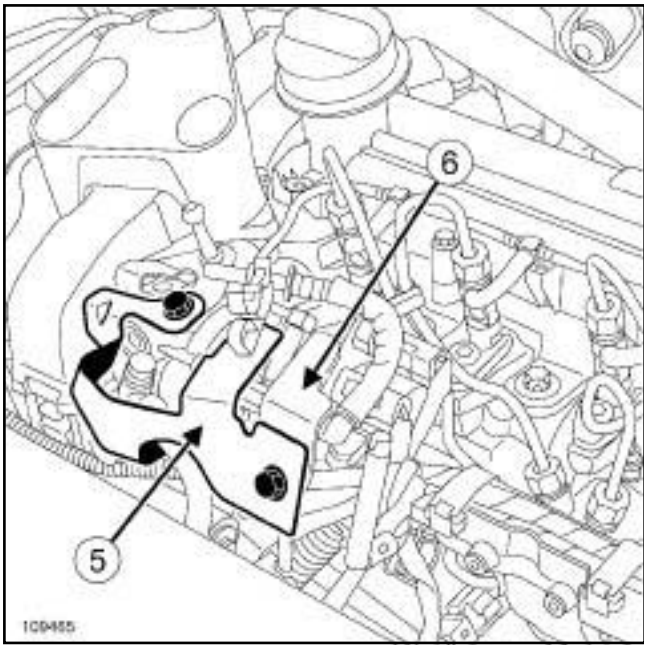
❏ Move the dipstick duct to one side.

❏ Unclip the upper section of the injector rail protector.

❏ Unscrew the upper section of the injector rail protector.

❏ Remove the injector rail protector.

K9K, and 750 or 752 or 766 or 768



109465

❏ Remove the high pressure pump protectors (**5**) and (**6**) .

❏ Protect the alternator from fuel outflow.

❏ Pour cleaning product into a container.

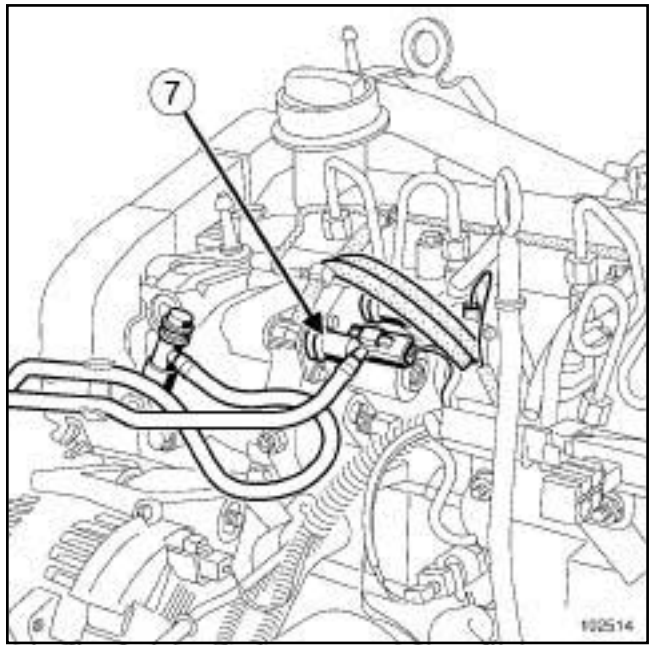
IMPORTANT
Wear protective gloves when using cleaning product.

❏ Soak the brush with cleaning product and clean the diesel return pipe union on the high pressure pump.

❏ Blow compressed air into the cleaned areas, then wipe with new cloths.

IMPORTANT
Wear protective glasses.

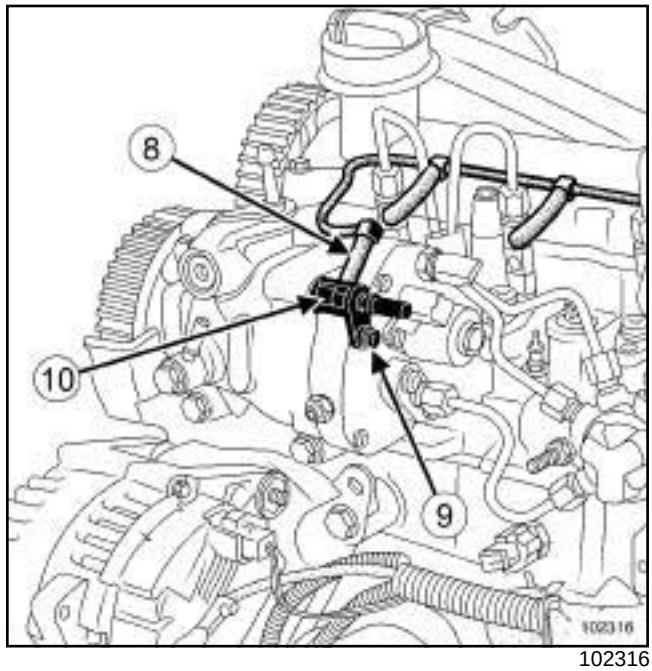
WARNING
Do not blow compressed air once the fuel circuit is open, otherwise impurities may enter the system. Use cloths if necessary.



102514

❏ Disconnect the diesel return pipe (**7**) .

❏ Fit the correct blanking plugs.



102316

❏ Disconnect the return pipe (**8**) connecting the injectors to the high pressure pump.

❏ Fit the correct blanking plugs.

II - REMOVAL OF THE PART CONCERNED

❏ Remove:

- the Venturi bolt ***(9)*** ,
- the Venturi ***(10)*** .

K9K, and 750 or 752 or 766 or 768

❑ Fit blanking plugs into the openings.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING

Do not remove the blanking plugs from each component until the last moment.

❑ Lubricate the O-ring with lubricant from the applicator supplied with the new part.

Note:

Do not lubricate the Venturi seals with grease or used diesel fuel.

Use the applicator supplied with the kit.

II - REFITTING PART CONCERNED

❑ Fit the Venturi.

WARNING

Do not damage the O-ring when fitting the Venturi.

❑ Tighten to torque the **Venturi bolt (5.5 N.m)** using a **torque wrench**.

III - FINAL OPERATION

❑ Connect the return pipe connecting the injectors to the high pressure pump.

❑ Refit the high pressure pump protection.

❑ Refit the inlet air duct.

❑ Connect the inlet air pressure sensor.

K9K, and 750 or 766 or 768

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❑ Refit the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- switch off the ignition,
- check that there is no diesel fuel escaping.

K9K, and 764 or 772

Equipment required
Diagnostic tool

Tightening torques ▽	
intercooler inlet air pipe nut on the alternator	**8 Nm.**

IMPORTANT
Consult the safety instructions and cleanliness advice and the operation recommendations before carrying out any repairs (see **Diesel injection: Repair precautions**).

IMPORTANT

Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the rail is not under pressure,

- that the fuel temperature is not too high.

Working on the circuit with the engine running is strictly forbidden.

IMPORTANT
Be careful when removing the injectors or the injection rail as there will be a quantity of fuel in the rail and the union.

IMPORTANT
Loosening a high pressure pipe union when the engine is running is strictly prohibited.

REMOVAL

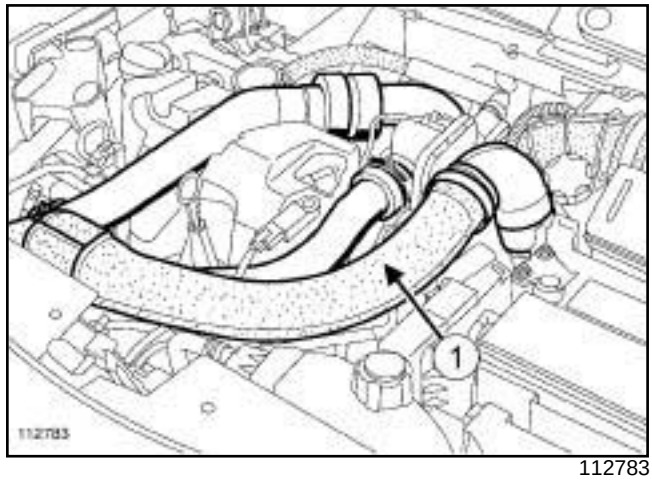
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

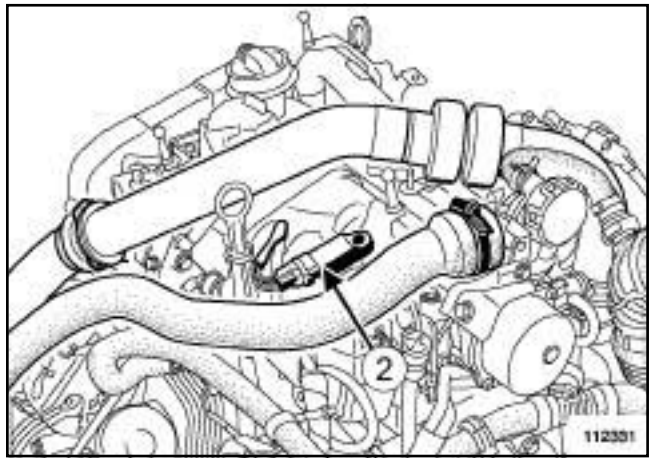
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the engine undertray.



112783

❏ Remove the air inlet sleeve (**1**) .



112331

❏ Disconnect the inlet pressure sensor connector (**2**) .

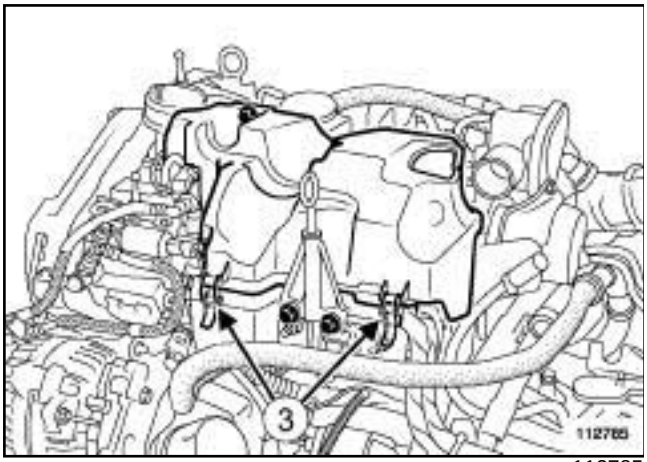
❏ Remove:

- the intercooler air outlet pipe,

- the air pipe at the intercooler inlet,

- the turbocharger outlet air pipe.

K9K, and 764 or 772



112785

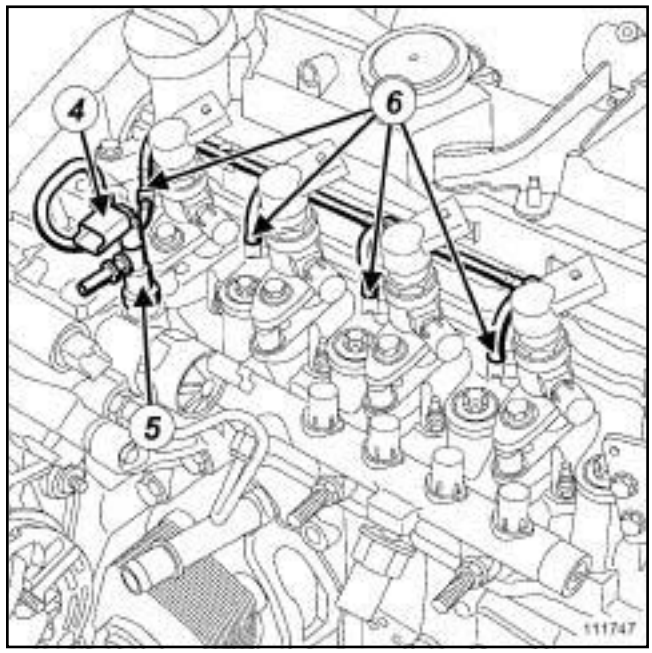
❏ Unclip the rail protector cover at (**3**) .

❏ Remove:

- the rail protector cover bolts,
- the rail protector cover.

❏ Protect the alternator from fuel outflow.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111747

❏ Disconnect the diesel temperature sensor connector (**4**) .

❏ Clean the diesel return union (**5**) on the high pressure pump (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❏ Disconnect the diesel return union (**5**) from the high pressure pump.

Note:

Make preparations for the fuel outflow.

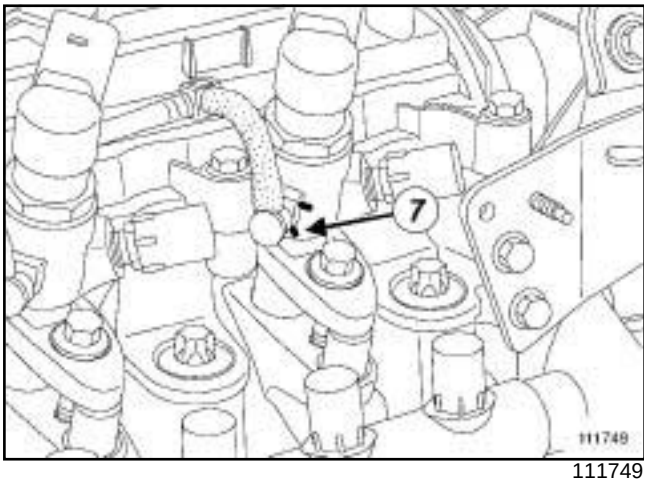
❏ Fit blanking plugs to:

- the diesel return pipe,
- the high pressure pump.

❏ Clean the diesel return unions (**6**) on the injectors (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

K9K, and 764 or 772

First stage in removing the injector fuel return unions



111749

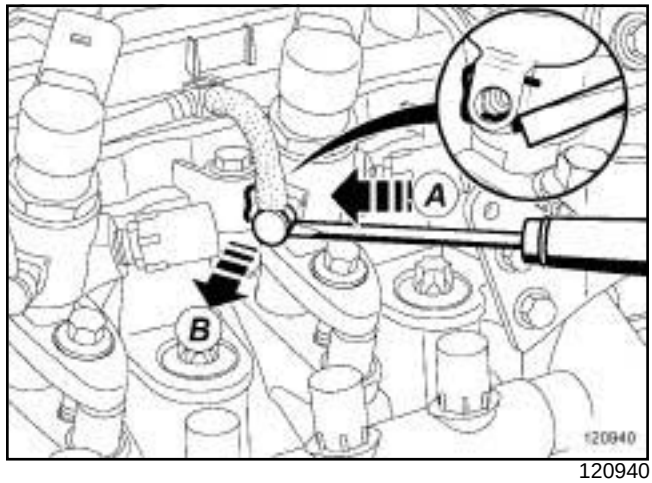
❏ Using a fine flat-blade screwdriver, push the lower tabs (**7**) of the injector fuel return union clips towards the rocker cover in order to unfasten them and fully fit them on the rocker cover.

Note:

Take care not to dislodge the clip fully from its housing in case it becomes damaged when extracting the diesel return union.

Any clips that become completely separated from a diesel injector that has not been removed must always be replaced: to do this, it is essential that the diesel injector in question is removed (see **13B**, **Diesel injection**, **Diesel injector: Removal - Refitting**, page **13B-83**) (13B, Injection).

Second stage in removing the injector fuel return unions



120940

❏ Using a fine flat-blade screwdriver, push down (**A**) on the lower tabs of the clips, which were first resting on the rocker cover, without separating them fully from their injectors.

❏ Manually remove the injector diesel return unions at (**B**) , while **pressing (A) on the lower tabs of the clips using a fine flat-blade screwdriver.**

Note:

With sufficient force applied to the clip while pressing continuously with the screwdriver, the injector diesel return unions will come out effortlessly.

WARNING

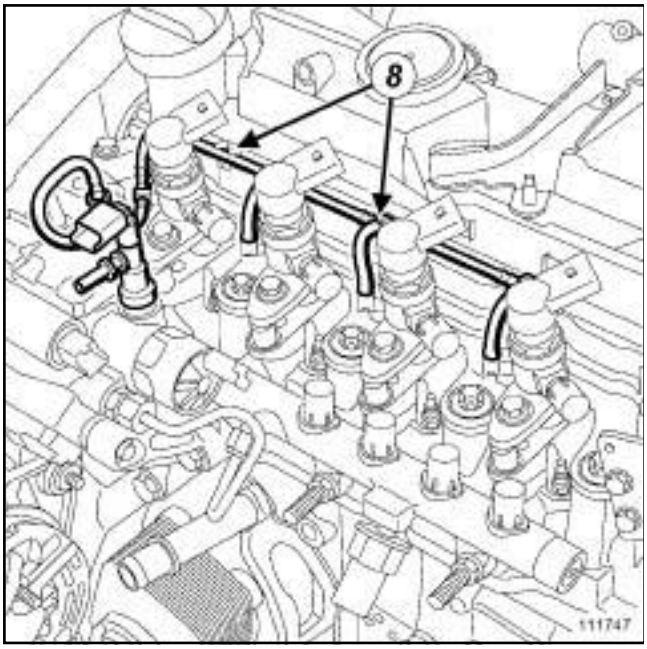
Do not use the screwdriver as a lever on the injector fuel return unions.

❏ Fit blanking plugs on:

- the diesel return unions on the injectors,

- the diesel return openings on the injectors.

K9K, and 764 or 772



111747

❑ Unclip the diesel return pipe from the rocker cover at (**8**) .

❑ Remove the diesel return pipe.

Note:

If the diesel return pipe is to be reused, keep it in a sealed bag throughout the removal operation.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING

Only remove the blanking plugs from the protected components at the last possible moment.

Also, do not remove the components from their packaging until just before fitting them to the vehicle.

II - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING

Check the condition of the seals on the fuel return unions on the injectors.

Check that they are not cut, crushed and have not come out of their grooves.

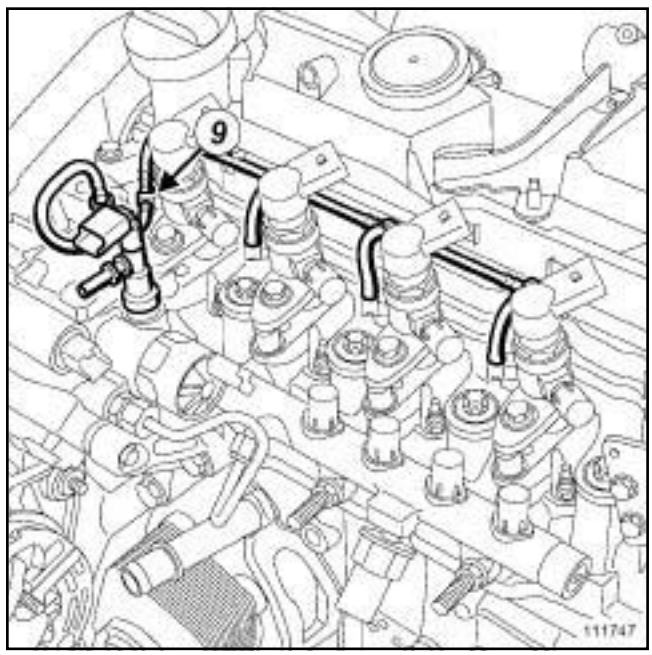
Replace the entire diesel return pipe if one of the components is damaged.

❑ Push the retaining clips for the diesel return unions on the injectors towards the front of the vehicle until they are in their original positions.

❑ Remove the blanking plugs from the injector fuel return openings, and discard.

❑ Remove the diesel return pipe from its packaging.

❑ Lubricate the injector diesel return unions with **SILICONE FREE LUBRICANT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) so that the seals are completely covered.



111747

❑ Offer up the diesel return unions to the injector diesel return openings, starting with injector number 4 (**9**) .

K9K, and 764 or 772

❏ Clip the injector diesel return unions onto the injectors, starting with injector number 4.

Note:

Check that the diesel return unions are clipped on properly.

❏ Clip the fuel return pipe onto the rocker cover.

III - FINAL OPERATION.

❏ Connect the diesel temperature sensor connector.

❏ Refit:

- the rail protector cover,
- the intercooler air outlet pipe,
- the air pipe at the intercooler inlet,
- the turbocharger outlet air pipe.

❏ Torque tighten the **intercooler inlet air pipe nut on the alternator (8 Nm.)**

❏ Refit the engine protector.

❏ Reprime the fuel circuit using the priming bulb.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Check the high pressure circuit (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) (13B, Injection).

High pressure pipe between pump and rail: Removal - Refitting

K9K, and 764 or 772

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
high pressure pipe nuts	**24 Nm**
intercooler inlet air pipe mounting nut on the alternator	**8 Nm**

WARNING

Before starting work on the vehicle, obtain:

- a new blanking plug kit (**part no. 77 01 476 857**),
- cleaning wipes (**part no. 77 11 211 707**),
- cleaning product (**part no. 77 11 224 188**).

WARNING

Parts always to be replaced:

- all the high pressure pipes which have been removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

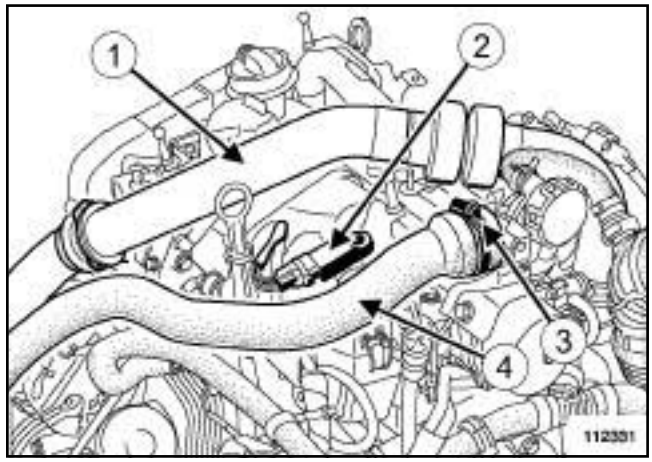
Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine protector.



112331

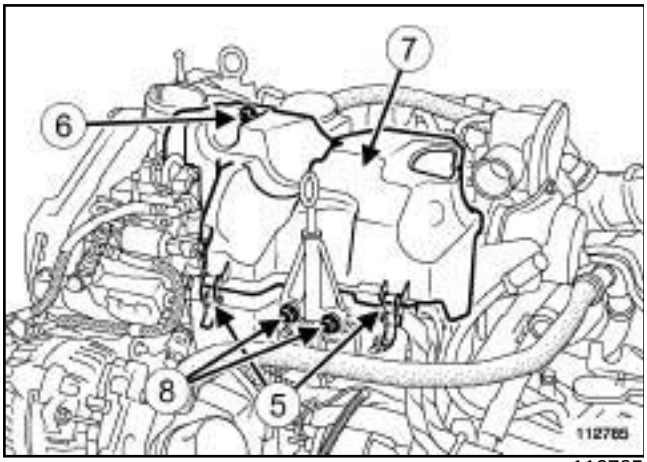
❏ Remove the upper section (**1**) of the turbocharging duct.

❏ Disconnect the inlet air pressure sensor (**2**)

❏ Loosen the clip (**3**) .

❏ Move the inlet duct to one side (**4**) .

K9K, and 764 or 772



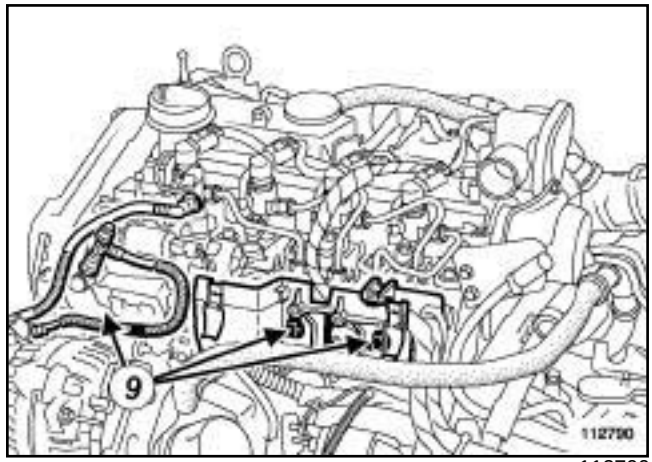
112785

❏ Unclip the clips (**5**) from the injector rail protector cover.

❏ Remove:

- the injector rail protector cover mounting bolt (**6**) ,
- the injector rail protector cover (**7**) ,
- the dipstick,
- the dipstick tube (**8**) mounting bolts.

❏ Move the dipstick duct to one side.



112790

❏ Remove:

- the injector rail protector support mounting bolts (**9**) ,
- the injector rail protector mounting.

❏ Protect the alternator from fuel outflow.

❏ Pour cleaning product into a container.

IMPORTANT
Wear protective gloves when using cleaning product.

❏ Soak the brush with cleaning product, then clean the unions:

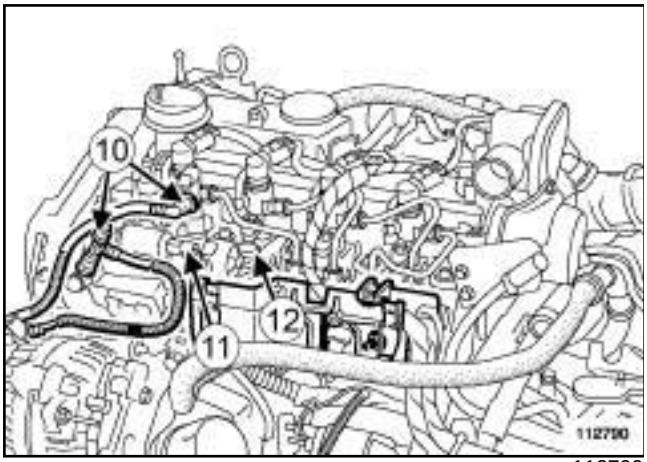
- on the high-pressure pump fuel supply pipe,
- on the high-pressure pump fuel return pipe, taking care not to soak the diesel fuel temperature sensor,
- on the high-pressure pipe between the high-pressure pump and the injector rail,

❏ Blast the cleaned areas with compressed air, then wipe them with new cleaning cloths.

IMPORTANT
Wear protective glasses.

WARNING
Do not blow compressed air once the fuel circuit is open, otherwise impurities may enter the system. Use wipes if necessary.

K9K, and 764 or 772



112790

❑ Disconnect:

- the diesel fuel supply and return pipes (**10**) ,
- the pressure regulating valve connector (**11**) ,
- the volume regulating valve connector (**12**) ,

Note:

Be prepared for fuel outflow. Clean with new cloths.

❑ Fit the blanking plugs.

II - REMOVAL OF PART CONCERNED

❑ Remove the high-pressure pipe between the high-pressure pump and the injector rail and discard it.

Note:

Hold the intermediate nut between the pump-rail pipe and the high-pressure pump using a lock wrench.

❑ Fit the blanking plugs.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

WARNING

Remove the blanking plugs only before reconnecting the fuel circuit pipes.

The blanking plugs are single-use only. Do not reuse them, and discard the whole kit once opened.

❑ Take the new high pressure pipe out of its plastic bag.

❑ Remove the blanking plugs.

II - REFITTING PART CONCERNED

❑ Fit the new high pressure pipe between the injector rail and the high pressure pump.

Note:

If the new pipe kit does not contain an applicator, lubrication of the nut threads will be unnecessary (as they are self-lubricating pipes).

❑ Hand-tighten the nut on the high-pressure pipe on the pump end, then the one on the rail end.

❑ Torque tighten the **high pressure pipe nuts (24 Nm)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting with the nut on the high pressure pump side.

III - FINAL OPERATION.

❑ Connect:

- the volume regulating valve connector,
- the pressure regulating valve connector,
- diesel fuel supply and return pipes.

❑ Refit:

- the injector rail protector mounting,
- the dipstick duct mounting bolts.
- the dipstick,
- the injector rail protector cover,

❑ Refit the air inlet duct and tighten the clip.

❑ Connect the inlet air pressure sensor

❑ Loosen the intercooler inlet air pipe mounting nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **intercooler inlet air pipe mounting nut on the alternator (8 Nm)**.

❑ Refit the engine cover.

❑ Reprime the fuel circuit.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 772

❏ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- check that there are no diesel leaks.

❏ Use the **Diagnostic tool** to check for stored faults.

❏ Clear them if necessary.

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.

Tightening torques ▽	
high pressure pipe between the pump and the rail	**24 N.m**

❑

IMPORTANT

Use the diagnostic tool before any operation is carried out on the injection circuit to check:

- that the rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Working on the circuit with the engine running is strictly forbidden.

WARNING

Before starting work on the vehicle, obtain:

- a new set of plug welds (part no.: **77 01 206 804**),
- cleaning cloths (part no.: **77 11 211 707**),
- cleaning product (part no.: **77 11 224 188**).

Note:

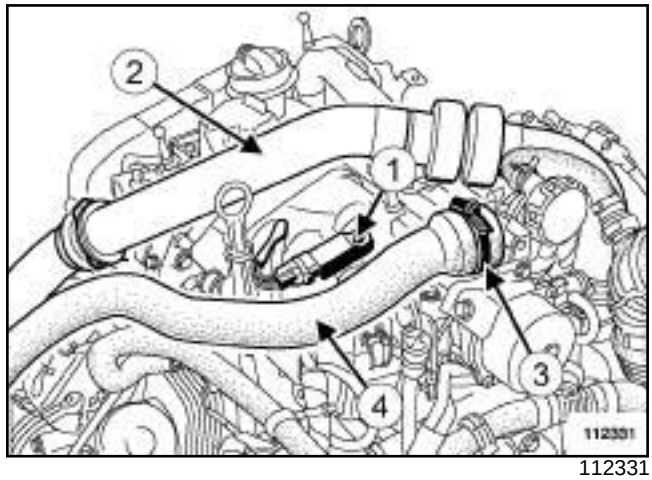
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the front engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



112331

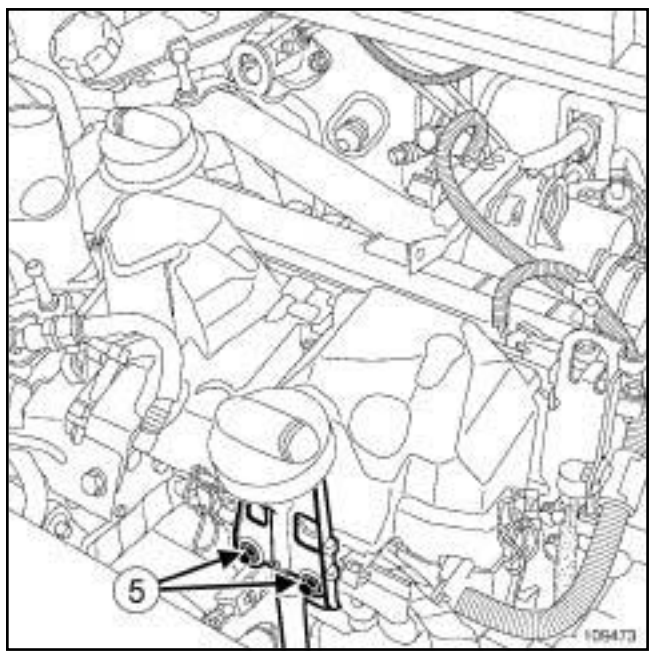
❑ Disconnect the inlet air pressure sensor (**1**) .

K9K, and 750 or 766 or 768

❑ Remove the turbocharging duct (**2**) .

❑ Loosen the air inlet duct clip (**3**) .

❑ Move the inlet duct to one side (**4**) .



109473

❑ Remove the dipstick bolts (**5**) .

❑ Remove the dipstick.

❑ Disconnect the accelerometer connector.

K9K, and 750 or 752 or 766 or 768

II - REMOVAL OF THE PART CONCERNED

❑ Clean the high pressure pipe between the pump and the rail (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❑ Undo:

- the high pressure pipe nut at the pump end using the **(Mot. 1746)**,
- the high pressure pipe nut at the injector rail end using the **(Mot. 1746)**.

❑ Fit blanking plugs into the openings.

REFITTING

I - REFITTING PREPARATION OPERATION

20960

❑

WARNING

Before fitting a new high pressure pipe, lightly lubricate the nut threads with oil from the applicator provided with the new part.

Be careful not to allow oil into the high pressure pipe.

Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

WARNING

Do not remove the blanking plugs from each component until the last moment.

II - REFITTING PART CONCERNED

❑ Remove the blanking plugs.

❑ Insert the high pressure pipe olive in the high pressure pump high pressure outlet taper.

❑ Insert the high pressure pipe olive into the injector rail inlet taper.

❑ Fit, without tightening, the high pressure pipe nuts by hand, starting with the nut at the rail end.

❑ Slightly pretighten the high pressure pipe nuts.

❑ Tighten to torque the **high pressure pipe between the pump and the rail (24 N.m)** using the **(Mot. 1746)**.

III - FINAL OPERATION

❑ Connect the accelerometer connector.

❑ Insert the dipstick.

❑ Refit the dipstick bolts ***(5)*** .

K9K, and 750 or 766 or 768

❑ Refit:

- the turbocharging pipe ***(2)*** ,
- the air inlet duct ***(4)*** .

❑ Tighten the air inlet duct clip ***(3)*** .

❑ Refit the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Prime the diesel circuit using the priming pump.

WARNING

Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- carry out a road test,
- Switch off the ignition.

K9K, and 764 or 772

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
injection rail mounting nuts	**28 Nm**
high-pressure pipe nuts	**24 Nm**
mounting nut of the air pipe at the intercooler inlet on the alternator	**8 Nm**

WARNING

Before starting work on the vehicle, make sure you have:

- a new blanking plug kit (**part no. 77 01 476 857**),
- cleaning wipes (**part no. 77 11 211 707**),
- cleaning product (**part no. 77 11 224 188**).

WARNING

Parts always to be replaced:

- all the high-pressure pipes which have been removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) .

❑ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

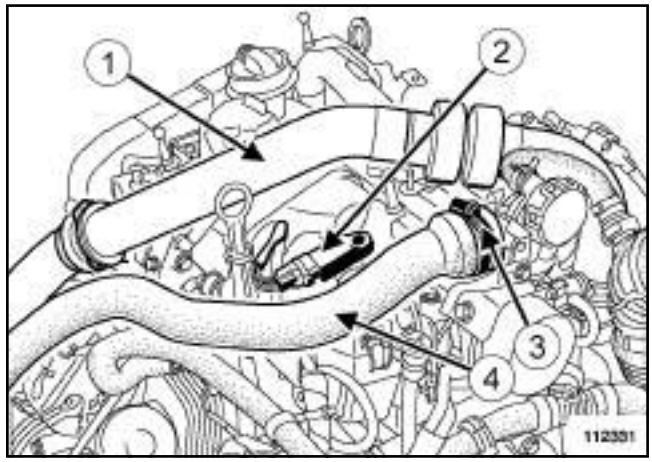
Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) .

❑ Remove the engine cover.



112331

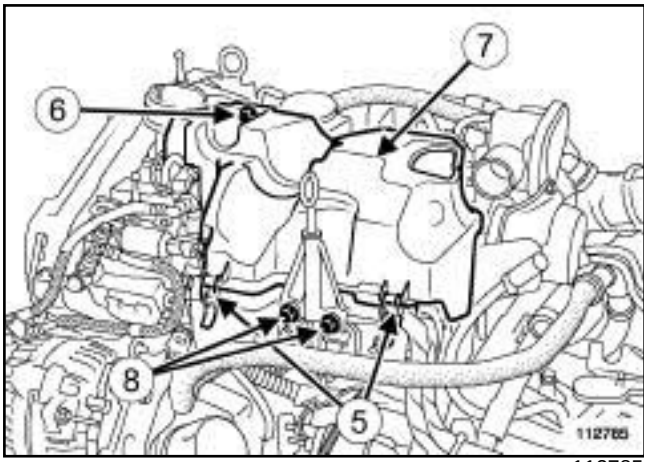
❑ Remove the upper part (**1**) of the turbocharger duct

❑ Disconnect the air inlet pressure sensor (**2**)

❑ Loosen the clip (**3**) .

❑ Move the inlet duct to one side (**4**) .

K9K, and 764 or 772



112785

❏ Unclip the clips (**5**) from the injection rail protector cover.

❏ Remove:

- the injection rail protector cover mounting bolts (**6**) ,
- the injection rail protector cover (**7**) ,
- the dipstick,
- the dipstick pipe mounting bolts (**8**) .

❏ Push the dipstick pipe to one side.

❏ Protect the alternator from fuel outflow.

❏ Pour cleaning product into a container.

IMPORTANT
Wear protective gloves when using cleaning product.

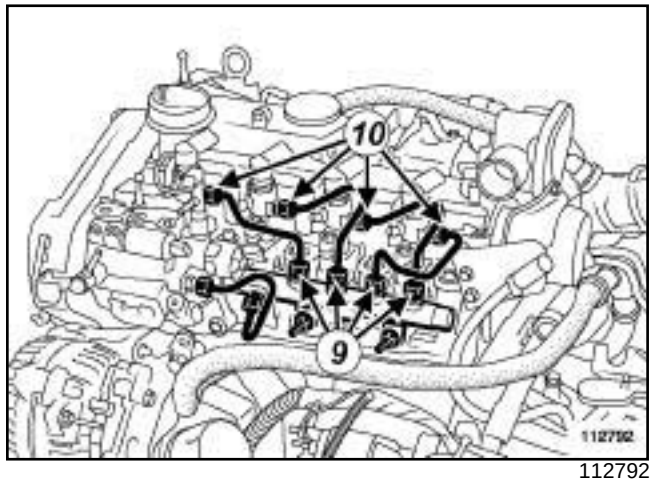
❏ Soak the brush with cleaning product, then clean the high-pressure pipe unions between the injection rail and the injectors

❏ Blast the cleaned areas with compressed air, then wipe them with new cleaning wipes.

IMPORTANT
Wear protective glasses.

WARNING
Do not blast with compressed air once the fuel circuit is open, otherwise impurities may enter the system. Use wipes if necessary.

II - REMOVAL OF PART CONCERNED

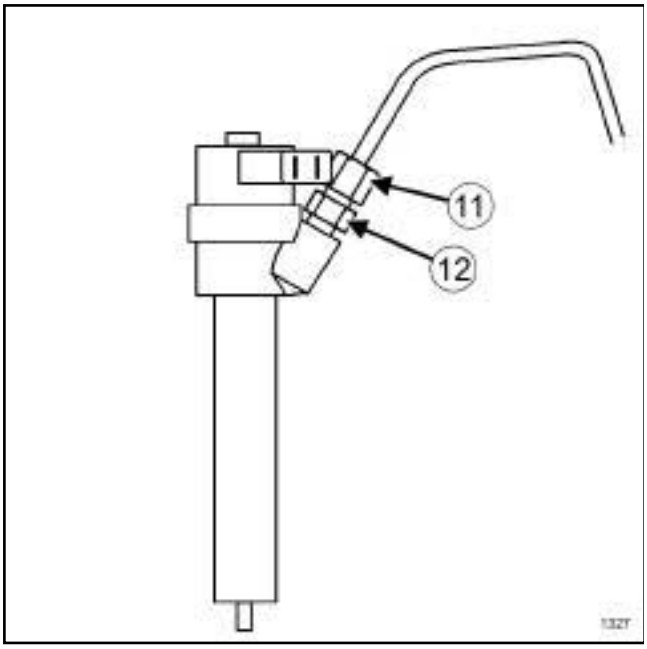


112792

❏ Undo:

- the nut securing the high-pressure pipe between the injection rail and the injector at the rail end (**9**) ,
- the nut securing the high-pressure pipe between the injection rail and the injector at the injector end (**10**) ,

K9K, and 764 or 772



1327

❑

WARNING

When the high-pressure pipe unions (**11**) on the injector holder are loosened, it is imperative to hold the filter rod retaining nut (**12**) with a lock wrench.

❑ Remove the high-pressure pipe in question and discard it.

Note:

Be prepared for fuel outflow. Clean with new wipes.

❑ Insert the correct blanking plugs.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If replacing the four high-pressure pipes:

- remove the anti-splash cover mounting,
- Undo the injection rail mounting nuts by a few turns (the injection rail should be loose).

II - REFITTING PART CONCERNED

❑

WARNING

Only remove the blanking plugs immediately before connecting the fuel circuit pipes.

The plugs are single-use. Do not reuse them.

❑ Take the new high-pressure pipe out of its plastic bag.

❑ Remove the blanking plugs from:

- the injection rail
- the injector fuel inlet.

Note:

If the new pipe kit does not contain an applicator, lubrication of the nut threads will be unnecessary (as they are self-lubricating pipes).

❑ Finger tighten the high-pressure pipe nuts as much as possible, starting at the injection rail end.

❑ If replacing the four high-pressure pipes:

- Tighten to torque the **injection rail mounting nuts (28 Nm)**,
- Refit the injection rail mounting.

❑ Tighten to torque the **high-pressure pipe nuts (24 Nm)** using **(Mot. 1746)** or **(Mot. 1566)** starting at the injection rail end.

III - FINAL OPERATION

❑ Refit:

- the dipstick pipe mounting bolts.
- the dipstick,
- the injection rail protector cover,
- the injection rail protector cover mountings.

❑ Loosen the mounting nut of the air pipe at the intercooler inlet on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler air inlet pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Tighten to torque the **mounting nut of the air pipe at the intercooler inlet on the alternator (8 Nm)**.

❑ Refit the air inlet duct and tighten its clip.

❑ Connect the inlet air pressure sensor

K9K, and 764 or 772

- ❏ Reprime the fuel circuit using the priming bulb.
- ❏ Connect the battery (see **Battery: Removal - Refitting**) .
- ❏ Confirm that there is no diesel fuel leak:
  - check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
  - accelerate several times at no load,
  - check for leaks and for diesel fuel outflow.
- ❏ Use the **Diagnostic tool** to check for stored faults.
- ❏ Clear them if necessary.

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
injector rail nuts	**28 N.m**
pump-rail high pressure pipe nuts	**24 N.m**
rail-injector high pressure pipe nuts	**24 N.m**
nuts of the neck on the rail	**21 N.m**
nut mounting the intercooler inlet air pipe on the alternator	**8 N.m**

❑

IMPORTANT

Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the injector rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Loosening a high pressure pipe union when the engine is running is prohibited.

WARNING

Before starting work on the vehicle, obtain:

- a new set of blanking plugs (part no.: **77 01 206 804**),
- cleaning cloths (part no.: **77 11 211 707**),
- cleaning product (part no.: **77 11 224 188**).

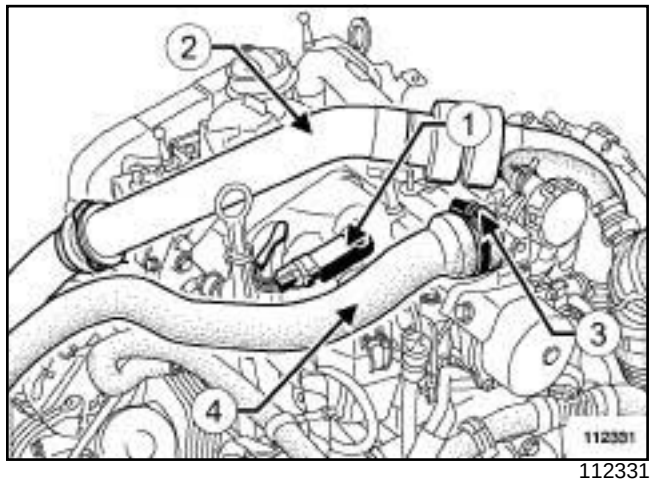
Note:

Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) 392, 80A, Battery).



112331

❑ Disconnect the inlet air pressure sensor (**1**) .

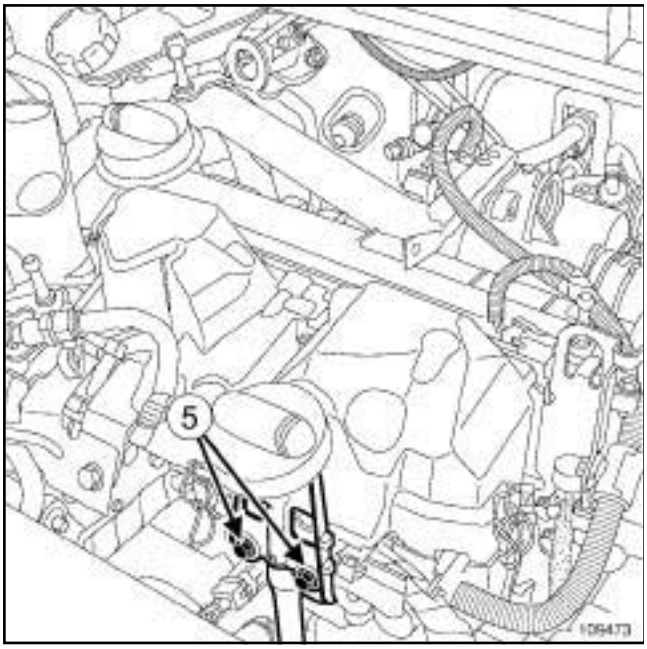
K9K, and 750 or 766 or 768

❑ Remove the upper section of the turbocharger air duct (**2**) .

❑ Loosen the clip (**3**) .

❑ Move the inlet duct to one side ***(4)*** .

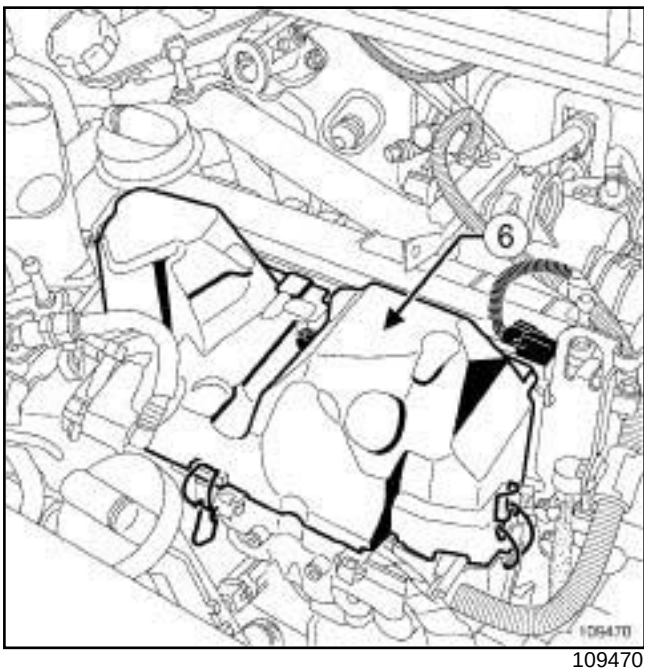
K9K, and 750 or 752 or 766 or 768



109473

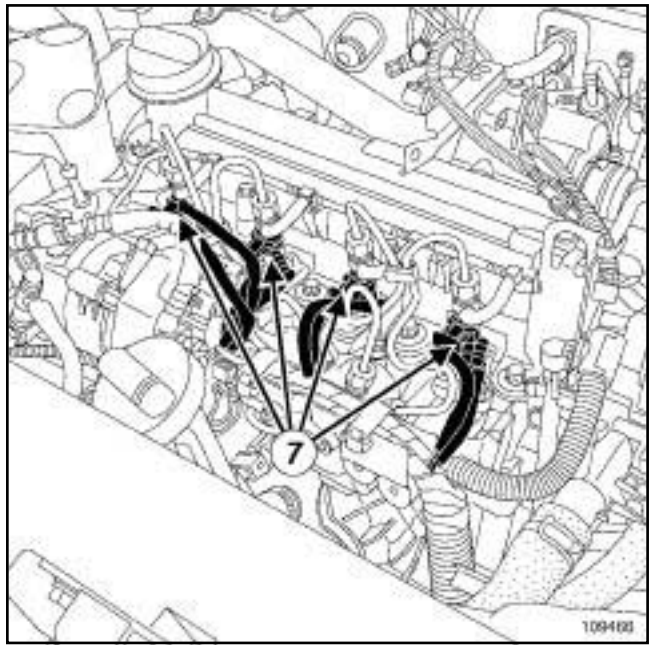
❏ Remove the dipstick bolts (**5**) .

❏ Put the dipstick to one side.



109470

❏ Remove the injector rail protector cover (**6**) .

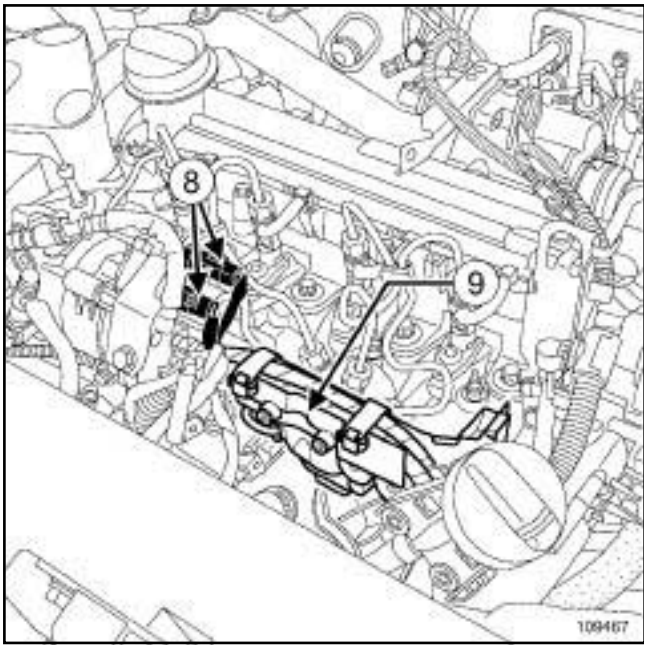


109466

❏ Disconnect the following connectors (**7**) :

- the heater plugs,
- the injectors.

K9K, and 750 or 752 or 766 or 768



109467

❏ Disconnect the high pressure pump electrical connectors (**8**) .

❏ Remove the bolts mounting the neck (**9**) onto the spherical injector rail.

❏ Move the electric wiring harness and neck to the side as shown by the arrow.

❏ Loosen the injector rail nuts by several turns.

❏ Remove the clips connecting the high pressure pipes.

II - REMOVAL OF THE PART CONCERNED

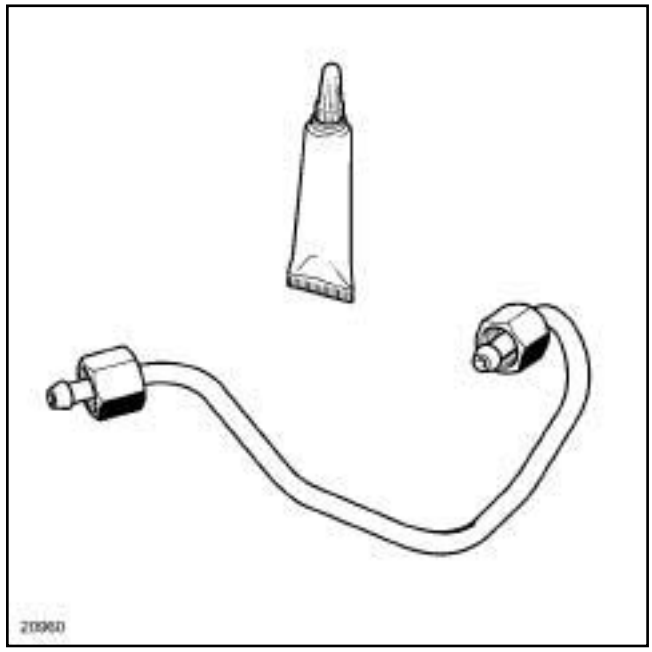
❏ Undo:

- the high pressure pipe nut at the injector end using the **(Mot. 1746)**,
- the high pressure pipe nut at the injector rail end using the **(Mot. 1746)**.

❏ Fit blanking plugs into the openings.

REFITTING

I - REFITTING PREPARATION OPERATION



20960

❏

WARNING

Before fitting a new high-pressure pipe, lightly lubricate the nut thread with oil from the applicator supplied in the new part.

Be careful not to allow oil into the high pressure pipe.

Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

WARNING

Do not remove the blanking plugs from each component until the last moment.

❏ If replacing the four high pressure pipes:

- remove the anti-splash cover mounting,
- loosen the injector rail nuts by a few turns (the injector rail should be loose).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Remove the blanking plugs.

❏ Insert the high pressure pipe olive in the injector high pressure inlet taper.

K9K, and 750 or 752 or 766 or 768

❑ Insert the high-pressure pipe olive in the rail high-pressure outlet taper.

❑ Fit the high pressure pipe nuts without tightening them, starting with the nut on the injector end.

❑ Slightly pretighten the high-pressure pipe nuts.

Note:

The order of fitting of the rail - injector high pressure pipes is not important.

❑ Mount a new clip provided with the new high pressure pipe.

❑ If replacing the four high pressure pipes, torque tighten the **injector rail nuts (28 N.m)**.

❑ Tighten to torque and in order the **pump-rail high pressure pipe nuts (24 N.m)**.

- pump end,
- rail end.

❑ Tighten to torque and in order the **rail-injector high pressure pipe nuts (24 N.m)**.

- injectors end,
- rail end.

Note:

Tighten each pipe fully before moving on to the next pipe.

III - FINAL OPERATION

❑ Refit the neck on the injector rail and torque tighten the **nuts of the neck on the rail (21 N.m)**.

❑ Connect the connectors of:

- the accelerometer,
- the injectors,
- the heater plugs.

❑ Refit the injector rail protector cover.

❑ Insert the dipstick.

❑ Refit the dipstick bolts.

❑ Refit the inlet duct and tighten its clip.

❑ Connect the inlet air pressure sensor.

K9K, and 750 or 766 or 768

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❑ Connect the battery (see **Battery: Removal - Refitting**) 392, 80A, Battery).

❑ Prime the diesel circuit using the priming pump.

WARNING

Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- carry out a road test,
- switch off the ignition,
- confirm that there is no diesel fuel leakage.

K9K, and 764 or 772

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
injector rail mounting nuts	**28 Nm**
high pressure pipe nuts between the injector rail and the injectors	**24 Nm**
high pressure pipe nuts between the injector rail and the high pressure pump	**24 Nm**
nut mounting the intercooler air inlet pipe on the alternator	**8 Nm**

WARNING

Before starting work on the vehicle, have to hand:

- a new blanking plug kit (**part no. 77 01 476 857**),
- cleaning wipes (**part no. 77 11 211 707**),
- cleaning product (**part no. 77 11 224 188**).

WARNING

Parts always to be replaced:

- all the high pressure pipes which have been removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

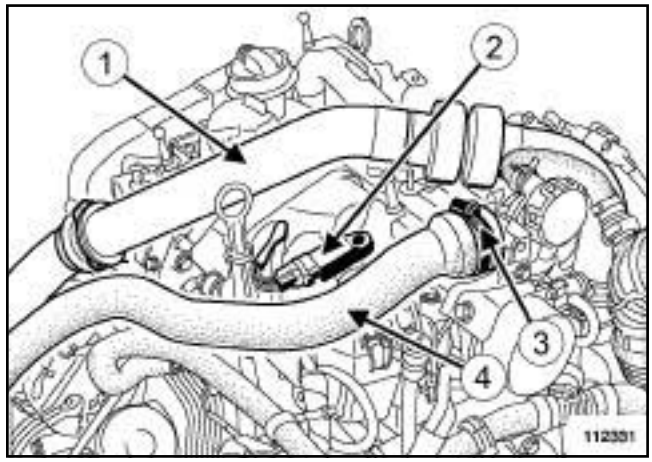
Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine cover.



112331

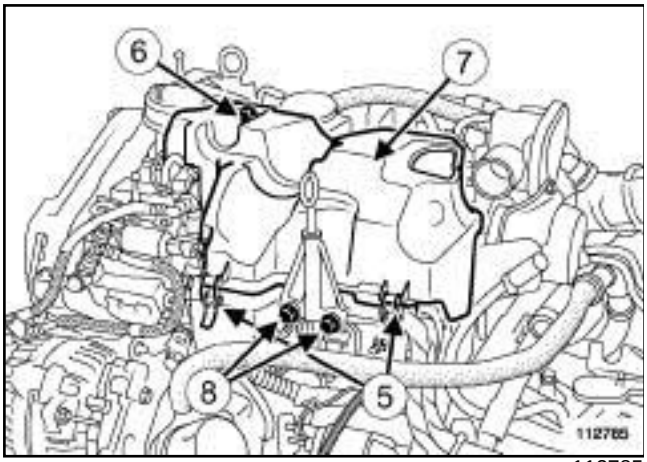
❑ Remove the upper section (**1**) of the turbocharging duct.

❑ Disconnect the inlet air pressure sensor (**2**)

❑ Loosen the clip (**3**) .

❑ Move the inlet duct to one side (**4**) .

K9K, and 764 or 772



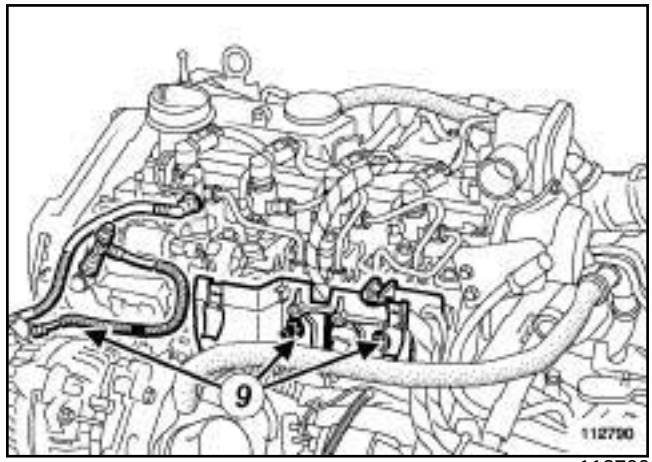
112785

❏ Unclip the clips (**5**) from the injector rail protector cover.

❏ Remove:

- the injector rail protector cover mounting bolt (**6**) ,
- the injection rail protector cover (**7**) ,
- the dipstick,
- the dipstick tube (**8**) mounting bolts.

❏ Move the dipstick duct to one side.



112790

❏ Remove:

- the injector rail protector support mounting bolts (**9**) ,
- the injector rail protector mounting.

❏ Protect the alternator from fuel outflow.

❏ Pour cleaning product into a container.

IMPORTANT
Wear protective gloves when using cleaning product.

❏ Soak the brush with cleaning product, then clean the unions:

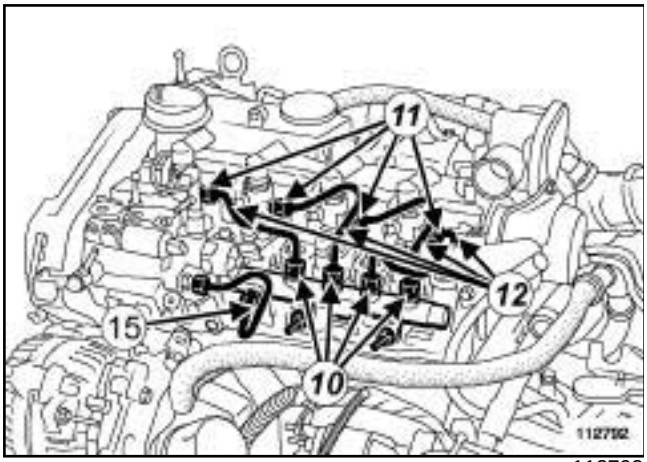
- of the high pressure pipes between the injector rail and the injectors
- of the high pressure pipe between the pump and the injection rail.

❏ Blast the cleaned areas with compressed air, then wipe them with new cleaning cloths.

IMPORTANT
Wear protective glasses.

WARNING
Do not blow compressed air once the fuel circuit is open, otherwise impurities may enter the system. Use wipes if necessary.

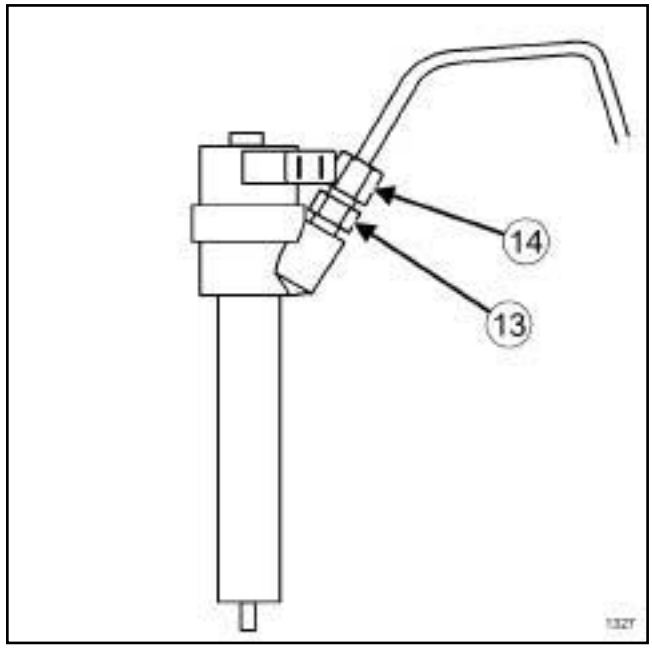
K9K, and 764 or 772



112792

❑ Undo:

- the nut securing the four high pressure pipes between the injection rail and the injector at the rail end (**10**) ,
- the nut securing the high pressure pipes between the injection rail and the injector at the injector end (**11**) ,



1327

❑

WARNING

When the high pressure pipe unions (**14**) on the injector holder have been loosened, always hold the rod filter retaining nut (**13**) with a lock wrench.

❑ Remove the four high pressure pipes ***(12)*** and discard them.

Note:

Make preparations for fuel outflow. Clean with new cloths.

❑ Fit the blanking plugs.

❑ Remove the high pressure pipe between the high pressure pump and the injection rail and discard it.

Note:

Hold the intermediate nut between the pump-rail pipe and the high pressure pump using a lock wrench.

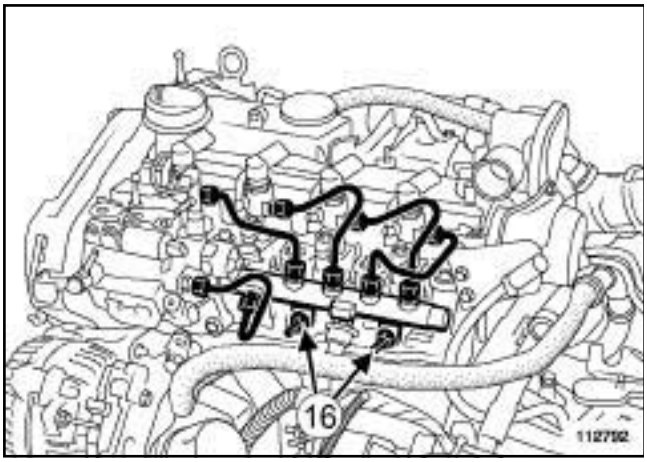
Note:

Make preparations for fuel outflow. Clean with new cloths.

Insert the correct blanking plugs.

K9K, and 764 or 772

II - REMOVAL OF PART CONCERNED



112792

❑ Remove:

- the injector rail mounting nuts (**16**) ,
- the injector rail.

> **WARNING**
> If the injection rail is to be reused, keep it in a sealed plastic bag all the time it is disconnected.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

> **WARNING**
> Remove the blanking plugs only before reconnecting the fuel circuit pipes.
>
> The plugs are single-use only. Do not reuse them, and discard the kit once opened.

❑ Take the injector rail out of its plastic bag.

> **WARNING**
> If an injector rail is being replaced, only remove the new one from its original packaging when it is about to be fitted.

II - REFITTING PART CONCERNED

❑ Fit the injector rail.

❑ Finger tighten the injection rail mounting bolts (the injection rail should be loose).

III - FINAL OPERATION.

❑ Remove the blanking plugs from:

- the high pressure pump,
- the injection rail fuel inlet opening.

❑ Fit a new high pressure pipe between the injector rail and the high pressure pump.

> Note:
> If the new pipe kit does not contain an applicator, lubrication of the pipe threads will be unnecessary (as they are self-lubricating pipes).

❑ Finger tighten the high pressure pipe nuts until they make contact.

❑ Remove the blanking plugs from:

- the rail injector fuel return openings,
- the injector fuel inlet.

❑ Fit the new high pressure pipes between the rail and the injectors.

> Note:
> If the new pipe kit does not contain an applicator, lubrication of the pipe threads will be unnecessary (as they are self-lubricating pipes).

❑ Finger tighten the high pressure pipe nuts until they make contact.

❑ Torque tighten:

- the **injector rail mounting nuts (28 Nm)**,
- the **high pressure pipe nuts between the injector rail and the injectors (24 Nm)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting on the injector side,
- the **high pressure pipe nuts between the injector rail and the high pressure pump (24 Nm)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting on the high pressure pump side.

❑ Refit:

- the injector rail protector mounting,
- the mounting bolts from the injection rail protector mounting,
- the dipstick duct mounting bolts.
- the dipstick,
- the injector rail protector cover,
- injection rail protector cover mounting bolts,

❑ Refit the air inlet duct and tighten the mounting clip.

K9K, and 764 or 772

❑ Connect the inlet air pressure sensor

❑ Loosen the mounting nut securing the intercooler air inlet pipe to the alternator,

- fit the air duct between the turbocharger and the intercooler air inlet pipe,
- lock the air duct onto the turbocharger and the intercooler air inlet pipe.
- tighten the air duct bolt on the rocker cover,
- torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.

❑ Reprime the fuel circuit.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Confirm that there is no diesel fuel leak:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- check that there are no diesel leaks.

❑ Use the **Diagnostic tool** to check for stored faults. Clear them if necessary.

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
injector rail nuts	**28 N.m**
high pressure pipe nuts between the injector rail and the injectors	**24 N.m**
high pressure pipe nuts between the injector rail and the high pressure pump	**24 N.m**
nut mounting the intercooler air inlet pipe on the alternator	**8 N.m**

WARNING

Before starting work on the vehicle, have to hand:

- a new blanking plug kit (**part no. 77 01 206 804**),
- cleaning cloths (**part no. 77 11 211 707**),
- cleaning product (**part no. 77 11 224 188**).

WARNING

Parts always to be replaced:

- all the high pressure pipes which have been removed.

Note:

Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

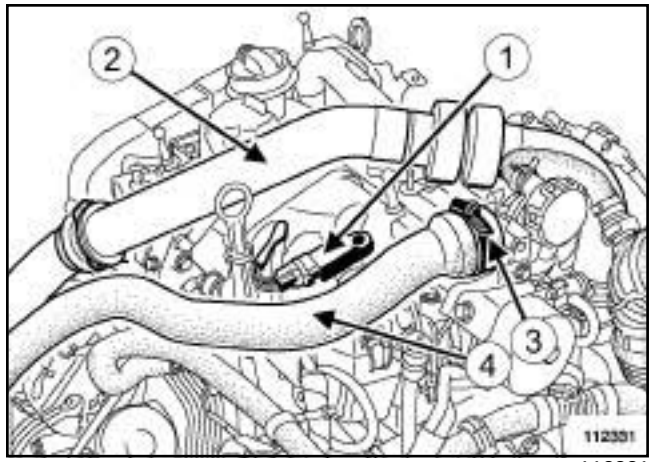
Before carrying out any work on the injection system, check using the **Diagnostic tool** :

- that the rail is not under pressure,
- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.



112331

❑ Disconnect the inlet air pressure sensor (**1**) .

K9K, and 750 or 766 or 768

❑ Remove the upper section (**2**) of the turbocharging duct.

❑ Loosen the clip (**3**) .

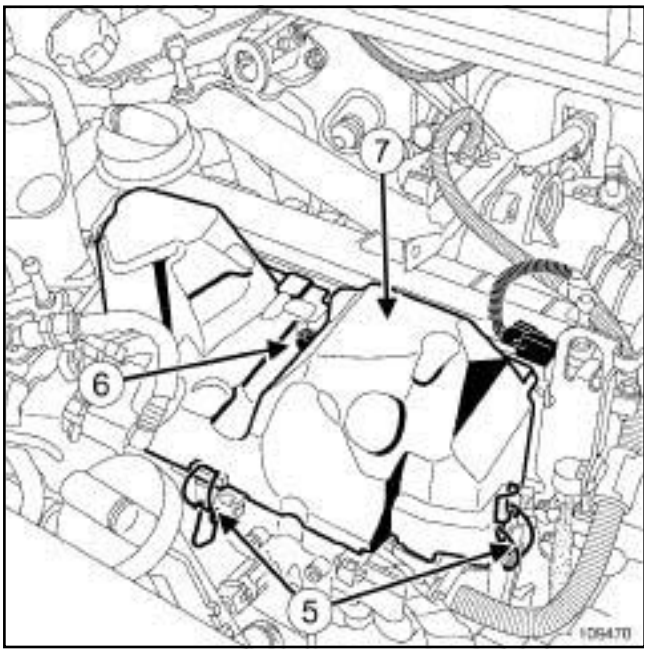
❑ Move the inlet duct to one side (**4**) .

K9K, and 750 or 752 or 766 or 768

❏ Remove:

- the dipstick,
- the dipstick duct bolts.

❏ Move the dipstick duct to one side.

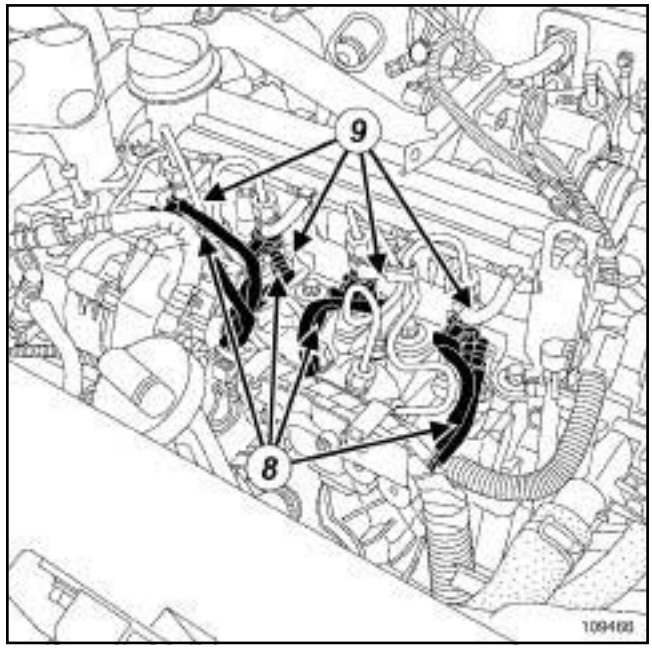


109470

❏ Unclip the clips (**5**) from the injector rail protector cover.

❏ Remove:

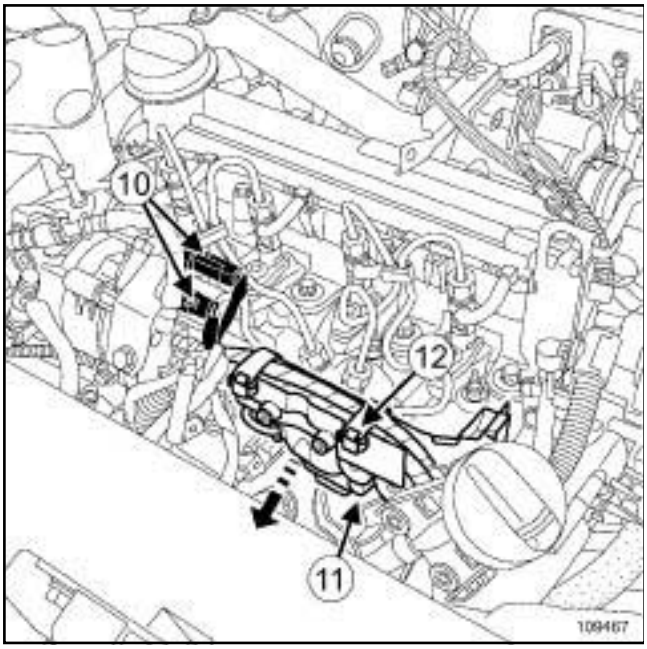
- the injector rail protector cover bolt (**6**) ,
- the injector rail protector cover (**7**) ,



109466

❏ Disconnect the connectors from the injectors (**8**) and the heater plugs (**9**) .

K9K, and 750 or 752 or 766 or 768



109467

❑ Disconnect:

- the connectors (**10**) from the fuel flow actuator and the diesel temperature sensor,
- the pressure sensor (**11**) from the spherical injector rail,

❑ Move the electric wiring harness and neck to the side as shown by the arrow.

❑ Remove the mountings from the neck (**12**) fixed on the spherical rail.

❑ Protect the alternator from fuel outflow.

❑ Pour cleaning product into a container.

IMPORTANT
Wear protective gloves when using cleaning product.

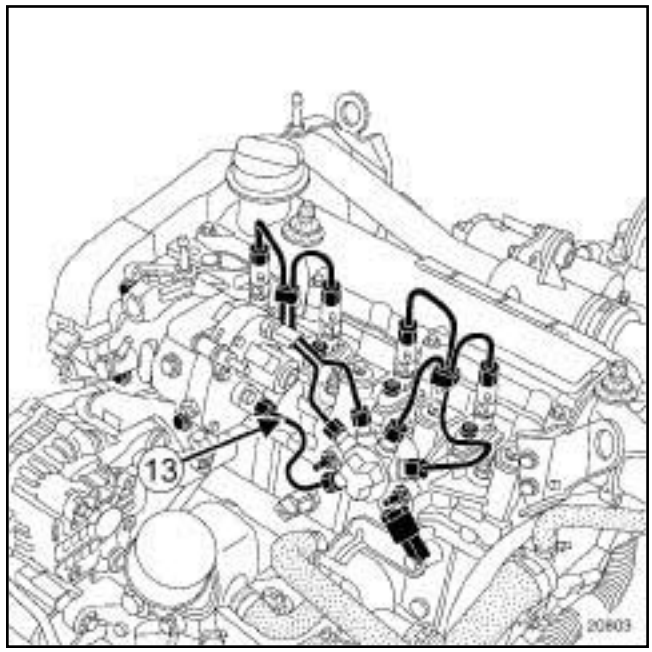
❑ Soak the brush with cleaning product, then clean the unions:

- on the high-pressure pipes between the injector rail and the injectors,
- of the high pressure pipe between the pump and the injection rail.

❑ Blast the cleaned areas with compressed air, then wipe them with new cleaning cloths.

IMPORTANT
Wear protective glasses.

WARNING
To prevent impurities from entering, once the fuel circuit is opened, it must not be blasted with compressed air. Use cloths if necessary.



20803

❑ Remove the clips between the high pressure pipes.

❑ Undo:

- the nut securing the high pressure pipes between the injection rail and the injector,

❑ Remove the four high pressure pipes and discard.

Note:
Make preparations for fuel outflow. Clean with new cloths.

❑ Insert the blanking plugs.

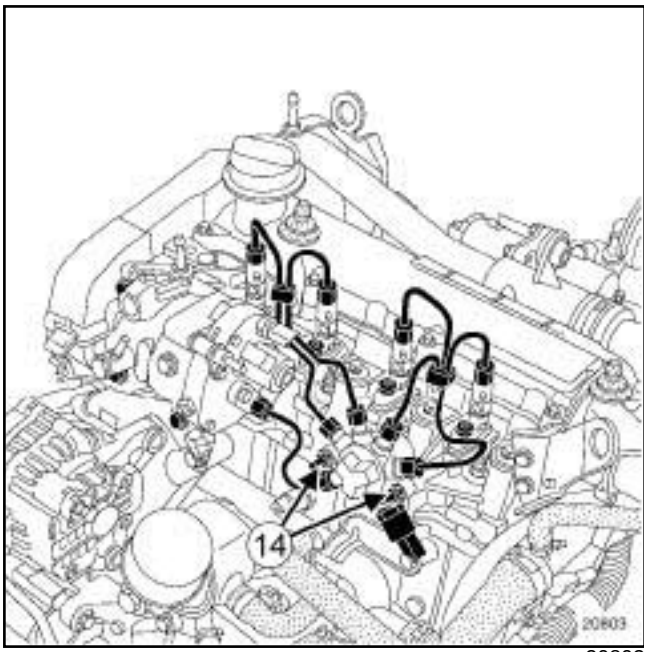
❑ Remove the high pressure pipe between the high pressure pump and the injector rail ***(13)*** .

Note:
Make preparations for fuel outflow. Clean with new cloths.

❑ Insert the blanking plugs.

K9K, and 750 or 752 or 766 or 768

II - REMOVAL OF PART CONCERNED



20803

❑ Remove:

- the nuts (**14**) from the injector rail,
- the injector rail.

> **WARNING**
> If the injector rail is to be reused, keep it in a sealed plastic bag all the time it is disconnected.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

> **WARNING**
> Only remove the blanking plugs immediately before connecting the fuel circuit pipes.
>
> The plugs are single-use. Do not reuse them, and discard the whole kit once opened.

❑ Take the injector rail out of its plastic bag.

> **WARNING**
> If an injector rail is being replaced, only remove the new one from its original packaging when it is about to be fitted.

II - REFITTING PART CONCERNED

❑ Fit the injector rail.

❑ Screw on the injector rail bolts without tightening them (the rail should be loose).

III - FINAL OPERATION

❑ Remove the blanking plugs from:

- the high pressure pump,
- from the fuel inlet port of the injector rail.

❑ Fit a new high-pressure pipe between the injection rail and the high-pressure pump.

> Note:
> If the new pipe kit does not contain an applicator, lubrication of the pipe threads will be unnecessary (as they are self-lubricating pipes).

❑ Screw on the high pressure pipe nuts by hand until contact is made, but without tightening them.

❑ Remove the blanking plugs from:

- from the fuel outlet ports of the injector rail,
- from the fuel inlet of the injector.

❑ Fit the new high-pressure pipes between the rail and the injectors.

> Note:
> If the new pipe kit does not contain an applicator, lubrication of the pipe threads will be unnecessary (as they are self-lubricating pipes).

❑ Screw on the high pressure pipe nuts by hand until contact is made, but without tightening them.

❑ Torque tighten:

- the **injector rail nuts (28 N.m)**,
- the **high pressure pipe nuts between the injector rail and the injectors (24 N.m)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting on the injector side,
- the **high pressure pipe nuts between the injector rail and the high pressure pump (24 N.m)** using the **(Mot. 1746)** or **(Mot. 1566)**, starting on the high pressure pump side.

❑ Refit:

- the wiring harness with the neck,
- the channel mountings,
- the dipstick duct bolts,
- the dipstick,
- the injector rail protector cover,

K9K, and 750 or 752 or 766 or 768

- the injector rail protector cover bolt.

❏ Connect the electrical connectors.

❏ Refit the air inlet duct and tighten the mounting clip.

❏ Connect the inlet air pressure sensor.

K9K, and 750 or 766 or 768

❏ Loosen the intercooler inlet air pipe nut on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler inlet air pipe.

❏ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 N.m)**.

❏ Re-prime the fuel circuit.

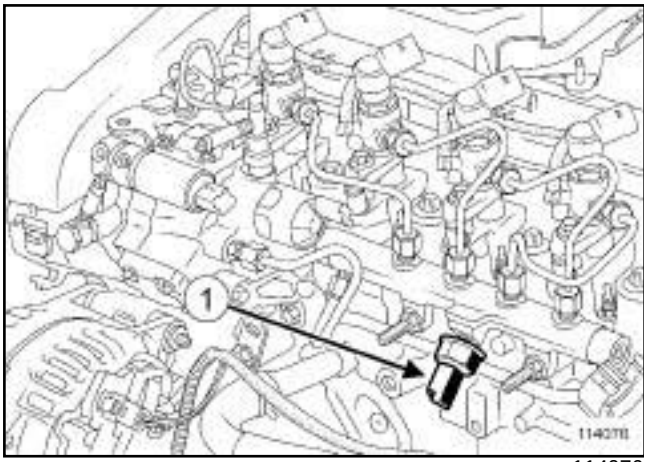
❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- check that there are no diesel leaks.

❏ Use the **Diagnostic tool** to check for stored faults. Clear them if necessary.

K9K, and 764 or 772

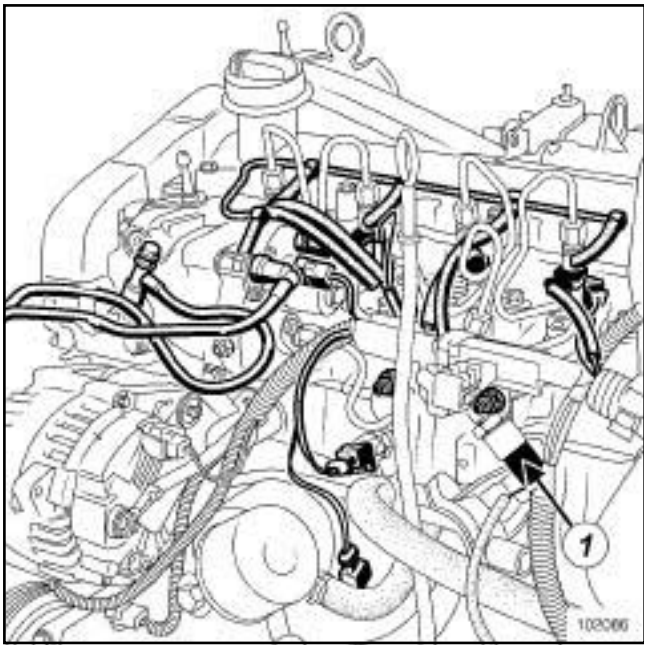


114076

The injector rail pressure sensor (**1**) cannot be separated from the injector rail.

In the event of a fault on the rail pressure sensor, replace the “rail pressure sensor - injector rail and high pressure pipes” assembly (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) .

K9K, and 750 or 752 or 766 or 768



102086

❑ The pressure sensor (**1**) cannot be removed from the spherical injector rail.

If the pressure sensor is faulty, replace the « pressure sensor - high pressure pipes and rail » assembly (see **13B**, **Diesel injection**, **Injector rail: Removal - Refitting**, page **13B-64**) .

K9K, and 750 or 752 or 766 or 768

Tightening torques ▽	
diesel temperature sensor	**15 N.m**
nut mounting the intercooler inlet air pipe on the alternator	**8 N.m**

IMPORTANT

Use the diagnostic tool before any operation is carried out on the injection circuit to check:

- that the injector rail is not under pressure,

- that the fuel temperature is not too high.

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system.

Loosening a high pressure pipe union when the engine is running is strictly prohibited.

WARNING

Before starting work on the vehicle, obtain:

- a new blanking plug kit (**part no. 77 01 206 804**),

- cleaning cloths (**part no. 77 11 211 707**).

It is essential to respect the safety and cleanliness advice whenever work is carried out on this system (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

Note:

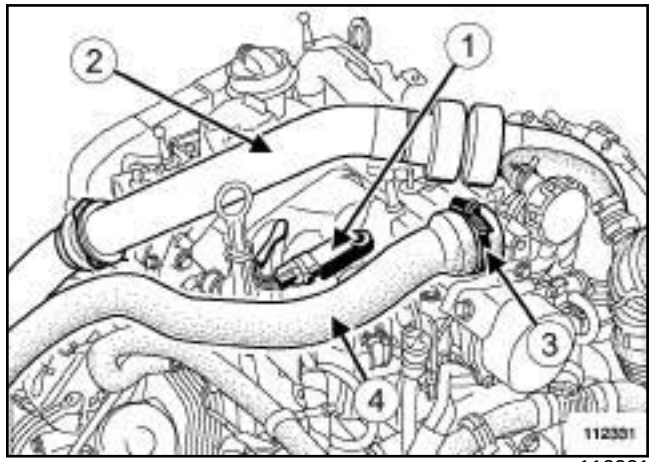
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front engine cover.



112331

❑ Disconnect the inlet air pressure sensor (**1**) .

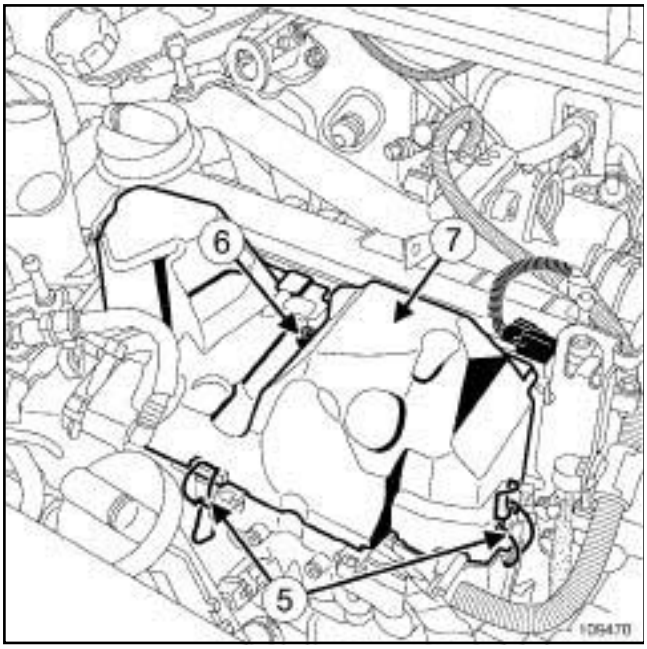
K9K, and 750 or 766 or 768

❑ Remove the upper section of the turbocharger air duct (**2**) .

❑ Loosen the clip (**3**) .

❑ Move the inlet air duct to one side (**4**) .

K9K, and 750 or 752 or 766 or 768



109470

❏ Remove:

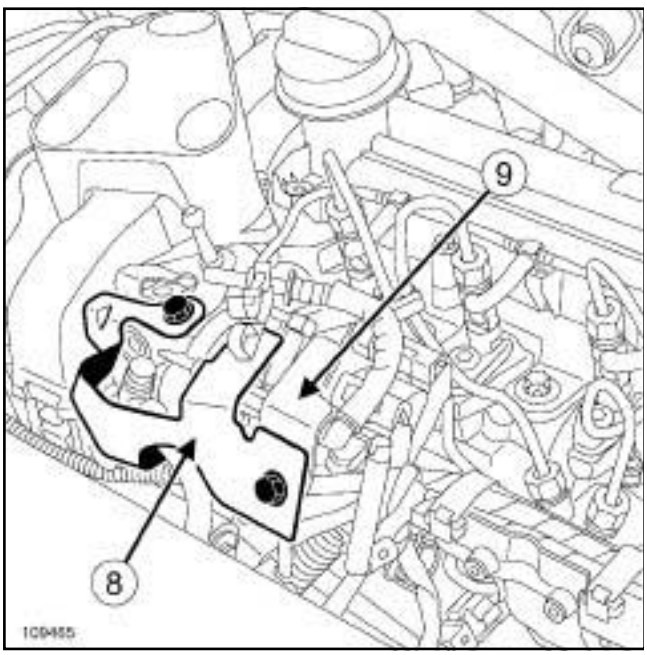
- the dipstick,
- the dipstick duct bolts.

❏ Move the dipstick duct to one side.

❏ Unclip the clips (**5**) from the injector rail protector.

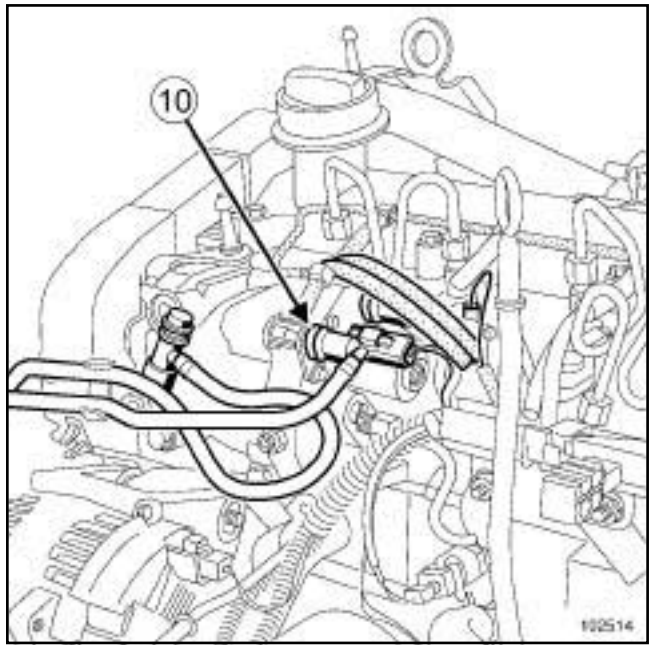
❏ Remove:

- the injector rail protector bolt (**6**) ,
- the injector rail protector (**7**) .



109465

❏ Remove the high pressure pump protectors (**8**) and (**9**) .



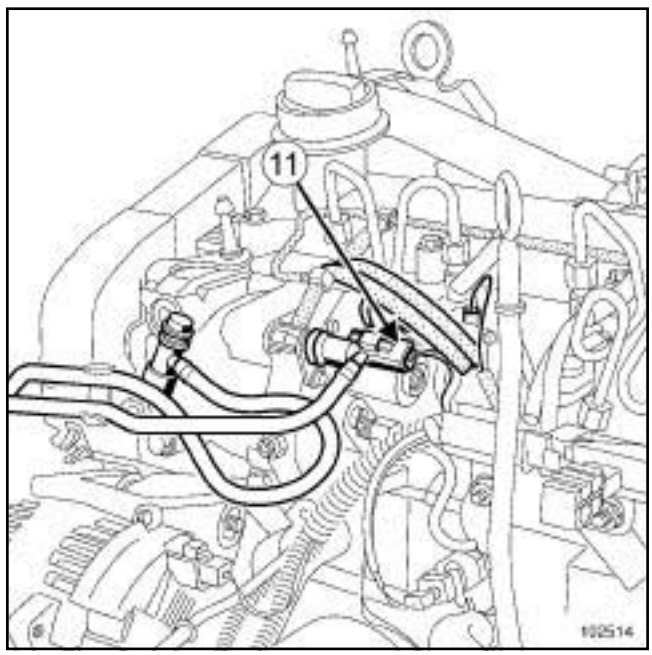
102514

❏ Disconnect the diesel supply and return pipes (**10**) .

Note:

Make preparations for fuel outflow. Clean with new cloths.

❏ Fit the correct blanking plugs.

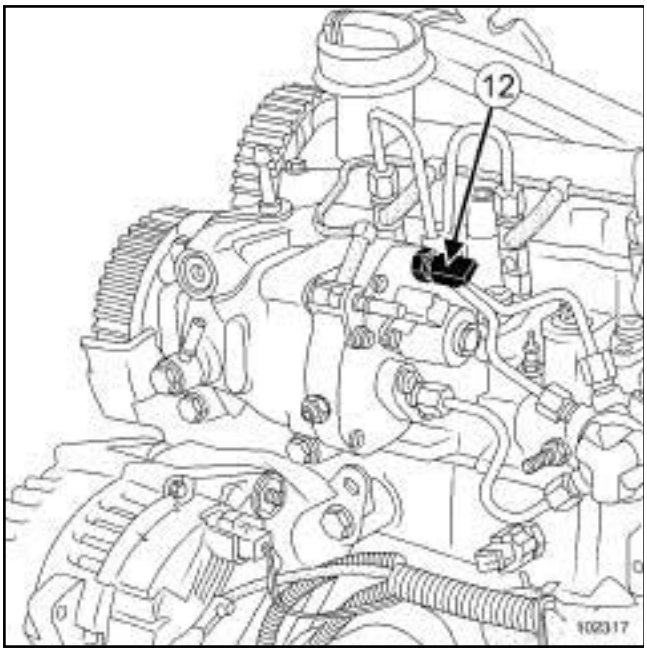


102514

❏ Disconnect the diesel temperature sensor connector (**11**) .

K9K, and 750 or 752 or 766 or 768

II - REMOVAL OF PART CONCERNED



102317

❑ Remove the diesel temperature sensor (**12**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Lubricate the O-ring with lubricant from the applicator supplied with the new part.

Note:

Do not lubricate the diesel temperature sensor seals with grease or used diesel. Use the applicator supplied with the kit.

WARNING

Do not damage the O-ring when refitting.

Do not remove the blanking plugs from each component until the last moment.

II - REFITTING PART CONCERNED

❑ Refit the diesel temperature sensor.

❑ Tighten to torque the **diesel temperature sensor (15 N.m)**.

III - FINAL OPERATION

❑ Reconnect:

- the diesel temperature sensor connector ,
- the diesel supply and return pipes.

❑ Refit:

- the high pressure pump protectors,
- the injector rail protector.

❑ Connect the inlet air pressure sensor.

K9K, and 750 or 766 or 768

❑ Refit the air inlet duct and tighten the clip.

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

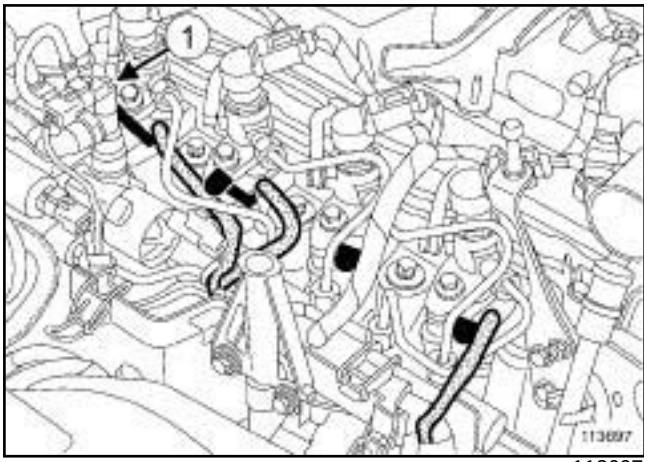
❑ Refit the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- run the engine at idle speed until the engine cooling fan starts operating,
- accelerate several times at no load,
- switch off the ignition,
- check that there is no diesel fuel escaping.

K9K, and 764 or 772



113697

❑ The diesel temperature sensor (**1**) is integral with the diesel return pipe. If the temperature sensor fails, replace the « temperature sensor-diesel return pipe assembly » (see **13B, Diesel injection, Diesel return pipe: Removal - Refitting**).

K9K, and 750 or 752 or 764 or 766 or 768

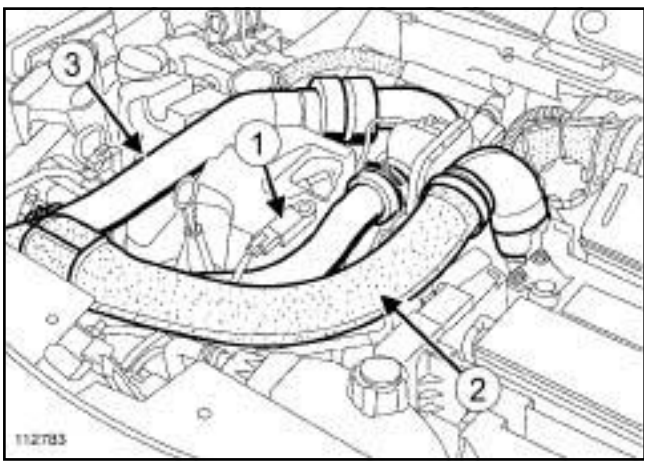
Special tooling required	
Mot. 1771	Kit for measuring SIEMENS injector leakage flow rate.
Mot. 1711	Kit for measuring the injector fuel flow rate.

Tightening torques ▽	
nut mounting the inter-cooler inlet air pipe on the alternator	**8 N.m**

Note:

Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



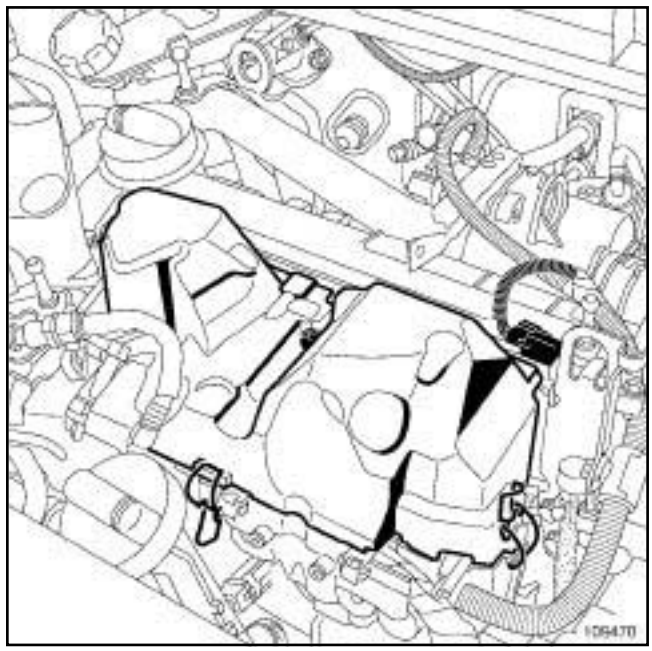
112783

❏ Disconnect the inlet pressure sensor (**1**) .

❏ Remove the air duct (**3**) between the intercooler and the turbocharger.

K9K, and 750 or 766 or 768

❏ Remove the air duct (**2**) between the air filter and the intercooler.



109470

❏ Unclip the cover of the diesel rail protector.

❏ Remove:

- the diesel anti-splash shield bolt,

- the diesel anti-splash shield.

K9K, and 764

❏ Disconnect the four return pipes from the four injectors (see) .

❏ Connect the four transparent hoses of the **(Mot. 1771)** to the injectors instead of the injector fuel return pipes.

❏ Place the correct blanking plug on the injector fuel return connectors.

K9K, and 766 or 768

❏ Connect the four transparent hoses of the **(Mot. 1711)** to the injectors instead of the injector fuel return pipes.

❏ Place the correct blanking plug on the injector fuel return connectors.

❏ Insert these hoses in the four graduated measuring cylinders of the **(Mot. 1711)**.

❏ Refit the air duct between the air filter and the intercooler.

K9K, and 750 or 752 or 764 or 766 or 768

K9K, and 750 or 766 or 768

❑ Loosen the intercooler inlet air pipe nut on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❑ Connect:

- the inlet pressure sensor,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Follow the procedures described in the fault finding repair manual (see **MR 394 Fault finding, 13B, Diesel injection, Fault finding - Tests**):

- TEST 6: Major leak in injectors / injectors open,
- TEST 7: Incorrect injection quantity.

IMPORTANT

Do not leave any object (tools or other) on the side of the engine housing during the entire operation.

Position the tools so that they do not fall during the « engine running » phase of the test.

K9K, and 750 or 752 or 766 or 768

❑ To configure the injectors, (see **MR 394 Fault finding, Diesel Injection, Configuration and programming**).

K9K, and 764 or 772

Special tooling required	
Mot. 1817	Injector well cleaning kit
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1566	Tool for removing high pressure pipes.

Equipment required
Diagnostic tool

Tightening torques ▽	
injector bracket bolt	**30 N.m**
high pressure pipe union on the injector rail side	**24 N.m**
high pressure pipe union on the injector side	**24 N.m**
intercooler air inlet pipe nut on the alternator	**8 N.m**
injector rail bolts	**28 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVING AN INJECTOR

I - REMOVAL PREPARATION OPERATION

❑ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

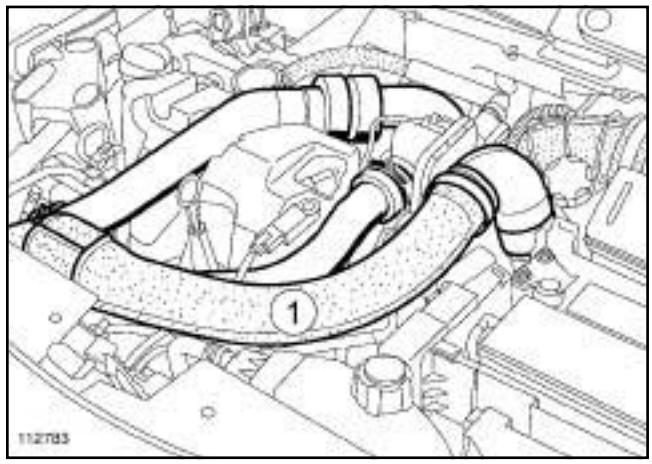
Use the diagnostic tool before any operation is carried out on the injection circuit to check:

- that the rail is not under pressure,
- that the fuel temperature is not too high.

Working on the circuit with the engine running is strictly forbidden.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

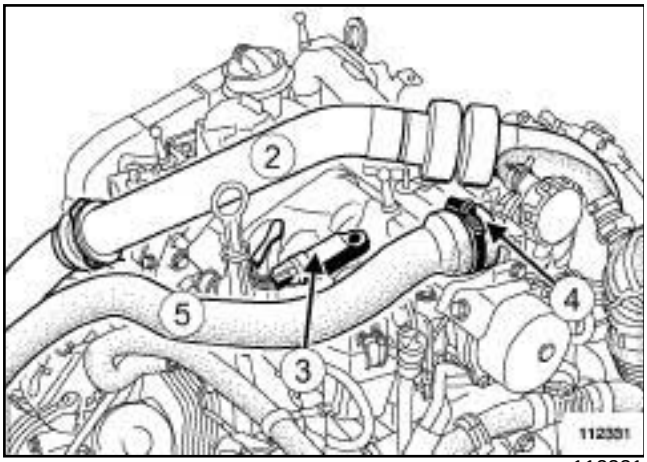
❑ Remove the engine cover.



112783

❑ Remove the air inlet sleeve (**1**) .

K9K, and 764 or 772



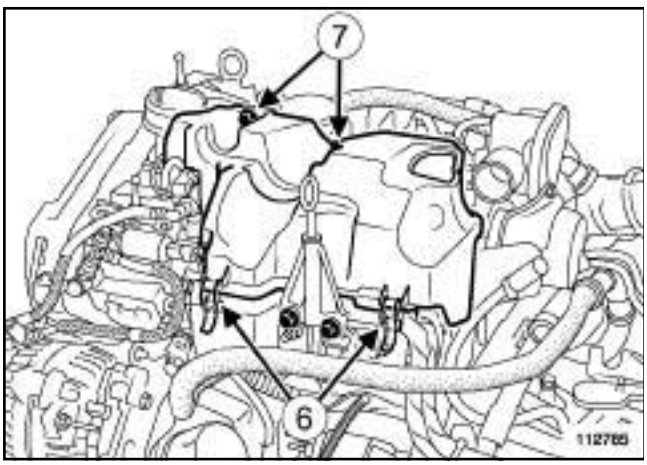
112331

❏ Remove the turbocharging duct (**2**) .

❏ Disconnect the inlet pressure sensor connector (**3**) .

❏ Loosen the inlet duct clip (**4**) .

❏ Move the air inlet duct (**5**) to one side.

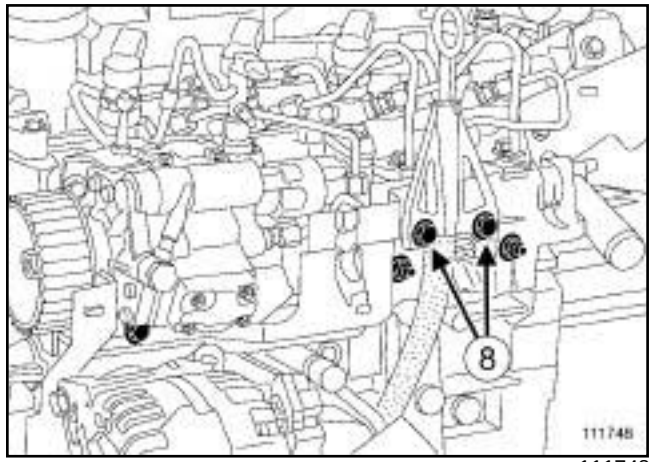


112785

❏ Unclip the rail protector cover at (**6**) .

❏ Remove:

- the bolts (**7**) from the rail protector cover,
- the rail protector cover,
- the dipstick.



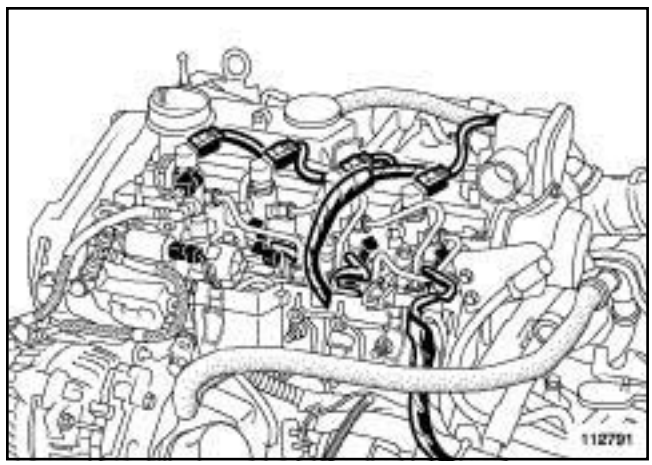
111748

❏ Remove the bolts (**8**) of the dipstick duct on the injector rail protector.

❏ Move the dipstick duct to one side.

❏ Protect the alternator from fuel outflow.

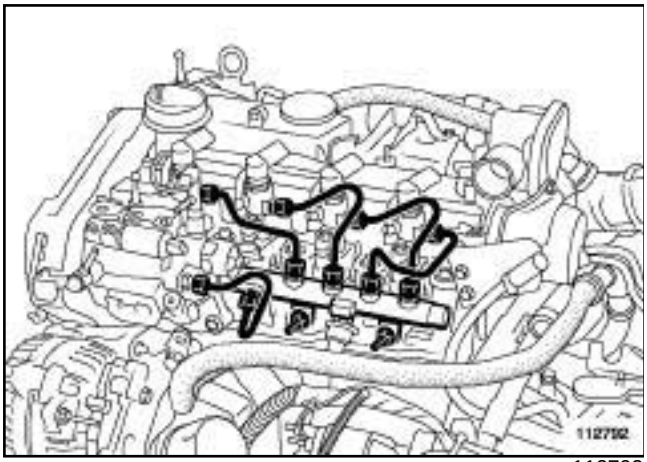
❏ Clean the high pressure pipes between the rail and the injectors, as well as the fuel return pipe (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .



112791

❏ Disconnect the electrical connector of the injector to be removed.

K9K, and 764 or 772



112792

❏ Remove:

- the high pressure pipe union between the injector rail and the injector to be removed at the rail end,
- the high pressure pipe union between the injector rail and the injector to be removed at the injector end,

WARNING

Always hold the intermediate injector union in place with a wrench when loosening the high pressure pipes.

Do not damage the injector return nozzle.

❏ Remove the high pressure pipe concerned and discard it.

WARNING

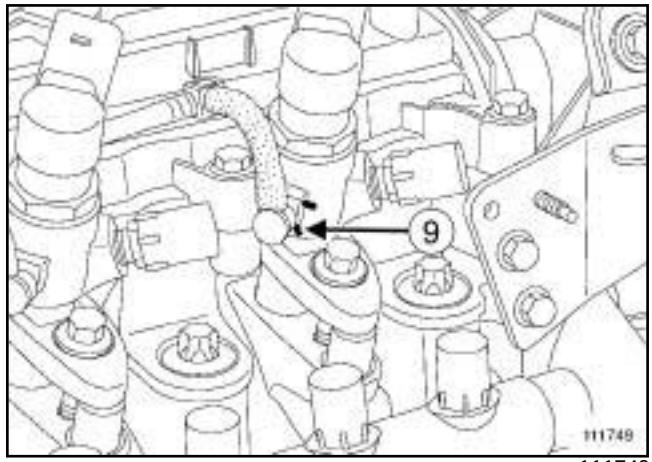
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

WARNING

To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

❏ Insert the correct blanking plugs on the unions of:

- the injector fuel inlet,
- the injector rail fuel outlet.



111749

❏ Using a narrow, flat-blade screwdriver, push the lower bracket (**9**) of the retaining clip of the fuel return union on the injector towards the rocker cover.

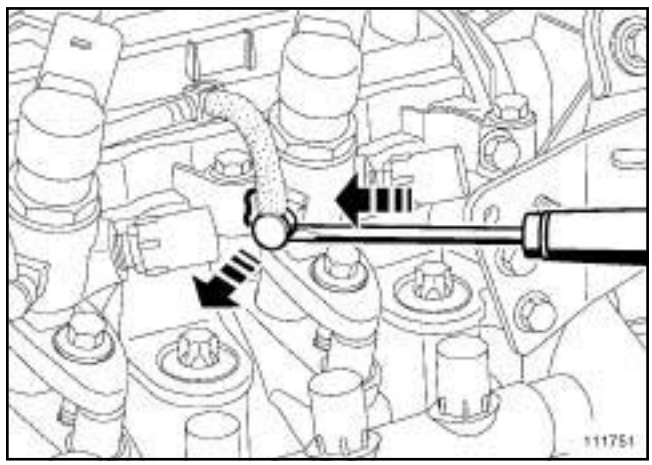
WARNING

Do not use the screwdriver as a lever on the injector fuel return unions.

WARNING

Ensure that the clip is not completely removed from its housing, otherwise it may be damaged when the diesel return union is removed.

In the case where a clip has been completely removed from its housing, remove the injector concerned and replace the clip with a new clip (see **13B**, **Diesel injection**, **Diesel injector: Removal - Refitting**, page **13B-83**) .



111751

❏ Pushing the lower bracket of the retaining clip downwards, pull out the injector fuel return union.

❏ Fit suitable blanking plugs on:

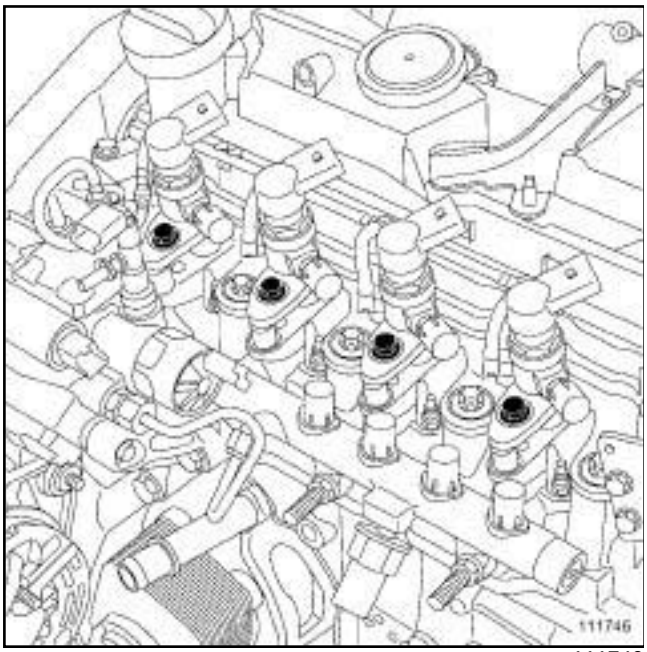
- the fuel return union,

K9K, and 764 or 772

- the return fuel connector of the injector.

❏ Push the fuel return pipe on the injector to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111746

❏ Remove:

- the bolts on the injector bracket to be removed,
- the injector bracket,
- the spacer,
- the injector.

❏ Remove the heat protection washer.

Note:

If the heat protection washer is stuck at the bottom of the well, use the **(Mot. 1817)** (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

Note:

If the injector is stuck in its well and cannot be removed, turn the injector by the retaining lugs on the injector bracket, using a **13 mm fork wrench**.

❏ Fit the appropriate blanking plug on the injector's nose.

❏ If it is to be reused, keep the injector in a sealed plastic bag all the time it is removed.

❏ Take care not to allow impurities to enter the cylinder via the injector well.

❏ Block the opening with a clean cloth.

REFITTING AN INJECTOR

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: injector seal**.

❏ **parts always to be replaced: High pressure pipe**.

❏ Parts always to be replaced:

- any injector that has been opened, contrary to instructions,
- all retaining clips on the fuel return union on the damaged injector.

Cleaning parts

❏

WARNING

It is strictly forbidden to clean the injectors with:

- a wire brush,
- an emery cloth,
- an ultrasonic cleaner.

❏ Always clean the well of the removed injector (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

❏ If reusing the removed injector:

- clean the injector using a wipe soaked in injector cleaning product or brake cleaner,
- if necessary, leave the injector nozzle to soak in injector cleaning product,
- wipe the injector with a new wipe,
- (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) and (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

K9K, and 764 or 772

II - REFITTING OPERATION FOR PART CONCERNED

❏ Remove the injector from its plastic bag.

> **WARNING**
> Do not remove the blanking plugs from each component until the last moment.
>
> Also, do not remove the components from their packaging until they are to be fitted to the vehicle.

❏ Remove the blanking plug from the injector nose.

❏ Fit in order:

- a new fire-resistant washer at the bottom of the injector's well in the cylinder head,
- the injector,
- the spacer between the cylinder head and the injector bracket,
- the injector bracket,

❏ Finger tighten the injector bracket bolt.

❏ Torque tighten the **injector bracket bolt (30 N.m)**.

III - FINAL OPERATION

❏ Remove the blanking plugs from:

- the injector rail,
- the injector

> **WARNING**
> Before fitting a new high pressure pipe, lightly lubricate the nut threads with the oil from the applicator provided in the new parts kit.
>
> Be careful not to allow oil into the high pressure pipe.
>
> Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

❏ Fit a new high pressure pipe between the injector rail and the injector.

❏ Finger tighten the high pressure pipe unions, starting at the injector rail end.

❏ Torque tighten in order, using the **(Mot. 1746)** or **(Mot. 1566)** :

- the **high pressure pipe union on the injector rail side (24 N.m)**,
- the **high pressure pipe union on the injector side (24 N.m)**.

❏ Remove the blanking plugs from:

- the fuel return union,
- the return fuel port of the injector.

❏ Push the retaining clip for the fuel return union on the injectors towards the front of the vehicle until it is in its original position.

❏ Clip the fuel return union on the injector.

> **WARNING**
> Check the condition of the seals on the fuel return unions on the injectors. Check that they are not cut or crushed, and have not come out of their grooves. Replace the diesel return pipe assembly if one of its components is damaged.

❏ Replace the fuel return pipe assembly if one of its components is damaged.

❏ Connect the injector's electrical connector.

❏ Refit:

- the dipstick,
- the rail protector cover,
- the air duct between the intercooler and the cut-out valve.

❏ Loosen the intercooler air inlet pipe nut on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Snap the air duct to the turbocharger and to the air pipe at the intercooler inlet.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **intercooler air inlet pipe nut on the alternator (8 N.m)**.

❏ Refit the engine cover.

❏ Reprime the fuel circuit using the manual priming pump.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Before restarting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

❏ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,

K9K, and 764 or 772

- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- check that there is no diesel fuel escaping.

❏ Use the **Diagnostic tool** to check that there are no stored faults, and clear them if necessary.

REMOVING ALL FOUR INJECTORS

I - REMOVAL PREPARATION OPERATION

❏ Switch off the ignition and wait **30 seconds** before starting work on the injection system.

IMPORTANT

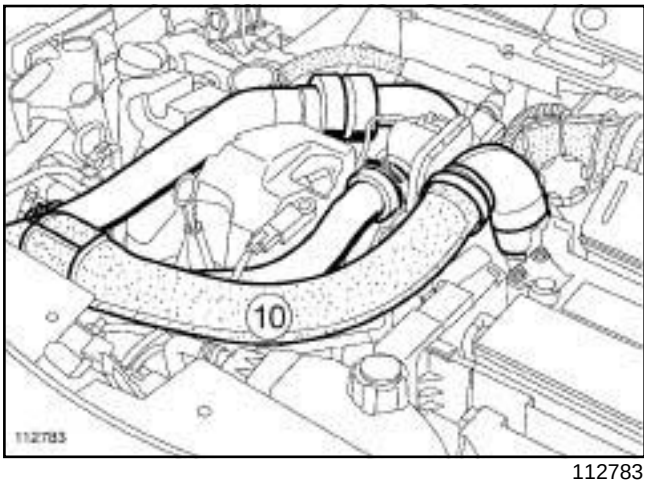
Use the diagnostic tool before any operation is carried out on the injection circuit to check:

- that the rail is not under pressure,
- that the fuel temperature is not too high.

Working on the circuit with the engine running is strictly forbidden.

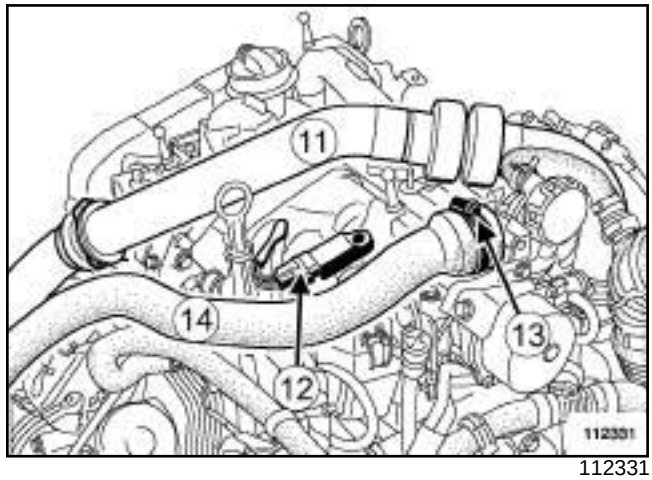
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the engine undertray.



112783

❏ Remove the air inlet sleeve (**10**) .



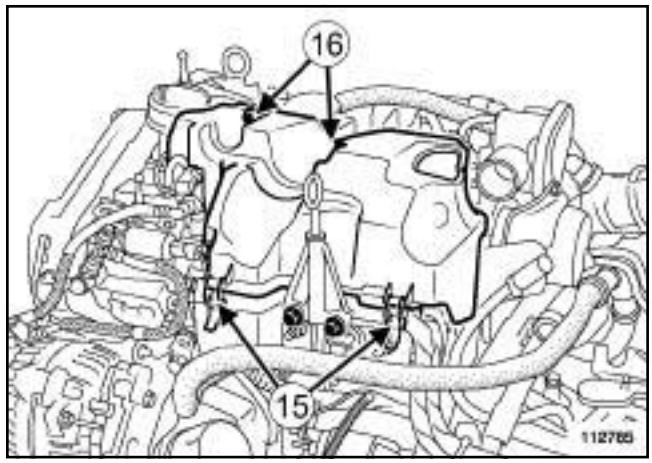
112331

❏ Remove the turbocharging duct (**11**) .

❏ Disconnect the inlet pressure sensor connector (**12**) .

❏ Loosen the inlet duct clip (**13**) .

❏ Move the air inlet duct (**14**) to one side.



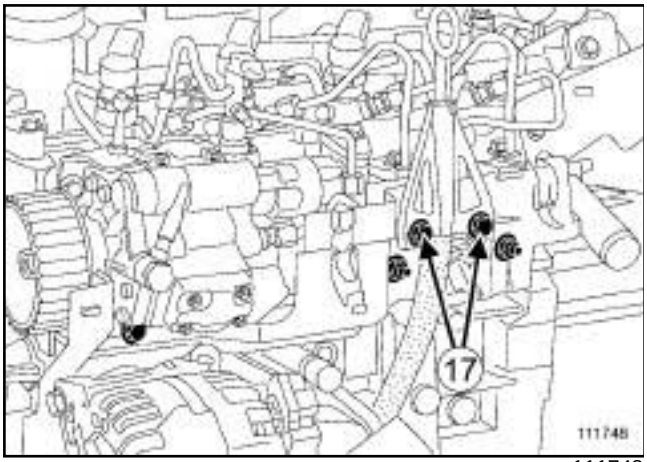
112785

❏ Unclip the rail protector cover at (**15**) .

❏ Remove:

- the bolts (**16**) from the rail protector cover,
- the rail protector cover,
- the dipstick.

K9K, and 764 or 772



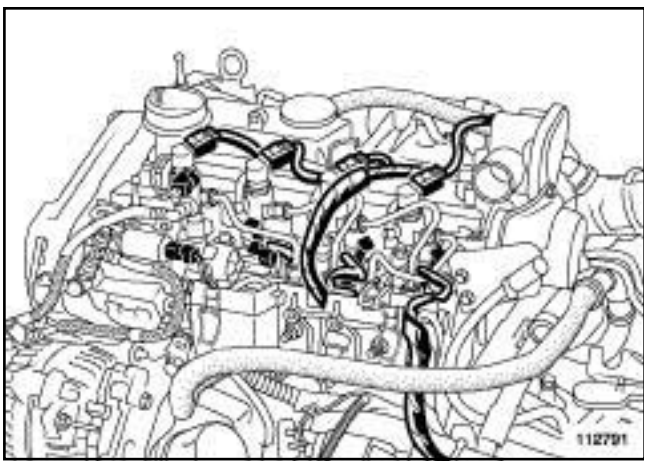
111748

❏ Remove the bolts (**17**) of the dipstick duct on the injector rail protector.

❏ Move the dipstick duct to one side.

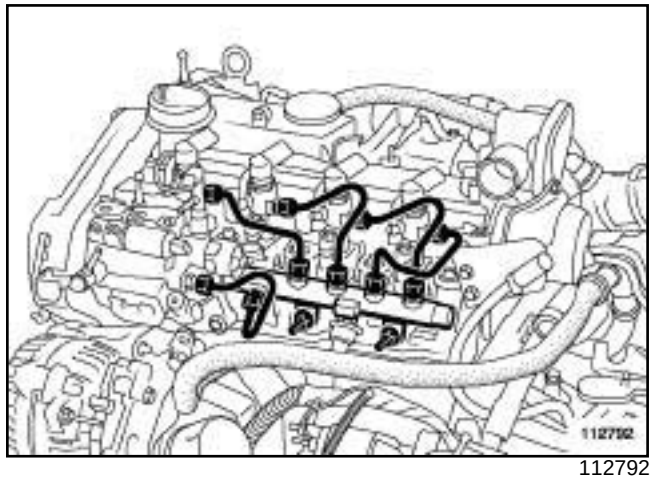
❏ Protect the alternator from fuel outflow.

❏ Clean the high pressure pipes between the rail and the injectors, as well as the fuel return pipe (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .



112791

❏ Disconnect the injector electrical connectors.



112792

❏ Remove:

- the high pressure pipe unions between the injector rail and the injectors at the rail end,
- the high pressure pipe unions between the injector rail and the injectors at the injector end,

WARNING

Always hold the intermediate injector union in place with a wrench when loosening the high pressure pipes.

Do not damage the injector return nozzle.

❏ Remove the high pressure pipes and discard.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

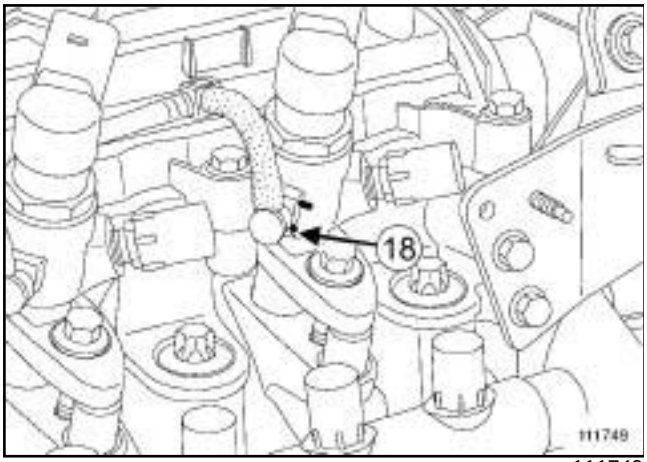
WARNING

To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

❏ Insert the correct blanking plugs on the unions of:

- the injector fuel inlet,
- the injector rail fuel outlet.

K9K, and 764 or 772



111749

❑ Using a narrow flat-blade screwdriver, push the lower brackets (**18**) of the fuel return union retaining clips on the injectors towards the rocker cover.

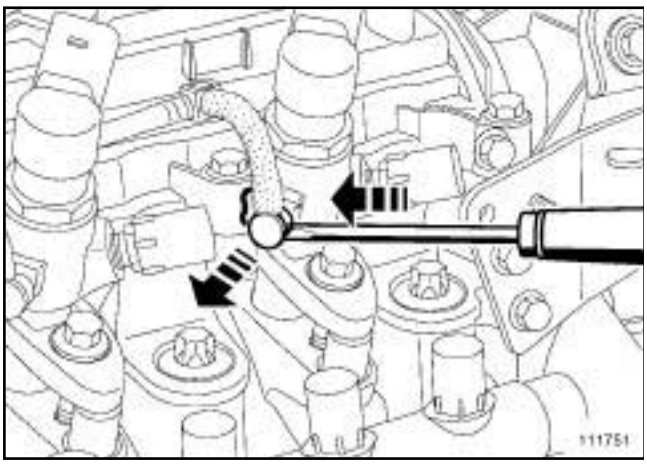
WARNING

Do not use the screwdriver as a lever on the injector fuel return unions.

WARNING

Ensure that the clip is not completely removed from its housing, otherwise it may be damaged when the diesel return union is removed.

In the case where a clip has been completely removed from its housing, remove the injector concerned and replace the clip with a new clip (see **13B**, **Diesel injection**, **Diesel injector: Removal - Refitting**, page **13B-83**) .



111751

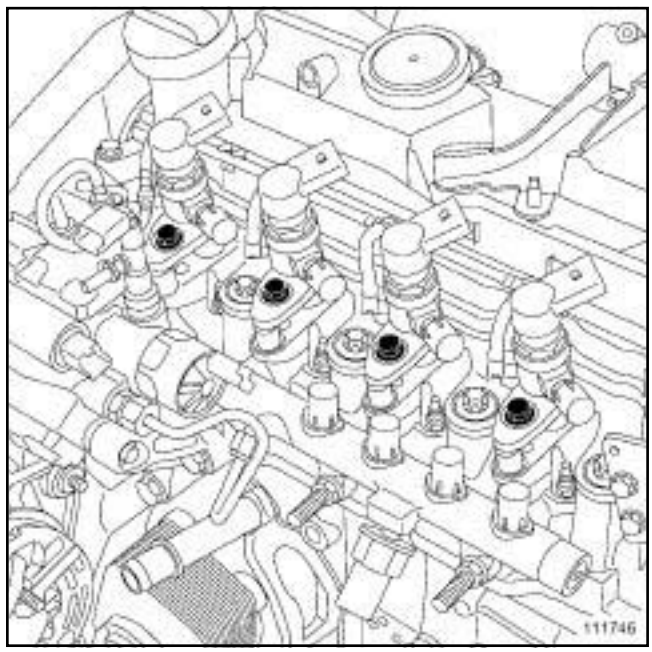
❑ Pushing the lower brackets of the retaining clips downwards, pull out the fuel return unions on the injectors.

❑ Fit suitable blanking plugs on:

- the fuel return unions,
- the fuel return openings on the injectors.

❑ Push the injector fuel return pipe to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111746

❑ Remove:

- the injector clamp bolts,
- the injector clamps,
- the spacers,
- the injectors.

❑ Remove the heat protection washers.

Note:

If the compression washer is stuck at the bottom of the well, use the **(Mot. 1817)** (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

Note:

If the injector is stuck in its well and cannot be removed, turn the injector by the retaining lugs on the injector bracket, using a **13 mm fork wrench**.

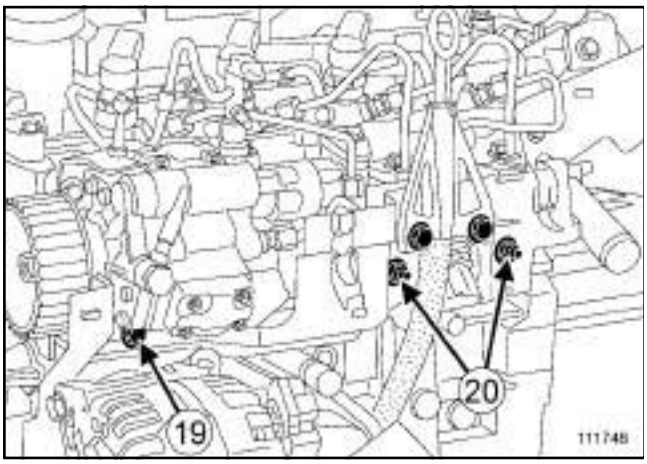
❑ Fit the correct blanking plugs on the injector noses.

K9K, and 764 or 772

❑ If they are to be reused, keep the injectors in a sealed plastic bag all the time they are removed.

❑ Take care not to allow impurities to enter the cylinders via the injector wells.

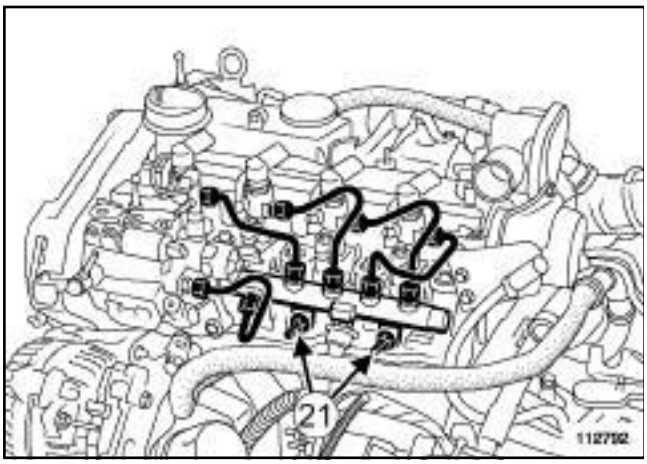
❑ Block the openings using clean cloths.



111748

❑ Remove:

- the bolt (**19**) and the nuts (**20**) of the rail protector,
- the rail protector.



112792

❑ Loosen the injector rail nuts (**21**) by a few turns.

Note:

The injector rail must be loose.

REFITTING THE FOUR INJECTORS

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: injector seal**.

❑ **parts always to be replaced: High pressure pipe**.

❑ Parts always to be replaced:

- any injector that has been opened, contrary to instructions,
- all retaining clips on the fuel return union on the damaged injector.

Cleaning parts

❑

WARNING

It is strictly forbidden to clean the injectors with:

- a wire brush,
- an emery cloth,
- an ultrasonic cleaner.

❑ Always clean the well of the removed injectors **(Mot. 1817)** (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

❑ If reusing the removed injector:

- clean the injector using a wipe soaked in injector cleaning product or brake cleaner,
- if necessary, leave the injector nozzle to soak in injector cleaning product,
- wipe the injector with a new wipe,
- (see) (04B, Consumables - Products) and (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Take the injectors out of their plastic bag.

WARNING

Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.

❑ Remove the blanking plug from the injector noses.

❑ Fit in order:

- new compression washers at the bottom of the injector wells in the cylinder head,
- the injectors,
- the spacers between the cylinder head and the injector brackets,

- the injector brackets.

❏ Finger tighten the injector bracket bolts.

❏ Torque tighten the **injector bracket bolts (30 N.m)**.

III - FINAL OPERATION

❏ Remove the blanking plugs from:

- the injector rail,
- the injectors.

> **WARNING**
> Before fitting a new high pressure pipe, lightly lubricate the nut threads with the oil from the applicator provided in the new parts kit.
>
> Be careful not to allow oil into the high pressure pipe.
>
> Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

❏ Fit the new high pressure pipes between the injector rail and the injectors.

❏ Finger tighten the high pressure pipe unions, starting at the injector rail end.

❏ Torque tighten the **injector rail bolts (28 N.m)**.

❏ Torque tighten in order, using the **(Mot. 1746)** or **(Mot. 1566)** :

- the **high pressure pipe unions on the injector rail side (24 N.m)**,
- the **high pressure pipe unions on the injector side (24 N.m)**.

❏ Remove the blanking plugs from:

- the fuel return unions,
- the fuel return openings on the injectors.

❏ Push the retaining clips for the fuel return unions on the injectors towards the front of the vehicle until they are in their original positions.

❏ Clip the fuel return unions on the injectors.

> **WARNING**
> Check the condition of the seals on the fuel return unions on the injectors. Check that they are not cut or crushed, and have not come out of their grooves. Replace the diesel return pipe assembly if one of its components is damaged.

❏ connect the electrical connectors to the injectors.

❏ Refit:

- the rail protector,
- the dipstick guide tube,
- the dipstick,
- the rail protector cover,
- the air duct between the intercooler and the cut-out valve.

❏ Loosen the intercooler inlet air pipe nut on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Snap the air duct to the turbocharger and to the air pipe at the intercooler inlet.

❏ Refit the air duct bolt on the rocker cover.

❏ Torque tighten the **intercooler air inlet pipe nut on the alternator (8 N.m)**.

❏ Reprime the fuel circuit using the manual priming pump.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Before restarting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

❏ Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- check that there are no diesel leaks.

❏ Use the **Diagnostic tool** to check that there are no stored faults, and clear them if necessary.

❏ Refit the engine cover.

K9K, and 750 or 752 or 766 or 768

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Mot. 1817	Injector well cleaning kit

Equipment required
Diagnostic tool

Tightening torques ▽	
injector clamp	**28 N.m**
injector rail nuts	**28 N.m**
« pump - rail» high pressure pipe nuts	**24 N.m**
« rail - injector» high pressure pipe nuts	**24 N.m**
nuts on the neck on the injector rail	**21 N.m**
intercooler inlet air pipe nut on the alternator	**8 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

Note:

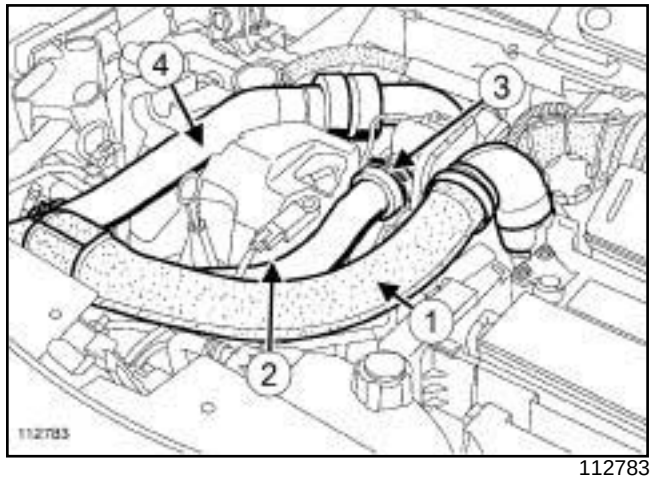
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the front engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



112783

❏ Remove the air inlet duct (**1**) .

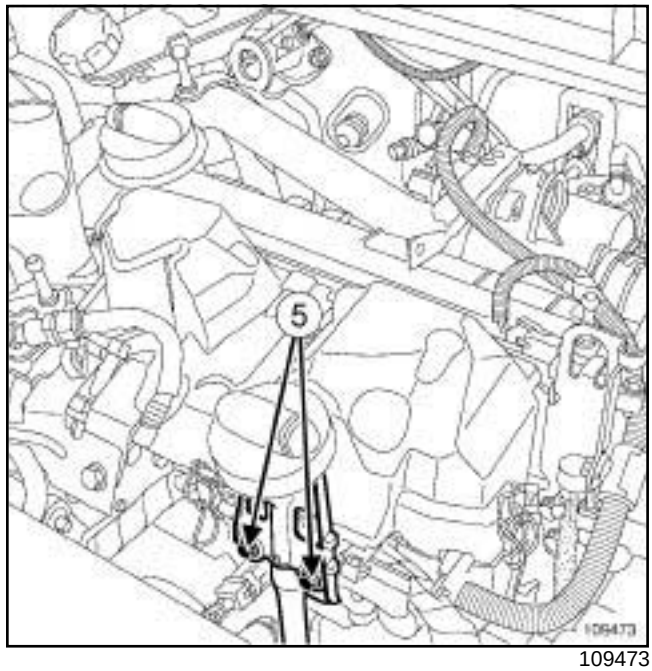
❏ Disconnect the turbocharger pressure sensor connector (**2**) .

K9K, and 750 or 766 or 768

❏ Loosen the clip of the air duct (**3**) between the intercooler and the damper valve.

❏ Move aside the air duct between the intercooler and the damper valve.

❏ Remove the stainless steel pipe (**4**) between the turbocharger and the intercooler.

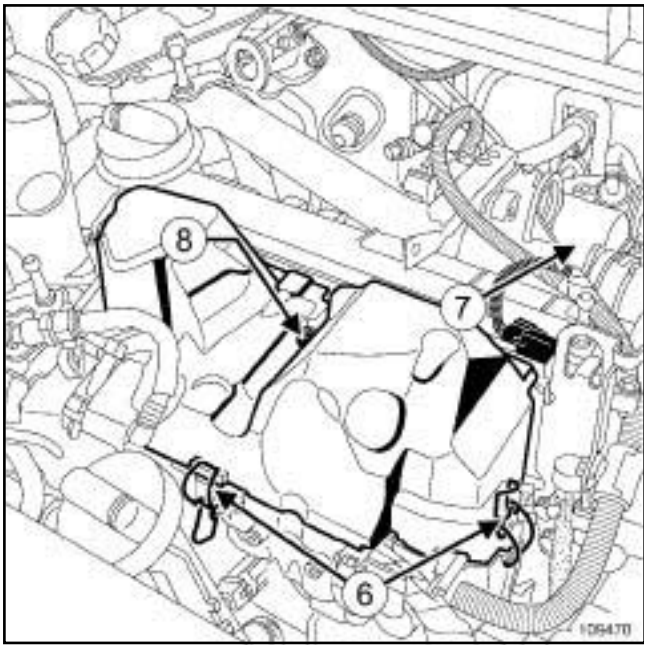


109473

❏ Remove the dipstick bolts (**5**) .

❏ Put the dipstick to one side.

K9K, and 750 or 752 or 766 or 768



109470

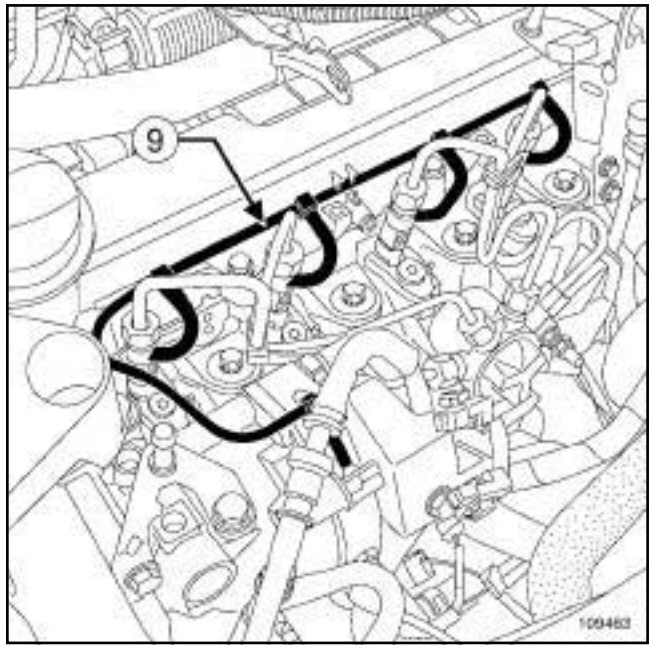
❏ Unclip the rail protector by the clips (**6**) .

❏ Remove:

- the engine cover bracket (**7**) on the flywheel end,
- the rail protector bolt (**8**) ,
- the rail protector.

❏ Disconnect:

- the heater plugs,
- injector connectors no. 3 and no. 4,
- injector connectors no. 1 and no. 2.



109463

❏

WARNING

Do not use the screwdriver as a lever on the injector fuel return unions.

WARNING

Ensure that the clip is not completely removed from its housing, otherwise it may be damaged when the diesel return union is removed.

In the case where a clip has been completely removed from its housing, remove the injector concerned and replace the clip with a new clip (see **13B**, **Diesel injection**, **Diesel injector: Removal - Refitting**, page **13B-83**) .

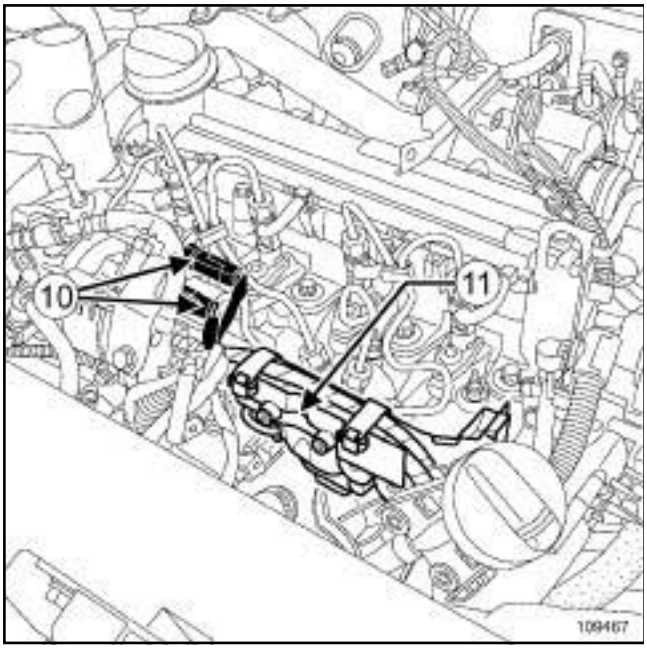
❏ Disconnect the injector diesel return pipe (**9**) .

WARNING

To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

❏ Fit plugs into the openings.

K9K, and 750 or 752 or 766 or 768



109467

❏ Disconnect the high pressure pump electrical connectors (**10**) .

❏ Remove the bolts of the neck (**11**) of the spherical injector rail.

❏ Move aside the electrical wiring with the neck.

❏ Loosen the injector rail nuts by several turns.

❏ Remove the clips connecting the high pressure pipes.

WARNING

Always hold the intermediate injector union in place with a wrench when loosening the high pressure pipes.

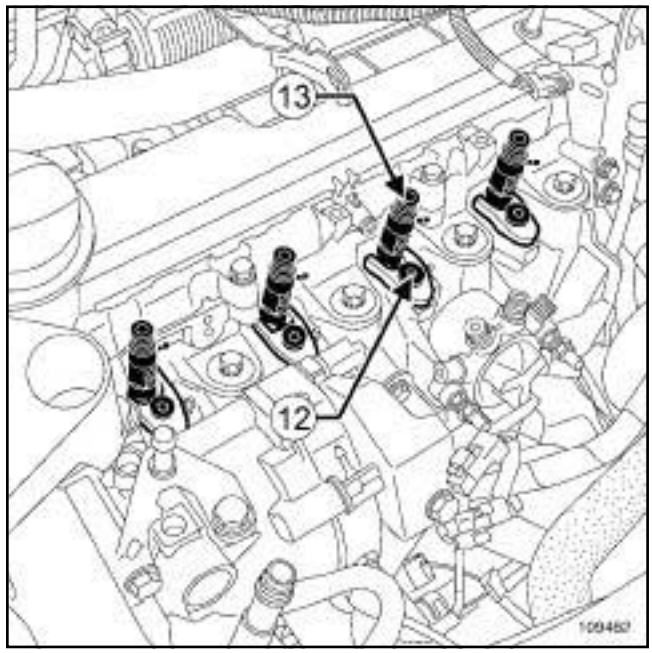
Do not damage the injector return nozzle.

❏ Undo:

- the high pressure pipe nut at the injector end using the **(Mot. 1746)**,
- the high pressure pipe nut at the injector rail end using the **(Mot. 1746)**.

❏ Fit blanking plugs into the openings.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109462

❏ Loosen the injector bracket (**12**) .

❏ Remove the injector (**13**) .

❏ If reusing an injector, always mark a removed injector in relation to its cylinder.

Note:

an injector corresponds to a cylinder.

❏ Remove the heat protection washer.

Note:

If the heat protection washer is stuck at the bottom of the well, use the **(Mot. 1817)** (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: injector seal**.

❏ **parts always to be replaced: High pressure pipe**.

K9K, and 750 or 752 or 766 or 768

Cleaning parts

❑

WARNING

It is strictly forbidden to clean the injectors with:

- a wire brush,
- an emery cloth,
- an ultrasonic cleaner.

❑ Always clean the well of the removed injector (see **Injector well cleaning tool: Use**) (Technical Note 6040A, 13B, Diesel injection).

❑ If reusing the removed injector:

- clean the injector using a wipe soaked in injector cleaning product or brake cleaner,
- if necessary, leave the injector nozzle to soak in injector cleaning product,
- wipe the injector with a new wipe,
- (see) (04B, Consumables - Products) and (see **13B**, **Diesel injection**, **Diesel injection: Precautions for the repair**, page **13B-1**) .

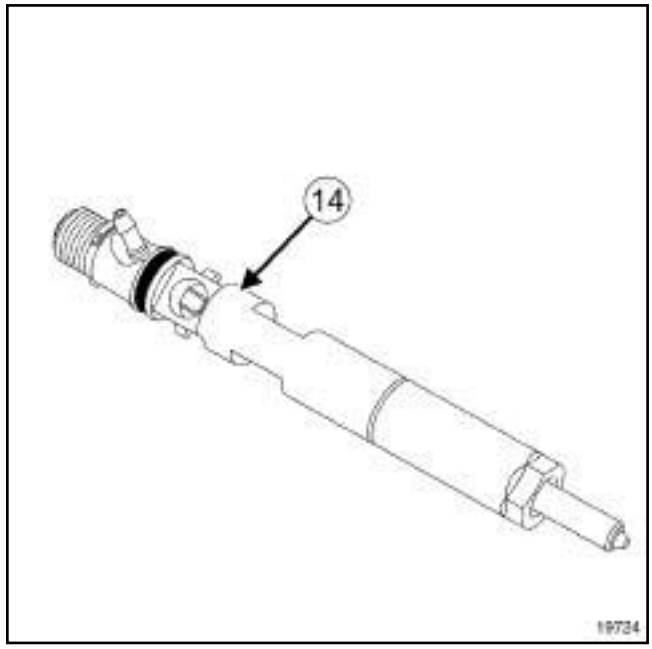
II - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING

Do not remove the caps from each component until the last moment.

❑ If removing the four injectors, loosen the nuts of the injector rail by a few turns (the rail should be loose).



19724

❑ Replace the compression washer with a new one.

❑ Position the injector.

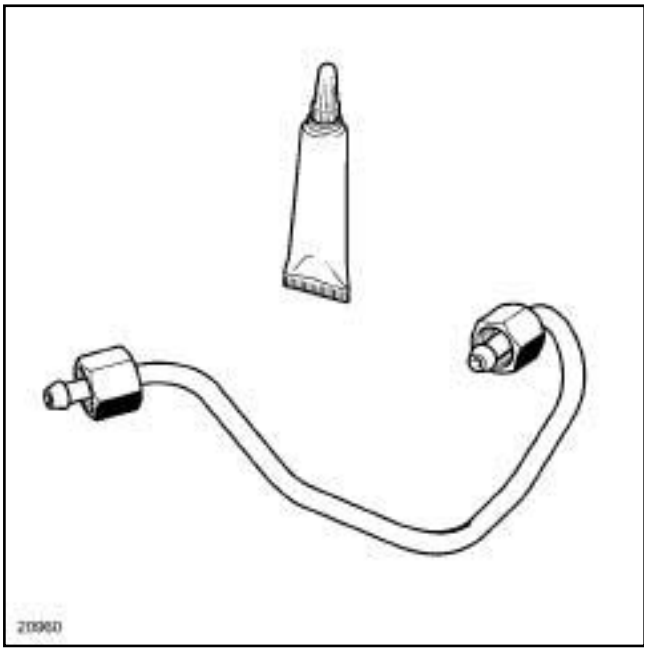
Note:

If one or more injectors are replaced, note the alphanumeric code (C2I) (**14**) and the cylinder on which it is fitted.

❑ Torque tighten the **injector clamp (28 N.m)**.

K9K, and 750 or 752 or 766 or 768

III - FINAL OPERATION



20960

❑

WARNING

Before fitting a new high pressure pipe, lightly lubricate the nut threads with oil from the applicator provided with the new part.

Be careful not to allow oil into the high pressure pipe.

Do not lubricate high pressure pipes supplied without an applicator; these pipes are self-lubricating.

WARNING

Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.

❑ Position the high pressure pipe olive:

- in the high pressure inlet taper of the injector,
- in the high pressure outlet taper of the rail.

❑ Fit without tightening the high pressure pipe nuts by hand, starting with the nut at the injector end.

❑ Slightly pretighten the high pressure pipe nuts.

Note:

The assembly order of the « rail - injector » high pressure pipes is not important.

❑ Mount a new clip provided with the new high pressure pipe.

❑ If removing the four injectors, torque tighten the **injector rail nuts (28 N.m)**.

❑ Tighten to torque and in order the **« pump - rail » high pressure pipe nuts (24 N.m)** :

- high pressure pump end,
- rail end.

❑ Tighten to torque and in order the **« rail - injector » high pressure pipe nuts (24 N.m)** :

- injectors end,
- rail end.

Note:

Tighten each pipe fully before moving on to the next pipe.

❑ Refit the neck on the injector rail.

❑ Tighten to torque the **nuts on the neck on the injector rail (21 N.m)**.

WARNING

Check the condition of the seals on the fuel return unions on the injectors. Check that they are not cut or crushed, and have not come out of their grooves. Replace the diesel return pipe assembly if one of its components is damaged.

❑ Connect:

- the injector diesel fuel return pipe,
- the connectors to injectors no. 1 and no. 2,
- the connectors to injectors no. 3 and no. 4,
- the heater plugs.

❑ Refit:

- the rail protector,
- the front engine cover bracket on the flywheel end.

❑ Clip on the rail protector.

K9K, and 750 or 752 or 766 or 768

K9K, and 750 or 766 or 768

- ❑ Loosen the intercooler inlet air pipe nut on the alternator.
- ❑ Fit the air duct on the turbocharger and on the intercooler inlet air pipe.
- ❑ Tighten the bolt of the air duct on the rocker cover.
- ❑ Torque tighten the **intercooler inlet air pipe nut on the alternator (8 N.m)**.
- ❑ Tighten the clip of the air duct between the intercooler and the damper valve.

- ❑ Connect the turbocharger pressure sensor connector.
- ❑ Refit the air inlet duct.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ❑ Program the alphanumeric code (C2I) for the replaced injector(s) using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (13B, Diesel injection).
- ❑ Check that there are no diesel leaks:
  - run the engine until the fan starts,
  - accelerate several times at no load,
  - switch off the ignition,
  - check that there is no diesel fuel escaping.
- ❑ Refit the engine cover.

K9K

Equipment required
Diagnostic tool

Tightening torques ▽	
nut mounting the inter-cooler air inlet pipe on the alternator	**8 Nm**
nut mounting the inter-cooler air inlet pipe on the alternator	**8 Nm**

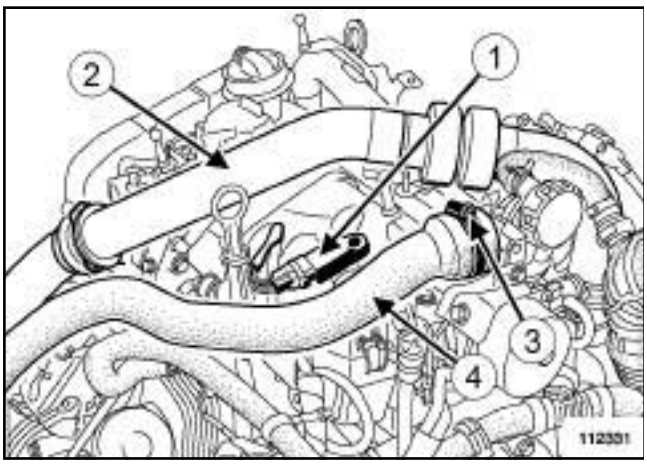
WARNING

After any operation, check that there are no diesel fuel leaks.

❏ Reprime the diesel circuit using the priming pump.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine protector.



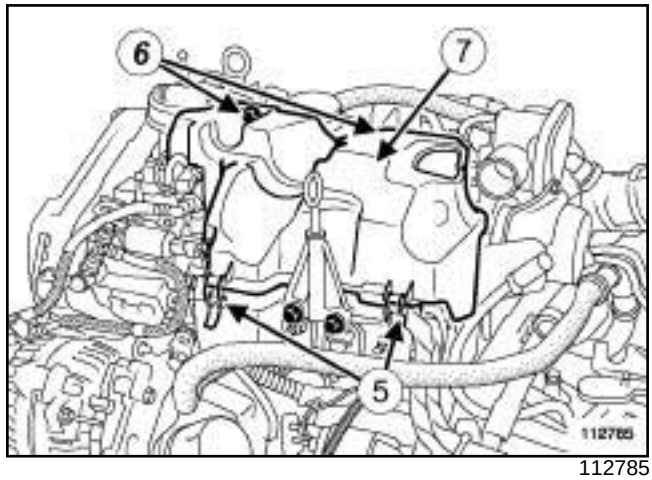
112331

❏ Disconnect the inlet air pressure sensor (**1**)

❏ Remove the upper section (**2**) of the turbocharging duct.

❏ Loosen the clip (**3**) .

❏ Move the inlet duct to one side (**4**) .



112785

❏ Unclip the clips (**5**) from the injector rail protector cover.

❏ Remove the mounting (**6**) from the injector rail protector cover.

❏ Remove the injector rail protector cover (**7**) .

❏ Refit the inlet duct.

❏ Loosen the mounting nut of the air pipe at the intercooler inlet on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Snap the air duct to the turbocharger and to the air pipe at the intercooler inlet.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.

❏ Connect:

- the inlet air pressure sensor.
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏

Note:

The **Diagnostic tool** can be used for testing the high pressure circuit with the engine running.

This command can be used to run fault finding on a leak due to an incorrectly fitted or tightened union. This command only works if the engine coolant temperature is above **60°C**. The fault finding procedure will not reveal small leaks due to incorrect tightening.

K9K

❏ Run command **AC029 "high pressure circuit sealing test"** in the "LPG/fuel circuit" tab of the **Diagnostic tool**.

WARNING
Do not leave anything on the side of the engine housing during the test phase (significant vibration).

Note:
The engine automatically runs a cycle of four accelerations and decelerations to lower the rail pressure.

❏ Check that there are no leaks in the high pressure circuit.

❏ Deal with the causes of any leaks.

❏ Disconnect:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the inlet air pressure sensor.

❏ Remove:

- the upper section of the turbocharging duct,
- the air inlet duct.

❏ Refit:

- the injector rail protector cover,
- the mountings of the injection rail protector cover,
- the air inlet duct.

❏ Loosen the intercooler inlet air pipe mounting nut on the alternator.

❏ Fit the air duct on the turbocharger and on the air pipe at the intercooler inlet.

❏ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.

❏ Connect:

- the inlet air pressure sensor.
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 750 or 752 or 760 or 762 or 766 or 768

Special tooling required	
Mot. 1746	Offset wrench for tightening High Pressure pump pipes.
Emb. 1596	24 mm socket wrench for removal - refitting of clutch master cylinder.

Equipment required
torque wrench
Diagnostic tool

Tightening torques ▽	
accelerometer mountings	**21 N.m**
high pressure pipe	**24 N.m**
injector rail neck nuts	**21 N.m**
nut mounting the intercooler inlet air pipe on the alternator	**8 N.m**

Note:

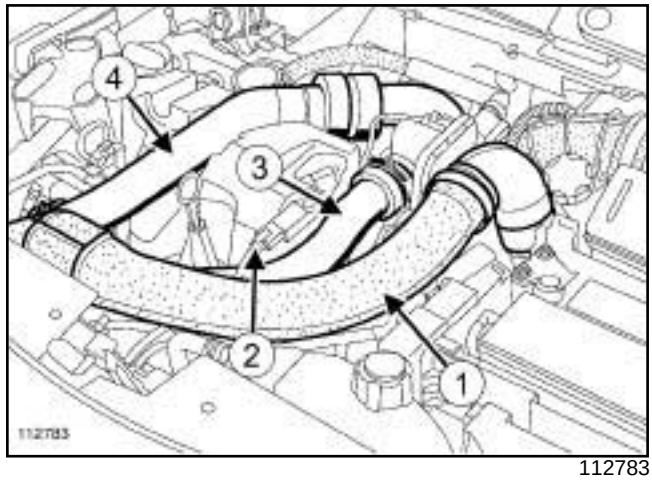
Vehicles equipped with the K9K*768 engine may or may not be equipped with an intercooler.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the front engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



112783

❏ Remove the inlet air duct (**1**) .

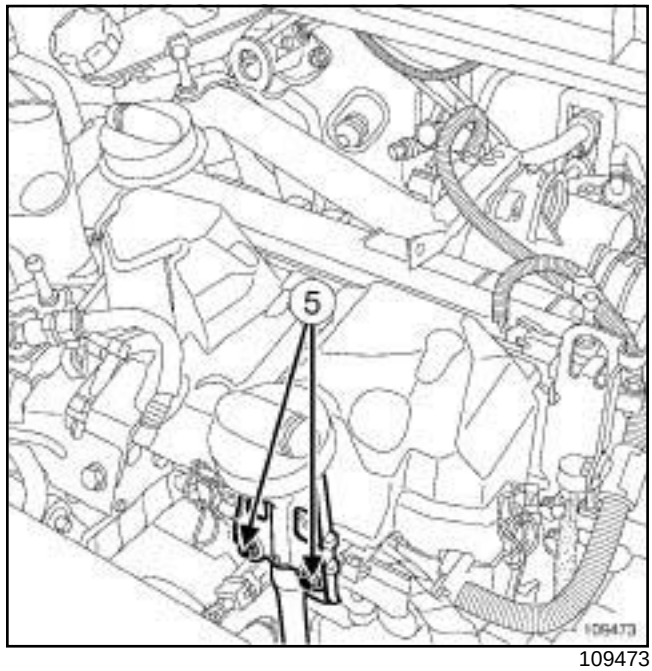
❏ Disconnect the turbocharger pressure sensor connector (**2**) .

K9K, and 750 or 760 or 762 or 766 or 768

❏ Loosen the clip of the air duct (**3**) between the intercooler and the inlet.

❏ Remove the air duct between the intercooler and the inlet.

❏ Remove the stainless steel pipe (**4**) between the turbocharger and the intercooler.

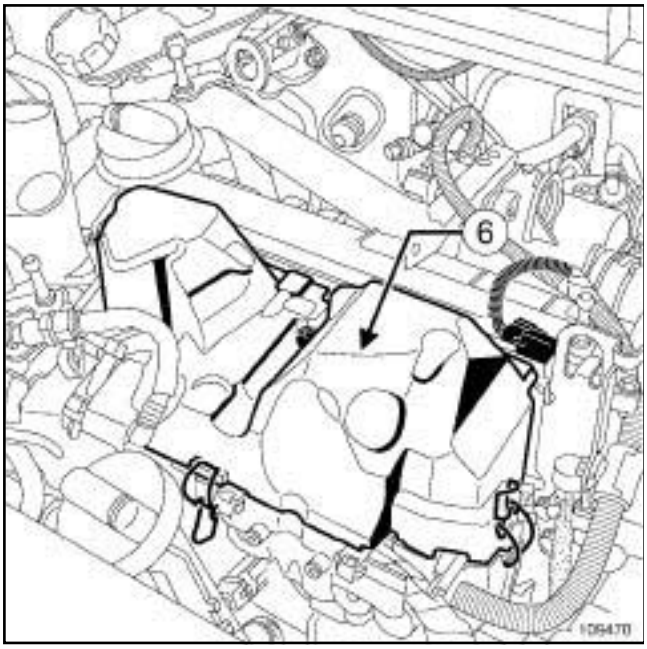


109473

❏ Remove the dipstick bolts (**5**) .

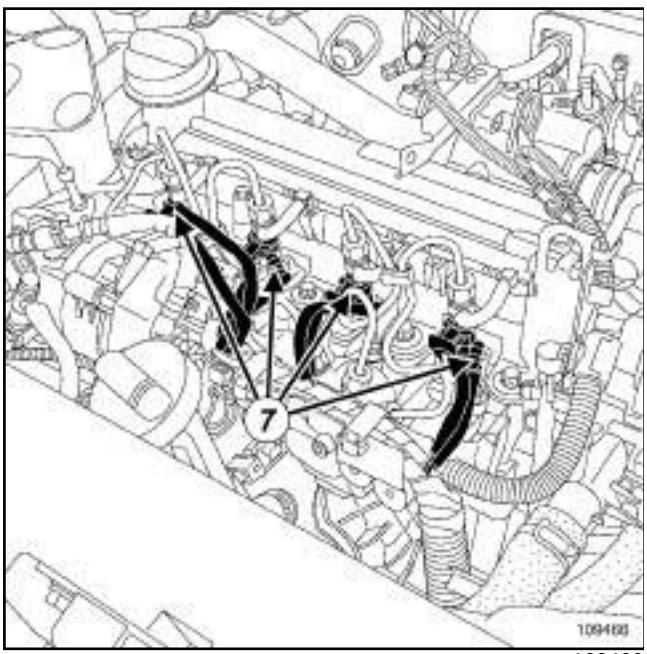
❏ Put the dipstick to one side.

K9K, and 750 or 752 or 760 or 762 or 766 or 768



109470

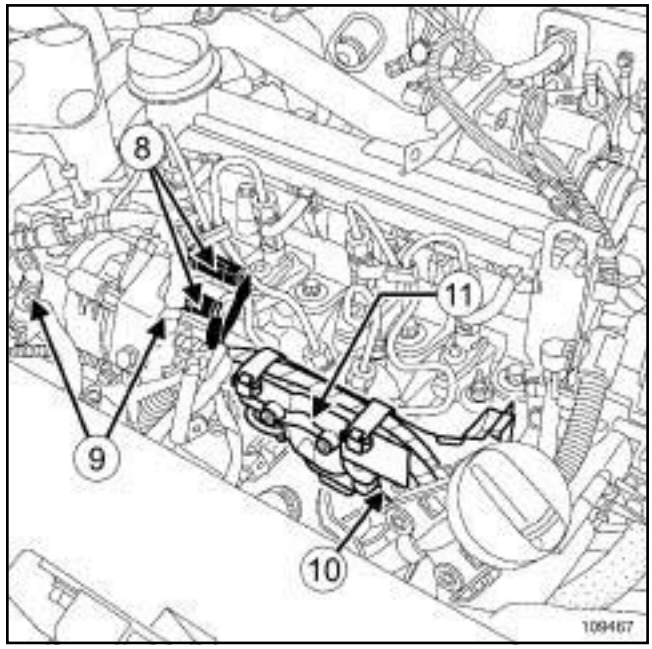
❏ Remove the cover (**6**) from the injector rail protector.



109466

❏ Disconnect the following connectors (**7**) :

- the heater plugs,
- the injectors.



109467

❏ Disconnect:

- the high pressure pump electrical connectors (**8**) ,
- the diesel supply and return pipes (**9**) ,
- the spherical injector rail pressure sensor (**10**) .

❏ Fit the correct blanking plugs.

❏ Remove the bolts mounting the neck (**11**) onto the spherical injector rail.

❏ Move the electric wiring harness and neck to the side as shown by the arrow.

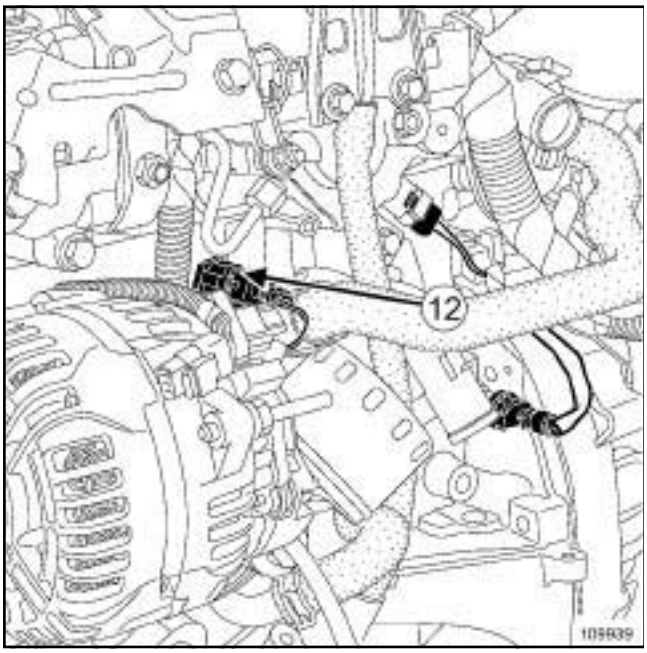
❏ Undo:

- the high pressure pipe nut at the pump end using the **(Mot. 1746)**,
- the high pressure pipe nut at the injector rail end using the **(Mot. 1746)**.

❏ Fit blanking plugs into the openings.

K9K, and 750 or 752 or 760 or 762 or 766 or 768

II - OPERATION FOR REMOVAL OF PART CONCERNED



109939

❑ Remove the accelerometer (**12**) using the **(Emb. 1596)**.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the accelerometer.

❑ Tighten to torque the **accelerometer mountings (21 N.m)** using the **torque wrench**.

20960

❑

WARNING

Before fitting a new high pressure pipe, lightly lubricate the nut threads with oil from the applicator provided with the new part.

Be careful not to allow oil into the high pressure pipe.

Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

WARNING

Do not remove the blanking plugs from each component until the last moment.

❑ Remove the blanking plugs.

❑ Insert the high pressure pipe olive in the high pressure pump high pressure outlet taper.

❑ Fit, without tightening, the high pressure pipe nuts by hand, starting with the nut at the rail end.

❑ Slightly pretighten the high pressure pipe nuts.

❑ Torque tighten the **high pressure pipe (24 N.m)**.

K9K, and 750 or 752 or 760 or 762 or 766 or 768

❏ Refit the neck on the injector rail.

❏ Tighten to torque the **injector rail neck nuts (21 N.m)**

❏ Connect:

- the spherical injector rail pressure sensor,
- the diesel return pipe connecting the injectors to the high pressure pump,
- the diesel fuel supply and return pipes,
- the high pressure pump electrical connectors.

❏ Connect the connectors of:

- the injectors,
- the heater plugs.

❏ Refit the injector rail protector cover.

❏ Insert the dipstick.

❏ Refit the dipstick bolts.

❏ Connect the inlet air pressure sensor.

K9K, and 750 or 760 or 762 or 766 or 768

❏ Refit the inlet duct and tighten its clip.

❏ Loosen the intercooler inlet air pipe nut on the alternator.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 N.m)**.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

❏ Prime the diesel circuit using the priming pump.

WARNING

Check that there are no diesel leaks:

- check the sealing after repair (see **13B**, **Diesel injection**, **High pressure pipe: Check**, page **13B-99**) ,
- let the engine run at idle speed until the engine cooling fan starts to operate,
- accelerate several times at no load,
- carry out a road test,
- switch off the ignition,
- confirm that there is no diesel fuel leakage.

Note:

When replacing the accelerometer, run command **RZ004** using the **Diagnostic tool** in order to carry out the necessary programming.

K9K, and 764 or 766 or 768

REMOVAL

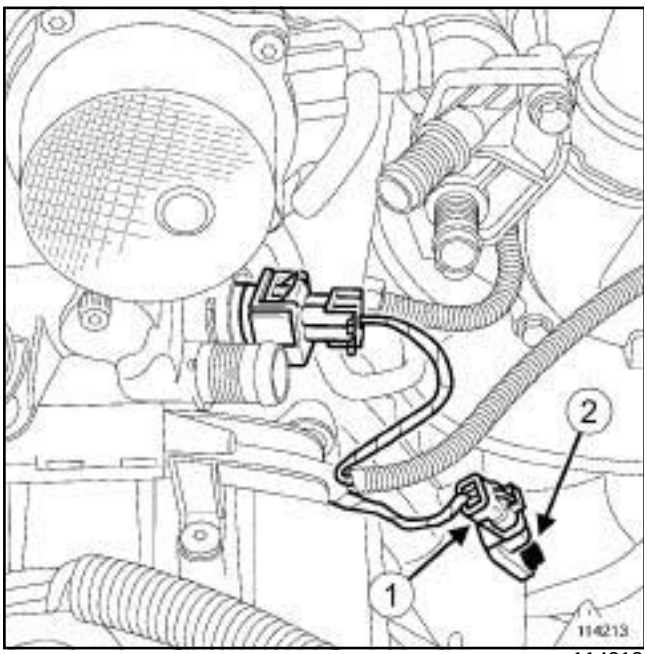
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



114213

❏ Disconnect the connector (**1**) from the engine speed and position sensor.

❏ Remove the engine speed and position sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the engine speed and position sensor.

❏ Connect the engine speed and position sensor connector.

II - FINAL OPERATION

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

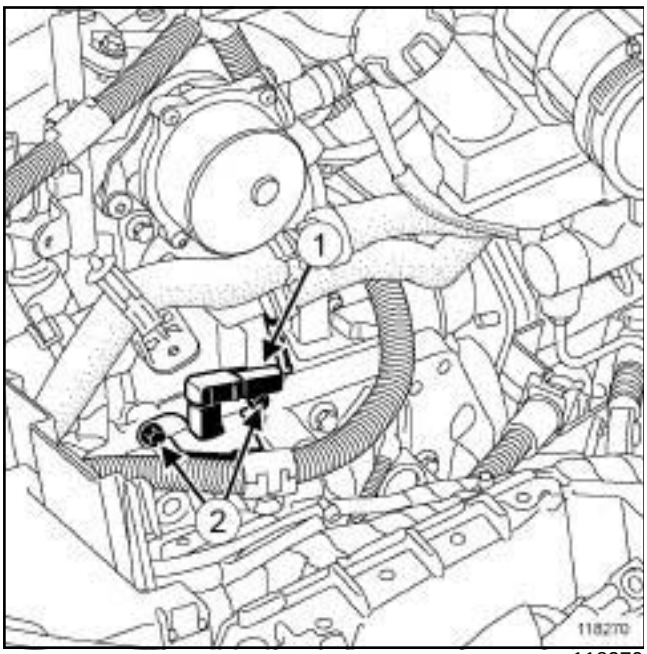
K9K, and 750 or 752

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the air filter unit air inlet pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118270

❏ Disconnect the connector (**1**) from the engine speed and position sensor.

❏ Remove:

- the engine speed and position sensor bolts (**2**) ,
- the engine speed and position sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the speed and position sensor,
- the engine speed and position sensor bolts.

❏ Connect the engine speed and position sensor connector.

II - FINAL OPERATION

❏ Refit the air filter unit air inlet pipe.

K9K

Tightening torques ▽	
pre-postheating unit mounting nut	9 Nm

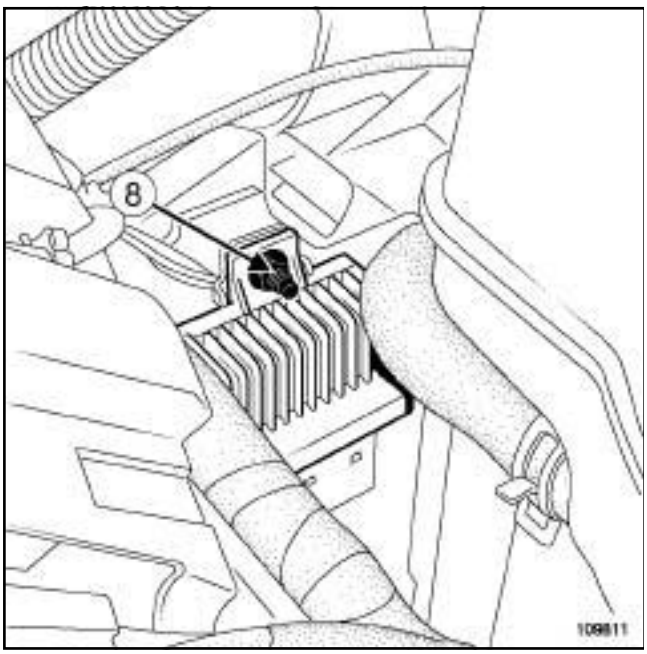
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

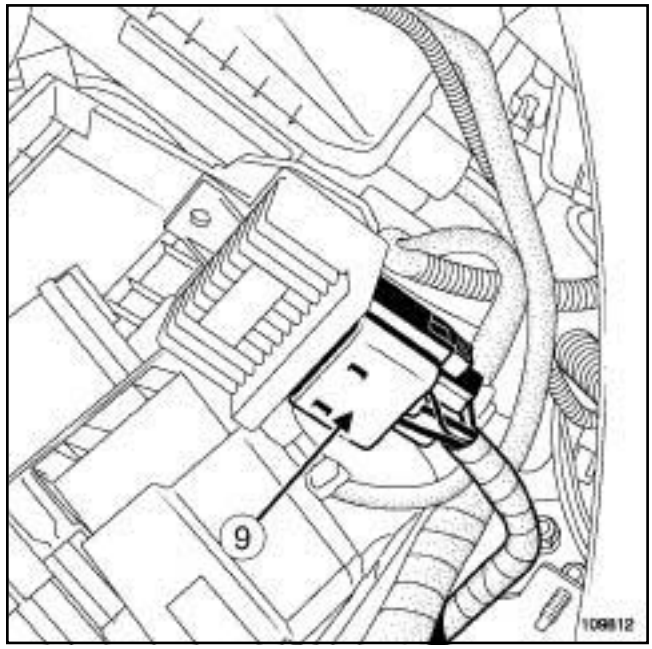
- the battery (see **Battery: Removal - Refitting**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



109811

❏ Remove the pre-postheating unit mounting bolt (**8**) .



109812

❏ Disconnect the pre-postheating unit connector (**9**) .

❏ Remove the pre-postheating unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the pre-postheating unit connector.

❏ Refit the pre-postheating unit.

❏ Tighten to torque the **pre-postheating unit mounting nut (9 Nm)**.

II - FINAL OPERATION.

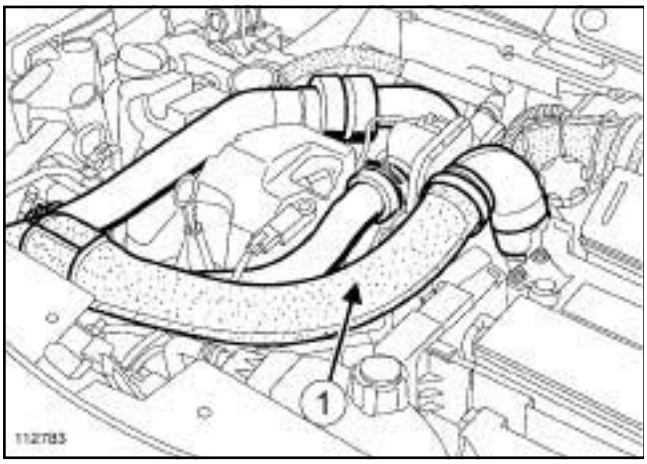
❏ Refit the battery (see **Battery: Removal - Refitting**) .

K9K, and 764 or 772

Tightening torques ▽	
heater plugs	**15 Nm**
injector rail protector cover bolt	**8 Nm**
injector rail protector cover nut	**8 Nm**
nut mounting the inter-cooler inlet air pipe on the alternator	**8 Nm**
intercooler outlet air pipe clip	**5.5 Nm**

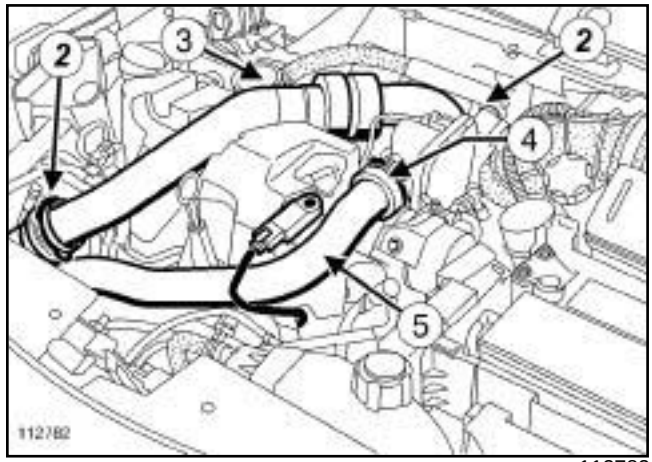
REMOVAL

I - REMOVAL PREPARATION OPERATION



112783

❏ Remove the air filter box inlet air pipe (**1**) .



112782

❏ Remove the turbocharger outlet air pipe retaining pins (**2**) .

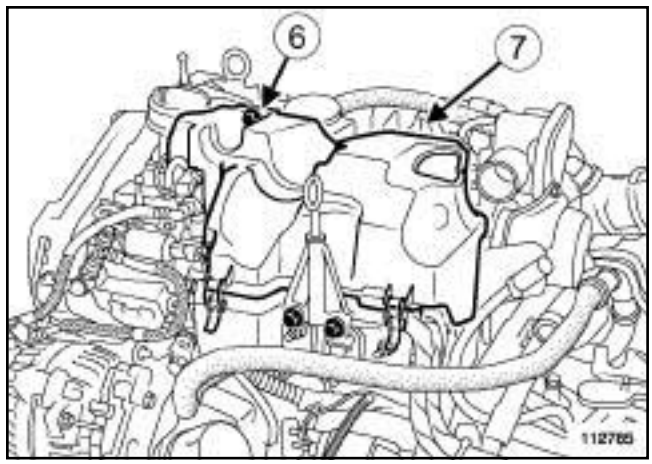
❏ Remove:

- the turbocharger outlet air pipe bolt (**3**) ,
- the turbocharger outlet air pipe

❏ Undo the clip (**4**) from the intercooler outlet air pipe.

❏ Move the intercooler outlet air pipe to one side (**5**) .

❏ Remove the dipstick.



112785

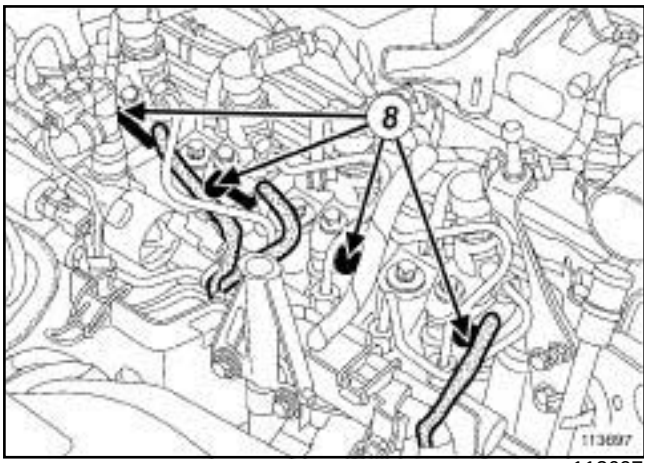
❏ Unclip the rail protector cover.

❏ Remove:

- the injector rail protector cover bolt (**6**) ,
- the injector rail protector cover nut (**7**) ,
- the injector rail protector cover,

K9K, and 764 or 772

II - OPERATION FOR REMOVAL OF PART CONCERNED



113697

❏ Disconnect the heater plug connectors (**8**) .

❏ Blow around the heater plugs with compressed air to prevent contamination of the cylinders.

❏ Undo then remove the plugs using a **10 mm** diameter long socket connected to a universal joint.

Note:
Use a hose to unscrew the plugs completely.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the heater plugs.

WARNING
Ensure that no foreign bodies enter the cylinder during this operation.

❏ Torque tighten the **heater plugs (15 Nm)**.

❏ Connect the heater plug connectors.

II - FINAL OPERATION

❏ Refit:

- the injector rail protector cover,
- the injector rail protector cover nut,
- the injector rail protector cover bolt.

❏ Tighten to torque:

- the **injector rail protector cover bolt (8 Nm)**,
- the **injector rail protector cover nut (8 Nm)**.

❏ Clip the injector rail protector cover into place.

❏ Refit the dipstick.

❏ Undo the intercooler inlet air pipe nut on the alternator.

❏ Fit:

- the turbocharger air outlet pipe,
- the turbocharger outlet air pipe retaining pins.

❏ Click into place the turbocharger outlet air pipe.

❏ Tighten the turbocharger outlet air pipe bolt on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 Nm)**.

❏ Fit the intercooler outlet air pipe.

❏ Torque tighten the **intercooler outlet air pipe clip (5.5 Nm)**.

❏ Refit the turbocharger outlet air pipe.

❏ Fit the turbocharger outlet air pipe retaining pins.

❏ Refit the air filter box inlet air pipe.

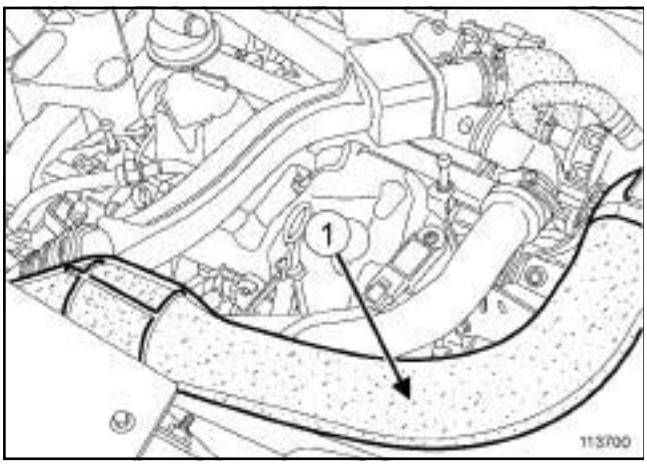
K9K, and 750 or 752 or 766 or 768

Tightening torques ▽	
heater plugs	**15 Nm**
turbocharger outlet air pipe clip	**5.5 Nm**
intercooler outlet air pipe clip	**5.5 Nm**
nut mounting the intercooler inlet air pipe on the alternator	**8 Nm**
intercooler outlet air pipe clip	**5.5 Nm**

REMOVAL

REMOVAL PREPARATION OPERATION

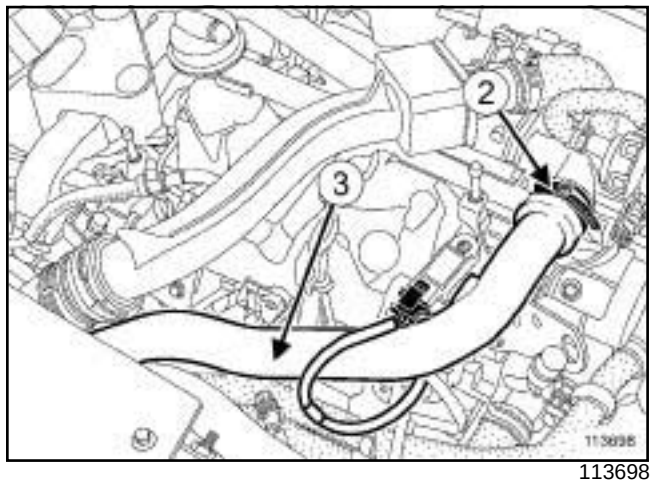
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



113700

❏ Remove the air filter box inlet air pipe (**1**) .

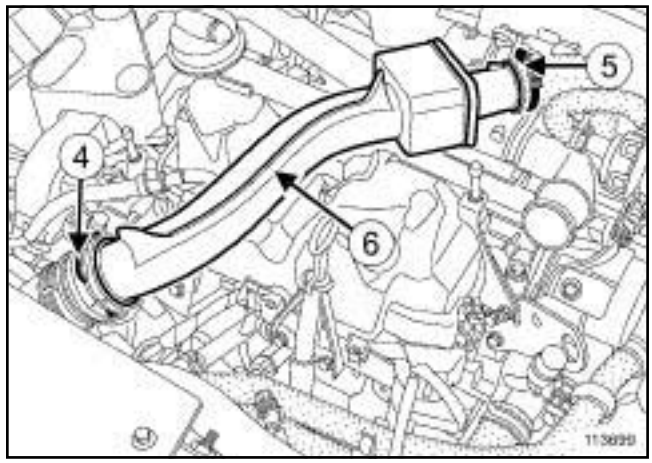
K9K, and 750 or 768



113698

❏ Undo the clip (**2**) from the intercooler outlet air pipe.

❏ Move the intercooler outlet air pipe to one side (**3**) .



113699

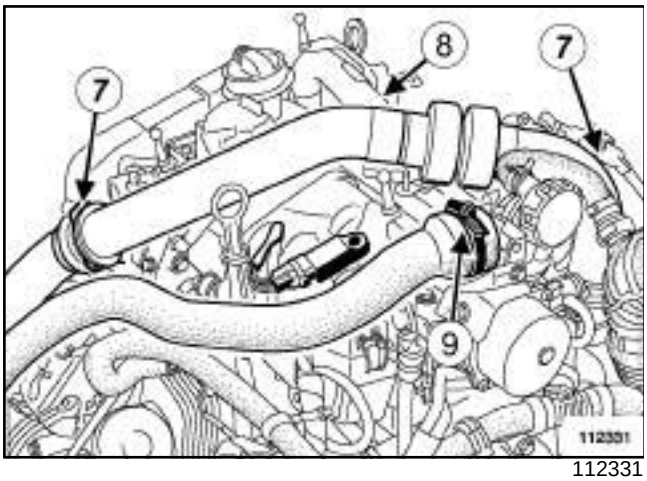
❏ Remove the turbocharger outlet air pipe retaining pin (**4**) .

❏ Loosen the turbocharger outlet air pipe clip (**5**) .

❏ Remove the turbocharger outlet air pipe (**6**) .

K9K, and 750 or 752 or 766 or 768

K9K, and 766



112331

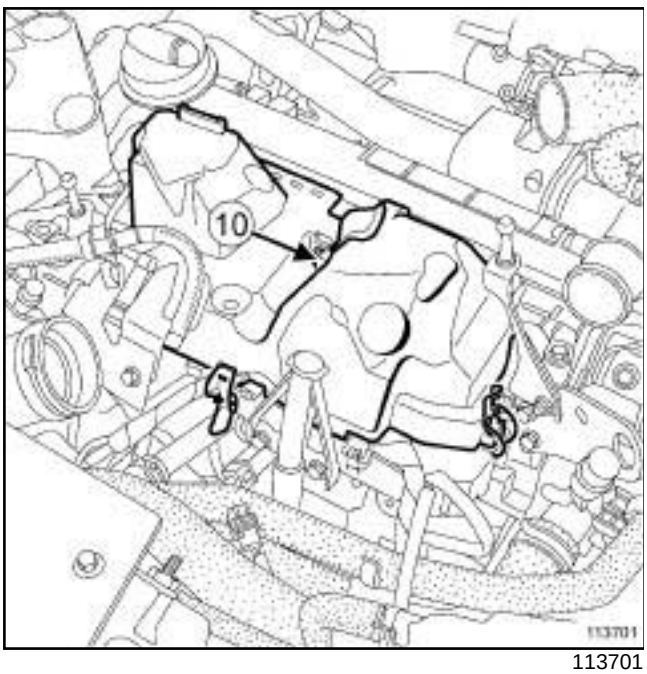
❏ Remove the turbocharger outlet air pipe retaining pins (**7**) .

❏ Remove:

- the turbocharger outlet air pipe bolt (**8**) on the rocker cover,
- the turbocharger outlet air pipe.

❏ Undo the clip (**9**) from the intercooler outlet air pipe.

❏ Move the intercooler outlet air pipe to one side.

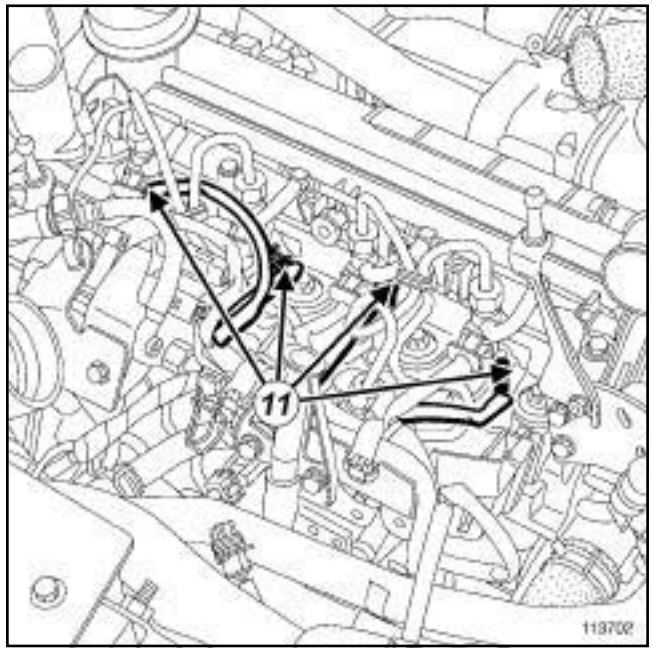


113701

❏ Unclip the rail protector.

❏ Remove the rail protector bolt (**10**) .

OPERATION FOR REMOVAL OF PART CONCERNED



113702

❏ Disconnect the heater plug connectors (**11**) .

❏ Blow around the heater plugs with compressed air to prevent contamination of the cylinders.

❏ Undo then remove the plugs using a **10 mm** diameter long socket connected to a universal joint.

Note:

Use a hose to unscrew the plugs completely.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the heater plugs.

WARNING
Ensure that no foreign bodies enter the cylinder during this operation.

❏ Torque tighten the **heater plugs (15 Nm)**.

❏ Connect the heater plug connectors.

II - FINAL OPERATION.

❏ Refit the rail protector.

K9K, and 750 or 752 or 766 or 768

K9K, and 750 or 768

❏ Refit the turbocharger outlet air pipe.

❏ Fit the turbocharger outlet air pipe retaining pin.

❏ Torque tighten the **turbocharger outlet air pipe clip (5.5 Nm)**.

❏ Fit the intercooler outlet air pipe.

❏ Torque tighten the **intercooler outlet air pipe clip (5.5 Nm)**.

K9K, and 766

❏ Loosen the intercooler inlet air pipe nut on the alternator.

❏ Fit:

- the turbocharger air outlet pipe,
- the turbocharger outlet air pipe retaining pins.

❏ Click into place the turbocharger outlet air pipe.

❏ Tighten the turbocharger outlet air pipe bolt on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler inlet air pipe on the alternator (8 Nm)**.

❏ Fit the intercooler outlet air pipe.

❏ Torque tighten the **intercooler outlet air pipe clip (5.5 Nm)**.

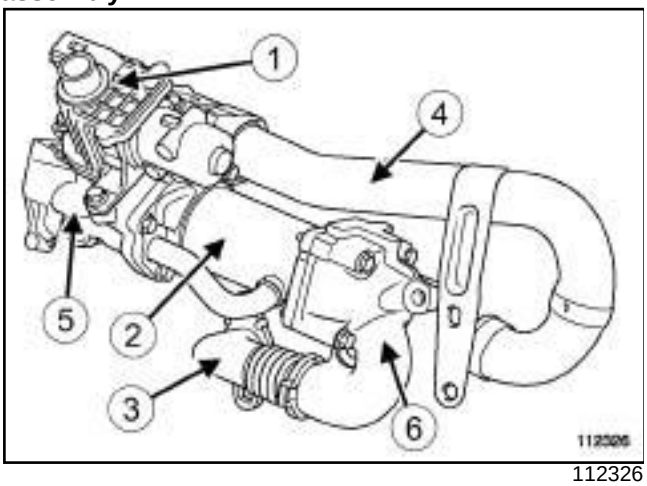
❏ Refit the air filter box air inlet pipe.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K

K9K, and 764 or 766 or 768 or 772

First fitting of the exhaust gas cooler recirculation assembly



112326

(**1**) Exhaust gas recirculation solenoid valve

(**2**) Exhaust gas cooler

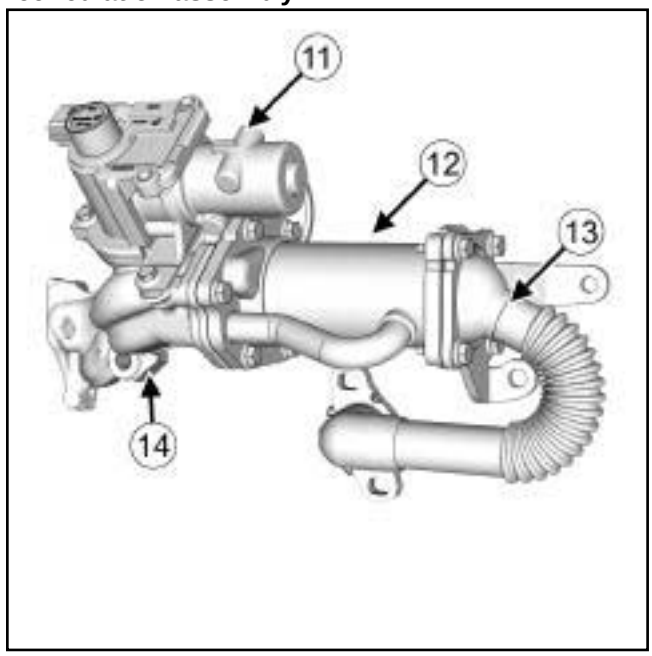
(**3**) Exhaust gas inlet pipe

(**4**) Metal air inlet tube

(**5**) Cooler support on the flywheel end

(**6**) Cooler support on the timing side

Second fitting of the exhaust gas cooler recirculation assembly



131602

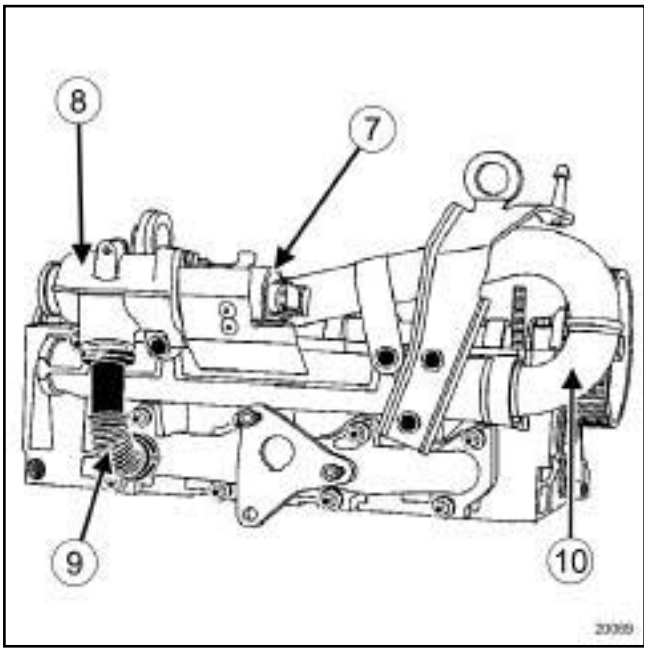
(**11**) Exhaust gas recirculation solenoid valve

(**12**) Exhaust gas cooler

(**13**) Exhaust gas inlet pipe with cooler support, timing end

(**14**) Cooler support on the flywheel end

K9K, and 750 or 752



20069

(**7**)	Exhaust gas recirculation solenoid valve
(**8**)	Exhaust gas recirculation mounting
(**9**)	Rigid exhaust gas recirculation pipe
(**10**)	Air inlet metal tube

K9K, and 764 or 766 or 768

Special tooling required	
Mot. 1729	Spanner for removing the EGR valve.

Equipment required
Diagnostic tool

Tightening torques ▽	
exhaust gas recirculation solenoid valve mounting bolts	**10 N.m**
nut mounting the intercooler air inlet pipe on the alternator	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

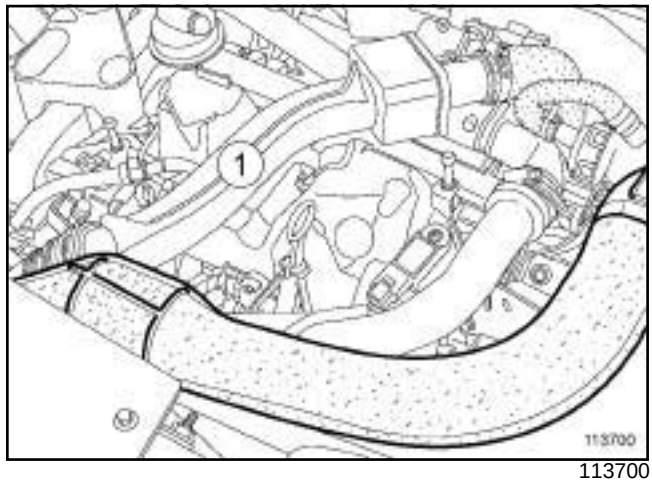
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

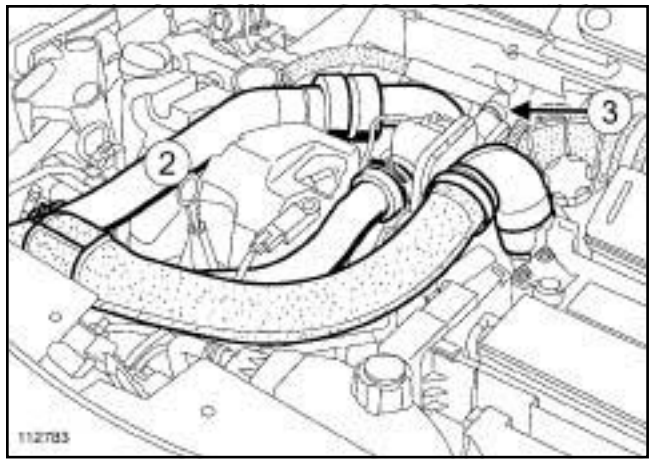
K9K, and 766 or 768



113700

❏ Remove the air duct (**1**) between the intercooler and the turbocharger.

K9K, and 764



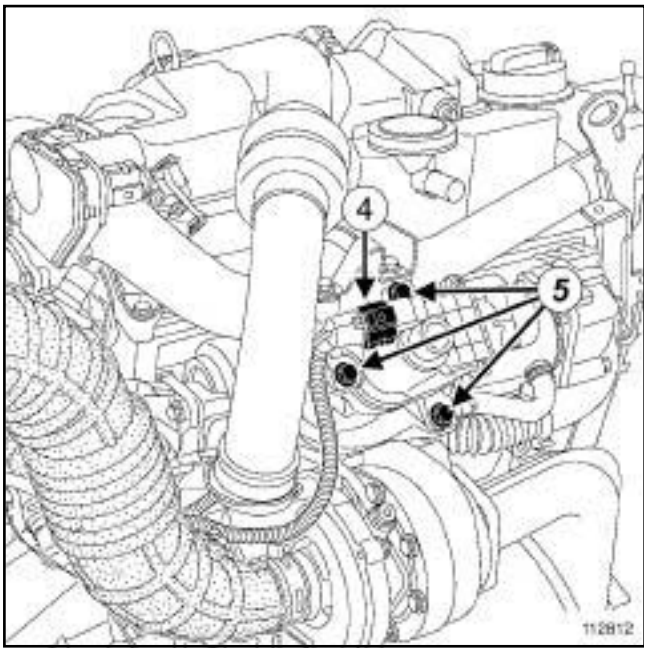
112783

❏ Remove the air duct (**2**) between the intercooler and the turbocharger.

❏ Disconnect the oil vapour rebreathing pipe at (**3**) and move it aside.

K9K, and 764 or 766 or 768

II - REMOVAL OF PART CONCERNED



112812

❑ Disconnect the connector (**4**) from the exhaust gas recirculation solenoid valve.

❑ Remove:

- the exhaust gas recirculation solenoid valve mounting bolts (**5**) ,
- the exhaust gas recirculation solenoid valve, using the tool **(Mot. 1729)**,
- the seal of the exhaust gas recirculation solenoid valve.

Note:

During removal of the solenoid valve using the **(Mot. 1729)**, proceed slowly until the solenoid valve is loosened from its support to remove it.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the seal of the exhaust gas recirculation solenoid valve.

II - REFITTING PART CONCERNED

❑ Offer up the exhaust gas recirculation solenoid valve with a new seal.

❑ Torque tighten the **exhaust gas recirculation solenoid valve mounting bolts (10 N.m)**.

III - FINAL OPERATION

K9K, and 764

❑ Reconnect the oil vapour rebreathing pipe.

❑ Loosen the mounting nut of the air pipe at the intercooler inlet on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 N.m)**.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Note:

If replacing the exhaust gas recirculation solenoid valve, perform the necessary programming (**see MR394, Section 13B, Fault finding - Replacement of components**).

❑ Before restarting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

K9K, and 750 or 752

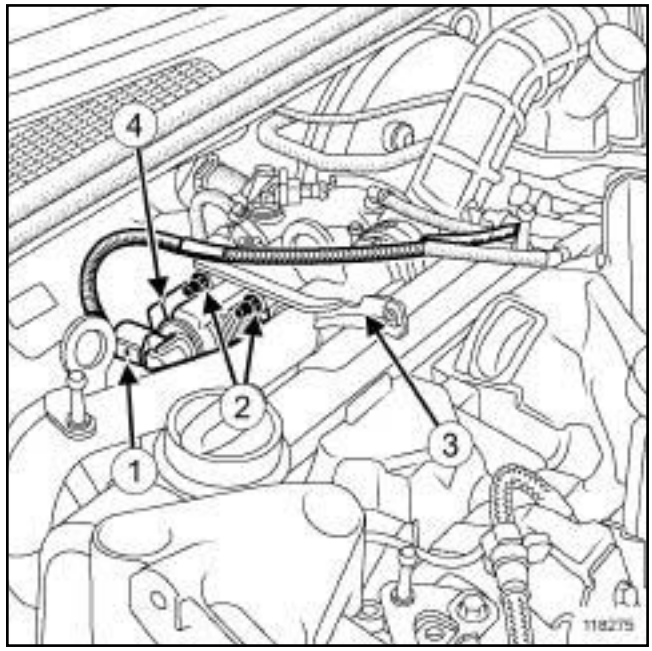
Tightening torques ▽	
EGR solenoid valve studs	**4 N.m**
EGR solenoid valve heat shield bolt	**12 N.m**
nuts for the strut on the EGR solenoid valve	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



118275

❑ Disconnect the connector (**1**) from the EGR solenoid valve.

❑ Remove:

- the nuts (**2**) from the strut on the EGR solenoid valve,
- the strut (**3**) on the EGR solenoid valve,
- the bolt from the EGR solenoid valve heat shield,
- the heat shield (**4**) from the EGR solenoid valve,
- the EGR solenoid valve,
- the seal between the EGR solenoid valve and the EGR solenoid valve mounting.

Note:

Clean the exhaust gas recirculation solenoid valve if it is reinitialised (see **Exhaust gas recirculation solenoid valve: Cleaning**) (Technical Note 3916A, 14A, Emission control).

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the seal between the EGR solenoid valve and the EGR solenoid valve mounting.

K9K, and 750 or 752

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the EGR solenoid valve studs, if necessary.

❏ Torque tighten the **EGR solenoid valve studs (4 N.m)**, if necessary.

❏ Refit:

- the seal between the EGR solenoid valve and the EGR solenoid valve mounting,
- the EGR solenoid valve,
- the EGR solenoid valve heat shield,
- the bolt from the EGR solenoid valve heat shield,
- the strut on the EGR solenoid valve,
- the nuts from the strut on the EGR solenoid valve,

❏ Torque tighten:

- the **EGR solenoid valve heat shield bolt (12 N.m)**,
- the **nuts for the strut on the EGR solenoid valve (12 N.m)**.

❏ Connect the EGR solenoid valve connector.

III - FINAL OPERATION

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Note:

If replacing the exhaust gas recirculation solenoid valve, perform the necessary programming (**see MR394, Section 13B, Fault finding - Replacement of components**).

K9K, and 764 or 766 or 768 or 772

Special tooling required	
Ms. 583	Pipe clamps.

Equipment required
Diagnostic tool

Tightening torques ▽	
bolts mounting the exhaust gas cooler on the timing end support	**12 N.m**
bolts mounting the exhaust gas cooler on the flywheel end support	**12 N.m**
mounting bolts of the exhaust gas cooler on the support at the flywheel end	**12 N.m**
coolant circulation cover mounting bolts	**10 N.m**
mounting bolts of the lifting bracket at the timing end	**10 N.m**
mounting nut of the pipe at the intercooler inlet on the alternator	**8 N.m**

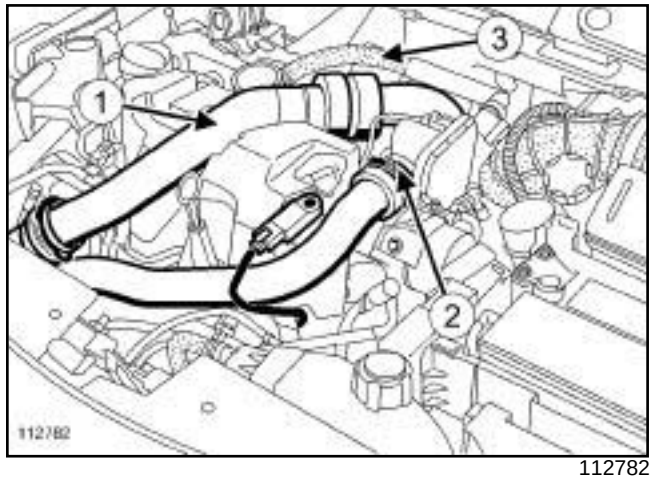
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) .



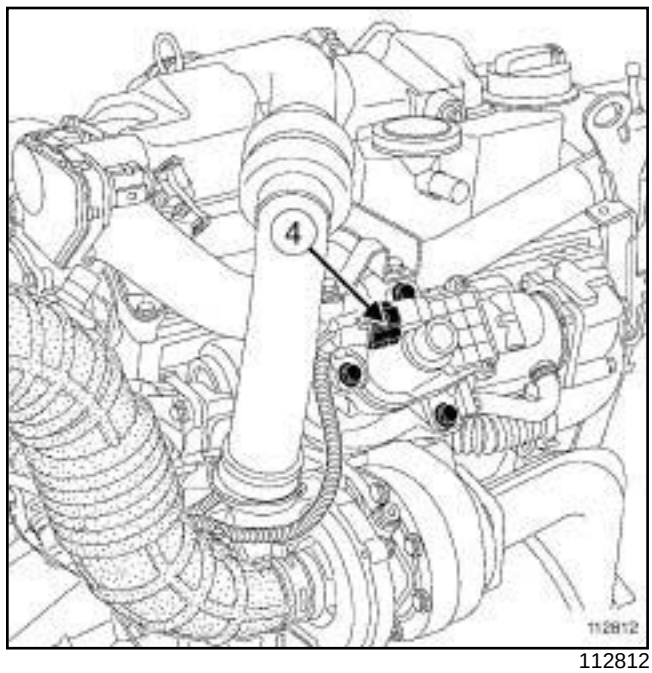
112782

❏ Remove the inlet duct (**1**) between the turbocharger and the intercooler.

❏ Disconnect the inlet duct (**2**) .

K9K, and 764 or 772

❏ Remove the oil vapour rebreathing pipe ***(3)*** .



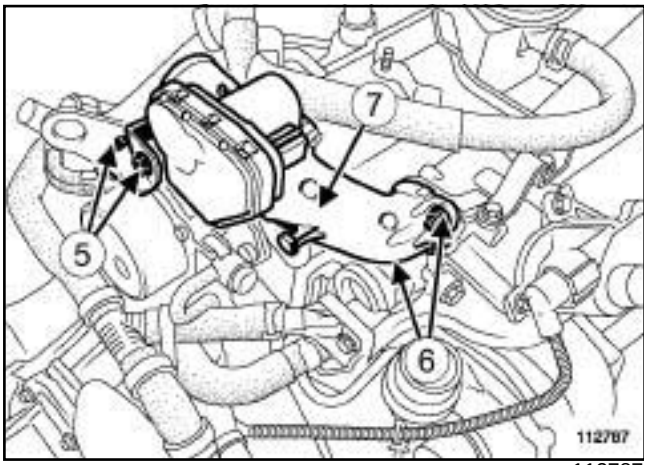
112812

❏ Disconnect the connector (**4**) from the exhaust gas recirculation solenoid valve.

❏ Disconnect the vacuum pump pipe.

K9K, and 764 or 766 or 768 or 772

K9K, and 764 or 772



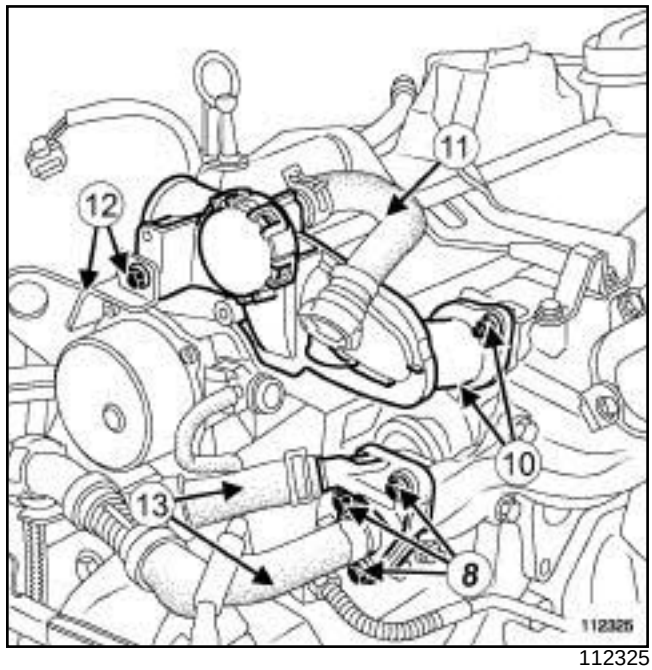
112787

❏ Disconnect the connector from the cut-off valve (if equipped).

❏ Remove:

- the bolts (**5**) mounting the damper valve retaining bracket,
- the damper valve mounting bolts (**6**) ,
- the damper valve (**7**) (if equipped).

K9K, and 766 or 768



112325

❏ Disconnect the oil vapour recirculation pipe (**11**) .

❏ Remove:

- the oil vapour recirculation valve bolts (**10**) ,
- the oil vapour recirculation valve,
- the mounting bolts (**12**) of the oil vapour recirculation valve retaining bracket.

❏ Position the tools **(Ms. 583)** or the hose clamps on the coolant inlet and outlet hoses ***(13)*** of the exhaust gas cooler.

❏ Remove the mounting bolts ***(8)*** of the coolant circulation cover.

❏ Detach the coolant circulation cover.

Note:

Be prepared for the escape of coolant.

K9K, and 764 or 766 or 768

❏ Remove the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

K9K, and 764 or 766 or 768 or 772

K9K, and 772

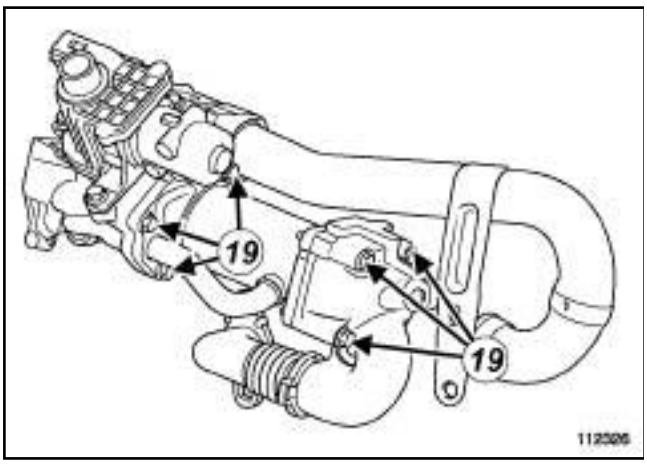
❑ Remove the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

❑ Remove:

- the exhaust gas recirculation rigid pipe (see **14A**, **Antipollution**, **Exhaust gas recirculation rigid pipe: Removal - Refitting**, page **14A-20**) ,
- the exhaust gas recirculation assembly (see) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - First fitting of the exhaust gas cooler recirculation assembly

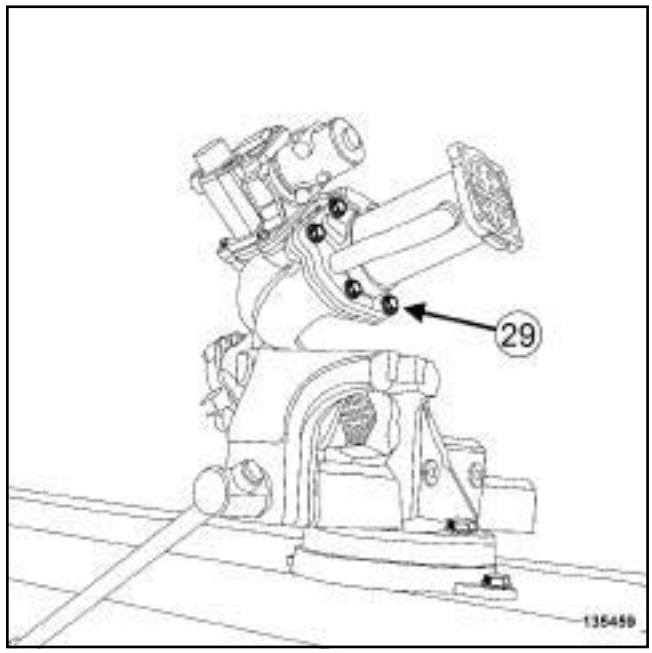


112326

❑ Using the workbench, remove:

- the bolts (**19**) mounting the exhaust gas cooler on its two supports,
- the exhaust gas cooler.

2 - Second fitting of the exhaust gas cooler recirculation assembly



135459

❑ Remove:

- the bolts (**29**) of the cooler on the support,
- the seal of the cooler on the support,
- the cooler.

K9K, and 764 or 766 or 768 or 772

REFITTING

I - REFITTING PREPARATION OPERATION

❑ All the supporting surfaces on each removed part must be carefully cleaned.

WARNING
Take care not to damage the bearing faces to prevent any risk of coolant leaks.

WARNING

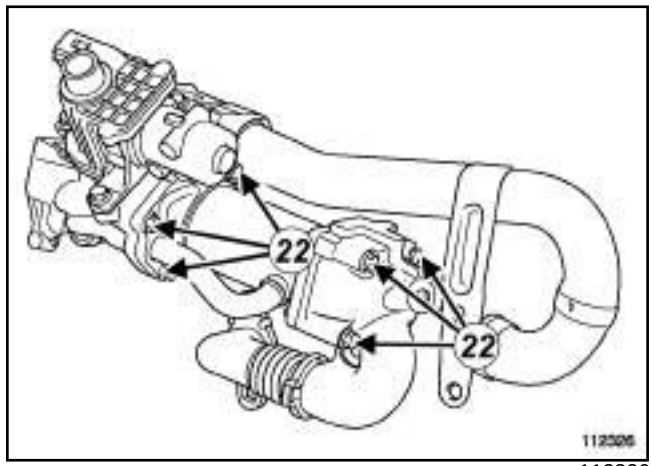
Always replace:

- the air inlet metal tube and its O-rings,
- the exhaust gas inlet pipe, its mounting bolts, its seal and its snap-on clip,
- the cooler seals on its mountings,
- the coolant circulation cover seals within the exhaust gas cooler,
- the seal between the cut-off valve downstream duct and the exhaust gas cooler mounting,
- the seal between the catalytic converter and the turbocharger.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the exhaust gas cooler on its two mountings with new seals.

1 - First fitting of the exhaust gas cooler recirculation assembly



112326

❑ Position the cooler mounting bolts (**22**) , avoiding contact so that the cooler can move.

❑ Refit the exhaust gas recirculation unit assembly on the cylinder head with its cooler.

❑ Tighten the two mounting bolts on the exhaust gas cooler mountings until contact is made.

❑ Adjust the exhaust gas cooler in relation to its two mountings.

❑ Tighten the exhaust gas cooler mounting bolts on to its two mountings until contact is made and so that it is locked into place.

❑ Remove the exhaust gas recirculation unit and its cooler.

❑ On the workbench, torque tighten:

- the **bolts mounting the exhaust gas cooler on the timing end support (12 N.m)**,
- the **bolts mounting the exhaust gas cooler on the flywheel end support (12 N.m)**.

WARNING
Ensure that the seals between the cooler and its two supports are correctly positioned to avoid any coolant leaks.

K9K, and 764 or 766 or 768 or 772

2 - Second fitting of the exhaust gas cooler recirculation assembly

❑ Position the cooler mounting bolts on its support, avoiding contact so that the cooler can move.

❑ Refit the exhaust gas recirculation assembly equipped with the old exhaust gas recirculation rigid pipe on the cylinder head.

❑ Tighten the mounting bolts of the exhaust gas recirculation assembly on the cylinder head until contact is made.

❑ Adjust the exhaust gas cooler in relation to its support.

❑ Tighten the bolts mounting the exhaust gas cooler on its support until contact is made, in order to immobilise it.

❑ Remove the exhaust gas recirculation assembly.

❑ Remove the old exhaust gas recirculation rigid pipe and dispose of it in a waste bin.

❑ On the workbench, torque tighten the **mounting bolts of the exhaust gas cooler on the support at the flywheel end (12 N.m)**.

WARNING
Ensure that the seal between the cooler and its support is correctly positioned to avoid any coolant leaks.

III - FINAL OPERATION

❑ Refit:

- the exhaust gas recirculation assembly (see) ,
- the exhaust gas recirculation rigid pipe (see **14A**, **Antipollution**, **Exhaust gas recirculation rigid pipe: Removal - Refitting**, page **14A-20**) .

K9K, and 764 or 766 or 768

❑ Refit the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

K9K, and 772

❑ Refit the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) .

❑ Torque tighten:

- the **coolant circulation cover mounting bolts (10 N.m)**,
- the **mounting bolts of the lifting bracket at the timing end (10 N.m)**.

WARNING
Make sure that the exhaust gas cooler coolant inlet and outlet hoses are correctly fitted so that they do not bend.

❑ Proceed in the reverse order to removal.

❑ Loosen the mounting nut of the air pipe at the intercooler inlet on the alternator.

❑ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❑ Snap the air duct to the turbocharger and to the air pipe at the intercooler inlet.

❑ Tighten the bolt of the air duct on the rocker cover.

❑ Torque tighten the **mounting nut of the pipe at the intercooler inlet on the alternator (8 N.m)**.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling circuit (see) .

❑ Clear any faults stored by the computer using the **Diagnostic tool**.

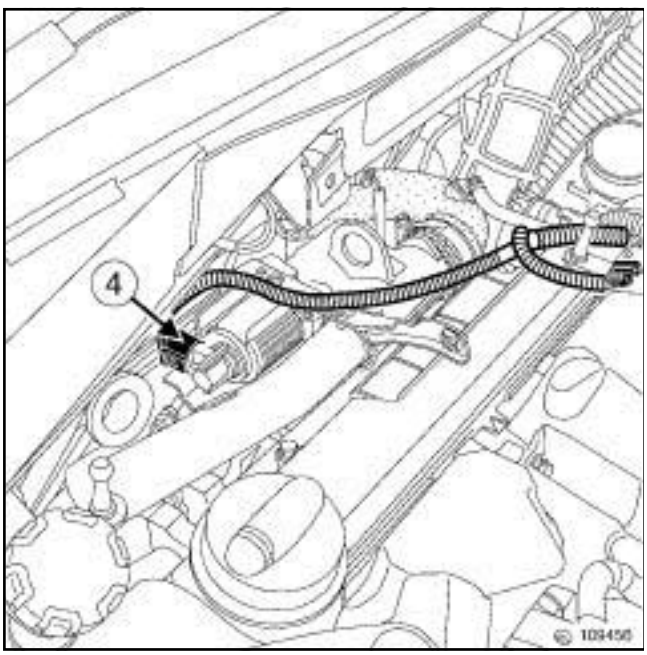
K9K, and 750 or 752

Tightening torques ▽	
exhaust gas recirculation unit mounting bolts	**21 N.m**
inlet air metal tube mounting bolts	**21 N.m**
lifting eye (timing end)	**21 N.m**
exhaust gas recirculation solenoid valve heat shield mounting bolts	**12 N.m**

REMOVAL

❏ Position the vehicle on a two-post lift.

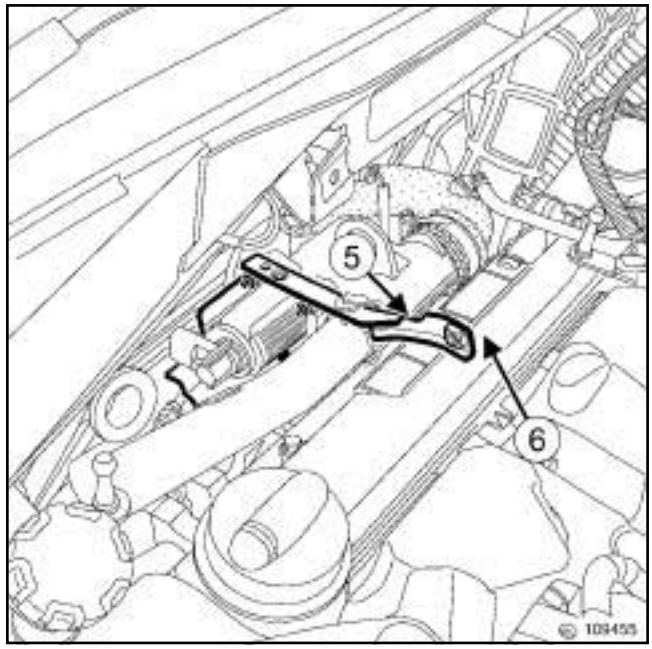
❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) .



109456

❏ Disconnect the exhaust gas recirculation solenoid valve electrical wiring harness (**4**) .

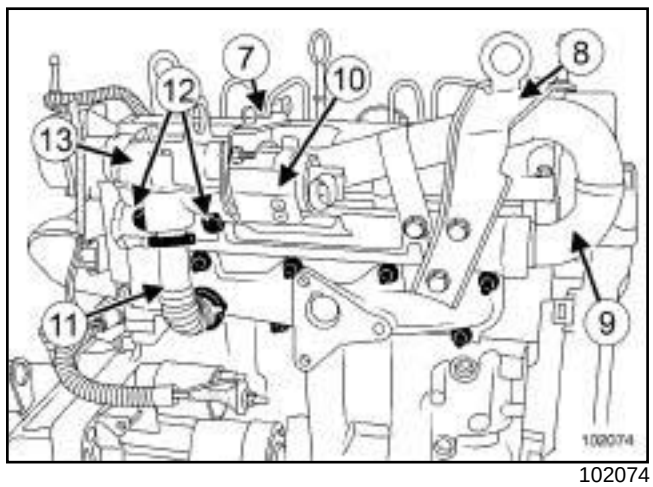
❏ Detach the electric wiring harness.



109455

❏ Disconnect:

- the rubber pipe (**5**) from the air duct turbocharging pressure control valve,
- the turbocharging air duct (**6**) from the exhaust gas recirculation unit.



102074

❏ Remove:

- the bracket (**7**) ,
- the engine lifting eye (**8**) ,
- the air inlet metal tube (**9**) ,
- the exhaust gas recirculation solenoid valve heat shield (**10**) ,
- the exhaust gas recirculation pipe (**11**) ,
- the EGR unit mounting bolts (**12**) ,
- the exhaust gas recirculation unit (**13**) .

K9K, and 750 or 752

REFITTING

❏ Replace the exhaust gas recirculation tube complete with new clips.

❏ Fit the new clips

❏ Tighten the new clips using tool (**Mot 1567**).

❏ Replace the O-rings on the metal air inlet tube.

❏ Torque tighten:

- the **exhaust gas recirculation unit mounting bolts (21 N.m)**,
- the **inlet air metal tube mounting bolts (21 N.m)**,
- the **lifting eye (timing end) (21 N.m)**,
- the **exhaust gas recirculation solenoid valve heat shield mounting bolts (12 N.m)**.

❏ Proceed in the reverse order to removal.

❏ Connect the battery, starting with the positive terminal.

WARNING

Carry out the necessary programming ((see **Battery: Removal - Refitting**)).

❏ Refit the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) .

K9K

Special tooling required	
Ms. 583	Pipe clamps.

Tightening torques ▽	
EGR unit assembly mounting bolts	**25 N.m**
exhaust gas inlet pipe bolts	**35 N.m**
mounting bolts of the lifting bracket on the timing end	**10 N.m**
coolant circulation cover mounting bolts	**10 N.m**
nut mounting the intercooler air inlet pipe on the alternator	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

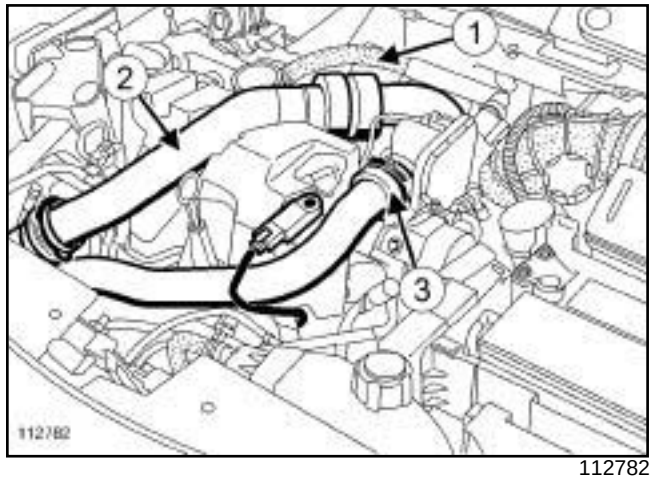
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the engine undertray.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

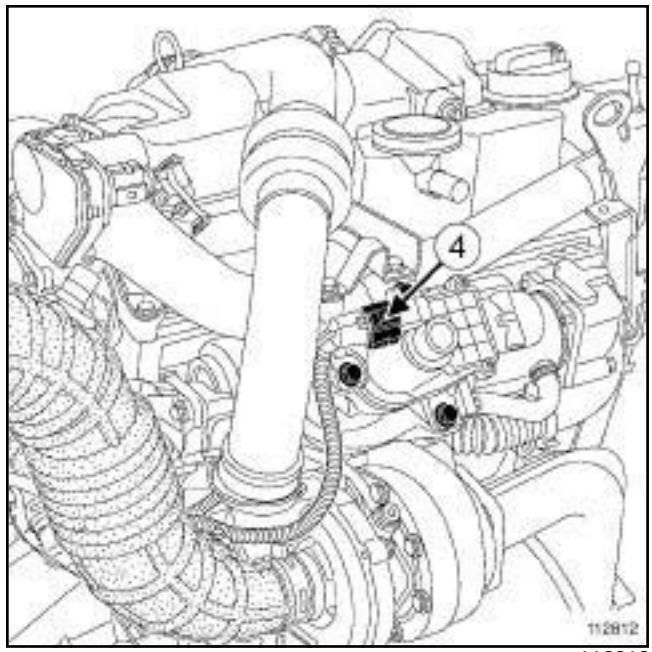
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the water chamber (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) (MR 392, 19A, Cooling).



112782

❏ Remove:

- the oil vapour rebreathing pipe (**1**) ,
- the air inlet duct (**2**) between the turbocharger and the intercooler,
- the air inlet duct clip (**3**) from the damper valve.

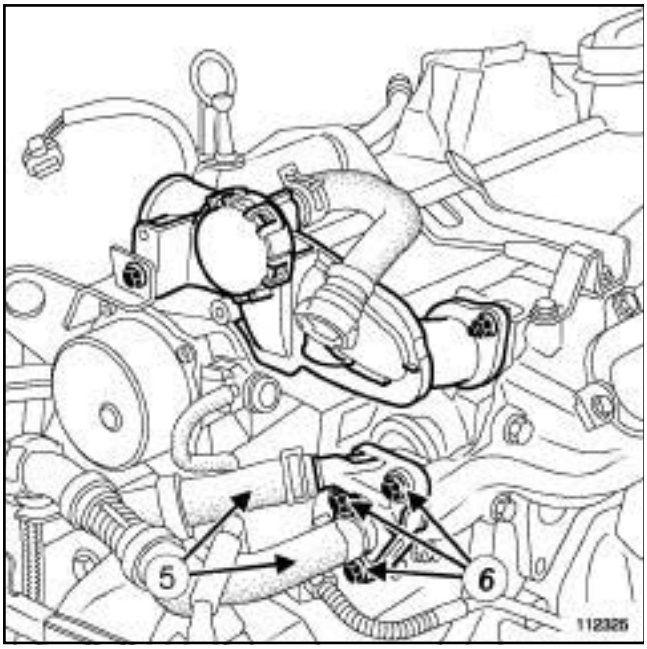


112812

❏ Disconnect the connector (**4**) from the exhaust gas recirculation solenoid valve.

❏ Remove the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (MR 392, 12A, Fuel mixture).

K9K



112325

❑ Position the tools **(Ms. 583)** or the hose clamps on the coolant inlet and outlet hoses (**5**) of the exhaust gas cooler.

❑ Remove:

- the coolant circulation cover mounting bolts (**6**) ,
- the coolant circulation cover,
- the seals of the coolant circulation cover.

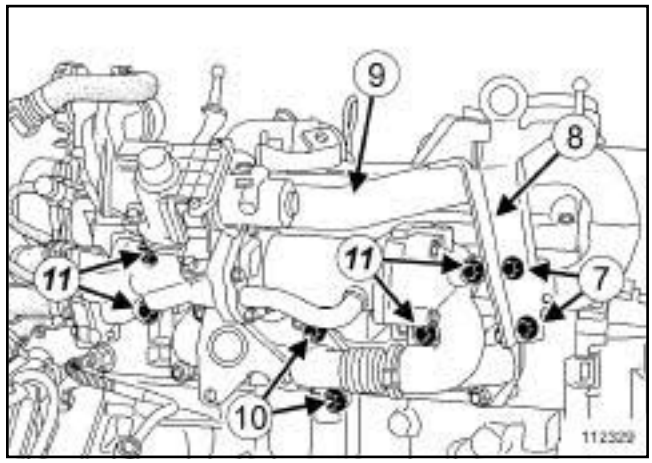
❑

Note:

Prepare for the outflow of coolant.

❑ Remove the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) (MR 392, 19B, Exhaust).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112329

❑ Remove:

- the lifting bracket mounting bolts (**7**) from the timing end,
- the lifting bracket (**8**) on the timing end,
- the air inlet metal tube (**9**) ,
- the mounting bolts (**10**) from the exhaust gas inlet pipe,
- the mounting bolts (**11**) from the exhaust gas recirculation unit assembly,
- the exhaust gas recirculation unit assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ All the supporting surfaces on each removed part must be carefully cleaned.

WARNING

Take care not to damage the bearing faces to prevent any risk of coolant leaks.

Always replace:

- the air inlet metal tube and its O-rings,
- the seals of the coolant circulation cover,
- the seal between the cut-off valve downstream duct and the exhaust gas cooler mounting,
- the seal between the catalytic converter and the turbocharger.

K9K

II - OPERATION FOR REFITTING PART CONCERNED

❏ Refit the exhaust gas recirculation unit assembly.

❏ Torque tighten the **EGR unit assembly mounting bolts (25 N.m)**.

III - FINAL OPERATION

❏ Refit the mounting bolts of the exhaust gas inlet pipe.

❏ Torque tighten the **exhaust gas inlet pipe bolts (35 N.m)**.

❏ Refit:

- the air inlet metal tube,
- the lifting bracket on the timing end.

❏ Torque tighten the **mounting bolts of the lifting bracket on the timing end (10 N.m)**.

❏ Refit:

- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) (MR 392, 19B, Exhaust),
- the coolant circulation cover.

❏ Torque tighten the **coolant circulation cover mounting bolts (10 N.m)**.

❏

WARNING

Ensure that the water inlet and outlet hoses of the exhaust gas cooler are correctly aligned so that they are not kinked.

❏ Refit the damper valve (see **12A**, **Fuel mixture**, **Damper valve: Removal - Refitting**, page **12A-31**) (MR 392, 12A, Fuel mixture).

❏ Connect the exhaust gas recirculation solenoid valve connector.

❏ Refit:

- the air inlet duct clip on the damper valve,
- the oil vapour rebreathing pipe,
- the water chamber (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) (MR 392, 19A, Cooling),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Loosen the mounting nut of the air pipe at the intercooler inlet.

❏ Fit the air duct between the turbocharger and the intercooler air inlet pipe.

❏ Lock the air duct onto the turbocharger and the intercooler inlet air pipe.

❏ Tighten the bolt of the air duct on the rocker cover.

❏ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 N.m)**.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

❏ Fill and bleed the cooling circuit (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Use the diagnostic tool to clear any faults which may be stored by the computer before restarting the engine.

K9K, and 764 or 766 or 768

To remove/refit the exhaust gas recirculation mountings (see **14A**, **Antipollution**, **Exhaust gas cooler: Removal - Refitting**, page **14A-7**) .

K9K, and 750 or 752

Special tooling required	
Mot. 1567	Remote pliers for exhaust gas recirculation pipe clamps.

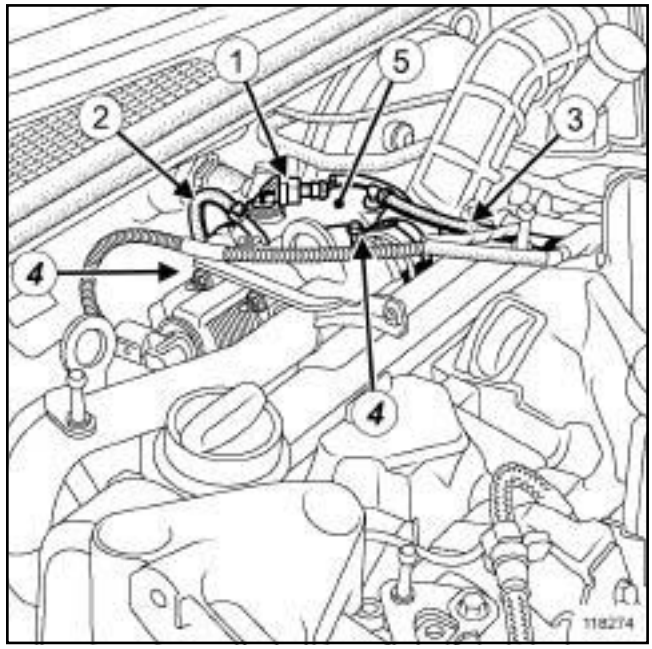
Tightening torques ▽	
bolts for the EGR mounting	**21 Nm**
air inlet metal tube bolt	**21 Nm**
engine lifting eye bolts	**21 Nm**
turbocharger outlet air pipe clips	**5.5 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the EGR solenoid valve (see **14A**, **Antipollution**, **Exhaust gas recirculation solenoid valve: Removal - Refitting**, page **14A-3**) .



118274

❏ Disconnect:

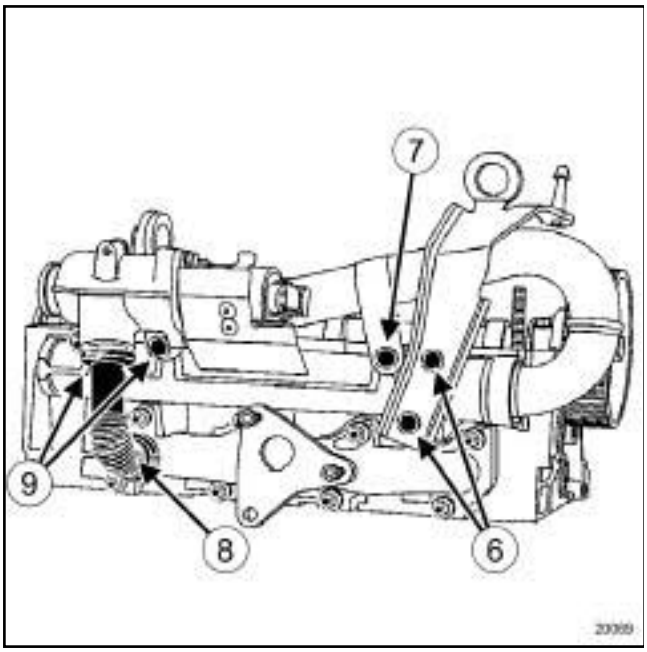
- the air temperature sensor connector (**1**) ,
- the vacuum pipe (**2**) between the turbocharger regulation valve and the turbocharger outlet air pipe,
- the vacuum pipe (**3**) between the air pressure sensor and the turbocharger outlet air pipe.

❏ Loosen the turbocharger outlet air pipe clips (**4**) .

❏ Remove the turbocharger outlet air pipe (**5**) .

K9K, and 750 or 752

II - OPERATION FOR REMOVAL OF PART CONCERNED



20069

❑ Remove:

- the bolts (**6**) from the engine lifting eye,
- the engine lifting eye,
- the bolt (**7**) from the air inlet metal tube,
- the air inlet metal tube,
- the clips of the exhaust gas recirculation pipe using the **(Mot. 1567)**,
- the exhaust gas recirculation rigid pipe (**8**) ,
- the bolts (**9**) from the EGR mounting,
- the EGR mounting.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the EGR mounting,
- the bolts to the EGR mounting.

❑ Torque tighten the **bolts for the EGR mounting (21 Nm)**.

❑ Refit:

- the exhaust gas recirculation rigid pipe,
- the clips of the exhaust gas recirculation pipe using the **(Mot. 1567)**,
- the air inlet metal tube,
- the air inlet metal tube bolt,
- the engine lifting eye,
- the engine lifting eye bolts,

❑ Torque tighten:

- the **air inlet metal tube bolt (21 Nm)**,
- the **engine lifting eye bolts (21 Nm)**.

II - FINAL OPERATION.

❑ Refit the turbocharger outlet air pipe.

❑ Torque tighten the **turbocharger outlet air pipe clips (5.5 Nm)**.

❑ Connect:

- the vacuum pipe between the air pressure sensor and the turbocharger outlet air pipe,
- the vacuum pipe between the turbocharger regulation valve and the turbocharger outlet air pipe,
- the air temperature sensor connector .

❑ Refit the EGR solenoid valve (see **14A**, **Antipollution**, **Exhaust gas recirculation solenoid valve: Removal - Refitting**, page **14A-3**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 766 or 768 or 772

Special tooling required	
Mot. 1567	Remote pliers for exhaust gas recirculation pipe clamps.

Tightening torques ▽	
rigid pipe bolts on the exhaust manifold	**36 N.m**
bolt of the clip on the rigid pipe	**5 N.m**
rigid pipe bolts on the exhaust manifold	**36 N.m**
bolts of the rigid pipe on the cylinder head	**25 N.m**
bolts of the rigid pipe on the exhaust gas cooler	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the engine style cover.

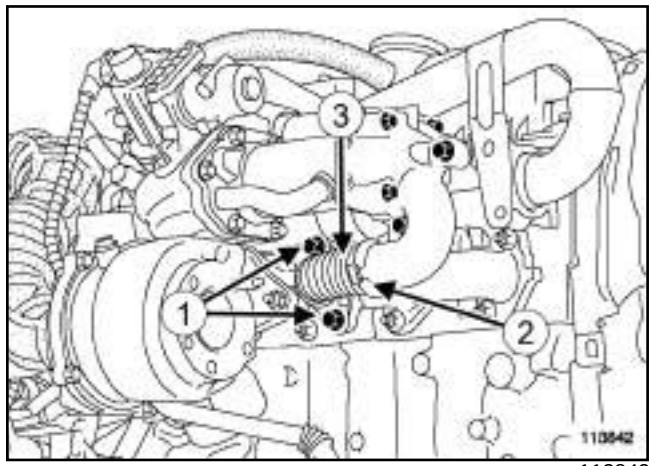
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) (K9K/760,762,764,766,768),
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) (K9K772).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - First fitting of the exhaust gas cooler recirculation assembly

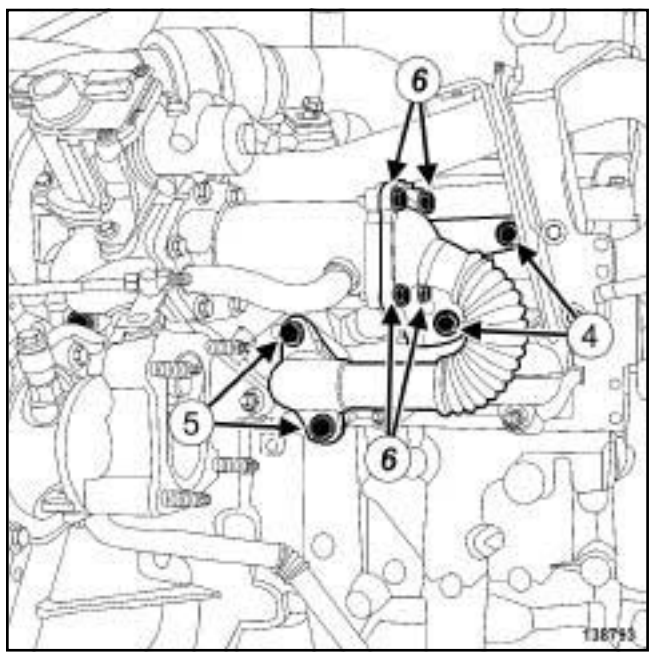


113842

❏ Remove:

- the mounting bolts (**1**) from the rigid exhaust gas recirculation pipe,
- the snap-fit clamp (**2**) using the **(Mot. 1567)**,
- the rigid exhaust gas recirculation pipe (**3**) .

2 - Second fitting of the exhaust gas cooler recirculation assembly



138793

❏ Remove:

- the bolts (**4**) of the rigid pipe bracket from the cylinder head,

K9K, and 764 or 766 or 768 or 772

- the bolts (**5**) of the rigid pipe on the exhaust manifold then discard them in the waste bin,

- the bolts (**6**) of the rigid pipe on the exhaust gas cooler,

- the rigid pipe and its seal then discard them in the waste bin.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ All the bearing faces must be carefully cleaned.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new rigid exhaust gas recirculation pipe with a new seal,

- the new exhaust gas recirculation pipe mounting bolts.

1 - First fitting of the exhaust gas cooler recirculation assembly

❑ **parts always to be replaced: Exhaust gas recirculation rigid pipeparts always to be replaced: exhaust gas recirculation pipe boltparts always to be replaced: Exhaust gas recirculation pipe clip**

❑ Refit the new rigid pipe, equipped with new bolts on the manifold, a new seal on the manifold and a new clip.

> Note:
>
> The Parts Department only supplies clips for the rigid pipe with a tangential bolt.

❑ Adjust the rigid pipe in its location by screwing, without tightening, the bolts on the manifold and centring the rigid pipe on the EGR support at the timing end.

❑ Torque tighten:

- the **rigid pipe bolts on the exhaust manifold (36 N.m)**,

- the **bolt of the clip on the rigid pipe (5 N.m)**.

2 - Second fitting of the exhaust gas cooler recirculation assembly

❑ **parts always to be replaced: Exhaust gas recirculation rigid pipeparts always to be replaced: exhaust gas recirculation pipe boltparts always to be replaced: Exhaust gas recirculation pipe seal**

❑ Fit the new rigid pipe equipped with a new seal and new bolts on the manifold.

❑ Fit without tightening:

- the bolts of the rigid pipe on the exhaust gas recirculation cooler,

- the bolts of the rigid pipe on the manifold,

- the bolts of the rigid pipe on the cylinder head.

❑ Torque tighten:

- the **rigid pipe bolts on the exhaust manifold (36 N.m)**,

- the **bolts of the rigid pipe on the cylinder head (25 N.m)**,

- the **bolts of the rigid pipe on the exhaust gas cooler (12 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-23**) (K9K/772),

- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) (K9K/760,762,764,766,768),

- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,

- the engine undertray,

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Refit the engine style cover.

K9K, and 750 or 752

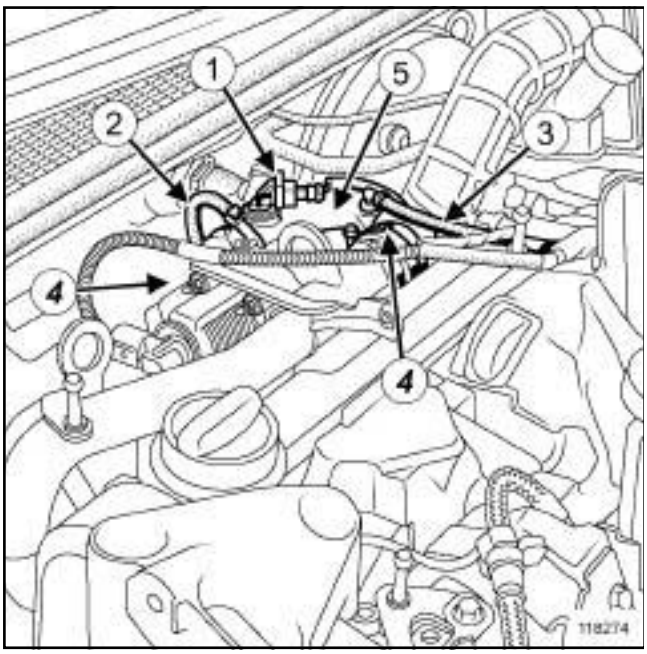
Special tooling required	
Mot. 1567	Remote pliers for exhaust gas recirculation pipe clamps.

Tightening torques ▽	
turbocharger outlet air pipe clips	**5.5 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



118274

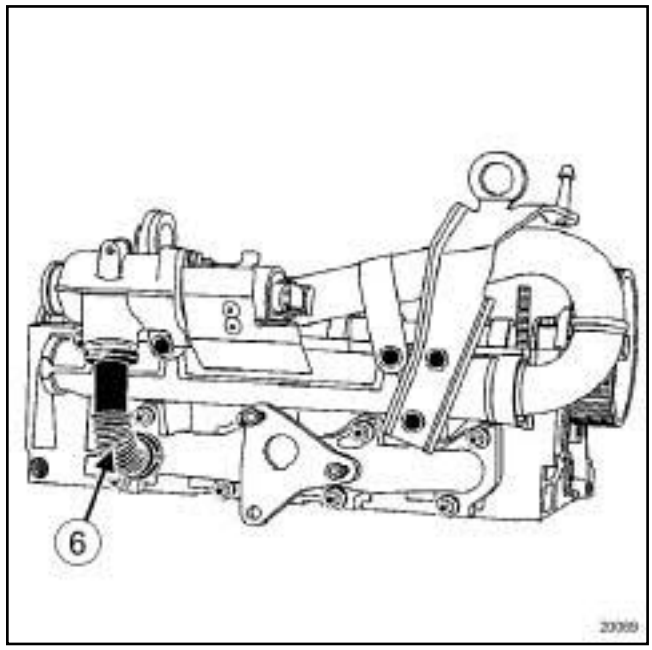
❏ Disconnect:

- the air temperature sensor connector (**1**) ,
- the vacuum pipe (**2**) between the turbocharger regulation valve and the turbocharger outlet air pipe,
- the vacuum pipe (**3**) between the air pressure sensor and the turbocharger outlet air pipe.

❏ Loosen the turbocharger outlet air pipe clips (**4**) .

❏ Remove the turbocharger outlet air pipe (**5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



20069

❏ Remove:

- the clips of the exhaust gas recirculation pipe using the **(Mot. 1567)**,
- the exhaust gas recirculation rigid pipe (**6**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the exhaust gas recirculation rigid pipe,
- the clips to the exhaust gas recirculation pipe using the **(Mot. 1567)**.

II - FINAL OPERATION

❏ Refit the turbocharger outlet air pipe.

❏ Torque tighten the **turbocharger outlet air pipe clips (5.5 N.m)**.

❏ Connect:

- the vacuum pipe between the air pressure sensor and the turbocharger outlet air pipe,
- the vacuum pipe between the turbocharger regulation valve and the turbocharger outlet air pipe,
- the air temperature sensor connector,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

WARNING

The breather must not be blocked during normal engine operation.

The tank is vented through the fuel vapour absorber.

Fuel vapour is trapped by the active carbon contained in the absorber as it passes through.

Fuel vapour trapped in the absorber is eliminated and burnt by the engine.

To do this, the solenoid valve is used to connect the fuel vapour absorber and the inlet manifold. This solenoid valve is located on the right-hand shock absorber turret or on the inlet manifold (M4R engine).

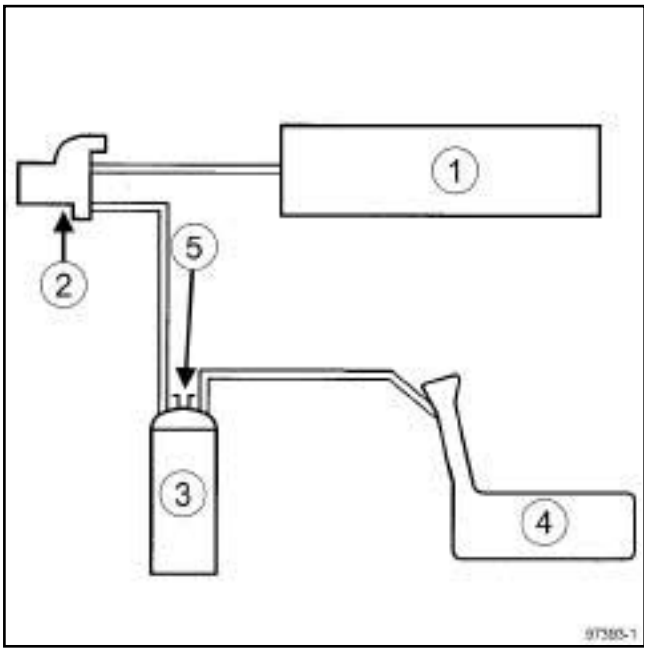
The principle behind the solenoid valve is to open a passage of variable size (according to the opening cyclic ratio signal sent by the injection computer).

The variation in the passage opened for fuel vapour in the solenoid valve results from the balance between the magnetic field created by the supply to the winding and the return spring force attempting to close the solenoid valve.

D4F or F4R or K4J or K4M or M4R

OPERATING DIAGRAM OF THE CIRCUIT

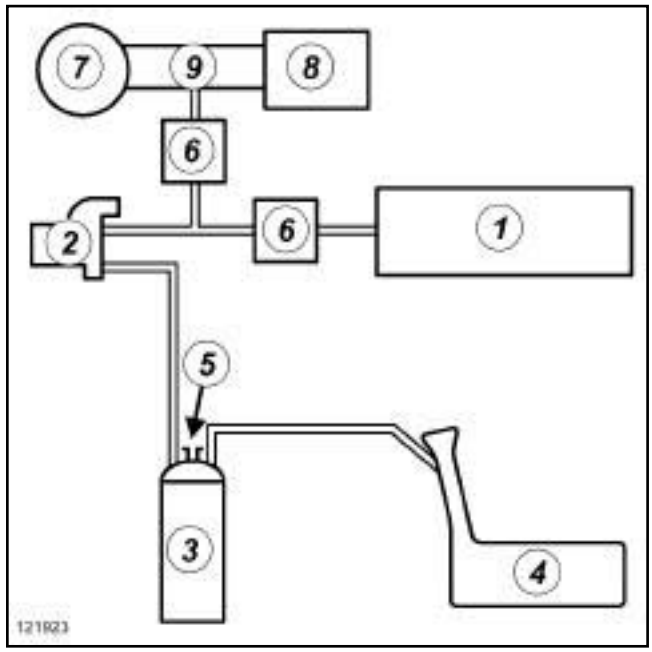
F4R or K4J or K4M or M4R – D4F, and 740 or 742 or 764



97393-1

(**1**) Inlet distributor
(**2**) Fuel vapour absorber bleed solenoid valve
(**3**) Petrol vapour absorber
(**4**) Tank
(**5**) Fresh air vent

D4F, and 784 or 786



121923

(**1**) Inlet distributor
(**2**) Fuel vapour absorber bleed solenoid valve
(**3**) Fuel vapour absorber
(**4**) Tank
(**5**) Fresh air vent
(**6**) Anti-return valve
(**7**) Turbocharger
(**8**) Air filter unit
(**9**) Air filter box air outlet pipe

F4R or K4J or K4M or M4R – D4F

Equipment required
Diagnostic tool

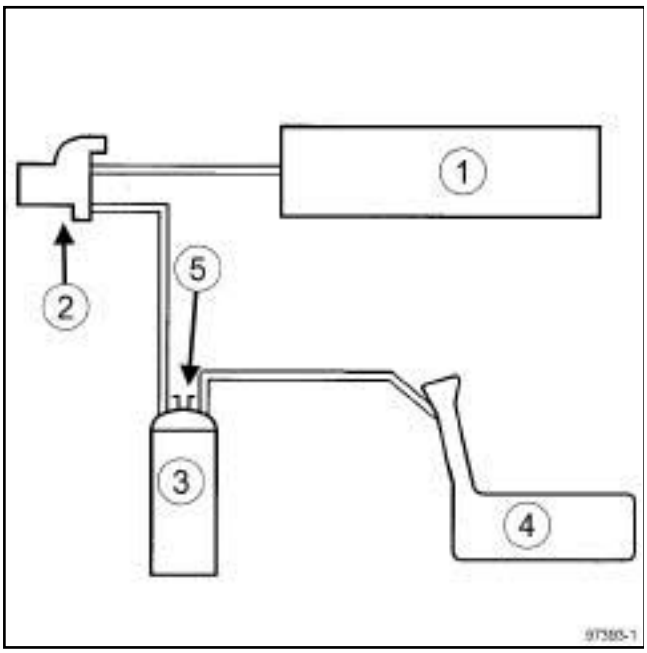
I - CHECKING THE OPERATION OF THE FUEL VAPOUR ABSORBER BLEED

❑

Note:

A fault with this system may result in rough idling or the engine stalling.

F4R or K4J or K4M or M4R – D4F, and 740 or 742 or 764

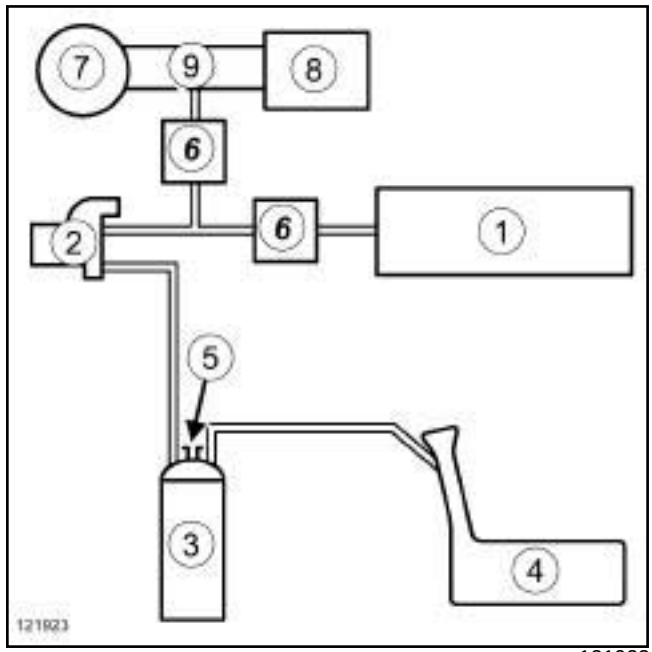


97393-1

(**1**) Inlet distributor
(**2**) Fuel vapour absorber bleed solenoid valve
(**3**) Petrol vapour absorber
(**4**) Tank
(**5**) Fresh air vent

❑ Check the condition of the pipes to the tank.

D4F, and 784 or 786



121923

(**1**) Inlet distributor
(**2**) Fuel vapour absorber bleed solenoid valve
(**3**) Petrol vapour absorber
(**4**) Tank
(**5**) Fresh air vent
(**6**) Anti-return valve
(**7**) Turbocharger
(**8**) Air filter unit
(**9**) Air filter box air outlet pipe

❑ Check the condition of the pipes to the tank.

II - FUEL VAPOUR ABSORBER BLEED CONDITIONS

❑ The fuel vapour absorber bleed solenoid valve is controlled by the petrol injection computer.

During « on board diagnostic » fault finding, fuel vapour absorber bleeding is not authorised.

The opening cyclic ratio of the fuel vapour absorber bleed solenoid valve can be viewed on the **Diagnostic tool** by reading parameter « fuel vapour absorber bleed solenoid valve OCR » .

The solenoid valve is closed for a value below **1.2%**.

D4F or F4R or K4J or K4M or M4R

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

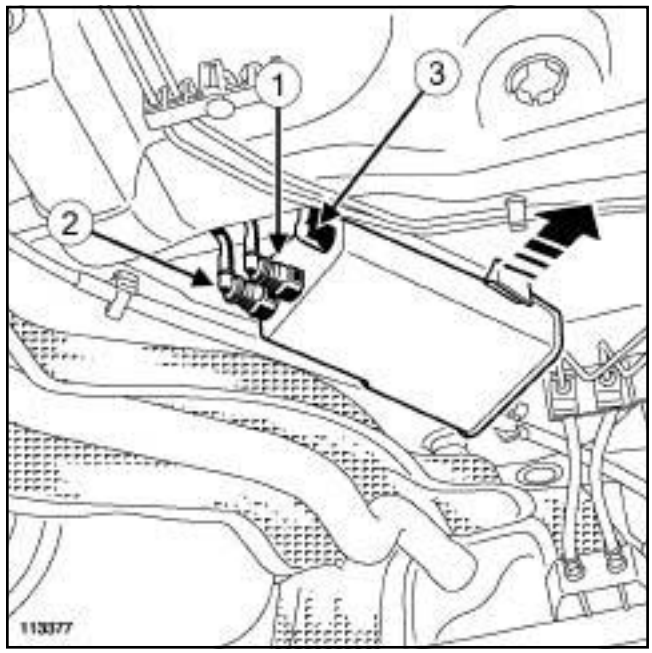
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113377

❏ Remove the absorber from the fuel tank retaining notch by pushing it in the direction of the arrow.

❏ Disconnect:

- the tank vapour inlet pipe (**1**) ,
- the pipe (**2**) circulating vapours to the solenoid valve,
- the breather pipe (**3**) .

❏ Remove the fuel vapour absorber.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the fuel vapour absorber.

❏ Connect:

- the breather pipe,
- the pipe taking the fuel vapours to the solenoid valve,
- the pipe bringing the fuel vapour from the tank.

❏ Refit the absorber in the fuel tank retaining notch.

II - FINAL OPERATION.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Fuel vapour absorber: Check

D4F or F4R or K4J or K4M or M4R

Equipment required
Diagnostic tool

I - CHECKING THE FUEL VAPOUR ABSORBER

❏ On the fuel vapour absorber, plug the circuit coming from the fuel tank.

❏ Connect a pressure gauge on the **Mot. 1311-01** to the absorber breather outlet.

❏ With the engine at idle speed, check that no vacuum is present at the absorber breather outlet. In the same way, the control value read by the **Diagnostic tool** in parameter « fuel vapour absorber bleed solenoid valve OCR » remains at least **X less than or equal to 1.5 %**.

Is there a vacuum?

❏ **YES:** with the ignition off, use a vacuum pump to apply a vacuum of **500 mbar** to the solenoid valve outlet. The vacuum pressure should not vary by more than **10 mbar** over **30 seconds**.

Does the pressure vary?

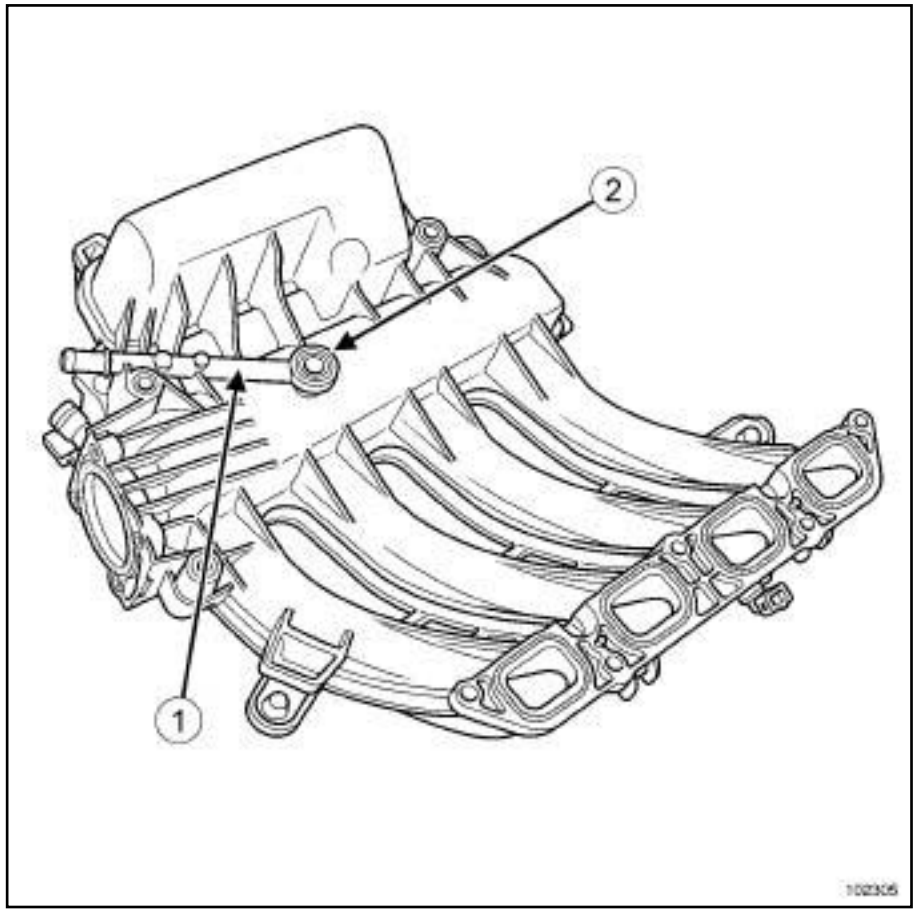
- Yes: the solenoid valve is faulty, replace it.
- No: there is an electrical fault, check the circuit.

❏ **NO:** in bleeding condition (see **14A**, **Antipollution**, **Fuel vapour recirculation circuit: Check**, page **14A-25**) , the vacuum must be increased. In the same time, the value of the parameter on the **Diagnostic tool** increases.

II - CHECKING THE FUEL VAPOUR ABSORBER TANK CONNECTION

❏ Check this connection by connecting a vacuum pump to the pipe going to the absorber.

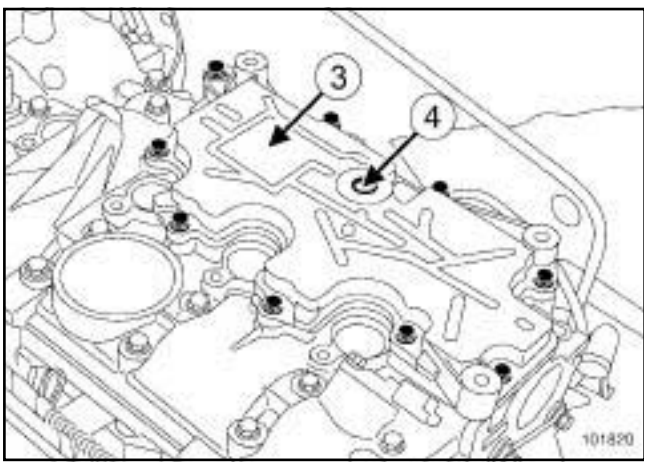
K4J or K4M, and 780 or 800 or 801



102305

(**1**) Oil vapour rebreathing duct

(**2**) Calibrated port



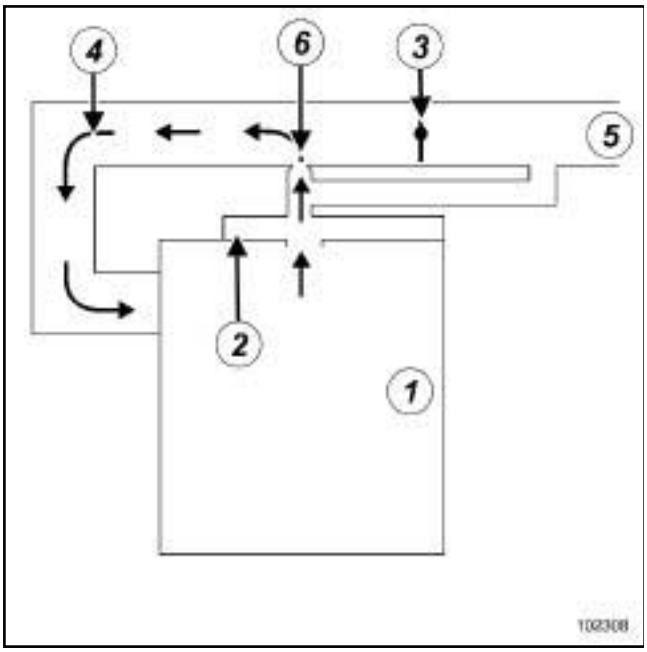
101820

(**3**) Oil vapour recovery plate located on the rocker cover

(**4**) Oil vapour rebreathing hole

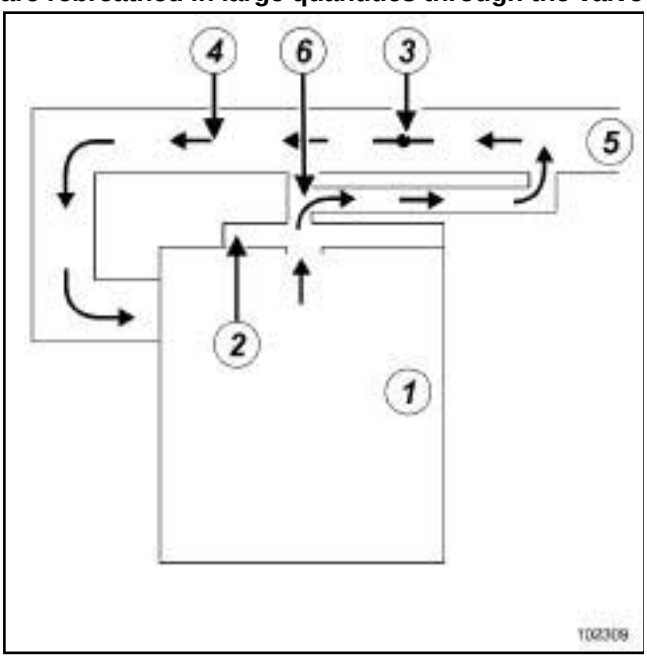
K4J, and 780 – K4M, and 800 or 801

A: under low loads, the oil vapours are rebreathed in small quantities through the calibrated orifice (6).



102308

B: under medium and heavy loads, the oil vapours are rebreathed in large quantities through the valve



102309

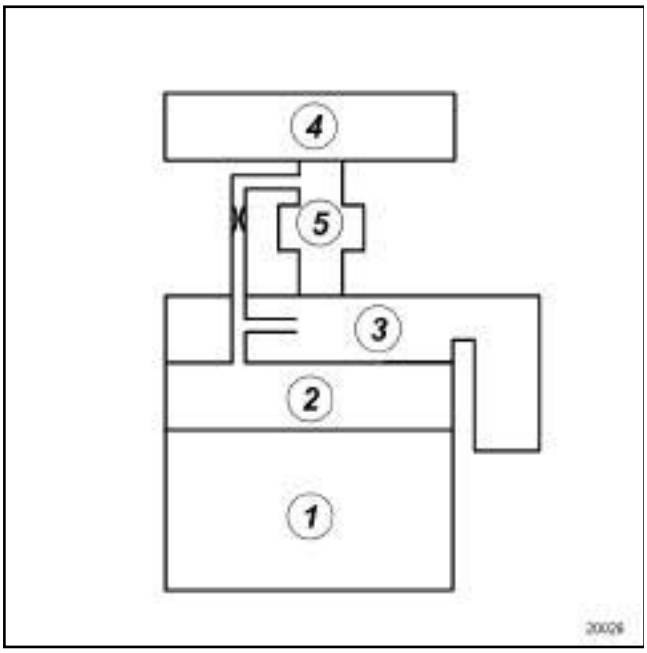
(**1**)	Engine
(**2**)	Oil vapour recovery plate
(**3**)	Motorised throttle valve
(**4**)	Inlet manifold
(**5**)	Air inlet
(**6**)	Calibrated choke

Oil vapour rebreathing circuit: Operating diagram

D4F

The oil decanter is located in the rocker cover.

These two components are manufactured together.

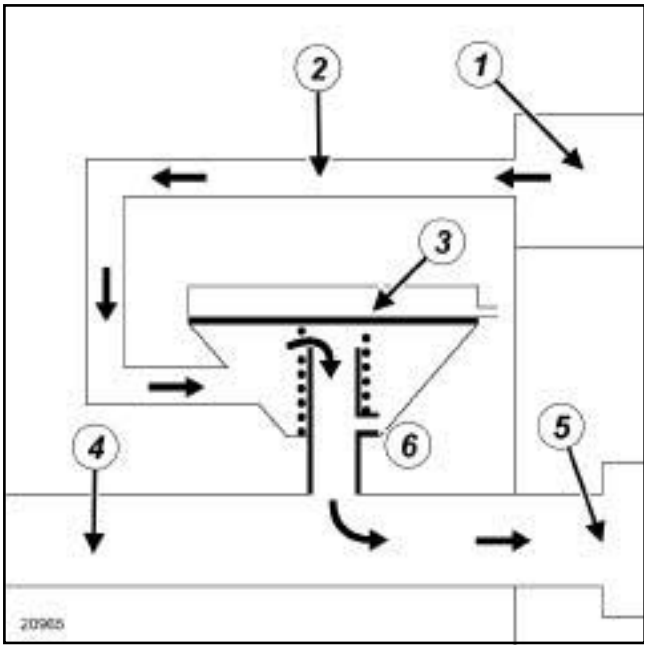


20026

(**1**) Engine
(**2**) Rocker cover
(**3**) Inlet manifold
(**4**) Air filter unit
(**5**) Motorised throttle valve

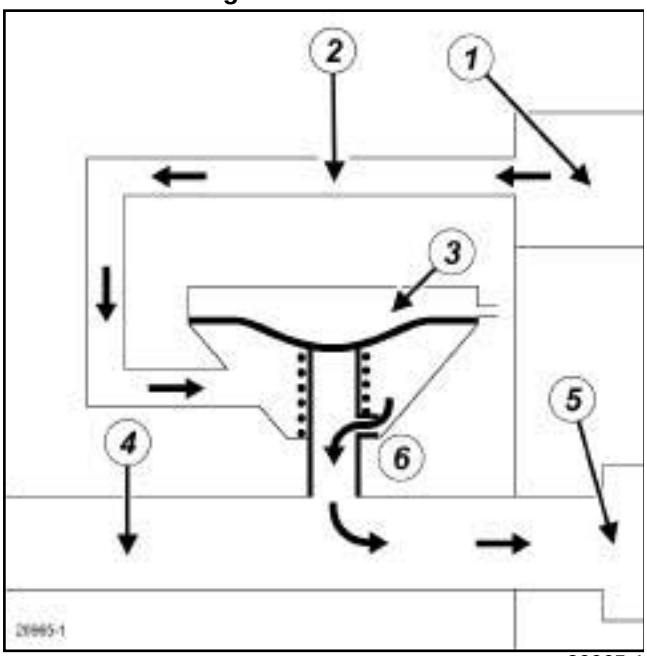
K9K, and 750 or 752 or 764 or 766 or 768

A: Low load



20965

B: Medium and high loads



20965-1

(**1**) Rocker cover
(**2**) Oil vapour rebreathing duct
(**3**) Oil vapour rebreathing valve
(**4**) Air inlet duct
(**5**) Turbocharger
(**6**) Atmospheric pressure

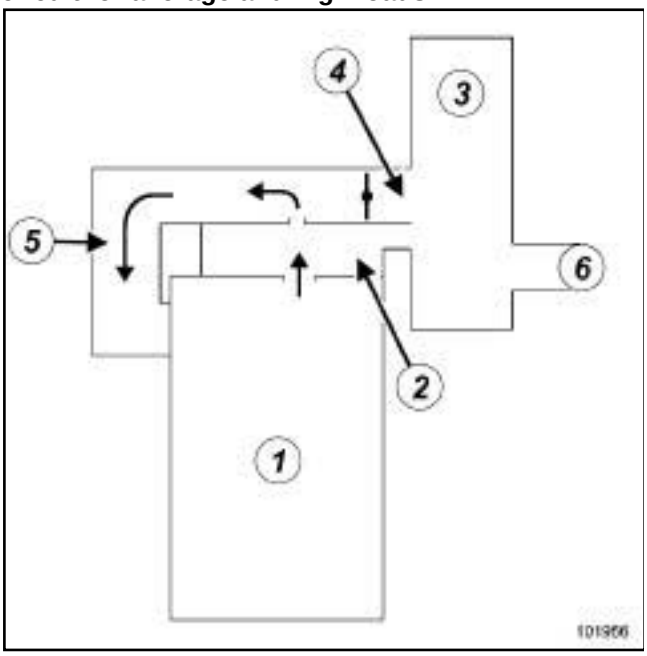
A: At low load, the vacuum pressure prevailing in the air inlet duct is below the spring calibration. Large quantities of oil vapour are sucked back in by the vacuum prevailing in the air inlet duct.

B: At medium or high load, the vacuum pressure prevailing in the air inlet duct pulls the valve diaphragm, small quantities of oil vapour are rebreathed in via a calibrated jet.

Oil vapour rebreathing circuit: Operating diagram

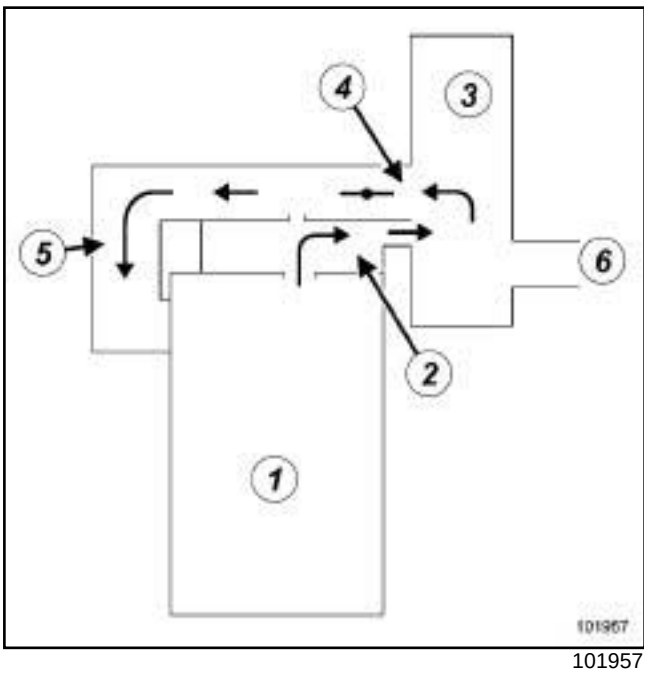
F4R, and 830

Operating diagram of the oil vapour rebreathing circuit for average and high loads



101956

Operating diagram of the oil vapour rebreathing circuit for low loads



101957

(**1**)	Engine
(**2**)	Oil separator
(**3**)	Air filter unit
(**4**)	Throttle valve
(**5**)	Inlet manifold
(**6**)	Air inlet

D4F or F4R or K4J or K4M or K9K or M4R

ALTERNATOR SPECIFICATIONS

Engine	Alternator	Current strength
D4F	8200429898	90 A
	8200429905	120 A
K4J	8200323137	120 A
	8200459711	120 A
K4M	8200323137	120 A
	8200459711	120 A
M4R	7701065385	120 A
F4R	8200429905	120 A
K9K	8200390675	120 A
	8200390676	150 A

D4F or F4R or K4J or K4M or K9K or M4R

OPERATION

These vehicles are fitted with a built-in regulator and an instrument panel warning light which operates as follows:

- when the ignition is switched on, the warning light comes on,
- the warning light goes out when the vehicle is started,
- if the warning light comes on while the engine is running, it indicates a battery charge fault.

D4F or F4R or K4J or K4M or K9K or M4R

Check the current after 30 minutes of heating at a voltage of 13.5 V.

Alternator speed (rpm) D4F	Alternator		
	BOSCH KCB1 0124325139	**VALEO TG11C056**	**BOSCH 0124325186**
1500	30A	40A	33A
2500	70A	95A	70A
4000	85A	102A	85A
6000	90A	112A	89A
8500	91A	115A	90A

Alternator speed (rpm) D4F	Alternator
	VALEO TG11C068
1800	52A
2000	64A
3000	92A
4000	102A
6000	112A
8000	115A

Alternator speed (rpm) K9K, K4M, K4J	Alternator	
	BOSCH LIE6 0124425037	**BOSCH LIE8 0124525081**
1500	40A	45A
2500	95A	115A
4000	113A	140A
6000	120A	150A
8500	123A	153A

D4F or F4R or K4J or K4M or K9K or M4R

Alternator speed (rpm) F4R	Alternator
	BOSCH LIE6 0124425055
1500	40A
2500	95A
4000	113A
6000	120A
8500	123A

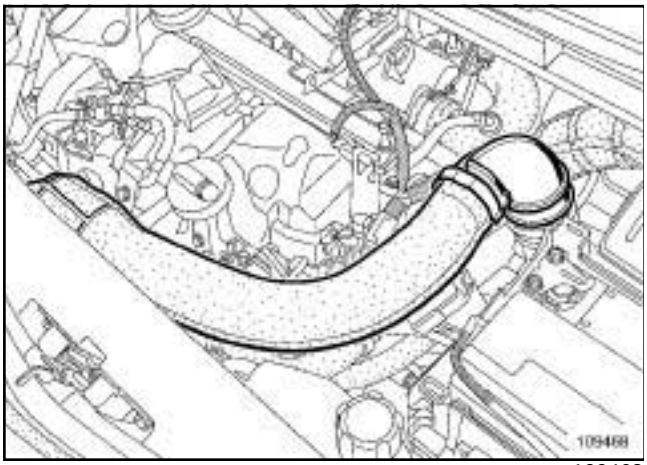
Alternator speed (rpm) M4R	Alternator
	BOSCH LIE6 0124425038
1500	40A
2500	95A
4000	113A
6000	120A
8500	123A

Tightening torques ▽		
alternator bolts	mounting	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .



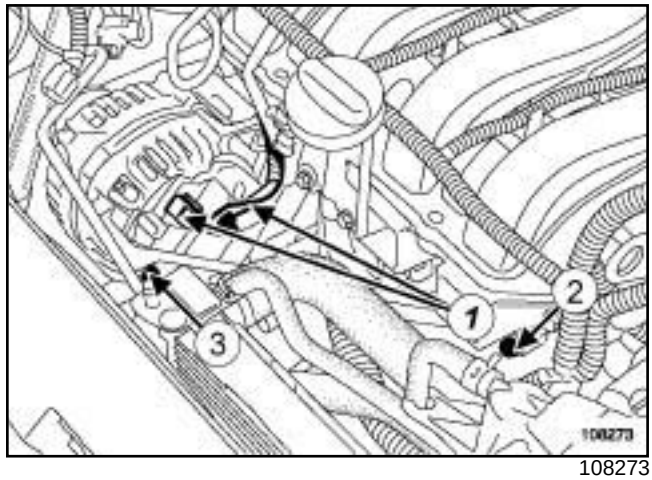
109468

❏ Remove the air inlet duct.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front left-hand wheel arch liner partially (see **Front wheel arch liner: Removal - Refitting**) ,
- the bumper (see **Front bumper: Removal - Refitting**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



108273

❏ Disconnect the electrical connections from the alternator (**1**) .

❏ Undo the strut mounting bolt on the cylinder block (**2**) .

❏ Remove the strut mounting bolt on the alternator (**3**) .

❏ Separate the mounting strut from the alternator.

❏ Remove the front right-hand air deflector.

II - REMOVAL OF PART CONCERNED

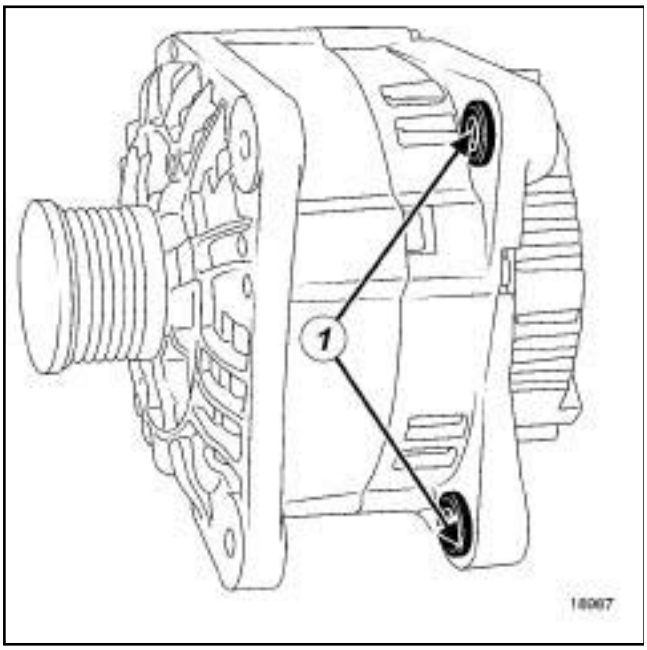
❏ Remove the upper mounting bolt from the alternator.

❏ Undo the lower alternator mounting bolt.

❏ Remove the alternator with its lower mounting bolt through the front of the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❑ Push in the rings (**1**) to make fitting easier.

II - REFITTING PART CONCERNED

❑ Refit the alternator.

❑ Torque tighten the **alternator mounting bolts (21 N.m)**.

III - FINAL OPERATION.

❑ Reconnect the alternator electrical connections.

❑ Refit:

- Refit the front right-hand air deflector,
- the new accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the bumper (see **Front bumper: Removal - Refitting**) ,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) .

❑ Reconnect the battery (see **Battery: Removal - Refitting**) .

❑ Refit the air inlet duct.

D4F, and 740 or 742 or 764, and STANDARD HEATING

Tightening torques ▽		
alternator bolts	mounting	**25 N.m**

REMOVAL

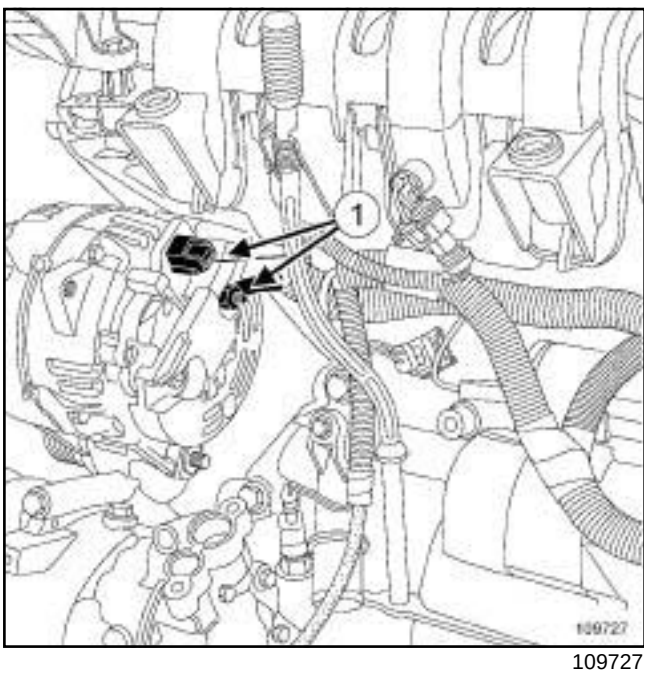
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand deflector,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



109727

❑ Disconnect the alternator's electrical connections (**1**) .

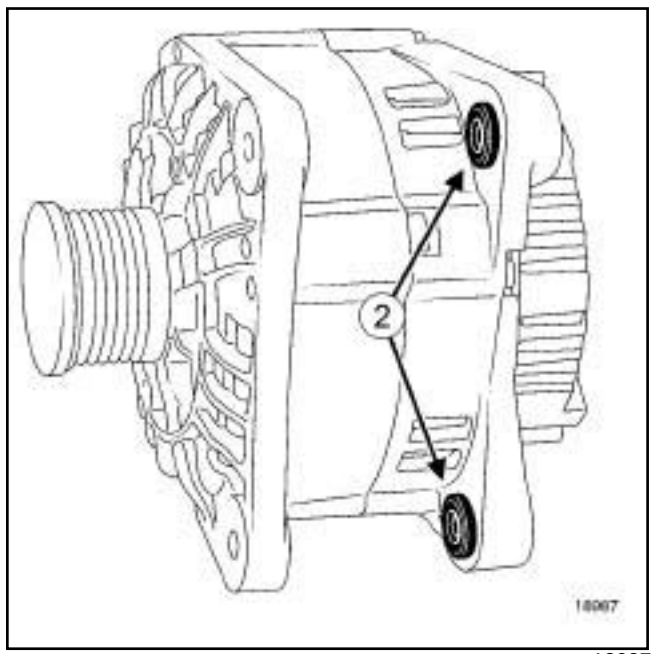
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the alternator mounting bolts,
- the alternator.

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❑ Press in the rings (**2**) using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the alternator.

❑ Torque tighten the **alternator mounting bolts (25 N.m)**.

III - FINAL OPERATION.

❑ Connect the alternator electrical connections.

❑ Refit:

- the front right-hand deflector,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,

D4F, and 740 or 742 or 764, and STANDARD HEATING

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 740 or 742 or 764, and AIR CONDITIONING

Tightening torques ▽		
alternator bolts	mounting	**25 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

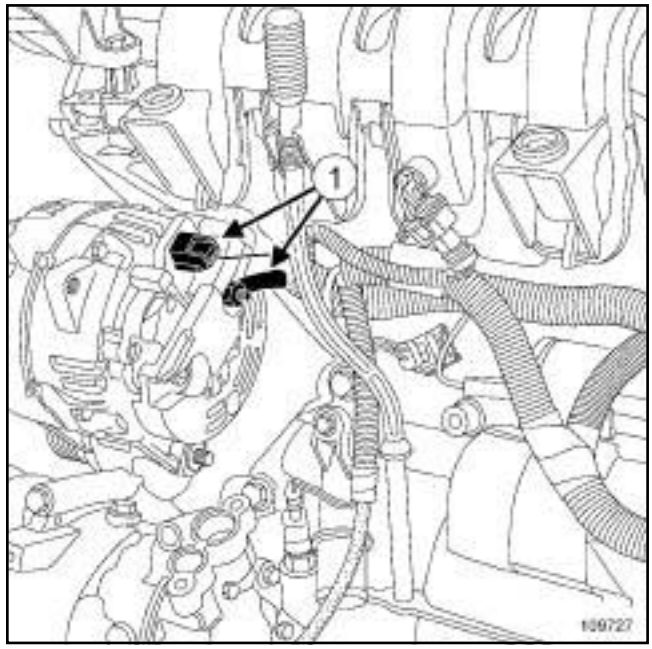
❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand deflector,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the air conditioning compressor mounting bolts.

❏ Fit the air conditioning compressor on the radiator front cross member.

Note:

Do not drain the air conditioning circuit.



109727

❏ Disconnect the alternator's electrical connections (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

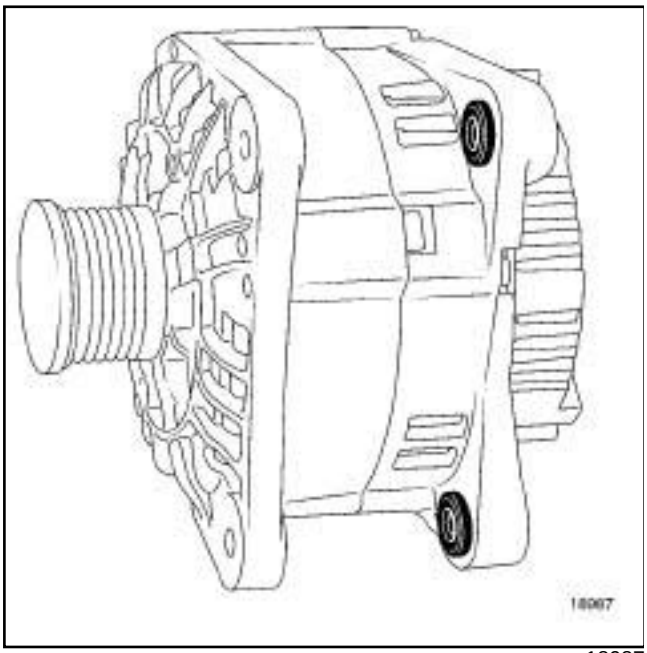
❏ Remove:

- the alternator mounting bolts,
- the alternator.

D4F, and 740 or 742 or 764, and AIR CONDITIONING

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❑ Press in the rings using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the alternator.

❑ Torque tighten the **alternator mounting bolts (25 N.m)**.

III - FINAL OPERATION.

❑ Connect the alternator electrical connections.

❑ Refit:

- the air conditioning compressor (see **Compressor: Removal - Refitting**) (MR 392, 62A, Air conditioning),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand deflector,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

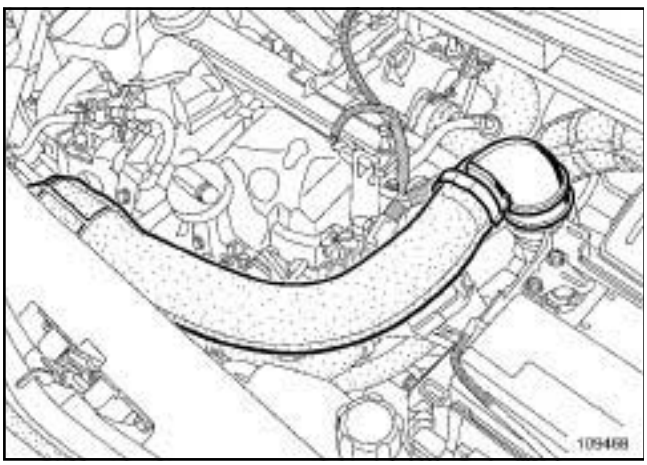
K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques ▽	
alternator mounting bolts	**21 N.m**
air conditioning compressor mounting bolts	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**)).



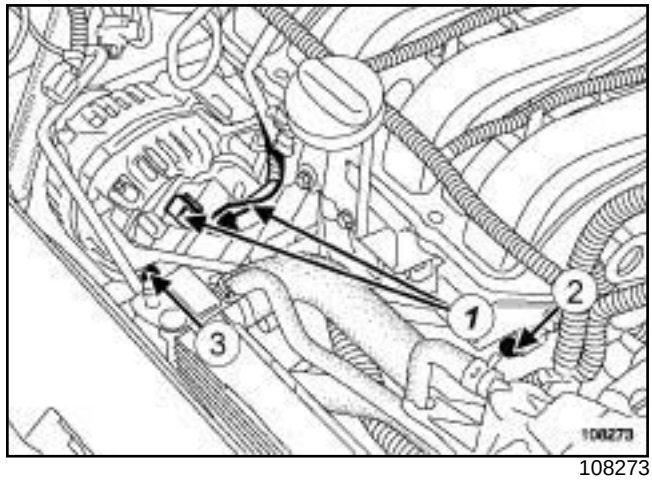
109468

❏ Remove the air inlet duct.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front left-hand wheel arch liner partially (see **Front wheel arch liner: Removal - Refitting**) ,
- the bumper (see **Front bumper: Removal - Refitting**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



108273

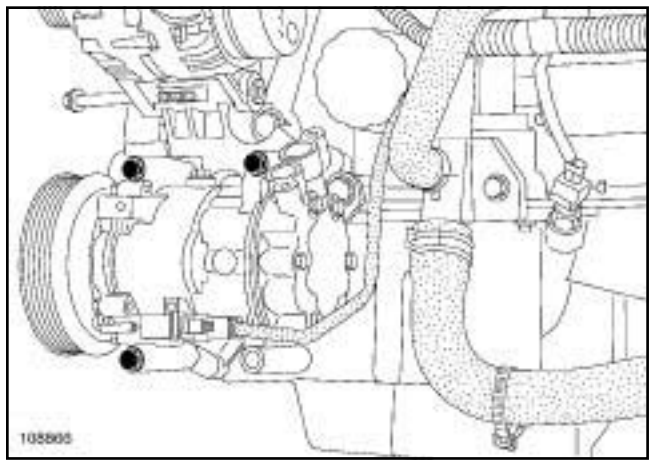
❏ Disconnect the electrical connections from the alternator (**1**) .

❏ Undo the strut mounting bolt on the cylinder block (**2**) .

❏ Remove the strut mounting bolt on the alternator (**3**) .

❏ Separate the mounting strut from the alternator.

❏ Remove the front right-hand air deflector.



108866

❏ Remove the air conditioning compressor mounting bolts.

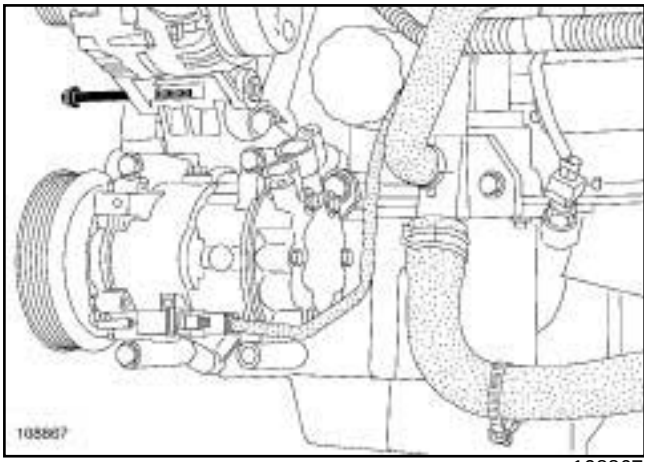
❏ Fit the air conditioning compressor on the front radiator cross member.

> Note:
>
> This operation does not require the air conditioning system to be drained.

II - REMOVAL OF PART CONCERNED

❏ Remove the upper mounting bolt from the alternator.

K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

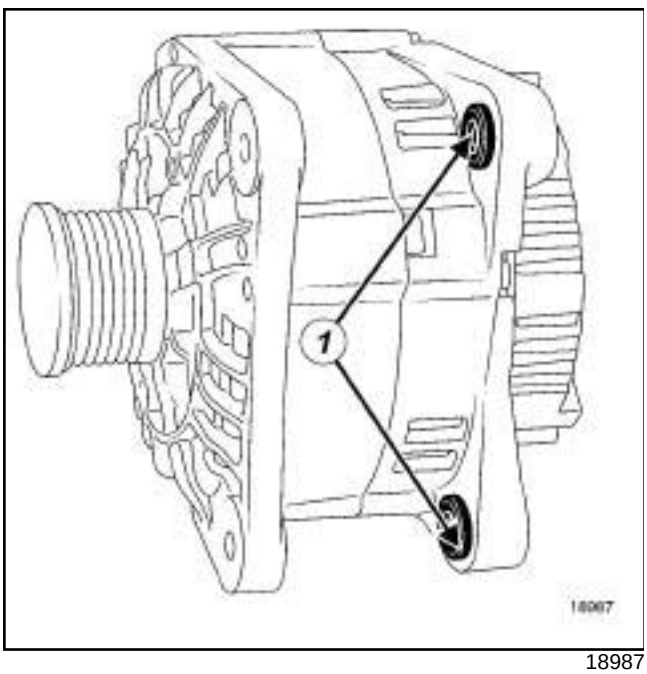

108867

❑ Undo the lower alternator mounting bolt.

❑ Remove the alternator with its lower mounting bolt through the front of the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❑ Push in the rings (**1**) to make fitting easier.

II - REFITTING PART CONCERNED

❑ Refit the alternator.

❑ Torque tighten the **alternator mounting bolts (21 N.m)**.

III - FINAL OPERATION.

❑ Reconnect the alternator electrical connections.

❑ Refit the air conditioning compressor.

❑ Torque tighten the **air conditioning compressor mounting bolts (21 N.m)**.

❑ Refit:

- Refit the front right-hand air deflector,
- the new accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the bumper (see **Front bumper: Removal - Refitting**) ,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) .

❑ Reconnect the battery (see **Battery: Removal - Refitting**) .

❑ Refit the air inlet duct.

K9K

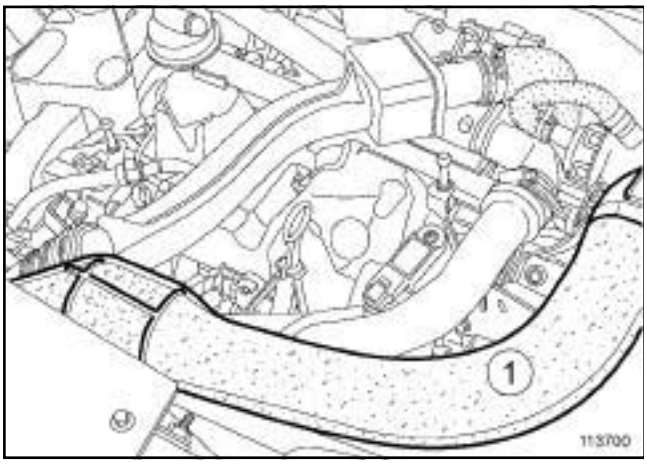
Tightening torques ▽	
alternator bolts	**21 Nm**
intercooler outlet air pipe clip	**5.5 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the front engine cover.



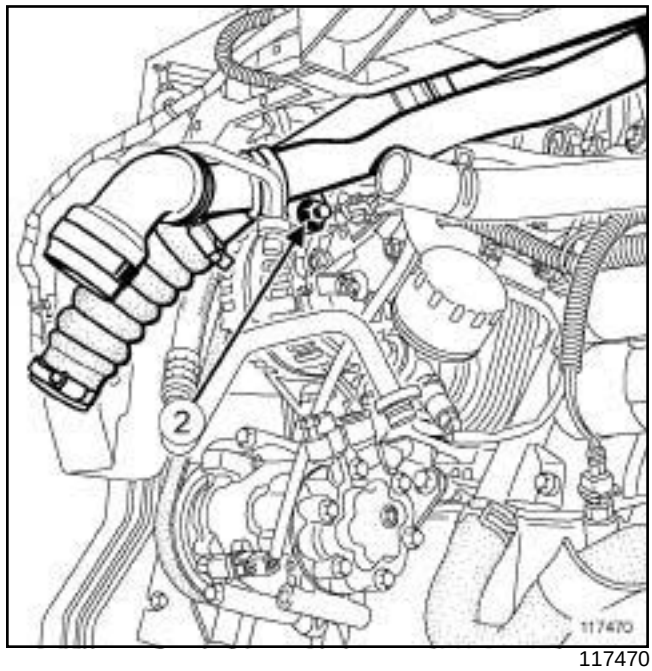
113700

❏ Remove the air filter inlet air pipe (**1**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

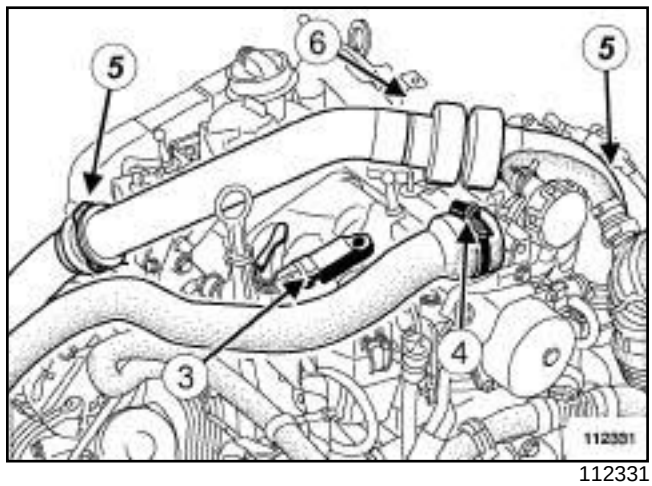
❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



117470

❏ Remove the bolt (**2**) from the intercooler inlet and outlet pipes.



112331

❏ Disconnect the connector (**3**) from the inlet air pressure sensor.

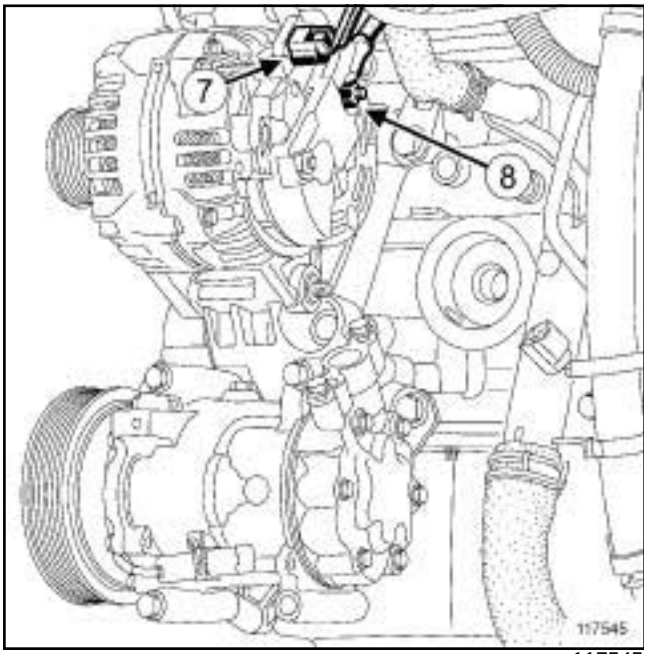
❏ Undo the clip (**4**) from the intercooler outlet air pipe.

❏ Remove:

- the intercooler outlet air pipe,
- the clips (**5**) from the intercooler inlet air pipe,
- the nut (**6**) from the intercooler inlet air pipe,

- the intercooler inlet air pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED

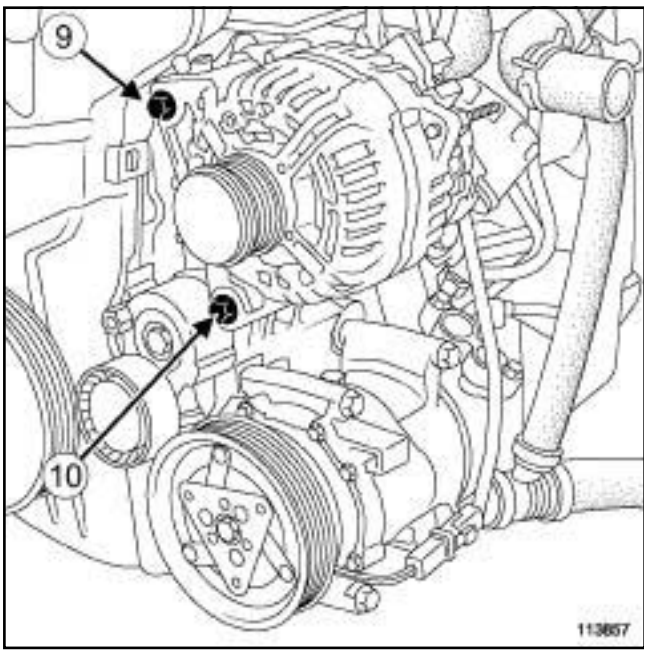


117545

❏ Disconnect the alternator connector (**7**) .

❏ Remove the nut (**8**) from the alternator positive terminal.

❏ Disconnect the alternator positive terminal wire.



113857

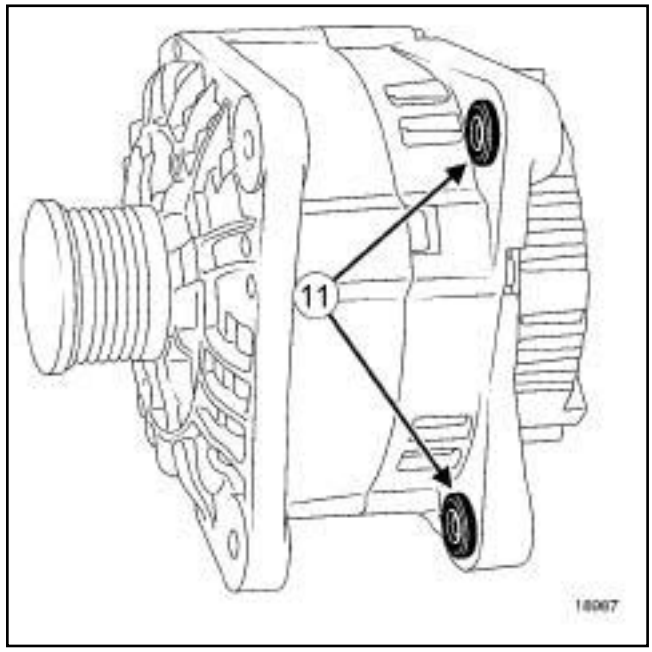
❏ Remove the alternator upper bolt (**9**) .

❏ Loosen the alternator lower bolt (**10**) .

❏ Remove the alternator with its lower bolt.

REFITTING

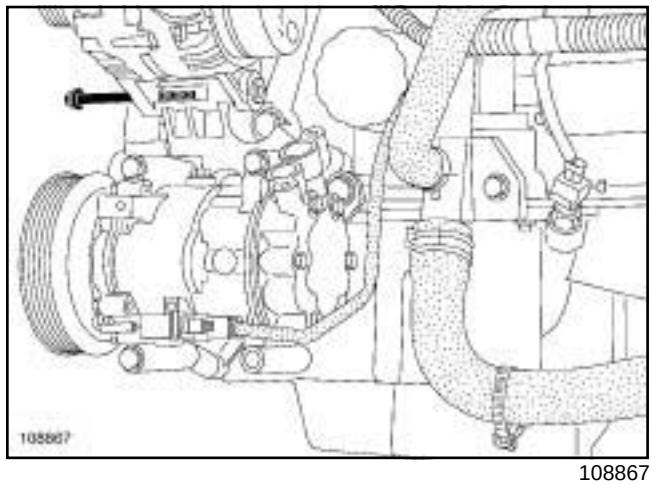
I - REFITTING PREPARATION OPERATION



18987

❏ Refit the rings (**11**) using pliers or a vice.

II - REFITTING OPERATION FOR PART CONCERNED



108867

❏ Refit the alternator with its lower bolt.

❏ Screw in the alternator bolts, without tightening them.

❏ Torque tighten the **alternator bolts (21 Nm)**.

❏ Connect the wire to the alternator positive terminal.

❏ Refit the alternator positive terminal nut.

❏ Connect the alternator connector.

K9K

III - FINAL OPERATION.

❑ Refit:

- the intercooler air inlet pipe,
- the nut to the intercooler inlet air pipe,
- the clips to the intercooler inlet air pipe,
- the intercooler outlet air pipe.

❑ Torque tighten the **intercooler outlet air pipe clip (5.5 Nm)**.

❑ Connect the inlet air pressure sensor connector.

❑ Remove:

- the intercooler inlet and outlet pipe bolts,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Refit:

- the air filter inlet air pipe,
- the engine cover.

M4R

Tightening torques ▽	
alternator mounting bolts	25 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

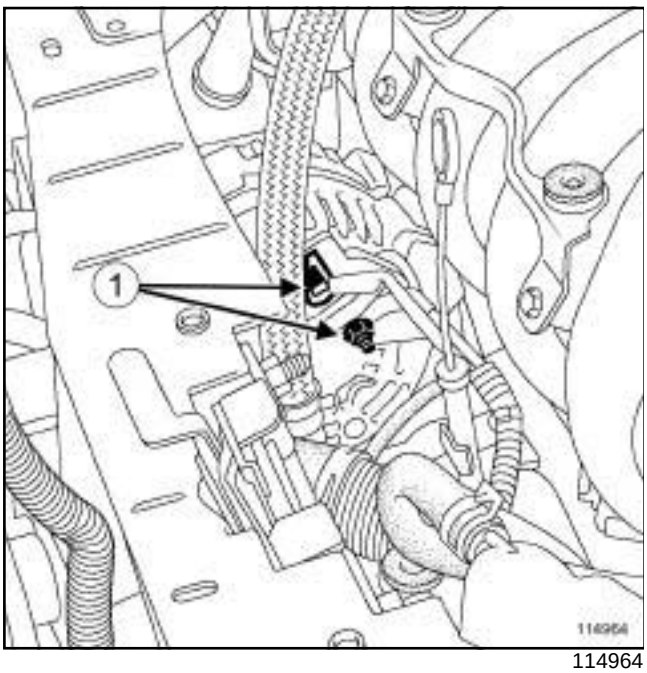
❏ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) .

❏ Remove the engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

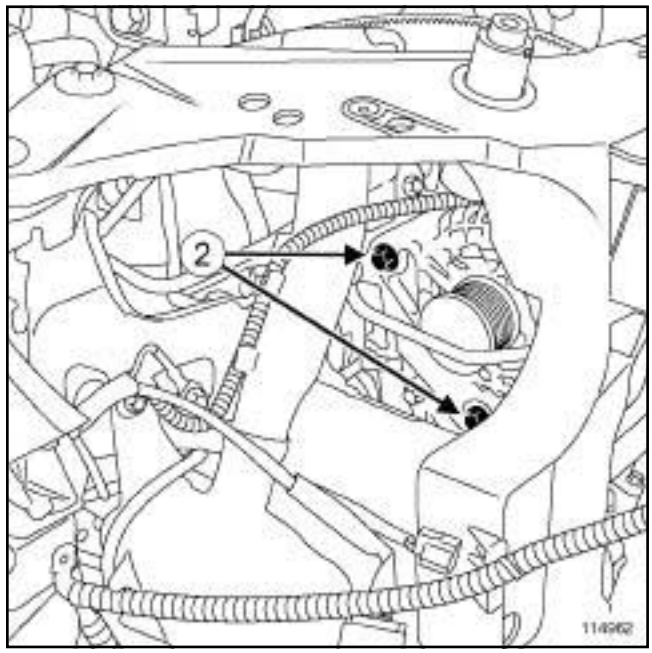
- the air resonator in the front end panel (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the right-hand headlight (see) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



114964

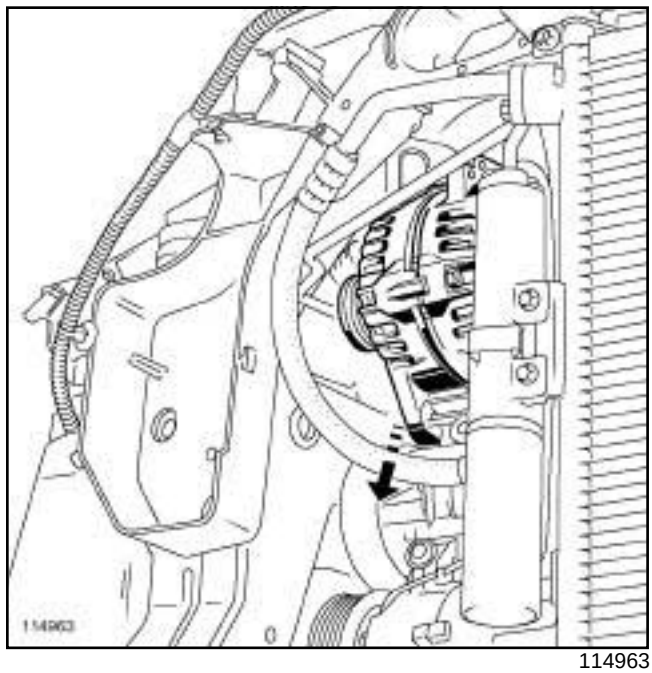
❏ Disconnect the alternator's electrical connections (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



114962

❏ Remove the alternator mounting bolts (**2**) .

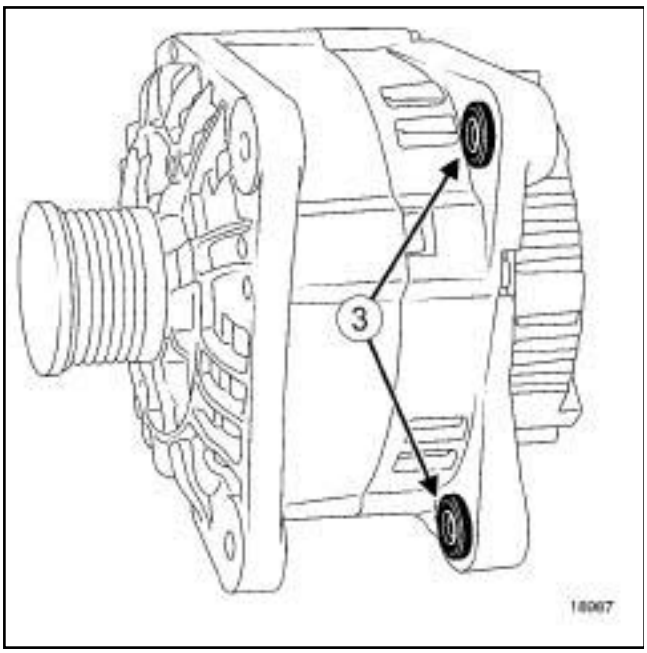


114963

❏ Remove the alternator using a screwdriver.

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❏ Push in the rings (**3**) , using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the alternator.

❏ Tighten to torque the **alternator mounting bolts (25 Nm)**.

III - FINAL OPERATION

❏ Connect the alternator electrical connections.

❏ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand headlight (see) ,
- the air resonator in the front end panel (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) .

❏ Refit the engine cover.

F4R

Tightening torques ▽		
alternator bolts	mounting	**25 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

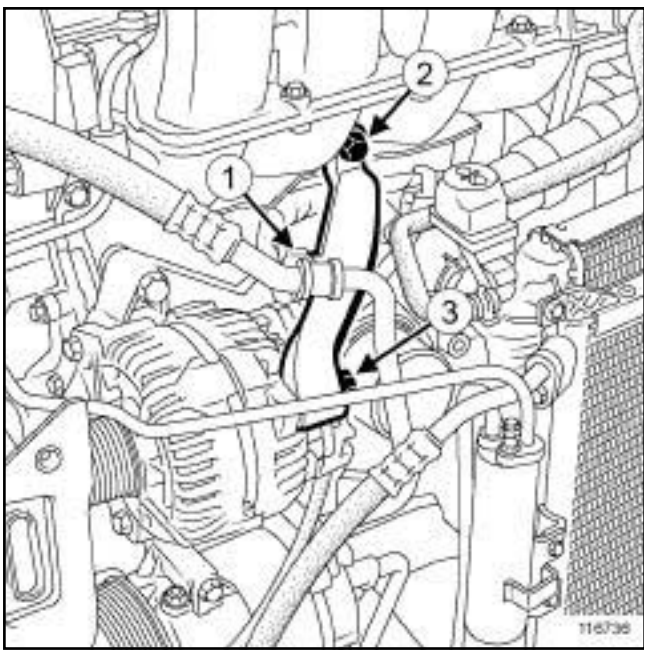
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

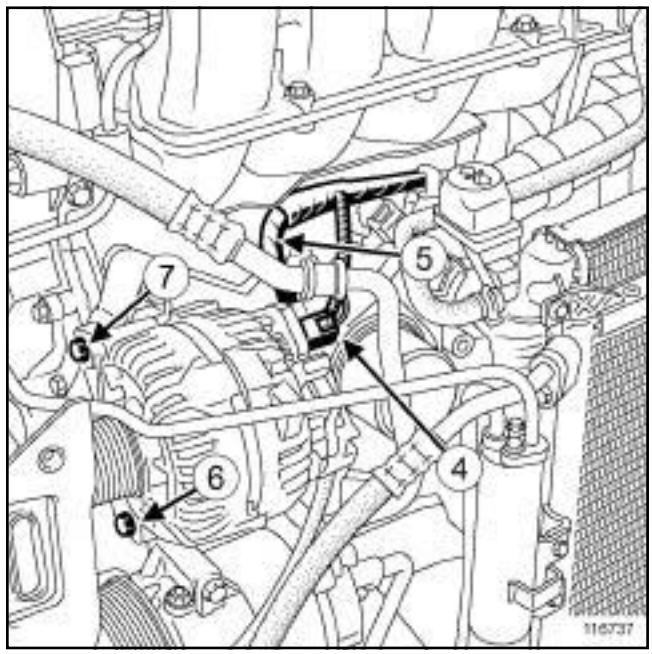
II - OPERATION FOR REMOVAL OF PART CONCERNED



116736

❏ Remove:

- the bolt (**1**) mounting the air conditioning pipe on the reinforcing bracket.
- the bolt (**2**) mounting the reinforcing bracket on the injector holder plate,
- the bolts (**3**) mounting the reinforcing bracket on the alternator,
- the reinforcing bracket.



116737

❏ Disconnect the alternator connector (**4**) .

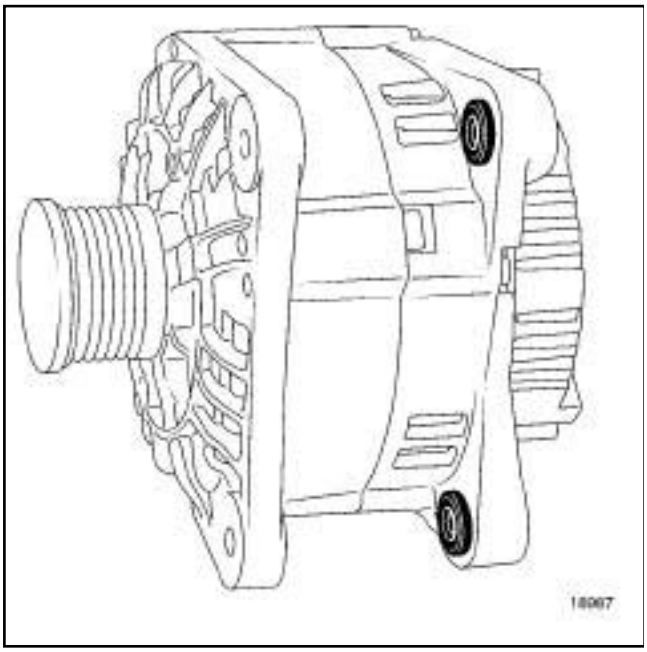
❏ Remove:

- the wiring harness nut (**5**) on the alternator,
- the lower mounting bolt (**6**) from the alternator,
- the upper mounting bolt (**7**) from the alternator,
- the alternator.

F4R

REFITTING

I - REFITTING PREPARATION OPERATION



18987

❑ Refit the rings using pliers or a vice to facilitate fitting.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the alternator,
- the alternator upper mounting bolt,
- the alternator lower mounting bolt.

❑ Torque tighten the **alternator mounting bolts (25 Nm)**.

❑ Refit the nut to the wiring harness ***(5)*** on the alternator.

❑ Connect the alternator connector ***(4)*** .

❑ Refit:

- the reinforcing bracket,
- the bolt ***(3)*** mounting the reinforcing bracket on the alternator.
- the bolt ***(2)*** mounting the reinforcing bracket on the injector holder plate,
- the bolt ***(1)*** mounting the air conditioning pipe on the reinforcing bracket.

III - FINAL OPERATION.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Tightening torques ▽	
alternator bolts	**25 N.m**
air conditioning compressor bolts	**25 N.m**

REMOVAL

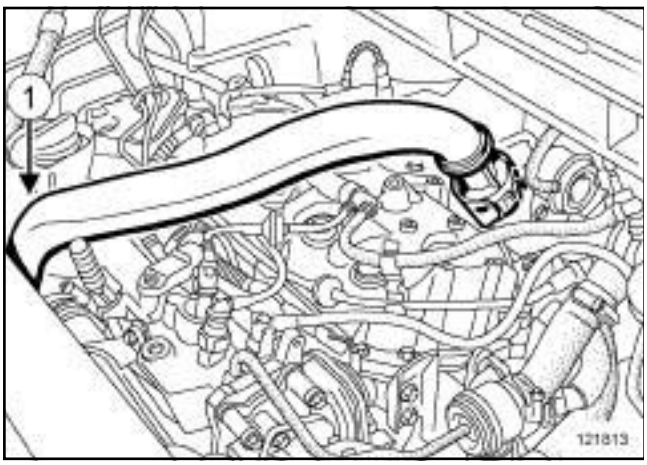
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see) (80A, Battery).

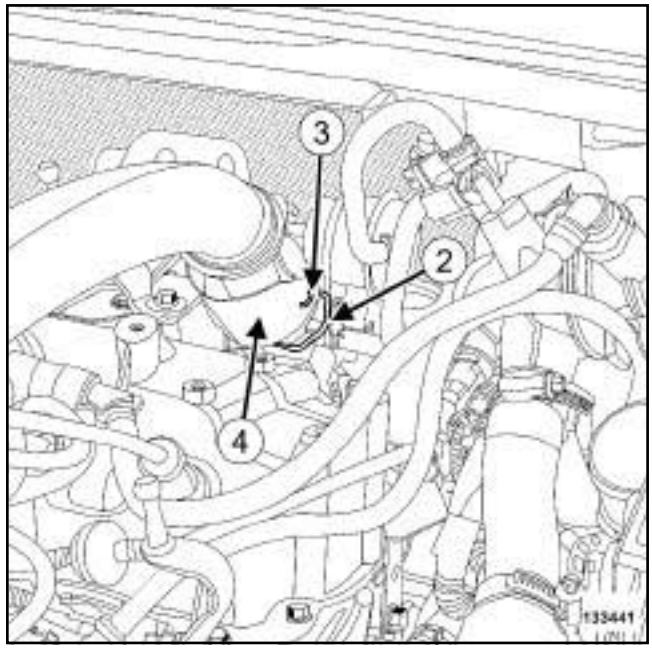
❏ Remove:

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



121813

❏ Remove the bolt (**1**) from the turbocharger air outlet pipe on the inlet distributor.



133441

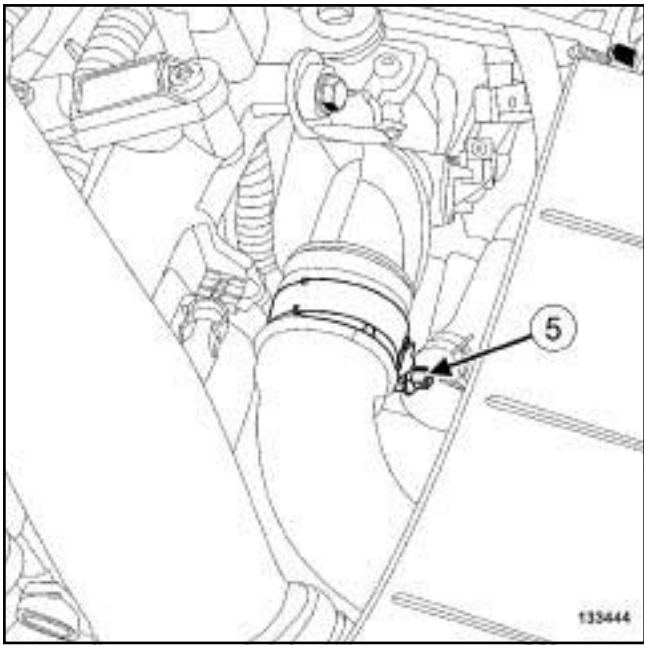
❏ Separate the clip (**2**) of the turbocharger air outlet pipe.

Note:

If the clip (**3**) is removed from the flexible heat shield (**4**) , the latter must be replaced.

❏ Move aside the turbocharger air outlet pipe.

D4F, and 784 or 786



133444

❏ Loosen the clip (**5**) on the intercooler intermediate pipe.

❏ Remove:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

AIR CONDITIONING

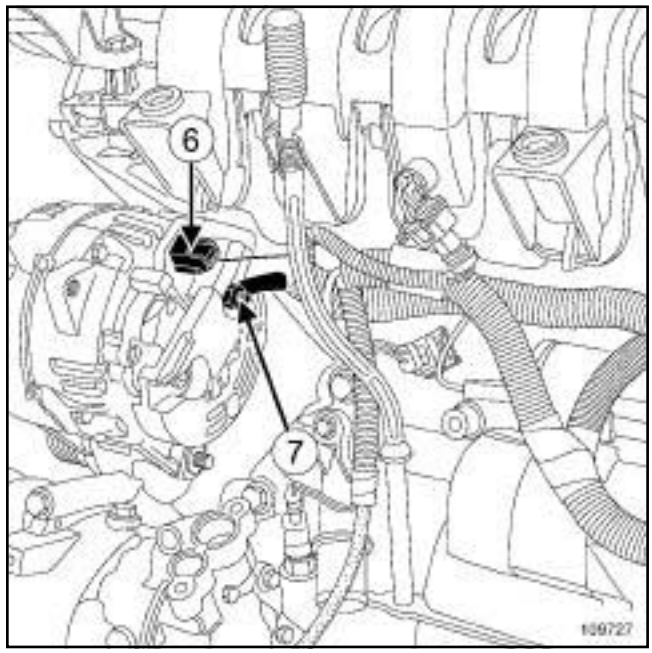
❏ Disconnect the air conditioning compressor clutch connector.

❏ Detach the air conditioning pipe from the body between the compressor and expansion valve.

❏ Remove the air conditioning compressor bolts.

❏ Position the air conditioning compressor on the radiator mounting cross member.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109727

❏ Disconnect the alternator wiring connector (**6**) .

❏ Remove:

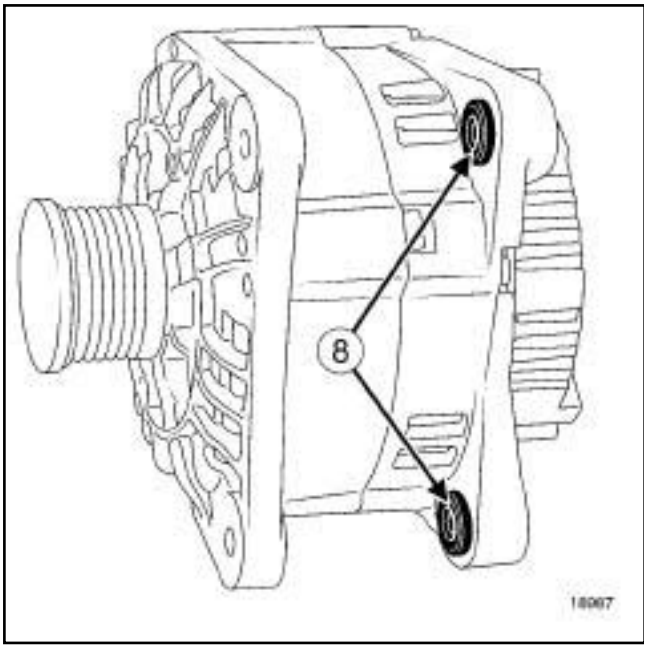
- the alternator wiring nut (**7**) ,
- the alternator bolts,
- the alternator.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the alternator pulley V-grooves to remove any deposits.

D4F, and 784 or 786



18987

❑ Press in the rings (**8**) using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the alternator,
- the alternator bolts.

❑ Torque tighten the **alternator bolts (25 N.m)**.

❑ Refit the alternator wiring nut.

❑ Connect the alternator wiring connector.

III - FINAL OPERATION

AIR CONDITIONING

❑ Refit:

- the air conditioning compressor ,
- the air conditioning compressor bolts.

❑ Torque tighten the **air conditioning compressor bolts (25 N.m)**.

❑ Attach the air conditioning pipe to the body between the compressor and expansion valve.

❑ Connect the air conditioning compressor clutch connector.

❑ Refit:

- the turbocharger air outlet pipe,
- the clip of the turbocharger air outlet pipe,
- the turbocharger air outlet pipe bolt on the inlet manifold,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Connect the battery (see) (80A, Battery).

D4F, and 740 or 742 or 764

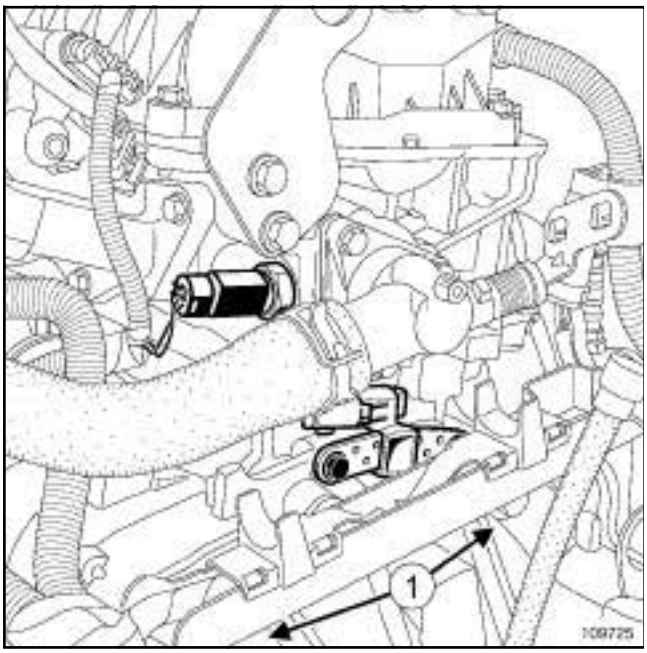
Tightening torques ▽	
starter mounting bolts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

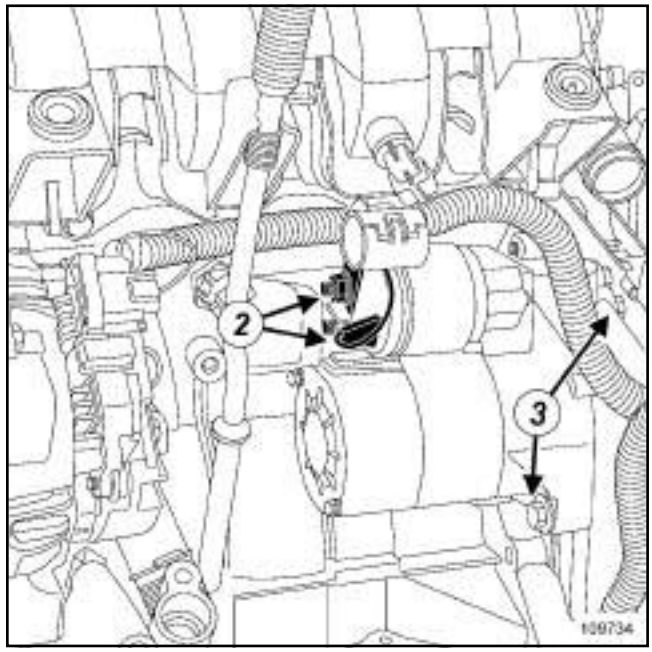
❏ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .



109725

❏ Remove the engine's electrical wiring channel mounting bolts (**1**) and move it out of the way to gain access to the starter mounting bolt.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109734

❏ Disconnect the starter motor connectors (**2**) .

❏ Remove:

- the mounting bolts (**3**) from the starter,
- the starter motor from above the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the starter centring dowel is in place.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the starter.

❏ Tighten to torque the **starter mounting bolts (44 N.m)**.

❏ Connect the starter motor connectors.

III - FINAL OPERATION.

❏ Refit the engine wiring harness duct mounting bolts.

❏ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J, and 780 – K4M, and 800 or 801

Tightening torques ▽	
starter mounting bolts	**44 Nm**

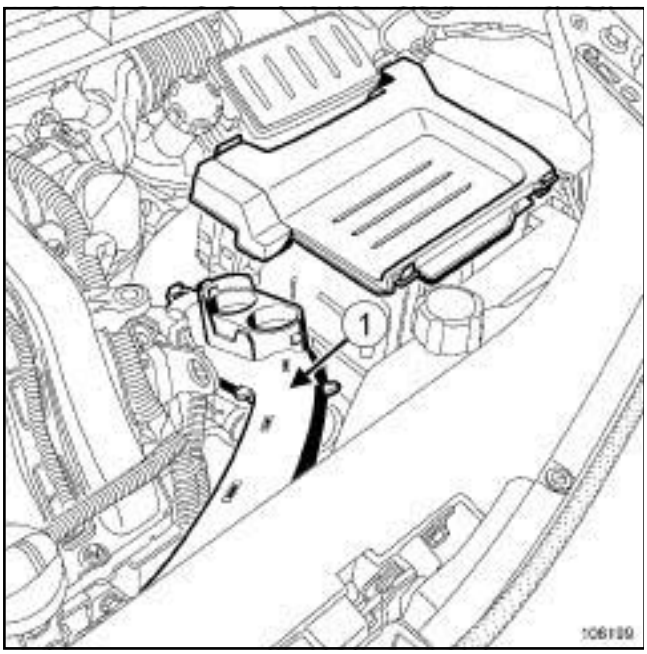
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine protector.



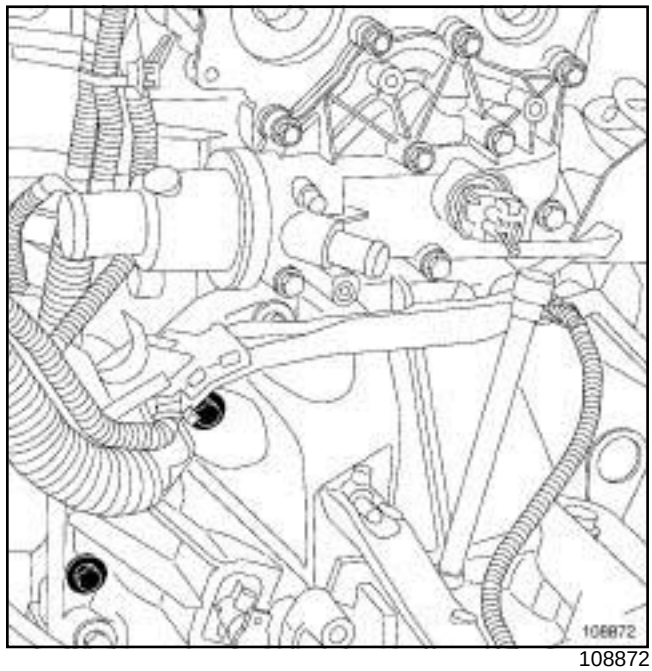
108199

❏ Remove the air inlet duct (**1**) .

❏ Disconnect:

- the starter motor connectors,
- the oil level sensor.

II - REMOVAL OF PART CONCERNED



108872

❏ Remove:

- the starter mounting bolts from below,
- the starter motor from underneath.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the centring dowel is in place.

II - REFITTING PART CONCERNED

❏ Refit:

- the starter,
- the starter mounting bolts.

❏ Tighten to torque the **starter mounting bolts (44 Nm)**.

III - FINAL OPERATION.

❏ Connect:

- the oil level sensor,
- the starter connectors.

❏ Refit the air inlet duct.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 764 or 766 or 768

Tightening torques ▽	
starter motor mounting bolts	44 Nm

REMOVAL

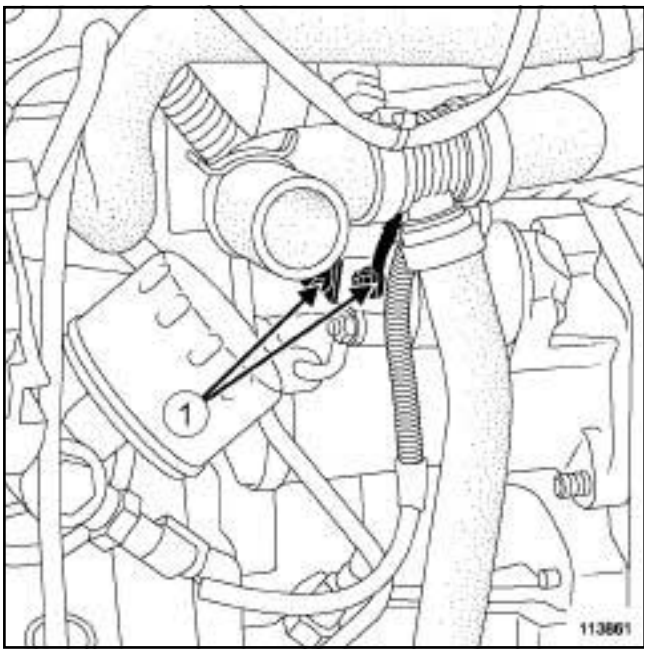
I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove the air inlet duct.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

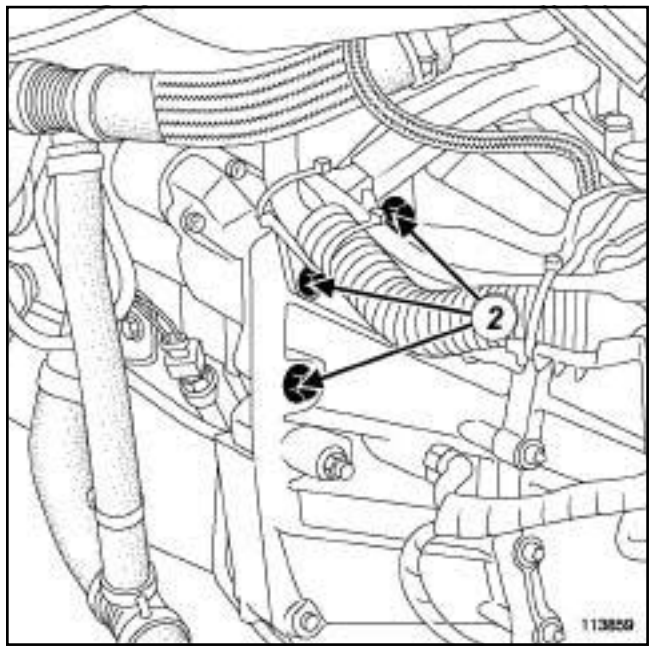
❏ Remove the engine undertray.



113861

❏ Disconnect the starter motor connectors (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113859

❏ Remove:

- the starter motor mounting bolts (**2**) .
- the starter motor from below.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the centring dowel is in place.

II - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the starter,
- the starter motor mounting bolts.

Tighten to torque the **starter motor mounting bolts (44 Nm)**.

III - FINAL OPERATION

❏ Connect the starter motor connectors.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

❏ Refit:

- the air inlet duct,
- the engine undertray.

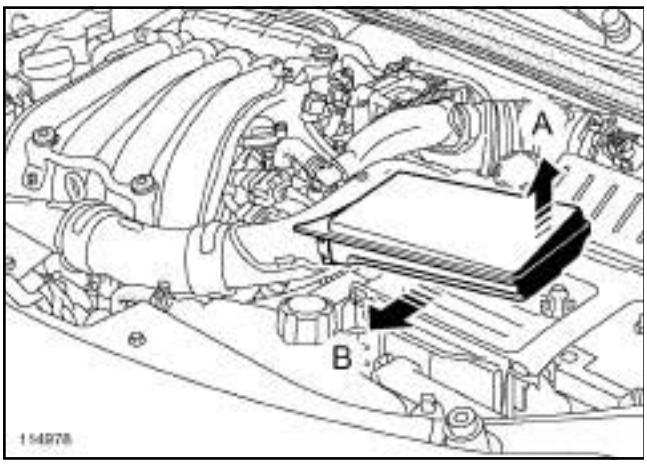
Tightening torques ▽	
starter mounting bolts	**62 Nm**
starter excitation connector bolt	**5 Nm**
starter power supply connector bolt	**9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

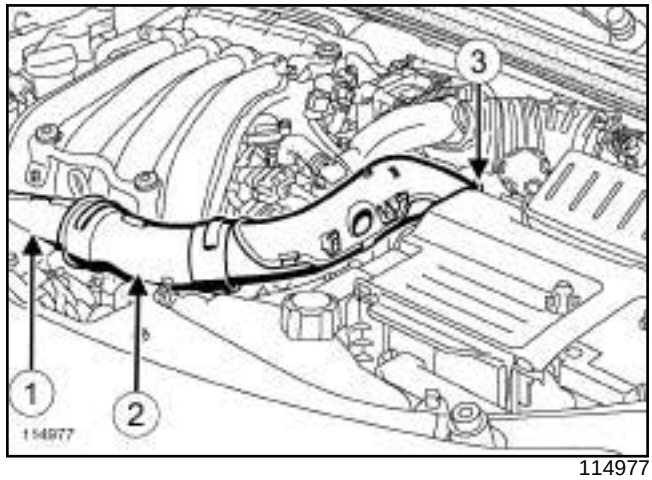
❑ Disconnect the battery (see) (MR 392, 80A, Battery).



114978

❑ Lift the air resonator (**A**) to remove it from the battery cover.

❑ Pull the air resonator towards the front of the vehicle (**B**) to remove it.



114977

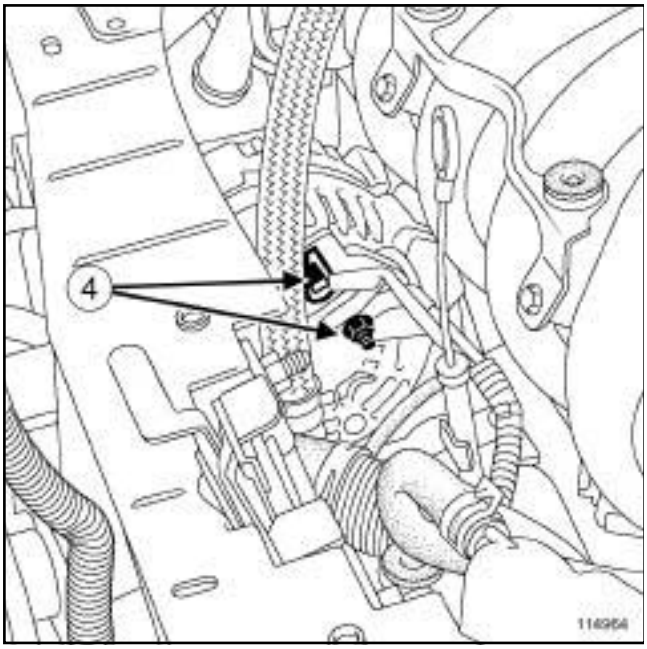
❑ Detach the air intake sleeve:

- from the front end panel at (**1**) ,
- from the air resonator on the front end panel at (**2**) ,
- from the air filter unit at (**3**) .

❑ Remove the air intake sleeve.

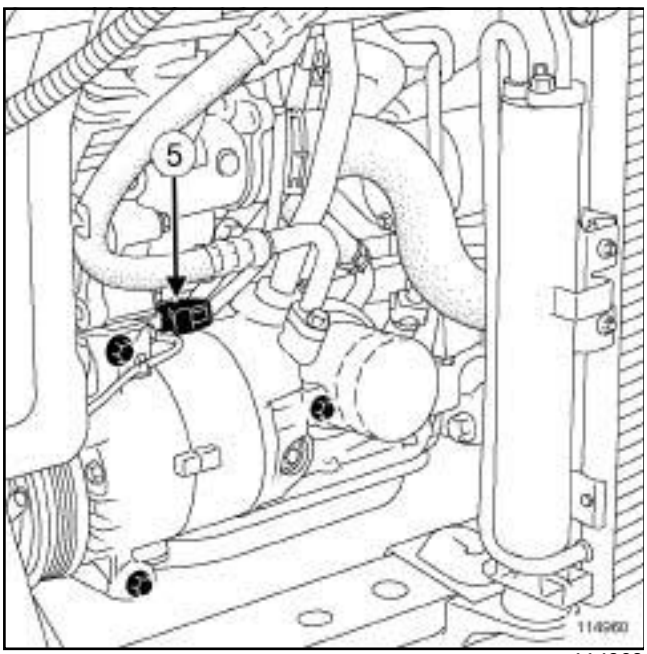
❑ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .



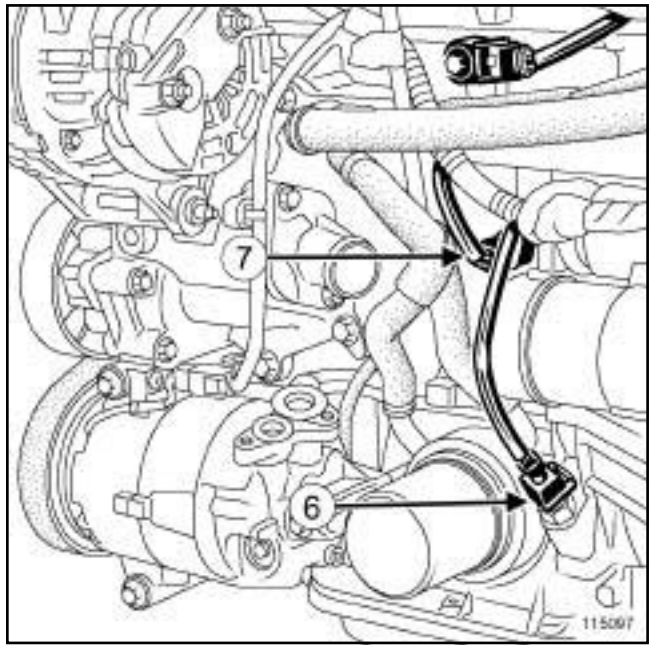
114964

❏ Disconnect the alternator connectors (**4**) .



114960

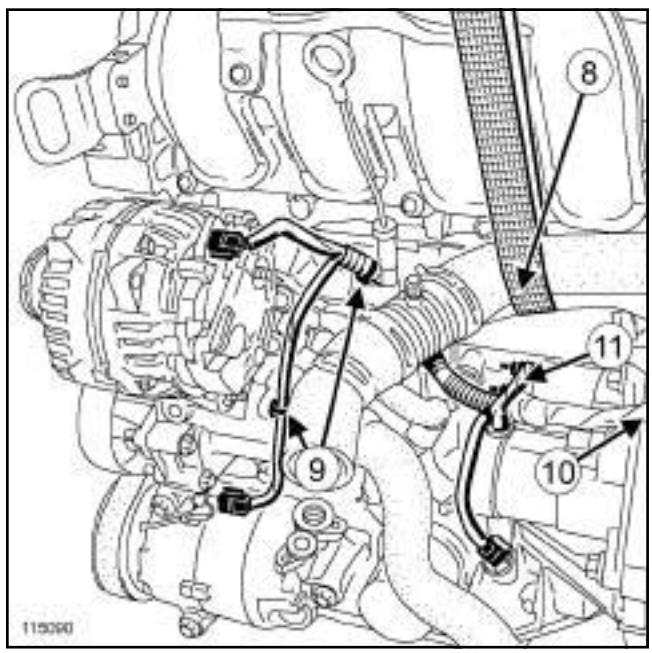
❏ Disconnect the connector (**5**) from the air conditioning compressor.



115097

❏ Disconnect:

- the oil level sensor connector (**6**) ,
- the oil pressure sensor (**7**) .



115090

❏ Strap the hoses (**8**) to the front end panel in order to access the starter.

❏ Unclip the wiring harness at (**9**) .

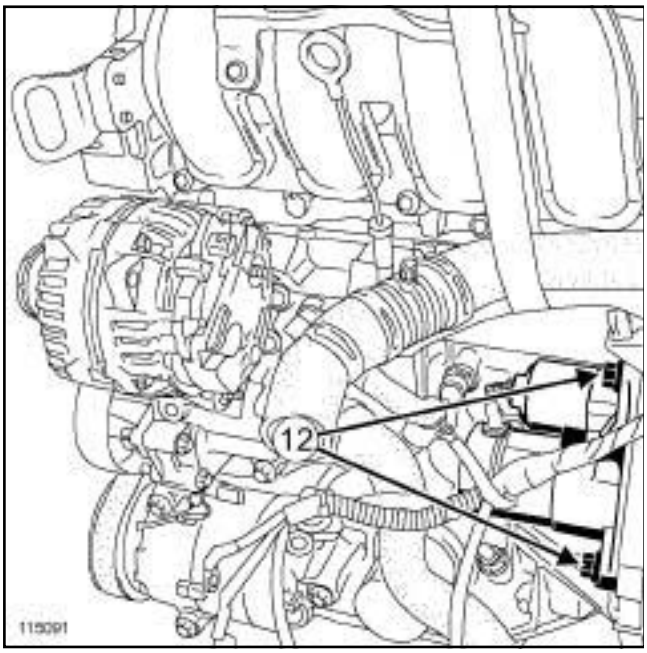
❏ Cut the wiring harness retaining clip on the neck at (**10**) .

❏ Disconnect the starter connector (**11**) .

❏ Move the wiring harness to one side.

M4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



115091

❑ Remove:

- the mounting bolts (**12**) from the starter,
- the starter through the space left by the air resonator in the front end panel.

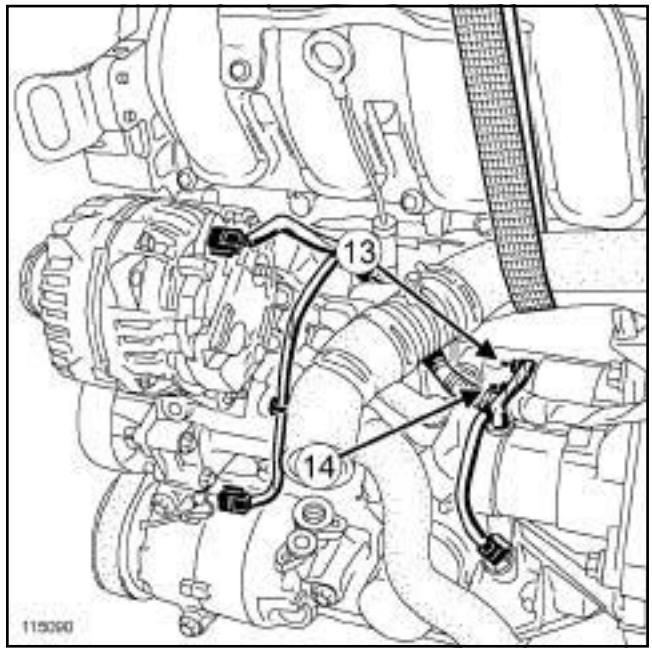
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the starter.

❑ Torque tighten the **starter mounting bolts (62 Nm)**.

II - FINAL OPERATION.



115090

❑ Connect:

- the starter motor connectors,
- the oil pressure sensor connector,
- the oil level sensor connector,
- the alternator connectors.
- the air conditioning compressor connector.

❑ Torque tighten:

- the **starter excitation connector bolt (5 Nm)** at (**13**) ,
- the **starter power supply connector bolt (9 Nm)** at (**14**) .

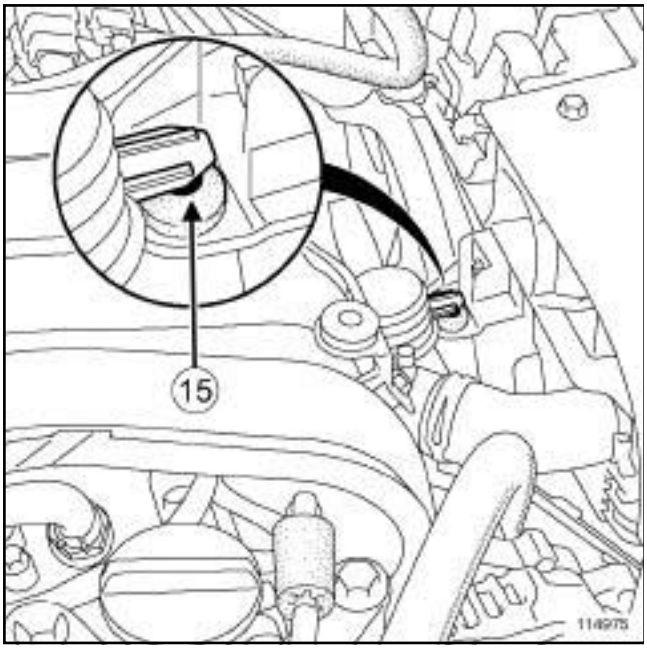
❑ Clip on the wiring harness.

❑ Refit a wiring harness retaining clip to the neck.

❑ Remove the retaining belt from the hoses.

❑ Refit:

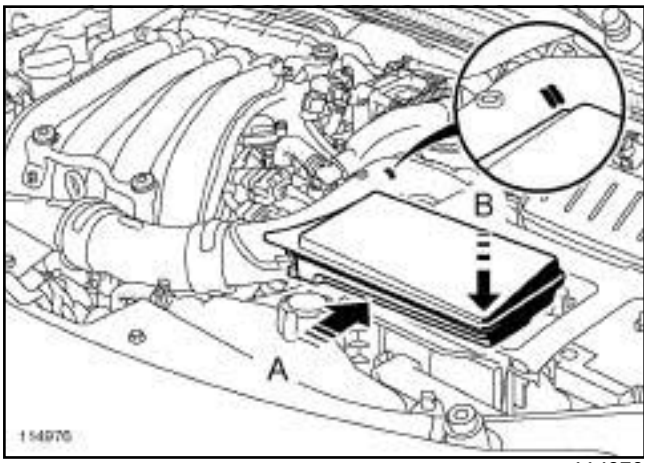
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.



114975

❏ Before refitting the air intake sleeve, check that the air resonator's upper mounting in the front end panel is correctly clipped at (**15**) .

❏ Refit the air intake sleeve.



114976

❏ Push the air resonator towards the rear of the vehicle (**A**) until the corner of the air resonator is between the two lines marked on the air intake sleeve.

❏ Push the air resonator (**B**) to fit it onto the battery cover.

❏ Connect the battery (see) (MR 392, 80A, Battery).

F4R

Tightening torques ▽	
starter lower bolt	**38 N.m**
starter upper bolts	**38 N.m**
bolts of the lower cross member	**62 N.m**

REMOVAL

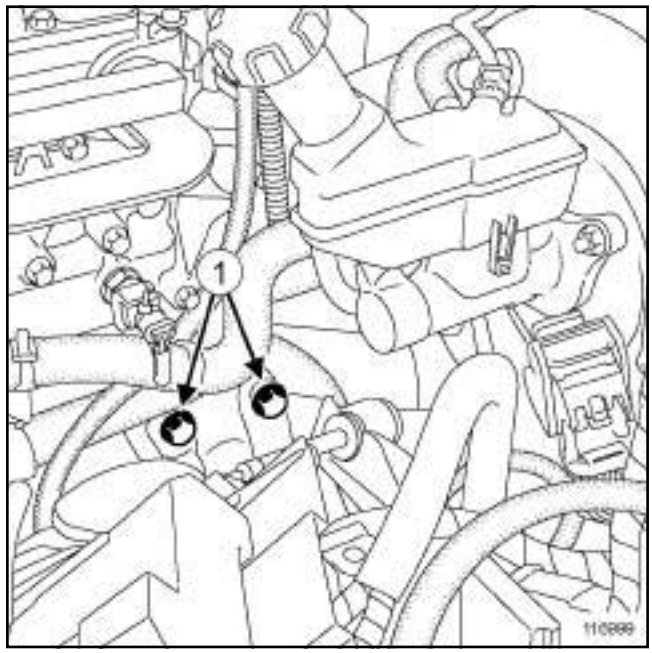
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

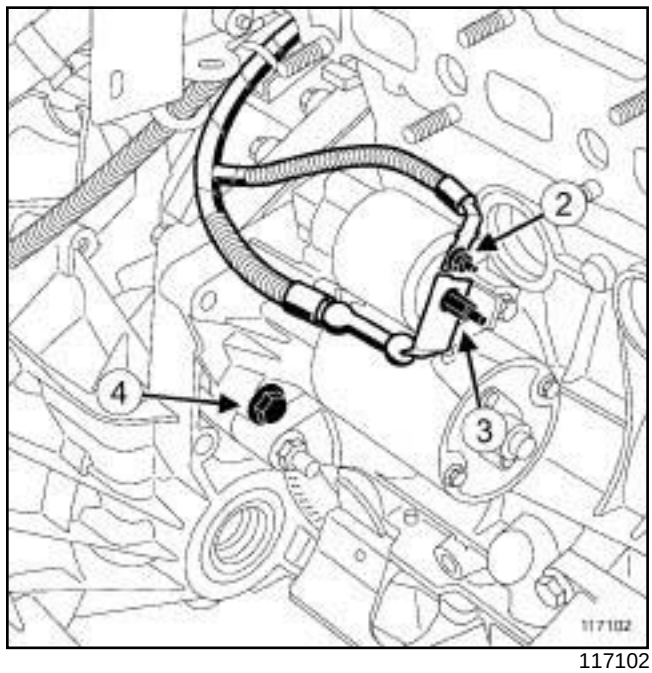
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the lower cross member.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116999

❏ Remove the upper bolts (**1**) from the starter.



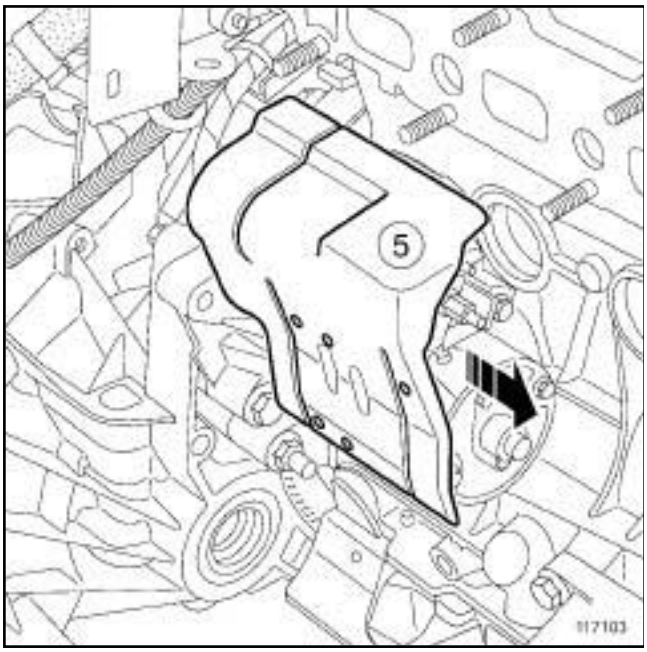
117102

❏ Remove:

- the excitation wiring terminal (**2**) on the starter,
- the power wiring terminal (**3**) on the starter.

F4R

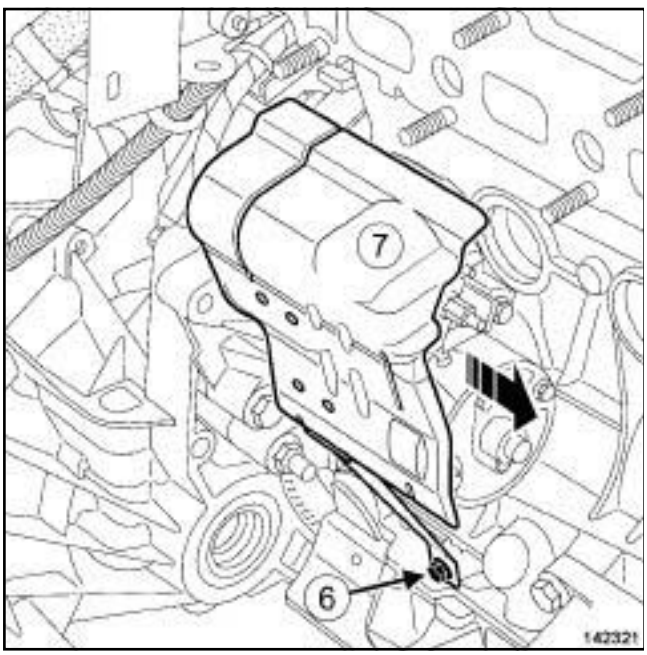
F4R, and 830



117103

❑ Remove the starter heat shield (**5**) by sliding it along the starter on the timing end.

F4R, and 832



142321

❑ Remove:

- the starter heat shield bolt (**6**) ,
- the starter heat shield (**7**) by sliding it along the starter on the timing end.

❑ Remove the starter lower bolt ***(4)*** .

❑ Remove the starter motor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the presence and condition of the centring device on the starter.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Fit the starter.

❑ Refit the starter lower bolt.

❑ Torque tighten the **starter lower bolt (38 N.m)**.

❑ Refit the starter heat shield by sliding it along the starter on the timing end.

F4R, and 832

❑ Refit the starter heat shield bolt.

❑ Refit:

- the excitation wiring terminal on the starter,
- the power wiring terminal on the starter.

❑ Refit the upper bolts on the starter.

❑ Torque tighten the **starter upper bolts (38 N.m)**.

III - FINAL OPERATION

❑ Refit the lower cross member.

❑ Torque tighten the **bolts of the lower cross member (62 N.m)**.

❑ Refit:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),

F4R

- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K9K, and 772

Tightening torques ▽	
starter lower mounting bolt	**44 Nm**
starter upper bolt	**44 Nm**
clip for the air inlet duct between the intercooler and the air inlet box on the air inlet box	**5.5 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front engine cover.

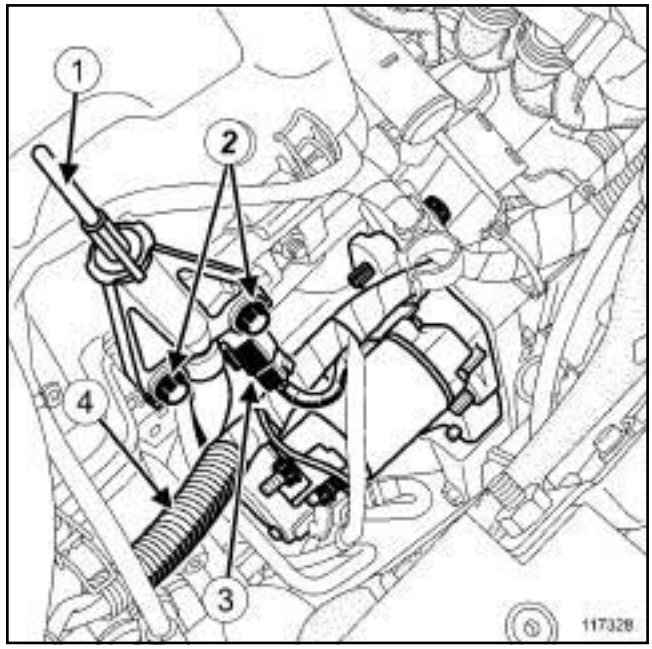
❏ Remove:

- the air duct at the air filter box inlet,
- the nut from the air inlet pipes on the alternator.

❏ Loosen the air inlet duct clip between the intercooler and the air box unit on the air inlet box.

❏ Move the air inlet duct between the intercooler and the air inlet box to one side.

❏ Detach the relay box from the battery tray.



117328

❏ Remove:

- the dipstick (**1**) ,
- the dipstick duct bolts (**2**) .

❏ Disconnect the injector rail pressure sensor connector (**3**) .

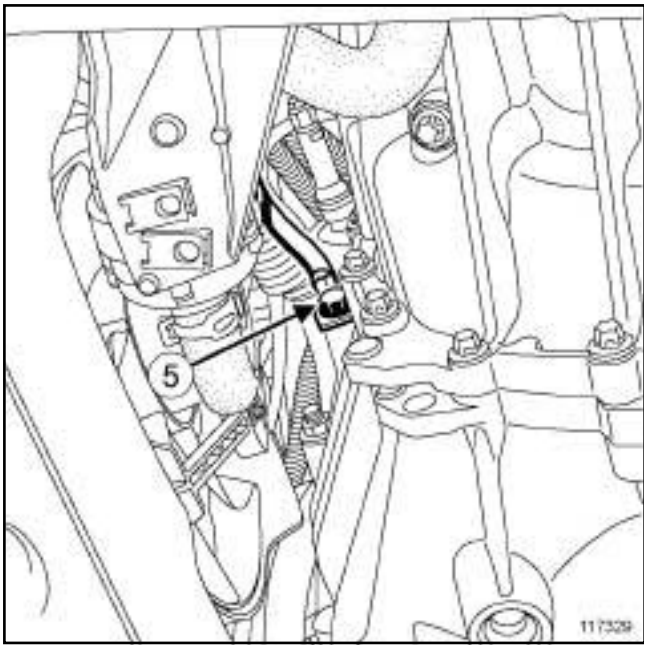
❏ Detach the emission control cover wiring harness (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove:

- the starter excitation lead,
- the starter power lead,
- the starter upper bolt,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the engine undertray.

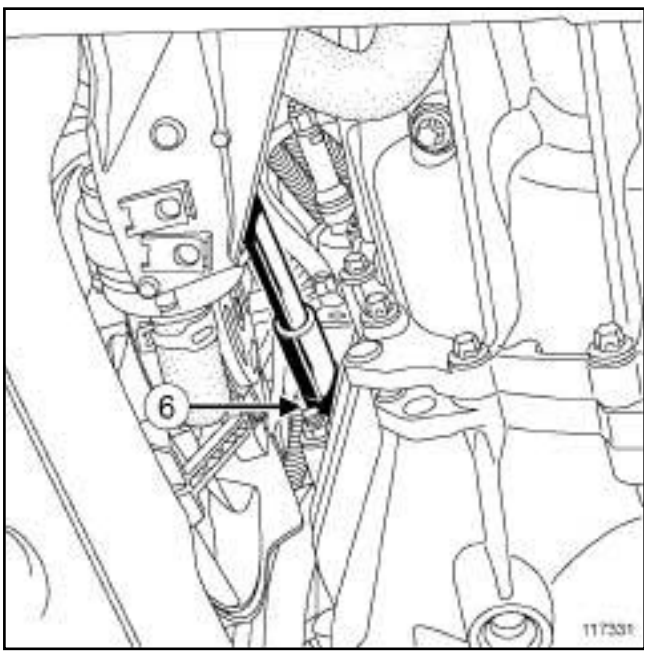
K9K, and 772



117329

❏ Remove the bolt (**5**) from the earth wiring on the gearbox.

❏ Unclip the diesel runoff pipe from the sump.



117331

❏ Remove:

- the starter lower bolt (**6**) ,
- the starter from underneath, placing the starter solenoid on timing end.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the starter,
- the starter lower mounting bolt.

❏ Torque tighten the **starter lower mounting bolt (44 Nm)**.

❏ Refit the earth wiring bolt on the gearbox.

❏ Clip the diesel runoff pipe onto the sump.

❏ Refit:

- the engine undertray,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the starter upper mounting bolt.

❏ Torque tighten the **starter upper bolt (44 Nm)**.

❏ Refit:

- the starter power lead,
- the starter excitation lead.

II - FINAL OPERATION.

❏ Attach the emission control cover wiring harness.

❏ Connect the injector rail pressure sensor connector.

❏ Refit:

- the dipstick duct bolts,
- the dipstick.

❏ Attach the relay box onto the battery tray.

❏ Position the air inlet duct between the intercooler and the air inlet box.

❏ Torque tighten the **clip for the air inlet duct between the intercooler and the air inlet box on the air inlet box (5.5 Nm)**.

❏ Refit:

- the air inlet pipe nut on the alternator,
- the air duct at the air filter unit inlet.

❏ Refit the engine cover.

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

K9K, and 750 or 752

Tightening torques ▽	
starter bolts	**44 Nm**
solenoid feed wire nut	**5 Nm**
starter feed wire nut	**8 Nm**

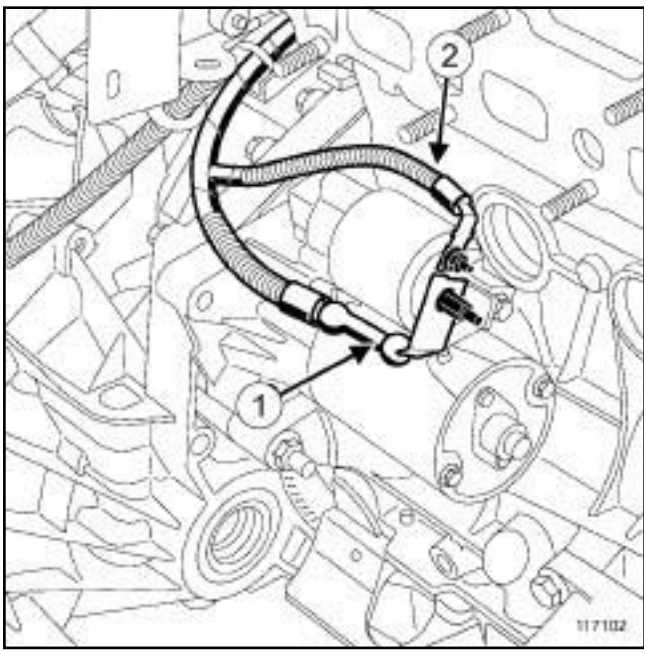
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the air filter box air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

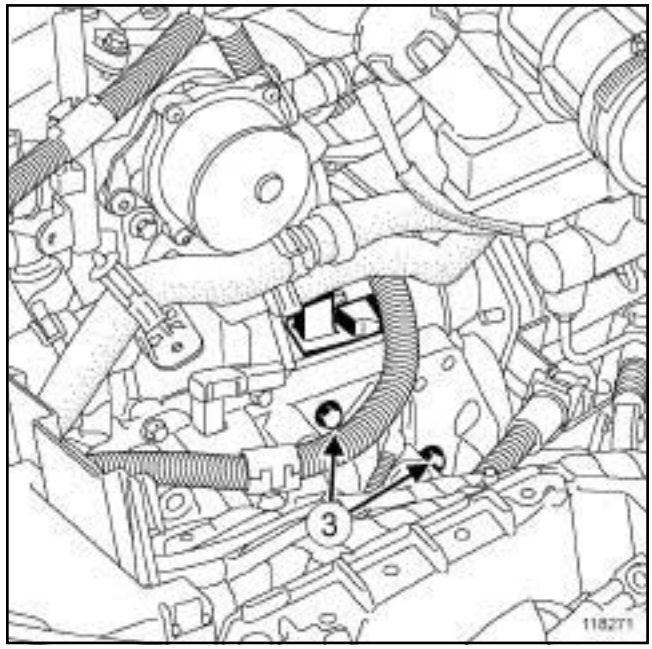


117102

❏ Remove:

- the nut (**1**) from the starter feed wire,
- the nut (**2**) from the solenoid feed wire.

❏ Move the starter wiring harness to one side.



118271

❏ Remove:

- the starter bolts (**3**) ,
- the starter from above.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the centring dowel is in place

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the starter,
- the starter bolts.

❏ Torque tighten the **starter bolts (44 Nm)**.

❏ Fit the starter wiring harness.

❏ Refit:

- the solenoid feed wire nut,
- the starter feed wire nut.

❏ Torque tighten:

- the **solenoid feed wire nut (5 Nm)**,
- the **starter feed wire nut (8 Nm)**.

K9K, and 750 or 752

III - FINAL OPERATION.

❑ Refit:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit air inlet pipe.

D4F, and 784 or 786

Equipment required
safety strap(s)

Tightening torques ▽	
starter bolts	**44 Nm**

REMOVAL

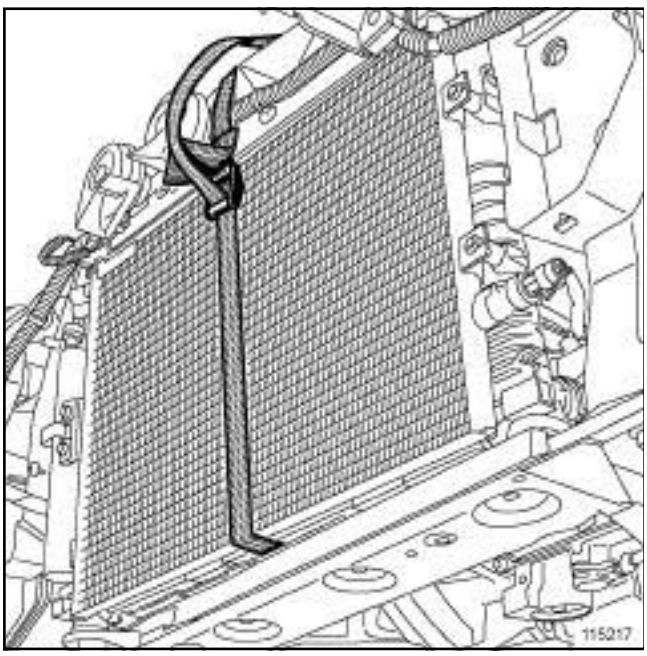
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

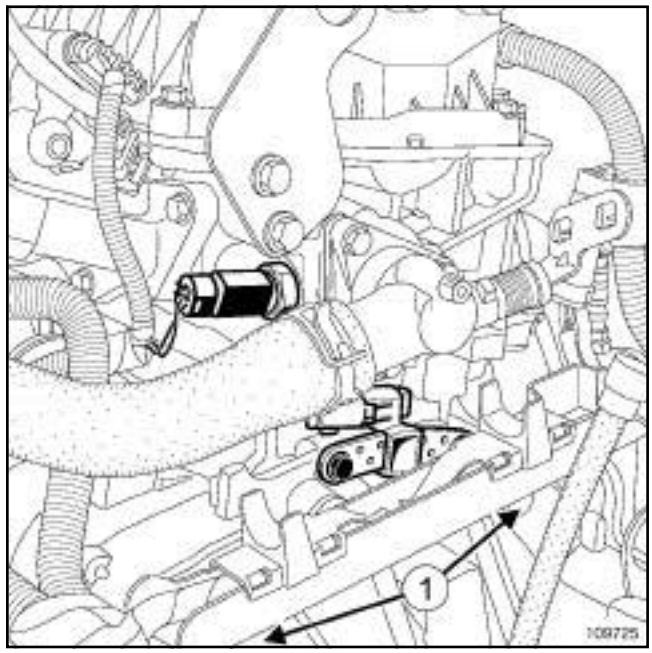
- the air filter box air inlet pipe,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the front section of the left and right-hand wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



115217

❏ Attach the cooling assembly using a **safety strap(s)**.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).



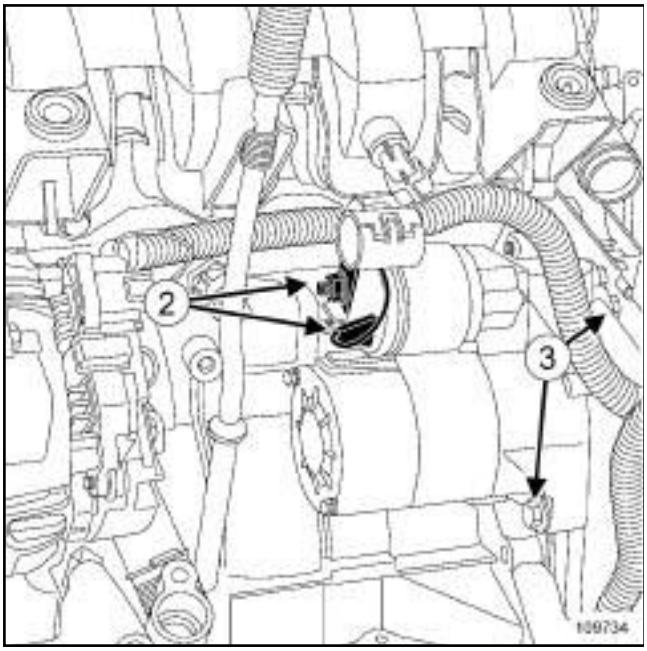
109725

❏ Remove the engine wiring harness neck bolts (**1**) .

❏ Move the wiring harness away from the engine.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



109734

❏ Remove the starter wiring harness (**2**) .

> Note:
>
> Depending on fitting, the starter wiring harness is screwed on or clipped on for solenoid excitation.

❏ Remove:

- the starter bolts (**3**) ,
- the starter from underneath the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the centring dowel is in place.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the starter,
- the starter bolts.

❏ Torque tighten the **starter bolts (44 Nm)**.

❏ Refit the starter wiring harness.

III - FINAL OPERATION.

❏ Refit:

- the engine's electrical wiring channel bolts,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Separate the cooling assembly.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the left and right-hand wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter box air inlet pipe.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Ignition: Specifications

D4F or F4R or K4J or K4M or M4R

Engine type	Brand	Spark plug type
D4F 740 and 764	CHAMPION	REA8MCL
Flat seat with seal Gap: **0.9 mm ± 0.05**		

Engine type	Brand	Spark plug type
D4F 784	NGK	ILKAR7A7
Flat seat with seal Gap: **0.65 mm ± 0.05**		

Engine type	Brand	Spark plug type
K4J	EYQUEM	RFN58LZ
K4M	CHAMPION	RC87YCL
Flat seat with seal Gap: **0.95 mm ± 0.05**		

Engine type	Brand	Spark plug type
M4R	NGK	PLZKAR6A-11
Gap: **1.1 mm**		

Engine type	Brand	Spark plug type
F4R	NGK	PFR7Z-TG
Gap: **0.9 mm ± 0.1**		

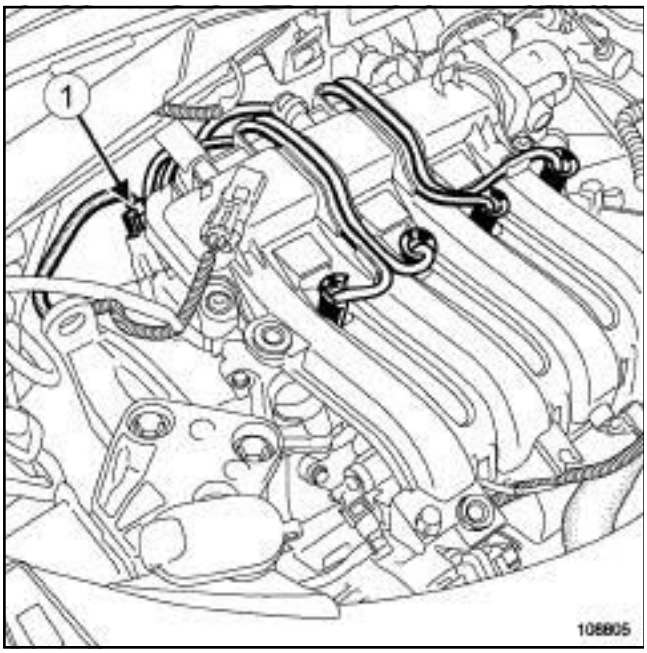
D4F, and 740 or 742 or 764

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .



108805

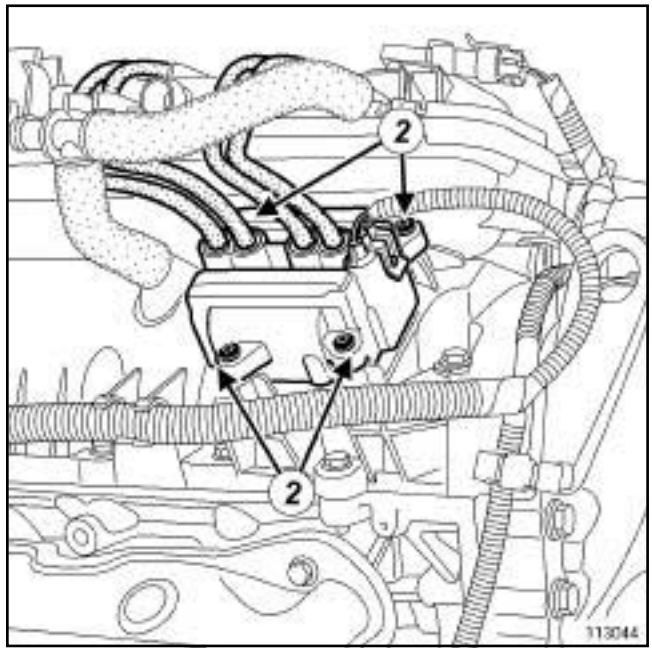
❑ Disconnect:

- the four spark plug leads,
- the connector (**1**) from the ignition coil.

WARNING

To disconnect the spark plug leads, never pull on the leads but by the extensions.

II - REMOVAL OF PART CONCERNED



113044

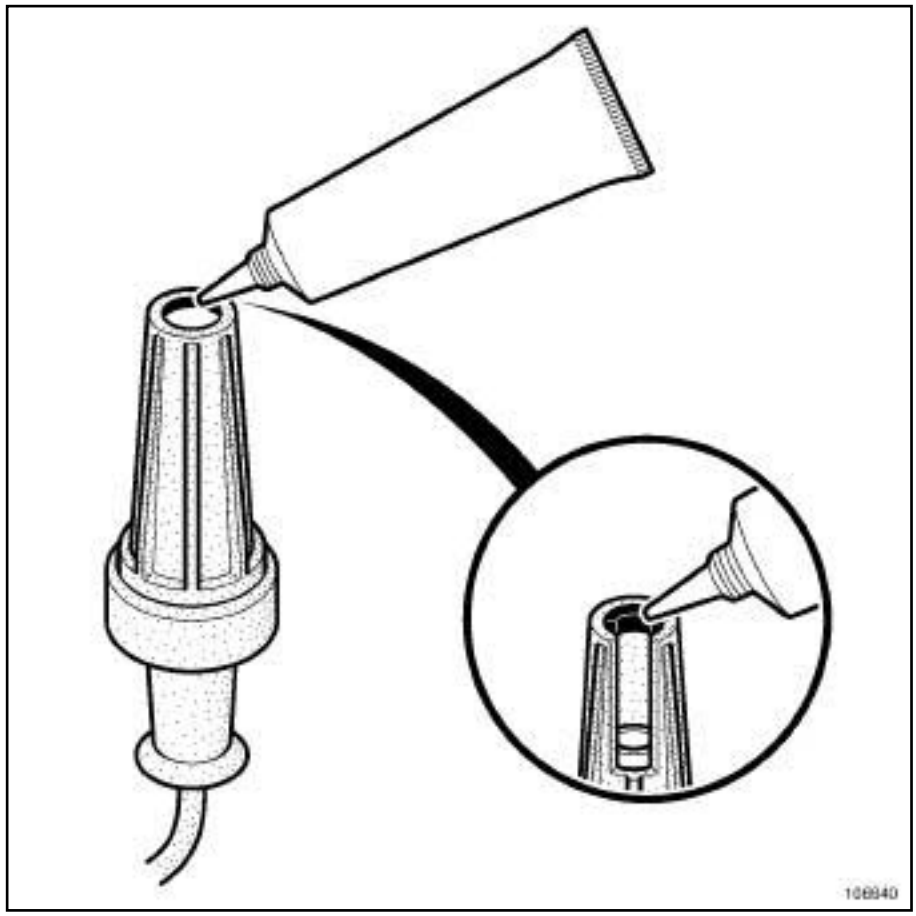
❑ Remove:

- the ignition coil mounting bolts (**2**) ,
- the ignition coil.

D4F, and 740 or 742 or 764

REFITTING

I - REFITTING PREPARATION OPERATION



106640

❑ When refitting spark plug leads, it is essential to apply a bead of **FLUORINATED GREASE (PART NUMBER 82 00 168 855)** with a diameter of **2 mm** around the inner edge of the high-tension caps.

II - REFITTING PART CONCERNED

❑ Refit:

- the ignition coil,
- the ignition coil mounting bolts.

III - FINAL OPERATION.

❑ Connect:

- the four spark plug leads,
- the ignition coil connector.

❑ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

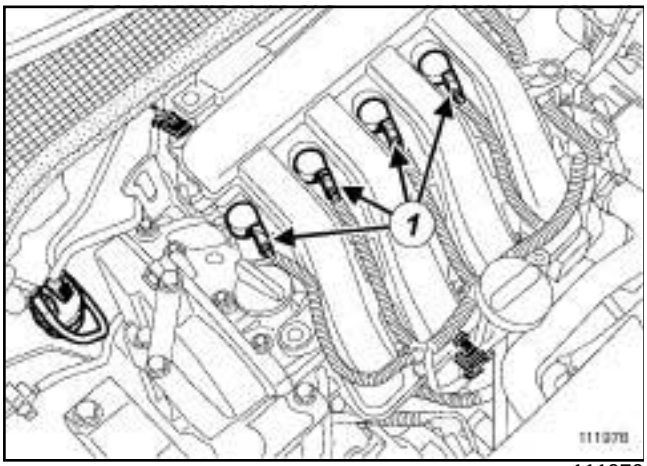
❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4J or K4M

Tightening torques ▽	
coil bolts	**14 N.m**

REMOVAL

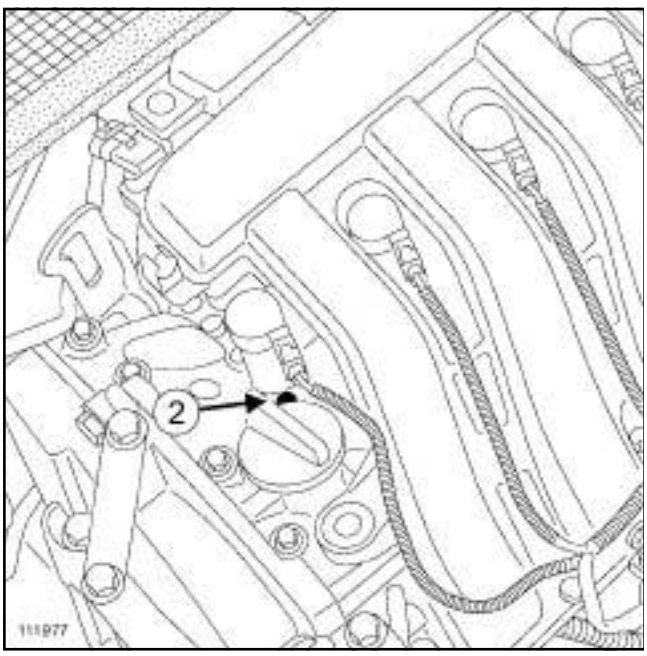
OPERATION FOR REMOVAL OF PART CONCERNED



111976

❏ Disconnect the coil connectors (**1**) .

❏ Be sure to replace any damaged connectors.



111977

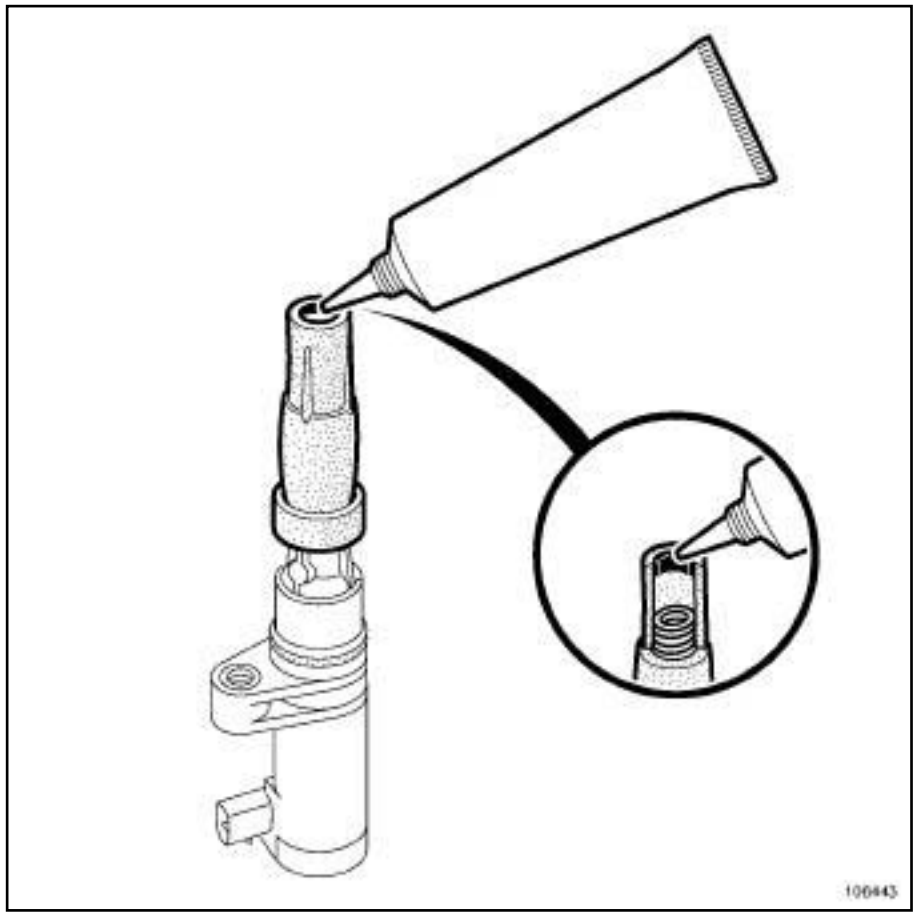
❏ Remove:

- the coil bolts (**2**) ,
- the coils.

K4J or K4M

REFITTING

I - REFITTING PREPARATION OPERATION



106443

- ❏ On the ignition coils, apply a bead of **FLUOSTAR 2L** (see) , **2 mm** in diameter around the inner edge of the high-tension cap.
- ❏ If necessary, replace the coil O-rings.

II - REFITTING PART CONCERNED

- ❏ Part always to be replaced: coil bolts.
- ❏ Refit:
  - the coils,
  - the coil bolts.
- ❏ Torque tighten the **coil bolts (14 N.m)**.
- ❏ Connect the coil connectors.

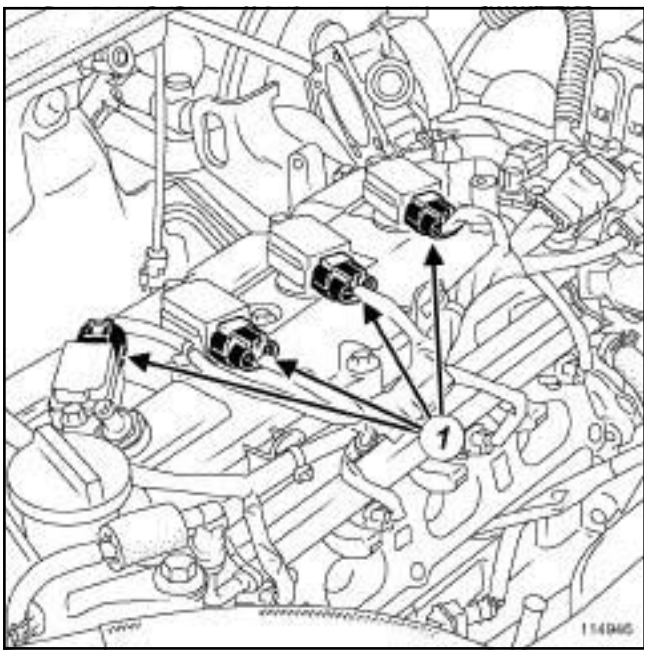
Tightening torques ▽	
ignition coil mounting bolts	7 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

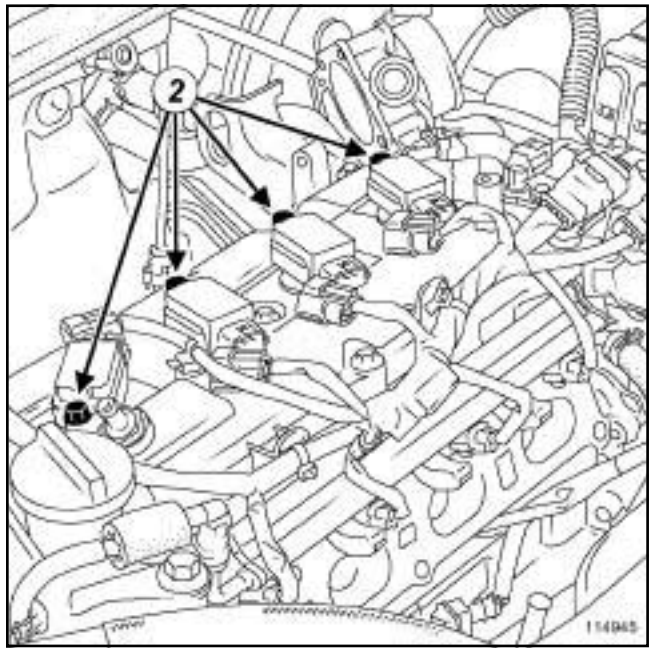
❏ Remove the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .



114946

❏ Disconnect the ignition coil connectors (**1**) .

II - REMOVAL OF PART CONCERNED



114945

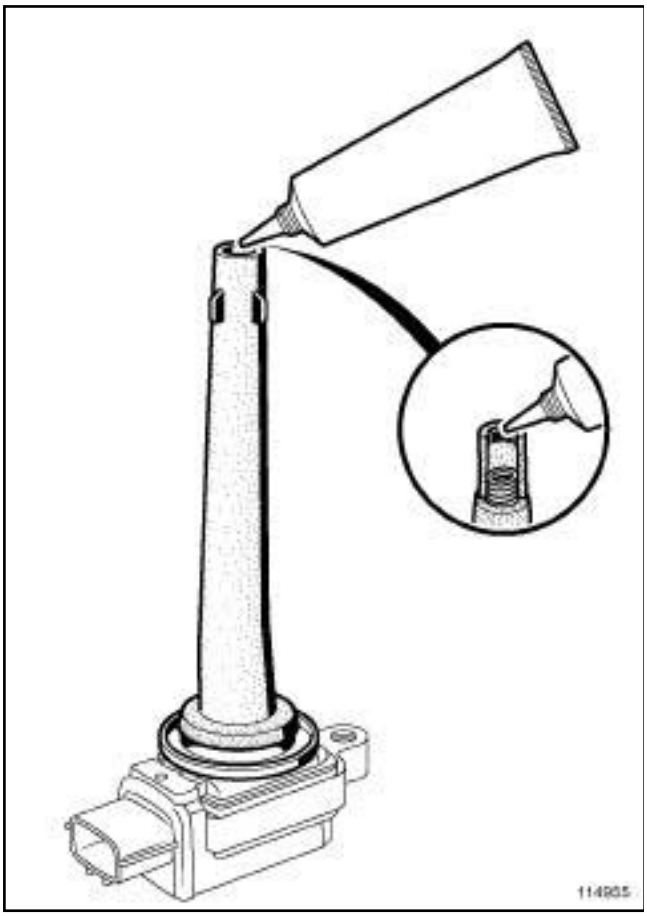
❏ Remove:

- the ignition coil mounting bolts (**2**) ,
- the ignition coils.

M4R

REFITTING

I - REFITTING PREPARATION OPERATION



114955

❑ Apply to the ignition coils a bead of **FLUORINATED GREASE, PART NO. 82 00 168 855** with a diameter of **2mm** around the inner edge of the high pressure cap.

II - REFITTING THE PART CONCERNED

❑ Put the ignition coils into position.

❑ Tighten to torque the **ignition coil mounting bolts (7 Nm)**.

III - FINAL OPERATION

❑ Connect the ignition coil connectors.

❑ Refit the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) .

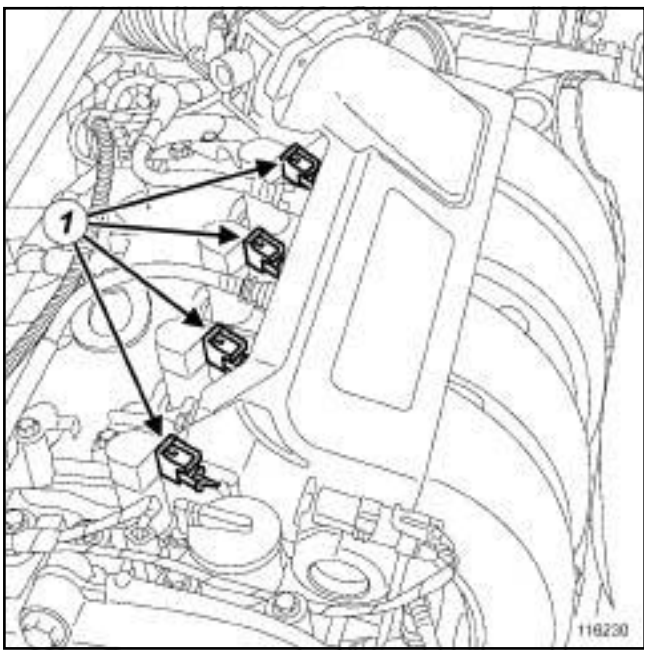
Tightening torques ▽	
ignition coil mounting bolts	**15 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

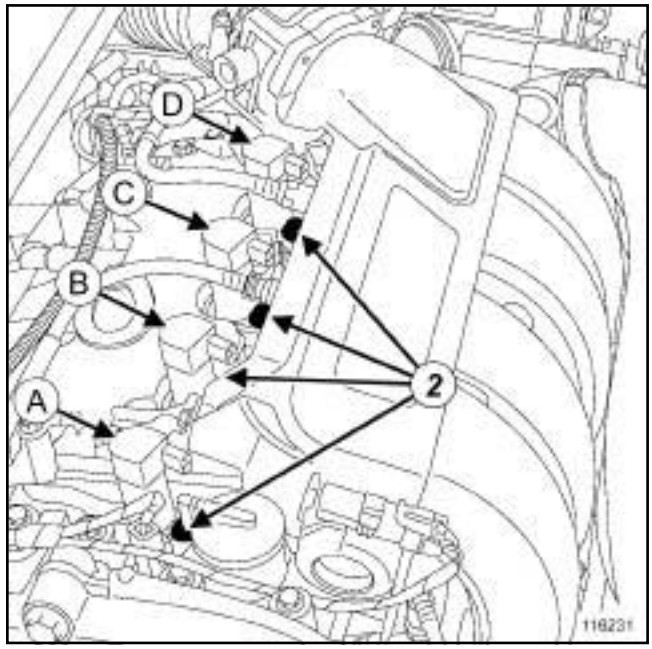
II - OPERATION FOR REMOVAL OF PART CONCERNED



116230

❑ Disconnect:

- the ignition coil connectors (**1**) ,
- the camshaft dephaser solenoid valve connector.



116231

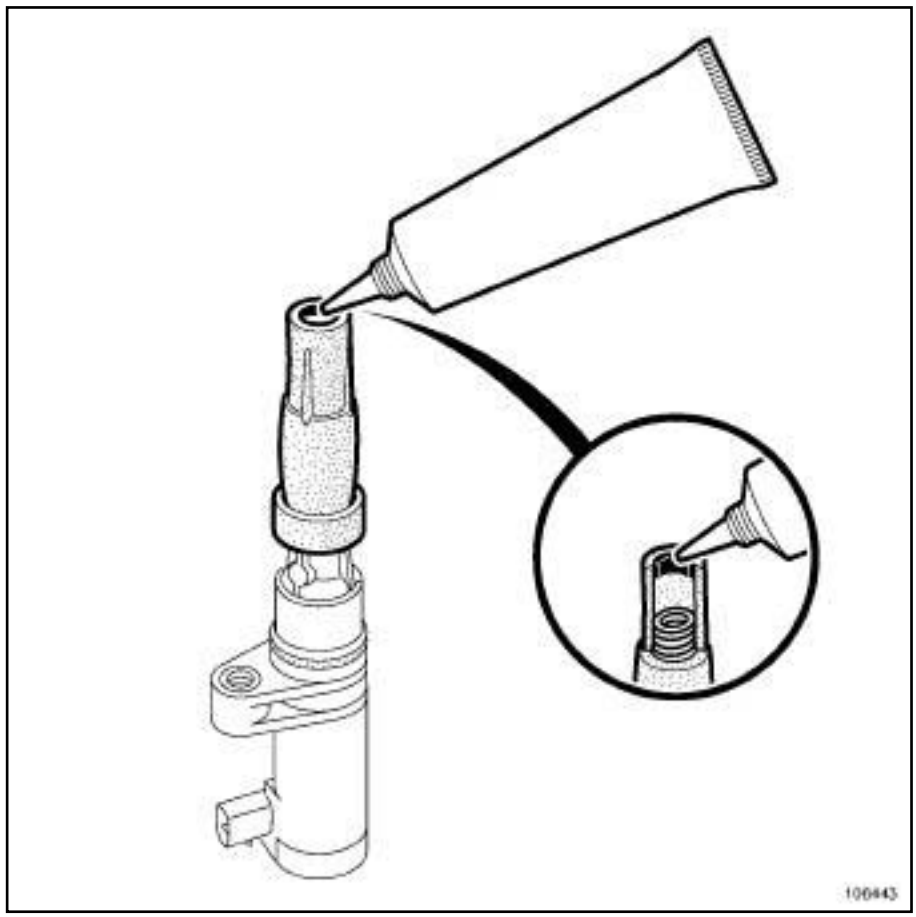
❑ Remove:

- the ignition coil mounting bolts (**2**) ,
- the ignition coils (**B**) , (**C**) and (**D**) ,
- the camshaft dephaser solenoid valve,
- the ignition coil (**A**) .

F4R

REFITTING

I - REFITTING PREPARATION OPERATION



106443

❏ Apply to the four ignition coils a bead of **fluorine grease (part no. 82 00 168 855) 2 mm** in diameter around the inner edge of the high-tension cap.

❏ If necessary, replace the ignition coil O-rings.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the cylinder ignition coils ***(A)*** , ***(B)*** , ***(C)*** ,and ***(D)*** ,
- the camshaft dephaser solenoid valve,
- the ignition coil mounting bolts.

❏ Torque tighten the **ignition coil mounting bolts (15 Nm)**.

❏ Connect:

- the ignition coil connectors,
- the camshaft dephaser solenoid valve connector.

III - FINAL OPERATION.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

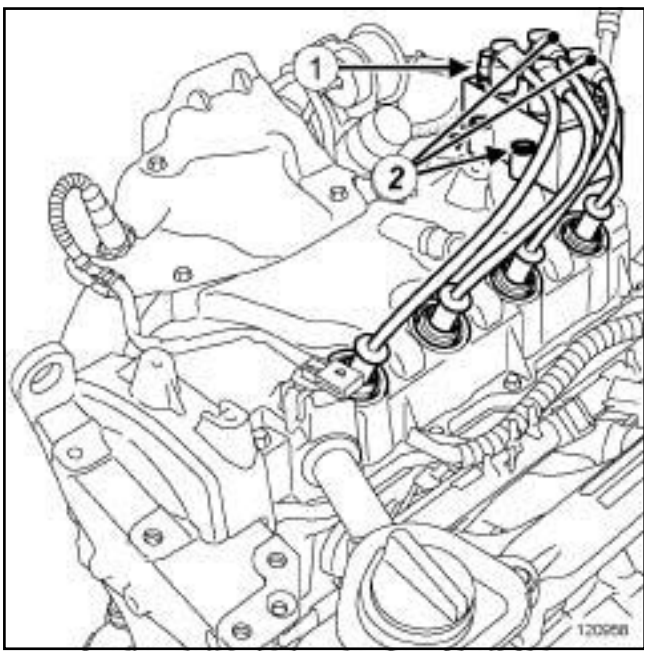
Tightening torques ▽	
ignition coil bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the front engine cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



120958

❑ Disconnect:

- the ignition coil connector (**1**) ,
- the spark plug lead high-tension caps from the ignition coil.

WARNING
To disconnect the spark plug leads, never pull on the leads but by the extensions.

❑ Remove:

- the bolts (**2**) from the ignition coil,
- the ignition coil.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ It is essential to apply a bead of **FLUOSTAR 2L** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) with a diameter of **2 mm** to the inner edge of the high-tension caps on the spark plug and ignition coil side.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the ignition coil,
- the ignition coil bolts.

❑ Torque tighten the **ignition coil bolts (10 Nm)**.

❑ Check the spark plug leads and ignition coil leads match.

❑ Connect:

- the spark plug lead high-tension caps to the ignition coil,
- the ignition coil connector.

III - FINAL OPERATION.

❑ Refit the engine cover.

D4F, and 740 – D4F, and 784 or 786

Special tooling required	
Ele. 1933	23 N.m tightening wrench for spark plugs
Ele. 1382-01	14 mm Plug spanner.

Equipment required
set of feeler gauges

Tightening torques ▽	
spark plugs	**23 N.m**

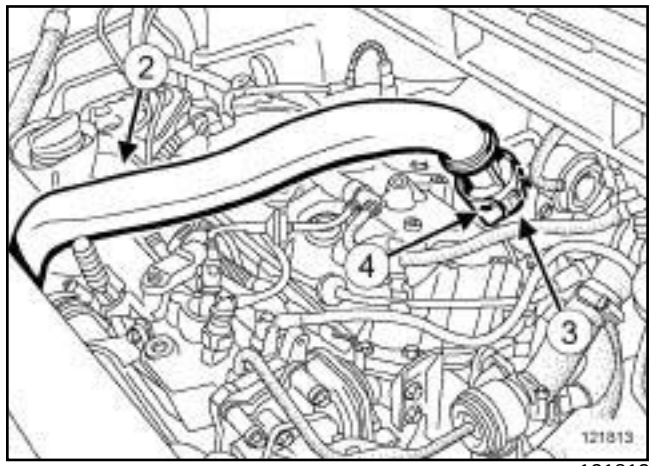
Spark plug electrode gap

Type of spark plug	Gap (mm)
NGK	0.65 ± 0.05

REMOVAL

I - REMOVAL PREPARATION OPERATION

D4F, and 784



121813

❑ Remove the turbocharger air outlet pipe bolt (**2**) from the inlet distributor.

❑ Remove the turbocharger air outlet pipe clip (**3**) from the turbocharger.

Note:

If the clip (**4**) is removed from the heat resistant protector, the latter must be replaced.

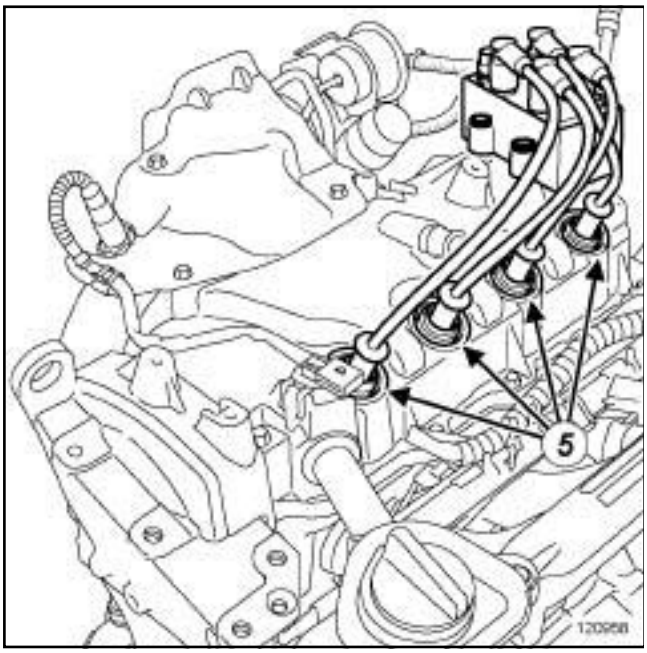
❑ Move aside the turbocharger air outlet pipe.

D4F, and 740

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

D4F, and 740 – D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



120958

❑

WARNING
To disconnect the spark plug leads, pull on the extensions and not on the leads.

Disconnect the spark plug ignition wiring harnesses (**5**) .

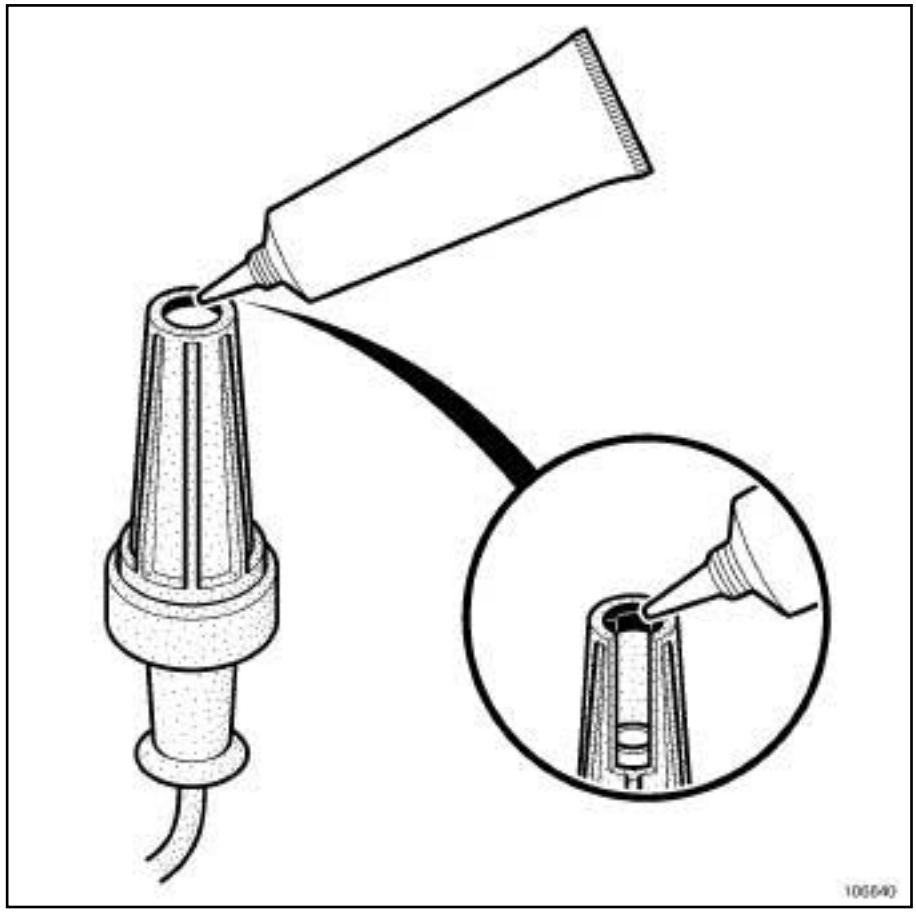
❑ Remove the spark plugs using the **(Ele. 1933)** equipped with the **(Ele. 1382-01)**.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check and, if necessary, correct the spark plug electrode gaps using a **set of feeler gauges**.

D4F, and 740 – D4F, and 784 or 786



106640

❑ It is essential to apply a bead of **FLUOSTAR 2L** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) with a diameter of **2 mm** to the inner edge of the high tension caps on the spark plug and ignition coil side.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the spark plugs.

❑ Torque tighten the **spark plugs (23 N.m)** using the **(Ele. 1933)** fitted with the **(Ele. 1382-01)**.

III - FINAL OPERATION

❑ Connect the ignition wiring harnesses to the spark plugs.

D4F, and 784

❑ Refit the turbocharger air outlet pipe.

❑ Clip the turbocharger air outlet pipe onto the turbocharger.

❑ Refit the turbocharger air outlet pipe bolt on the inlet distributor.

D4F, and 740

❑ Refit the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

F4R

Special tooling required	
Ele. 1382	Set of plug wrenches 16 & 21 mm torque 17.5 & 28 N.m + square adapter 9-9.52 for wrench Ele. 1086

Equipment required
set of feeler gauges

Tightening torques ▽	
spark plugs	**28 N.m**

Spark plug electrode gap

Type of spark plug	Gap (mm)
CHAMPION	0.90 ± 0.05
NGK	0.85 ± 0.05

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the engine cover (if fitted),
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

123172

❑ Remove the spark plugs using the tool **(Ele. 1382)** with the **grey** sleeve.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check and, if necessary, correct the spark plug electrode gaps using a **set of feeler gauges**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the spark plugs.

❑ Torque tighten the **spark plugs (28 N.m)** using **(Ele. 1382)** fitted with the **grey** sleeve.

III - FINAL OPERATION

❑ Refit:

- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the engine cover (if fitted).

M4R

Special tooling required	
Ele. 1382	Set of plug wrenches 16 & 21 mm torque 17.5 & 28 N.m + square adapter 9-9.52 for wrench Ele. 1086
Ele. 1382-01	14 mm Plug spanner.

Tightening torques ▽	
spark plugs	**17.5 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the engine cover,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

123369

❑ Remove the spark plugs using the tool **(Ele. 1382)** with the **red** sleeve equipped with the tool **(Ele. 1382-01)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the spark plugs.

❑ Torque tighten the **spark plugs (17.5 N.m)** using the tool **(Ele. 1382)** with the **red** sleeve equipped with the tool **(Ele. 1382-01)**.

II - FINAL OPERATION

❑ Refit:

- the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) ,
- the inlet manifold (see **12A**, **Fuel mixture**, **Inlet distributor: Removal - Refitting**, page **12A-45**) ,
- the engine cover.

K4J or K4M

Special tooling required	
Ele. 1382	Set of plug wrenches 16 & 21 mm torque 17.5 & 28 N.m + square adapter 9-9.52 for wrench Ele. 1086

Tightening torques ▽	
spark plugs	**28 N.m**

Spark plug electrode gap

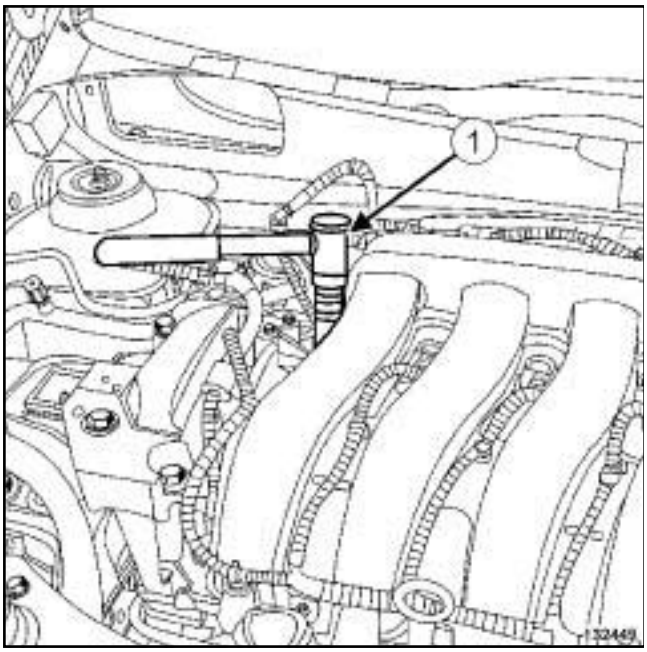
Type of spark plug	Gap (mm)
CHAMPION	0.95 ± 0.05
EYQUEM	0.95 ± 0.05
NGK	0.95 ± 0.05

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



132449

❑ Remove the spark plugs using **(Ele. 1382)** (**1**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check and, if necessary, correct the electrode gap for each spark plug.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the spark plugs.

❑ Torque tighten the **spark plugs (28 N.m)** using **(Ele. 1382)** fitted with the **grey** sleeve.

III - FINAL OPERATION

❑ Refit the ignition coils (see **17A**, **Ignition**, **Coils: Removal - Refitting**, page **17A-2**) .

D4F, and 740 – D4F, and 742 or 764

Special tooling required	
Ele. 1933	23 N.m tightening wrench for spark plugs
Ele. 1382-01	14 mm Plug spanner.

Equipment required
set of feeler gauges

Tightening torques ▽	
spark plugs	**23 N.m**

Spark plug electrode gap

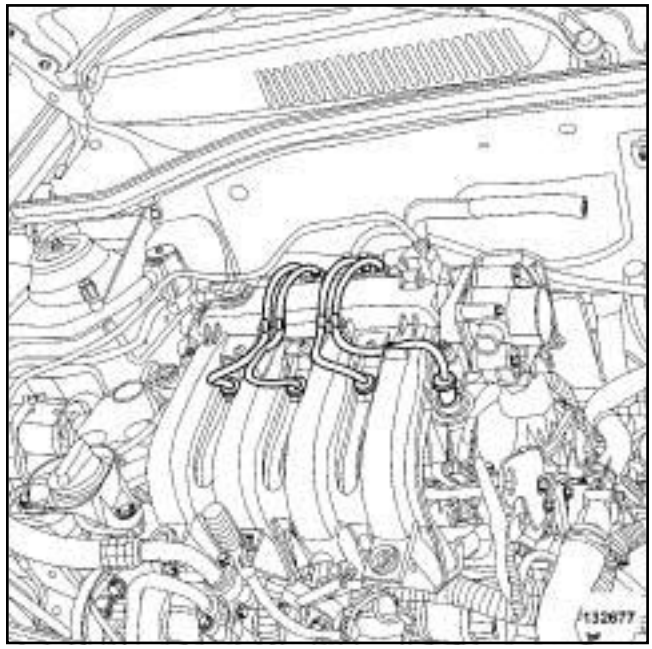
Type of spark plug	Gap (mm)
CHAMPION	0.90 ± 0.05
NGK	0.85 ± 0.05

REMOVAL

I - REMOVAL PREPARATION OPERATION

D4F, and 740 – D4F, and 742 or 764

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .



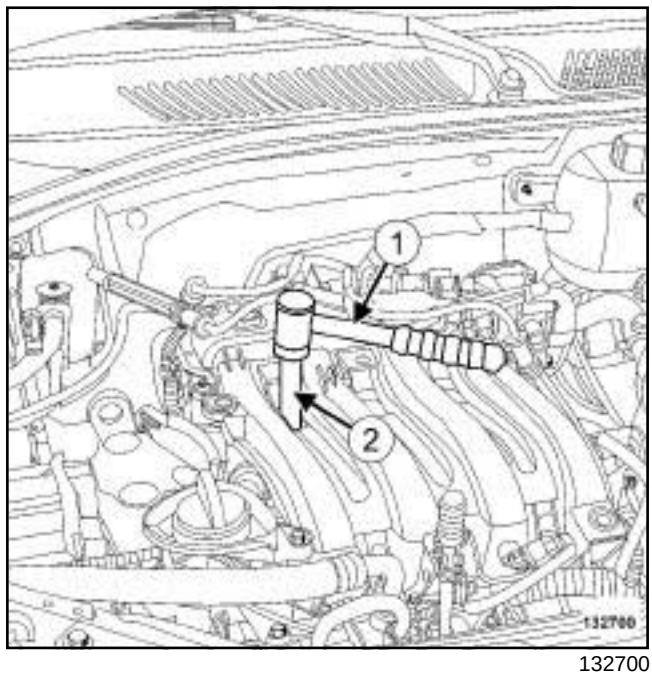
132677

❑

WARNING
To disconnect the spark plug leads, pull on the extensions and not on the leads.

Disconnect the spark plug wiring.

II - OPERATION FOR REMOVAL OF PART CONCERNED



132700

❑ Remove the spark plugs using the **(Ele. 1933)** (**1**) equipped with the **(Ele. 1382-01)** (**2**) .

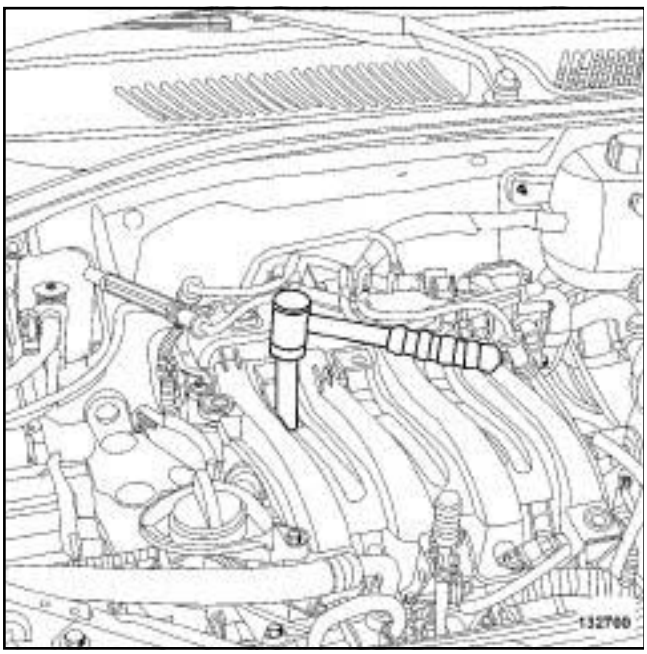
D4F, and 740 – D4F, and 742 or 764

REFITTING

I - REMOVAL PREPARATION OPERATION

❑ Check and, if necessary, correct the spark plug electrode gaps using a **set of feeler gauges**.

II - REFITTING OPERATION FOR PART CONCERNED



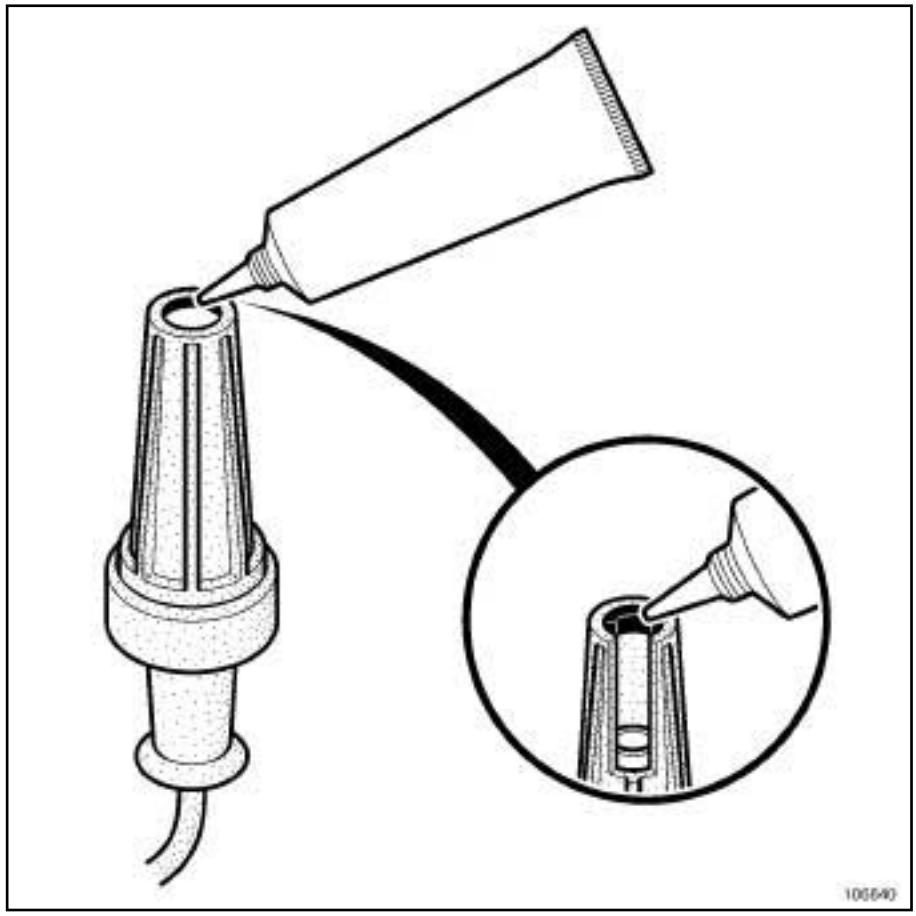
132700

❑ Refit the spark plugs.

❑ Torque tighten the **spark plugs (23 N.m)** using the **(Ele. 1933)** fitted with the **(Ele. 1382-01)**.

D4F, and 740 – D4F, and 742 or 764

III - FINAL OPERATION



106640

❏ Apply a bead of **FLUORSTAR 2L** grease (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) **2 mm** in diameter on the internal perimeter of the high-tension caps at the spark plug end.

❏ Connect the spark plug wiring.

D4F, and 740 – D4F, and 742 or 764

❏ Refit the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

D4F, and 740 or 742 or 764

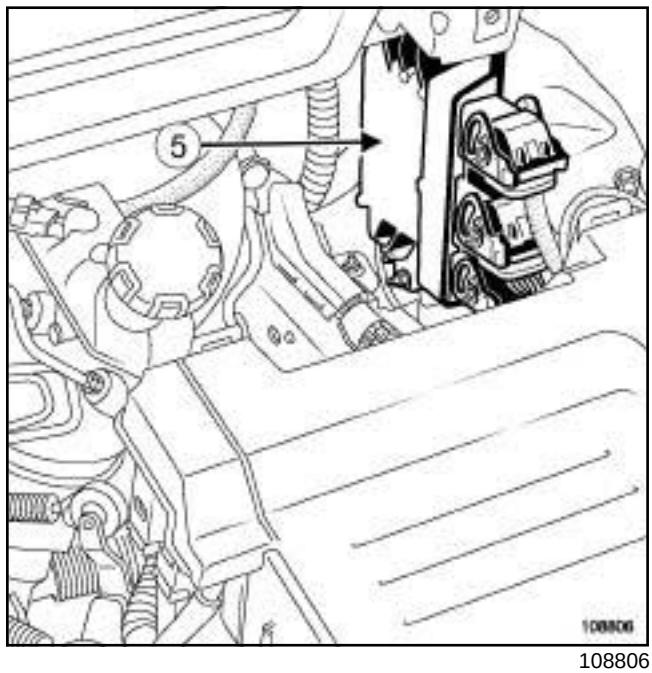
112344

(**1**) Petrol vapour rebreathing solenoid valve

(**2**) Air inlet pressure sensor

(**3**) Motorised throttle valve

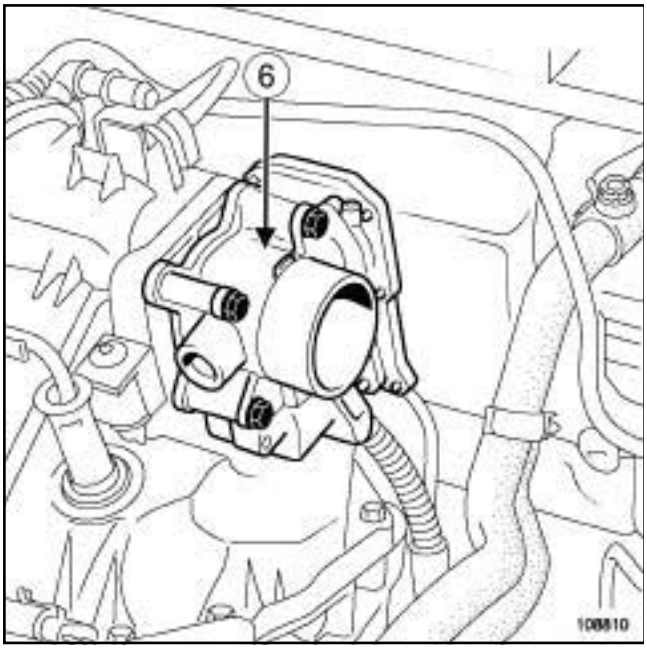
(**4**) Injection computer



108806

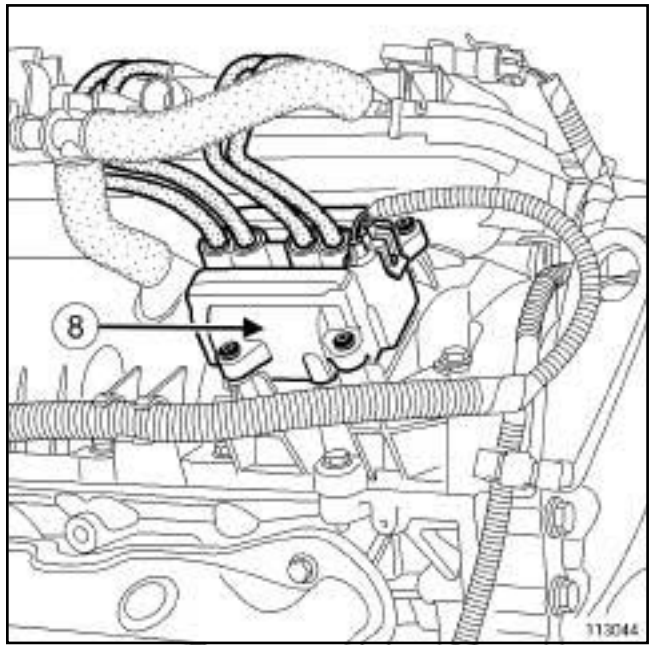
(**5**) Fuel injection computer

D4F, and 740 or 742 or 764



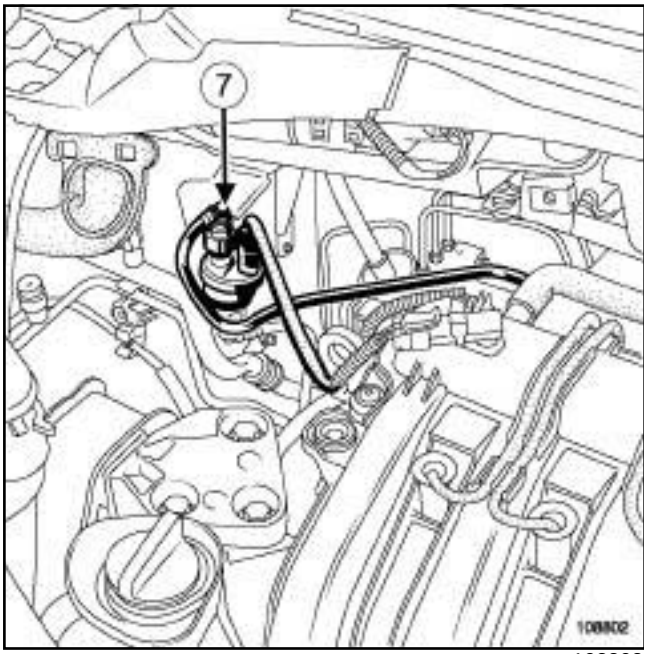
108810

(**6**) Motorised throttle valve



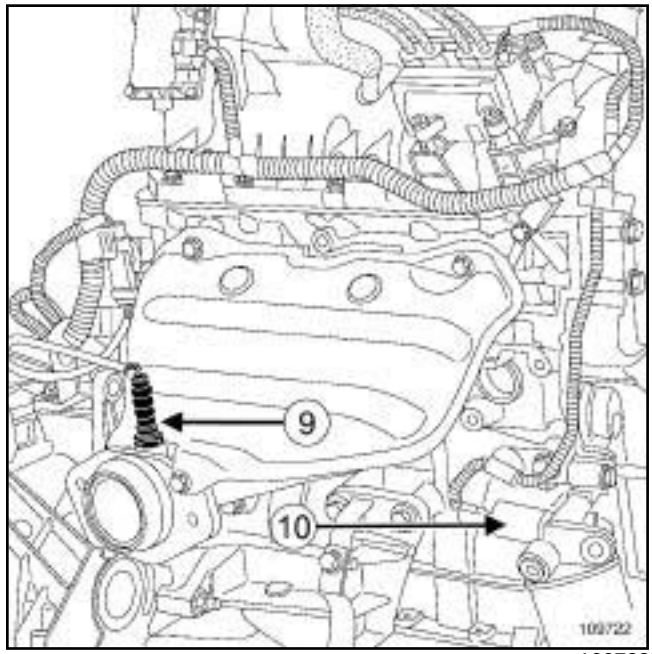
113044

(**8**) Ignition coil



108802

(**7**) Fuel vapour recirculation solenoid valve

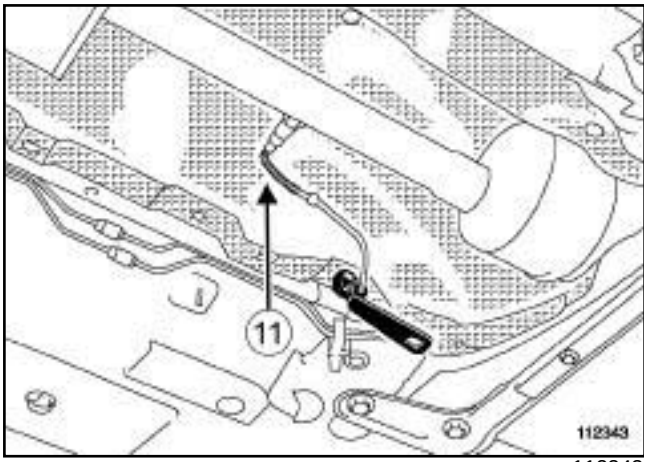


109722

(**9**) Upstream oxygen sensor

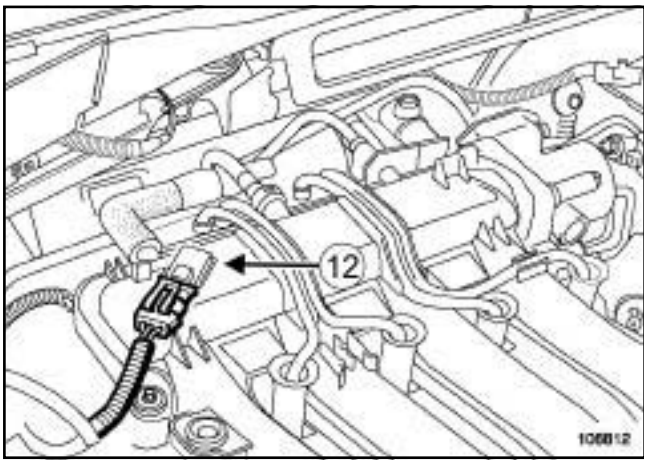
(**10**) Oil pressure sensor

D4F, and 740 or 742 or 764



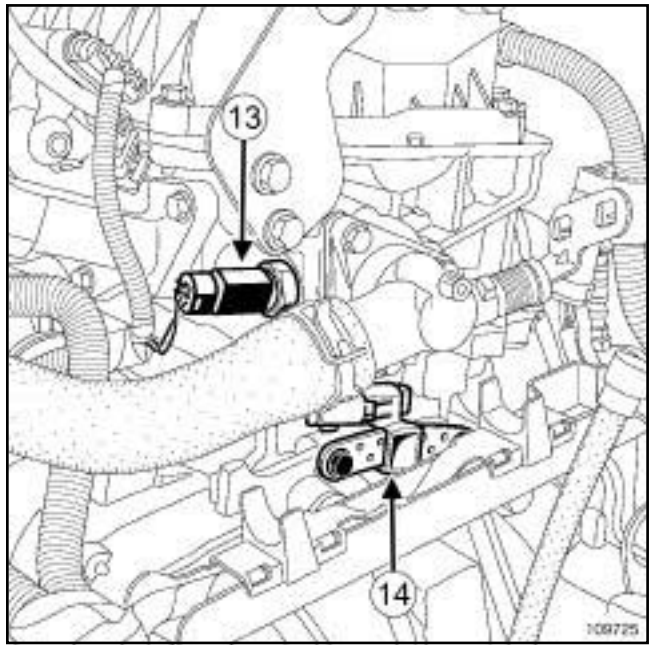
112343

(**11**) Downstream oxygen sensor



108812

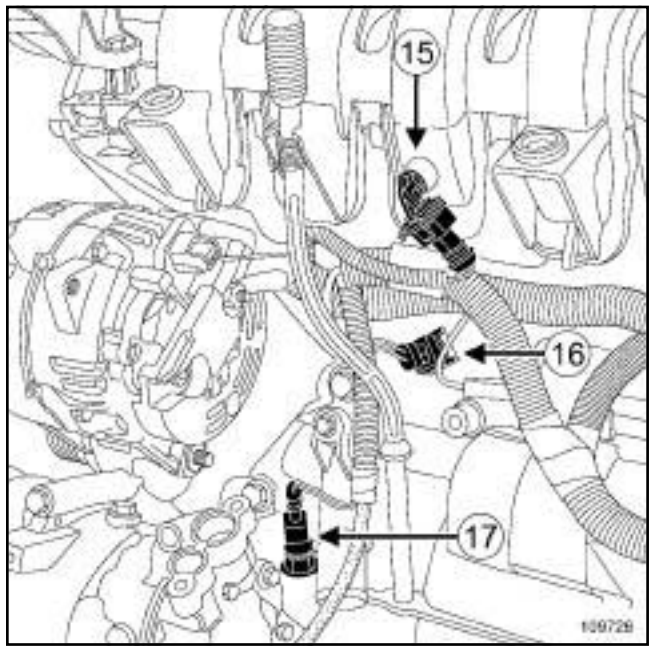
(**12**) Air inlet pressure sensor



109725

(**13**) Coolant temperature sensor

(**14**) Engine speed and flywheel position sensor



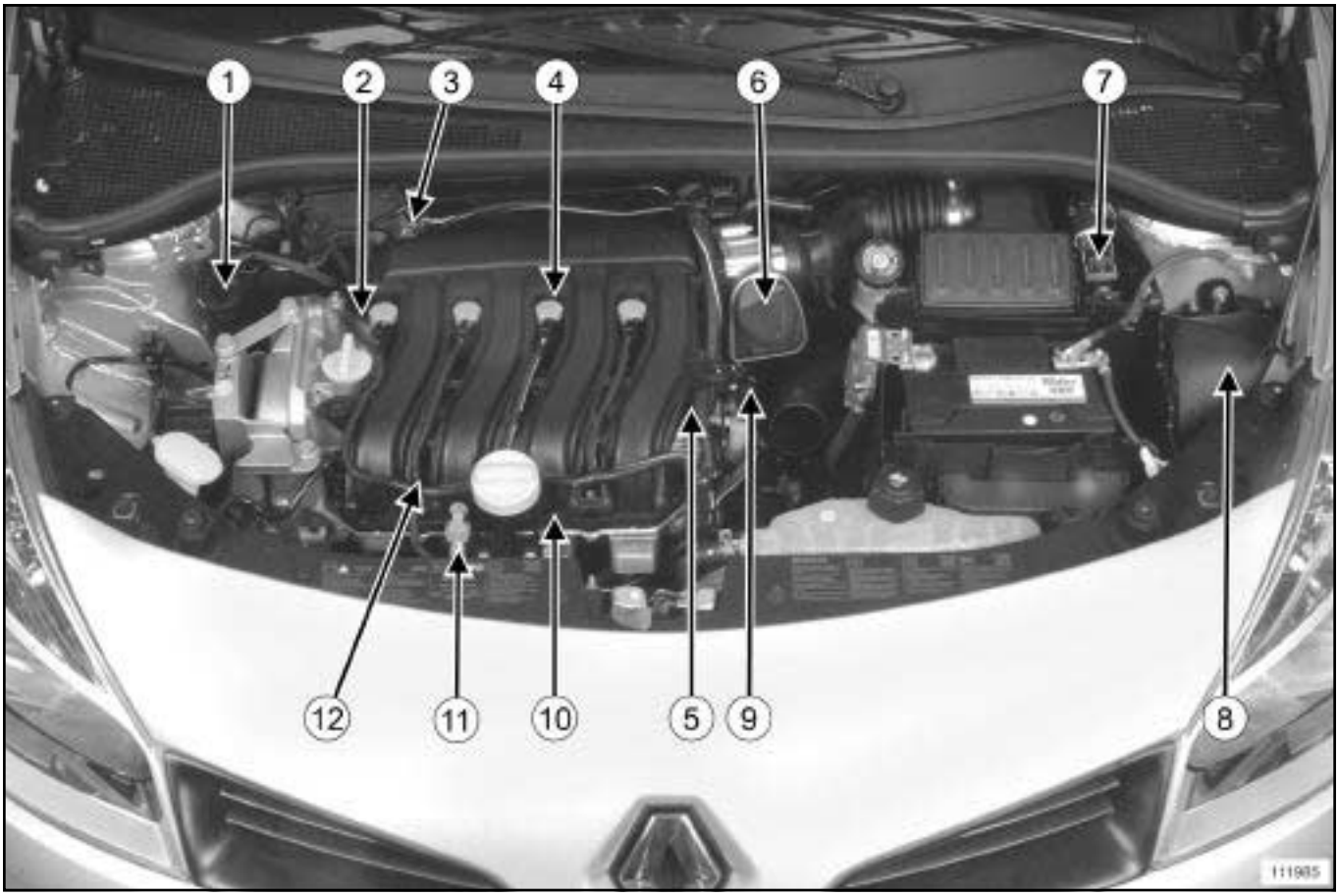
109726

(**15**) Air inlet temperature sensor

(**16**) Pinking sensor

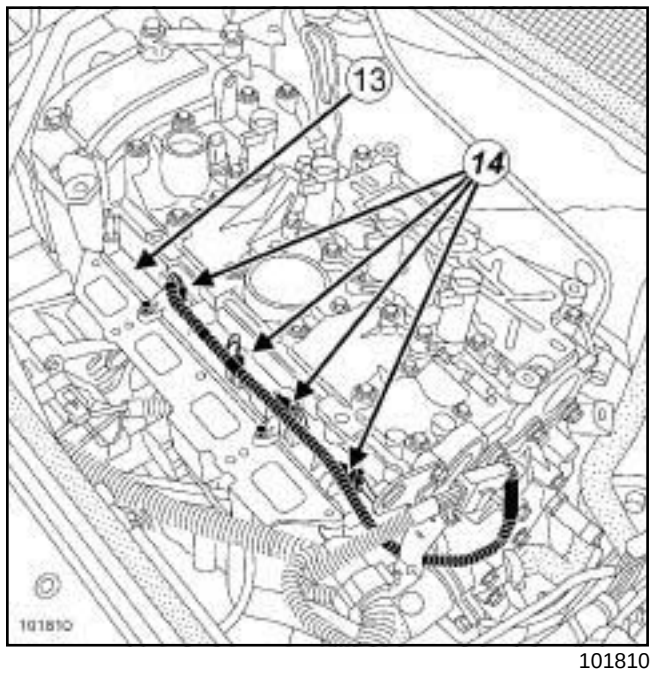
(**17**) Oil level sensor

K4J or K4M



111985

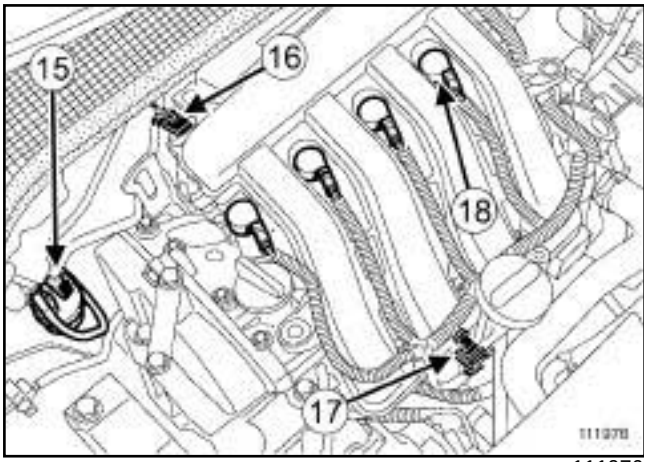
(**1**) Fuel vapour recirculation solenoid valve
(**2**) Camshaft dephaser solenoid valve
(**3**) Manifold pressure sensor
(**4**) Ignition coil
(**5**) Camshaft position sensor
(**6**) Motorised throttle valve
(**7**) Injection computer
(**8**) Connection unit
(**9**) Coolant temperature sensor
(**10**) Pinking sensor
(**11**) Air temperature sensor
(**12**) Injection rail and injectors



101810

(**13**) Injection rail
(**14**) Injectors

K4J or K4M



111976

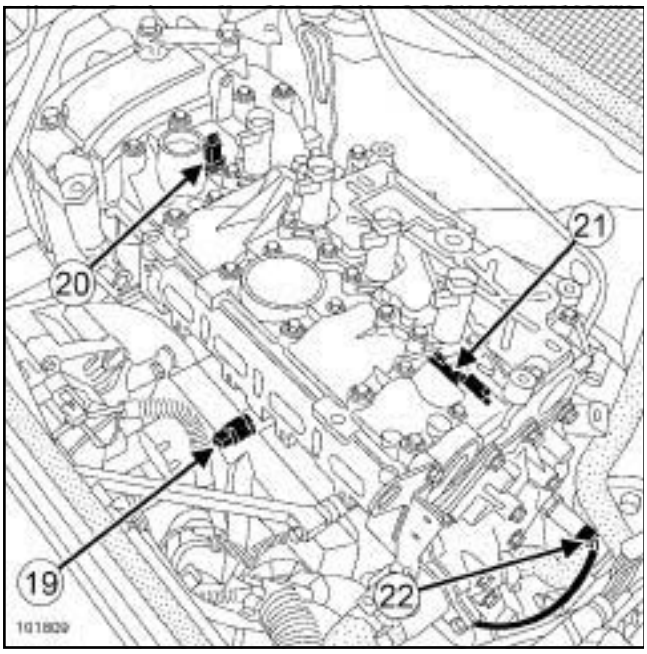
(**15**) Fuel vapour recirculation solenoid valve

(**16**) Manifold pressure sensor

(**17**) Air temperature sensor

(**18**) Ignition coils

K4M



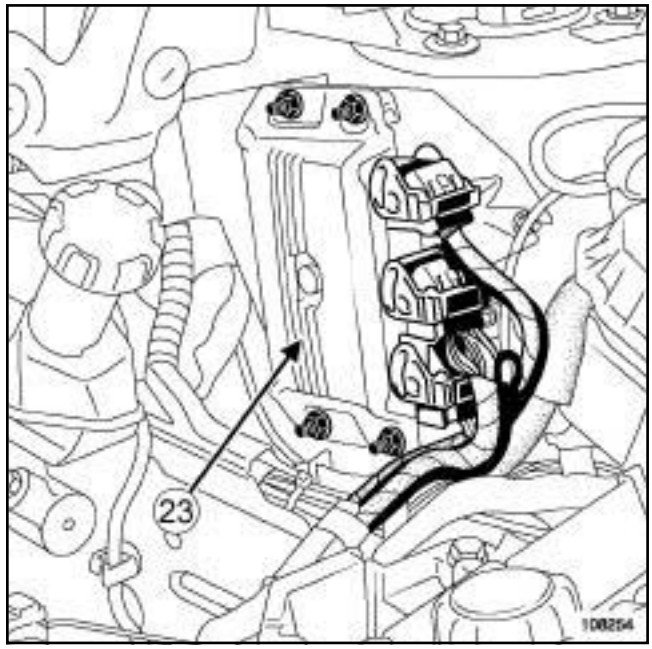
101809

(**19**) Pinking sensor

(**20**) Camshaft dephaser solenoid valve

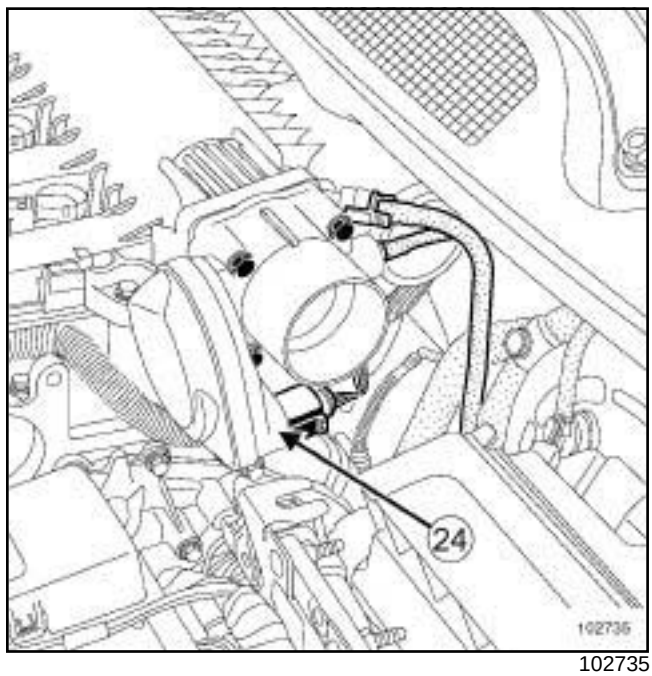
(**21**) Camshaft position sensor

(**22**) Coolant temperature sensor



108254

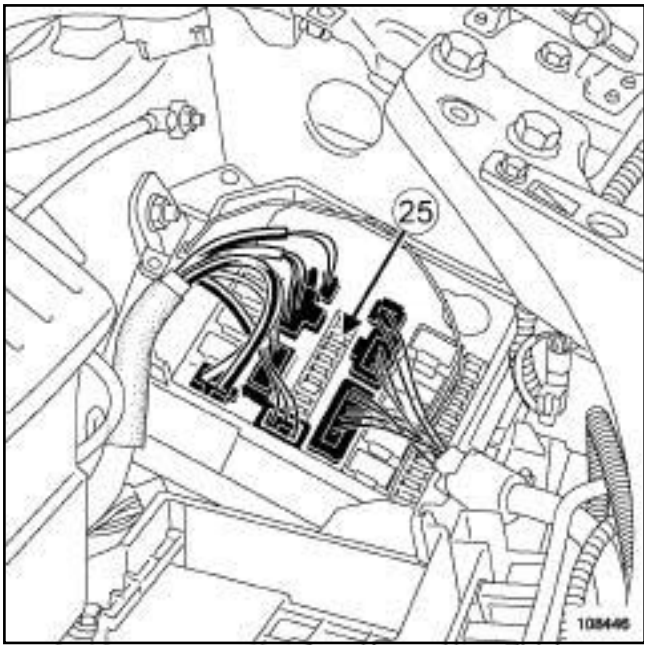
(**23**) Fuel injection computer



102735

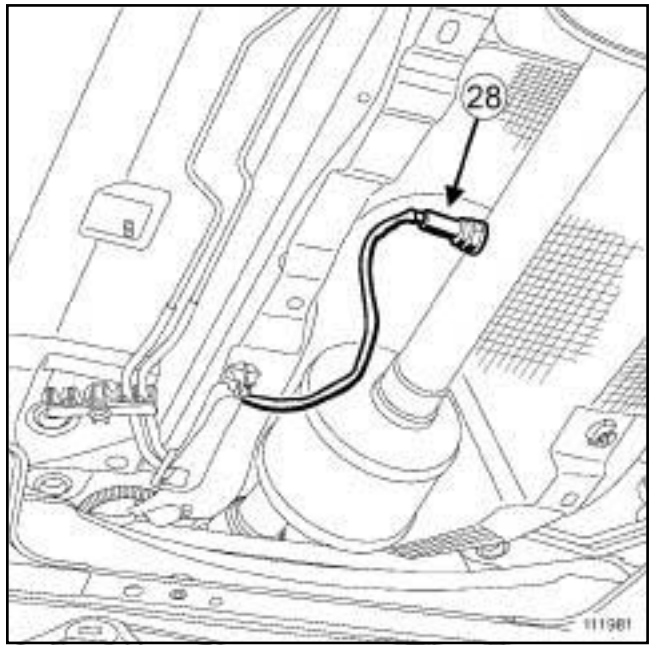
(**24**) Motorised throttle valve

K4J or K4M



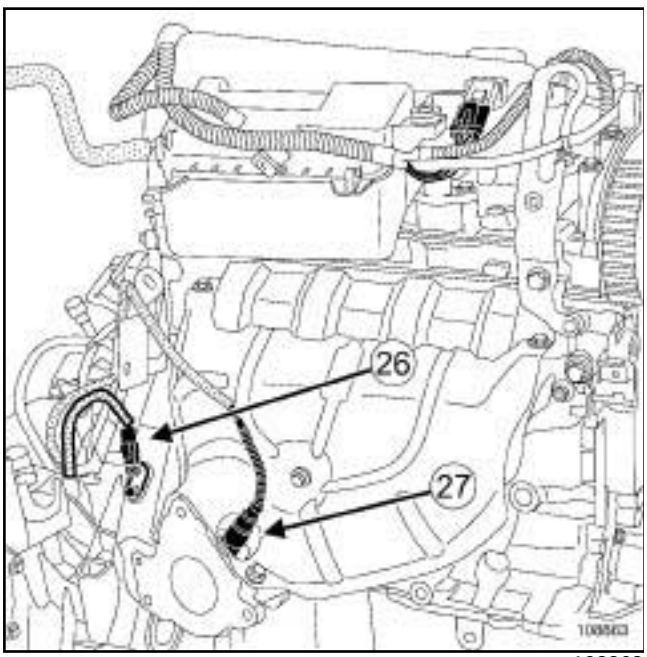
108446

(**25**) Connection unit



111981

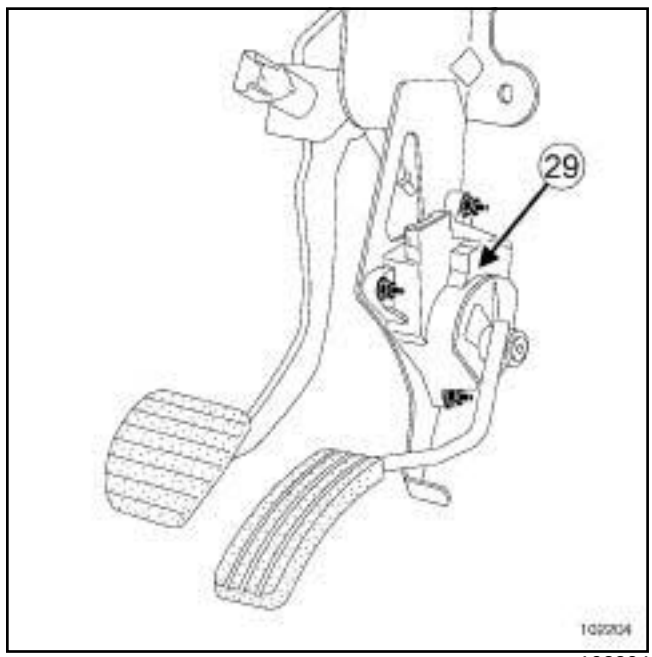
(**28**) Downstream oxygen sensor



108863

(**26**) Engine speed and position sensor

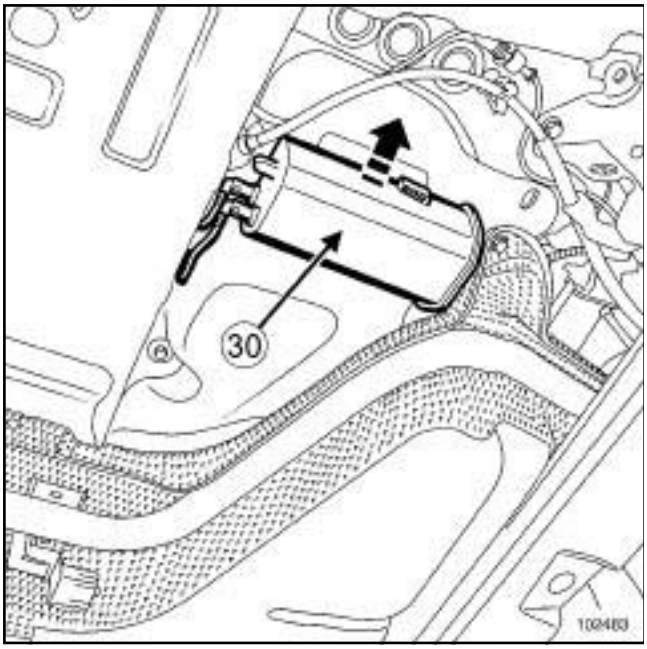
(**27**) Upstream oxygen sensor



102204

(**29**) Accelerator pedal potentiometer

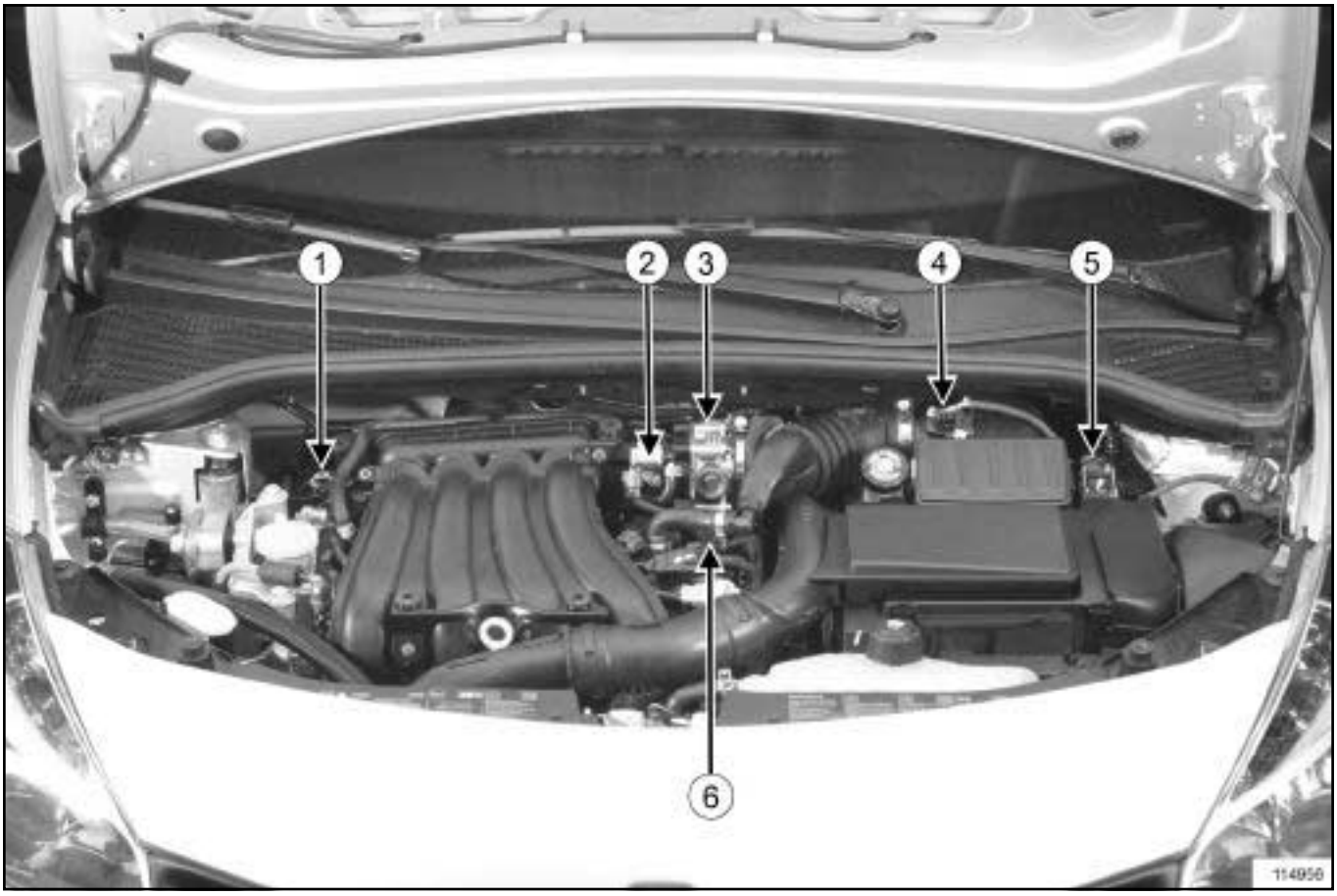
K4J or K4M



102483

(**30**) Fuel vapour absorber

M4R



114956

(**1**) Atmospheric pressure sensor

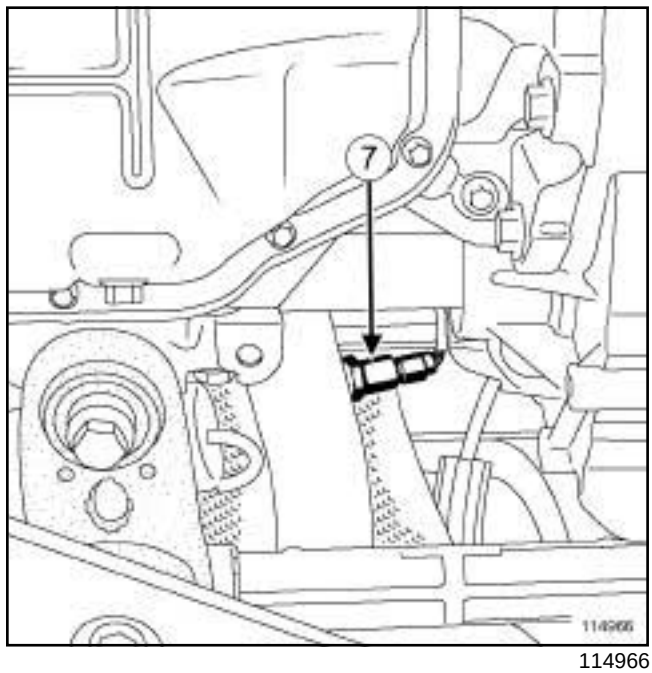
(**2**) Fuel vapour rebreathing solenoid valve

(**3**) Motorised throttle valve

(**4**) Airflow meter

(**5**) Injection computer

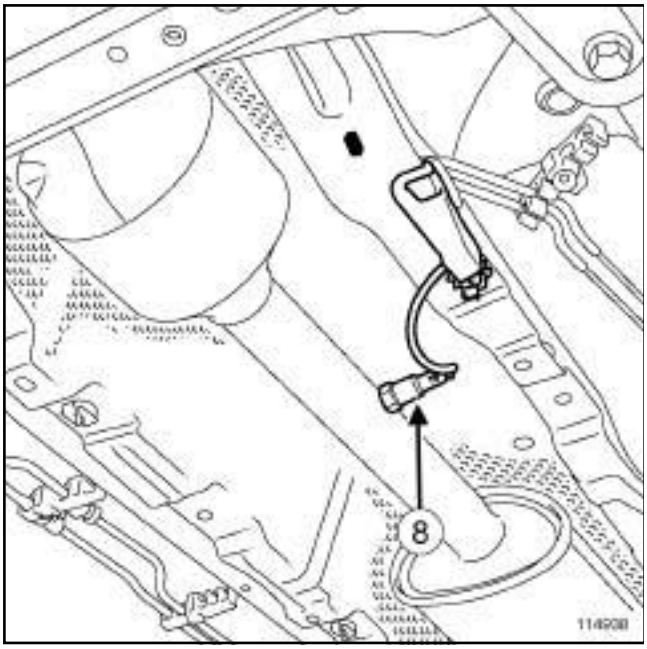
(**6**) Camshaft position sensor



114966

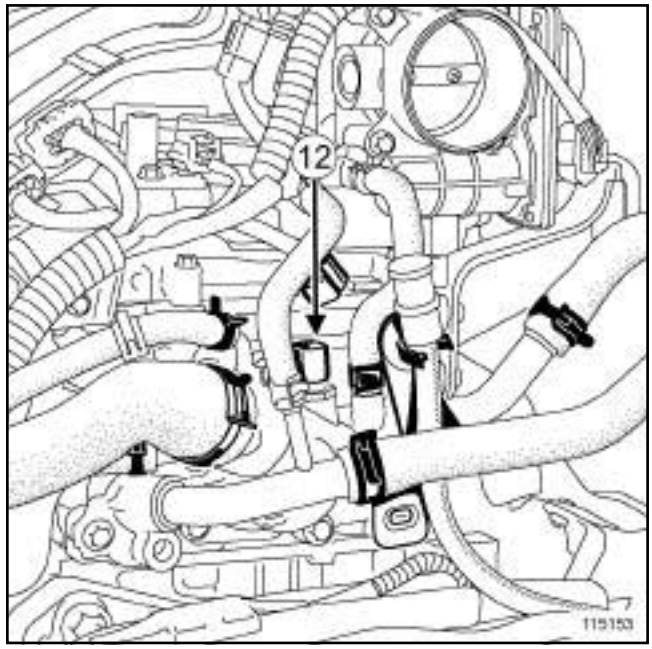
(**7**) Upstream oxygen sensor

M4R



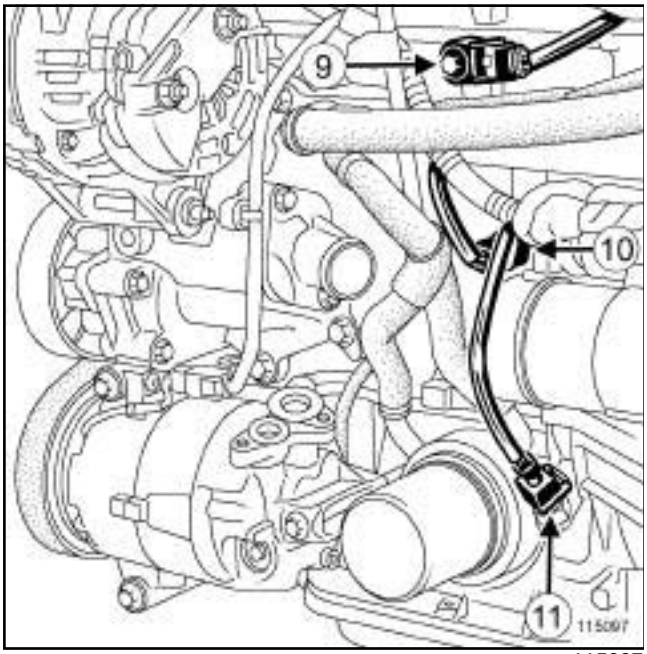
114938

(**8**) Downstream oxygen sensor



115153

(**12**) Coolant temperature sensor

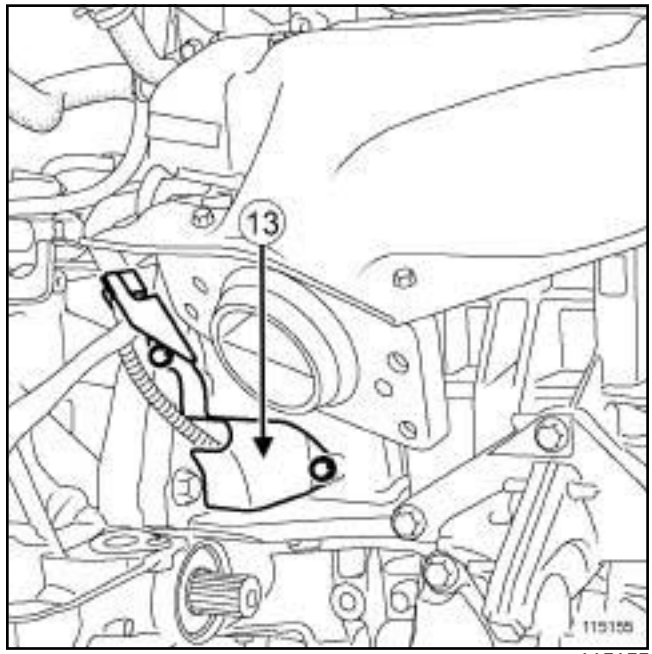


115097

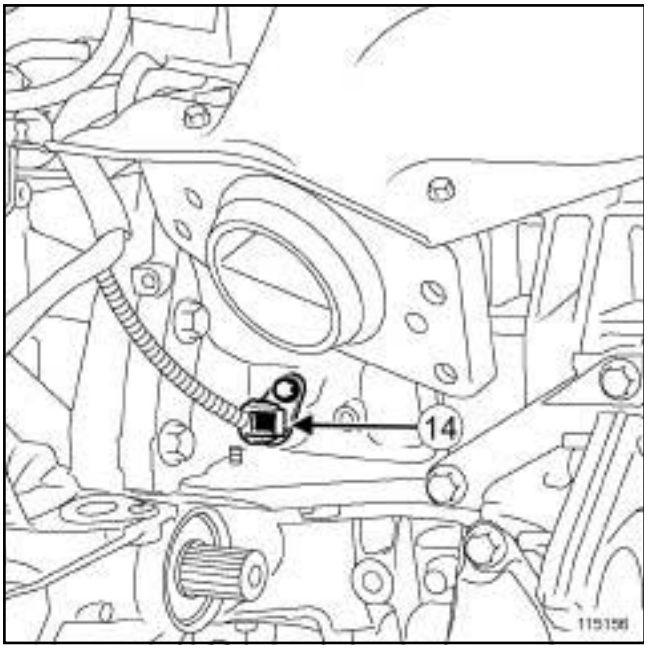
(**9**) Pinking sensor

(**10**) Oil pressure sensor

(**11**) Oil level sensor



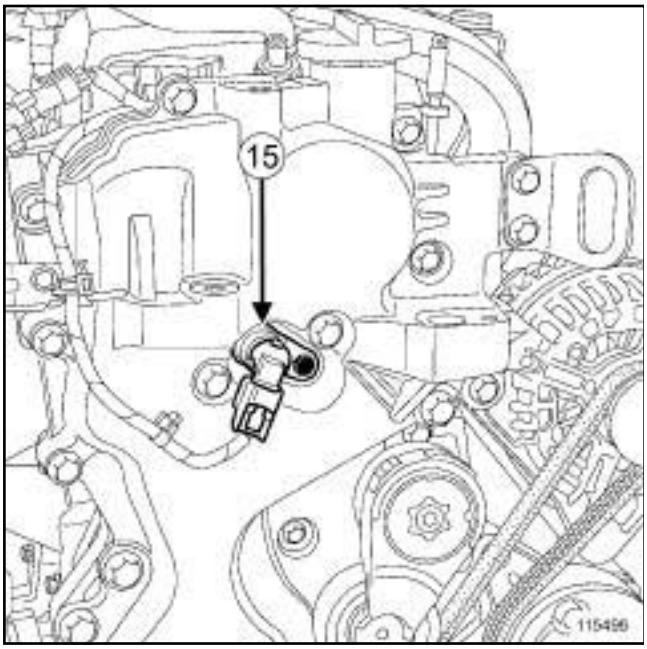
115155



115156

(**13**) Engine speed and flywheel position sensor protector.

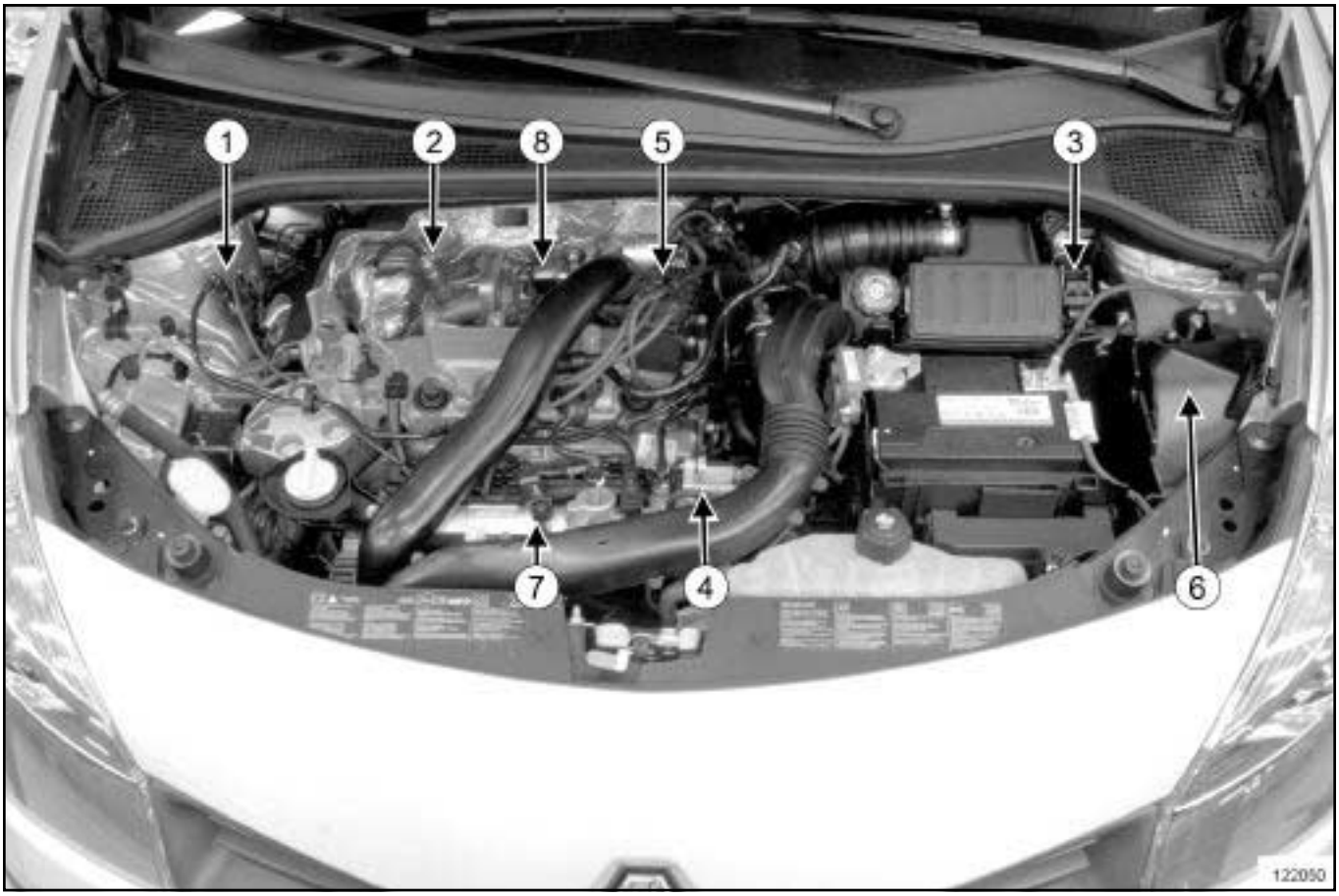
(**14**) Engine speed and flywheel position sensor



115496

(**15**) Camshaft dephaser solenoid valve

D4F, and 784 or 786



122050

(**1**) Fuel vapour recirculation solenoid valve

(**2**) Upstream oxygen sensor

(**3**) Petrol injection computer

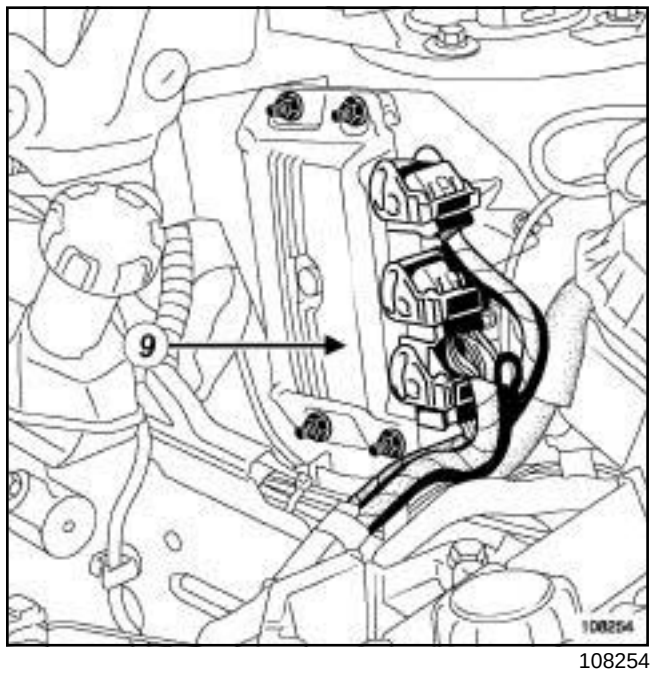
(**4**) Motorised throttle valve

(**5**) Ignition coil

(**6**) Engine compartment connection unit

(**7**) Intake distributor pressure sensor

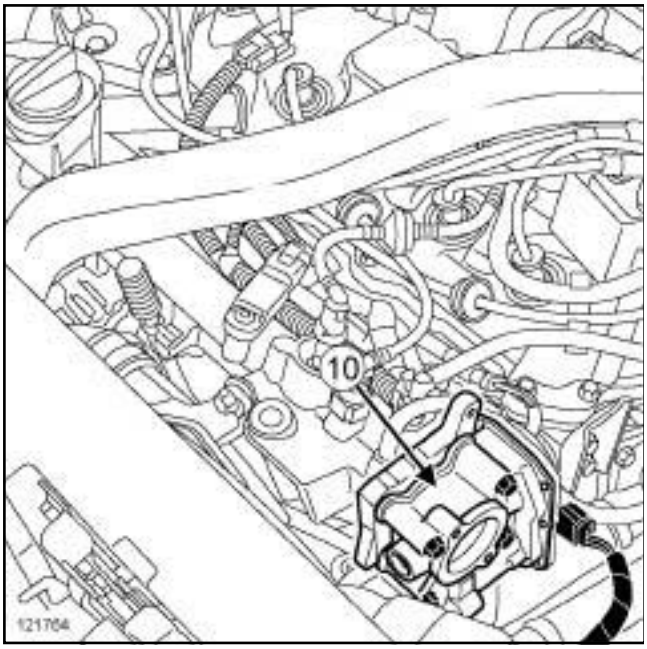
(**8**) Turbocharger



108254

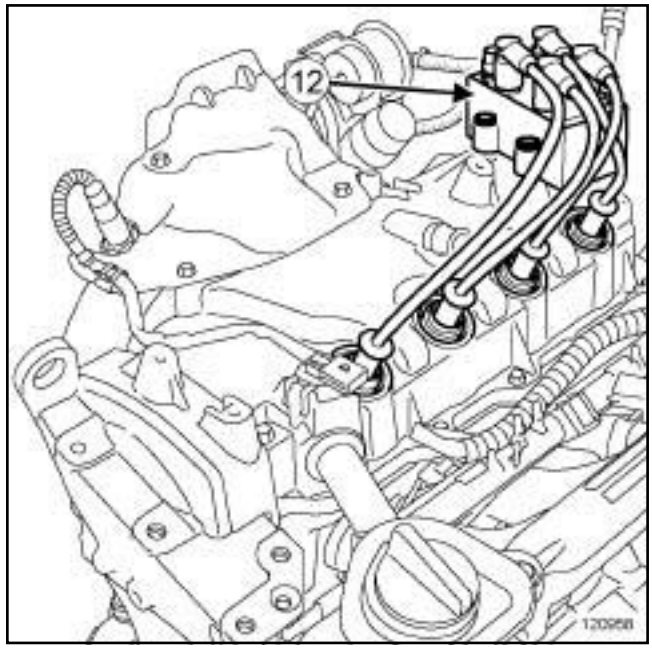
(**9**) Fuel injection computer

D4F, and 784 or 786



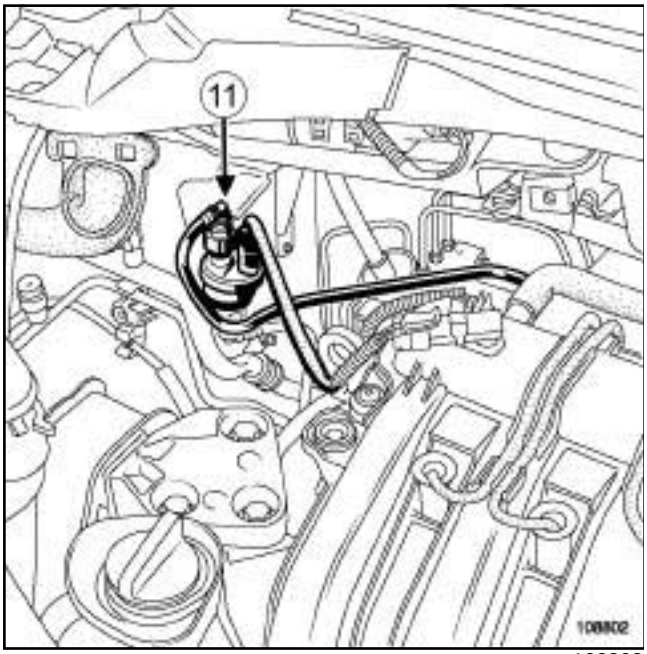
121764

(**10**) Throttle valve



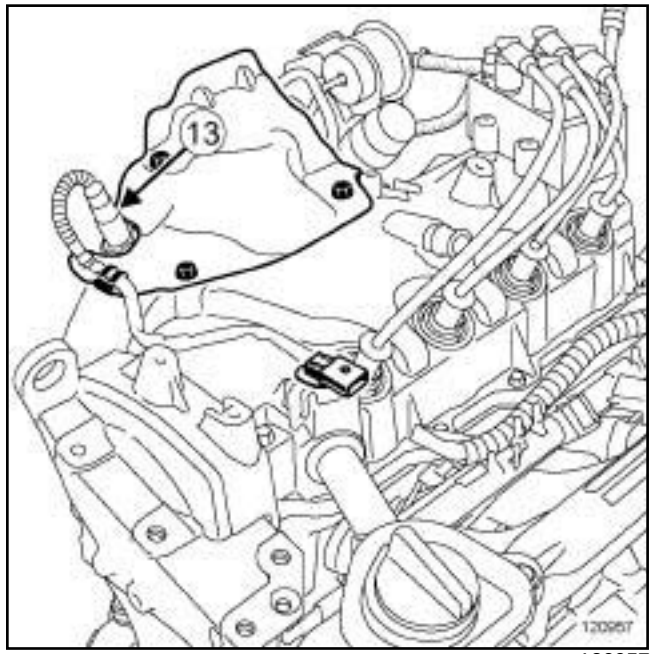
120958

(**12**) Ignition coil



108802

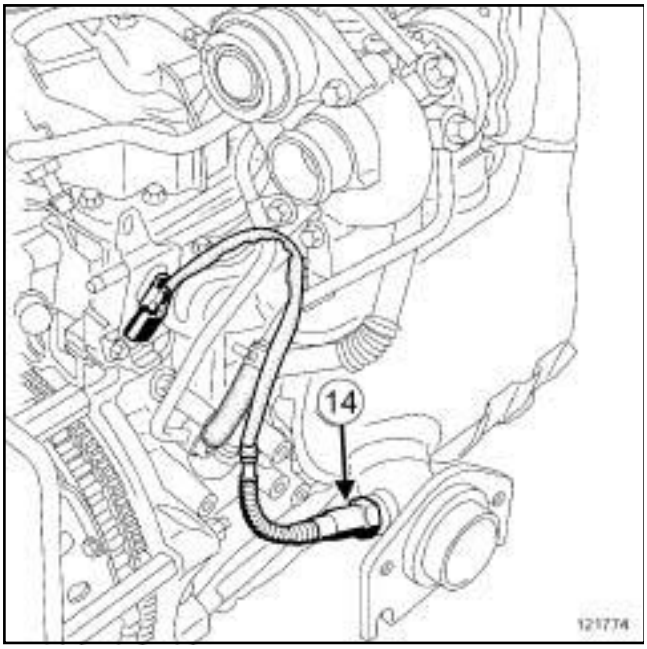
(**11**) Fuel vapour recirculation solenoid valve



120957

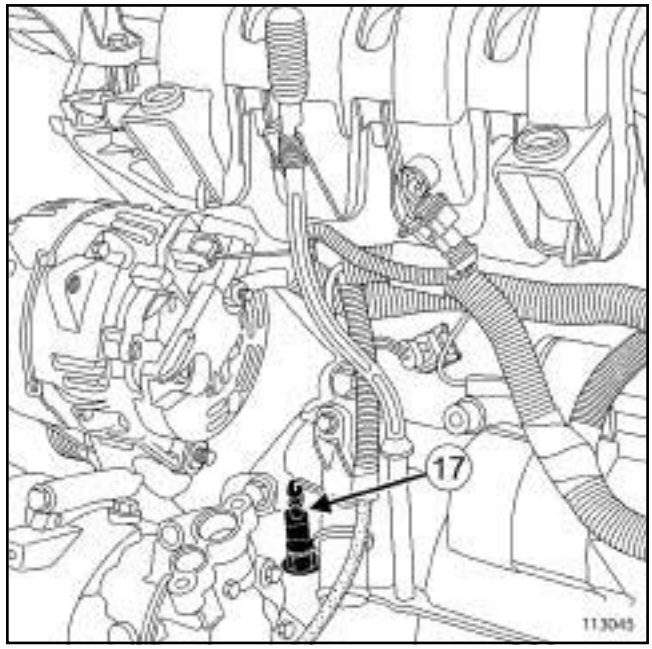
(**13**) Upstream oxygen sensor

D4F, and 784 or 786



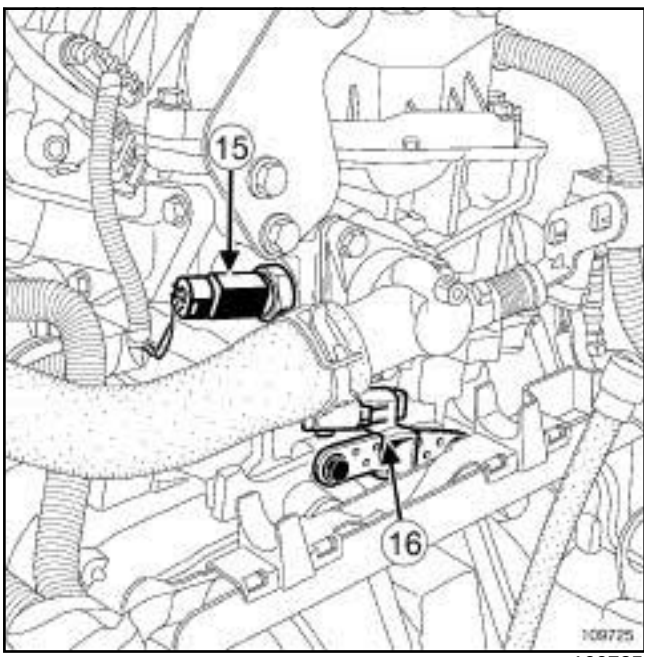
121774

(**14**) Downstream oxygen sensor



113045

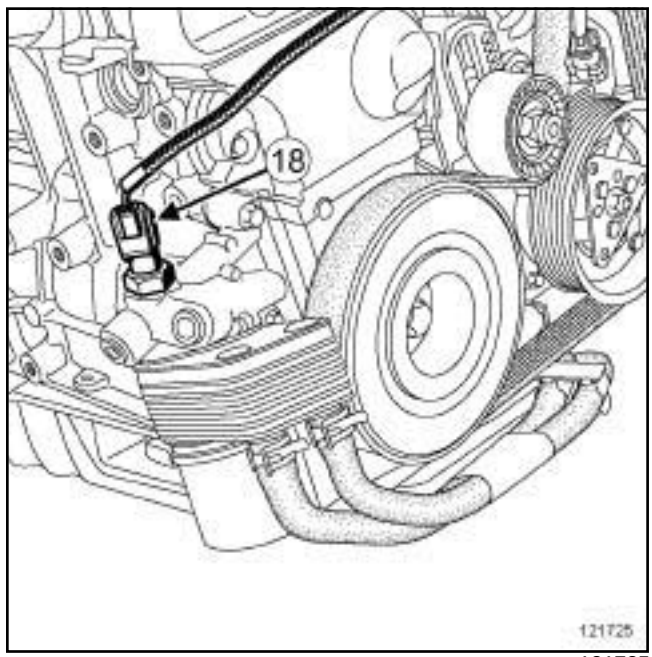
(**17**) Oil level sensor



109725

(**15**) Coolant temperature sensor

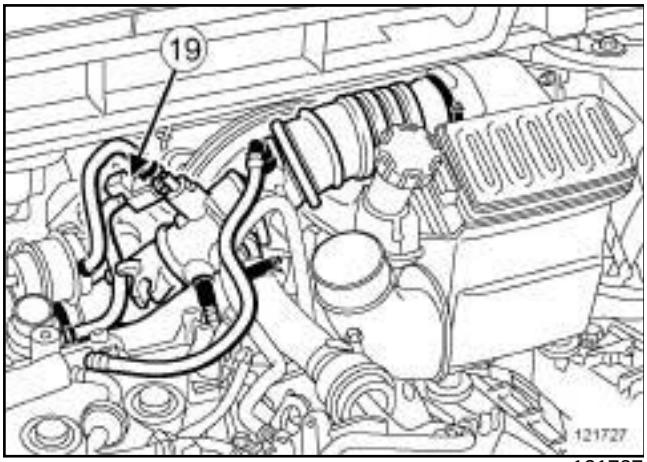
(**16**) Crankshaft speed and position sensor



121725

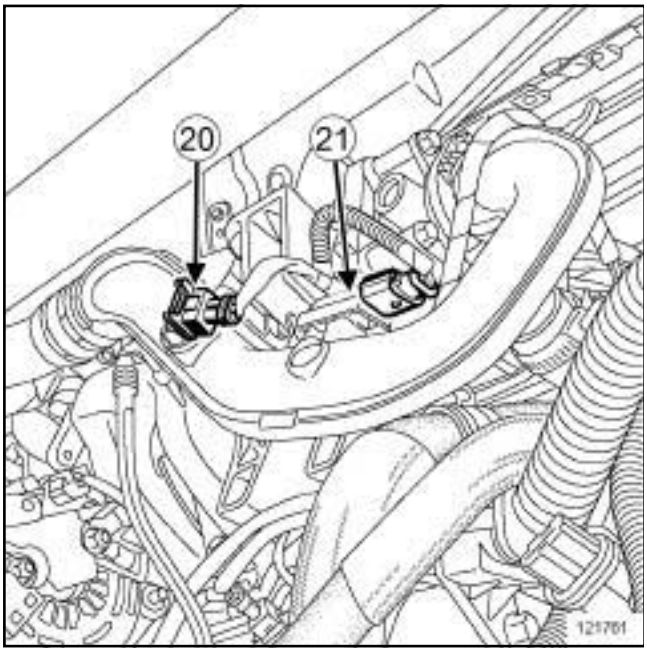
(**18**) Oil pressure sensor

D4F, and 784 or 786



121727

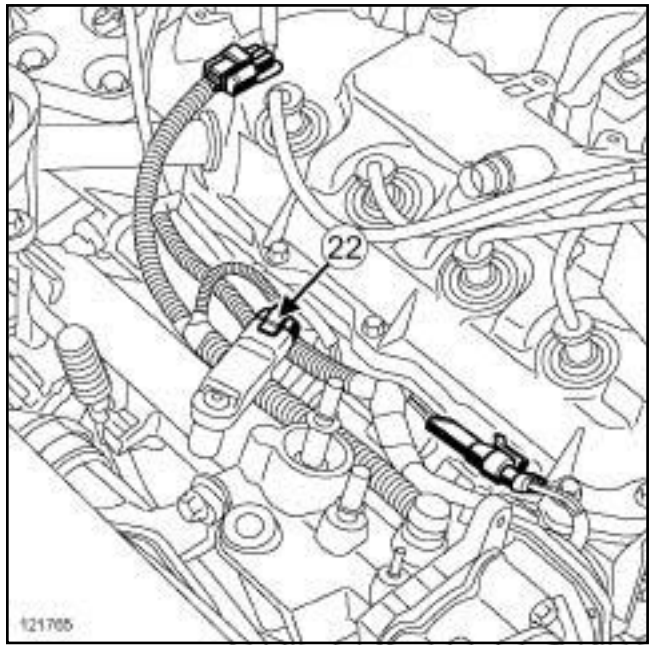
(**19**) Turbocharging pressure limiter solenoid valve



121761

(**20**) Inlet temperature sensor

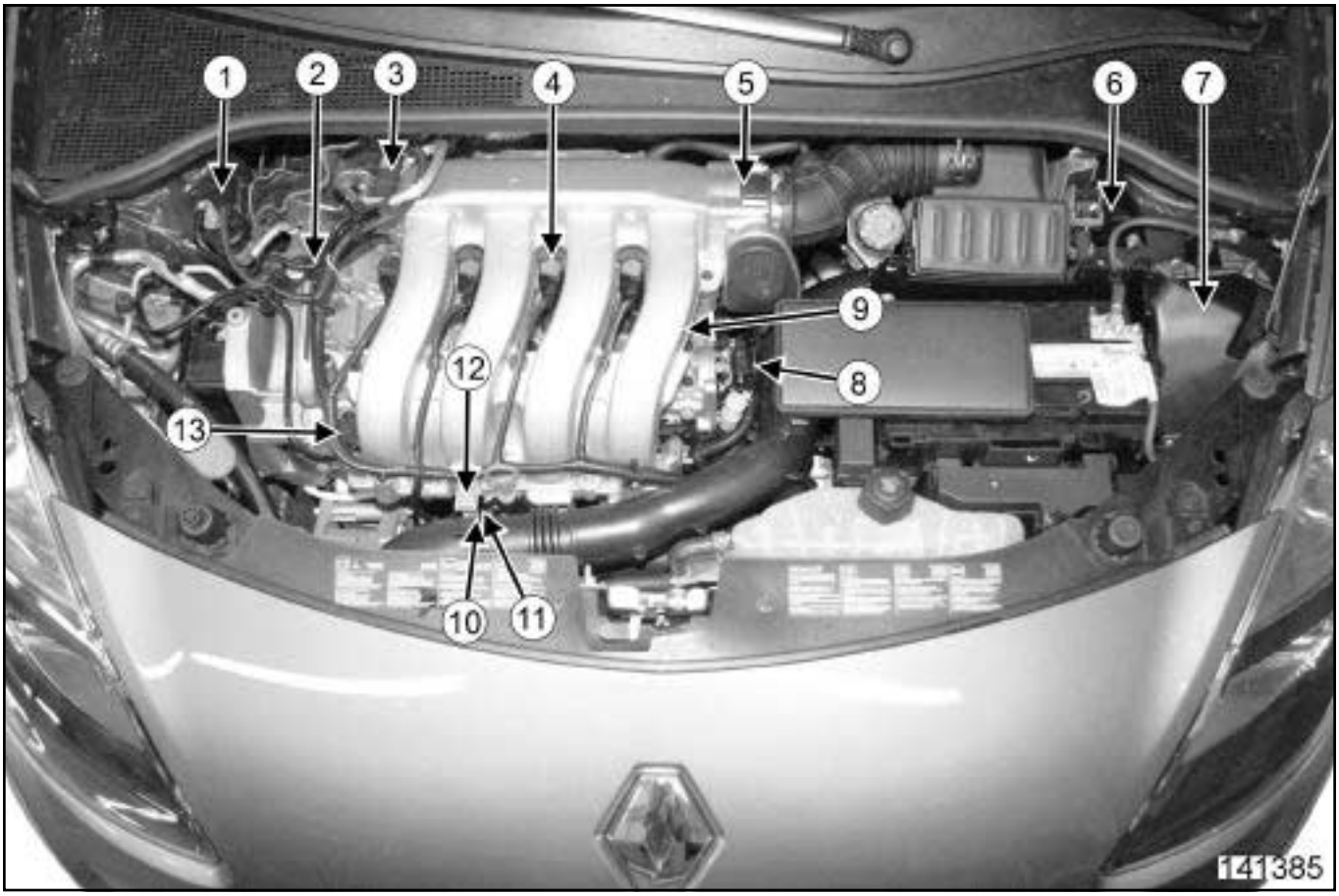
(**21**) Inlet pressure sensor



121765

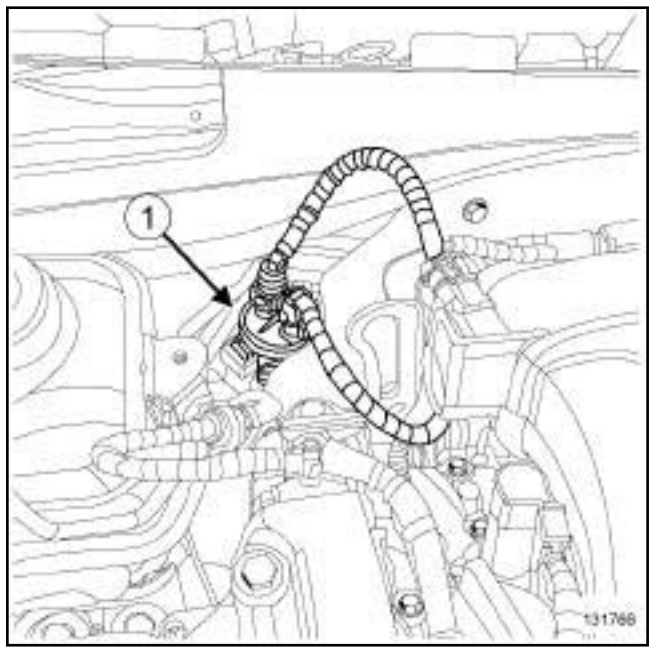
(**22**) Inlet pressure sensor

K4M, and 862



141385

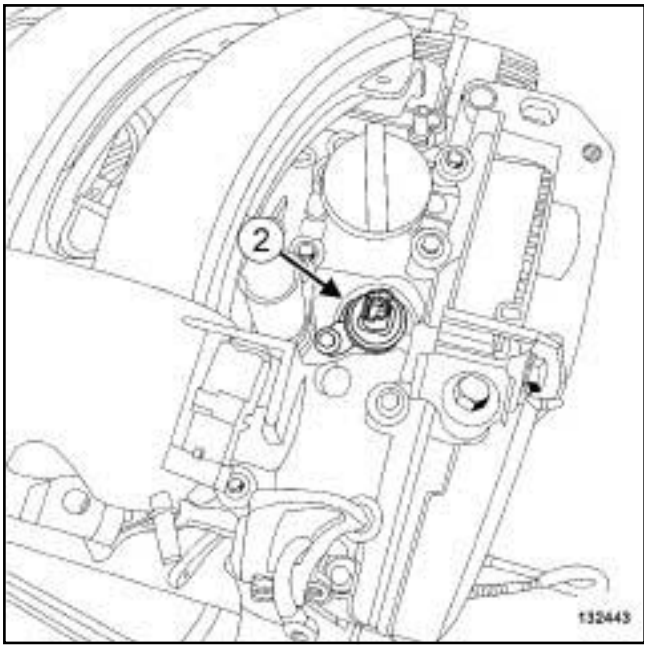
(**1**) Fuel vapour absorber bleed solenoid valve
(**2**) Camshaft dephaser solenoid valve
(**3**) Air inlet pressure sensor
(**4**) Coil
(**5**) Throttle valve
(**6**) Petrol injection computer
(**7**) Protection and switching unit
(**8**) Coolant temperature sensor
(**9**) Camshaft position sensor
(**10**) Pinking sensor
(**11**) Oil pressure sensor
(**12**) Air temperature sensor
(**13**) Injector rail



131766

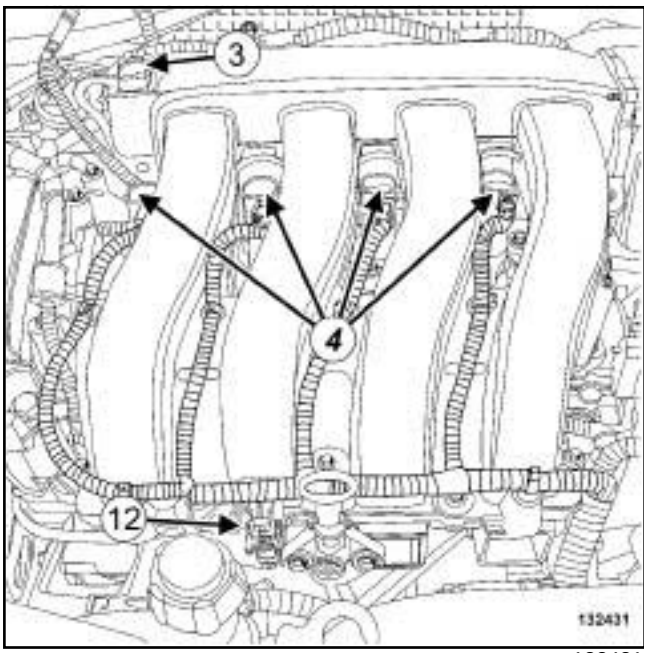
(**1**) Fuel vapour absorber bleed solenoid valve

K4M, and 862



132443

(**2**) Camshaft dephaser solenoid valve

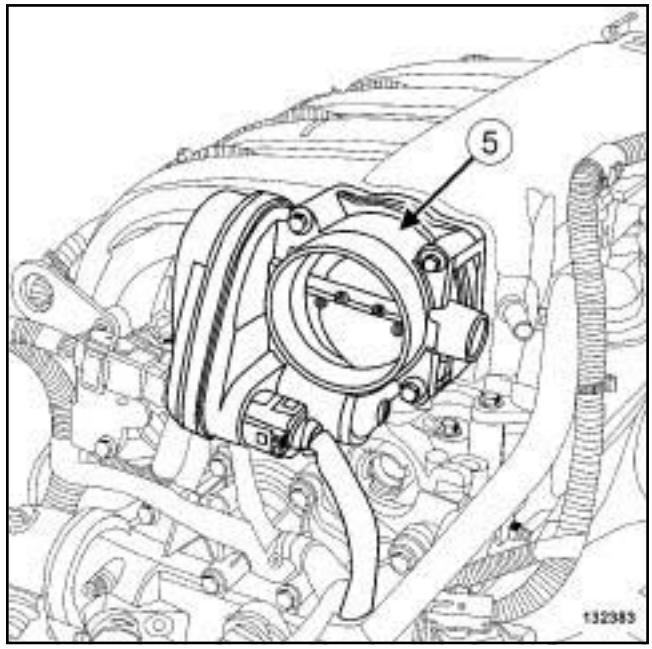


132431

(**3**) Air inlet pressure sensor

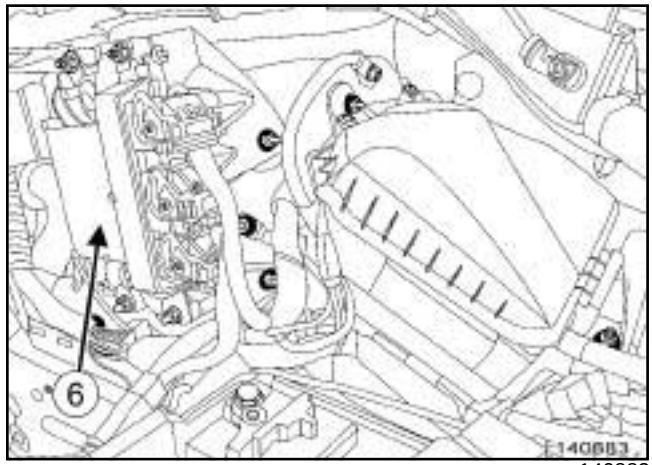
(**4**) Coils

(**12**) Air temperature sensor



132383

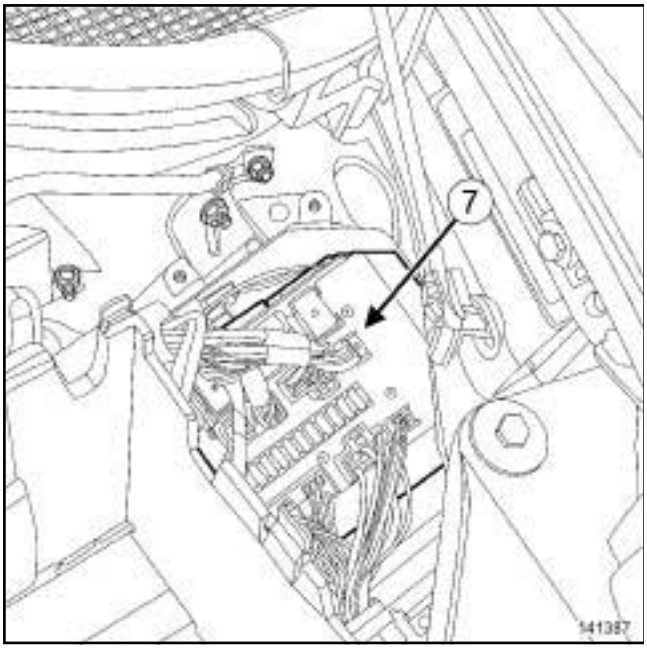
(**5**) Throttle valve



140883

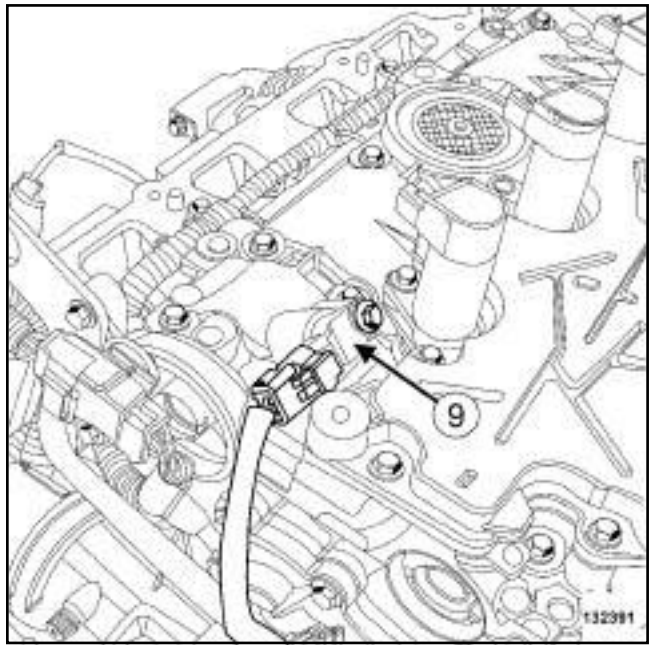
(**6**) Petrol injection computer

K4M, and 862



141387

(**7**) Protection and switching unit

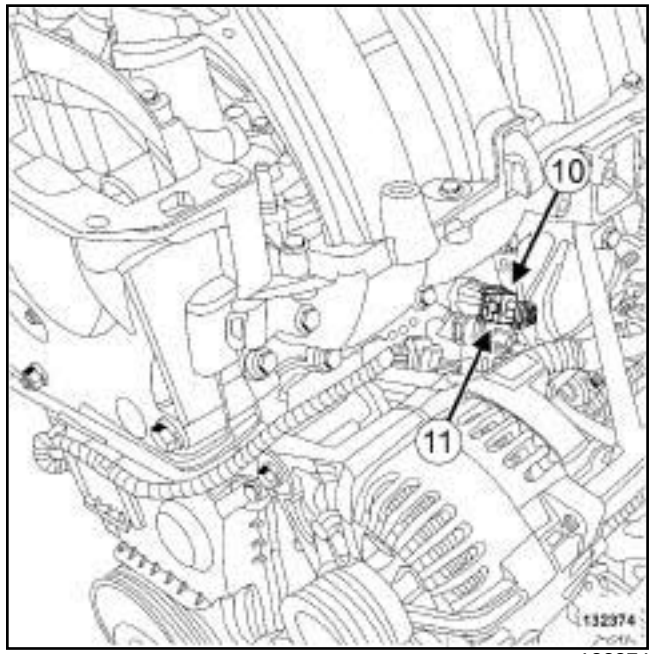


132391

(**9**) Camshaft position sensor

131762

(**8**) Coolant temperature sensor

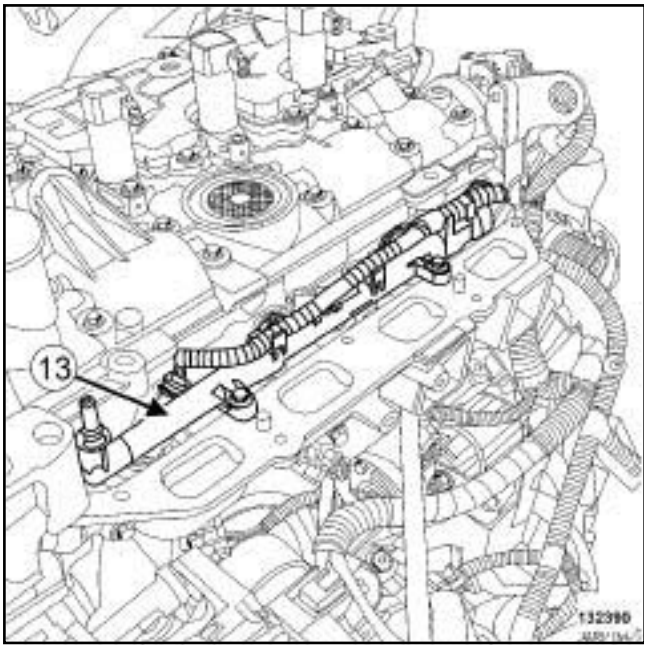


132374

(**10**) Pinking sensor

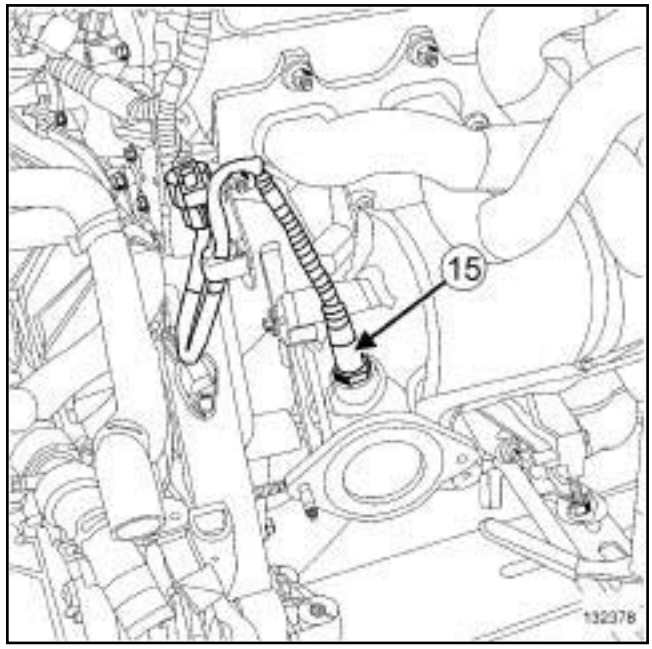
(**11**) Oil pressure sensor

K4M, and 862



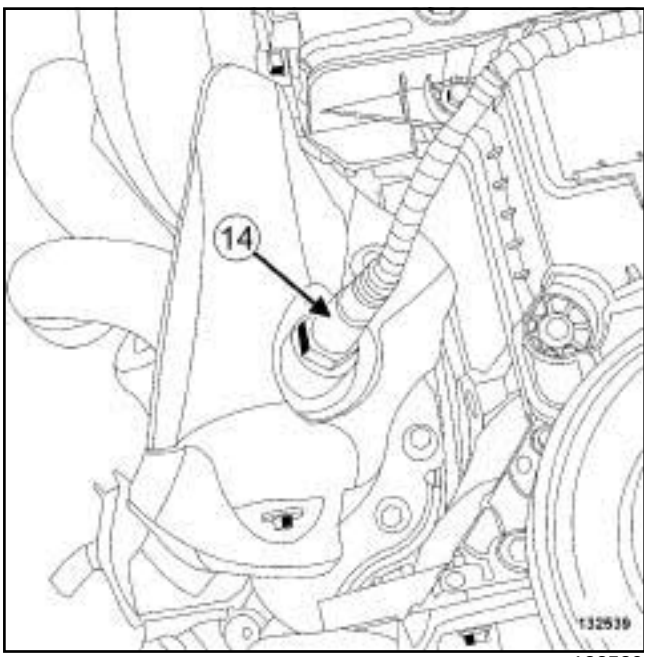
132390

(**13**) Injector rail



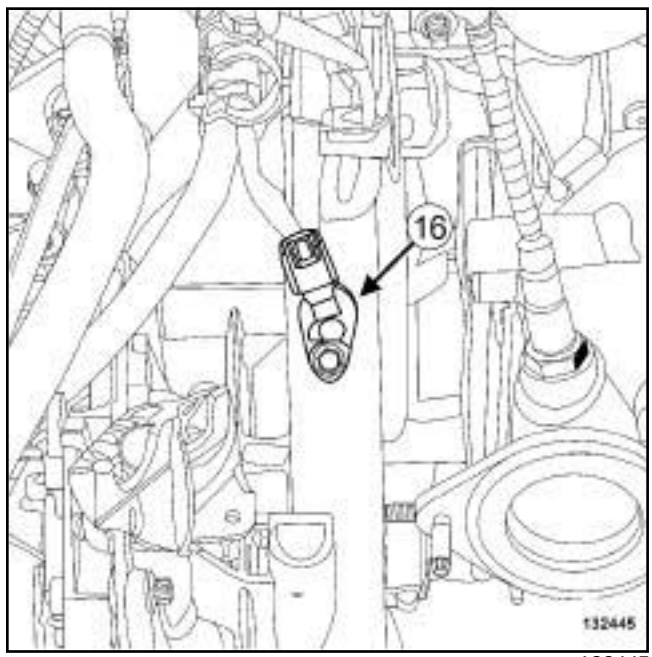
132378

(**15**) Downstream oxygen sensor



132539

(**14**) Upstream oxygen sensor



132445

(**16**) Crankshaft position sensor

D4F, and 740

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
upstream oxygen sensor	**45 Nm**
downstream oxygen sensor	**45 Nm**

WARNING
Do not use any product designed to improve electrical contact in the injection computer connectors and oxygen sensors and on the oxygen sensor body. Failure to respect this advice prevents the oxygen sensor from operating correctly and results in failure to comply with the emission control standard.

WARNING
If the connections are corroded, repair the wiring (see **Wiring: Precautions for the repair**) (Technical Note 6015, 88A, Wiring).

REMOVAL

I - REMOVAL PREPARATION OPERATION

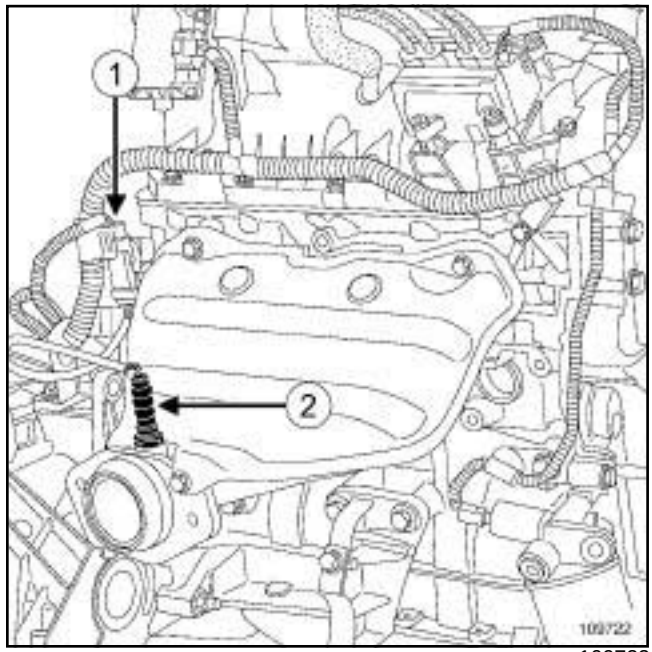
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Upstream oxygen sensor

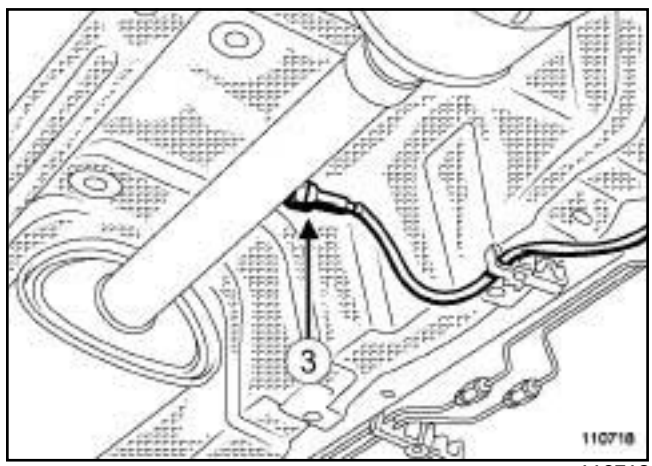


109722

❏ Disconnect the upstream oxygen sensor connector (**1**) .

❏ Remove the upstream oxygen sensor (**2**) using the **(Mot. 1495-01)**.

2 - Downstream oxygen sensor



110718

❏ Disconnect the downstream oxygen sensor connector.

❏ Remove the downstream oxygen sensor (**3**) using the **(Mot. 1495-01)**.

D4F, and 740

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Upstream oxygen sensor

❑ Torque tighten the **upstream oxygen sensor (45 Nm)** using the **(Mot. 1495-01)**.

❑ Connect the upstream oxygen sensor connector.

2 - Downstream oxygen sensor

❑ Torque tighten the **downstream oxygen sensor (45 Nm)** using the **(Mot. 1495-01)**.

❑ Connect the downstream oxygen sensor connector.

II - FINAL OPERATION.

❑ Refit the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Connect the battery (see) (MR 392, 80A, Battery).

K4J – K4M, and 800 or 801 or 804

Special tooling required	
Mot. 1495	22 mm socket for removal - refitting of oxygen sensors - 1/2" square drive and 24 mm hexagonal ext.

Equipment required
open-ended spanner for torque wrench

Tightening torques ▽	
oxygen sensors	**45 N.m**

WARNING

Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice causes the oxygen sensor to malfunction and results in failure to comply with the emission control standard.

WARNING

If the connections are corroded, repair the wiring (see **Wiring: Precautions for repair**) (88A, Wiring).

Note:

This procedure is for removal - refitting of the upstream oxygen sensor and the downstream oxygen sensor.

REMOVAL

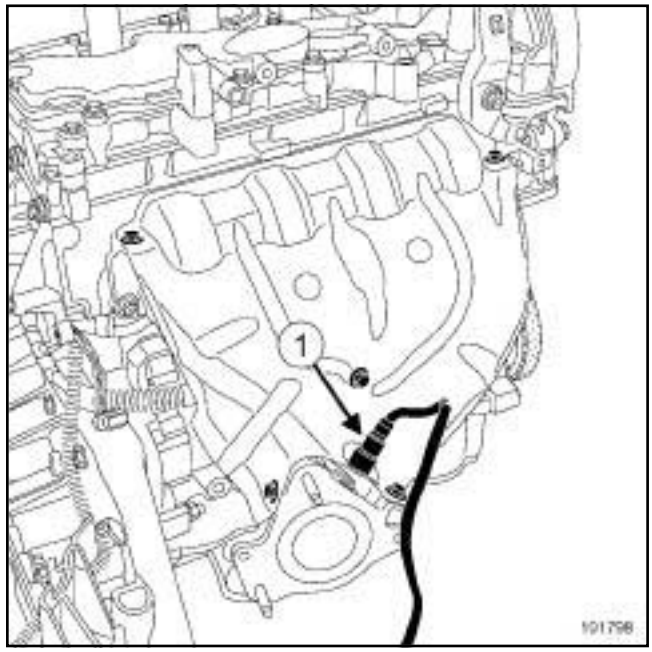
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see) (80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Upstream oxygen sensor



101798

❏ Remove:

- the lifting eye on the timing end,
- the fuel vapour absorber solenoid valve connector,

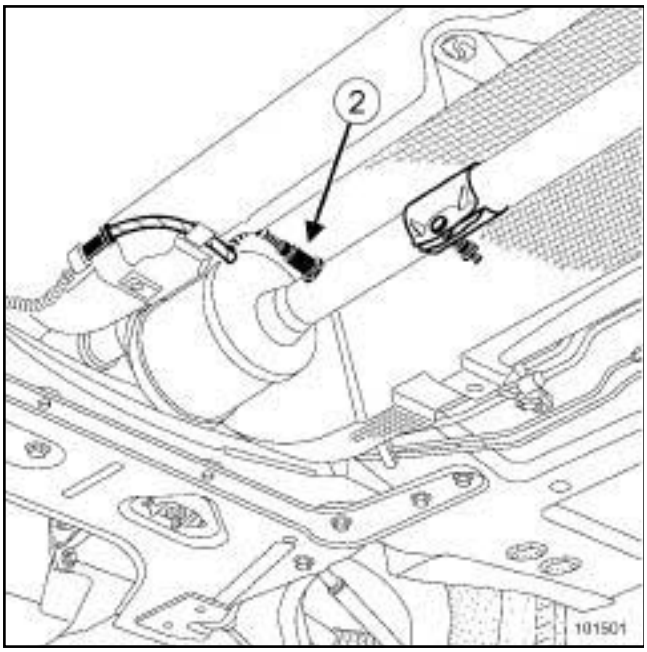
❏ Unclip the oxygen sensor wiring.

❏ Disconnect the oxygen sensor connector.

❏ Remove the upstream oxygen sensor (**1**) using the **(Mot. 1495)**.

K4J – K4M, and 800 or 801 or 804

2 - Downstream oxygen sensor



101501

❏ Unclip the downstream oxygen sensor wiring.

❏ Disconnect the downstream oxygen sensor connector.

❏ Remove the downstream oxygen sensor (**2**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the threading of the upstream and downstream oxygen sensors using a **WIRE BRUSH**.

❏ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the thread hole of the oxygen sensor on the exhaust manifold,
- the threading of the oxygen sensor if it is to be reused.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Upstream oxygen sensor

❏ Refit the upstream oxygen sensor.

❏ Connect the upstream oxygen sensor connector.

❏ Attach the upstream oxygen sensor wiring.

❏ Refit:

- the fuel vapour absorber solenoid valve connector,
- the front lifting eye at the timing end.

2 - Downstream oxygen sensor

❏ Refit the downstream oxygen sensor.

❏ Clip on the downstream oxygen sensor wiring.

❏ Connect the downstream oxygen sensor connector.

3 - Upstream and downstream oxygen sensors

❏ Torque tighten the **oxygen sensors (45 N.m)** using the **(Mot. 1495)** for the upstream oxygen sensor and using a **24 mm open-ended spanner for torque wrench** for the downstream oxygen sensor.

III - FINAL OPERATION

❏ Connect the battery (see) (80A, Battery).

M4R

Equipment required
open-ended spanner for torque wrench

Tightening torques ▽	
upstream oxygen sensor	**45 N.m**
downstream oxygen sensor	**45 N.m**

WARNING
Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice causes the oxygen sensor to malfunction and results in failure to comply with the emission control standard.

WARNING
If the connections are corroded, repair the wiring (see **Wiring: Precautions for repair**)(Technical Note 6015A, 88A, Wiring).

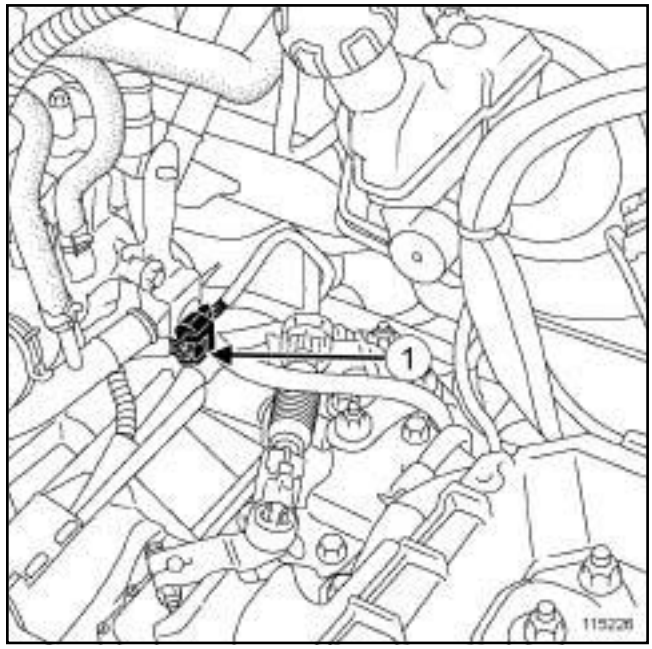
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

II - REMOVING THE UPSTREAM OXYGEN SENSOR

❏ Remove the engine cover.

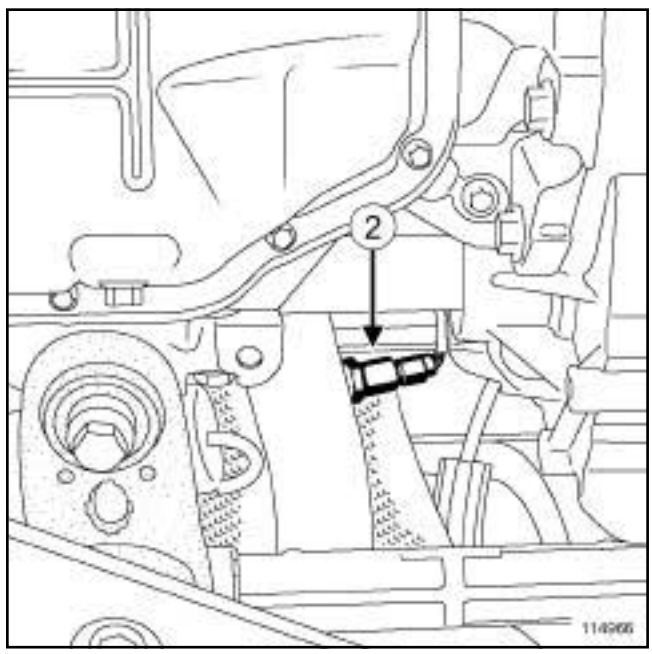


115226

❏ Unclip the upstream oxygen sensor connector at (**1**) .

❏ Disconnect the upstream oxygen sensor connector.

❏ Remove the engine undertray.

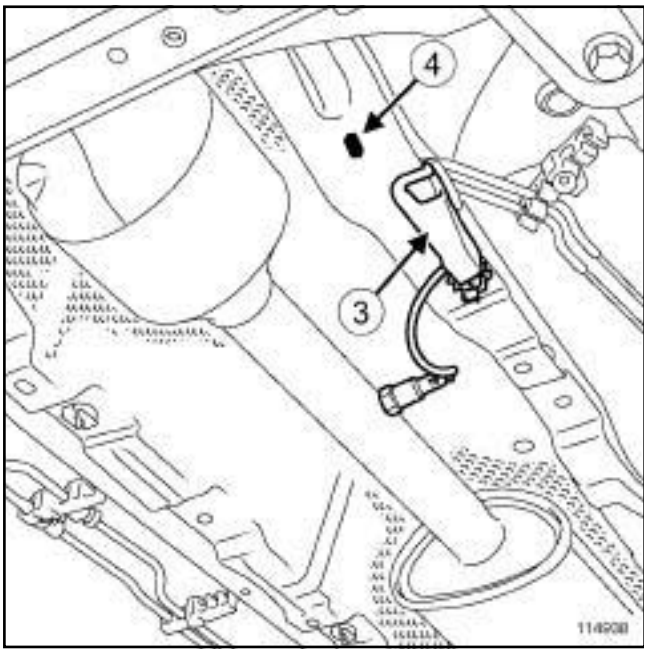


114966

❏ Remove the upstream oxygen sensor (**2**) .

M4R

III - REMOVAL OF THE DOWNSTREAM OXYGEN SENSOR

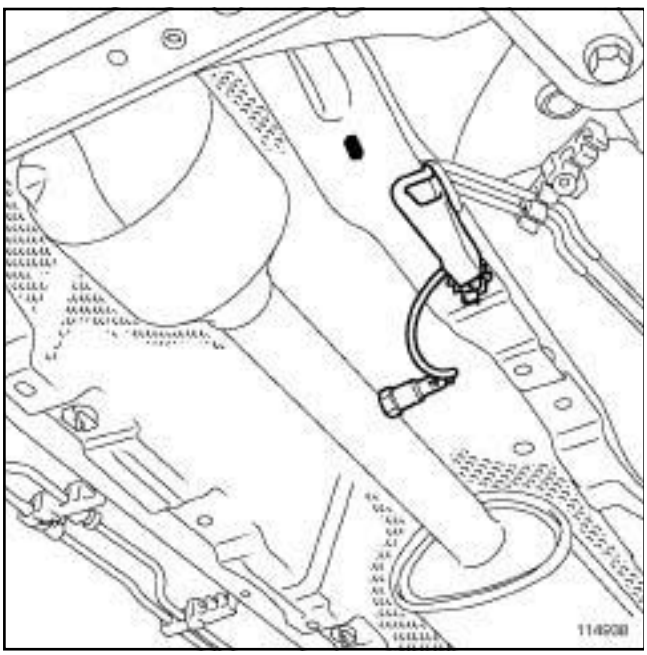


114938

❏ Remove the plastic cover (**3**) .

❏ Detach the downstream oxygen sensor connector at (**4**) .

❏ Disconnect the downstream oxygen sensor connector.



114938

❏ Remove the downstream oxygen sensor.

REFITTING

I - REFITTING THE UPSTREAM OXYGEN SENSOR

❏ Refit the upstream oxygen sensor.

❏ Torque tighten the **upstream oxygen sensor (45 N.m)** using a **open-ended spanner for torque wrench**.

❏ Refit the engine undertray.

❏ Connect the upstream oxygen sensor connector.

❏ Clip the oxygen sensor connector.

❏ Refit the engine cover.

II - REFITTING THE DOWNSTREAM OXYGEN SENSOR

❏ Refit the downstream oxygen sensor.

❏ Torque tighten the **downstream oxygen sensor (45 N.m)** using a **open-ended spanner for torque wrench**.

❏ Connect the downstream oxygen sensor connector.

❏ Clip the downstream oxygen sensor connector.

❏ Refit the plastic cover.

F4R

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
upstream oxygen sensor	**45 N.m**
downstream oxygen sensor	**45 N.m**

WARNING
Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice causes the oxygen sensor to malfunction and results in failure to comply with the emission control standard.

WARNING
If the connections are corroded, repair the wiring (see **Wiring: Precautions for repair**)(Technical Note 6015A, 88A, Wiring).

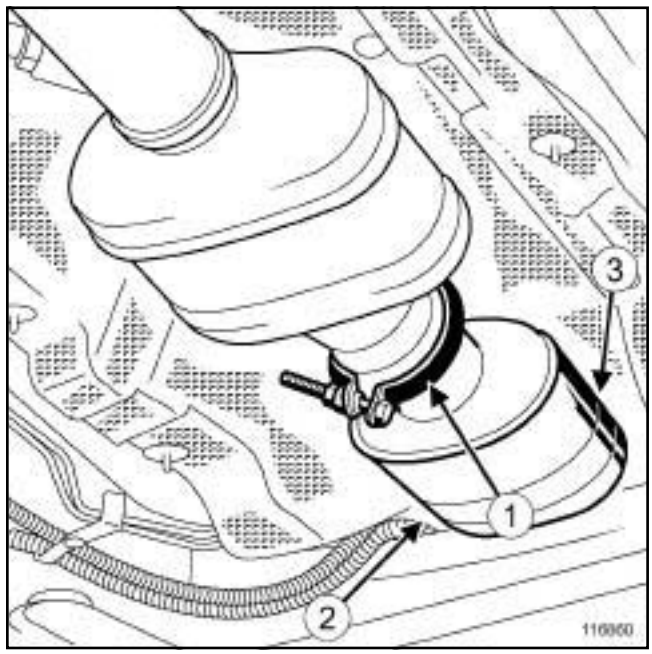
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

II - REMOVAL OPERATION FOR THE OXYGEN SENSOR

1 - Removing the upstream oxygen sensor



116860

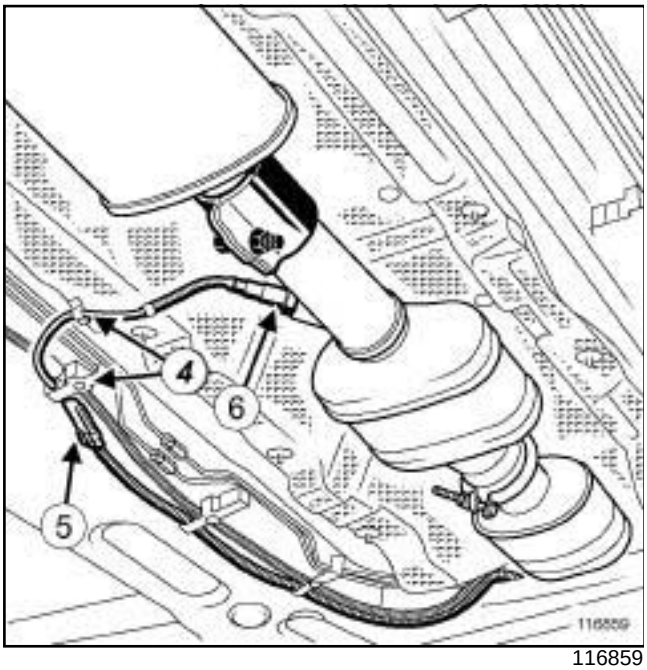
❑ Remove the connecting clip (**1**) between the « manifold - catalytic converter » assembly and the expansion chamber.

❑ Lower the catalytic converter slightly.

❑ Disconnect the upstream oxygen sensor connector (**2**) .

❑ Remove the upstream oxygen sensor (**3**) .

2 - Removal of the downstream oxygen sensor



116859

❑ Unclip the downstream oxygen sensor harness at (**4**) .

❑ Disconnect the downstream oxygen sensor connector (**5**) .

❑ Remove the downstream oxygen sensor (**6**) .

REFITTING

REFITTING OPERATION FOR THE OXYGEN SENSOR

1 - Refitting the upstream oxygen sensor

❑ Refit the upstream oxygen sensor.

❑ Torque tighten the **upstream oxygen sensor (45 N.m)** using the **(Mot. 1495-01)**.

❑ Align the exhaust pipe.

❑ Refit the connecting clip between the «manifold - catalytic converter» assembly and the expansion chamber.

❑ Connect the upstream oxygen sensor connector.

2 - Refitting the downstream oxygen sensor

❑ Refit the downstream oxygen sensor.

❑ Torque tighten the **downstream oxygen sensor (45 N.m)** using the tool **(Mot. 1495-01)**.

❑ Connect the downstream oxygen sensor connector.

❑ Clip on the heat shield downstream oxygen sensor connector.

D4F, and 784 or 786

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
upstream oxygen sensor	**45 N.m**
heat shield bolts	**8 N.m**
downstream oxygen sensor	**45 N.m**

WARNING

Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice causes the oxygen sensor to malfunction and results in failure to comply with the emission control standard.

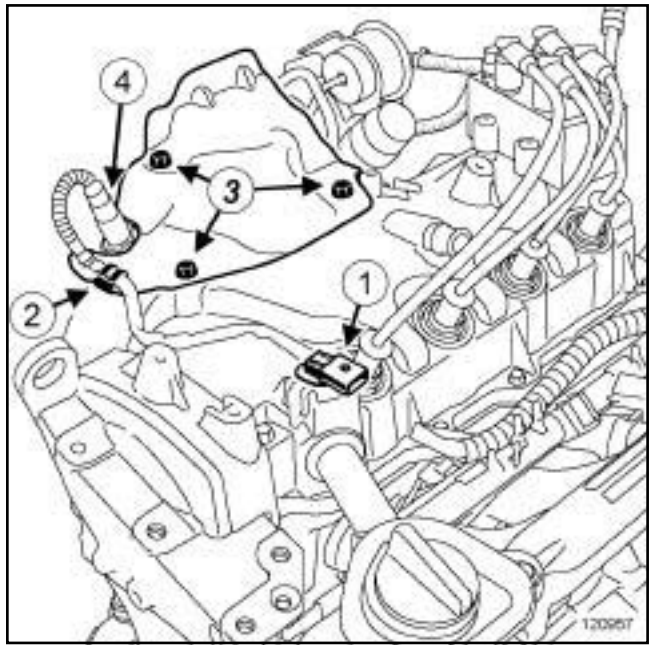
WARNING

If the connections are corroded, repair the wiring (see **Wiring: Precautions for repair**)(Technical Note 6015A, 88A, Wiring).

REMOVAL

I - REMOVING THE UPSTREAM OXYGEN SENSOR

❏ Remove the engine cover.



120957

❏ Disconnect the upstream oxygen sensor connector (**1**) .

❏ Unclip the upstream oxygen sensor connector.

❏ Detach the upstream oxygen sensor wiring harness at (**2**) .

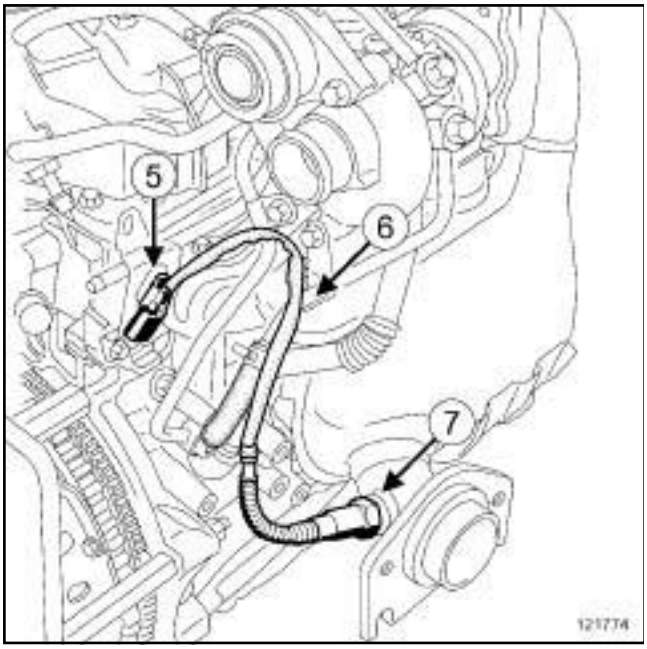
❏ Remove:

- the bolts (**3**) from the heat shield,
- the heat shield,
- the upstream oxygen sensor (**4**) using the **(Mot. 1495-01)**.

II - REMOVING THE DOWNSTREAM OXYGEN SENSOR

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

D4F, and 784 or 786



121774

❑ Disconnect the downstream oxygen sensor connector (**5**) .

❑ Unclip the downstream oxygen sensor connector from the catalytic converter.

❑ Detach the downstream oxygen sensor wiring harness from the catalytic converter at (**6**) .

❑ Remove:

- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) ,
- the downstream oxygen sensor from the catalytic converter (**7**) using the **(Mot. 1495-01)**.

REFITTING

I - REFITTING THE UPSTREAM OXYGEN SENSOR

❑ Refit the upstream oxygen sensor.

❑ Torque tighten the **upstream oxygen sensor (45 N.m)** using the **(Mot. 1495-01)**.

❑ Refit:

- the heat shield,
- the heat shield bolts.

❑ Torque tighten the **heat shield bolts (8 N.m)**.

❑ Attach the upstream oxygen sensor wiring harness.

❑ Fit the upstream oxygen sensor connector.

❑ Connect the upstream oxygen sensor connector.

❑ Refit the engine cover.

II - REFITTING THE DOWNSTREAM OXYGEN SENSOR

❑ Refit the downstream oxygen sensor.

❑ Torque tighten the **downstream oxygen sensor (45 N.m)** using the tool **(Mot. 1495-01)**.

❑ Refit the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-29**) .

❑ Attach the downstream oxygen sensor wiring harness.

❑ Fit the downstream oxygen sensor connector.

❑ Connect the downstream oxygen sensor connector.

❑ Refit the engine undertray.

K4M, and 862

Tightening torques ▽	
upstream oxygen sensor	90°
downstream oxygen sensor	44 N.m

WARNING

Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice causes the oxygen sensor to malfunction and results in failure to comply with the emission control standard.

WARNING

If the connections are corroded, repair the wiring (see **Wiring: Precautions for repair**)(Technical Note 6015A, 88A, Wiring).

Note:

This procedure is for removing and refitting the upstream oxygen sensor and the downstream oxygen sensor.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

1 - Upstream oxygen sensor

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

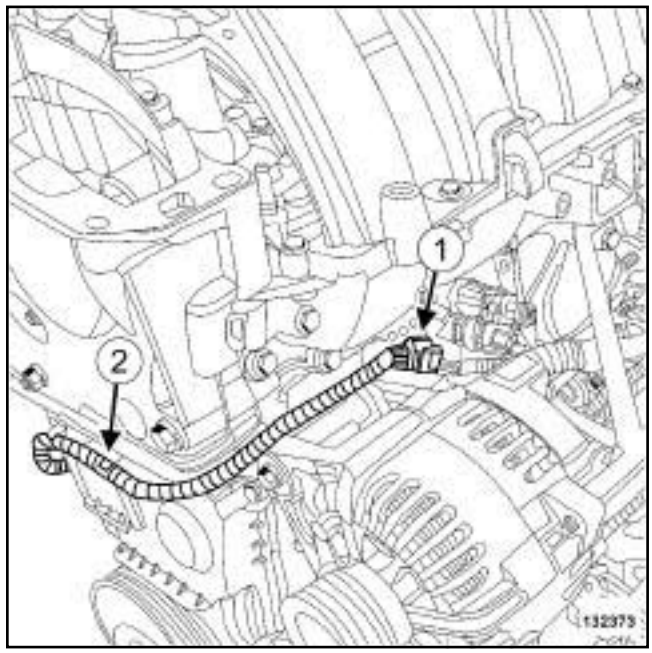
2 - Downstream oxygen sensor

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Upstream oxygen sensor

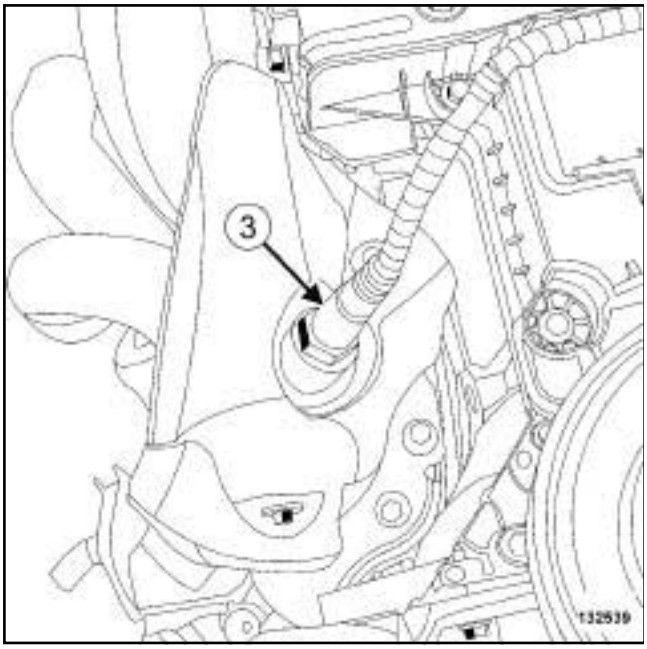


132373

❏ Disconnect the upstream oxygen sensor connector (**1**) .

❏ Unclip the wiring from the upstream oxygen sensor at (**2**) .

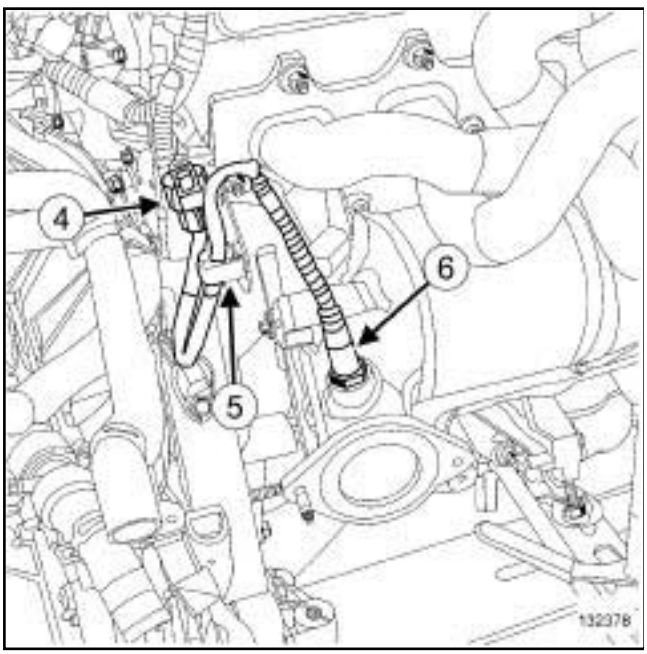
K4M, and 862



132539

❑ Remove the upstream oxygen sensor (**3**) .

2 - Downstream oxygen sensor



132378

❑ Disconnect the downstream oxygen sensor connector (**4**) .

❑ Unclip the wiring from the downstream oxygen sensor at (**5**) .

❑ Remove the downstream oxygen sensor (**6**) .

REFITTING

I - REMOVAL PREPARATION OPERATION

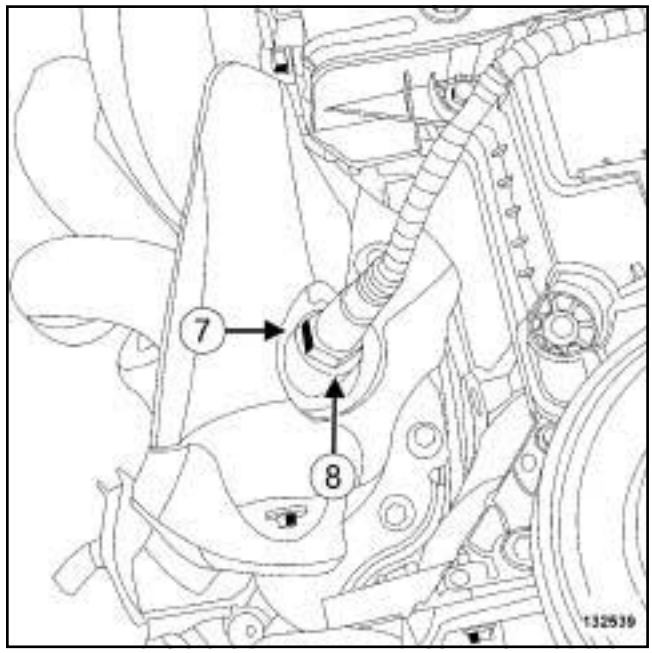
❑ Clean the threading of the upstream and downstream oxygen sensors using a **WIRE BRUSH**.

❑ Use **SURFACE CLEANER** (see) (04B, Consumables - Products) to clean and degrease:

- the thread hole of the oxygen sensor on the exhaust manifold,
- the threading of the oxygen sensor if it is to be reused.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Upstream oxygen sensor



132539

❑ Refit the upstream oxygen sensor.

❑ Angle tighten the **upstream oxygen sensor (90°)**.

Note:

For angle tightening, make a mark (**7**) on the catalytic converter in the middle of the flat surface of the upstream oxygen sensor. Move the upstream oxygen sensor stop (**8**) to the mark (**7**) .

❑ Attach the upstream oxygen sensor wiring.

❑ Connect the upstream oxygen sensor connector.

K4M, and 862

2 - Downstream oxygen sensor

❏ Refit the downstream oxygen sensor.

❏ Torque tighten the **downstream oxygen sensor (44 N.m)**.

❏ Clip on the downstream oxygen sensor wiring.

❏ Connect the downstream oxygen sensor connector.

III - FINAL OPERATION

1 - Upstream oxygen sensor

❏ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

2 - Downstream oxygen sensor

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine undertray.

D4F, and 740 or 742 or 764

REMOVAL

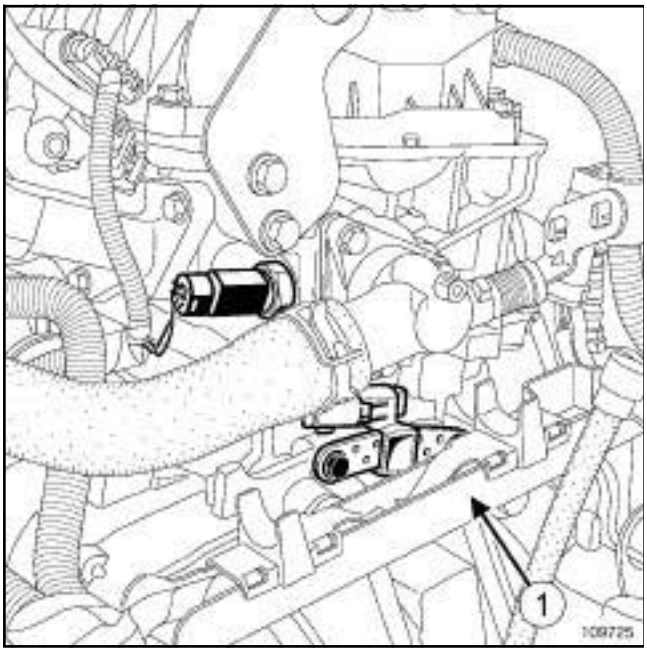
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Move the cooling hose away from the engine wiring harness bracket.

❏ Disconnect the engine speed and position sensor connector.

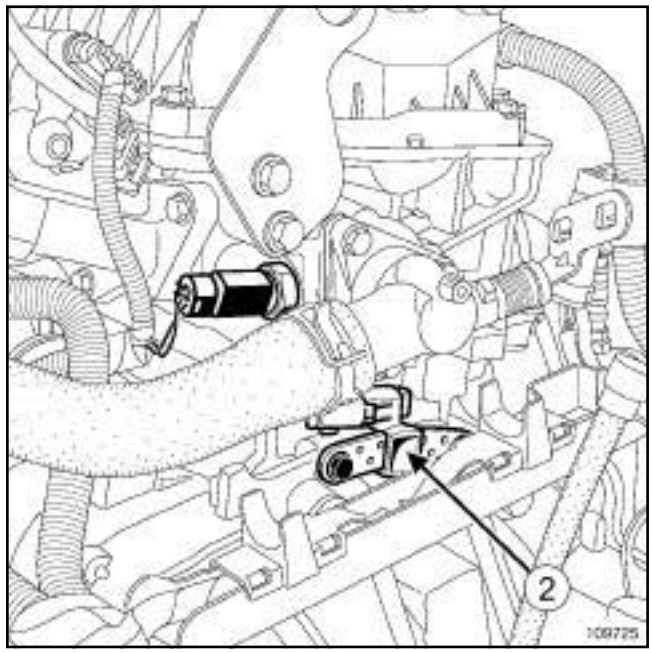


109725

❏ Remove the engine wiring harness bracket mountings (**1**) from the gearbox.

❏ Move the engine wiring harness bracket to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109725

❏ Remove the engine speed and position sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the engine speed and position sensor.

II - FINAL OPERATION.

❏ Refit the engine wiring harness bracket.

❏ Connect the engine speed and position sensor connector.

❏ Refit:

- the cooling hose onto the engine wiring harness bracket,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) .

K4J or K4M

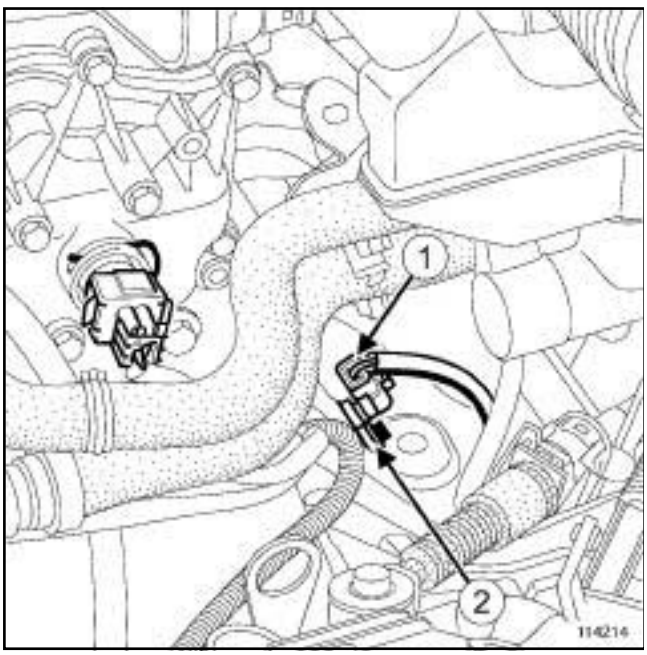
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



114214

❏ Disconnect the engine speed and position sensor connector (**1**) .

❏ Remove the engine speed and position sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the engine speed and position sensor.

❏ Connect the engine speed and position sensor connector.

II - FINAL OPERATION

❏ Connect the battery (see **Battery: Removal - Refitting**) .

F4R

REMOVAL

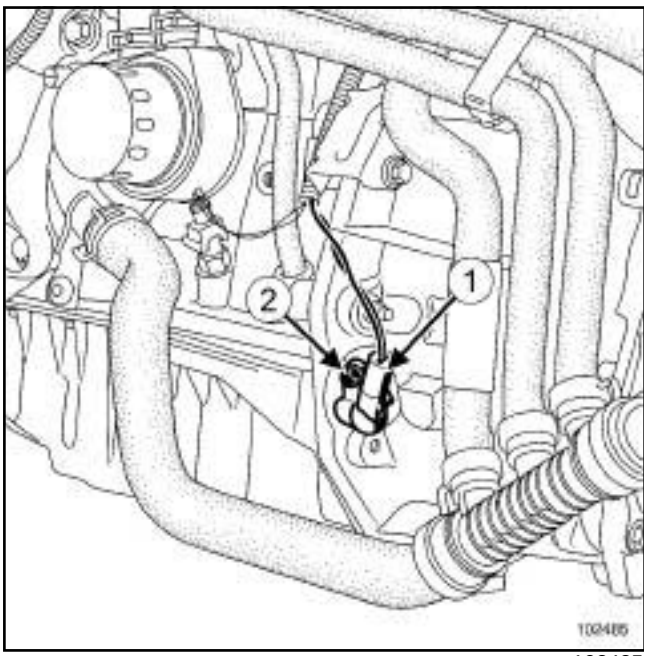
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray

II - OPERATION FOR REMOVAL OF PART CONCERNED



102485

❏ Disconnect the connector (**1**) from the engine speed and position sensor.

❏ Remove:

- the speed and position sensor mounting bolt (**2**) ,
- the engine speed and position sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the removed sensor using a dry, lint-free cloth.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the speed and position sensor in place.

❏ Refit the speed and position sensor mounting bolt.

❏ Connect the connector to the speed and position sensor.

III - FINAL OPERATION.

❏ Refit the engine undertray.

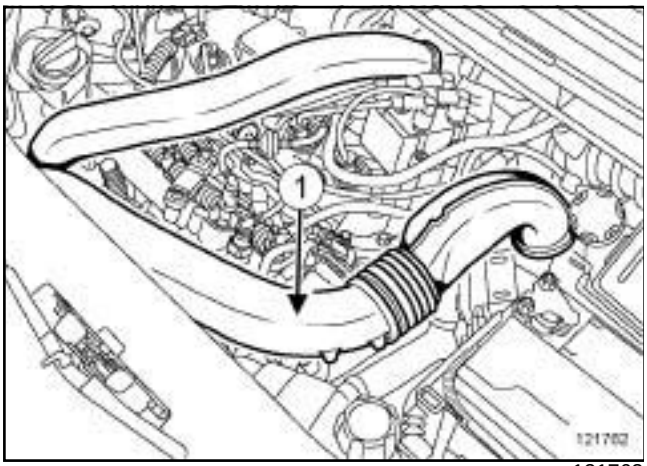
❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

REMOVAL

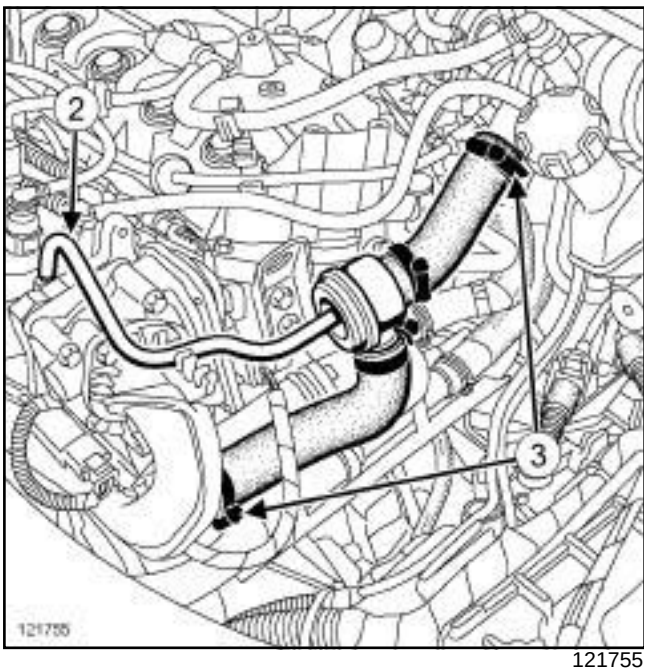
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see) (MR 392, 80A, Battery).



121762

❏ Remove the air filter unit air inlet pipe (**1**) .



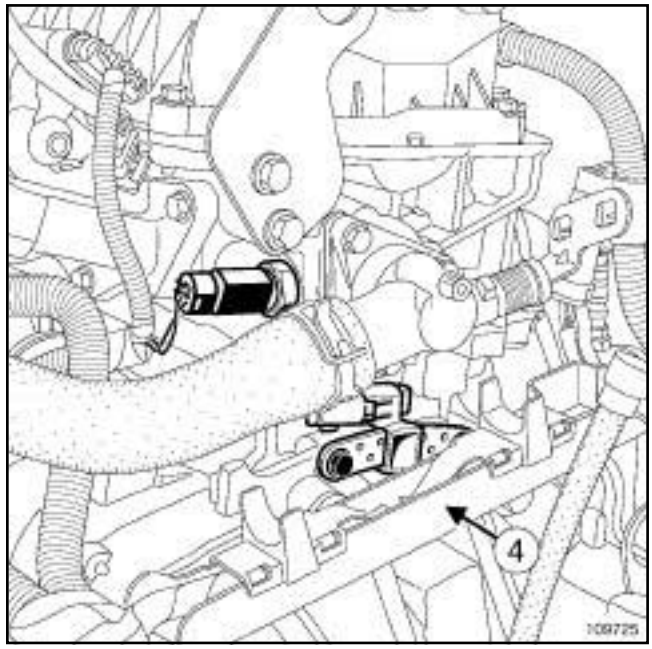
121755

❏ Disconnect the vacuum pipe (**2**) .

❏ Undo the compressor discharge valve pipe clips (**3**) .

❏ Disconnect the compressor discharge valve pipe.

❏ Remove the compressor discharge valve pipe.



109725

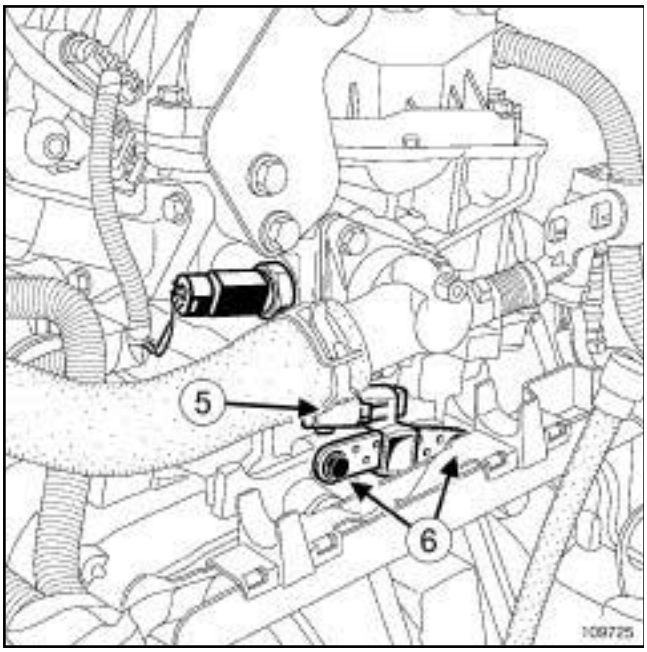
❏ Move the cooling hose away from the engine wiring harness bracket.

❏ Remove the engine wiring mounting bolts (**4**) from the gearbox.

❏ Move the engine wiring harness bracket to one side.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



109725

❏ Disconnect the connector (**5**) from the engine speed and position sensor.

❏ Remove:

- the engine speed and position sensor bolts (**6**) ,
- the engine speed and position sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the speed and position sensor,
- the engine speed and position sensor bolts.

❏ Connect the engine speed and position sensor connector.

II - FINAL OPERATION.

❏ Refit:

- the engine wiring harness bracket,
- the engine wiring harness bracket bolts,
- the cooling hose.

❏ Refit the compressor discharge valve pipe.

❏ Connect the compressor discharge valve pipe.

❏ Tighten the compressor discharge valve pipe clips.

❏ Connect the vacuum pipe.

❏ Refit the air filter box air inlet pipe.

❏ Connect the battery (see) (MR 392, 80A, Battery).

❏ Program the engine speed and position sensor (see **Fault finding - Replacement of components**) (MR 394, 17B, Petrol injection).

D4F, and 740 or 742 or 764

Equipment required
Diagnostic tool

Tightening torques ▽	
injection computer bolts	**10 N.m**

WARNING

Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors. Failure to respect this advice prevents the oxygen sensor from operating correctly and results in failure to comply with the emission control standard.

WARNING

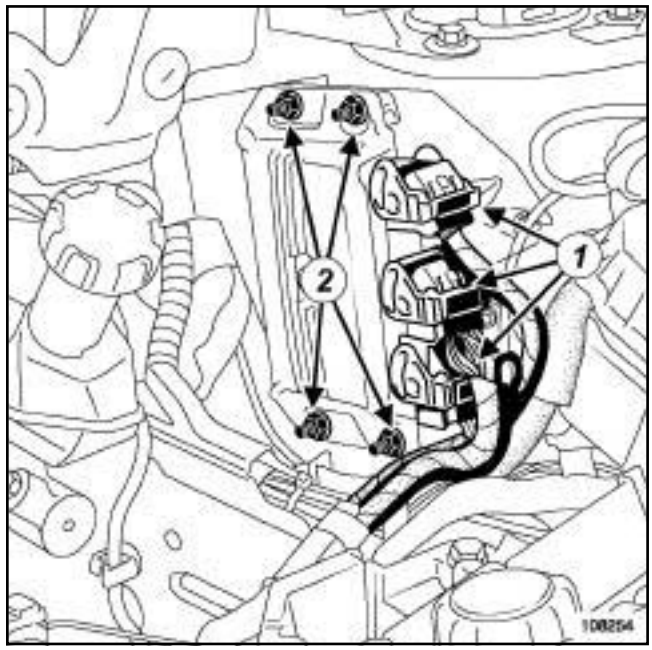
If the connections are corroded, repair the wiring (see **Wiring: Precautions for the repair**) (Technical Note 6015, 88A, Wiring).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



108254

❑ Disconnect the three connectors (**1**) from the petrol injection computer.

❑ Remove:

- the petrol injection computer bolts (**2**) ,
- the petrol injection computer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Position the petrol injection computer.

❑ Torque tighten the **injection computer bolts (10 N.m)**.

❑ Connect the three petrol injection computer connectors.

II - FINAL OPERATION.

❑ Connect the battery (see) (MR 392, 80A, Battery).

1 - Programming the motorised throttle valve stops

❑ Switch on the ignition.

❑ Wait **30 seconds** : the injection computer automatically programs the MIN and MAX stops.

❑ Switch off the ignition.

❑ Wait **30 seconds** : the injection computer automatically stores the programming of the stops.

D4F, and 740 or 742 or 764

❏ Check with the **Diagnostic tool** that this programming has been carried out correctly **ET051 « Apprentissage butées papillon »** .

2 - Programming procedure for flywheel position and engine speed sensor

❏ The engine coolant temperature must be greater than **35°C**.

❏ Whilst driving the vehicle in third gear at an engine speed between **3000 rpm** and **3500 rpm**, decelerate first for at least **5 seconds**.

❏ Whilst driving the vehicle in third gear at an engine speed of between **2000 rpm** and **2400 rpm**, decelerate again for at least **5 seconds**.

❏ Check with the **Diagnostic tool** that this programming has been carried out correctly using the command **ET089: « Apprentissage cible volant moteur : Effectué »** .

❏ Read the fault codes using the **Diagnostic tool**.

❏ Repair if necessary.

❏ Clear the fault codes.

❏ Check that the vehicle is working correctly.

K4J – K4M – M4R – F4R – D4F, and 784 or 786

Tightening torques ▽	
injection computer mounting nuts	**8 Nm**

WARNING

Do not use any product designed to improve the electrical contact in the injection computer and oxygen sensor connectors or on the bodies of the oxygen sensors.

Failure to respect this advice prevents the oxygen sensor from operating correctly and results in failure to comply with the emission control standard.

WARNING

If the connection is corroded, repair the wiring (see **Wiring: Precautions for the repair**) (Technical Note 6015, 88A, Wiring).

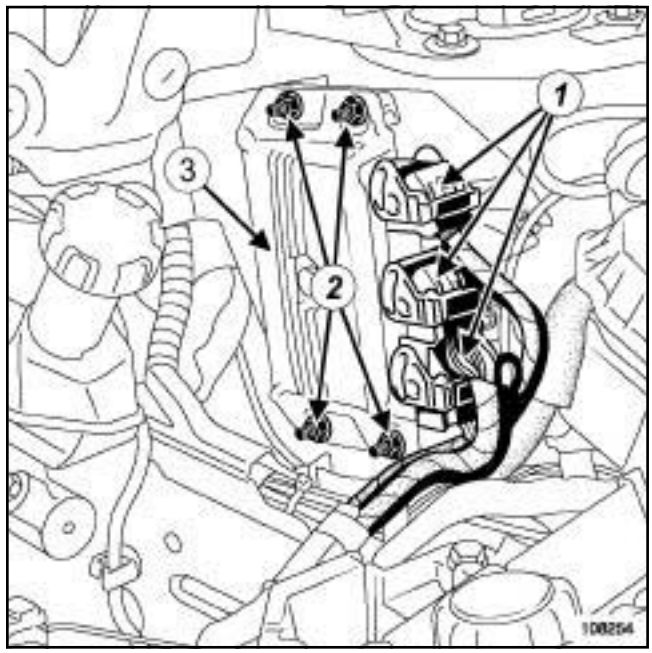
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the battery (see) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108254

❑ Disconnect the injection computer connectors (**1**) .

❑ Remove:

- the injection computer nuts (**2**) ,
- the injection computer (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the injection computer.

❑ Torque tighten the **injection computer mounting nuts (8 Nm)**.

❑ Connect the injection computer connectors.

II - FINAL OPERATION

❑ Refit:

- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).
- the battery (see) (MR 392, 80A, Battery).

❑ Program the engine speed sensor and motorised throttle valve (see **Fault finding - Replacement of components**)(MR 387, 17B, Petrol injection).

INGREDIENT

Coolant **GLACEOL RX (TYPE D)**

Note:

Ready-to-use coolant or antifreeze must be diluted with distilled water in accordance with the guide-lines marked on the container.

IMPORTANT

The circuits are designed to be pressurized, so be careful at high temperatures (risk of serious burns).

Never remove the cap from the expansion bottle while the engine is hot.

Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed valve(s) while the engine is running.

Only use recommended coolants: **GLACEOL RX (TYPE D)**.

WARNING

- The coolant helps to keep the engine running properly (heat exchange).
- The system does not operate using pure water.

WARNING

Take care not to damage the cooling unit fins (radiator, condenser, etc.) during handling. When carrying out a repair that requires a complete circuit drain, it is essential to flush the circuit with clean water, blow compressed air through the circuit to eliminate water, fill and drain the circuit and then « measure the effective protection » . The parameters to be observed are:

- protection down to **- 25°C ± 2** for cold and temperate countries,
- protection down to **- 40 °C ± 2** for very cold countries.

WARNING

- Drain and refill with the engine warm.
- Flush and refill with oil with the engine cold or warm.
- Never flush a warm engine (risk of major thermal shock).

Vehicles in the current range have cooling systems with the following basic specifications:

- hermetically-sealed pressurised circuit (expansion chamber valve),
- circuit using type « D » liquid,
- passenger compartment heating systems equipped with a « heater matrix » type radiator located under the dashboard which helps to cool the engine.

Coolant quantities

Engine	Quantity (litres)	Grade
D4F 764	5	Concentrated ANTIFREEZE (type D)
D4F 740/742	5	**GLACEOL RX (type D)** Only use coolant
D4F 784	5.5	
K4J	5.5	
K4M	6.5	
M4R 701	5.9	
F4R 830/832	5	
K9K 764	6.5	
K9K 766	6.5	
K9K 768	6.5	
K9K 772	6.5	
K9K 750	6.5	
K9K 752	6.5	

Special notes:

- protection down to **- 25°C ± 2** for cold and temperate countries,
- protection down to **- 37°C ± 2** for very cold countries.

Note:

Only use extreme cold coolant (Concentrated anti-freeze type D) for the **D4F 764** engine, with Parts Department numbers **77 11 170 548 (1 l) or 77 11 219 692 (2.5 l)**. Dilute **0.2 litres** of concentrated antifreeze for **1 litre** of Glaceol RX liquid (temperate countries). The mixture can also be made up of distilled water with a dilution ratio of **50%** concentrated antifreeze to **50%** distilled water.

Thermostat opening temperatures

Engine	Start of opening (°C)	End of opening (°C)
D4F 740/742	**89**	**99 ± 2**
D4F 764 Thermostat in non-actuated mode	**108 ± 2**	**120**

Engine	Start of opening (°C)	End of opening (°C)
D4F 764 Thermostat in actuated mode	**100 ± 2**	**120**
D4F 784	**89**	**99 ± 2**
K4J	**89**	**99 ± 2**
K4M	**89**	**99 ± 2**
M4R	Cylinder head thermostat	
	93.5	**96.5**
	Cylinder block thermostat	
	80.5	**83.5**
F4R 830/832	**75**	**87**
K9K	**89**	**99 ± 2**

Special tooling required	
Mot. 1700	Fault finding and filling - bleeding the cooling circuit.
Ms. 554-07	Instrument for testing the cooling circuit and the expansion bottle valve. Contains caps 554-01, 554-04, 554-06

IMPORTANT

When working in the engine compartment, take care as the radiator fan(s) may start up unexpectedly (risk of being cut).

To avoid any risk of serious burns when the engine is hot:

- do not open the expansion bottle cap,
- do not drain the cooling system,
- do not open the bleed screw(s).

Note:

There are two procedures for checking the cooling system:

- the procedure using the **(Mot. 1700)**
- the procedure using the **(Ms. 554-07)**

Expansion bottle cap valve rating:

Expansion bottle cap with ...	Valve rating
... a brown circle	**1.2 bar**
... a yellow marking	**1.4 bar**
... a white marking	**1.6 bar**
... a grey marking	**1.8 bar**

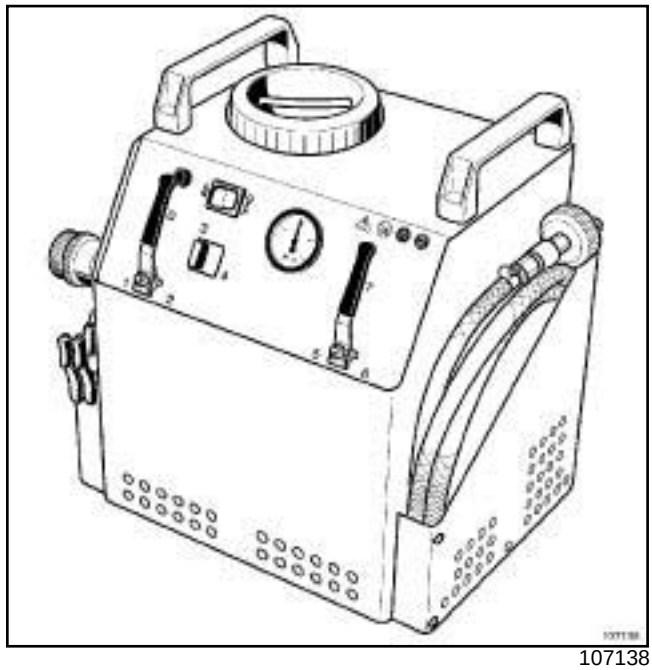
I - CHECKING THE COOLING SYSTEM USING THE TOOL (MOT. 1700)

❑

WARNING

If the coolant is leaking from the expansion bottle cap, replace the valve.

1 - Checking the expansion bottle cap valve



107138

❑ Use the cooling system filling and diagnostic tool **(Mot. 1700)**. Consult the user's manual for this tool (see **Cooling system filling and diagnostic tool: Use**) (Technical Note 3857A, 19A, Cooling).

2 - Checking the sealing of the cooling circuit

❑ Use the cooling system filling and diagnostic tool **(Mot. 1700)**. Consult the user's manual for this tool (see **Cooling system filling and diagnostic tool: Use**) (Technical Note 3857A, 19A, Cooling).

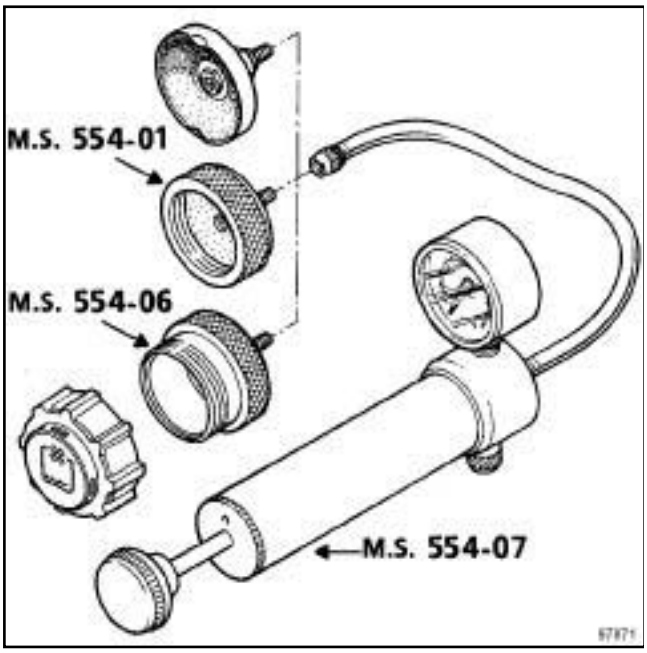
II - CHECKING THE COOLING SYSTEM USING THE TOOL (MS. 554-07)

❑

WARNING

If the coolant is leaking from the expansion bottle cap, replace the valve.

1 - Checking the expansion bottle cap valve



97871

❏ Fit onto the tester **(Ms. 554-07)**, the adapter **(Ms. 554-06)**.

❏ Fit the expansion bottle cap to the adapter **(Ms. 554-06)**.

> Note:
>
> The pressure should not drop; if it does, look for the leak.

❏ Pump with the **(Ms. 554-07)**, the pressure should stabilise at the expansion bottle cap valve rating with a test tolerance of ± **0.1 bar.**

2 - Checking the sealing of the cooling circuit

❏ Replace the expansion bottle cap with the adapter **(Ms. 554-01)**.

❏ Connect on the adapter **(Ms. 554-01)** the tool **(Ms. 554-07)**.

❏ Pump with the **(Ms. 554-07)** to put the cooling circuit under pressure.

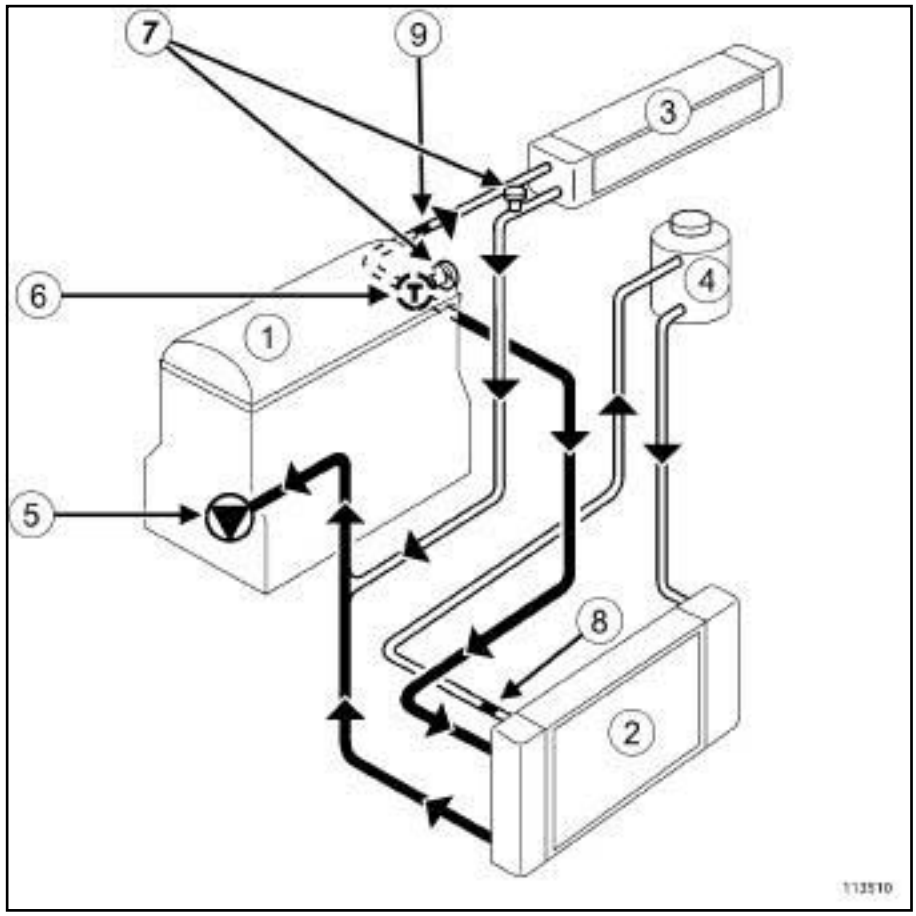
❏ Stop pumping at **0.1 bar** below the valve rating for the expansion bottle cap valve.

> Note:
>
> The pressure should not drop; if it does, look for the leak.

❏ Gradually unscrew the union of the **(Ms. 554-07)** to decompress the cooling system then remove the adapter **(Ms. 554-01)** and refit the expansion bottle cap.

D4F

D4F, and 740 or 742 or 764



113510

(**1**) Engine

(**2**) Cooling radiator

(**3**) heater matrix

(**4**) Expansion bottle

(**5**) Water pump

(**6**) Thermostat

(**7**) Bleed screws

(**8**) **5 mm** restriction

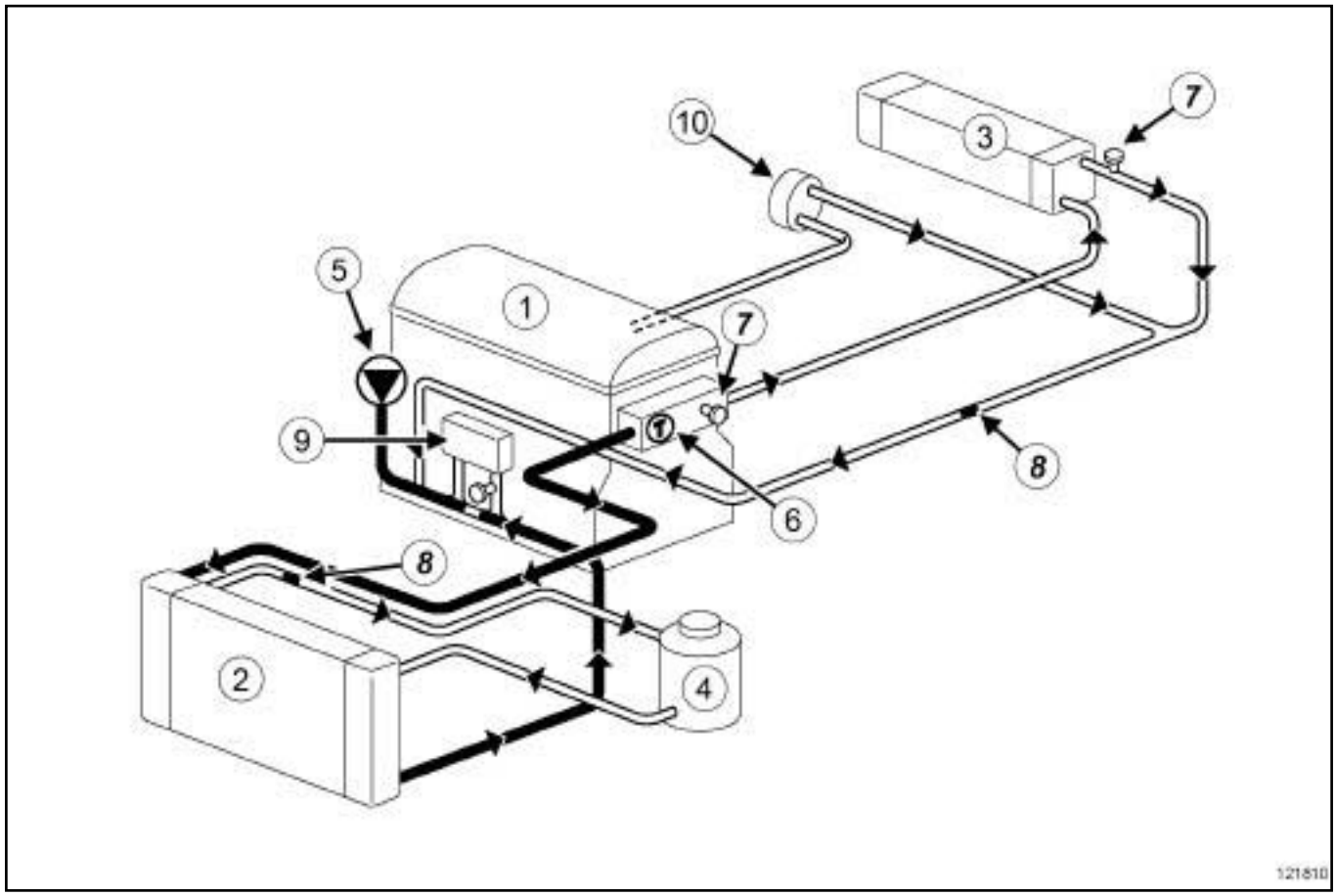
(**9**) **10 mm** restriction

Note:

The rating of the expansion bottle degassing valve is **1.4 bar**.

D4F

D4F, and 784

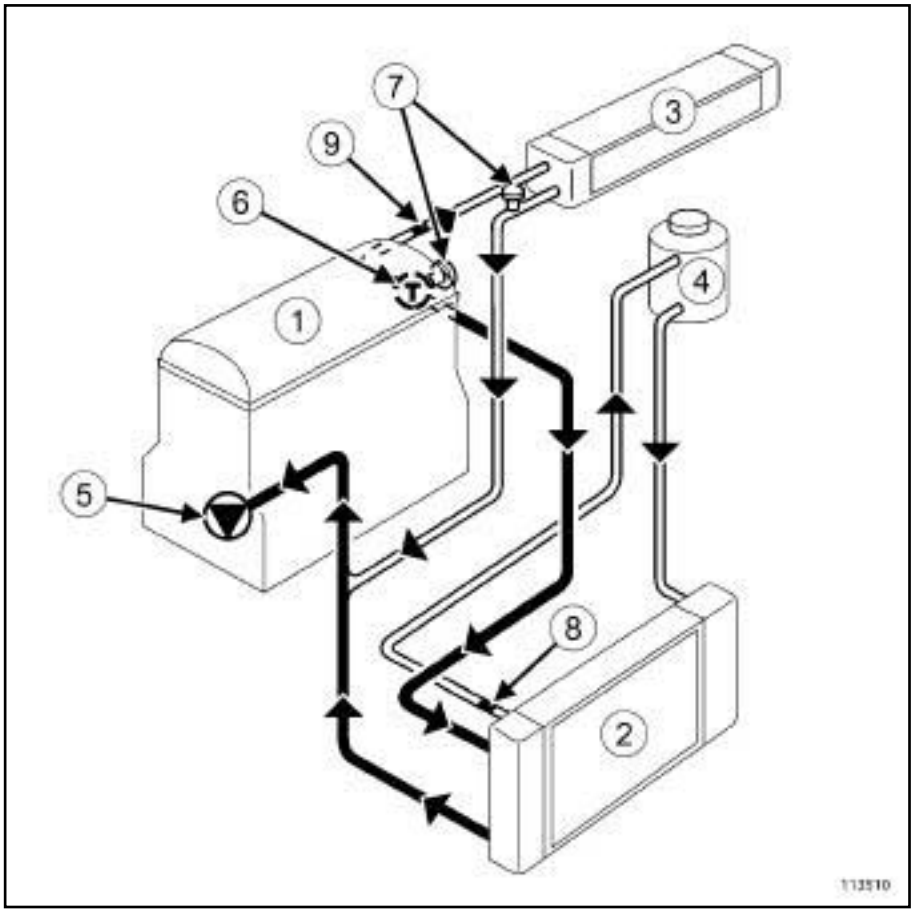


121810

121810

(**1**) Engine
(**2**) Cooling radiator
(**3**) Heater matrix
(**4**) Expansion bottle
(**5**) Water pump
(**6**) Thermostat
(**7**) Bleed screws
(**8**) Choke
(**9**) Coolant-oil intercooler
(**10**) Turbocharger

K4M, and 800



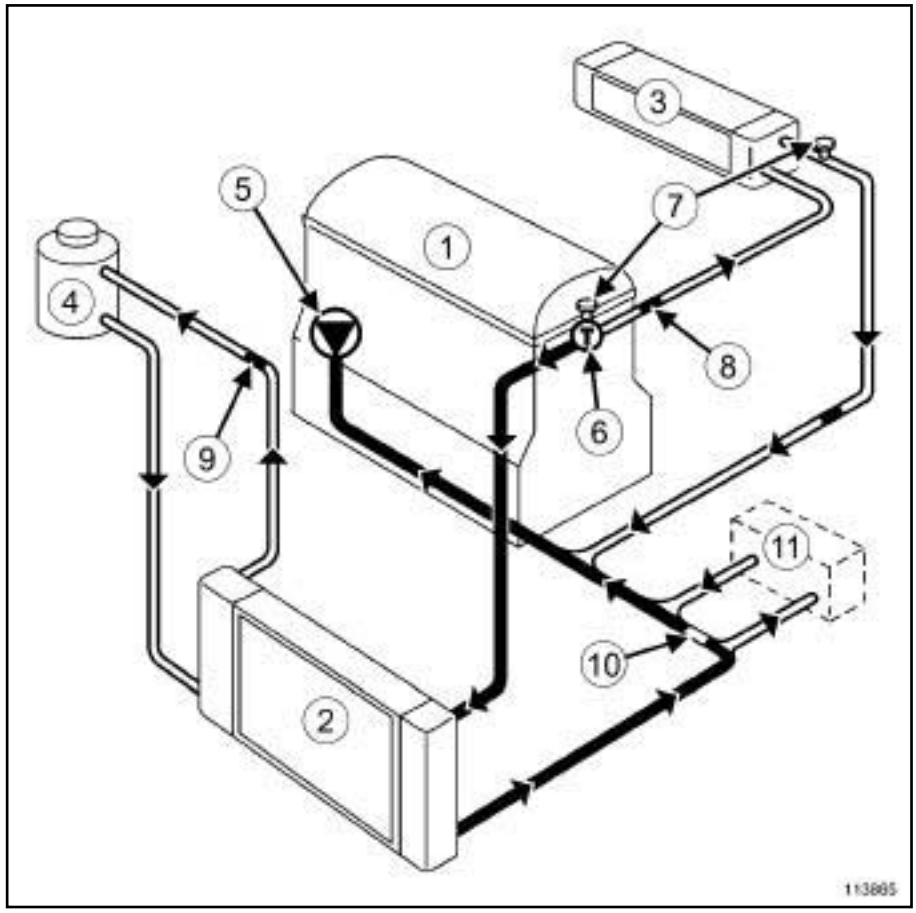
113510

(**1**) Engine
(**2**) Cooling radiator
(**3**) Heater radiator
(**4**) Expansion bottle
(**5**) Water pump
(**6**) Thermostat
(**7**) Bleed screws
(**8**) 5 mm restriction
(**9**) 10 mm restriction

Note:

The expansion bottle degassing valve rating is **1.4 bar**.

K4M, and 801



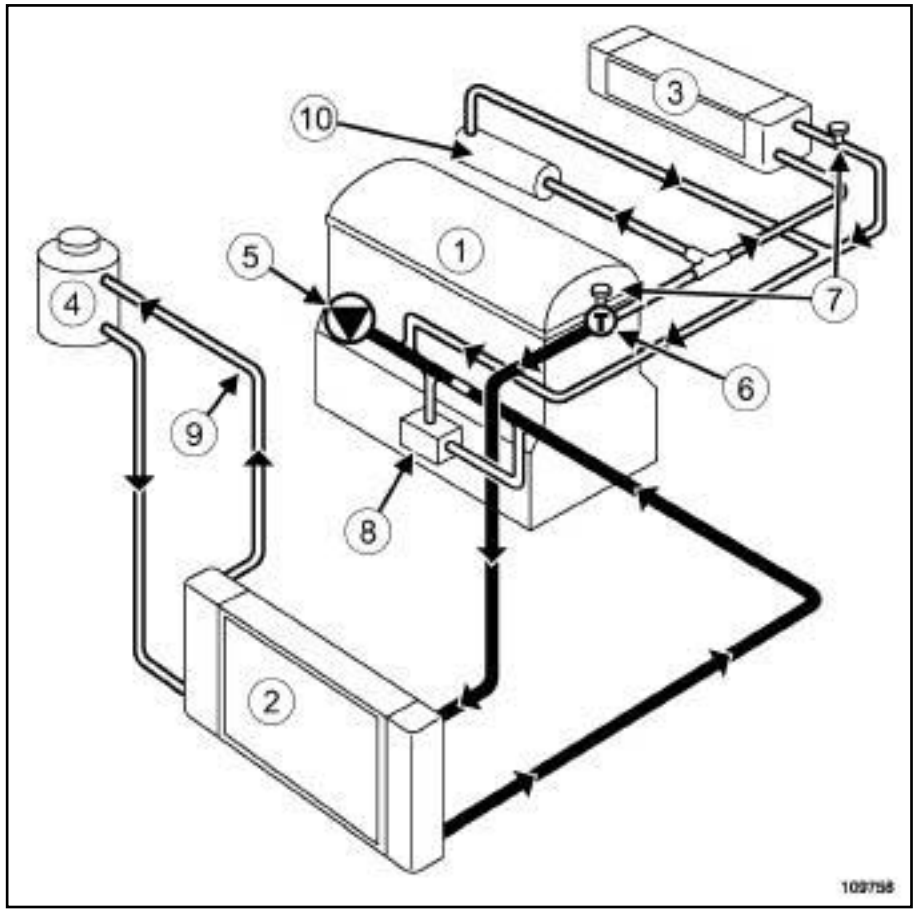
113865

(**1**)	Engine
(**2**)	Cooling radiator
(**3**)	Heater radiator
(**4**)	Expansion bottle
(**5**)	Water pump
(**6**)	Thermostat
(**7**)	Bleed screws
(**8**)	11 mm restriction
(**9**)	5 mm restriction
(**10**)	10 mm restriction
(**11**)	Oil-water intercooler for automatic gearbox (if fitted to the vehicle)

Note:

The expansion bottle degassing valve rating is **1.4 bar**.

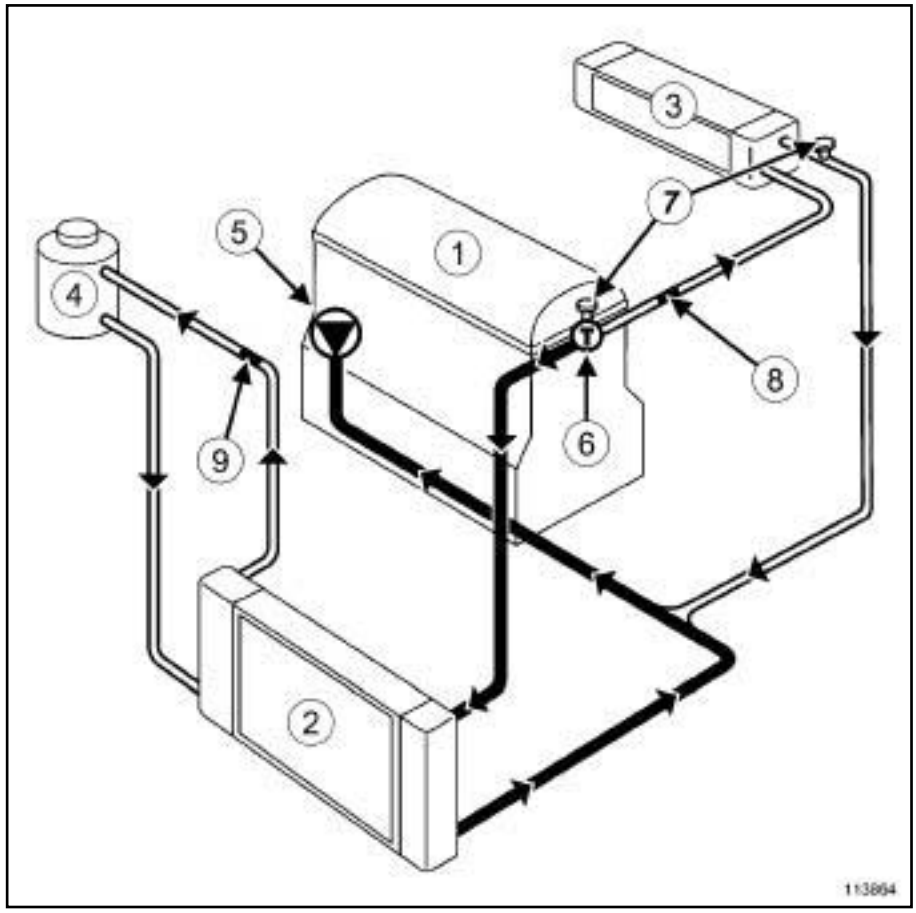
K9K, and 764 or 766 or 768



109758

(**1**)	Engine
(**2**)	Cooling radiator
(**3**)	Heater radiator
(**4**)	Expansion bottle
(**5**)	Coolant pump
(**6**)	Thermostat
(**7**)	Bleed screws
(**8**)	Water-oil heat exchanger
(**9**)	5 mm choke
(**10**)	EGR

K4J

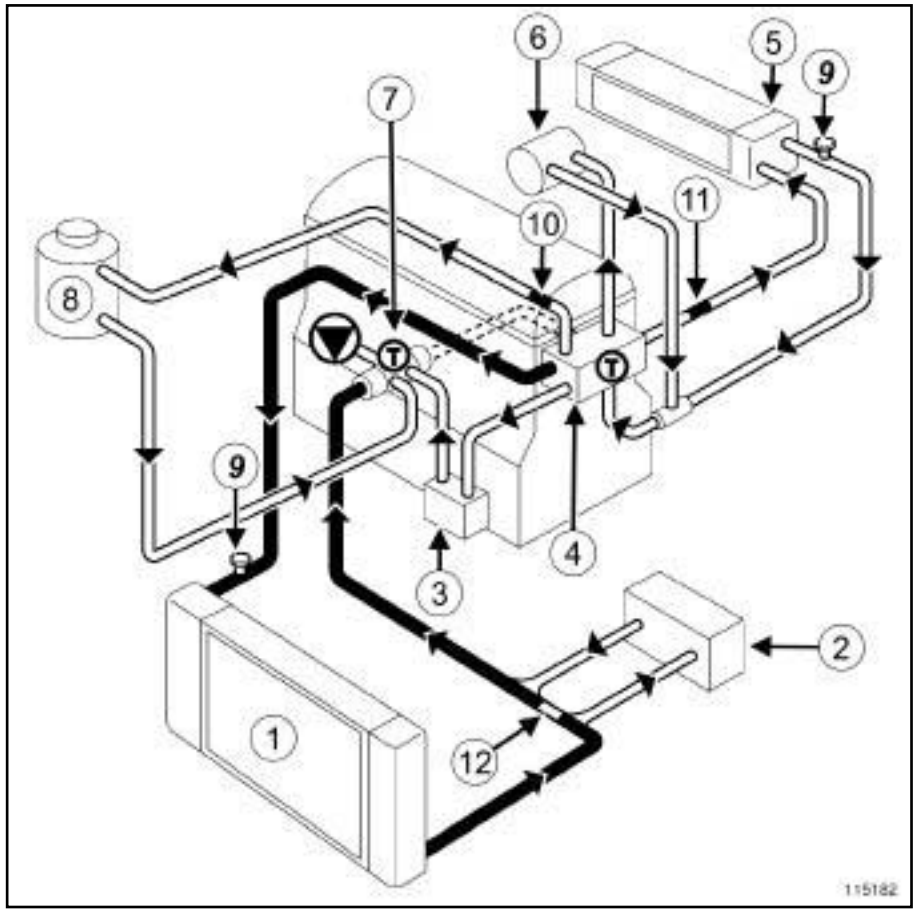


113864

(**1**) Engine
(**2**) Cooling radiator
(**3**) Heater radiator
(**4**) Expansion bottle
(**5**) Water pump
(**6**) Thermostat
(**7**) Bleed screws
(**8**) 11 mm restriction
(**9**) 5 mm restriction

Note:

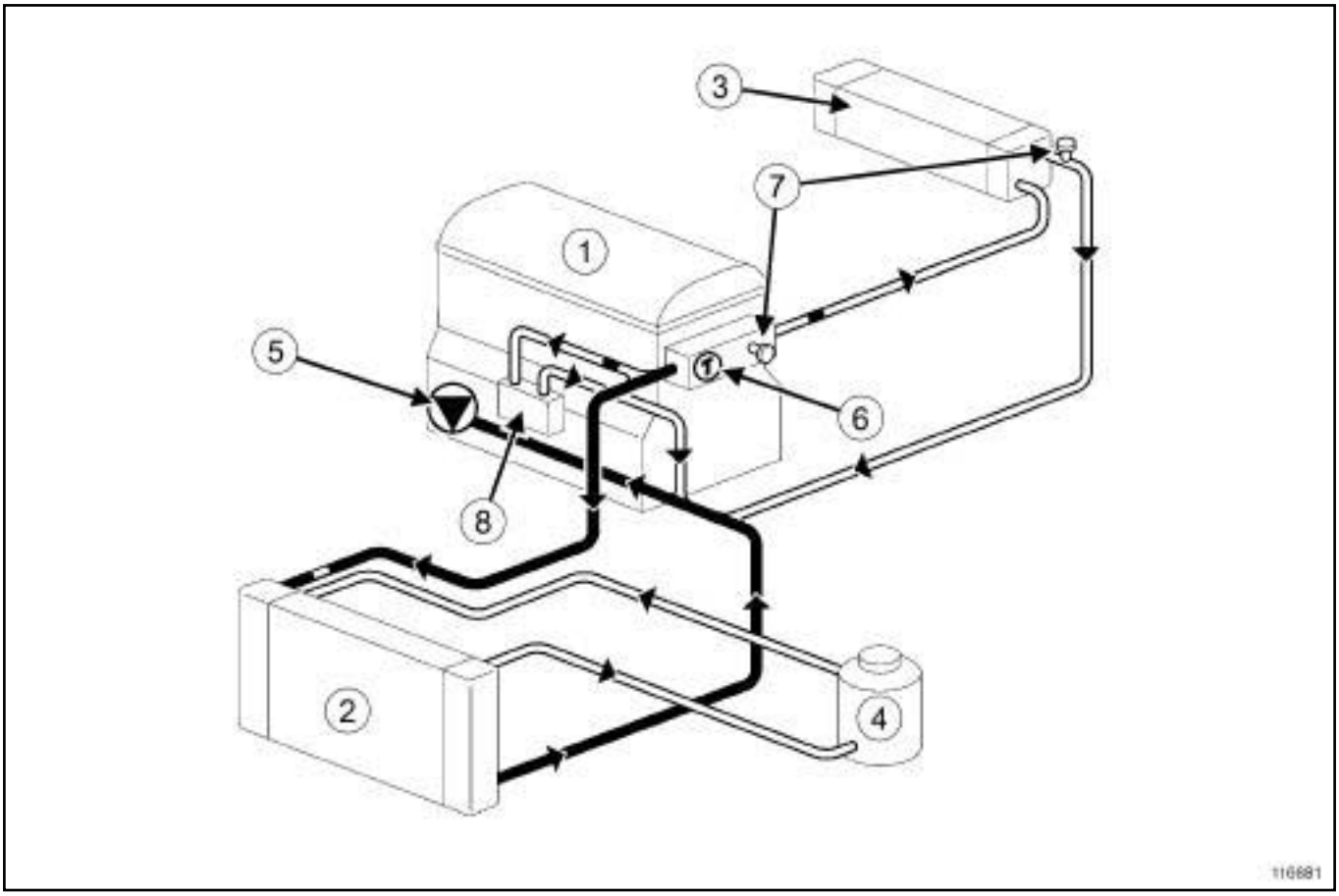
The expansion bottle degassing valve rating is **1.4 bar**.



115182

(**1**)	Radiator
(**2**)	Automatic transmission oil coolant heat exchanger
(**3**)	Engine oil coolant heat exchanger
(**4**)	Cylinder head thermostat
(**5**)	Heater matrix
(**6**)	Motorised throttle valve
(**7**)	Cylinder block thermostat
(**8**)	Expansion bottle
(**9**)	Bleed screws
(**10**)	3 mm restriction
(**11**)	11 mm restriction
(**12**)	10 mm restriction

F4R



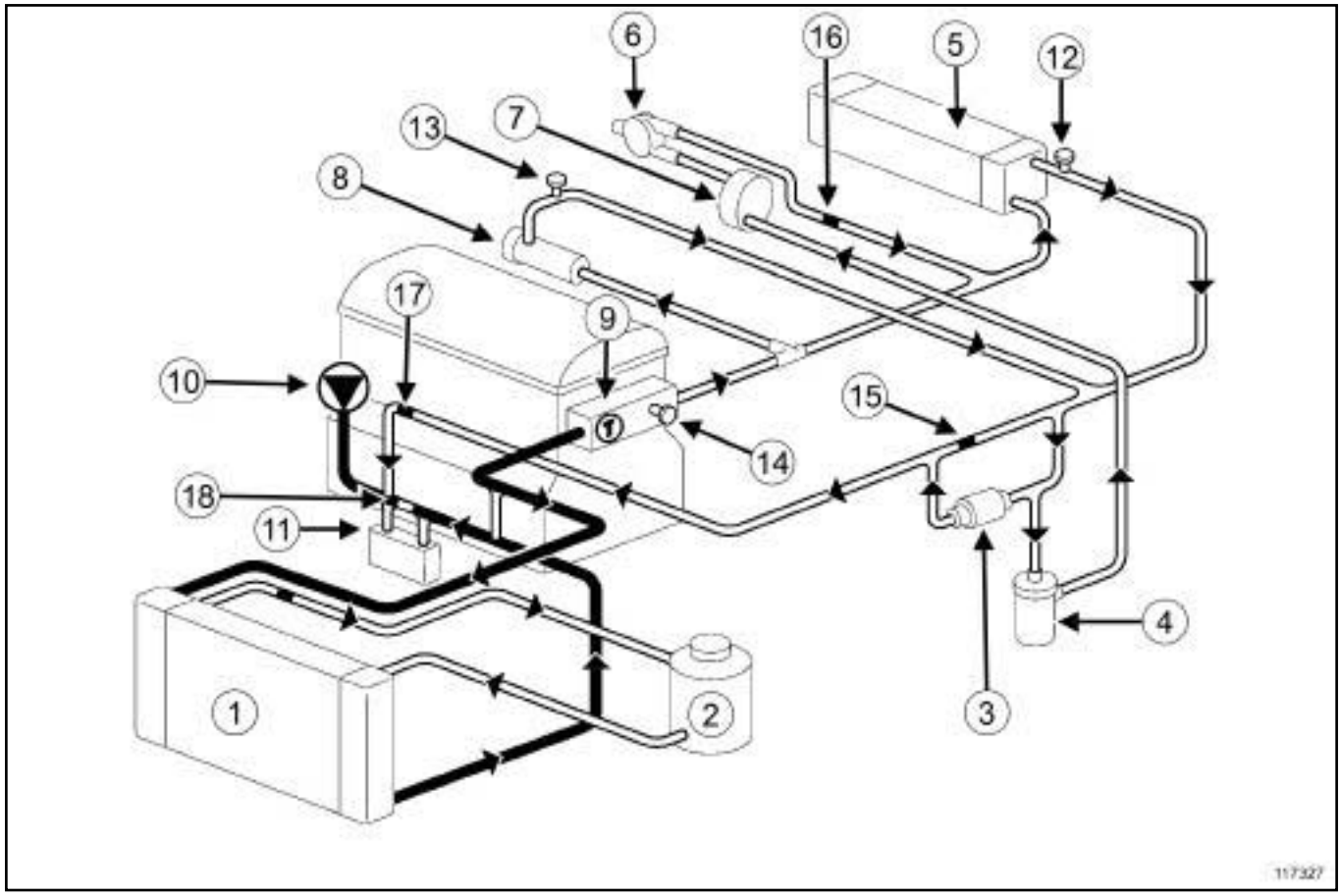
116881

(**1**) Engine
(**2**) Cooling radiator
(**3**) Heater radiator
(**4**) Expansion bottle
(**5**) Coolant pump
(**6**) thermostat
(**7**) Bleed screw
(**8**) Engine oil cooler

Note:

The rating of the expansion bottle degassing valve is **1.4 bar**.

K9K, and 772



117327

(**1**)	Radiator
(**2**)	Expansion bottle
(**3**)	Heating elements
(**4**)	Electric coolant pump
(**5**)	Heater matrix
(**6**)	Turbocharger
(**7**)	Diesel fuel injector cooler on the catalytic pre-converter
(**8**)	Exhaust gas cooler
(**9**)	Thermostat
(**10**)	Coolant pump
(**11**)	Water-oil heat exchanger
(**12**)	Bleed screw
(**13**)	Bleed screw
(**14**)	Bleed screw
(**15**)	Choke
(**16**)	Choke
(**17**)	Choke
(**18**)	Choke

Special tooling required	
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1700	Fault finding and filling - bleeding the cooling circuit.
Ms. 554-07	Instrument for testing the cooling circuit and the expansion bottle valve. Contains caps 554-01, 554-04, 554-06

Equipment required
coolant recovery tray
compressed air nozzle
pedal press

IMPORTANT

The circuits are designed to be pressurised, so be careful at high temperatures (risk of serious burns).

Do not remove the cap from the expansion bottle while the engine is hot.

Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed screw(s) with the engine running.

WARNING

Before the operation, protect the electrical accessories to prevent any risk of short circuiting and protect the belts to avoid damaging them.

DRAINING

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the expansion bottle cap,
- the engine undertray.

❑ Position the **coolant recovery tray** under the vehicle.

❑ Remove the cooling radiator bottom hose clip using the **(Mot. 1202-01)** or **(Mot. 1202-02)** or **(Mot. 1448)**.

❑ Open the cooling system by disconnecting the bottom hose from the cooling radiator.

❑ Use a **compressed air nozzle** to blow air into the system through the expansion bottle opening to remove as much coolant as possible.

CLEANING

❑ Fill the cooling system with water through the expansion bottle.

❑ Let the water run until the water collected from the cooling radiator bottom hose becomes clear.

❑ Use a **compressed air nozzle** to blow air into the circuit through the expansion bottle opening to remove as much water as possible.

❑ Refit:

- the cooling radiator bottom hose,
- the cooling radiator bottom hose clip with the **(Mot. 1202-01)** or **(Mot. 1202-02)** or **(Mot. 1448)**.

FILLING

❑

Note:

There are two procedures for filling the cooling system:

- the procedure using the **(Mot. 1700)** recommended by Renault which saves a considerable amount of time as the cooling system bleed screws do not need to be opened,
- the procedure without a special tool.

I - FILLING PROCEDURE USING THE TOOL (MOT. 1700)

❑ Fill the cooling system with engine coolant recommended by the manufacturer (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) using the **(Mot. 1700)** (see) (Technical Note 3857A, 19A, Cooling).

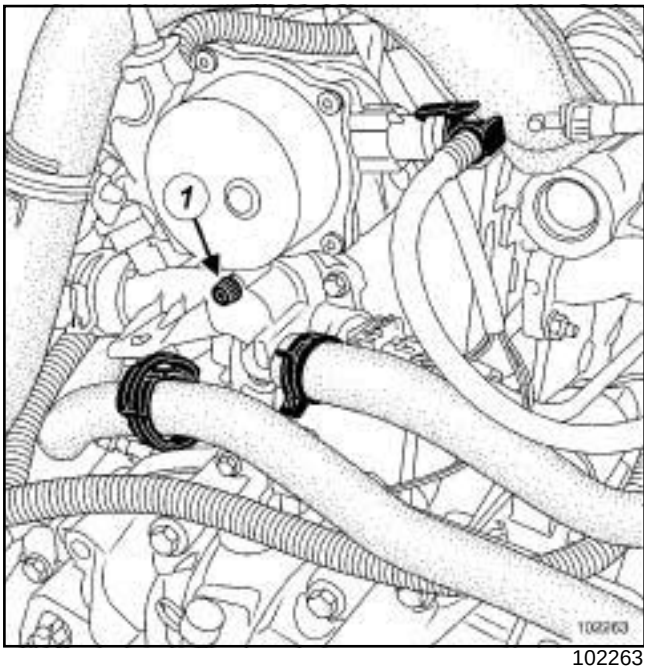
II - FILLING PROCEDURE WITHOUT A SPECIAL TOOL

❑

WARNING

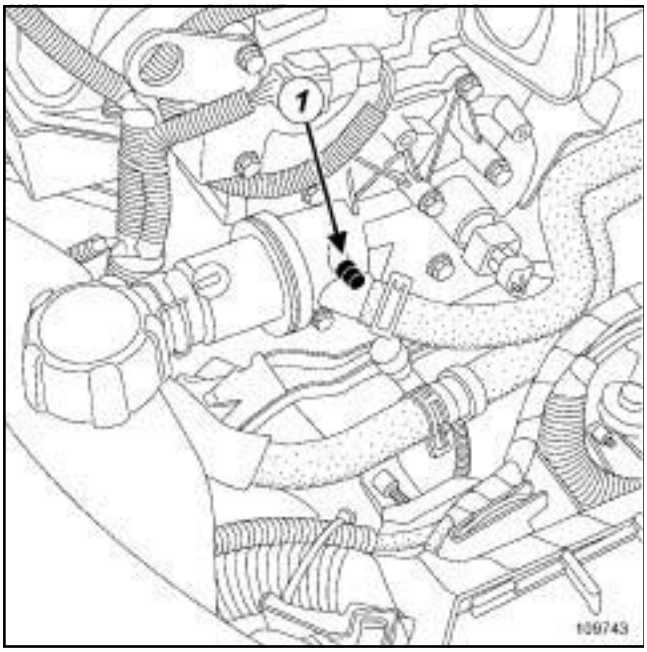
It is essential to open all of the bleed screws to remove as much as air as possible in the cooling system. Failure to perform this procedure may prevent the cooling system from filling properly and may damage the engine.

Location of the bleed screw on the K9K water chamber



102263

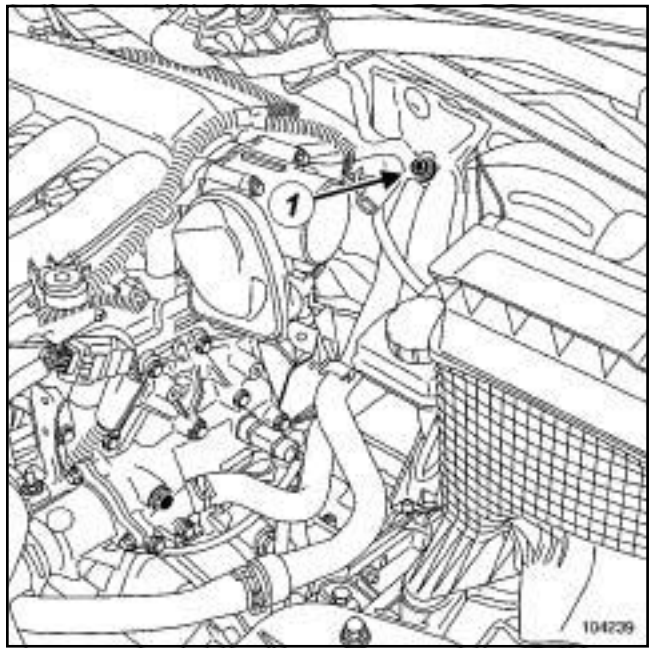
Location of the bleed screw on the D4F, K4J, K4M water chamber



109743

Location of the bleed screw on the D4F, K4M, K4J,

K9K heater radiator hose



104239

❑ Open the bleed screws (**1**) .

❑ Fill the cooling system with the engine coolant recommended by the manufacturer (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) via the expansion bottle until it overflows.

❑ Close all the bleed screws as soon as the coolant starts to flow in a continuous stream.

❑ Pressurise the system using the **(Ms. 554-07)** to check that there are no leaks (see **19A**, **Cooling**, **Engine cooling system: Check**, page **19A-5**) .

❑ Refit the expansion bottle cap.

❑ Clean any surfaces soiled by the coolant.

BLEEDING

❑

WARNING

Do not open the bleed screw whilst the engine is running; this would damage the engine.

❑ Start the engine.

D4F, and 740 or 742 or 764

❑ Maintain the engine speed at **2500 rpm**, using the **pedal press** for **5 minutes**.

❑ Stabilise the engine speed at **2000 rpm** until the fan assembly has been activated twice.

D4F, and 784

- ❏ Maintain the engine speed at **2500 rpm**, using the **pedal press** for **5 minutes**
- ❏ Stabilise the engine speed at **2000 rpm** until the fan assembly is activated.
- ❏ Note the coolant level in the expansion bottle after this first activation.
- ❏ Accelerate at a minimum of **4000 rpm** for a few seconds, until the coolant fluid level in the expansion bottle drops.

K9K

- ❏ Maintain the engine speed at **1500 rpm** rapidly varying the engine speed (until maximum speed is reached) **2 to 3** times approximately every two minutes until the fan assembly starts for a second time.

F4R or K4J or K4M

- ❏ Run the engine at **2500 rpm**, until the engine cooling fan has started to operate three times (time required for automatic degassing).

M4R

- ❏ Let the engine run at **3000 rpm**, until the engine cooling fan has been activated three times (time required for automatic degassing).

- ❏ Check that the heating is operating correctly.
- ❏ Allow the engine to cool until the coolant temperature is less than **50°C**.
- ❏ Make sure the coolant fluid level is at the « Maximum » mark.
- ❏ Refit the expansion bottle cap.

FINAL OPERATION.

- ❏ Remove the **coolant recovery tray**.
- ❏ Refit the engine undertray.

D4F, and 740 or 742 or 764, and STANDARD HEATING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the expansion bottle valve,
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Attach the cooling radiator to the front end panel.

❏ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).
- the engine fuse box cover,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❏ Disconnect the fan unit connector.

❏ Unclip the wiring harness on the fan assembly.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Detach the cooling radiator from the front end panel.

❏ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the cooling radiator

❏ Remove the expansion bottle hose clamps using **(Mot. 1448)**.

❏ Using the **(Car. 1363)**, remove:

- the radiator expansion bottle bottom hose,
- the radiator expansion bottle top hose.

❏ Remove the radiator fan unit.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❏ Refit:

- the radiator fan unit,
- the radiator expansion bottle top hose,
- the radiator expansion bottle bottom hose,

❏ Refit the expansion bottle hose clamps using **(Mot. 1448)**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front end panel rubber pads,
- the cooling radiator.

III - FINAL OPERATION

❏ Connect the fan unit connector.

❏ Clip the wiring harness onto the fan assembly.

❏ Refit:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the engine fuse box cover,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

D4F, and 740 or 742 or 764, and STANDARD HEATING

- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

D4F, and 740 or 742 or 764, and AIR CONDITIONING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

Tightening torques ▽	
air conditioning pipe union mounting bolts on the condenser	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the expansion bottle valve,
- the engine undertray.

❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

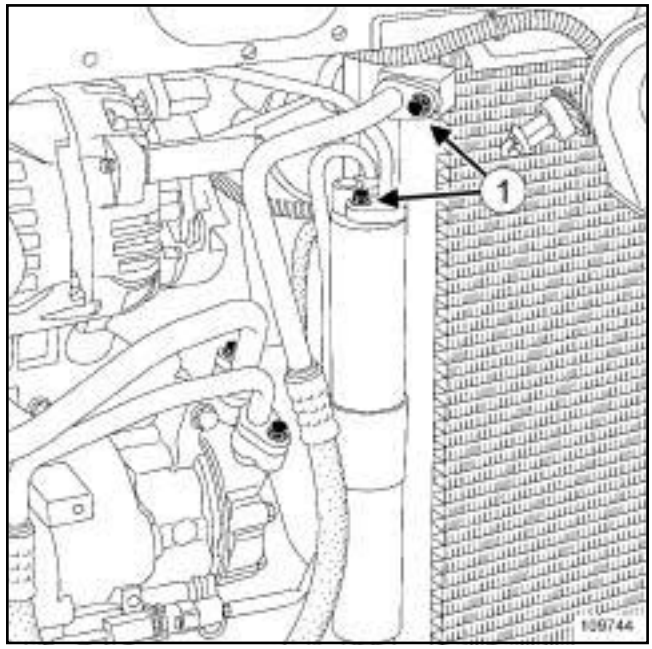
❏ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Attach the cooling radiator to the front end panel.

❏ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the engine fuse box cover,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❏ Unclip the wiring harness of the pressure switch on the condenser.



109744

❏ Remove:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector,
- the mounting bolts (**1**) securing the air conditioning pipe unions to the condenser,
- the fan assembly connector.

❏ Disconnect the air conditioning pipe unions.

❏ Insert plugs in the air conditioning pipe unions.

❏ Unclip the fan unit wiring harness.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Detach the cooling radiator from the front end panel.

❏ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the cooling radiator

❏ Remove:

- the dehydration canister clamp bolts,
- the dehydrator reservoir.

❏ Remove the expansion bottle hose clamps using **(Mot. 1448)**.

❏ Using the **(Car. 1363)**, remove:

- the radiator expansion bottle bottom hose,

- the radiator expansion bottle top hose.

❑ Remove the radiator fan unit.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❑ Refit:

- the radiator fan unit,
- the radiator expansion bottle top hose,
- the radiator expansion bottle bottom hose,

❑ Refit the expansion bottle hose clamps using **(Mot. 1448)**.

❑ Refit:

- the dehydrator reservoir,
- the dehydration canister clamp bolts.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front end panel rubber pads,
- the cooling radiator.

III - FINAL OPERATION

❑ Clip the wiring harness onto the fan assembly.

❑ Remove the caps from the air conditioning pipe unions.

❑ Replace the seals on the air conditioning pipe unions.

❑ Refit:

- the fan unit connector,
- the air conditioning compressor clutch connector,
- the pressure switch from the condenser,
- the air conditioning pipe unions,
- the air conditioning pipe union mounting bolts on the condenser.

❑ Torque tighten the **air conditioning pipe union mounting bolts on the condenser (8 N.m)**.

❑ Clip the pressure switch wiring harness on the condenser.

❑ Refit:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the engine fuse box cover,
- the battery cover,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

Cooling radiator: Removal - Refitting

K4J or K4M, and STANDARD HEATING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine fuse box cover,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Attach the cooling radiator to the front end panel.

❑ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

❑ Disconnect the blower assembly connector.

❑ Unclip the fan unit wiring harness.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Detach the cooling radiator from the front end panel.

❑ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the radiator

❑ Using the **(Mot. 1448)**, remove:

- the radiator expansion bottle bottom hose clamps,
- the radiator expansion bottle top hose clamp.

❑ Using the **(Car. 1363)**, remove:

- the expansion bottle bottom hose on the radiator,
- the expansion bottle top hose on the radiator,

❑ Remove the radiator fan unit.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❑ Refit:

- the radiator fan unit,
- the expansion bottle top hose on the radiator,
- the expansion bottle bottom hose.

❑ Using the **(Mot. 1448)**, refit:

- the radiator expansion bottle top hose clamp.
- the radiator expansion bottle bottom hose clamp.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front end panel rubber pads,
- the cooling radiator.

III - FINAL OPERATION

❑ Connect the fan assembly connector.

❑ Clip the wiring harness onto the fan assembly.

❑ Refit:

- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see) (MR 392, 80A, Battery),

K4J or K4M, and STANDARD HEATING

- the engine fuse box cover,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

K4J or K4M, and AIR CONDITIONING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

Tightening torques ▽	
air conditioning pipe union mounting bolts on the condenser	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine fuse box cover,
- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the expansion bottle valve.

❑ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

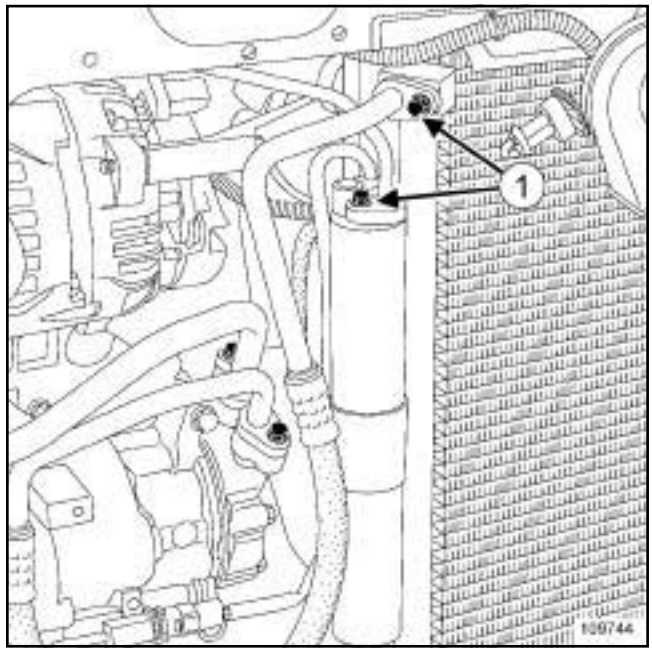
❑ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Attach the cooling radiator to the front end panel.

❑ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

❑ Unclip the wiring harness of the pressure switch on the condenser.



109744

❑ Remove:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector,
- the mounting bolts (**1**) securing the air conditioning pipe unions to the condenser,
- the fan assembly connector.

❑ Disconnect the air conditioning pipe unions.

❑ Insert plugs in the air conditioning pipe unions.

❑ Unclip the wiring harness on the fan assembly.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Detach the cooling radiator from the front end panel.

❑ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the radiator

❑ Using the **(Mot. 1448)**, loosen:

- the clamp of the bottom hose of the expansion bottle on the radiator,
- the clamp of the top hose of the expansion bottle on the radiator,

K4J or K4M, and AIR CONDITIONING

❑ Using the **(Car. 1363)**, remove:

- the bottom hose of the expansion bottle on the radiator,
- the top hose of the expansion bottle on the radiator,

❑ Remove:

- the radiator fan assembly,
- the dehydrator reservoir.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❑ Refit:

- the dehydrator reservoir,
- the radiator fan unit
- the top hose of the expansion bottle on the radiator,
- the bottom hose of the expansion bottle on the radiator.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front end panel rubber pads,
- the cooling radiator.

III - FINAL OPERATION

❑ Clip the wiring harness onto the fan assembly.

❑ Remove the caps from the air conditioning pipe unions.

❑ Replace the seals on the air conditioning pipe unions.

❑ Refit:

- the fan assembly connector,
- the air conditioning compressor clutch connector,
- the pressure switch from the condenser,
- the air conditioning pipe unions,
- the mounting bolts of the air conditioning pipe unions.

❑ Torque tighten the **air conditioning pipe union mounting bolts on the condenser (8 N.m)**.

❑ Clip the pressure switch wiring harness on the condenser.

❑ Refit:

- the air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see) (MR 392, 80A, Battery),
- the engine fuse box cover,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

K9K, and AIR CONDITIONING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

Tightening torques ▽	
air conditioning pipe union mounting bolts on the condenser	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the expansion bottle valve,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Drain the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

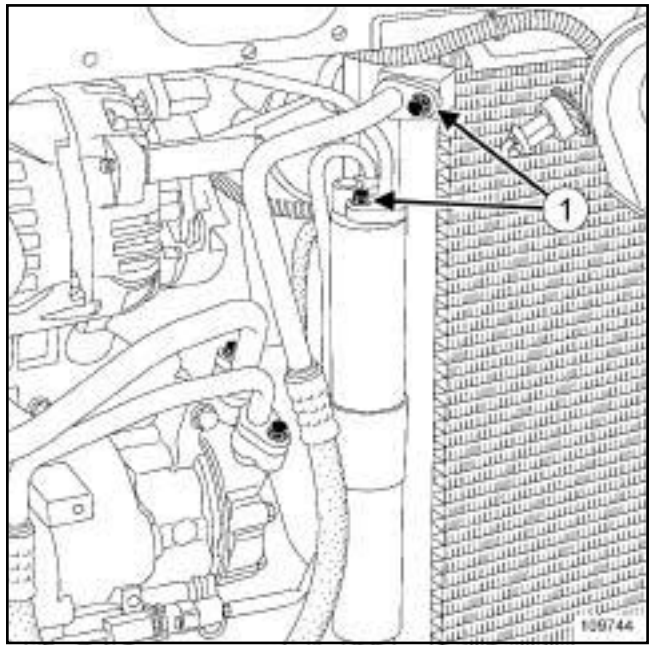
❏ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Attach the cooling radiator to the front end panel.

❏ Remove:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❏ Unclip the wiring harness of the pressure switch on the condenser.



109744

❏ Remove:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector,
- the mounting bolts (**1**) securing the air conditioning pipe unions to the condenser,
- the fan assembly connector.

❏ Disconnect the air conditioning pipe unions.

❏ Insert plugs in the air conditioning pipe unions.

❏ Unclip the fan unit wiring harness.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Detach the cooling radiator from the front end panel.

❏ Remove:

- the cooling radiator,
- the front end panel rubber pads.

K9K, and AIR CONDITIONING

Stripping the cooling radiator

❑ Remove:

- the mounting bolts of the dehydration canister clamp,
- the dehydrator reservoir.

❑ Using the **(Mot. 1448)**, remove:

- the clamp of the bottom hose of the expansion bottle on the radiator,
- the clamp of the top hose of the expansion bottle on the radiator,

❑ Using the **(Car. 1363)**, remove:

- the bottom hose of the expansion bottle on the radiator,
- the top hose of the expansion bottle on the radiator,

❑ Remove the radiator fan unit.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❑ Refit:

- the dehydrator reservoir,
- the dehydration canister mounting bolts,
- the radiator fan unit,
- the top hose of the expansion bottle on the radiator,
- the bottom hose of the expansion bottle on the radiator.

❑ Using the **(Mot. 1448)**, refit:

- the clamp of the top hose of the expansion bottle on the radiator,
- the clamp of the bottom hose of the expansion bottle on the radiator.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the rubber pads on the front end panel,
- the cooling radiator.

III - FINAL OPERATION

❑ Clip the wiring harness onto the fan assembly.

❑ Remove the plugs from the air conditioning pipe unions.

❑ Replace the seals on the air conditioning pipe unions.

❑ Refit:

- the fan assembly connector,
- the air conditioning compressor clutch connector,
- the pressure switch from the condenser,
- the air conditioning pipe unions,
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the air conditioning pipe union mounting bolts on the condenser.

❑ Torque tighten the **air conditioning pipe union mounting bolts on the condenser (8 N.m)**.

❑ Clip the pressure switch wiring harness on the condenser.

❑ Refit:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❑ Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the engine undertray,

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K9K, and STANDARD HEATING

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the expansion bottle valve,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Attach the cooling radiator to the front end panel.

❏ Remove:

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) .

❏ Disconnect the fan unit connector.

❏ Unclip the wiring harness on the fan assembly.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Detach the cooling radiator from the front end panel.

❏ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the cooling radiator

❏ Using the **(Mot. 1448)**, remove:

- the clamp of the bottom hose of the expansion bottle on the radiator,
- the clamp of the top hose of the expansion bottle on the radiator,

❏ Using the **(Car. 1363)**, remove:

- the bottom hose of the expansion bottle on the radiator,
- the top hose of the expansion bottle on the radiator.

❏ Remove the fan assembly of the radiator.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❏ Refit:

- the radiator fan unit,
- the top hose of the expansion bottle on the radiator,
- the bottom hose of the expansion bottle on the radiator.

❏ Using the **(Mot. 1448)**, refit:

- the clamp of the top hose of the expansion bottle on the radiator,
- the clamp of the bottom hose of the expansion bottle on the radiator.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front end panel rubber pads,
- the cooling radiator.

III - FINAL OPERATION

❏ Connect the fan unit connector.

❏ Clip the wiring harness onto the fan assembly.

❏ Refit:

- the expansion bottle (see **19A**, **Cooling**, **Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),

K9K, and STANDARD HEATING

- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
air conditioning pipe union mounting bolts on the condenser	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

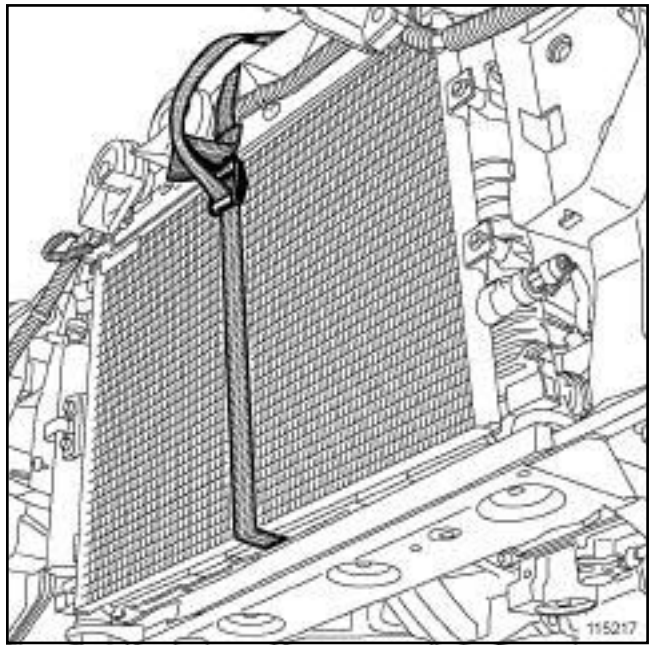
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Drain:

- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

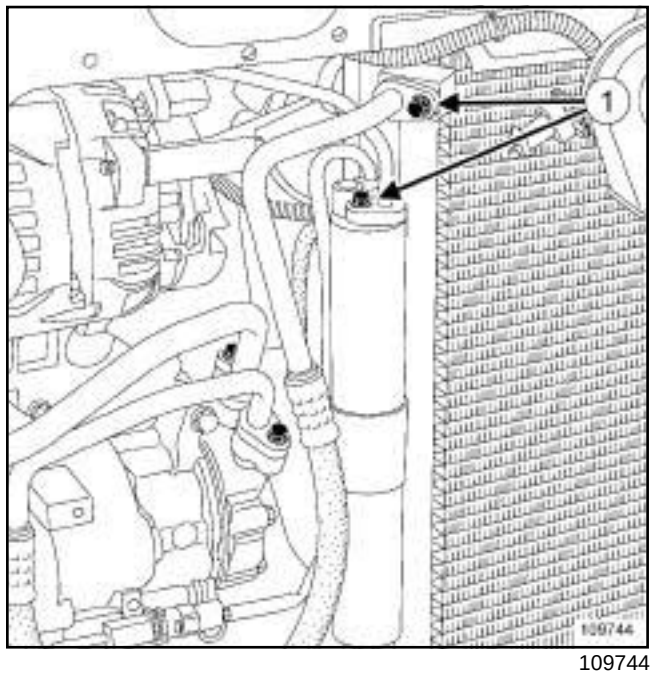


115217

❏ Attach the radiator to the front end panel.

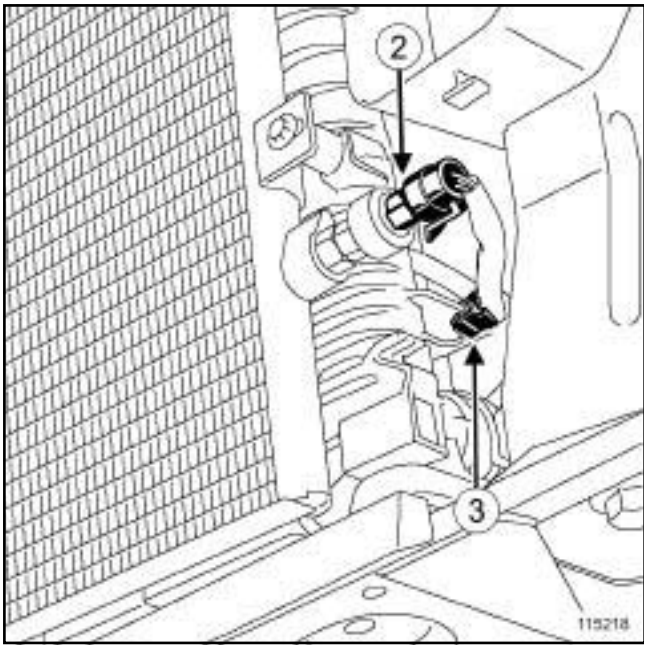
❏ Remove:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).



109744

❏ Remove the bolts (**1**) mounting the air conditioning pipe unions on the condenser.



115218

❑ Disconnect:

- the pressostat connector (**2**) on the condenser,
- the radiator top hose, using the **(Mot. 1448)**,
- the fan unit connectors.

❑ Unclip:

- the pressostat wiring harness from the condenser (**3**) ,
- the wiring harness from the fan unit.

❑ Disconnect the air conditioning pipe unions.

❑ Insert protective plugs in the air conditioning pipe unions.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Detach the cooling radiator from the front end panel.

❑ Remove:

- the cooling radiator,
- the front end panel rubber pads.

Stripping the cooling radiator

❑ Remove:

- the mounting bolts of the dehydration canister clamp,
- the dehydrator reservoir.

❑ Remove the radiator fan unit.

REFITTING

I - REFITTING PREPARATION OPERATION

Rebuilding the cooling radiator

❑ Refit:

- the dehydrator reservoir,
- the dehydration canister mounting bolts,
- the radiator fan unit.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the rubber pads on the front end panel,
- the cooling radiator.

M4R

III - FINAL OPERATION

❑ Clip the harness onto the fan unit.

❑ Remove the plugs from the air conditioning pipe unions.

❑ The air conditioning pipe union seals must be replaced.

❑ Refit:

- the fan assembly connector,
- the air conditioning compressor clutch connector,
- the pressure switch from the condenser,
- the air conditioning pipe unions,
- the bolts mounting the air conditioning pipe unions on the condenser,
- the radiator hoses using the **(Mot. 1448)**.

❑ Torque tighten the **air conditioning pipe union mounting bolts on the condenser (8 N.m)**.

❑ Clip the pressostat wiring harness to the condenser.

❑ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the engine undertray,

❑ Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
- the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

F4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

IMPORTANT

The circuits are designed to be pressurised, so be careful at high temperatures (risk of serious burns).

Do not remove the cap from the expansion bottle while the engine is hot. Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed screw(s) with the engine running.

WARNING

When carrying out a repair that requires a complete change, it is essential to flush the circuit with clean water, blast compressed air through the circuit to drive out the water, fill and bleed the circuit and then measure the effective protection.

The criteria to be met are:

- protection down to **-25°C ± 2** for cold and temperate countries,
- protection down to **-40°C ± 2** for "extreme cold" countries.

WARNING

Drain with the engine warm.

Flush and refill with the engine cold or warm.

Never flush a hot engine (risk of major thermal shock).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

❑ Perform the following operations:

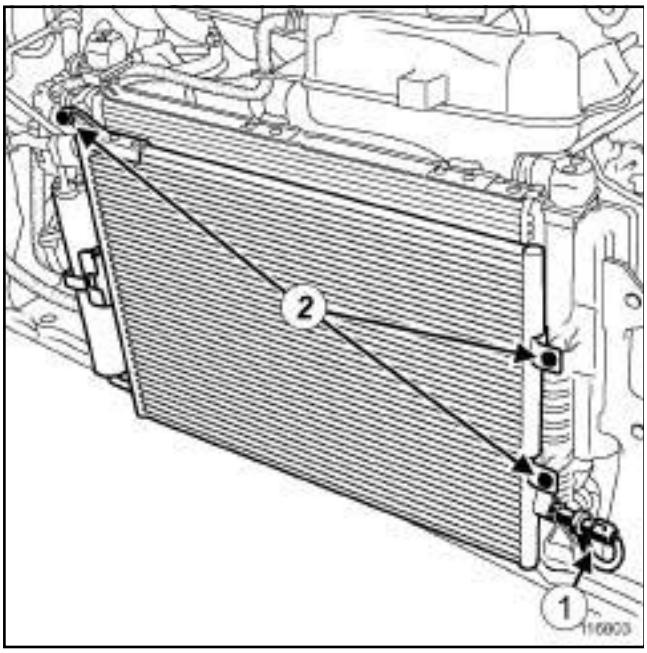
- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- clean the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Removing the « motor-driven fan assembly - radiator » assembly



116803

❑ Disconnect:

- the engine cooling fan assembly connectors,
- the pressure sensor connector (**1**) ,
- the cooling radiator hoses using the **(Mot. 1448)**.

❑ Remove the mounting bolts (**2**) from the air conditioning condenser.

❑ Move the air conditioning condenser slightly to one side.

WARNING
Do not deform the air conditioning pipes.

WARNING
Do not damage the cooling unit vanes (radiator, condenser, etc) during handling.

❑ Remove the « expansion bottle - radiator - motor-driven fan assembly » assembly.

2 - Stripping the radiator

❑ Separate the motor-driven fan assembly from the cooling radiator (see **19A**, **Cooling**, **Engine cooling fan assembly: Removal - Refitting**, page **19A-85**) .

WARNING
Do not damage the cooling unit vanes (radiator, condenser, etc) during handling.

❑ Disconnect the expansion bottle hoses on the cooling radiator using the **(Mot. 1448)**.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Connect the expansion bottle hoses to the cooling radiator.

❑ Refit the engine cooling fan assembly to the cooling radiator.

WARNING
Do not damage the cooling unit vanes (radiator, condenser, etc) during handling.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the « expansion bottle - radiator - motor-driven fan assembly » assembly to the radiator mounting cross member,
- the air conditioning condenser to the cooling radiator.

WARNING
Do not damage the cooling unit vanes (radiator, condenser, etc) during handling.

❑ Refit the air conditioning condenser mounting bolts to the cooling radiator.

❑ Connect:

- the cooling radiator hoses using the **(Mot. 1448)**.
- the pressure sensor connector,
- the fan assembly connectors.

F4R

III - FINAL OPERATION

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Check that there are no coolant leaks.

❑ Refit the engine undertray.

D4F, and 784 or 786

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Equipment required
safety strap(s)
refrigerant charging station

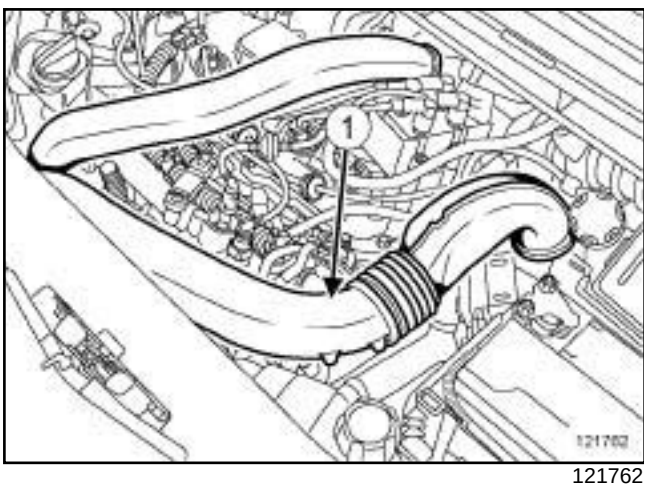
Tightening torques ▽	
air conditioning pipe bolt	**8 Nm**
air conditioning pipe bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



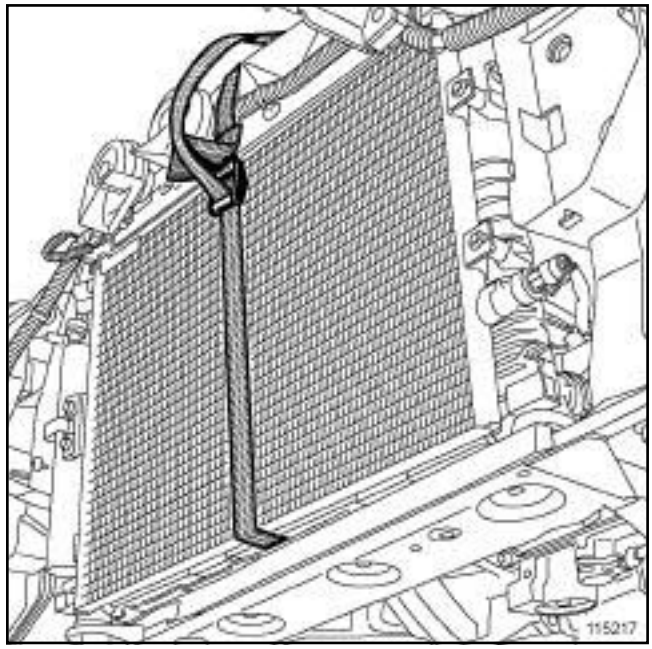
121762

❏ Remove the air filter unit air inlet pipe (**1**) .

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

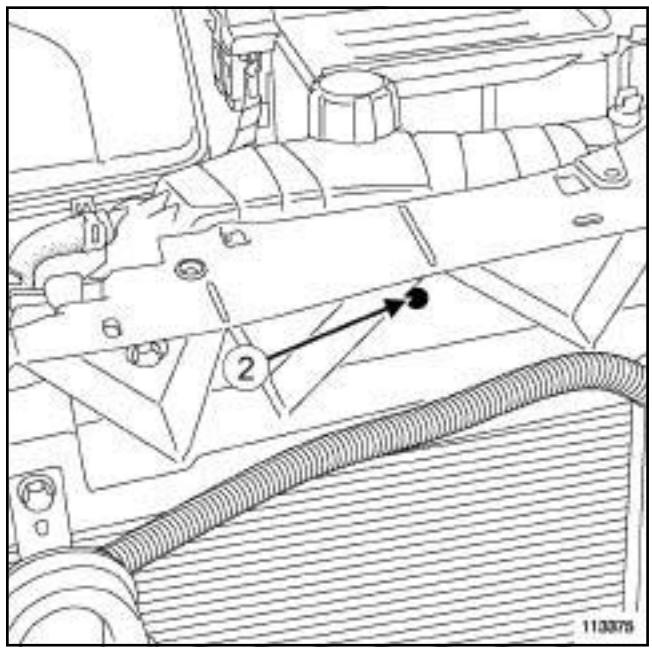
❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



115217

❏ Attach the « radiator - condenser - cooling fan » assembly using a **safety strap(s)**.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).



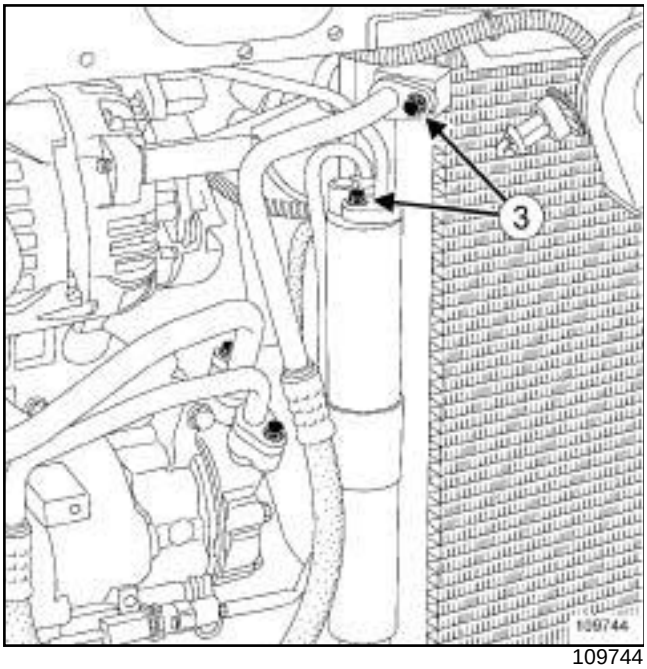
113375

❏ Remove the clip (**2**) from the expansion bottle.

❏ Remove the expansion bottle.

D4F, and 784 or 786

AIR CONDITIONING



109744

❏ Drain the air conditioning circuit using **refrigerant charging station**.

❏ Remove the bolts (**3**) from the air conditioning pipes on the dehydrator reservoir and on the condenser.

❏ Uncouple the air conditioning pipes on the dehydrator reservoir and on the condenser.

❏ Plug the openings.

❏ Disconnect the pressostat connector.

❏ Disconnect the motor-driven fan assembly connectors.

❏ Unclip the wiring harness on the fan assembly.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Detach the « radiator - condenser - cooling fan » assembly from the front end panel.

❏ Remove:

- the « radiator - condenser - motor-driven fan » assembly,
- the front end panel rubber pads.

Stripping the cooling radiator

❏ Remove:

- the dehydration canister clamp bolts,
- the air conditioning pipe bolt,
- the dehydration canister.

❏ Move the hose clips away from the expansion bottle using **(Mot. 1448)**.

❏ Disconnect:

- the bottom hose of the expansion bottle on the radiator,
- the top hose of the expansion bottle on the radiator.

❏ Unclip the cooling fan assembly.

REFITTING

I - REFITTING PREPARATIONS OPERATION

Rebuilding the cooling radiator

❏ Clip on the cooling fan assembly.

❏ Connect:

- the bottom hose of the expansion bottle on the radiator,
- the top hose of the expansion bottle on the radiator.

❏ Fit the clips on the expansion bottle hoses using the **(Mot. 1448)**.

❏ Refit:

- the dehydrator reservoir.
- the air conditioning pipe bolt,
- the dehydration canister clamp bolts.

❏ Torque tighten the **air conditioning pipe bolt (8 Nm)**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front end panel rubber pads,
- the « radiator - condenser - engine motor-driven fan » assembly.

III - FINAL OPERATION.

❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

D4F, and 784 or 786

❏ Clip the wiring harness onto the motor-driven fan assembly.

❏ Connect the motor-driven fan assembly connectors.

AIR CONDITIONING

❏ Connect the pressostat connector.

❏ Remove the blanking plugs.

❏ Refit:

- the air conditioning pipes on the dehydrator reservoir and on the condenser,
- the bolts for the air conditioning pipes on the dehydrator reservoir and on the condenser.

❏ Torque tighten the **air conditioning pipe bolts (8 Nm)**.

❏ Refit:

- the expansion bottle,
- the expansion bottle clip,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the air filter unit air inlet pipe.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

AIR CONDITIONING

❏ Fill the air conditioning circuit with **refrigerant charging station**.

❏ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit the engine undertray.

D4F, and 740 or 742 or 764

Tightening torques ▽	
coolant pump bolts	**9 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **19A**, **Cooling**, **Engine cooling: Precautions for the repair**, page **19A-2**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand deflector,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) (11A, Top and front of engine),
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) (16A, Starting - Charging),
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) (11A, Top and front of engine).

❏ Drain the engine cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (19A, Cooling).

AIR CONDITIONING

❏ Disconnect the air conditioning compressor clutch connector.

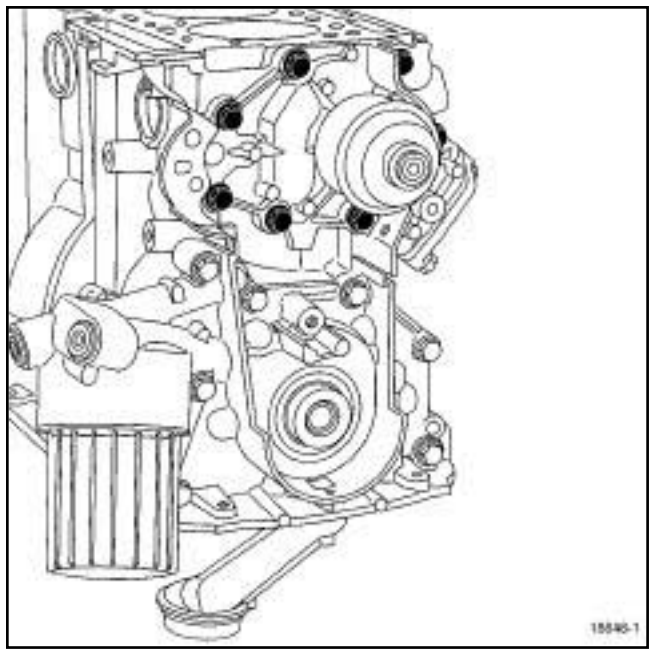
❏ Remove the air conditioning compressor bolts.

❏ Attach the air conditioning compressor to the radiator lower cross member.

❏ Remove:

- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) (10A, Engine and cylinder block assembly),
- the coolant pump inlet pipe (see **19A**, **Cooling**, **Coolant pump inlet pipe: Removal - Refitting**, page **19A-93**) (19A, Cooling).

II - OPERATION FOR REMOVAL OF PART CONCERNED



18646-1

❏ Remove:

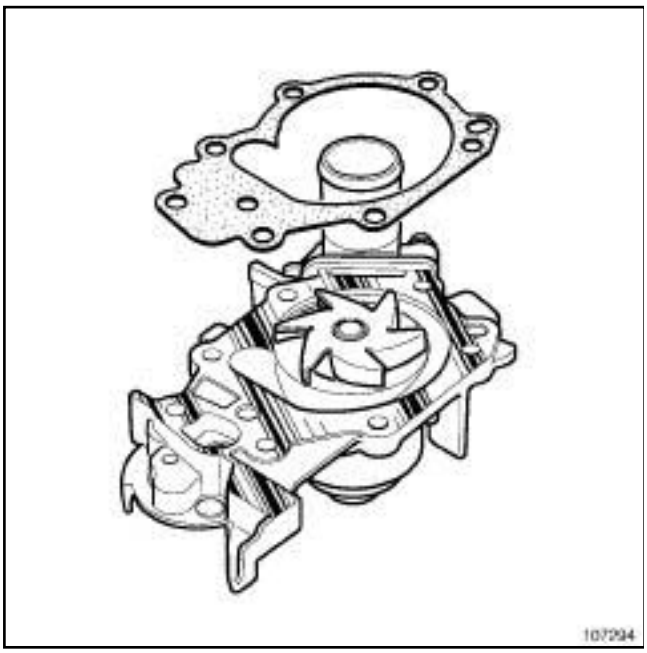
- the coolant pump bolts,
- the coolant pump,
- the coolant pump seal.

D4F, and 740 or 742 or 764

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: coolant pump seal**.



107294

❑

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

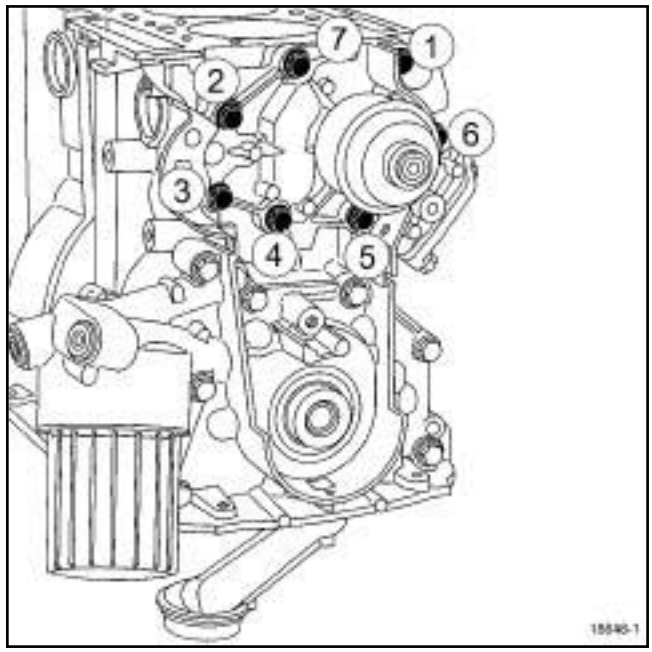
IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT
Wear goggles with side protectors for this operation.

❑ Clean the joint faces with **SUPER CLEANER FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to dissolve any part of the seal still adhering.

❑ Apply the product to the section to be cleaned; wait approximately ten minutes, then remove the residue using a wooden spatula.

II - REFITTING OPERATION FOR PART CONCERNED



18646-1

❑

WARNING
To ensure proper sealing, the joint faces must be clean, dry and not greasy (avoid any finger marks).

WARNING
To check the sealing of parts delivered with a seal, fit the seal without sealing resin.

❑ Refit a new coolant pump seal.

WARNING
Failure to observe the following procedure may cause irreparable damage to the coolant pump.

Note:
To fit the coolant pump on the two pins of the cylinder block, never use the coolant pump pinion for support. Instead, use the coolant pump bolts by pretightening them.

❑ Refit:

- the coolant pump,
- the coolant pump bolts.

❑ Tighten to torque and in order the **coolant pump bolts (9 N.m)**.

D4F, and 740 or 742 or 764

III - FINAL OPERATION

❑ Refit:

- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) (10A, Engine and cylinder block assembly),
- the coolant pump inlet pipe (see **19A**, **Cooling**, **Coolant pump inlet pipe: Removal - Refitting**, page **19A-93**) (19A, Cooling).

AIR CONDITIONING

❑ Refit the air conditioning compressor.

❑ Connect the air conditioning compressor clutch connector.

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) (11A, Top and front of engine),
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) (16A, Starting - Charging),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) (11A, Top and front of engine),
- the front right-hand deflector,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (19A, Cooling).

Coolant pump: Removal - Refitting

K4J or K4M

Tightening torques ▽	
bolts (2) to (8) of the coolant pump	**10 N.m**
bolt 1 of the coolant pump	**27 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

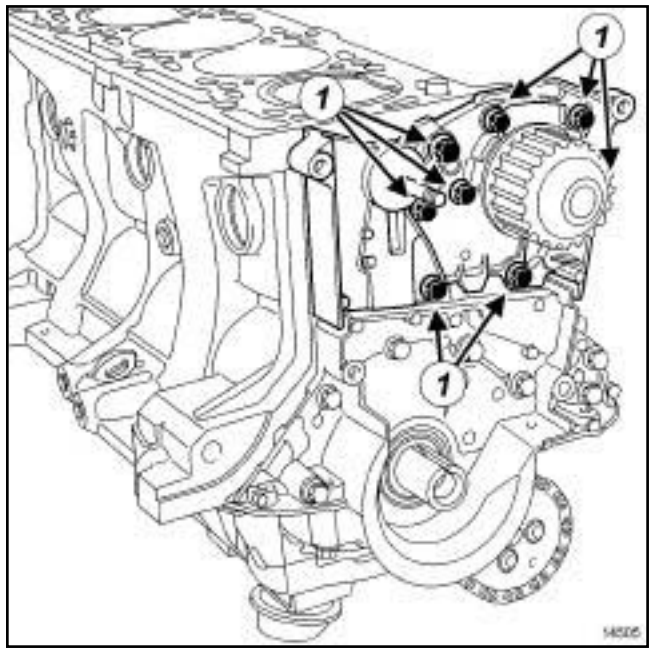
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

STANDARD HEATING

❑ Remove the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



14505

❑ Remove:

- the coolant pump bolts (**1**) ,
- the coolant pump.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

WARNING
To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

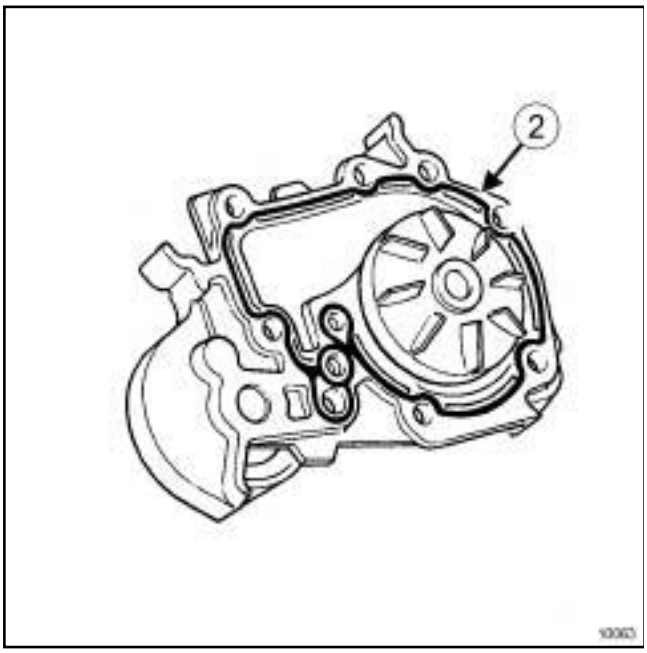
K4J or K4M

❑ Use **SUPER CLEANING AGENT FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:

- the coolant pump sealing face if it is to be reused,
- the cylinder block gasket face.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to degrease:

- the coolant pump joint face if the pump is to be reused,
- the cylinder block joint face.



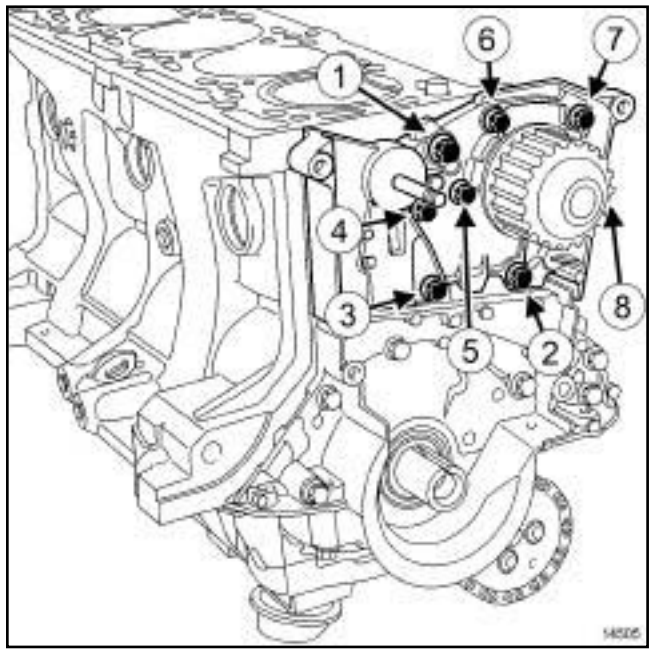
10063

❑

WARNING
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid could damage certain components (engine, radiator, etc.).

❑ Apply at (**2**) a bead of **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) **0.6 to 1 mm** wide.

II - REFITTING OPERATION FOR PART CONCERNED



14505

❑

Note:
Apply one to two drops of **FRENETANCHE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the coolant pump bolts (**1**) and (**4**) .

Note:
To fit the coolant pump on the two pins of the cylinder block, never use the coolant pump pinion for support. Instead, use the coolant pump bolts by pretightening them.

❑ Refit:

- the coolant pump,
- the coolant pump bolts.

❑ Tighten to torque and in order:

- **bolts (2) to (8) of the coolant pump (10 N.m)**,
- **bolt 1 of the coolant pump (27 N.m)**.

K4J or K4M

III - FINAL OPERATION

STANDARD HEATING

❑ Refit the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) .

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

K9K

Tightening torques ▽	
coolant pump bolts	**11 N.m**
inner timing cover bolts	**9 N.m**
alternator bolts	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

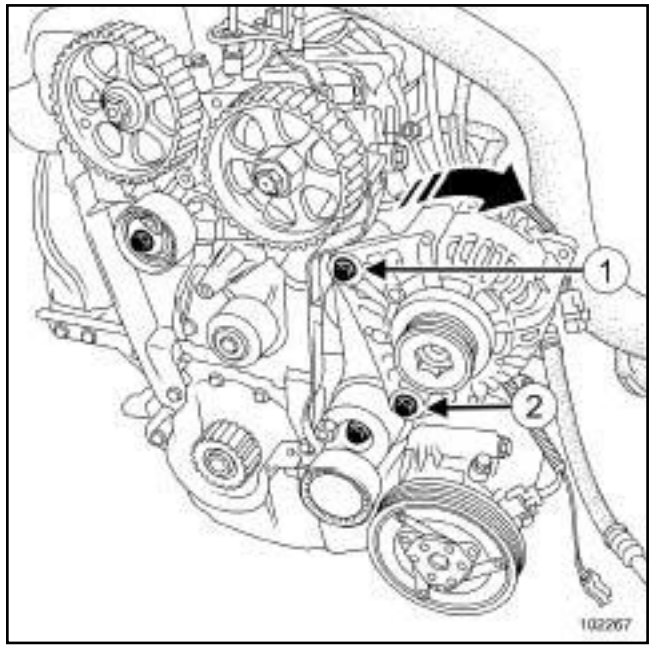
❏ Remove:

- the engine undertray,
- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Clean the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .



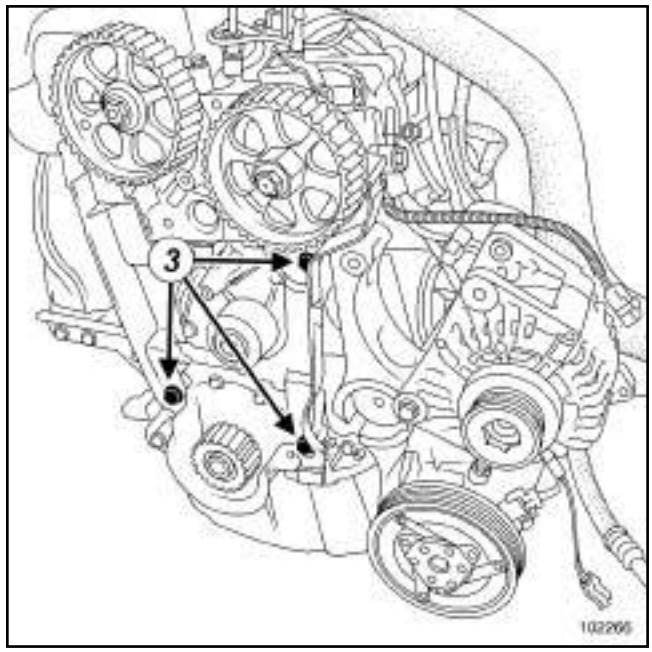
102267

❏ Disconnect the electrical connections from the alternator.

❏ Remove the alternator upper bolt (**1**) .

❏ Loosen the alternator lower bolt (**2**) .

❏ Tip the alternator towards the front of the vehicle.



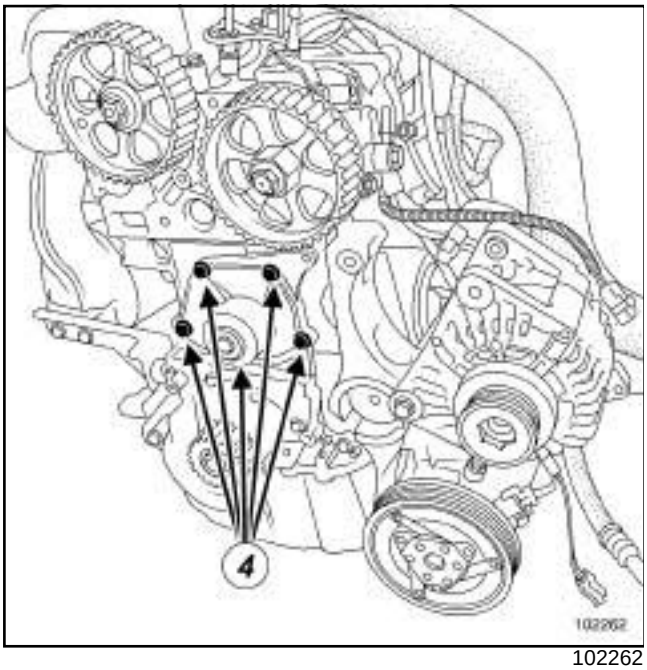
102266

❏ Remove:

- the inner timing cover bolts (**3**) ,
- the inner timing cover.

K9K

II - REMOVAL OF THE PART CONCERNED



102262

❑ Remove:

- the coolant pump bolts (**4**) ,
- the coolant pump,
- the coolant pump seal,

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the joint faces with **SUPER DÉCAPANT FOR JOINT FACES** to dissolve any remaining parts of the seal.

Apply the product to the sections to be cleaned; wait for approximately ten minutes, then remove the residue using a wooden spatula.

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear goggles with side protectors for this operation.

IMPORTANT
Wear gloves during this operation.

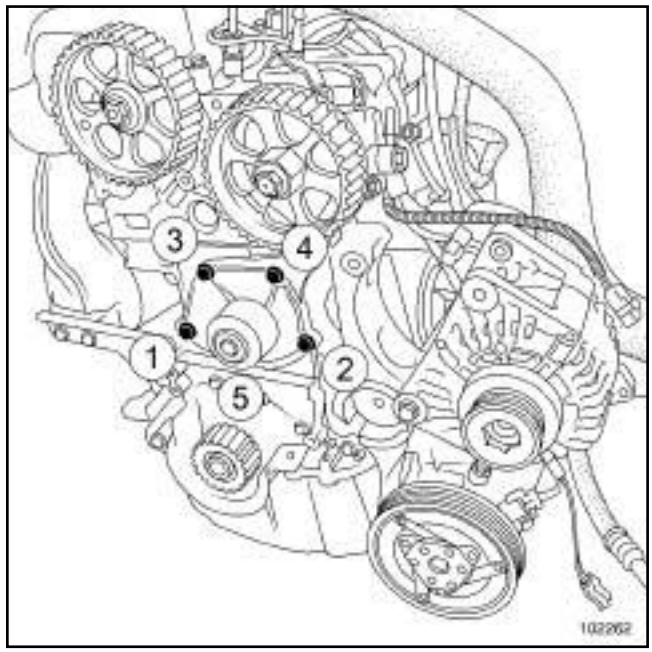
II - REFITTING PART CONCERNED

❑ Replace the coolant pump seal every time the coolant pump is removed.

❑ Position the coolant pump fitted with a new seal.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

Note:
Apply one or two drops of **FRENETANCHE** on the coolant pump bolts.



102262

❑ Tighten to torque and in order the **coolant pump bolts (11 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the inner timing cover,
- the inner timing cover bolts.

❑ Tighten to torque the **inner timing cover bolts (9 N.m)**.

❑ Refit the alternator upper bolt.

❑ Torque tighten the **alternator bolts (21 N.m)**.

❑ Connect the alternator electrical connections.

K9K

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the engine undertray,
- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

Coolant pump: Removal - Refitting

M4R

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
coolant pump mounting bolts	**25 N.m**
engine cover mounting bolts	**62 N.m**
bolts mounting the rubber mounting bush on the body	**62 N.m**
bolts mounting the rubber mounting bush on the engine	**105 N.m**
upper engine tie-bar mounting bolts	**105 N.m**
bolt mounting the engine tie-bar on the subframe	**105 N.m**
bolt mounting the engine tie-bar on the engine	**180 N.m**
radiator mounting cross member right-hand mounting bolt	**105 N.m**
subframe tie-rod left-hand mounting bolt	**105 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

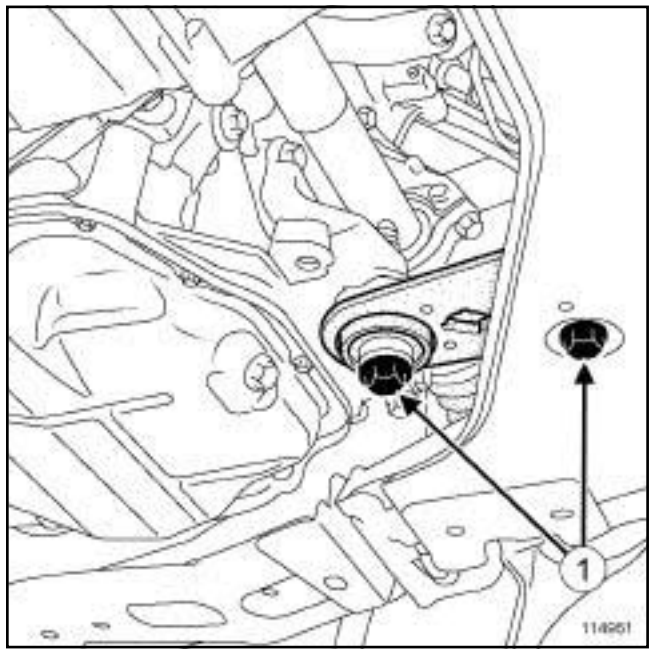
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the right-hand wheel arch liner see (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) .



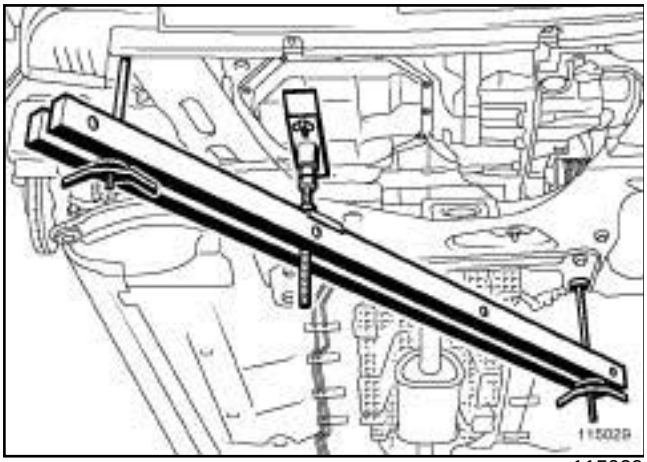
114951

❑ Remove:

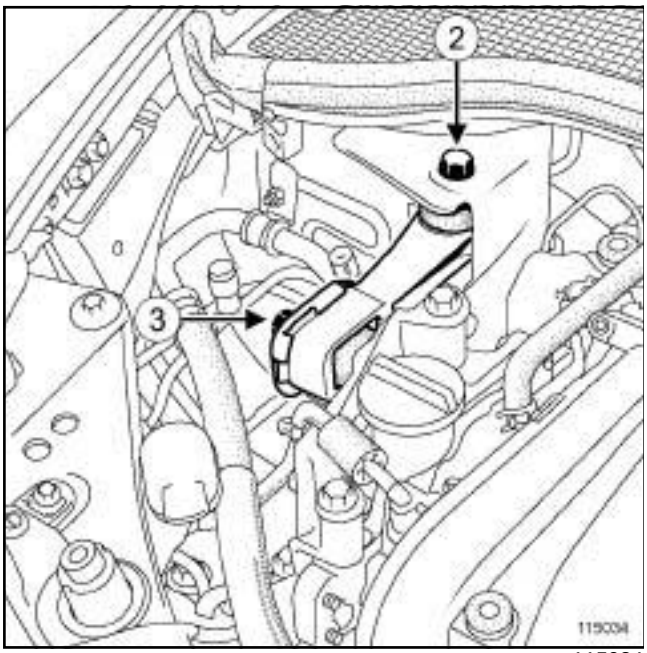
- the engine tie-bar mounting bolts (**1**) ,
- the engine tie-bar .

❑ Remove:

- the right-hand mounting bolt from the radiator support cross member,
- the left-hand mounting bolt from the sub-frame tie-rod.


115029

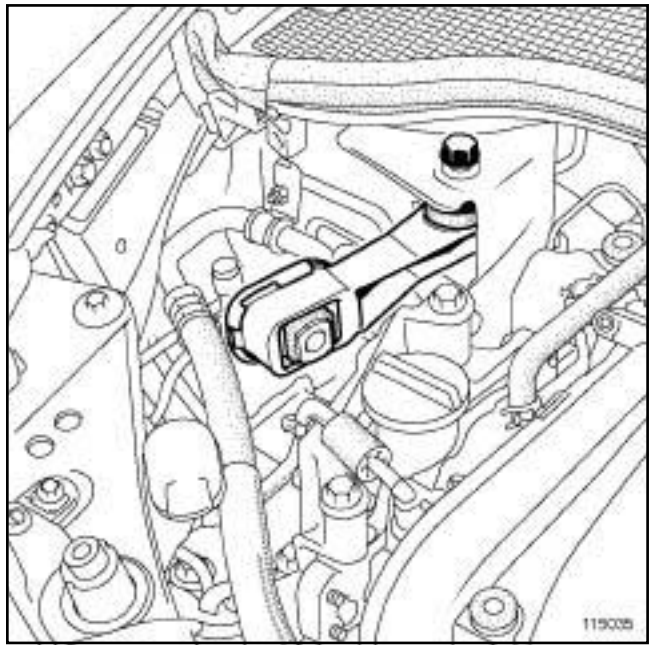
❏ Fit the lower engine support tool **(Mot. 1672)**.



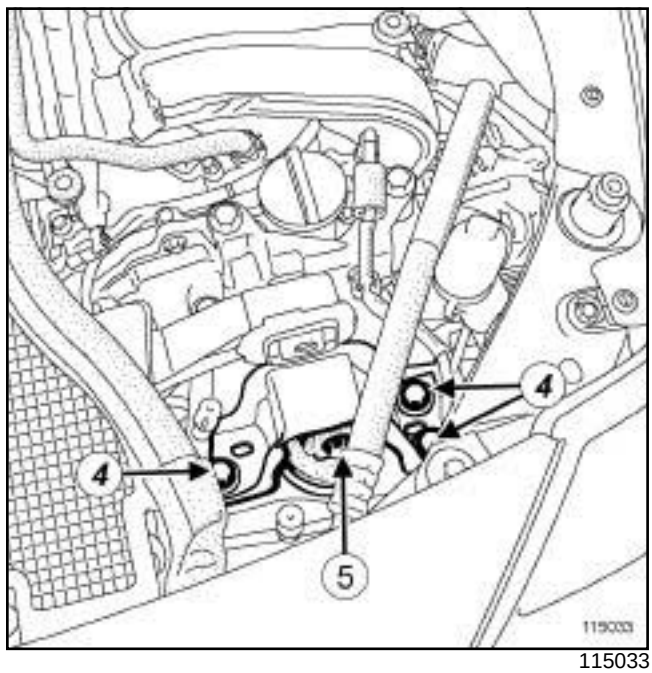
115034

❏ Undo the upper engine tie-bar mounting bolt (**2**) .

❏ Remove the upper engine tie-bar mounting bolt (**3**) .


115035

❏ Remove the upper engine tie-bar.

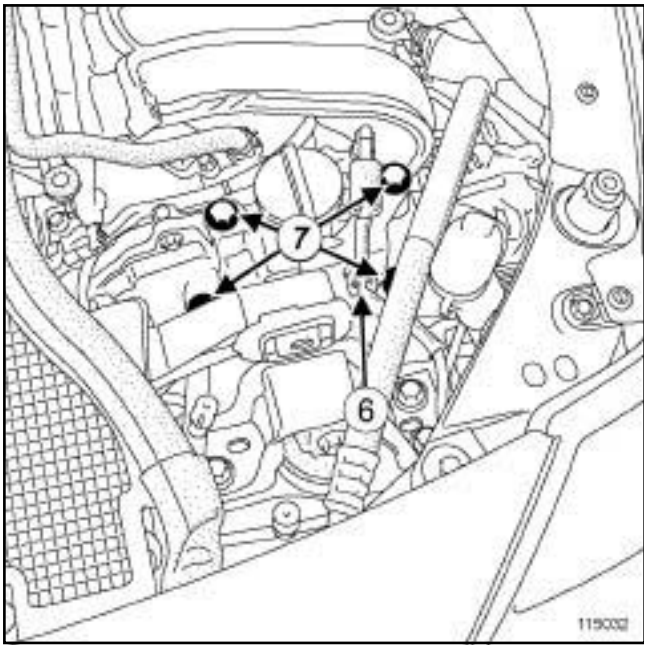


115033

❏ Remove:

- the engine cover rubber mounting bush mounting bolt (**4**) ,
- the rubber mounting bush mounting bolts (**5**) on the body.

M4R

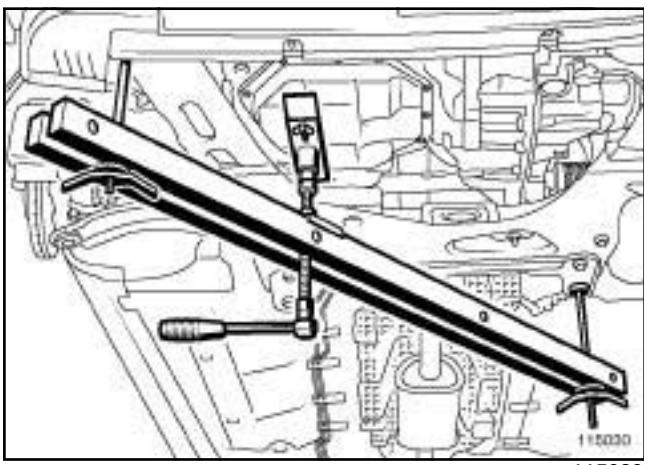


115032

❏ Unclip the fuel supply pipe at (**6**) .

❏ Remove:

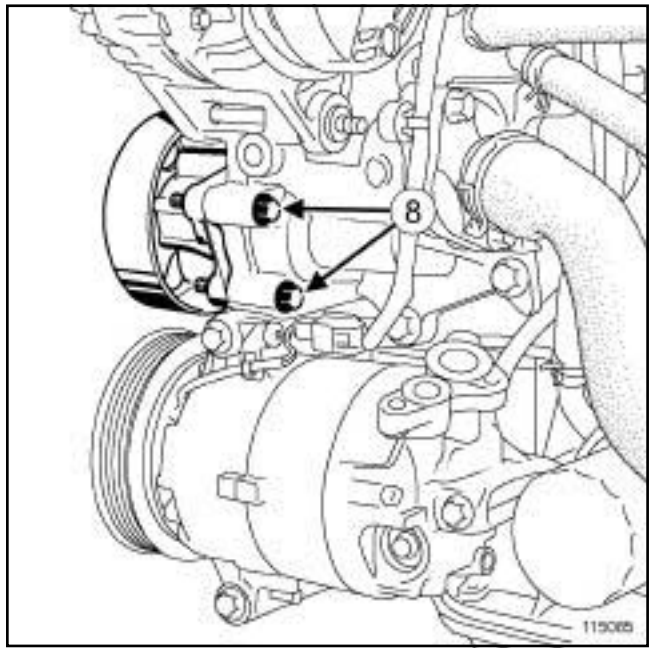
- the engine cover mounting bolts (**7**) ,
- the engine cover,
- the rubber mounting bush.



115030

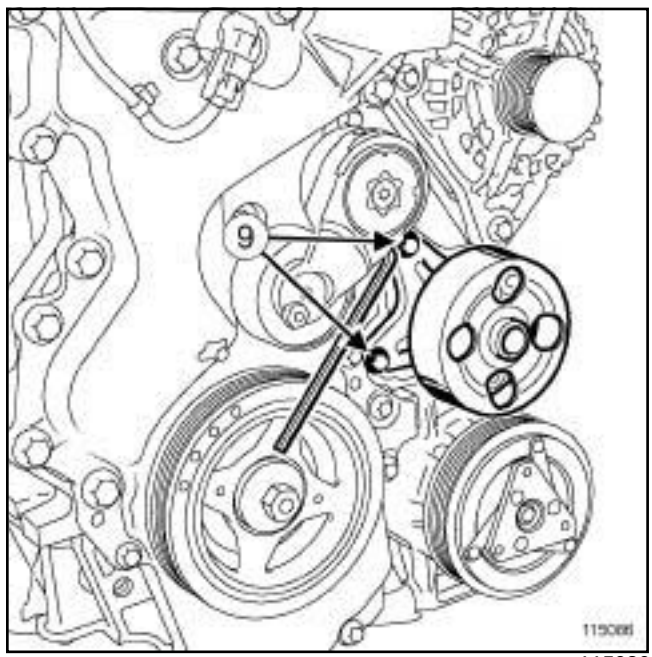
❏ Lower the engine until the timing cover makes contact with the half sub-frame.

II - REMOVAL OF PART CONCERNED



115085

❏ Remove the water pump mounting bolts (**8**) .



115086

❏

- the coolant pump mounting bolts (**9**) ,
- the coolant pump,
- the coolant pump seal,

M4R

REFITTING

I - REFITTING PREPARATION OPERATION

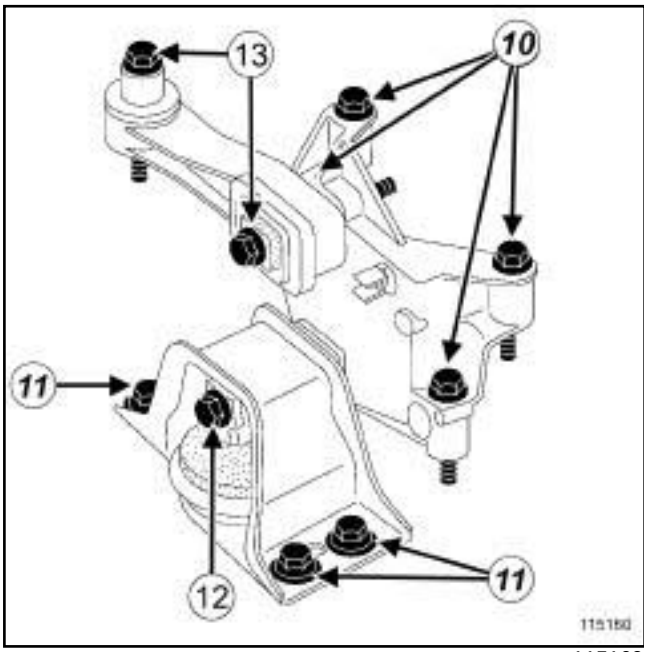
❏ The coolant pump seal must be replaced.

II - REFITTING PART CONCERNED

❏ Refit the coolant pump.

❏ Tighten to torque the **coolant pump mounting bolts (25 N.m)**.

III - FINAL OPERATION



115160

❏ Fit:

- the rubber mounting bush,
- the engine cover.

❏ Pretighten:

- the engine cover mounting bolts (**10**) ,
- the rubber mounting bush mounting bolts (**11**) on the body.

Note:
Allow the two parts to move freely.

❏ Raise the engine to fit the bolt securing the rubber mounting bush to the engine cover.

❏ Tighten to torque and in order:

- the **engine cover mounting bolts (62 N.m)** at (**10**) ,
- the **bolts mounting the rubber mounting bush on the body (62 N.m)** at (**11**) ,
- the **bolts mounting the rubber mounting bush on the engine (105 N.m)** at (**12**) ,
- the **upper engine tie-bar mounting bolts (105 N.m)** at (**13**) .

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Torque tighten:

- the **bolt mounting the engine tie-bar on the subframe (105 N.m)**,
- the **bolt mounting the engine tie-bar on the engine (180 N.m)**.
- the **radiator mounting cross member right-hand mounting bolt (105 N.m)**,
- the **subframe tie-rod left-hand mounting bolt (105 N.m)**.

❏ Refit:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front section of the right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) ,
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

Coolant pump: Removal - Refitting

F4R

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.

Tightening torques ▽	
coolant pump mounting bolts	**17 N.m**

IMPORTANT

The circuits are designed to be pressurised, so be careful at high temperatures (risk of serious burns).

Do not remove the cap from the expansion bottle while the engine is hot. Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed screw(s) with the engine running.

WARNING

When carrying out a repair that requires a complete change, it is essential to flush the circuit with clean water, blast compressed air through the circuit to drive out the water, fill and bleed the circuit and then measure the effective protection.

The criteria to be met are:

- protection down to **-25°C ± 2** for cold and temperate countries,
- protection down to **-40°C ± 2** for "extreme cold" countries.

WARNING

Drain with the engine warm.

Flush and refill with the engine cold or warm.

Never flush a hot engine (risk of major thermal shock).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❑ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❑ Remove:

- the battery (see **80A, Battery, Battery: Removal - Refitting**),
- the front right-hand wheel (**35A, Wheels and tyres, Wheel: Removal - Refitting**),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the engine undertray.

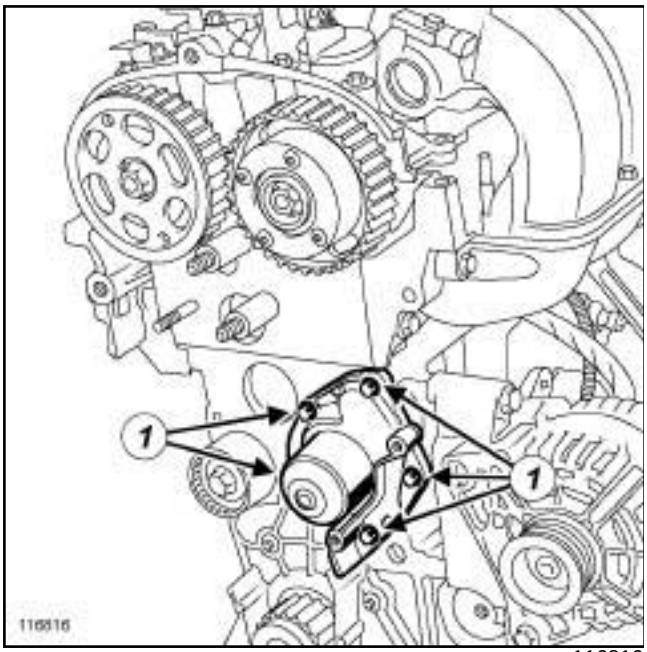
❑ Perform the following operations:

- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Fit the engine lifting eye at the timing end (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❑ Remove the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) using the **(Mot. 1453)** fitted with the **(Mot. 1453-01)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116816

❑ Remove:

- the water pump mounting bolts (**1**) ,
- the coolant pump.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the joint faces.

> **IMPORTANT**
> Do not scratch the aluminium sealing surfaces.
> Wear goggles.
> Wear gloves during the operation.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the coolant pump fitted with a new seal.

❑ Refit the coolant pump mounting bolts.

❑ Torque tighten the **coolant pump mounting bolts (17 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the front right-hand wheel (**35A, Wheels and tyres, Wheel: Removal - Refitting**),
- the battery (see **80A, Battery, Battery, Removal - Refitting**).

❑ Remove the engine lifting eye at the timing end (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❑ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❑ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Check that there are no coolant leaks.

❑ Refit the engine undertray.

D4F, and 784

Tightening torques ▽	
coolant pump bolts	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

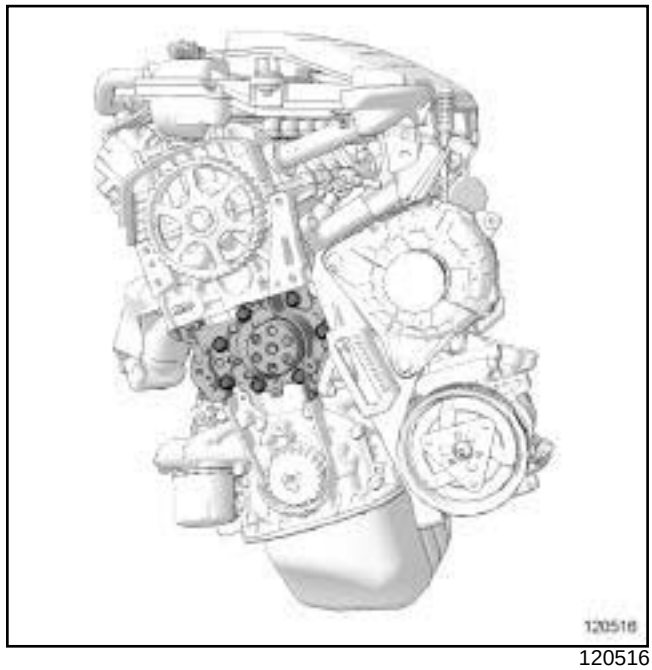
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) .

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED


120516

❏ Remove:

- the coolant pump bolts,
- the coolant pump,
- the coolant pump seal,

REFITTING

I - REFITTING PREPARATION OPERATION

❏

WARNING
Do not scrape the aluminium joint faces of the, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

IMPORTANT
Wear goggles with side protectors for this operation.

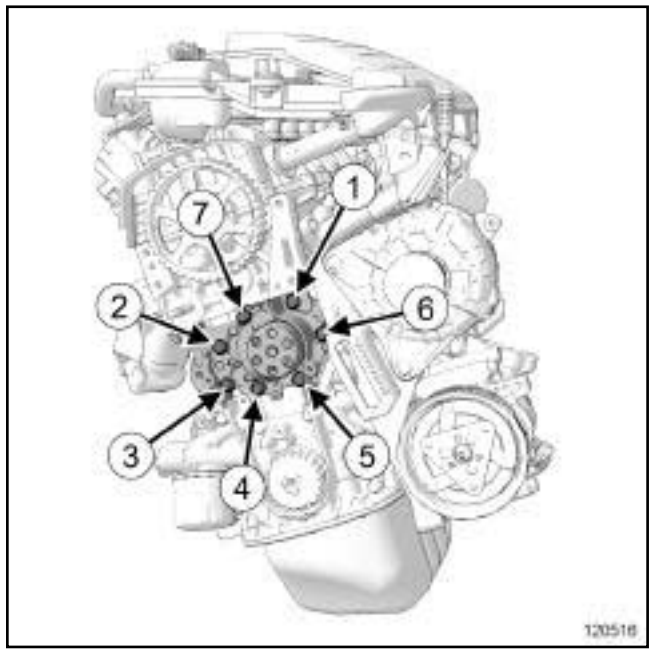
❏ Clean the joint faces with **SUPER CLEANER FOR JOINT FACES** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to dissolve any part of the seal still adhering.

D4F, and 784

❑ Apply the product to the section to be cleaned; wait approximately ten minutes, then remove the residue using a wooden spatula.

❑ Always replace the coolant pump seal.

II - REFITTING OPERATION FOR PART CONCERNED



120516

❑

WARNING

To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

WARNING

To check the sealing of parts delivered with a seal, fit the seal without sealing resin.

❑ Refit a new seal for the coolant pump.

WARNING

Failure to observe the following procedure may cause irreparable damage to the coolant pump.

Note:

Do not push on the pinion when fitting the coolant pump, use the bolts instead.

❑ Refit the coolant pump.

❑ Tighten to torque and in order the **coolant pump bolts (10 N.m)**.

D4F, and 784

III - FINAL OPERATION

❑ Refit:

- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-48**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the engine undertray,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Refill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

M4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
coolant inlet union mounting bolts	**17 N.m**

Note:

This engine has two thermostats: one thermostat is located on the cylinder head and the other is on the cylinder block.

REMOVAL OF THE CYLINDER HEAD THERMOSTAT

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

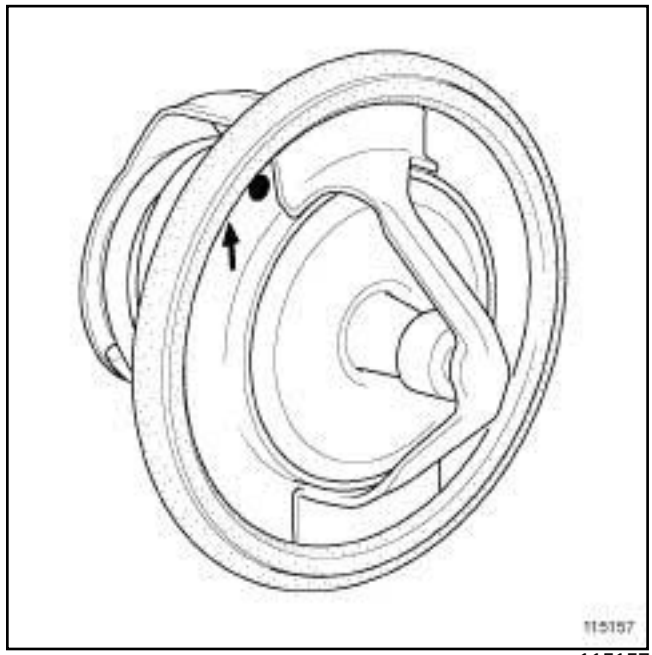
❏ Remove the water chamber (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) .

II - REMOVAL OF PART CONCERNED

❏ Remove the cylinder head thermostat.

REFITTING THE CYLINDER HEAD THERMOSTAT

I - REFITTING PART CONCERNED



115157

❏ Refit the cylinder head thermostat, respecting the direction indicated in the diagram.

II - FINAL OPERATION

❏ Refit the coolant outlet unit (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit:

- the engine undertray,
- the engine cover.

❏ Carry out the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

REMOVAL OF THE CYLINDER BLOCK THERMOSTAT

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

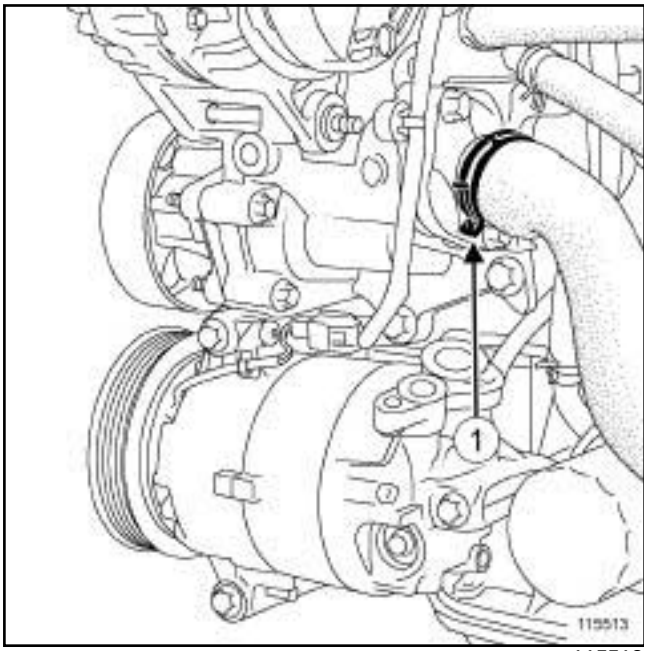
M4R

❑ Remove the engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

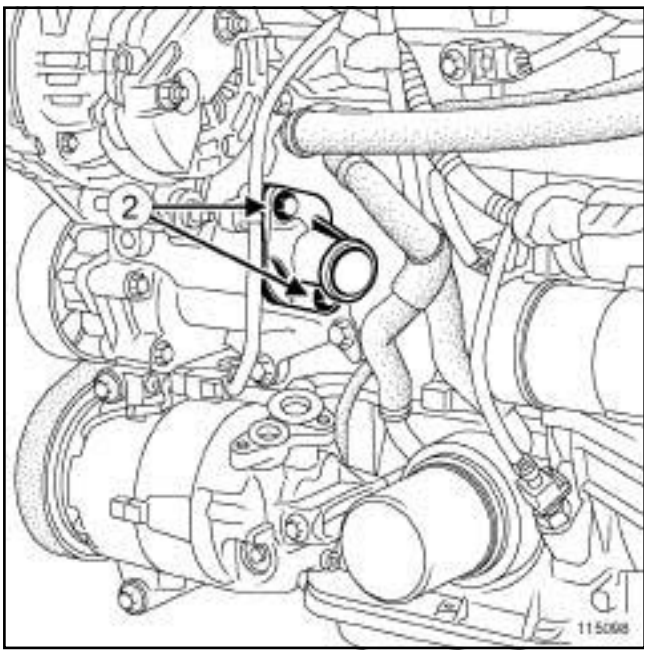
❑ Remove the engine undertray.

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



115513

❑ Disconnect the coolant inlet union hose (**1**) using the **(Mot. 1448)**.



115098

❑ Remove:

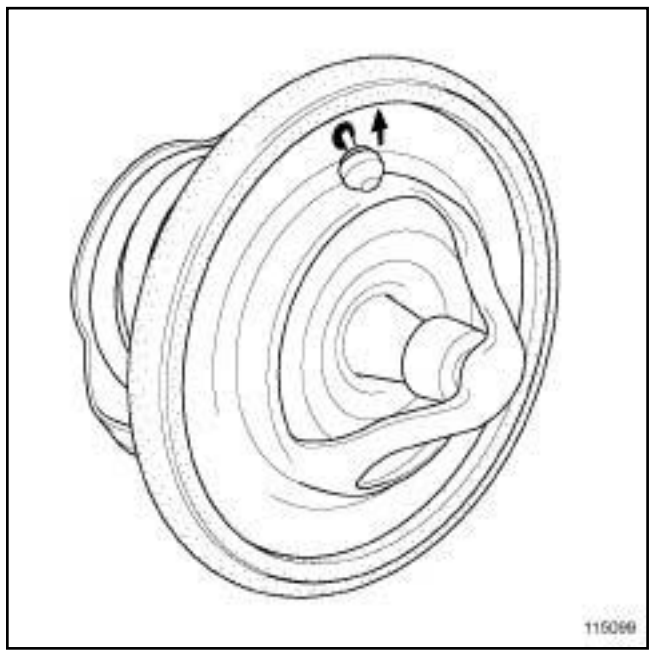
- the mounting bolts (**2**) from the coolant inlet union,
- the coolant outlet union.

II - REMOVAL OF PART CONCERNED

❑ Remove the cylinder block thermostat.

REFITTING THE CYLINDER BLOCK THERMOSTAT

I - REFITTING PART CONCERNED



115099

❑ Refit the cylinder block thermostat, respecting the direction indicated in the diagram.

II - FINAL OPERATION

❑ Tighten to torque the **coolant inlet union mounting bolts (17 N.m)**.

❑ Connect the coolant inlet union hose using the **(Mot. 1448)**.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Refit:

- the engine undertray,
- the engine cover.

❑ Carry out the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see) .

M4R

D4F, and 784 or 786

REMOVAL

I - REMOVAL PREPARATION OPERATION

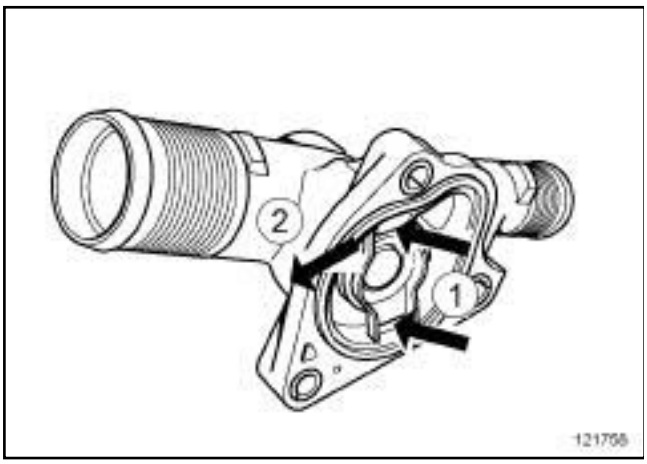
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the water chamber (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) .

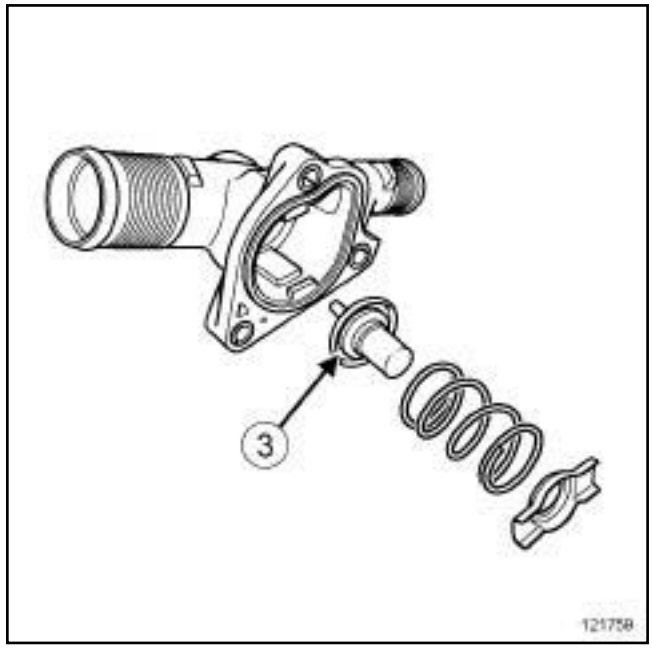
II - OPERATION FOR REMOVAL OF PART CONCERNED



121758

❑ Press on the spring mounting at (**1**) .

❑ Turn the spring mounting at (**2**) .



121759

❑ Remove the thermostat (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the thermostat.

❑ Fit:

- the spring,
- the spring mounting.

❑ Press on the spring mounting.

❑ Turn the spring mounting.

II - FINAL OPERATION.

❑ Refit:

- the water chamber (see **19A**, **Cooling**, **Water chamber: Removal - Refitting**, page **19A-63**) ,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 740 or 742 or 784

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
water chamber bolts	**9 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

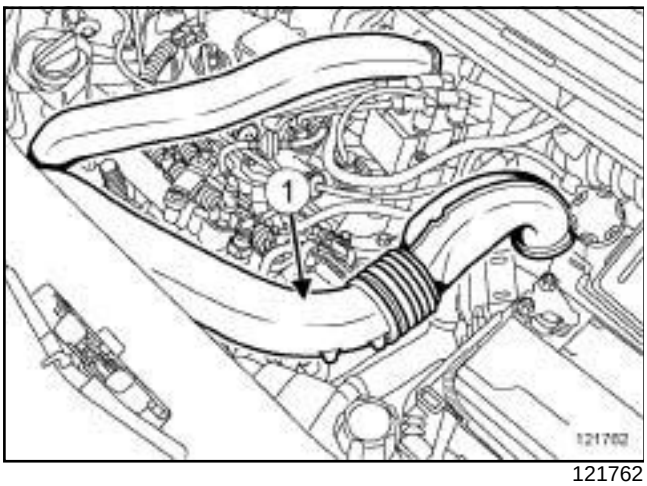
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

D4F, and 740 or 742

❑ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture).

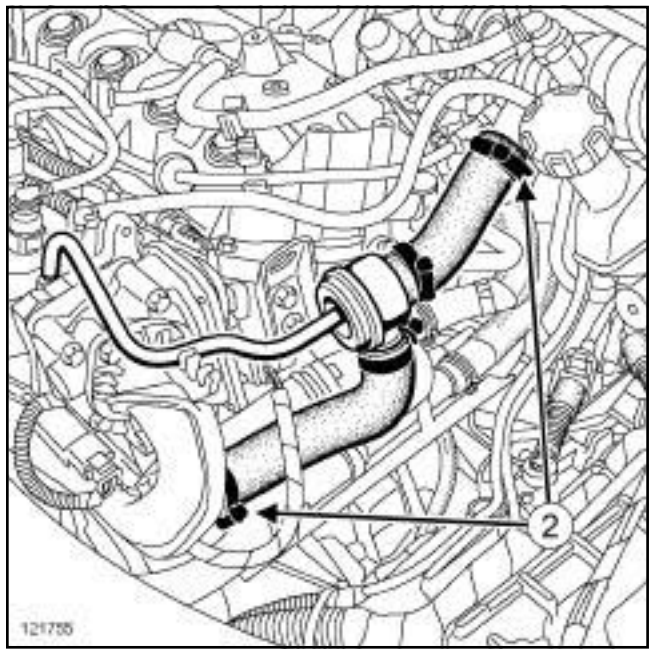
D4F, and 784



121762

❑ Remove the air filter unit air inlet pipe (**1**) .

D4F, and 784



121755

❑ Undo the compressor discharge valve pipe clips (**2**) .

❑ Disconnect the compressor discharge valve pipe.

❑ Remove the compressor discharge valve pipe.

❑ Remove the engine undertray.

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

II - OPERATION FOR REMOVAL OF PART CONCERNED

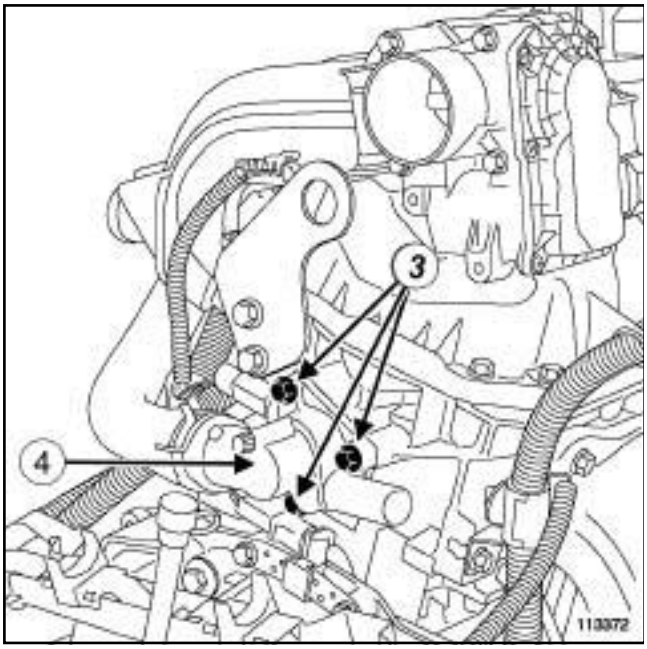
❑ Remove the water chamber hose clips using the **(Mot. 1448)**.

Note:

Protect the TDC sensor with a cloth to prevent coolant entering the gearbox aperture.

❑ Disconnect the water chamber hoses.

D4F, and 740 or 742 or 784



113372

❑ Remove:

- the water chamber bolts (**3**) ,
- the water chamber (**4**) ,
- the water chamber seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear protective gloves during the operation.

IMPORTANT
Wear goggles with side protectors for this operation.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

❑ The water chamber seal must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the water chamber with a new seal.

❑ Screw on the water chamber bolts without tightening them.

❑ Torque tighten the **water chamber bolts (9 N.m)**.

❑ Connect the water chamber hoses.

❑ Refit the water chamber hose clips using the **(Mot. 1448)**.

III - FINAL OPERATION

D4F, and 784

❑ Refit the compressor discharge valve pipe.

❑ Connect the compressor discharge valve pipe.

❑ Tighten the compressor discharge valve pipe clips.

❑ Refit the air filter unit air inlet pipe.

D4F, and 740 or 742

❑ Refit the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture).

❑ Connect the battery (see) (MR 392, 80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit the engine undertray.

K9K

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Tightening torques ▽	
water chamber bolts	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

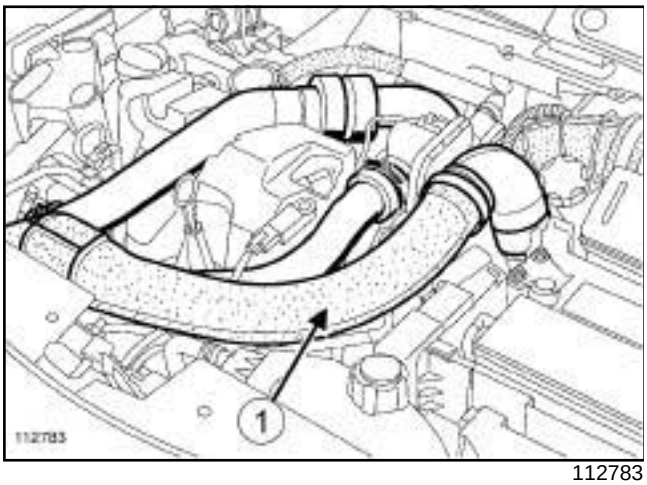
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine cover,
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

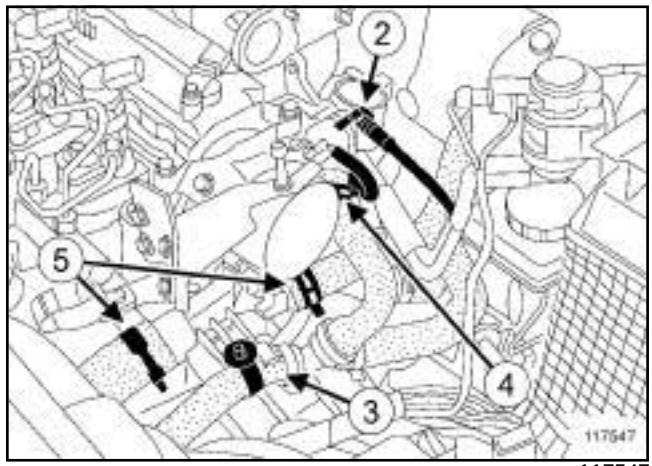
❏ Clean the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).



112783

❏ Remove:

- the air filter unit air inlet pipe (**1**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture).



117547

❏ Disconnect the vacuum pipe (**2**) from the vacuum pump.

❏ Unclip the coolant hose (**3**) .

❏ Remove the clip (**4**) from the coolant hose using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the coolant hose.

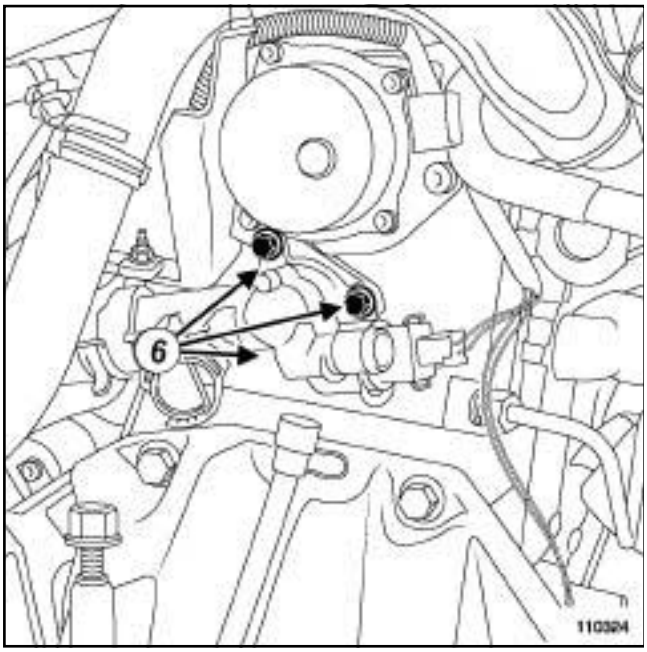
❏ Move the water chamber hose clips (**5**) to one side using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect:

- the water chamber hoses,
- the coolant temperature sensor connector.

K9K

II - REMOVAL OF THE PART CONCERNED



110324

❑ Remove:

- the water chamber bolts (**6**) ,
- the water chamber.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

> **WARNING**
> The joint faces must be clean, dry and free from grease (avoid finger marks).

❑ Replace the seal of the water chamber.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the water chamber.

❑ Screw on the water chamber bolts without tightening them.

❑ Torque tighten the **water chamber bolts (12 N.m)**.

III - FINAL OPERATION

❑ Connect:

- the coolant temperature sensor connector,
- the water chamber hoses.

❑ Fit the water chamber hose clips using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Disconnect the coolant hose.

❑ Fit the coolant hose clip using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❑ Clip the coolant hose.

❑ Connect the vacuum pipe to the vacuum pump.

❑ Refit:

- the engine undertray,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter inlet air pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- fill the engine cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit the engine cover.

K4J or K4M

Tightening torques ▽	
mounting bolts no. 9, 2, 8, 1, 4, 5, 6, 7, 3, 1	**11 N.m**

REMOVAL

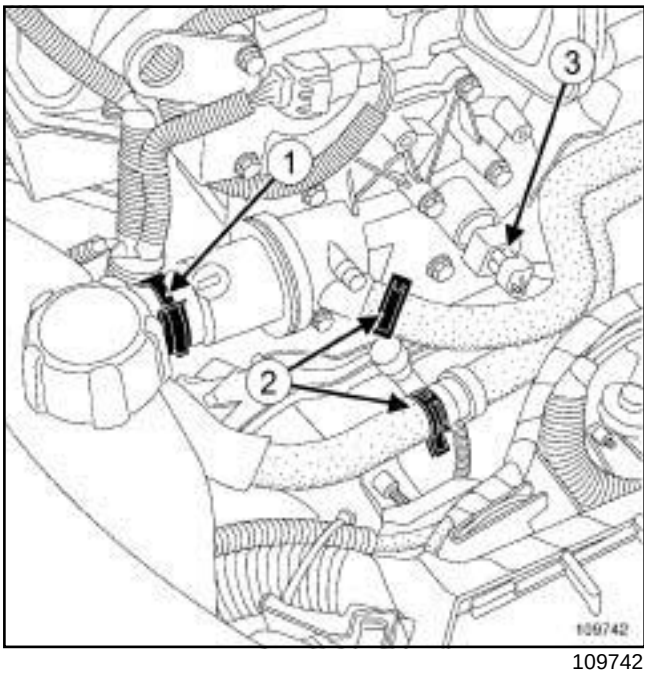
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air intake ducts,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

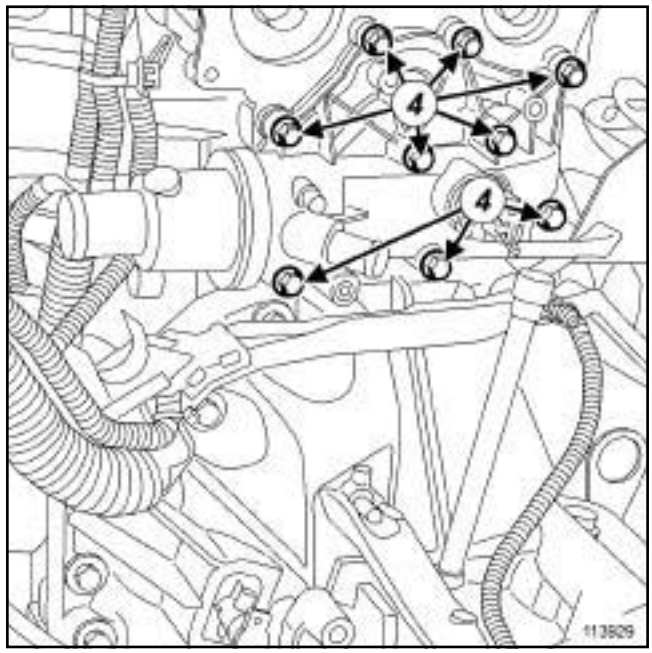


109742

❑ Disconnect:

- the top hose (**1**) on the water chamber,
- the passenger compartment heating hoses (**2**) ,
- the coolant temperature sensor (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113929

❑ Remove

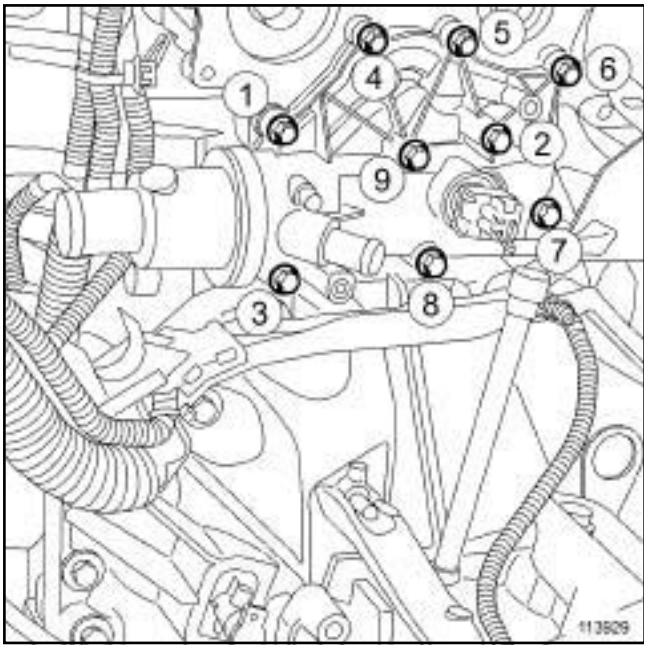
- the mounting bolts (**4**) from the water chamber,
- the water chamber.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the water chamber.

K4J or K4M



113929

❏ Tighten the water chamber mounting bolts,

❏ Pre-tighten the following mounting bolts in order and to torque: **mounting bolts no. 9, 2, 8, 1, 4, 5, 6, 7, 3, 1 (4 N.m)**.

❏ Tighten to torque and in order **mounting bolts no. 9, 2, 8, 1, 4, 5, 6, 7, 3, 1 (11 N.m)**.

II - FINAL OPERATION

❏ Connect:

- the coolant temperature sensor,
- the passenger compartment heating hoses,
- the top hose to the water chamber.

❏ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit:

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air intake ducts,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

M4R

Tightening torques ▽	
water chamber mounting bolts	25 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

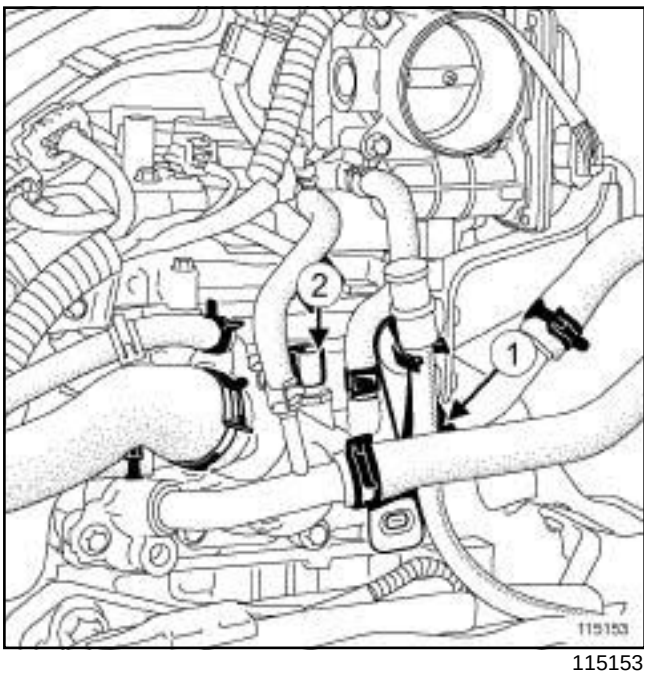
❏ Remove the engine cover.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).



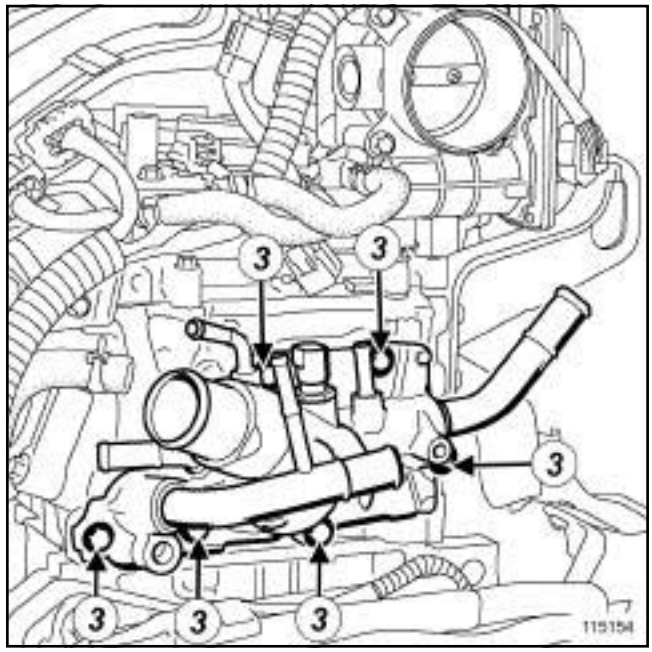
115153

❏ Remove the gearbox breather mounting bracket (**1**) .

❏ Disconnect:

- the coolant temperature sensor connector (**2**) ,
- the hoses from the plenum chamber.

II - REMOVAL OF PART CONCERNED



115154

❏ Remove:

- the mounting bolts (**3**) from the water chamber,
- the water chamber,
- the water chamber seal.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ The water chamber seal must be replaced.

II - REFITTING PART CONCERNED

❏ Torque tighten the **water chamber mounting bolts (25 N.m)**.

III - FINAL OPERATION

❏ Connect:

- the coolant temperature sensor connector,
- the hoses from the plenum chamber.

❏ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit the engine cover.

F4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
coolant outlet unit mounting bolts	**13 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

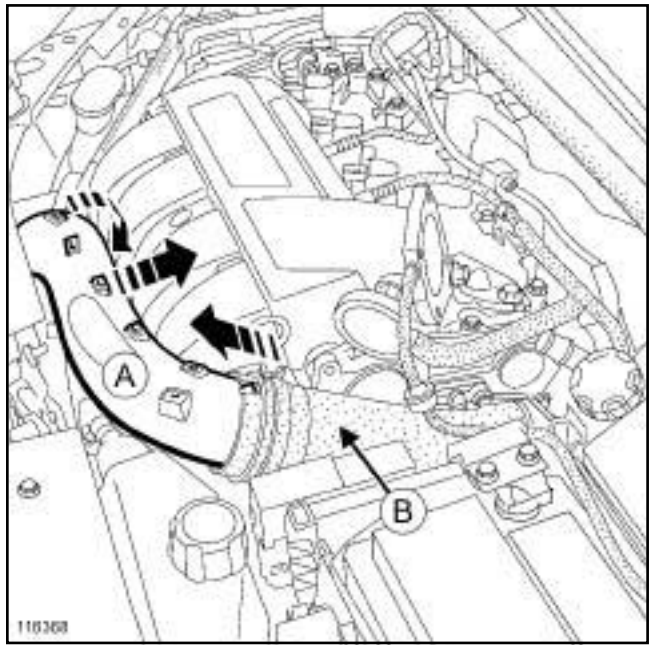
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

❏ Perform the following operations:

- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling),
- flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).



116368

❏ Remove the air inlet duct (**A**) :

- unclip it from the front end panel,
- turn it and disconnect it.

❏ Disconnect the duct (**B**) :

- air resonator side,
- air filter unit side.

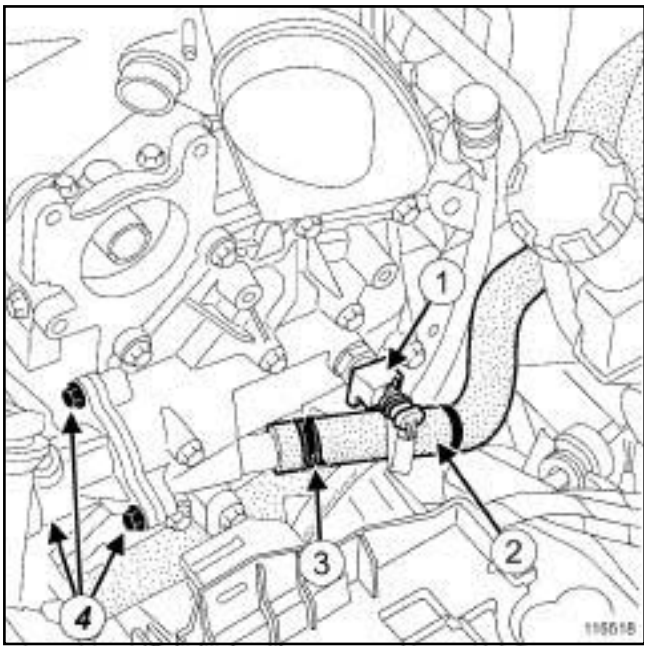
❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unclip the breather pipe from the gearbox.

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116518

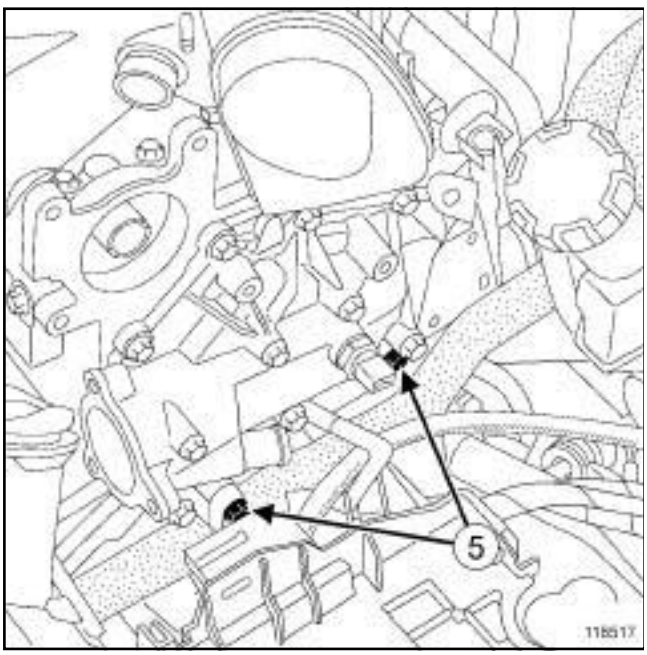
❏ Disconnect:

- the coolant temperature sensor connector (**1**) ,
- the cooling hose (**2**) on the unit, separating the clip (**3**) using the **(Mot. 1448)**.

❏ Remove the thermostat cover mounting bolts (**4**) .

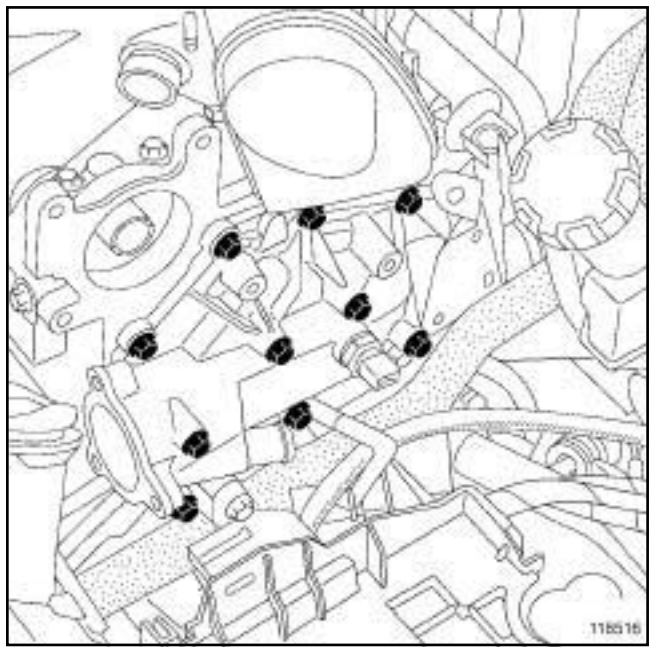
❏ Move the thermostat cover to one side.

❏ Remove the thermostat.



116517

❏ Remove the wiring harness channel mounting bolts (**5**) .



116516

❏ Remove:

- the coolant outlet unit mounting bolts,
- the water chamber.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the joint faces.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the water chamber fitted with a new seal,
- the plenum chamber mounting bolts.

❏ Torque tighten the **coolant outlet unit mounting bolts (13 N.m)**.

❏ Refit:

- the thermostat fitted with a new seal,
- the thermostat cover,
- the thermostat cover mounting bolts,
- the coolant hose mounting bolts.

❏ Connect the coolant hose to the coolant outlet unit.

❏ Fit the hose clip using the **(Mot. 1448)**.

❏ Connect the coolant temperature sensor connector.

F4R

III - FINAL OPERATION

❏ Clip the breather pipe to the gearbox.

❏ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Connect the duct ***(B)*** :

- to air filter unit,
- to the air resonator.

❏ Refit the air inlet duct ***(A)*** :

- rotate it and connect it,
- clip it to the front end panel.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Check that there are no leaks.

❏ Refit the engine undertray.

D4F, and 764

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
cylinder head water chamber bolts	**10 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

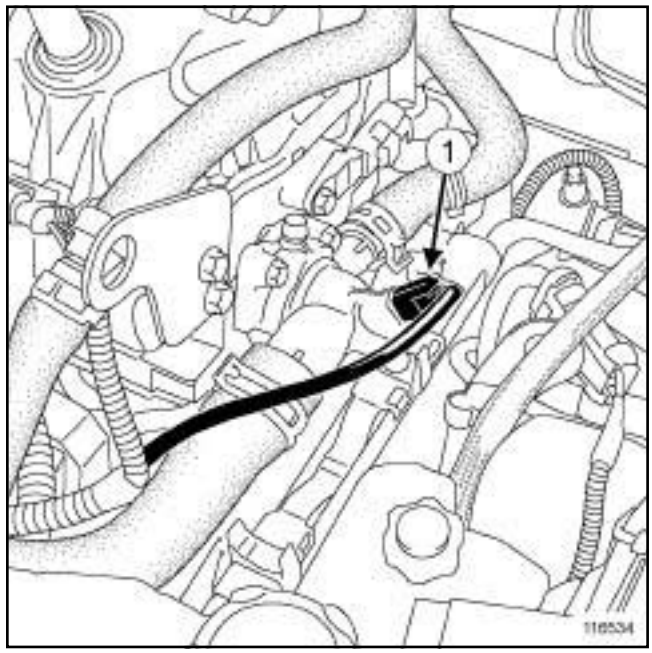
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the engine undertray.

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

II - OPERATION FOR REMOVAL OF PART CONCERNED



116534

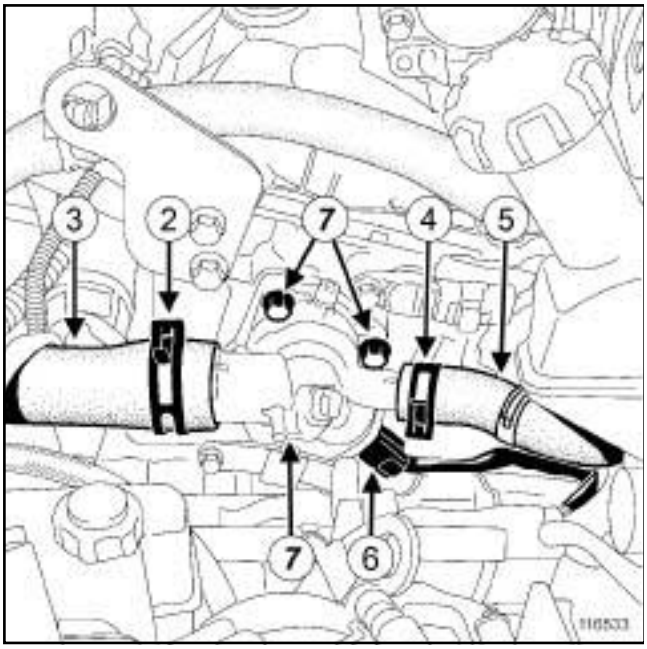
❑

Note:

Protect the TDC sensor with a cloth to prevent coolant entering the gearbox aperture.

❑ Disconnect the thermostat control connector (**1**) .

D4F, and 764



116533

❑ Remove using the **(Mot. 1448)** :

- the engine cooling radiator hose clip (**2**) ,
- the heater matrix hose clip (**4**) .

❑ Disconnect:

- the engine cooling radiator hose (**3**) ,
- the heater matrix hose (**5**) .

❑ Disconnect the coolant temperature sensor connector (**6**) .

❑ Remove:

- the water chamber bolts (**7**) ,
- the water chamber.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

IMPORTANT
Wear protective gloves during the operation.

IMPORTANT
Wear goggles with side protectors for this operation.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

❑ The water chamber seal must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the water chamber with a new seal.

❑ Screw on the water chamber bolts without tightening them.

❑ Torque tighten the **cylinder head water chamber bolts (10 N.m)**.

❑ Connect:

- the coolant temperature sensor connector,
- the heater matrix hose,
- the cooling radiator hose.

❑ Using the **(Mot. 1448)**, fit:

- the heater matrix hose clip,
- the engine cooling radiator hose clip.

❑ Connect the thermostat control connector.

III - FINAL OPERATION

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit:

- the engine undertray,

D4F, and 764

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

Coolant temperature sensor: Removal - Refitting

K4J or K4M

REMOVAL

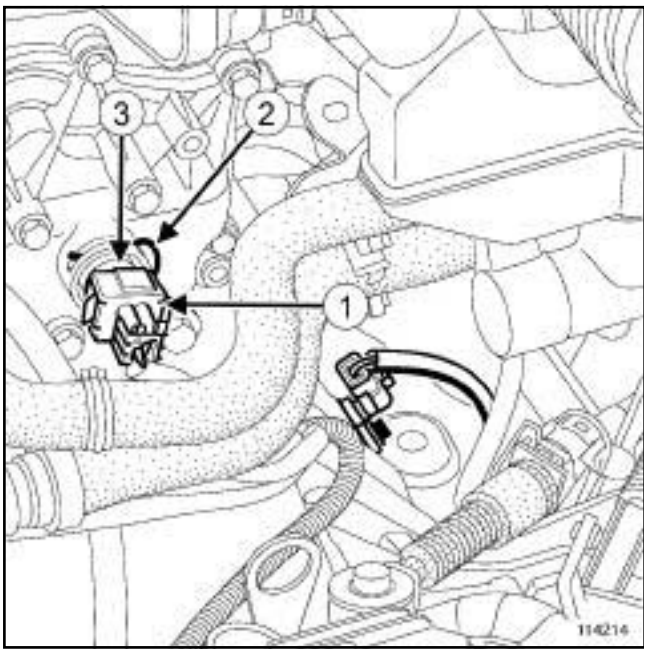
I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the engine cover,
- the air intake sleeve.

II - OPERATION FOR REMOVAL OF PART CONCERNED



114214

❑ Disconnect the coolant temperature sensor connector (**1**) .

❑ Unclip the retaining clip (**2**) on the coolant temperature sensor.

❑ Remove the coolant temperature sensor (**3**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the coolant temperature sensor O-ring.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the coolant temperature sensor.

❑ Secure the coolant temperature sensor with the retaining clip.

❑ Connect the coolant temperature sensor connector.

III - FINAL OPERATION

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑

Refit:

- the air intake sleeve,
- the engine cover.

Coolant temperature sensor: Removal - Refitting

K9K

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

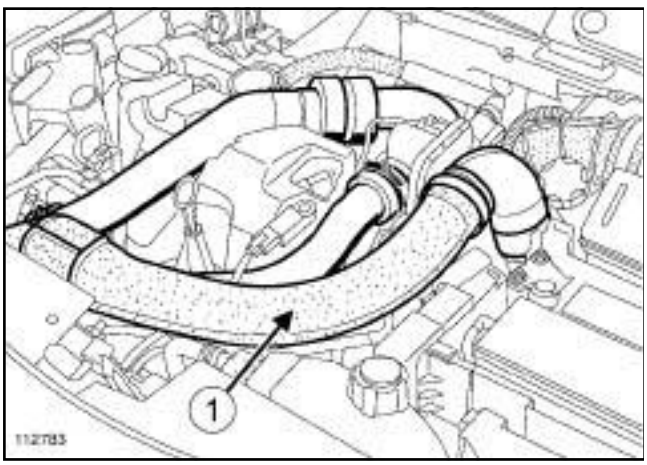
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine cover.



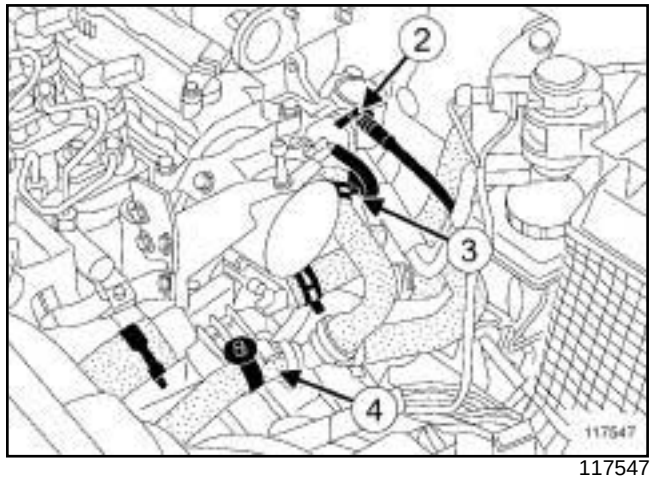
112783

❏ Remove:

- the air filter inlet air pipe (**1**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Clean the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).



117547

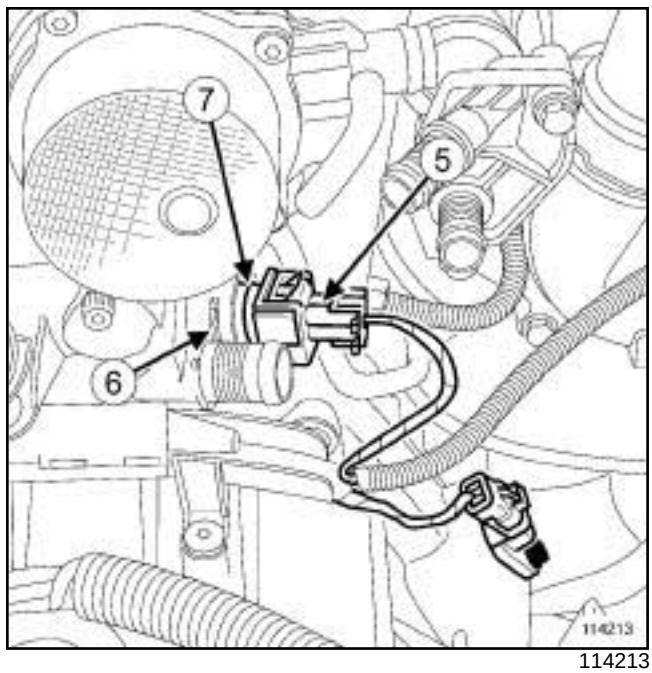
❏ Disconnect the vacuum pipe (**2**) from the vacuum pump.

❏ Remove the clip (**3**) from the coolant hose using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the coolant hose.

❏ Unclip the coolant hose (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



114213

❏ Disconnect the coolant temperature sensor connector (**5**) .

❏ Remove:

- the coolant temperature sensor retaining clip (**6**) ,
- the coolant temperature sensor (**7**) ,
- the coolant temperature sensor O-ring.

K9K

REFITTING

I - REFITTING PREPARATION OPERATION

❏ The coolant temperature sensor O-ring must always be replaced.

❏ Connect the coolant temperature sensor connector.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the coolant temperature sensor,
- the coolant temperature sensor retaining clip.

III - FINAL OPERATION

❏ Connect the coolant hose.

❏ Fit the coolant hose clip using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Clip the coolant hose.

❏ Connect the vacuum pipe to the vacuum pump.

❏ Refit:

- the engine undertray,
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter inlet air pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),

❏ Perform the following operations:

- fill the engine cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Refit the engine cover.

D4F, and 740 or 742 or 764

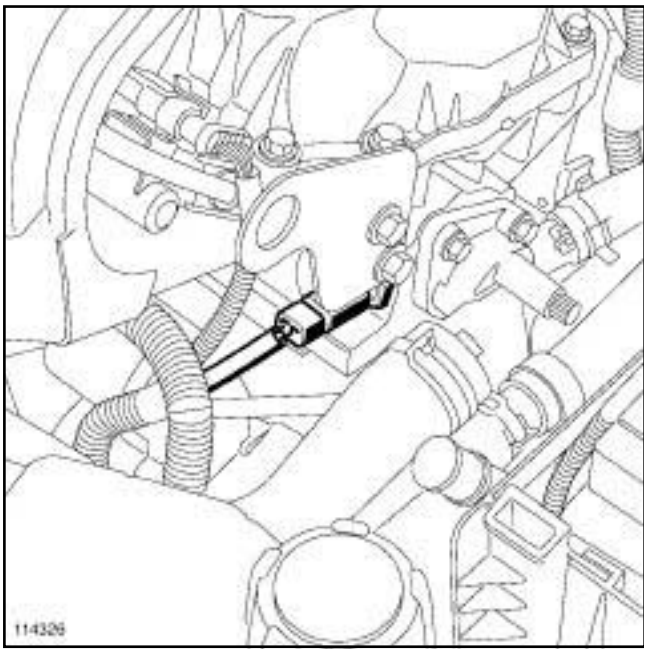
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) (80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



114326

❏ Disconnect the coolant temperature sensor connector.

❏ Remove the coolant temperature sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the coolant temperature sensor O-ring.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the coolant temperature sensor O-ring,
- the coolant temperature sensor.

❏ Connect the coolant temperature sensor connector.

III - FINAL OPERATION

❏ Refit the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

❏ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

Coolant temperature sensor: Removal - Refitting

F4R

Tightening torques ▽	
coolant temperature sensor	33 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

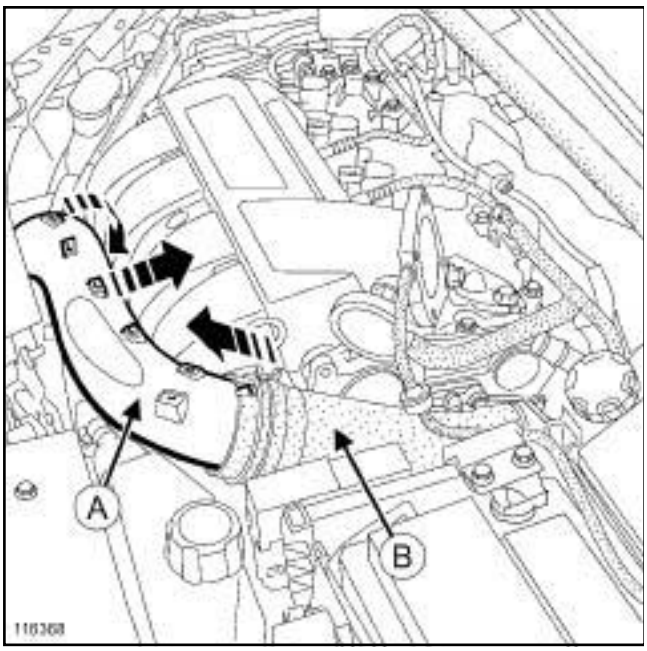
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

❏ Perform the following operations:

- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- flush out the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



116368

❏ Remove the air inlet duct (**A**) :

- unclip it from the front end panel,
- turn it and disconnect it.

❏ Disconnect the duct (**B**) :

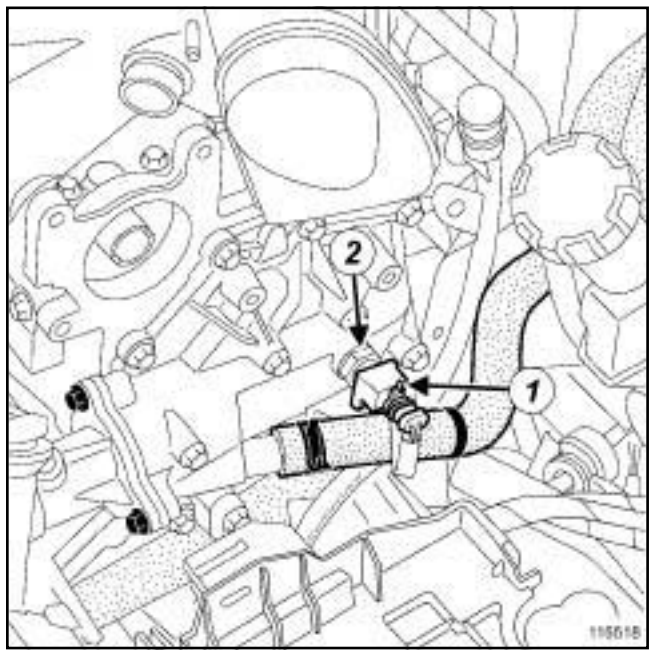
- air resonator side,
- air filter unit side.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unclip the breather pipe from the gearbox.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116518

❏ Disconnect the coolant temperature sensor connector (**1**) .

❏ Remove the coolant temperature sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the coolant temperature sensor fitted with a new seal.

❏ Tighten to torque the **coolant temperature sensor (33 N.m)**.

❏ Connect the coolant temperature sensor connector.

F4R

II - FINAL OPERATION

❑ Clip the breather pipe to the gearbox.

❑ Connect the duct ***(B)*** :

- to air filter unit,
- to the air resonator.

❑ Refit:

- the air inlet duct ***(A)*** ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Connect the battery ((see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Check that there are no leaks.

❑ Refit the engine undertray.

Coolant temperature sensor: Removal - Refitting

D4F, and 784 or 786

Tightening torques ▽	
coolant temperature sensor	**23 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

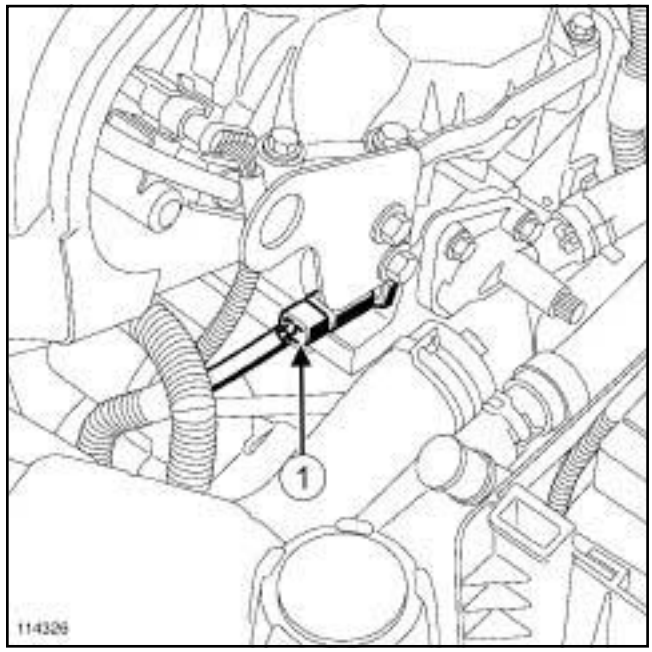
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine undertray,
- the engine cover,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) .

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

II - OPERATION FOR REMOVAL OF PART CONCERNED



114326

❑ Disconnect the coolant temperature sensor connector (**1**) .

❑ Remove the coolant temperature sensor.

Remove:

- the coolant temperature sensor,
- the coolant temperature sensor O-ring.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the coolant temperature sensor O-ring.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the coolant temperature sensor O-ring,
- the coolant temperature sensor.

❑ Torque tighten the **coolant temperature sensor (23 N.m)**.

❑ Connect the coolant temperature sensor connector.

D4F, and 784 or 786

III - FINAL OPERATION

❑ Refit:

- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-33**) ,
- the engine cover.

❑ Connect the battery (see) (MR 392, 80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) (MR 392, 19A, Cooling).

❑ Refit the engine undertray.

Engine cooling fan assembly: Removal - Refitting

K9K

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

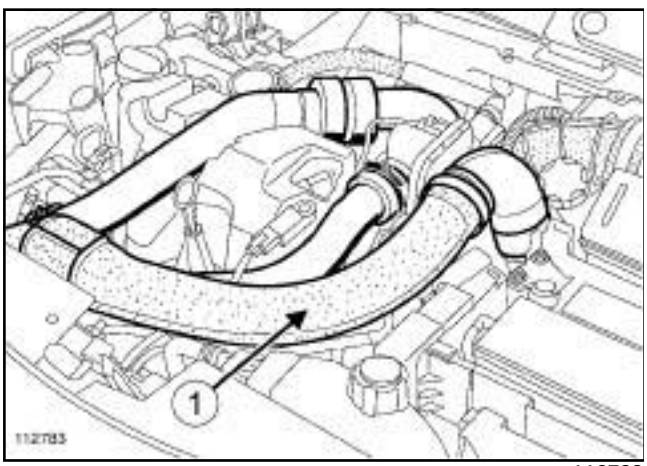
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

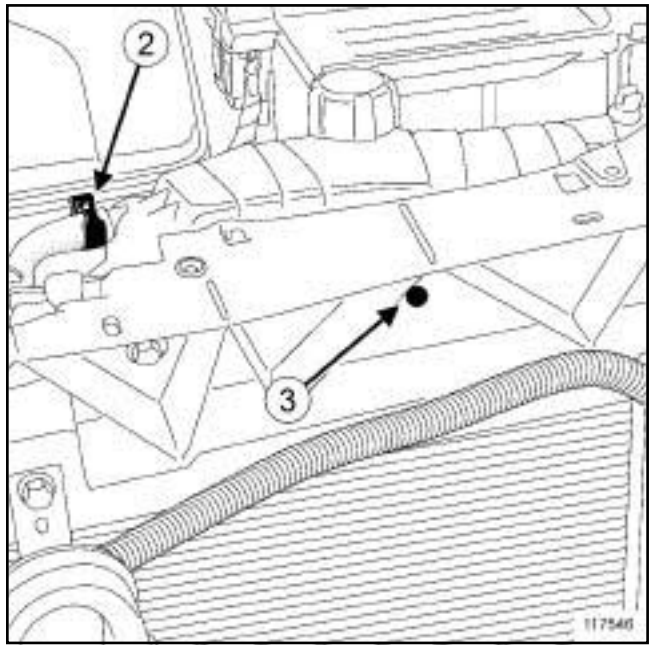


112783

❏ Remove:

- the air filter inlet air pipe (**1**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Fit a hose clamp **(Ms. 583)** to the expansion bottle top hose.

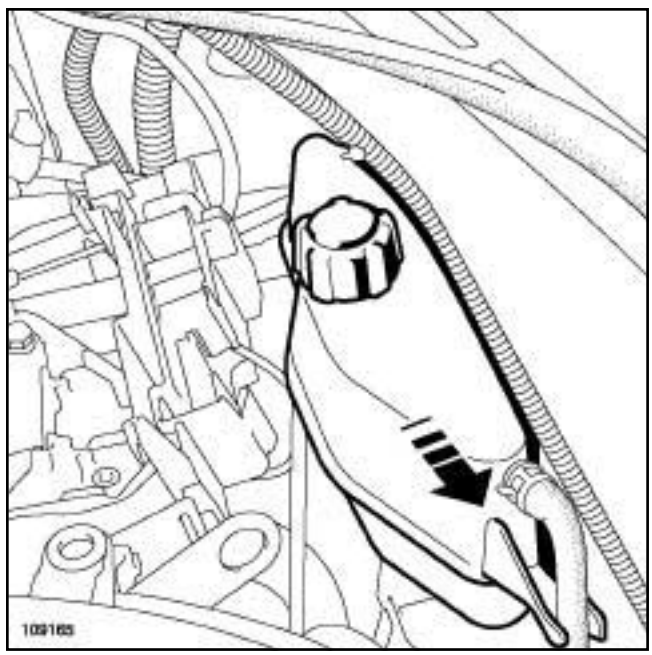


117546

❏ Open the clip (**2**) on the expansion bottle top hose using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the expansion bottle top hose.

❏ Remove the clip (**3**) from the expansion bottle.



109165

❏ Remove the expansion bottle, following the direction of the arrow.

❏ Unclip the wiring harness of the turbocharger solenoid valve on the fan assembly.

❏ Remove the engine undertray.

K9K

❏ Disconnect the motor-driven fan assembly connectors.

❏ Unclip the fan assembly wiring harness.

❏ Unclip the coolant bottom hose.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the blower unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the blower unit.

II - FINAL OPERATION.

❏ Clip the coolant bottom hose.

❏ Clip the fan assembly wiring harness.

❏ Connect the fan assembly connectors.

❏ Refit the engine undertray.

❏ Clip the wiring harness of the turbocharger solenoid valve on the fan assembly.

❏ Position the expansion bottle.

❏ Refit the clip to the expansion bottle.

❏ Connect the expansion bottle top hose.

❏ Fit the expansion bottle top hose clip using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Remove the hose clamp **(Ms. 583)** on the expansion bottle top hose.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter inlet air pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine cover.

Engine cooling fan assembly: Removal - Refitting

D4F, and 740 or 742 or 764

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

STANDARD HEATING

❏ Disconnect the motor-driven fan assembly connectors.

❏ Unclip the fan assembly wiring.

❏ Remove the electrical earth from the gearbox.

AIR CONDITIONING

❏ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Disconnect:

- the pressure switch connector,
- the fan assembly connectors.

❏ Unclip the fan assembly wiring.

❏ Remove the electrical earth from the gearbox.

❏ Attach the cooling radiator assembly.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Separate the fan assembly from the cooling radiator.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the blower unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the fan assembly.

II - FINAL OPERATION.

STANDARD HEATING

❏ Refit the electrical earth to the gearbox.

❏ Clip the fan assembly wiring.

❏ Connect the motor-driven fan assembly connectors.

AIR CONDITIONING

❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Detach the cooling radiator assembly.

❏ Refit the electrical earth to the gearbox.

❏ Clip the fan assembly wiring.

❏ Connect:

- the engine cooling fan assembly connectors,
- the pressostat connector.

❏ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

Engine cooling fan assembly: Removal - Refitting

F4R or K4J or K4M

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

IMPORTANT

The circuits are designed to be pressurised, so be careful at high temperatures (risk of serious burns).

Do not remove the cap from the expansion bottle while the engine is hot. Take care when carrying out a repair under the bonnet, as the radiator fan(s) may start to operate without warning.

Do not open the bleed screw(s) with the engine running.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air inlet duct,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Fit a hose clamp to the expansion bottle degassing hose.

❏ Remove

- the expansion bottle degassing hose clip using the **(Mot. 1448)**,
- the expansion bottle degassing hose.

❏ Remove the expansion bottle.

❏ Unclip the air resonator upper clip.

❏ Attach the cooling radiator assembly to the front end panel.

❏ Remove:

- the air resonator,
- the left and right-hand wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners: Removal - Refitting**),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

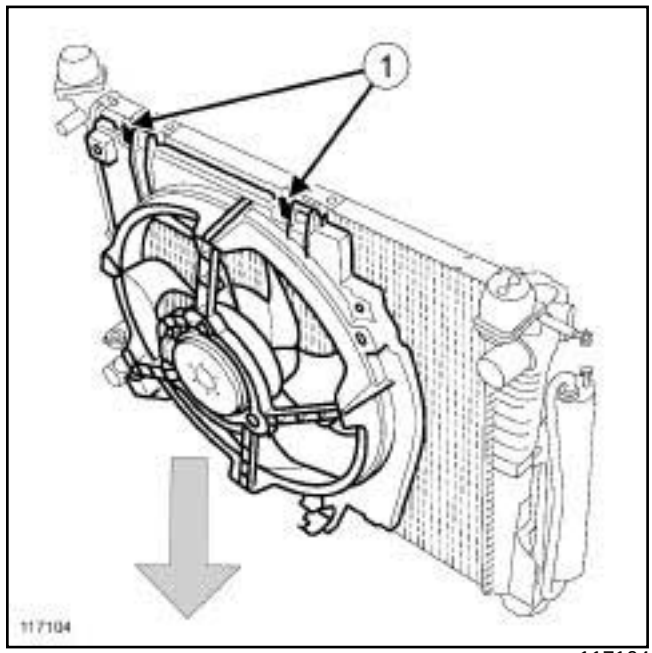
❏ Disconnect the motor-driven fan assembly connectors.

❏ Unclip the wiring harness on the motor-driven fan assembly.

❏ Remove the electrical earth from the gearbox.

❏ Remove the bottom hose on the motor-driven fan assembly.

II - OPERATION FOR REMOVAL OF PART CONCERNED



117104

❏ Move the brackets (**1**) apart.

❏ Lower the motor-driven fan assembly in the direction of the arrow.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the motor-driven fan assembly.

❏ Clip the retaining brackets.

II - FINAL OPERATION.

❏ Refit the bottom hose onto the motor-driven fan assembly.

❏ Refit the electrical earth to the gearbox.

F4R or K4J or K4M

❏ Clip the wiring harness onto the motor-driven fan assembly.

❏ Connect the motor-driven fan assembly connectors.

❏ Refit:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the air resonator.

❏ Detach the cooling radiator assembly from the front end panel.

❏ Clip the air resonator upper clip.

❏ Refit:

- the expansion bottle,
- the expansion bottle degassing hose,
- the expansion bottle degassing hose clip using the **(Mot. 1448)**.

❏ Remove the hose clamp from the expansion bottle degassing hose.

❏ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air inlet duct,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Check that the engine cooling fan is operating correctly.

M4R

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) .

❏ Disconnect:

- the pressostat connector,
- the fan assembly connectors.

❏ Unclip the wiring harness from the fan assembly.

❏ Attach the cooling radiator assembly.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Separate the fan assembly from the cooling radiator.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the blower unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the blower unit.

II - FINAL OPERATION.

❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Detach the cooling radiator assembly.

❏ Refit the electrical earth to the gearbox.

❏ Clip the fan assembly wiring.

❏ Connect:

- the engine cooling fan assembly connectors,
- the pressostat connector.

❏ Refit:

- the front end panel air resonator (see **12A**, **Fuel mixture**, **Air resonator: Removal - Refitting**, page **12A-10**) ,
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Equipment required
safety strap(s)

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove:

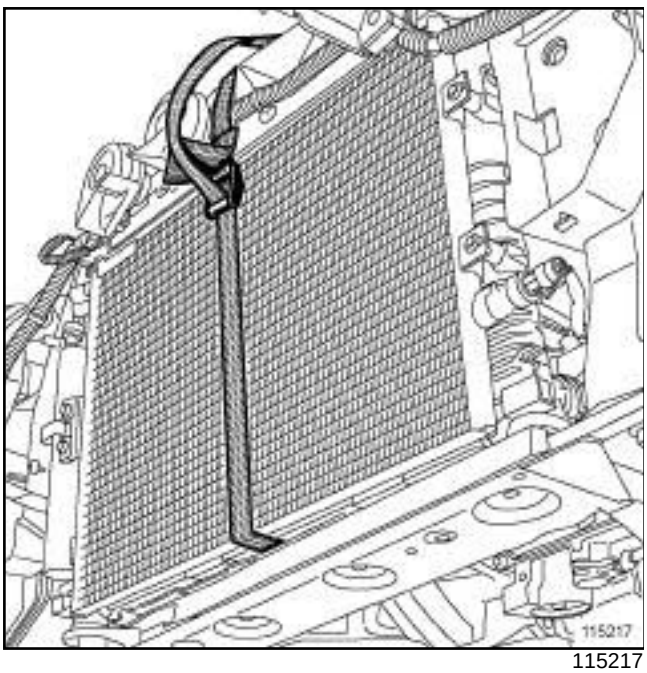
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Disconnect:

- the pressostat connector,
- the fan assembly connectors.

❏ Unpick the blower unit harness.

❏ Remove the earth cable from the gearbox.

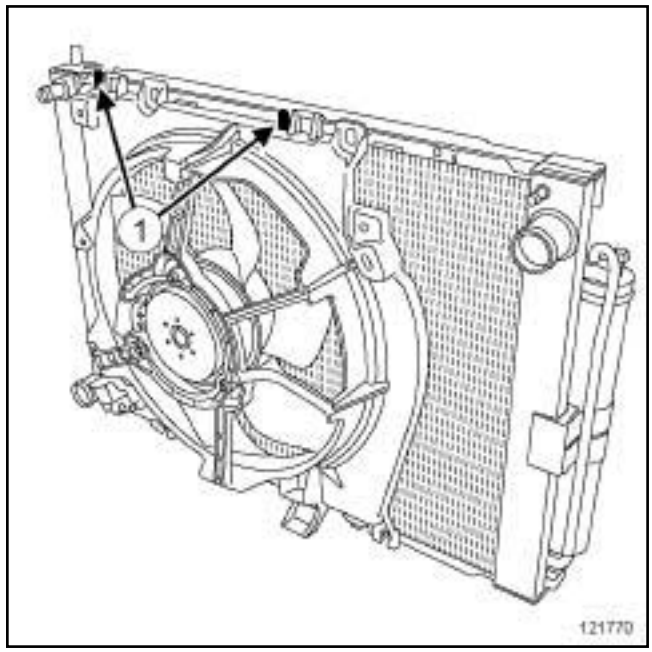


115217

❏ Attach the cooling radiator assembly using a **safety strap(s)**.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

II - OPERATION FOR REMOVAL OF PART CONCERNED



121770

❏ Remove the tabs (**1**) .

❏ Remove the motor-driven fan assembly from underneath.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the blower unit.

❏ Clip the tabs into place.

II - FINAL OPERATION.

❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Remove the **safety strap(s)**.

❏ Refit the earth cable on the gearbox.

❏ Clip the blower unit wiring harness.

❏ Connect:

- the pressostat connector,
- the fan assembly connectors.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

D4F, and 784 or 786

❑ Connect the battery (see) (MR 392, 80A, Battery).

Coolant pump inlet pipe: Removal - Refitting

D4F, and 740 or 742 or 764

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
coolant pump inlet pipe bolt	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

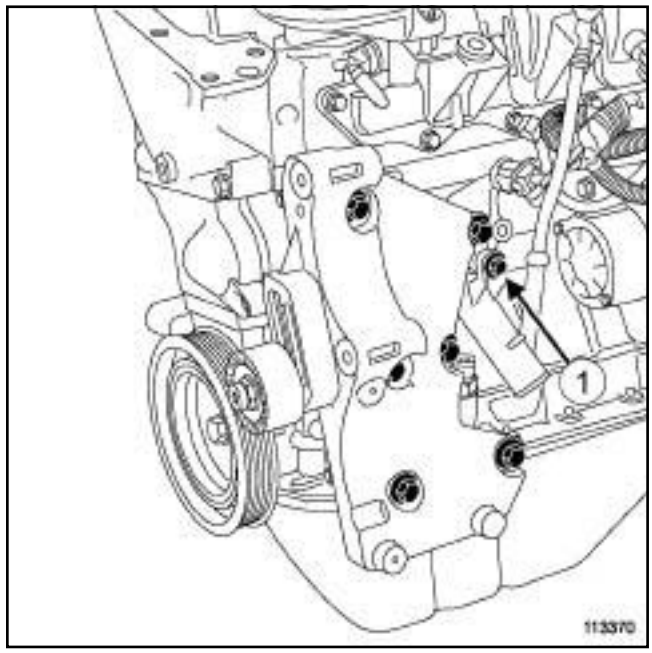
- the engine undertray bolts,
- the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Separate the clip on the cooling radiator bottom hose on the coolant pump inlet pipe side using the tool **(Mot. 1448)**.

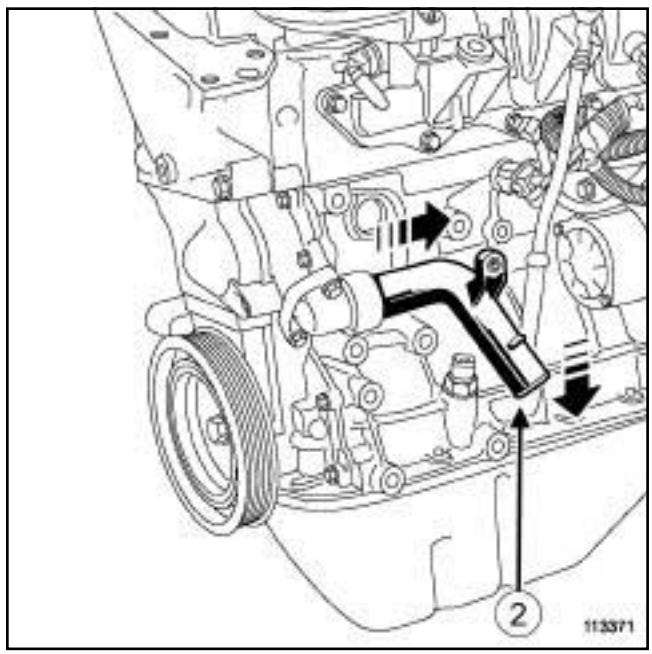
❏ Disconnect the cooling radiator bottom hose on the coolant pump inlet pipe side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113370

❏ Remove the bolt (**1**) from the coolant pump inlet pipe.



113371

❏ Remove:

- the coolant pump inlet pipe (**2**) ,
- the coolant pump inlet pipe seal.

D4F, and 740 or 742 or 764

REFITTING

I - REFITTING PREPARATION OPERATION

- ❑ **parts always to be replaced: seal between coolant pump inlet pipe and coolant pump inlet union**.
- ❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease:
  - the housing of the seal on the coolant pump inlet pipe if it is to be reused,
  - the housing of the coolant pump inlet union seal.

> **WARNING**
> To ensure proper sealing, the gasket surfaces must be clean, dry and not greasy (avoid any finger marks).

- ❑ Refit a new coolant pump inlet pipe seal on the coolant pump inlet pipe.

II - REFITTING OPERATION FOR PART CONCERNED

- ❑ Refit the coolant pump inlet pipe.
- ❑ Torque tighten the **coolant pump inlet pipe bolt (12 N.m)**.

III - FINAL OPERATION

- ❑ Connect the cooling radiator bottom hose to the coolant pump inlet pipe.
- ❑ Fit the cooling radiator bottom hose clip to the coolant pump inlet pipe using the tool **(Mot. 1448)**.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .
- ❑ Refit the engine undertray.

Coolant pump inlet pipe: Removal - Refitting

K4J or K4M

Special tooling required	
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
coolant pump inlet pipe mounting bolts	**25 N.m**

REMOVAL

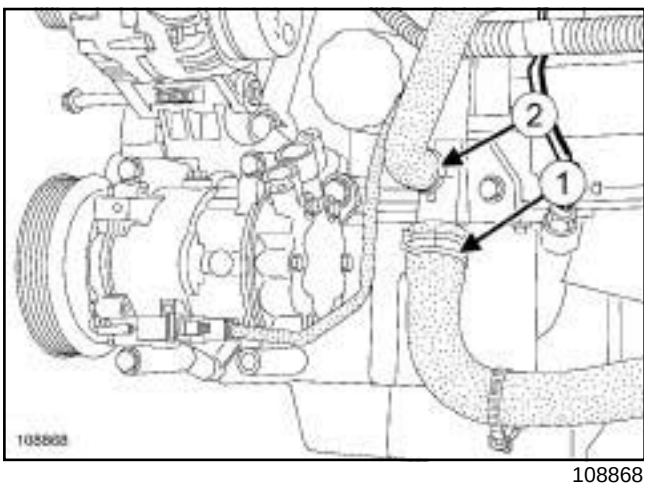
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .



108868

❑ Disconnect the cooling radiator bottom hose (**1**) and the heater hose (**2**) using the **(Mot. 1202-01)** or **(Mot. 1202-02)** or **(Mot. 1448)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the mounting bolts of the water pump inlet pipe,
- the coolant pump inlet pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the pump inlet pipe.

❑ Torque tighten the **coolant pump inlet pipe mounting bolts (25 N.m)**.

II - FINAL OPERATION

❑ Connect the cooling radiator bottom hose and the heater hose using the **(Mot. 1202-01)** or **(Mot. 1202-02)** or **(Mot. 1448)**.

❑ Fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Coolant pump inlet pipe: Removal - Refitting

K9K

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1202-01	Clip pliers for hose clips (large size).
Mot. 1202-02	Clip pliers for hose clips (small size)

Tightening torques ▽	
water pump inlet pipe bolt	**22 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

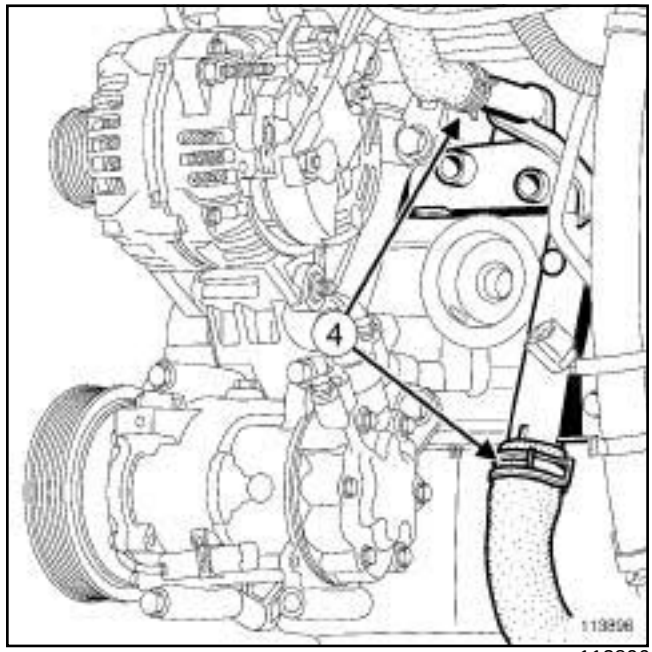
❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Remove:

- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) .

❏ Remove the oil-water heat exchanger (see **10A**, **Engine and cylinder block assembly**, **Oil-coolant heat exchanger: Removal - Refitting**, page **10A-25**) .

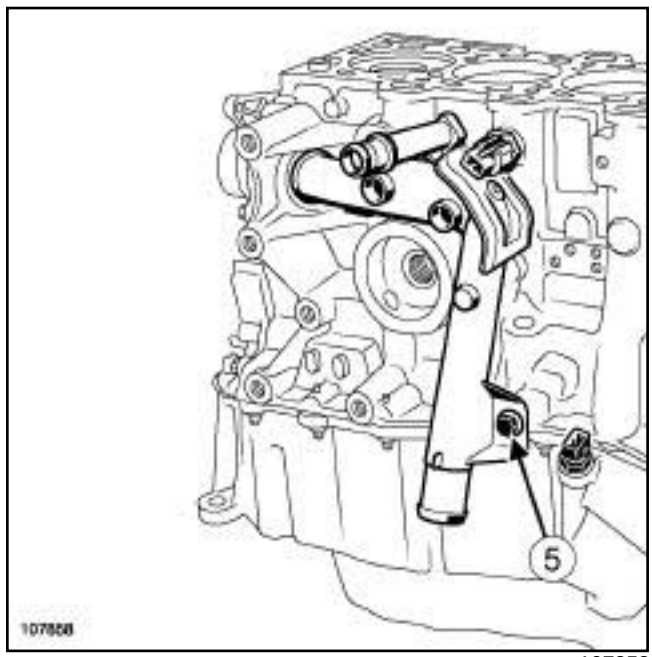
II - REMOVAL OF THE PART CONCERNED



113896

❏ Remove the clips (**4**) from the water pump inlet pipe hoses using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

❏ Disconnect the water hoses of the water pump inlet pipes.



107858

❏ Remove:

- the water pump inlet pipe bolt (**5**) ,
- the water pump inlet pipe.

K9K

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the water pump inlet pipe seals.

❑ Clean the bearing faces on the coolant-oil heat exchanger and the cylinder block.

❑ Always replace the coolant-oil heat exchanger seals.

II - REFITTING PART CONCERNED

❑ Refit the water inlet pipe on the water pump.

❑ Torque tighten the **water pump inlet pipe bolt (22 N.m)**.

❑ Connect the water hoses on the water pump inlet pipes.

❑ Fit the water pump inlet pipe hose clips using the **(Mot. 1448)** or **(Mot. 1202-01)** or **(Mot. 1202-02)**.

III - FINAL OPERATION

❑ Refit the oil-water heat exchanger (see **10A**, **Engine and cylinder block assembly**, **Oil-coolant heat exchanger: Removal - Refitting**, page **10A-25**) .

❑ Connect the oil pressure sensor connector.

❑ Refit:

- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-5**) ,
- the intercooler (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Top up the engine (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Refit:

- the engine undertray,
- the engine cover,

Coolant pump inlet pipe: Removal - Refitting

F4R

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

❑ Perform the following operations:

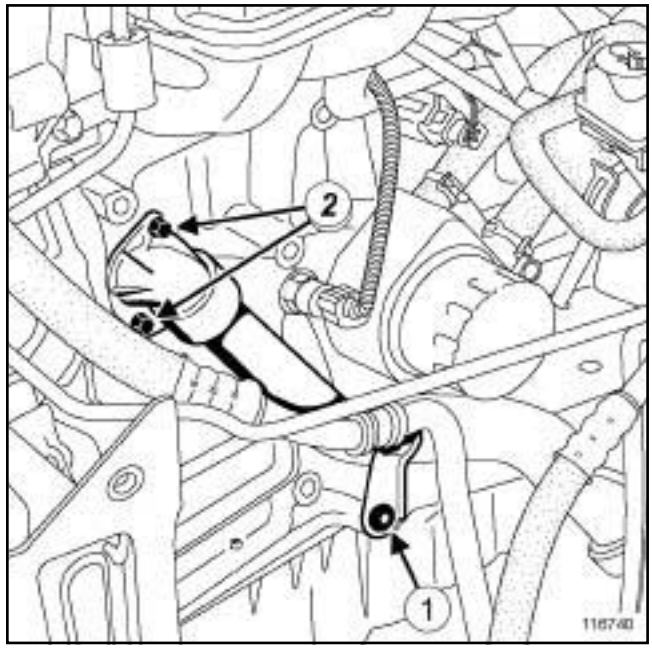
- drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- flush the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❑ Remove:

- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) ,
- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the clip from the hose using the **(Mot. 1448)**.



116740

❑ Remove:

- the coolant pump inlet pipe mounting bolt (**1**) ,
- the coolant pump inlet pipe elbow mounting bolts (**2**) ,
- the coolant pump inlet pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the coolant pump inlet pipe fitted with a new seal,
- the coolant pump inlet pipe elbow mounting bolts,
- the coolant pump inlet pipe mounting bolt.

❑ Connect the hose on the coolant pump inlet pipe.

❑ Fit the clip using the **(Mot. 1448)**.

II - FINAL OPERATION

❑ Refit:

- the multifunction support (see **10A**, **Engine and cylinder block assembly**, **Multifunction support: Removal - Refitting**, page **10A-96**) ,
- the alternator (see **16A**, **Starting - Charging**, **Alternator: Removal - Refitting**, page **16A-5**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Coolant pump inlet pipe: Removal - Refitting

F4R

❏ Perform the following operations:

- fill the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Check that there are no coolant leaks.

❏ Refit the engine undertray.

Coolant pump inlet pipe: Removal - Refitting

D4F, and 784 or 786

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

Tightening torques ▽	
coolant pump inlet pipe bolts	**10 Nm**

REMOVAL

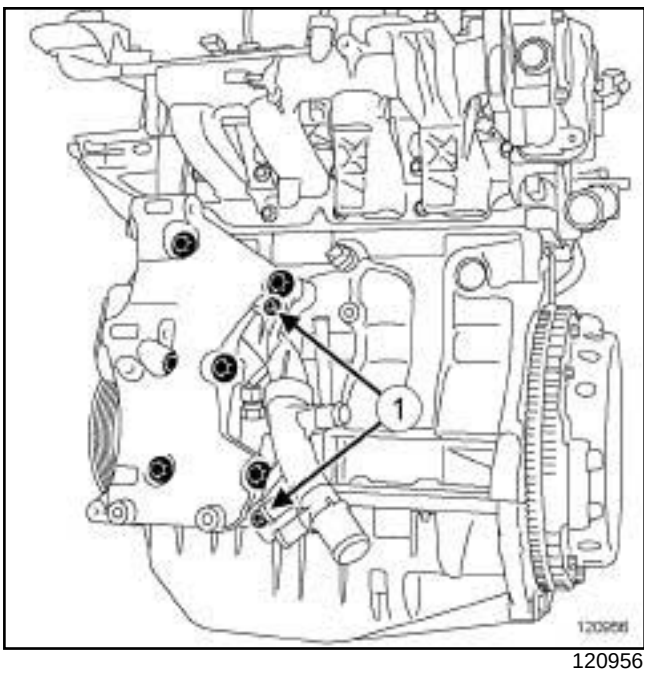
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the engine undertray.

❏ Drain the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



120956

❏ Remove the coolant pump inlet pipe hose clips using the **(Mot. 1448)**.

❏ Disconnect the coolant pump inlet pipe hoses.

❏ Remove:

- the bolts (**1**) from the coolant pump inlet pipe,
- the coolant pump inlet pipe.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Always replace the coolant pump inlet pipe seal.

❏ Clean the coolant pump inlet pipe bearing faces.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the coolant pump inlet pipe,
- the coolant pump inlet pipe bolts.

❏ Torque tighten the **coolant pump inlet pipe bolts (10 Nm)**.

❏ Connect the coolant pump inlet pipe hoses.

❏ Refit the coolant pump inlet pipe hose clips using the **(Mot. 1448)**.

III - FINAL OPERATION.

❏ Fill and bleed the cooling system (see **19A**, **Cooling**, **Cooling system: Draining - Refilling**, page **19A-16**) .

❏ Refit the engine undertray.

Expansion bottle: Removal - Refitting

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.

REMOVAL

I - REMOVAL PREPARATION OPERATION

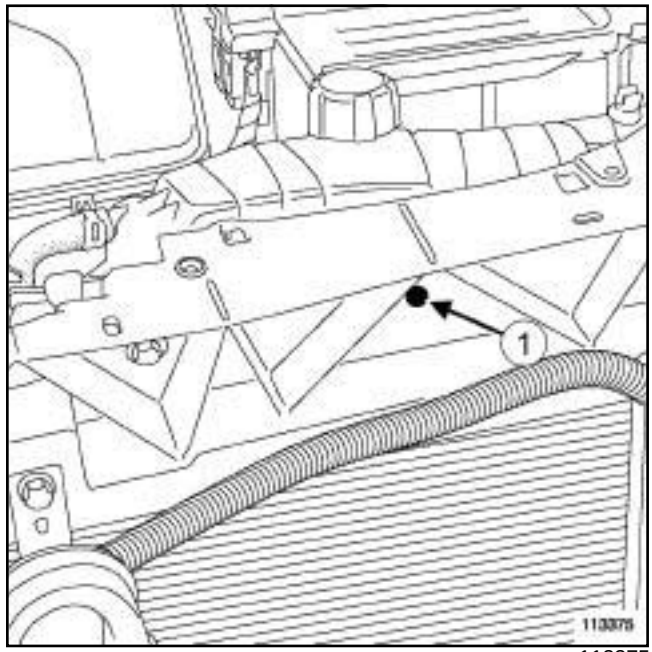
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 393, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113375

❏ Remove the clip (**1**) .

❏ Remove the expansion bottle.

❏ Fit hose clamps to the expansion bottle hoses.

❏ Using the **(Mot. 1448)**, remove:

- the clamp of the bottom hose of the expansion bottle,
- the clamp of the top hose of the expansion bottle,

❏ Disconnect:

- the expansion bottle's bottom hose,
- the expansion bottle's top hose.

❏ Remove the expansion bottle.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect:

- the expansion bottle's top hose,
- the expansion bottle bottom hose.

❏ Using the **(Mot. 1448)**, refit:

- the clamp of the top hose of the expansion bottle,
- the clamp of the bottom hose of the expansion bottle.

❏ Remove the hose clamps.

❑ Refit:

- the expansion bottle,
- the expansion bottle clip.

II - FINAL OPERATION.

❑ Top-up the coolant level in the expansion bottle.

❑ Refit:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784 or 786

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

REMOVAL

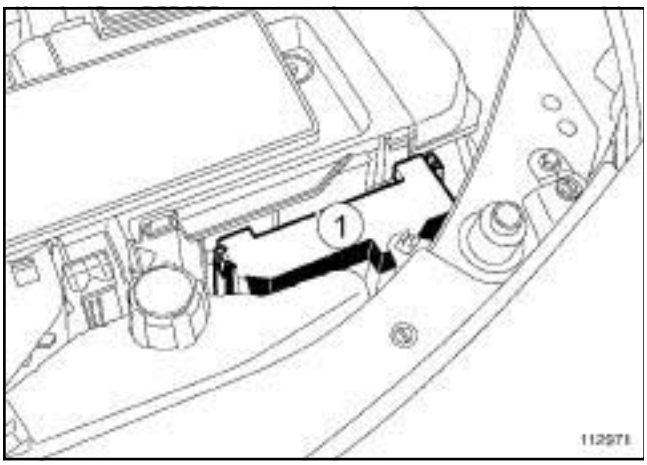
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

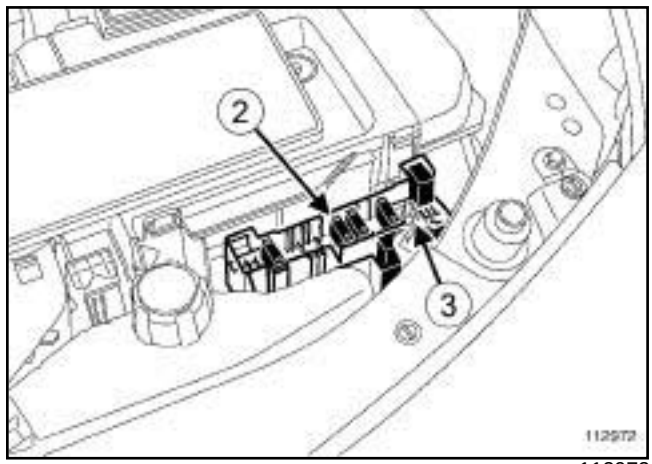
❏ Remove:

- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112971

❏ Remove the cover (**1**) from the power feed fuse board mounting.



112972

❏ Remove the green fuse (**2**) **(30 A)**.

❏ Detach the fuse connector from the fuse mounting.

❏ Remove the power wiring harness nut (**3**) from the fuse mounting.

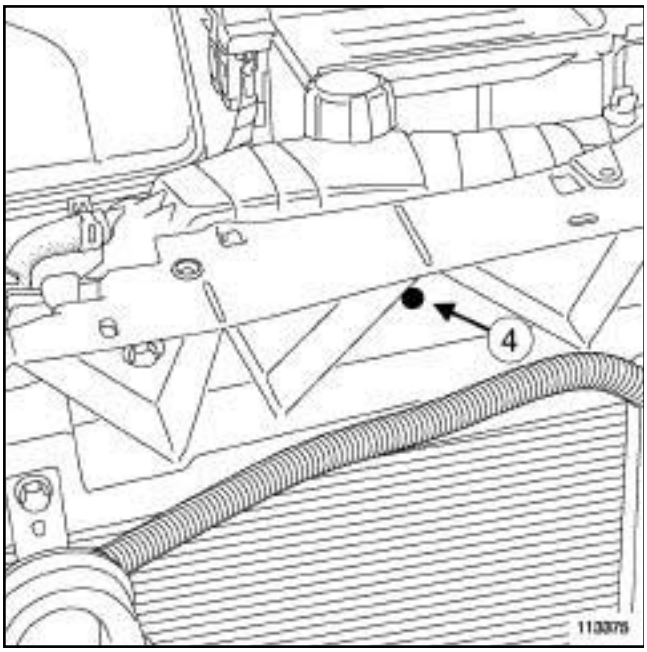
❏ Remove the power wiring harness from the fuse mounting.

❏ Detach the fuse board.

❏ Remove the air filter box air inlet pipe.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



113375

❏ Remove clip (**4**) .

❏ Remove the expansion bottle.

❏ Fit the **(Ms. 583)** to the expansion bottle hoses.

❏ Using the **(Mot. 1448)**, remove:

- the expansion bottle bottom hose clip,
- the expansion bottle top hose clip.

❏ Disconnect:

- the expansion bottle's bottom hose,
- the expansion bottle top hose.

❏ Remove the expansion bottle.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect:

- the expansion bottle's top hose,
- the expansion bottle bottom hose.

❏ Using the **(Mot. 1448)**, refit:

- the clamp of the top hose of the expansion bottle,
- the clamp of the bottom hose of the expansion bottle.

❏ Remove the **(Ms. 583)**.

❏ Refit:

- the expansion bottle,
- the expansion bottle clip.

II - FINAL OPERATION.

❏ Clip the fuse board onto the battery tray.

❏ Position the fuse board wiring harness.

❏ Refit the fuse board wiring harness nut.

❏ Clip the **30 A** fuse connector onto the fuse board.

❏ Refit:

- the **30 A** fuse,
- the fuse board mounting cover,
- the air filter unit air inlet pipe.

❏ Top-up the coolant level in the expansion bottle.

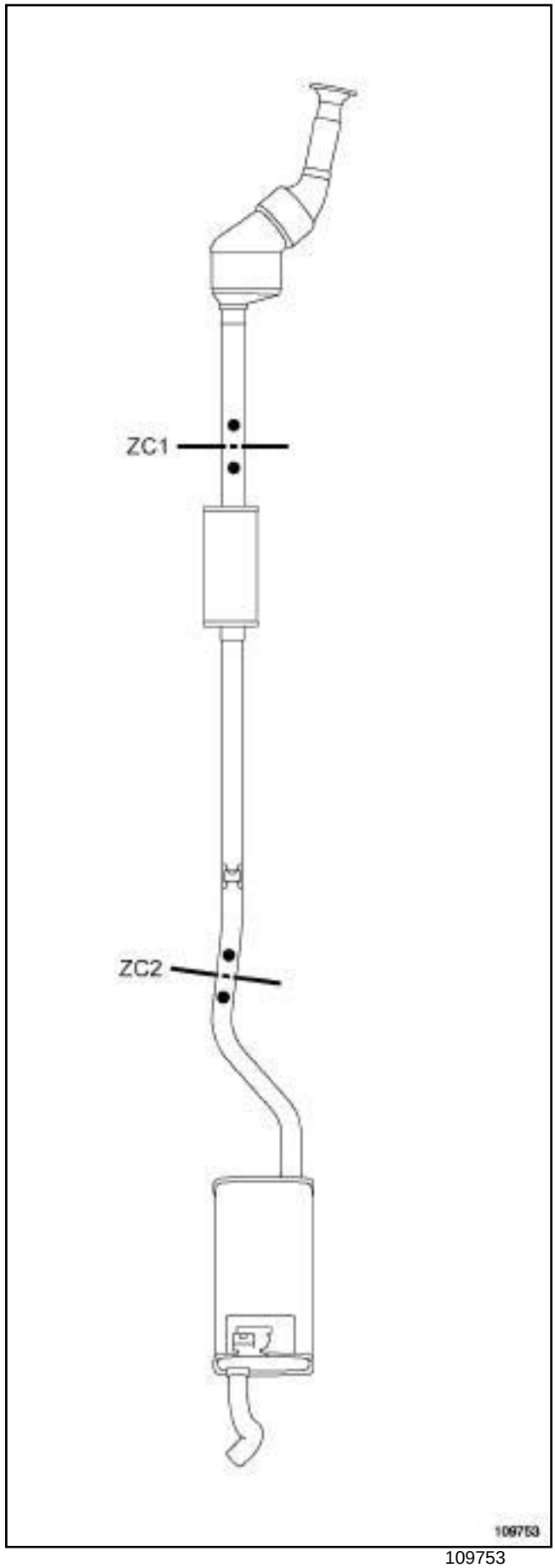
❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❏ Connect the battery (see) (MR 392, 80A, Battery).

PIPE ASSEMBLY

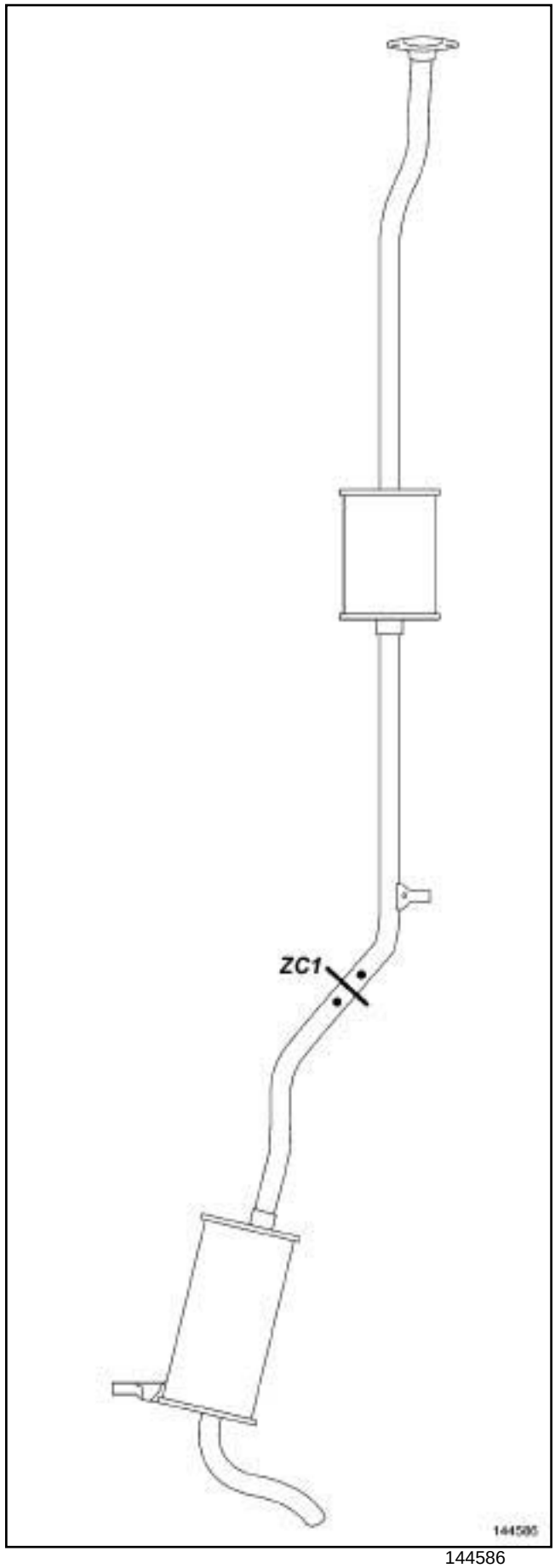
D4F, and 740 or 742 or 764



109753

(**ZC1**)	cutting area between the catalytic converter and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

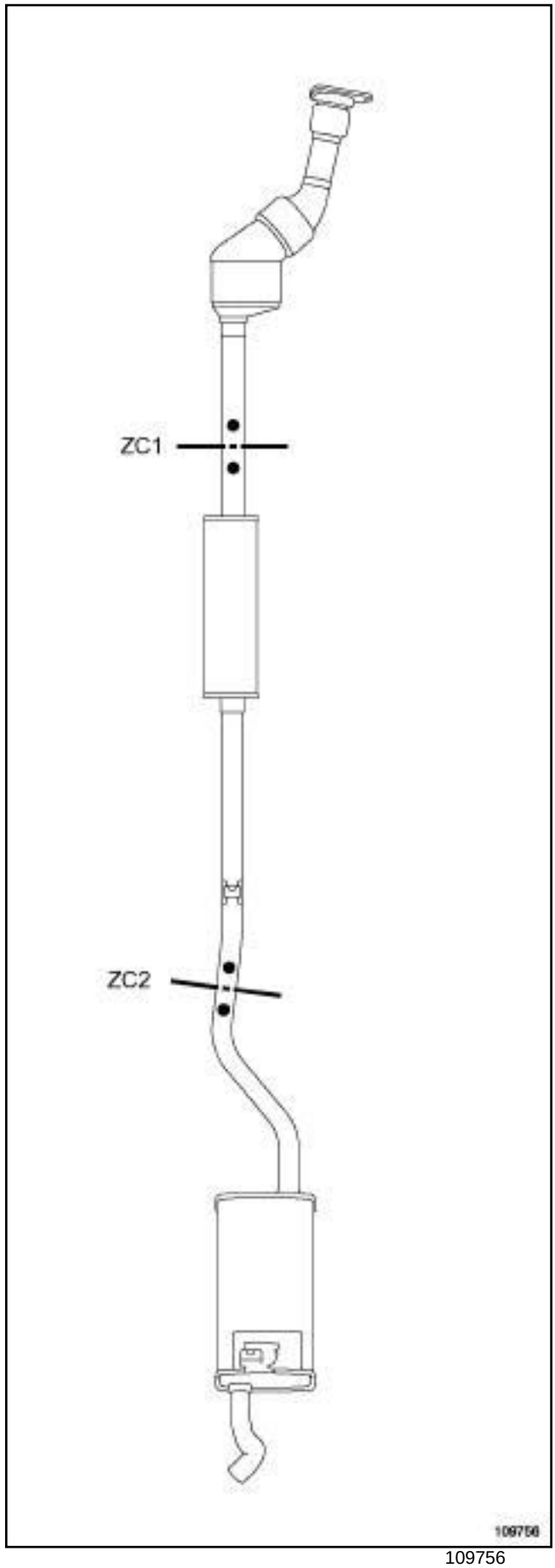
D4F, and 784 or 786



144586

(**ZC1**)	cutting area between the expansion chamber and the silencer

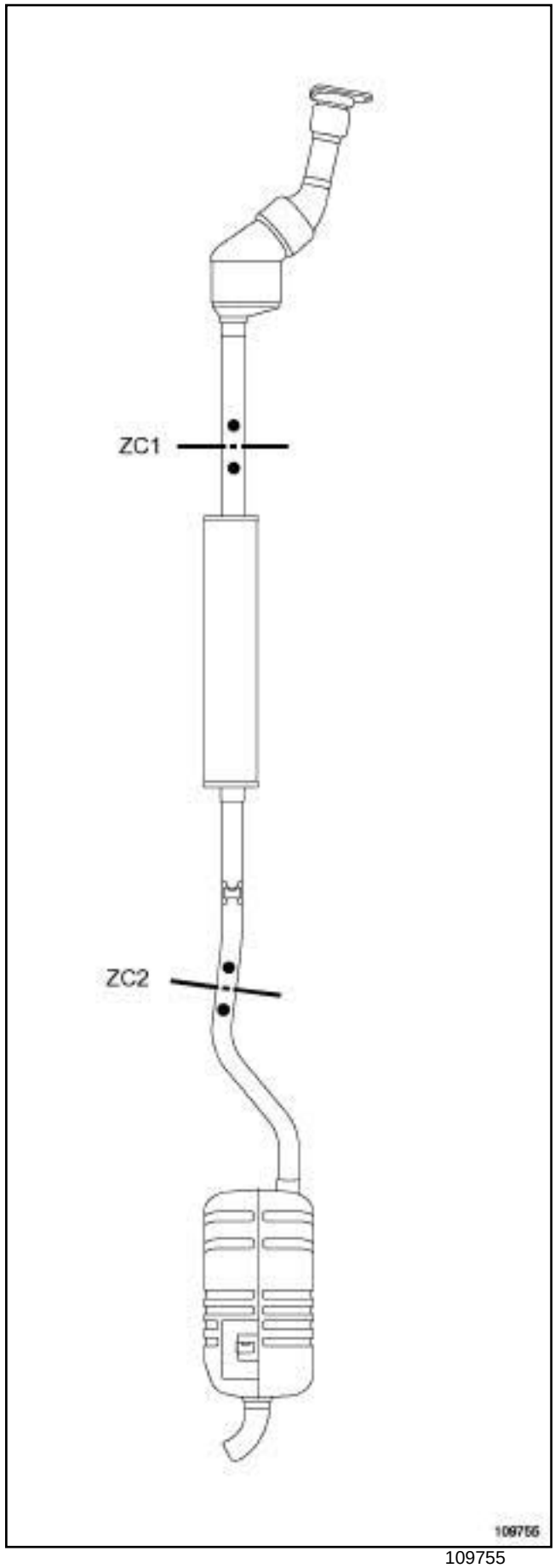
K4J



109756

(**ZC1**)	cutting area between the catalytic converter and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

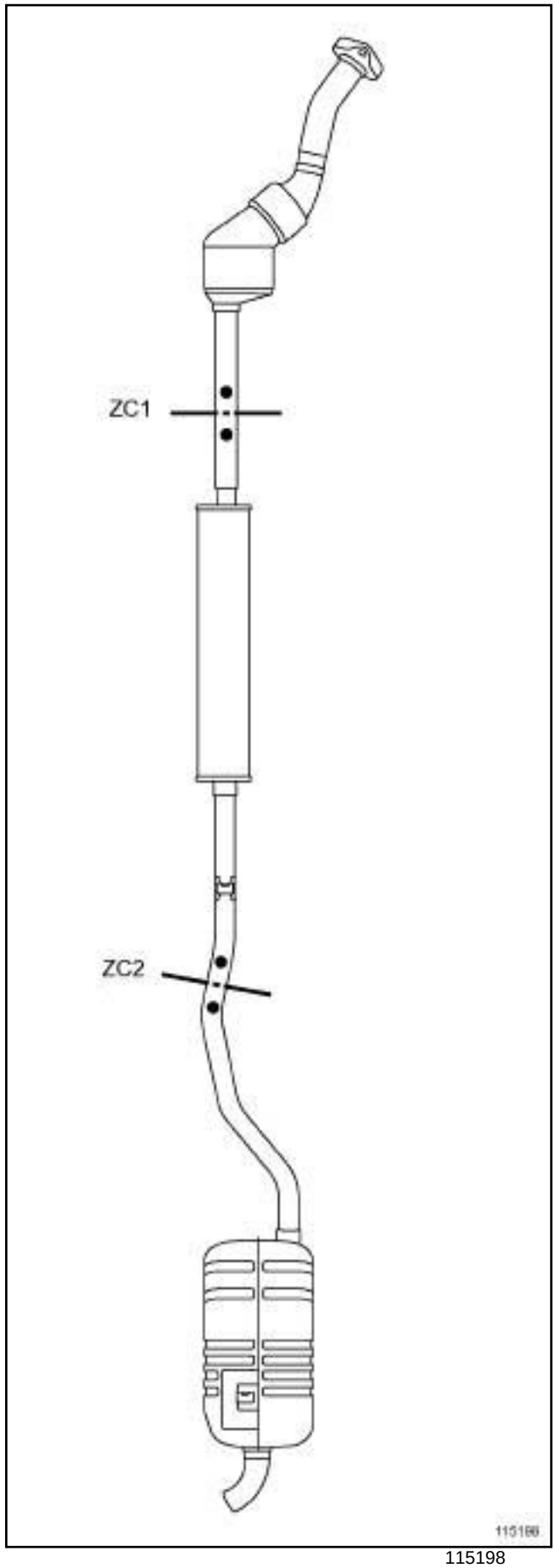
K4M



109755

(**ZC1**)	cutting area between the catalytic converter and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

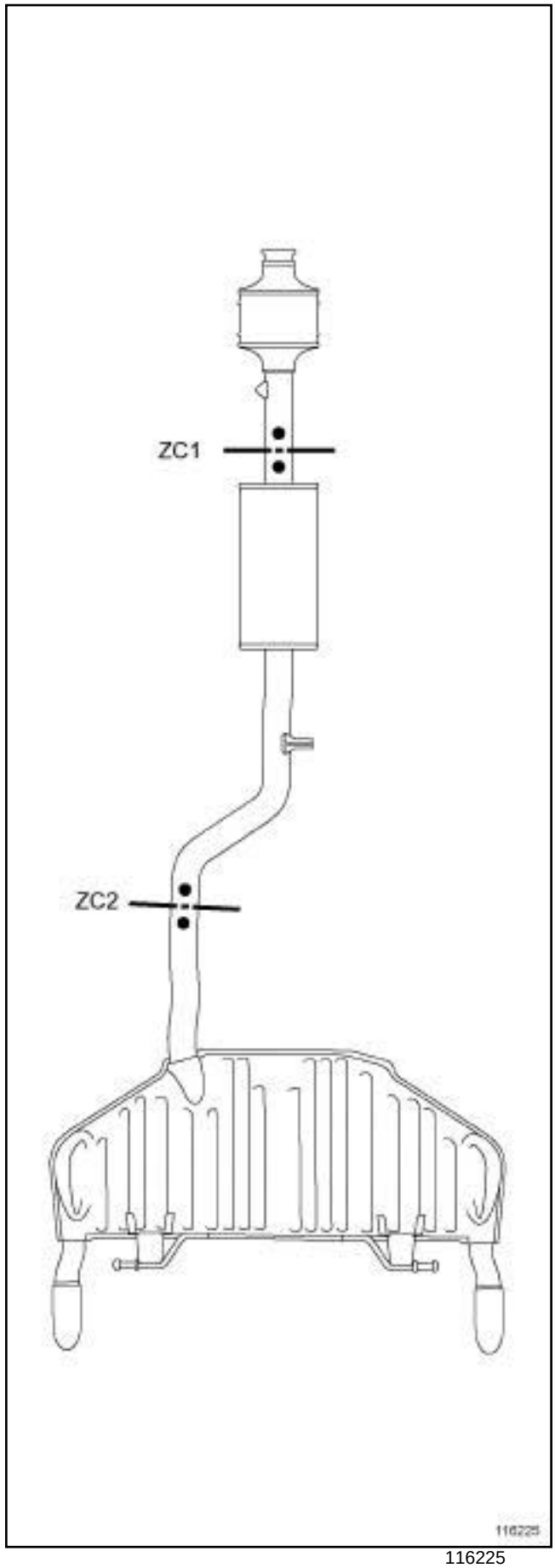
M4R



115198

(**ZC1**)	cutting area between the catalytic converter and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

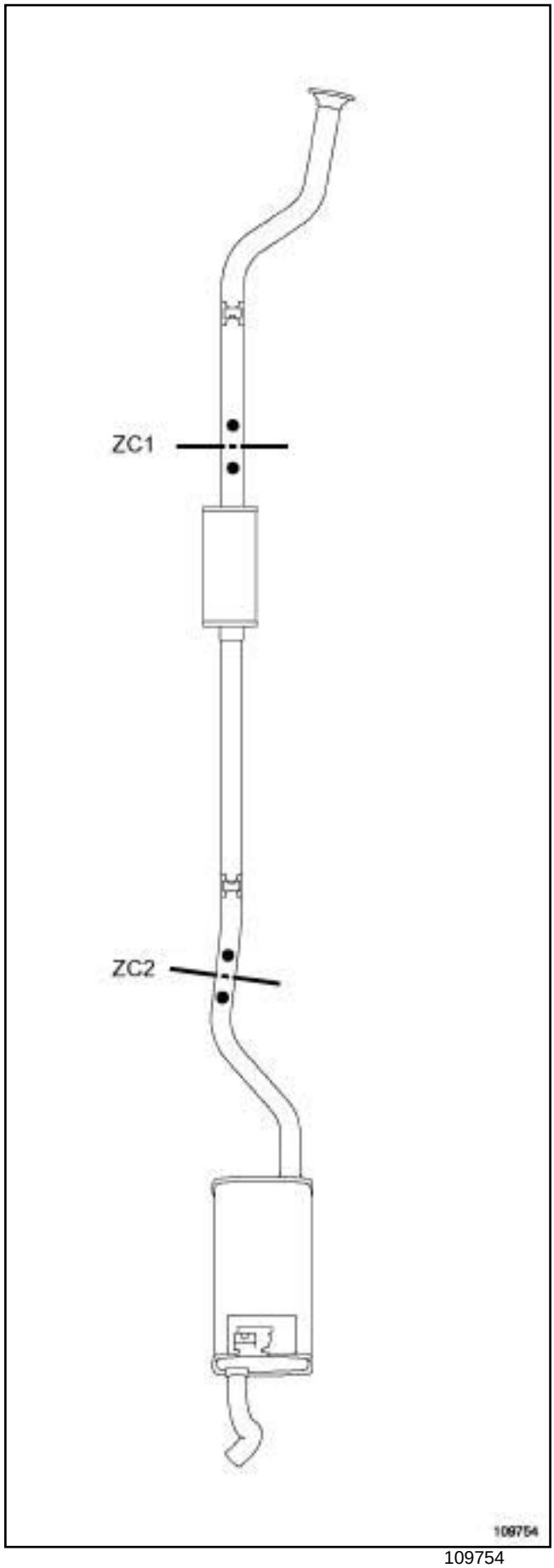
F4R



116225

(**ZC1**)	cutting area between the catalytic converter integrated into the exhaust pipe and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

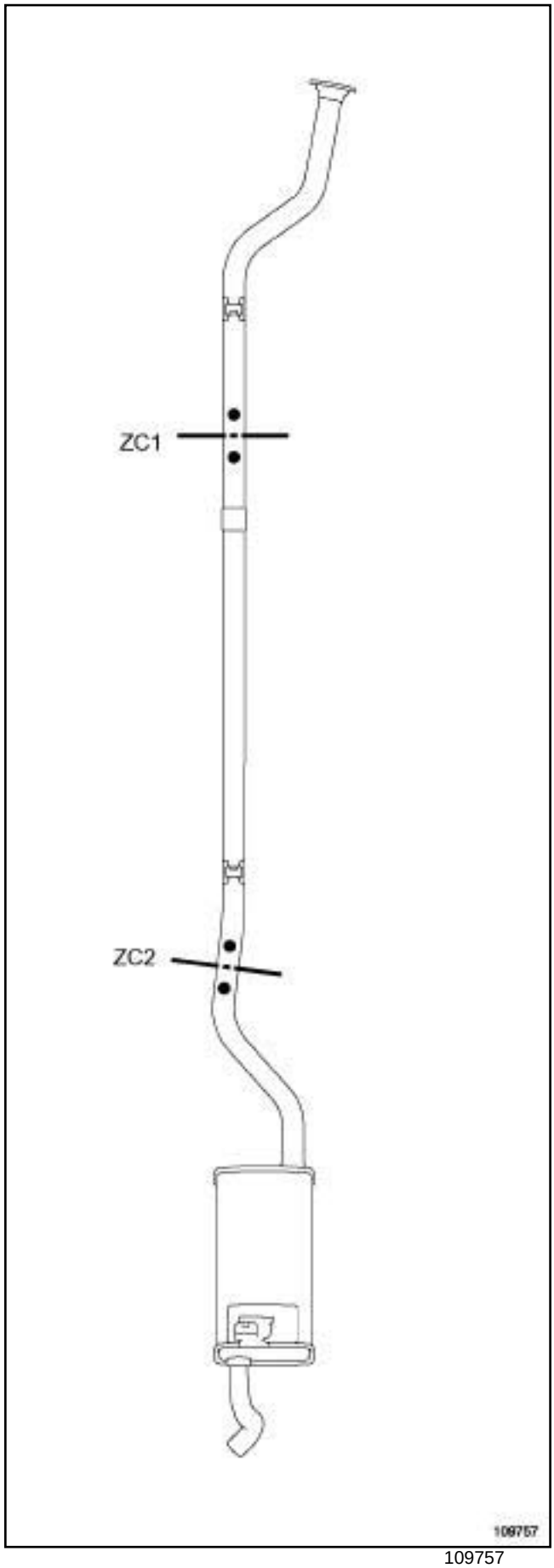
K9K, and 764



109754

(**ZC1**)	cutting area between the expansion chamber inlet pipe and the expansion chamber
(**ZC2**)	cutting area between the expansion chamber and the silencer

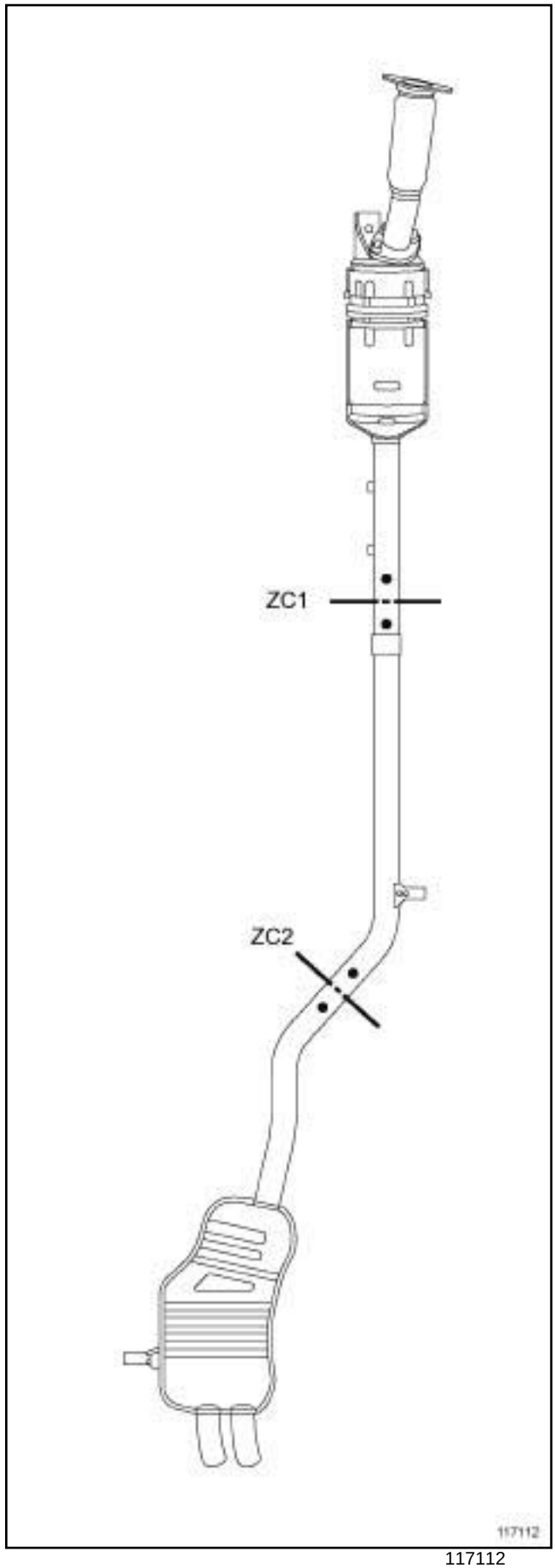
K9K, and 750 or 752 or 760 or 762 or 766 or 768



109757

(**ZC1**)	cutting area between the intermediate pipe inlet pipe and the intermediate pipe
(**ZC2**)	cutting area between the intermediate pipe and the silencer

K9K, and 772



117112

(**ZC1**)	cutting area between the particle filter and the intermediate pipe
(**ZC2**)	cutting area between the intermediate pipe and the silencer

Special tooling required	
Mot. 1199-01	Exhaust pipe cutter (diameter 35/50 mm and diameter 50/65mm). Complete kit in a case.

I - PARTS AND CONSUMABLES FOR THE REPAIR

1 - Parts always to be replaced:

- the exhaust trunking (if fitted)

- the seal or sealing ring on the connection between the catalytic converter or catalytic pre-converter and the rest of the exhaust system

- the exhaust clip(s) (if fitted)

2 - Consumables (see part no. in Technical Note 5068, 04B, Consumables - Products):

- exhaust mastic

- surface cleaner

- abrasive pads

II - ADVICE TO OBSERVE

IMPORTANT
Do not park and run the engine in a place where combustible substances and materials such as grass or leaves can come into contact with the hot exhaust system.

IMPORTANT
Catalytic converters contain ceramic fibres, these are contained within a closed unit, and cannot disperse. Drilling or cutting catalytic converters is prohibited.

1 - During removal and refitting, the catalytic converter or catalytic pre-converter must not receive any knocks or impacts as this could damage it.

2 - The whole exhaust pipe is made of stainless steel.

3 - After working on the bracket between the catalytic converter or catalytic pre-converter and the rest of the exhaust system, ensure that the connection is perfectly sealed.

To do this:

- clean the pressure faces of the connection using the **ABRASIVE PADS**,

- degrease the pressure faces of the connection using **SURFACE CLEANER** and clean cloths,

- always replace the seal or sealing ring on the connection.

III - SPECIAL NOTES ON THE SINGLE UNIT EXHAUST PIPE

1 - Cutting the single unit exhaust pipe

The exhaust pipe is a « single unit type » .

To replace different parts of the exhaust system it must be cut.

To do this be sure to carry out these precautions in the following order:

- correctly identify the area to be cut, as explained below,

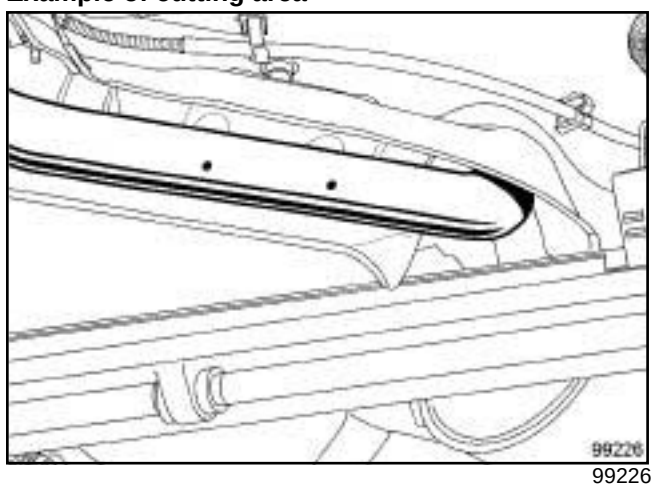
- use the cutting tool correctly **(Mot. 1199-01)**,

- position the exhaust trunking correctly.

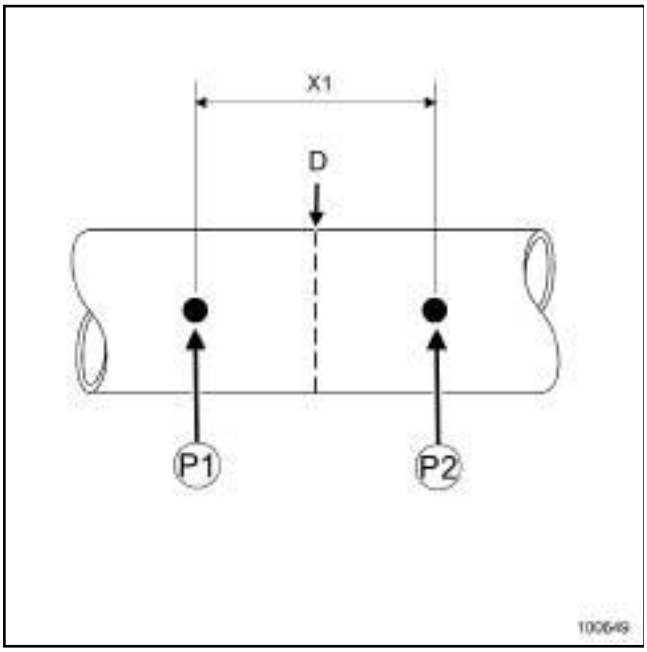
2 - Identifying the area of the exhaust system to be cut

Two marks made on the exhaust system define the area to be cut (see **Exhaust: Parts and consumables for the repair**) (see MR for vehicle concerned, 19B, Exhaust).

Example of cutting area



99226



100649

Before cutting the exhaust system, draw a line (**D**) between the two marks (**P1**) and (**P2**) .

The distance between the two marks on the exhaust pipe is (**X1**) : **90 mm** (all types except RENAULT SPORT).

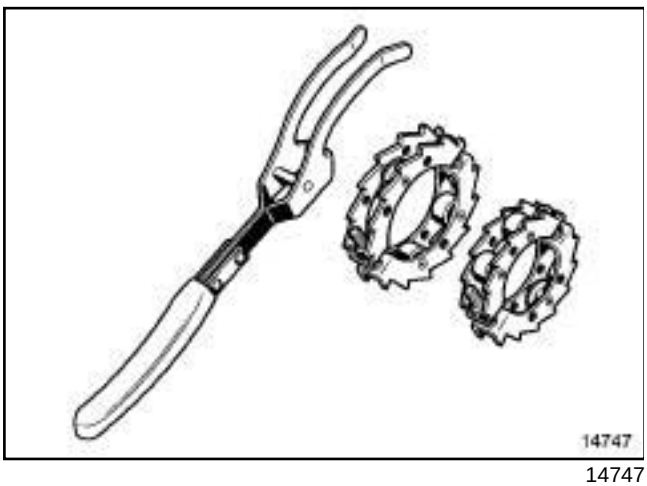
The distance between the two marks on the exhaust pipe is (**X1**) : **80 mm** (RENAULT SPORT).

Note:

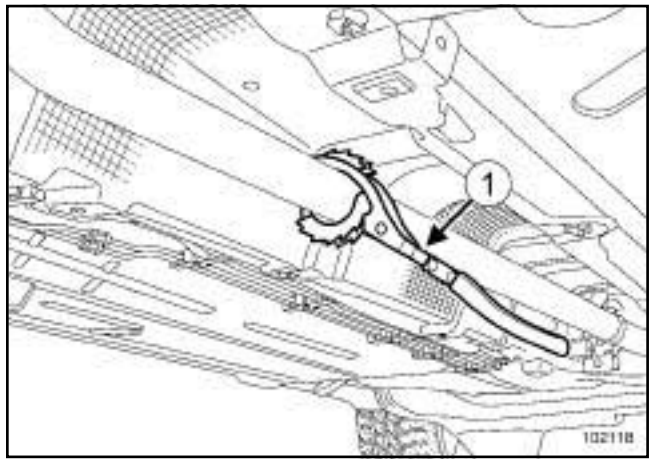
For CLIO II RENAULT SPORT with F4R*730, F4R*732 and F4R*736 engines, the cutting area is shown by a single mark on the exhaust pipe.

Cut the exhaust pipe by placing the **(Mot. 1199-01)** on the mark.

3 - Operate tool Mot. 1199-01



14747



102118

Fit the **(Mot. 1199-01)** (**1**) on the exhaust pipe.

Tighten the two bolts on the tool until they touch the pipe in order to clamp the tool onto the pipe.

Turn the cutting tool using the handle and pressing it against the pipe (as indicated in the diagram above).

Tighten the two bolts on the tool whilst cutting, until the pipe is completely cut.

Note:

Do not over-tighten the tool onto the pipe to avoid deforming it.

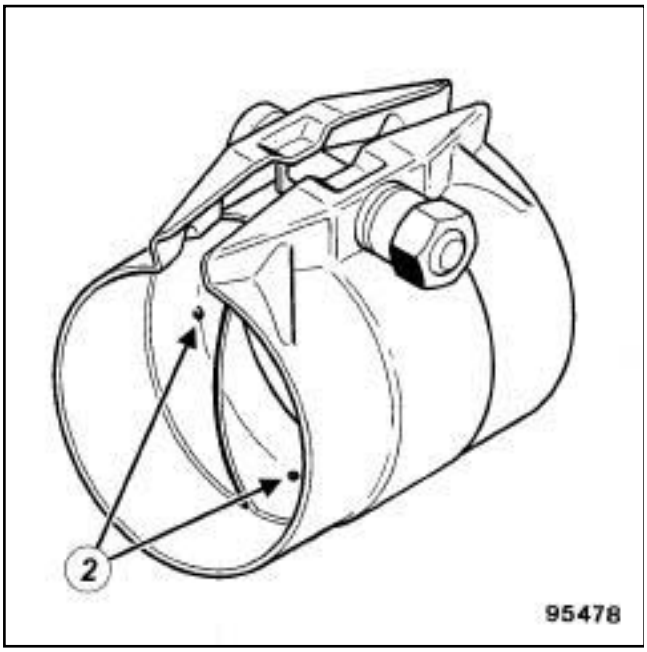
Once the pipe is cut, file and deburr the end of the pipe to be used on the vehicle again.

4 - Positioning the exhaust trunking

WARNING

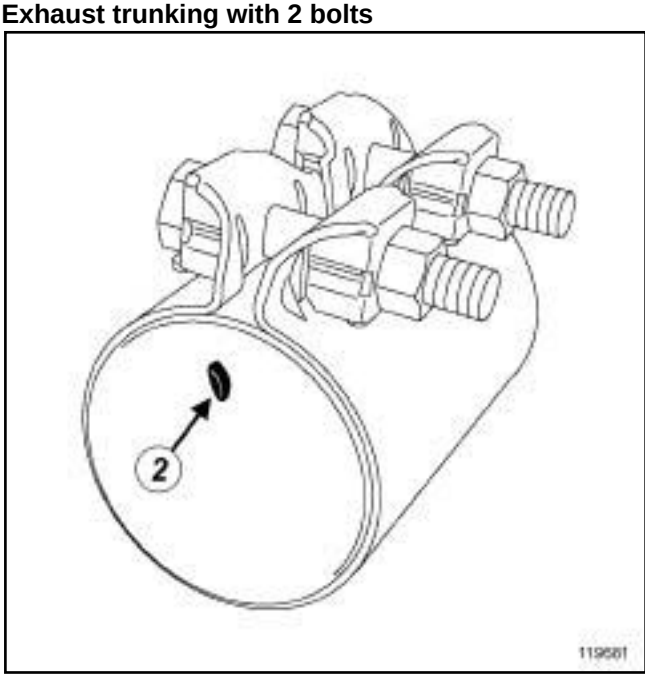
Do not reuse an old exhaust trunking.

Exhaust trunking with 1 bolt



95478

Exhaust trunking with 2 bolts



119681

Fit the exhaust trunking onto the part of the exhaust system fitted to the vehicle.

Position the pipe onto the lugs (**2**) inside the exhaust trunking.

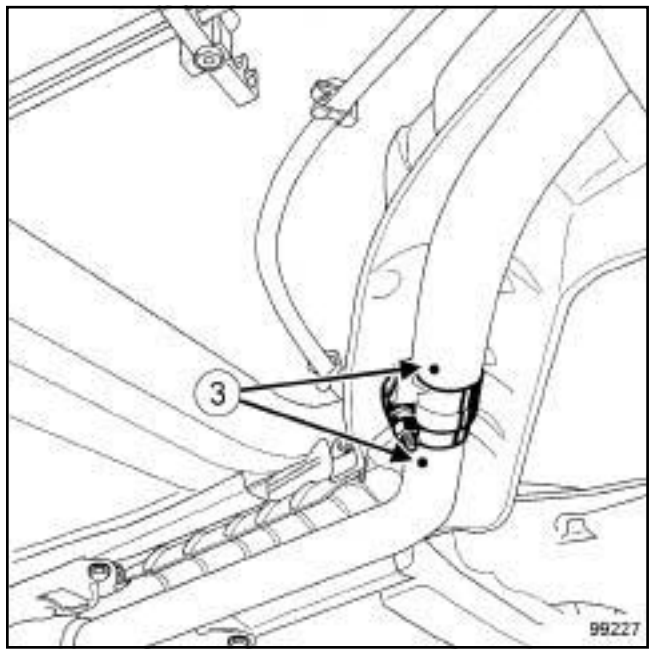
Tighten the exhaust trunking bolt(s) slightly (depending on the version).

Position the second part of the exhaust system under the vehicle, fitting it in the exhaust trunking.

Note:

If necessary, use a workshop jack to lift and hold the heavy and bulky components of the exhaust system.

Position the second exhaust pipe onto the lugs inside the exhaust trunking.



99227

Check that the two cut marks (**3**) are aligned (if applicable).

Position the trunking so that there is no risk of contact between its bolt or bolts and the heat shields.

Torque tighten

- the **exhaust trunking nut with 1 bolt (25 N.m)** (if fitted),
- the **exhaust trunking nuts with 2 bolts (18 N.m)** (if fitted).

Check the following and deal with if necessary:

- no underbody contact between the exhaust system and the heat shields,
- all of the heat shields are present and secure.

Note:

Any damaged heat shields must be replaced.

Start the engine.

Check that there are no leaks: deal with any leaks.

Note:

If there are leaks from the **EXHAUST TRUNKING WITH 1 BOLT**, apply **EXHAUST MASTIC** to the trunking (see part no. in Technical Note 5068, 04B, Consumables - Products).

If the application of exhaust mastic does not fix the leak:

- remove and replace the used exhaust trunking,
- check the condition of the exhaust pipes (condition of the pipe surface, deburring of the area cut, damage to the pipes).
- fit the new trunking in accordance with the instructions given before.

K9K, and 772

Tightening torques ▽	
catalytic pre-converter studs on the turbo-charger	**7 N.m**
turbocharger studs on the flexible pipe	**7 N.m**
catalytic pre-converter diesel injector cooler studs	**7 N.m**
catalytic pre-converter nuts on the turbo-charger	**26 N.m**
catalytic pre-converter upstream stay bolts on the engine	**44 N.m**
catalytic pre-converter downstream stay bolt and nut on the gearbox	**21 N.m**
catalytic pre-converter upstream stay bolts on the catalytic pre-con-verter	**26 N.m**
catalytic pre-converter downstream stay bolt on the catalytic pre-con-verter	**21 N.m**
diesel injector cooler nuts	**25 N.m**
flexible pipe nuts on the catalytic pre-converter	**21 N.m**

PARTS AND CONSUMABLES FOR THE REPAIR WORK

❏ Parts always to be replaced:

- the seal between the catalytic pre-converter and the turbocharger,
- the seal between the catalytic pre-converter and the flexible pipe.

❏ Consumables:

- abrasive pads,
- surface cleaner **77 01 404 178**,
- clean cloths.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Disconnect the connector from the turbocharger upstream exhaust gas temperature sensor.

❏ Detach the turbocharger upstream exhaust gas temperature sensor connector from the timing end lifting eye.

❏ Remove:

- the bolts from the lifting eye, timing end,
- the lifting eye on the timing end.

II - OPERATION FOR REMOVAL OF PART CONCERNED

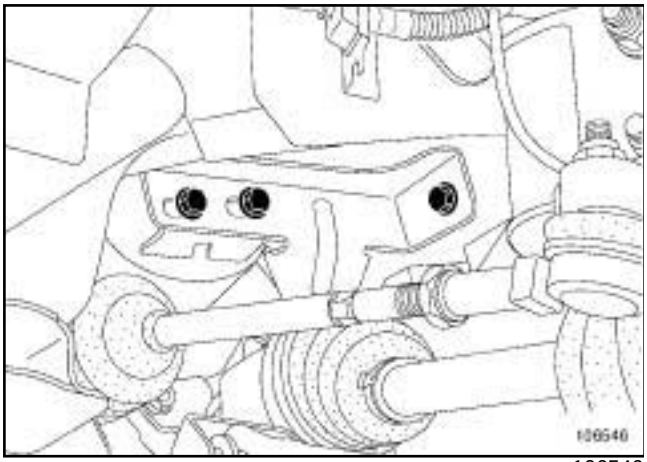
❏ Remove:

- the catalytic pre-converter nuts on the turbocharger,
- the engine undertray,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

❏ Remove:

- the connecting hose nuts on the catalytic pre-converter,

K9K, and 772


106546

❑ Remove the bolt from the downstream stay on the catalytic pre-converter.

❑ Undo the downstream stay bolts on the cylinder block.

❑ Remove the catalytic pre-converter downstream stay.

❑ Remove the catalytic pre-converter upstream stay upper bolts.

❑ Undo the catalytic pre-converter upstream stay lower bolt.

❑ Remove the catalytic pre-converter upstream stay.

❑ Remove the catalytic pre-converter diesel injector cooler nuts.

❑ Discard the catalytic pre-converter diesel injector cooler seal.

❑ Remove the catalytic pre-converter by moving it towards the timing end and moving aside the catalytic pre-converter diesel injector cooler.

❑ Remove the catalytic pre-converter from the engine compartment by moving the engine towards the front of the vehicle.

❑ Remove:

- the seal between the catalytic pre-converter and the turbocharger,
- the seal between the catalytic pre-converter and the flexible pipe.

❑ Discard:

- the seal between the catalytic pre-converter and the turbocharger,
- the seal between the catalytic pre-converter and the flexible pipe.

REFITTING

I - REMOVAL PREPARATION OPERATION

❑ Using **ABRASIVE PADS**, clean the pressure faces:

- of the turbocharger and the catalytic pre-converter,
- of the catalytic pre-converter and the exhaust pipe.

❑ Next, degrease these pressure faces using **SURFACE CLEANER AND CLEAN CLOTHS 77 01 404 178**.

❑ If replacing, torque tighten:

- the **catalytic pre-converter studs on the turbocharger (7 N.m)**,
- the **turbocharger studs on the flexible pipe (7 N.m)**,
- the **catalytic pre-converter diesel injector cooler studs (7 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ From underneath the vehicle, fit:

- the catalytic pre-converter fitted with a new seal between the catalytic pre-converter and the turbocharger,
- one of the catalytic pre-converter nuts on the turbocharger,
- the diesel injector cooler on the catalytic pre-converter,
- the diesel injector cooler nuts.

WARNING
Check that there is no contact between the catalytic pre-converter and the turbocharger oil return pipe during the entire catalytic pre-converter tightening operation.

❑ Torque tighten in order:

- the catalytic pre-converter upstream stay bolts on the engine,
- the catalytic pre-converter downstream stay bolt and nut on the gearbox,
- the catalytic pre-converter upstream stay bolts on the catalytic converter,
- the catalytic pre-converter downstream stay bolt on the catalytic converter,
- the catalytic pre-converter nuts on the turbocharger,

K9K, and 772

- the diesel injector cooler nuts.

❏ Torque tighten in order:

- the **catalytic pre-converter nuts on the turbocharger (26 N.m)**,
- the **catalytic pre-converter upstream stay bolts on the engine (44 N.m)**,
- the **catalytic pre-converter downstream stay bolt and nut on the gearbox (21 N.m)**,
- the **catalytic pre-converter upstream stay bolts on the catalytic pre-converter (26 N.m)**,
- the **catalytic pre-converter downstream stay bolt on the catalytic pre-converter (21 N.m)**,
- the **diesel injector cooler nuts (25 N.m)**.

❏ Refit a new seal between the catalytic pre-converter and the flexible pipe on the catalytic pre-converter.

❏ Position the connecting hose on the catalytic pre-converter.

❏ Refit the flexible pipe nuts on the catalytic pre-converter.

❏ Torque tighten the **flexible pipe nuts on the catalytic pre-converter (21 N.m)**.

III - FINAL OPERATION

❏ Refit the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

❏ Refit:

- the lifting eye on the timing end,
- the timing end lifting eye bolts.

❏ Clip the turbocharger upstream exhaust gas temperature sensor connector on the timing end lifting eye.

❏ Connect the turbocharger upstream exhaust gas temperature sensor connector.

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the engine undertray.

D4F, and 784

REMOVAL

REMOVAL PREPARATION OPERATION

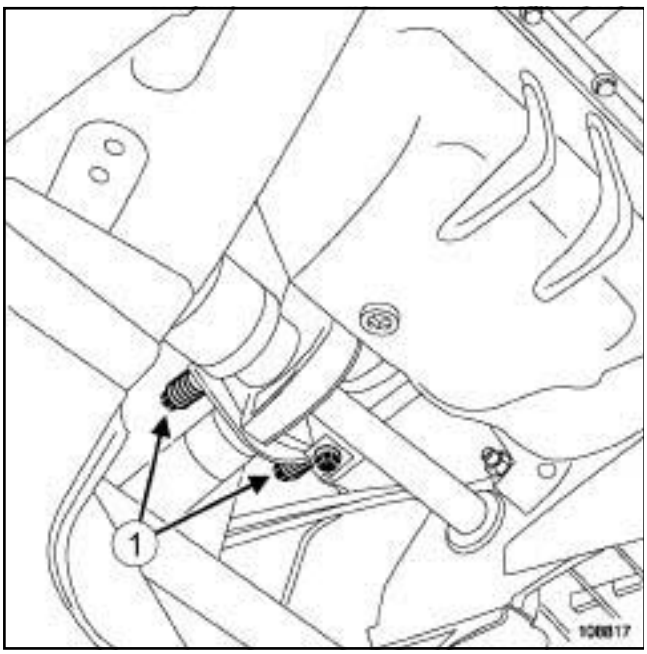
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

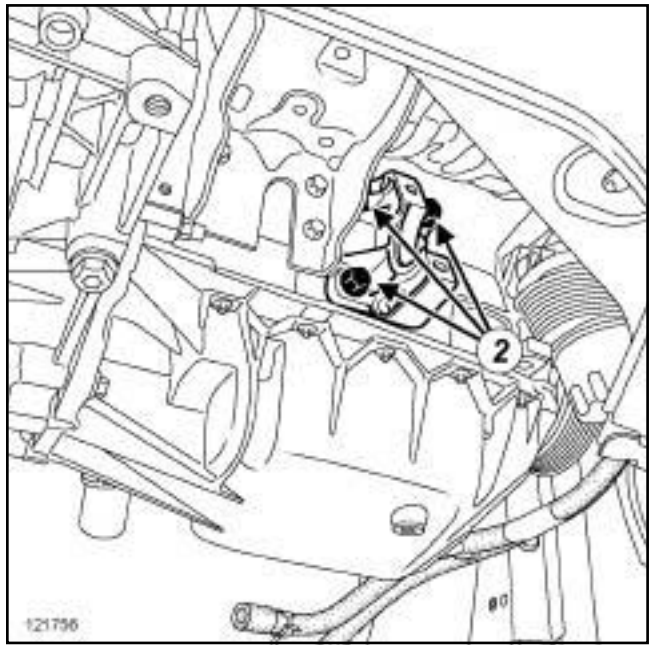
- the engine protector,
- the engine cover.

❑ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).



108817

❑ Remove the nuts (**1**) from the exhaust bracket at the outlet of the catalytic pre-converter.

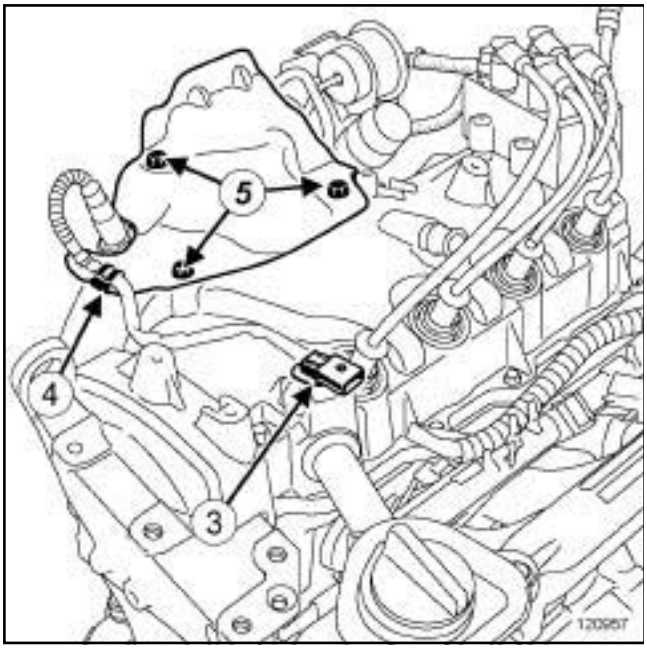


121756

❑ Remove:

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting),**
- the front right-hand wheel driveshaft bearing nuts (**2**) ,
- the front right-hand wheel driveshaft bearing.

D4F, and 784



120957

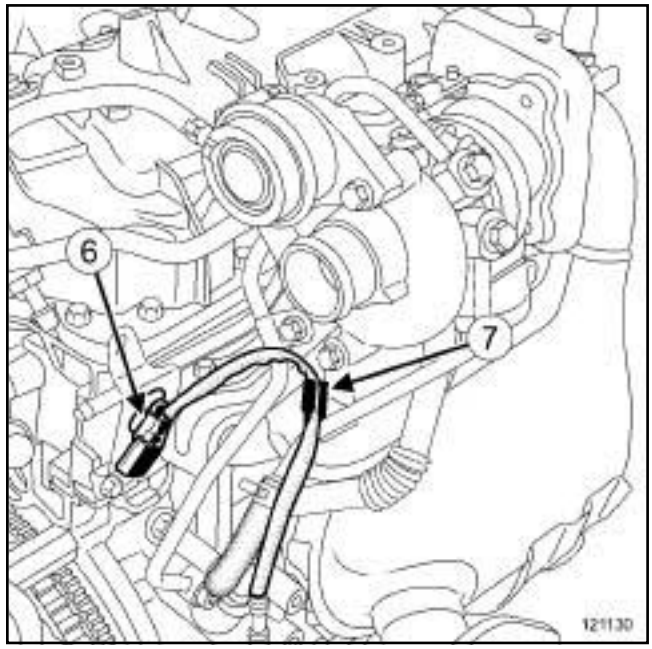
❏ Disconnect the catalytic pre-converter upstream oxygen sensor connector (**3**) .

❏ Unclip the catalytic pre-converter upstream oxygen sensor connector.

❏ Detach the catalytic pre-converter upstream oxygen sensor wiring harness at (**4**) .

❏ Remove:

- the bolts (**5**) from the turbocharger heat shield,
- the turbocharger heat shield.

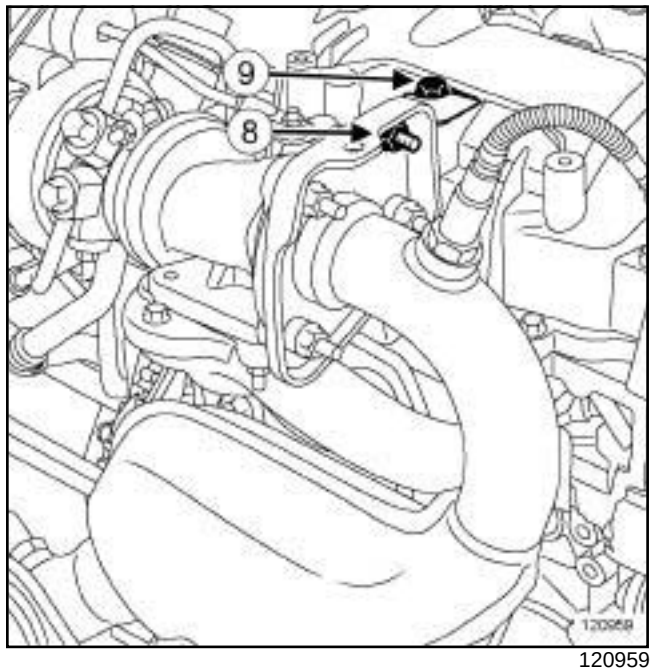


121130

❏ Disconnect the catalytic pre-converter downstream oxygen sensor connector (**6**) .

❏ Unclip the catalytic pre-converter downstream oxygen sensor connector.

❏ Detach the catalytic pre-converter downstream oxygen sensor wiring harness at (**7**) .

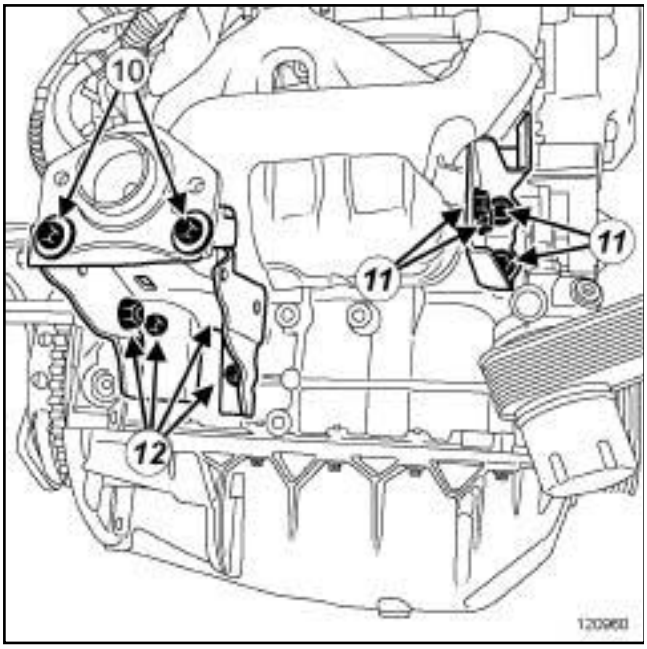


120959

❏ Remove:

- the nut (**8**) from the turbocharger strut,
- the bolt (**9**) from the turbocharger strut,
- the turbocharger strut.

D4F, and 784



120960

❏ Disconnect the oil pressure sensor connector.

❏ Undo the bolts (**10**) on the catalytic pre-converter primary strut.

❏ Remove:

- the catalytic pre-converter upstream strut bolts (**11**) ,
- the catalytic pre-converter upstream stay,
- the bolts (**12**) from the catalytic pre-converter primary strut,
- the primary strut on the catalytic pre-converter.

Catalytic converter: Removal - Refitting

K4J or K4M

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
oxygen sensor	**45 Nm**
manifold studs	**7 Nm**
nuts mounting the catalytic converter on the exhaust manifold	**21 Nm**
exhaust sleeve	**25 Nm**
exhaust manifold studs	**8 Nm**
exhaust sleeve	**25 Nm**

IMPORTANT

Catalytic converters contain ceramic fibres: these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

REMOVAL

I - REMOVAL PREPARATION OPERATION

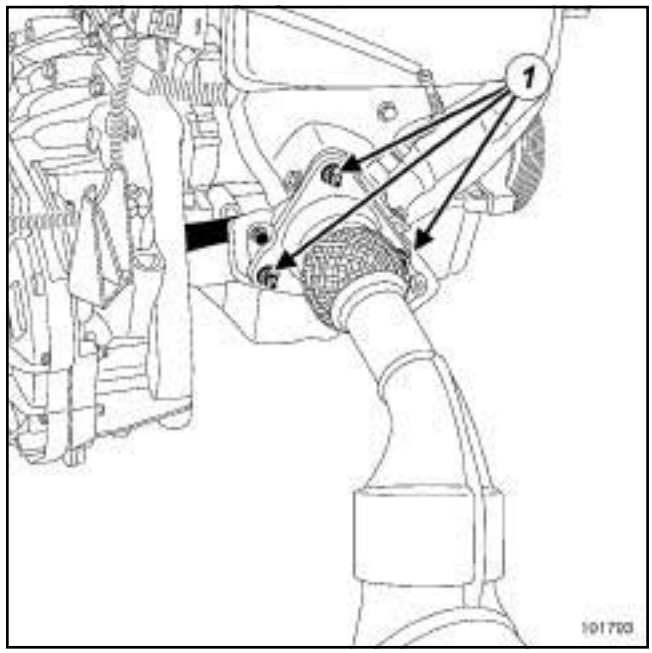
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Remove the connector from the downstream oxygen sensor.

❏ Unclip the wiring harness from the downstream oxygen sensor.

❏ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101793

❏ Remove:

- the catalytic converter mounting nuts (**1**) from the exhaust manifold
- the exhaust catalytic converter,
- the downstream oxygen sensor of the catalytic converter using tool **(Mot. 1495-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Refit the oxygen sensor.

❏ Torque tighten the **oxygen sensor (45 Nm)**.

❏ Replace the exhaust flange seal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Torque tighten the **manifold studs (7 Nm)**.

❏ Fit:

- the catalytic converter,
- the catalytic converter sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❏ Torque tighten the **nuts mounting the catalytic converter on the exhaust manifold (21 Nm)**.

K4J or K4M

III - FINAL OPERATION

❏ Torque tighten:

- the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment,
- the **exhaust manifold studs (8 Nm)**,
- the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment.

❏ Connect the oxygen sensor connector.

❏ Make sure that all the exhaust pipe heat shields are in place and properly secured.

❏ Refit the engine undertray.

❏ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- position the sleeve « bolt - tightening nut» assembly vertically with the nut facing downwards to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.

K9K

Tightening torques ▽	
turbocharger output studs	**7 N.m**
catalytic converter mounting nuts on the turbocharger	**26 N.m**
bolts mounting the upstream strut on the engine	**44 N.m**
bolts mounting the downstream strut on the gearbox	**21 N.m**
bolts mounting the upstream strut on the catalytic converter	**26 N.m**
bolt mounting the downstream strut on the catalytic converter	**21 N.m**
exhaust clamp studs on the catalytic converter output	**7 N.m**
exhaust bracket nuts	**21 N.m**
exhaust pipe rubber mounting bush mountings on the body	**62 N.m**

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

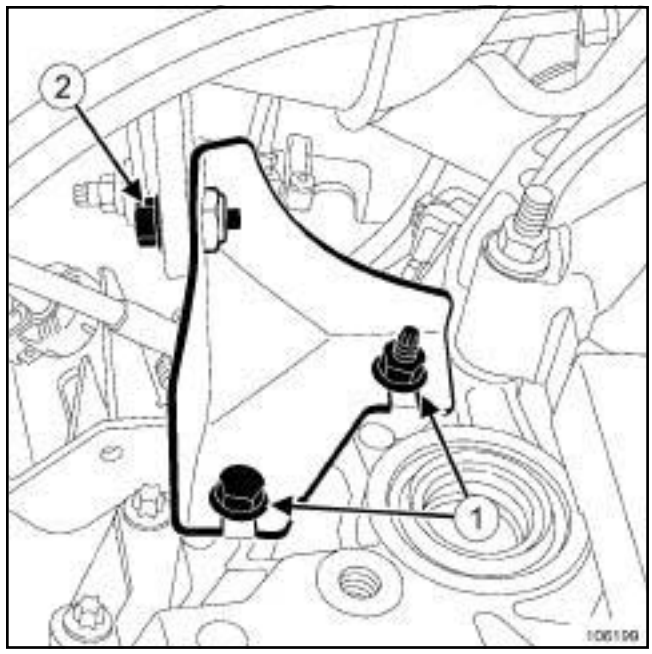
❏ Remove:

- the engine cover,
- the air inlet duct,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❏ Remove:

- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the wiring harness mountings between the catalytic converter and the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

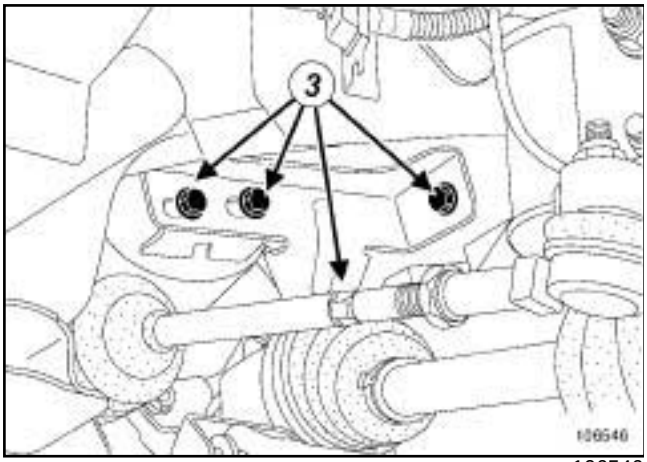
❏ Withdraw the exhaust pipe.



106199

❏ Remove:

- the downstream strut mountings (**1**) on the gearbox,
- the catalytic converter downstream strut mounting bolt (**2**) ,
- the downstream strut.

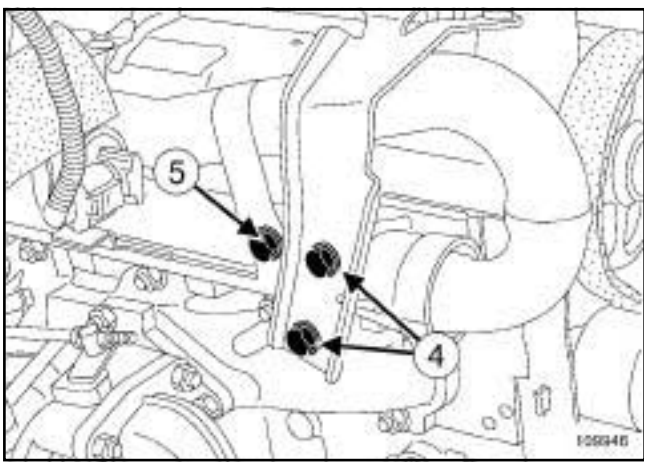


106546

❑ Remove:

- the upstream strut mountings (**3**) ,
- the upstream strut.

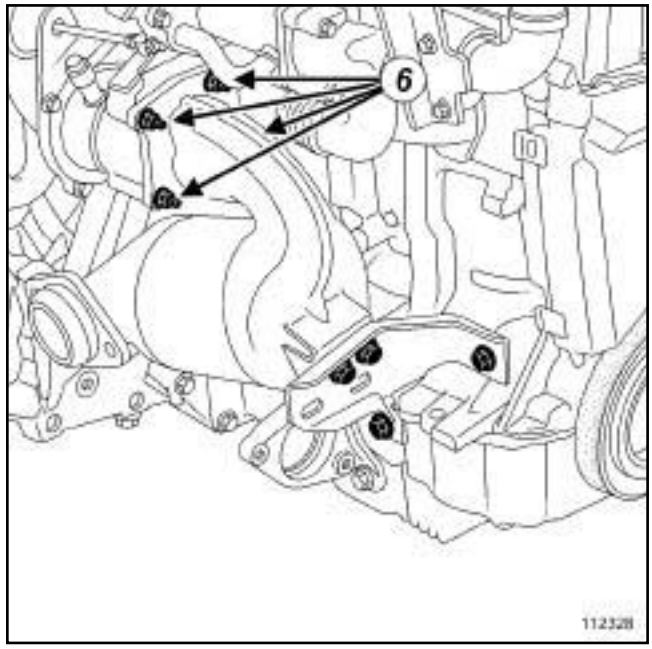
II - OPERATION FOR REMOVAL OF PART CONCERNED



109946

❑ Remove:

- the lifting eye mounting bolts (**4**) on the timing end,
- the lifting eye on the timing end,
- the mounting bolt (**5**) from the air inlet tube,
- the air inlet duct.



112328

❑ Remove:

- the bolts (**6**) mounting the catalytic converter to the turbocharger,
- the catalytic converter and its seal on the turbocharger,
- the sealing ring or the seal (depending on the version) then dispose of them in a waste bin.

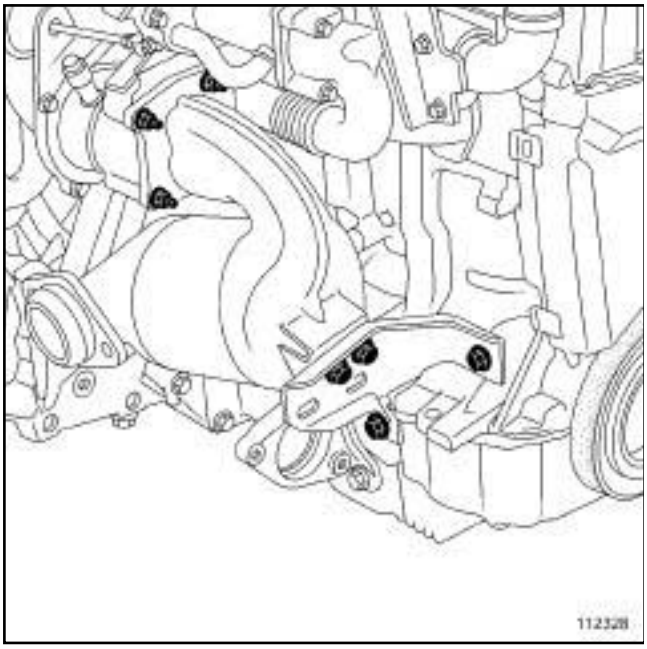
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clean the bearing faces of the turbocharger and catalytic converter using an abrasive pad (see) .

❑ Degrease the bearing faces using surface cleaner and clean cloths (see) .

K9K



112328

❑ In case of replacement, torque tighten the **turbocharger output studs (7 N.m)**.

❑ Fit the catalytic converter equipped with a new seal on the turbocharger.

❑ Pretighten in order:

- the upstream strut bolts on the engine,
- the downstream strut bolts on the gearbox,
- the upstream strut bolts on the catalytic converter,
- the downstream strut bolts on the catalytic converter,
- the catalytic converter/turbocharger mounting nuts.

❑ Tighten to torque and in order:

- the **catalytic converter mounting nuts on the turbocharger (26 N.m)**,
- the **bolts mounting the upstream strut on the engine (44 N.m)**,
- the **bolts mounting the downstream strut on the gearbox (21 N.m)**,
- the **bolts mounting the upstream strut on the catalytic converter (26 N.m)**,
- the **bolt mounting the downstream strut on the catalytic converter (21 N.m)**.

❑ Refit:

- the air inlet duct,
- the lifting eye,
- the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

WARNING

Make sure there is no contact between the catalytic converter and the turbocharger oil return pipe.

❑

WARNING

Always replace the sealing ring between the catalytic converter and the exhaust pipe with a new component.

❑ Refit a new sealing ring or a new seal (depending on the version).

❑ Torque tighten:

- in the event of replacement, the **exhaust clamp studs on the catalytic converter output (7 N.m)**,
- the **exhaust bracket nuts (21 N.m)**.

II - FINAL OPERATION

❑ Torque tighten the **exhaust pipe rubber mounting bush mountings on the body (62 N.m)**.

❑ Make sure that there is no contact with the underbody.

❑ Refit the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

WARNING

Check:

- the exhaust pipe is not touching the body,
- all the heat shields are present.

❑ Refit:

- the engine undertray,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,

K9K

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air inlet duct,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 740 or 764

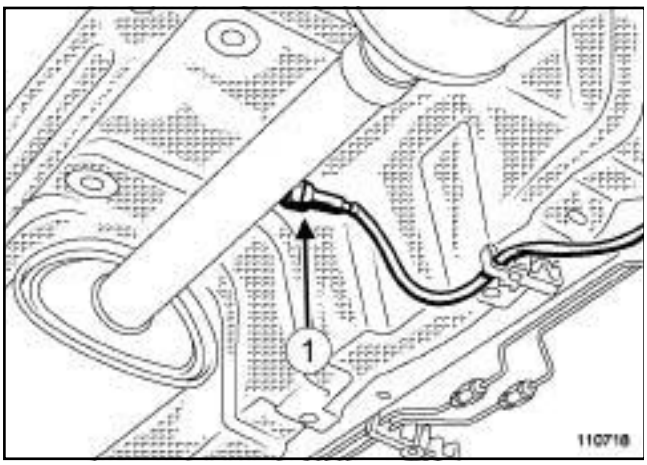
Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
manifold output bracket studs	**7 Nm**
exhaust bracket mounting bolts	**25 Nm**
oxygen sensor	**45 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).



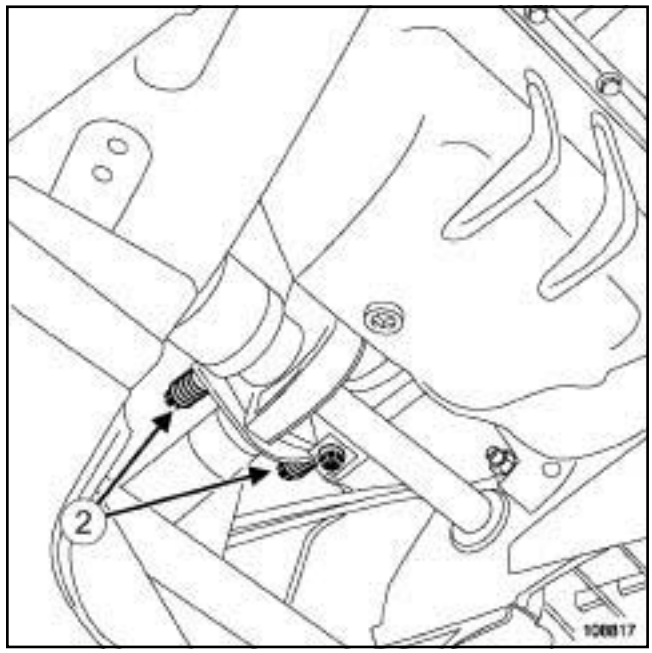
110718

❑ Remove:

- the engine undertray mounting bolts,
- the engine undertray,
- the downstream oxygen sensor (**1**) using the **(Mot. 1495-01)**.

❑ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108817

❑ Remove:

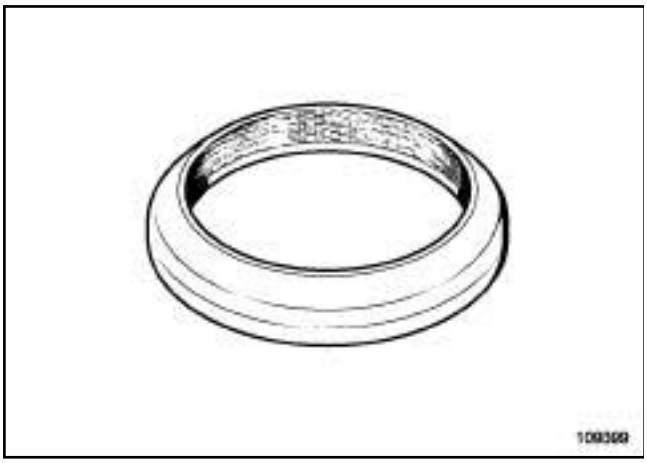
- the exhaust clamp mounting bolts (**2**) ,
- the catalytic converter.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

D4F, and 740 or 764

REFITTING

I - REFITTING PREPARATIONS OPERATION



109399

❑

WARNING
It is essential to replace the sealing ring between the exhaust manifold and the catalytic converter.

❑ Position the after sales sleeve on the catalytic converter (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ When replacing, torque tighten the **manifold output bracket studs (7 Nm)**.

❑ Refit the catalytic converter.

❑ Torque tighten the **exhaust bracket mounting bolts (25 Nm)**.

❑ Torque tighten the after-sales sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

III - FINAL OPERATION.

❑ Torque tighten the **oxygen sensor (45 Nm)** using the **(Mot. 1495-01)**.

❑ Refit:

- the engine undertray,
- the engine undertray mounting bolts,

❑ Check:

- that there is no contact with the underbody,
- all the exhaust pipe heat shields are in place and properly attached.

WARNING
Any damaged heat shields must be replaced.

M4R

Tightening torques ▽	
exhaust flange mounting bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove the engine cover.

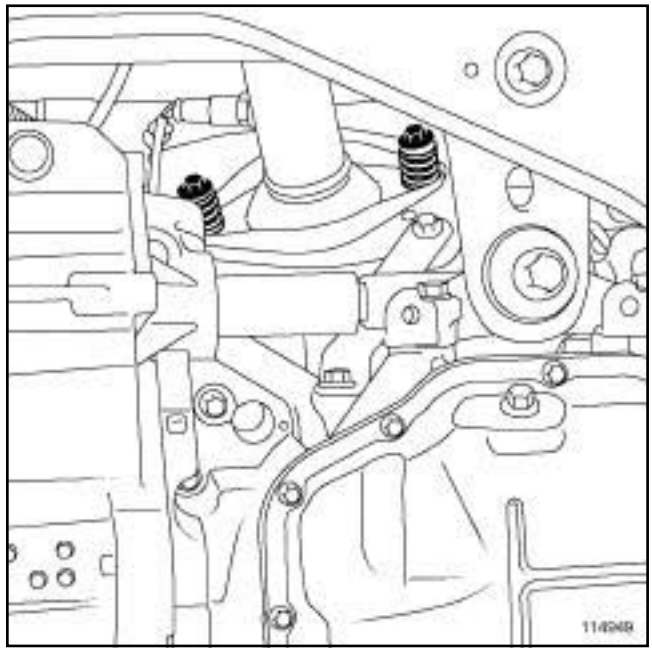
❏ Disconnect the battery (see) .

❏ Remove:

- the engine undertray,
- the upstream and downstream oxygen sensors (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

❏ Cut the exhaust pipe in the area to be cut number 1 (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) and (see) .

II - REMOVAL OF PART CONCERNED



114949

❏ Remove:

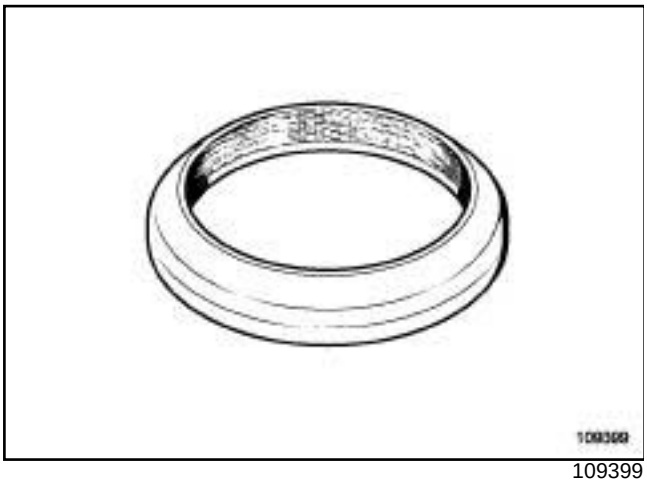
- the exhaust clamp mounting bolts,
- the catalytic converter,
- the exhaust flange sealing ring.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

M4R

REFITTING

I - REFITTING PREPARATION OPERATION



109399

❑ Always replace the exhaust flange sealing ring.

II - REFITTING THE PART CONCERNED

❑ Position the after sales sleeve on the catalytic converter (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Torque tighten the **exhaust flange mounting bolts (21 Nm)**.

III - FINAL OPERATION

❑ Refit:

- the upstream and downstream oxygen sensors (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) ,
- the engine undertray.

❑ Connect the battery (see) .

❑ Refit the engine cover.

F4R

The emission control assembly is comprised of two catalytic converters on the vehicle:

- one integrated into the exhaust manifold,

- one integrated into the exhaust pipe.

The method below deals with the operating procedure on the catalytic converter integrated into the exhaust pipe.

Note:

The catalytic converter integrated into the exhaust manifold cannot be separated from the latter. When removing - refitting the catalytic converter, the catalytic converter - exhaust manifold assembly must be removed (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) . When replacing the catalytic converter, the catalytic converter - exhaust manifold assembly must be replaced.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

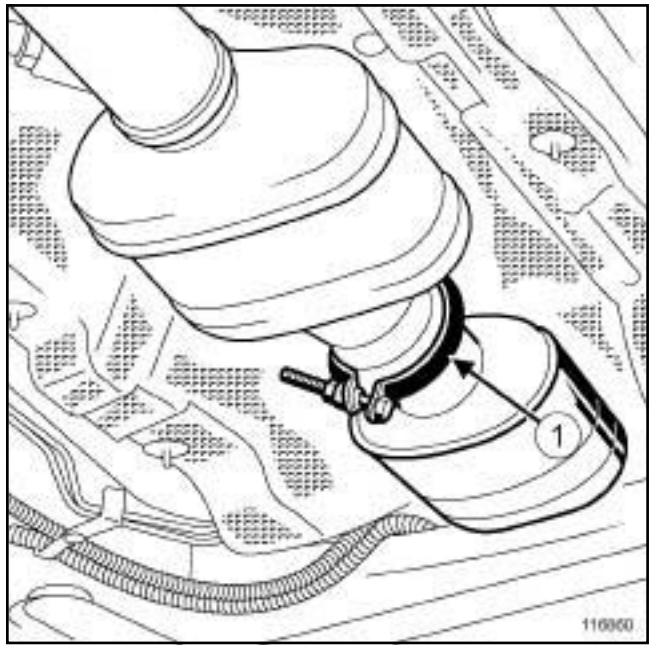
1 - Removing the catalytic converter integrated into the exhaust manifold

❑ Remove the exhaust manifold (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) .

2 - Removing the catalytic converter integrated into the exhaust pipe

❑ Remove the downstream oxygen sensor (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

❑ Cut the exhaust system at the cutting area **ZC1** for this purpose (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .



116860

❑ Remove:

- the exhaust pipe clamp (**1**) ,

- the catalytic converter integrated into the exhaust pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Refitting the catalytic converter integrated into the exhaust manifold

❑ Refit the exhaust manifold (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) .

2 - Refitting the catalytic converter integrated into the exhaust pipe

❑ Fit the catalytic converter integrated into the exhaust pipe.

❑ Tighten the new exhaust pipe clamp by several turns.

❑ Fit the new After-Sales sleeve following the instructions supplied (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Remove the downstream oxygen sensor (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

F4R

II - FINAL OPERATION

❑ Make sure there is no contact with the underbody.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Start the engine and check that there are no leaks: deal with any problems as necessary.

Catalytic converter: Removal - Refitting

D4F, and 784 or 786

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
upstream and downstream oxygen sensors	**45 Nm**
primary strut bolts on the cylinder block	**25 Nm**
primary strut bolt on the gearbox	**44 Nm**
catalytic converter nuts on the turbocharger (initial torque)	**20 Nm**
catalytic converter nuts on the turbocharger	**30 Nm**
primary strut bolts on the catalytic converter (initial torque)	**20 Nm**
primary strut bolts on the catalytic converter	**30 Nm**
catalytic converter upstream strut bolts on the catalytic converter	**21 Nm**
catalytic converter upstream strut bolts on the cylinder block	**21 Nm**
turbocharger strut nut	**21 Nm**
turbocharger strut bolt	**21 Nm**
turbocharger heat shield bolts	**8 Nm**
front right-hand wheel driveshaft relay bearing nuts	**44 Nm**
exhaust bracket bolts at the catalytic converter outlet	**9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

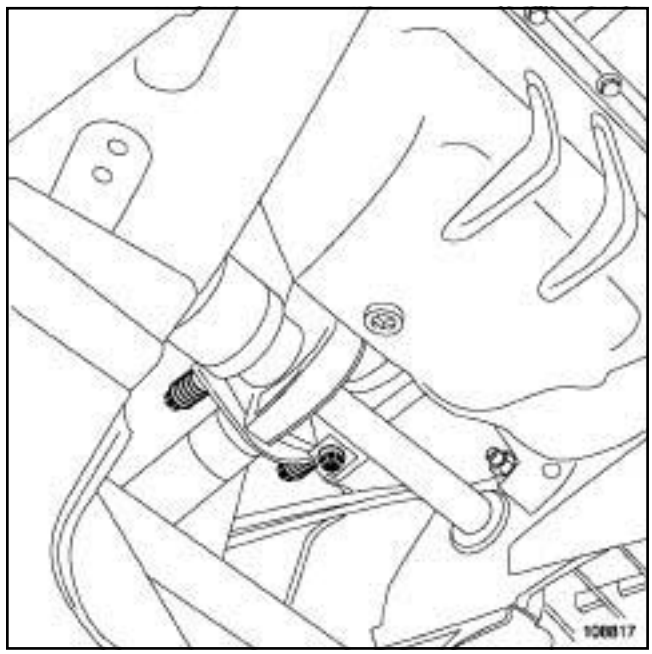
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the engine undertray.

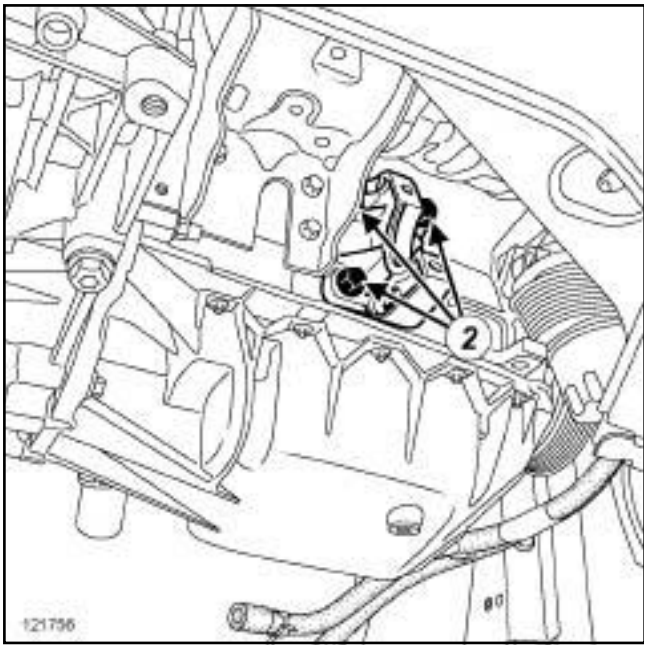
❑ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).



108817

❑ Remove the nuts from the exhaust bracket at the catalytic converter outlet.

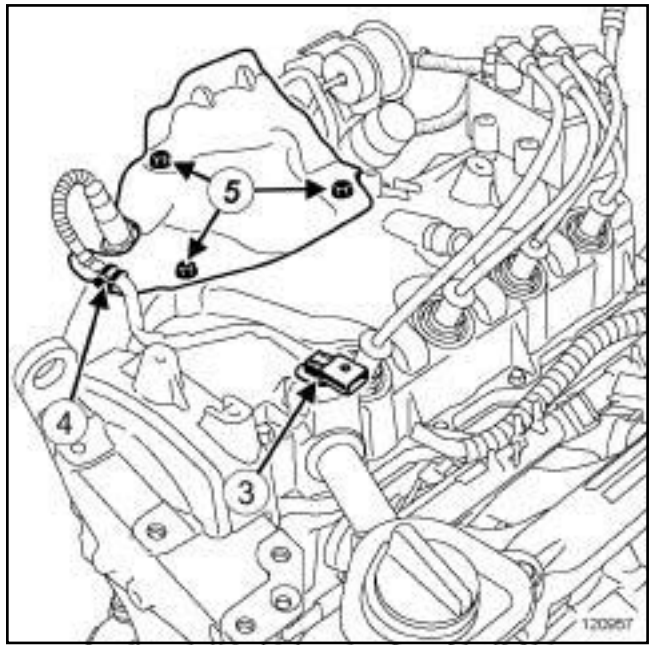
D4F, and 784 or 786



121756

❏ Remove:

- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front right-hand wheel driveshaft relay bearing nuts (**2**) ,
- the front right-hand wheel driveshaft relay bearing.



120957

❏ Disconnect the upstream oxygen sensor connector (**3**) .

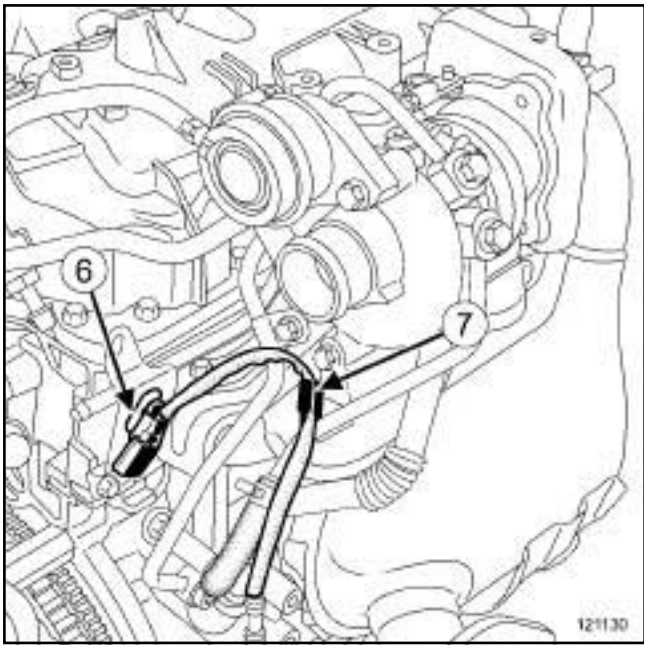
❏ Unclip the upstream oxygen sensor connector.

❏ Detach the upstream oxygen sensor wiring harness at (**4**) .

❏ Remove:

- the bolts (**5**) from the turbocharger heat shield,
- the turbocharger heat shield.

D4F, and 784 or 786

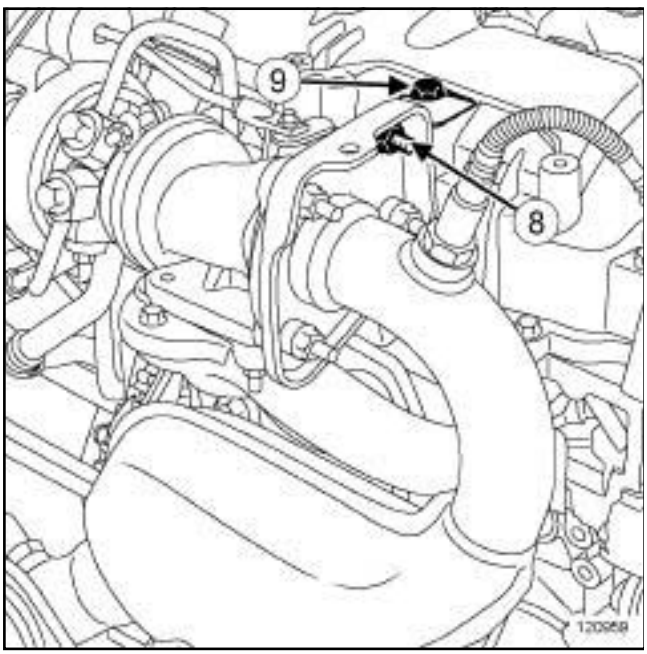


121130

❏ Disconnect the downstream oxygen sensor connector (**6**) .

❏ Unclip the downstream oxygen sensor connector.

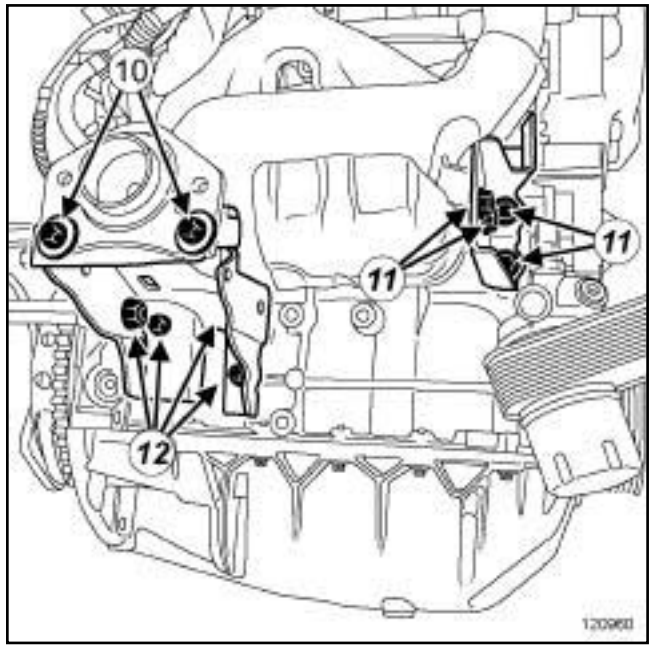
❏ Detach the downstream oxygen sensor wiring harness at (**7**) .



120959

❏ Remove:

- the nut (**8**) from the turbocharger strut,
- the bolt (**9**) from the turbocharger strut,
- the turbocharger strut.



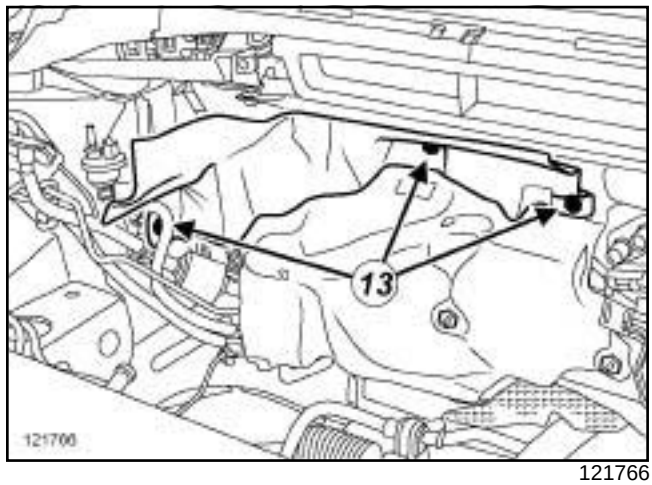
120960

❏ Disconnect the oil pressure sensor connector.

❏ Undo the bolts (**10**) on the catalytic converter primary strut.

❏ Remove:

- the catalytic converter upstream strut bolts (**11**) ,
- the catalytic converter upstream stay,
- the bolts (**12**) on the cylinder block primary strut,
- the primary strut from the cylinder block.



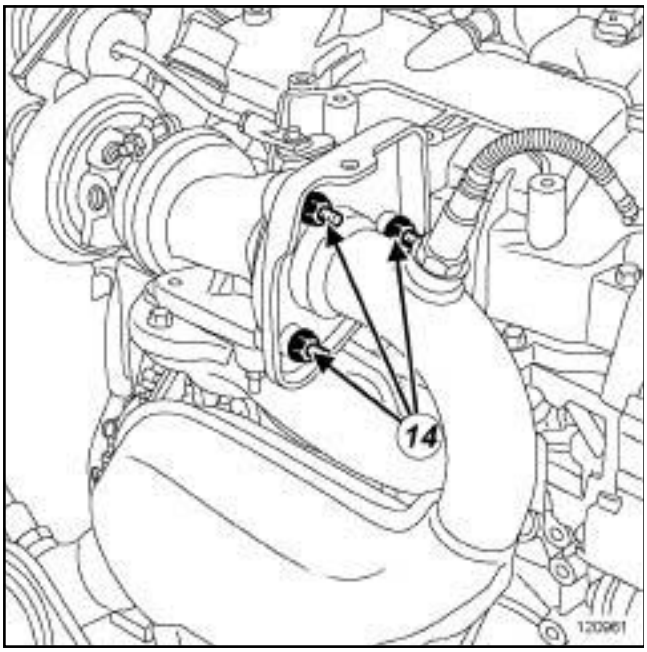
121766

❏ remove:

- the clips (**13**) from the upper heat shield,
- the upper heat shield.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



120961

❑ Remove:

- the nuts (**14**) mounting the catalytic converter on the turbocharger and the spacers,
- the catalytic converter,
- the catalytic converter seal on the turbocharger.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

❑ When replacing the catalytic converter, remove the upstream and downstream oxygen sensors on the workbench using the **(Mot. 1495-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ When replacing the catalytic converter, refit the upstream and downstream oxygen sensors on the workbench.

❑ Torque tighten the **upstream and downstream oxygen sensors (45 Nm)** using the **(Mot. 1495-01)**.

❑ Always replace:

- the catalytic converter seal,
- the catalytic converter nuts on the turbocharger,

❑ Use abrasive pads to clean the bearing faces of:

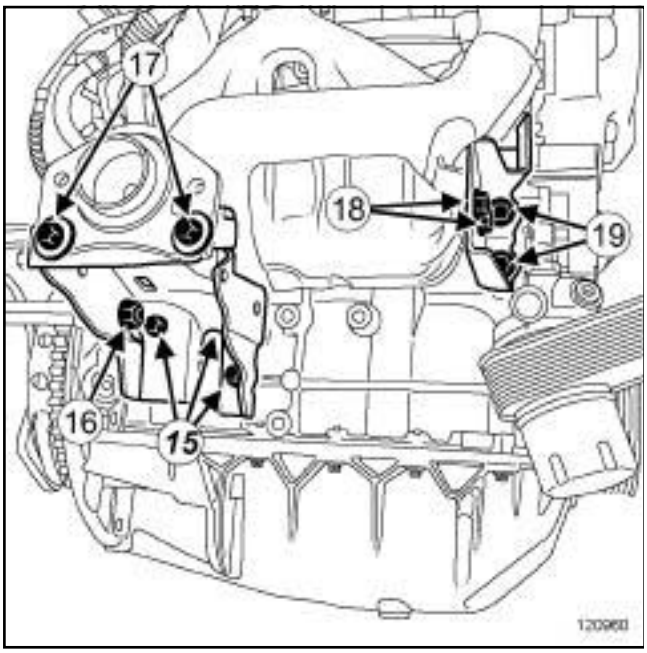
- the turbocharger,
- the catalytic converter.

❑ Degrease the pressure faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) and a clean cloth:

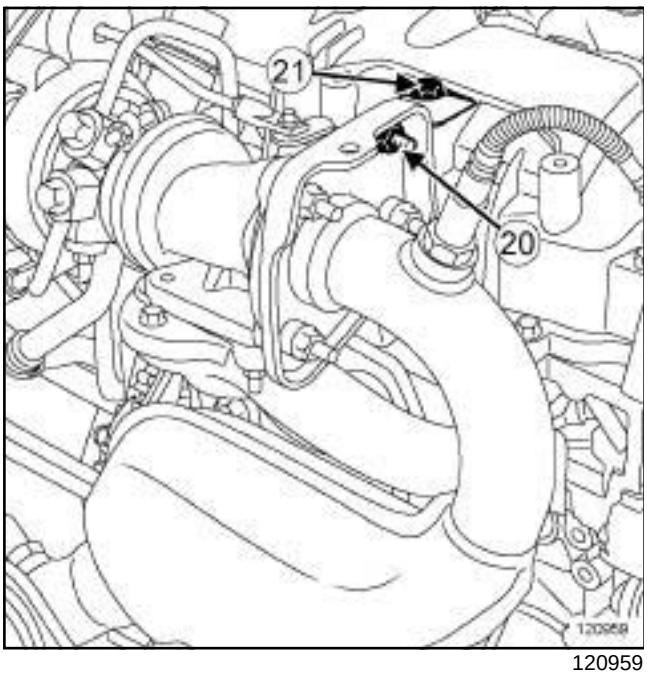
- the turbocharger,
- the catalytic converter.

D4F, and 784 or 786

II - REFITTING OPERATION FOR PART CONCERNED



120960



120959

❏ Refit:

- the catalytic converter seal on the turbocharger,
- the catalytic converter,
- the new nuts with the catalytic converter spacers on the turbocharger,
- the catalytic converter primary strut,
- the bolts (**15**) on the cylinder block primary strut,
- the primary strut bolt (**16**) on the gearbox,
- the catalytic converter upstream stay,
- the catalytic converter upstream strut bolts (**18**) and (**19**) ,
- the turbocharger strut.
- the bolt (**21**) from the turbocharger strut,
- the turbocharger strut nut (**20**) .

❏ Torque tighten:

- the **primary strut bolts on the cylinder block (25 Nm)** by locking the strut on the gearbox lug at (**15**) ,
- the **primary strut bolt on the gearbox (44 Nm)** at (**16**) ,
- the **catalytic converter nuts on the turbocharger (initial torque) (20 Nm)**,
- the **catalytic converter nuts on the turbocharger (30 Nm)**,
- the **primary strut bolts on the catalytic converter (initial torque) (20 Nm)** at (**17**) ,
- the **primary strut bolts on the catalytic converter (30 Nm)**,
- the **catalytic converter upstream strut bolts on the catalytic converter (21 Nm)** at (**18**) ,
- the **catalytic converter upstream strut bolts on the cylinder block (21 Nm)** at (**19**) ,
- the **turbocharger strut nut (21 Nm)** at (**20**) ,
- the **turbocharger strut bolt (21 Nm)** at (**21**) .

III - FINAL OPERATION.

❏ Refit:

- the upper heat shield,
- the clips on the upper heat shield.

❏ Connect the oil pressure sensor connector.

❏ Attach the downstream oxygen sensor wiring harness.

❏ Fit the downstream oxygen sensor connector.

❏ Connect the downstream oxygen sensor connector.

❏ Refit:

- the turbocharger heat shield,
- the turbocharger heat shield bolts.

❏ Torque tighten the **turbocharger heat shield bolts (8 Nm)**.

❏ Attach the upstream oxygen sensor wiring harness.

❏ Fit the upstream oxygen sensor connector.

❏ Connect the upstream oxygen sensor connector.

D4F, and 784 or 786

❑ Refit:

- the front right-hand wheel driveshaft relay bearing,
- the front right-hand wheel driveshaft relay bearing nuts.

❑ Torque tighten the **front right-hand wheel driveshaft relay bearing nuts (44 Nm)**.

❑ Refit:

- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- exhaust bracket nuts.

❑ Torque tighten the **exhaust bracket bolts at the catalytic converter outlet (9 Nm)**.

❑ Fill the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).

❑ Refit:

- the engine cover,
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
new expansion chamber mounting bolt on the rubber mounting bush	**8 Nm**
exhaust sleeves	**25 Nm**

REMOVAL

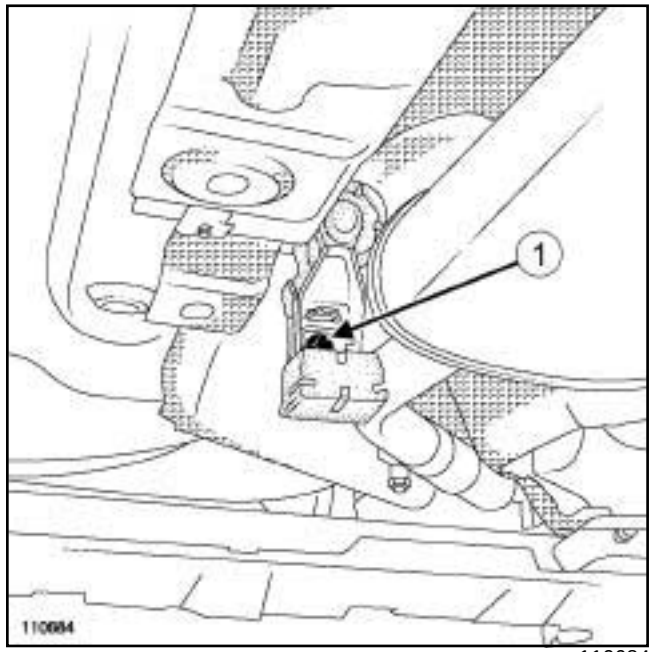
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Remove the engine undertray.

❑ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



110684

❑ Remove:

- the bolt (**1**) mounting the expansion chamber to the exhaust rubber mounting bush,
- the expansion chamber.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the expansion chamber,
- the sleeves,
- the rubber mounting bush damper.

❑ Torque tighten:

- the **new expansion chamber mounting bolt on the rubber mounting bush (8 Nm)**,
- the **exhaust sleeves (25 Nm)** while lifting the exhaust pipe to ensure correct alignment (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - FINAL OPERATION.

❑ Check:

- that all the exhaust pipe heat shields are in place and properly attached,
- that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

Tightening torques ▽	
new mounting bolts on the connector pipe on the rubber mounting bush	**8 Nm**
exhaust sleeves	**25 Nm**

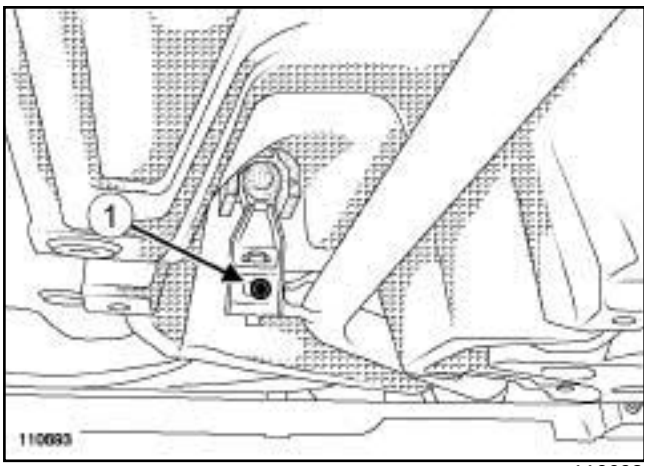
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (see) (MR 392, 19A, Exhaust).



110693

❑ Remove:

- the bolt (**1**) mounting the connector pipe to the rubber mounting bush support,
- the connector pipe.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the connector pipe,
- the sleeves.

❑ Torque tighten:

- the **new mounting bolts on the connector pipe on the rubber mounting bush (8 Nm)**,
- the **exhaust sleeves (25 Nm)** while lifting the exhaust pipe to ensure correct alignment (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (MR 392, 19A, Exhaust).

II - FINAL OPERATION.

❑ Make sure that all the exhaust pipe heat shields are in place and properly secured.

❑ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

D4F or K4J or K4M or K9K or M4R

Tightening torques ▽	
rubber mounting bush support bolts on the silencer	**8 Nm**
exhaust sleeve	**25 Nm**

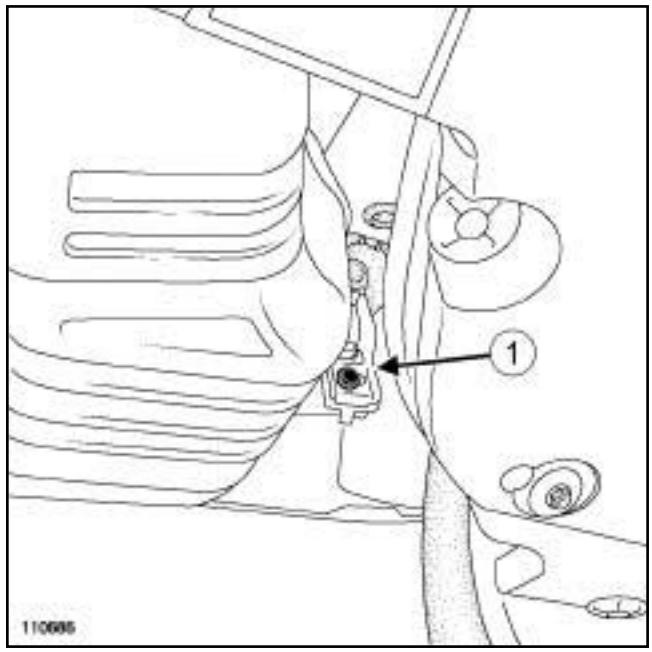
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (see) (MR 392, 19A, Exhaust).

II - OPERATION FOR REMOVAL OF PART CONCERNED



110686

❑ Remove:

- the bolt (**1**) mounting the silencer on the rubber mounting bush support,
- the silencer.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the silencer,
- the sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (MR 392, 19A, Exhaust).

❑ Torque tighten:

- the **rubber mounting bush support bolts on the silencer (8 Nm)**,
- the **exhaust sleeve (25 Nm)** while lifting the exhaust pipe to ensure correct alignment.

D4F or K4J or K4M or K9K or M4R

II - FINAL OPERATION.

- ❑ Make sure that all the exhaust pipe heat shields are in place and properly secured.
- ❑ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- position the new component in such a way that the marks on the area to be cut are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

F4R

Equipment required
component jack

Tightening torques ▽	
bolts of the rubber mounting bush supports on the body	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the diffuser on the rear bumper (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

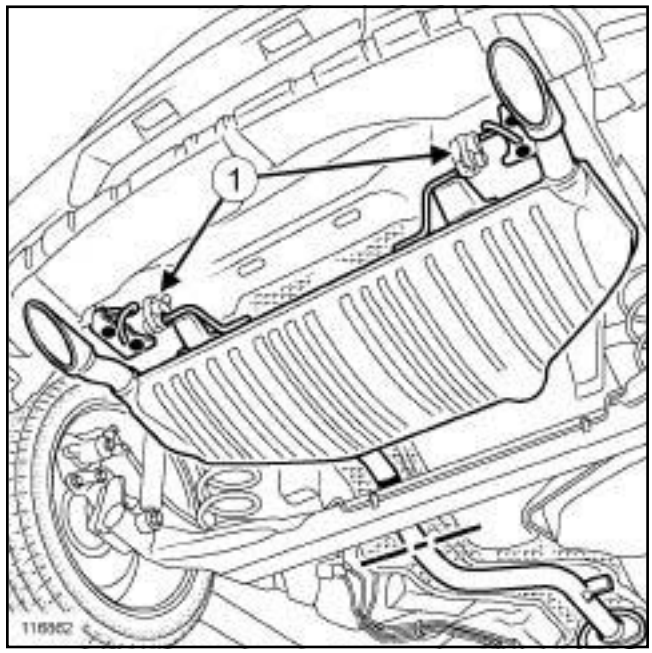
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) in the designated area to be cut (see **19B**, **Exhaust**, **Exhaust: List and location of components**, page **19B-1**) .

❑ Fit a **component jack** under the silencer.

WARNING
If removing the support from the rubber mounting bush on the body, mark its position on the body beforehand, using a pen.

F4R, and 830

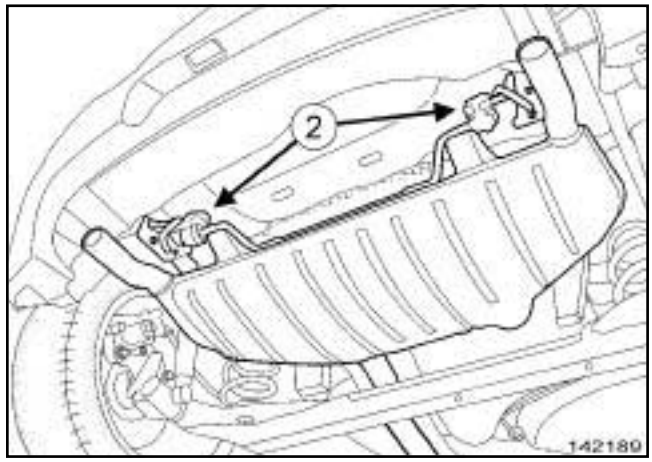


116862

❑ Remove:

- the rubber mounting bushes (**1**) using the tool **Mot. 1857**,
- the silencer.

F4R, and 832



142189

❑ Remove:

- the rubber mounting bushes (**2**) using the tool **Mot. 1857**,

- the silencer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the silencer and hold it with a **component jack**.

❏ If removing the supports from the rubber mounting bushes, fit the mounting bolts of the rubber mounting bush supports on the body without tightening them.

❏ Fit the retaining rubber mounting bushes of the silencer.

> Note:
>
> Lubricate inside the holes of the rubber mounting bush using brake cleaner (see) to fit it more easily on the support on the body and on the silencer.

❏ Fit the exhaust trunking (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❏ Adjust the silencer in relation to the rear bumper in order to align the splines horizontally.

❏ Torque tighten the **bolts of the rubber mounting bush supports on the body (21 N.m)** if they were removed.

II - FINAL OPERATION

❏ Check that the exhaust pipe heat shields are in place and properly attached.

❏ Check that there are no leaks.

> **WARNING**
>
> Check that the exhaust pipe is not touching the body.
>
> Check that all the heat shields are present.

❏ Refit the diffuser on the rear bumper (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

EQUIPMENT LEVEL EAG

Tightening torques ▽	
rubber mounting bush support bolts on the silencer	**8 N.m**
exhaust sleeve	**25 N.m**

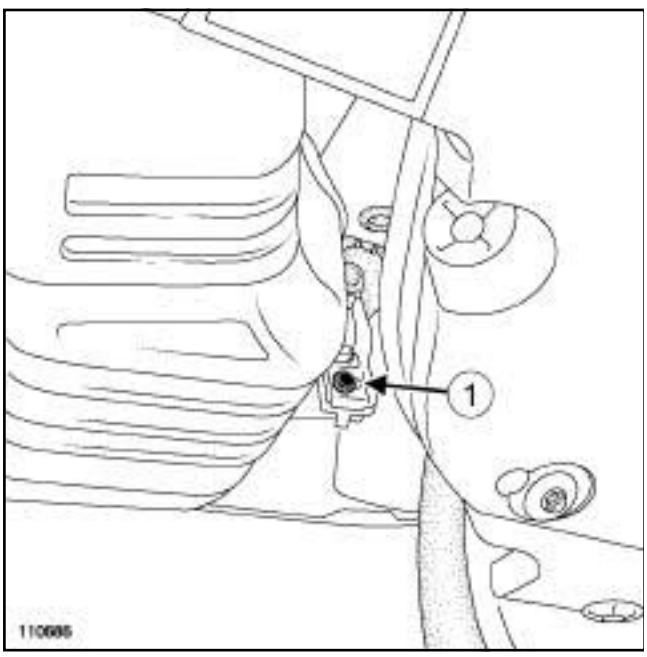
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

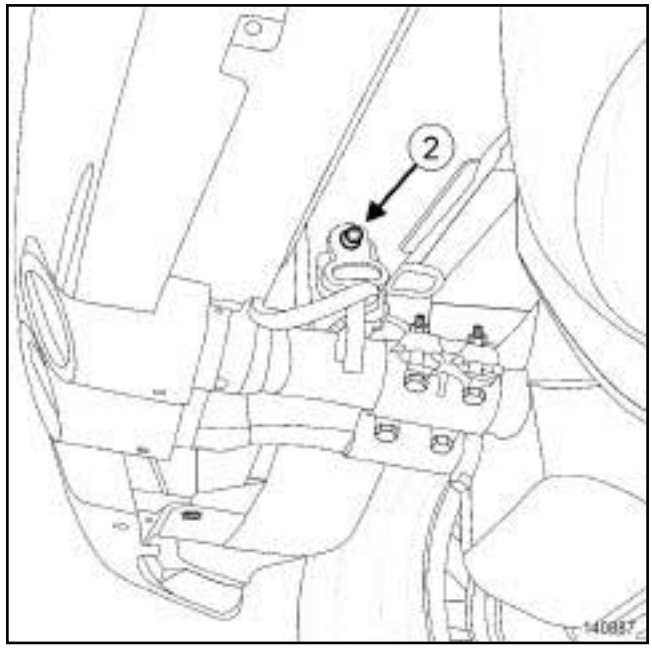
❏ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) in the designated area to be cut (see) (19A, Exhaust).

II - OPERATION FOR REMOVAL OF PART CONCERNED



110686

❏ Remove the silencer bolts (**1**) on the rubber mounting bush support.



140887

❏ Unclip the silencer from the rubber mounting bush at (**2**) .

❏ Remove the silencer.

> Note:
>
> If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the silencer.

❏ Clip the silencer onto the rubber mounting bush.

❏ Fit a new After-Sales sleeve between the expansion chamber and the silencer (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

> **WARNING**
>
> Position the « nut and bolt securing the sleeve » assembly so that the assembly cannot come into contact with the underbody.

❏ Tighten to torque:

- the **rubber mounting bush support bolts on the silencer (8 N.m)**,

EQUIPMENT LEVEL EAG

- the **exhaust sleeve (25 N.m)** whilst supporting the exhaust pipe.

II - FINAL OPERATION

❑ Check:

- that all the exhaust pipe heat shields are in place and properly attached,
- that there is no contact with the underbody,
- that there are no leaks.

K9K, and 772

Special tooling required	
Mot. 1199-01	Exhaust pipe cutter (diameter 35/50 mm and diameter 50/65mm). Complete kit in a case.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

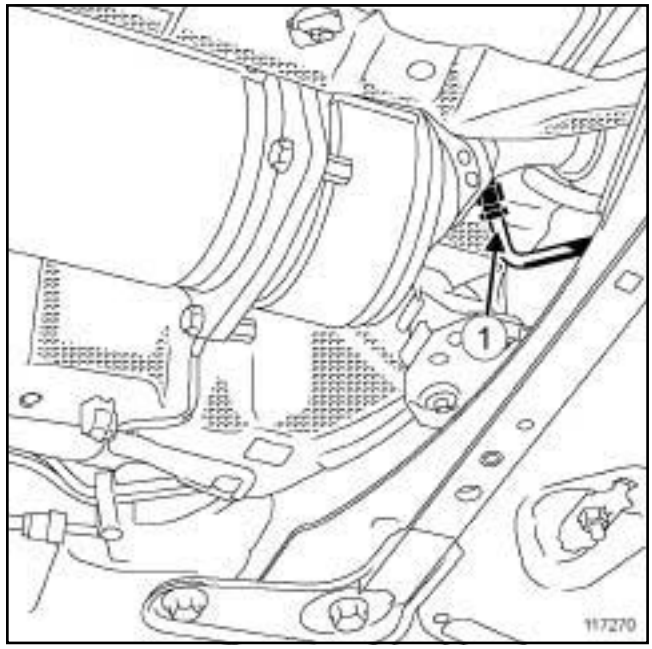
❏ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Disconnect the blue connector from the upstream temperature sensor on the steering rack.

❏ Remove:

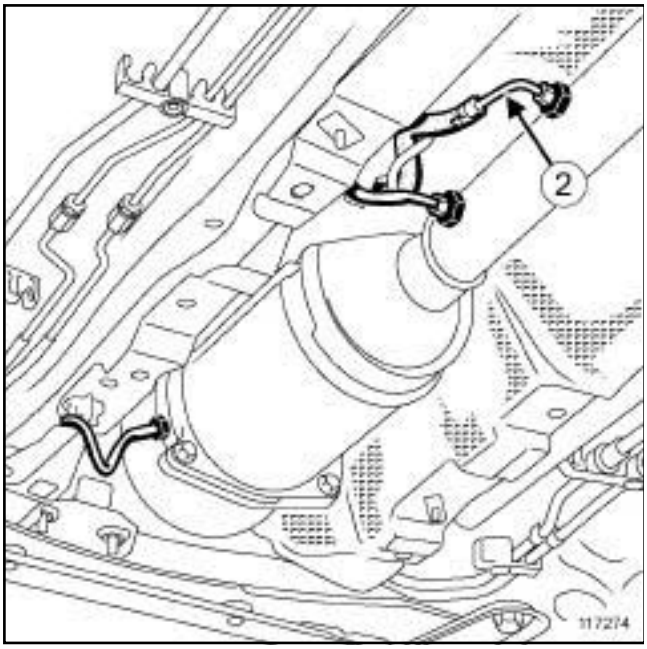
- the downstream temperature sensor from its adapter on the exhaust pipe.
- the temperature sensor between the catalytic converter and the particle filter,



117270

❏ Remove the upstream pressure measurement connection (**1**) from its adapter bolted to the exhaust pipe.

K9K, and 772



117274

❑ Remove the downstream pressure measurement connection (**2**) from its adapter bolted to the exhaust pipe.

WARNING
When removing the pipe, the adapter must be held using a lock wrench.

WARNING
The pressure measurement circuit must never be opened except at the pressure measurement adapters.

❑ Remove the connecting hose nuts on the catalytic pre-converter.

❑ Remove the particle filter rubber mounting bush bolts on the sub-frame.

❑ Cut the exhaust pipe at **Area to be cut 1** using the **(Mot. 1199-01)** (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Remove the particle filter.

❑ If removing the particle filter, remove:

- the upstream temperature sensor (see **19B**, **Exhaust**, **Particle filter temperature sensors: Removal - Refitting**, page **19B-62**) ,
- the connecting hose (see **Connecting hose: Removal - Refitting**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Deburr the cut marks on the exhaust pipe and on the particle filter if it is to be re-used.

WARNING
When fitting the particle filter, be sure to pass the downstream pressure measurement connection behind the heat shield.

WARNING
Always replace any adapter that has been removed from the exhaust pipe.

Note:

It is essential to thoroughly clean the pressure faces at:

- the catalytic pre-converter - connecting hose connecting brackets,
- the particle filter - connecting hose connecting brackets.

❑ If replacing the particle filter, refit:

- the upstream temperature sensor (see **19B**, **Exhaust**, **Particle filter temperature sensors: Removal - Refitting**, page **19B-62**) ,
- the connecting hose equipped with a new seal (see **Connecting hose: Removal - Refitting**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the new seal between the catalytic pre-converter and the connecting hose.

❑ Fit:

- the particle filter,
- the sleeve.

❑ Refit:

- the rubber mounting bush bolts on the sub-frame,
- the connecting hose nuts on the catalytic pre-converter.

❑ Tighten the sleeve bolt.

❑ Coat the threadings of the upstream and downstream pressure measurement connections with **ANTI-SEIZE COPPER GREASE** or **COPPER-ALUMINIUM LUBRICANT**.

K9K, and 772

❑ Refit:

- the downstream temperature sensor,
- the temperature sensor between the catalytic converter and the particle filter,
- the downstream pressure measurement connection on its adapter bolted to the exhaust pipe,
- the upstream pressure measurement connection on its adapter bolted to the exhaust pipe.

❑ Connect the upstream temperature sensor connector.

III - FINAL OPERATION

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Before starting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

❑ Refit the engine undertray.

❑ If replacing the particle filter, reinitialise the particle filter parameters (see **Fault finding - Replacement of components**) (MR 394, 13B, Diesel injection).

Particle filter pressure sensor: Removal - Refitting

K9K, and 772

Equipment required
Diagnostic tool

Tightening torques ▽	
adapter	**44 N.m**
downstream pressure measurement connection union on its adapter	**21 N.m**
upstream pressure measurement connection union on its adapter	**21 N.m**

The pressure measurement circuit must only ever be opened at the adapters on the exhaust pipe.

REMOVAL

I - REMOVAL PREPARATION OPERATION

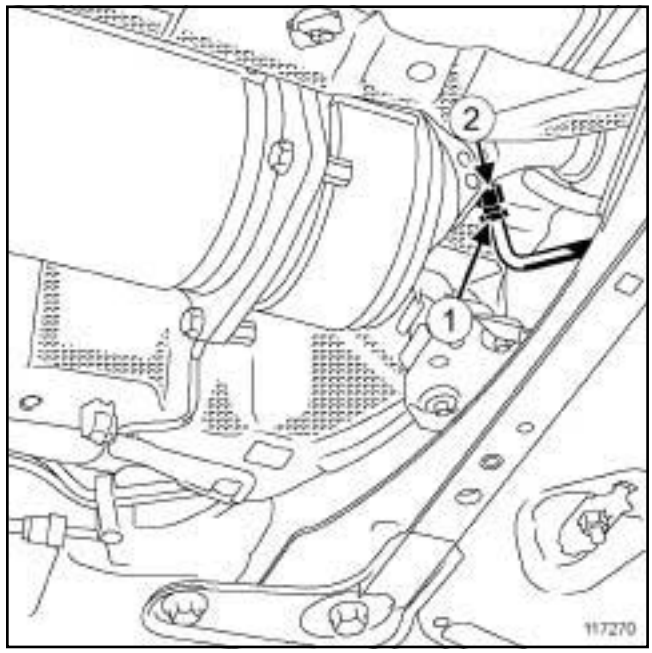
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

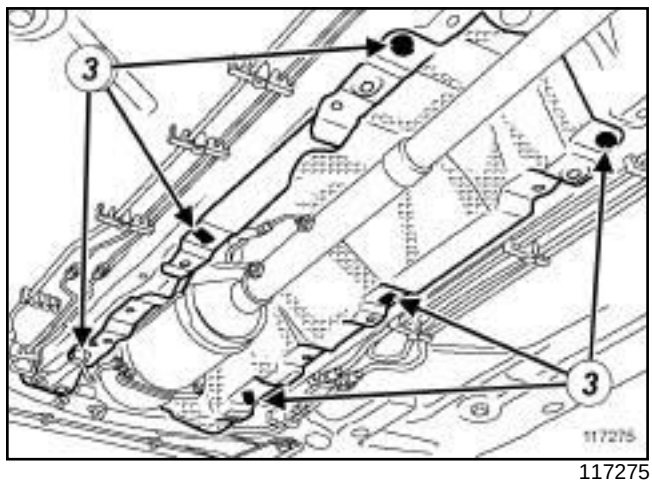


117270

❏ Remove the upstream pressure measurement connection (**1**) from its adapter (**2**) bolted to the exhaust pipe.

WARNING

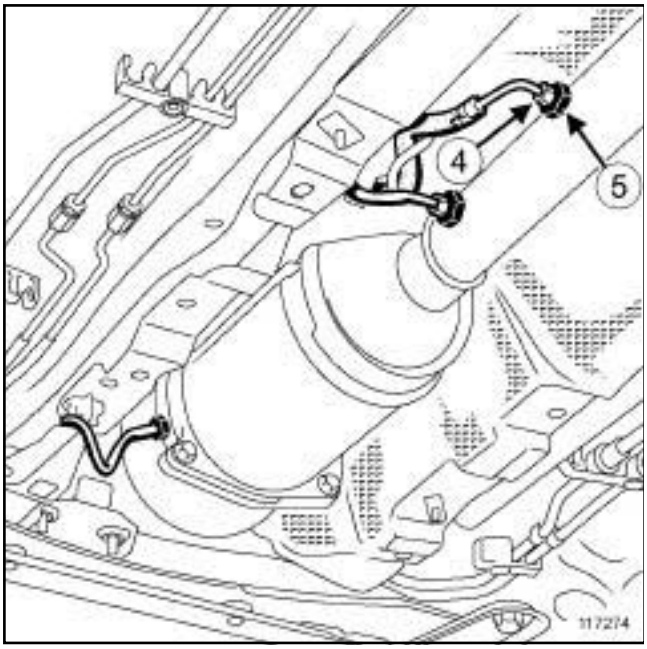
When the pressure measurement connection is removed, the adapter must be held with a lock spanner.



117275

❏ Remove the clips (**3**) from the heat shield.

K9K, and 772

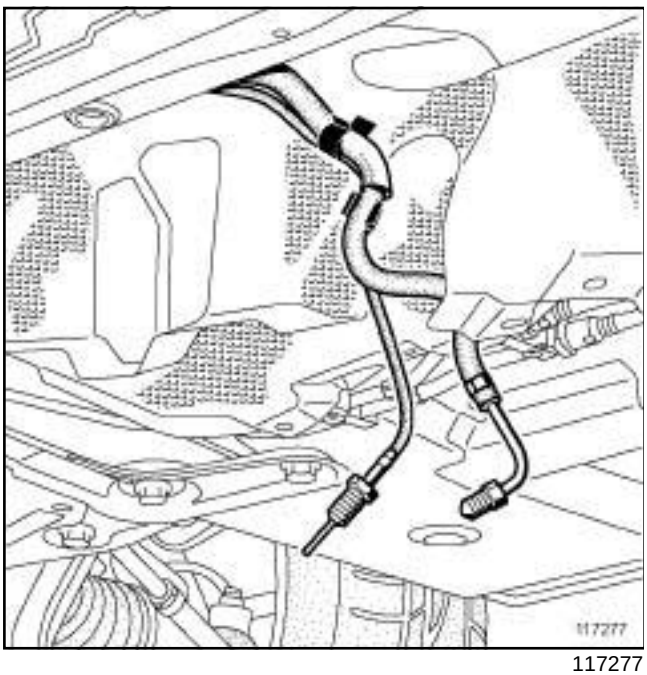


117274

❑ Remove the downstream pressure measurement connection (**4**) from its adapter (**5**) bolted onto the exhaust pipe.

WARNING

When the pressure measurement connection is removed, the adapter must be held with a lock spanner.



117277

❑ Detach the downstream pressure measurement connection from the heat shield.

❑ Remove:

- the pressure sensor nut on the steering box,
- the pressure sensor equipped with its upstream and downstream pressure measurement connections.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING

Always replace any adapter that has been removed from the exhaust pipe.

In the event of replacement, torque tighten the **adapter (44 N.m)**.

❑ Coat the temperature sensor threading with **ANTI-SEIZE COPPER GREASE** or **COPPER-ALUMINIUM LUBRICANT**.

WARNING

Make sure that the grease does not run over the threading.

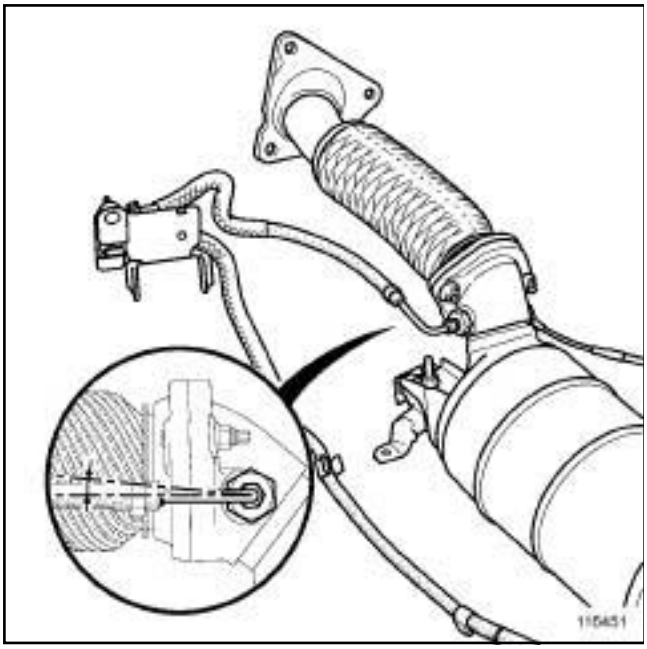
II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

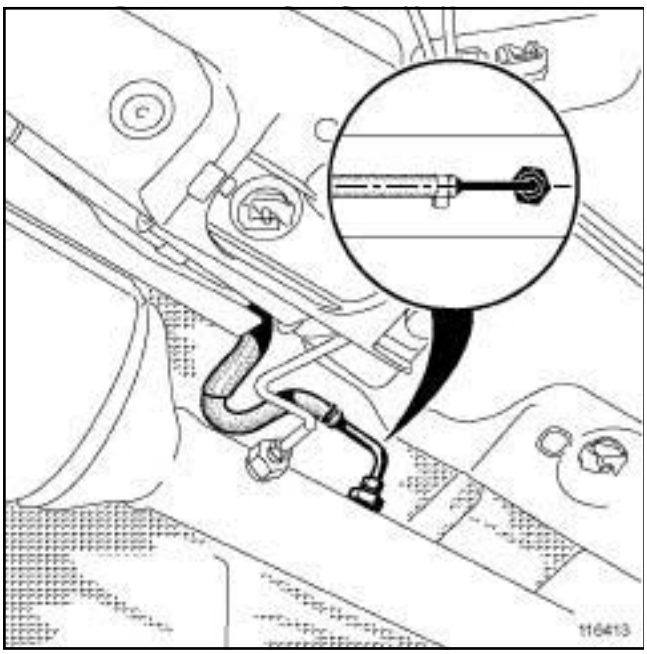
- the pressure sensor equipped with its upstream and downstream pressure measurement connections.
- the pressure sensor nut.

❑ Clip the downstream pressure measurement connection on the heat shield.

K9K, and 772



116451



116413

❑ Refit the downstream pressure measurement connection bolted to the exhaust pipe, observing an angle of **+3°** for the rigid section relative to the exhaust pipe.

❑ Torque tighten the **downstream pressure measurement connection union on its adapter (21 N.m)**, maintaining the angle of the rigid section.

❑ Refit the upstream pressure measurement connection bolted to the exhaust pipe, observing an angle of **+3°** for the rigid section relative to the exhaust pipe.

❑ Torque tighten the **upstream pressure measurement connection union on its adapter (21 N.m)**, maintaining the angle of the rigid section.

III - FINAL OPERATION

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Before starting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

❑ Refit:

- the engine undertray,
- the engine cover.

K9K, and 772

Equipment required
Diagnostic tool

Tightening torques ▽	
adapter	**44 N.m**
catalytic converter upstream temperature sensor	**30 N.m**
particle filter upstream temperature sensor	**21 N.m**
particle filter down-stream temperature sensor	**30 N.m**

The particle filter must be removed in order to remove the catalytic converter upstream temperature sensor.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

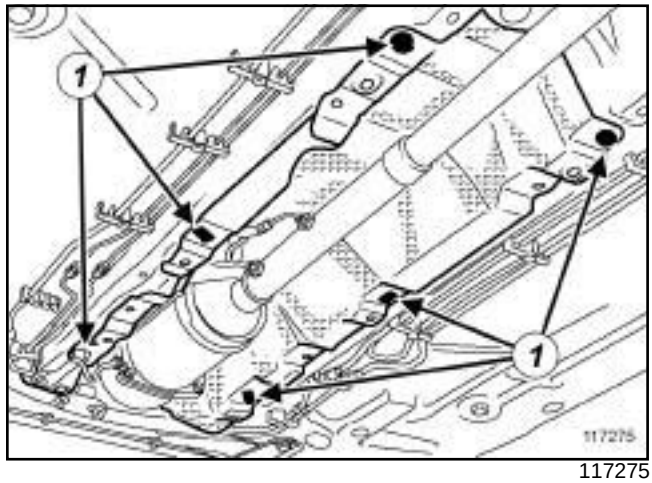
1 - Catalytic converter upstream temperature sensor

❏ Remove the particle filter (see **19B**, **Exhaust**, **Particle filter: Removal - Refitting**, page **19B-56**) .

❏ Remove the catalytic converter upstream temperature sensor from its adapter bolted to the exhaust pipe.

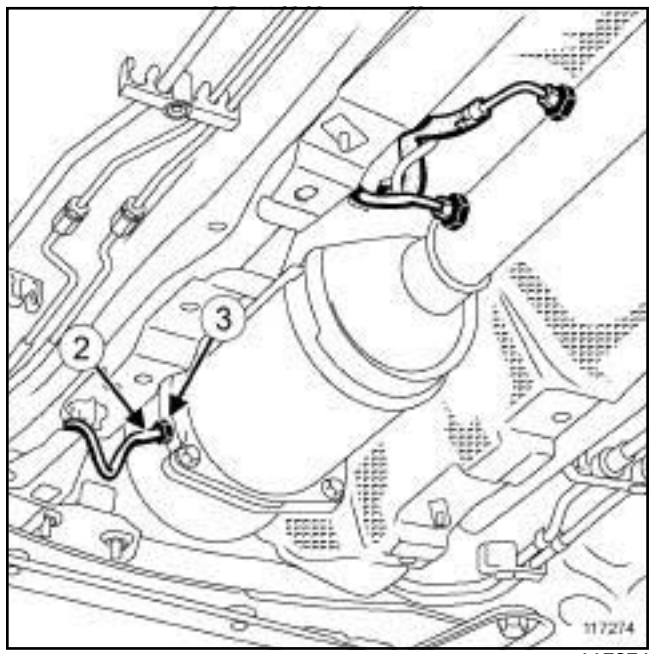
WARNING
When removing the particle filter temperature sensor, the adapter must be held with a lock wrench.

2 - Particle filter upstream temperature sensor



117275

❏ Remove the heat shield clips (**1**)

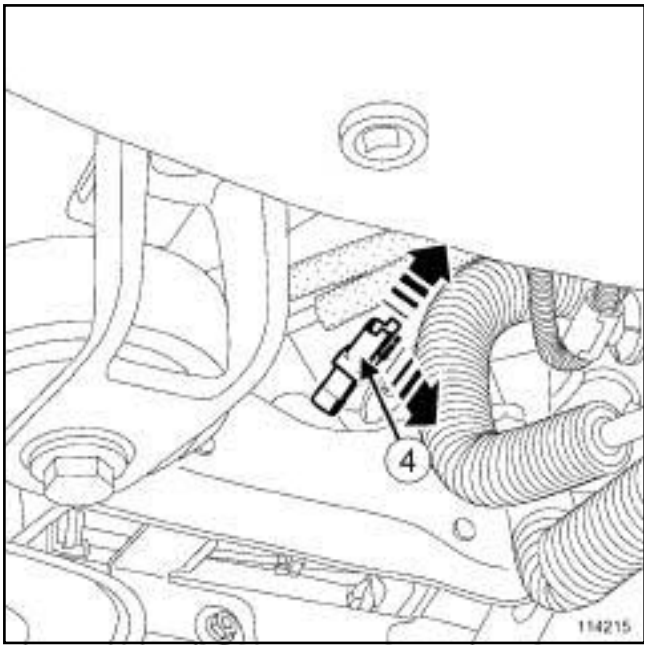


117274

❏ Remove the particle filter upstream temperature sensor (**2**) from its adapter (**3**) bolted to the exhaust pipe.

WARNING
When removing the particle filter temperature sensor, the adapter must be held with a lock wrench.

K9K, and 772

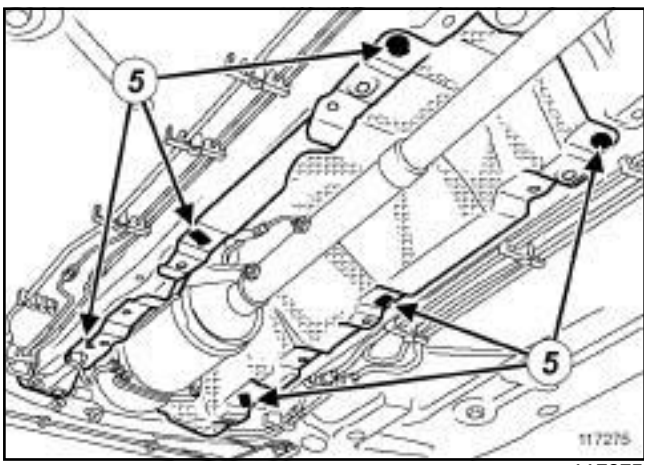


114215

❑ Disconnect the green connector from the temperature sensor.

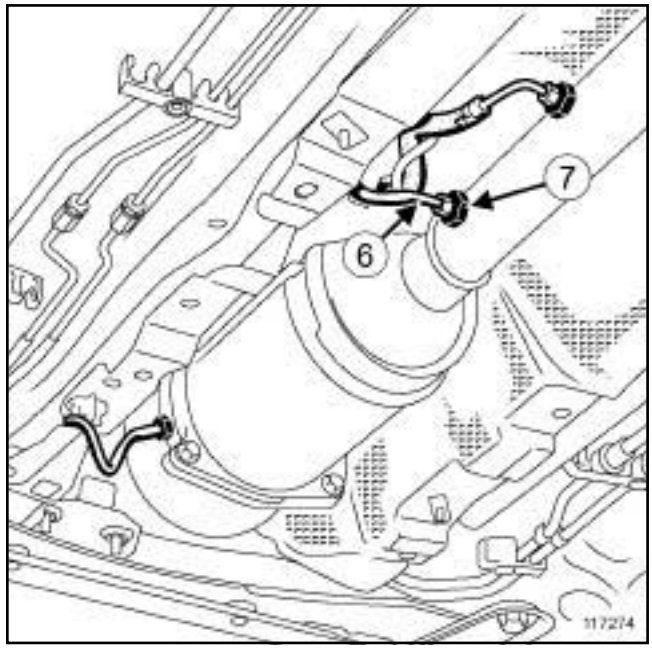
❑ Remove the particle filter upstream temperature sensor.

3 - Particle filter downstream temperature sensor



117275

❑ Remove the heat shield clips (**5**)



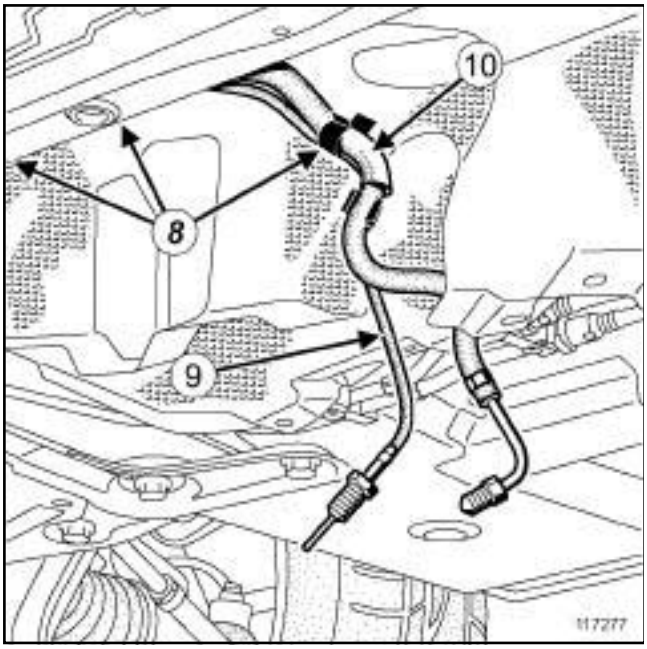
117274

❑ Remove the particle filter downstream temperature sensor (**6**) from its adapter (**7**) bolted to the exhaust pipe.

WARNING

When removing the particle filter temperature sensor, the adapter must be held with a lock wrench.

K9K, and 772

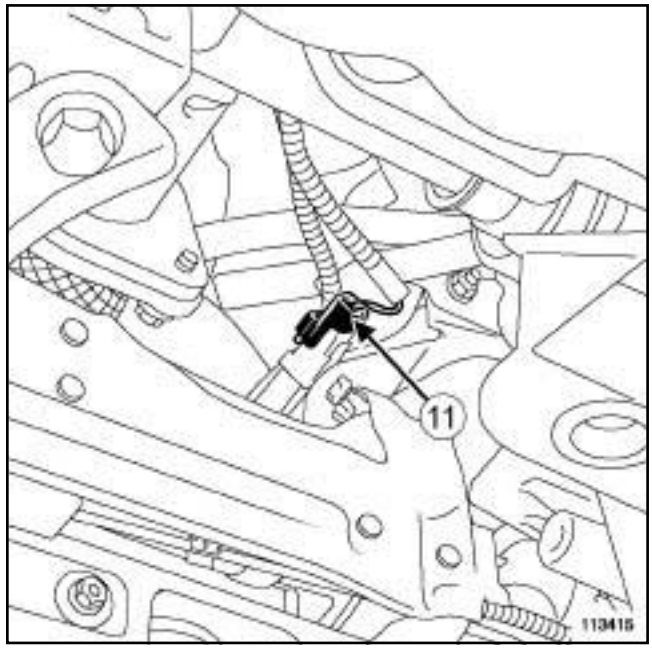


117277

❑ Detach the temperature sensor wiring harness (**8**) from the heat shield at (**9**) , moving the heat shield aside.

Note:

It may be necessary to detach the downstream pressure measurement connection (**10**) so as not to damage the temperature sensor wiring harness.



113415

❑ Disconnect the black connector (**11**) from the temperature sensor.

❑ Remove the particle filter downstream temperature sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Always replace any adapter that has been removed from the exhaust pipe.

In the event of replacement, torque tighten the **adapter (44 N.m)**.

❑ Coat the temperature sensor threading with **ANTI-SEIZE COPPER GREASE** or **COPPER-ALUMINIUM LUBRICANT**.

WARNING
Make sure that the grease does not run over the threading.

K9K, and 772

II - REFITTING OPERATION FOR PART CONCERNED

1 - Catalytic converter upstream temperature sensor

❏ Refit the catalytic converter upstream temperature sensor on its adapter bolted to the exhaust pipe.

❏ Torque tighten the **catalytic converter upstream temperature sensor (30 N.m)**.

❏ Refit the particle filter (see **19B**, **Exhaust**, **Particle filter: Removal - Refitting**, page **19B-56**) .

2 - Particle filter upstream temperature sensor

❏ Refit the particle filter upstream temperature sensor to its adapter bolted to the exhaust pipe.

❏ Torque tighten the **particle filter upstream temperature sensor (21 N.m)**.

❏ Connect the temperature sensor connector.

❏ Clip the temperature sensor wiring harness to the heat shield.

❏ Fit the heat shield.

❏ Refit the heat shield clips

3 - Particle filter downstream temperature sensor

❏ Refit the particle filter downstream temperature sensor to its adapter bolted to the exhaust pipe.

❏ Torque tighten the **particle filter downstream temperature sensor (30 N.m)**.

❏ Connect the temperature sensor connector.

❏ Clip:

- the temperature sensor wiring harness on the heat shield,
- the downstream pressure measurement connection.

❏ Fit the heat shield.

❏ Refit the heat shield clips.

III - FINAL OPERATION

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Before starting the engine, use the **Diagnostic tool** to clear any faults stored by the injection computer.

❏ Refit:

- the engine undertray,
- the engine cover.

Exhaust fuel injector: Removal - Refitting

K9K, and 772

Equipment required
Diagnostic tool

Tightening torques ▽	
mounting bolt of the diesel injector retaining bracket	**21 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- **see Exhaust: Precautions for repair** (19B, Exhaust),
- **see Vehicle: Precautions for repair** (01D, Mechanical introduction).

IMPORTANT

Wear protective gloves during the operation.

IMPORTANT

Wear heat protective gloves during the operation.

PARTS AND CONSUMABLES FOR THE REPAIR WORK

❑ Parts always to be replaced:

- the diesel injector seal on its cooler.

❑ Consumables:

- cleaning cloths (part no. **77 11 211 707**).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Connect **Diagnostic tool** to the vehicle.

❑ Run command **AC238** "Fuel pump relay" in order to lower the fuel pressure in the exhaust fuel injector supply system.

Note:

Repeat this operation 4 times in order to discharge the residual pressure as much as possible.

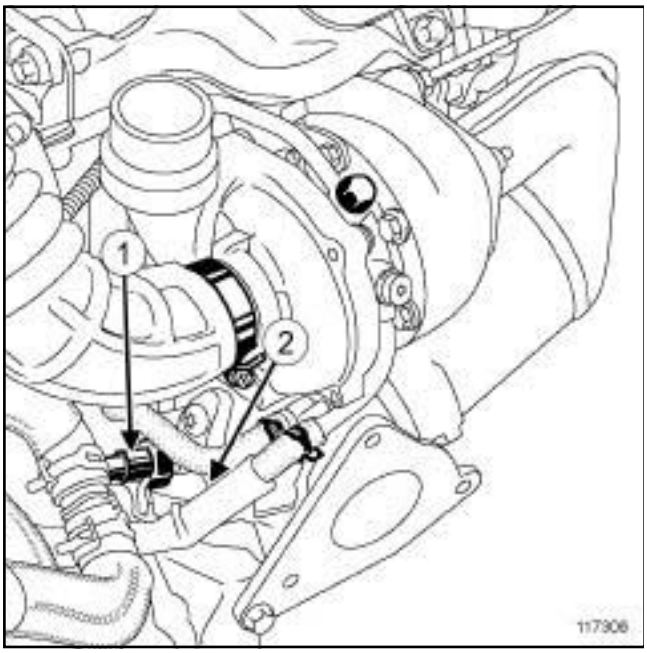
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the engine undertray
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 772

II - OPERATION FOR REMOVAL OF PART CONCERNED



117306

❑ From underneath the engine compartment, disconnect from the diesel injector on the catalytic pre-converter:

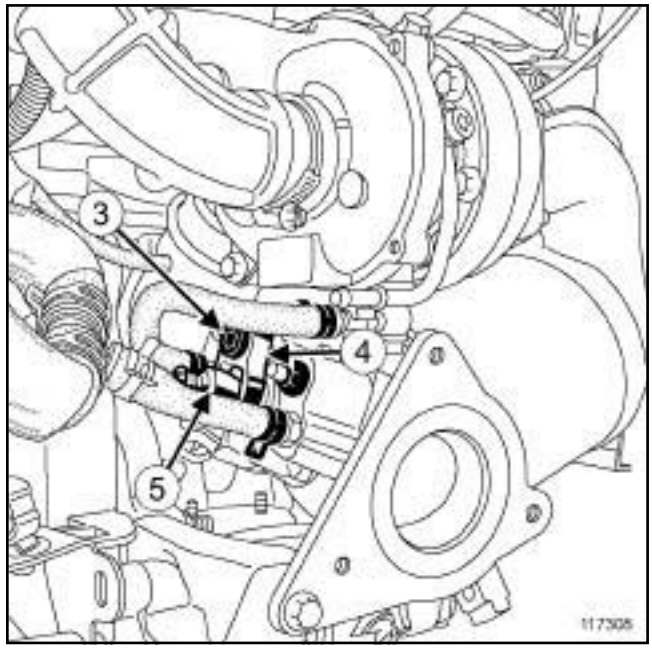
- the diesel supply pipe union (**1**) ,
- the electrical connector (**2**) .

Note:

Be careful not to damage the connector.

Note:

Prepare for diesel outflow (pressurised circuit).



117308

❑ Remove:

- the retaining bracket bolt (**3**) from the diesel injector on the catalytic pre-converter using a ratchet fitted with an extension and a **T45 male torx socket**,
- the diesel injector retaining bracket (**4**) on the catalytic pre-converter,
- the diesel injector (**5**) with its seal.

Note:

To remove and refit the injector, lift the vehicle and operate from underneath.

❑ Discard the diesel injector cooler seal.

REFITTING

I - CLEANING THE DIESEL INJECTOR

❑ Immerse the injector in a container of diesel.

❑ Wipe using new cleaning cloths (part no. **77 11 211 707**).

WARNING

It is strictly forbidden to clean the injectors with:

- a wire brush,
- an emery cloth,
- an ultrasonic cleaner.

K9K, and 772

II - REFITTING OPERATION FOR PART CONCERNED

❑ Always replace the diesel injector seal on its cooler.

❑ Fit the diesel injector fitted with its new seal and its retaining bracket on the cooler.

WARNING

Before tightening the bracket, check that the injector is correctly positioned in relation to the bracket.

Note:

Before tightening the bracket bolt, ensure that the injector is positioned properly in relation to its bracket: flat surfaces to guide the bracket on the injector ensure this correct position.

If the injector is incorrectly positioned, the entire particle filter will not work properly as the diesel fuel jet will not be correctly oriented.

❑ Torque tighten the **mounting bolt of the diesel injector retaining bracket (21 N.m)**.

❑ Connect to the diesel injector:

- the diesel supply pipe union,
- the electrical connector.

III - FINAL OPERATION

❑ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Connect the **Diagnostic tool** to the vehicle.

❑ Run command **AC 237** : fuel pump relay.

❑ Wait for the command to end, then lift the vehicle and check that there are no leaks on the injector circuit: deal with any leaks.

❑ Refit:

- the engine cover,
- the engine undertray.

Exhaust fuel injector cooler: Removal - Refitting

K9K, and 772

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

Equipment required
Diagnostic tool

Tightening torques ▽	
diesel injector cooler studs	**on the catalytic pre-converter9 N.m**
diesel injector cooler nuts on the catalytic pre-converter	**25 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

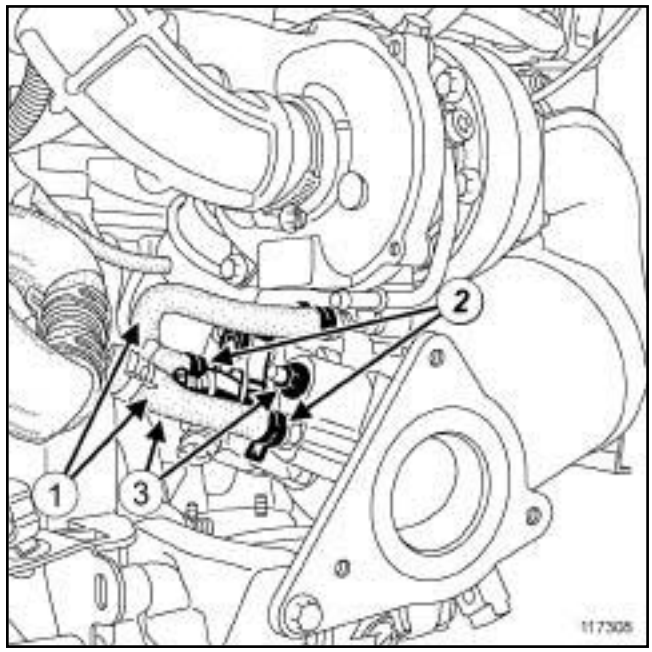
❏ Apply the discharge procedure for the exhaust injector fuel supply system (see **19B**, **Exhaust**, **Exhaust fuel injector: Removal - Refitting**, page **19B-66**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the diesel injector from the catalytic pre-converter (see **19B**, **Exhaust**, **Exhaust fuel injector: Removal - Refitting**, page **19B-66**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117308

❏ Place a **(Ms. 583)** or a hose clamp on the hoses (**1**) of the catalytic pre-converter diesel injector cooler.

❏ Release the clips (**2**) using the **(Mot. 1448)**.

❏ Disconnect the diesel injector cooler hoses on the catalytic pre-converter.

Note:

Be prepared for the escape of coolant.

❏ Remove:

- the catalytic pre-converter diesel injector cooler nuts (**3**) ,
- the diesel injector cooler on the catalytic pre-converter,
- the seal from the diesel injector cooler on the catalytic pre-converter, then discard it.

Note:

Be prepared for the escape of coolant.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ If replacing, torque tighten the **diesel injector cooler studs (on the catalytic pre-converter9 N.m)**.

K9K, and 772

❑ Refit:

- the diesel injector cooler on the catalytic pre-converter fitted with a new seal,
- the diesel injector cooler nuts on the catalytic pre-converter.

❑ Torque tighten the **diesel injector cooler nuts on the catalytic pre-converter (25 N.m)**.

❑ Connect the diesel injector cooler inlet and outlet hoses to the catalytic pre-converter.

❑ Fit the clips using the **(Mot. 1448)**.

❑ Remove the hose clamps from the catalytic pre-converter diesel injector cooler hoses.

II - FINAL OPERATION

❑ Refit:

- the diesel injector on the catalytic pre-converter (see **19B**, **Exhaust**, **Exhaust fuel injector: Removal - Refitting**, page **19B-66**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Perform the following operations:

- top up the coolant level in the expansion bottle,
- bleed the cooling system (see) .

❑ Connect the **Diagnostic tool**

❑ Run command **AC 237** : fuel pump relay.

❑ Wait for the command to end, then lift the vehicle and check that there are no leaks on the injection circuit: deal with any leaks.

❑ Refit:

- the engine undertray,
- the engine cover.

Special tooling required	
Mot. 1199-01	Exhaust pipe cutter (diameter 35/50 mm and diameter 50/65mm). Complete kit in a case.

I - PARTS AND CONSUMABLES FOR THE REPAIR

1 - Parts always to be replaced:

- the exhaust trunking (if fitted)

- the seal or sealing ring on the connection between the catalytic converter or catalytic pre-converter and the rest of the exhaust system

- the exhaust clip(s) (if fitted)

2 - Consumables (see part no. in Technical Note 5068, 04B, Consumables - Products):

- exhaust mastic

- surface cleaner

- abrasive pads

II - ADVICE TO OBSERVE

IMPORTANT
Do not park and run the engine in a place where combustible substances and materials such as grass or leaves can come into contact with the hot exhaust system.

IMPORTANT
Catalytic converters contain ceramic fibres, these are contained within a closed unit, and cannot disperse. Drilling or cutting catalytic converters is prohibited.

1 - During removal and refitting, the catalytic converter or catalytic pre-converter must not receive any knocks or impacts as this could damage it.

2 - The whole exhaust pipe is made of stainless steel.

3 - After working on the bracket between the catalytic converter or catalytic pre-converter and the rest of the exhaust system, ensure that the connection is perfectly sealed.

To do this:

- clean the pressure faces of the connection using the **ABRASIVE PADS**,

- degrease the pressure faces of the connection using **SURFACE CLEANER** and clean cloths,

- always replace the seal or sealing ring on the connection.

III - SPECIAL NOTES ON THE SINGLE UNIT EXHAUST PIPE

1 - Cutting the single unit exhaust pipe

The exhaust pipe is a « single unit type » .

To replace different parts of the exhaust system it must be cut.

To do this be sure to carry out these precautions in the following order:

- correctly identify the area to be cut, as explained below,

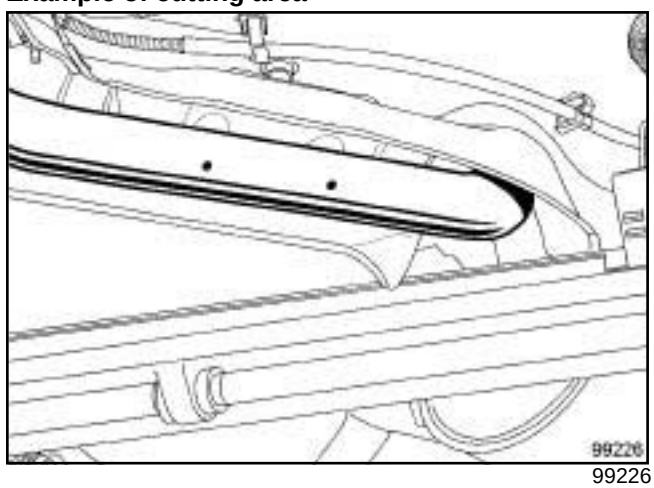
- use the cutting tool correctly **(Mot. 1199-01)**,

- position the exhaust trunking correctly.

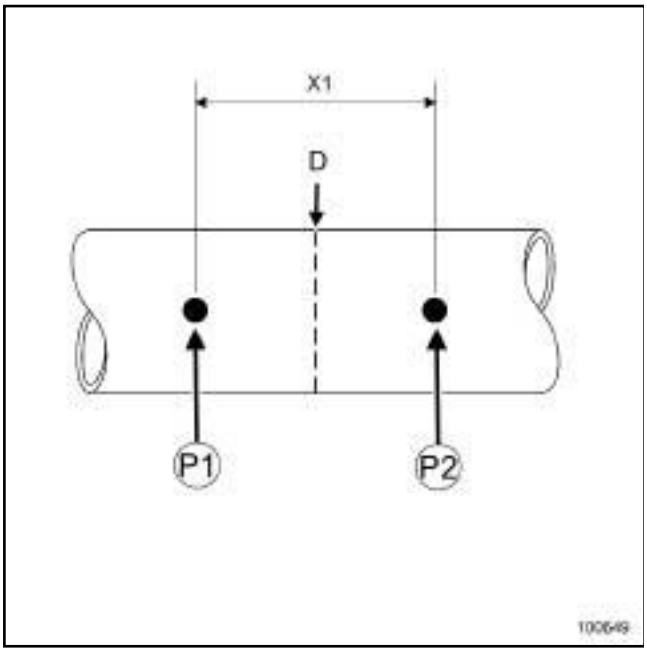
2 - Identifying the area of the exhaust system to be cut

Two marks made on the exhaust system define the area to be cut (see **Exhaust: Parts and consumables for the repair**) (see MR for vehicle concerned, 19B, Exhaust).

Example of cutting area



99226



100649

Before cutting the exhaust system, draw a line (**D**) between the two marks (**P1**) and (**P2**) .

The distance between the two marks on the exhaust pipe is (**X1**) : **90 mm** (all types except RENAULT SPORT).

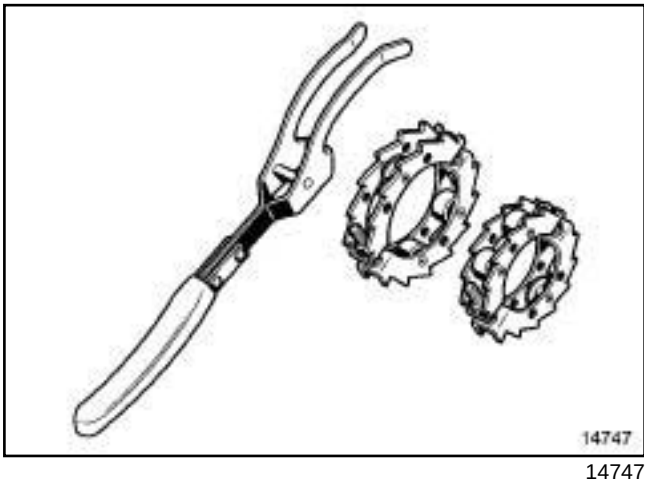
The distance between the two marks on the exhaust pipe is (**X1**) : **80 mm** (RENAULT SPORT).

Note:

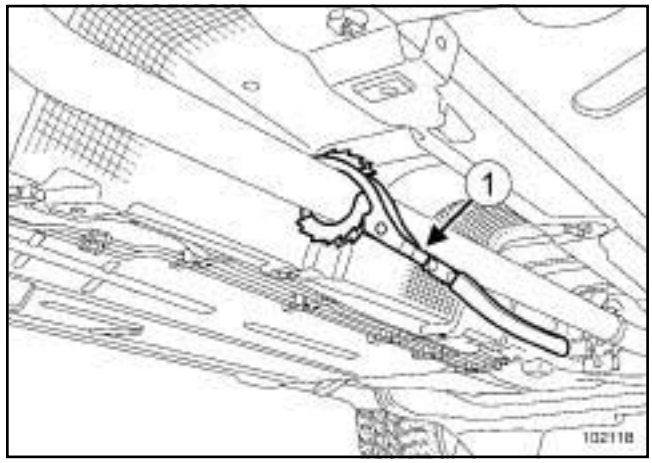
For CLIO II RENAULT SPORT with F4R*730, F4R*732 and F4R*736 engines, the cutting area is shown by a single mark on the exhaust pipe.

Cut the exhaust pipe by placing the **(Mot. 1199-01)** on the mark.

3 - Operate tool Mot. 1199-01



14747



102118

Fit the **(Mot. 1199-01)** (**1**) on the exhaust pipe.

Tighten the two bolts on the tool until they touch the pipe in order to clamp the tool onto the pipe.

Turn the cutting tool using the handle and pressing it against the pipe (as indicated in the diagram above).

Tighten the two bolts on the tool whilst cutting, until the pipe is completely cut.

Note:

Do not over-tighten the tool onto the pipe to avoid deforming it.

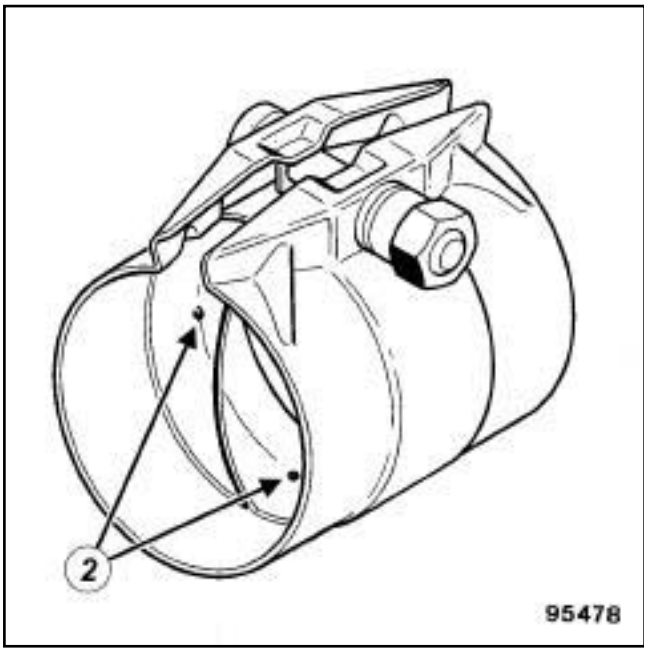
Once the pipe is cut, file and deburr the end of the pipe to be used on the vehicle again.

4 - Positioning the exhaust trunking

WARNING

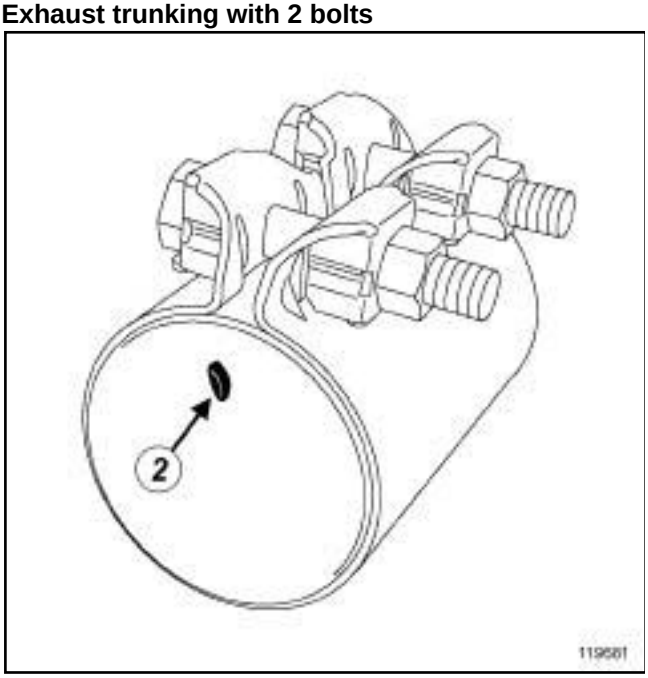
Do not reuse an old exhaust trunking.

Exhaust trunking with 1 bolt



95478

Exhaust trunking with 2 bolts



119681

Fit the exhaust trunking onto the part of the exhaust system fitted to the vehicle.

Position the pipe onto the lugs (**2**) inside the exhaust trunking.

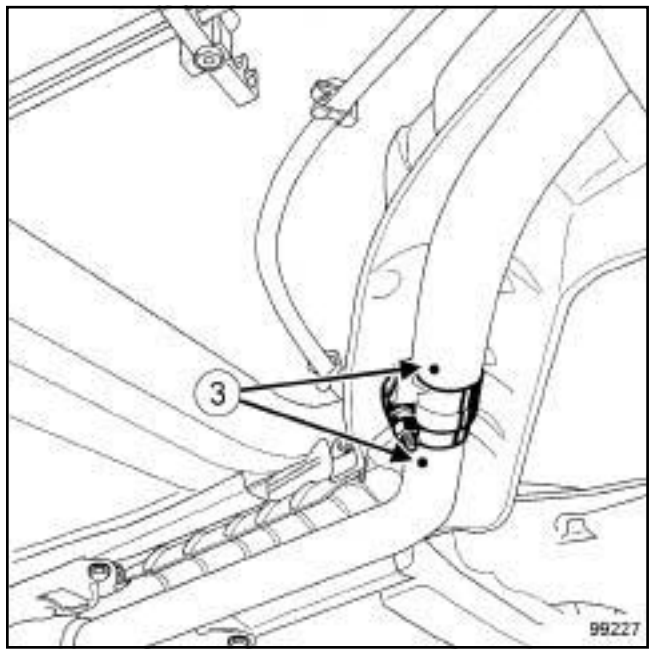
Tighten the exhaust trunking bolt(s) slightly (depending on the version).

Position the second part of the exhaust system under the vehicle, fitting it in the exhaust trunking.

Note:

If necessary, use a workshop jack to lift and hold the heavy and bulky components of the exhaust system.

Position the second exhaust pipe onto the lugs inside the exhaust trunking.



99227

Check that the two cut marks (**3**) are aligned (if applicable).

Position the trunking so that there is no risk of contact between its bolt or bolts and the heat shields.

Torque tighten

- the **exhaust trunking nut with 1 bolt (25 N.m)** (if fitted),
- the **exhaust trunking nuts with 2 bolts (18 N.m)** (if fitted).

Check the following and deal with if necessary:

- no underbody contact between the exhaust system and the heat shields,
- all of the heat shields are present and secure.

Note:

Any damaged heat shields must be replaced.

Start the engine.

Check that there are no leaks: deal with any leaks.

Note:

If there are leaks from the **EXHAUST TRUNKING WITH 1 BOLT**, apply **EXHAUST MASTIC** to the trunking (see part no. in Technical Note 5068, 04B, Consumables - Products).

If the application of exhaust mastic does not fix the leak:

- remove and replace the used exhaust trunking,
- check the condition of the exhaust pipes (condition of the pipe surface, deburring of the area cut, damage to the pipes).
- fit the new trunking in accordance with the instructions given before.

K4J or K4M

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
oxygen sensor	**45 Nm**
manifold studs	**7 Nm**
nuts mounting the catalytic converter on the exhaust manifold	**21 Nm**
exhaust sleeve	**25 Nm**
exhaust manifold studs	**8 Nm**
exhaust sleeve	**25 Nm**

IMPORTANT
Catalytic converters contain ceramic fibres: these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

REMOVAL

I - REMOVAL PREPARATION OPERATION

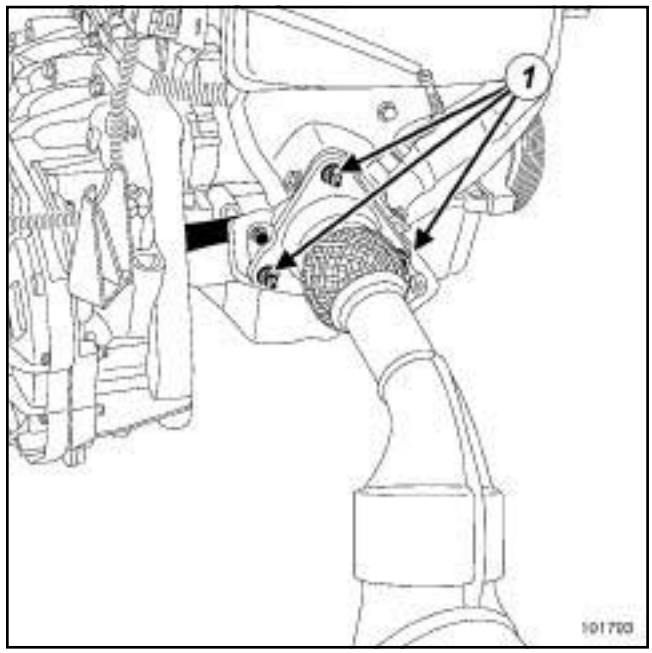
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Remove the connector from the downstream oxygen sensor.

❏ Unclip the wiring harness from the downstream oxygen sensor.

❏ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101793

❏ Remove:

- the catalytic converter mounting nuts (**1**) from the exhaust manifold
- the exhaust catalytic converter,
- the downstream oxygen sensor of the catalytic converter using tool **(Mot. 1495-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Refit the oxygen sensor.

❏ Torque tighten the **oxygen sensor (45 Nm)**.

❏ Replace the exhaust flange seal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Torque tighten the **manifold studs (7 Nm)**.

❏ Fit:

- the catalytic converter,
- the catalytic converter sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❏ Torque tighten the **nuts mounting the catalytic converter on the exhaust manifold (21 Nm)**.

K4J or K4M

III - FINAL OPERATION

❏ Torque tighten:

- the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment,
- the **exhaust manifold studs (8 Nm)**,
- the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment.

❏ Connect the oxygen sensor connector.

❏ Make sure that all the exhaust pipe heat shields are in place and properly secured.

❏ Refit the engine undertray.

❏ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- position the sleeve « bolt - tightening nut» assembly vertically with the nut facing downwards to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.

K9K

Tightening torques ▽	
turbocharger output studs	**7 N.m**
catalytic converter mounting nuts on the turbocharger	**26 N.m**
bolts mounting the upstream strut on the engine	**44 N.m**
bolts mounting the downstream strut on the gearbox	**21 N.m**
bolts mounting the upstream strut on the catalytic converter	**26 N.m**
bolt mounting the downstream strut on the catalytic converter	**21 N.m**
exhaust clamp studs on the catalytic converter output	**7 N.m**
exhaust bracket nuts	**21 N.m**
exhaust pipe rubber mounting bush mountings on the body	**62 N.m**

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

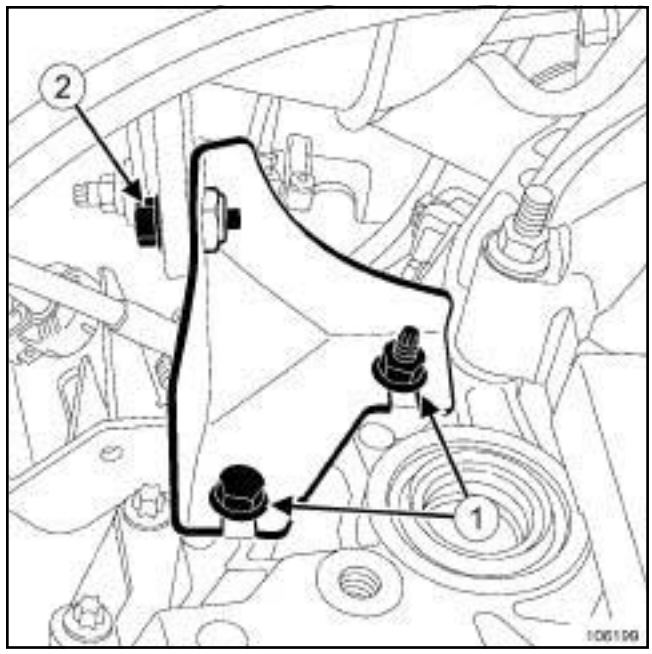
❑ Remove:

- the engine cover,
- the air inlet duct,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❑ Remove:

- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the wiring harness mountings between the catalytic converter and the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

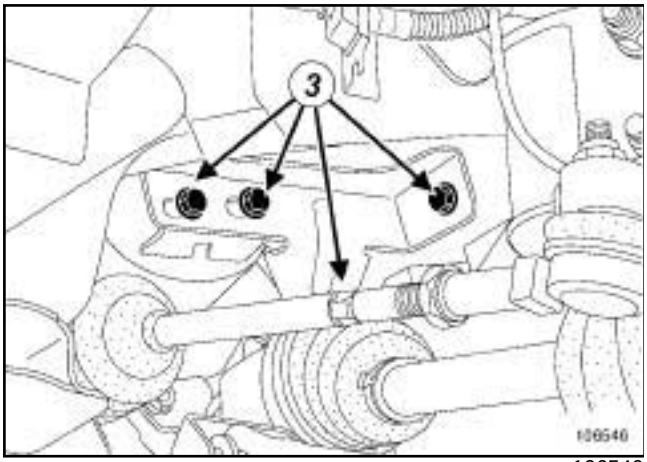
❑ Withdraw the exhaust pipe.



106199

❑ Remove:

- the downstream strut mountings (**1**) on the gearbox,
- the catalytic converter downstream strut mounting bolt (**2**) ,
- the downstream strut.

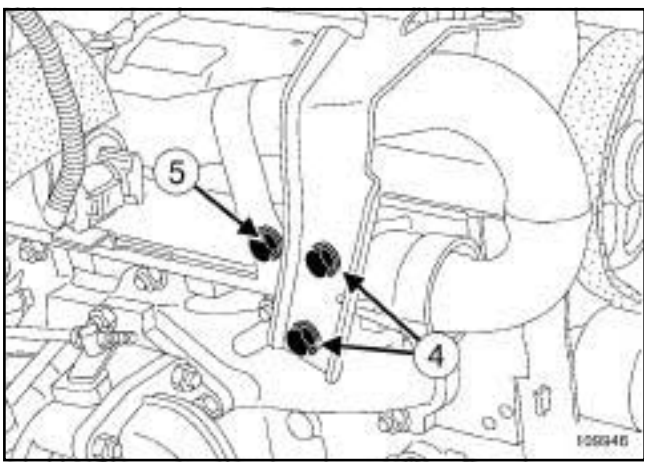


106546

❑ Remove:

- the upstream strut mountings (**3**) ,
- the upstream strut.

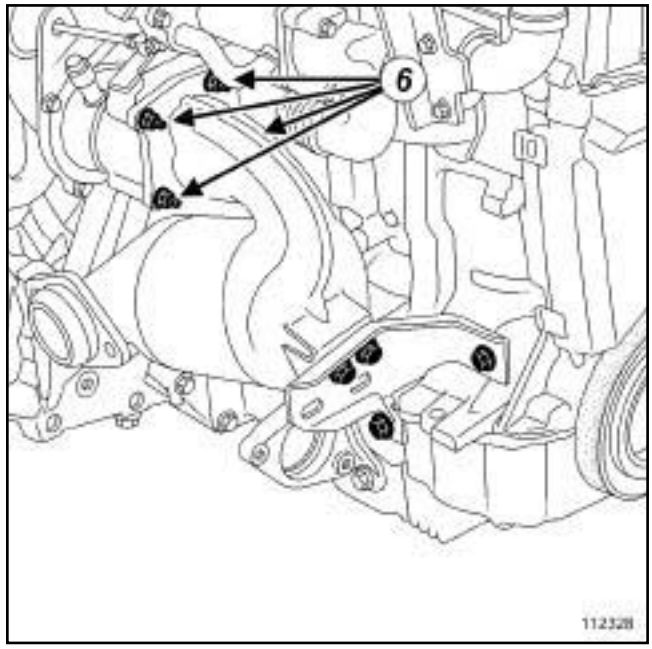
II - OPERATION FOR REMOVAL OF PART CONCERNED



109946

❑ Remove:

- the lifting eye mounting bolts (**4**) on the timing end,
- the lifting eye on the timing end,
- the mounting bolt (**5**) from the air inlet tube,
- the air inlet duct.



112328

❑ Remove:

- the bolts (**6**) mounting the catalytic converter to the turbocharger,
- the catalytic converter and its seal on the turbocharger,
- the sealing ring or the seal (depending on the version) then dispose of them in a waste bin.

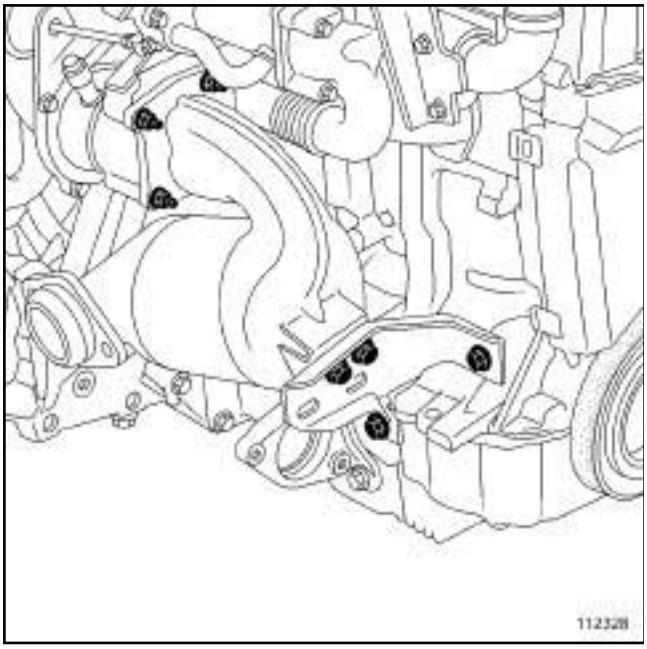
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clean the bearing faces of the turbocharger and catalytic converter using an abrasive pad (see) .

❑ Degrease the bearing faces using surface cleaner and clean cloths (see) .

K9K



112328

❑ In case of replacement, torque tighten the **turbocharger output studs (7 N.m)**.

❑ Fit the catalytic converter equipped with a new seal on the turbocharger.

❑ Pretighten in order:

- the upstream strut bolts on the engine,
- the downstream strut bolts on the gearbox,
- the upstream strut bolts on the catalytic converter,
- the downstream strut bolts on the catalytic converter,
- the catalytic converter/turbocharger mounting nuts.

❑ Tighten to torque and in order:

- the **catalytic converter mounting nuts on the turbocharger (26 N.m)**,
- the **bolts mounting the upstream strut on the engine (44 N.m)**,
- the **bolts mounting the downstream strut on the gearbox (21 N.m)**,
- the **bolts mounting the upstream strut on the catalytic converter (26 N.m)**,
- the **bolt mounting the downstream strut on the catalytic converter (21 N.m)**.

❑ Refit:

- the air inlet duct,
- the lifting eye,
- the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

WARNING

Make sure there is no contact between the catalytic converter and the turbocharger oil return pipe.

❑

WARNING

Always replace the sealing ring between the catalytic converter and the exhaust pipe with a new component.

❑ Refit a new sealing ring or a new seal (depending on the version).

❑ Torque tighten:

- in the event of replacement, the **exhaust clamp studs on the catalytic converter output (7 N.m)**,
- the **exhaust bracket nuts (21 N.m)**.

II - FINAL OPERATION

❑ Torque tighten the **exhaust pipe rubber mounting bush mountings on the body (62 N.m)**.

❑ Make sure that there is no contact with the underbody.

❑ Refit the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

WARNING

Check:

- the exhaust pipe is not touching the body,
- all the heat shields are present.

❑ Refit:

- the engine undertray,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,

K9K

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air inlet duct,
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 740 or 764

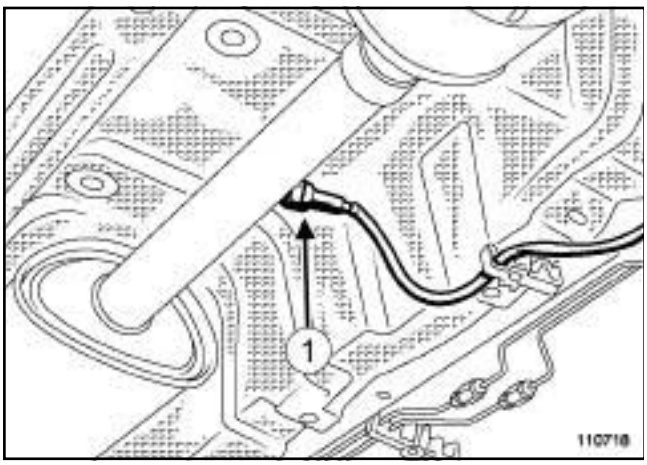
Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
manifold output bracket studs	**7 Nm**
exhaust bracket mounting bolts	**25 Nm**
oxygen sensor	**45 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).



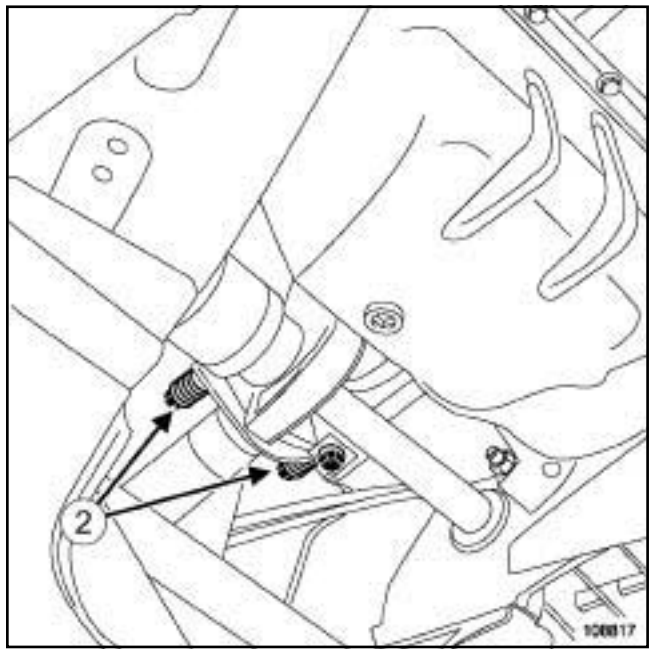
110718

❑ Remove:

- the engine undertray mounting bolts,
- the engine undertray,
- the downstream oxygen sensor (**1**) using the **(Mot. 1495-01)**.

❑ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108817

❑ Remove:

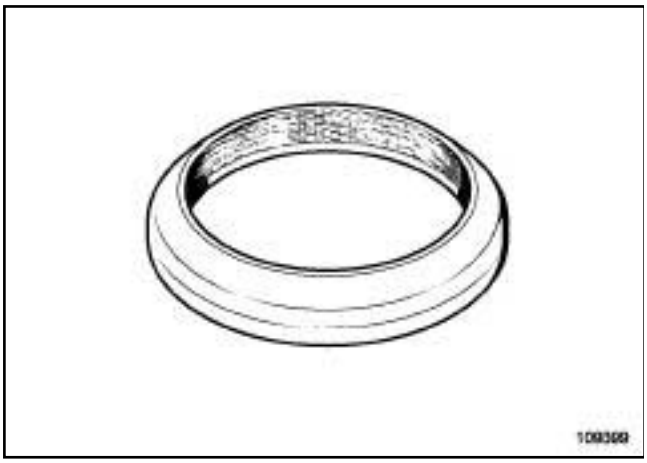
- the exhaust clamp mounting bolts (**2**) ,
- the catalytic converter.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

D4F, and 740 or 764

REFITTING

I - REFITTING PREPARATIONS OPERATION



109399

❑

WARNING
It is essential to replace the sealing ring between the exhaust manifold and the catalytic converter.

❑ Position the after sales sleeve on the catalytic converter (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ When replacing, torque tighten the **manifold output bracket studs (7 Nm)**.

❑ Refit the catalytic converter.

❑ Torque tighten the **exhaust bracket mounting bolts (25 Nm)**.

❑ Torque tighten the after-sales sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

III - FINAL OPERATION.

❑ Torque tighten the **oxygen sensor (45 Nm)** using the **(Mot. 1495-01)**.

❑ Refit:

- the engine undertray,
- the engine undertray mounting bolts,

❑ Check:

- that there is no contact with the underbody,
- all the exhaust pipe heat shields are in place and properly attached.

WARNING
Any damaged heat shields must be replaced.

M4R

Tightening torques ▽	
exhaust flange mounting bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove the engine cover.

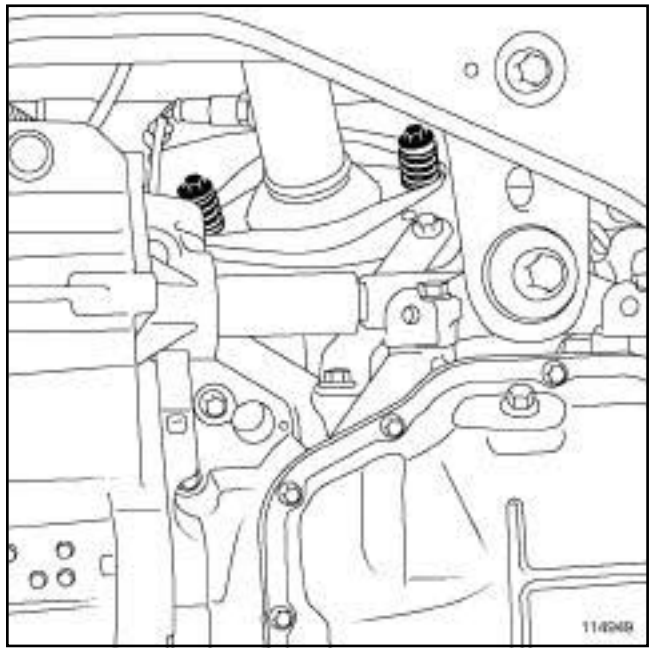
❏ Disconnect the battery (see) .

❏ Remove:

- the engine undertray,
- the upstream and downstream oxygen sensors (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

❏ Cut the exhaust pipe in the area to be cut number 1 (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) and (see) .

II - REMOVAL OF PART CONCERNED



114949

❏ Remove:

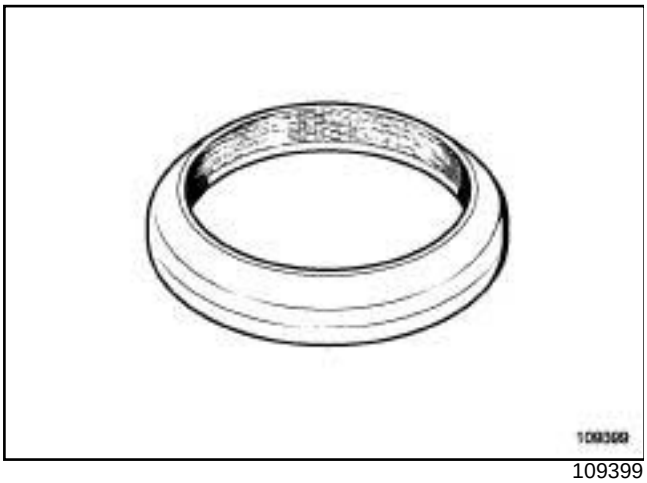
- the exhaust clamp mounting bolts,
- the catalytic converter,
- the exhaust flange sealing ring.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

M4R

REFITTING

I - REFITTING PREPARATION OPERATION



109399

❑ Always replace the exhaust flange sealing ring.

II - REFITTING THE PART CONCERNED

❑ Position the after sales sleeve on the catalytic converter (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Torque tighten the **exhaust flange mounting bolts (21 Nm)**.

III - FINAL OPERATION

❑ Refit:

- the upstream and downstream oxygen sensors (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) ,
- the engine undertray.

❑ Connect the battery (see) .

❑ Refit the engine cover.

F4R

The emission control assembly is comprised of two catalytic converters on the vehicle:

- one integrated into the exhaust manifold,

- one integrated into the exhaust pipe.

The method below deals with the operating procedure on the catalytic converter integrated into the exhaust pipe.

Note:

The catalytic converter integrated into the exhaust manifold cannot be separated from the latter. When removing - refitting the catalytic converter, the catalytic converter - exhaust manifold assembly must be removed (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) . When replacing the catalytic converter, the catalytic converter - exhaust manifold assembly must be replaced.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

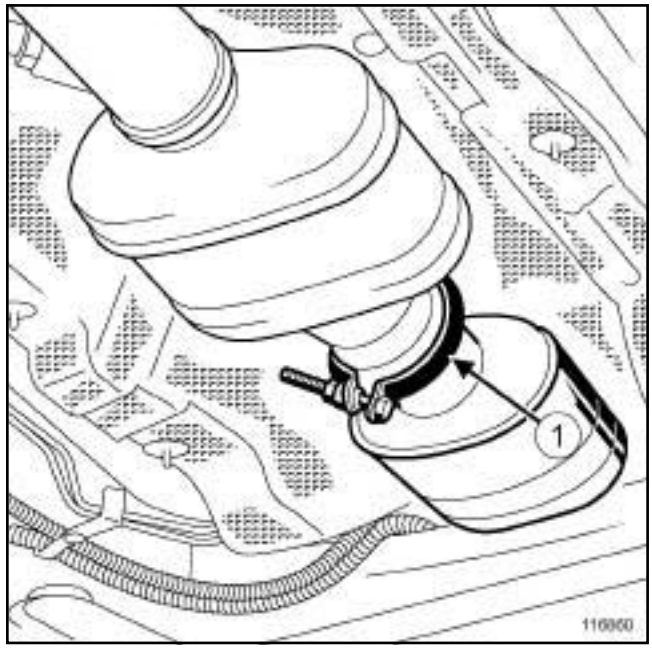
1 - Removing the catalytic converter integrated into the exhaust manifold

❑ Remove the exhaust manifold (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) .

2 - Removing the catalytic converter integrated into the exhaust pipe

❑ Remove the downstream oxygen sensor (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

❑ Cut the exhaust system at the cutting area **ZC1** for this purpose (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .



116860

❑ Remove:

- the exhaust pipe clamp (**1**) ,

- the catalytic converter integrated into the exhaust pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Refitting the catalytic converter integrated into the exhaust manifold

❑ Refit the exhaust manifold (see **12A**, **Fuel mixture**, **Exhaust manifold: Removal - Refitting**, page **12A-74**) .

2 - Refitting the catalytic converter integrated into the exhaust pipe

❑ Fit the catalytic converter integrated into the exhaust pipe.

❑ Tighten the new exhaust pipe clamp by several turns.

❑ Fit the new After-Sales sleeve following the instructions supplied (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Remove the downstream oxygen sensor (see **17B**, **Petrol injection**, **Oxygen sensors: Removal - Refitting**, page **17B-19**) .

F4R

II - FINAL OPERATION

- ❑ Make sure there is no contact with the underbody.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❑ Start the engine and check that there are no leaks: deal with any problems as necessary.

Catalytic converter: Removal - Refitting

D4F, and 784 or 786

Special tooling required	
Mot. 1495-01	22 mm socket for removal - refitting of oxygen sensors.

Tightening torques ▽	
upstream and downstream oxygen sensors	**45 Nm**
primary strut bolts on the cylinder block	**25 Nm**
primary strut bolt on the gearbox	**44 Nm**
catalytic converter nuts on the turbocharger (initial torque)	**20 Nm**
catalytic converter nuts on the turbocharger	**30 Nm**
primary strut bolts on the catalytic converter (initial torque)	**20 Nm**
primary strut bolts on the catalytic converter	**30 Nm**
catalytic converter upstream strut bolts on the catalytic converter	**21 Nm**
catalytic converter upstream strut bolts on the cylinder block	**21 Nm**
turbocharger strut nut	**21 Nm**
turbocharger strut bolt	**21 Nm**
turbocharger heat shield bolts	**8 Nm**
front right-hand wheel driveshaft relay bearing nuts	**44 Nm**
exhaust bracket bolts at the catalytic converter outlet	**9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

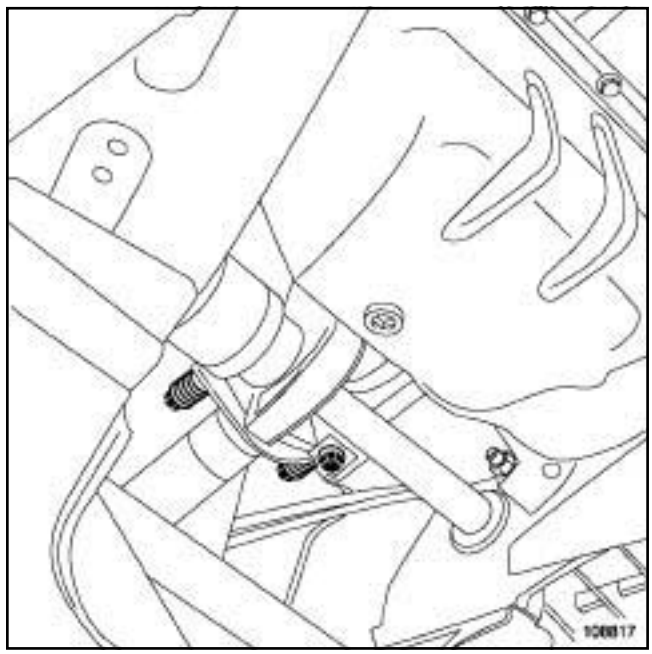
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the engine undertray.

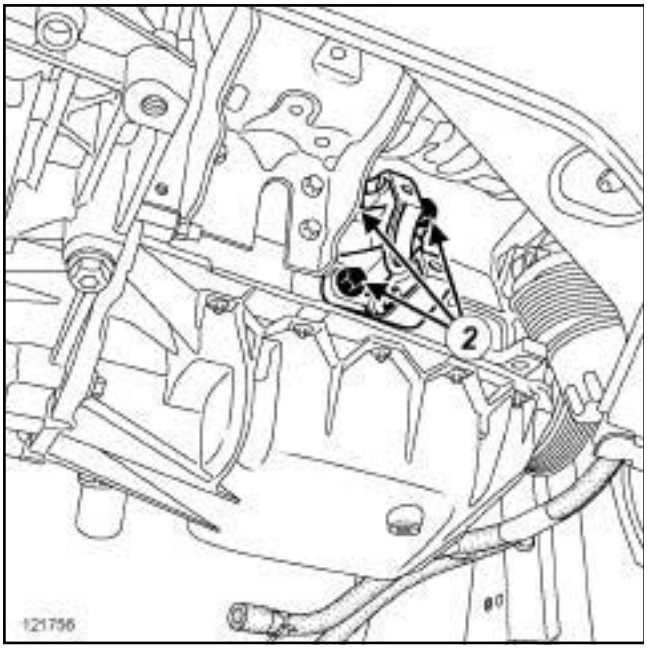
❑ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).



108817

❑ Remove the nuts from the exhaust bracket at the catalytic converter outlet.

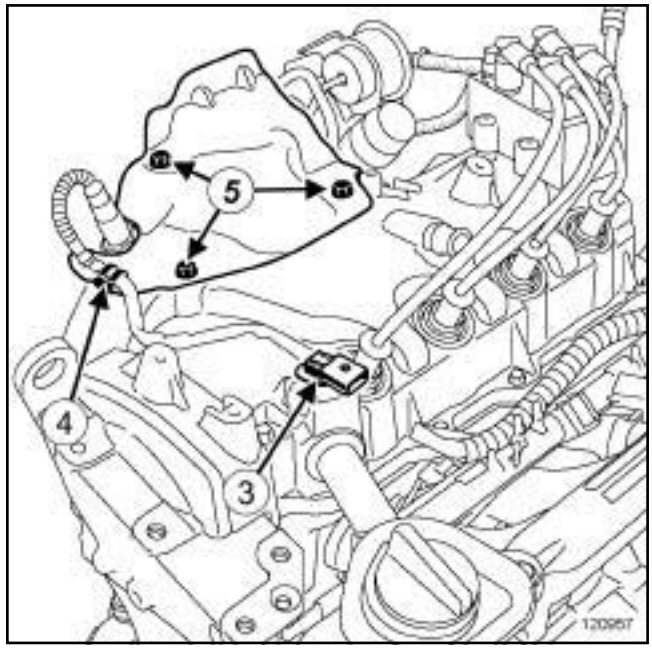
D4F, and 784 or 786



121756

❏ Remove:

- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front right-hand wheel driveshaft relay bearing nuts (**2**) ,
- the front right-hand wheel driveshaft relay bearing.



120957

❏ Disconnect the upstream oxygen sensor connector (**3**) .

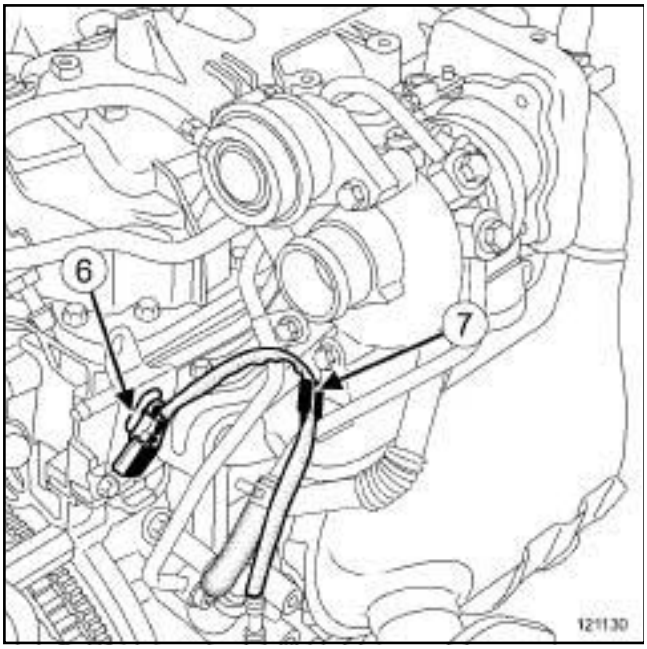
❏ Unclip the upstream oxygen sensor connector.

❏ Detach the upstream oxygen sensor wiring harness at (**4**) .

❏ Remove:

- the bolts (**5**) from the turbocharger heat shield,
- the turbocharger heat shield.

D4F, and 784 or 786

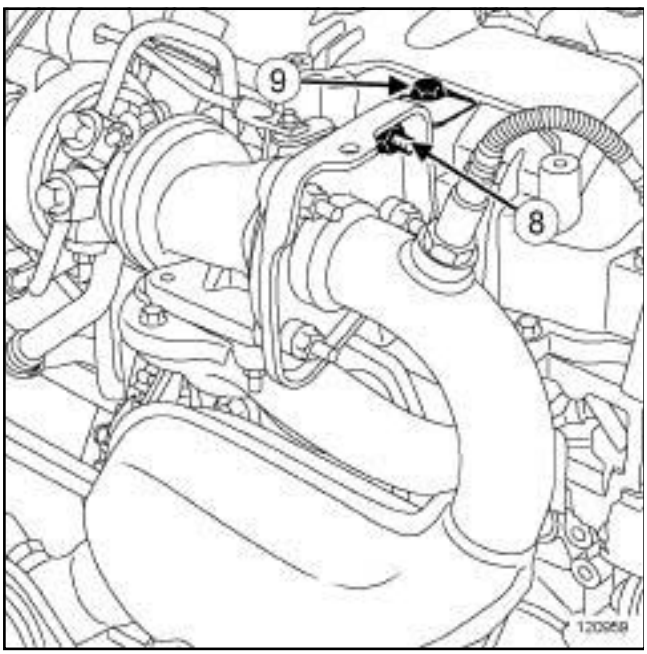


121130

❏ Disconnect the downstream oxygen sensor connector (**6**) .

❏ Unclip the downstream oxygen sensor connector.

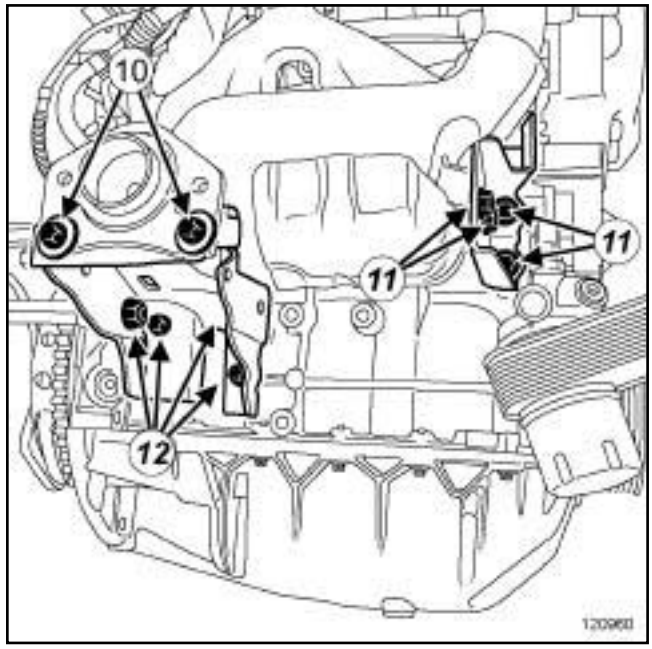
❏ Detach the downstream oxygen sensor wiring harness at (**7**) .



120959

❏ Remove:

- the nut (**8**) from the turbocharger strut,
- the bolt (**9**) from the turbocharger strut,
- the turbocharger strut.



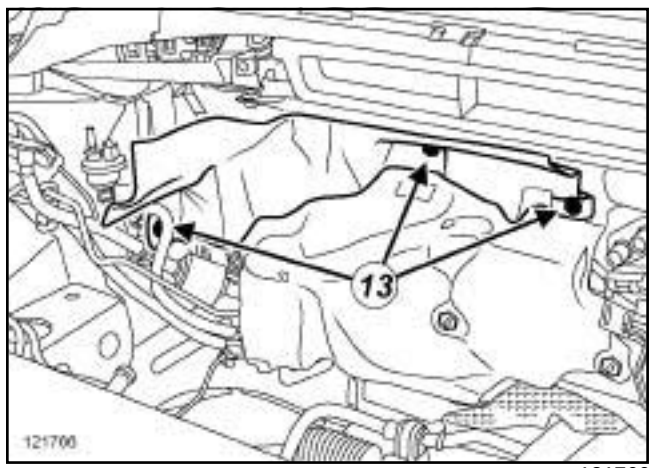
120960

❏ Disconnect the oil pressure sensor connector.

❏ Undo the bolts (**10**) on the catalytic converter primary strut.

❏ Remove:

- the catalytic converter upstream strut bolts (**11**) ,
- the catalytic converter upstream stay,
- the bolts (**12**) on the cylinder block primary strut,
- the primary strut from the cylinder block.



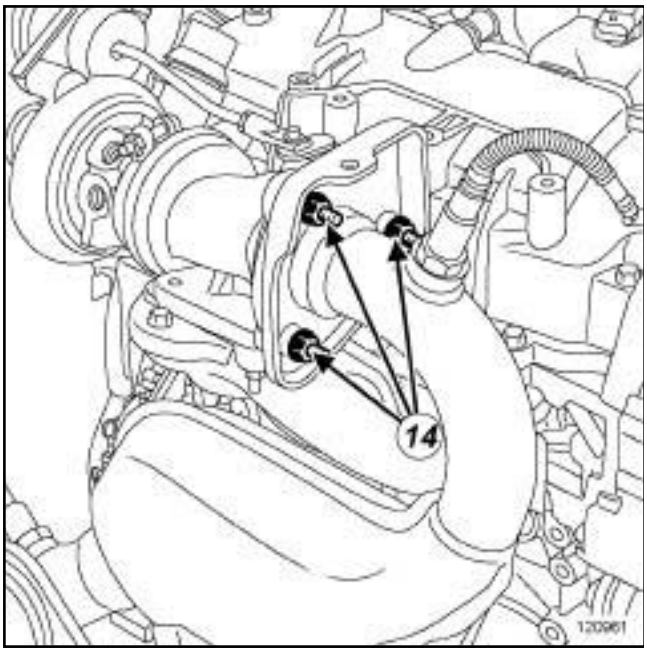
121766

❏ remove:

- the clips (**13**) from the upper heat shield,
- the upper heat shield.

D4F, and 784 or 786

II - OPERATION FOR REMOVAL OF PART CONCERNED



120961

❑ Remove:

- the nuts (**14**) mounting the catalytic converter on the turbocharger and the spacers,
- the catalytic converter,
- the catalytic converter seal on the turbocharger.

IMPORTANT
Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

❑ When replacing the catalytic converter, remove the upstream and downstream oxygen sensors on the workbench using the **(Mot. 1495-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ When replacing the catalytic converter, refit the upstream and downstream oxygen sensors on the workbench.

❑ Torque tighten the **upstream and downstream oxygen sensors (45 Nm)** using the **(Mot. 1495-01)**.

❑ Always replace:

- the catalytic converter seal,
- the catalytic converter nuts on the turbocharger,

❑ Use abrasive pads to clean the bearing faces of:

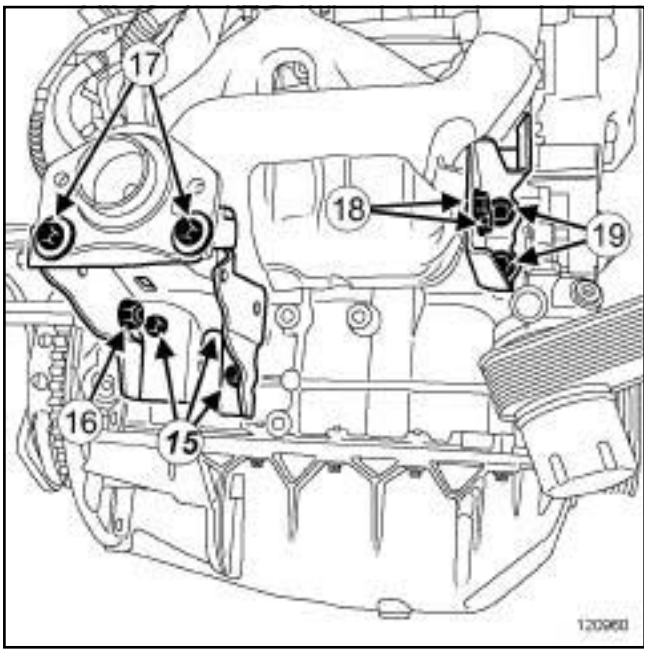
- the turbocharger,
- the catalytic converter.

❑ Degrease the pressure faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) and a clean cloth:

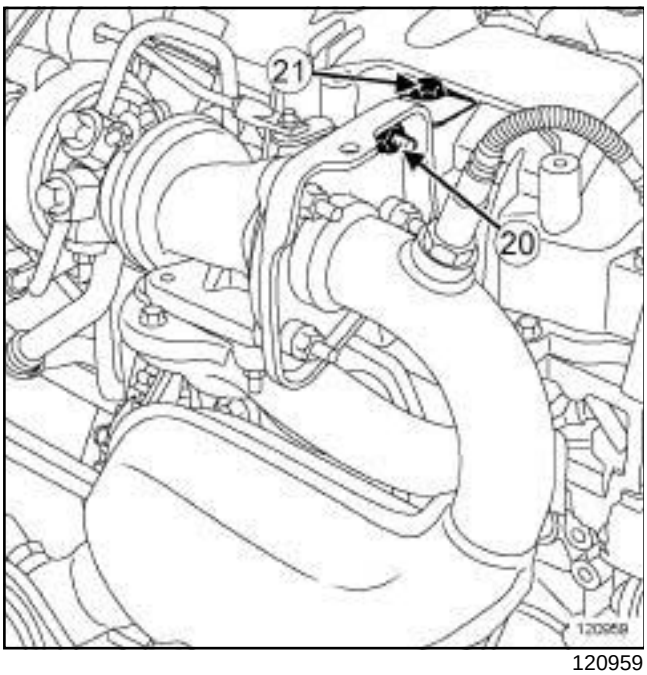
- the turbocharger,
- the catalytic converter.

D4F, and 784 or 786

II - REFITTING OPERATION FOR PART CONCERNED



120960



120959

❏ Refit:

- the catalytic converter seal on the turbocharger,
- the catalytic converter,
- the new nuts with the catalytic converter spacers on the turbocharger,
- the catalytic converter primary strut,
- the bolts (**15**) on the cylinder block primary strut,
- the primary strut bolt (**16**) on the gearbox,
- the catalytic converter upstream stay,
- the catalytic converter upstream strut bolts (**18**) and (**19**) ,
- the turbocharger strut.
- the bolt (**21**) from the turbocharger strut,
- the turbocharger strut nut (**20**) .

❏ Torque tighten:

- the **primary strut bolts on the cylinder block (25 Nm)** by locking the strut on the gearbox lug at (**15**) ,
- the **primary strut bolt on the gearbox (44 Nm)** at (**16**) ,
- the **catalytic converter nuts on the turbocharger (initial torque) (20 Nm)**,
- the **catalytic converter nuts on the turbocharger (30 Nm)**,
- the **primary strut bolts on the catalytic converter (initial torque) (20 Nm)** at (**17**) ,
- the **primary strut bolts on the catalytic converter (30 Nm)**,
- the **catalytic converter upstream strut bolts on the catalytic converter (21 Nm)** at (**18**) ,
- the **catalytic converter upstream strut bolts on the cylinder block (21 Nm)** at (**19**) ,
- the **turbocharger strut nut (21 Nm)** at (**20**) ,
- the **turbocharger strut bolt (21 Nm)** at (**21**) .

III - FINAL OPERATION.

❏ Refit:

- the upper heat shield,
- the clips on the upper heat shield.

❏ Connect the oil pressure sensor connector.

❏ Attach the downstream oxygen sensor wiring harness.

❏ Fit the downstream oxygen sensor connector.

❏ Connect the downstream oxygen sensor connector.

❏ Refit:

- the turbocharger heat shield,
- the turbocharger heat shield bolts.

❏ Torque tighten the **turbocharger heat shield bolts (8 Nm)**.

❏ Attach the upstream oxygen sensor wiring harness.

❏ Fit the upstream oxygen sensor connector.

❏ Connect the upstream oxygen sensor connector.

D4F, and 784 or 786

❑ Refit:

- the front right-hand wheel driveshaft relay bearing,
- the front right-hand wheel driveshaft relay bearing nuts.

❑ Torque tighten the **front right-hand wheel driveshaft relay bearing nuts (44 Nm)**.

❑ Refit:

- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- exhaust bracket nuts.

❑ Torque tighten the **exhaust bracket bolts at the catalytic converter outlet (9 Nm)**.

❑ Fill the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).

❑ Refit:

- the engine cover,
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
new expansion chamber mounting bolt on the rubber mounting bush	**8 Nm**
exhaust sleeves	**25 Nm**

REMOVAL

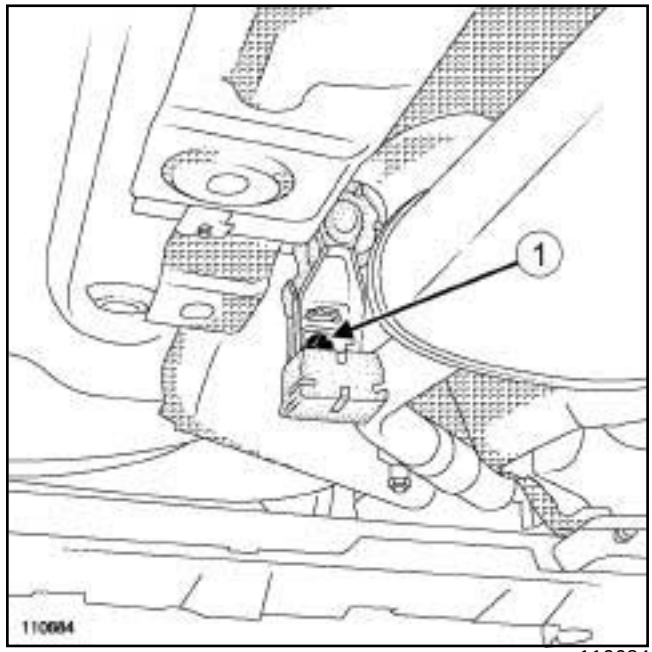
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Remove the engine undertray.

❑ Cut the exhaust pipe (see) and (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



110684

❑ Remove:

- the bolt (**1**) mounting the expansion chamber to the exhaust rubber mounting bush,
- the expansion chamber.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the expansion chamber,
- the sleeves,
- the rubber mounting bush damper.

❑ Torque tighten:

- the **new expansion chamber mounting bolt on the rubber mounting bush (8 Nm)**,
- the **exhaust sleeves (25 Nm)** while lifting the exhaust pipe to ensure correct alignment (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

II - FINAL OPERATION.

❑ Check:

- that all the exhaust pipe heat shields are in place and properly attached,
- that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

Tightening torques ▽	
new mounting bolts on the connector pipe on the rubber mounting bush	**8 Nm**
exhaust sleeves	**25 Nm**

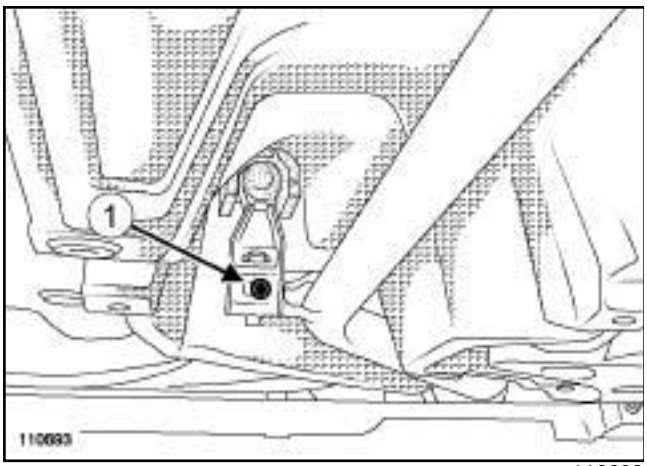
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (see) (MR 392, 19A, Exhaust).



110693

❑ Remove:

- the bolt (**1**) mounting the connector pipe to the rubber mounting bush support,
- the connector pipe.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the connector pipe,
- the sleeves.

❑ Torque tighten:

- the **new mounting bolts on the connector pipe on the rubber mounting bush (8 Nm)**,
- the **exhaust sleeves (25 Nm)** while lifting the exhaust pipe to ensure correct alignment (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (MR 392, 19A, Exhaust).

II - FINAL OPERATION.

❑ Make sure that all the exhaust pipe heat shields are in place and properly secured.

❑ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

D4F or K4J or K4M or K9K or M4R

Tightening torques ▽	
rubber mounting bush support bolts on the silencer	**8 Nm**
exhaust sleeve	**25 Nm**

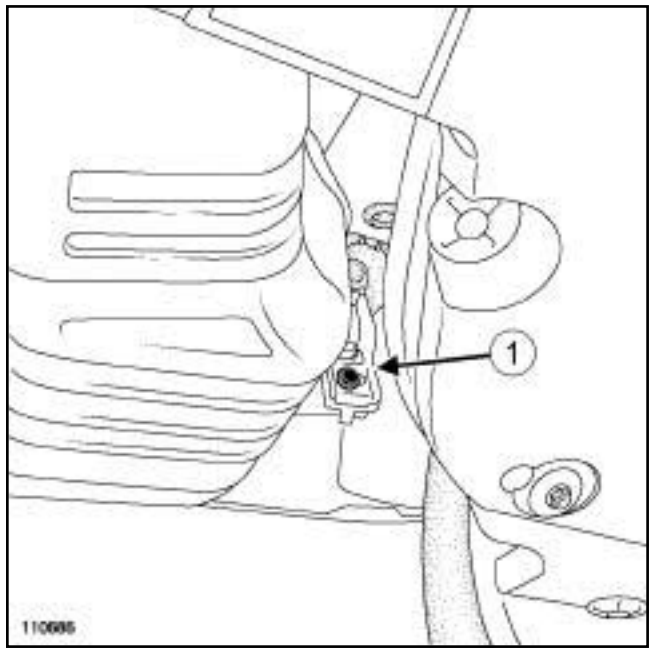
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (see) (MR 392, 19A, Exhaust).

II - OPERATION FOR REMOVAL OF PART CONCERNED



110686

❑ Remove:

- the bolt (**1**) mounting the silencer on the rubber mounting bush support,
- the silencer.

Note:

If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the silencer,
- the sleeve (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) (MR 392, 19A, Exhaust).

❑ Torque tighten:

- the **rubber mounting bush support bolts on the silencer (8 Nm)**,
- the **exhaust sleeve (25 Nm)** while lifting the exhaust pipe to ensure correct alignment.

D4F or K4J or K4M or K9K or M4R

II - FINAL OPERATION.

❑ Make sure that all the exhaust pipe heat shields are in place and properly secured.

❑ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- that the sleeve « nut-bolt tightening » assembly is vertical, with the nut facing downwards, to prevent any risk of underbody contact,
- position the new component in such a way that the marks on the area to be cut are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.
- that the bolts securing the rubber mounting bushes to the exhaust pipe have been replaced with new ones.

F4R

Equipment required
component jack

Tightening torques ▽	
bolts of the rubber mounting bush supports on the body	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the diffuser on the rear bumper (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

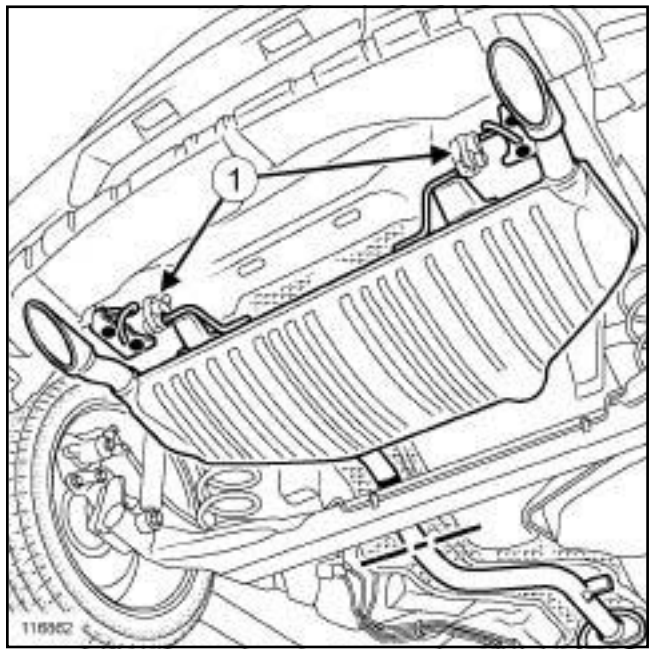
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) in the designated area to be cut (see **19B**, **Exhaust**, **Exhaust: List and location of components**, page **19B-1**) .

❑ Fit a **component jack** under the silencer.

WARNING
If removing the support from the rubber mounting bush on the body, mark its position on the body beforehand, using a pen.

F4R, and 830

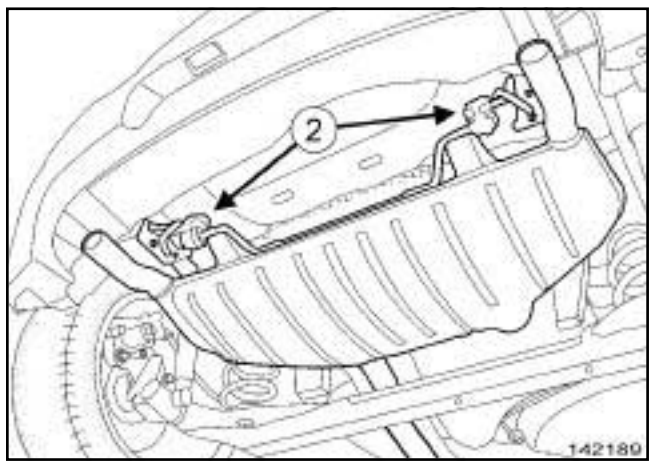


116862

❑ Remove:

- the rubber mounting bushes (**1**) using the tool **Mot. 1857**,
- the silencer.

F4R, and 832



142189

❑ Remove:

- the rubber mounting bushes (**2**) using the tool **Mot. 1857**,

- the silencer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the silencer and hold it with a **component jack**.

❑ If removing the supports from the rubber mounting bushes, fit the mounting bolts of the rubber mounting bush supports on the body without tightening them.

❑ Fit the retaining rubber mounting bushes of the silencer.

> Note:
>
> Lubricate inside the holes of the rubber mounting bush using brake cleaner (see) to fit it more easily on the support on the body and on the silencer.

❑ Fit the exhaust trunking (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

❑ Adjust the silencer in relation to the rear bumper in order to align the splines horizontally.

❑ Torque tighten the **bolts of the rubber mounting bush supports on the body (21 N.m)** if they were removed.

II - FINAL OPERATION

❑ Check that the exhaust pipe heat shields are in place and properly attached.

❑ Check that there are no leaks.

> **WARNING**
>
> Check that the exhaust pipe is not touching the body.
>
> Check that all the heat shields are present.

❑ Refit the diffuser on the rear bumper (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

EQUIPMENT LEVEL EAG

Tightening torques ▽	
rubber mounting bush support bolts on the silencer	**8 N.m**
exhaust sleeve	**25 N.m**

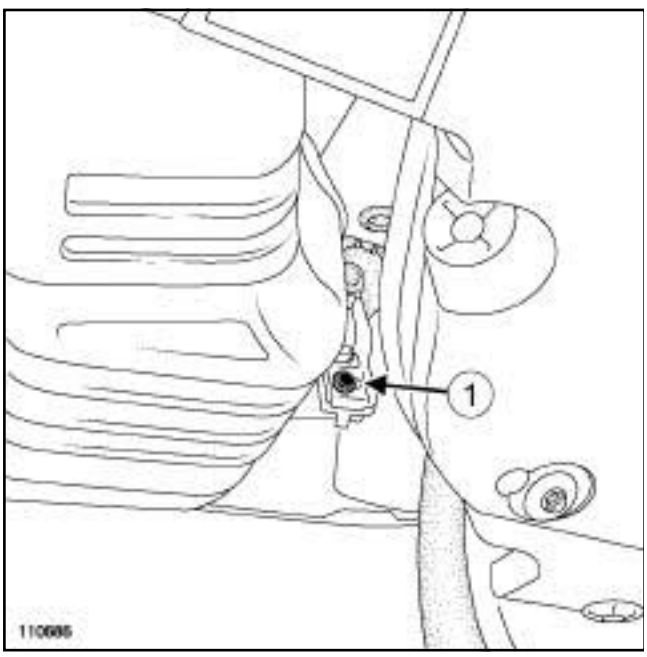
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

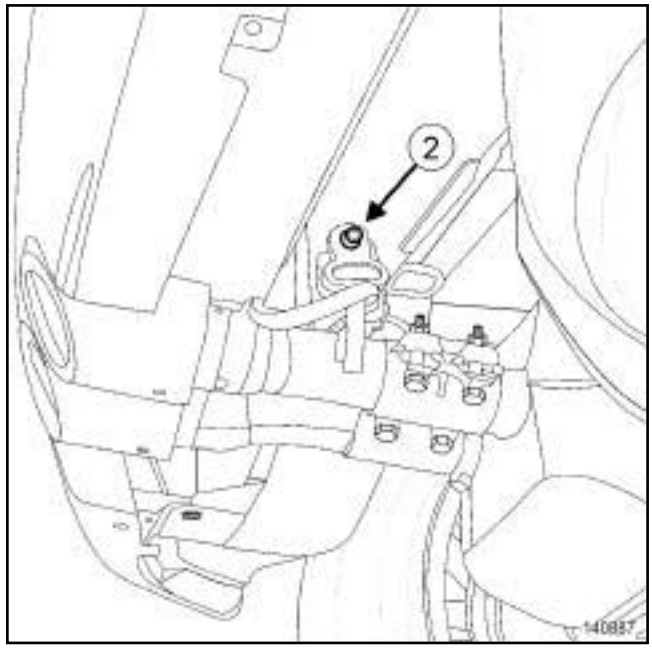
❏ Cut the exhaust pipe (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) in the designated area to be cut (see) (19A, Exhaust).

II - OPERATION FOR REMOVAL OF PART CONCERNED



110686

❏ Remove the silencer bolts (**1**) on the rubber mounting bush support.



140887

❏ Unclip the silencer from the rubber mounting bush at (**2**) .

❏ Remove the silencer.

> Note:
>
> If the rubber mounting bushes are damaged, mark the position of the support on the body, then replace the « support - rubber mounting bush » assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the silencer.

❏ Clip the silencer onto the rubber mounting bush.

❏ Fit a new After-Sales sleeve between the expansion chamber and the silencer (see **19B**, **Exhaust**, **Exhaust: Precautions for the repair**, page **19B-19**) .

> **WARNING**
>
> Position the « nut and bolt securing the sleeve » assembly so that the assembly cannot come into contact with the underbody.

❏ Tighten to torque:

- the **rubber mounting bush support bolts on the silencer (8 N.m)**,

EQUIPMENT LEVEL EAG

- the **exhaust sleeve (25 N.m)** whilst supporting the exhaust pipe.

II - FINAL OPERATION

❑ Check:

- that all the exhaust pipe heat shields are in place and properly attached,
- that there is no contact with the underbody,
- that there are no leaks.

Fuel tank: Removal - Refitting

D4F or F4R or K4J or K4M or K9K or M4R – S85

Equipment required
component jack

Tightening torques ▽	
fuel tank bolts	**21 N.m**
silencer rubber mounting bush bolt on the body	**21 N.m**
expansion chamber rubber mounting bush bolt on the body	**21 N.m**
fuel tank filler neck bolt	**21 N.m**

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To prevent impurities from entering the circuit, plugs must be fitted to the openings of all the fuel circuit components exposed to the open air.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Drain the fuel tank (see **19C**, **Tank**, **Fuel tank: Draining**, page **19C-8**) .

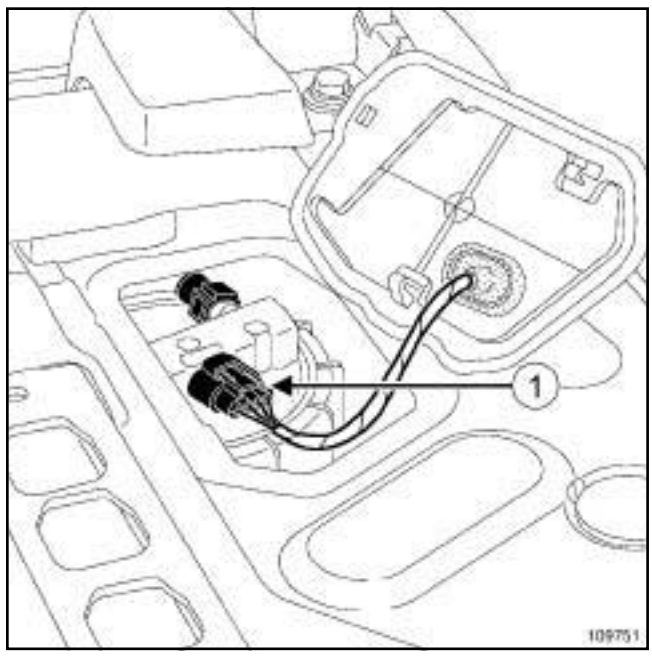
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Raise the rear bench seat.

S85

❏ Remove the rear loading trim (see **Rear loading trim: Removal - Refitting**) (71A, Body internal trim).

❏ Open the inspection flap.



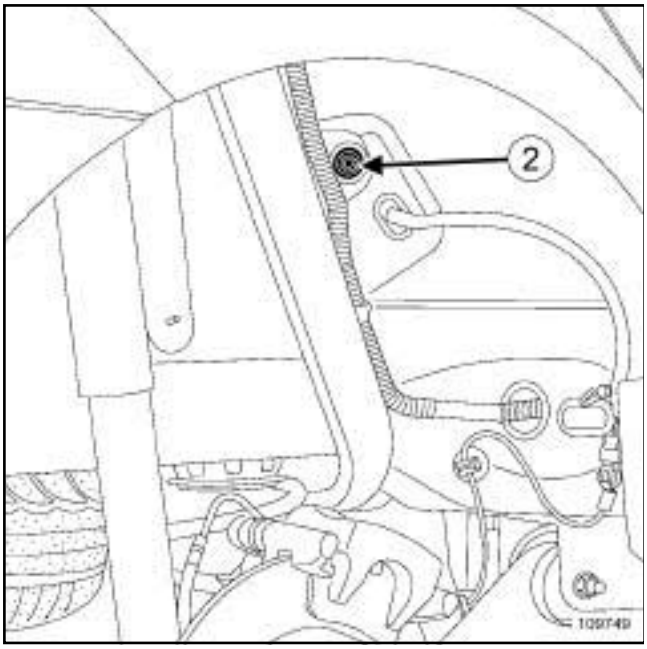
109751

❏ Disconnect the connector (**1**) from the « fuel sender module » .

❏ Remove:

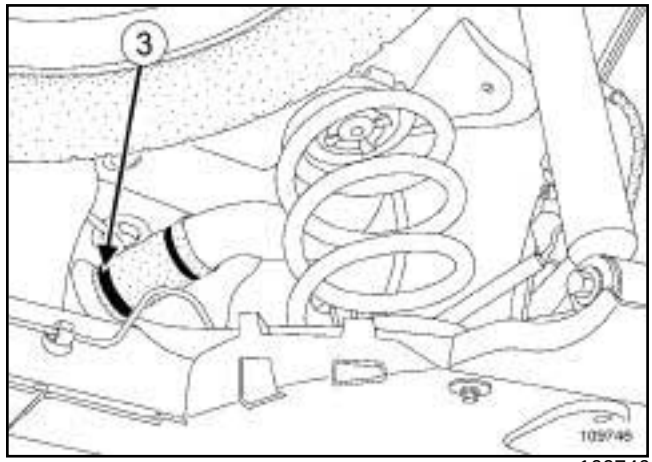
- the rear right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the rear right-hand wheel arch liner (see **Rear wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

D4F or F4R or K4J or K4M or K9K or M4R – S85



109749

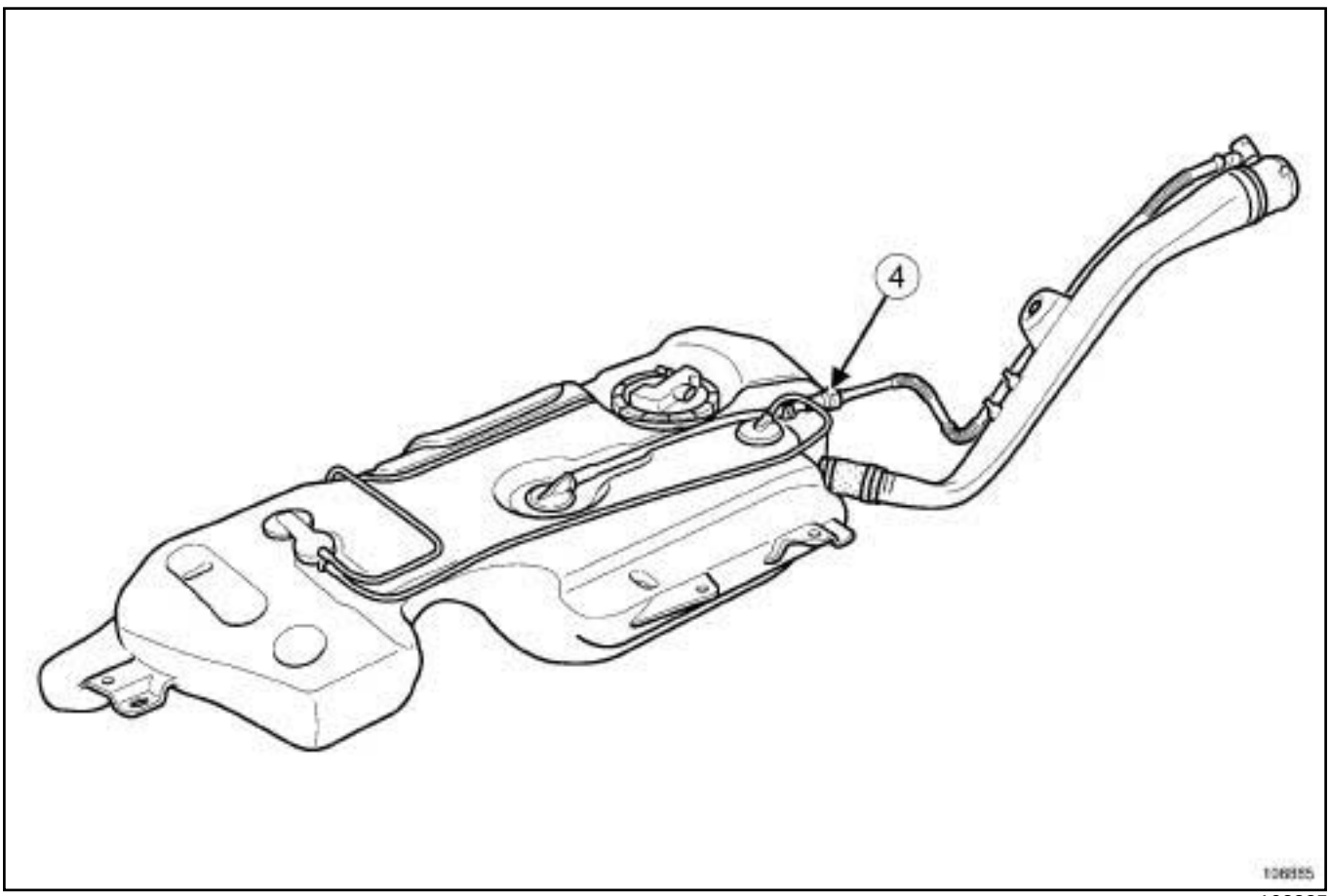
❑ Remove the bolt (**2**) from the fuel tank filler neck.



109746

❑ Remove the clip (**3**) from the fuel tank filler neck.

❑ Separate the filler neck from the fuel tank.

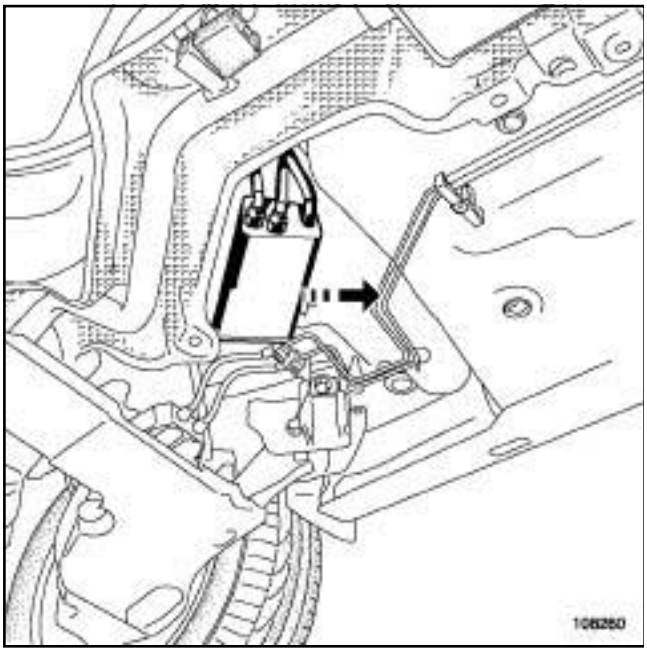


108885

❑ Disconnect the anti-discharge pipe (**4**) from the fuel tank.

D4F or F4R or K4J or K4M or K9K or M4R – S85

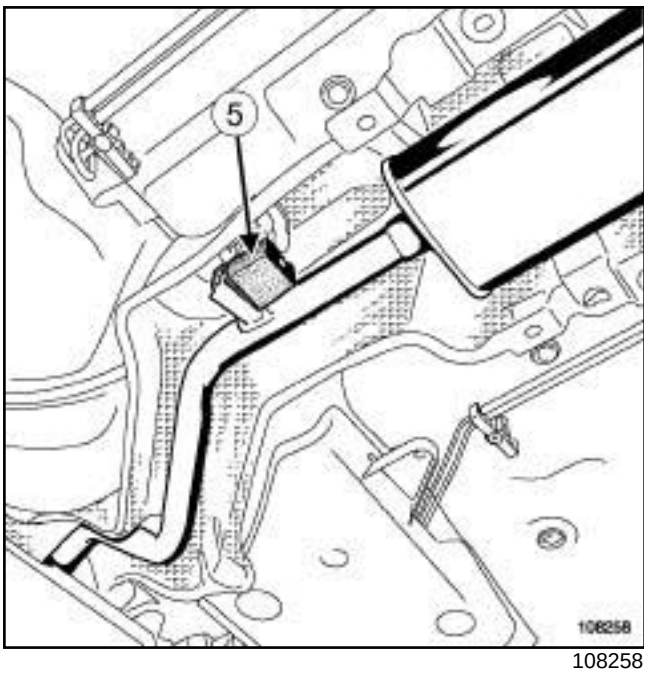
D4F or F4R or K4J or K4M or M4R



108260

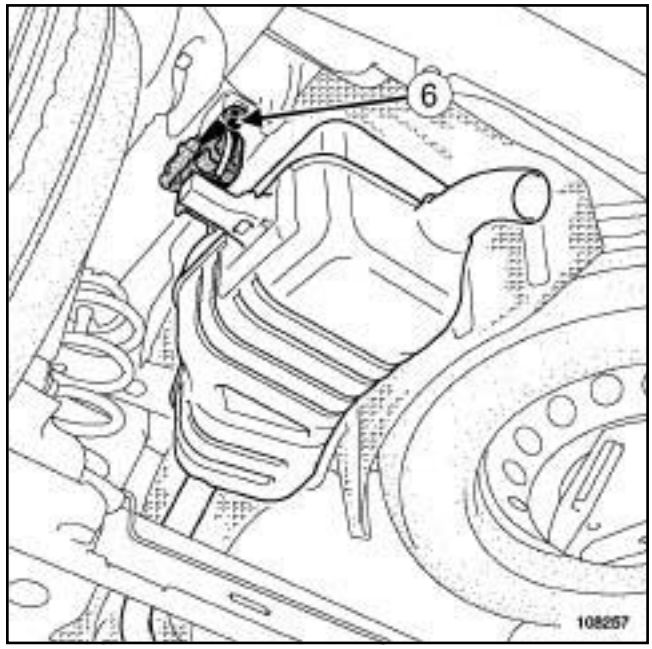
❏ Disconnect the pipes connected to the fuel vapour absorber.

❏ Remove the fuel vapour absorber.



108258

❏ Remove the rubber mounting bush bolt (**5**) from the expansion chamber on the body.

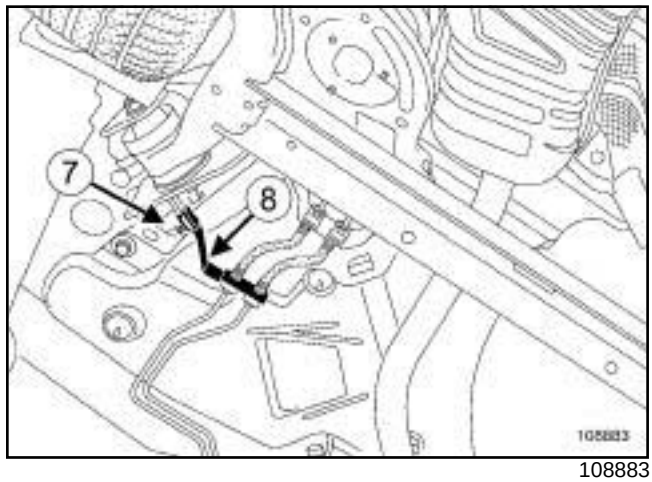


108257

❏ Remove the rubber mounting bush bolt (**6**) from the silencer on the body.

❏ Position the exhaust pipe resting on the rear axle.

❏ Remove the heat shield.



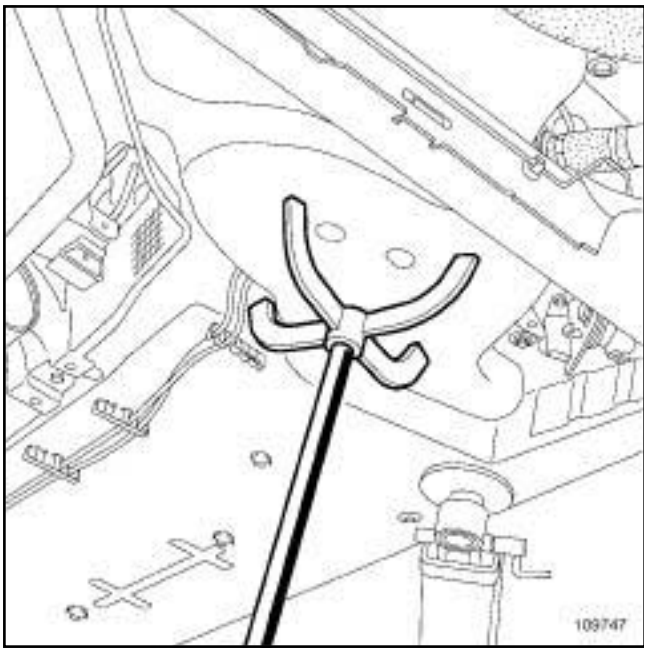
108883

❏ Undo the brake pipe strut bolt (**7**) on the rear axle.

❏ Remove the brake pipe strut (**8**) on the rear axle.

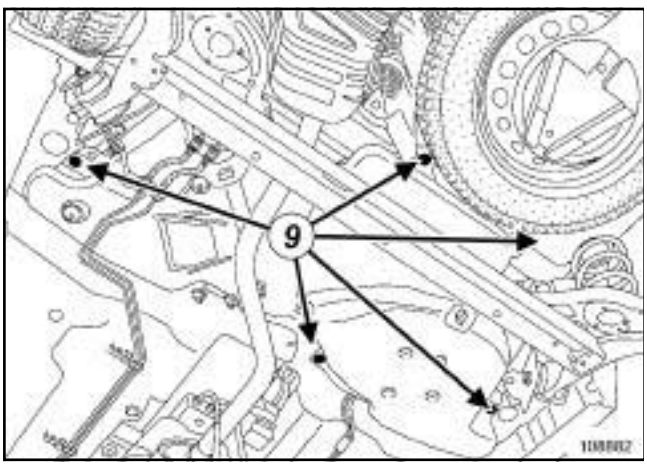
D4F or F4R or K4J or K4M or K9K or M4R – S85

II - OPERATION FOR REMOVAL OF PART CONCERNED



109747

❏ Fit a **component jack** under the fuel tank.



108882

❏ Remove the bolts (**9**) from the fuel tank.

❏ Gently lower the fuel tank.

❏ Unclip the fuel supply pipes from the fuel tank.

❏ Disconnect the fuel sender module fuel union.

❏ Remove the fuel tank by turning it around the exhaust pipe (this operation requires two people).

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always fit a new clip to the filler neck - fuel tank connecting hose.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the fuel tank by turning it around the exhaust pipe (this operation requires two people).

❏ Connect the fuel sender module fuel union.

❏ Connect the fuel supply pipes to the fuel tank.

❏ Torque tighten the **fuel tank bolts (21 N.m)**.

❏ Remove the **component jack**.

III - FINAL OPERATION

❏ Refit the brake pipe strut ***(8)*** on the rear axle.

❏ Tighten the brake pipe strut bolt ***(7)*** on the rear axle.

❏ Refit the heat shield.

❏ Torque tighten:

- the **silencer rubber mounting bush bolt on the body (21 N.m)**,
- the **expansion chamber rubber mounting bush bolt on the body (21 N.m)**.

D4F or F4R or K4J or K4M or M4R

❏ Refit the fuel vapour absorber.

❏ Connect the pipes connected to the fuel vapour absorber.

❏ Connect the anti-discharge pipe ***(4)*** to the fuel tank.

❏ Fit the filler neck on the fuel tank.

❏ Refit the new fuel tank filler neck clip ***(3)*** .

❏ Torque tighten the **fuel tank filler neck bolt (21 N.m)**.

❏ Refit:

- the rear right-hand wheel arch liner (see **Rear wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the rear right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Connect the connector ***(1)*** for the « fuel sender » module.

❏ Close the inspection flap.

❏ Refit the rear bench seat.

D4F or F4R or K4J or K4M or K9K or M4R – S85

S85

❑ Refit the rear loading trim (see **Rear loading trim: Removal - Refitting**) (71A, Body internal trim).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

D4F or F4R or K4J or K4M or K9K or M4R

Tightening torques ▽	
filler neck earth bolt	**21 Nm**

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To prevent impurities from entering the circuit, plugs must be fitted to the openings of all the fuel circuit components exposed to the open air.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Drain the tank (see **19C**, **Tank**, **Fuel tank: Draining**, page **19C-8**) .

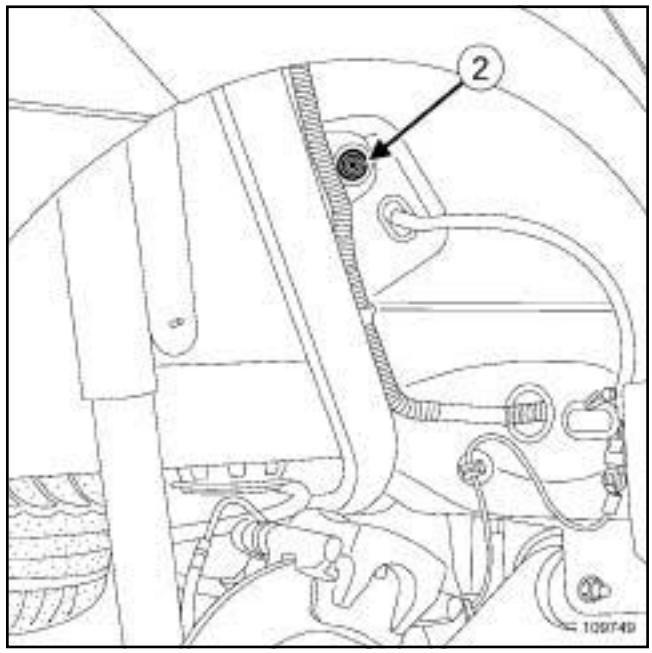
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

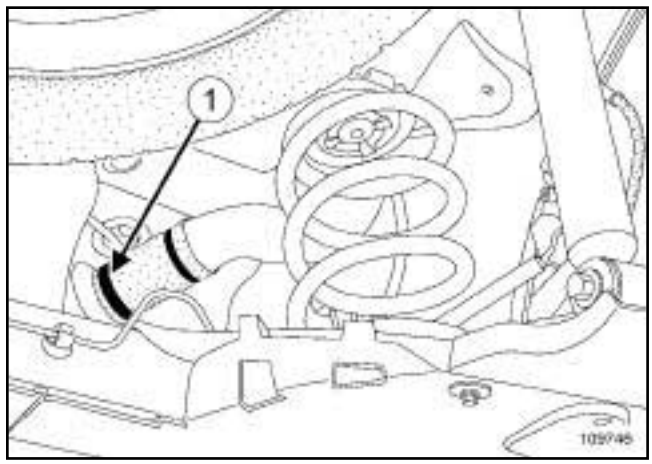
- the rear right-hand wheel,
- the rear right-hand wheel arch liner.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109749

❏ Remove the earth bolt (**2**) from the filler neck.

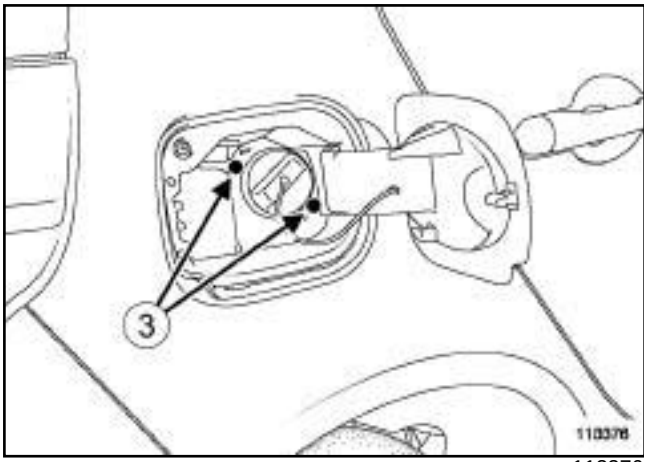


109746

❏ Disconnect the anti-return pipe.

❏ Remove the filler pipe clip (**1**) .

D4F or F4R or K4J or K4M or K9K or M4R



113376

❏ Remove:

- the filler neck bolts (**3**) ,
- the filler neck.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Always replace the clips with new ones.

❏ Refit:

- the filler neck,
- the filler neck earth bolt
- the filler neck bolts,
- the new clip on the filler pipe.

❏ Torque tighten the **filler neck earth bolt (21 Nm)** ***(2)*** .

❏ Fit the new filler pipe clip.

❏ Disconnect the anti-return pipe.

II - FINAL OPERATION.

❏ Refit:

- the rear right-hand wheel arch liner (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the rear right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 750 or 752 or 764 or 766 or 768

Tightening torques ▽	
fuel filter protector nuts	**21 Nm**

IMPORTANT

during this operation, it is essential to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

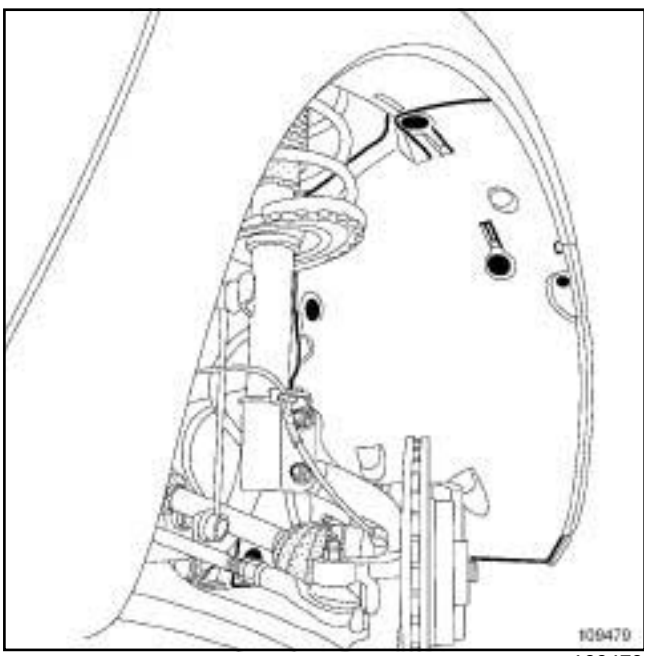
IMPORTANT

Wear gloves during this operation.

IMPORTANT

Wear goggles with side protectors for this operation.

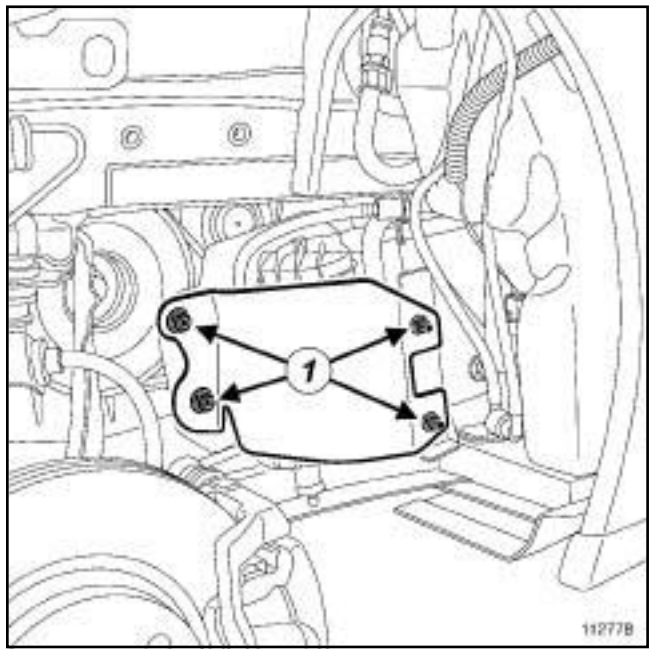
I - OIL SERVICE



109479

❏ Remove:

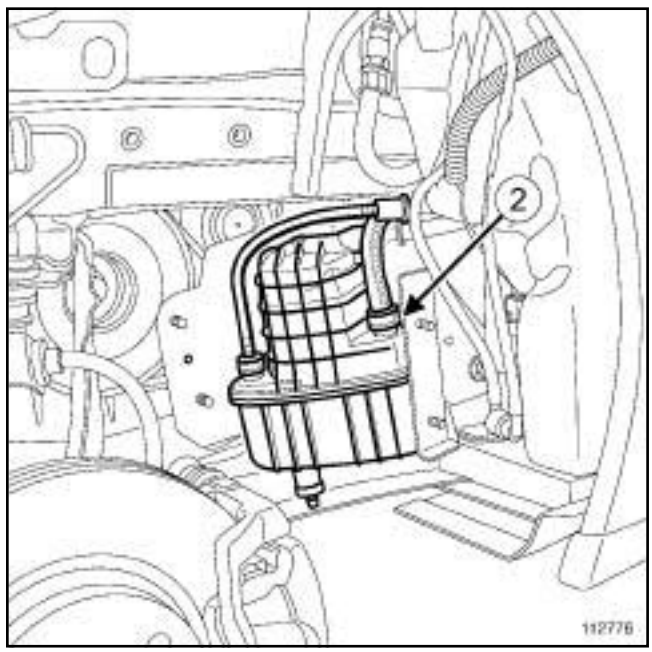
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112778

❏ Remove:

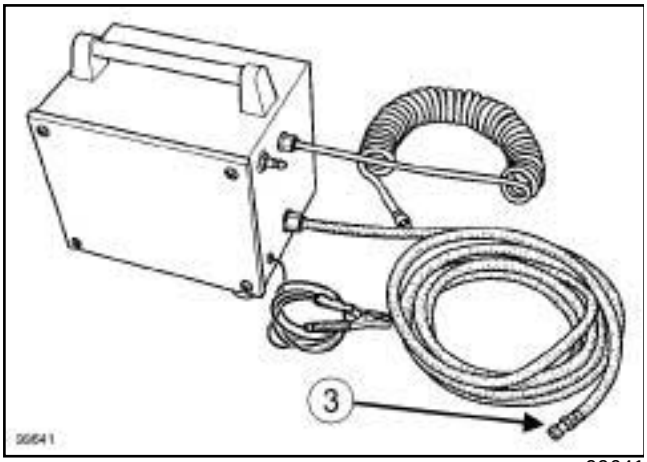
- the nuts (**1**) from the fuel filter guard,
- the fuel filter guard.



112776

❏ Disconnect the fuel inlet pipe (**2**) from the fuel filter.

❏ Make preparations for fuel outflow.



99641

❏ Connect the rubber pneumatic pump vacuum pipe (**3**) onto the fuel supply pipe.

❏ Activate the pneumatic pump.

❏ Let the fuel flow out until it the flow is intermittent.

II - REFITTING

❏ Connect the fuel supply pipe to the fuel filter pipe.

❏ Refit the fuel filter guard.

❏ Torque tighten the **fuel filter protector nuts (21 Nm)**.

❏ Refit:

- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

D4F or K4J or K4M or M4R

Special tooling required	
Mot. 1311-08	Union for taking fuel pressure measurements.

Equipment required
pneumatic transfer pump for fuels

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To prevent impurities from entering the circuit, plugs must be fitted to the openings of all the fuel circuit components exposed to the open air.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

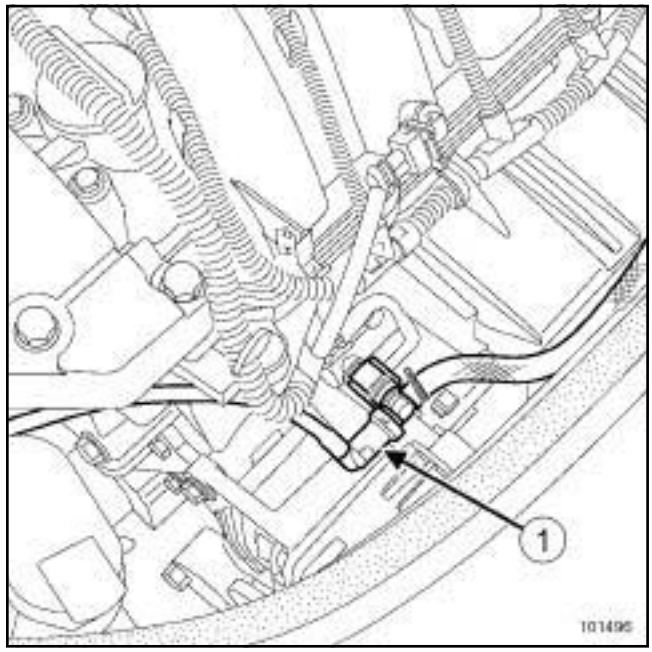
I - DRAINING PREPARATION OPERATION

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

K4J or K4M or M4R – D4F, and 784

❑ Remove the front engine cover.

K4J



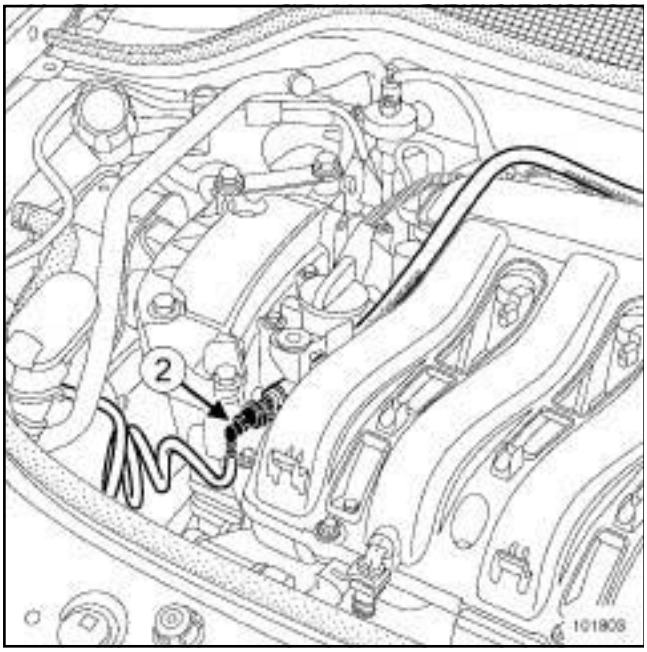
101496

❑ Disconnect the fuel supply union (**1**) from the injector rail.

❑ Fit a « T » union **(Mot. 1311-08)**.

D4F or K4J or K4M or M4R

K4M

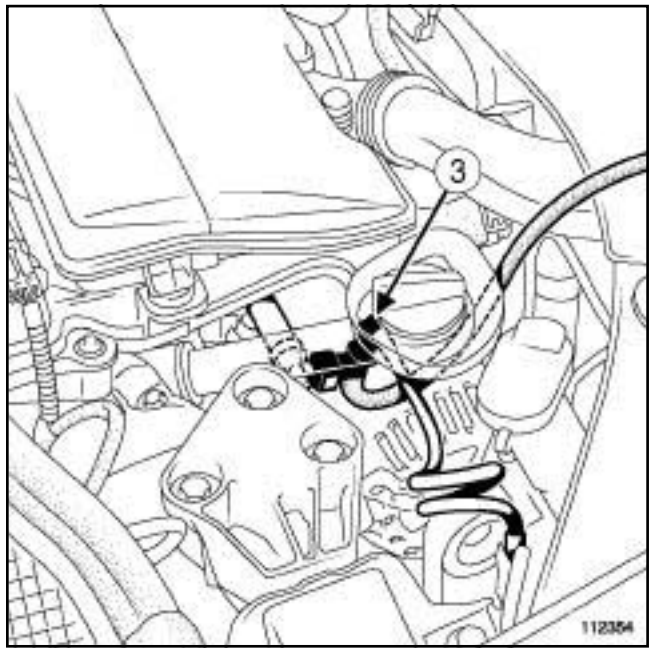


101803

❏ Disconnect the fuel supply union (**2**) from the injector rail.

❏ Fit a « T » union **(Mot. 1311-08)**.

D4F



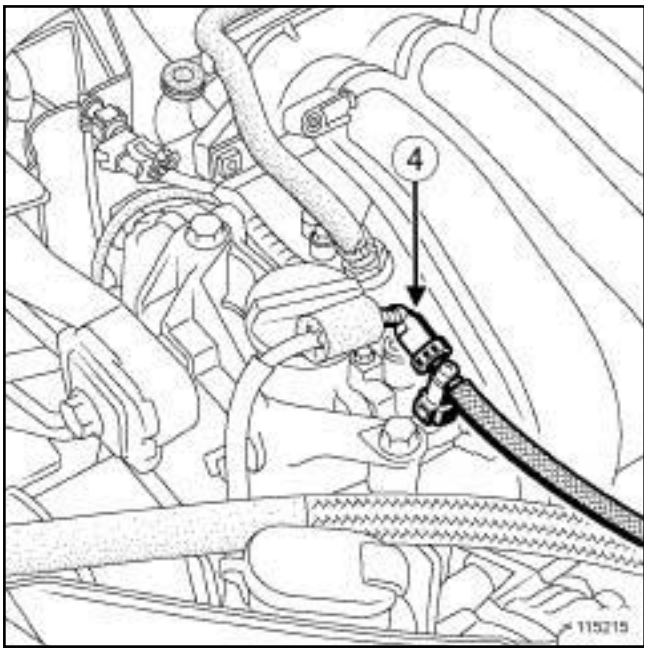
112354

❏ Disconnect the fuel supply union (**3**) from the injector rail.

❏ Fit a « T » union **(Mot. 1311-08)**.

D4F or K4J or K4M or M4R

M4R



115215

❏ Disconnect the fuel supply union (**4**) from the injector rail.

❏ Fit a « T » union **(Mot. 1311-08)**.

II - FUEL TANK DRAINING PROCEDURE

❏ Connect a **pneumatic transfer pump for fuels** to the « T » union output.

❏ Drain the fuel tank.

III - FINAL OPERATION.

❏ Disconnect the **pneumatic transfer pump for fuels**.

❏ Remove the « T » union **(Mot. 1311-08)**.

❏ Connect:

- fuel supply union ,
- the battery (see) (MR 392, 80A, Battery).

K4J or K4M or M4R – D4F, and 784

❏ Refit the engine cover.

F4R

Special tooling required	
Mot. 1311-08	Union for taking fuel pressure measurements.

Equipment required
pneumatic transfer pump for fuels

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To prevent impurities from entering the circuit, plugs must be fitted to the openings of all the fuel circuit components exposed to the open air.

WARNING

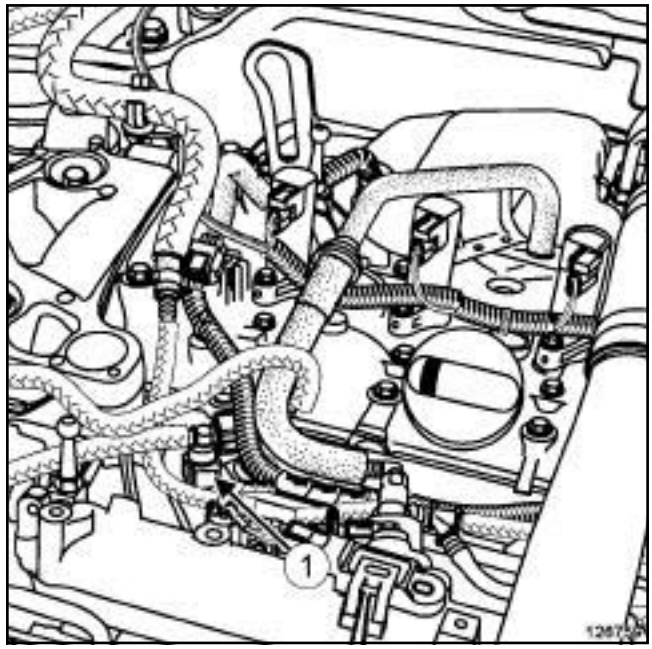
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

DRAINING

❏ Disconnect the battery (see) (80A, Battery).

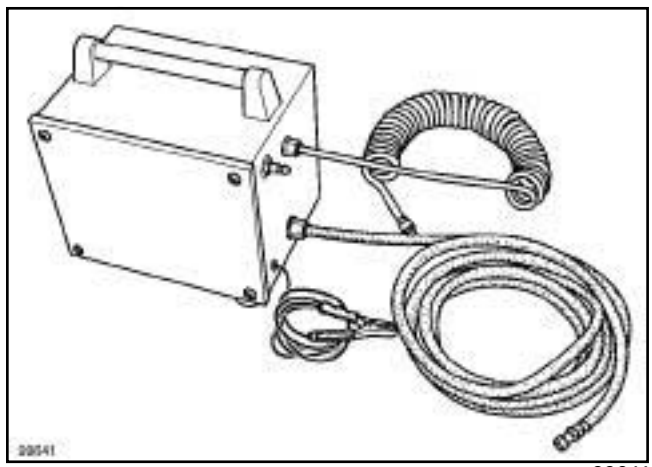
❏ Remove the front engine cover.

❏ Disconnect the fuel supply pipe union from the injector rail.



126759

❏ Fit a « T » union **(Mot. 1311-08)** (**1**) .



99641

❏ Connect a **pneumatic transfer pump for fuels** on the « T » union outlet.

❏ Drain the fuel tank.

REFITTING

❏ Disconnect the **pneumatic transfer pump for fuels** from the « T » union outlet.

❏ Remove the « T » union **(Mot. 1311-08)**.

❏ Connect:

- the fuel supply union on the injector rail,
- the battery (see) (80A, Battery).

❏ Refit the engine cover.

K9K

Special tooling required	
Mot. 1397	Universal spanner for removing fuel gauge nuts.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

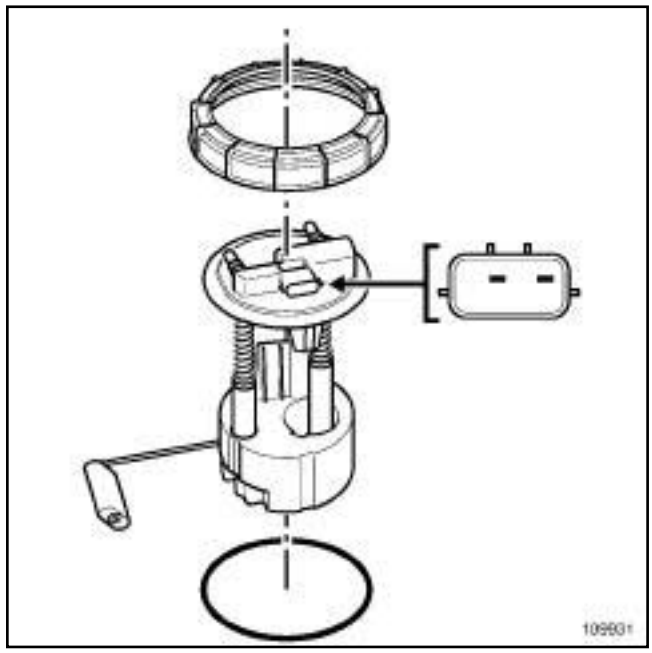
❑ Drain the fuel tank (see **19C**, **Tank**, **Fuel tank: Draining**, page **19C-8**) .

❑ Remove the battery covers.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109931

❑ Remove the mounting nut from the sender unit using **(Mot. 1397)**

❑ Let the fuel drain from the sender.

❑ Remove the sender unit, being careful with the float.

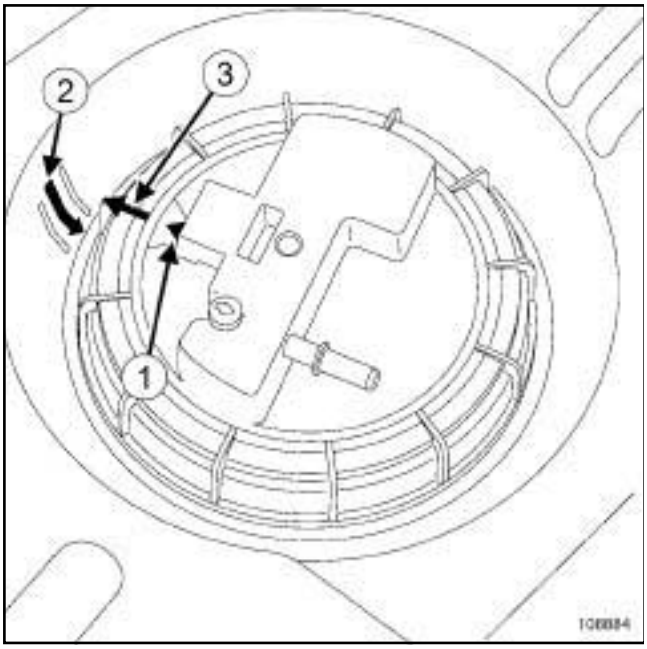
WARNING

Refit the sender nut as soon as the sender has been removed to prevent any deformation of the fuel tank.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Replace the O-ring.



108884

❑ Refit the pump - sender by positioning the mark (**1**) on the sender opposite the mark (**2**) on the tank.

❑ Position the sender mounting nut.

❑ Tighten the sender mounting nut using the **(Mot. 1397)** until the mark on the nut (**3**) lines up with the mark (**2**) on the tank and the mark (**1**) on the sender.

II - FINAL OPERATION.

❑ Refit the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and 772

Special tooling required	
Mot. 1397	Universal spanner for removing fuel gauge nuts.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

IMPORTANT

Wear gloves during this operation.

IMPORTANT

Wear goggles with side protectors for this operation.

REMOVAL

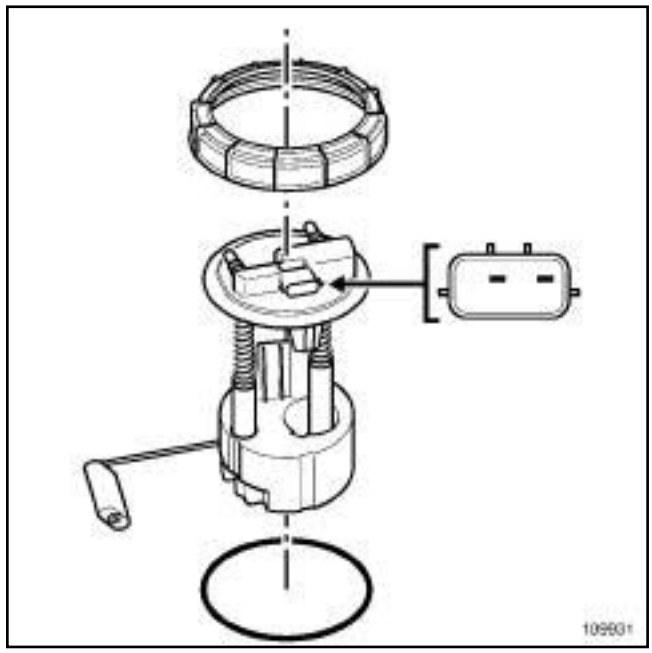
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❏ Drain the fuel tank (see **19C**, **Tank**, **Fuel tank: Draining**, page **19C-8**) .

❏ Remove the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109931

❏ Remove the nut from the pump - sender using the **(Mot. 1397)**.

❏ Let the fuel in the pump - sender flow out.

❏ Remove the pump - sender, being careful with the float.

WARNING

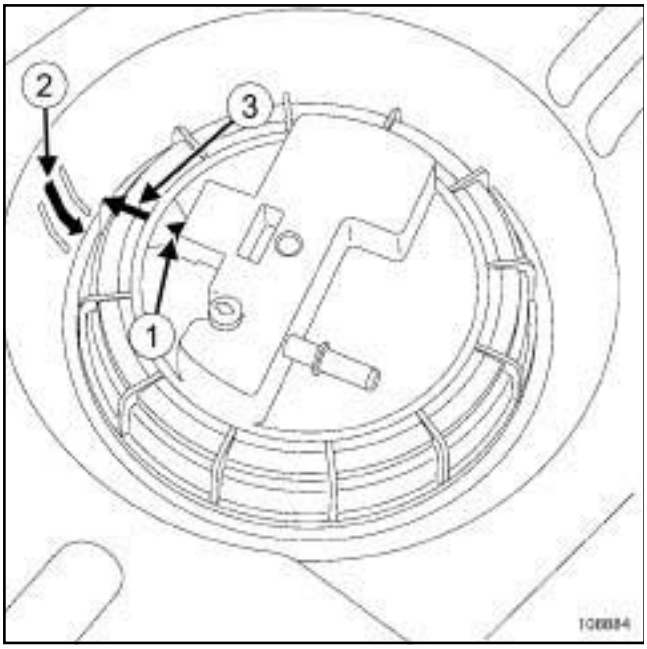
Refit the pump - sender nut as soon as the pump - sender has been removed to prevent any deformation of the fuel tank.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Replace the pump - sender O-ring seal and nut.

K9K, and 772



108884

❑ Refit the pump - sender by positioning the mark (**1**) on the sender opposite the mark (**2**) on the tank.

❑ Position the nut for the sender.

❑ Tighten the pump - sender nut using the **(Mot. 1397)** until the mark on the nut (**3**) lines up with the mark (**2**) on the tank and the mark (**1**) on the pump - sender.

II - FINAL OPERATION

❑ Refit the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

D4F or F4R or K4J or K4M or M4R

Special tooling required	
Mot. 1397	Universal spanner for removing fuel gauge nuts.

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear latex gloves during the operation.

WARNING

To prevent impurities from entering the circuit, plugs must be fitted to the openings of all the fuel circuit components exposed to the open air.

WARNING

To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

REMOVAL

I - REMOVAL PREPARATION OPERATION

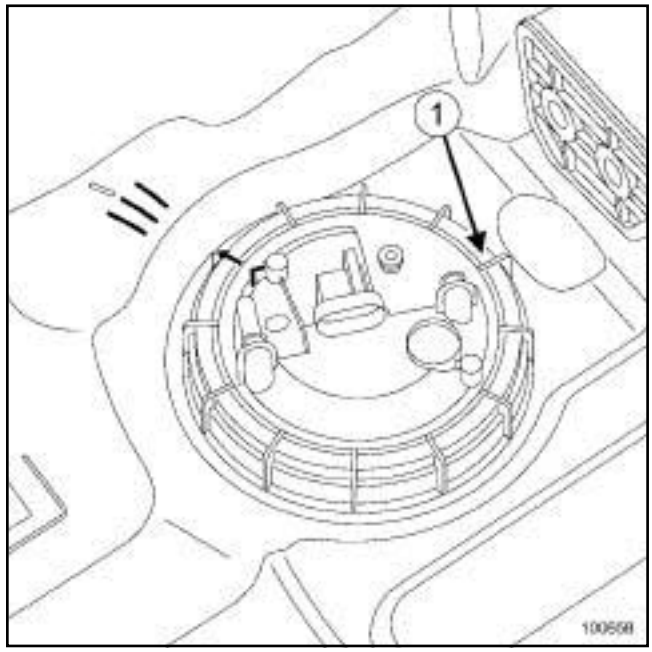
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Drain the fuel tank (see **19C**, **Tank**, **Fuel tank: Draining**, page **19C-8**) .

❑ Remove the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



100658

❑ Remove the nut (**1**) from the fuel sender module using the **(Mot. 1397)**.

Note:

Take care to ensure that the float is not damaged during the operation.

❑ Remove the fuel sender module, preparing for the flow of fuel.

WARNING

In order to avoid any damage to the tank, refit the « pump-sender-filter » assembly nut as soon as the assembly is removed.

REFITTING

I - REFITTING PREPARATIONS OPERATION

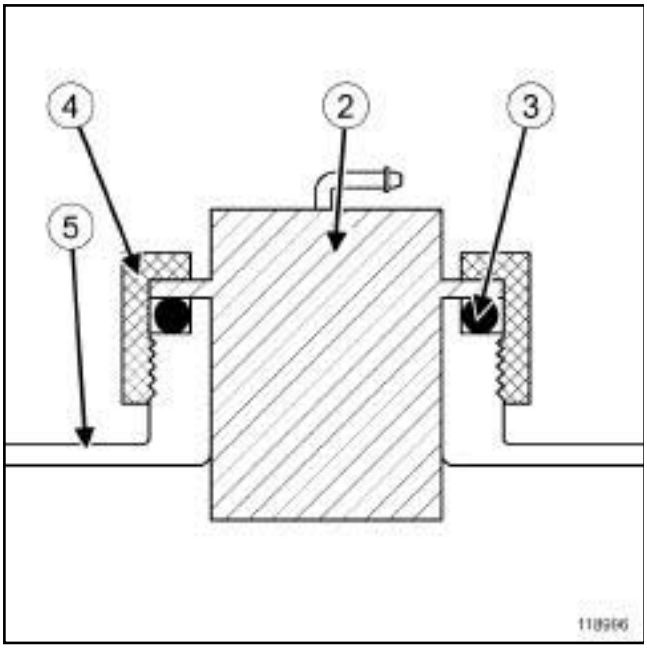
❑ Always replace:

- the fuel sender module nut,
- the O-ring seal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the fuel sender module.

D4F or F4R or K4J or K4M or M4R

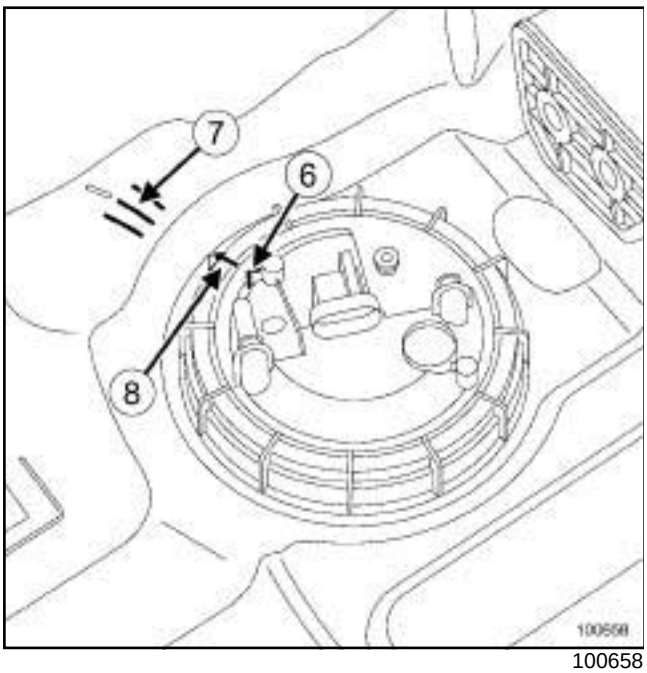


118996

❏ Correctly position the seal (**3**) in the neck.

❏ Position the fuel sender module (**2**) on the tank (**5**) ; a lug on the fuel sender module and a recess in the tank ensure correct fitting in the tank.

❏ Press on the "fuel sender" module to secure the seal, manually pre-tighten the "fuel sender" module nut (**4**) on the tank.



100658

❏ Tighten the fuel sender module nut using the **(Mot. 1397)** until the index (**8**) corresponds with the tank index (**7**) and the "fuel sender" module index (**6**) .

III - FINAL OPERATION.

❏ Refit the fuel tank (see **19C**, **Tank**, **Fuel tank: Removal - Refitting**, page **19C-1**) .

❏ Connect the battery (see) (MR 392, 80A, Battery).

❏ Check that there are no fuel leaks:

- run the engine at idle speed,
- accelerate several times at no load,
- switch off the ignition,
- check that there is no fuel escaping.

D4F or K4J or K4M or M4R

Value between the terminals 2 and 4 (Ω)	Capacity	Height H (mm ± 6 mm)
28 ± 11	full tank	upper stop
83 ± 22	tank 3/4 full	144
142 ± 23	tank 1/2 full	112
213 ± 23	tank 1/4 full	73
287 ± 24	reserve	39
317 ± 7	tank empty	lower stop

Check that the resistance varies when the float is moved.

Place the sender unit on a flat surface.

H is the height between the sender unit float pivot and the flat surface.

K9K

Value between the terminals 2 and 4 (Ω)	Capacity	Height H (mm ± 6 mm)
55 ± 11	full tank	upper stop
110 ± 23	tank 3/4 full	144
164 ± 23	tank 1/2 full	112
230 ± 23	tank 1/4 full	73
290 ± 24	reserve	39
317 ± 7	tank empty	lower stop

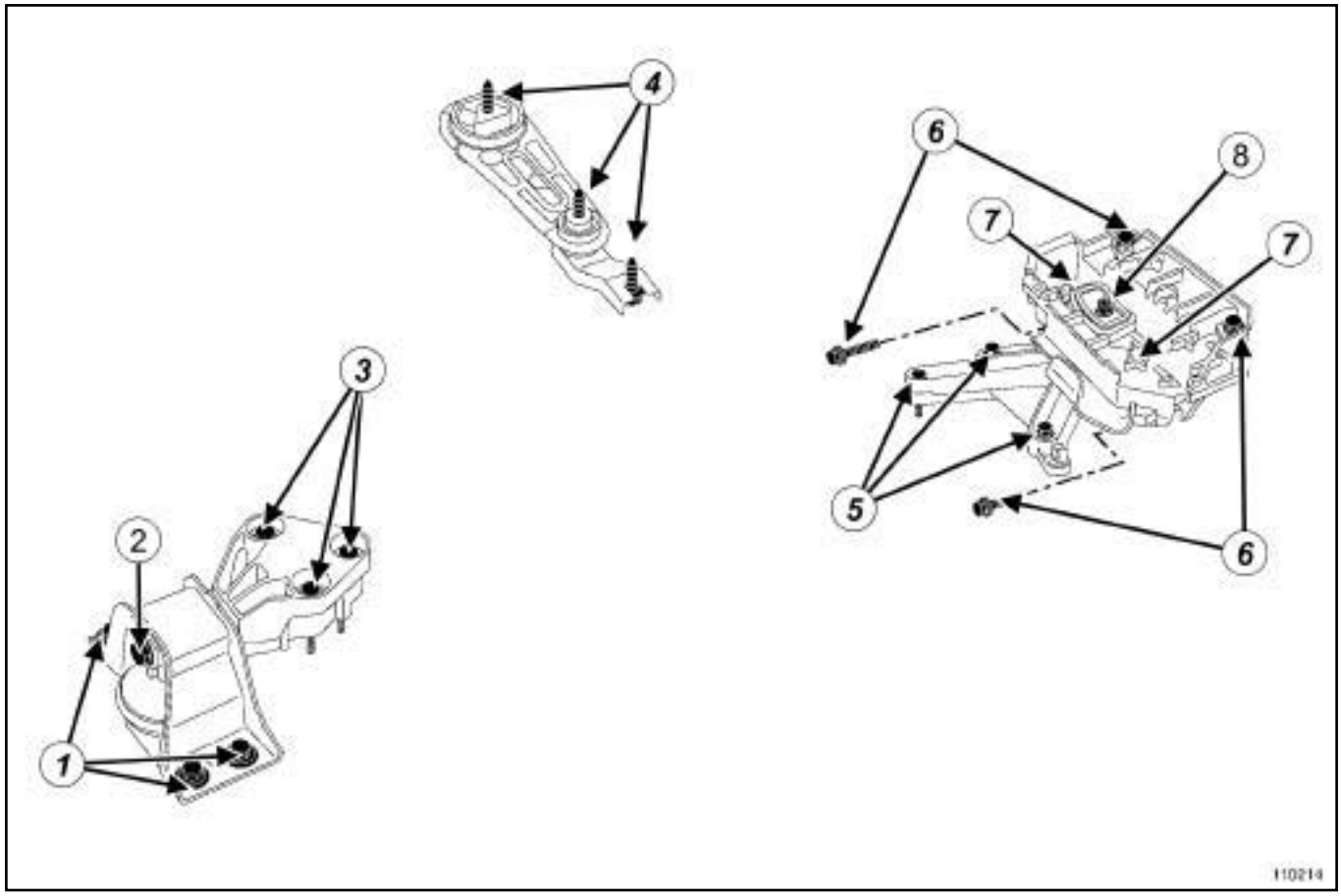
Check that the resistance varies when the float is moved.

Place the sender unit on a flat surface.

H is the height between the sender unit float pivot and the flat surface.

Suspended engine mounting: Tightening torque

D4F

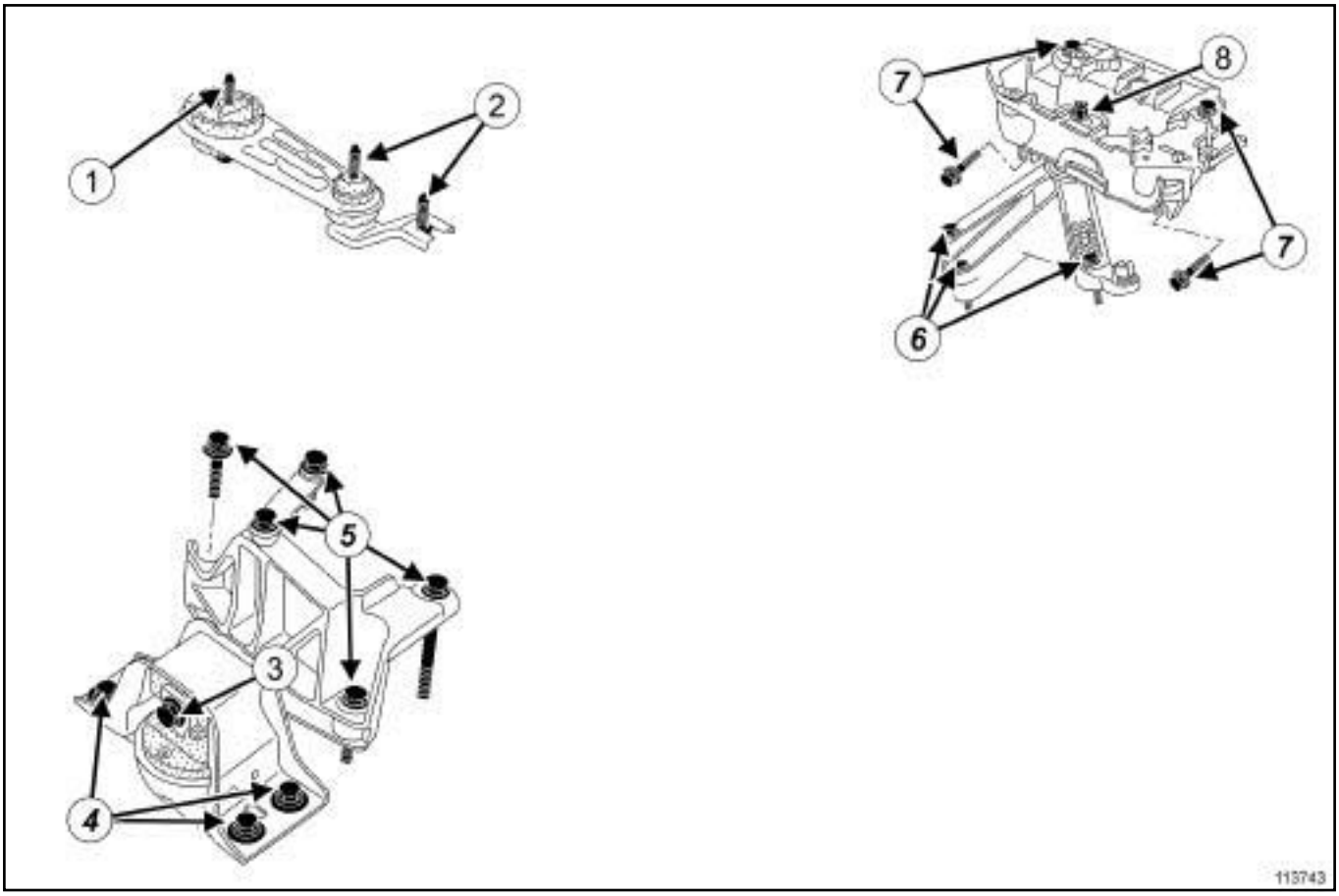


110214

Tightening torque (in Nm)

(1)	**62**
(2)	**105**
(3)	**62**
(4)	**105**
(5)	**62**
(6)	**62**
(7)	**62**
(8)	**62**

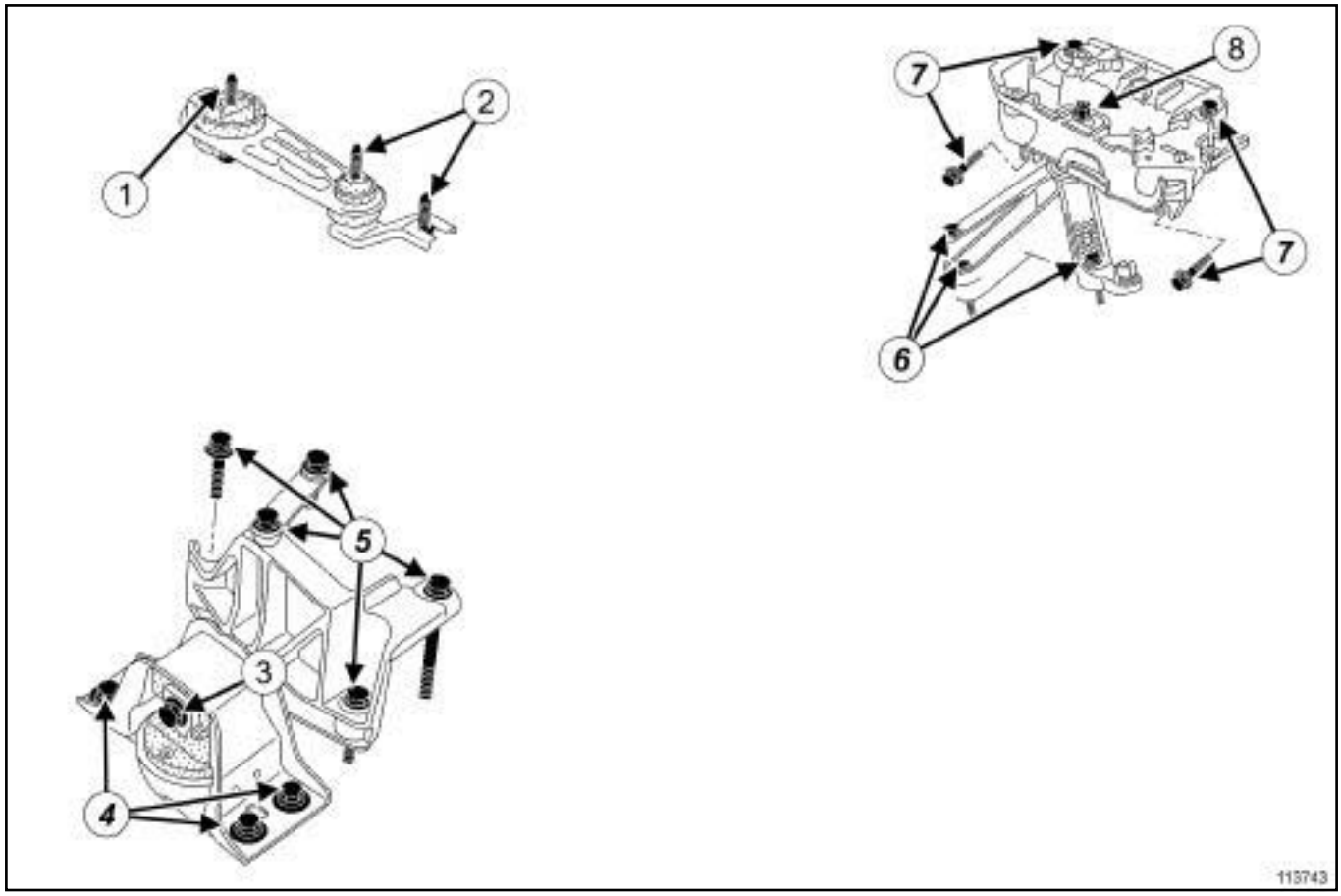
K4J, and JH3



113743

Number	Description	Tightening torque (Nm)
(**1**)	Bolt mounting the engine tie-bar onto the sub-frame	**105**
(**2**)	Engine tie-bar mounting bolt on the gearbox	**105**
(**3**)	Right-hand rubber pad mounting bolt	**105**
(**4**)	Bolt mounting the right-hand suspended mounting support on the body	**62**
(**5**)	Bolt mounting the right-hand suspended mounting support on the engine	**62**
(**6**)	Bolt mounting the left-hand suspended mounting support on the gearbox	**62**
(**7**)	Bolt mounting the left-hand suspended mounting support on the body	**62**
(**8**)	Nut mounting the left-hand rubber pad on the gearbox	**62**

K4M, and JH3

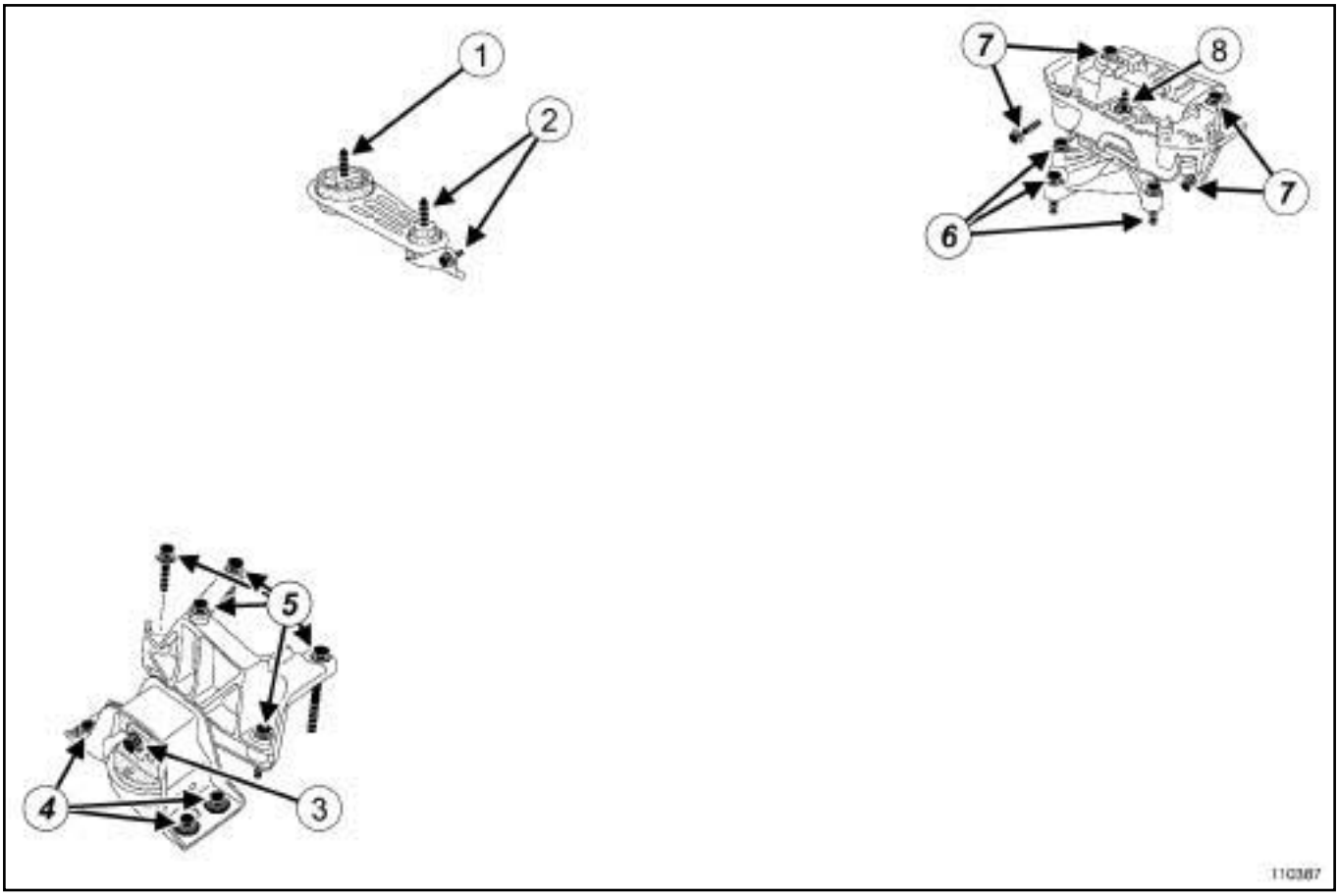


113743

Num-ber	Description	Tighten-ing torque (Nm)
(**1**)	Bolt mounting the engine tie-bar on the sub-frame	**105**
(**2**)	Engine tie-bar mounting bolt on the gearbox	**105**
(**3**)	Right-hand rubber pad mounting bolt	**105**
(**4**)	Bolt mounting the right-hand suspended mounting support on the body	**62**
(**5**)	Bolt mounting the right-hand suspended mounting support on the engine	**62**
(**6**)	Bolt mounting the left-hand suspended mounting support on the gearbox	**62**
(**7**)	Bolt mounting the left-hand suspended mounting support on the body	**62**
(**8**)	Nut mounting the left-hand rubber pad on the gearbox	**62**

Suspended engine mounting: Tightening torque

K4M, and DP0

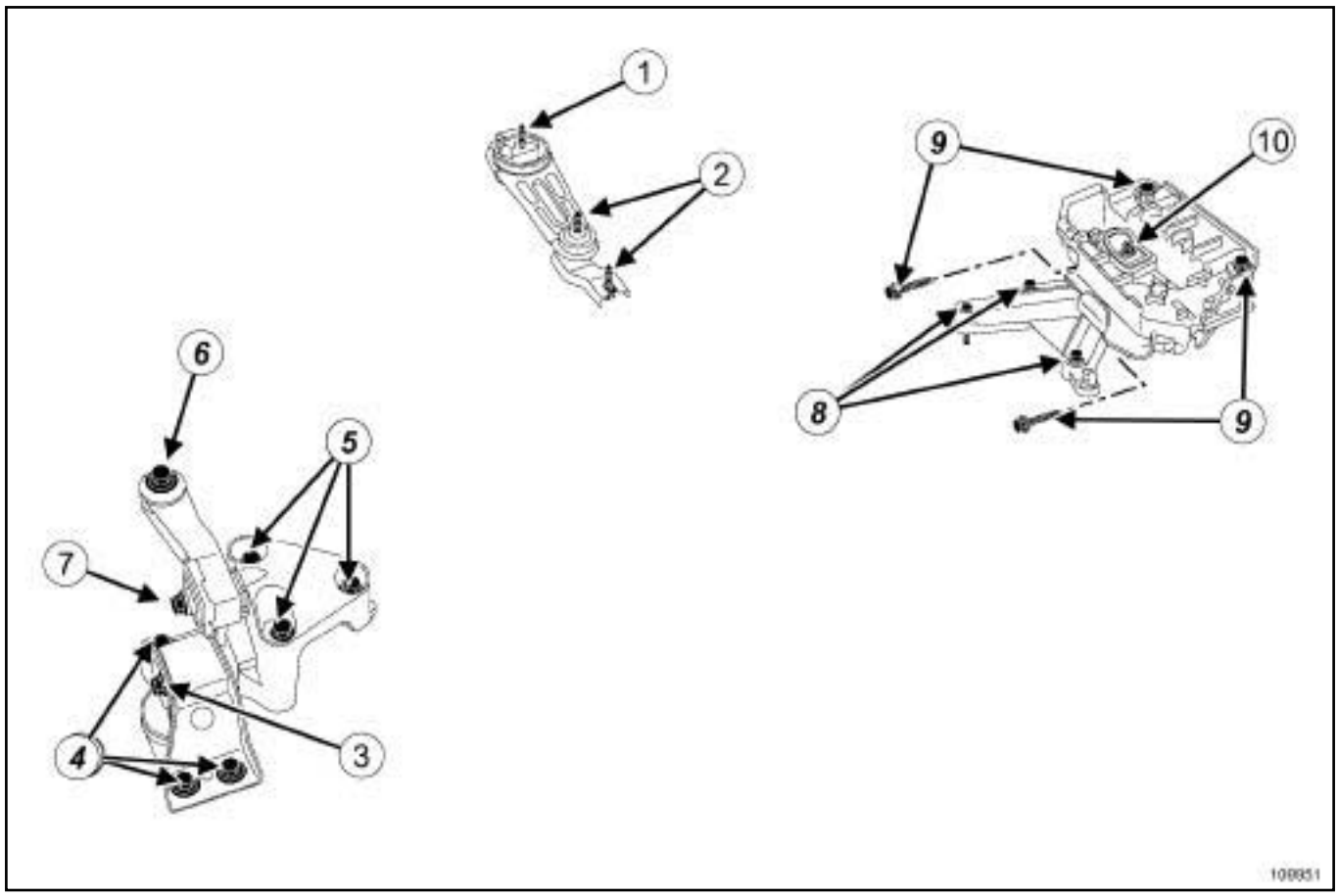


110387

Number	Description	Tightening torque (Nm)
(**1**)	Bolt mounting the engine tie-bar onto the sub-frame	**105**
(**2**)	Engine tie-bar mounting bolt on the gearbox	**62**
(**3**)	Right-hand rubber pad mounting bolt	**105**
(**4**)	Bolt mounting the right-hand suspended mounting support on the body	**62**
(**5**)	Bolt mounting the right-hand suspended mounting support on the engine	**62**
(**6**)	Bolt mounting the left-hand suspended mounting support on the gearbox	**62**
(**7**)	Bolt mounting the left-hand suspended mounting support on the body	**62**
(**8**)	Nut mounting the left-hand rubber pad on the gearbox	**62**

Suspended engine mounting: Tightening torque

K9K, and JR5

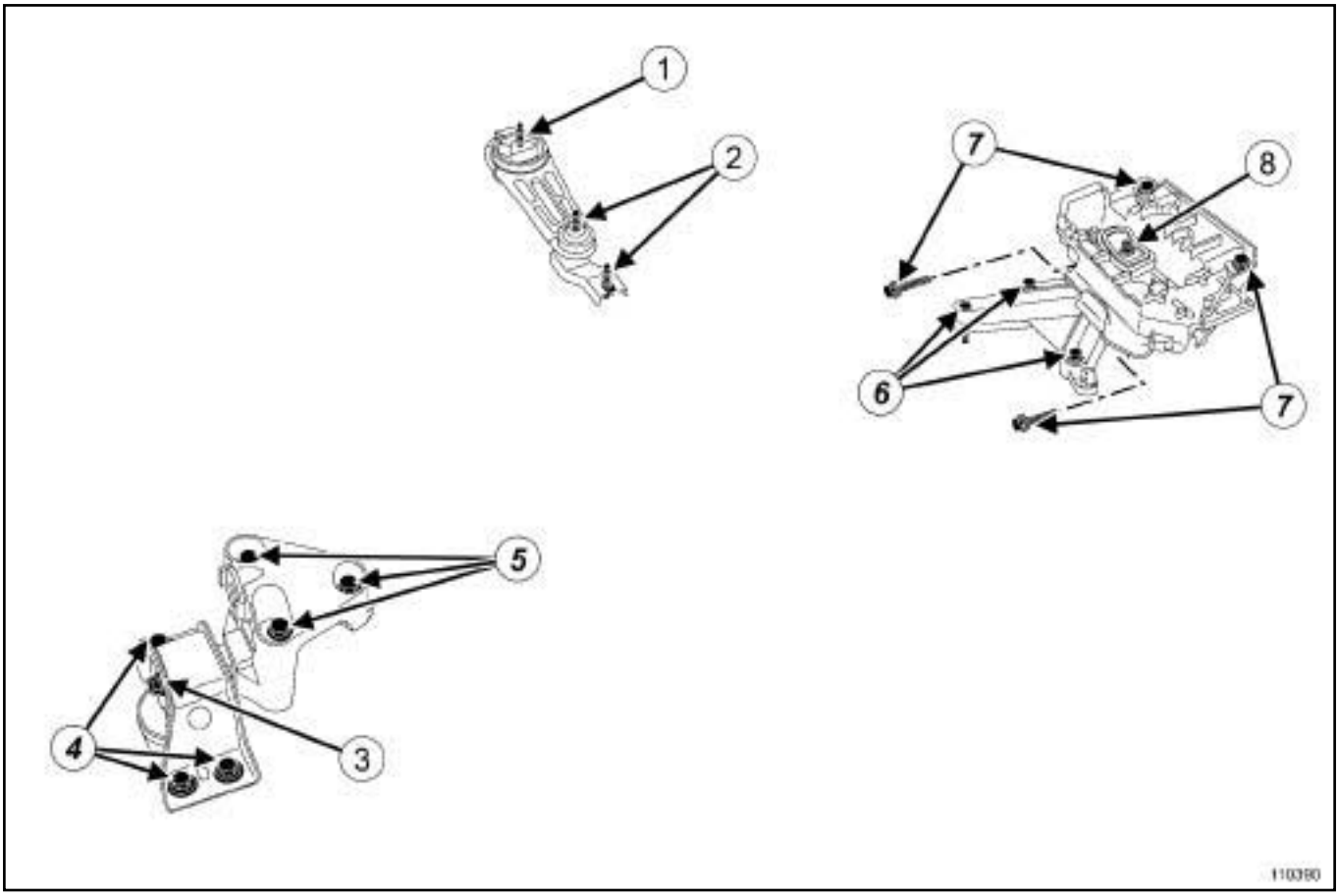


109951

No.	Description	Tightening torque (N.m)
(**1**)	Bolt mounting the lower engine tie-bar on the sub-frame	**105**
(**2**)	Lower engine tie-bar mounting bolt on the gearbox	**105**
(**3**)	Right-hand rubber pad mounting bolt	**105**
(**4**)	Bolts mounting the right-hand suspended mounting support on the body	**62**
(**5**)	Bolts mounting the right-hand suspended mounting support on the engine	**62**
(**6**)	Bolt mounting the upper engine tie-bar on the body	**105**
(**7**)	Bolt mounting the upper engine tie-bar onto the engine suspended mounting support	**105**
(**8**)	Bolts mounting the left-hand suspended mounting support onto the gearbox	**62**
(**9**)	Bolt mounting the left-hand suspended mounting support on the body	**62**
(**10**)	Nut mounting the left-hand rubber pad onto the gearbox	**62**

Suspended engine mounting: Tightening torque

K9K, and JH3

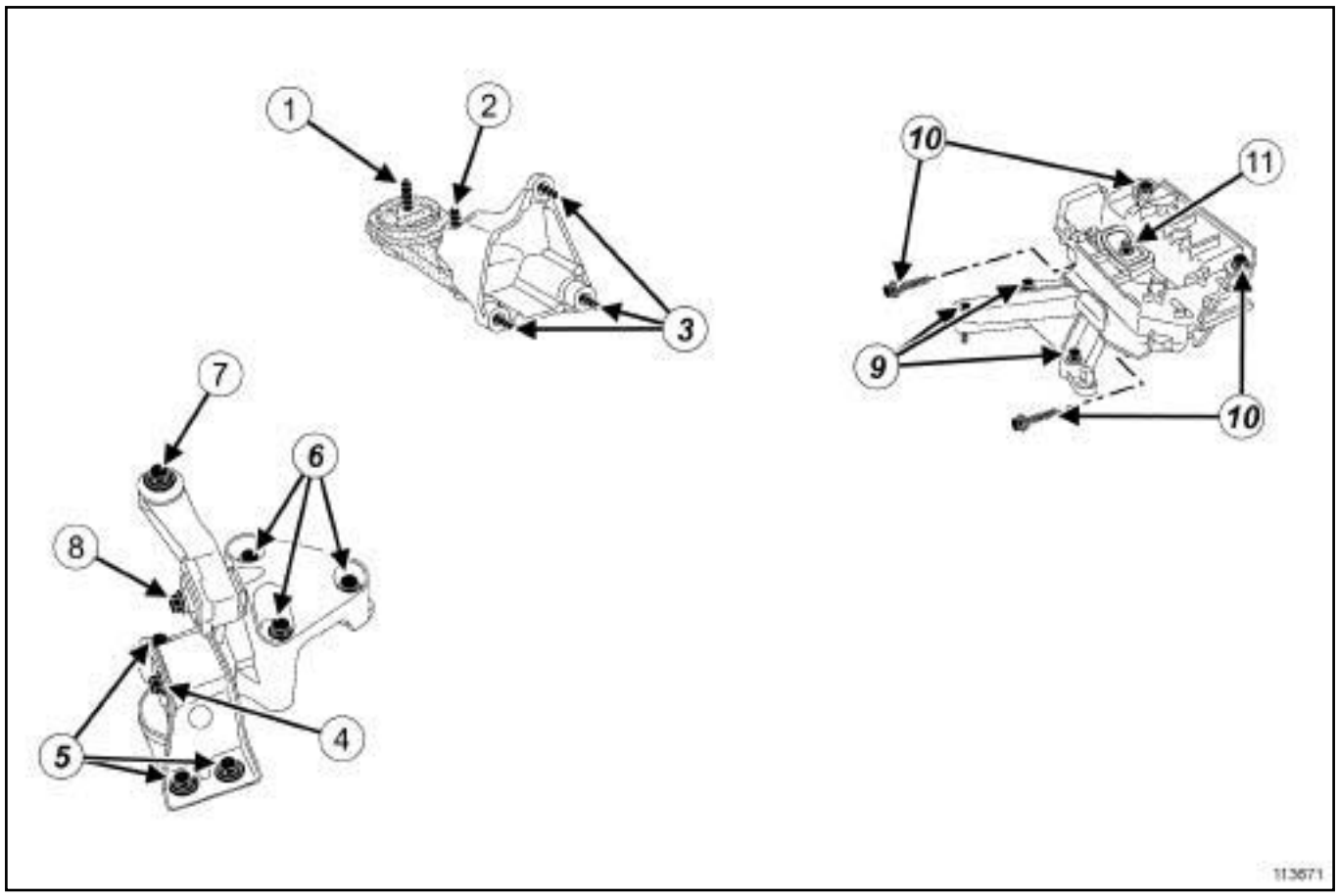


110390

No.	Description	Tightening torque (N.m)
(**1**)	Bolt mounting the engine tie-bar onto the sub-frame	**105**
(**2**)	Engine tie-bar mounting bolt on the gearbox	**105**
(**3**)	Right-hand rubber pad mounting bolt	**105**
(**4**)	Bolts mounting the right-hand suspended mounting support on the body	**62**
(**5**)	Bolts mounting the right-hand suspended mounting support on the engine	**62**
(**6**)	Bolts mounting the left-hand suspended mounting support onto the gearbox	**62**
(**7**)	Bolt mounting the left-hand suspended mounting support on the body	**62**
(**8**)	Nut mounting the left-hand rubber pad onto the gearbox	**62**

Suspended engine mounting: Tightening torque

K9K, and TL4

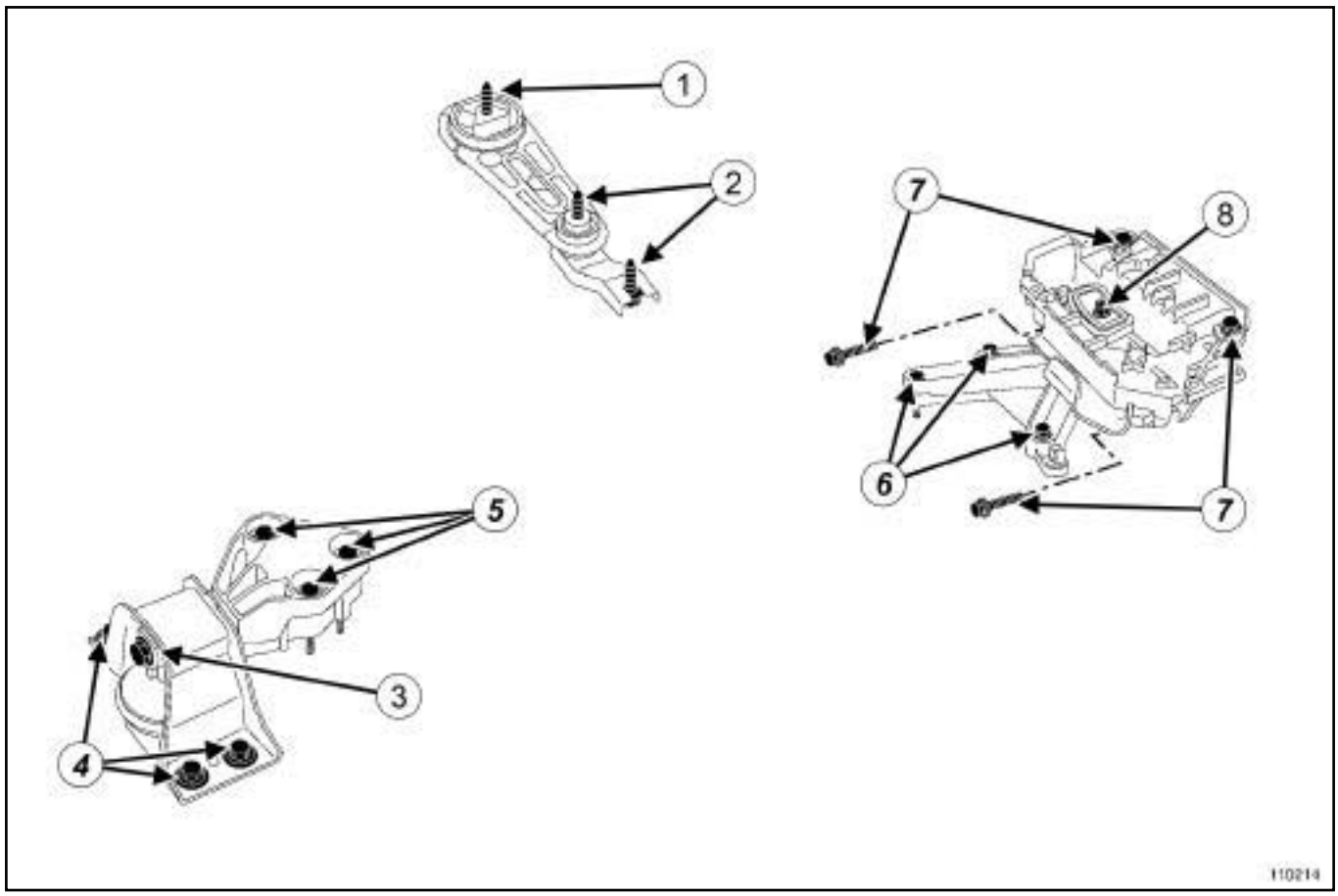


113671

Number	Description	Tightening torque (Nm)
(**1**)	Bolt mounting the lower engine tie-bar on the sub-frame	**105**
(**2**)	Bolt mounting the lower engine tie-bar onto its support	**180**
(**3**)	Bolt mounting the lower engine tie-bar onto its support	**62**
(**4**)	Right-hand rubber pad mounting bolt	**105**
(**5**)	Bolt mounting the right-hand suspended mounting support on the body	**62**
(**6**)	Bolt mounting the right-hand suspended mounting support on the engine	**62**
(**7**)	Bolt mounting the upper engine tie-bar on the body	**105**
(**8**)	Upper engine tie-bar mounting bolt on the engine suspended mounting	**105**
(**9**)	Bolt mounting the left-hand suspended mounting support onto the gear-box	**62**
(**10**)	Bolt mounting the left-hand suspended mounting support onto the gear-box	**62**
(**11**)	Nut mounting the left-hand rubber pad onto the gearbox	**62**

Suspended engine mounting: Tightening torque

D4F, and JH3

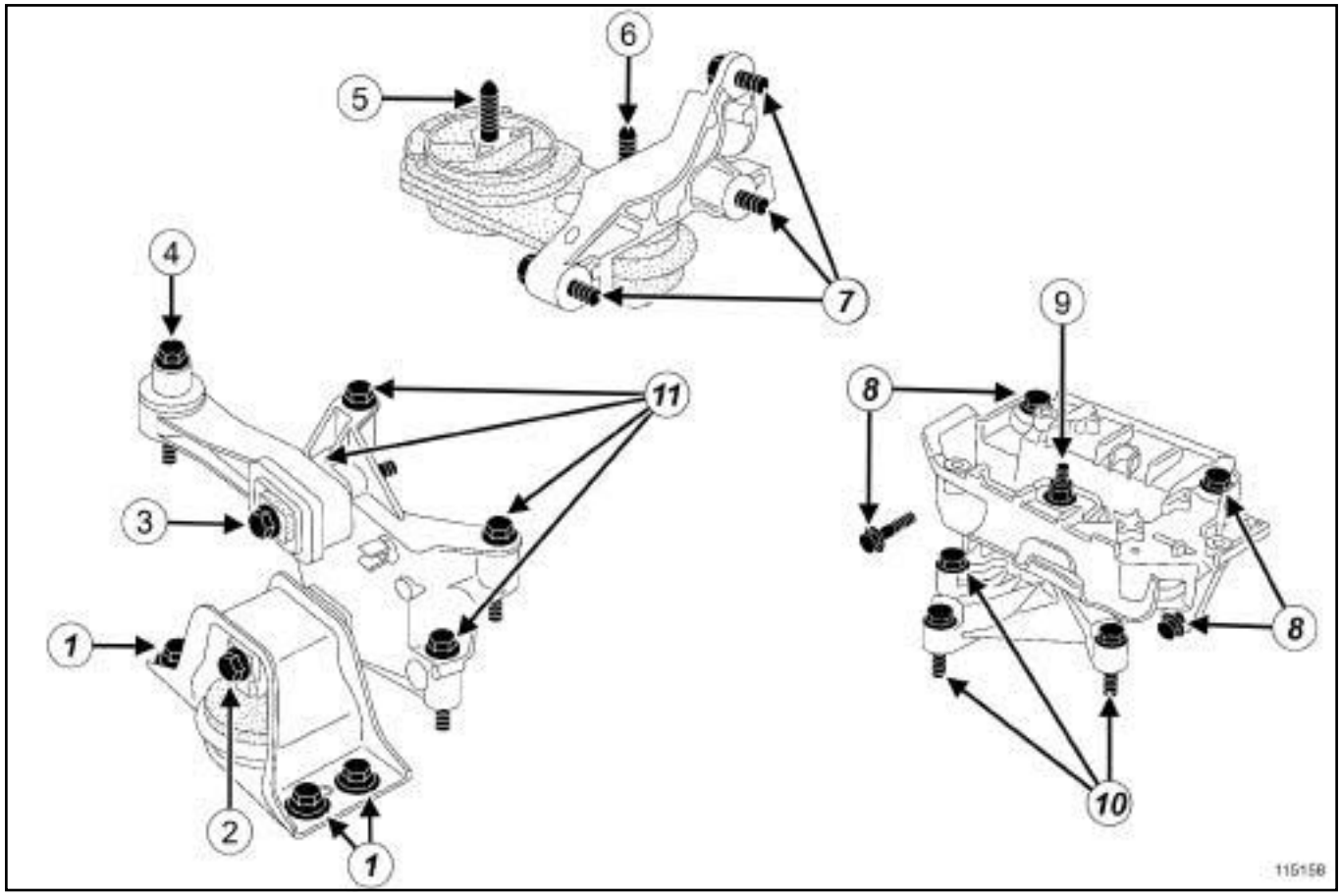


110214

No.	Description	Tightening torque (Nm)
(**1**)	Engine tie-bar bolt on the subframe	**105**
(**2**)	Engine tie-bar bolt on the gearbox	**105**
(**3**)	Right-hand rubber pad bolt	**105**
(**4**)	Right-hand suspended mounting support bolt on the body	**62**
(**5**)	Right-hand suspended mounting support bolt on the engine	**62**
(**6**)	Left hand suspended mounting bolt on the gearbox	**62**
(**7**)	Left-hand suspended mounting support bolt on the body	**62**
(**8**)	Gearbox left-hand rubber pad nut	**62**

Suspended engine mounting: Tightening torque

M4R, and DP0

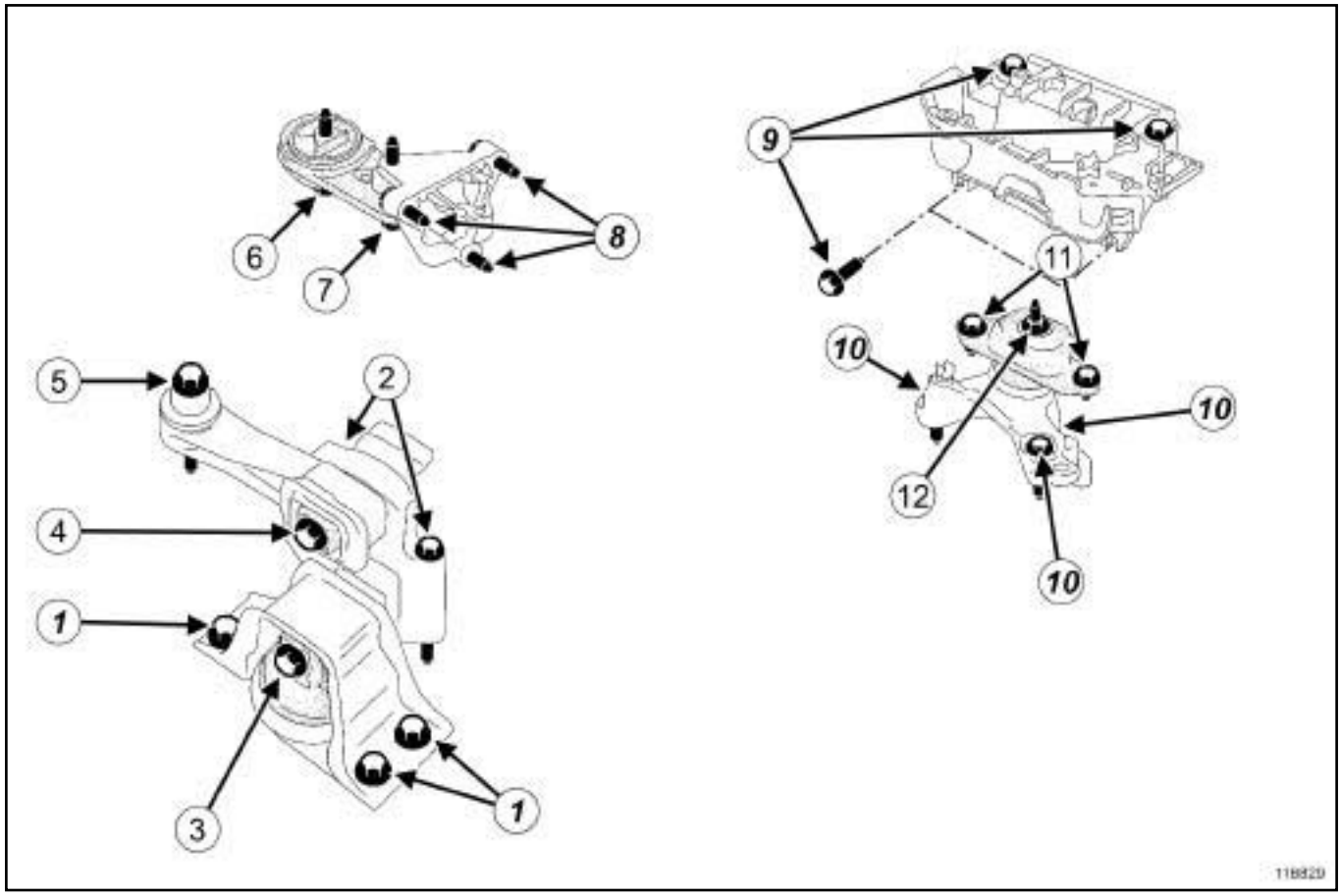


115158

Mark	Description	Tightening torque (Nm)
(**1**)	Mounting bolt securing rubber mounting bush on body	**62**
(**2**)	Mounting bolt securing rubber mounting bush on engine cover	**105**
(**3**)	Mounting bolt securing upper engine tie-bar on engine cover	**105**
(**4**)	Mounting bolt securing upper engine tie-bar on body	**105**
(**5**)	Mounting bolt securing lower engine tie-bar on body	**105**
(**6**)	Mounting bolt securing lower engine tie-bar on engine support	**180**
(**7**)	Mounting bolt securing engine support on engine	**62**
(**8**)	Mounting bolt securing gearbox support on body	**62**
(**9**)	Mounting nut securing gearbox cover on engine support	**62**
(**10**)	Mounting bolt securing gearbox cover on gearbox	**62**
(**11**)	Mounting bolt securing engine cover on engine	**62**

Suspended engine mounting: Tightening torque

F4R



116829

number	description	tightening torque (in Nm)
(**1**)	Bolts mounting the right-hand suspended mounting support on the body	**62**
(**2**)	Bolts mounting the right-hand suspended mounting support on the engine	**62**
(**3**)	Rubber pad mounting bolts	**105**
(**4**)	Upper engine tie-bar mounting bolts on the suspended engine mounting	**105**
(**5**)	Bolt mounting the upper engine tie-bar onto the body	**105**
(**6**)	Bolt mounting the lower engine tie-bar on the sub-frame	**105**
(**7**)	Bolt mounting the lower engine tie-bar onto its support	**180**
(**8**)	Bolt mounting the lower engine tie-bar on the engine	**62**
(**9**)	Bolt mounting the left-hand suspended engine mounting rubber pad support on the body	**62**
(**10**)	Bolt mounting the left-hand suspended engine mounting rubber pad support on the gearbox	**62**

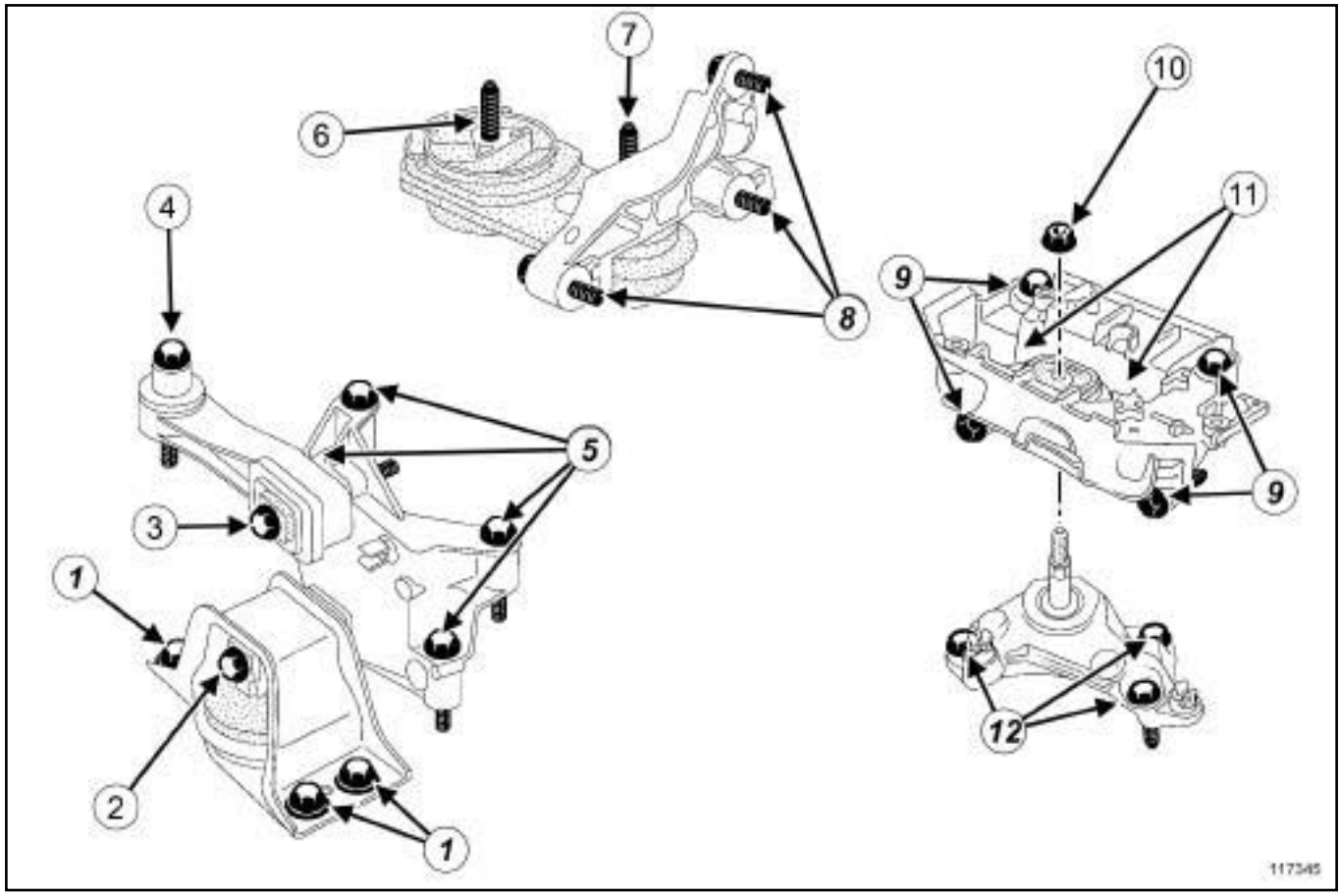
Suspended engine mounting: Tightening torque

F4R

number	description	tightening torque (in Nm)
(**11**)	Rubber pad mounting bolt on the support mounted on the body	**62**
(**12**)	Nut mounting the rubber pad on the support mounted on the gearbox	**62**

Suspended engine mounting: Tightening torque

M4R, and TL4



117345

Mark	Description	tightening torque (in Nm)
(**1**)	Rubber mounting bush bolts on the body	**62**
(**2**)	Rubber mounting bush bolts on the engine cover	**105**
(**3**)	Upper engine tie-bar bolts on the engine cover	**105**
(**4**)	Upper engine tie-bar bolts on the body	**105**
(**5**)	Engine cover bolts on the engine	**62**
(**6**)	Lower engine tie-bar bolts on the body	**105**
(**7**)	Lower engine tie-bar bolts on the engine mounting	**180**
(**8**)	Engine mounting bolts on the engine	**62**
(**9**)	Gearbox support bolts on the body	**62**
(**10**)	Gearbox cover nut on the gearbox support	**62**
(**11**)	Gearbox support rubber mounting bush nuts	**62**
(**12**)	Gearbox cover bolts on the gearbox	**62**

K9K

Tightening torques ▽	
engine tie-bar bolts	**105 Nm**
engine tie-bar bolt on its support	**180 Nm**
engine tie-bar bolt on the subframe	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

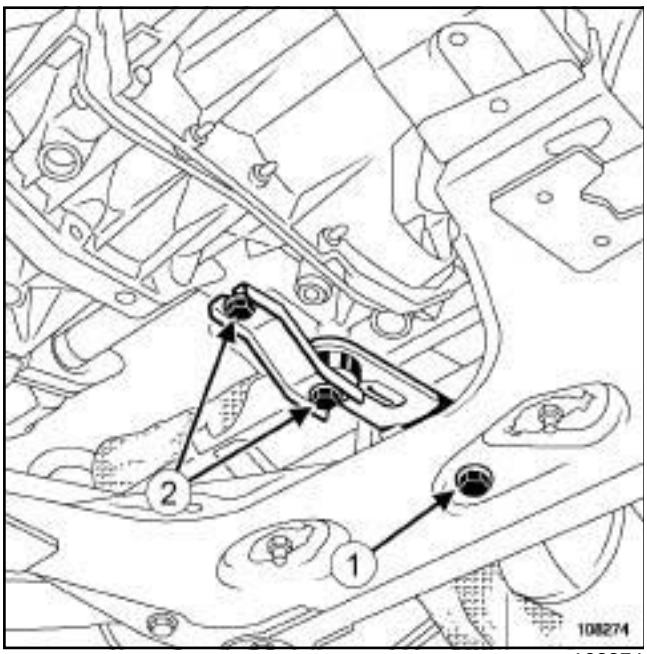
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

JH3 or JR5

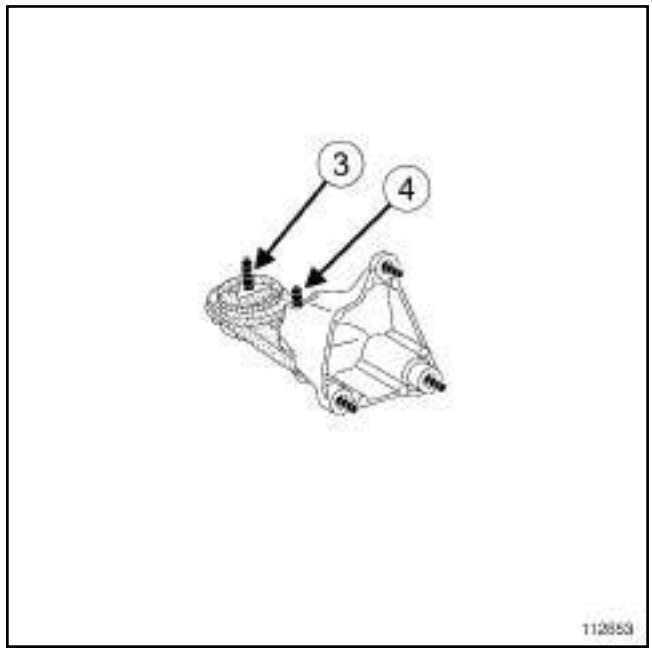


108274

❏ Remove:

- the engine tie-bar bolt (**1**) on the subframe,
- the (**2**) engine tie-bar bolt on the gearbox.

TL4



112653

❏ Remove:

- the engine tie-bar bolt (**3**) from the subframe,
- the bolt (**4**) mounting the engine tie-bar on its support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

JH3 or JR5

❏ Screw in without tightening the engine tie-bar bolts.

❏ Torque tighten the **engine tie-bar bolts (105 Nm)**.

K9K

TL4

❑ Refit:

- the engine tie-bar bolt on its support,
- the engine tie-bar bolt on the subframe.

❑ Screw in without tightening the engine tie-bar bolts.

❑ Torque tighten:

- the **engine tie-bar bolt on its support (180 Nm)**,
- the **engine tie-bar bolt on the subframe (105 Nm)**.

II - FINAL OPERATION.

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F or K4J

Tightening torques ▽	
engine tie-bar bolts on the gearbox	**105 Nm**
engine tie-bar bolt on the subframe	**105 Nm**

REMOVAL

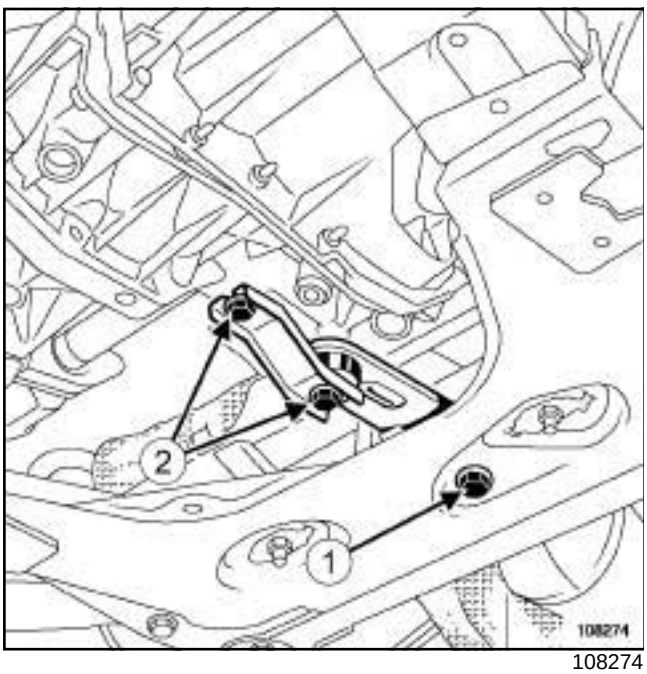
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108274

❑ Remove:

- the engine tie-bar bolt (**1**) from the subframe,
- the bolts (**2**) from the engine tie-bar on the gearbox,
- the anti-slide rod,
- the engine tie-bar.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the engine tie-bar,
- the anti-slide rod,
- the engine tie-bar bolts on the gearbox,
- the engine tie-bar bolt on the subframe.

❑ Torque tighten:

- the **engine tie-bar bolts on the gearbox (105 Nm)**,
- the **engine tie-bar bolt on the subframe (105 Nm)**.

II - FINAL OPERATION.

❑ Refit the engine undertray.

❑ Connect the battery (see) (MR 392, 80A, Battery).

K4M

Tightening torques ▽	
bolts mounting the engine tie-bar on the gearbox	**62 Nm**
bolts mounting the engine tie-bar on the gearbox	**105 Nm**
bolt mounting the engine tie-bar on the subframe	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

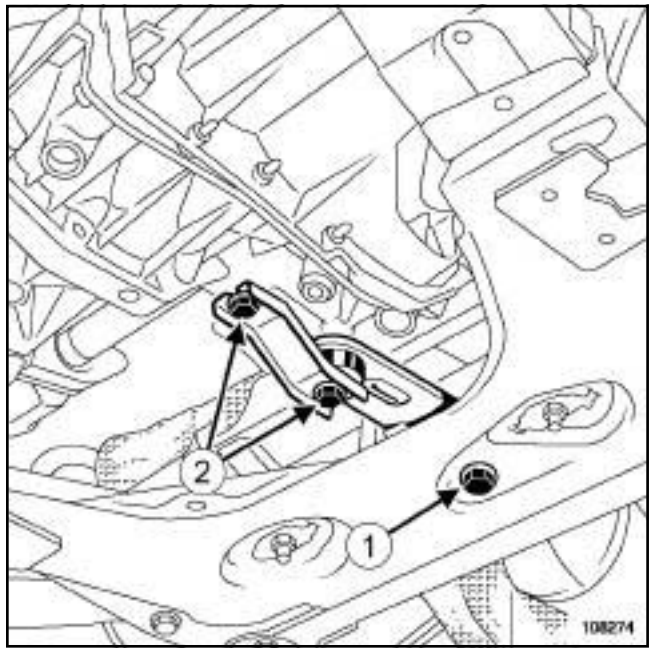
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

JR5



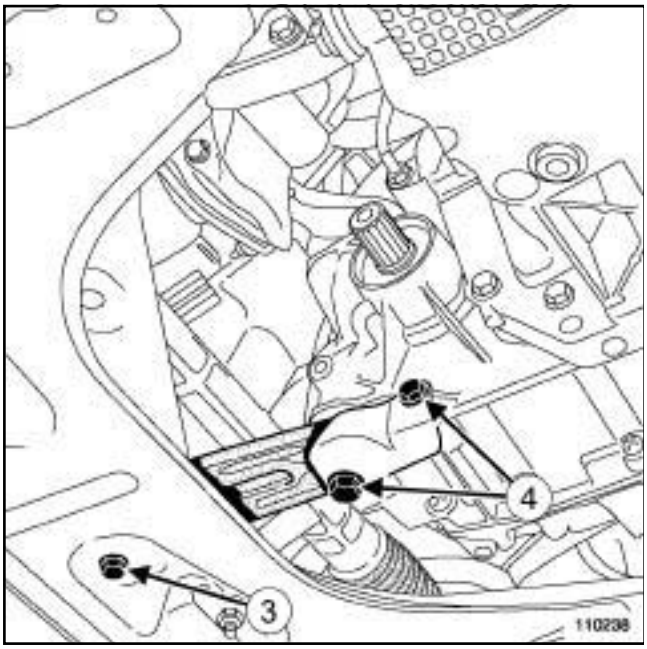
108274

❑ Remove:

- the mounting bolt (**1**) for the engine tie-bar on the subframe,
- the bolts (**2**) mounting the engine tie-bar on the gearbox.

K4M

DP0



110238

❑

Remove:

- the mounting bolt (**3**) for the engine tie-bar on the subframe,
- the bolts (**4**) mounting the engine tie-bar on the gearbox.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the bolts mounting the engine tie-bar on the gearbox,
- the bolt mounting the engine tie-bar on the subframe.

DP0

❑ Torque tighten the **bolts mounting the engine tie-bar on the gearbox (62 Nm)**

❑ Torque tighten:

- the **bolts mounting the engine tie-bar on the gearbox (105 Nm)**,
- the **bolt mounting the engine tie-bar on the subframe (105 Nm)**.

II - FINAL OPERATION.

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Tightening torques ▽	
engine tie-bar mounting bolt on the sub-frame	**105 Nm**
mounting bolt securing the engine tie-bar on the engine	**180 Nm**

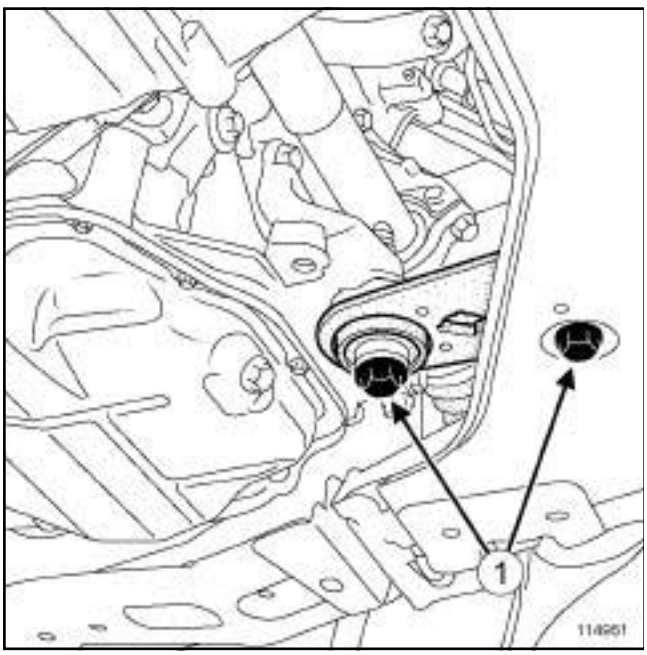
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Fit the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove the engine undertray.

II - REMOVAL OF PART CONCERNED



114951

❏ Remove:

- the mounting bolts (**1**) from the engine tie-bar,
- the engine tie-bar.

REFITTING

I - REFITTING PART CONCERNED

❏ Refit the engine tie-bar.

❏ Tighten to torque:

- the **engine tie-bar mounting bolt on the sub-frame (105 Nm)**,
- the **mounting bolt securing the engine tie-bar on the engine (180 Nm)**.

II - FINAL OPERATION

❏ Refit the engine undertray.

F4R

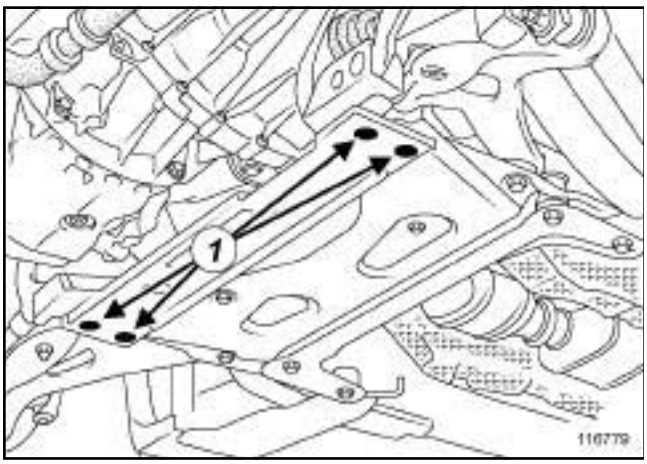
Tightening torques ▽	
lower engine tie-bar support mounting bolts	**62 Nm**
lower engine tie-bar mounting bolts on the support	**180 Nm**
lower engine tie-bar mounting bolts on the sub-frame	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

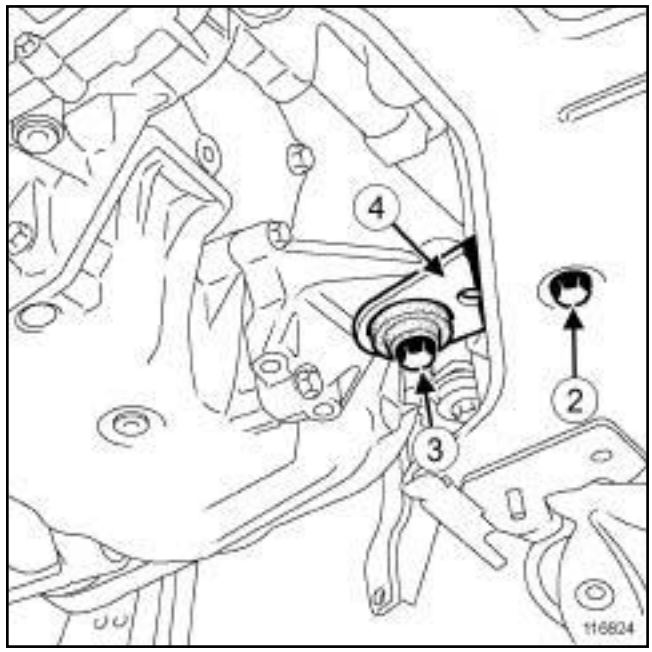


116779

❏ Remove:

- the engine undertray,
- the sub-frame stiffener cross member mounting nuts (**1**) ,
- the sub-frame stiffener cross member.

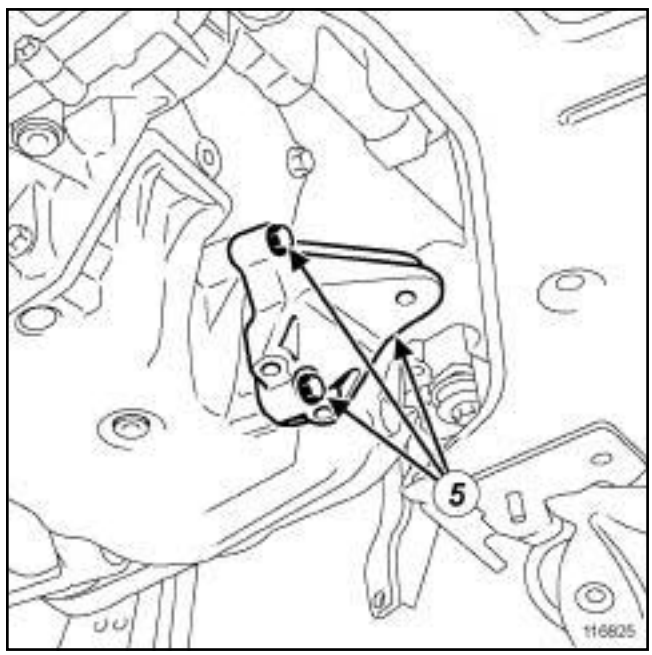
II - OPERATION FOR REMOVAL OF PART CONCERNED



116824

❏ Remove:

- the bolt (**2**) mounting the lower engine tie-bar on the sub-frame,
- the bolt (**3**) mounting the lower engine tie-bar on the support,
- the lower engine tie-bar (**4**) .



116825

❏ Remove:

- the lower engine tie-bar support mounting bolts (**5**) ,

- the lower engine tie-bar support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the lower engine tie-bar support,
- the lower engine tie-bar support mounting bolts.

❑ Torque tighten the **lower engine tie-bar support mounting bolts (62 Nm)**.

❑ Refit:

- the lower engine tie-bar,
- the lower engine tie-bar mounting bolt onto the support,
- the lower engine tie-bar mounting bolt onto the sub-frame.

❑ Torque tighten:

- the **lower engine tie-bar mounting bolts on the support (180 Nm)**,
- the **lower engine tie-bar mounting bolts on the sub-frame (105 Nm)**.

II - FINAL OPERATION.

❑ Refit:

- the sub-frame stiffener cross member
- the sub-frame stiffener cross member mounting nuts.

❑ Torque tighten the cross member.

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M, and TL4

Tightening torques ▽	
engine tie-bar bolts on the gearbox	**105 N.m**
engine tie-bar bolt on the subframe	**105 N.m**

REMOVAL

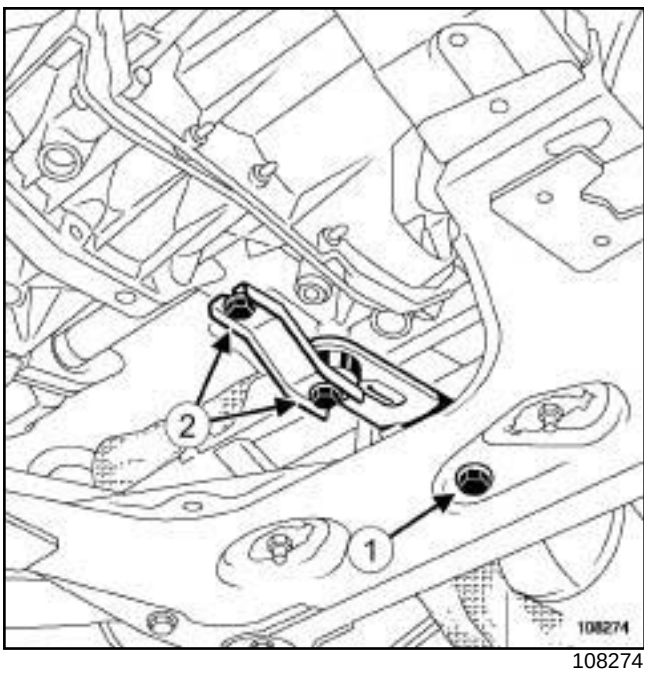
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108274

❑ Remove:

- the engine tie-bar bolt (**1**) from the subframe,
- the bolts (**2**) from the engine tie-bar on the gearbox,
- the engine tie-bar.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the engine tie-bar,
- the bolts of the engine tie-bar on the gearbox,
- the engine tie-bar bolt on the subframe.

❑ Tighten to torque:

- the **engine tie-bar bolts on the gearbox (105 N.m)**,
- the **engine tie-bar bolt on the subframe (105 N.m)**.

II - FINAL OPERATION

❑ Refit the engine undertray.

D4F or K9K, and JH3

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
right-hand suspended mounting support bolts on the engine	**62 Nm**
suspended mounting bolts on the body	**62 Nm**
right-hand rubber pad bolts (if changed)	**105 Nm**

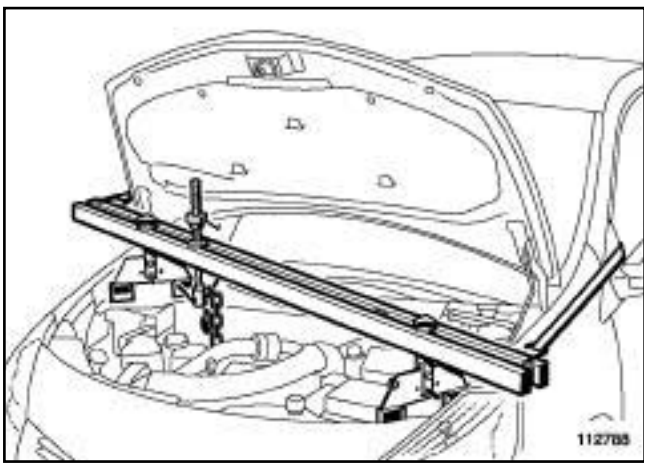
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



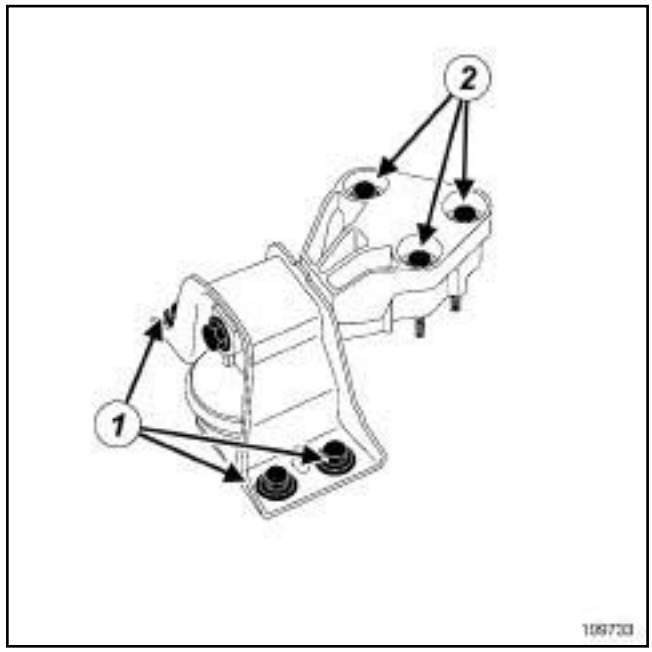
112788

❏ Position tool **(Mot. 1453)**.

❏ Mark the position of the suspended engine mounting on the body.

II - OPERATION FOR REMOVAL OF PART CONCERNED

D4F, and 740 or 784



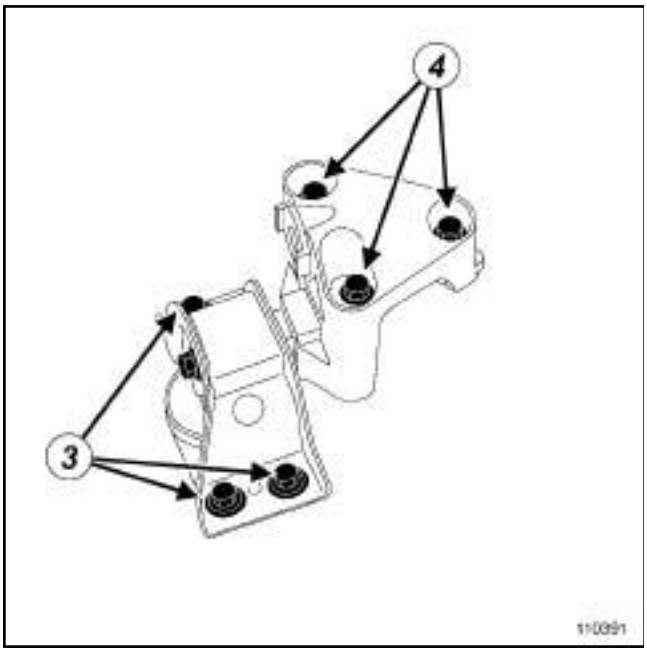
109733

❏ Remove:

- the bolts (**1**) from the suspended mounting on the body,
- the bolts (**2**) from the suspended mounting on the engine,
- the suspended engine mounting.

D4F or K9K, and JH3

K9K, and 750 or 752 or 768



110391

❑ Remove:

- the bolts (**3**) from the suspended mounting on the body,
- the bolts (**4**) from the suspended mounting on the engine,
- the suspended engine mounting.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the right-hand suspended mounting support,
- the bolts for the right-hand suspended mounting support on the engine,
- the bolts mounting the suspended mounting on the body.

❑ Torque tighten:

- the **right-hand suspended mounting support bolts on the engine (62 Nm)**,
- the **suspended mounting bolts on the body (62 Nm)**,
- the **right-hand rubber pad bolts (if changed) (105 Nm)**

II - FINAL OPERATION.

❑ Remove the **(Mot. 1453)**.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Connect the battery (see) (MR 392, 80A, Battery).

K4J or K4M

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
bolts mounting the suspended mounting on the engine	**62 Nm**
bolts mounting the suspended mounting on the body	**62 Nm**
right-hand rubber pad mounting bolt (if it has been changed)	**105 Nm**

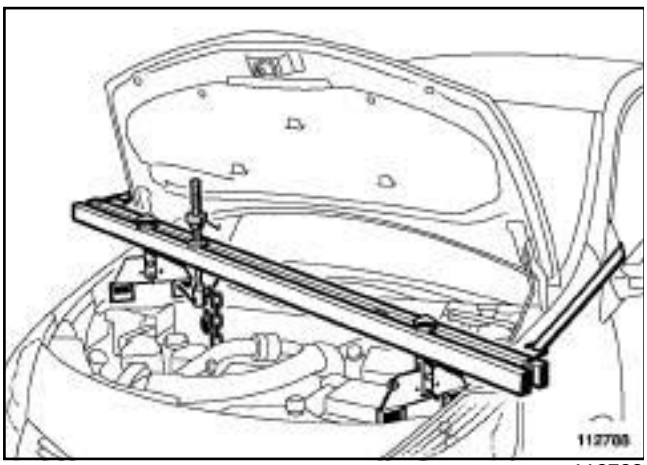
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

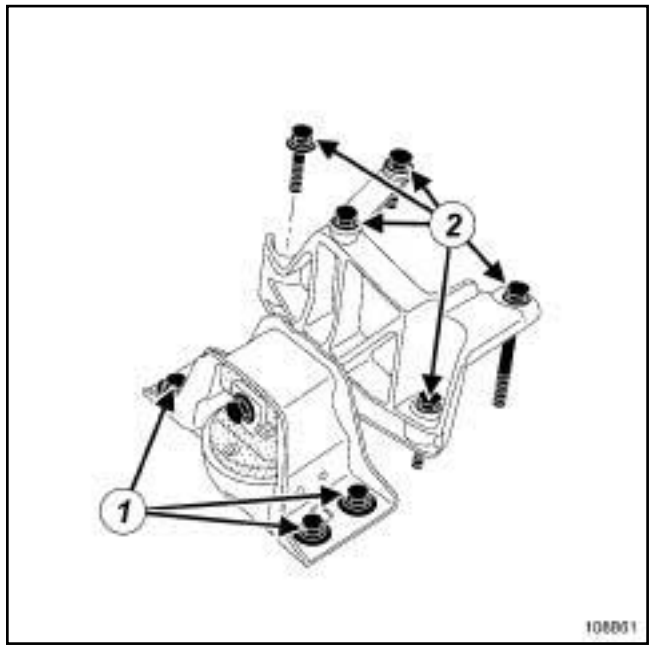


112788

❏ Position the **(Mot. 1453)**.

❏ Mark the position of the suspended engine mounting on the body.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108861

❏ Remove

- the suspended mounting bolts (**1**) on the body,
- the suspended mounting bolts (**2**) on the engine,
- the suspended engine mounting.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the right-hand suspended mounting.

❏ Refit:

- the bolts mounting the right-hand suspended mounting support on the engine,
- the bolts mounting the suspended mounting on the body.

❏ Torque tighten:

- the **bolts mounting the suspended mounting on the engine (62 Nm)**,
- the **bolts mounting the suspended mounting on the body (62 Nm)**,
- the **right-hand rubber pad mounting bolt (if it has been changed) (105 Nm)**.

K4J or K4M

II - FINAL OPERATION.

❑ Remove the **(Mot. 1453)**.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and JR5 or TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
bolt mounting the engine tie-bar on the body	**105 Nm**
bolts mounting the right-hand suspended mounting support on the engine	**62 Nm**
bolts mounting the suspended mounting on the body	**62 Nm**
right-hand rubber pad mounting bolt (if it has been changed)	**105 Nm**
bolt mounting the upper engine tie-bar on the suspended engine mounting (if it has been changed)	**105 Nm**

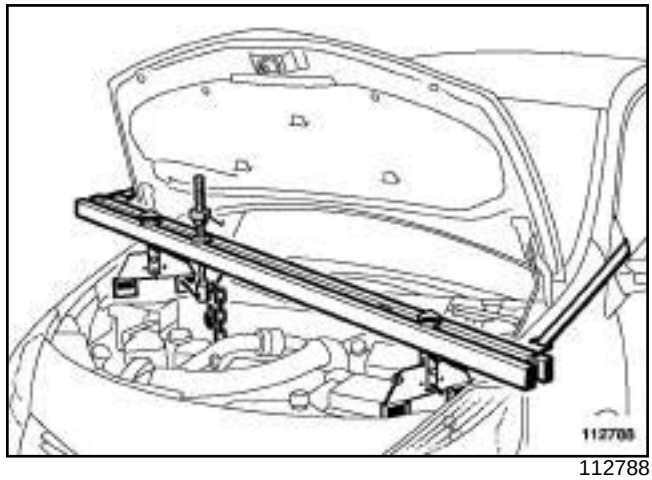
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

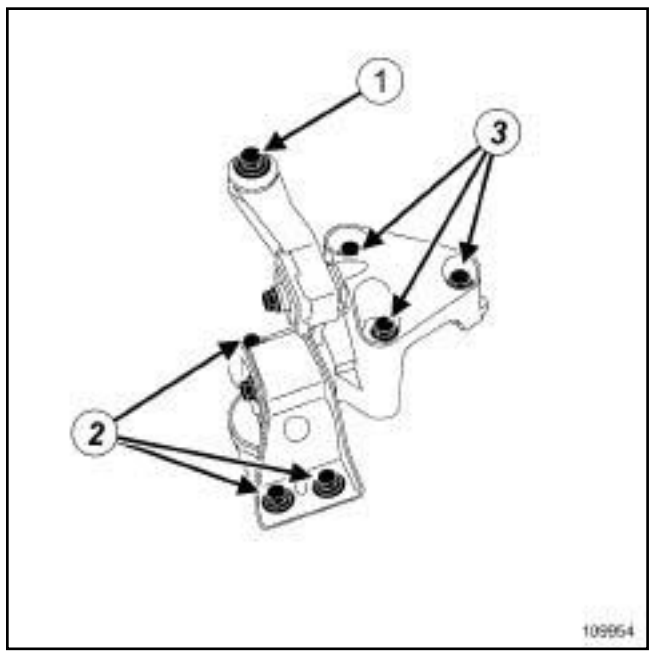


112788

❏ Position tool **(Mot. 1453)**.

❏ Mark the position of the suspended engine mounting on the body.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109954

❏

Remove:

- the bolt (**1**) mounting the engine tie-bar on the body,
- the suspended mounting bolts (**2**) on the body,
- the suspended mounting bolts (**3**) on the engine,
- the suspended engine mounting.

K9K, and JR5 or TL4

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the right-hand suspended mounting.

❏ Refit:

- the bolts mounting the right-hand suspended mounting support on the engine,
- the bolts mounting the suspended mounting on the body,
- the bolt mounting the engine tie-bar on the body.

❏ Torque tighten:

- the **bolt mounting the engine tie-bar on the body (105 Nm)**,
- the **bolts mounting the right-hand suspended mounting support on the engine (62 Nm)**,
- the **bolts mounting the suspended mounting on the body (62 Nm)**,
- the **right-hand rubber pad mounting bolt (if it has been changed) (105 Nm)**,
- the **bolt mounting the upper engine tie-bar on the suspended engine mounting (if it has been changed) (105 Nm)**.

II - FINAL OPERATION.

❏ Remove the **(Mot. 1453)**.

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
right-hand side radiator mounting cross member bolt	**105 Nm**
left-hand subframe tie-rod bolt	**105 Nm**

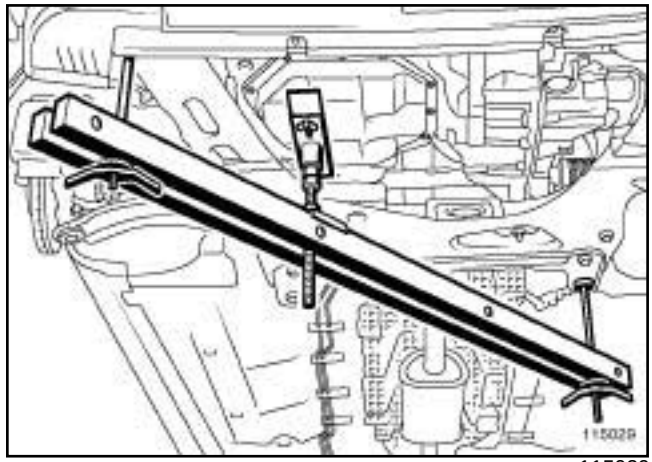
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❑ Remove:

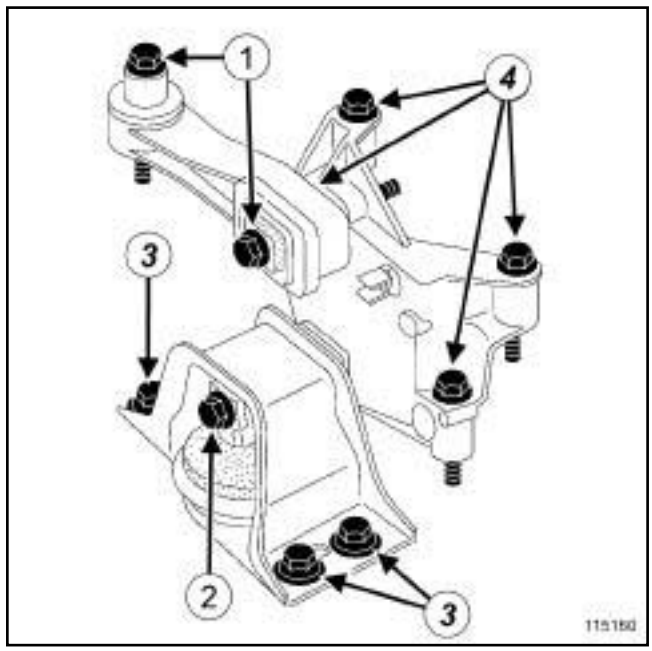
- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the right-hand wheel arch liner bolts on the front bumper,
- the bolt from the right-hand side radiator mounting cross member,
- the subframe tie-rod bolt on the left-hand side.



115029

❑ Fit the lower engine support tool **(Mot. 1672)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



115160

❑ Remove:

- the upper engine tie-bar bolts (**1**) ,
- the upper engine tie-bar.
- the bolt (**2**) from the rubber mounting bush on the engine cover,
- the bolts (**3**) from the rubber mounting bush on the body,
- the rubber mounting bush,
- the bolts (**4**) from the engine cover,
- the engine cover.

M4R

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the engine cover,
- the engine cover bolts,
- the rubber mounting bush,
- the bolts for the rubber mounting bush on the body,
- the bolt for the rubber mounting bush on the engine cover,
- the upper engine tie-bar.
- the upper engine tie-bar bolts.

❑ Torque tighten (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) :

- the engine cover bolts,
- the bolts for the rubber mounting bush on the body,
- the bolt for the rubber mounting bush on the engine cover,
- the upper engine tie-bar bolts.

II - FINAL OPERATION.

❑ Remove the lower engine support tool **(Mot. 1672)**.

❑ Refit:

- the radiator mounting cross member bolt on the right-hand side,
- the subframe tie-rod bolt on the left-hand side.

❑ Torque tighten:

- the **right-hand side radiator mounting cross member bolt (105 Nm)**,
- the **left-hand subframe tie-rod bolt (105 Nm)**.

❑ Refit:

- the right-hand wheel arch liner bolts on the front bumper.
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

F4R

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
suspended engine mounting bolt on the body side	**62 Nm**
suspended engine mounting bolt in the engine compartment	**62 Nm**
rubber pad mounting bolt	**105 Nm**
upper engine tie-bar mounting bolt in the engine compartment	**105 Nm**
upper engine tie-bar mounting bolt on the body	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Have to hand the timing end lifting eye and its mounting bolts (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

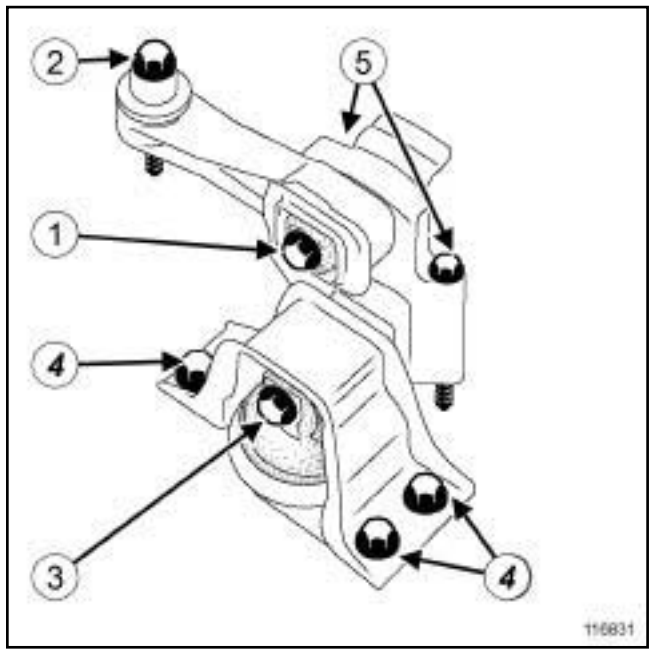
❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Fit the timing end lifting eye (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Fit the **(Mot. 1453)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116831

❏ Remove:

- the upper engine tie-bar mounting bolt (**1**) in the engine compartment,
- the upper engine tie-bar mounting bolt (**2**) on the body,
- the upper engine tie-bar.
- the rubber pad mounting bolt (**3**) ,
- the suspended engine mounting bolts (**4**) on the body side,
- the suspended engine mounting bolts (**5**) in the engine compartment,
- the right-hand suspended engine mounting.

WARNING
Do not deform the air conditioning pipes.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the right suspended engine mounting.

WARNING
Do not deform the air conditioning pipes.

F4R

❏ Refit:

- the suspended engine mounting bolts on the body side,
- the suspended engine mounting bolts in the engine compartment,
- the rubber pad mounting bolt.

❏ Torque tighten:

- the **suspended engine mounting bolt on the body side (62 Nm)**,
- the **suspended engine mounting bolt in the engine compartment (62 Nm)**,
- the **rubber pad mounting bolt (105 Nm)**.

❏ Refit:

- the upper engine tie-bar.
- the upper engine tie-bar mounting bolt in the engine compartment,
- the upper engine tie-bar mounting bolt on the body.

❏ Torque tighten:

- the **upper engine tie-bar mounting bolt in the engine compartment (105 Nm)**,
- the **upper engine tie-bar mounting bolt on the body (105 Nm)**.

II - FINAL OPERATION.

❏ Remove:

- the **(Mot. 1453)**,
- the lifting eye on the timing end (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the timing end lifting eye and its mounting bolt in the luggage compartment (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

K4M, and TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.

Equipment required
indelible pencil

Tightening torques ▽	
right-hand suspended engine mounting cover bolts	**62 N.m**
right-hand suspended engine mounting rubber pad bolts	**62 N.m**

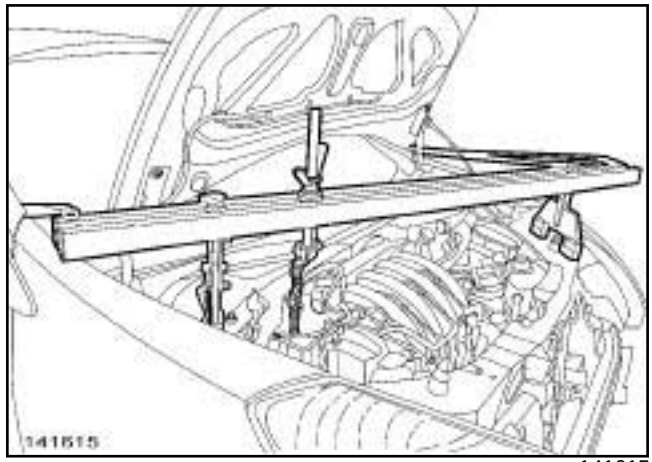
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Towing and lifting).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

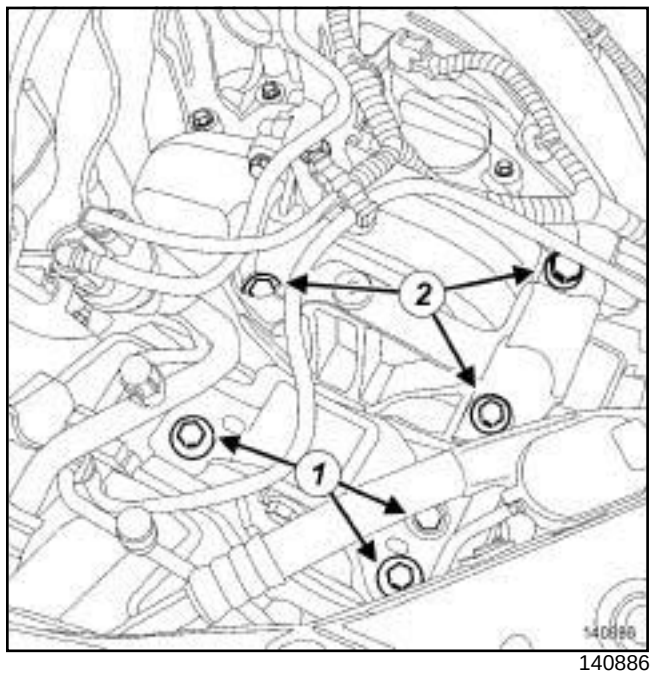


141615

❏ Position the tool **(Mot. 1453)** and **(Mot. 1453-01)**.

❏ Mark the position of the suspended engine mounting on the body using a **indelible pencil**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



140886

❏ Remove the bolts (**1**) from the right-hand suspended engine mounting rubber pad.

❏ Slightly raise the engine using the tool **(Mot. 1453)** until the rubber pad detaches from the right-hand suspended engine mounting.

❏ Remove:

- the bolts (**2**) from the right-hand suspended engine mounting cover,
- the right-hand suspended engine mounting.

K4M, and TL4

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the suspended engine mounting.

❏ Torque tighten the **right-hand suspended engine mounting cover bolts (62 N.m)**.

❏ Lower the engine until the rubber pad touches the right-hand suspended engine mounting.

❏ Position the right-hand suspended engine mounting rubber pad in line with the mark made during removal.

❏ Torque tighten the **right-hand suspended engine mounting rubber pad bolts (62 N.m)**.

II - FINAL OPERATION

❏ Remove the **(Mot. 1453)** and **(Mot. 1453-01)**.

❏ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine undertray.

K4M, and DP0

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

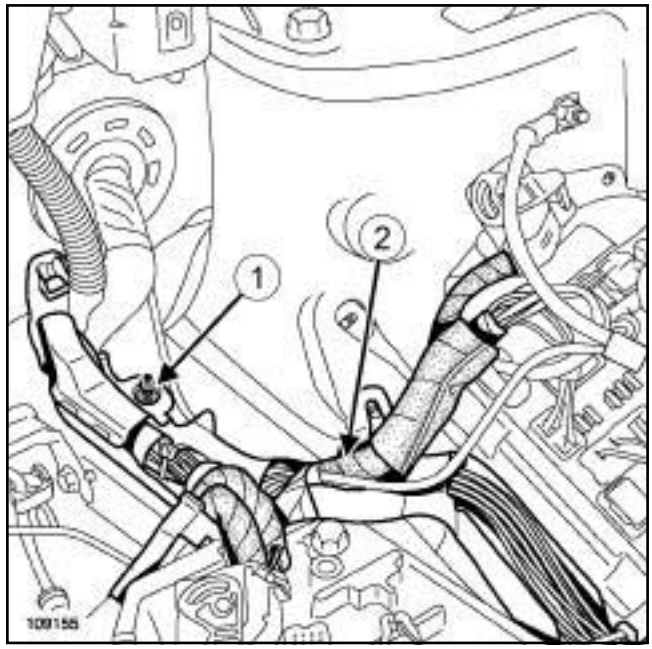
Tightening torques ▽	
bolts mounting the left-hand suspended mounting on the gearbox	**62 Nm**
gearbox suspended engine mounting stud (if it has been replaced)	**180 Nm**
bolts mounting the left-hand suspended mounting support on the body	**62 Nm**
gearbox left-hand rubber pad mounting nut	**62 Nm**
wiring channel mounting nut	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

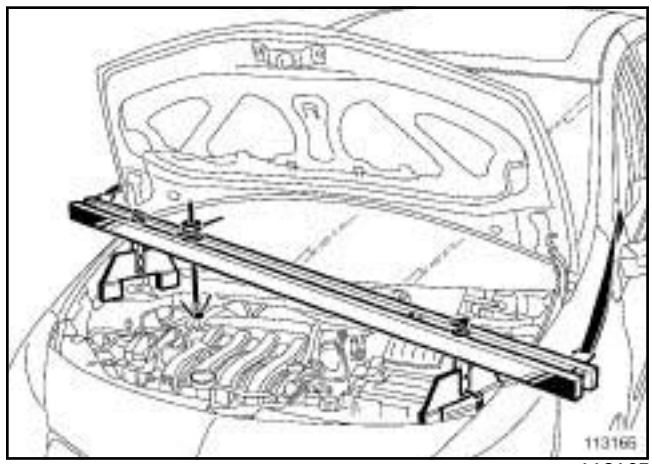
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the computer and its mounting (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the engine undertray.



109155

❑ Remove the wiring channel mounting nut (**1**) .

❑ Detach the wiring channel (**2**) .



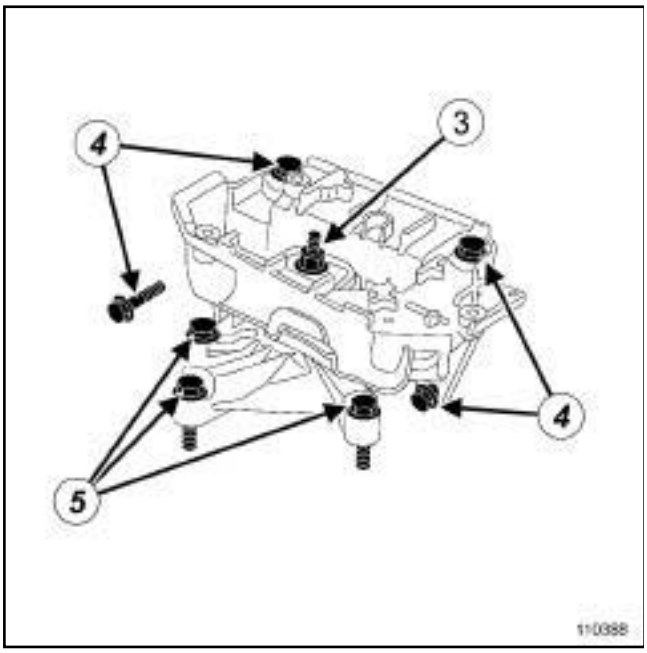
113165

❑ Position tool **(Mot. 1453)**.

❑ Mark the position of the suspended engine mounting on the body.

K4M, and DP0

II - OPERATION FOR REMOVAL OF PART CONCERNED



110388

❑ Remove:

- the gearbox left-hand rubber pad mounting nut (**3**) ,
- the bolts (**4**) mounting the left-hand suspended mounting on the body,
- the left-hand suspended mounting from the body,
- the bolts (**5**) mounting the left hand suspended mounting on the gearbox,
- the gearbox left-hand suspended mounting.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Reposition the left-hand suspended mounting on the gearbox.

❑ Refit the bolts mounting the left-hand suspended mounting on the gearbox.

❑ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the gearbox (62 Nm)**,
- the **gearbox suspended engine mounting stud (if it has been replaced) (180 Nm)**.

❑ Reposition the left-hand suspended mounting on the body.

❑ Refit the bolts mounting the left-hand suspended mounting on the body,

❑ Torque tighten:

- the **bolts mounting the left-hand suspended mounting support on the body (62 Nm)**,
- the **gearbox left-hand rubber pad mounting nut (62 Nm)**.

K4M, and DP0

II - FINAL OPERATION.

❑ Remove the **(Mot. 1453)**.

❑ Position the wiring channel.

❑ Torque tighten the **wiring channel mounting nut (10 Nm)**.

❑ Refit:

- the computer and its mounting (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and JH3 – K9K – K4J, and JH3 – K4M, and JH3

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
bolts mounting the left-hand suspended mounting on the gearbox	**62 Nm**
left-hand suspended mounting stud on the gearbox	**180 Nm**
left-hand suspended mounting bolts on the body	**62 Nm**
left-hand rubber pad nut on the gearbox	**62 Nm**
wiring harness channel nut	**10 Nm**

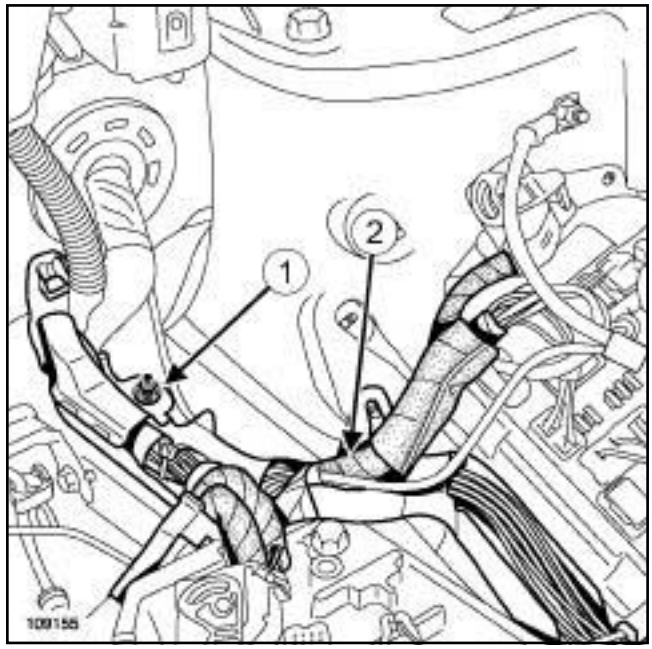
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

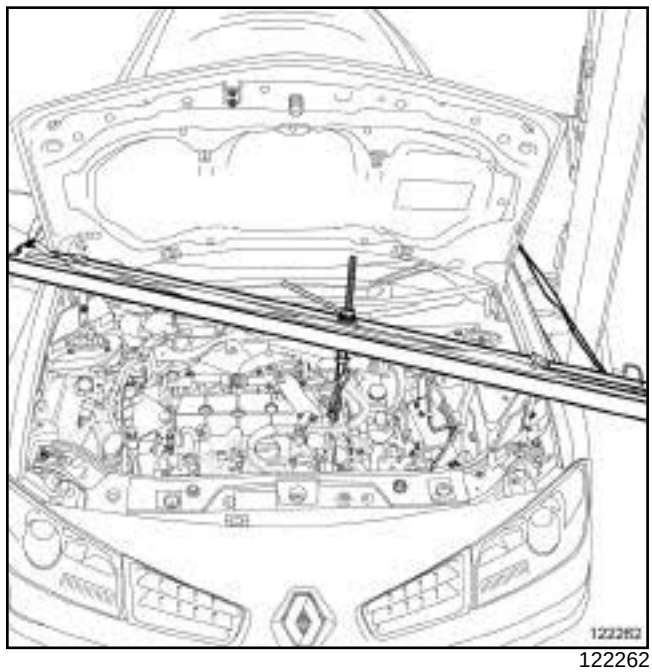
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the computer and its mounting (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the engine undertray.



109155

❏ Remove the wiring harness channel nut (**1**) .

❏ Detach the wiring harness channel (**2**) .



122262

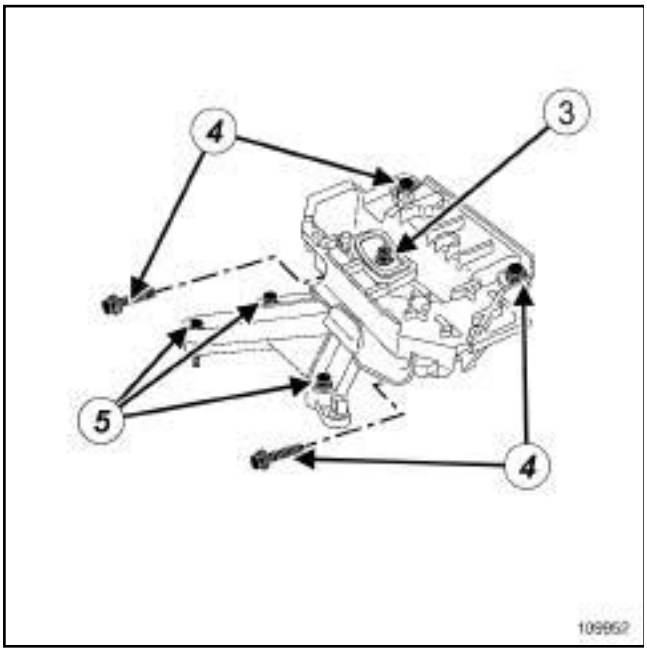
❏ Position tool **(Mot. 1453)**.

❏ Mark the position of the suspended engine mounting on the body.

D4F, and JH3 – K9K – K4J, and JH3 – K4M, and JH3

II - OPERATION FOR REMOVAL OF PART CONCERNED

D4F – K9K

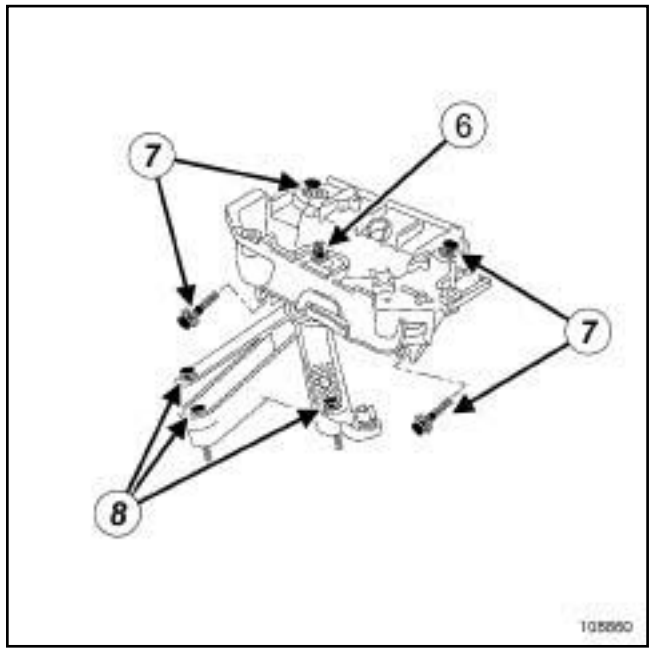


109952

❑ Remove:

- the nut (**3**) from the gearbox left-hand rubber pad,
- the bolts (**4**) from the left-hand suspended mounting on the body,
- the left-hand suspended mounting from the body,
- the bolts (**5**) from the gearbox left-hand suspended mounting,
- the gearbox left-hand suspended mounting.

K4J – K4M, and 800



108860

❑ Remove:

- the nut (**6**) from the gearbox left-hand rubber pad,
- the bolts (**7**) from the left-hand suspended mounting on the body,
- the left-hand suspended mounting from the body,
- the bolts (**8**) from the gearbox left-hand suspended mounting,
- the gearbox left-hand suspended mounting.

D4F, and JH3 – K9K – K4J, and JH3 – K4M, and JH3

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the left-hand suspended mounting on the gearbox,
- the left hand suspended mounting bolts on the gearbox.

❏ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the gearbox (62 Nm)**,
- If it has been replaced, the **left-hand suspended mounting stud on the gearbox (180 Nm)**.

❏ Refit:

- the left-hand suspended mounting from the body,
- the left-hand suspended mounting bolts on the body.

❏ Torque tighten the **left-hand suspended mounting bolts on the body (62 Nm)**.

❏ Refit the left-hand gearbox rubber pad nut.

❏ Tighten to torque the **left-hand rubber pad nut on the gearbox (62 Nm)**.

II - FINAL OPERATION.

❏ Remove the **(Mot. 1453)**.

❏ Position the wiring harness channel.

❏ Torque tighten the **wiring harness channel nut (10 Nm)**.

❏ Refit:

- the computer and its mounting (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

M4R, and DP0

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
gearbox cover mounting bolts	**62 Nm**
mounting bolts securing the gearbox support to the body	**62 Nm**
mounting studs securing the rubber mounting bush to the gearbox support	**62 Nm**
mounting nut securing the rubber mounting bush to the gearbox cover	**62 Nm**
right-hand mounting bolt of the radiator support cross member	**105 Nm**
left-hand mounting bolt of the sub-frame tie-rod	**105 Nm**

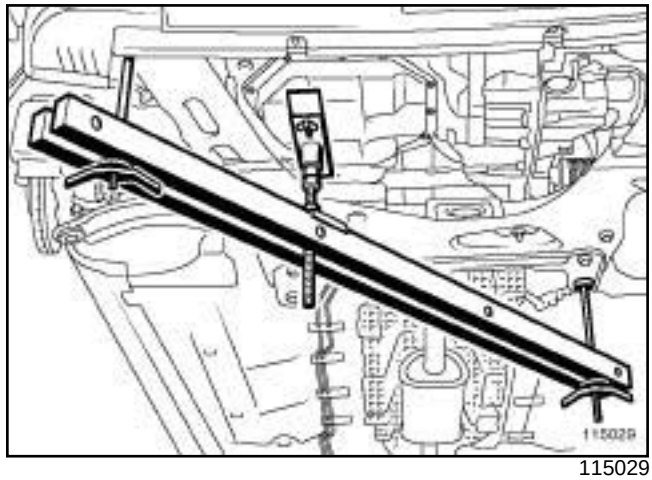
REMOVAL

I - REMOVAL PREPARATION OPERATION

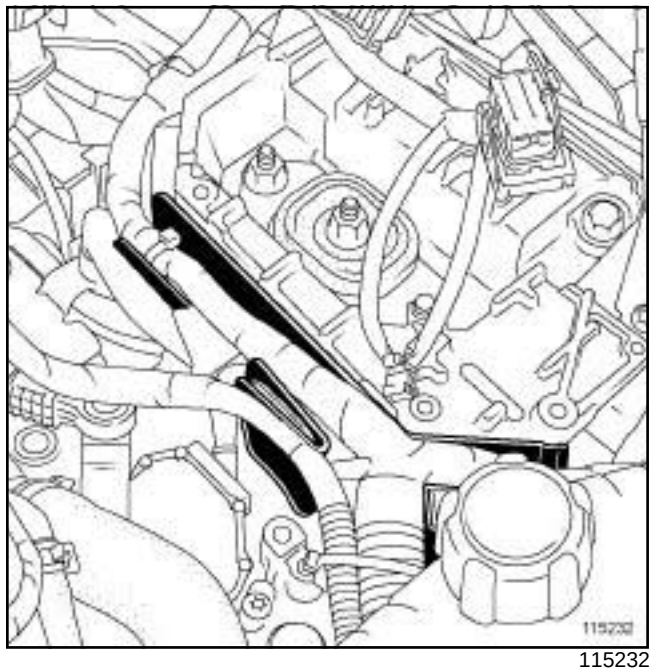
❏ Fit the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove:

- the engine cover,
- the engine undertray,
- the battery (see) ,
- the battery tray (see) ,
- the right-hand mounting bolt from the radiator support cross member,
- the left-hand mounting bolt from the sub-frame tie-rod.


115029

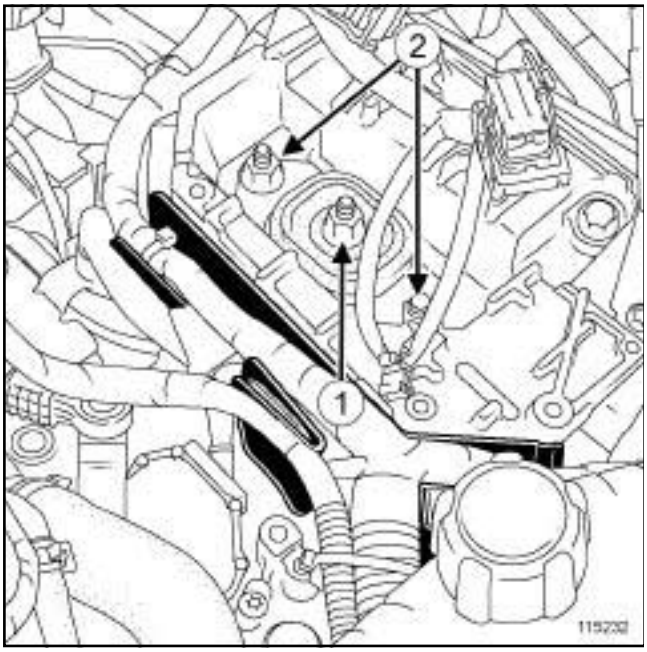
❏ Fit the lower engine support tool **(Mot. 1672)**.


115232

❏ Remove the gearbox mounting wiring harness neck.

M4R, and DP0

II - REMOVAL OF PART CONCERNED



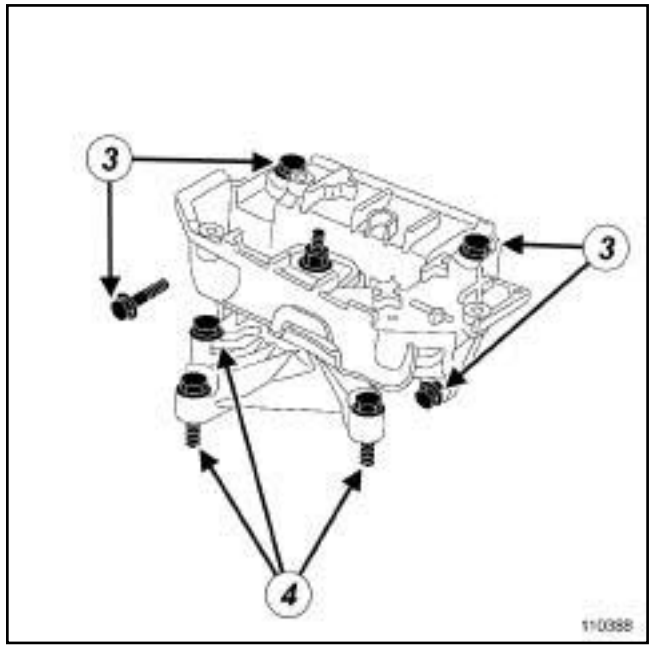
115232

❑ Remove:

- the gearbox cover rubber mounting bush mounting nut (**1**) ,
- the gearbox support rubber mounting bush mounting studs (**2**) ,
- the rubber mounting bush.

Note:

If necessary, lower the engine a few millimetres using **(Mot. 1672)** then hit the stud with a copper hammer.



110388

❑ Remove:

- the mounting bolts (**3**) securing the gearbox support on the body,
- the gearbox support,
- the mounting bolts (**4**) securing the gearbox cover to the gearbox,
- the gearbox cover.

REFITTING

I - REFITTING PART CONCERNED

❑ Refit:

- the gearbox cover,
- the gearbox cover mounting bolts,

❑ Tighten to torque the **gearbox cover mounting bolts (62 Nm)**.

❑ Refit:

- the gearbox support,
- the mounting bolts securing the gearbox support to the body,
- the rubber mounting bush,
- the mounting studs securing the rubber mounting bush to the gearbox support,
- the mounting nut securing the rubber mounting bush to the gearbox cover.

M4R, and DP0

❏ Tighten to torque:

- the **mounting bolts securing the gearbox support to the body (62 Nm)**,
- the **mounting studs securing the rubber mounting bush to the gearbox support (62 Nm)**,
- the **mounting nut securing the rubber mounting bush to the gearbox cover (62 Nm)**.

II - FINAL OPERATION

❏ Fit the wiring harness neck to the gearbox support.

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Tighten to torque:

- the **right-hand mounting bolt of the radiator support cross member (105 Nm)**,
- the **left-hand mounting bolt of the sub-frame tie-rod (105 Nm)**.

❏ Refit:

- the battery tray (see) ,
- the battery (see) ,
- the engine cover,
- the engine undertray.

F4R

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
suspended engine mounting bolts on the gearbox side	**62 N.m**
suspended engine mounting bolts on the body side	**62 Nm**
left-hand suspended engine mounting rubber pad mounting bolts	**62 Nm**
left-hand suspended engine mounting rubber pad mounting nut	**62 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

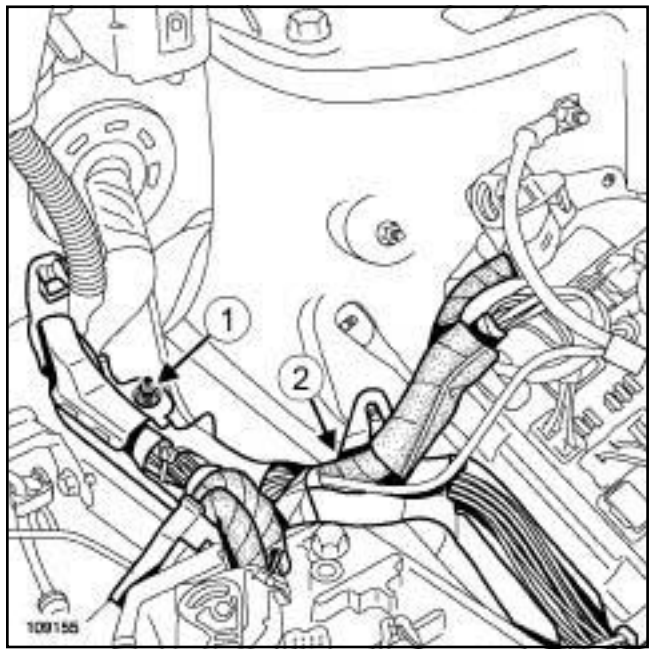
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

❏ Have to hand the gearbox side lifting eye and its mounting bolts (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the petrol injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) .



109155

❏ Remove the wiring harness channel mounting nut (**1**) .

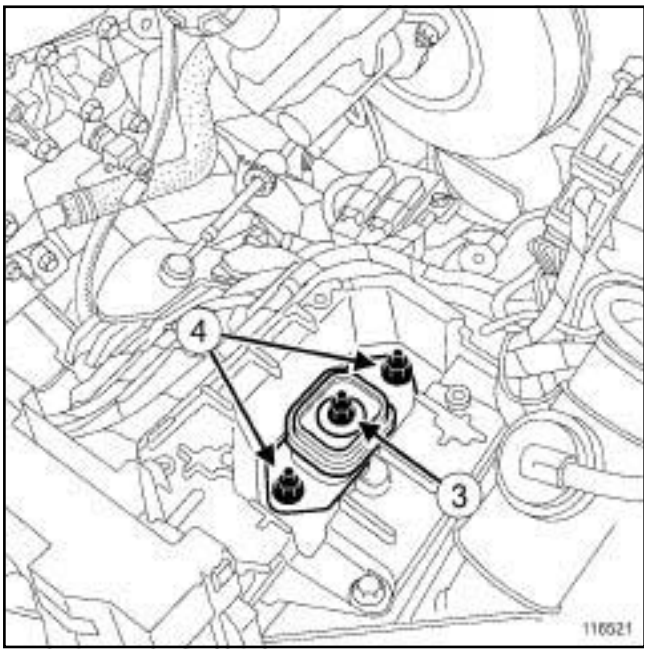
❏ Move aside the wiring harness channel (**2**) .

❏ Fit the gearbox side lifting eye (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Fit the **(Mot. 1453)**.

F4R

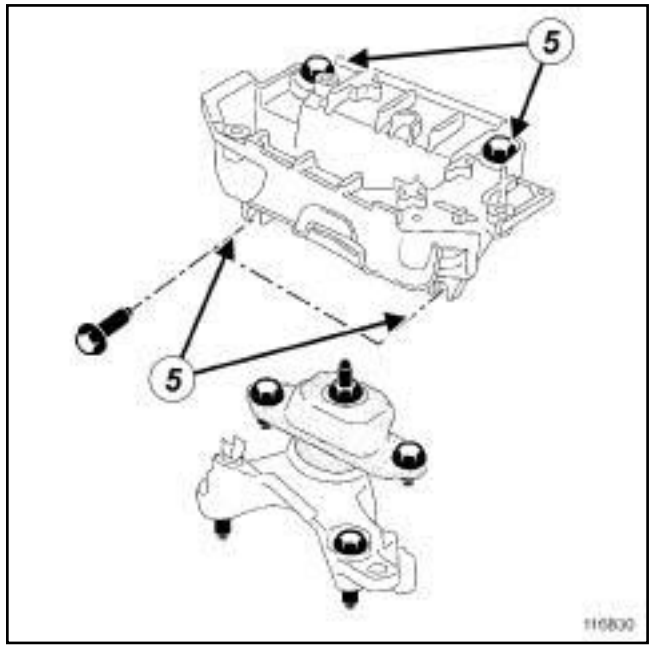
II - OPERATION FOR REMOVAL OF PART CONCERNED



116521

❑ Remove:

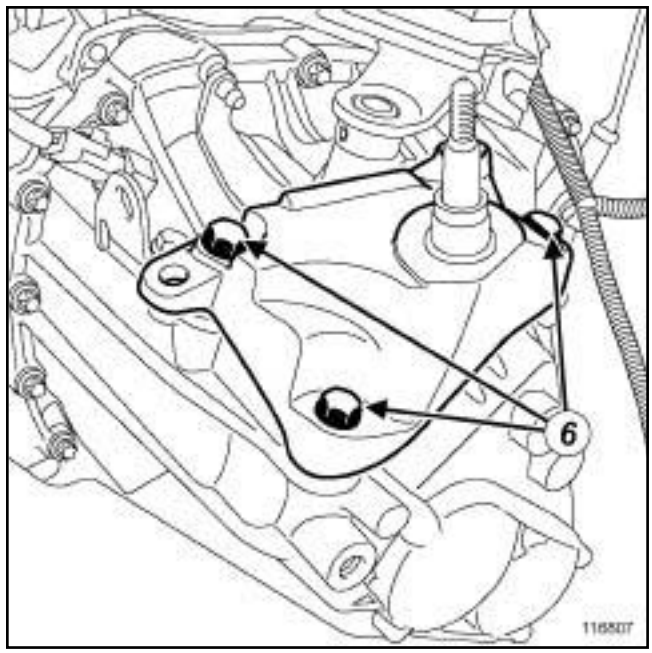
- the rubber pad mounting nut (**3**) from the left-hand suspended engine mounting,
- the rubber pad mounting bolt (**4**) from the left-hand suspended engine mounting,
- the rubber pad from the left-hand suspended engine mounting



116830

❑ Remove:

- the bolts (**5**) mounting the left-hand suspended engine mounting support on the body side,
- the left-hand suspended engine mounting support on the body side.



116807

❑ Remove:

- the bolts (**6**) mounting the left-hand suspended engine mounting support on the gearbox side,
- the left-hand suspended engine mounting support on the gearbox side.

F4R

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Remove:

- the left-hand suspended engine mounting support on the gearbox side,
- the bolts mounting the left-hand suspended engine mounting support on the gearbox side.

❏ Torque tighten the **suspended engine mounting bolts on the gearbox side (62 N.m)**.

❏ Refit:

- the left-hand suspended engine mounting support on the body side,
- the bolts mounting the left-hand suspended engine mounting support on the body side.

❏ Torque tighten the **suspended engine mounting bolts on the body side (62 Nm)**.

❏ Refit:

- the rubber pad on the left-hand suspended engine mounting,
- the rubber pad mounting bolt on the left-hand suspended engine mounting,
- the rubber pad mounting nut on the left-hand suspended engine mounting.

❏ Torque tighten:

- the **left-hand suspended engine mounting rubber pad mounting bolts (62 Nm)**,
- the **left-hand suspended engine mounting rubber pad mounting nut (62 Nm)**.

II - FINAL OPERATION.

❏ Remove:

- the **(Mot. 1453)**,
- the gearbox side lifting eye (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

❏ Fir the wiring harness channel.

❏ Refit:

- the wiring harness channel mounting nut,
- the petrol injection computer (see **17B**, **Petrol injection**, **Petrol injection computer: Removal - Refitting**, page **17B-37**) ,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the gearbox side lifting eye and its mounting bolts in the luggage compartment (see **11A**, **Top and front of engine**, **Lifting eyes: Removal - Refitting**, page **11A-305**) .

M4R, and TL4

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
subframe tie-rod right-hand bolt	**105 Nm**
radiator mounting cross member left-hand bolt	**105 Nm**

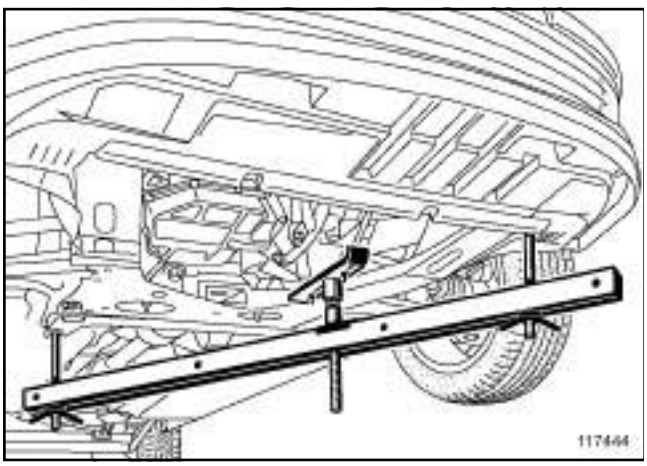
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).

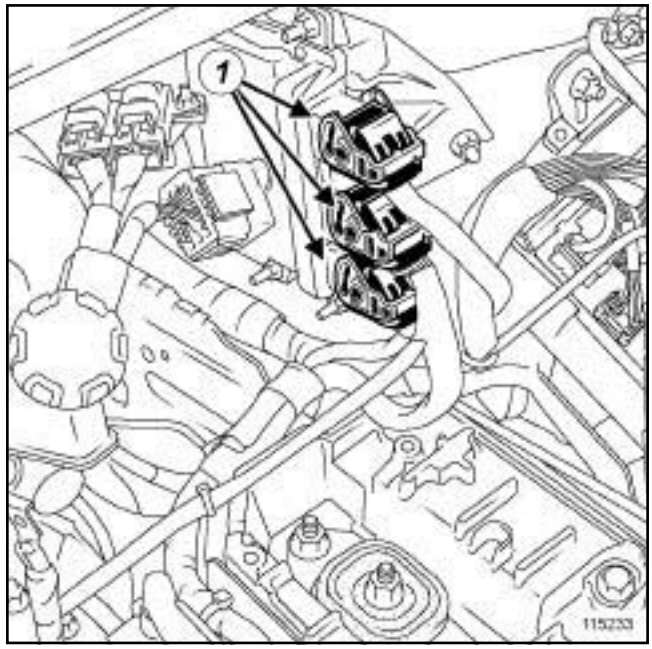
❏ Remove:

- the engine cover,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the radiator mounting cross member left-hand bolt,
- the subframe tie-rod right-hand bolt.



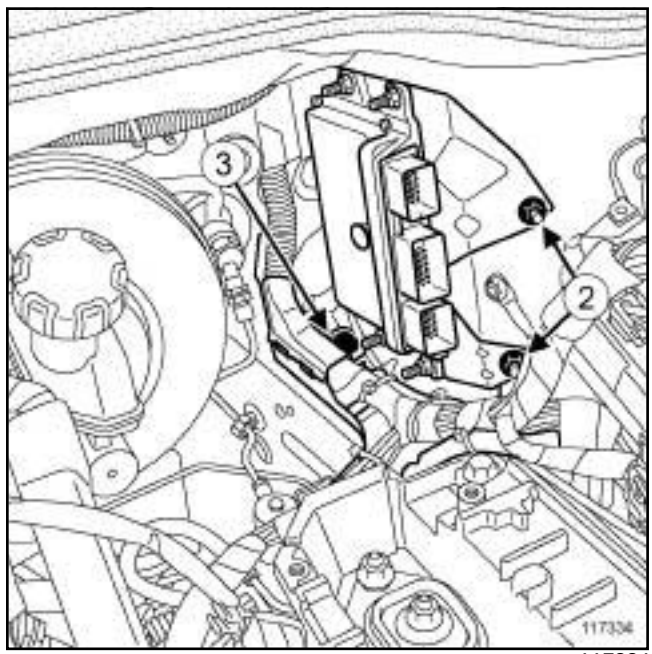
117444

❏ Fit the lower engine support tool **(Mot. 1672)**.



115233

❏ Disconnect the injection computer connectors (**1**) .



117334

❏ Remove:

- the bolts (**2**) from the injection computer support,
- the bolt (**3**) from the wiring harness channel.

❏ Remove:

- the injection computer mounting,
- the wiring harness channel.

M4R, and TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED

115232

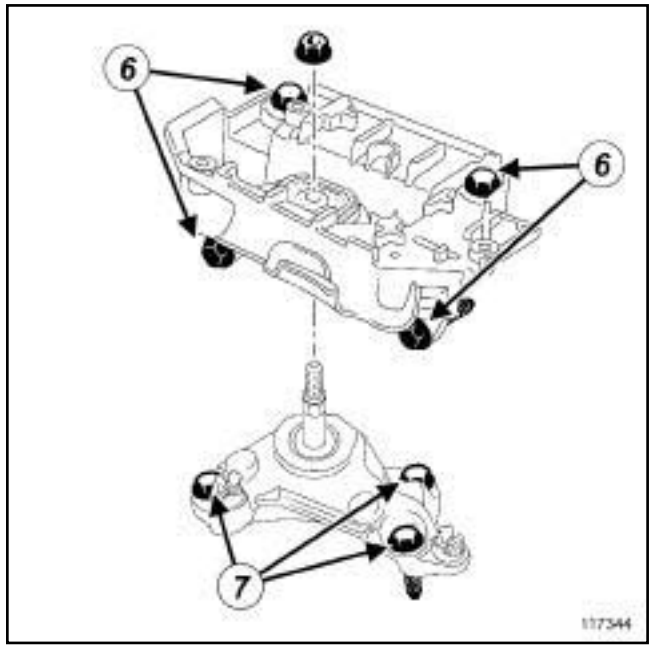
❏ Separate the wiring harness channel from the gearbox support.

❏ Remove:

- the nut (**4**) mounting the gearbox cover on the gearbox support,
- the bolts (**5**) from the gearbox support rubber mounting bush,
- the rubber mounting bush.

Note:

If necessary, lower the engine a few millimetres using the **(Mot. 1672)** then hit the stud with a copper hammer.



117344

❏ Remove:

- the bolts (**6**) mounting the gearbox support on the body,
- the gearbox support,
- the bolts (**7**) mounting the gearbox cover on the gearbox,
- the gearbox cover.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the gearbox cover,
- the bolts mounting the gearbox cover on the gearbox.

❏ Torque tighten the gearbox cover bolts (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) .

❏ Refit:

- the gearbox support,
- the gearbox support bolts on the body,
- the rubber mounting bush,
- the bolts to the gearbox support rubber mounting bush,
- the nut mounting the gearbox cover on the gearbox support.

M4R, and TL4

❏ Tighten to torque and in order (see **19D**, **Engine mounting**, **Suspended engine mounting: Tightening torque**, page **19D-1**) :

- the gearbox support bolts on the body,
- the bolts to the gearbox support rubber mounting bush,
- the nut mounting the gearbox cover on the gearbox support.

II - FINAL OPERATION.

❏ Fit the wiring harness channel to the gearbox support.

❏ Remove the lower engine support tool **(Mot. 1672)**.

❏ Fit:

- the harness channel,
- the injection computer support.

❏ Refit:

- the injection computer support bolts,
- the wiring harness channel bolts.

❏ Connect the injection computer connectors.

❏ Refit:

- the subframe tie-rod right-hand bolt,
- the radiator mounting cross member left-hand bolt.

❏ Torque tighten:

- the **subframe tie-rod right-hand bolt (105 Nm)**,
- the **radiator mounting cross member left-hand bolt (105 Nm)**.

❏ Refit:

- the engine undertray,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine cover.

K4M, and TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
indelible pencil

Tightening torques ▽	
bolts of the left-hand suspended engine mounting support on the gearbox	**62 N.m**
bolts of the left-hand suspended engine mounting support on the body	**62 N.m**
left-hand suspended engine mounting shaft nut	**62 N.m**
earth nut on the body	**8 N.m**

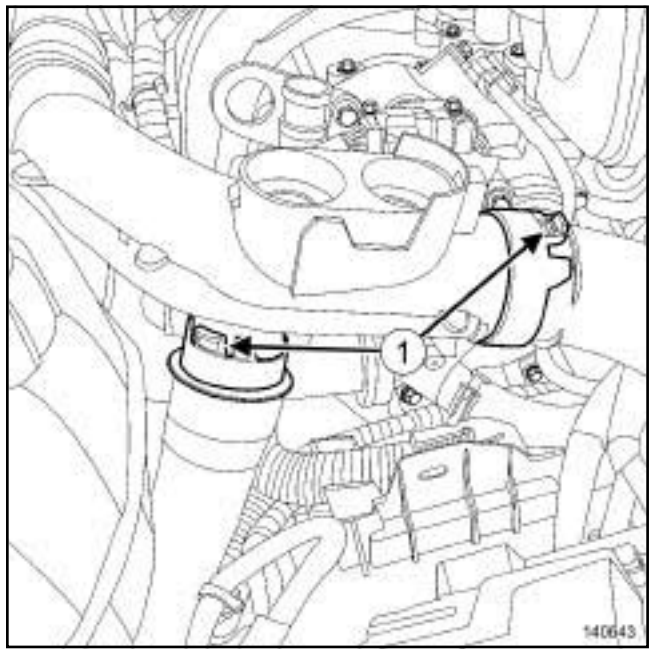
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



140643

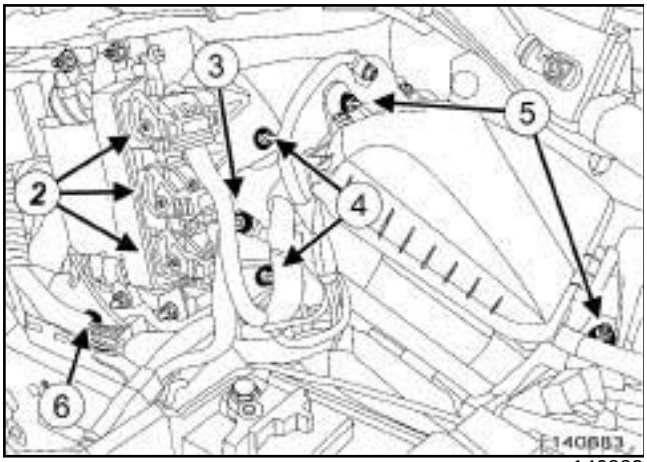
❏ Unclip the air inlet pipe from the air filter unit (**1**) .

❏ Move aside the air inlet pipe from the air filter unit.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) .

K4M, and TL4



140883

❏ Disconnect the connectors (**2**) from the petrol injection computer.

❏ Remove:

- the earth nut (**3**) on the body,
- the petrol injection computer nuts (**4**) .

❏ Move aside the wiring of the petrol injection computer.

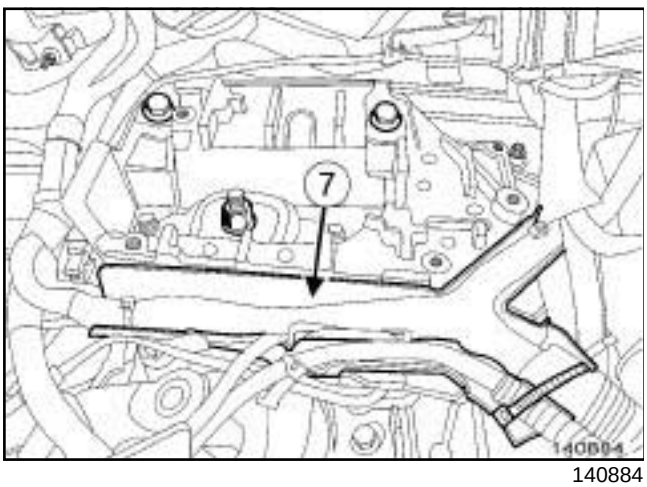
❏ Remove:

- the petrol injection computer,
- the Protection and Switching Unit nuts (**5**) .

❏ Move aside the Protection and Switching Unit.

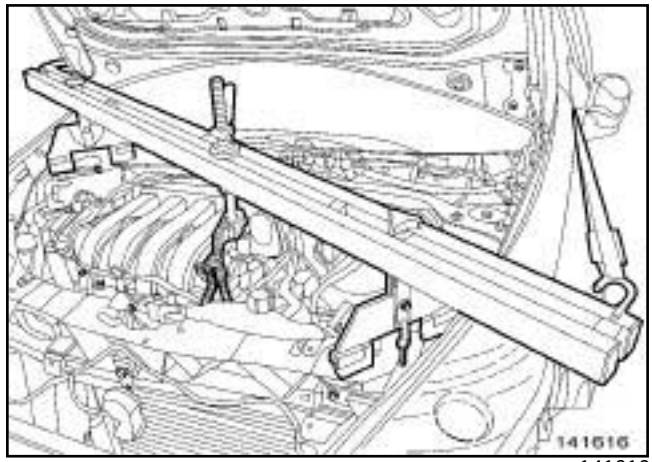
❏ Remove the wiring channel nut (**6**) .

❏ Move aside the wiring channel on the body.



140884

❏ Unclip the wiring channel (**7**) from the left-hand suspended engine mounting.

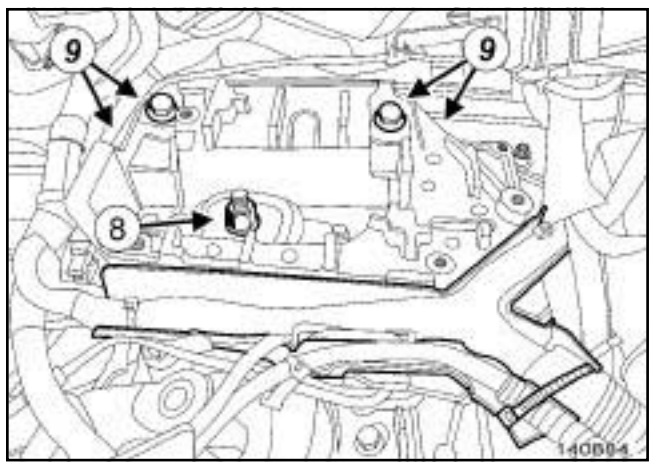


141616

❏ Position the **(Mot. 1453)**.

❏ Mark the position of the suspended engine mounting on the body using a **indelible pencil**.

II - OPERATION FOR REMOVAL OF PART CONCERNED

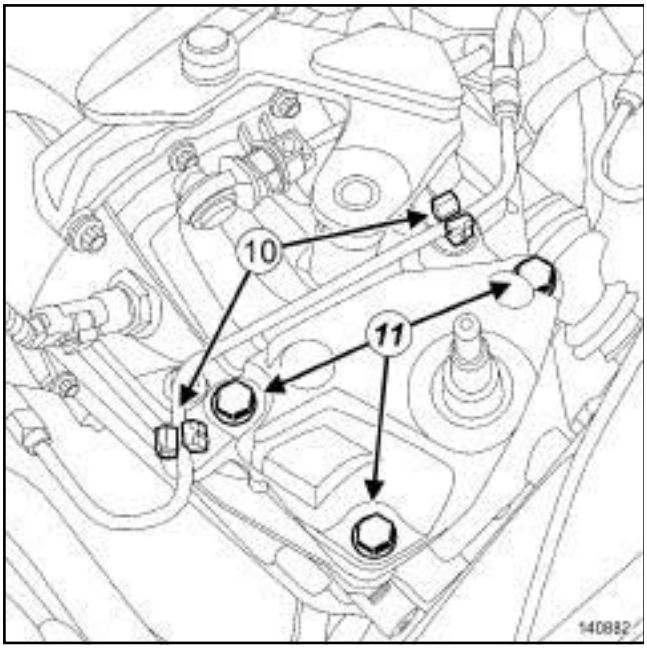


140884

❏ Remove:

- the left-hand suspended engine mounting shaft nut (**8**) ,
- the bolts (**9**) of the left-hand suspended engine mounting support on the body,
- the left-hand suspended engine mounting support on the body.

K4M, and TL4



140882

❑ Unclip the clutch pipe (**10**) .

❑ Remove:

- the left-hand suspended engine mounting support bolts (**11**) on the gearbox,
- the left-hand suspended engine mounting support on the gearbox.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the left-hand suspended engine mounting support on the gearbox.

❑ Torque tighten the **bolts of the left-hand suspended engine mounting support on the gearbox (62 N.m)**.

❑ Attach the clutch pipe.

❑ Refit the left-hand suspended engine mounting support on the body.

❑ Torque tighten the **bolts of the left-hand suspended engine mounting support on the body (62 N.m)**.

❑ Refit the left-hand suspended engine mounting shaft nut.

❑ Torque tighten the **left-hand suspended engine mounting shaft nut (62 N.m)**.

II - FINAL OPERATION

❑ Remove the tool **(Mot. 1453)**.

❑ Fit the wiring channel on the left-hand suspended engine mounting.

❑ Refit:

- the wiring channel on the body,
- the Protection and Switching Unit,
- the petrol injection computer,
- the earth on the body.

❑ Torque tighten the **earth nut on the body (8 N.m)**.

❑ Connect the connectors of the petrol injection computer.

❑ Refit:

- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the air filter unit air inlet pipe,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine undertray.

RENAULT

2 Transmission

20A CLUTCH

21A MANUAL GEARBOX

21B SEQUENTIAL GEARBOX

23A AUTOMATIC GEARBOX

29A DRIVESHAFTS

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Chapitre 2

Contents

Pages

20A CLUTCH

Clutch: Precautions for the repair 20A-1

Clutch: Specifications 20A-2

Pressure plate - Disc: Removal - Refitting 20A-5

Clutch thrust bearing: Removal - Refitting 20A-11

21A MANUAL GEARBOX

Manual gearbox: Identification 21A-1

Manual gearbox oils: Draining - Filling 21A-3

Manual gearbox: Specifications 21A-5

Manual gearbox: Removal - Refitting 21A-12

Input shaft lip seal: Removal - Refitting 21A-44

Differential output seal: Removal - Refitting 21A-46

Reverse gear switch: Removal - Refitting 21A-52

21B SEQUENTIAL GEARBOX

Sequential gearbox: Precautions for the repair 21B-1

Pressure accumulator: Removal - Refitting 21B-2

Pump assembly reservoir: Removal - Refitting 21B-6

Electro-hydraulic unit: Removal - Refitting 21B-8

Pump assembly: Removal - Refitting 21B-12

Solenoid valves: Removal - Refitting 21B-28

Engagement sensor: Removal - Refitting 21B-32

Actuator module: Removal - Refitting 21B-34

Gear selection sensor: Removal - Refitting 21B-54

Clutch position sensor: Removal - Refitting 21B-56

Solenoid valve assembly pressure sensor: Removal - Refitting 21B-58

Sequential gearbox engine speed sensor: Removal - Refitting 21B-62

Sequential gearbox: Removal - Refitting 21B-66

Contents

21B SEQUENTIAL GEARBOX

Sequential gearbox converter: Removal - Refitting 21B-76

Sequential gearbox gear lever: Removal - Refitting 21B-78

Sequential gearbox oil: Specifications 21B-82

Sequential gearbox: Bleeding 21B-84

Electro-hydraulic unit: List and location of components 21B-86

23A AUTOMATIC GEARBOX

Automatic gearbox: Identification 23A-1

Automatic gearbox oil: Draining - Filling 23A-2

Automatic gearbox: Specifications 23A-5

Automatic gearbox converter: Fault finding 23A-6

Automatic gearbox: Removal - Refitting 23A-7

Drive plate: Removal - Refitting 23A-21

Multifunction switch: Removal - Refitting 23A-24

Multifunction switch: Adjustment 23A-27

Speed sensor: Removal - Refitting 23A-28

Pressure sensor: Removal - Refitting 23A-31

Hydraulic distributor: Removal - Refitting 23A-34

Flow control solenoid valve: Removal - Refitting 23A-40

Hydraulic distributor solenoid valves: Removal - Refitting 23A-42

23A AUTOMATIC GEARBOX

Automatic gearbox connector: Removal - Refitting 23A-43

Automatic gearbox converter: Removal - Refitting 23A-45

Differential seal: Removal - Refitting 23A-46

Converter seal: Removal - Refitting 23A-47

29A DRIVESHAFTS

Driveshaft: Precautions for the repair 29A-1

Front left-hand driveshaft: Removal - Refitting 29A-2

Front right-hand driveshaft: Removal - Refitting 29A-9

Relay shaft bearing: Removal - Refitting 29A-20

Front driveshaft gaiter, wheel side: Removal - Refitting 29A-21

Front right-hand driveshaft gaiter, gearbox side: Removal - Refitting 29A-24

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting 29A-27

Clutch: Precautions for the repair

Special tooling required	
Emb. 1518	Set of clutch plate centring mandrels
Emb. 1780	Set of clutch plate centring mandrels.

Before removing the clutch, check:

- The direction of fitting for the clutch plate.

Before refitting the clutch, check:

- The flywheel friction track (no scratches or blue stains),
- The crankshaft bearing (no sticking),
- The engine and gearbox seals (replace if necessary),
- The sliding action of the clutch plate on the output shaft,
- The guide of the thrust bearing and clutch fork (no wear or scratches).

WARNING

To prevent the clutch from juddering or slipping, do not grease the output shaft or the clutch plate hub.

During refitting:

Check the direction of the clutch plate.

Centre the clutch plate using the **(Emb. 1518)** or **(Emb. 1780)**.

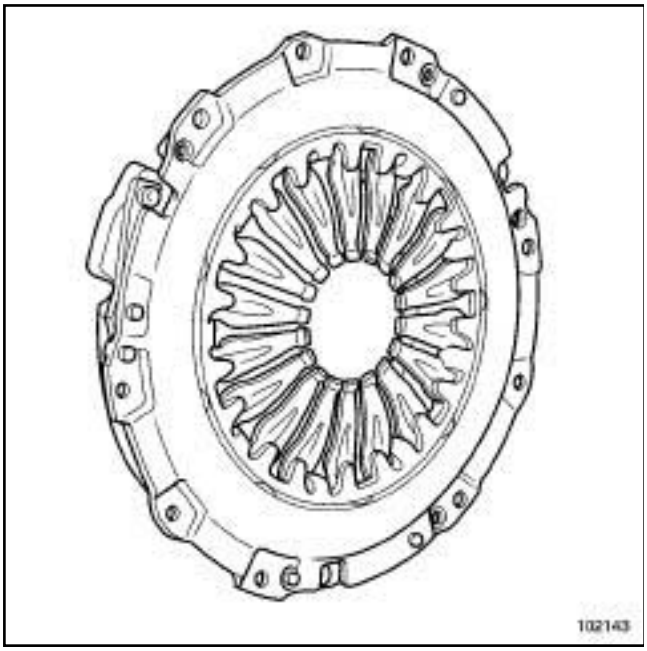
Gradually torque tighten the clutch pressure plate bolts.

After refitting, check:

- The clutch play (for a cable operated vehicle),
- Bleeding of the hydraulic circuit (for vehicles with hydraulic controls).

D4F, and 740 or 742 or 764

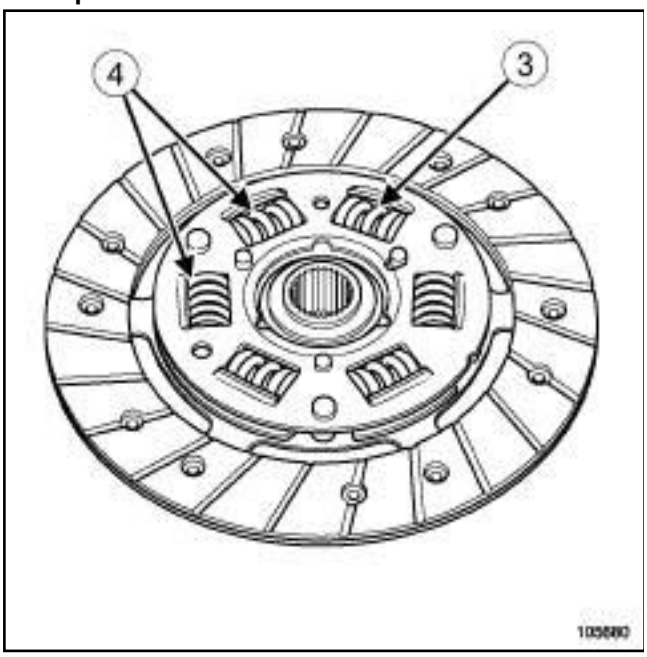
Pressure plate



102143

Pressure plate part no: 180 CPOE 3300

Drive plate



105680

Plate external diameter: **181.5 mm**

Plate thickness: **6.7 mm**

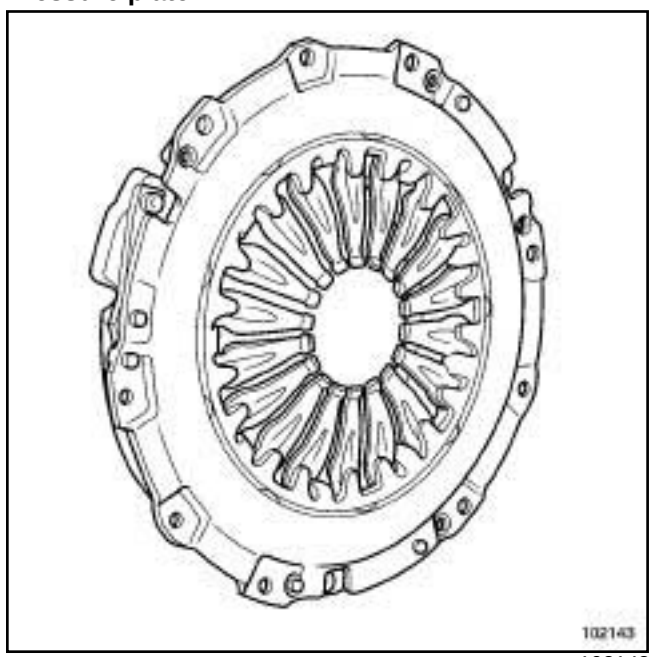
Number of splines: **26**

Colour of springs (**3**) : Grey

Colour of springs (**4**) : Black

D4F, and 784 or 786

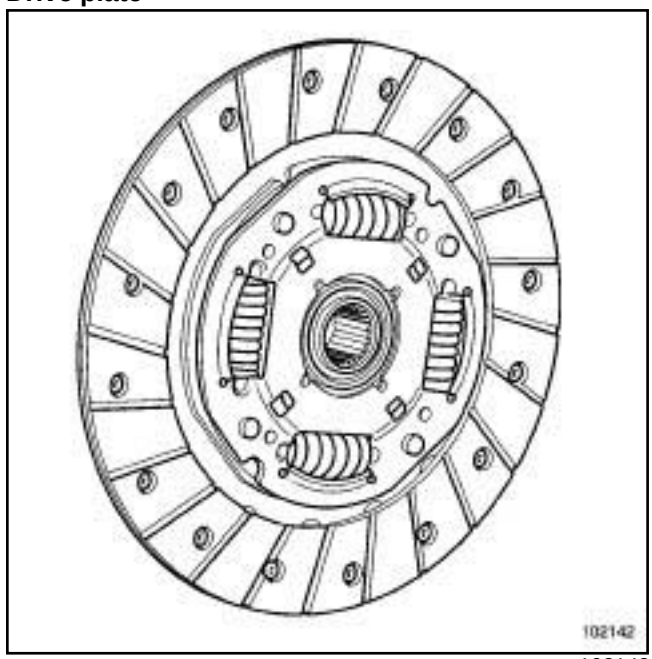
Pressure plate



102143

Pressure plate part no.: **200 CPOE 3900**

Drive plate



102142

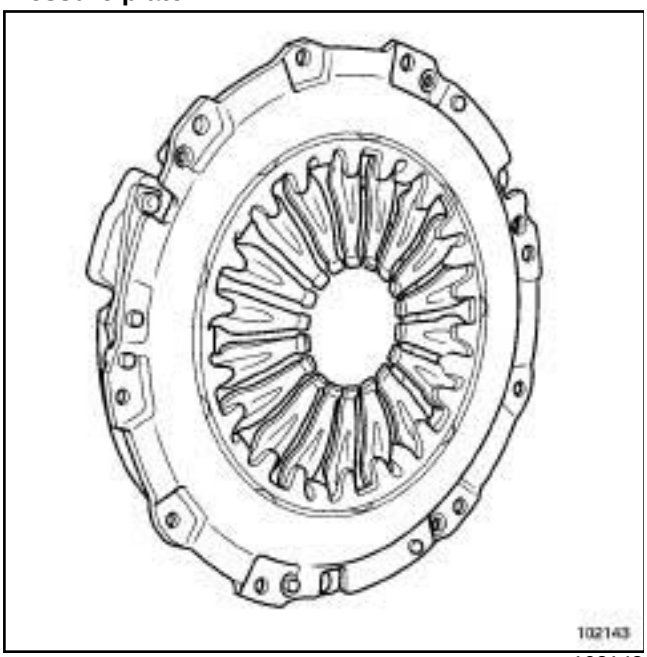
Plate external diameter: **200 mm**

Plate thickness: **7 mm**

Number of splines: **26**

F4R or K4J or K4M

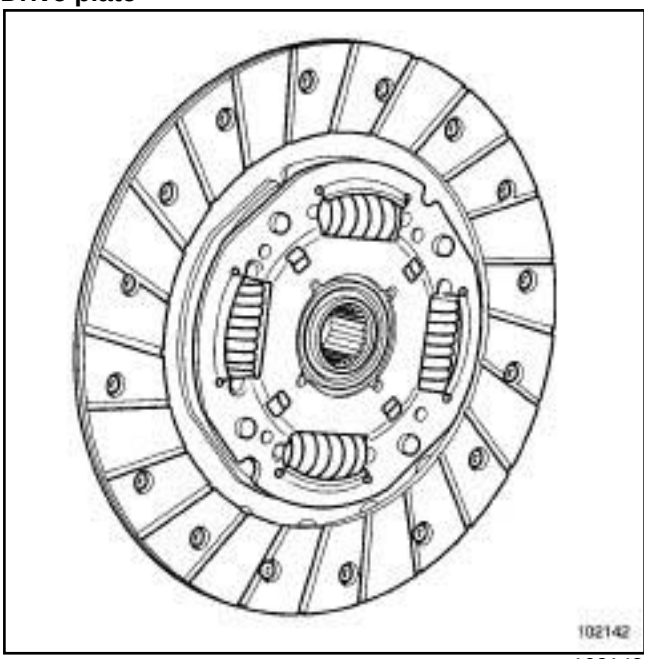
Pressure plate



102143

Pressure plate part no: 200 CPOEH 3900

Drive plate



102142

Plate external diameter: **200 mm**

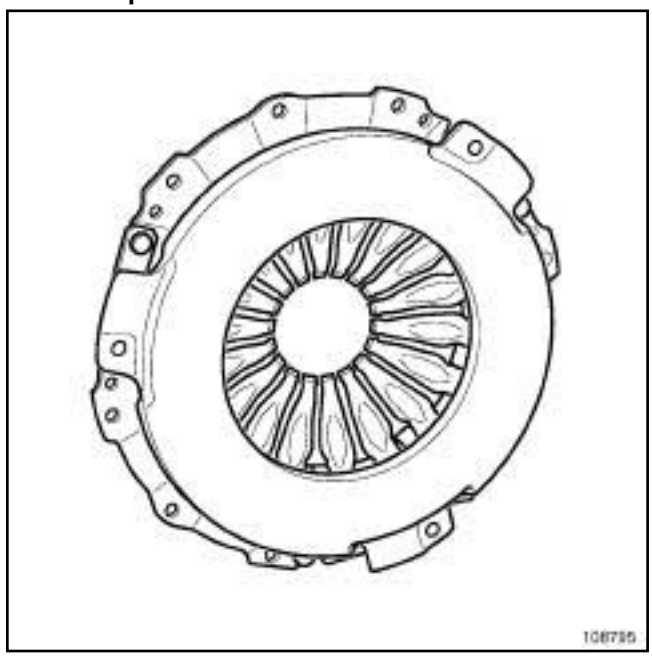
Plate thickness: **6.9 mm**

Number of splines: **26**

Colour of springs: Grey

K9K

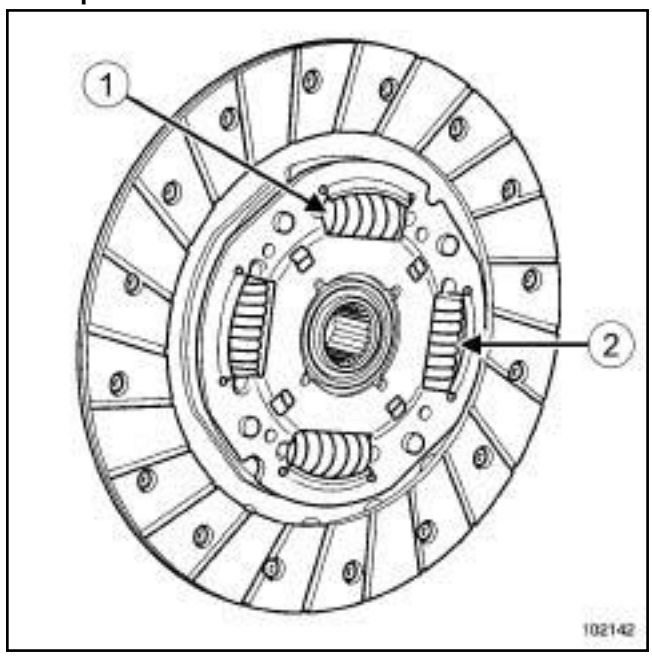
Pressure plate



108795

Pressure plate part no: 215 CPoVK 4400

Drive plate



102142

Plate outer diameter: **215 mm**

Plate thickness: **6.9 mm**

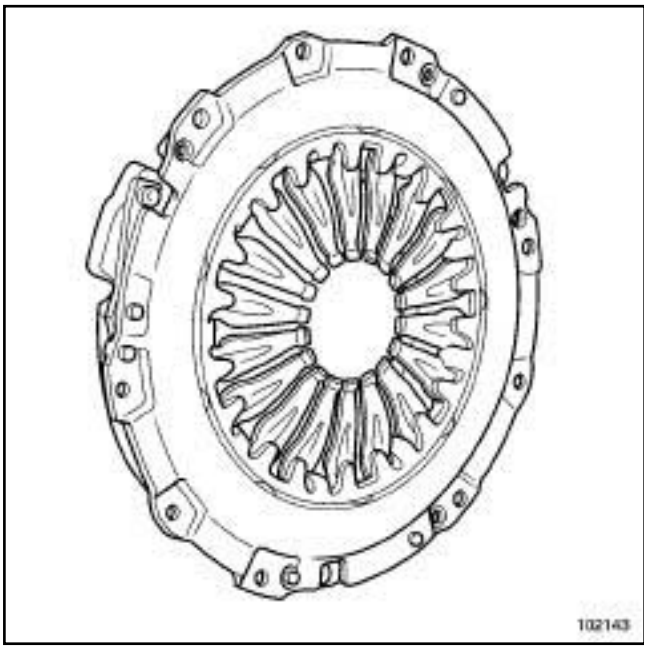
Number of splines: **26**

Colour of springs (**1**) : Red and Black

Colour of springs (**2**) : Grey

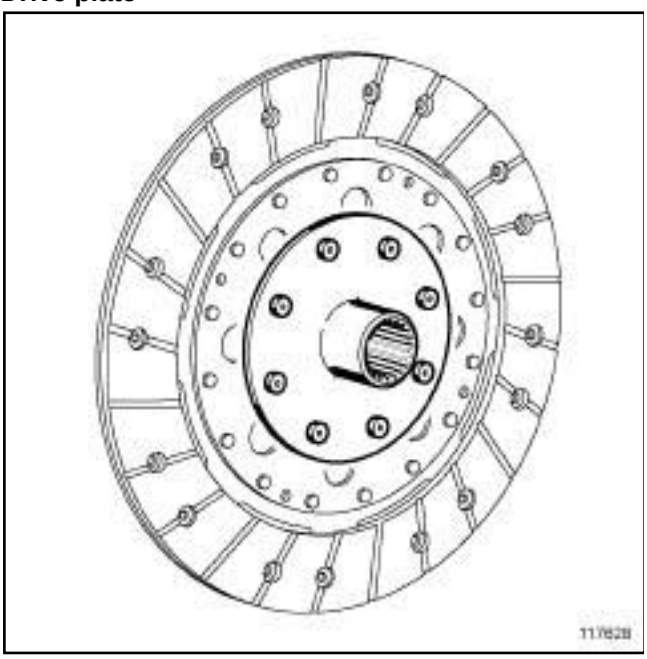
M4R, and TL4

Pressure plate



102143

Drive plate



117628

Plate outer diameter: **215 mm**

Plate thickness: **6.7 mm**

Number of splines: **26**

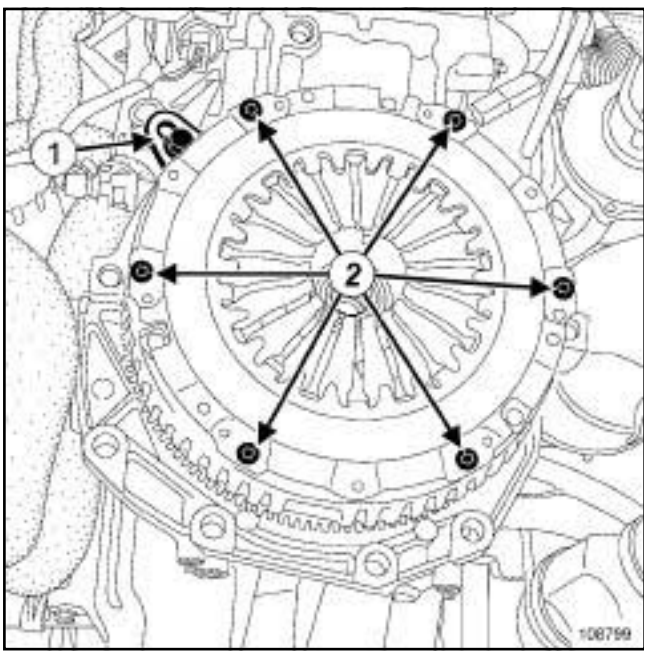
D4F or K4J or K4M or K9K, and 750 or 752 or 760 or 762 or 766 or 768, and JH3 or JR5

Special tooling required	
Mot. 582-01	Flywheel locking tool.
Emb. 1518	Set of clutch plate centring mandrels

Tightening torques ▽	
pressure plate mounting bolts	**20 N.m**
pressure plate mounting bolts	**15 N.m**

REMOVAL

❑ Remove the gearbox ((see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**)).



108799

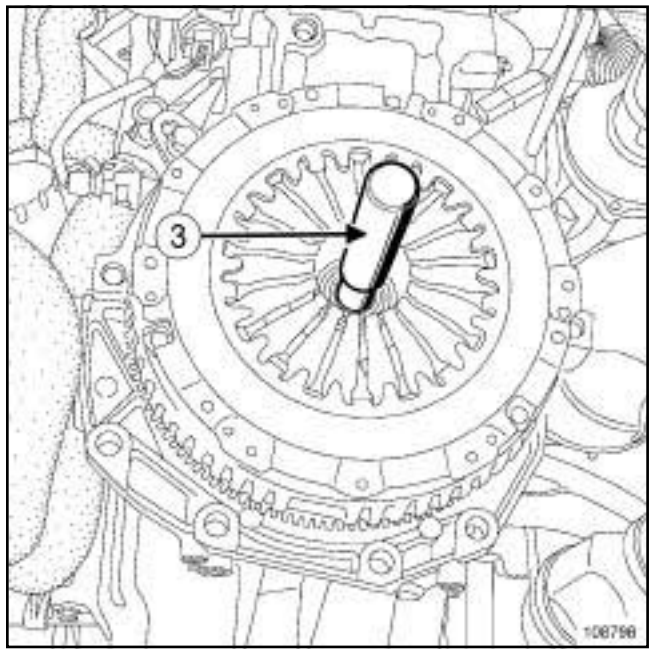
❑ Lock the engine using the **(Mot. 582-01)** (**1**) .

❑ Remove the pressure plate mounting bolts (**2**) .

❑ Remove the friction plate.

❑ Replace any faulty parts.

REFITTING



108798

❑

WARNING
- Degrease the flywheel friction face.
- Clean the clutch shaft splines.
- Refit the assembly without lubricant.

❑ Position the clutch plate.

❑ Centre the clutch plate using the **(Emb. 1518)** (**3**) .

❑ Screw into place gradually in a radial pattern.

D4F or K4J or K4M

❑ Torque tighten:

- **pressure plate mounting bolts (20 N.m)**,

K9K, and 750 or 752 or 760 or 762 or 766 or 768

❑ Torque tighten:

- **pressure plate mounting bolts (15 N.m)**,

❑ Remove the tool **(Mot. 582-01)**.

❑ Refit the gearbox ((see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**)).

F4R, and TL4

Special tooling required	
Mot. 582-01	Flywheel locking tool.
Emb. 1780	Set of clutch plate centring mandrels.

Tightening torques ▽	
mechanism mounting bolts	**20 N.m**

REMOVAL

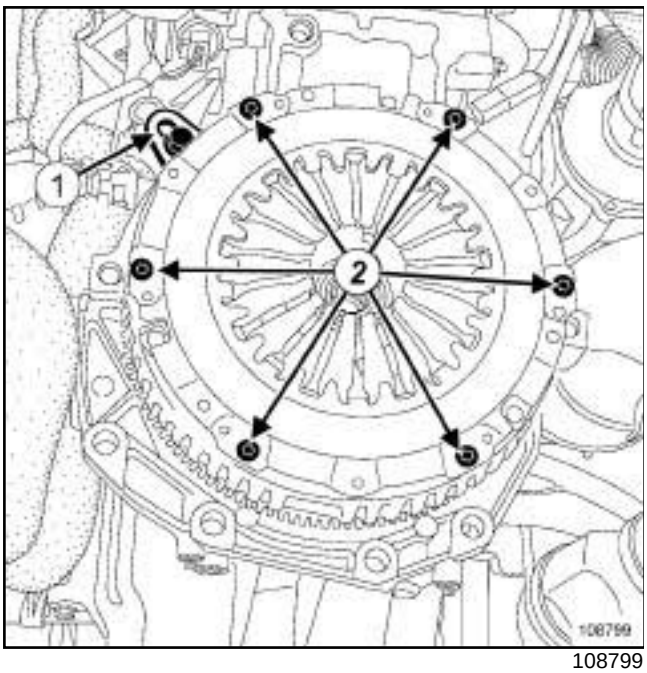
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108799

❏ Lock the engine using the **(Mot. 582-01)** (**1**) .

❏ Remove the pressure plate mounting bolts (**2**) .

❏ Remove the pressure plate and the friction plate.

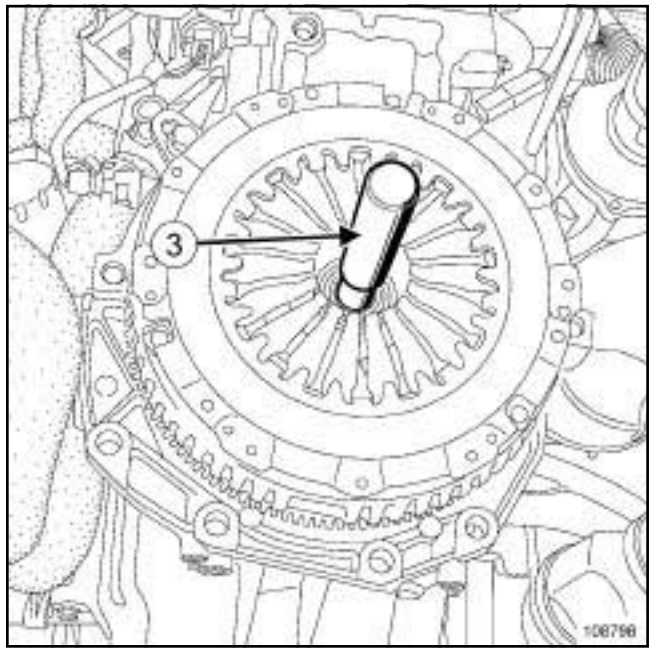
REFITTING

I - REFITTING PREPARATION OPERATION

❏ Degrease the flywheel friction face.

❏ Clean the clutch shaft splines.

II - REFITTING OPERATION FOR PART CONCERNED



108798

❏ Position the clutch plate.

❏ Centre the clutch plate using the **(Emb. 1780)** (**3**) .

❏ Fit the pressure plate.

❏ Gradually tighten the clutch pressure plate mounting bolts radially.

❏ Torque tighten the **mechanism mounting bolts (20 N.m)**.

III - FINAL OPERATION

❏ Remove the **(Mot. 582-01)** and **(Emb. 1780)**.

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

❏ Connect the battery (see) (MR 392, 80A, Battery).

M4R, and TL4

Special tooling required	
Mot. 1677	Flywheel locking tool.
Emb. 1780	Set of clutch plate centring mandrels.

Tightening torques ▽	
clutch mechanism bolts	**initial torque: 15 Nm**
clutch mechanism bolts	**25 Nm**

REMOVAL

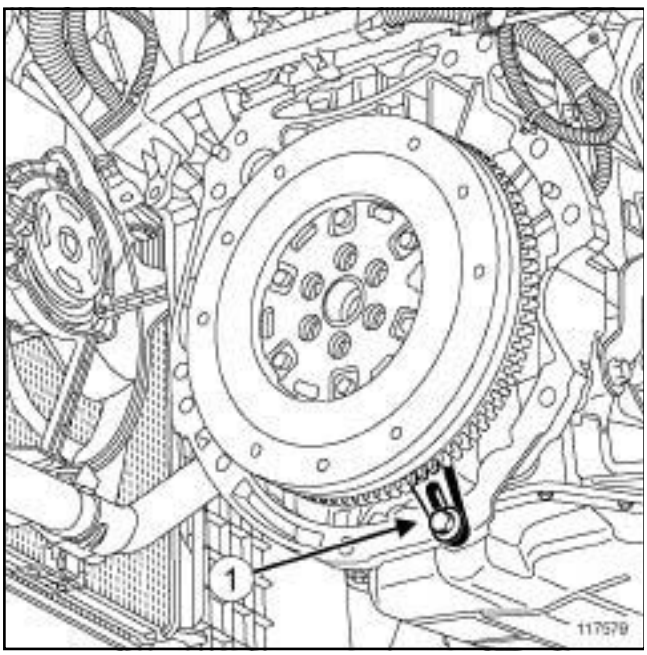
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

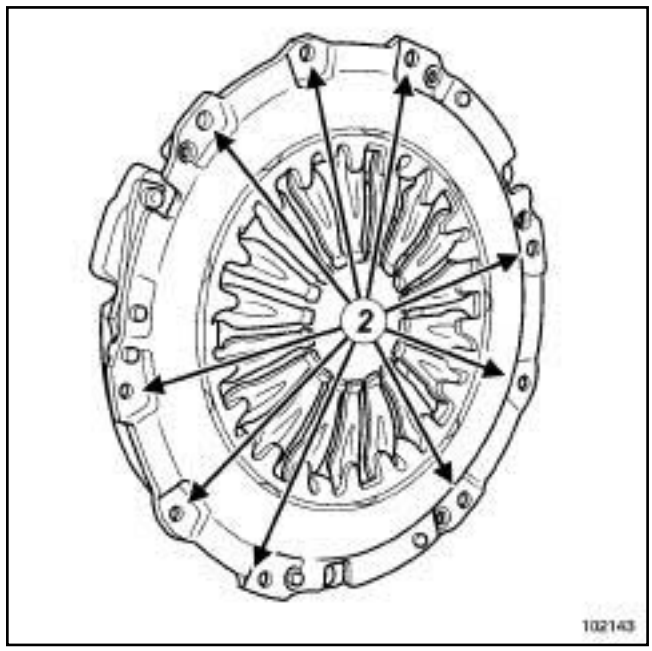
❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117579

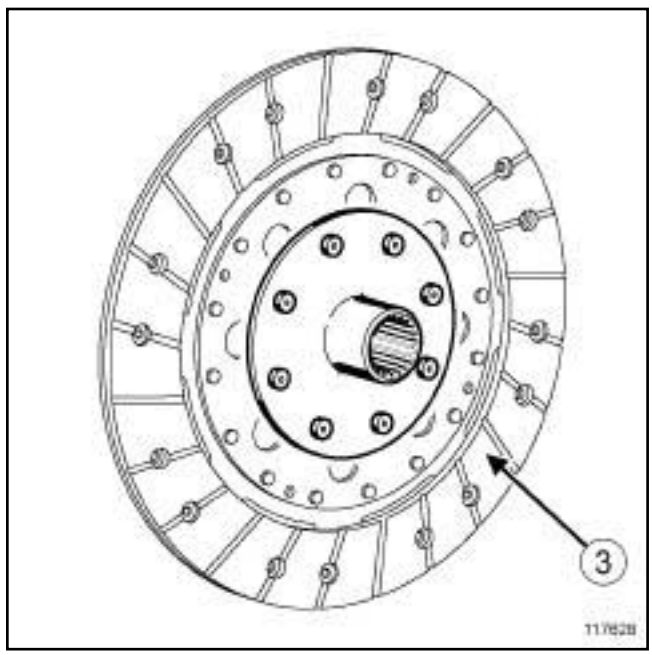
❏ Lock the engine using tool **(Mot. 1677)** (**1**) .



102143

❏ Slide the bolts (**2**) out of the mechanism.

❏ Remove the mechanism.



117628

❏ Remove the clutch plate (**3**) .

REFITTING

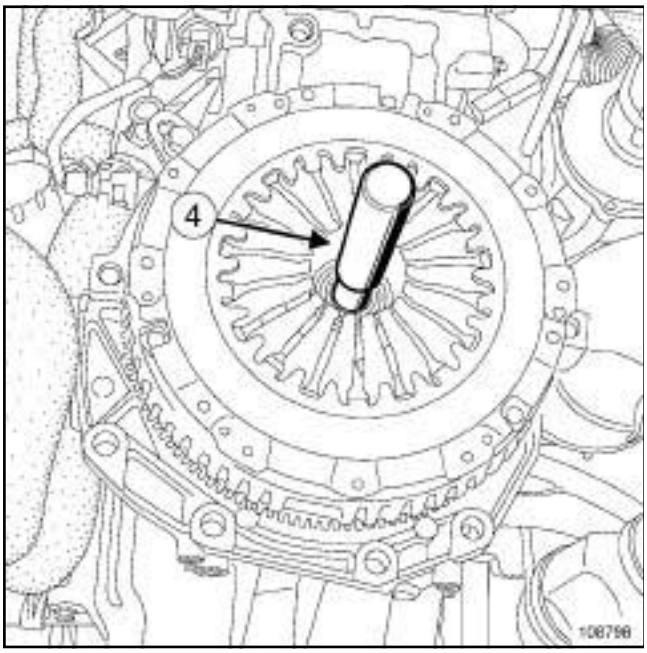
I - REFITTING PREPARATION OPERATION

❏ Degrease the flywheel friction face.

❏ Clean the clutch shaft splines.

M4R, and TL4

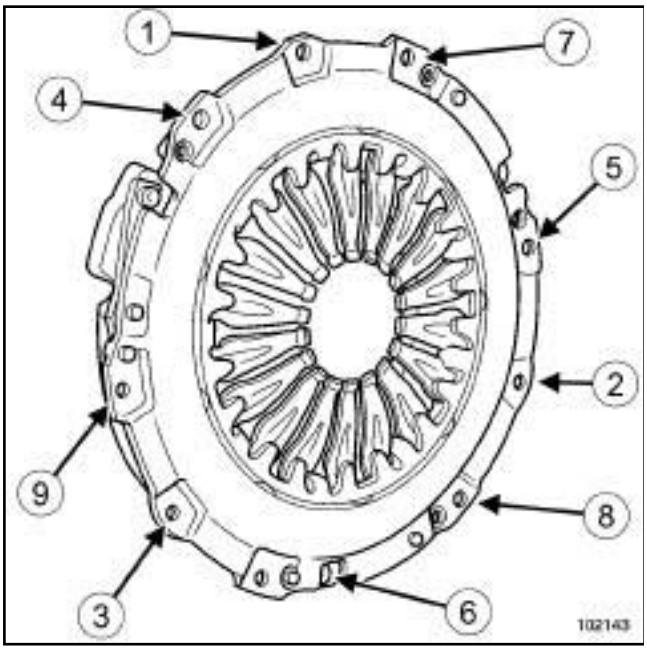
II - REFITTING OPERATION FOR PART CONCERNED



108798

❏ Position the clutch driven plate.

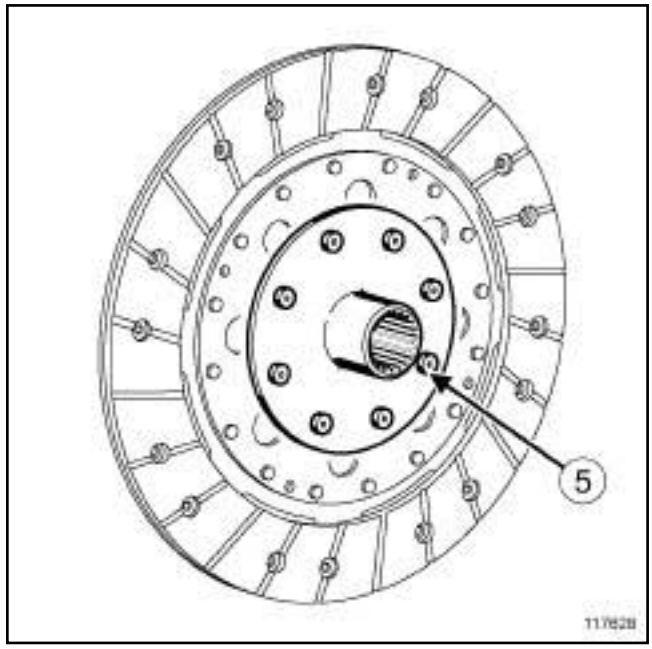
❏ Centre the clutch plate using tool **(Emb. 1780)** (**4**) .



102143

❏ Pretighten to torque and in order the **clutch mechanism bolts (initial torque: 15 Nm)**.

❏ Torque tighten the **clutch mechanism bolts (25 Nm)**.



117628

❏

Note:

Position the clutch plate with the section (**5**) against the flywheel.

III - FINAL OPERATION

❏ Remove the **(Mot. 1677)** and **(Emb. 1780)**.

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

❏ Connect the battery (see) (MR 392, 80A, Battery).

K9K, and TL4

Special tooling required	
Mot. 582-01	Flywheel locking tool.
Emb. 1780	Set of clutch plate centring mandrels.

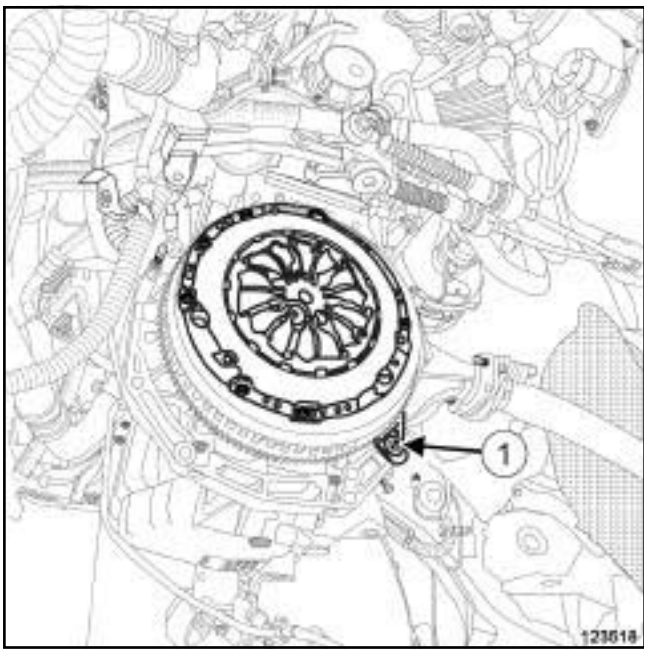
Tightening torques ▽	
clutch pressure plate bolts	**12 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

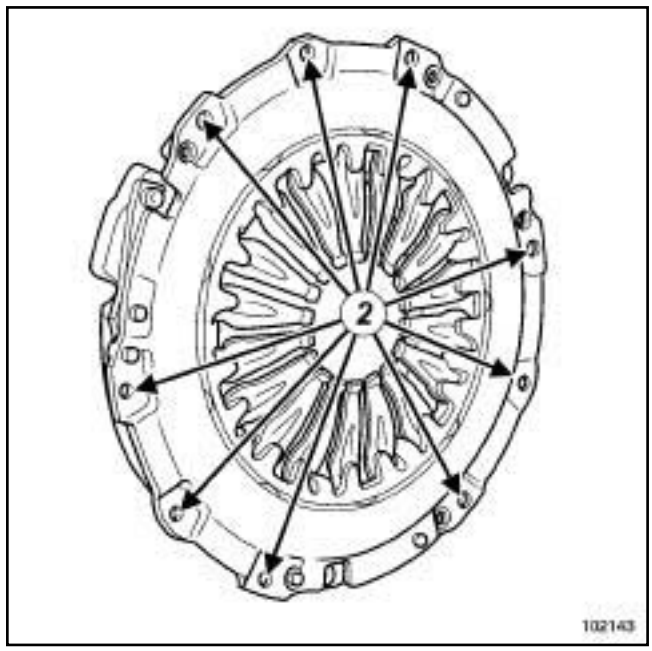
❑ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



123518

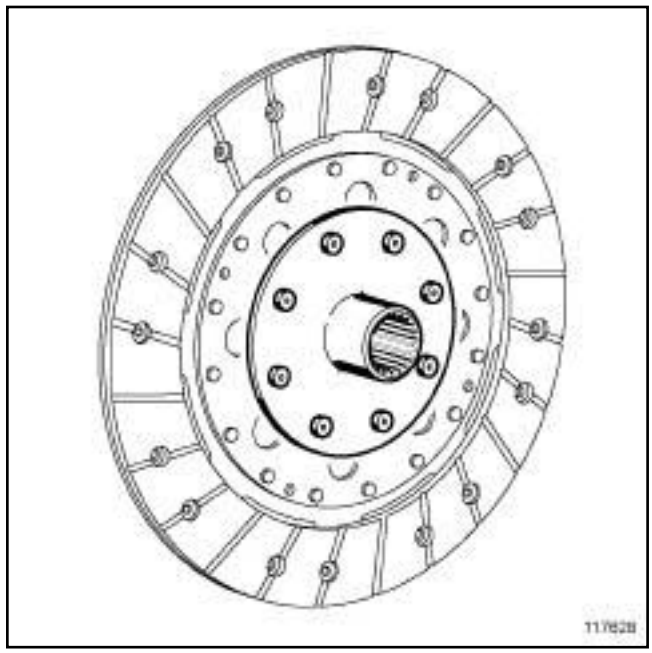
❑ Lock the engine using the (**1**) **(Mot. 582-01)**.



102143

❑ Slide the bolts (**2**) out of the mechanism.

❑ Remove the mechanism.



117628

❑ Remove the clutch plate.

REFITTING

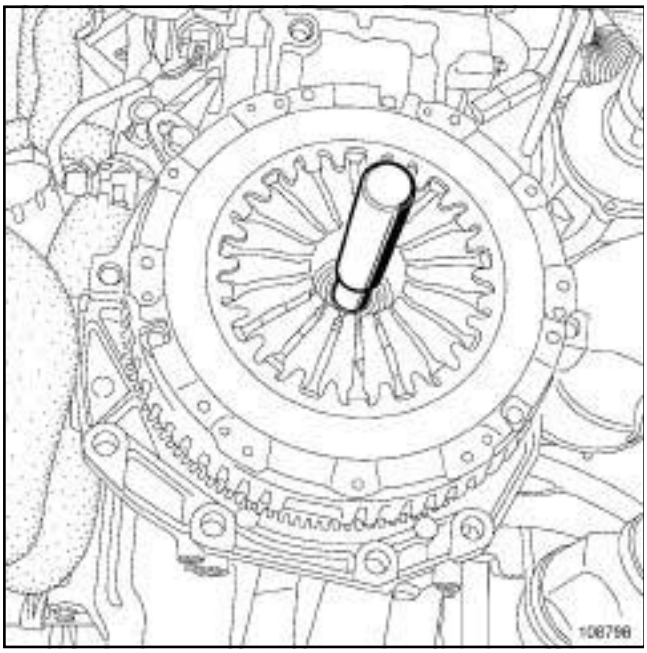
I - REFITTING PREPARATION OPERATION

❑ Degrease the flywheel friction face.

❑ Clean the clutch shaft splines.

K9K, and TL4

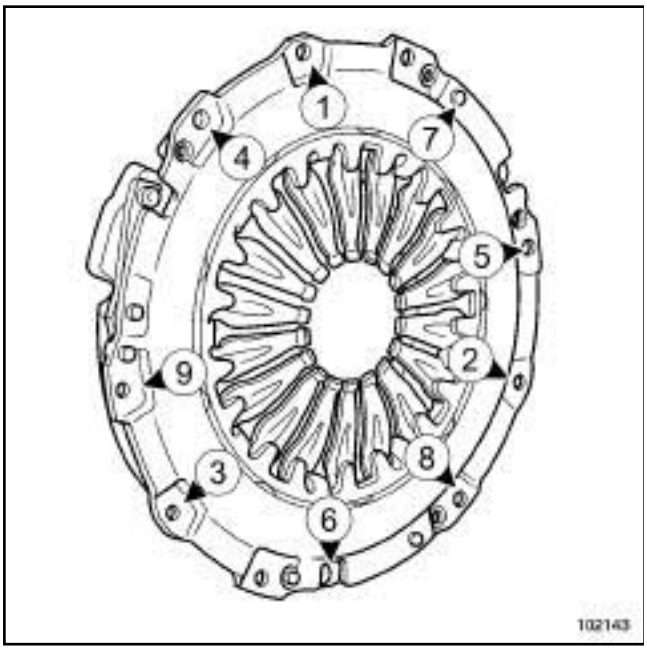
II - REFITTING OPERATION FOR PART CONCERNED



108798

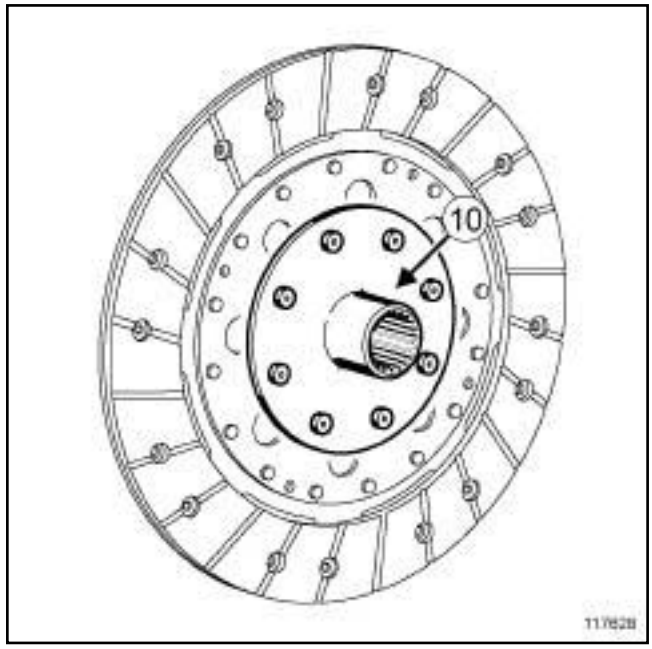
❏ Position the clutch plate.

❏ Centre the clutch plate using the **(Emb. 1780)**.



102143

❏ Tighten to torque and in order the **clutch pressure plate bolts (12 N.m)**.



117628

❏ Position the clutch plate with the section (**10**) against the flywheel.

III - FINAL OPERATION

❏ Remove the **(Mot. 582-01)** then the **(Emb. 1780)**.

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

Tightening torques ▽	
bolts mounting the clutch thrust bearing on the clutch housing	**21 Nm**

The thrust bearing is connected to the clutch slave cylinder.

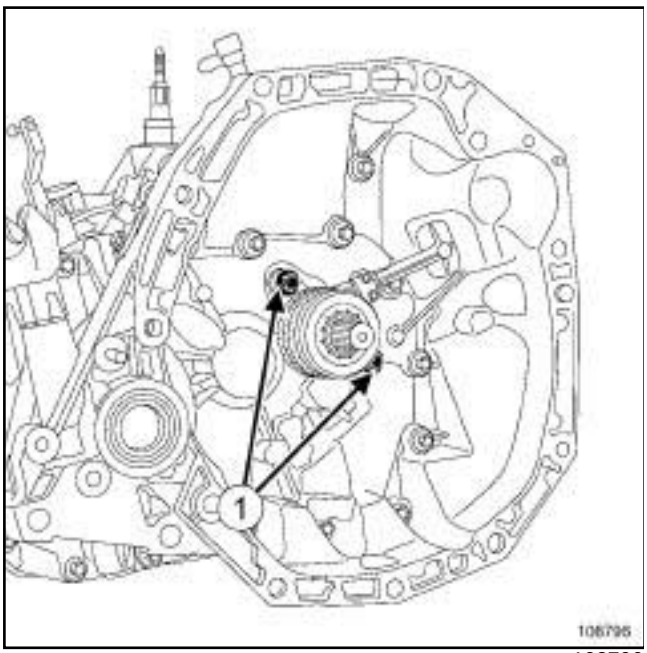
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Drain the brake reservoir using a syringe to remove the clutch thrust bearing and control.

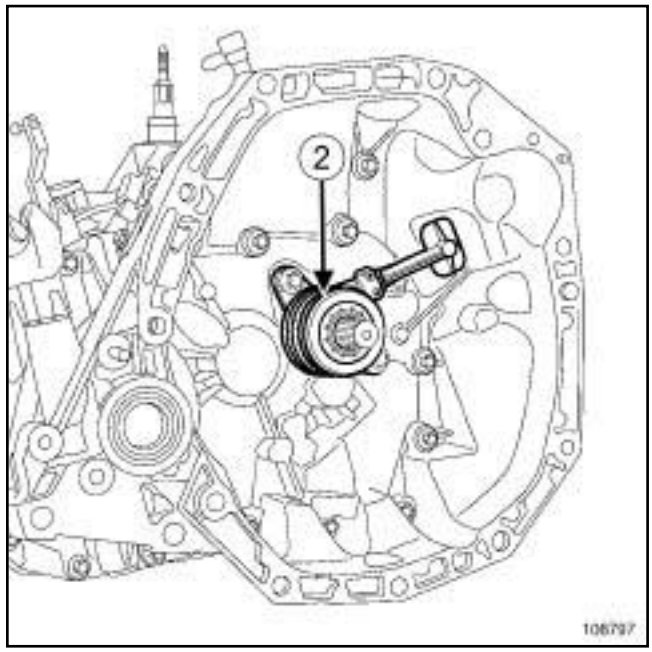
❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

II - REMOVAL OF PART CONCERNED



108796

❏ Remove the two clutch thrust bearing mounting bolts (**1**) on the clutch housing.



108797

❏ Remove the clutch thrust bearing (**2**) .

REFITTING

I - REFITTING PART CONCERNED

❏ Refit the clutch thrust bearing ***(2)*** .

❏ Torque tighten the **bolts mounting the clutch thrust bearing on the clutch housing (21 Nm)** ***(1)*** .

WARNING

To avoid damaging the clutch slave cylinder, do not lubricate the clutch shaft.

Never operate the system while the slave cylinder is removed.

II - FINAL OPERATION

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

❏ Bleed the clutch control (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

TL4

Tightening torques ▽	
clutch thrust bearing bolts	**21 Nm**

REMOVAL

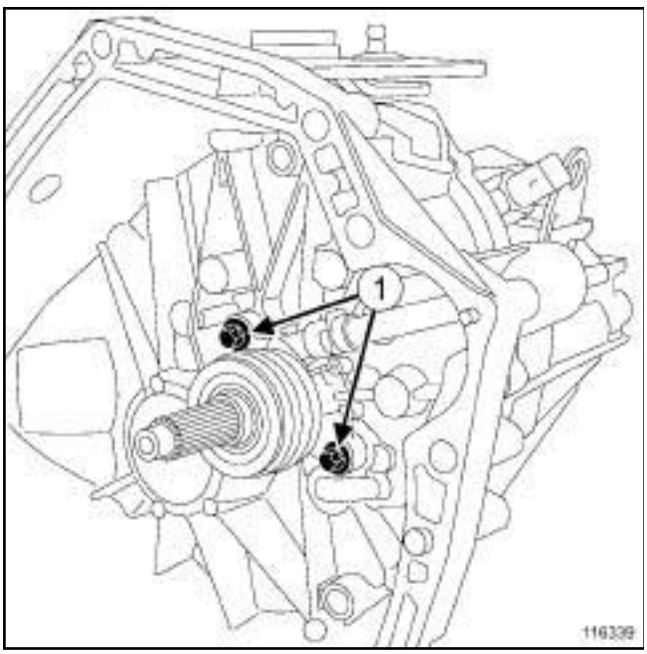
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



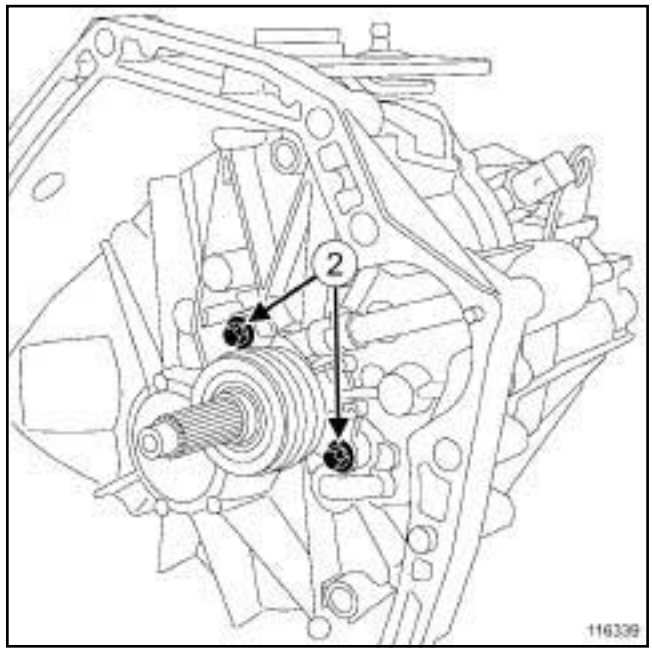
116339

❏ Remove:

- the bolts (**1**) from the clutch thrust bearing,
- the clutch thrust bearing.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



116339

❏ Refit:

- the new clutch thrust bearing,
- the bolts (**2**) from the clutch thrust bearing.

❏ Torque tighten the **clutch thrust bearing bolts (21 Nm)**.

II - FINAL OPERATION

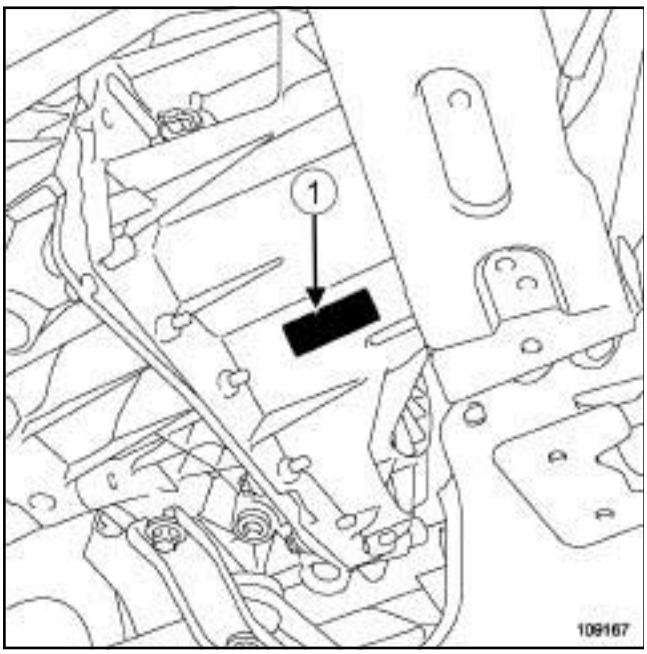
❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

❏ Connect the battery (see) (MR 392, 80A, Battery).

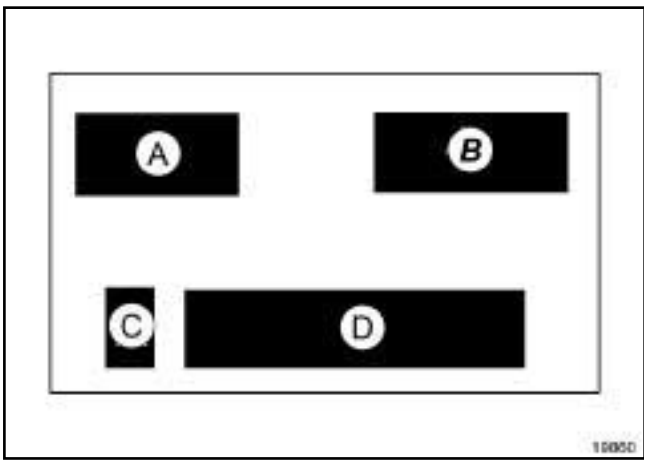
JA3 or JA5 or JH3 or JR5

K4J / K4M / K9K / D4F engines are fitted with type JH and JR manual gearboxes.

A marking (**1**) on the gearbox casing indicates:

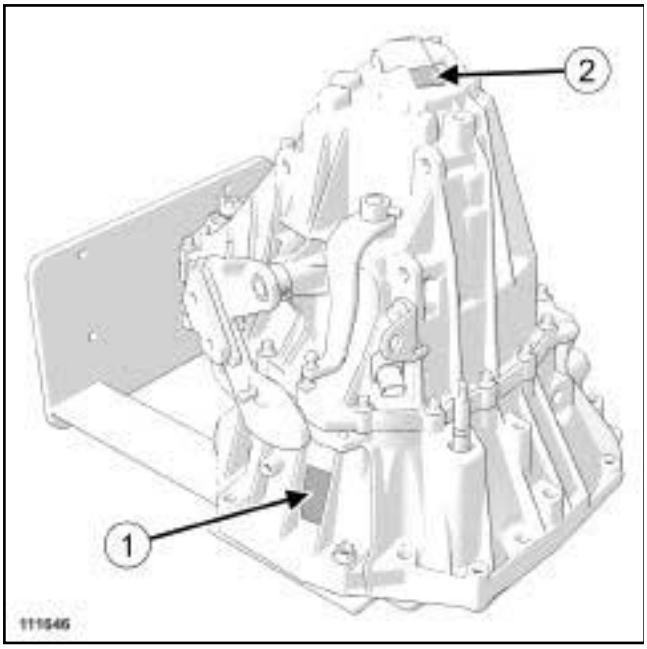


109167



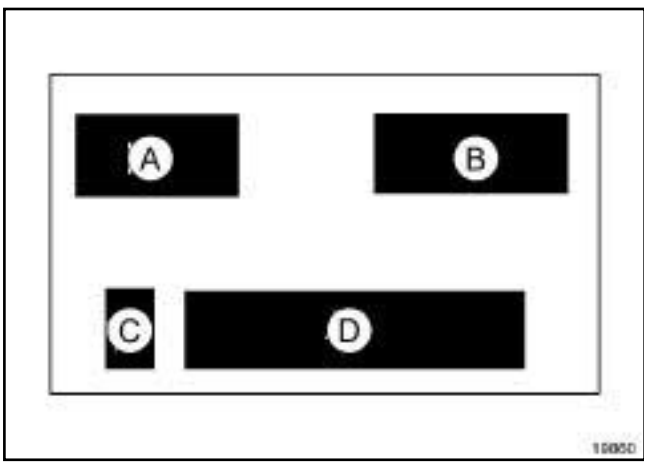
19860

(**A**) Gearbox type
(**B**) Gearbox suffix
(**C**) Production plant
(**D**) Production number



111646

(**1**) Identification plate
(**2**) Engraving



19860

(**A**) Gearbox type
(**B**) Gearbox suffix
(**C**) Production plant
(**D**) Production number

JH3 or JR5

Capacity (in litres)

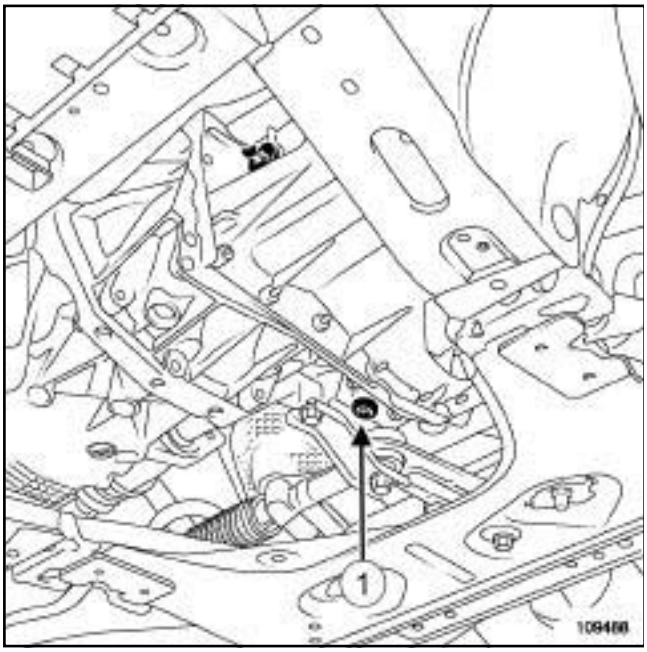
JR5	2.5
JH3	2.8

DRAINING

❏ Remove:

- the engine undertray mounting bolts,
- the engine undertray.

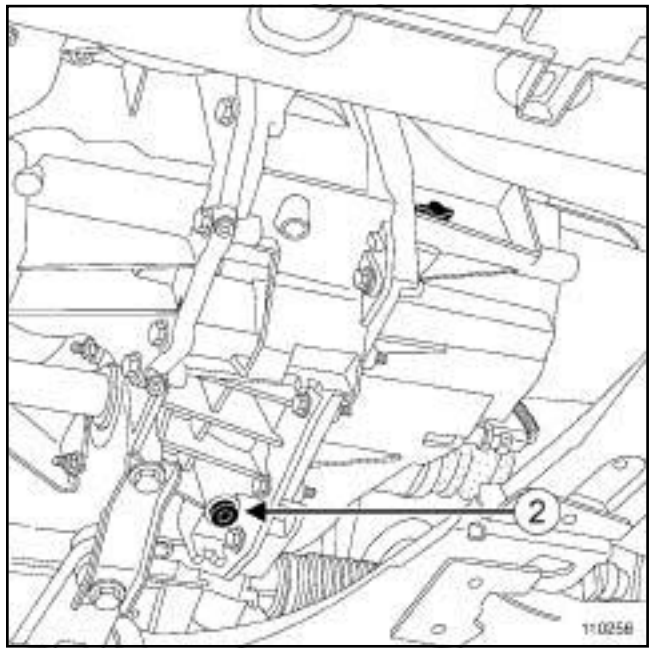
JH3



109488

❏ Remove the drain plug (**1**) .

JR5



110256

❏ Remove the drain plug (**2**) .

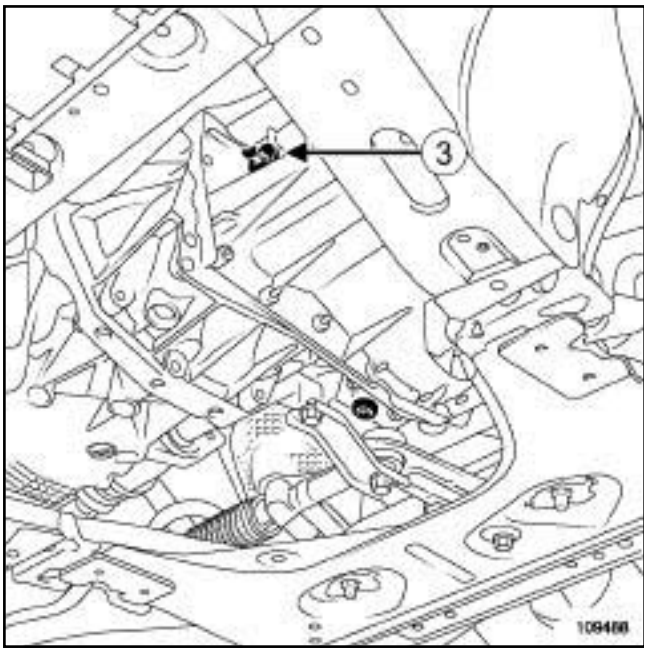
FILLING

❏ It is essential to replace the drain plug seal.

❏ Refit the drain plug.

JH3 or JR5

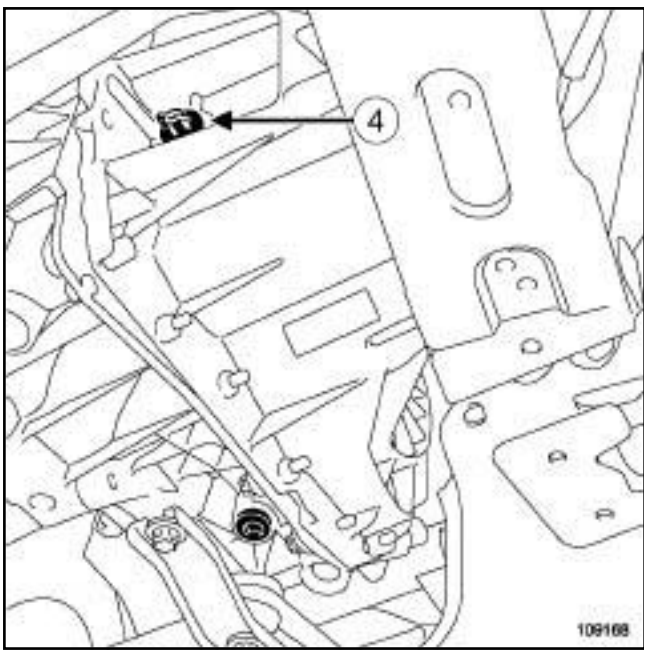
JH3



109488

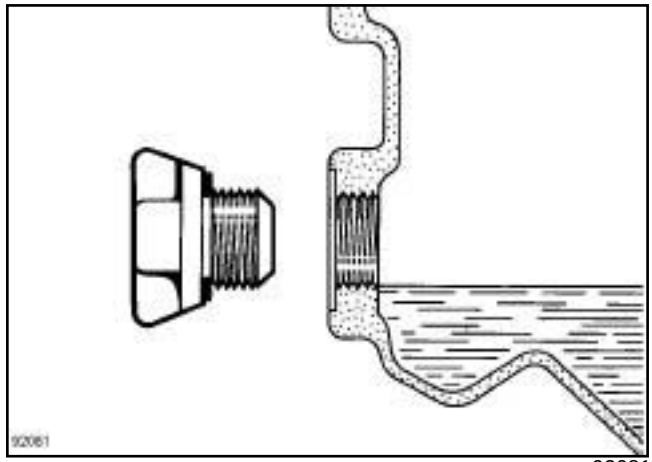
❑ Remove the filler cap (**3**) .

JR5



109168

❑ Remove the filler cap (**4**) .



92081

❑ Fill up to the level of the opening with oil recommended by the manufacturer (see **Manual gearbox oil: Specifications**) (Technical Note 6012A, 04, Lubricants).

❑ Refit the filler cap.

❑ Refit:

- the engine undertray,

- the engine undertray mounting bolts.

Manual gearbox: Specifications

JA3 or JA5 or JH3 or JR5

GEAR RATIOS

Suffix	First	Second	Third	Fourth	Fifth	Reverse gear	Final drive	Tacho meter
JA3 sequential gearbox								
JA3-001	11/41	21/43	28/39	34/35	39/32	11/39	14/61	None
JA5 sequential gearbox								
JA5-001	11/41	21/43	28/37	35/34	41/31	11/39	16/55	None
JH1 manual gearbox								
JH1 -004	11/37	22/41	28/37	34/35	39/32	11/39	14/59	21/19
JH1 -013	11/37	22/41	28/37	34/35	39/32	11/39	15/61	21/19
JH1 -014	11/37	22/41	28/37	30/29	39/32	11/39	15/58	21/19
JH1 -015	11/37	22/41	28/37	30/29	41/31	11/39	15/56	21/19
JH1 -016	11/37	22/41	28/37	34/35	39/32	11/39	14/59	None
JH1 -017	11/37	22/41	28/37	34/35	39/32	11/39	15/61	None
JH1-019	11/37	22/41	28/37	34/35	39/32	14/59	14/59	21/19
JH1 -018	11/37	22/41	28/37	30/29	41/31	11/39	15/56	21/19
JH1 -020	11/41	21/43	28/39	34/35	39/31	11/39	14/59	None
JH1-021	11/41	21/43	28/39	34/35	39/31	11/39	14/59	None
JH1 -053	11/41	21/43	28/39	34/35	39/31	11/39	14/59	22/18
JH1-054	11/41	21/43	28/39	34/35	39/31	11/39	15/56	21/19
JH1-055	11/37	21/41	28/37	34/35	39/31	11/39	16/55	21/19
JH3 manual gearbox								
JH3-050	11/41	21/43	28/39	34/35	39/31	11/39	15/56	21/19
JH3-052	11/41	21/43	28/39	34/35	39/32	11/39	14/59	22/18
JH3-053	11/37	22/41	28/37	30/29	42/41	11/39	15/58	22/18
JH3-054	11/41	21/43	28/37	30/29	41/31	11/39	14/63	22/18
JH3-055	11/41	21/43	28/37	30/29	39/31	11/39	14/63	22/18
JH3-056	11/41	21/43	28/37	30/29	41/31	11/39	14/61	22/18
JH3-057	11/41	21/43	28/39	34/35	39/31	11/39	14/59	None
JH3-058	11/41	21/43	28/39	34/35	39/32	11/39	14/59	22/18
JH3-059	11/45	22/47	28/39	34/35	37/33	11/39	14/69	22/18

JA3 or JA5 or JH3 or JR5

Suffix	First	Second	Third	Fourth	Fifth	Reverse gear	Final drive	Tacho meter
JH3-060	11/41	21/43	28/39	34/35	39/31	11/39	14/59	22/18
JH3-061	11/41	21/43	28/39	34/35	39/31	11/39	14/61	22/18
JH3-062	11/41	21/43	28/39	34/35	39/31	11/39	14/61	22/18
JH3-063	11/41	21/43	28/39	34/35	39/32	11/39	14/61	22/18
JH3-064	11/41	21/43	28/39	34/35	39/32	11/39	14/59	22/18
JH3-065	11/41	21/43	28/39	34/35	39/32	11/39	14/59	22/18
JH3-066	11/41	21/43	28/29	34/35	39/31	11/39	14/63	22/18
JH3-067	11/37	22/41	28/37	34/35	39/32	11/39	14/63	22/18
JH3-068	11/41	21/43	28/39	34/35	39/32	11/39	14/59	22/18
JH3-071	11/41	21/43	28/37	30/29	39/31	11/39	14/63	22/18
JH3-072	11/41	21/43	28/37	34/35	39/32	11/39	14/59	22/18
JH3-105	11/41	21/43	28/39	31/34	37/33	11/39	14/59	None
JH3-106	11/41	21/43	28/39	34/35	39/32	11/39	14/63	None
JH3-128	11/41	21/43	28/39	34/35	39/32	11/39	14/61	None
JH3-129	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-131	11/41	21/43	28/39	31/34	37/33	11/39	15/58	None
JH3-132	11/37	22/41	28/37	30/29	42/41	11/39	15/58	None
JH3-137	11/41	21/43	28/39	31/34	37/33	11/39	14/59	None
JH3-141	11/37	22/41	28/37	30/29	42/41	11/39	15/58	None
JH3-142	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-143	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-144	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-145	11/37	22/41	28/37	30/29	42/31	11/39	16/57	None
JH3-150	11/37	22/41	28/37	30/29	42/41	11/39	15/58	None
JH3-154	11/41	21/43	28/39	31/34	37/33	11/39	16/61	None
JH3-155	11/41	21/43	28/39	31/34	37/33	11/39	15/58	None
JH3-156								
JH3-160	11/41	22/41	28/37	30/29	42/31	11/39	15/58	22/18
JH3-166	11/41	21/43	28/37	30/29	42/31	11/39	16/55	None
JH3-169	11/41	21/43	28/39	34/35	39/31	11/39	14/59	None

Manual gearbox: Specifications

JA3 or JA5 or JH3 or JR5

Suffix	First	Second	Third	Fourth	Fifth	Reverse gear	Final drive	Tacho meter
JH3-170	11/41	21/43	28/39	34/35	39/32	11/39	14/63	None
JH3-171	11/37	22/41	28/37	34/35	39/31	11/39	15/61	None
JH3-172	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-173	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-174	11/37	22/41	28/37	30/29	42/31	11/39	15/68	None
JH3-175	11/37	22/41	28/37	30/29	42/31	11/39	15/68	None
JH3-176	11/41	21/43	28/39	34/35	39/32	11/39	14/61	None
JH3-177	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None
JH3-179	11/41	21/43	28/39	31/34	37/33	11/39	15/68	None
JH3-183	11/41	21/43	28/39	34/35	39/32	11/39	14/59	None
JH3-184	11/41	21/43	28/39	34/35	39/32	11/39	15/58	None
JH3-185	11/41	21/43	28/39	34/35	39/32	11/39	15/58	None
JH3-186	11/41	21/43	28/39	34/35	39/32	11/39	15/58	None
JH3-187	11/41	21/43	28/39	34/35	39/32	11/39	15/58	None
JH3-189	11/37	22/41	28/37	30/29	42/31	11/39	15/56	None
JH3-190	11/37	22/41	28/37	30/29	42/31	11/39	15/56	None
JH3-193	11/41	21/43	28/37	30/29	42/31	11/39	16/55	None
JH3-199	11/41	21/43	28/39	34/35	39/32	11/39	14/59	None
JH3-309	11/41	21/43	28/39	34/35	39/32	11/39	15/58	None
JH3-312	11/41	21/43	28/37	30/29	42/31	11/39	16/57	None
JH3-313	11/41	21/43	28/37	30/29	42/31	11/39	16/57	None
JH3-315	11/41	21/43	28/37	30/29	42/31	11/39	16/57	None
JH3-321	11/41	21/43	28/39	34/35	39/31	11/39	14/59	22/18
JR5 manual gearbox								
JR5-003	11/37	22/41	28/37	34/35	39/32	11/39	15/61	None
JR5-004	11/41	21/43	28/37	35/34	41/31	11/39	16/55	None
JR5-008	11/41	21/43	29/39	31/34	37/33	11/39	15/58	None
JR5-015	11/41	21/43	28/39	31/34	37/33	11/39	15/58	None
JR5-016	11/41	21/43	28/37	35/34	41/31	11/39	16/55	None
JR5-017	11/41	21/43	28/39	31/34	37/33	11/39	15/61	None

Manual gearbox: Specifications

JA3 or JA5 or JH3 or JR5

Suffix	First	Second	Third	Fourth	Fifth	Reverse gear	Final drive	Tacho meter
JR5-018	11/37	22/41	28/37	34/35	39/32	11/39	15/61	None
JR5-113	11/41	21/43	28/37	35/34	41/31	11/39	16/57	None
JR5-116	11/41	21/43	28/37	35/34	41/31	11/39	16/55	21/19
JR5-124	11/41	21/43	28/37	35/34	41/31	11/39	16/55	None
JR5-126	11/37	21/41	28/37	35/34	42/31	11/39	15/58	21/19
JR5-144	11/37	21/41	28/37	35/34	42/31	11/39	15/58	21/18
JR5-145	11/41	21/43	28/37	35/34	41/31	11/39	16/55	21/19
JR5-147	11/41	21/43	28/37	35/34	42/31	11/39	15/58	22/18
JR5-149	11/41	21/43	28/39	31/34	42/31	11/39	15/58	22/18
JR5-151	11/41	21/43	28/37	35/34	39/31	11/39	14/63	22/18
JR5-152	11/41	21/43	28/37	35/34	39/32	11/39	14/63	None
JR5-156	11/41	21/43	28/37	35/34	39/32	11/39	15/58	None
JR5-158	11/41	21/43	28/37	35/34	42/31	11/39	15/61	22/18
JR5-165	11/41	21/43	28/37	35/34	42/31	11/39	14/69	22/18
JR5-166	11/41	21/43	28/37	35/34	42/31	11/39	16/57	22/18
JR5-168	11/41	21/43	28/37	35/34	41/31	11/39	14/69	None
JR5-169	11/41	21/43	28/37	35/34	42/31	11/39	14/73	22/18
JR5-170	11/41	21/43	28/37	35/34	42/31	11/39	14/69	22/18
JR5-171	11/41	21/43	28/37	35/34	39/32	11/39	14/63	None
JR5-172	11/41	21/43	28/39	31/34	37/33	11/39	14/63	22/18
JR5-173	11/41	21/43	28/37	35/34	39/32	11/39	14/61	None
JR5-175	11/41	21/43	28/37	34/35	39/32	11/39	15/56	None
JR5-176	11/41	22/41	28/37	35/34	42/31	11/39	15/56	None
JR5-183	11/41	21/43	28/37	35/34	39/32	11/39	14/59	None
JR5-184	11/41	21/43	28/37	35/34	39/32	11/39	15/58	None
JR5-185	11/41	21/43	28/37	35/34	41/31	11/39	17/56	None
JR5-187	11/41	21/43	28/37	35/34	39/32	11/39	14/69	None
JR5-189	11/41	21/43	28/37	35/34	41/31	11/39	14/59	None
JR5-193	11/41	21/43	28/37	35/34	41/31	11/39	1756	None
JR5-301	11/41	21/43	28/37	35/34	41/31	11/39	15/56	None

JA3 or JA5 or JH3 or JR5

Suffix	First	Second	Third	Fourth	Fifth	Reverse gear	Final drive	Tacho meter
JR5-302	11/41	21/43	28/37	35/34	41/31	11/39	14/69	None
JR5-308	11/41	21/43	28/37	31/29	45/31	11/39	18/57	None

TL4

GEAR RATIOS

Suffix	1st	2nd	3rd	4th	5th	6th	Final drive	Reverse gear
000	11/41	19/37	31/41	40/39	38/29	47/30	15/59	11/28
001	11/41	19/37	31/41	40/39	38/29	47/30	15/56	11/28
002	11/41	19/37	31/41	40/39	38/29	47/30	16/57	11/28
003	11/35	19/37	29/43	34/41	38/39	39/34	16/69	11/23
008	11/37	19/37	28/39	35/39	35/32	43/33	15/59	11/25
013	11/41	19/37	31/41	40/39	38/29	47/30	15/59	11/28
014	11/41	19/37	31/41	40/39	38/29	47/30	15/59	11/28
015	11/41	19/40	31/45	35/39	35/32	43/33	16/71	11/28
016	11/41	19/40	31/45	35/39	35/32	43/33	16/71	11/28
017	11/37	19/37	28/39	35/39	35/32	43/33	16/69	11/25
018	11/41	19/37	31/41	40/39	38/29	47/30	16/66	11/28
019	11/41	19/40	31/45	35/39	35/32	43/33	15/71	11/28
020	11/41	19/40	31/45	35/39	35/32	43/33	16/71	11/28
021	11/41	19/40	31/45	35/39	35/32	43/33	15/71	11/28
022	11/41	19/37	31/41	40/39	38/29	47/30	15/59	11/28
024	11/35	19/37	29/43	34/41	35/34	37/30	16/69	11/23
026	11/41	19/37	29/43	40/39	38/29	47/30	15/59	11/28
027	11/41	19/37	31/41	40/38	39/29	47/30	14/59	11/28
028	11/41	19/40	31/45	35/28	39/34	41/30	14/64	11/28
029	11/41	19/40	31/45	38/39	35/32	43/33	15/71	11/28
030	11/41	19/40	31/45	35/39	35/32	41/30	16/71	11/28
031	11/37	19/40	27/41	34/41	35/34	37/30	16/69	11/23
032	11/37	19/37	28/39	35/39	35/32	43/33	16/66	11/28
033	11/37	19/37	28/39	35/39	35/32	43/33	16/69	11/28
034	11/41	19/37	31/41	40/39	38/29	47/30	16/66	11/39
035	11/41	19/40	31/45	35/39	35/32	43/33	16/69	11/28
036	11/41	19/40	31/45	35/38	39/34	41/30	14/64	11/28
037	11/41	19/40	31/45	35/28	39/34	41/30	15/71	11/28

TL4

Suffix	1st	2nd	3rd	4th	5th	6th	Final drive	Reverse gear
038	11/41	19/40	31/45	35/39	35/32	43/33	14/64	11/28
039	11/37	19/37	28/39	35/39	35/32	43/33	16/69	11/25
040	11/41	19/37	31/41	40/39	38/29	47/30	15/56	11/28
041	11/41	19/37	31/41	40/39	38/29	47/30	16/66	11/39
042	11/41	19/40	31/45	35/39	35/32	41/30	15/71	11/39
045	11/41	19/37	31/41	40/39	38/29	47/30	15/59	11/28

JH3 or JR5

Equipment required
component jack

Tightening torques ▽	
lower gearbox bell housing bolts	**44 N.m**
upper gearbox bell housing bolts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

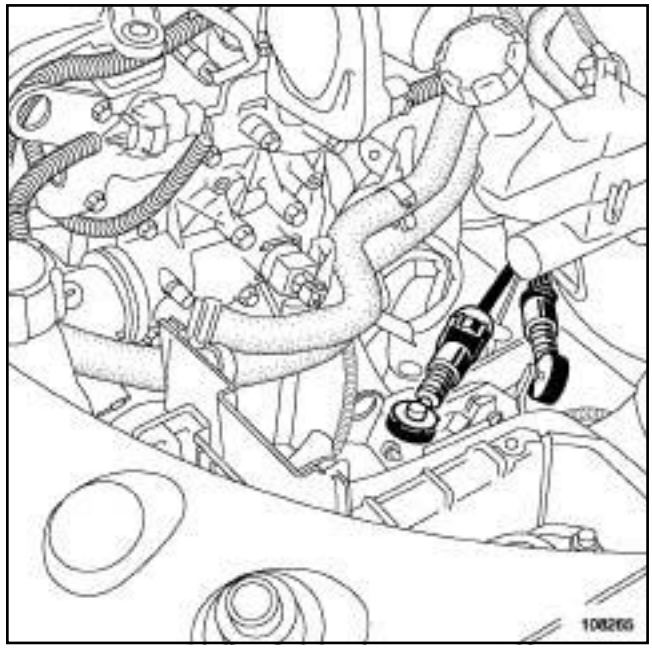
IMPORTANT
During this operation, secure the vehicle to the lift with a strap, to avoid any imbalance.

For strapping the vehicle (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

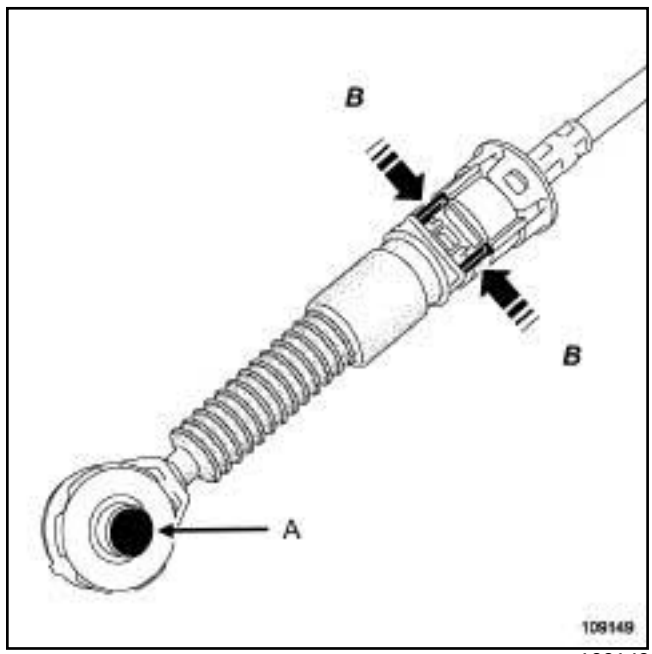
❏ Remove:

- the battery (see **Battery: Removal - Refitting**) ,
- the battery tray (see) ,
- the air inlet duct,
- the air filter unit (see **Air filter unit: Removal - Refitting**) ,
- the front wheels (see **Wheel: Removal - Refitting**) ,
- the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners: Removal - Refitting**).
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .



108265



109149

❏ Remove:

- the gear control cables from the gearbox by pressing at (**A**) ,
- the gearbox control cable sleeve stops by pressing at (**B**) .

❏ Disconnect the anti-lock braking system sensor connectors.

❏ Remove:

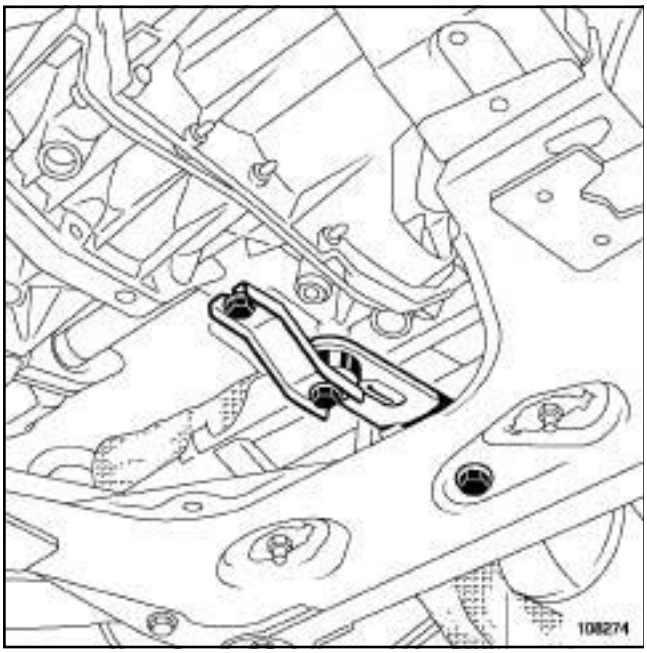
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,

JH3 or JR5

- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

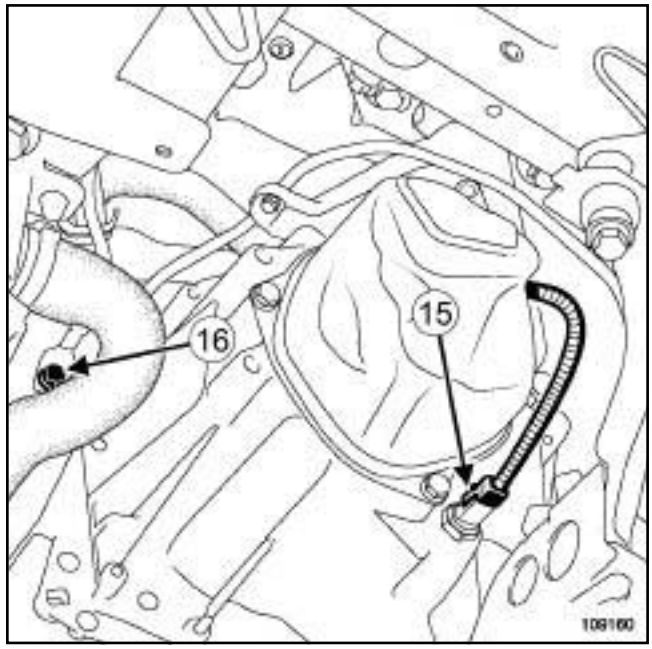
❑ Attach the radiator assembly to the upper cross member.

❑ Remove the radiator support cross member (see **MR 393 Bodywork, 41A, Front lower structure, Radiator support cross member: Removal - Refitting**).



108274

❑ Remove the engine tie-bar with its reinforcement (see **Lower engine tie-bar: Removal - Refitting**) .



109160

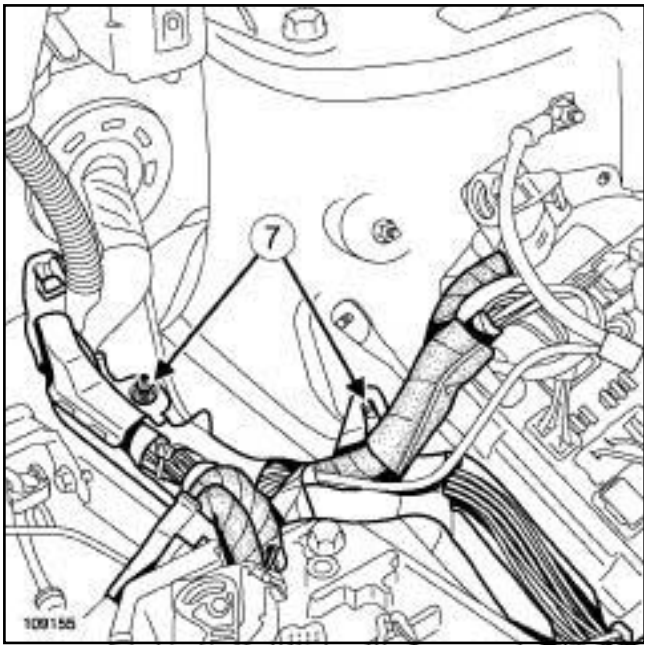
❑ Remove:

- the reverse gear connector (**15**) on the gearbox,
- the earth strap (**16**) from the gearbox.

❑ Remove:

- the starter (see **Starter: Removal - Refitting**) ,
- the TDC sensor,
- the cover of the Protection and Switching Unit,
- the injection computer (see **Petrol injection computer: Removal - Refitting**) ,
- the computer bracket mounting bolts bolts,
- the computer bracket.

JH3 or JR5

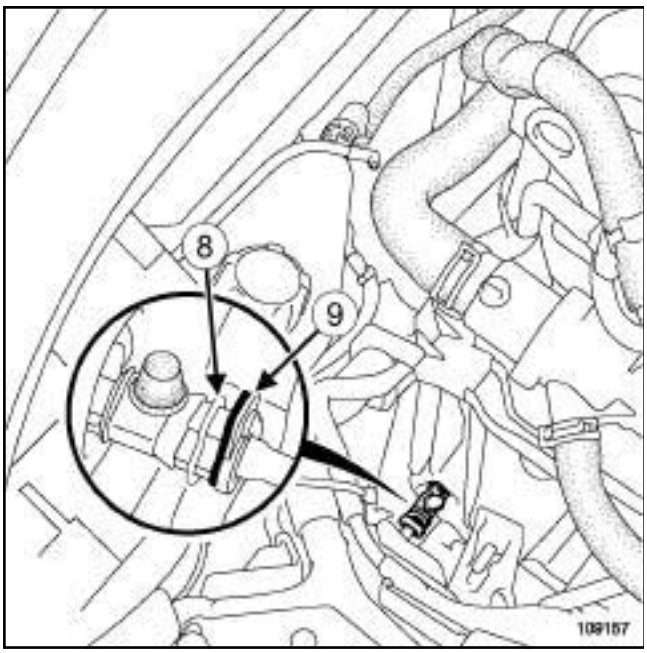


109155

❏ Remove the mounting bolts (**7**) for the wiring duct on the body.

❏ Remove the wiring duct.

❏ Fit a hose clamp between the brake fluid reservoir and the clutch master cylinder.



109157

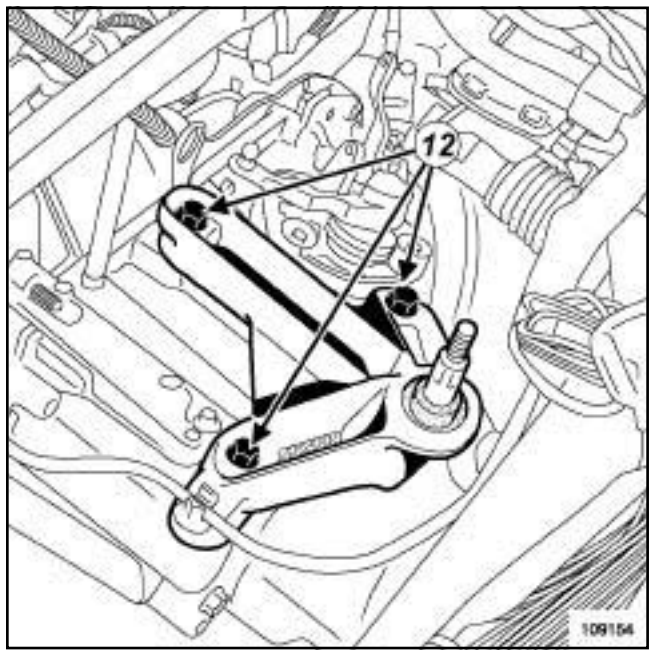
❏ Disconnect the clutch slave cylinder by pulling on the clips (**8**) , (**9**) .

❏ Collect the fluid in a container.

❏ It is essential to place protective plugs in the ends of the hoses.

❏ Remove:

- the scuttle panel grille (see **MR 393 Bodywork, 56A, Exterior protection, Scuttle panel grille: Removal - Refitting**).
- the scoop under the scuttle panel grille (see **393 56A, Exterior equipment, Scoop under scuttle panel grille: Removal - Refitting**).
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) .



109154

❏ Remove:

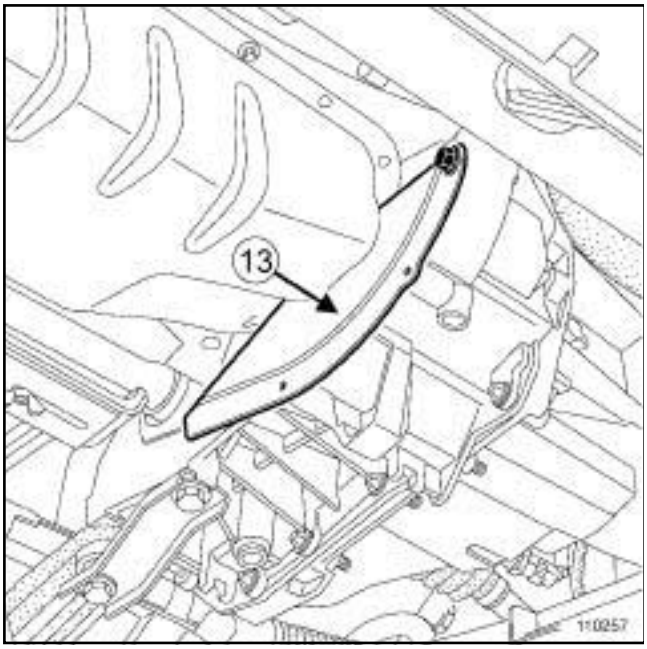
- the bolts (**12**) securing the gearbox support.
- the gearbox support.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the upper gearbox bell housing bolts.

❏ Position the **component jack** under the gearbox.

JH3 or JR5



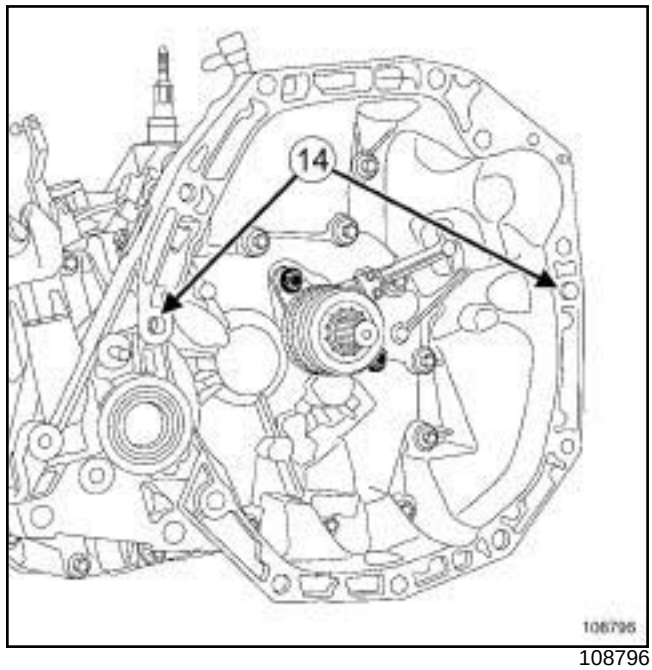
110257

❑ Remove:

- the flywheel cover (**13**) ,
- the lower gearbox bell housing bolts,
- the gearbox mounting studs,
- the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION



108796

❑ Check that the engine / gearbox centering rings (**14**) are present and correctly positioned.

WARNING

Do not grease:

- the transmission output shaft, so as not to damage the clutch slave cylinder,
- the clutch shaft splines.

Note:

- To avoid leaks, the clutch slave cylinder must always be replaced after the clutch pressure plate is replaced;
- Always replace the right-hand driveshaft circlip with a new one whenever it is removed.
- It is essential to replace the differential seals with new ones every time the driveshafts are removed.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the gearbox,
- the gearbox mounting studs,

JH3 or JR5

- the lower gearbox bell housing bolts,
- the flywheel cover.

❏ Tighten to torque the **lower gearbox bell housing bolts (44 N.m)**.

❏ Remove the **component jack** from underneath the gearbox.

❏ Refit the upper gearbox bell housing bolts.

❏ Tighten to torque the **upper gearbox bell housing bolts (44 N.m)**.

III - FINAL OPERATION

❏ Refit:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) ,
- the scoop under the scuttle panel grille (see **393 56A, Exterior equipment, Scoop under scuttle panel grille: Removal - Refitting**).
- the scuttle panel grille (see **MR 393 Bodywork, 56A, Exterior protection, Scuttle panel grille: Removal - Refitting**).

❏ It is essential to remove the protective plugs from the ends of the hoses.

❏ Connect the clutch slave cylinder.

❏ Remove the hose clamp between the brake fluid reservoir and the clutch master cylinder.

❏ Refit:

- the wiring channel on the body,
- the mounting bolts for the wiring duct on the body.
- the earth strap on the gearbox,
- the computer mounting,
- the computer bracket mounting bolts bolts,
- the injection computer (see **Petrol injection computer: Removal - Refitting**) ,
- the reverse gear connector on the gearbox,
- the cover of the Protection and Switching Unit,
- the TDC sensor,
- the starter (see **Starter: Removal - Refitting**) ,
- the engine tie-bar with its reinforcement (see **Lower engine tie-bar: Removal - Refitting**) ,
- the radiator support cross member (see **MR 393 Bodywork, 41A, Lower front structure, Radiator support cross member: Removal - Refitting**).

❏ Detach the radiator assembly from the upper cross member.

❏ Refit:

- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

❏ Connect the ABS sensor connectors.

❏ Connect:

- the gearbox control cable sleeve stops on the gearbox,
- the gear control cables to the gearbox.

❏ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Refit:

- the engine undertray,
- the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners: Removal - Refitting**).
- the front wheels (see **Wheel: Removal - Refitting**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) ,
- the air inlet duct,
- the battery tray (see) ,
- the battery (see **Battery: Removal - Refitting**) .

K9K, and TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required
safety strap(s)
component jack

Tightening torques ▽	
nuts on the studs	**44 Nm**
gearbox bolts	**44 Nm**
exhaust strut bolt on the gearbox	**21 Nm**
exhaust strut nut on the gearbox	**21 Nm**
exhaust strut bolt on the catalytic converter	**21 Nm**
front axle subframe front left-hand bolt	**105 Nm**
tie-rod bolt	**21 Nm**
side stiffener bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

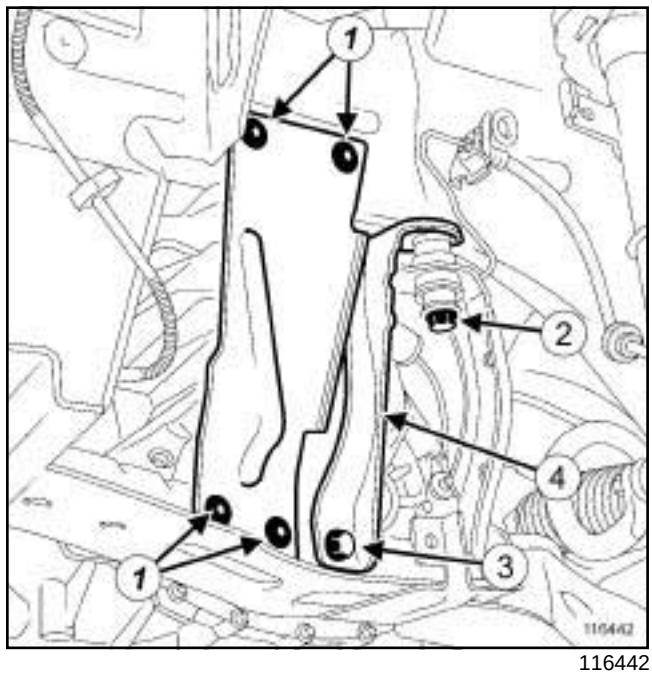
❏ Remove:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .



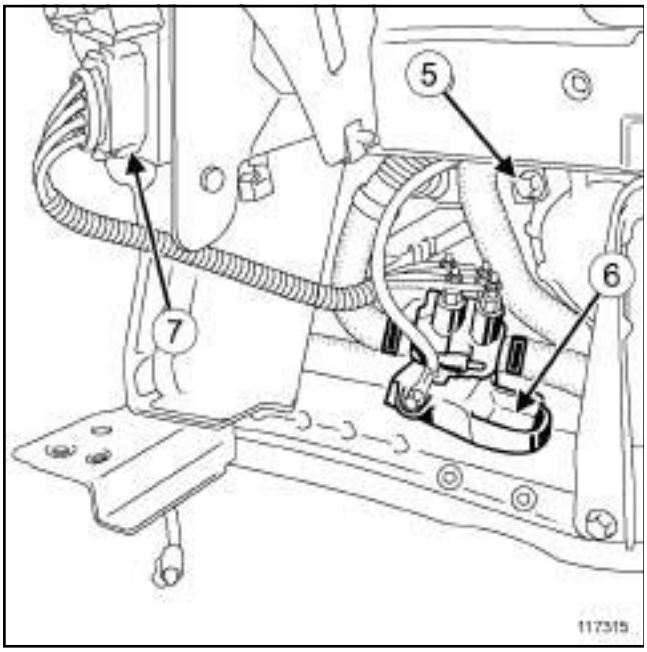
116442

❏ Remove:

- the side stiffener bolts (**1**) ,
- the front axle sub-frame front left-hand bolt (**2**) ,
- the tie-rod bolt (**3**) ,
- the tie rod (**4**) .

K9K, and TL4

K9K, and 772



117315

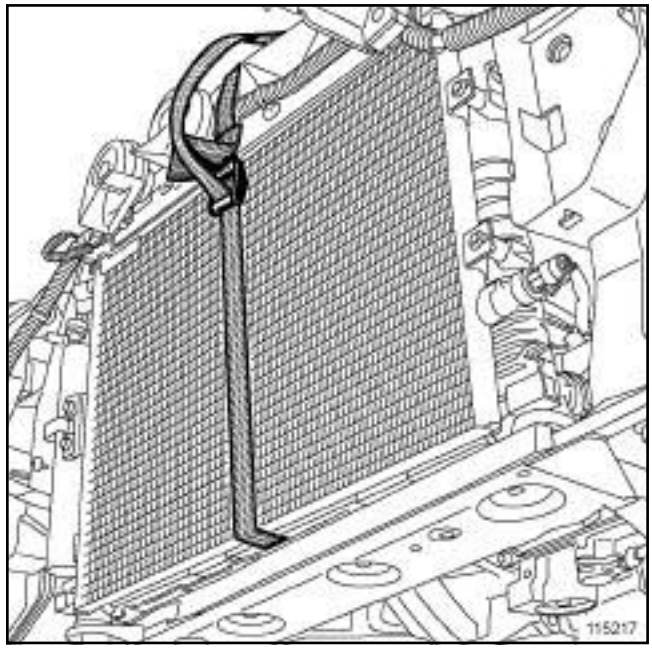
❏ Remove:

- the earth wiring bolt (**5**) ,
- the bolt (**6**) from the heating element and coolant pump support on the radiator mounting cross member.

❏ Disconnect the connector (**7**) from the heating element unit.

❏ Move the heating element and coolant pump support on the radiator mounting cross member to one side.

❏ Undo the radiator mounting cross member bolts (see **Radiator mounting cross member: General description**) (MR 393, 41A, Lower structure).



115217

❏ Attach the « cooling radiator - fan unit » assembly to the upper cross member using a **safety strap(s)**.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

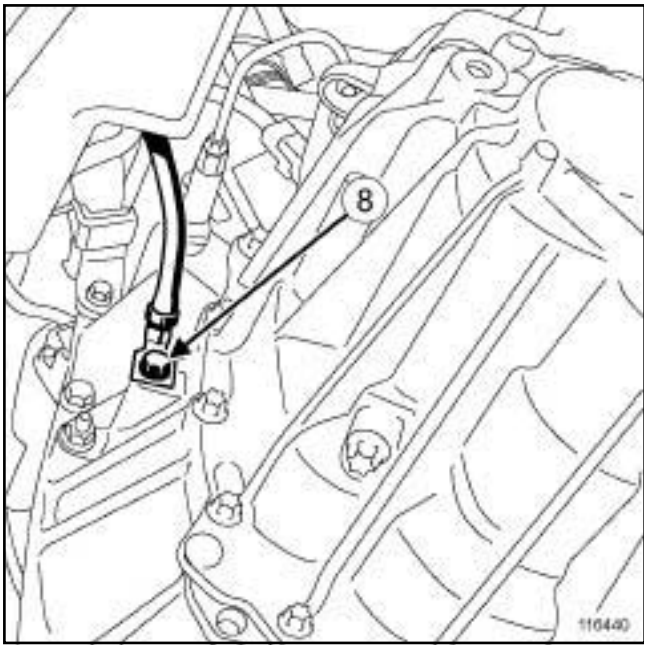
❏ Remove the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting).

IMPORTANT

Having already removed the driveshafts, remove the front axle subframe without removing the lower ball joint nuts.

❏ Remove the front axle sub-frame (see **Front axle subframe: Removal - Refitting**) (MR 392, 31A, Front axle components).

K9K, and TL4



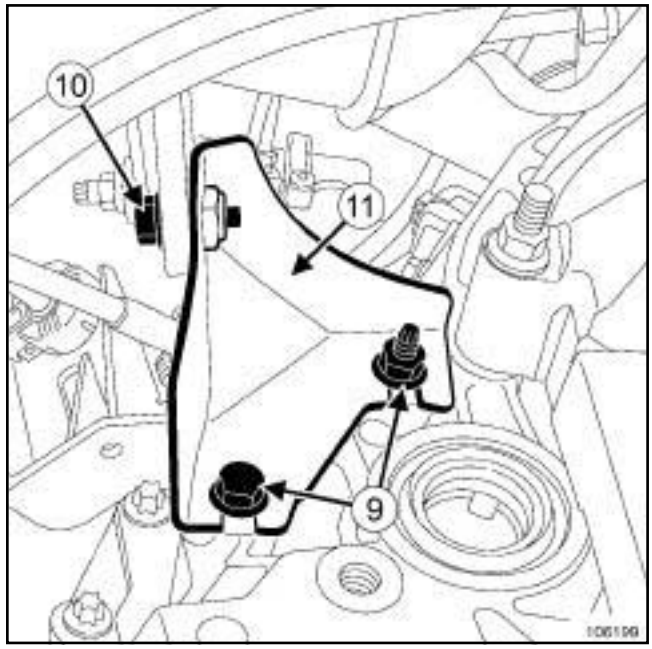
116440

❑ Remove the earth wiring bolt (**8**) .

Note:

Before removing the earth terminal, mark its position using an indelible marker by drawing a line on the earth terminal and on the gearbox casing.

When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.



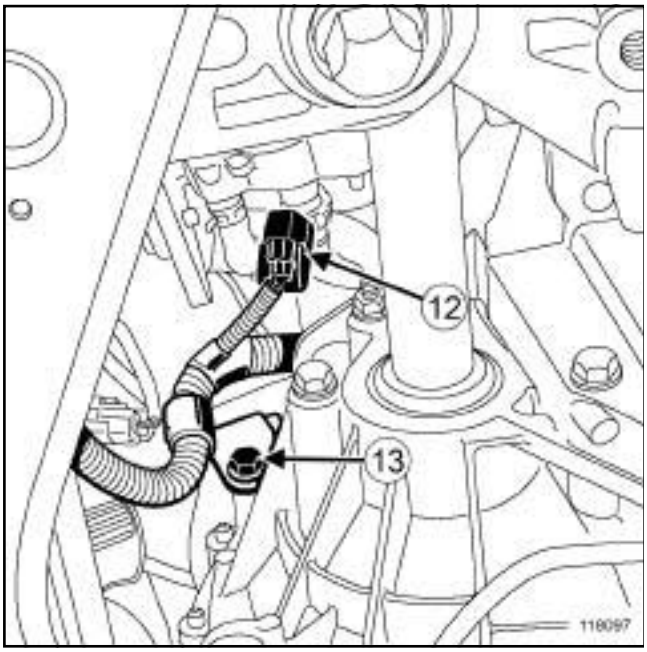
106199

❑ Remove:

- the bolt and the nut (**9**) on the gearbox,
- the bolt (**10**) on the catalytic converter,
- the exhaust strut (**11**) .

K9K, and TL4

K9K, and 772

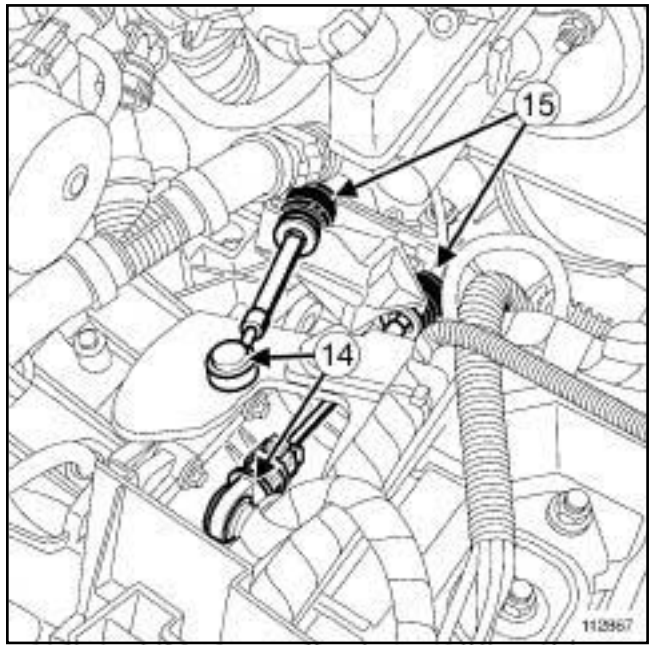


118097

❏ Disconnect the connector (**12**) from the diesel injector.

❏ Remove the bolt (**13**) from the diesel injector wiring harness strut.

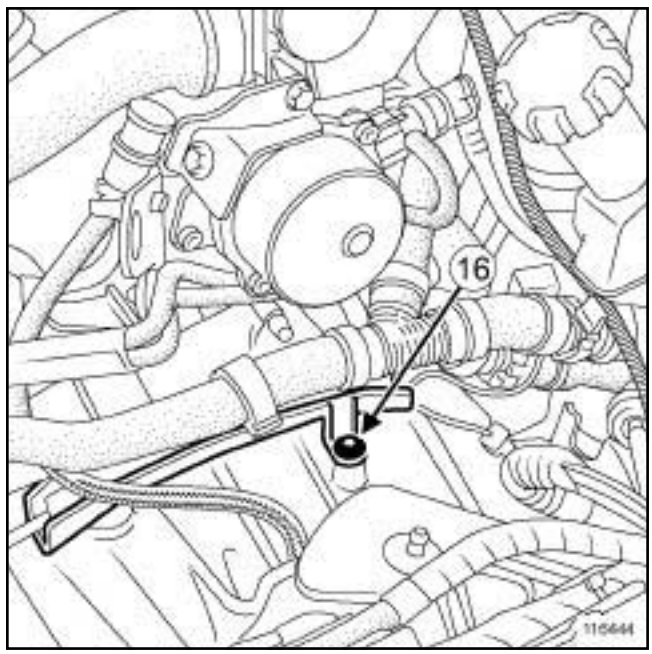
❏ Move the diesel injector wiring harness strut to one side.



112867

❏ Unclip:

- the gear control cables (**14**) from the gearbox using an open ended wrench,
- the gear control cable sleeve stops (**15**) from the gearbox,
- the expansion bottle (see **Expansion bottle: Removal - Refitting**) (MR 392, 19A, Cooling).



116444

❏ Remove the bolt (**16**) from the wiring harness channel on the gearbox.

❏ Remove the wiring harness channel.

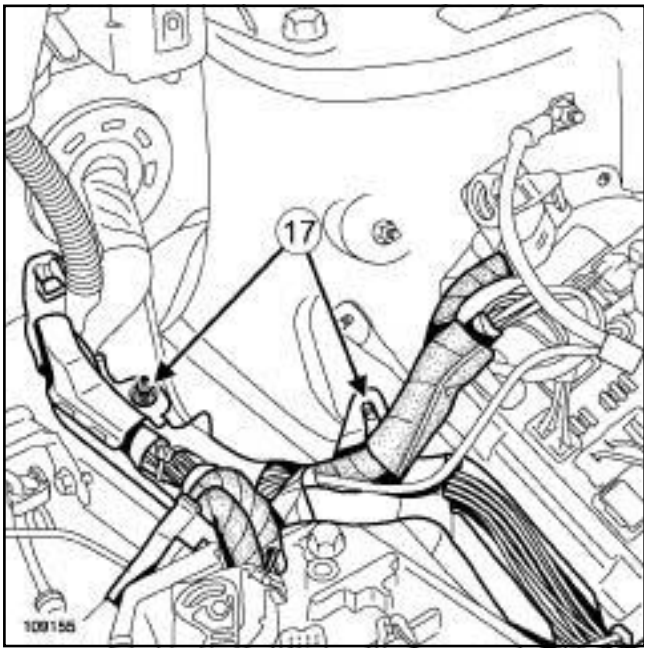
K9K, and TL4

❑ Remove:

- the starter (see **Starter: Removal - Refitting**) (MR 392, 16A, Starting - Charging),
- the engine speed and position sensor (see **Crankshaft position sensor: Removal - Refitting**) (MR 392, 13B, Diesel injection).

❑ Disconnect the coolant temperature sensor.

❑ Remove the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection).



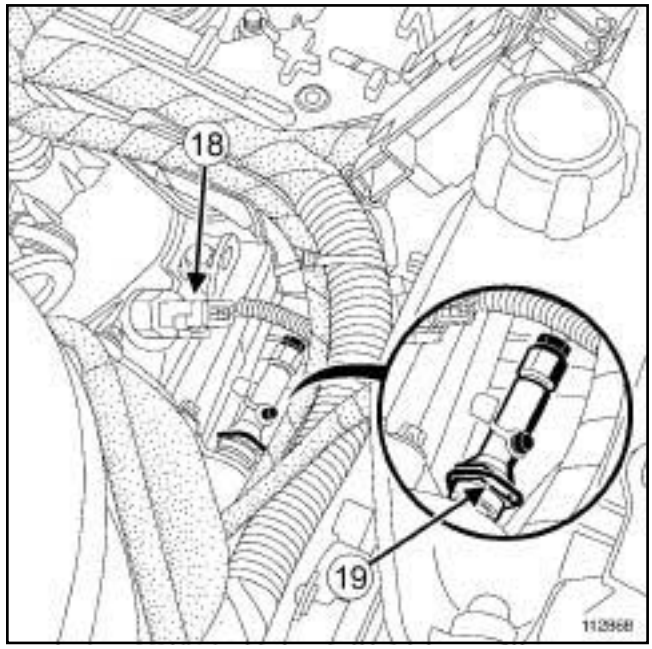
109155

❑ Remove the wiring channel bolts (**17**) on the body.

❑ Remove:

- the computer supporting bracket,
- the wiring channel.

❑ Fit a hose clamp between the brake fluid reservoir and clutch master cylinder.



112868

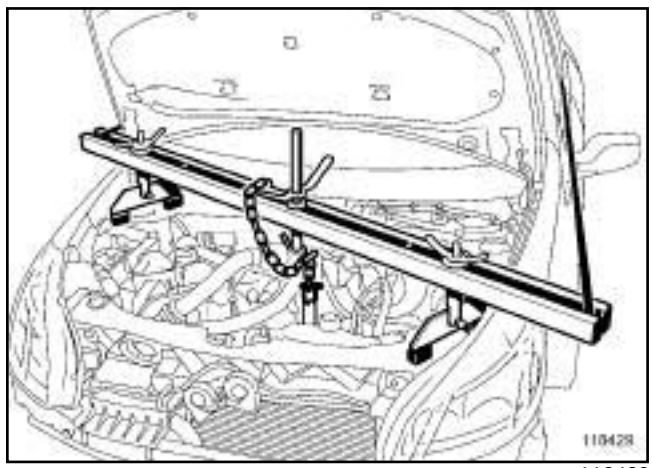
❑ Disconnect the connector (**18**) from the reversing sensor.

WARNING
Do not pull on the clip, any incorrect handling of the clip will mean that the clutch control pipes will have to be replaced.

❑ Disconnect the clutch slave cylinder by pressing on the clip (**19**) .

❑ It is essential to place protective plugs in the ends of the hoses.

❑ Unclip the breather pipe from the gearbox on the engine.


118429

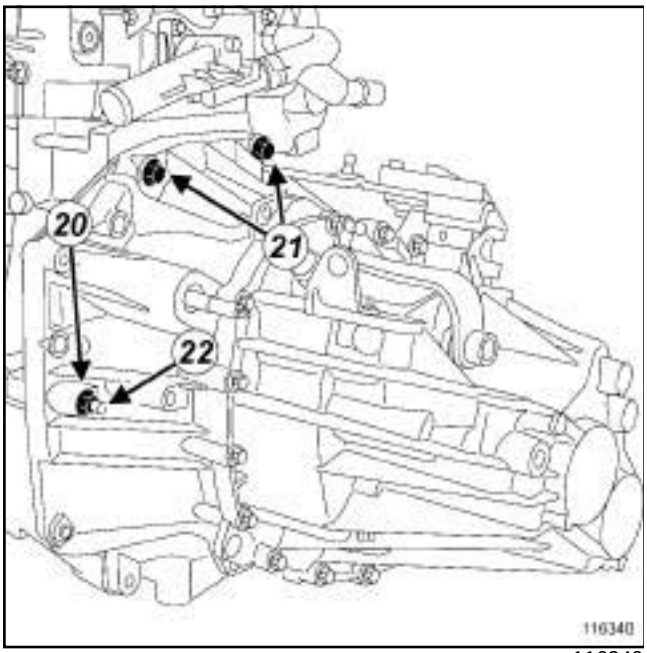
❑ Fit:

- the **(Mot. 1453)**,

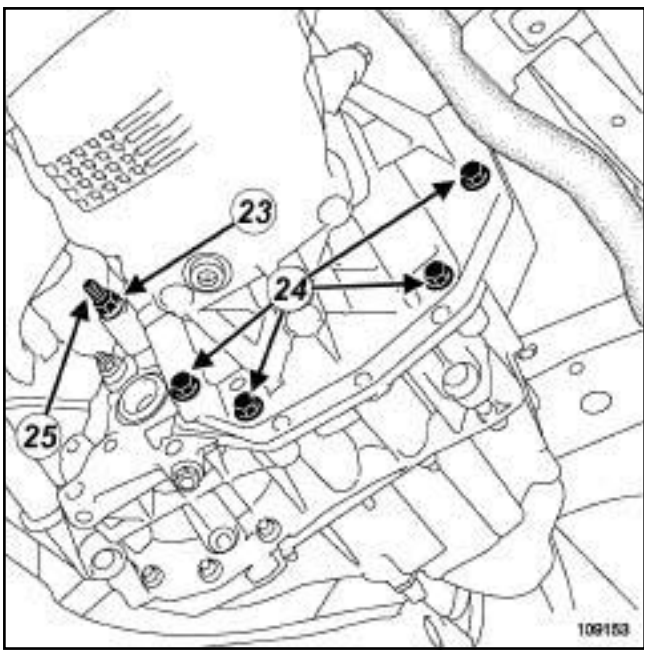
- the **safety strap(s)**.

❑ Remove the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

II - OPERATION FOR REMOVAL OF PART CONCERNED



116340

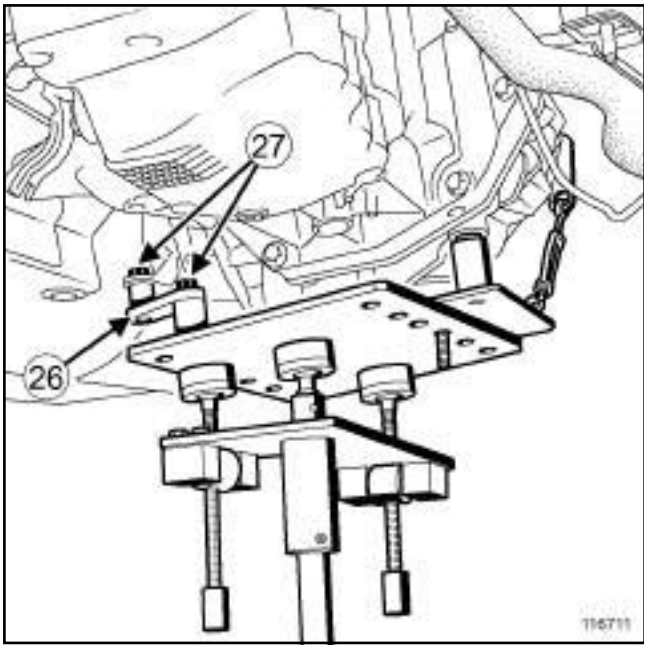


109153

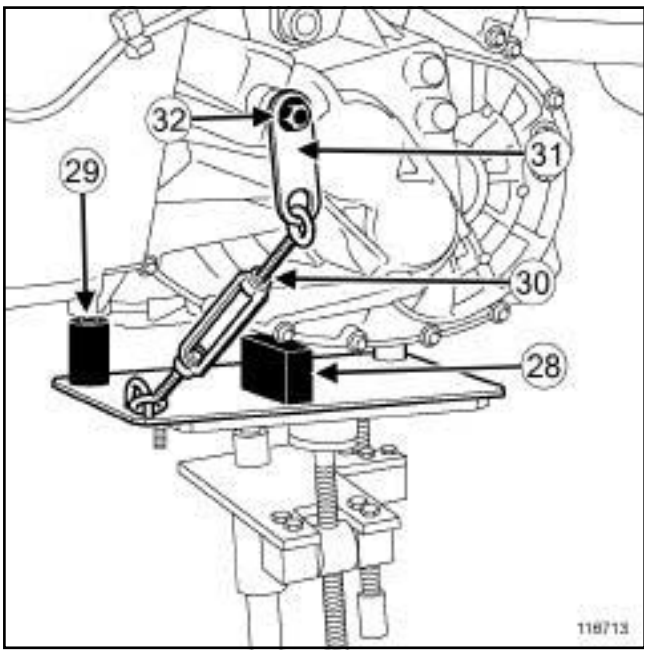
❑ Remove:

- the gearbox nuts (**23**) ,
- the gearbox bolts (**24**) ,
- the gearbox studs (**25**) .

K9K, and TL4



116711



116713

❏ Fit the **(Bvi. 1718)** on a **component jack**.

❏ Fit:

- the **(Bvi. 1718)** and the **component jack** under the gearbox,
- the bracket (**26**) using the nuts (**27**) ,
- the support (**28**) ,
- the pin (**29**) ,
- the rod (**30**) using the bracket (**31**) and the bolt (**32**) .

❏ Tighten the rod (**30**) anti-clockwise in order to avoid tilting the gearbox.

❏ Remove the gearbox using the **(Bvi. 1718)**.

REFITTING

I - REFITTING PREPARATION OPERATION

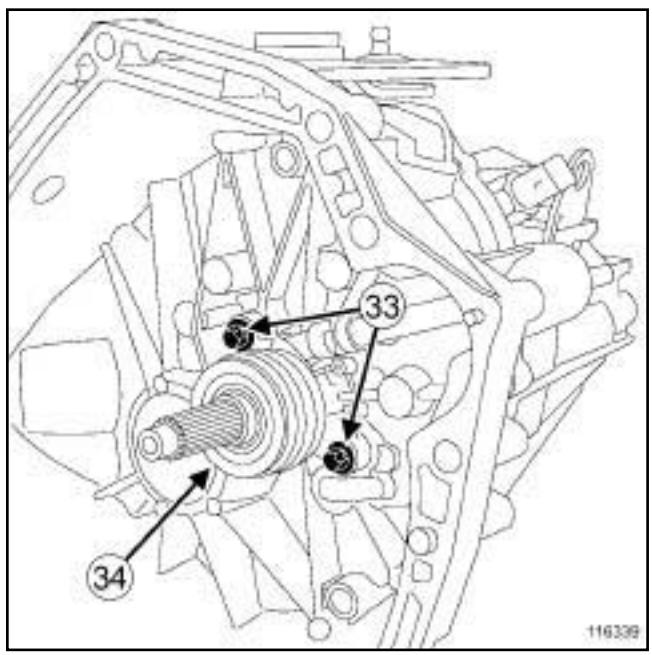
❏

WARNING
To avoid damaging the clutch slave cylinder, do not coat the gearbox output shaft with grease.

WARNING
Do not grease the clutch shaft splines.

WARNING
To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

WARNING
It is essential to replace the differential output lip seal each time the driveshafts are removed.



116339

❏ Remove:

- the clutch hydraulic slave cylinder bolts (**33**) ,
- the clutch hydraulic slave cylinder (**34**) .

❏ Check that the engine-gearbox centering ringsare in place and correctly positioned.

K9K, and TL4

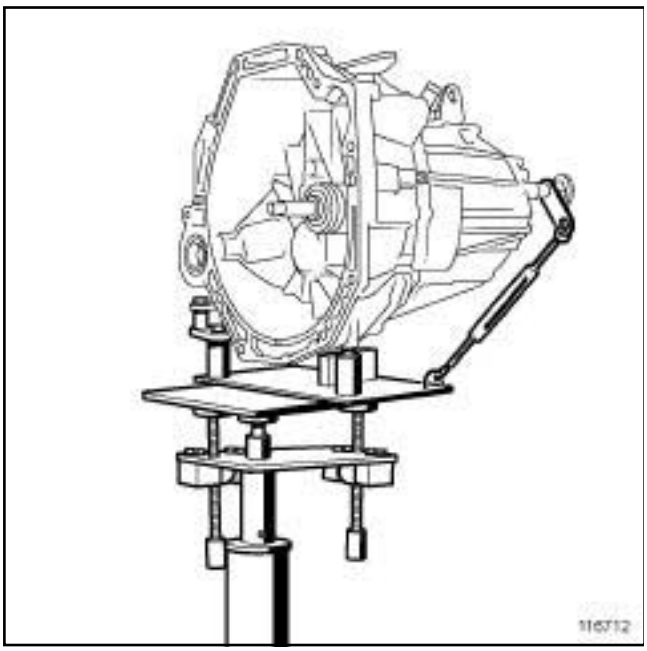
❑ Pre-fill the hydraulic slave cylinder using a syringe.

❑ Position the new clutch hydraulic slave cylinder.

❑ Refit the bolts for the clutch hydraulic slave cylinder.

❑ Replace the left and right-hand differential seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

Replacing the gearbox



116712

❑

Note:

To fit the tool on the new gearbox, follow the same steps as for the removal operation.

❑ Fit the new gearbox on the **(Bvi. 1718)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the gearbox using the **(Bvi. 1718)**.

❑ Refit the gearbox studs.

❑ Fit without tightening:

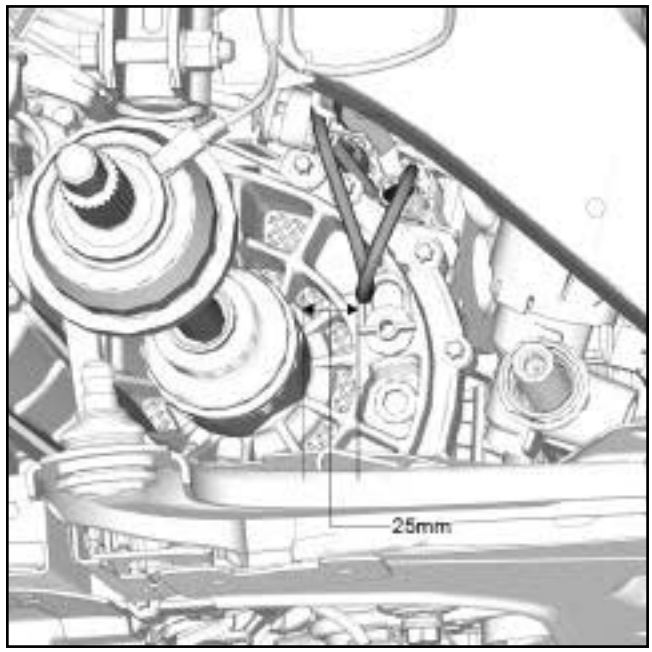
- the gearbox bolts,
- the nuts on the studs.

❑ Remove the **(Bvi. 1718)**.

❑ Tighten to torque:

- the **nuts on the studs (44 Nm)**,
- the **gearbox bolts (44 Nm)**.

III - FINAL OPERATION.



128087

❑

Note:

If equipped with the 5th injector.

After carrying out the operation, check that the dimension between the driveshaft and the hose for the 5th injector is at least 25mm.

To avoid damaging the hose.

❑ Connect:

- the hydraulic slave cylinder,
- the reverse gear connector.

❑ Remove the hose clamp.

❑ Bleed the hydraulic clutch control (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

❑ Refit:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the **(Mot. 1453)**,
- the **safety strap(s)**.

❑ Clip the breather pipe from the gearbox on the engine.

❑ Fit:

- the computer supporting bracket,

K9K, and TL4

- the wiring harness channel on the body.

❑ Refit:

- the wiring channel bolts on the body,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),

❑ Connect the coolant temperature sensor.

❑ Refit:

- the engine speed and position sensor (see **Crankshaft position sensor: Removal - Refitting**) (MR 392, 13B, Diesel injection).
- the starter (see **Starter: Removal - Refitting**) (MR 392, 16A, Starting - Charging),
- the wiring harness channel mounting on the gearbox.

❑ Clip:

- the expansion bottle (see **Expansion bottle: Removal - Refitting**) (MR 392, 19A, Cooling).
- the gearbox control cable sleeve stops on the gearbox,
- the control cables onto the gearbox.

K9K, and 772

❑ Fit the diesel injector wiring harness strut.

❑ the diesel injector wiring harness strut bolt.

❑ Connect the diesel injector connector.

❑ Fit the exhaust strut.

❑ Fit without tightening the exhaust strut bolts and nut.

❑ Tighten to torque:

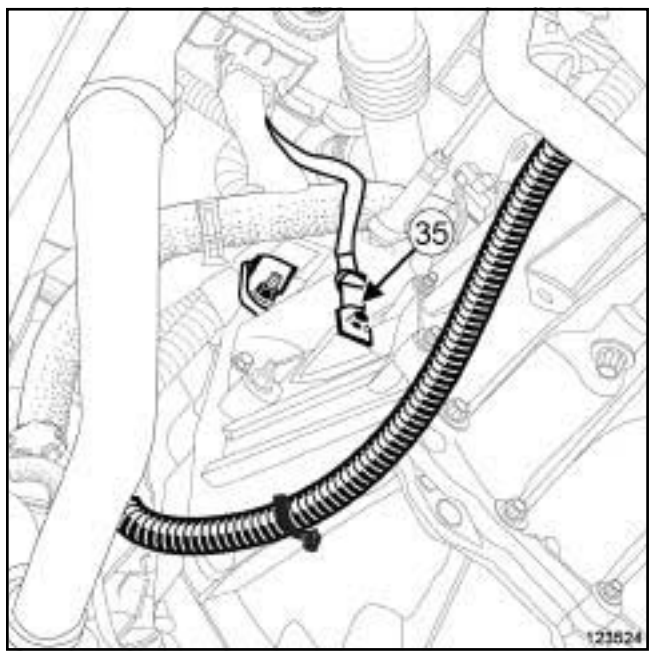
- the **exhaust strut bolt on the gearbox (21 Nm)**,
- the **exhaust strut nut on the gearbox (21 Nm)**,
- the **exhaust strut bolt on the catalytic converter (21 Nm)**.

❑ Refit:

- the tie rod,
- the front axle subframe front left-hand bolt,
- the tie-rod bolt,
- the side stiffener,
- the side stiffener bolts,

❑ Tighten to torque:

- the **front axle subframe front left-hand bolt (105 Nm)**,
- the **tie-rod bolt (21 Nm)**,
- the **side stiffener bolts (21 Nm)**.



123524

❑

Note:

Refit the earth terminal, aligning the indelible marks on the gearbox casing.

When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.

❑ The earth wiring must be refit as shown in the illustration.

❑ Refit the earth wiring bolt (**35**) to the manual gearbox.

❑ Tighten the earth wiring bolt (**35**) on the manual gearbox.

K9K, and TL4

❏ Refit:

- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 392, 31A, Front axle components).
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting).,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Detach the « cooling radiator - fan unit » assembly from the upper cross member.

K9K, and 772

❏ Position the heating element and electric coolant pump mounting on the radiator mounting cross member.

❏ Refit:

- the bolt from the heating element and coolant pump support on the radiator mounting cross member.
- the earth wiring bolt,

❏ Connect the connector to the heating element unit.

❏ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

F4R, and 830, and TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required
component jack

Tightening torques ▽	
gearbox bell housing mounting bolts	**44 Nm**
gearbox bell housing mounting nuts	**44 Nm**
starter mounting bolts	**40 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Use the lifting eye on the gearbox side and its mounting bolts (see **Lifting eyes: Removal - Refitting**) (MR 392, 11A, Top and front of engine).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

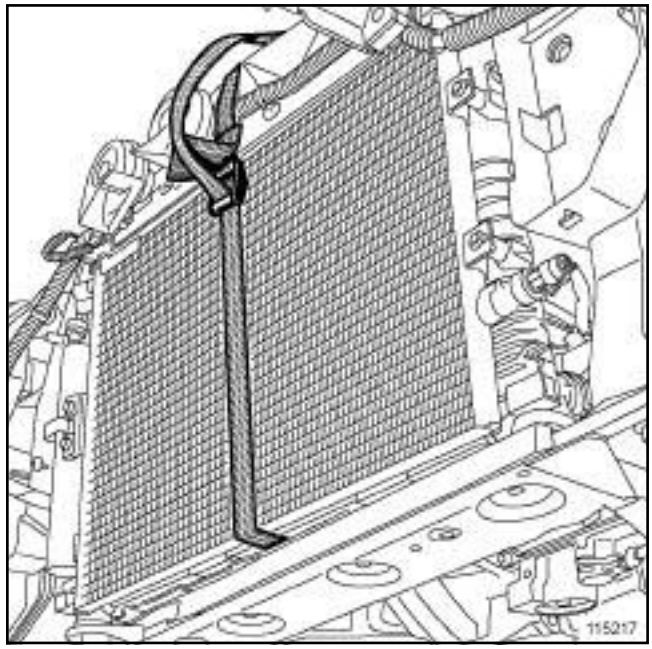
❑ Unclip the breather pipe from the gearbox.

❑ Remove:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the battery tray bracket (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

❑ Drain the gearbox (see) .

❑ Remove the left-hand and right-hand driveshafts (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

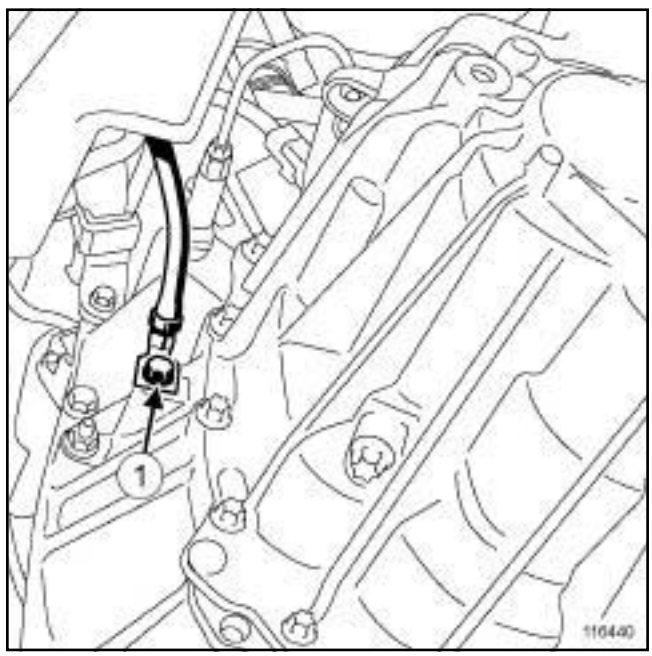


115217

❑ Strap the cooling unit in place.

❑ Remove:

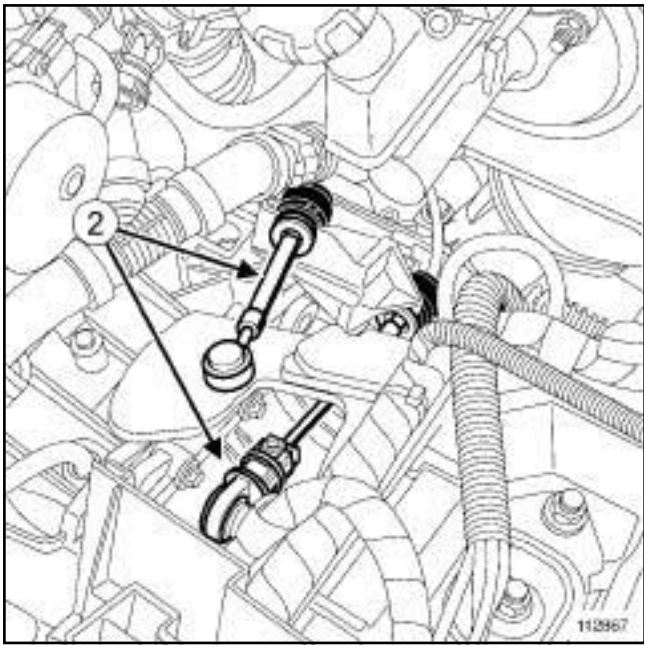
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).
- the front axle sub-frame (see **Front axle sub-frame: Removal - Refitting**) (MR 392, 31A, Front axle components).



116440

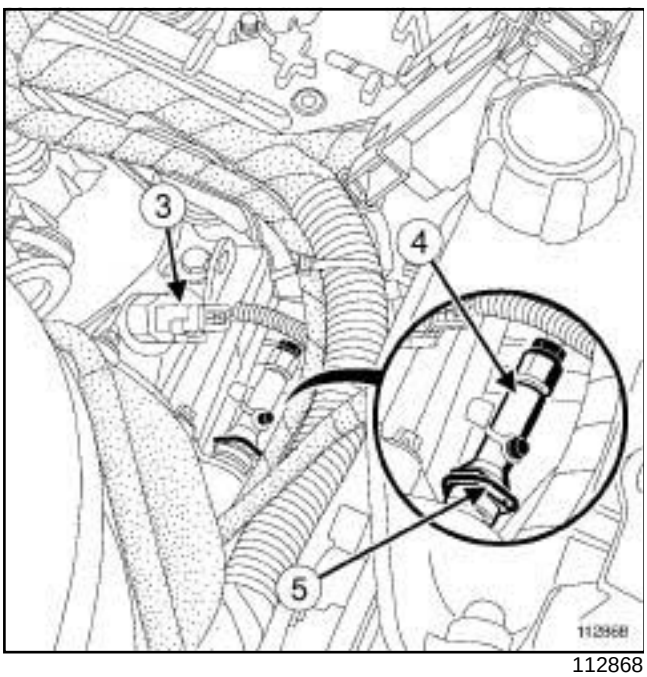
❑ Remove the earth strap mounting bolt (**1**) .

F4R, and 830, and TL4



112867

❏ Unclip the gearbox controls (**2**) .



112868

❏ Disconnect:

- the connector (**3**) from the reverse gear switch,
- the pipe (**4**) from the clutch slave cylinder by pushing on the clip (**5**) .

❏ Fit the lifting eye on the gearbox side (see **Lifting eyes: Removal - Refitting**) (MR 392, 11A, Top and front of engine).

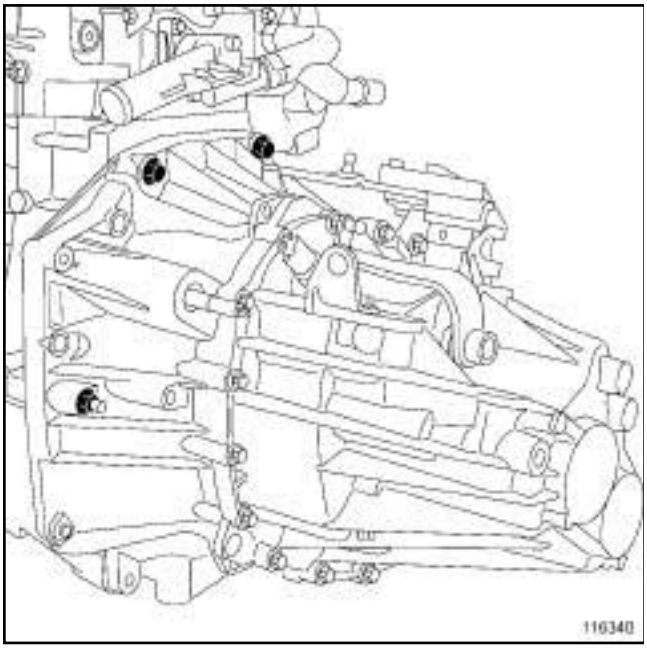
❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Fit the **(Mot. 1453)**.

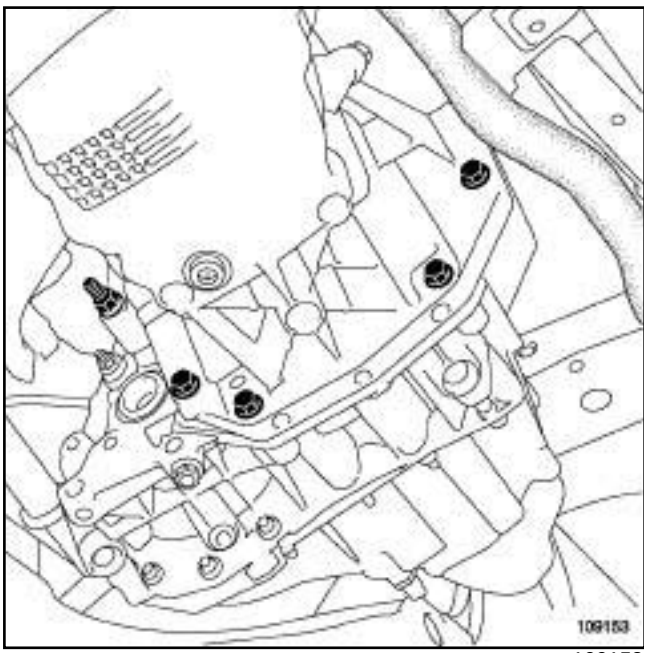
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

F4R, and 830, and TL4



116340



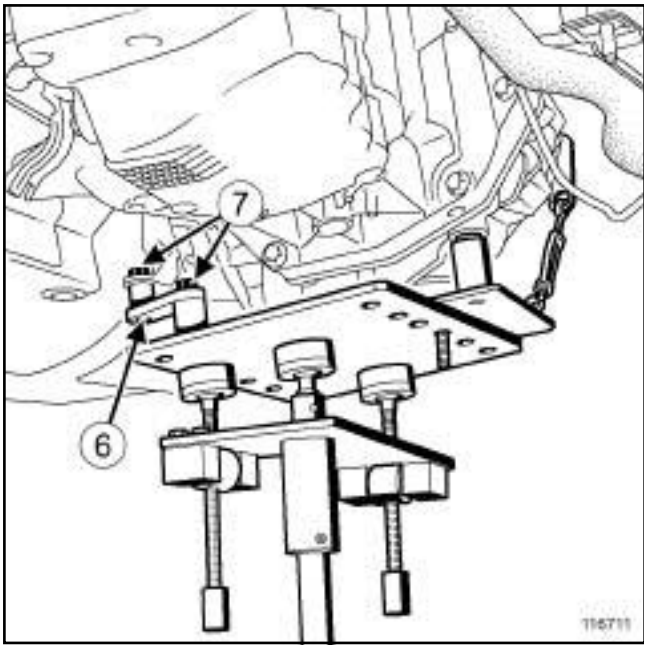
109153

❑ Remove:

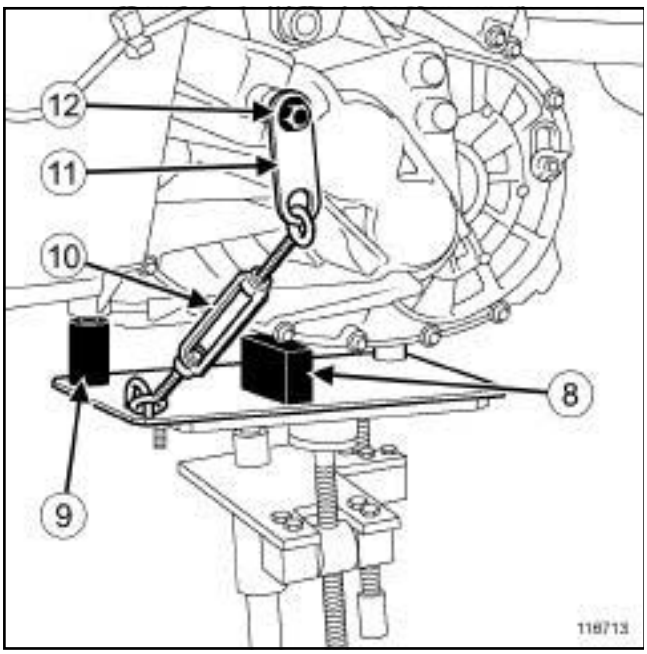
- the starter mounting bolts,
- the gearbox bell housing mounting nuts,
- the gearbox bell housing mounting bolts, leaving one mounting bolt in place,
- the gearbox mounting studs.

❑ Fit the **(Bvi. 1718)** on a **component jack**.

F4R, and 830, and TL4



116711



116713

❑ Fit:

- the **(Bvi. 1718)** and the **component jack** under the gearbox,
- the bracket (**6**) using mounting nuts (**7**) ,
- the support (**8**) ,
- the pin (**9**) ,
- the rod (**10**) using the bracket (**11**) and the mounting bolt (**12**) .

❑ Tighten the rod (**10**) in an anti-clockwise direction to prevent the gearbox from tilting.

❑ Remove:

- the remaining gearbox bell housing mounting bolt,
- the gearbox using the **(Bvi. 1718)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

WARNING
Do not grease the clutch shaft splines.

WARNING
To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

WARNING
It is essential to replace the differential output lip seal each time the driveshafts are removed.

❑ Replace the left-hand and right-hand differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

❑ Refit the gearbox mounting studs.

❑ Check the condition of the centring devices on the gearbox.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the gearbox using the **(Bvi. 1718)**.

❑ Refit one gearbox bell housing mounting bolt.

❑ Remove the **(Bvi. 1718)** from the gearbox.

❑ Refit:

- the gearbox bell housing mounting bolts,
- the gearbox bell housing mounting nuts,
- the starter mounting bolts.

❑ Torque tighten:

- the **gearbox bell housing mounting bolts (44 Nm)**,
- the **gearbox bell housing mounting nuts (44 Nm)**,
- the **starter mounting bolts (40 Nm)**.

❑ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

F4R, and 830, and TL4

❑ Remove:

- the **(Mot. 1453)**,
- the lifting eye on the gearbox side (see **Lifting eyes: Removal - Refitting**) (MR 392, 11A, Top and front of engine).

❑ Connect the clutch slave cylinder pipe.

❑ Refit the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Bleed the hydraulic clutch system (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

❑ Connect the reverse gear switch connector.

❑ Clip the gear controls into place.

❑ Refit the earth strap and its mounting bolt.

III - FINAL OPERATION.

❑ Refit:

- the front axle sub-frame (see **Front axle sub-frame: Removal - Refitting**) (MR 392, 31A, Front axle components).
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❑ Remove the retaining belt from the cooling unit.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the left-hand and right-hand driveshafts (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the battery tray bracket (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❑ Clip the breather pipe onto the gearbox.

❑ Fill the gearbox (see) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R, and TL4

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required
safety strap(s)
component jack

Tightening torques ▽	
gearbox bell housing bolts	**44 Nm**
gearbox bell housing nuts	**44 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

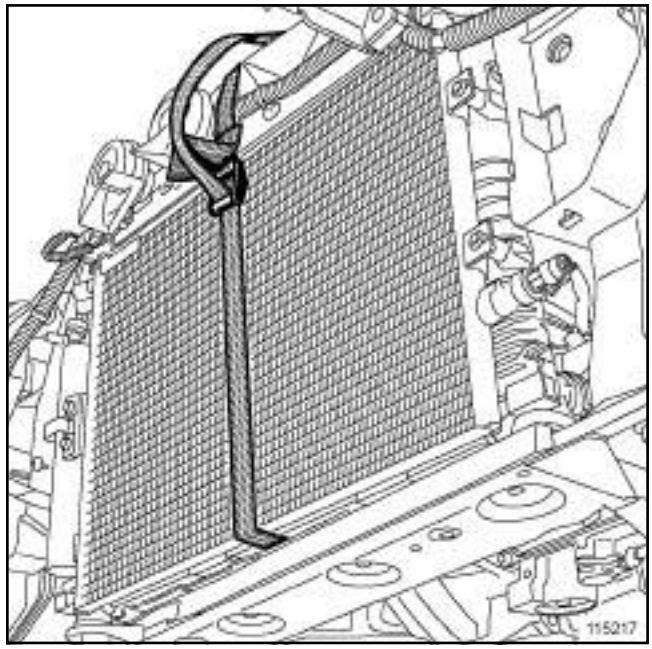
❏ Remove the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the battery tray bracket (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

❏ Drain the gearbox (see) .

❏ Remove the left-hand and right-hand driveshafts (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) and (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

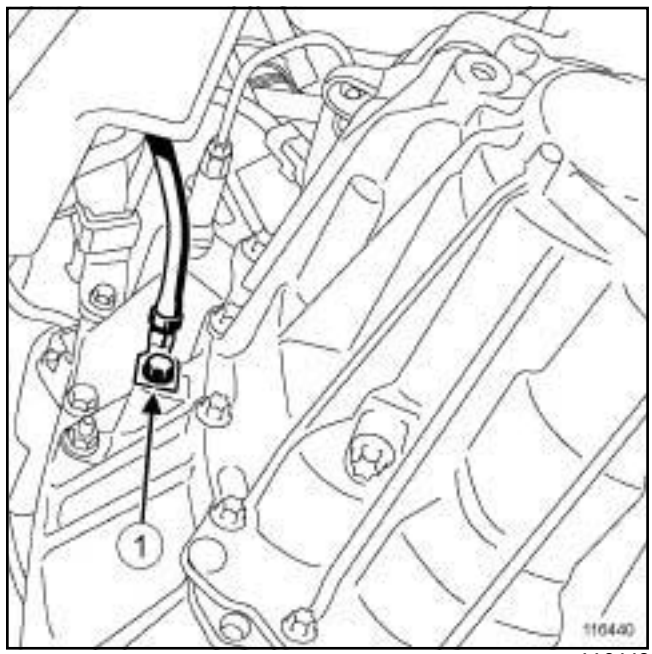


115217

❏ Attach the cooling assembly using a **safety strap(s)**.

❏ Remove:

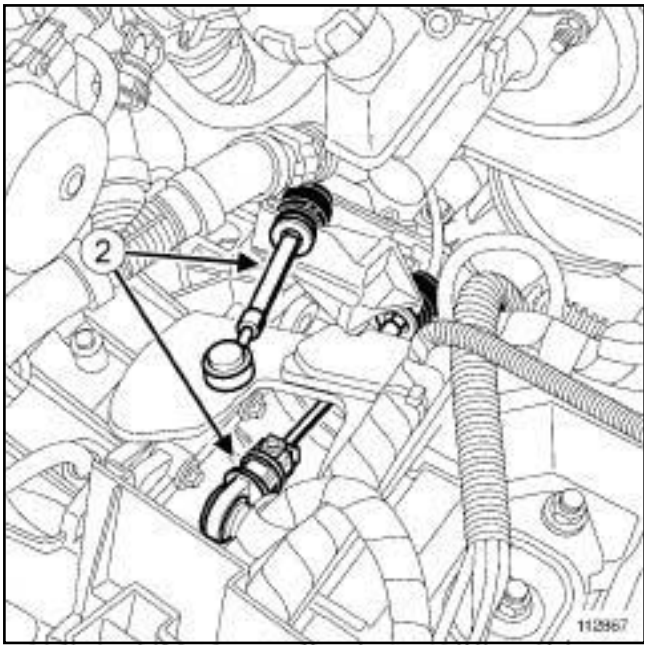
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).
- the front axle sub-frame (see **Front axle sub-frame: Removal - Refitting**) (MR 392, 31A, Front axle components).



116440

❏ Remove the earth wiring bolt (**1**) .

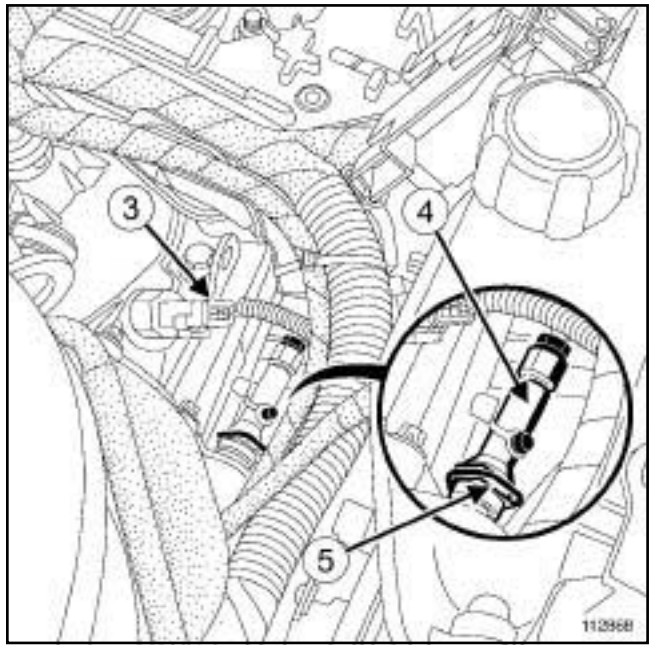
M4R, and TL4



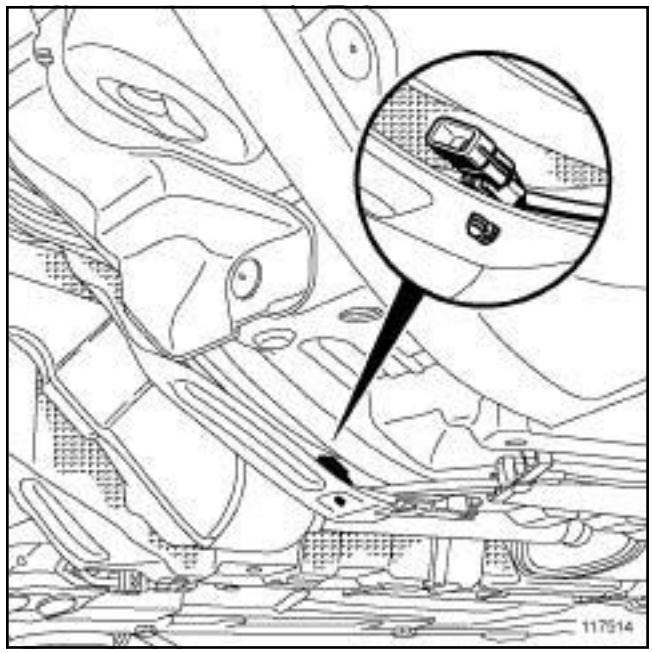
112867

❏ Unclip the gearbox controls (**2**) .

❏ Remove the wiring harness channel bolts.



112868



117514

❏ Disconnect:

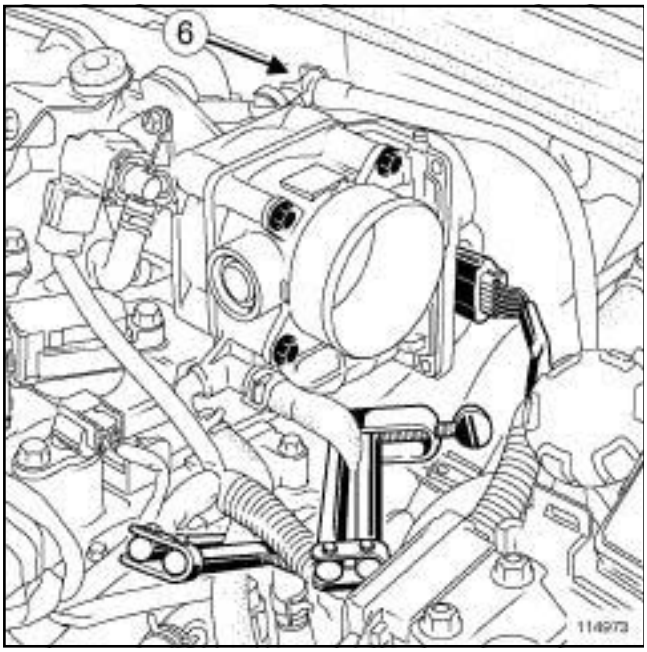
- the connector (**3**) from the reverse gear switch,
- the downstream oxygen sensor connector,
- the clutch control pipes (**4**) by pushing on the clip (**5**) .

❏ Remove:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

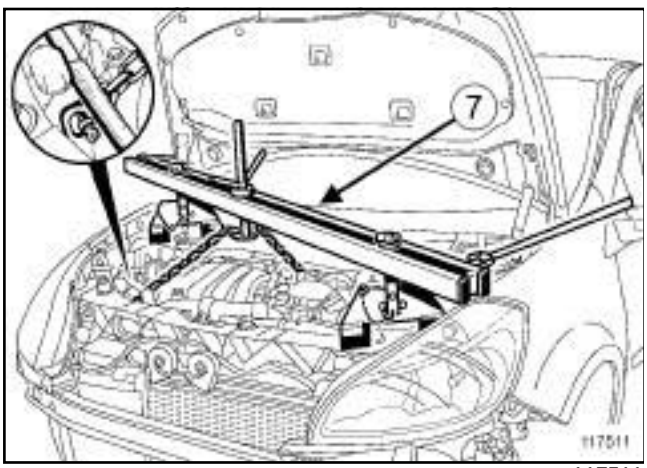
M4R, and TL4

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



114973

❏ Disconnect the union (**6**) from the brake servo pipe on the vacuum pump.



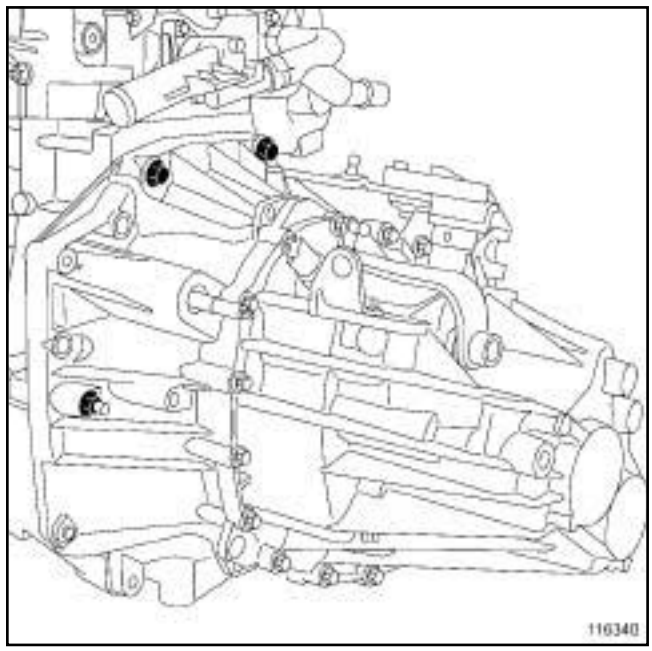
117511

❏ Position the **(Mot. 1453)** (**7**) .

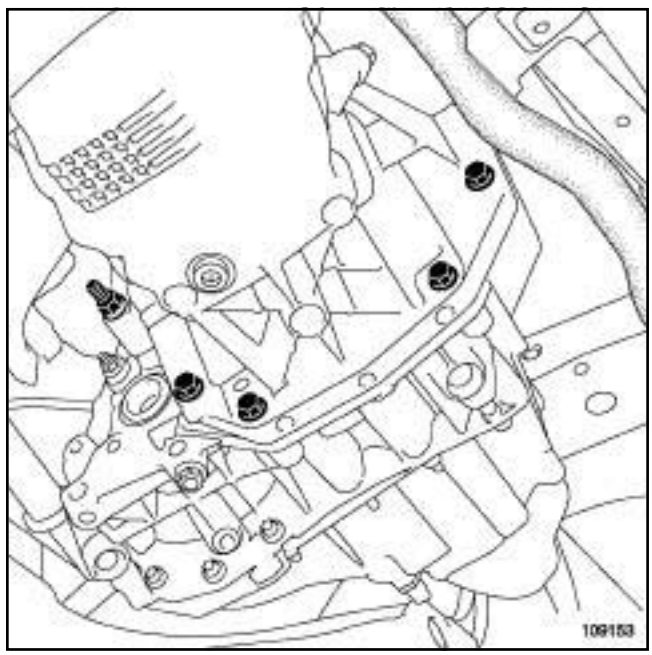
WARNING
Do not deform the air conditioning pipes.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).



116340



109153

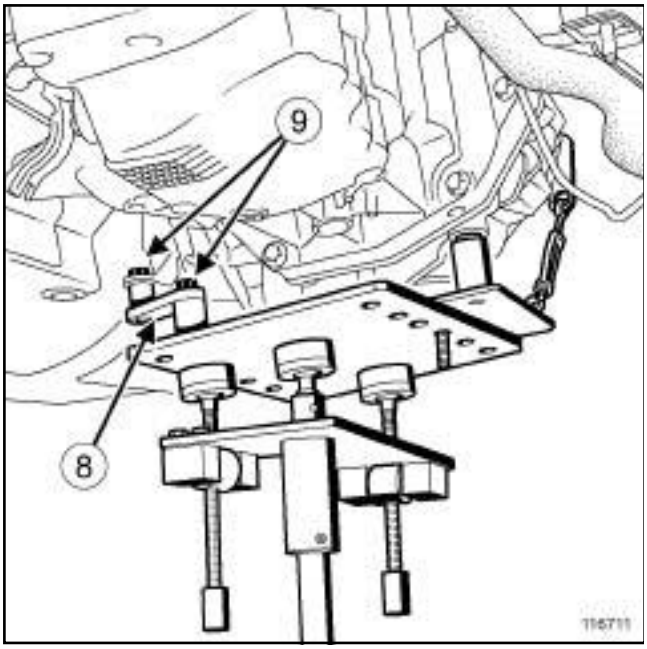
❏ Remove:

- the starter bolts (see **Starter: Removal - Refitting**) (MR 392, 16A, Starting - Charging),
- the gearbox nuts,
- the gearbox bolts, leaving one bolt in place,
- the gearbox studs.

❏ Unclip the breather pipe from the gearbox.

❏ Fit the **(Bvi. 1718)** on a **component jack**.

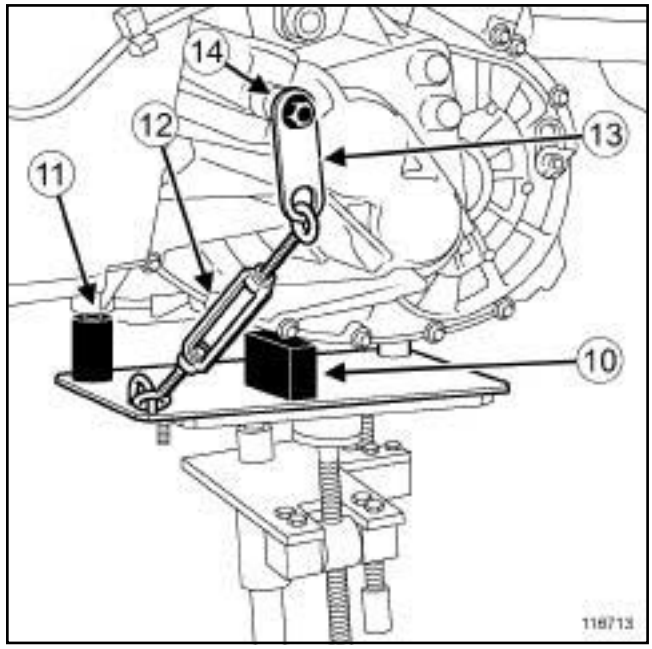
M4R, and TL4



116711

❏ Fit:

- the **(Bvi. 1718)** and the **component jack** under the gearbox,
- the bracket (**8**) using the nuts (**9**) ,



116713

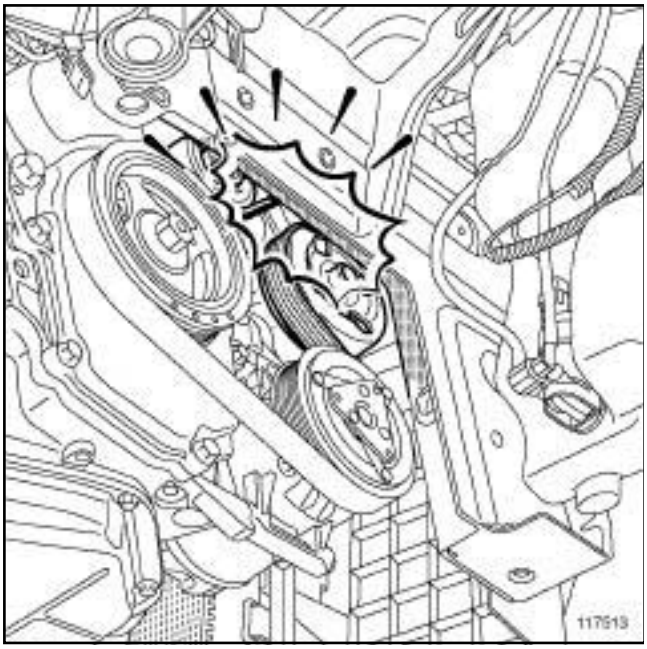
❏ Tap the hole (**14**) using a self-tapping bolt **(Part no.: 77 03 002 244)** to attach the gearbox to the support using the rod (**12**) .

❏ Fit:

- the shim (**10**) ,
- the shim (**11**) ,
- the rod (**12**) using the bracket (**13**) and the bolt (**14**) .

❏ Tighten the rod (**12**) in an anti-clockwise direction to prevent the gearbox from tilting.

M4R, and TL4



117513

❑

Note:

Check that the pulleys on the accessories side are not pressing against the side member on the right-hand side of the vehicle when the engine and transmission assembly is being lowered.

❑ Remove:

- the gearbox bolt,
- the gearbox using the **(Bvi. 1718)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

WARNING
Do not grease the clutch shaft splines.

WARNING
To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

WARNING
It is essential to replace the differential output lip seal each time the driveshafts are removed.

❑ Replace the left-hand and right-hand differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

❑ Refit the gearbox studs.

❑ Check the condition of the centring devices on the gearbox.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the gearbox using the **(Bvi. 1718)**.

❑ Refit a gearbox bell housing bolt,

❑ Remove the **(Bvi. 1718)** from the gearbox.

❑ Refit:

- the gearbox bell housing bolts,
- the gearbox bell housing nuts,
- the starter bolts (see **Starter: Removal - Refitting**) (MR 392, 16A, Starting - Charging),

❑ Torque tighten:

- the **gearbox bell housing bolts (44 Nm)**,
- the **gearbox bell housing nuts (44 Nm)**,

❑ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❑ Remove the **(Mot. 1453)**.

❑ Refit the hose connected to the brake servo.

❑ Connect the clutch slave cylinder pipe.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Bleed the hydraulic clutch system (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

❑ Connect the reverse gear switch connector.

❑ Clip the gear controls into place.

❑ Refit:

- the wiring harness channel bolt,
- the earth wiring fitted with its bolt.

❑ Reposition the downstream oxygen sensor connector.

M4R, and TL4

III - FINAL OPERATION.

❑ Refit:

- the subframe (see **31A, Front axle component, Front axle subframe: Removal-Refitting**),
- the radiator mounting cross member (see **MR 393 Bodywork, 41A, Lower structure, Radiator mounting cross member: Removal - Refitting**).

❑ Remove the **safety strap(s)** from the cooling unit.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the left-hand and right-hand driveshafts (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the battery tray bracket (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),

❑ Clip the breather pipe onto the gearbox.

❑ Top up the gearbox (see) .

❑ Refit the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K4M, and TL4

Special tooling required	
Ms. 583	Pipe clamps.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required
indelible pencil
component jack

Tightening torques ▽	
gearbox nuts	**44 N.m**
gearbox bolts	**44 N.m**
front left-hand bolt of the front axle sub-frame	**105 N.m**
earth wiring bolt on the gearbox	**24 N.m**

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

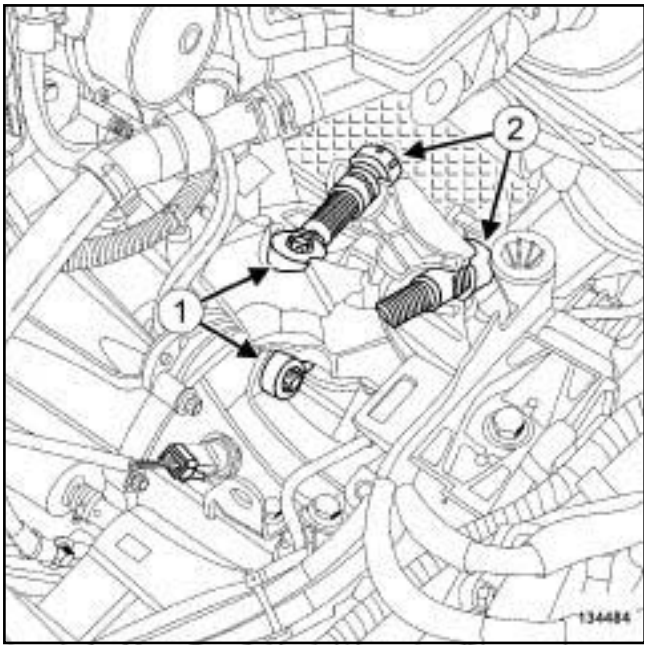
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) ,
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the battery (see) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

K4M, and TL4



134484

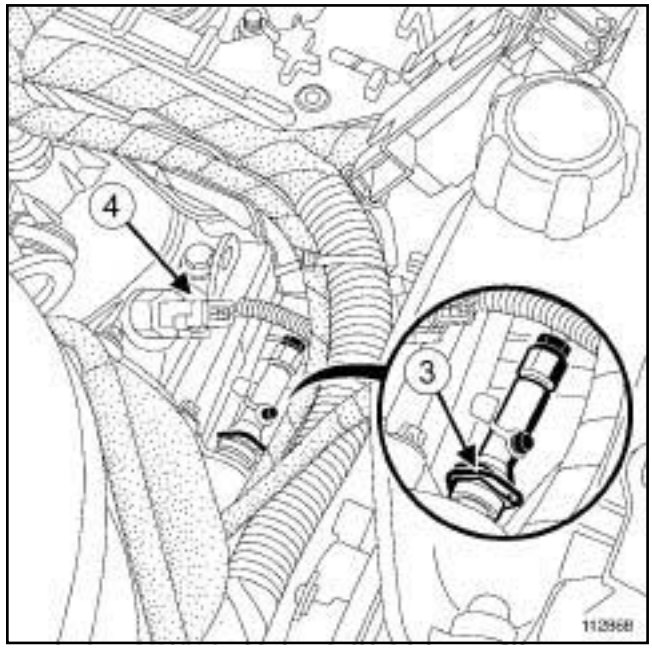
❏ Unclip:

- the gear control cables (**1**) from the selector ball joints using an open-jawed spanner,
- the gear control cables (**2**) from their support.

❏ Fit the tool **(Ms. 583)** between the brake fluid reservoir and the clutch master cylinder.

WARNING

Do not pull the clip. If it is incorrectly handled in any way, the pipe will need to be replaced.



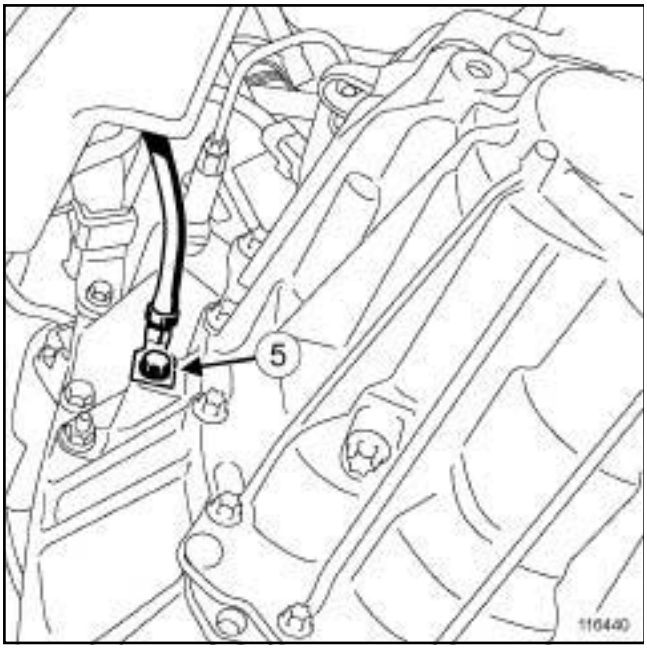
112868

❏ Disconnect:

- the hydraulic clutch control pipe by pressing on the clip (**3**) ,
- the connector (**4**) from the reverse gear switch,

❏ Insert the blanking plugs.

K4M, and TL4



116440

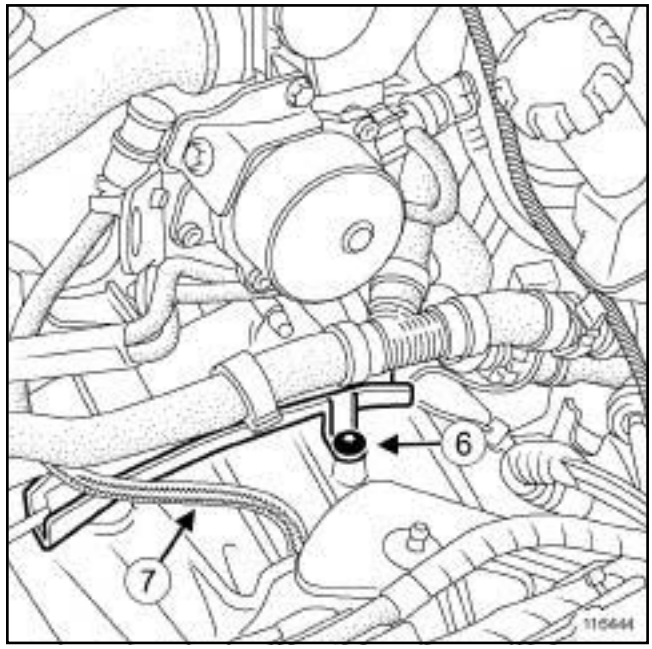
❑

Note:

Before removing the earth terminal, mark its position using a **indelible pencil** by drawing a line on the earth terminal and on the gearbox casing.

When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.

❑ Remove the earth wiring bolt (**5**) .

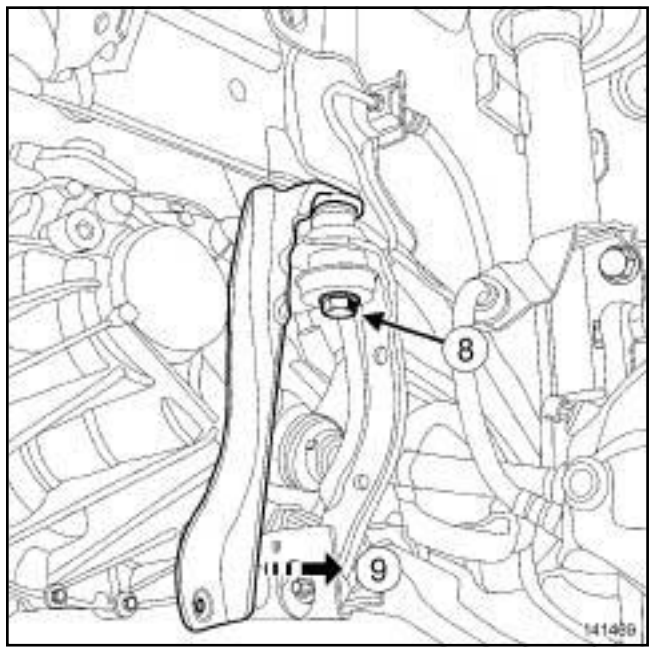


116444

❑ Remove the bolt (**6**) from the wiring harness channel on the gearbox.

❑ Disconnect the breather pipe (**7**) from the gearbox.

❑ Remove the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) .



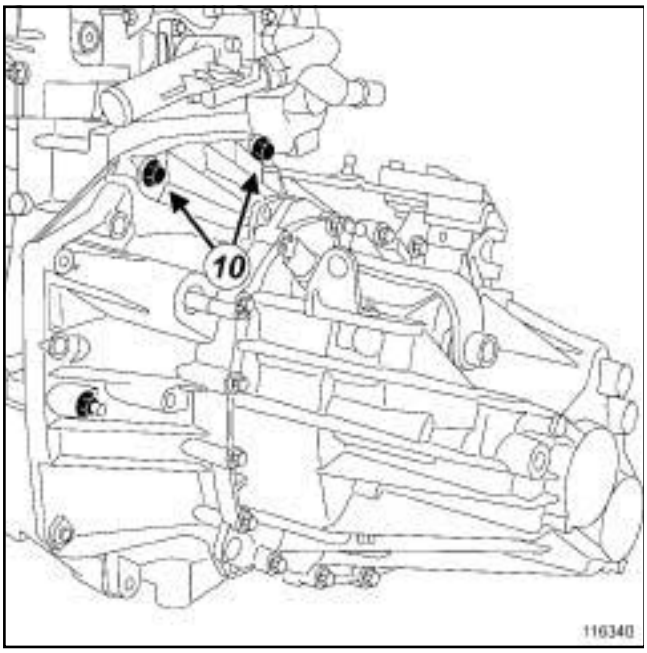
141469

❑ Loosen the front left-hand bolt (**8**) on the front axle subframe.

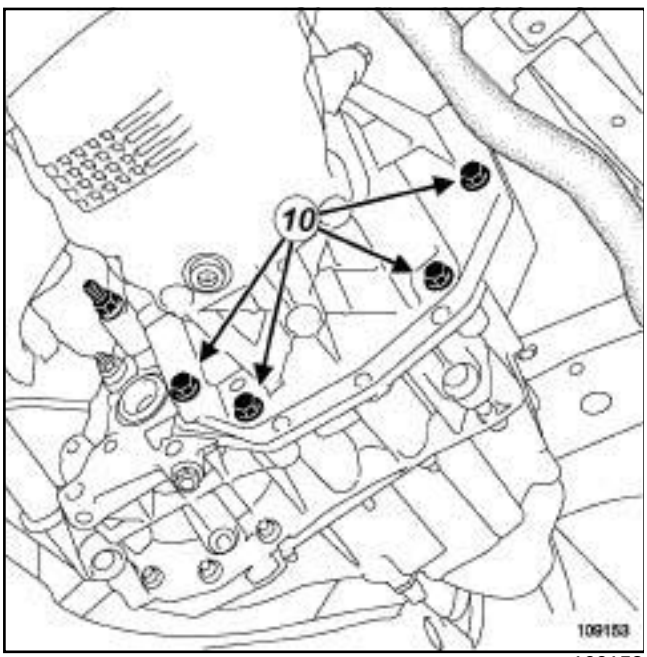
❑ Pivot the tie rod at (**9**) .

K4M, and TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED

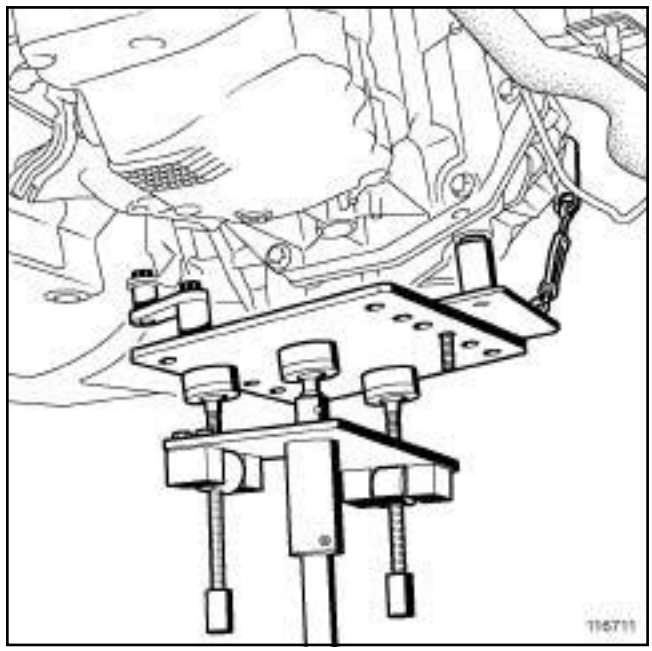


116340

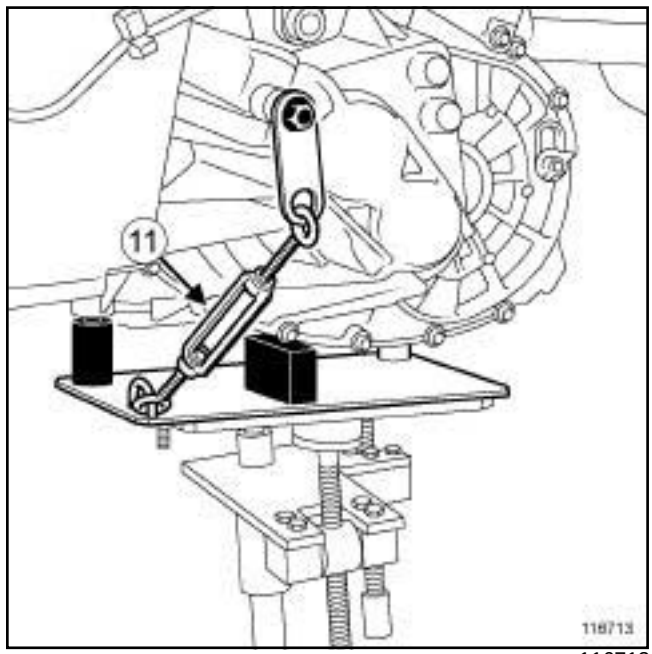


109153

❏ Remove the bolts (**10**) from the gearbox.



116711



116713

❏ Fit the **(Bvi. 1718)** on a **component jack**.

❏ Position the tool **(Bvi. 1718)** and the **component jack** under the gearbox.

❏ Tighten the rod (**11**) anti-clockwise in order to avoid tilting the gearbox.

❏ Remove:

- the gearbox nuts,
- the gearbox using the tool **(Bvi. 1718)**,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-11**) .

K4M, and TL4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing**.

❑

> **WARNING**
> To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

> **WARNING**
> Do not grease the clutch shaft splines.

❑ Check that the centring dowelsare in place.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-11**) ,
- the gearbox using the **(Bvi. 1718)**.

❑ Remove the tool **(Bvi. 1718)**.

❑ Tighten to torque:

- the **gearbox nuts (44 N.m)**,
- the **gearbox bolts (44 N.m)**.

III - FINAL OPERATION

❑ Fit the tie-rod.

❑ Refit the front left-hand bolt on the front axle sub-frame.

❑ Torque tighten the **front left-hand bolt of the front axle sub-frame (105 N.m)**.

❑ Refit the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) .

❑ Connect the gearbox breather pipe.

❑ Refit the wiring channel bolt on the gearbox.

❑ Refit the earth cable respecting the marks made during removal.

❑ Refit the earth wiring bolt on the gearbox.

❑ Torque tighten the **earth wiring bolt on the gearbox (24 N.m)**.

❑ Connect the reverse gear switch connector.

❑ Remove the blanking plugs.

❑ Connect the clutch slave cylinder.

❑ Remove the tool **(Ms. 583)**.

❑ Clip:

- the gear control cables onto their support,
- the gear control cables onto the gear selector ball joints.

❑ Refit:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see) (80A, Battery),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

K4M, and TL4

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Perform the following operations:

- fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) ,
- bleed the clutch hydraulic clutch (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

❑ Refit the engine undertray.

JH3 or JR5

❑ Replace the lip seal after opening the gearbox (see **Technical Note 3661A, gearbox JH - JR**).

TL4

Special tooling required	
Bvi. 1601	Tool for fitting the primary shaft seal.

REMOVAL

I - REMOVAL PREPARATION OPERATION

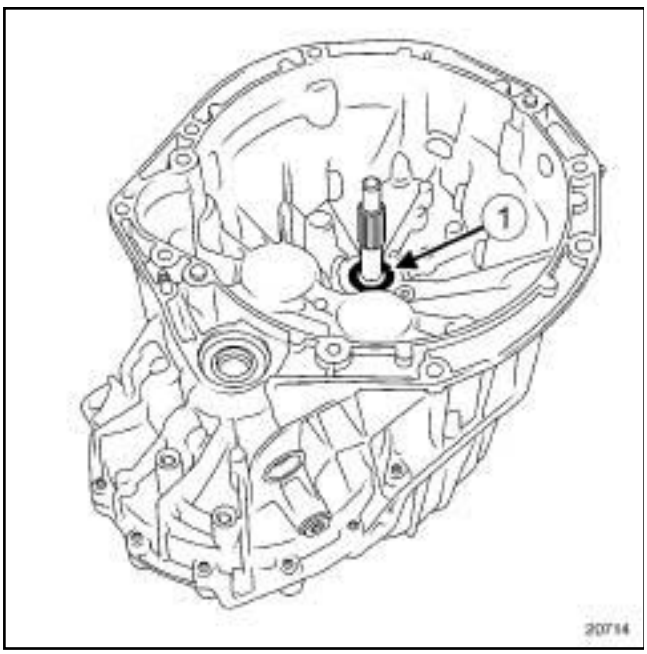
❑ Remove:

- the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) ,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-11**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Drill a hole in the seal, using a **2.5 mm** drill bit.

WARNING
Do not scratch the shaft or mating face.



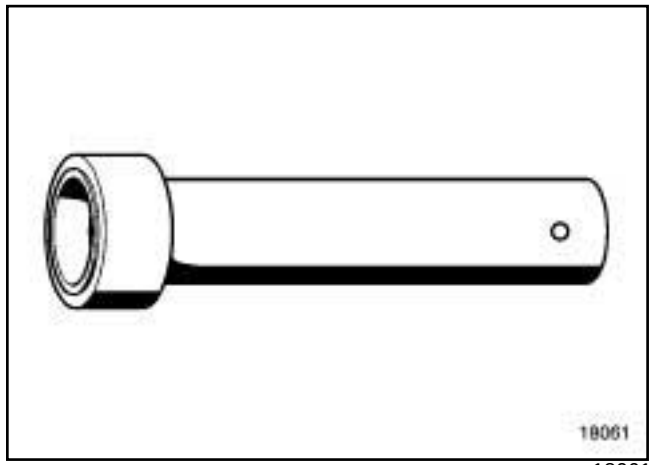
20714

❑ Fit a bolt in seal (**1**) .

❑ Extract the seal (**1**) using pliers.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



18061

❑ Fit a new seal with its protector using the **(Bvi. 1601)**.

❑ Remove the protector.

II - FINAL OPERATION

❑ Refit:

- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-11**) .
- the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-12**) .

JH3 or JR5

Special tooling required	
Bvi. 1666	Tool for fitting differential seals.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

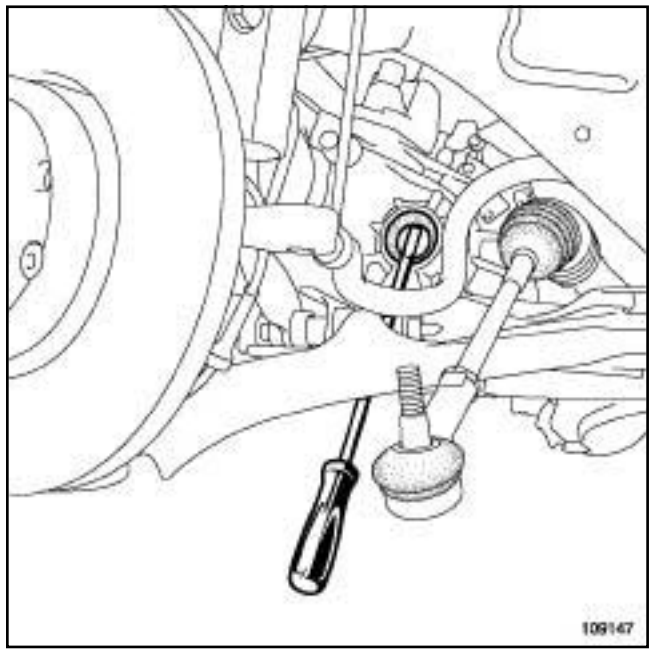
❏ Remove:

- the front wheel from the side in question (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front brake pads from the side in question (see **Front brake pads: Removal - Refitting**) (MR 392, 31A, Front axle components),
- the engine undertray mounting bolts,
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Remove the driveshaft from the side in question (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**)

II - OPERATION FOR REMOVAL OF PART CONCERNED



109147

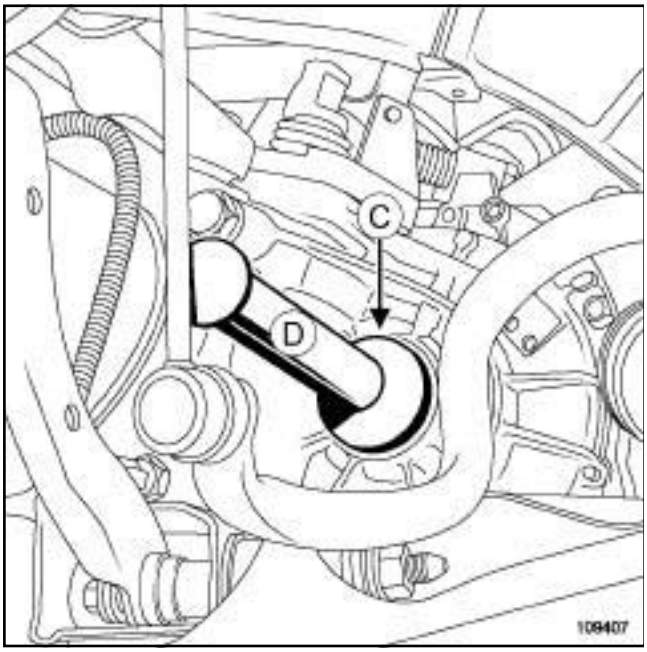
❏ Tap the base of the lip seal using a pin punch and a small hammer to release it and cause it to turn in its housing.

❏ Withdraw the lip seal using a large screwdriver, taking care not to damage the differential housing.

JH3 or JR5

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



109407

❏ Refit the seal using the **(Bvi. 1666)** (**C**) , suffix **A** on the right-hand side, and suffix **B** on the left-hand side.

❏ Strike the **(Bvi. 1666)** (**C**) with a copper hammer (**D**) to fully seat the differential output seal

II - FINAL OPERATION.

❏ Position the driveshaft in relation to the sunwheel.

❏ Refit the driveshaft on the side in question (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**)

❏ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Refit:

- the engine undertray,
- the engine undertray mounting bolts,
- the front brake pads from the side in question (see **Front brake pads: Removal - Refitting**) (MR 392, 31A, Front axle components),
- the front wheel on the side in question (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

TL4

Special tooling required	
Bvi. 1854	Differential output seal fitting tool TL4

Equipment required
roll pin punch

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

1 - When replacing the differential output seal on the left-hand side

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

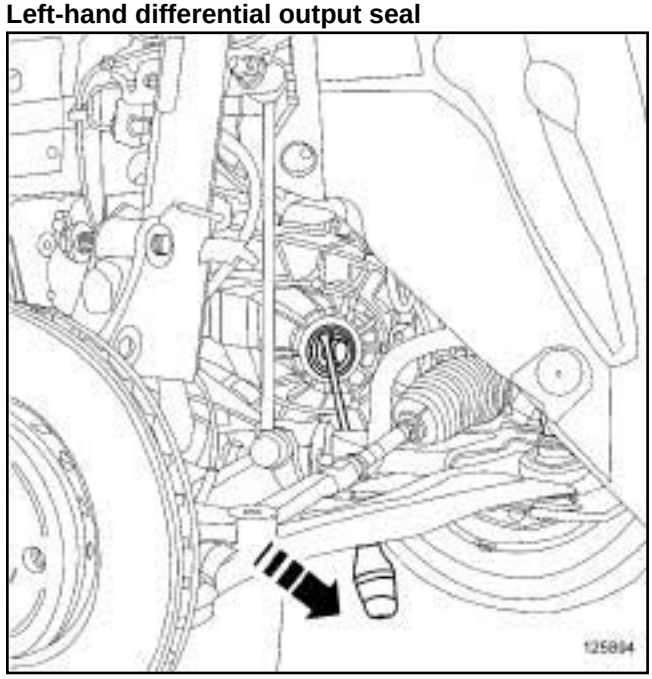
2 - When replacing the differential output seal on the right-hand side

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

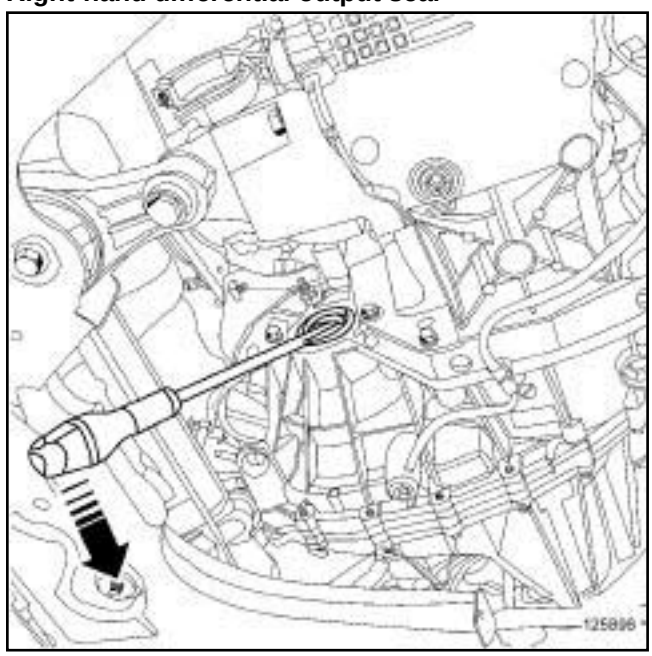
II - REMOVAL OPERATION FOR THE DIFFERENTIAL OUTPUT SEAL

Left-hand differential output seal



125894

Right-hand differential output seal



125896

❏ Tap the base of the lip seal using a **roll pin punch** and a small hammer to release it and make it turn in its housing.

❏ Remove the lip seal using a large screwdriver, taking care not to damage the differential housing.

TL4

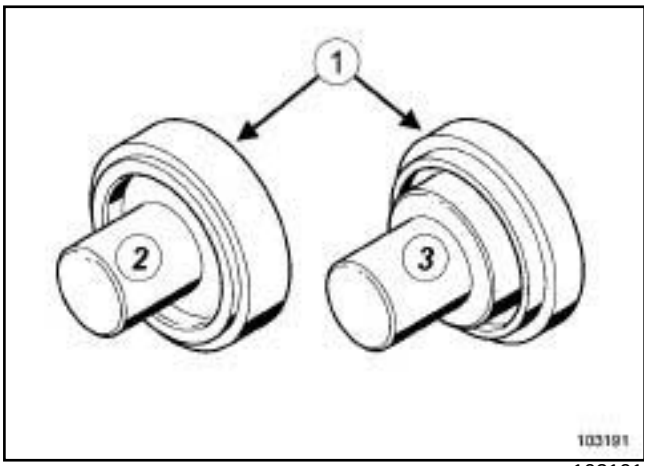
REFITTING

I - REFITTING PREPARATION OPERATION

- **parts always to be replaced: Differential output seal**.

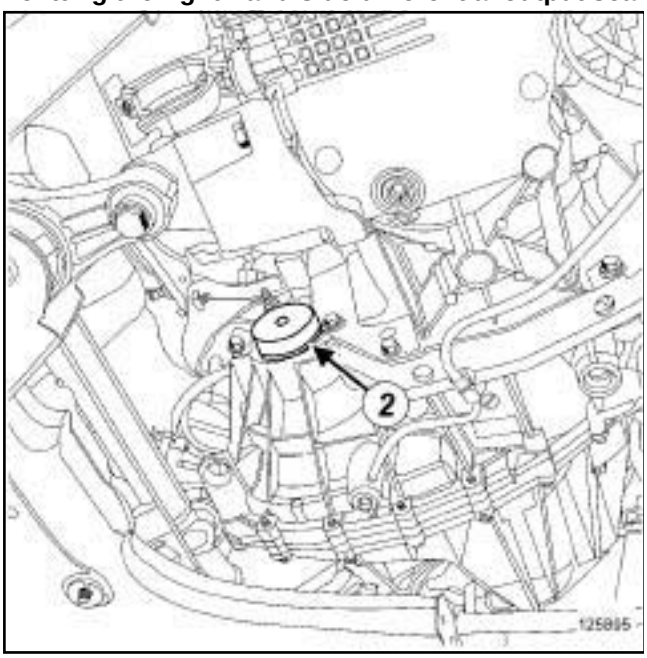
TL4

II - REFITTING OPERATION FOR THE DIFFERENTIAL OUTPUT SEAL



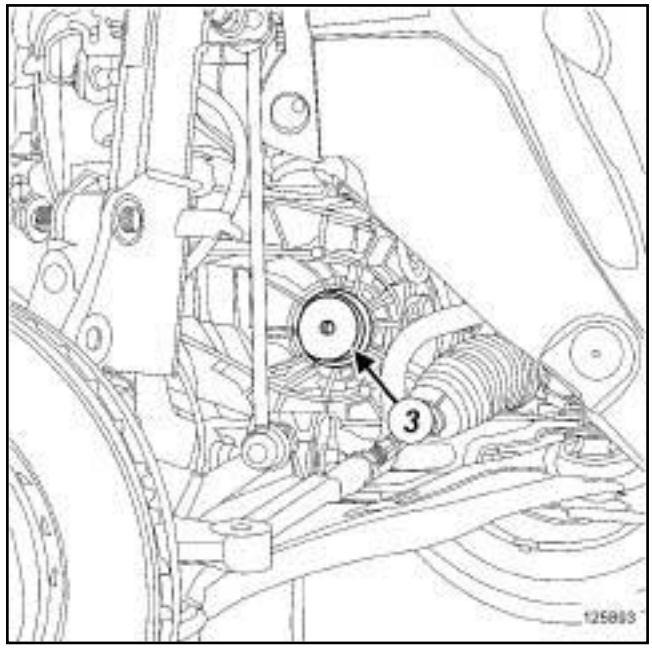
103191

Refitting the right-hand side differential output seal



125895

Refitting the left-hand side differential output seal.



125893

❑ The new differential output seal is refitted using the tool **(Bvi. 1854)** (**1**) consisting of:

- a mandrel (**2**) for the right-hand side,
- a mandrel (**3**) for the left-hand side.

❑ Oil the internal surface of the new differential output seal.

❑ Fit:

- the new differential output seal on the gearbox,
- the mandrel (**2**) or (**3**) of the tool **(Bvi. 1854)** on the new differential output seal.

❑ Tap the tool (**1**) with a copper hammer to fit the new differential output seal fully.

III - FINAL OPERATION

1 - Refitting the left-hand driveshaft

❑ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

2 - Refitting the right-hand driveshaft

❑ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,

TL4

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

3 - Final operation

❑ Fill the gearbox and check the level (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❑ Refit the engine undertray.

TL4

Special tooling required	
Bvi. 1934	Socket for removing/refitting reverse gear switch

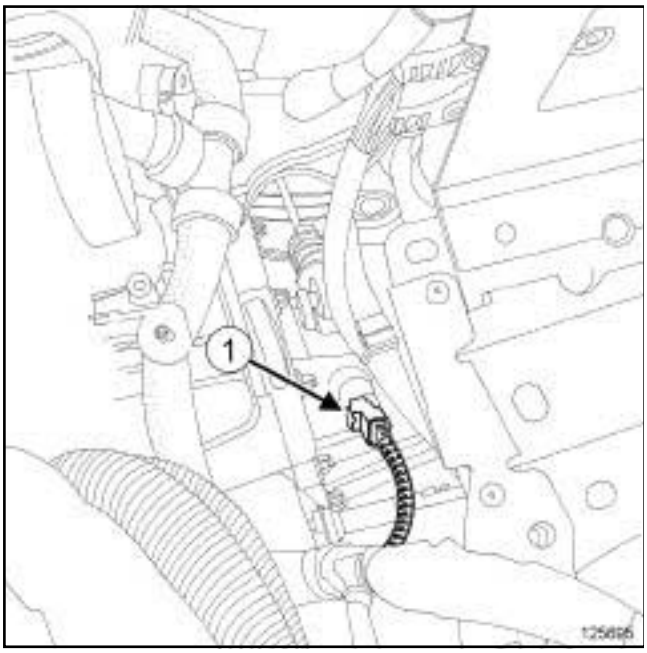
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

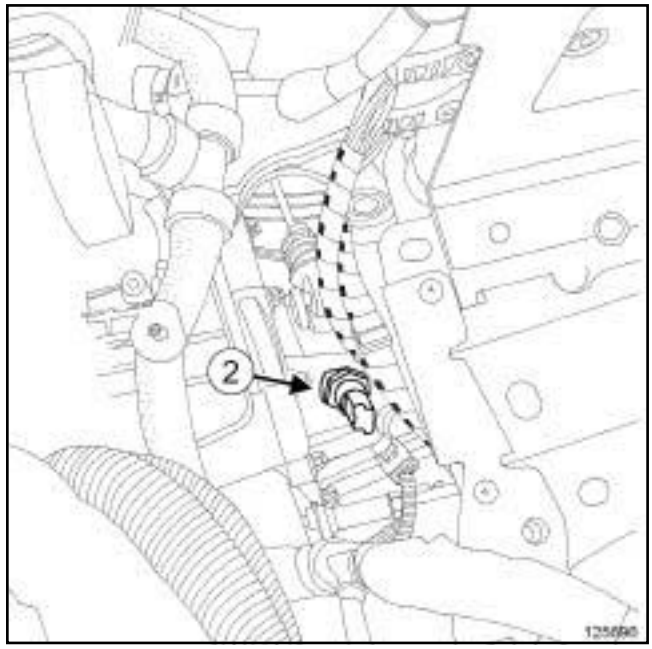
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



125695

❑ Disconnect the connector (**1**) from the reverse gear switch.



125696

❑ Remove the reverse gear switch using the socket for removing/refitting the reverse gear switch **(Bvi. 1934)** (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the reverse gear switch.

❑ Tighten the reverse gear switch using the socket for removing/refitting the reverse gear switch **(Bvi. 1934)**.

❑ Connect the reverse gear switch connector.

II - FINAL OPERATION

❑ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

JH3 or JR5

Special tooling required	
Bvi. 1934	Socket for removing/refitting reverse gear switch

Tightening torques ▽	
reverse gear switch	**23 N.m**

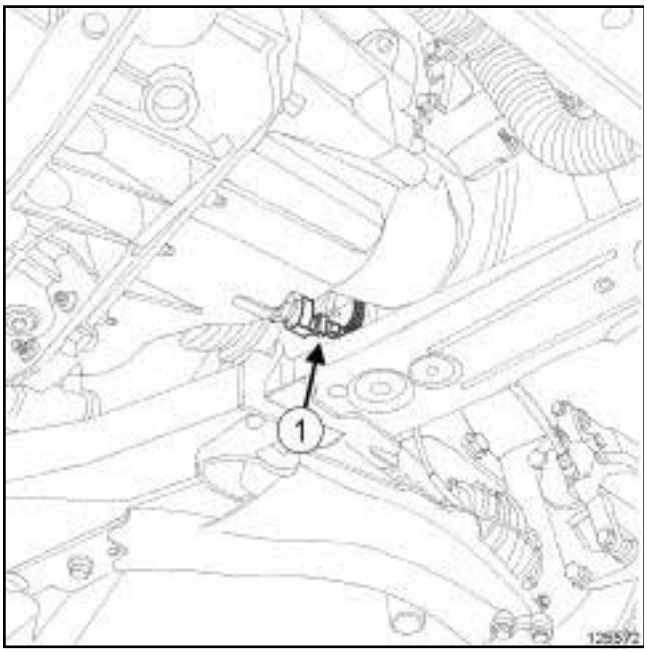
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

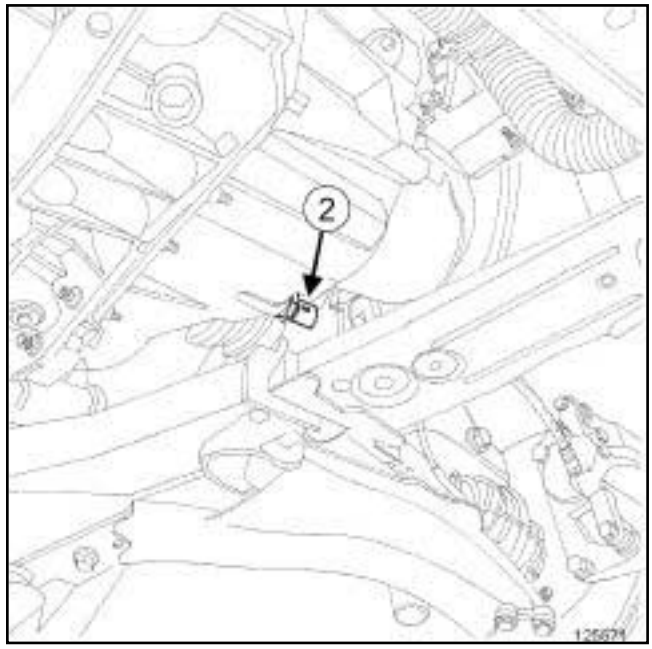
❏ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



125572

❏ Disconnect the connector (**1**) from the reverse gear switch.



125571

❏ Remove the reverse gear switch (**2**) using the **(Bvi. 1934)**.

Note:

Seal the housing of the reverse gear switch while replacing the part.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Apply some **SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the threading of the reverse gear switch.

❏ Refit the reverse gear switch using the **(Bvi. 1934)**.

❏ Torque tighten the **reverse gear switch (23 N.m)**.

❏ Connect the reverse gear switch connector.

II - FINAL OPERATION

❏ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Refit the engine undertray.

Sequential gearbox: Precautions for the repair

D4F or K9K, and JA3 or JA5

Equipment required
Diagnostic tool

I - SEQUENTIAL GEARBOX

WARNING

If any operation is carried out on the electro-hydraulic unit, it is essential to clean the unit using a cleaning product and compressed air.

Never leave the circuit open and never use a high pressure cleaner.

II - SEQUENTIAL GEARBOX COMPUTER

To disconnect the computer, switch off the ignition and wait for **1 minute**.

III - ELECTRO-HYDRAULIC UNIT

Discharge the pressure accumulator using the **Diagnostic tool** before any operation on the electro-hydraulic unit.

K9K, and JA5

Special tooling required	
Mot. 445	Oil filter strap wrench.

Equipment required
Diagnostic tool

Tightening torques ▽	
lifting eye nut on the gearbox	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

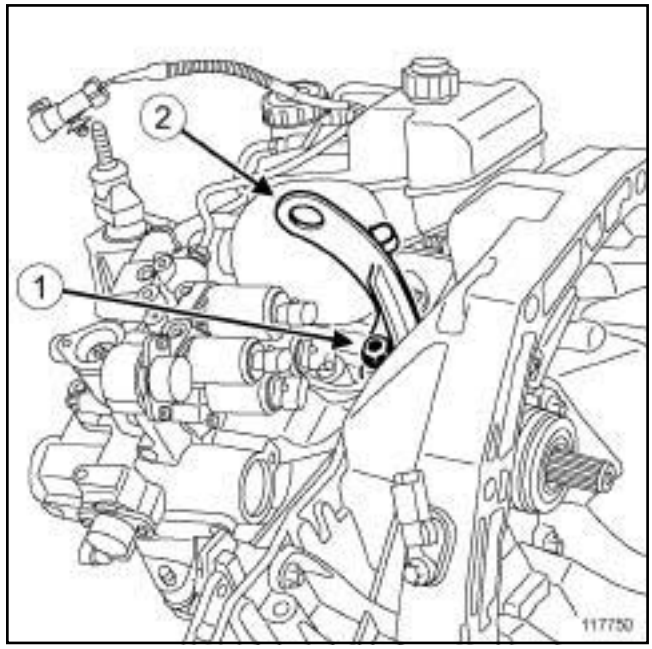
To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

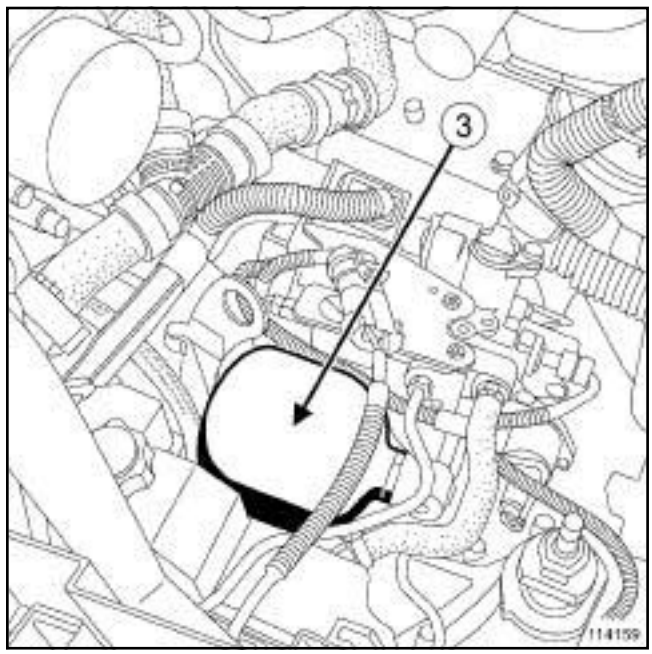


117750

❑ Remove:

- the lifting eye nut on the gearbox (**1**) ,
- the lifting eye on the gearbox (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



114159

❑ Remove the pressure accumulator (**3**) using the **(Mot. 445)**.

K9K, and JA5

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the pressure accumulator.

❏ Tighten the pressure accumulator using the **(Mot. 445)**.

❏ Affix the safety label to the pressure accumulator.

❏ Refit:

- the lifting eye on the gearbox,
- the lifting eye nut on the gearbox.

❏ Tighten to torque the **lifting eye nut on the gearbox (21 Nm)**.

❏ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),

II - FINAL OPERATION.

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Special tooling required	
Mot. 445	Oil filter strap wrench.

Equipment required
Diagnostic tool

Tightening torques ▽	
lifting eye nut on the gearbox	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

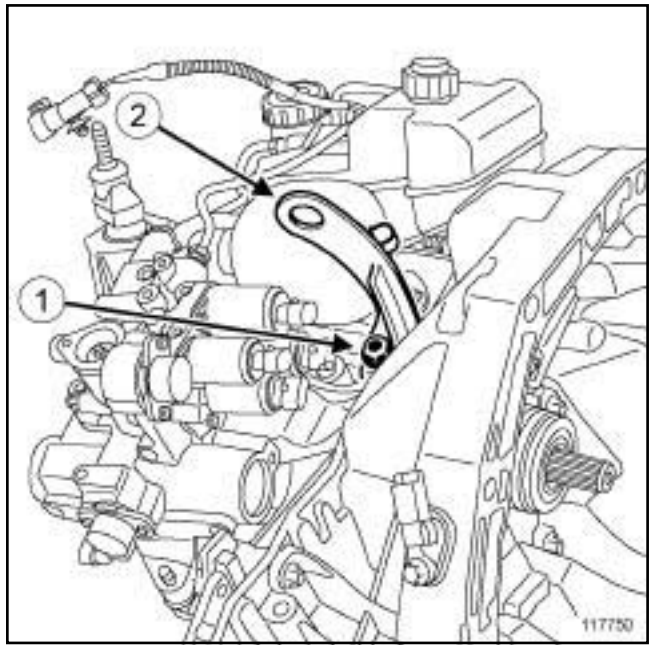
To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

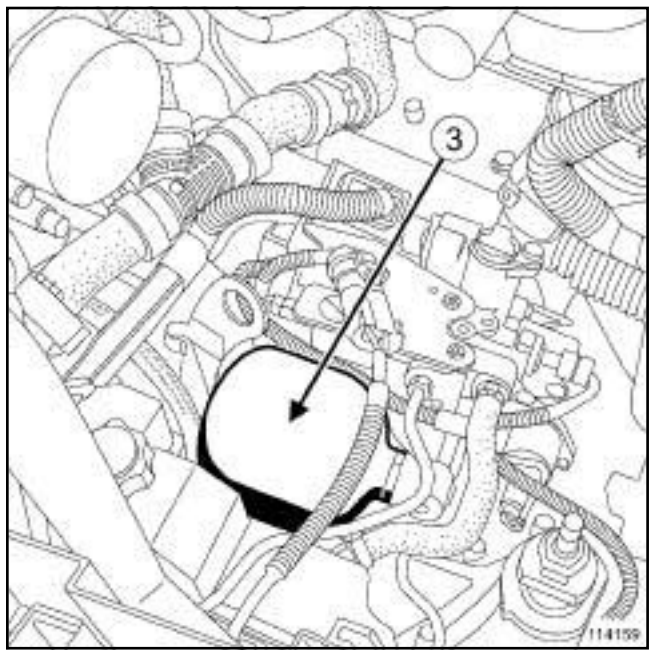


117750

❑ Remove:

- the lifting eye nut on the gearbox (**1**) ,
- the lifting eye on the gearbox (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



114159

❑ Remove the pressure accumulator (**3**) using the **(Mot. 445)**.

D4F, and JA3

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the pressure accumulator.

❏ Tighten the pressure accumulator using the **(Mot. 445)**.

❏ Affix the safety label to the pressure accumulator.

❏ Refit:

- the lifting eye on the gearbox,
- the lifting eye nut on the gearbox.

❏ Tighten to torque the **lifting eye nut on the gearbox (21 Nm)**.

❏ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - FINAL OPERATION.

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Equipment required
Diagnostic tool

Tightening torques ▽	
pump assembly reservoir bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

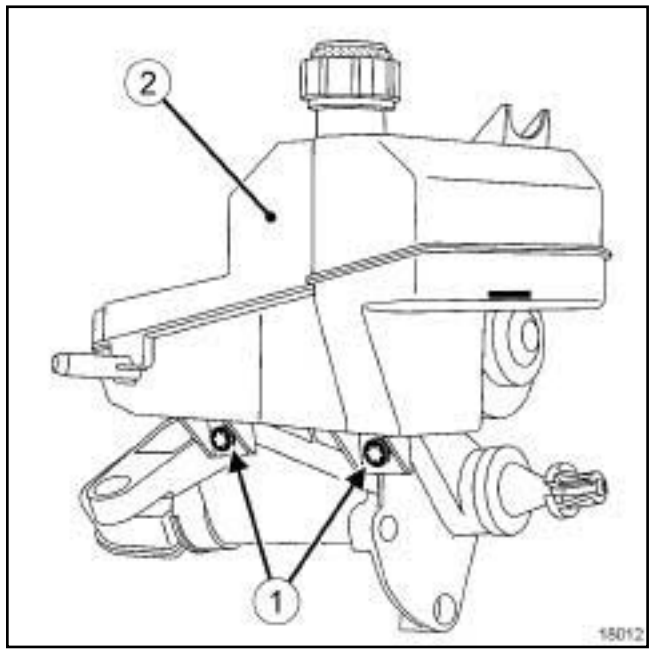
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



18012

❑ Remove:

- the bolts (**1**) from the pump assembly reservoir,
- the reservoir (**2**) from the pump assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the pump assembly reservoir,
- the pump assembly reservoir bolts.

❑ Torque tighten the **pump assembly reservoir bolts (10 Nm)**.

II - FINAL OPERATION.

❑ Refit the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

D4F, and JA3

Equipment required
Diagnostic tool

Tightening torques ▽	
pump assembly reservoir bolts	**10 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

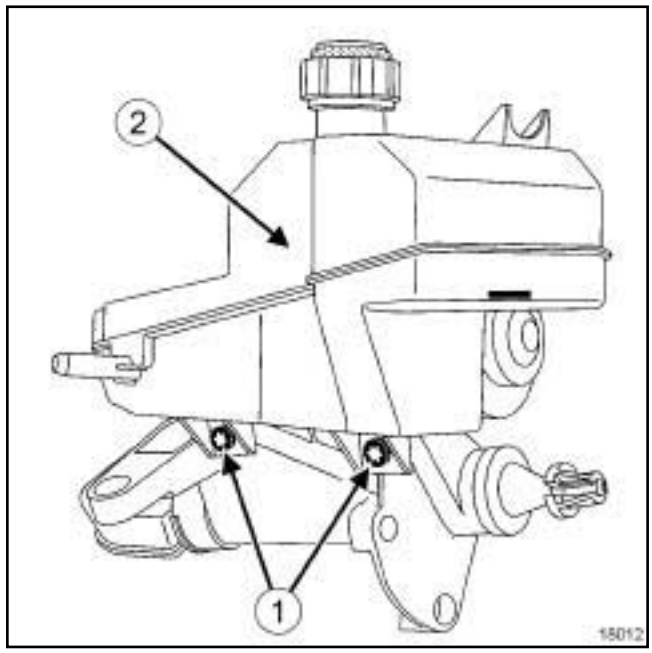
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



18012

❑ Remove:

- the bolts (**1**) from the pump assembly reservoir,
- the reservoir (**2**) from the pump assembly.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the pump assembly reservoir,
- the pump assembly reservoir bolts.

❑ Torque tighten the **pump assembly reservoir bolts (10 Nm)**.

II - FINAL OPERATION.

❑ Refit the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

K9K, and JA5

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

When replacing the electric pump assembly, always replace the control relay.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

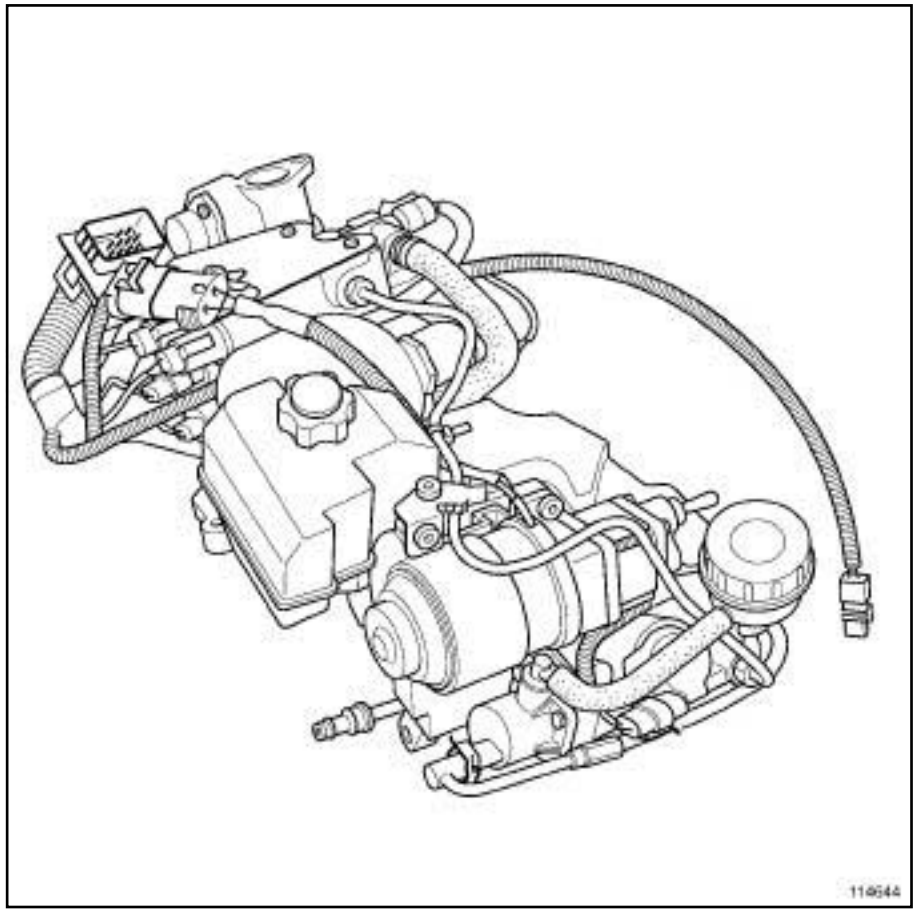
To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

K9K, and JA5



114644

❑

Note:

The electro-hydraulic unit includes the pump assembly and the actuator module.

❑ Remove:

- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) ,
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the electro-hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

II - FINAL OPERATION

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

When replacing the electric pump assembly, always replace the control relay.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

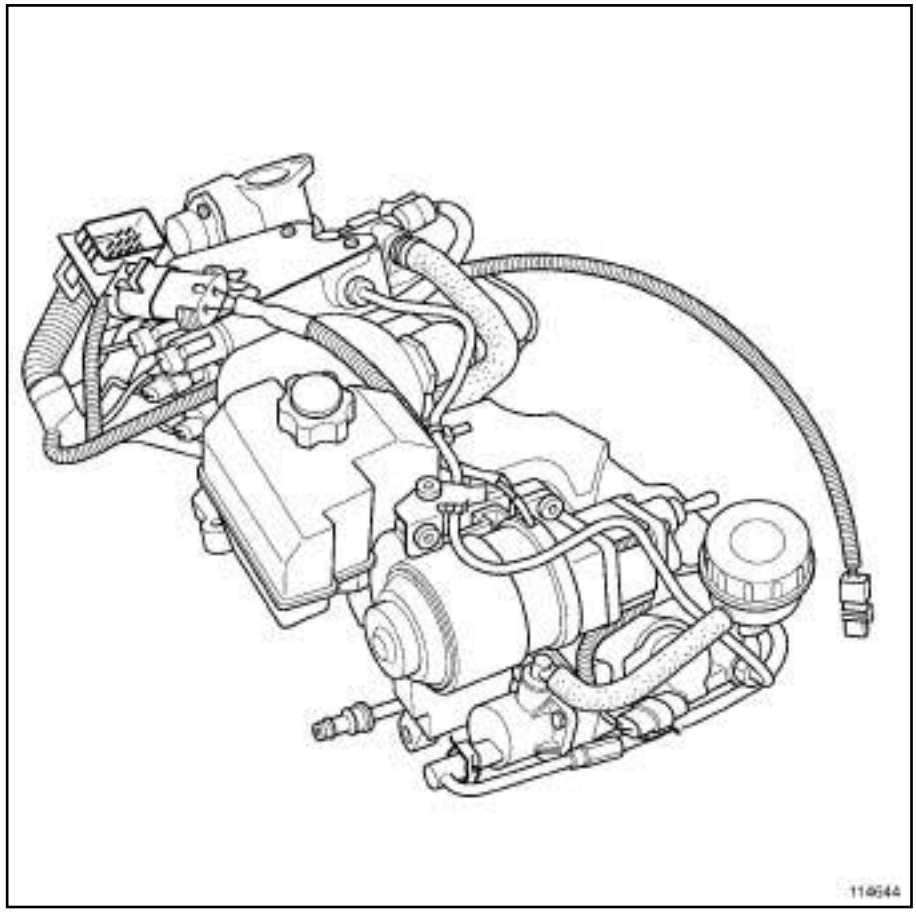
To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

D4F, and JA3



114644

❑

Note:

The electro-hydraulic unit includes the pump assembly and the actuator module.

❑ Remove:

- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) ,
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the electro-hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .

II - FINAL OPERATION

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)

Tightening torques ▽	
pump assembly lower bolts	**24 N.m**
pump assembly upper bolt	**24 N.m**
low pressure pump pipe	**14 N.m**
high pressure pump pipe	**14 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

When replacing the electric pump assembly, always replace the control relay.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

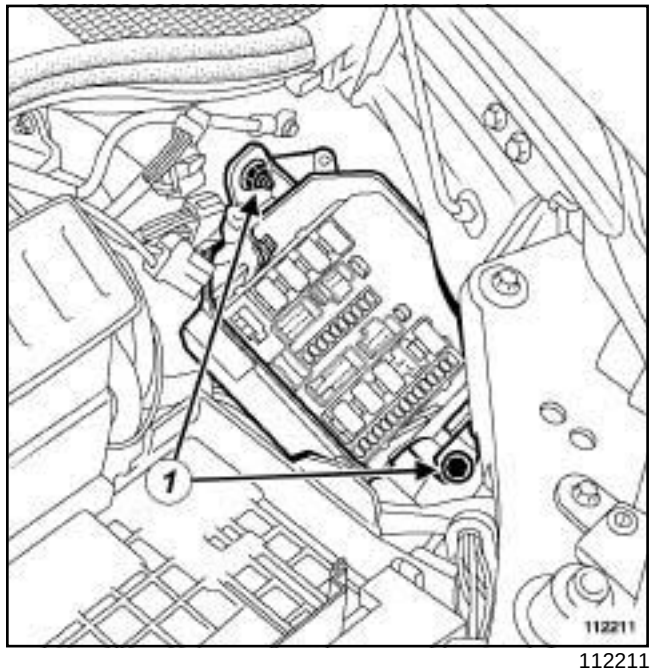
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.



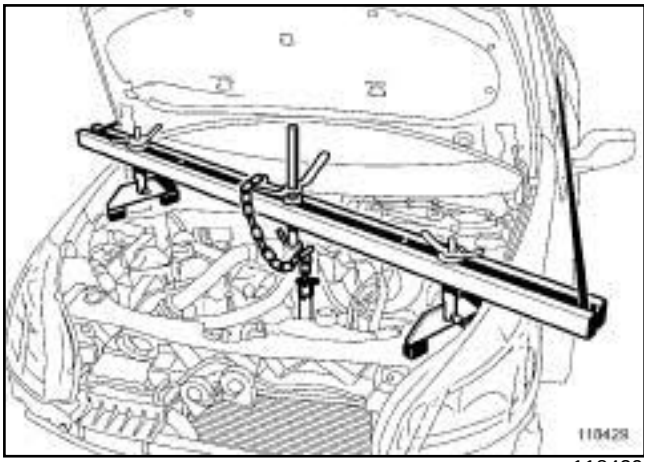
112211

❑ Remove the Protection and Switching Unit bolts (**1**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.

K9K, and JA5

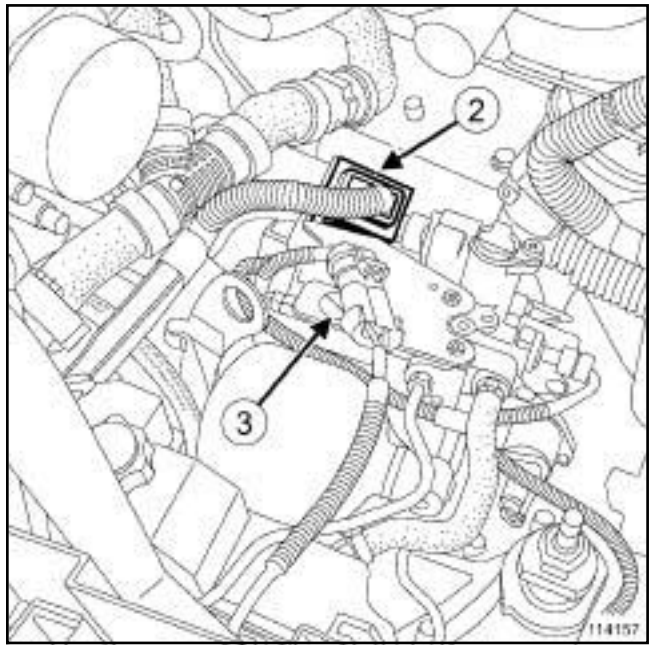


118429

❏ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the engine undertray,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

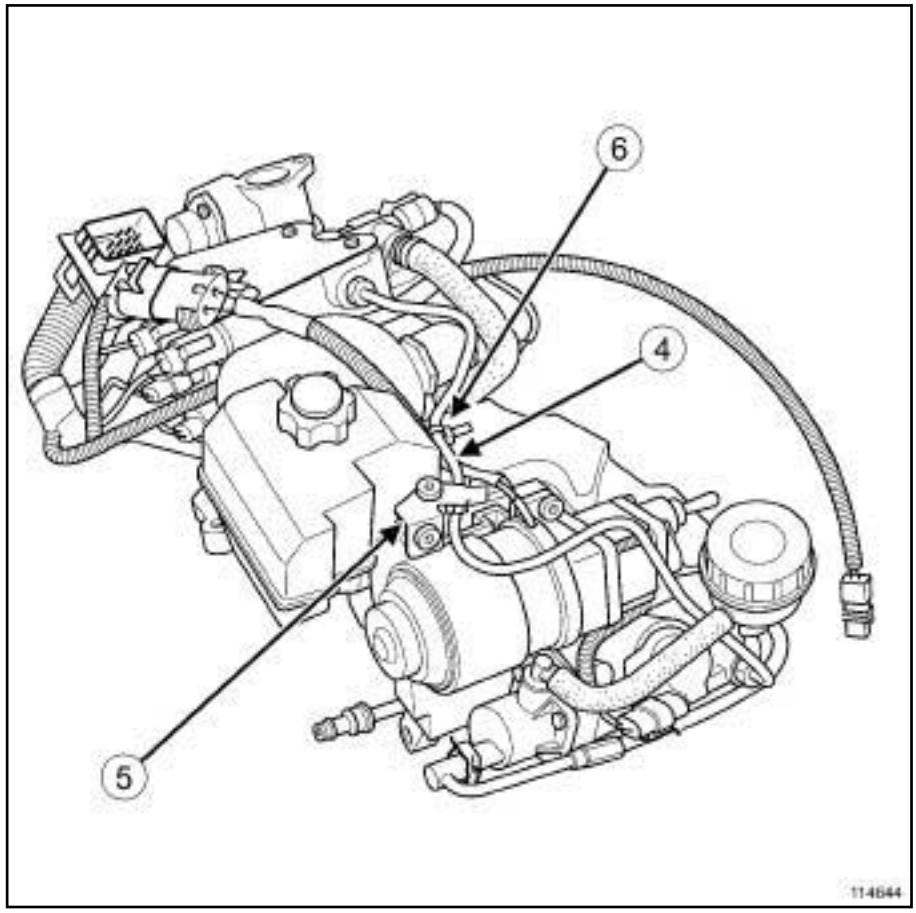


114157

❏ Disconnect:

- the connector (**2**) from the actuator module,
- the connector (**3**) from the pump assembly.

K9K, and JA5



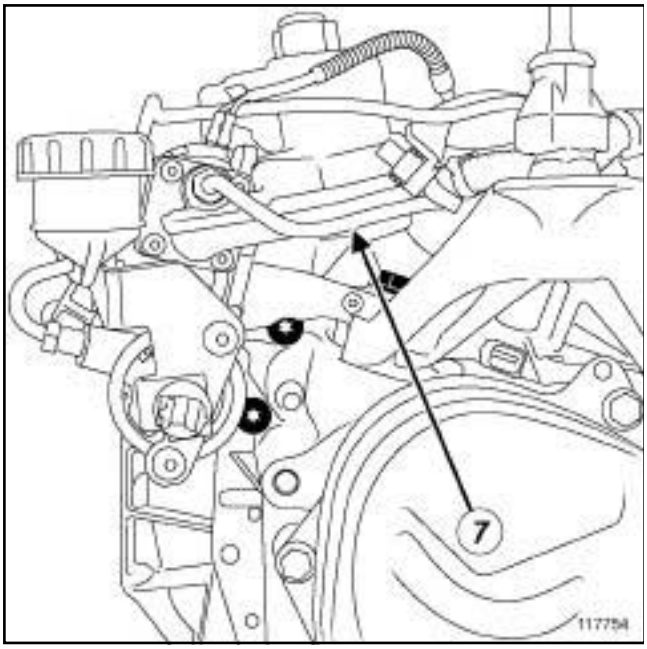
114644

❏ Remove:

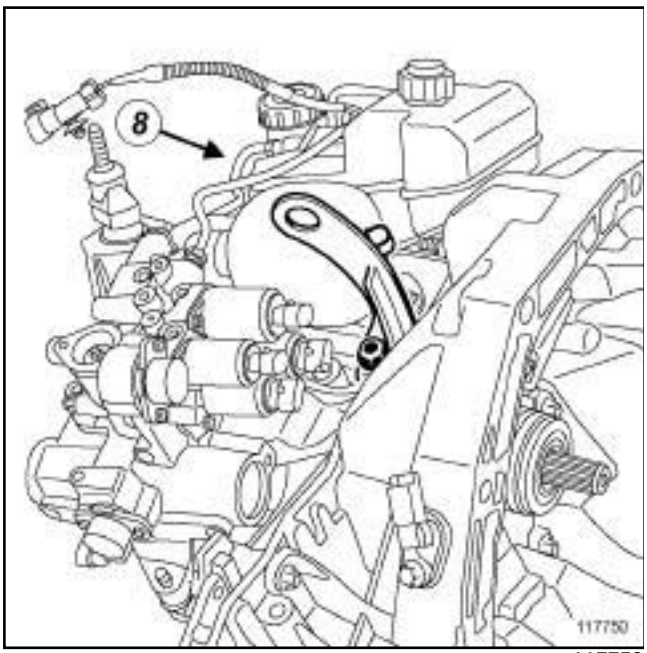
- the clutch pipe (**4**) ,
- the clutch pipe bracket (**5**) .

❏ Cut the clip on the clutch pipe (**6**) .

K9K, and JA5



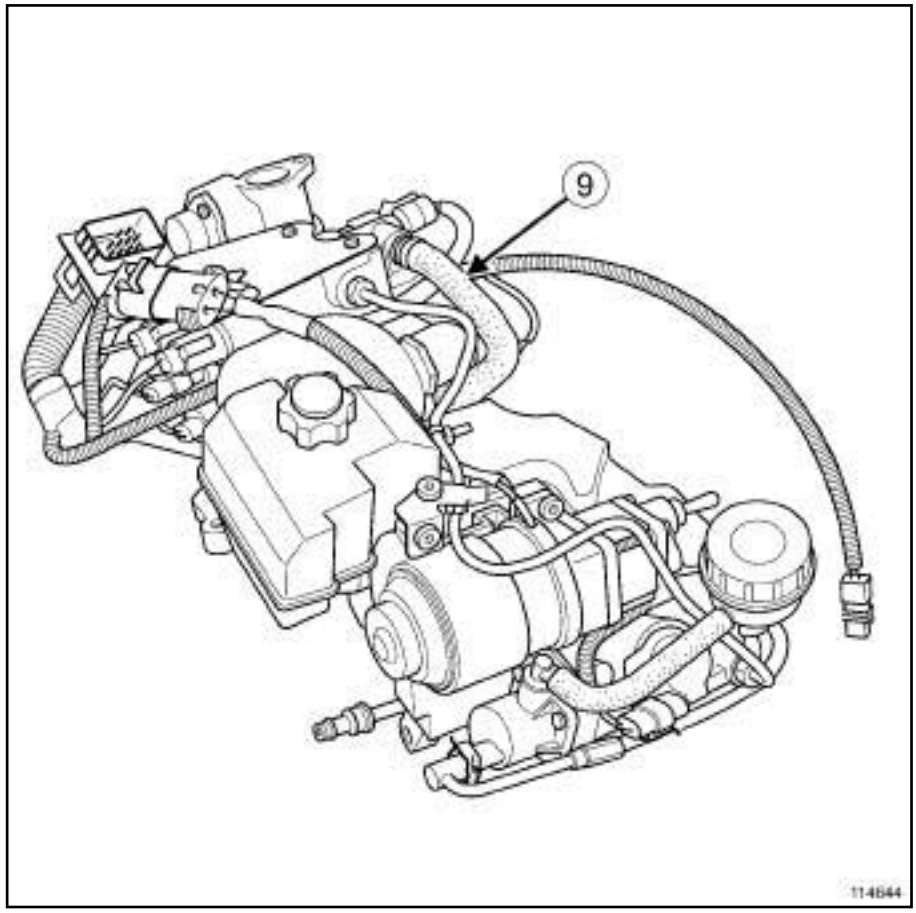
117754



117750

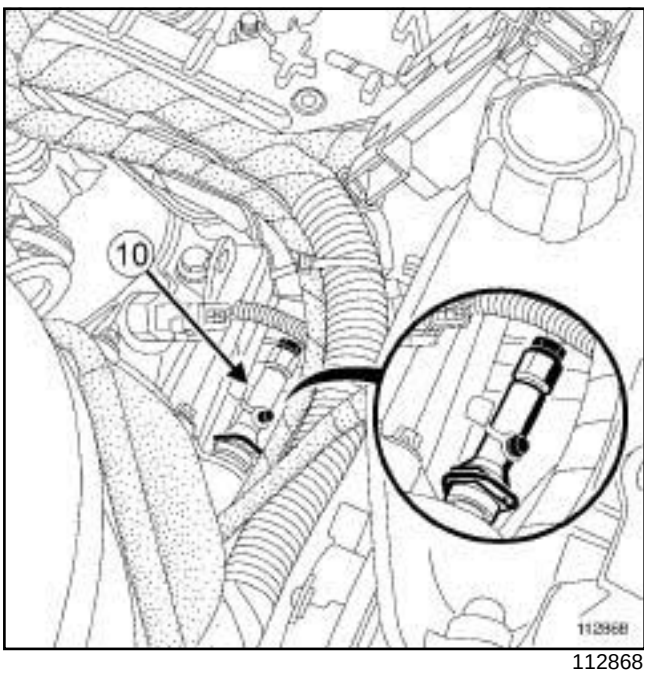
❑ Remove the high pressure pump pipe (**7**) and (**8**) .

K9K, and JA5



114644

❏ Remove the low pressure pump pipe (**9**) .

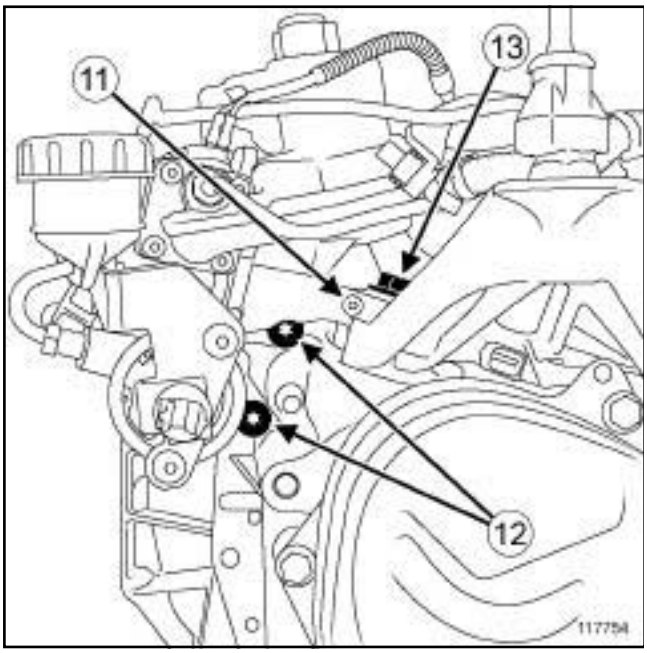


112868

❏ Disconnect the clutch control pipe (**10**) on the hydraulic cylinder by pushing on the clip.

K9K, and JA5

II - OPERATION FOR REMOVAL OF PART CONCERNED



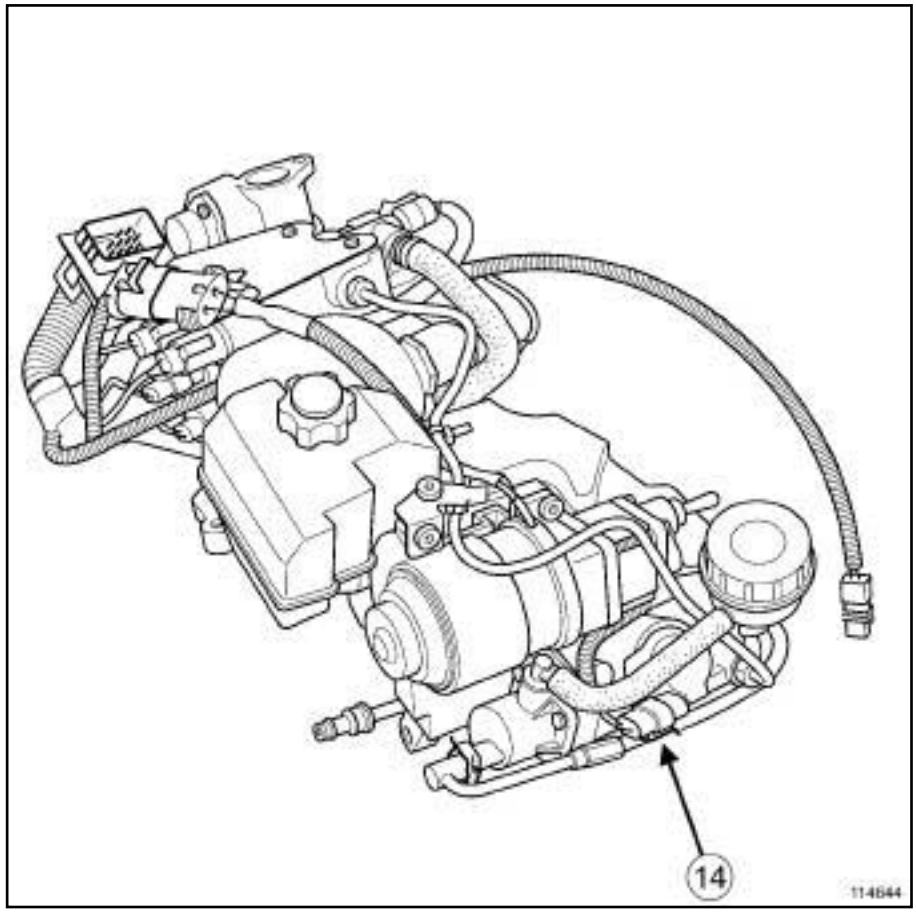
117754

❏ Drain the pump assembly reservoir using a syringe.

❏ Remove:

- the earth strap on the pump assembly (**11**) ,
- the lower bolts from the pump assembly (**12**) ,
- the upper bolt from the pump assembly (**13**) .

K9K, and JA5



114644

❏ Disconnect the connector from the pump assembly (**14**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the pump assembly.

❏ Refit:

- the pump assembly upper bolt,
- the pump assembly lower bolts,
- the earth strap on the pump assembly.

❏ Tighten to torque:

- the **pump assembly lower bolts (24 N.m)**,
- the **pump assembly upper bolt (24 N.m)**.

❏ Connect the clutch control pipe on the hydraulic cylinder.

❏ Refit:

- the low pressure pump pipe,
- the high pressure pump pipe,
- the clutch pipe,
- the clutch pipe bracket,
- a new clip on the clutch pipe.

❏ Tighten to torque:

- the **low pressure pump pipe (14 N.m)**,
- the **high pressure pump pipe (14 N.m)**.

❏ Connect:

- the actuator module connector,
- the pump assembly connector.

❏ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❏ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❏ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,

- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the electrohydraulic unit connector.

❏ Fill the oil reservoir (see **21B**, **Sequential gearbox**, **Sequential gearbox oil: Specifications**, page **21B-82**) (Technical Note 6012, 04A, Lubricants) to between **32 and 38 mm** above the **MIN** mark.

❏ Refit:

- the Protection and Switching Unit,
- the wiring harness under the injection computer,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

II - FINAL OPERATION

❏ Perform the following operations:

- bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**) ,
- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING
After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)

Tightening torques ▽	
pump assembly lower bolts	**24 N.m**
pump assembly upper bolt	**24 N.m**
low pressure pump pipe	**14 N.m**
high pressure pump pipe	**14 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

When replacing the electric pump assembly, always replace the control relay.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

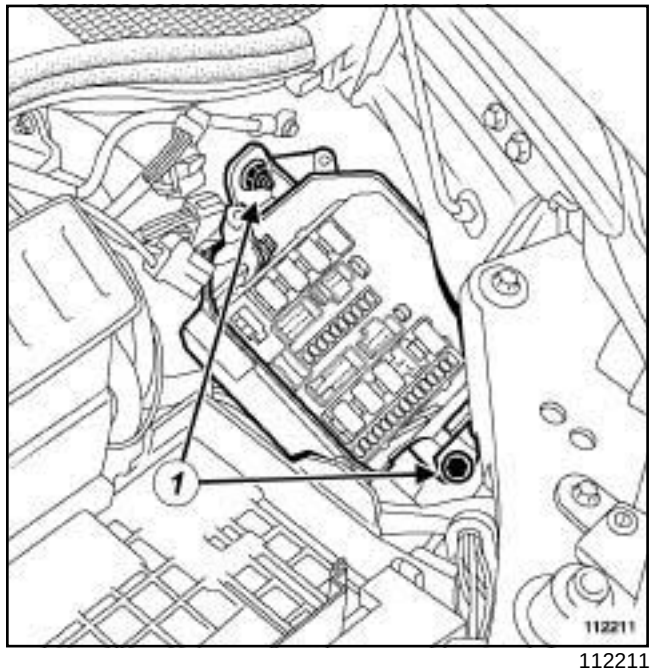
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.



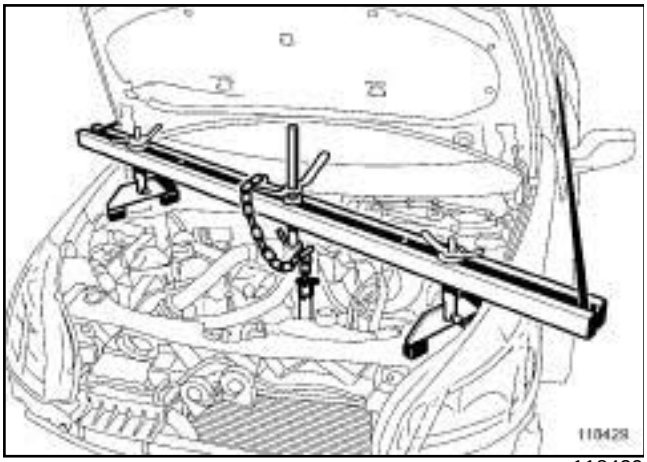
112211

❑ Remove the Protection and Switching Unit bolts (**1**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.

D4F, and JA3

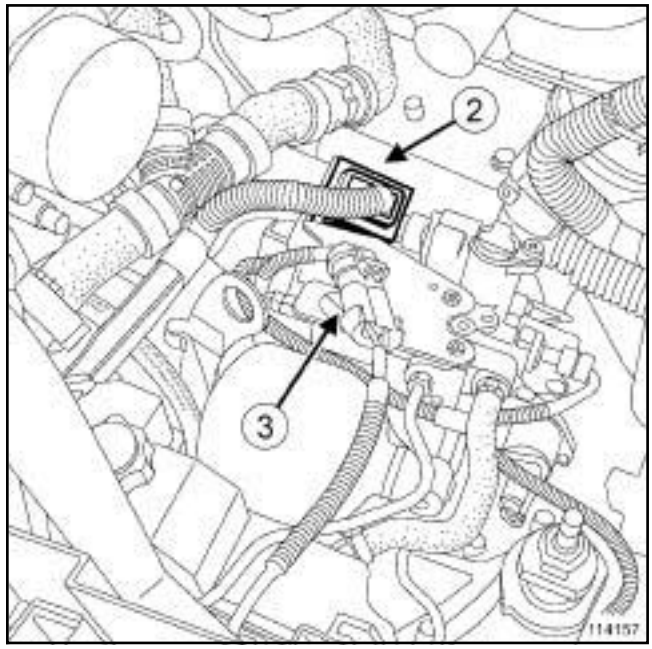


118429

❏ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the engine undertray,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

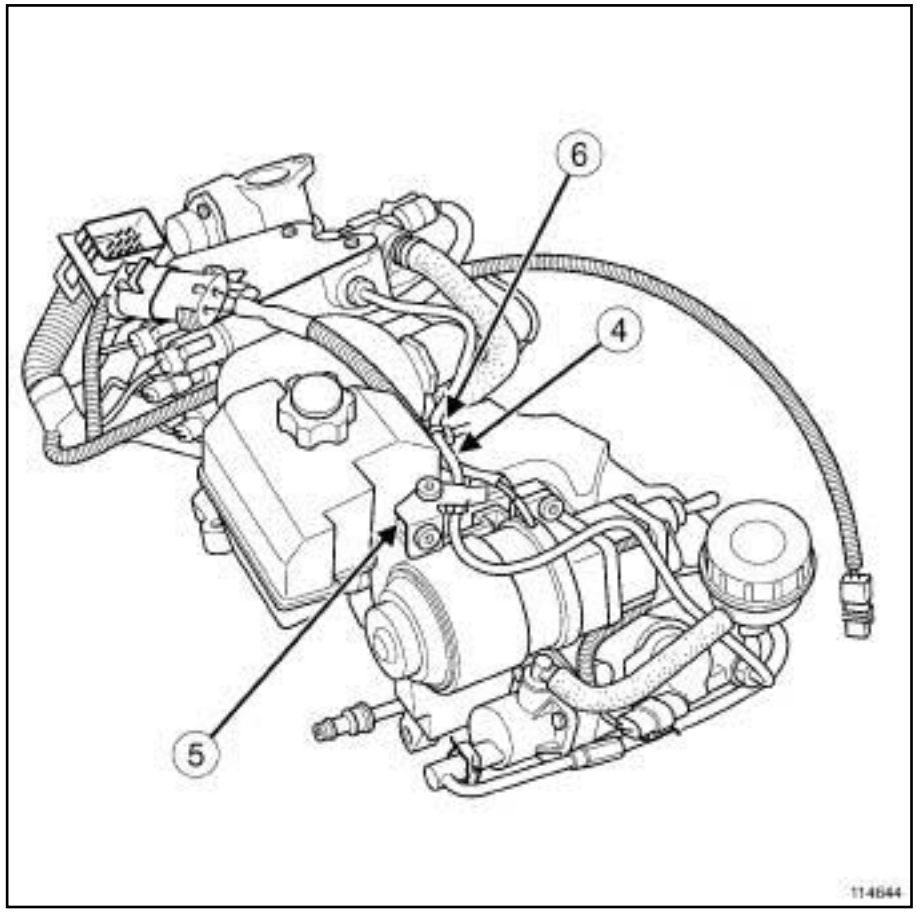


114157

❏ Disconnect:

- the connector (**2**) from the actuator module,
- the connector (**3**) from the pump assembly.

D4F, and JA3



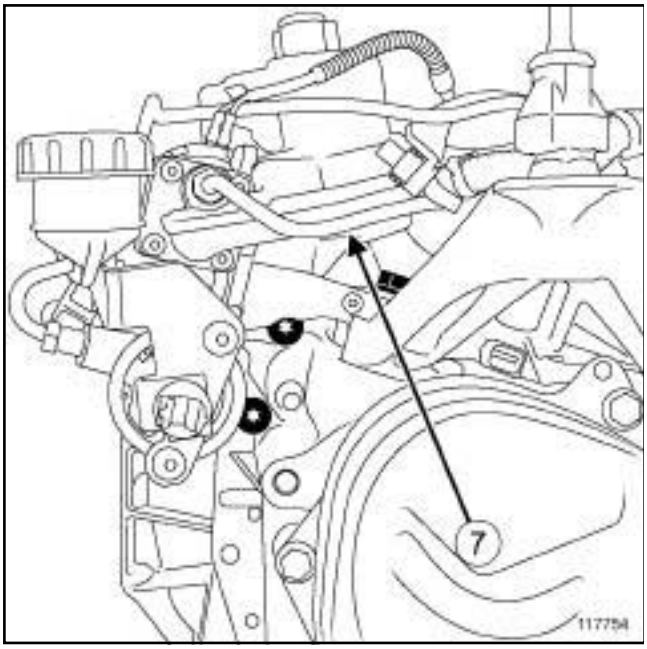
114644

❏ Remove:

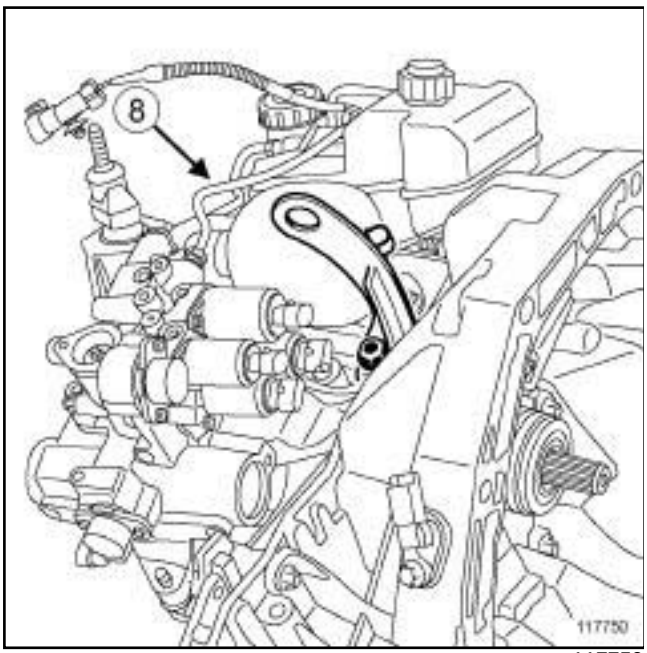
- the clutch pipe (**4**) ,
- the clutch pipe bracket (**5**) .

❏ Cut the clip on the clutch pipe (**6**) .

D4F, and JA3



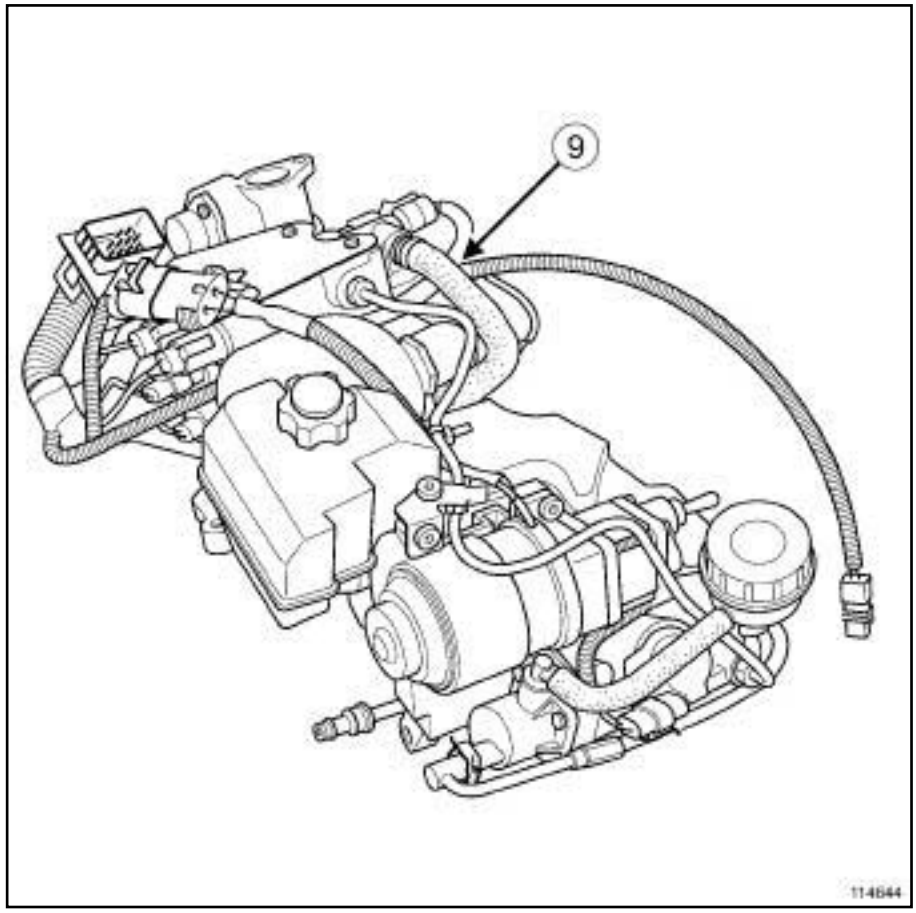
117754



117750

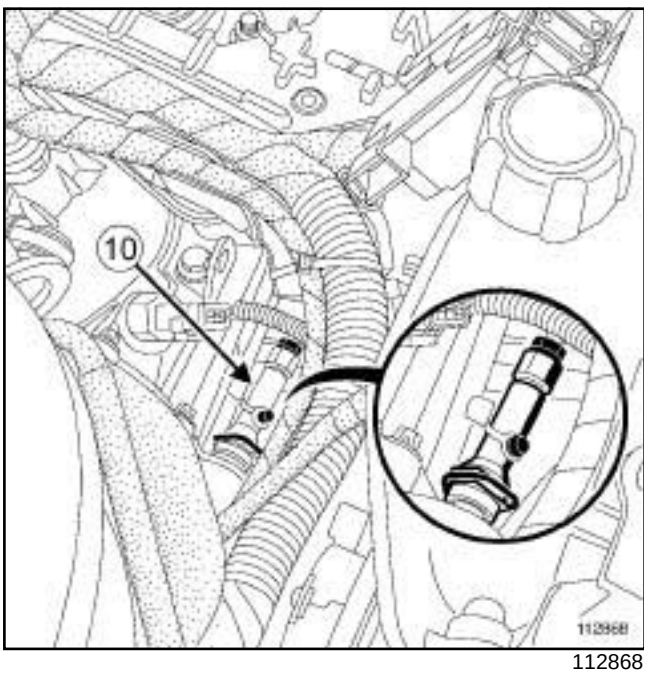
❑ Remove the high pressure pump pipe (**7**) and (**8**) .

D4F, and JA3



114644

❏ Remove the low pressure pump pipe (**9**) .

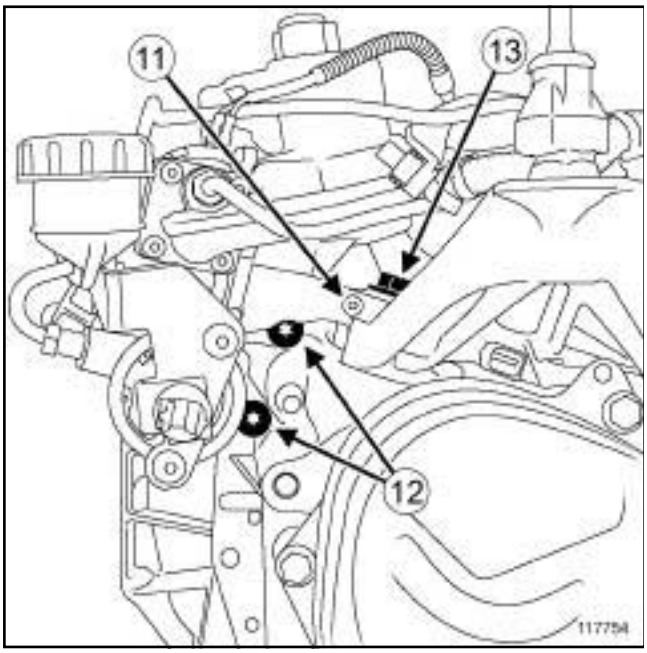


112868

❏ Disconnect the clutch control pipe (**10**) on the hydraulic cylinder by pushing on the clip.

D4F, and JA3

II - OPERATION FOR REMOVAL OF PART CONCERNED



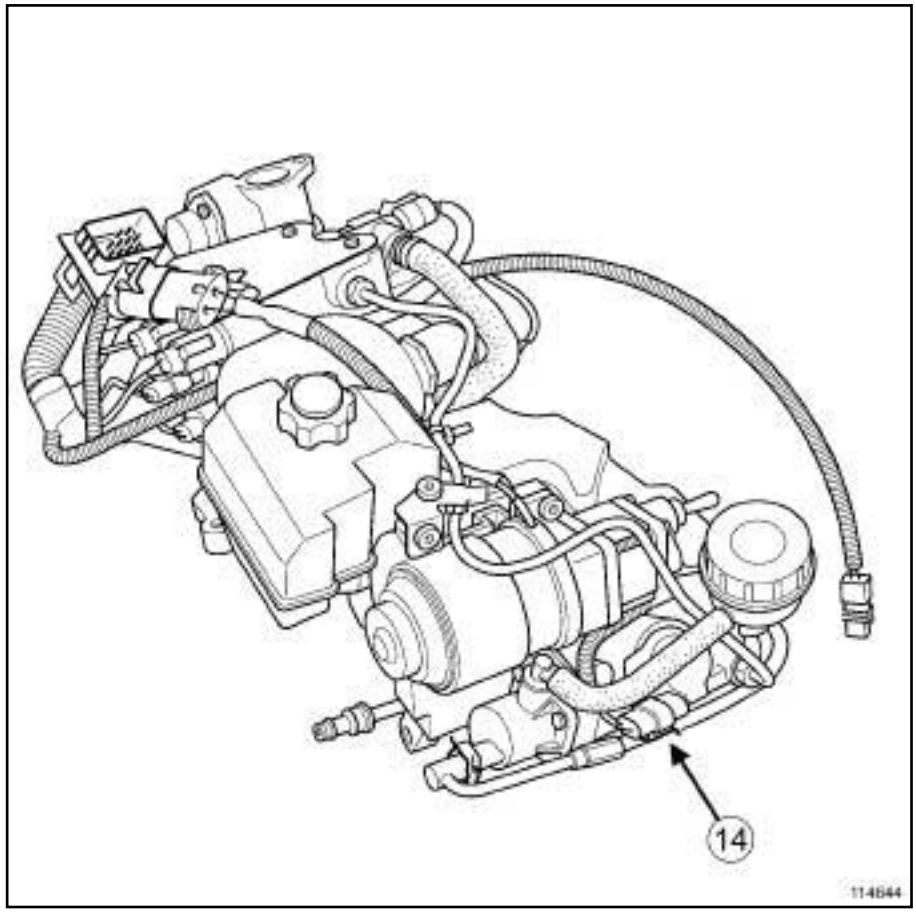
117754

❏ Drain the pump assembly reservoir using a syringe.

❏ Remove:

- the earth strap on the pump assembly (**11**) ,
- the lower bolts from the pump assembly (**12**) ,
- the upper bolt from the pump assembly (**13**) .

D4F, and JA3



114644

❏ Disconnect the connector from the pump assembly (**14**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the pump assembly.

❏ Refit:

- the pump assembly upper bolt,
- the pump assembly lower bolts,
- the earth strap on the pump assembly.

❏ Tighten to torque:

- the **pump assembly lower bolts (24 N.m)**,
- the **pump assembly upper bolt (24 N.m)**.

❏ Connect the clutch control pipe on the hydraulic cylinder.

❏ Refit:

- the low pressure pump pipe,
- the high pressure pump pipe,
- the clutch pipe,
- the clutch pipe bracket,
- a new clip on the clutch pipe.

❏ Tighten to torque:

- the **low pressure pump pipe (14 N.m)**,
- the **high pressure pump pipe (14 N.m)**.

❏ Connect:

- the actuator module connector,
- the pump assembly connector.

❏ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❏ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❏ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,

D4F, and JA3

- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the electrohydraulic unit connector.

❏ Fill the oil reservoir (see **21B**, **Sequential gearbox**, **Sequential gearbox oil: Specifications**, page **21B-82**) (Technical Note 6012, 04A, Lubricants) to between **32 and 38 mm** above the **MIN** mark.

❏ Refit:

- the Protection and Switching Unit,
- the wiring harness under the injection computer,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray.

II - FINAL OPERATION

❏ Perform the following operations:

- bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**)
- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING
After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Equipment required
Diagnostic tool

Tightening torques ▽	
solenoid valve bolts	**4 N.m**
bracket bolts on the actuator module	**4 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

Before removing the solenoid valves, always mark their respective connectors in order not to mix them up.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

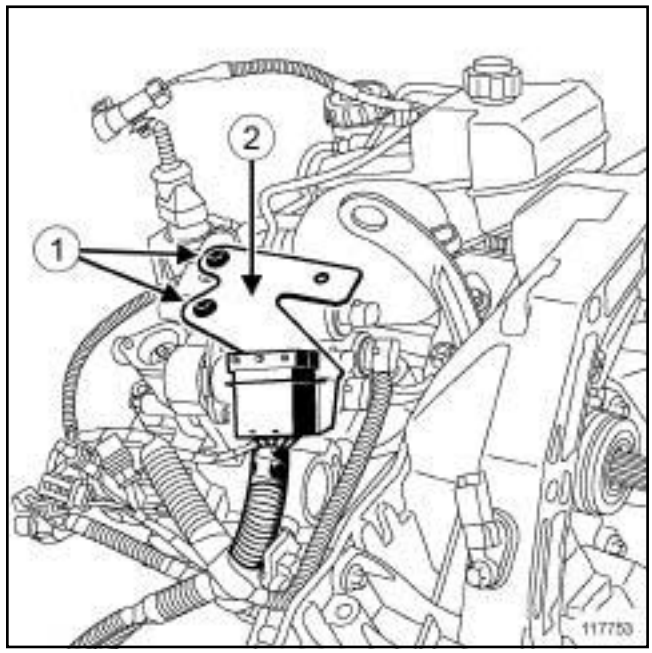
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

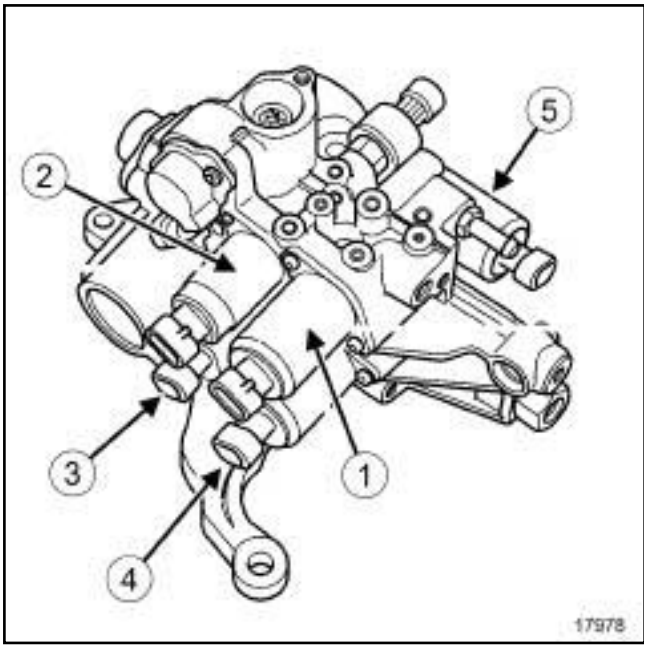


117753

❑ Remove:

- the bracket bolts on the actuator module (**1**) ,
- the actuator module bracket (**2**) .

K9K, and JA5



17978

❑ Remove the solenoid valve affected, following the correct removal order for the solenoid valves:

- (**1**) Clutch solenoid valve
- (**2**) Selection solenoid valve 4
- (**3**) Selection solenoid valve 3
- (**4**) Engagement solenoid valve 1

Note:

Remove engagement solenoid valve 2 (**5**) independently of the other solenoid valves.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Refit the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the solenoid valve affected,
- the bolts from the solenoid valve,
- the actuator module bracket.

❑ Tighten to torque:

- the **solenoid valve bolts (4 N.m)**,
- the **bracket bolts on the actuator module (4 N.m)**.

III - FINAL OPERATION

❑ Perform the following operations:

- bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**)
- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Equipment required
Diagnostic tool

Tightening torques ▽	
solenoid valve bolts	**4 N.m**
bracket bolts on the actuator module	**4 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

Before removing the solenoid valves, always mark their respective connectors in order not to mix them up.

IMPORTANT

Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

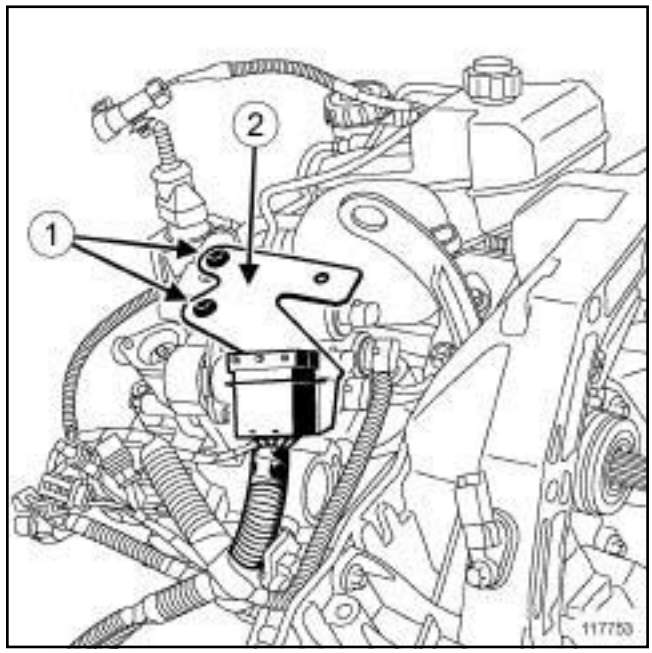
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

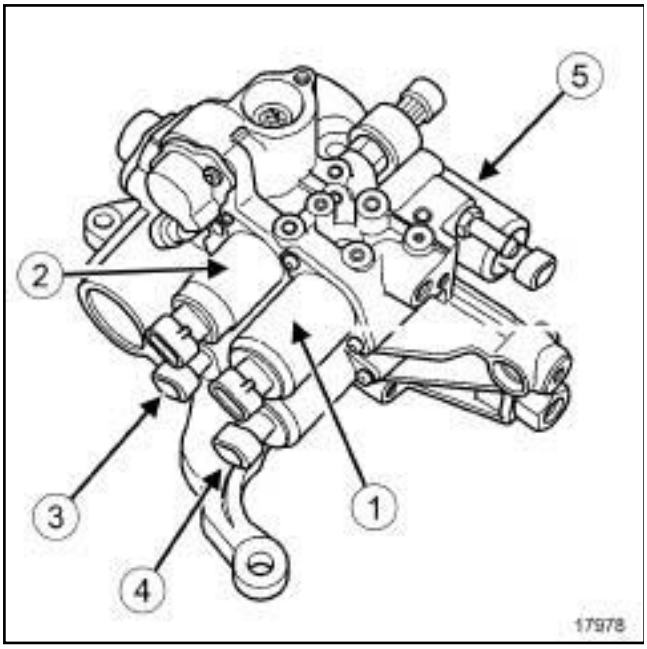


117753

❑ Remove:

- the bracket bolts on the actuator module (**1**) ,
- the actuator module bracket (**2**) .

D4F, and JA3



17978

❑ Remove the solenoid valve affected, following the correct removal order for the solenoid valves:

- (**1**) Clutch solenoid valve
- (**2**) Selection solenoid valve 4
- (**3**) Selection solenoid valve 3
- (**4**) Engagement solenoid valve 1

Note:

Remove engagement solenoid valve 2 (**5**) independently of the other solenoid valves.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Refit the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the solenoid valve affected,
- the bolts from the solenoid valve,
- the actuator module bracket.

❑ Tighten to torque:

- the **solenoid valve bolts (4 N.m)**,
- the **bracket bolts on the actuator module (4 N.m)**.

III - FINAL OPERATION

❑ Perform the following operations:

- bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**)
- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Tightening torques ▽	
engagement sensor bolts	4 Nm

REMOVAL

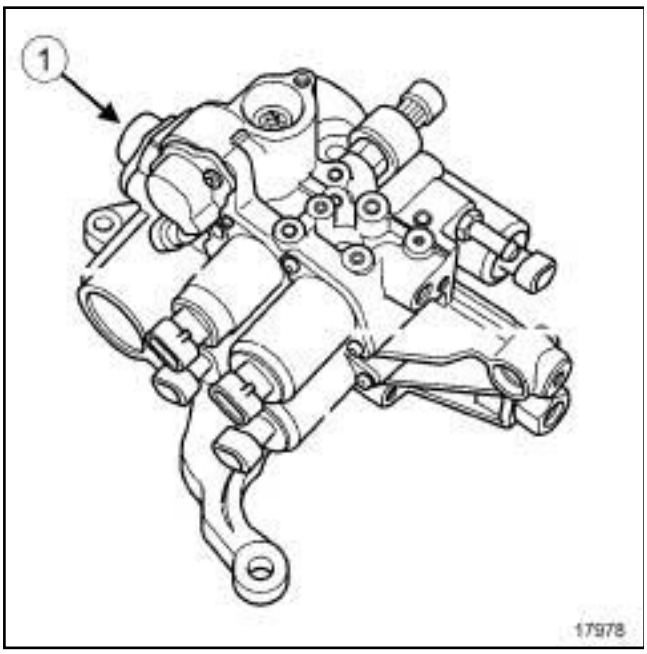
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

II - OPERATION FOR REMOVAL OF PART CONCERNED



17978

❏ Disconnect the engagement sensor connector.

❏ Remove:

- the engagement sensor bolts,

- the engagement sensor (**1**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the engagement sensor,

- the engagement sensor bolts.

❏ Tighten to torque the **engagement sensor bolts (4 Nm)**.

❏ Connect the engagement sensor connector.

II - FINAL OPERATION.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Tightening torques ▽	
engagement sensor bolts	4 Nm

REMOVAL

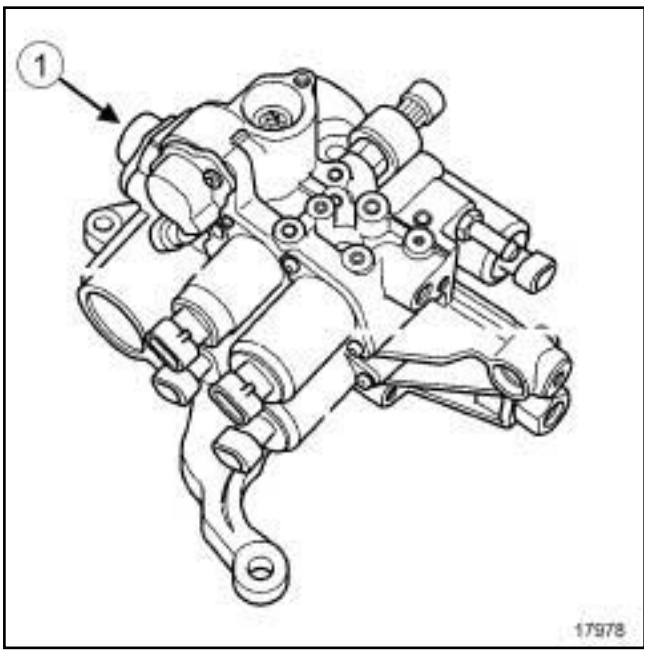
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

II - OPERATION FOR REMOVAL OF PART CONCERNED



17978

❏ Disconnect the engagement sensor connector.

❏ Remove:

- the engagement sensor bolts,
- the engagement sensor (**1**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the engagement sensor,
- the engagement sensor bolts.

❏ Tighten to torque the **engagement sensor bolts (4 Nm)**.

❏ Connect the engagement sensor connector.

II - FINAL OPERATION.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING
After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

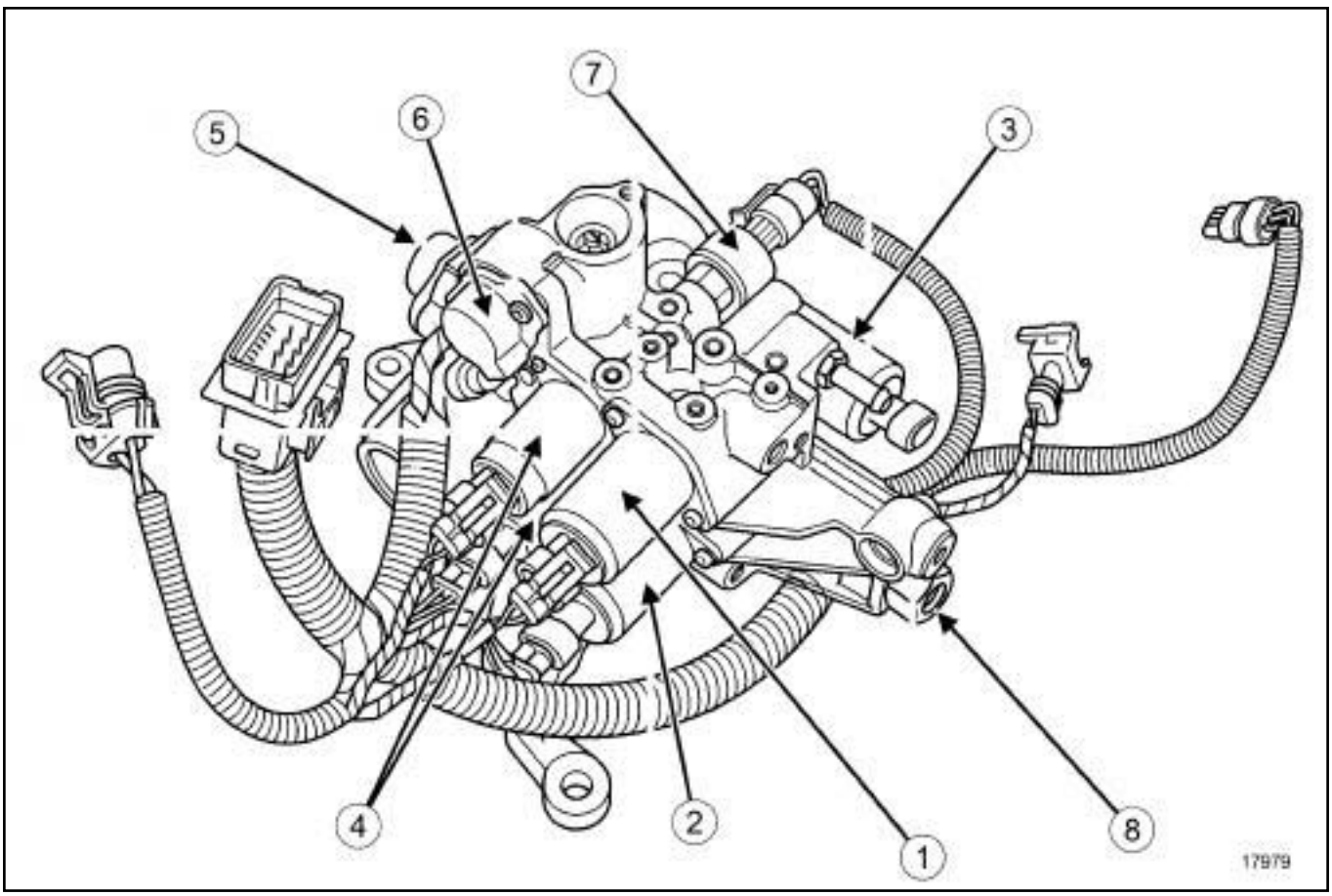
K9K, and JA5

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)

Tightening torques ▽	
clutch pipe nuts	**14 Nm**
high pressure pump pipe nuts	**14 Nm**
gearbox mounting nut	**21 Nm**

Tightening torques ▽	
actuator module nuts	**24 Nm**
bolts mounting the left-hand suspended mounting on the gearbox	**62 Nm**
stud mounting the left-hand suspended mounting on the gearbox (if it has been changed)	**180 Nm**
bolts mounting the left-hand suspended mounting on the body	**62 Nm**
gearbox left-hand rubber pad nut	**62 Nm**



17979

(**1**) Clutch solenoid valve

(**2**) Gear engagement solenoid valve

(**18**) Gear engagement solenoid valve

(**4**) Selection solenoid valve

(**5**) Engagement sensor

(**20**) Gear selection sensor

(**7**) Solenoid valve unit pressure sensor

(**8**) High pressure filter

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

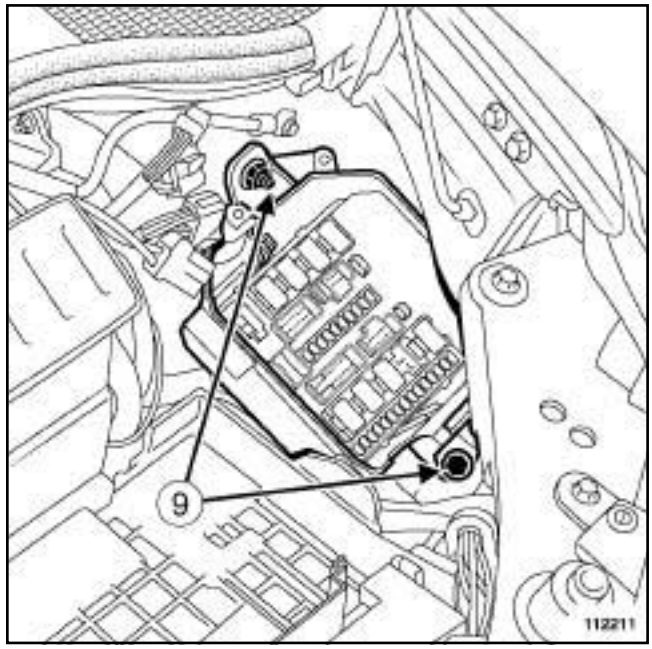
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.

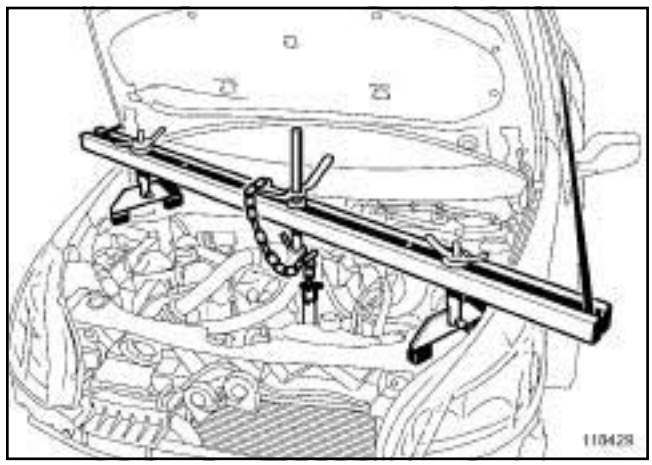


112211

❑ Remove the Protection and Switching Unit (**9**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.



118429

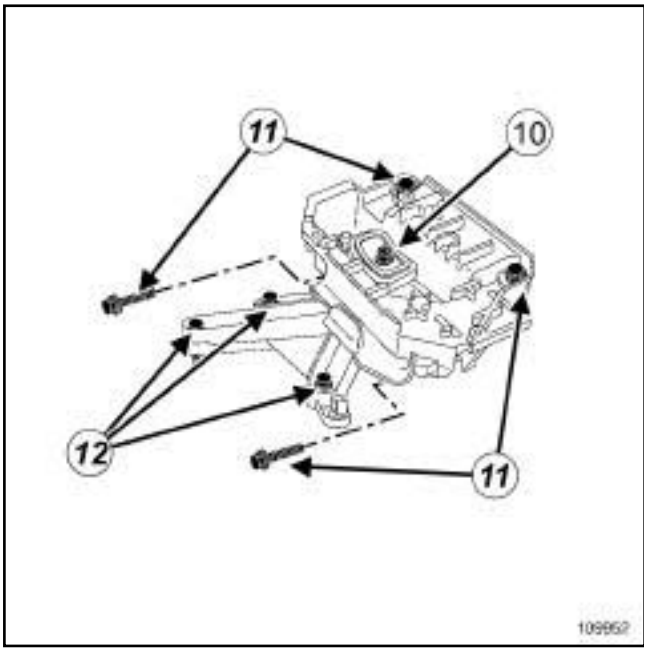
❑ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,

K9K, and JA5

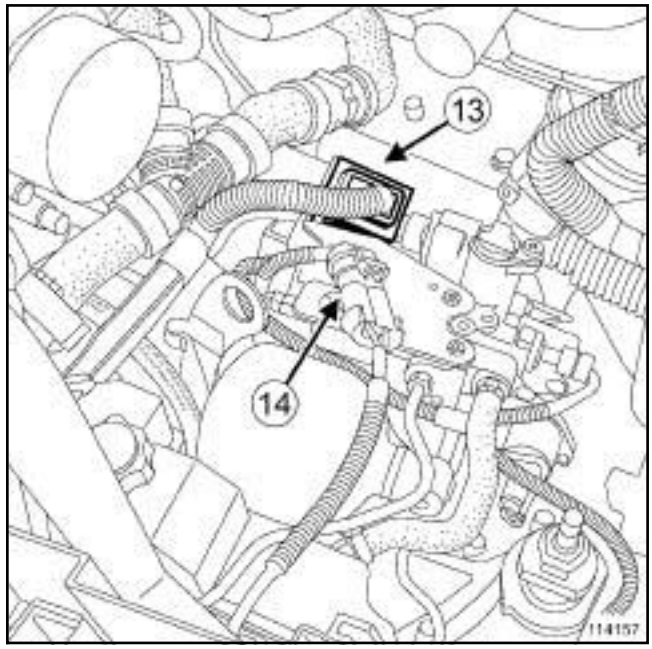
- the engine undertray.



109952

❏ Remove:

- the nut (**10**) from the gearbox left-hand rubber pad,
- the bolts (**11**) from the left-hand suspended mounting on the body,
- the left-hand suspended mounting from the body,
- the bolts (**12**) from the gearbox left-hand suspended mounting,
- the gearbox left-hand suspended mounting.

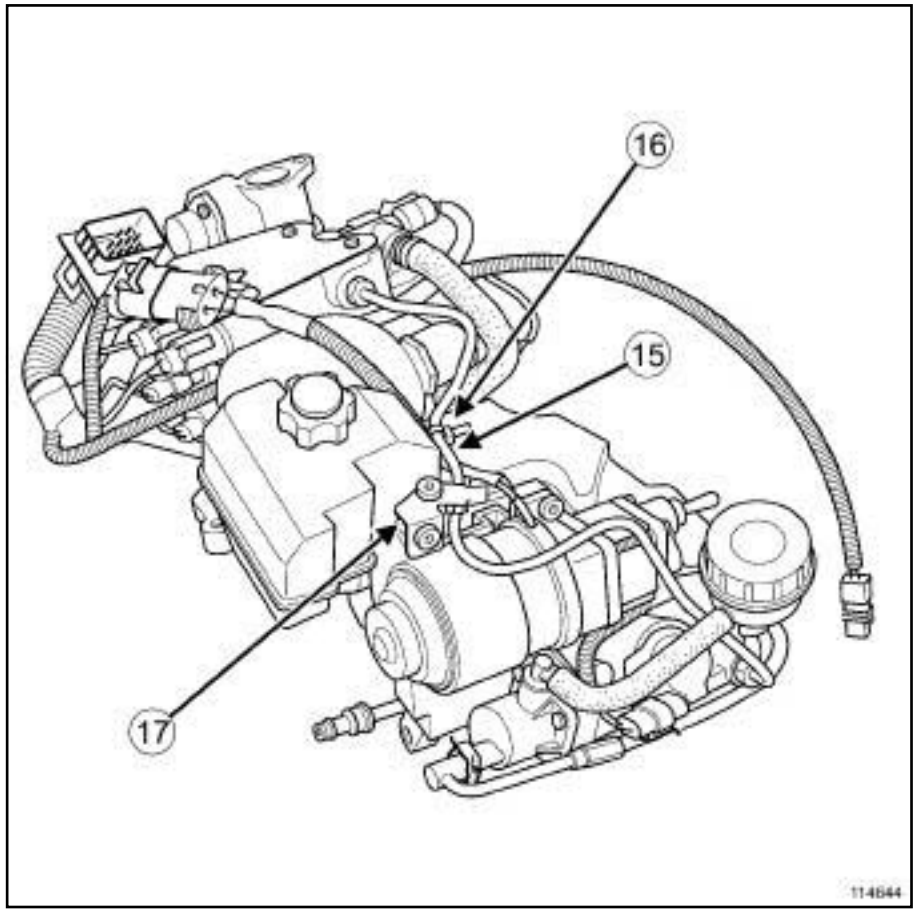


114157

❏ Disconnect:

- the connector from the actuator module (**13**) ,
- the connector from the pump assembly (**14**) .

K9K, and JA5



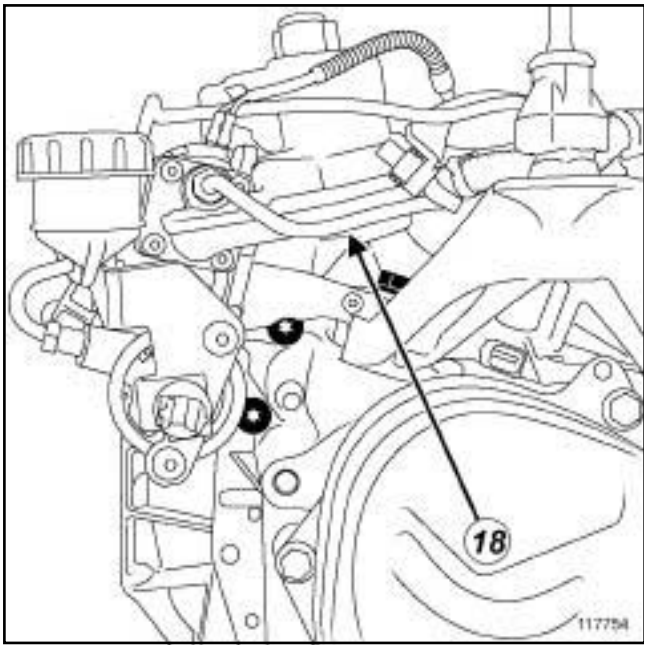
114644

❏ Remove:

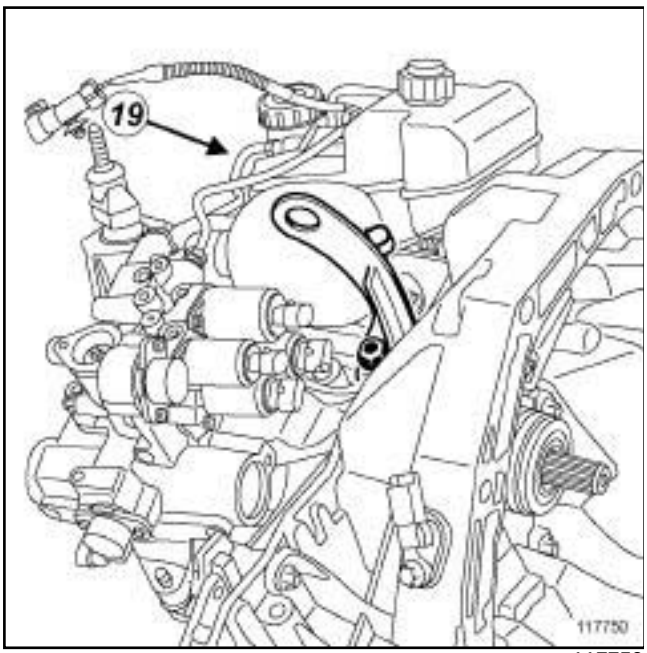
- the clutch pipe (**15**) ,
- the clutch pipe bracket (**16**) .

❏ Cut the clip on the clutch pipe (**17**) .

K9K, and JA5



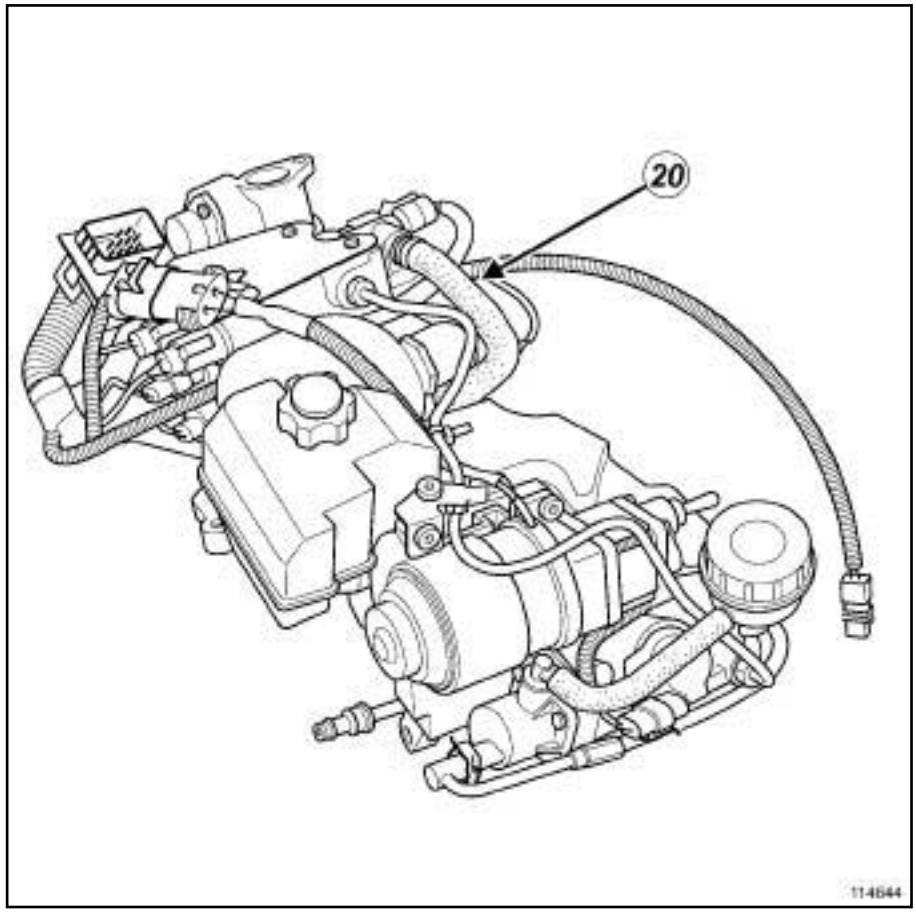
117754



117750

❑ Remove the high pressure pump pipes (**18**) and (**20**) .

K9K, and JA5



114644

❑ Remove the low pressure pump pipe (**20**) .

Note:

To avoid any sequential gearbox malfunction, mark the routing for the solenoid valve and sensor wiring on the actuator module.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

Note:

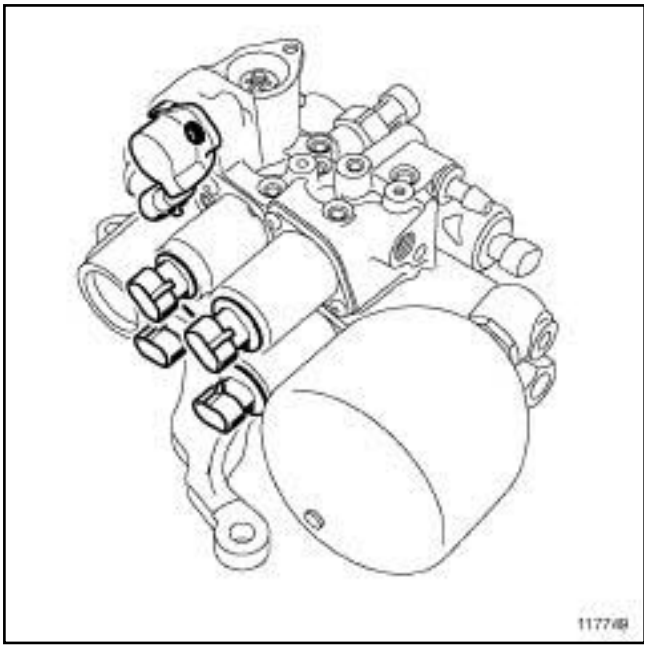
The actuator module can be removed or refitted with the pressure accumulator in place.

❑ Remove:

- the lifting eye on the gearbox,
- the nuts from the actuator module.

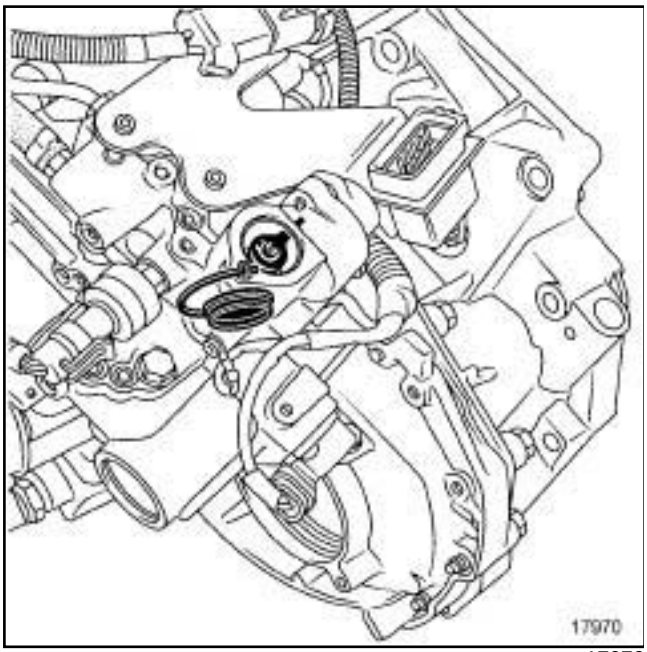
K9K, and JA5

Actuator module



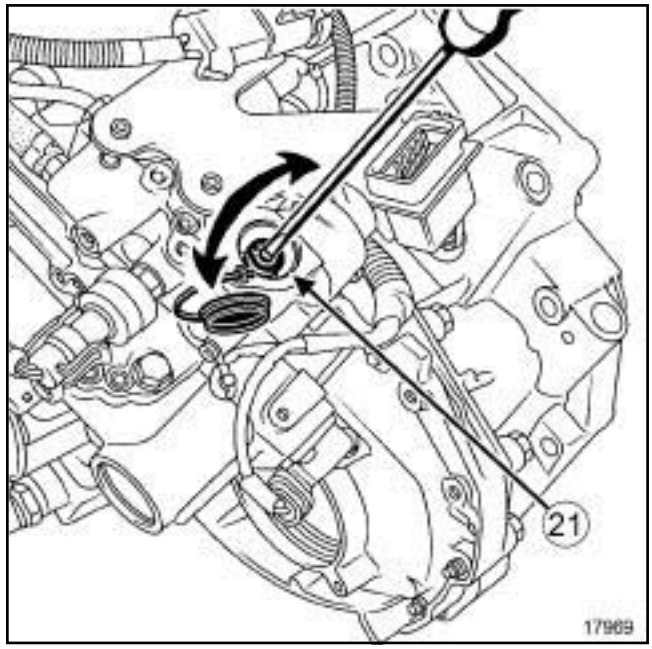
117749

Selector shaft locked



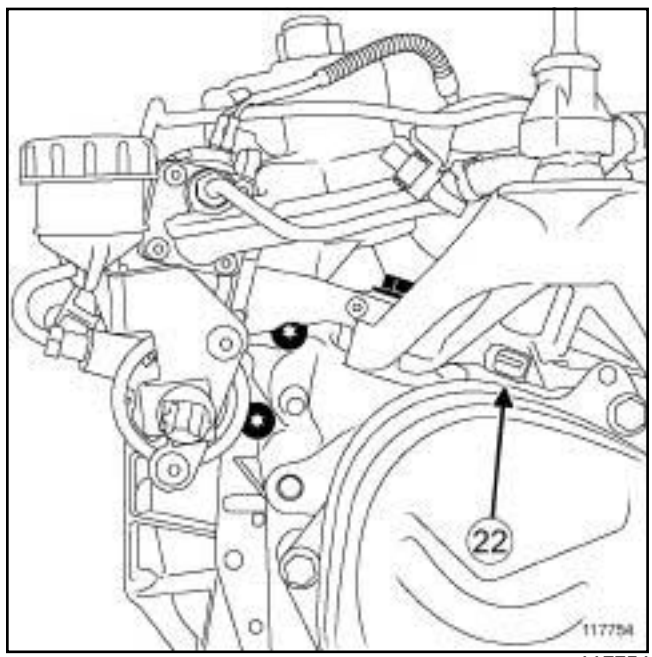
17970

Selector shaft unlocked



17969

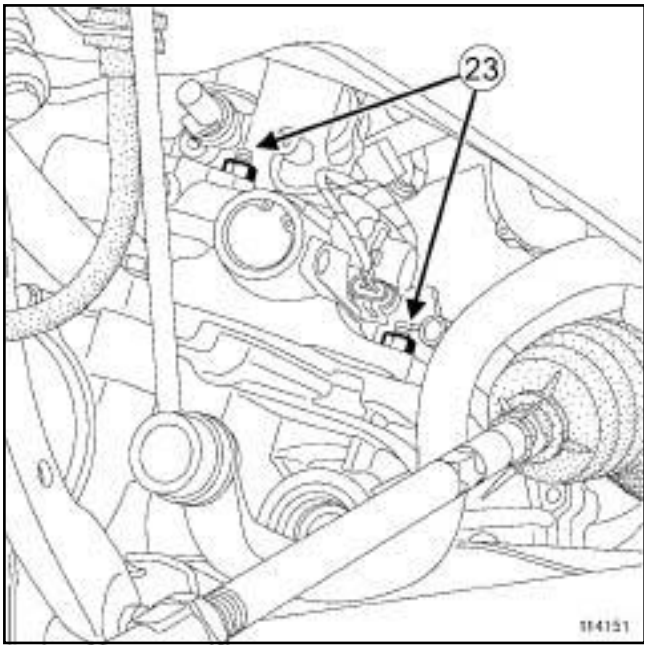
❏ Unlock the gear selector shaft (**21**) by turning the shaft by a quarter of a turn using a screwdriver.



117754

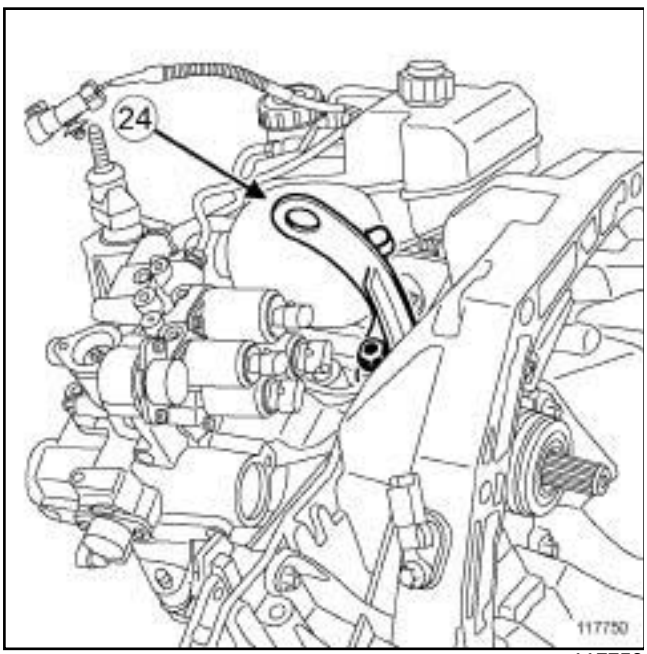
❏ Disconnect the sequential gearbox sensor connector (**22**) .

K9K, and JA5



114151

❏ Remove the nuts (**23**) from the electro-hydraulic unit.



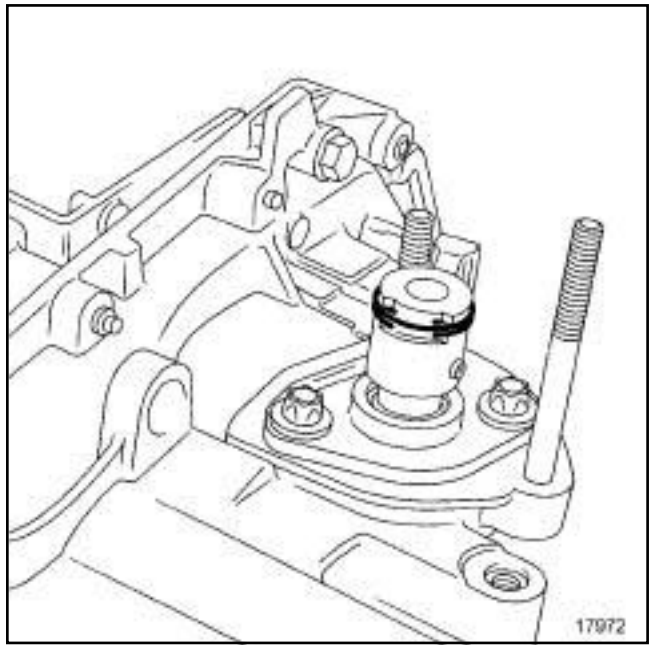
117750

❏ Remove:

- the lifting eye nut on the actuator module,
- the lifting eye (**24**) on the actuator module,
- the actuator module.

I - REFITTING PREPARATIONS OPERATION

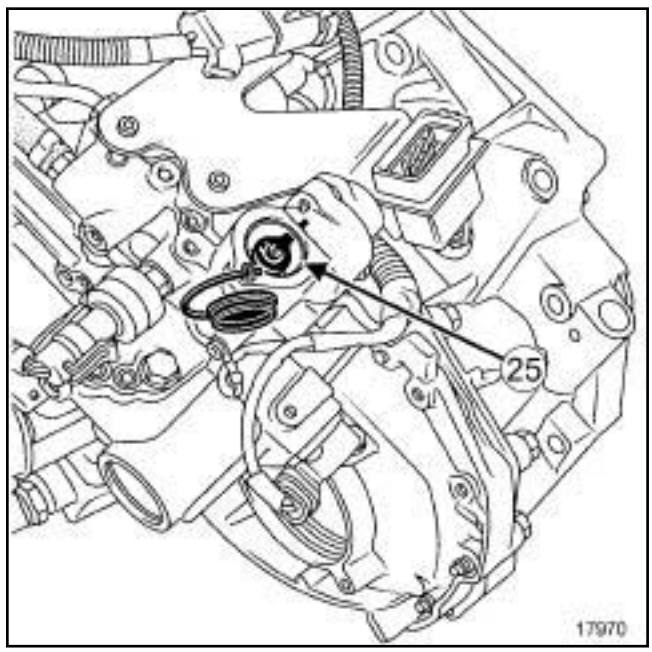
❏ Check that the two half-moons are positioned correctly.



17972

❏ Position the two half-moons and the circlips in the selector shaft neck.

❏ Coat the two half-moons and the selector finger with **MOLYCOTE**.



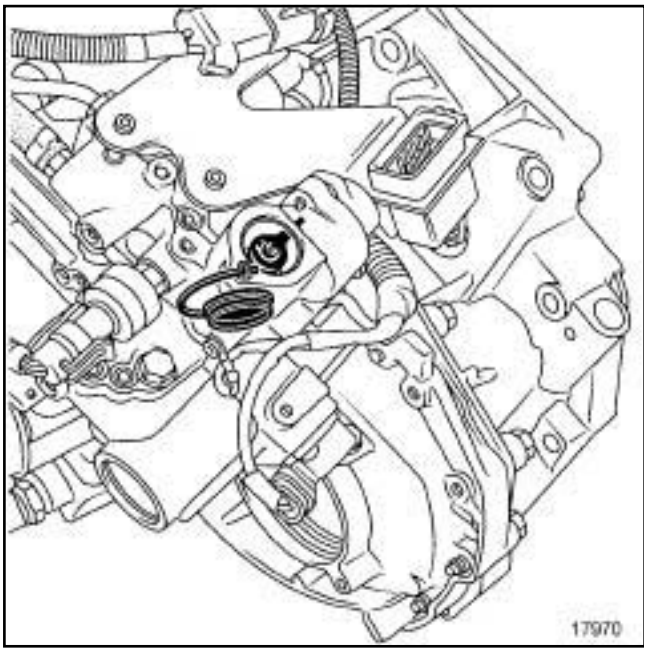
17970

❏ Lock the selector shaft (**25**) .

❏ Position the flat seal.

K9K, and JA5

II - REFITTING OPERATION FOR PART CONCERNED



17970

❏ Using a screwdriver, press on the selector shaft to clip it onto the actuator module.

❏ Refit:

- the low pressure pump pipe,
- the high pressure pump pipe,
- the clutch pipe,
- the clutch pipe bracket,
- a new clip on the clutch pipe,
- the nuts from the actuator module.

❏ Without tightening, fit:

- the clutch pipe nuts,
- the high pressure pump pipe nuts.

❏ Torque tighten:

- the **clutch pipe nuts (14 Nm)**,
- the **high pressure pump pipe nuts (14 Nm)**,
- the **gearbox mounting nut (21 Nm)**,
- the **actuator module nuts (24 Nm)**.

❏ Connect the sequential gearbox speed sensor connector.

❏ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❏ Reposition the left-hand suspended mounting on the gearbox.

❏ Refit the bolts mounting the left-hand suspended mounting on the gearbox.

❏ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the gearbox (62 Nm)**,
- the **stud mounting the left-hand suspended mounting on the gearbox (if it has been changed) (180 Nm)**

❏ Reposition the left-hand suspended mounting on the body.

❏ Refit the left-hand suspended mounting bolts on the body.

❏ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the body (62 Nm)**,
- the **gearbox left-hand rubber pad nut (62 Nm)**.

❏ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the engine undertray,
- the Protection and Switching Unit,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

K9K, and JA5

III - FINAL OPERATION.

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

SEQUENTIAL GEARBOX
Actuator module: Removal - Refitting

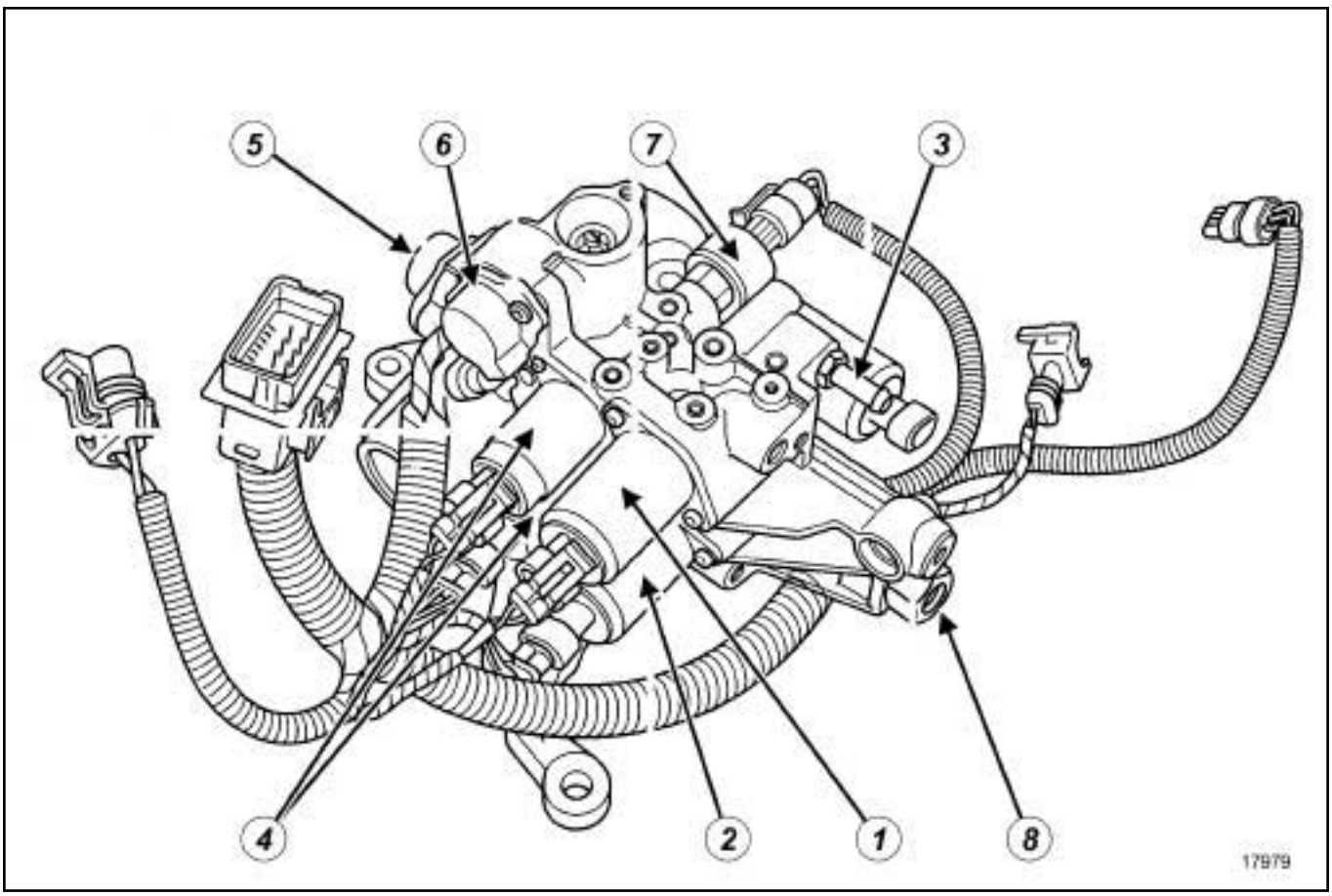
D4F, and JA3

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)

Tightening torques ▽	
clutch pipe nuts	**14 Nm**
high pressure pump pipe nuts	**14 Nm**
gearbox mounting nut	**21 Nm**

Tightening torques ▽	
actuator module nuts	**24 Nm**
bolts mounting the left-hand suspended mounting on the gearbox	**62 Nm**
stud mounting the left-hand suspended mounting on the gearbox (if it has been changed)	**180 Nm**
bolts mounting the left-hand suspended mounting on the body	**62 Nm**
gearbox left-hand rubber pad nut	**62 Nm**



17979

(**1**) Clutch solenoid valve

(**2**) Gear engagement solenoid valve

(**3**) Gear engagement solenoid valve

(**4**) Selection solenoid valve

(**5**) Engagement sensor
(**6**) Gear selection sensor
(**7**) Solenoid valve unit pressure sensor
(**8**) High pressure filter

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

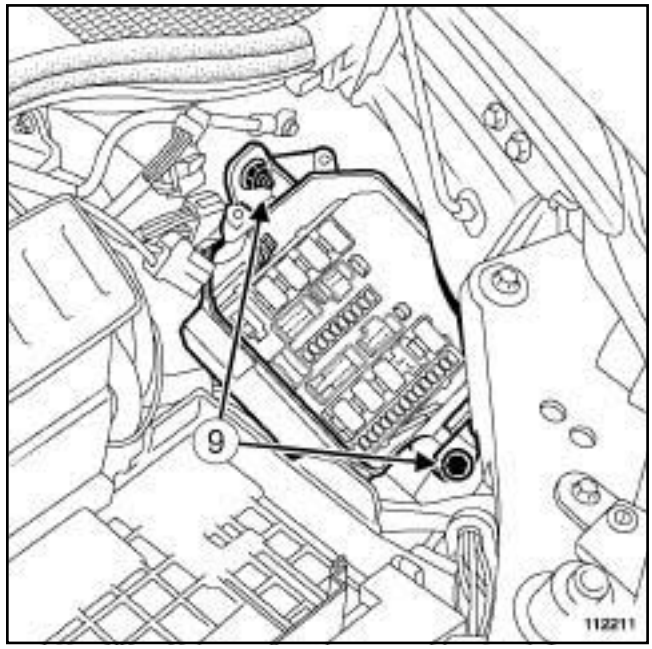
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.

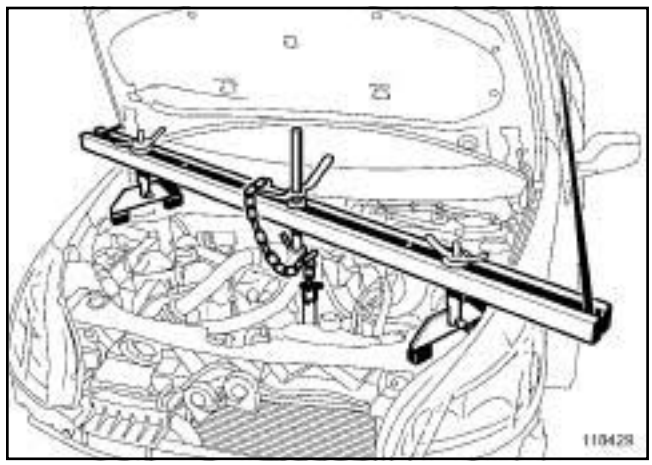


112211

❑ Remove the Protection and Switching Unit bolts (**9**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.



118429

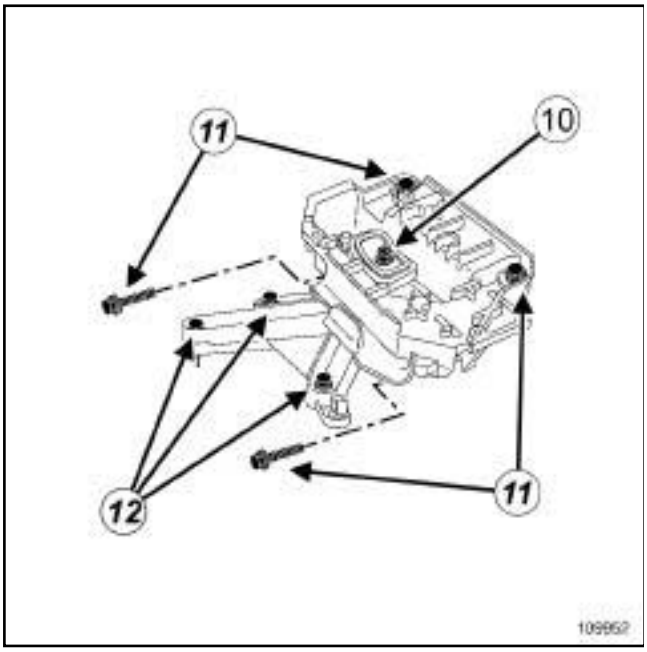
❑ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,

D4F, and JA3

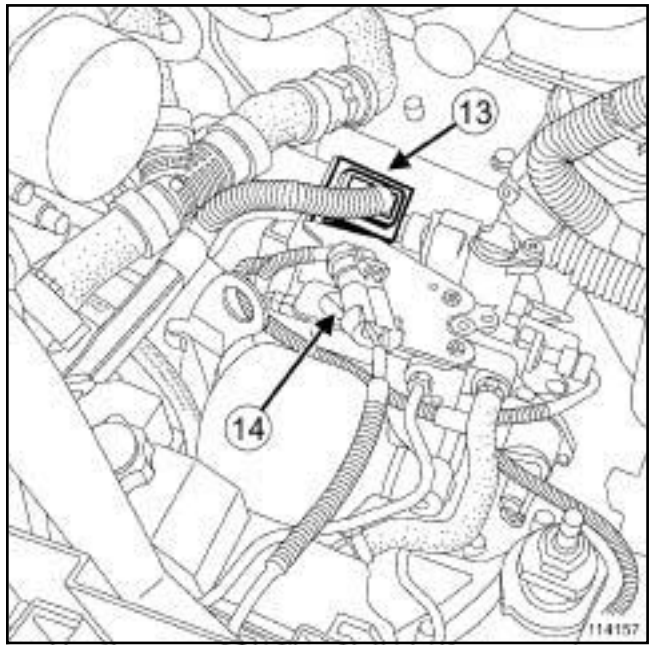
- the engine undertray.



109952

❏ Remove:

- the nut (**10**) from the gearbox left-hand rubber pad,
- the bolts (**11**) from the left-hand suspended mounting on the body,
- the left-hand suspended mounting from the body,
- the bolts (**12**) from the gearbox left-hand suspended mounting,
- the gearbox left-hand suspended mounting.

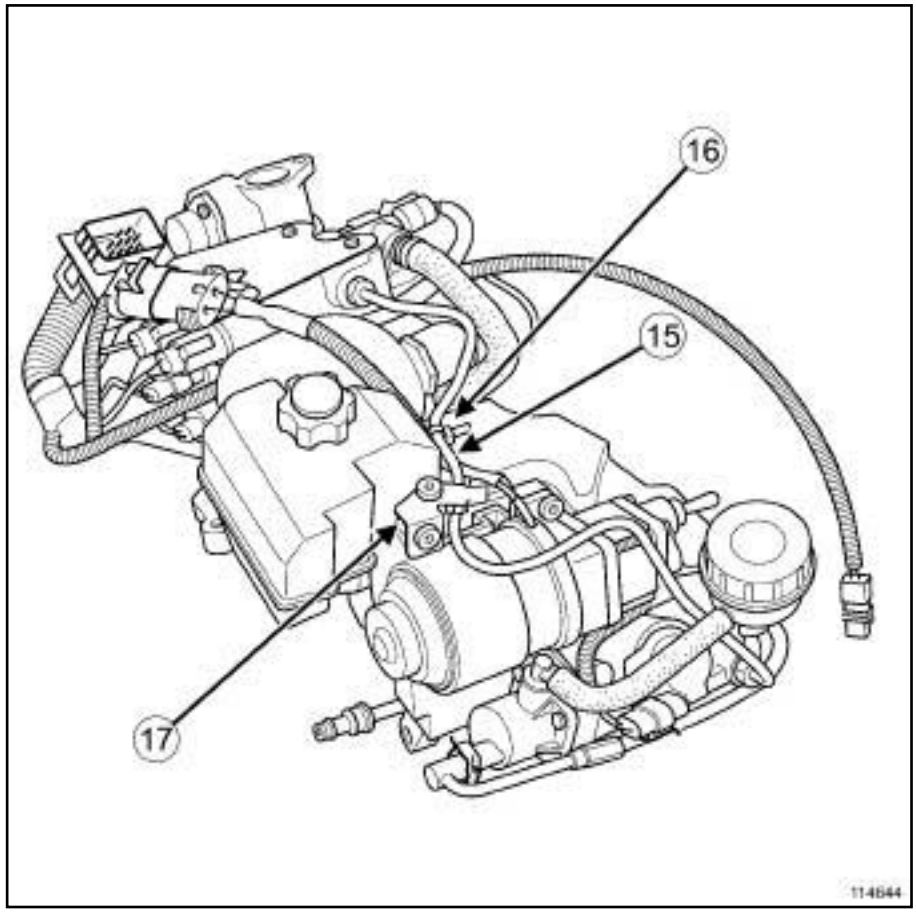


114157

❏ Disconnect:

- the connector from the actuator module (**13**) ,
- the connector from the pump assembly (**14**) .

D4F, and JA3

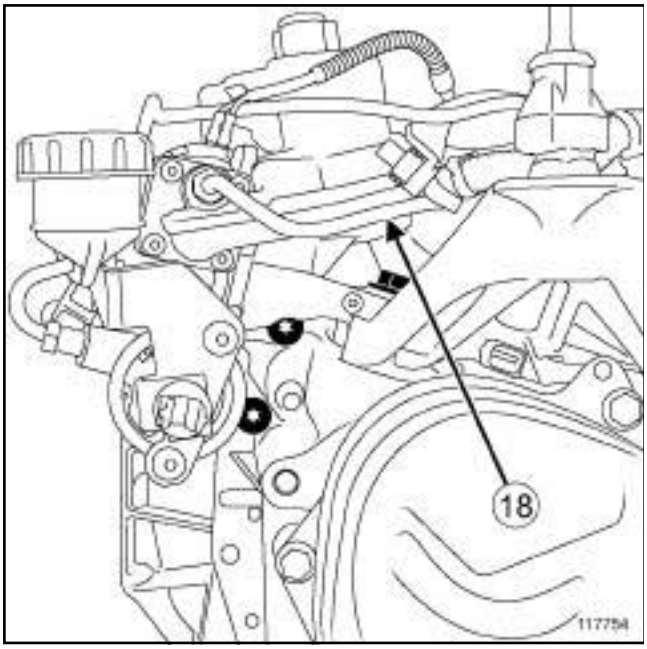


114644

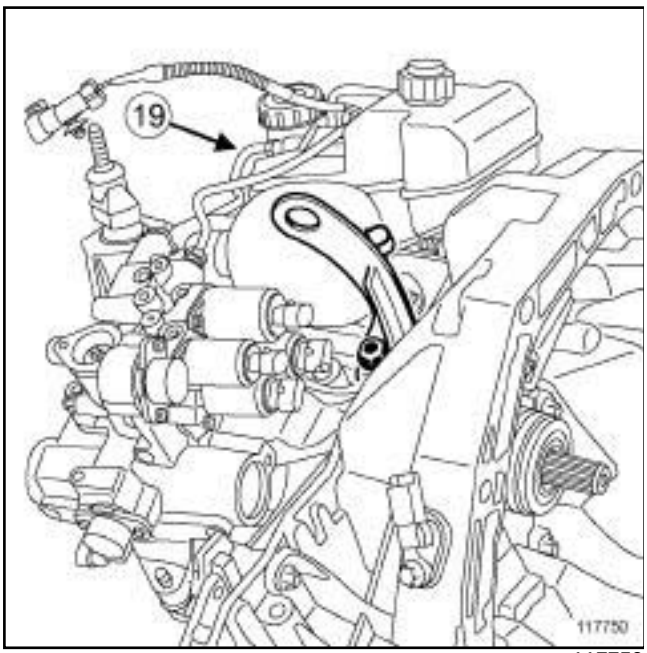
❏ Remove:

- the clutch pipe (**15**) ,
- the clutch pipe bracket (**16**) .

❏ Cut the clip on the clutch pipe (**17**) .



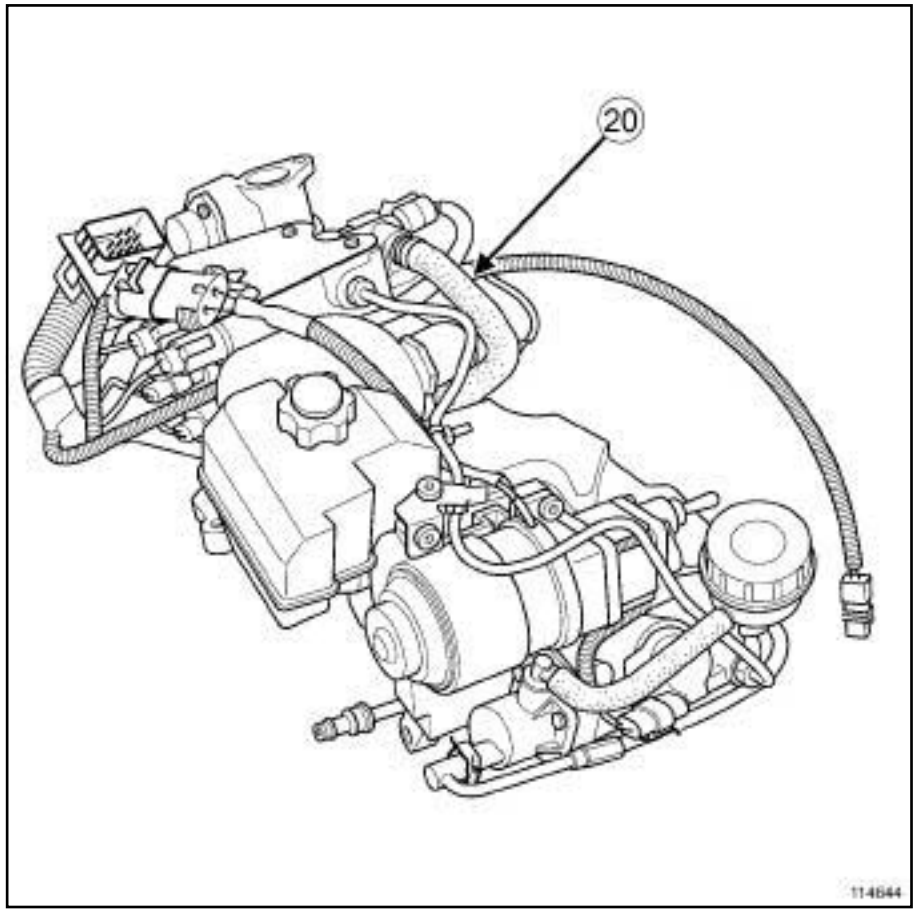
117754



117750

❑ Remove the high pressure pump pipes (**18**) and (**19**) .

D4F, and JA3



114644

❑ Remove the low pressure pump pipe (**20**) .

Note:

To avoid any sequential gearbox malfunction, mark the routing for the solenoid valve and sensor wiring on the actuator module.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

Note:

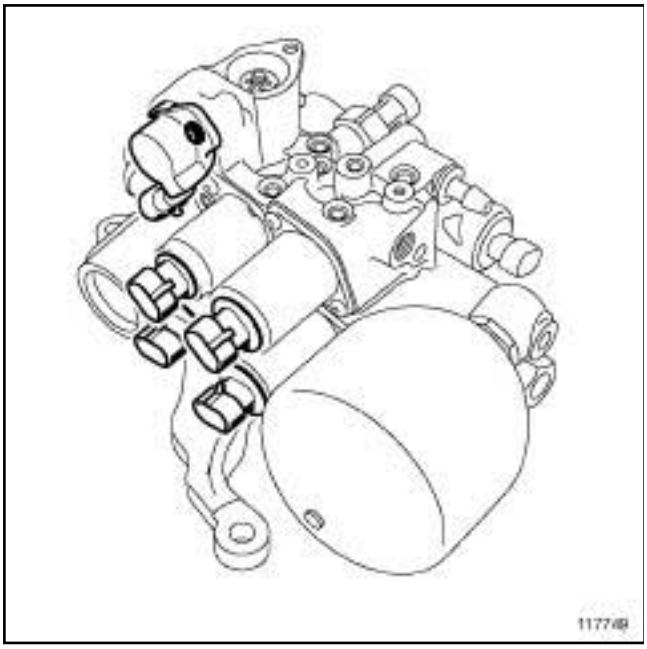
The actuator module can be removed or refitted with the pressure accumulator in place.

❑ Remove:

- the lifting eye on the gearbox,
- the nuts from the actuator module.

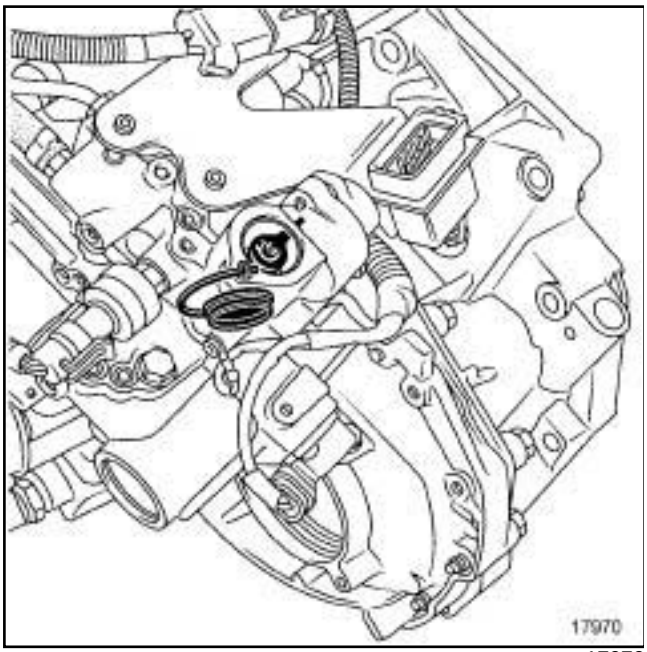
D4F, and JA3

Actuator module



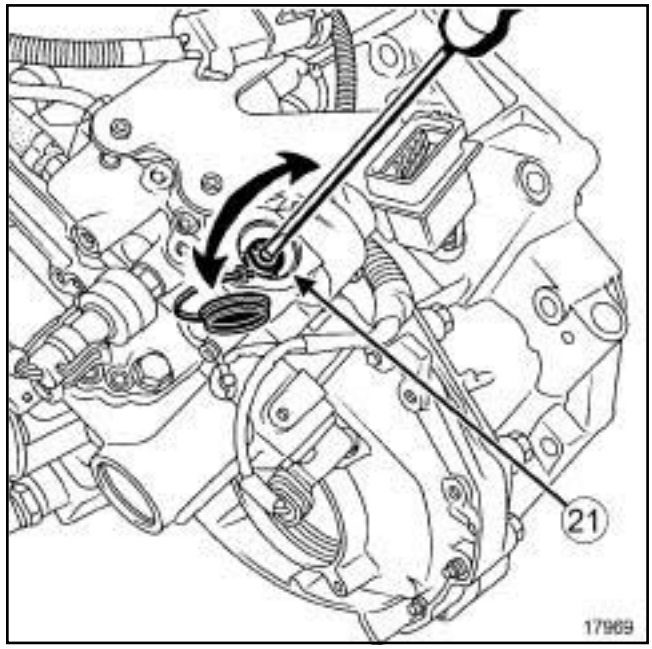
117749

Selector shaft locked



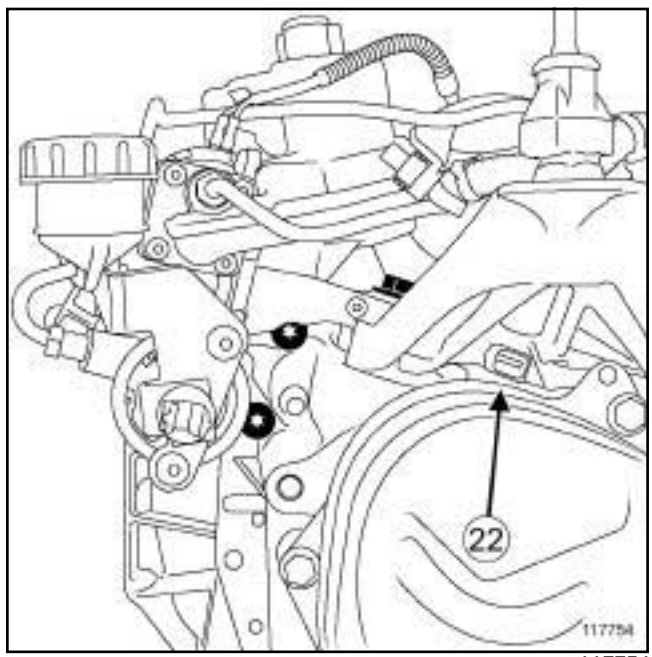
17970

Selector shaft unlocked



17969

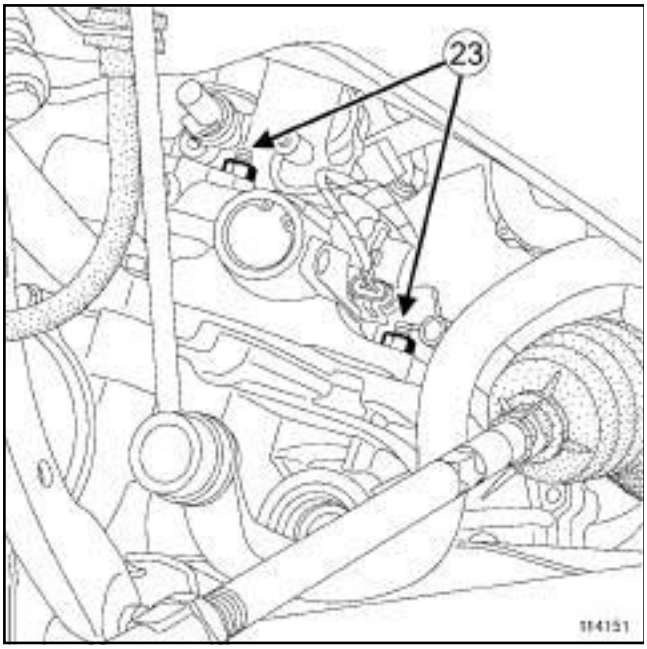
❏ Unlock the gear selector shaft by turning the shaft (**21**) by a quarter of a turn using a screwdriver.



117754

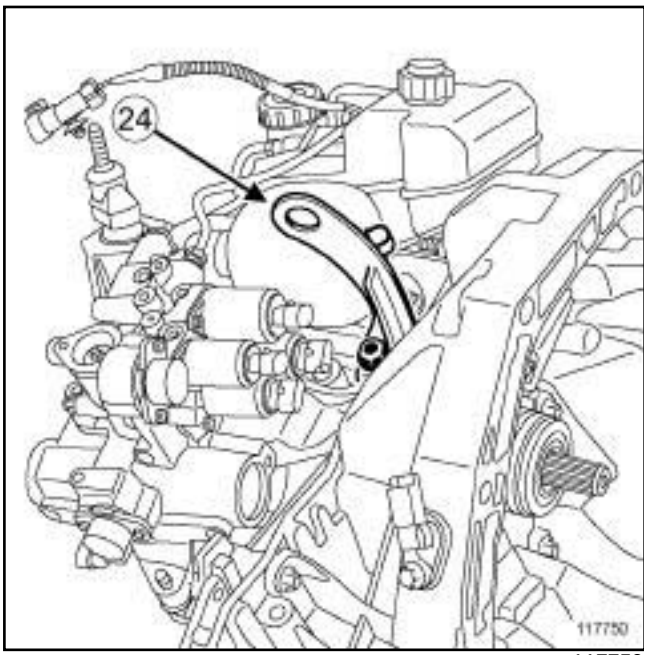
❏ Disconnect the sequential gearbox speed sensor connector (**22**) .

D4F, and JA3



114151

❑ Remove the nuts (**23**) from the electro-hydraulic unit.



117750

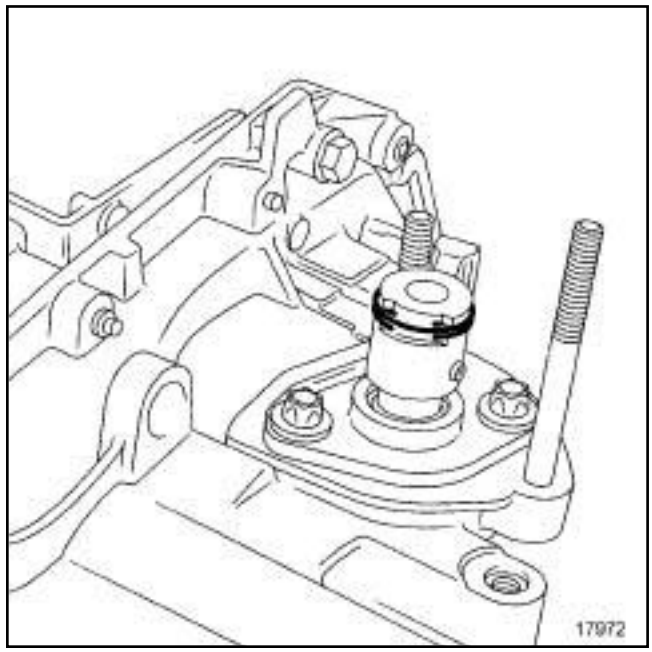
❑ Remove:

- the lifting eye nut on the actuator module,
- the lifting eye (**24**) on the actuator module,
- the actuator module.

REFITTING

I - REFITTING PREPARATIONS OPERATION

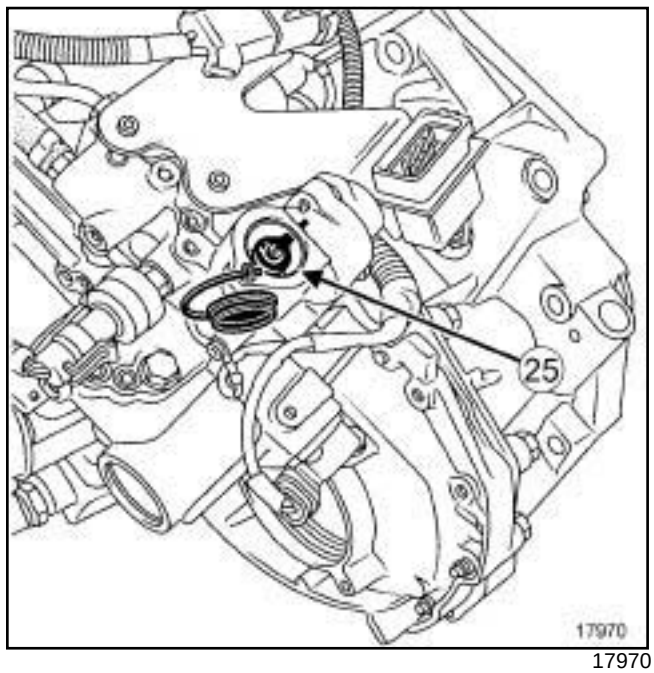
❑ Check that the two half-moons are positioned correctly.



17972

❑ Position the two half-moons and the circlips in the selector shaft neck.

❑ Coat the two half-moons and the selector finger with **MOLYCOTE**.



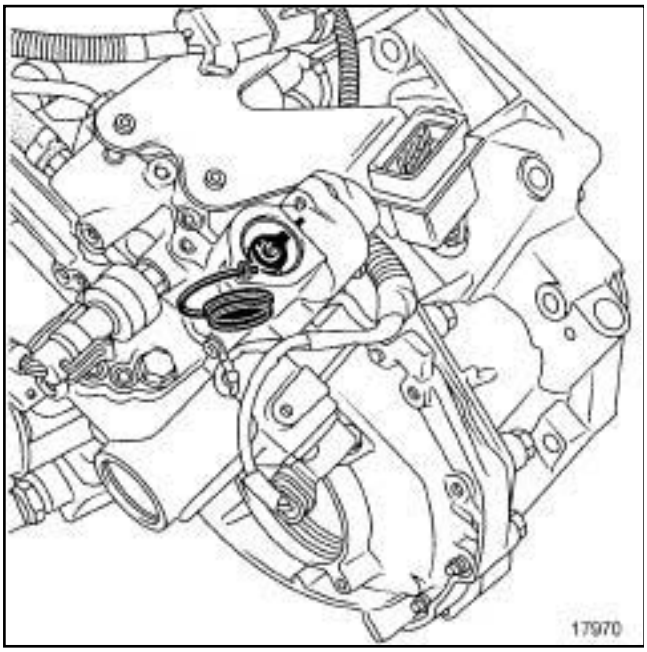
17970

❑ Lock the selector shaft (**25**) .

❑ Position the flat seal.

D4F, and JA3

II - REFITTING OPERATION FOR PART CONCERNED



17970

❏ Using a screwdriver, press on the selector shaft to clip it onto the actuator module.

❏ Refit:

- the low pressure pump pipe,
- the high pressure pump pipe,
- the clutch pipe,
- the clutch pipe bracket,
- a new clip on the clutch pipe,
- the nuts from the actuator module.

❏ Without tightening, fit:

- the clutch pipe nuts,
- the high pressure pump pipe nuts.

❏ Torque tighten:

- the **clutch pipe nuts (14 Nm)**,
- the **high pressure pump pipe nuts (14 Nm)**,
- the **gearbox mounting nut (21 Nm)**,
- the **actuator module nuts (24 Nm)**.

❏ Connect the sequential gearbox speed sensor connector.

❏ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❏ Reposition the left-hand suspended mounting on the gearbox.

❏ Refit the bolts mounting the left-hand suspended mounting on the gearbox.

❏ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the gearbox (62 Nm)**,
- the **stud mounting the left-hand suspended mounting on the gearbox (if it has been changed) (180 Nm)**

❏ Reposition the left-hand suspended mounting on the body.

❏ Refit the left-hand suspended mounting bolts on the body.

❏ Torque tighten:

- the **bolts mounting the left-hand suspended mounting on the body (62 Nm)**,
- the **gearbox left-hand rubber pad nut (62 Nm)**.

❏ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the engine undertray,
- the Protection and Switching Unit,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

D4F, and JA3

III - FINAL OPERATION.

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Tightening torques ▽	
gear selection sensor bolts	4 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

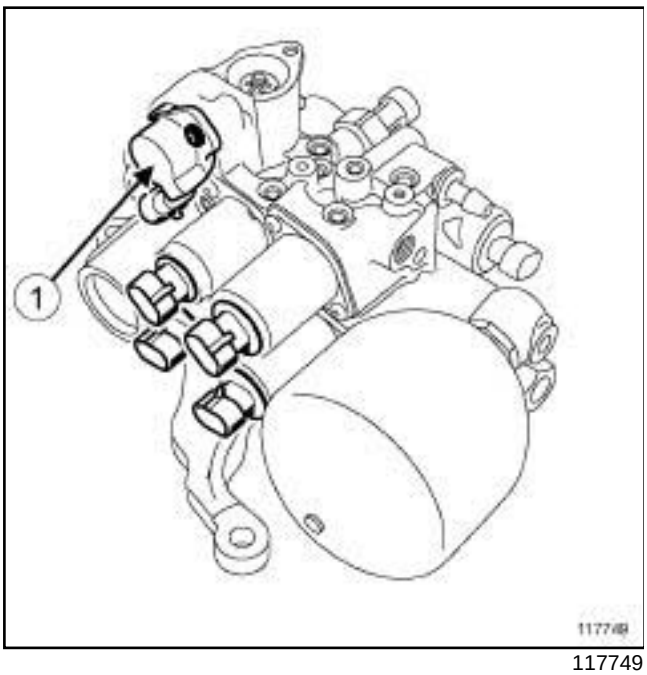
❑

WARNING
To remove the gear selection sensor it is essential that you shift to first gear before removal.

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

II - OPERATION FOR REMOVAL OF PART CONCERNED



117749

❑ Disconnect the gear selection sensor connector (**1**) .

❑ Remove:

- the gear selection sensor bolts,
- the gear selection sensor (**1**) .

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check that the gear selection sensor is able to rotate freely.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the gear selection sensor,
- the gear selection sensor bolts.

❑ Torque tighten the **gear selection sensor bolts (4 Nm)**.

❑ Connect the gear selection sensor connector.

III - FINAL OPERATION.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),

❑ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

D4F, and JA3

Tightening torques ▽	
gear selection sensor bolts	4 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

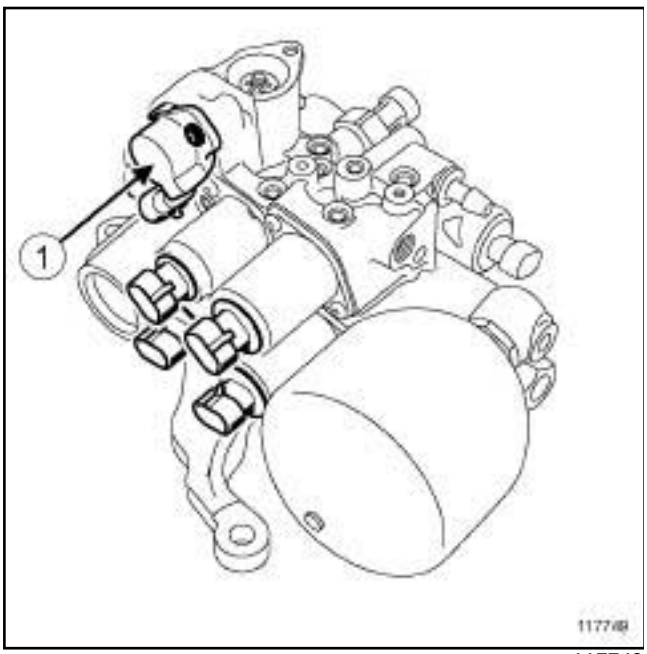
❑

WARNING
To remove the gear selection sensor it is essential that you shift to first gear before removal.

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



117749

❑ Disconnect the gear selection sensor connector (**1**) .

❑ Remove:

- the gear selection sensor bolts,
- the gear selection sensor (**1**) .

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check that the gear selection sensor is able to rotate freely.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the gear selection sensor,
- the gear selection sensor bolts.

❑ Torque tighten the **gear selection sensor bolts (4 Nm)**.

❑ Connect the gear selection sensor connector.

III - FINAL OPERATION.

❑ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

K9K, and JA5

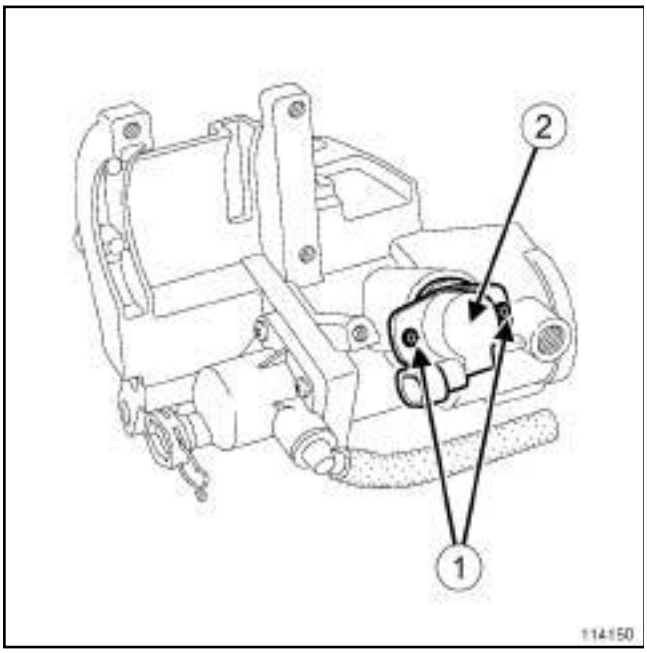
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



114150

❏ Remove the engine undertray.

❏ Disconnect the clutch position sensor connector.

❏ Remove:

- the bolts (**1**) from the clutch position sensor,
- the clutch position sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the clutch position sensor,
- the clutch position sensor bolts.

❏ Connect the clutch position sensor connector.

II - FINAL OPERATION.

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

D4F, and JA3

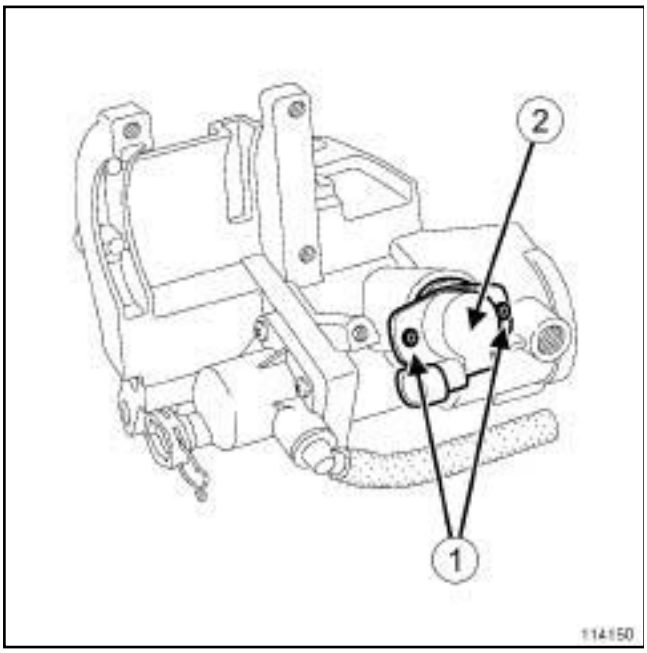
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



114150

❏ Remove the engine undertray.

❏ Disconnect the clutch position sensor connector.

❏ Remove:

- the clutch position sensor bolt (**1**) ,
- the clutch position sensor (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the clutch position sensor,
- the clutch position sensor bolts.

❏ Connect the clutch position sensor connector.

II - FINAL OPERATION.

❏ Refit the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

K9K, and JA5

Equipment required
Diagnostic tool

Tightening torques ▽	
solenoid valve unit pressure sensor	15 Nm

REMOVAL

REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

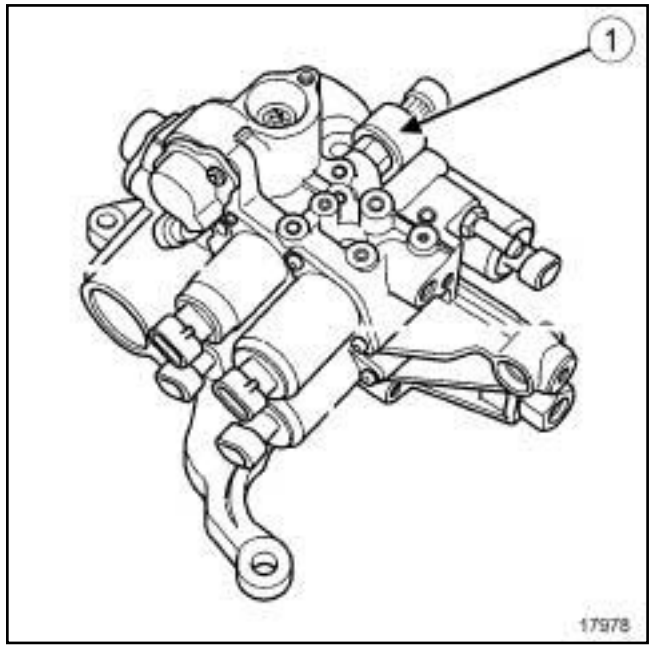
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



17978

❑ Disconnect the solenoid valve unit pressure sensor connector (**1**) .

❑ Remove the pressure sensor from the solenoid valve unit (**1**) using a **long socket**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the solenoid valve unit pressure sensor.

❑ Finger tighten the solenoid valve unit pressure sensor.

❑ Torque tighten the **solenoid valve unit pressure sensor (15 Nm)**

❑ Connect the solenoid valve unit pressure sensor connector.

II - FINAL OPERATION.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

K9K, and JA5

❑ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Equipment required
Diagnostic tool

Tightening torques ▽	
solenoid valve unit pressure sensor	**15 Nm**

REMOVAL

REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

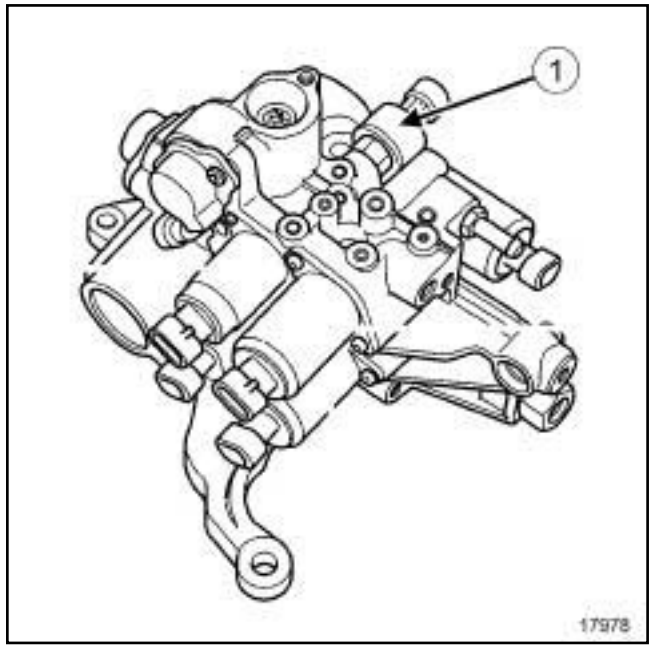
If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).



17978

❑ Disconnect the solenoid valve unit pressure sensor connector (**1**) .

❑ Remove the pressure sensor from the solenoid valve unit (**1**) using a **long socket**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the solenoid valve unit pressure sensor.

❑ Finger tighten the solenoid valve unit pressure sensor.

❑ Torque tighten the **solenoid valve unit pressure sensor (15 Nm)**

❑ Connect the solenoid valve unit pressure sensor connector.

II - FINAL OPERATION.

❑ Refit:

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and JA3

❑ Carry out the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Equipment required
Diagnostic tool

Tightening torques ▽	
sequential gearbox speed sensor	**15 Nm**
the left-hand suspended engine mounting support bolts on the gearbox	**62 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

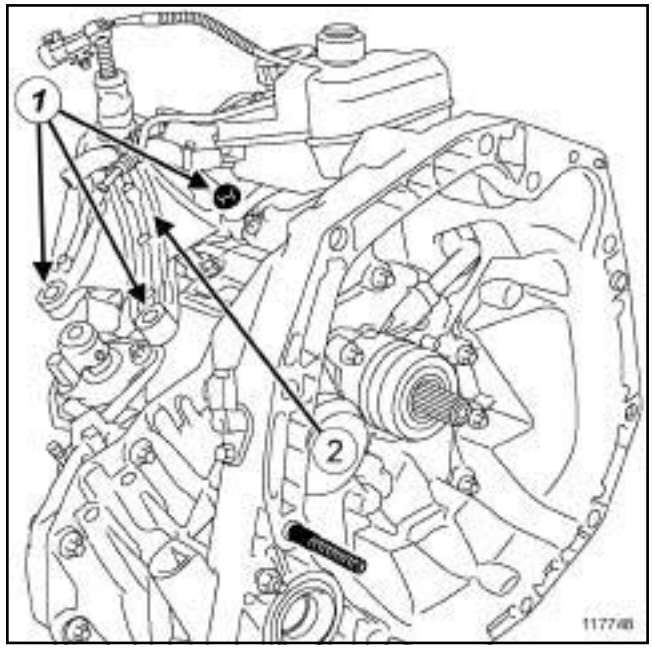
The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

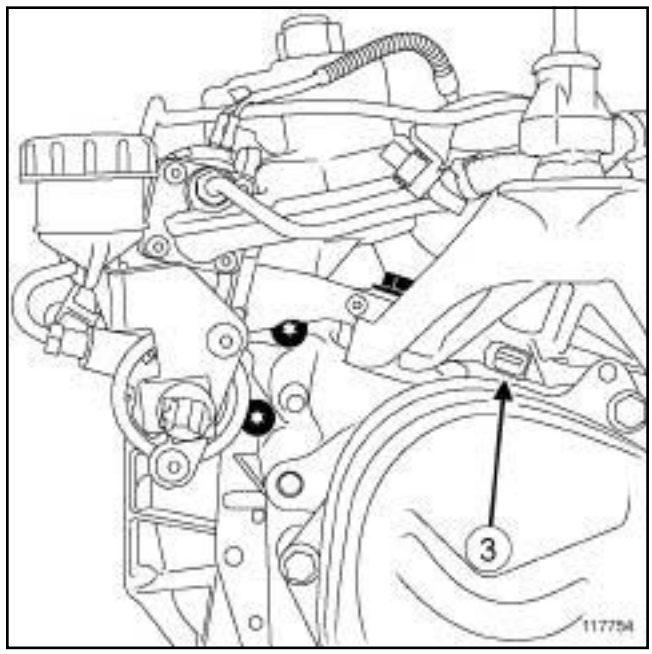
❑ Remove the electro-hydraulic unit (see **21B**, **Sequential gearbox**, **Electro-hydraulic unit: Removal - Refitting**, page **21B-8**) .



117748

❑ Remove:

- the mounting bolts (**1**) from the left-hand suspended mounting on the gearbox,
- the left-hand suspended engine mounting (**2**) on the gearbox.



117754

❑ Disconnect the sequential gearbox speed sensor connector.

❑ Remove:

- the sequential gearbox speed sensor bolt,
- the sequential gearbox speed sensor (**3**) .

D4F, and JA3

III - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the sequential gearbox speed sensor connector.

❏ Refit:

- the sequential gearbox engine speed sensor,
- the sequential gearbox sensor bolt.

❏ Torque tighten the **sequential gearbox speed sensor (15 Nm)**.

❏ Refit:

- the left-hand suspended engine mounting support on the gearbox,
- the left-hand suspended engine mounting support bolts on the gearbox.

❏ Torque tighten the **the left-hand suspended engine mounting support bolts on the gearbox (62 Nm)**.

❏ Refit the electro-hydraulic unit (see **21B**, **Sequential gearbox**, **Electro-hydraulic unit: Removal - Refitting**, page **21B-8**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Equipment required
Diagnostic tool

Tightening torques ▽	
sequential gearbox speed sensor	**15 Nm**
the left-hand suspended engine mounting support bolts on the gearbox	**62 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

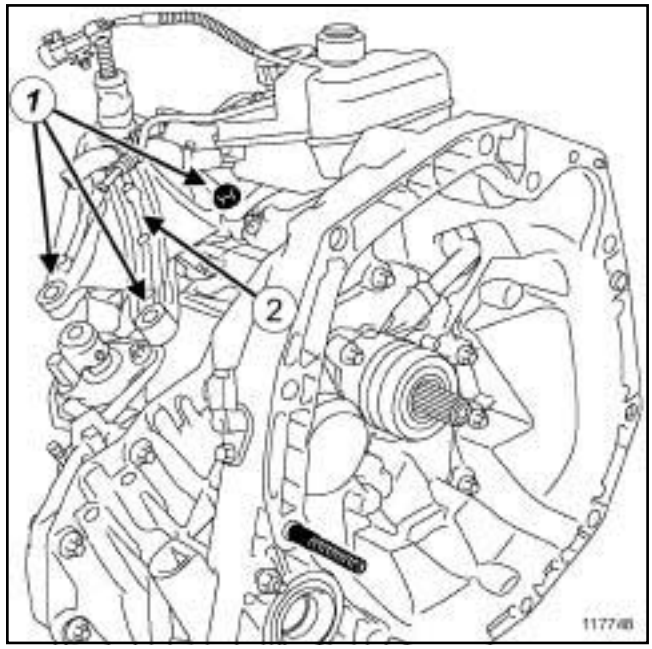
The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

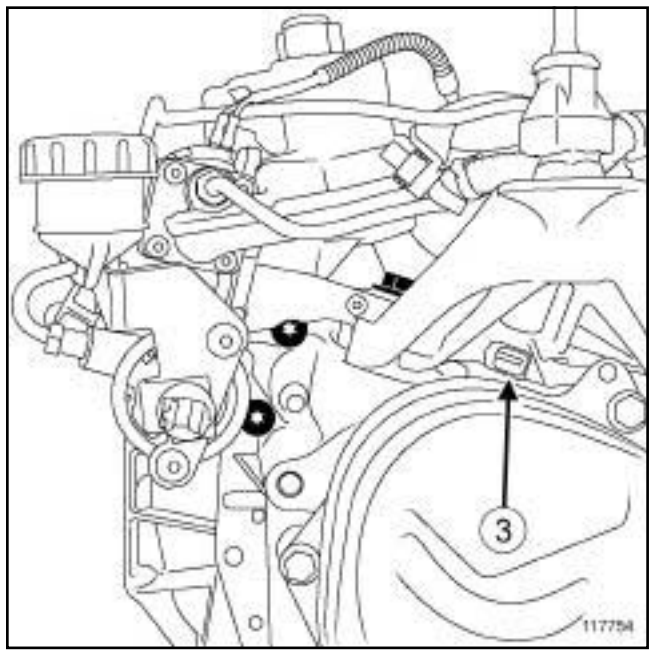
❑ Remove the electro-hydraulic unit (see **21B**, **Sequential gearbox**, **Electro-hydraulic unit: Removal - Refitting**, page **21B-8**) .



117748

❑ Remove:

- the mounting bolts (**1**) from the left-hand suspended mounting on the gearbox,
- the left-hand suspended engine mounting (**2**) on the gearbox.



117754

❑ Disconnect the sequential gearbox speed sensor connector.

❑ Remove:

- the sequential gearbox speed sensor bolt,
- the sequential gearbox speed sensor (**3**) .

K9K, and JA5

III - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sequential gearbox engine speed sensor,
- the sequential gearbox sensor bolt.

❑ Connect the sequential gearbox speed sensor connector.

❑ Torque tighten the **sequential gearbox speed sensor (15 Nm)**.

❑ Refit:

- the left-hand suspended engine mounting support on the gearbox,
- the left-hand suspended engine mounting support bolts on the gearbox.

❑ Torque tighten the **the left-hand suspended engine mounting support bolts on the gearbox (62 Nm)**.

❑ Refit the electro-hydraulic unit (see **21B**, **Sequential gearbox**, **Electro-hydraulic unit: Removal - Refitting**, page **21B-8**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)
component jack

Tightening torques ▽	
gearbox bell housing bolts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

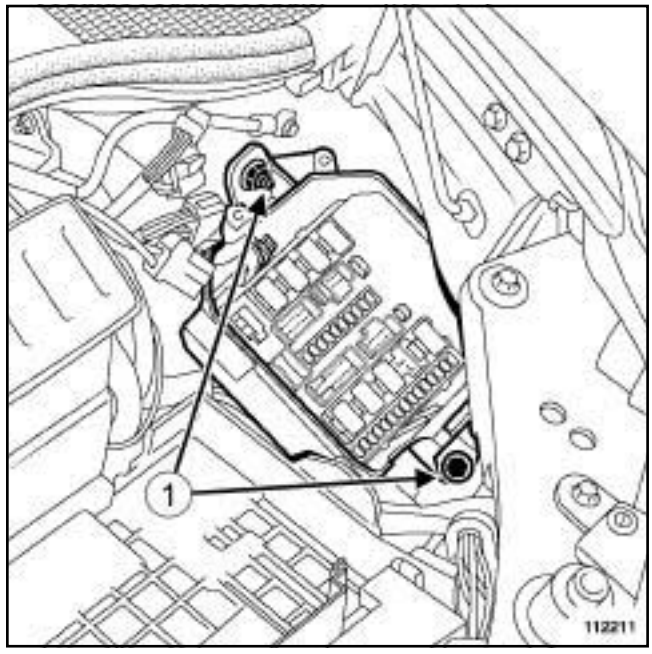
❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❑ Drain the sequential gearbox.

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.



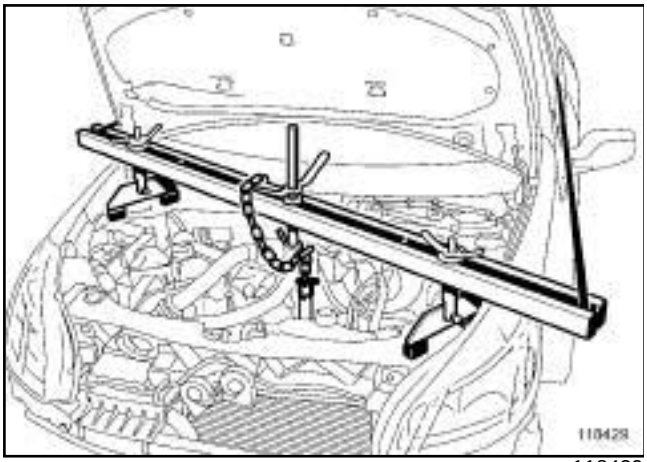
112211

❑ Remove the Protection and Switching Unit bolts (**1**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.

K9K, and JA5

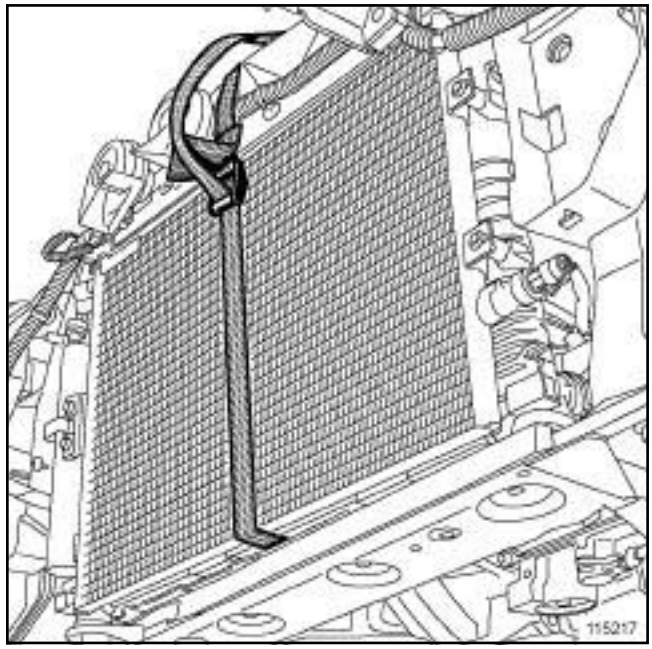


118429

❏ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❏ Remove:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the engine undertray,
- the rear suspended engine mounting (see **19D, Engine mounting, Rear suspended engine mounting: Removal-Refitting**),
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the pump assembly (see **21B**, **Sequential gearbox**, **Sequential gearbox: Removal - Refitting**, page **21B-66**) .



115217

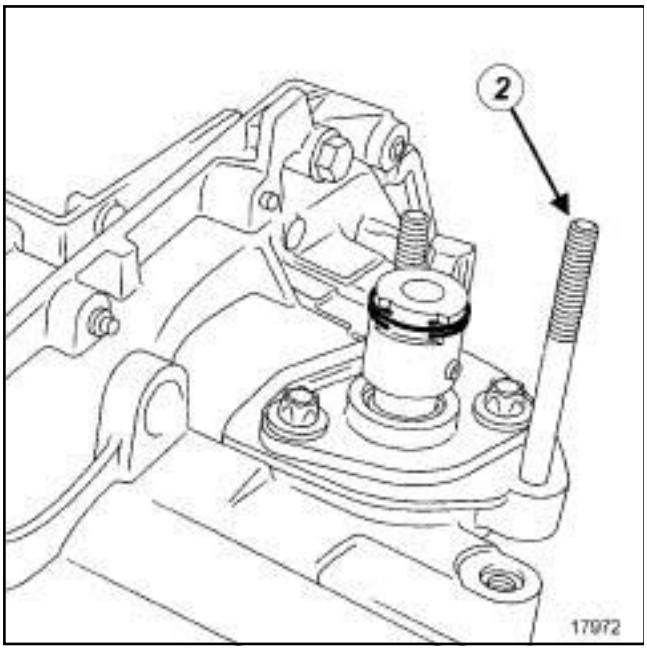
❏ Attach the « cooling radiator - fan unit » assembly to the upper cross member using a **safety strap(s)**.

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

K9K, and JA5

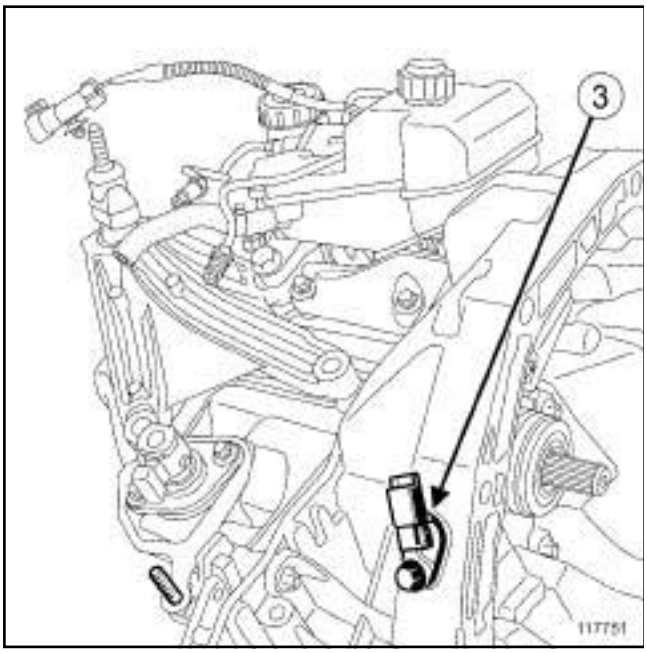
II - OPERATION FOR REMOVAL OF PART CONCERNED



17972

❏ Remove:

- the stud (**2**) from the actuator module on the gearbox,
- the wiring harness channel bolts on the gearbox,
- the earth wiring bolt on the gearbox.

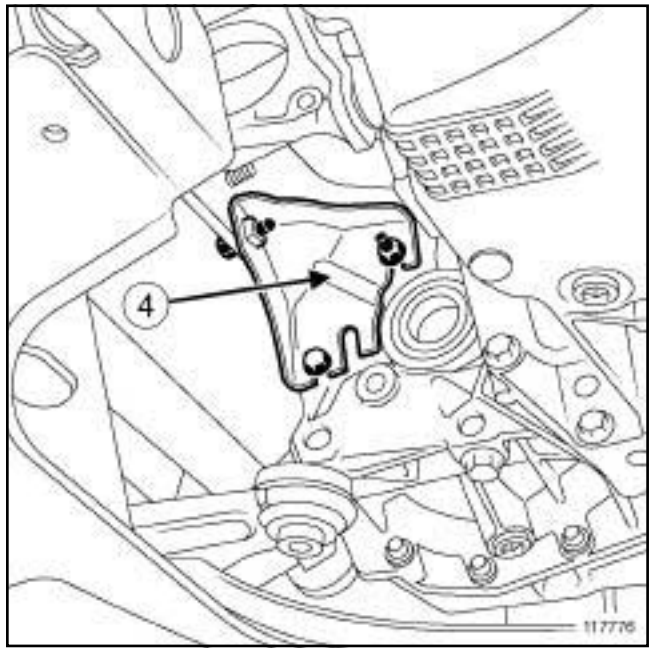


117751

❏ Disconnect the engine speed and position sensor connector.

❏ Remove:

- the bolt from the engine speed and position sensor,
- the engine speed and position sensor (**3**) .

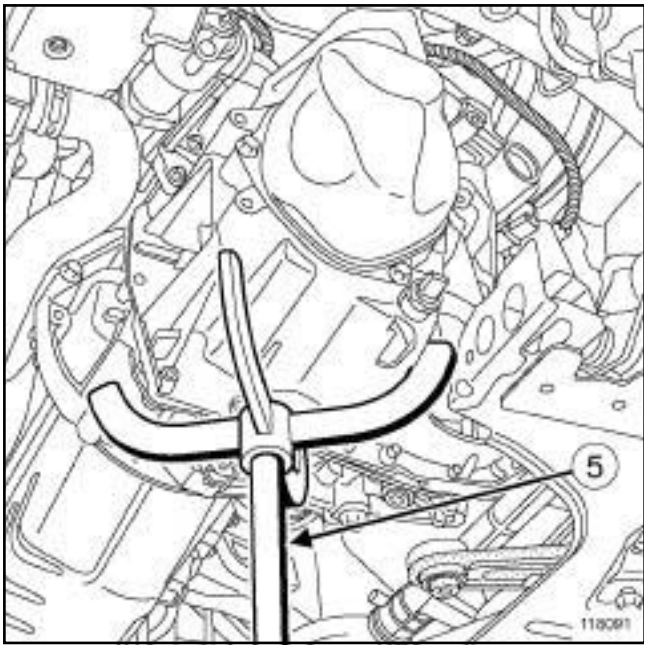


117776

❏ Remove:

- the exhaust bracket bolt on the gearbox,
- the exhaust bracket nut on the gearbox,
- the exhaust bracket (**4**) on the gearbox,
- the starter bolts,
- the gearbox upper bolts,
- the gearbox lower bolts.

K9K, and JA5



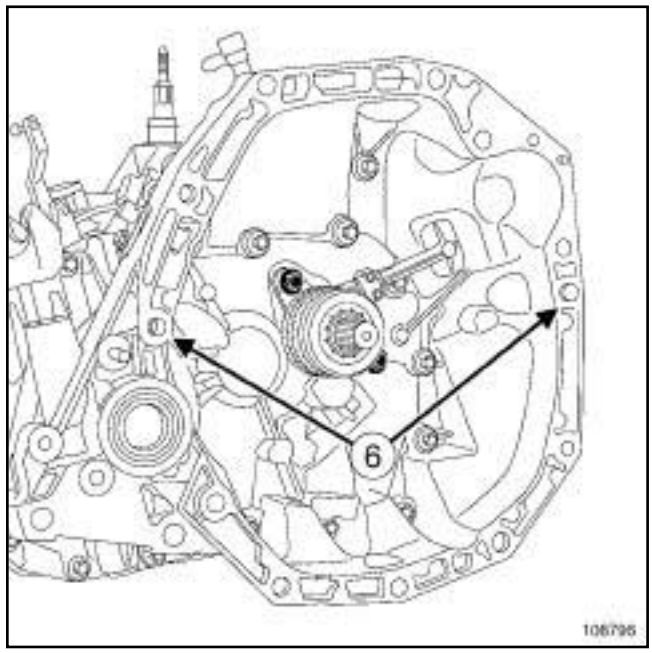
118091

❏ Position the **component jack** (**5**) under the gearbox.

❏ Remove the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION



108796

❏ Check that the engine/gearbox centring rings are in place and correctly positioned (**6**) .

WARNING
To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

WARNING
To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

Note:
- Always replace the right-hand driveshaft snap ring with a new one whenever it is removed.
- Always replace the differential output seals each time the driveshafts are removed.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:
- the gearbox,
- the gearbox lower bolts,
- the gearbox upper bolts,
- the actuator module stud on the gearbox.

K9K, and JA5

❏ Torque tighten the **gearbox bell housing bolts (44 N.m)**.

III - FINAL OPERATION

❏ Refit:

- the starter bolts,
- the wiring channel bolts on the gearbox,
- the earth wiring bolt on the gearbox,
- the exhaust bracket bolt on the gearbox,
- the speed and position sensor,
- the exhaust bracket on the gearbox,
- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) ,
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),

❏ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❏ Bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**)

❏ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the Protection and Switching Unit,
- the wiring harness under the injection computer,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Fill the electro-hydraulic unit reservoir with oil (see **21B**, **Sequential gearbox**, **Sequential gearbox oil: Specifications**, page **21B-82**) (Technical Note 6012, 04A, Lubricants) to between **32 and 38 mm** above the **MIN** mark.

❏ Perform the following operations:

- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

D4F, and JA3

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
Diagnostic tool
safety strap(s)
component jack

Tightening torques ▽	
gearbox bolts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
Before any operation on the sequential system, discharge the accumulator using the **Diagnostic tool**.

To discharge the accumulator, run command « Discharge pressure accumulator » **AC081**.

To confirm the pressure drop, read the « Hydraulic pressure » parameter for the resulting value.

If there is still pressure in the accumulator, re-run the « Discharge pressure accumulator » command until the pressure is negligible and will not pose a risk when the high pressure pipes are removed.

The pressure reading must be close to zero.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

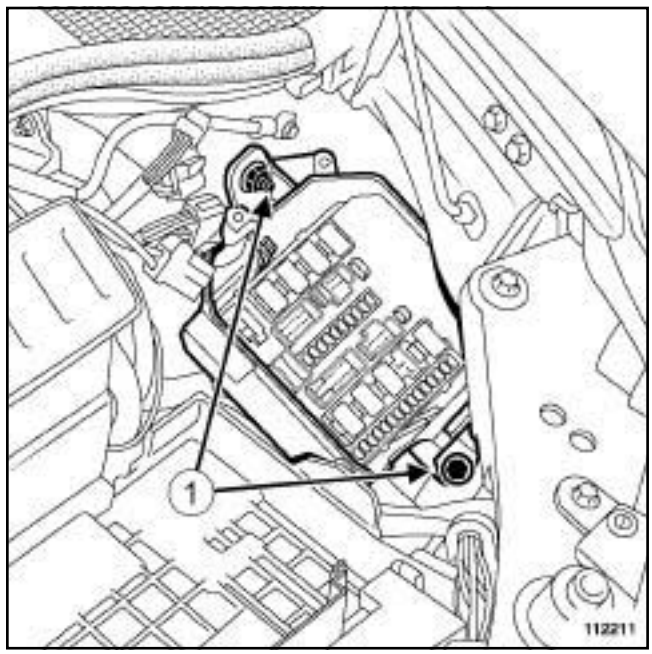
❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❑ Drain the sequential gearbox.

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the wiring harness nut under the injection computer.



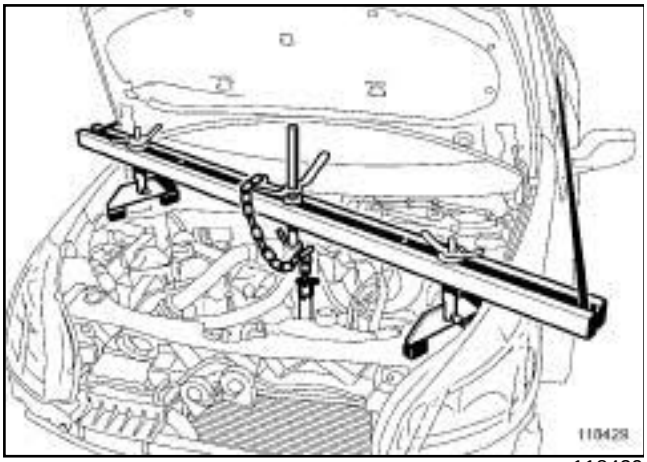
112211

❑ Remove the Protection and Switching Unit bolts (**1**) .

❑ Remove:

- the Protection and Switching Unit,
- the wiring harness under the injection computer.

D4F, and JA3

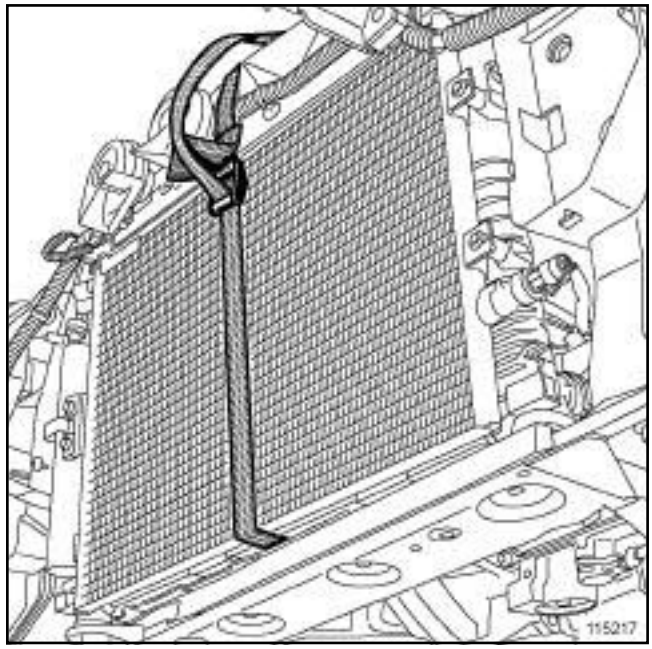


118429

❏ Fit the **(Mot. 1453)** with a **safety strap(s)**.

❏ Remove:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the engine undertray,
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) .



115217

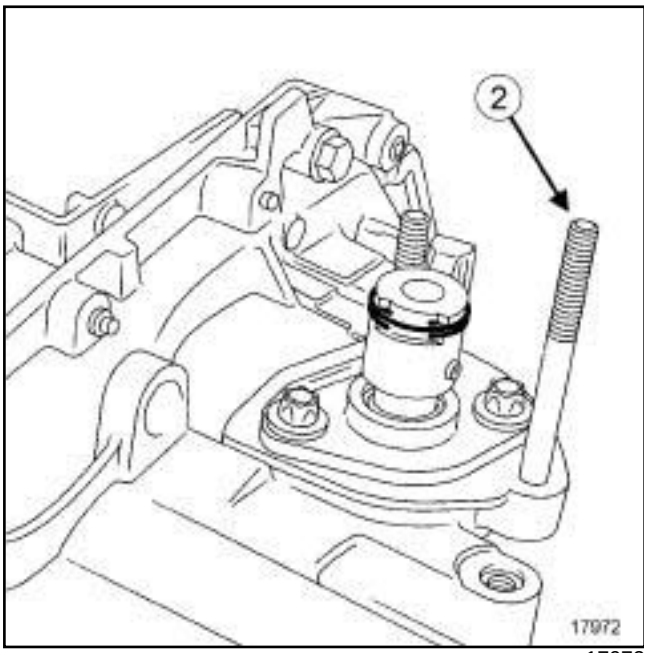
❏ Attach the « cooling radiator - fan unit » assembly to the upper cross member using a **safety strap(s)**.

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

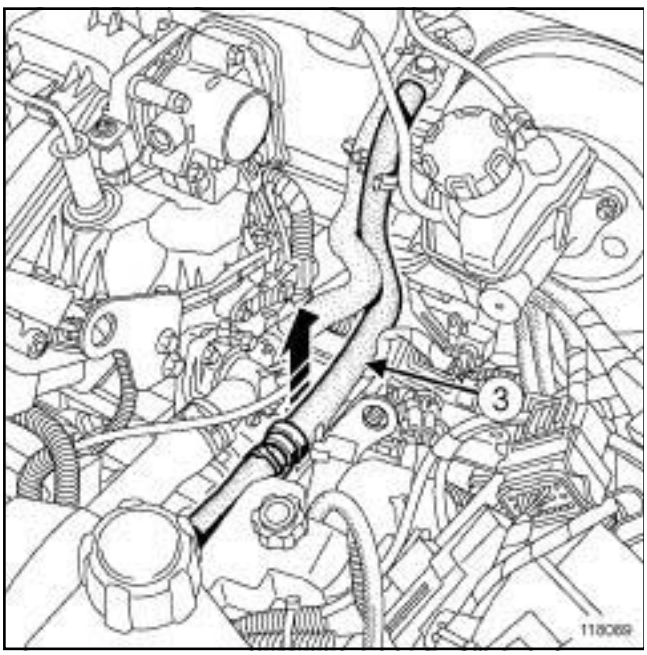
D4F, and JA3

II - OPERATION FOR REMOVAL OF PART CONCERNED



17972

❏ Remove the stud (**2**) from the actuator module on the gearbox.

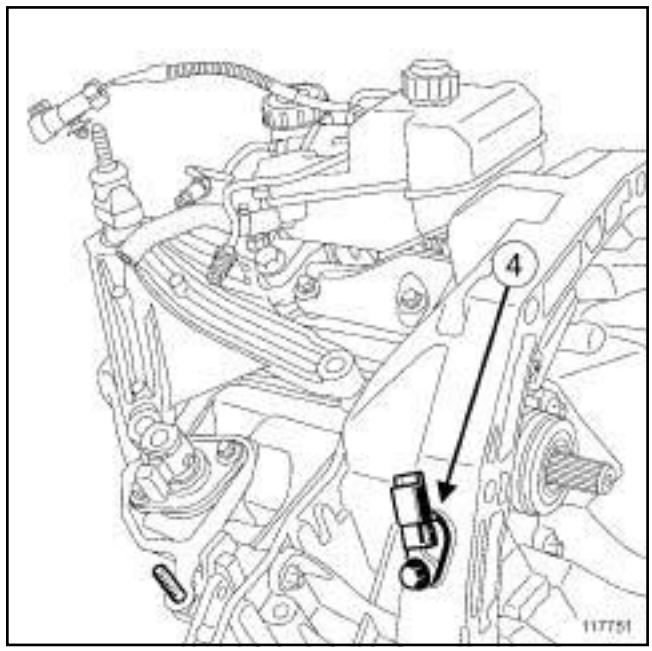


118089

❏ Lift the cooling hose (**3**) to access the wiring harness channel bolts on the gearbox.

❏ Remove:

- the wiring harness channel bolts on the gearbox,
- the earth wiring bolt on the gearbox.

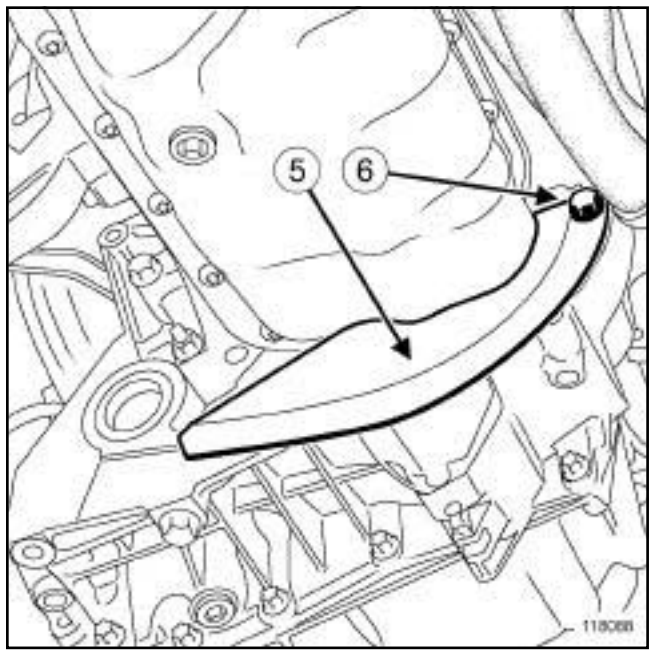


117751

❏ Disconnect the engine speed and position sensor connector.

❏ Remove:

- the bolt from the engine speed and position sensor,
- the engine speed and position sensor (**4**) .

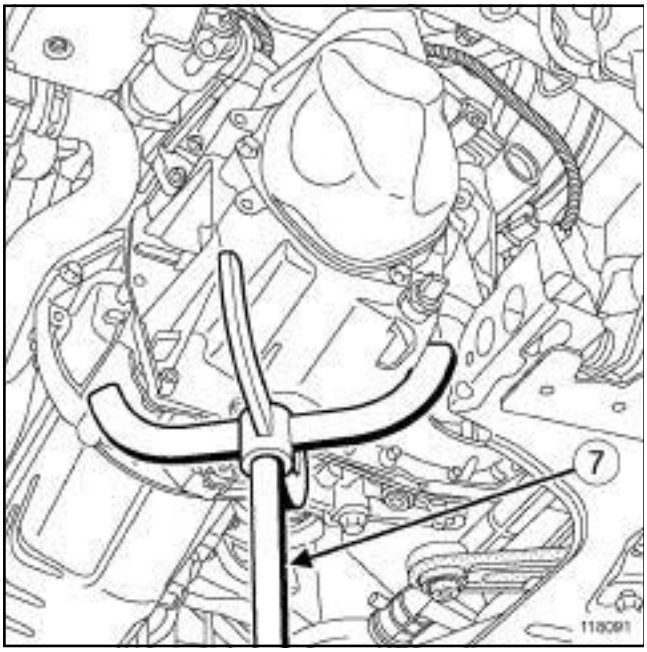


118088

❏ Remove:

- the flywheel protector bolt (**6**) ,
- the flywheel protector (**5**) ,
- the starter bolts,
- the gearbox upper bolts,

- the gearbox lower bolts.



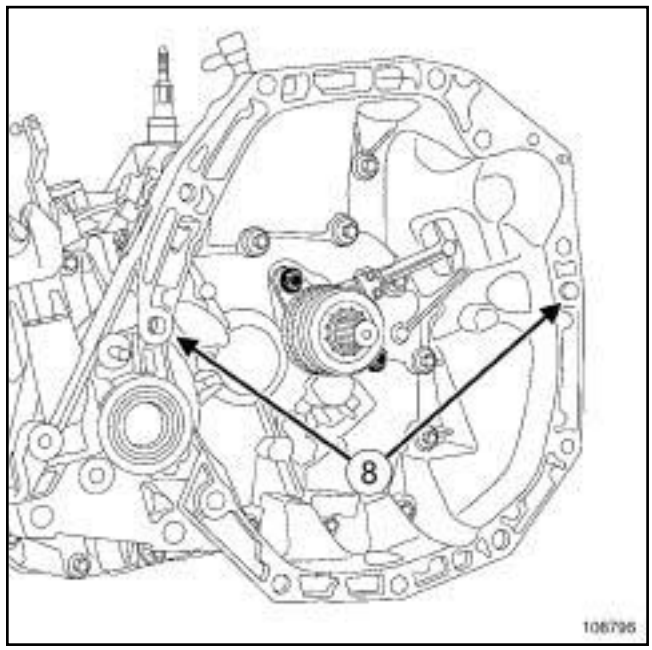
118091

❏ Position the **component jack** (**7**) under the gearbox.

❏ Remove the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION



108796

❏ Check that the engine/gearbox centring rings are in place and correctly positioned (**8**) .

WARNING
To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

WARNING
To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

Note:
- Always replace the right-hand driveshaft snap ring with a new one whenever it is removed.
- Always replace the differential output seals each time the driveshafts are removed.
- Always replace the hydraulic clutch thrust bearing.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the gearbox,
- the gearbox lower bolts,

D4F, and JA3

- the gearbox upper bolts,
- the actuator module stud on the gearbox.

❑ Torque tighten the **gearbox bolts (44 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the starter bolts,
- the wiring channel bolts on the gearbox,
- the earth wiring bolt on the gearbox,
- the flywheel protector,
- the speed and position sensor,
- the pump assembly (see **21B**, **Sequential gearbox**, **Pump assembly: Removal - Refitting**, page **21B-12**) ,
- the actuator module (see **21B**, **Sequential gearbox**, **Actuator module: Removal - Refitting**, page **21B-34**) ,
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),

❑ Remove the **(Mot. 1453)** and the **safety strap(s)**.

❑ Bleed the clutch circuit (see **21B**, **Sequential gearbox**, **Sequential gearbox: Bleeding**, page **21B-84**)

❑ Refit:

- the side stiffener bolts on the left-hand side of the vehicle,
- the side stiffener on the left-hand side of the vehicle,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- the Protection and Switching Unit,
- the wiring harness under the injection computer,
- the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the engine undertray,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Fill the electro-hydraulic unit reservoir with oil (see **21B**, **Sequential gearbox**, **Sequential gearbox oil: Specifications**, page **21B-82**) (Technical Note 6012, 04A, Lubricants) to between **32 and 38 mm** above the **MIN** mark.

❑ Perform the following operations:

- the necessary programming (see **Fault finding - Replacement of components** (MR 394, 21B, Sequential gearbox).

WARNING

After the accumulator has been fully filled (15 seconds after the ignition has been switched on): the oil is at the **MIN** mark.

K9K, and JA5

REMOVAL

I - REMOVAL PREPARATION OPERATION

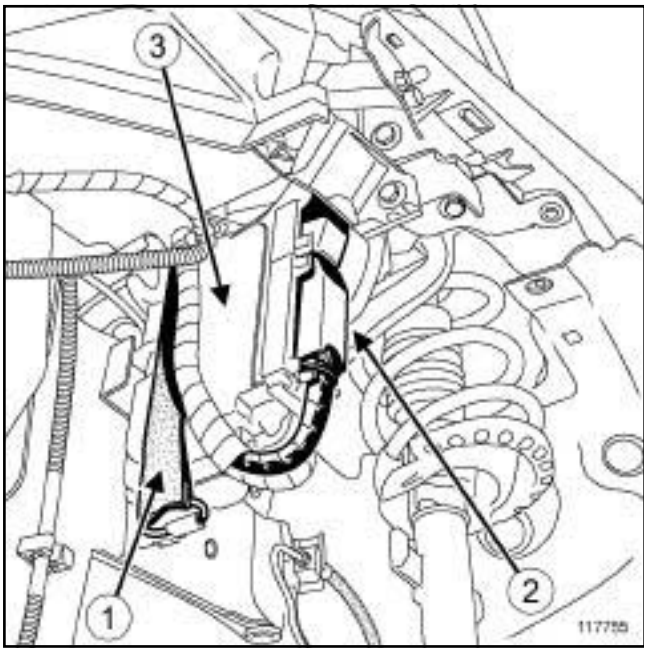
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Wheel arch liner).

II - OPERATION FOR REMOVAL OF PART CONCERNED



117755

❑ Remove:

- the retaining belt (**1**) from the sequential gearbox computer,
- the sequential gearbox computer connector (**2**) ,
- the sequential gearbox computer (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sequential gearbox computer,
- the sequential gearbox computer connector,
- the retaining belt from the sequential gearbox computer,

II - FINAL OPERATION.

❑ Refit:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Wheel arch liner).
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

D4F, and JA3

REMOVAL

I - REMOVAL PREPARATION OPERATION

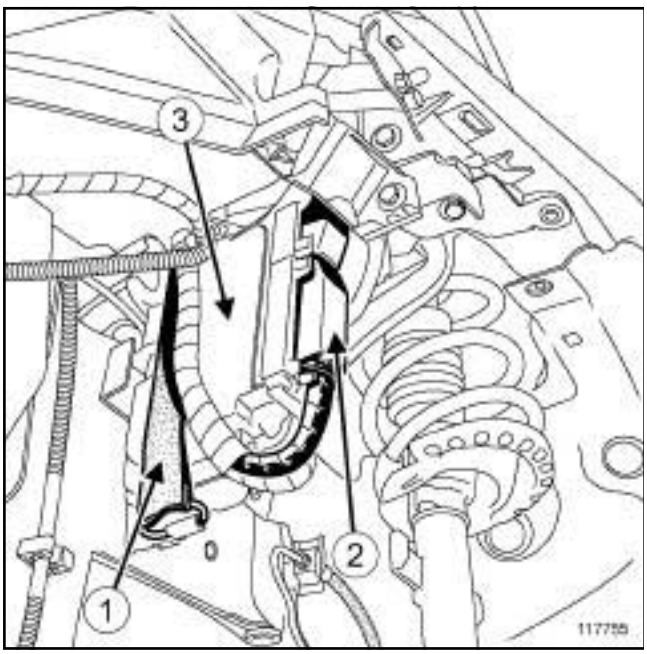
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Wheel arch liner).

II - OPERATION FOR REMOVAL OF PART CONCERNED



117755

❑ Remove:

- the retaining belt (**1**) from the sequential gearbox computer,
- the sequential gearbox computer connector (**2**) ,
- the sequential gearbox computer (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sequential gearbox computer,
- the sequential gearbox computer connector,
- the retaining belt from the sequential gearbox computer,

II - FINAL OPERATION.

❑ Refit:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Wheel arch liner).
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

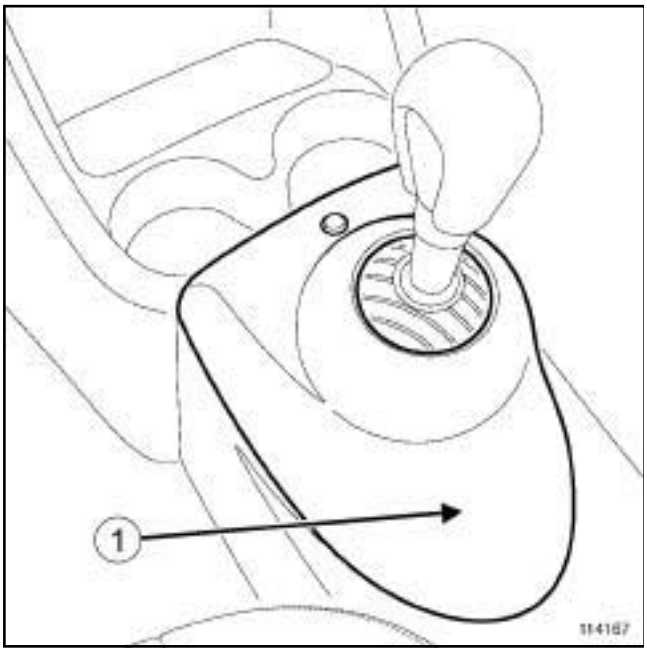
K9K, and JA5

REMOVAL

I - REMOVAL PREPARATION OPERATION

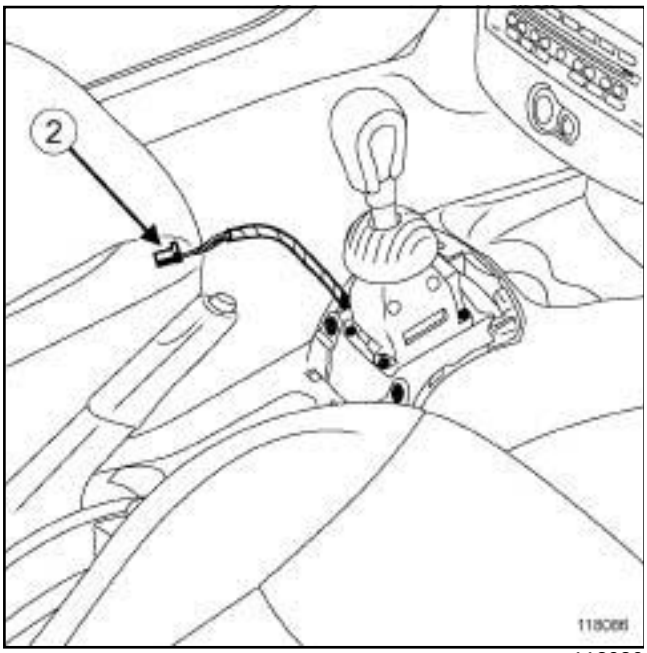
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



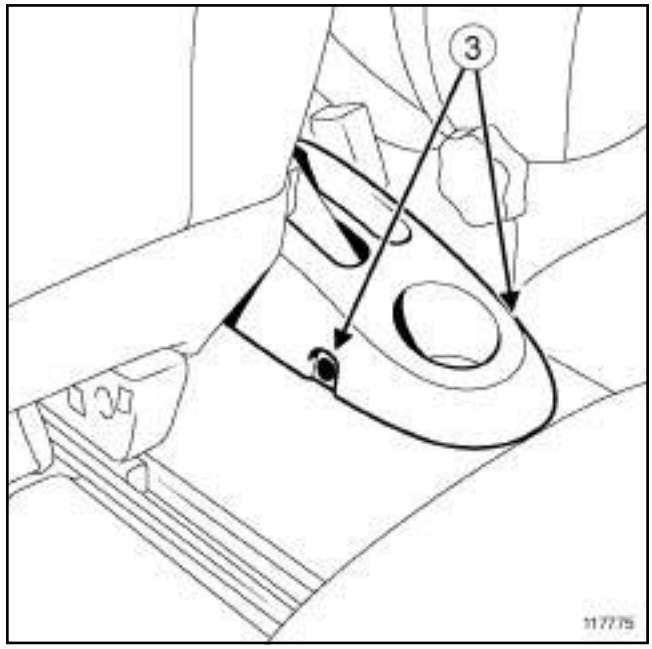
114167

❑ Remove the gear lever cover (**1**) using a screwdriver.

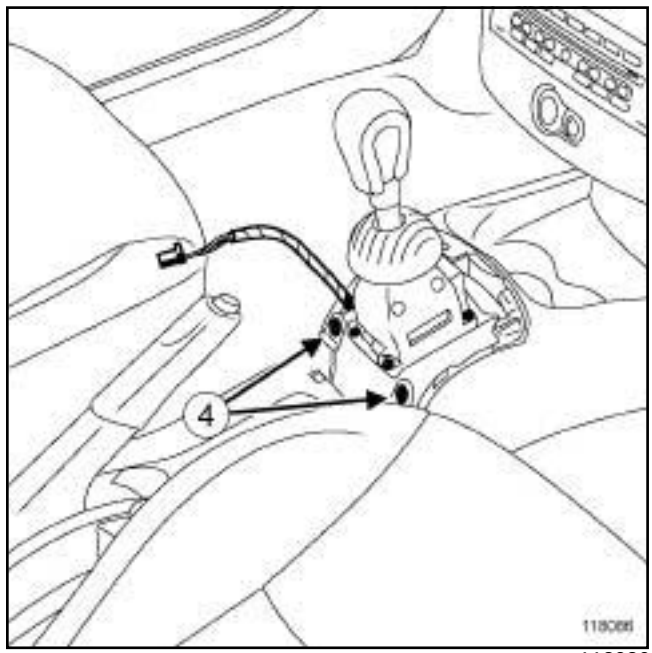


118086

❑ Disconnect the gear lever lighting connector (**2**) .



117775

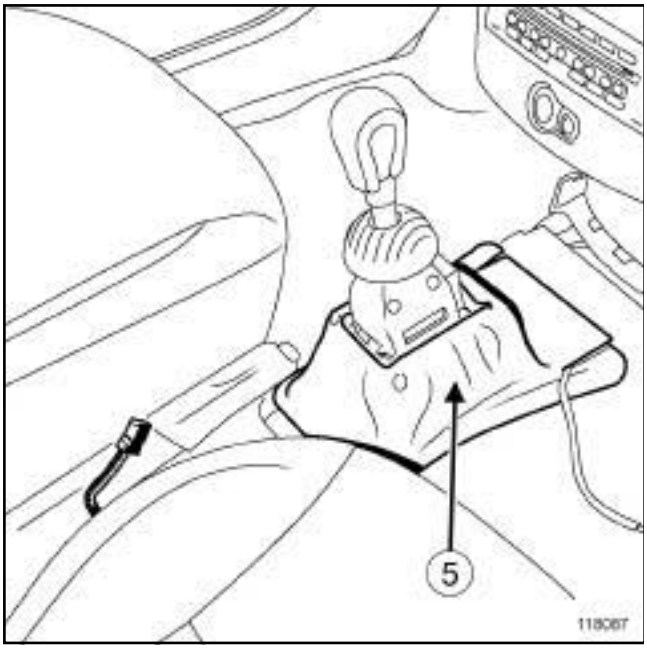


118086

❑ Remove:

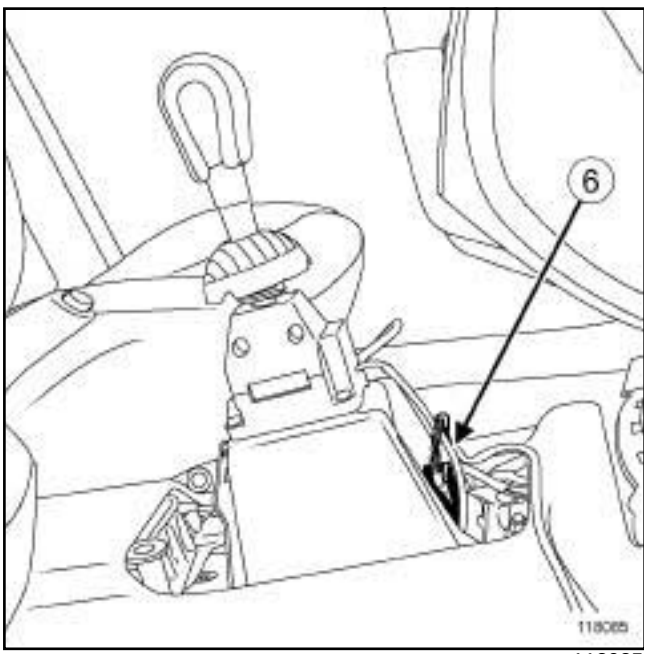
- the rear bolts (**3**) from the centre console,
- the front bolts (**4**) from the centre console.

K9K, and JA5



118087

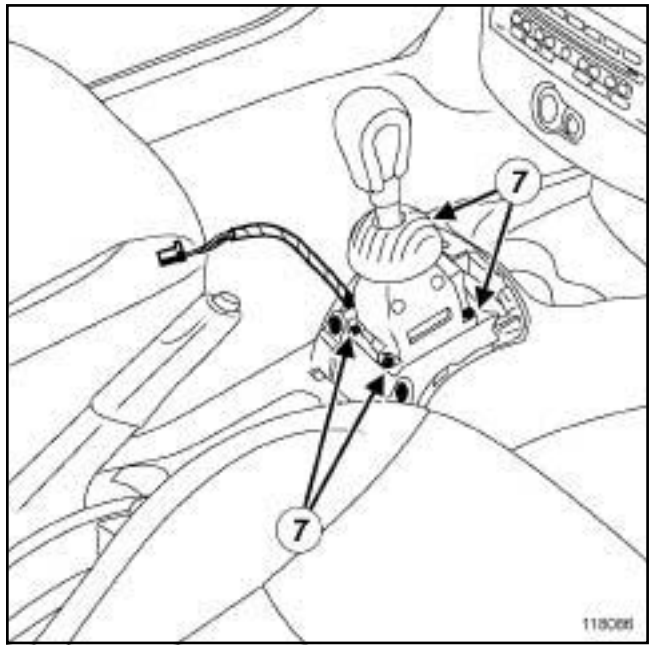
❏ Remove the soundproofing (**5**) from the gear lever.



118085

❏ Detach the connector (**6**) from the gear lever.

❏ Disconnect the gear lever connector.



118086

❏ Remove:

- the bolts (**7**) from the gear lever base plate,
- the gear lever.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the gear lever,
- the gear lever base plate bolts,

❏ Connect the gear lever connector.

❏ Attach the gear lever connector.

❏ Refit:

- the gear lever soundproofing,
- the front bolts to the centre console,
- the rear bolts to the centre console.

❏ Connect the gear lever lighting connector.

❏ Refit the gear lever cover.

II - FINAL OPERATION.

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

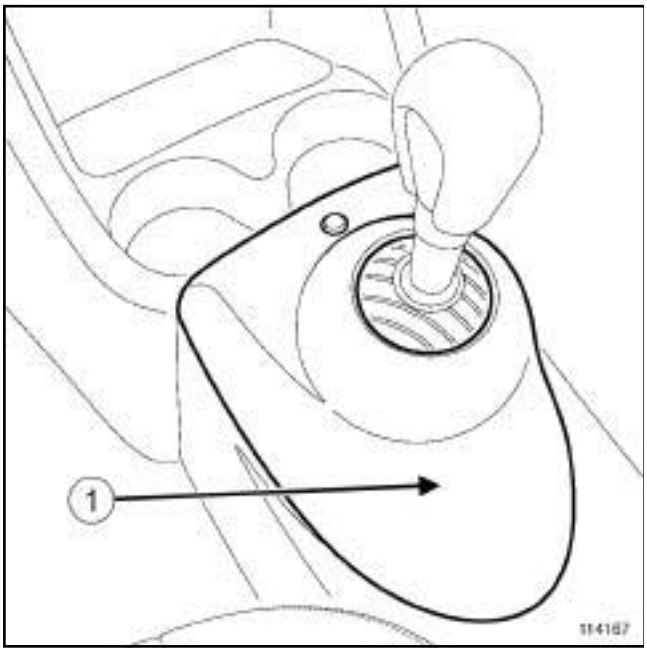
D4F, and JA3

REMOVAL

I - REMOVAL PREPARATION OPERATION

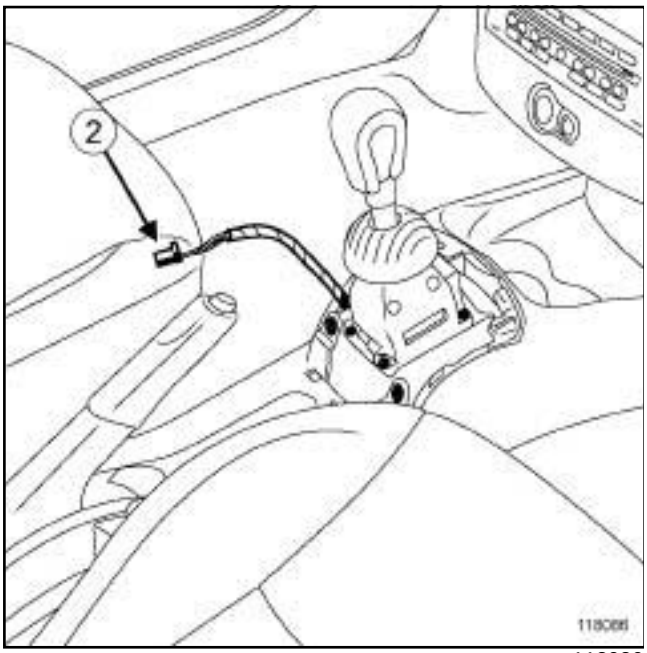
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



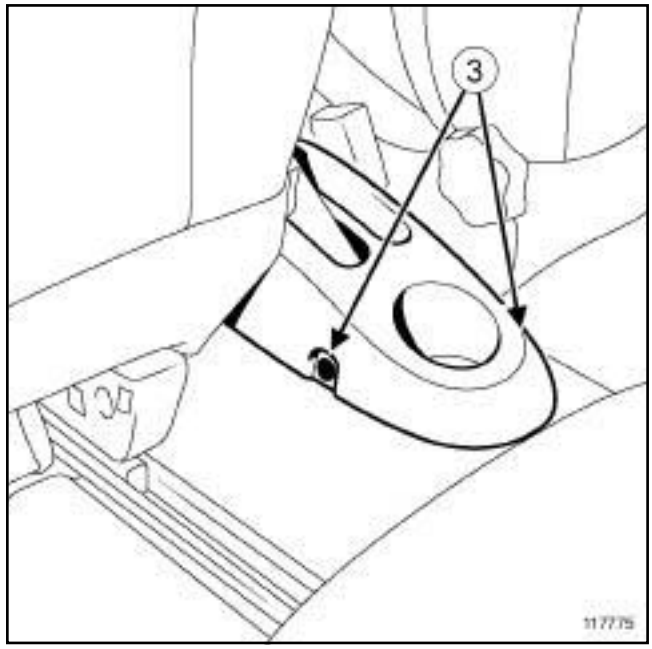
114167

❑ Remove the gear lever cover (**1**) using a screwdriver.

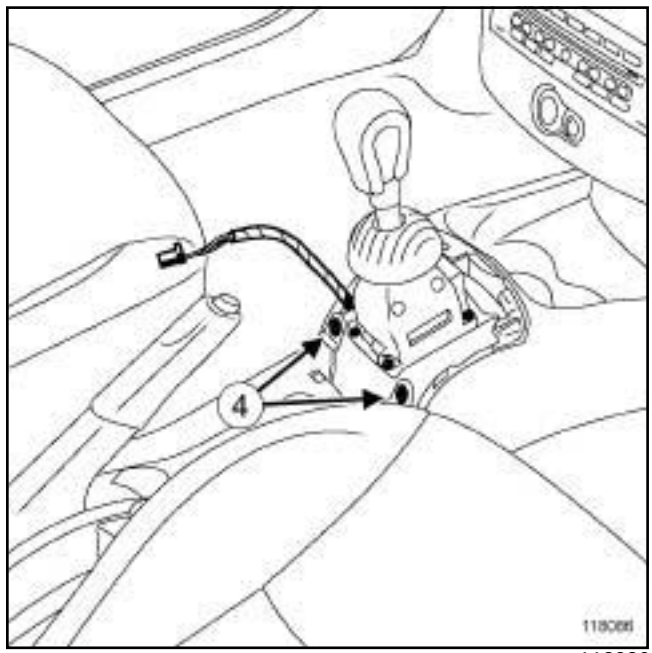


118086

❑ Disconnect the gear lever lighting connector (**2**) .



117775

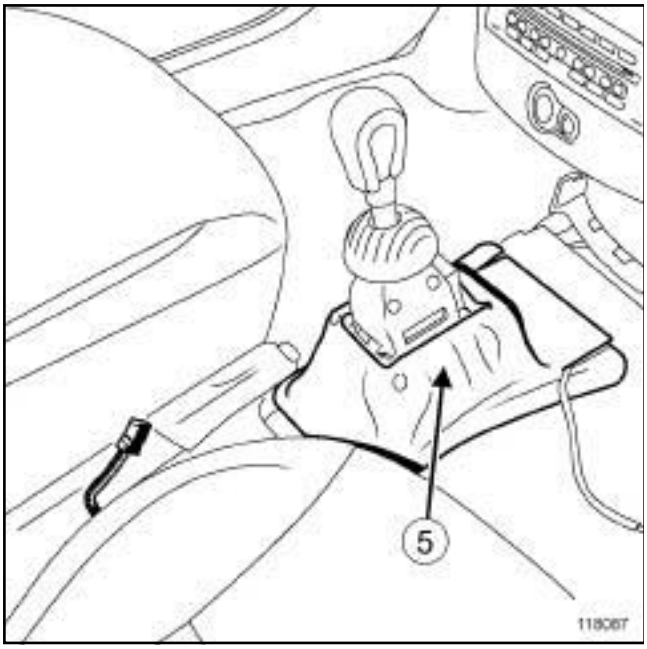


118086

❑ Remove:

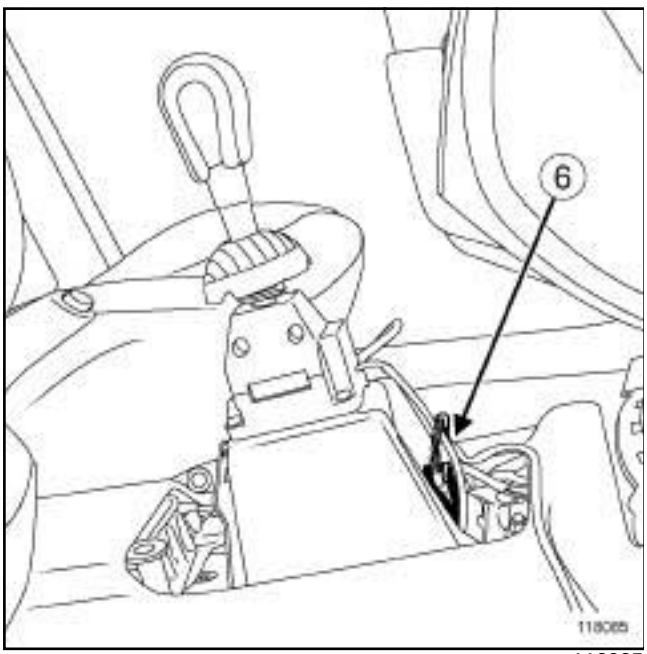
- the rear bolts (**3**) from the centre console,
- the front bolts (**4**) from the centre console.

D4F, and JA3



118087

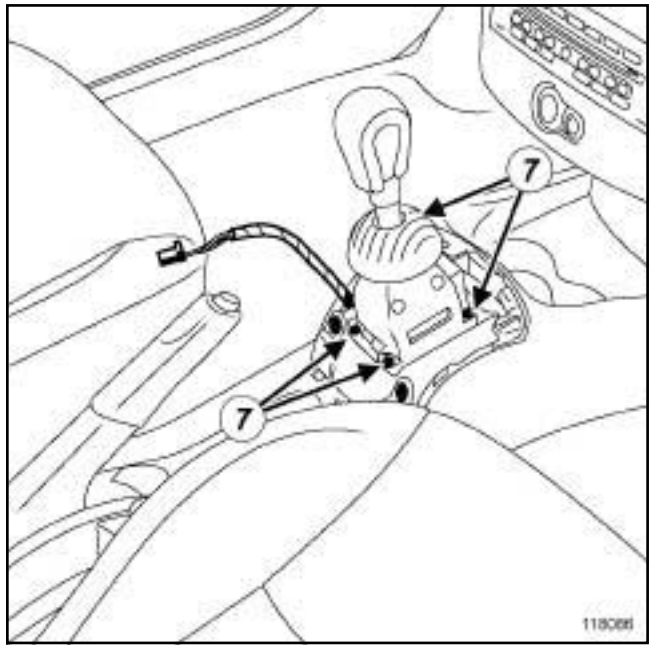
❏ Remove the soundproofing (**5**) from the gear lever.



118085

❏ Detach the connector (**6**) from the gear lever.

❏ Disconnect the gear lever connector.



118086

❏ Remove:

- the bolts (**7**) from the gear lever base plate,
- the gear lever.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the gear lever,
- the gear lever base plate bolts,

❏ Connect the gear lever connector.

❏ Attach the gear lever connector.

❏ Refit:

- the gear lever soundproofing,
- the front bolts to the centre console,
- the rear bolts to the centre console.

❏ Connect the gear lever lighting connector.

❏ Refit the gear lever cover.

II - FINAL OPERATION.

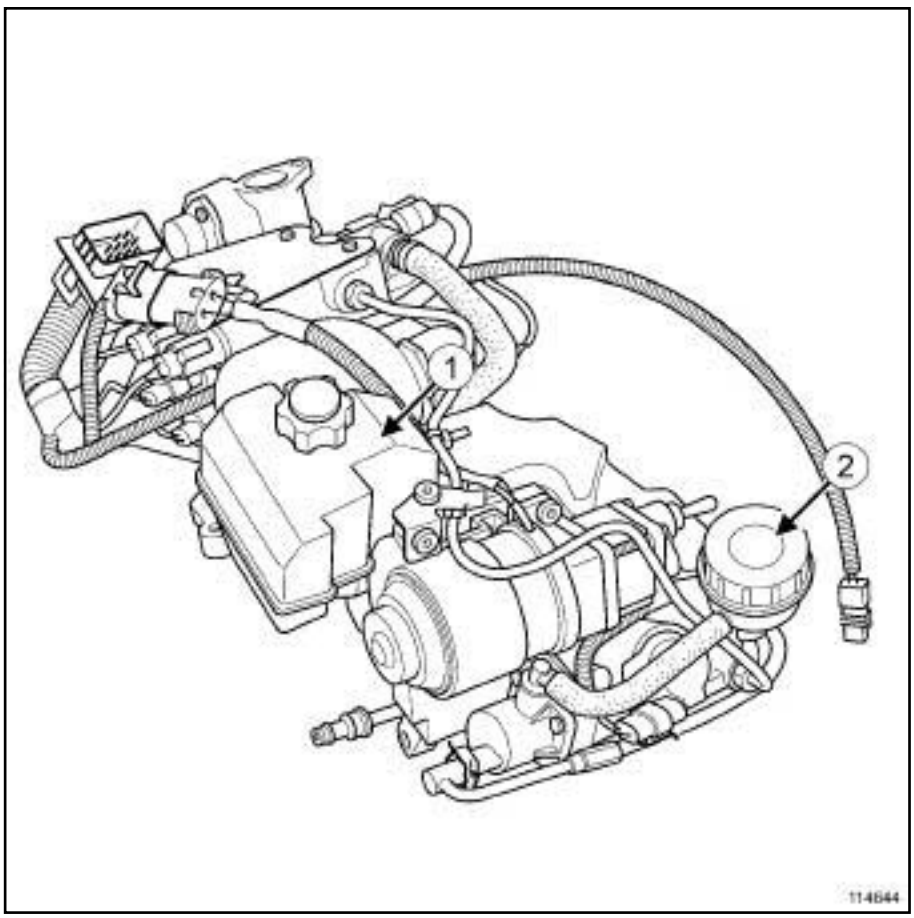
❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Carry out the necessary programming (see **Fault finding - Replacement of components**) (MR 394, 21B, Sequential gearbox).

5-SPEED MANUAL SEQUENTIAL GEARBOX

I - GEARBOX TYPE/OIL TYPE CORRELATIONS:

GEARBOX TYPE	TYPE OF OIL FOR GEAR-BOX	TYPE OF OIL FOR SEQUEN-TIAL UNIT	TYPE OF HYDRAULIC CLUTCH CON-TROL FLUID
JH1	TRANSELF TRJ 75W80 or NFJ75W80	ELF RENAULT-MATIC D3 SYN ***(3)***	-
JA3/JA5	TRANSELF TRJ 75W80 or NFJ75W80	ELF SPEEDMATIC ***(1)***	DOT4 ***(2)***
PA0/PA6	TRANSELF TRX 75W80 or NFP75W80	ELF SPEEDMATIC ***(1)***	DOT4 ***(2)***



114644

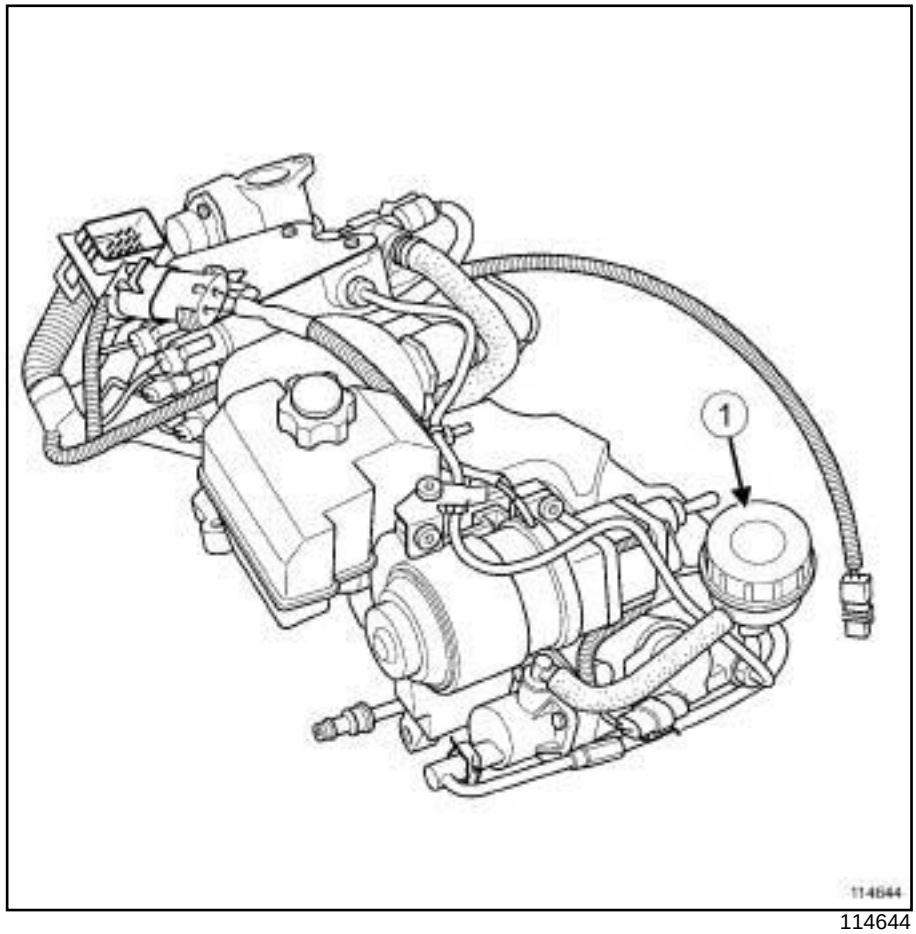
5-SPEED MANUAL SEQUENTIAL GEARBOX

II - STANDARDS AND PART NUMBERS OF THE VARIOUS RECOMMENDED OILS:

DESIGNATION	STANDARD	PART NUMBER
TRANSELF TRX 75W80 OR NFP75W80	APIGL4 MIL-L-2105 C or D	**77 11 143 534** (5 litres)
TRANSELF TRJ 75W80 or NFJ 75W80	APIGL4 MIL-L-2105 C or D	May be ordered from ELF
ELF RENAULTMATIC D3 SYN	DEXRON III	May be ordered from ELF
ELF SPEEDMATIC	ATF	**77 11 228 107** (1 litre)

Equipment required
Diagnostic tool

I - PROCEDURE



114644

❑

WARNING

- Even a tiny air bubble can cause a malfunction.
- Incorrect bleeding may cause fault finding errors and lead to an unnecessary part replacement.

II - GEARBOX REMOVED

❑

WARNING

When removing the hydraulic clutch tappet, fill the tappet with an approved fluid (see **21B**, **Sequential gearbox**, **Sequential gearbox oil: Specifications**, page **21B-82**) before refitting the gearbox, following the procedure described below.

❑ Fill the reservoir ***(1)*** with approved clutch circuit fluid.

❑ Activate the clutch tappet manually (releasing/engaging the clutch) until releasing/engaging the clutch becomes very difficult, without releasing any air bubbles. If necessary use the fluid (DOT4) to fill the reservoir.

III - GEARBOX IN POSITION

❑ Drain the reservoir of approved clutch circuit fluid.

❑ Remove the bleed screw cap.

❑ Connect a transparent tube to the bleed screw, connected to a syringe with an effective volume of **60 cm^3** filled with approved fluid.

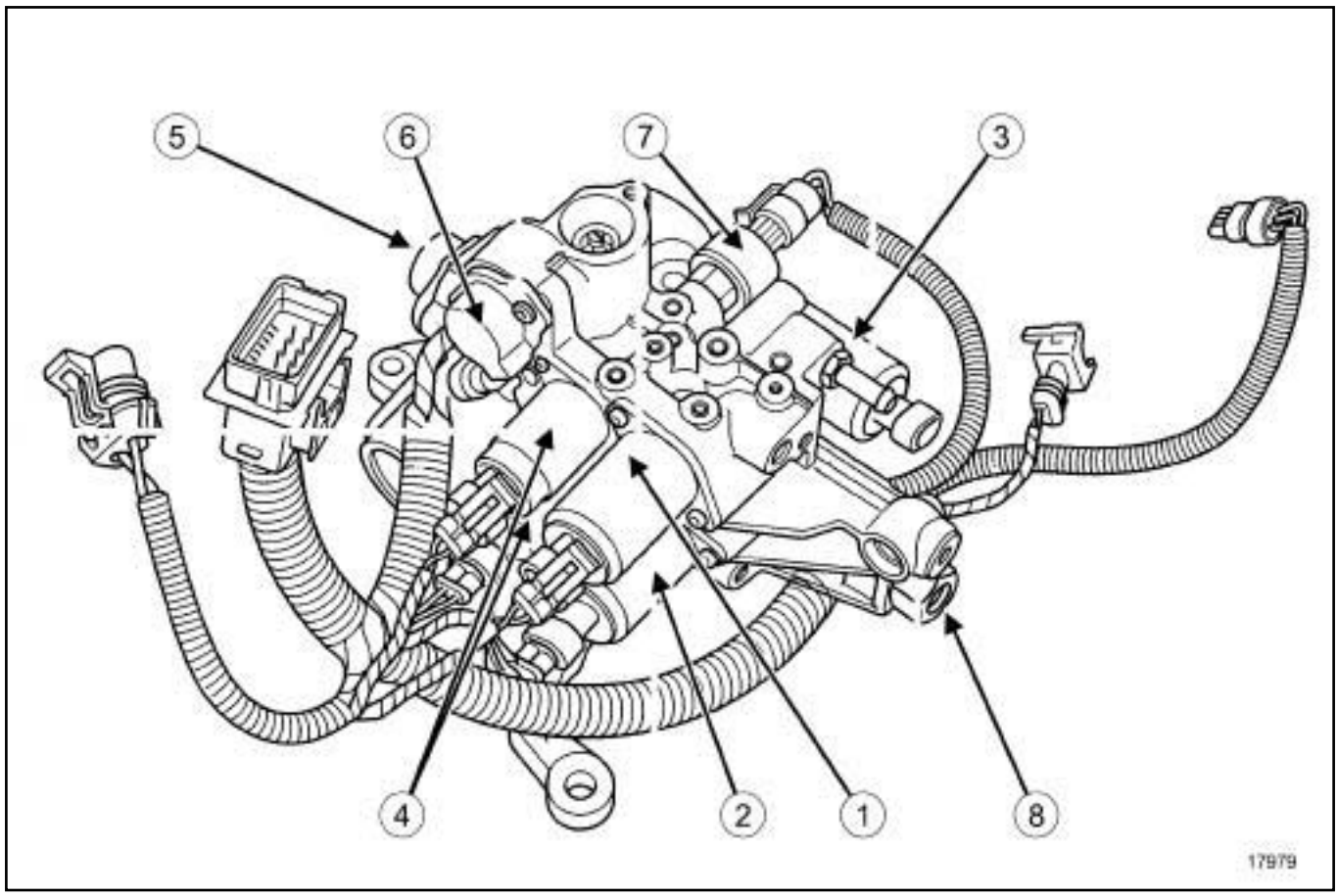
❑ Push the clutch pipe retaining clip and pull the pipe so that it is in the bleed position.

❑ Slowly inject the fluid in the syringe, making sure that the fluid does not overflow out of the reservoir.

❑ Carry out the Intake - Reflux operations slowly using the syringe until all of the air bubbles have disappeared.

- ❏ Push the pipe back into the retaining clip.
- ❏ Perform an auto-bleed using the **Diagnostic tool**.
- ❏ Check that the system is operating correctly by carrying out a road test.
- ❏ The level is correct when the fluid is halfway up the reservoir.

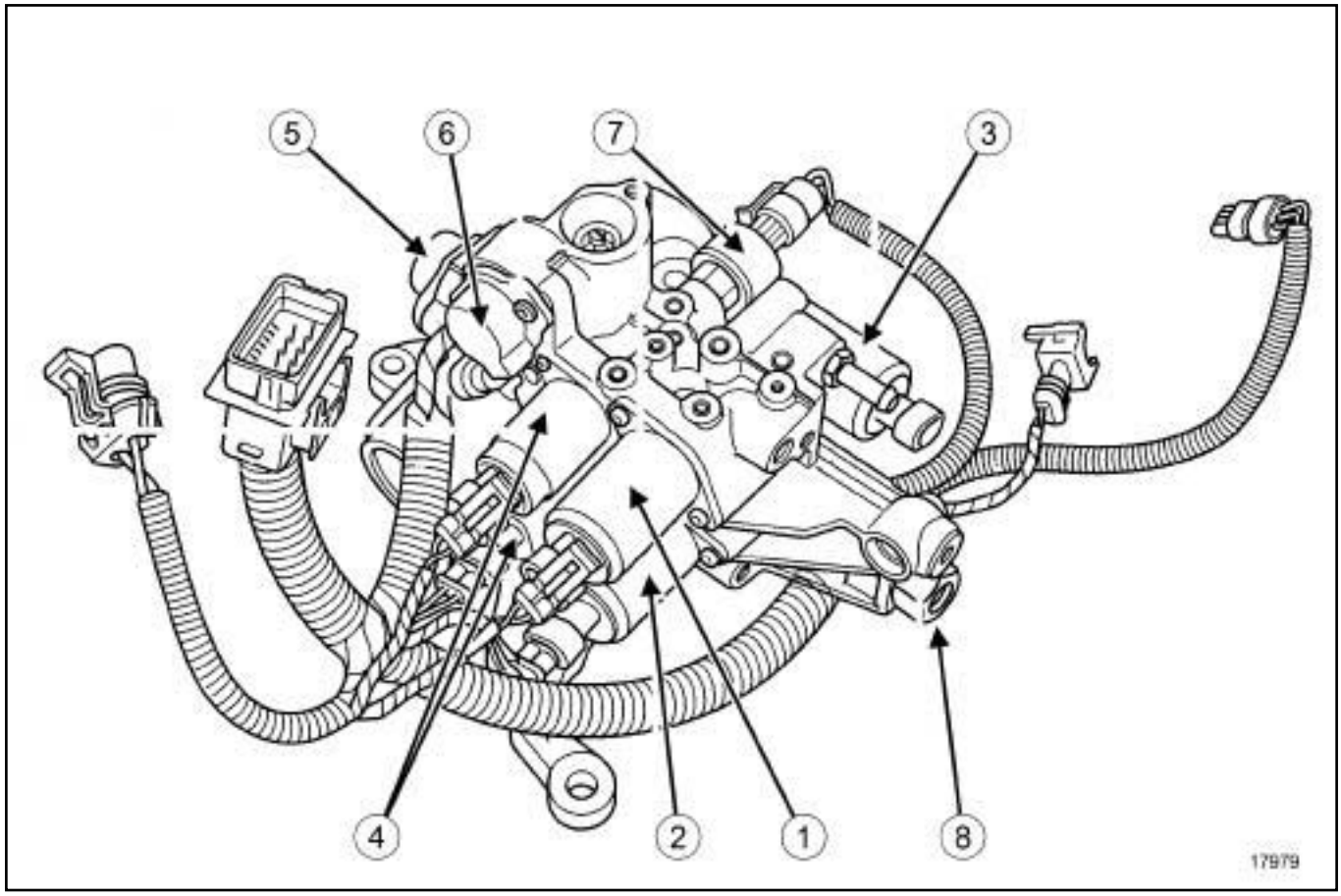
D4F, and JA3



17979

(**1**)	Clutch solenoid valve
(**2**)	Gear engagement solenoid valve
(**3**)	Gear engagement solenoid valve
(**4**)	Selection solenoid valve
(**5**)	Engagement sensor
(**6**)	Gear selection sensor
(**7**)	Solenoid valve unit pressure sensor
(**8**)	High pressure filter

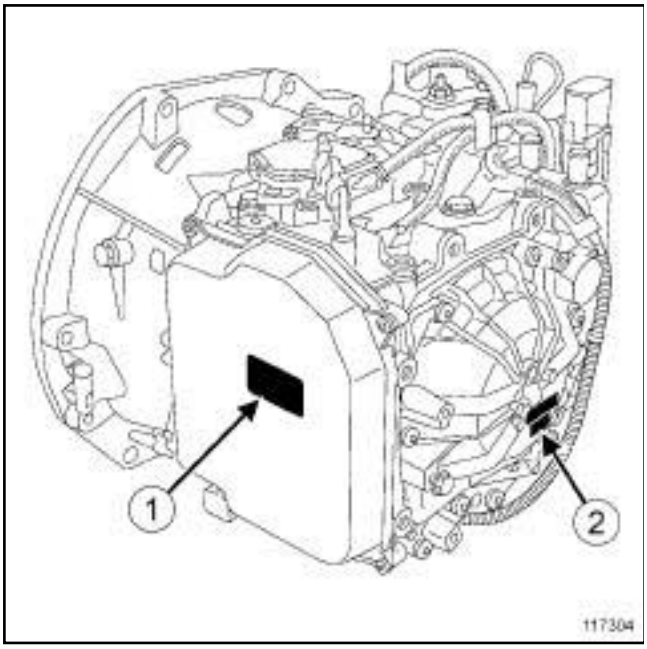
K9K, and JA5



17979

(**1**)	Clutch solenoid valve
(**2**)	Gear engagement solenoid valve
(**3**)	Gear engagement solenoid valve
(**4**)	Selection solenoid valve
(**5**)	Engagement sensor
(**6**)	Gear selection sensor
(**7**)	Solenoid valve unit pressure sensor
(**8**)	High-pressure filter

DP0



117304

The automatic transmission series number can be found in two places: on a label on the hydraulic distributor cover (**1**) and etched onto the outer casing (**2**) on the wheel side.

DP0

Equipment required
Diagnostic tool

Tightening torques ▽	
oil overflow pipe	**9 N.m**
level-setting plug	**35 N.m**
filler cap	**35 N.m**
mounting nuts on the scoop under the scuttle panel grille	**6.5 N.m**

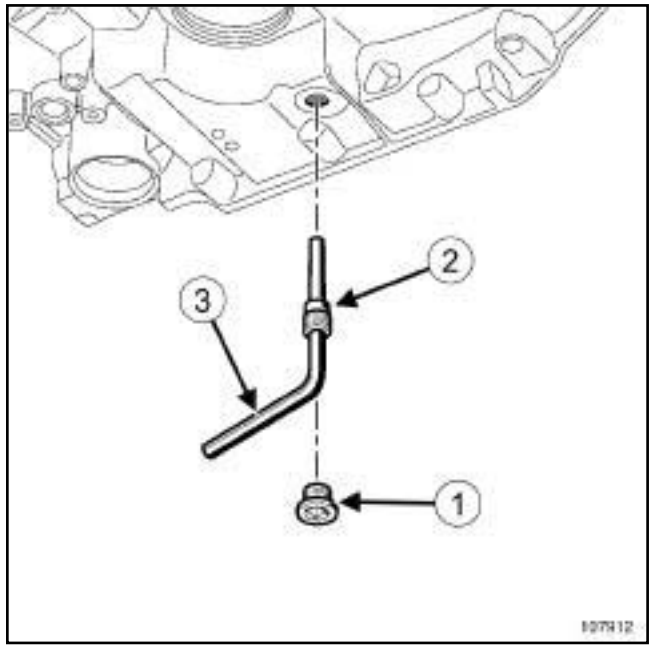
I - OIL SERVICE

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

Note:

Drain the automatic transmission oil when the oil is warm (**60°C maximum**), in order to remove as many impurities as possible.

❏ Remove the engine undertray.



107912

❏ Remove:

- the level-setting plug (**1**) ,
- the oil overflow pipe (**2**) using an **8 mm** Allen key (**3**) .

❏ Let the oil flow.

Note:

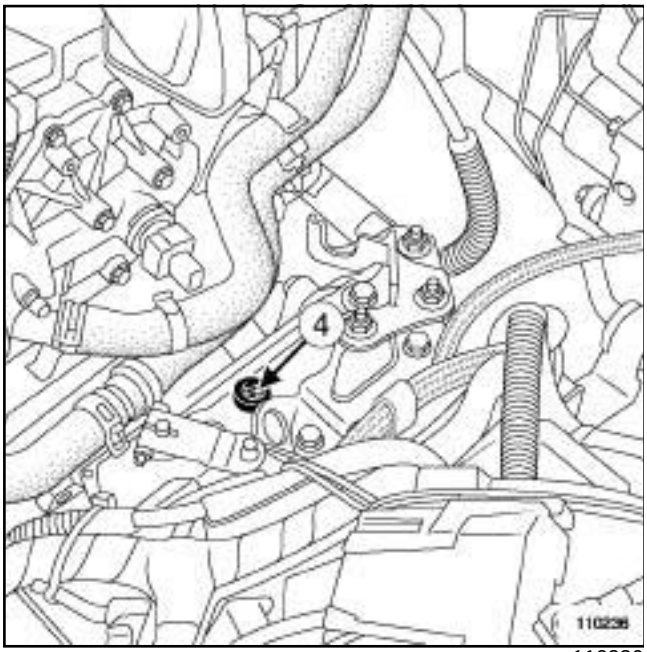
Always replace the overflow pipe (**2**) every time it is removed.

❏ Refit the new spillway.

❏ Torque tighten:

- the **oil overflow pipe (9 N.m)**,
- the **level-setting plug (35 N.m)**.

II - FILLING



110236

❏ Park the vehicle on level ground.

❏ It is essential to shift the selector lever to the Park position.

❏ Remove:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the filler cap (**4**) .

❏ Use a funnel with a **15/100** filter to prevent any impurities from entering the system.

❏ Fill the gearbox with gearbox oil recommended by the manufacturer (see) (Technical Note 6012, 04, Lubricants) using **3.5 litres** of new oil.

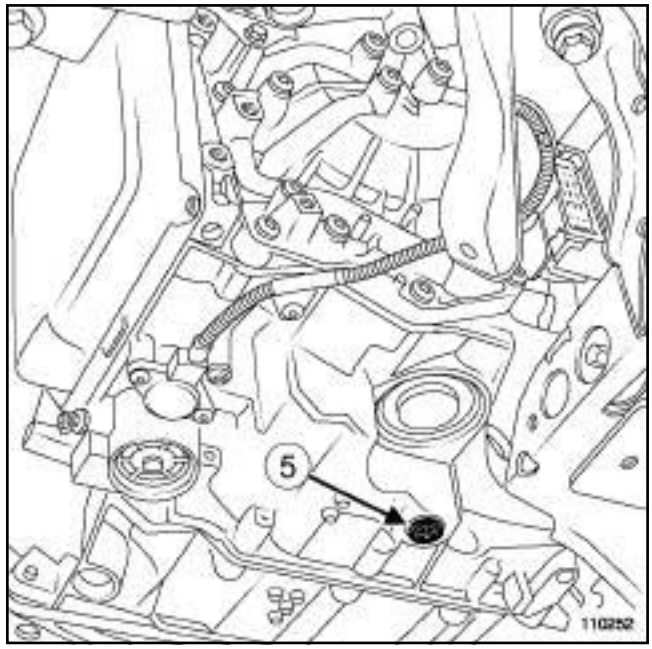
❏ Run the engine at idle speed.

❏ Connect the **Diagnostic tool**.

❏ Establish dialogue with the automatic gearbox computer.

❏ Monitor the gearbox oil temperature parameter.

❏ Wait for the temperature to reach **60˚C ± 1**.



110252

❏ Place a container under the level-setting plug (**5**) .

❏ Open the level-setting plug (**5**) , leaving the engine running.

❏ If the oil does not flow out or the quantity collected is below **0.1 litres** :

- Switch off the engine,
- add **0.5 litre** of oil,
- let the automatic transmission cool to **50˚C**,
- run the engine at idle speed,
- connect the **Diagnostic tool**,
- establish dialogue with the automatic transmission computer,
- monitor the gearbox oil temperature parameter,
- wait for the temperature to reach **60˚C**,
- place a container under the level-setting plug (**5**) .

❏ Repeat these operations until more than **0.1 litres** of oil is recovered in the container.

❏ Refit the level-setting plug (**5**) .

❏ Torque tighten the **filler cap (35 N.m)**.

III - LEVEL

❏ Park the vehicle on level ground.

Note:

The level must be checked according to the procedure described below.

DP0

- ❏ It is essential to shift the selector lever to the **Park** position.
- ❏ Fill the automatic transmission with **0.5 litre** of new oil.
- ❏ Run the engine at idle speed.
- ❏ Connect the **Diagnostic tool**.
- ❏ Establish dialogue with the automatic gearbox computer.
- ❏ Monitor the gearbox oil temperature parameter.
- ❏ Wait until the temperature reaches **60°C ± 1**
- ❏ Place a container under the level-setting plug,
- ❏ open the level-setting plug.
- ❏ If the oil does not flow or if the quantity collected is below **0.1 litres** :
  - Switch off the engine,
  - add **0.5 litre** of oil,
  - let the automatic transmission cool to **50°C**,
  - run the engine at idle speed,
  - connect the **Diagnostic tool**,
  - establish dialogue with the automatic transmission computer,
  - monitor the gearbox oil temperature parameter,
  - wait for the temperature to reach **60°C ± 1**,
  - place a container under the level-setting plug,
  - open the level-setting plug.
- ❏ Repeat these operations until more than **0.1 litres** of oil is recovered in the container.

> Note:
>
> When the oil is replaced, the electronic oil ageing counter must be reset (inside the computer).

- ❏ Refit:
  - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
  - the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).
- ❏ Torque tighten the **mounting nuts on the scoop under the scuttle panel grille (6.5 N.m)**.
- ❏ Enter the date of the oil change using the **Diagnostic tool** (see **Fault finding - Configurations and programming)** (MR 394, 23A, Automatic transmission).

K4M, and 801, and DP0 – M4R, and 701, and DP0, and 021

Vehicle	Engine	Automatic transmission	Automatic transmission suffix	Reduction	Final drive
CROC BROC	M4R 701	DP0	021	52 / 67	21 / 73
CR0B BR0B	K4M 801	DP0	074	52 / 67	20 / 73

DP0

Equipment required
Diagnostic tool

Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

Lift the vehicle until the wheels are raised off the ground by a few centimetres.

Connect the **Diagnostic tool**.

Establish dialogue with the automatic transmission computer.

Monitor the automatic gearbox oil temperature parameter.

Check that the oil temperature is between **60˚C** and **80˚C**.

Start the engine and shift the lever to **D**.

Monitor the engine speed parameter:

Establish dialogue with the computer.

Accelerate fully, keeping the brakes applied. The front wheels should not rotate.

WARNING

- Full load should not be maintained for more than **5 seconds**. Beyond this, there is a high risk of destroying the converter or the automatic gearbox.

- Once the measurement has been taken, release the accelerator and keep the brakes on until the engine speed stabilises to idle speed (there is a risk of damaging the automatic gearbox if this is not done).

The engine speed should stabilise at **2700 rpm**.

A setting point outside the tolerance requires the converter to be replaced.

Note:

A stall point which is too low may be linked to a lack of engine power.

K4M, and DP0

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
safety strap(s)
component jack
Diagnostic tool

Tightening torques ▽	
automatic transmission bell housing bolts	**44 Nm**
converter nuts	**25 Nm**
exhaust manifold bracket nuts	**21 Nm**
subframe bolt	**105 Nm**
automatic transmission connector bolts	**20 Nm**

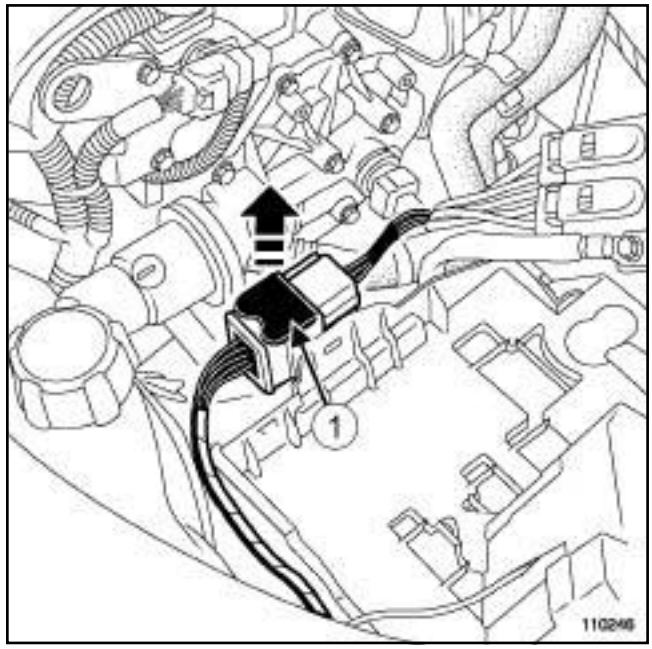
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

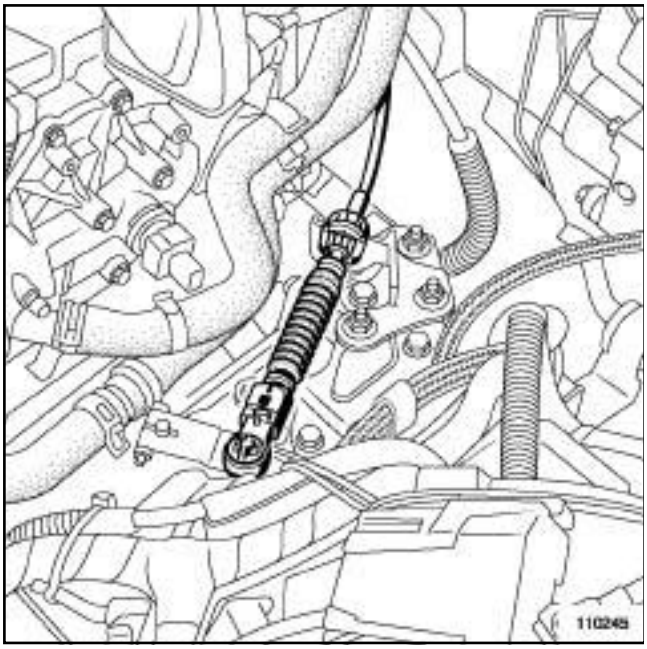
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the battery (see) (80A, Battery)
- the battery tray (see) (80A, Battery),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



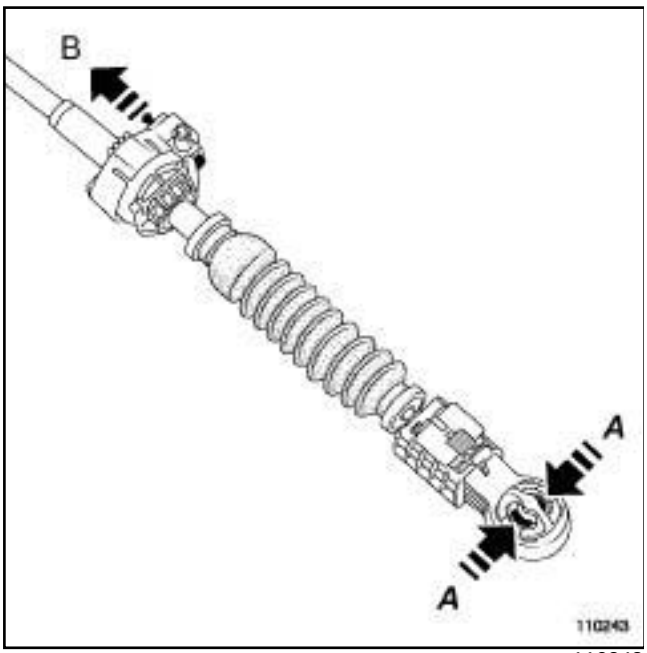
110246

❑ Disconnect the modular connector by pulling the connector slide mechanism (**1**) .

K4M, and DP0



110245



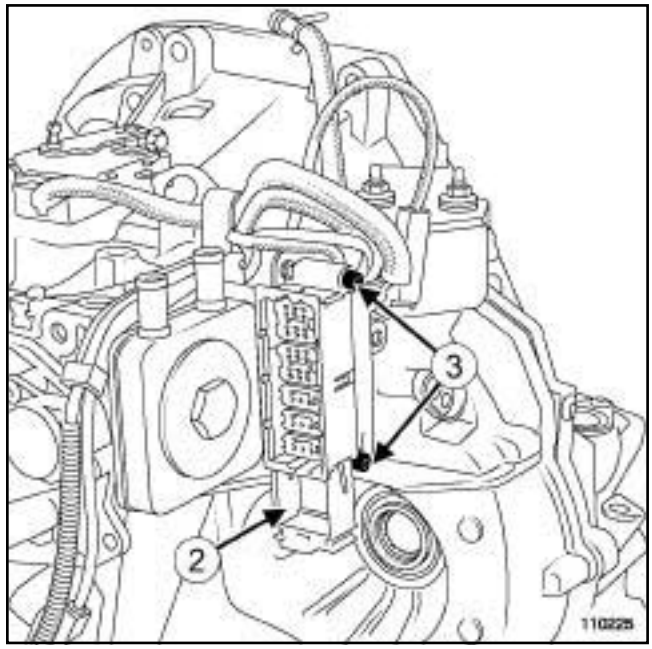
110243

❏ Remove:

- the multifunction switch control cable by pressing at (**A**) ,
- the control cable sheath stop from the gearbox support by pulling the catch at (**B**) .

❏ Disconnect the crankshaft position sensor connector.

❏ Remove the crankshaft position sensor.



110225

❏ Disconnect the automatic transmission connector by pulling out the slide (**2**) .

❏ Remove the bolts (**3**) from the automatic transmission connector and slide it into a waterproof plastic bag.

Note:

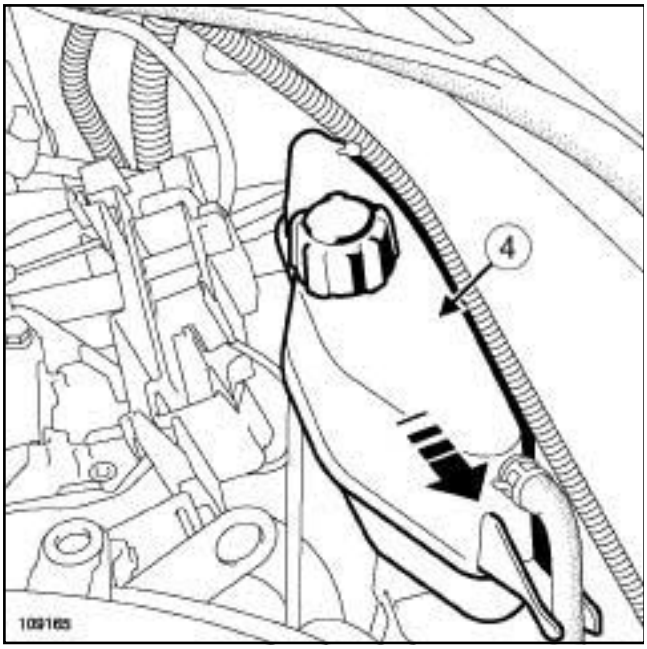
Protect the automatic transmission connector by sliding it into a waterproof plastic bag.

❏ Drain the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

❏ Disconnect the hoses from the expansion bottle.

❏ Remove the plastic rivet from the expansion bottle.

K4M, and DP0



109165

❏ Remove:

- the expansion bottle (**4**) in the direction of the arrow,
- the air resonator.

❏ Disconnect the automatic transmission cooling hoses.

❏ Remove the bottom cooling hose.

❏ Unclip the top cooling hose from the thermostat.

❏ Disconnect:

- the engine cooling fan,
- the engine fan relay unit,
- the pressostat.

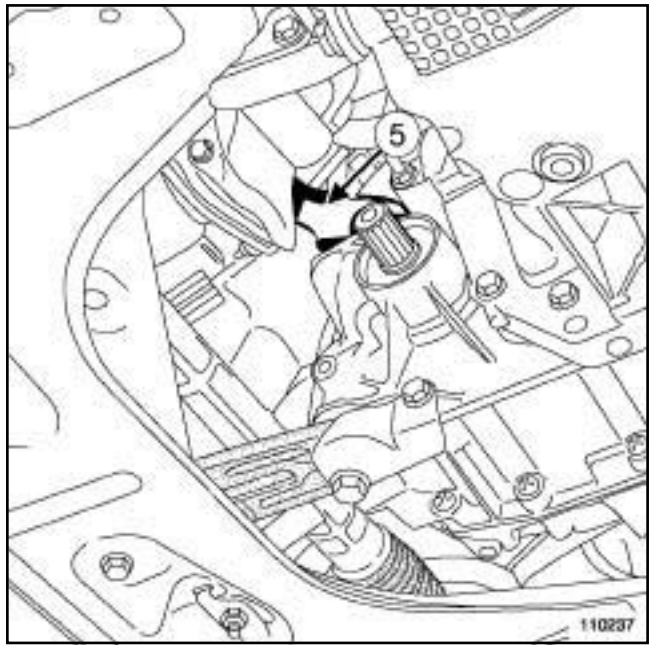
❏ Move the wiring aside.

❏ Unclip the radiator fan unit.

❏ Disconnect the anti-lock braking system sensor connectors.

❏ Remove:

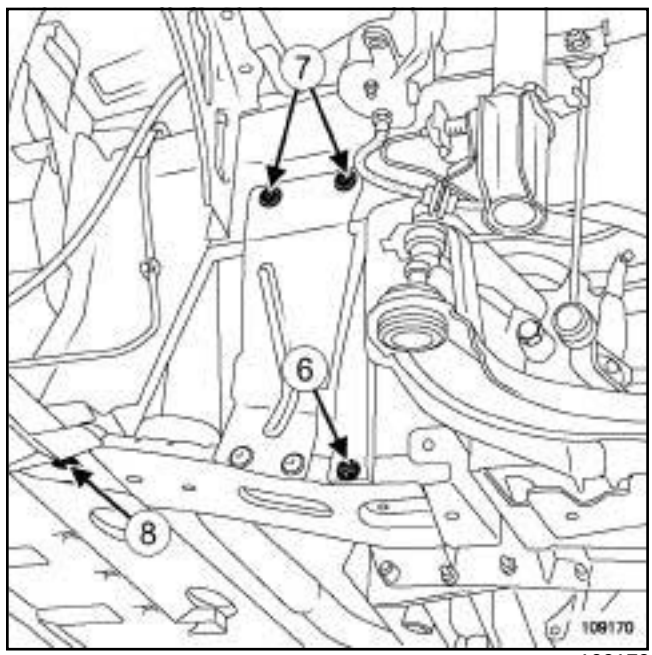
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .



110237

❏ Remove the catalytic converter stay (**5**) .

❏ Fit the cooling assembly to the upper cross member using a **safety strap(s)**.

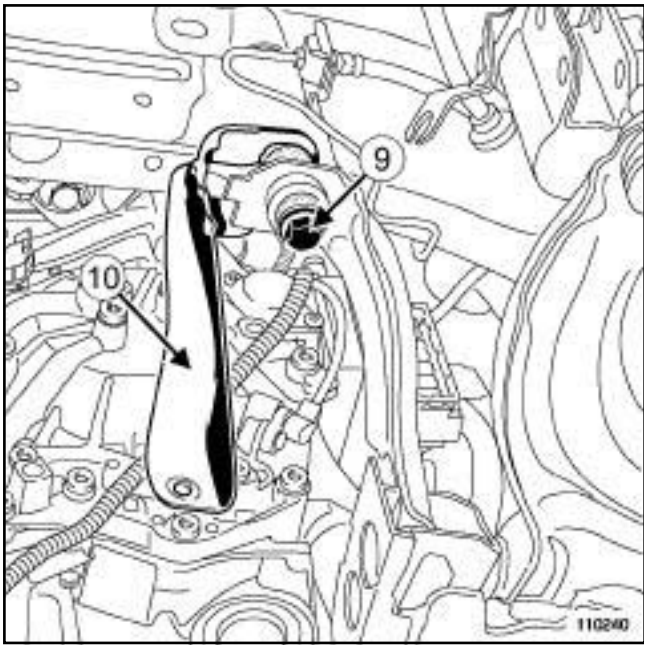


109170

❏ Remove:

- the tie rod bolts (**6**) ,
- the side stiffener bolts (**7**) ,
- the bolts (**8**) on the cooling radiator support cross member,
- the cooling radiator support cross member,
- the fan unit.

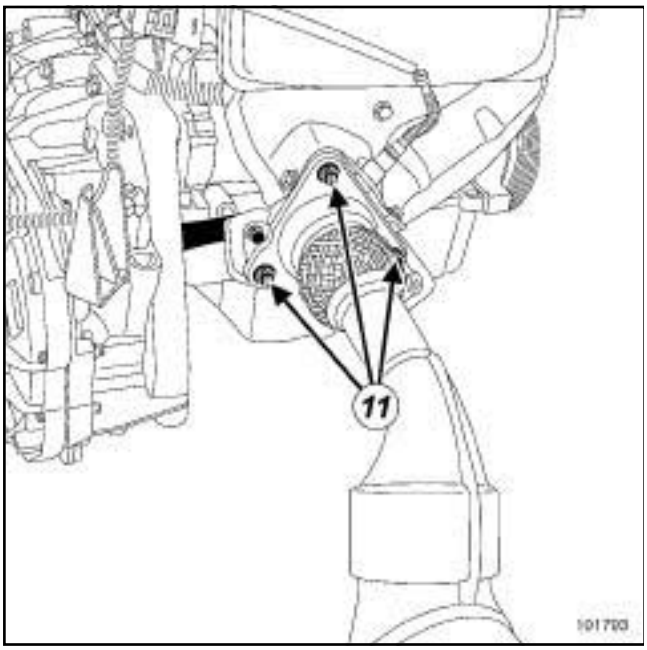
K4M, and DP0



110240

❏ Loosen the subframe bolt (**9**) .

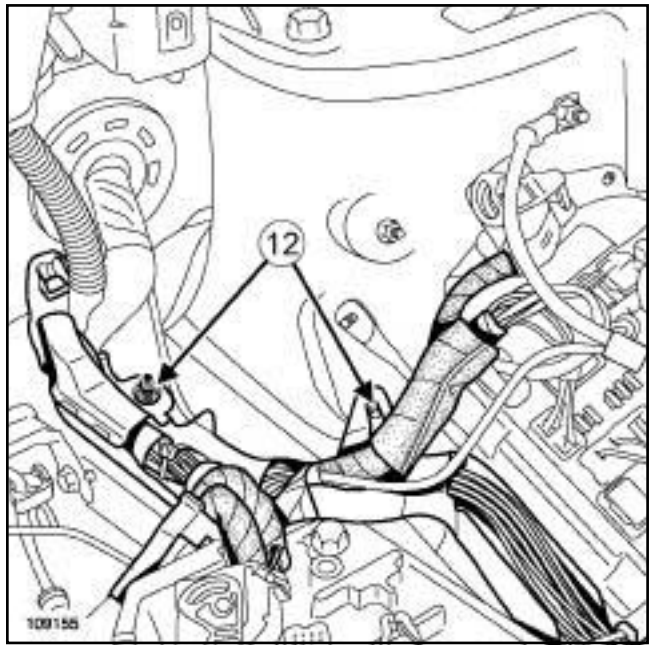
❏ Turn the stay (**10**) towards the rear to free the access to the automatic transmission.



101793

❏ Remove:

- the exhaust manifold bracket nuts (**11**) ,
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection).

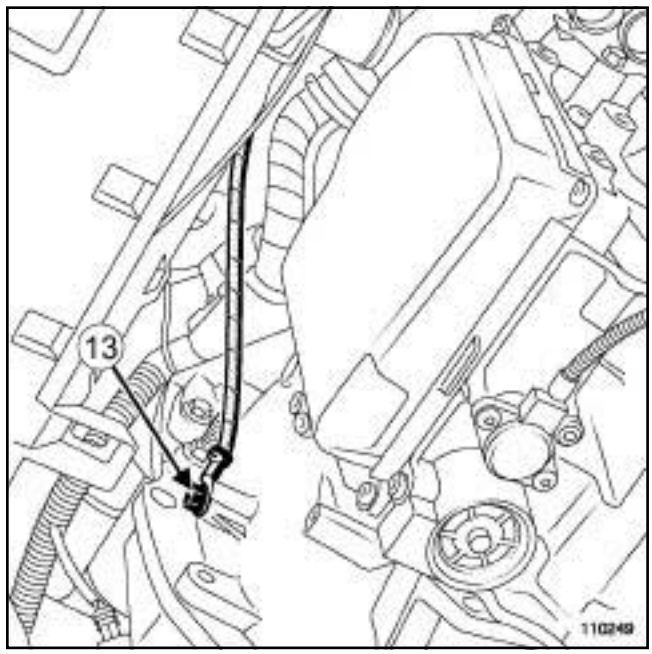


109155

❏ Remove the wiring channel nuts (**12**) on the body.

❏ Attach the wiring channel in order to access the automatic transmission support freely.

❏ Remove the wiring channel nuts on the engine.



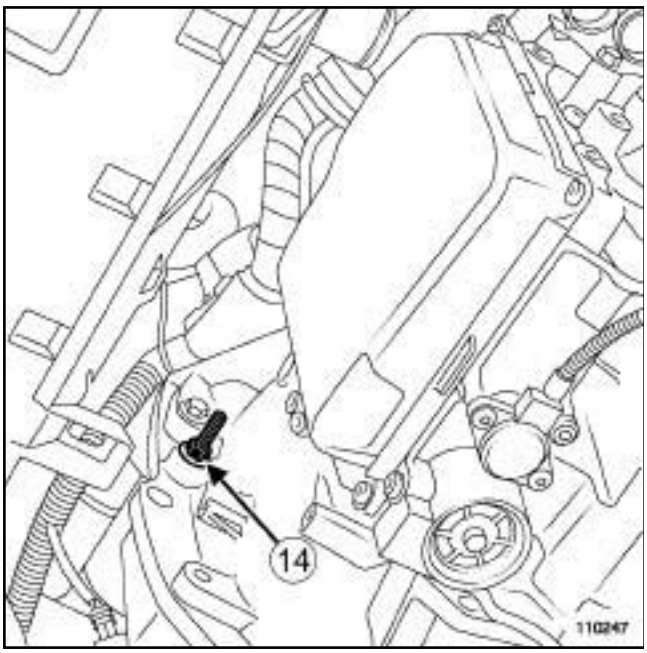
110249

❏ Remove:

- the bolt (**13**) on the automatic transmission earth strap,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the converter nuts via the starter aperture.

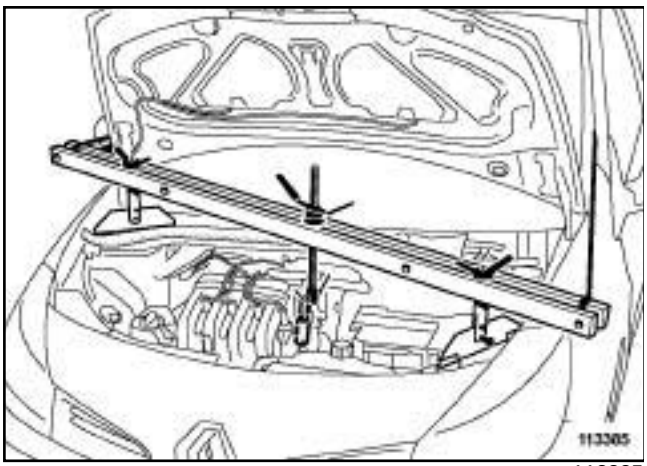
K4M, and DP0

II - OPERATION FOR REMOVAL OF PART CONCERNED



110247

❏ Remove the upper automatic transmission bell housing stud (**14**) .



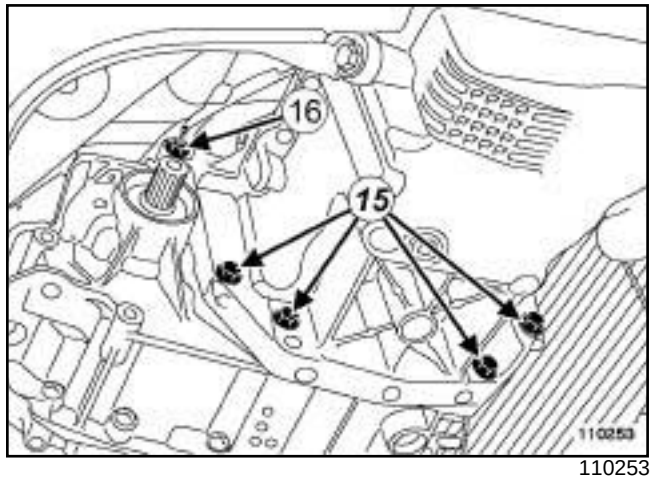
113385

❏ Fit the tool **(Mot. 1453)** with its **safety strap(s)**.

❏ Remove:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the automatic transmission bell housing upper bolts.

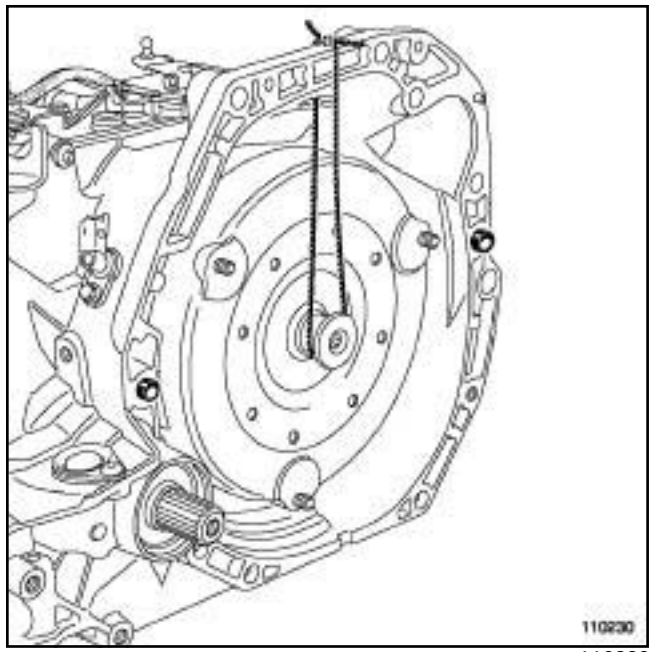
❏ Fit the **component jack** beneath the automatic transmission.



110253

❏ Remove:

- the lower bolts (**15**) on the automatic transmission bell housing,
- the automatic transmission lower stud (**16**) ,
- the automatic gearbox.



110230

❏ Attach the converter with string to stop it being detached.

K4M, and DP0

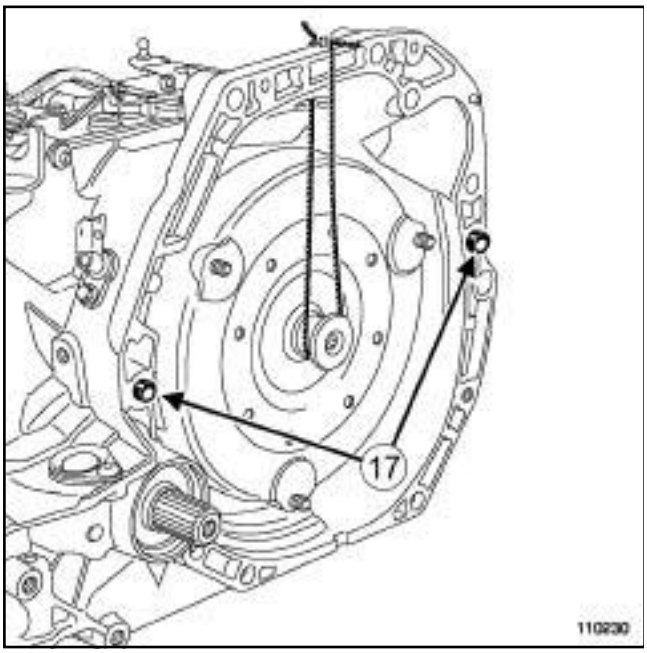
REFITTING

I - REFITTING PREPARATION OPERATION

❑

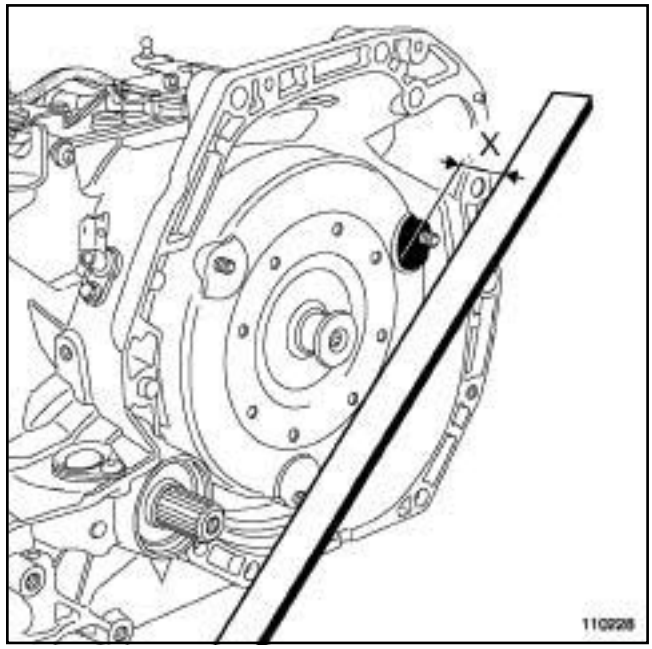
Note:

Do not reuse the converter nuts or the inertia flywheel nuts if they have been removed: always use new nuts.



110230

❑ Check that the centring dowels (**17**) are in place.



110228

❑ Check the positioning of the converter in relation to the engine/automatic transmission coupling face using a ruler and a slide; the value should be (**X**) **= 18.22 mm ± 1**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the automatic gearbox,
- the automatic transmission studs,
- the automatic transmission bell housing lower bolts.

Note:

Ensure that the converter is inserted correctly in the input shaft.

III - FINAL OPERATION.

❑ Remove the tool **component jack** under the automatic transmission.

❑ Refit the automatic transmission bell housing upper bolts.

❑ Torque tighten the **automatic transmission bell housing bolts (44 Nm)**.

❑ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

K4M, and DP0

❏ Remove the tool **(Mot. 1453)** with its **safety strap(s)**.

❏ Refit the converter nuts via the starter aperture.

❏ Torque tighten the **converter nuts (25 Nm)**

❏ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the earth strap bolt on the automatic transmission.

❏ Detach the wiring channel.

❏ Refit:

- the nuts mounting the wiring channel to the body,
- the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection),
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the exhaust manifold bracket.

❏ Torque tighten the **exhaust manifold bracket nuts (21 Nm)**.

❏ Refit the subframe tie-rod.

❏ Torque tighten the **subframe bolt (105 Nm)**.

❏ Refit:

- the fan assembly via the underbody of the vehicle,
- the radiator support cross member,
- the radiator support cross member bolts,
- the side stiffener bolts,
- the tie-rod bolts.

❏ Detach the cooling assembly from the upper cross member.

❏ Refit:

- the catalytic converter stay,
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

❏ Connect the ABS sensor connectors.

❏ Clip on the radiator fan assembly.

❏ Connect:

- the pressostat,
- the engine fan relay unit,
- the engine cooling fan.

❏ Fit the thermostat upper cooling hose.

❏ Refit the lower cooling hose.

❏ Connect the automatic transmission cooling hoses.

❏ Refit:

- the air resonator,
- the expansion bottle,
- the plastic rivet of the expansion bottle,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❏ Connect the expansion bottle hoses.

❏ Fill the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

❏ Take the automatic transmission connector out of the plastic bag.

❏ Refit the automatic transmission connector.

❏ Torque tighten the **automatic transmission connector bolts (20 Nm)**.

❏ Connect the automatic transmission connector by pushing the slide mechanism.

❏ Refit the crankshaft position sensor.

❏ Connect the crankshaft position sensor.

❏ Refit:

- the control cable sheath stop on the automatic transmission mounting,
- the multifunction switch control cable.

❏ Connect the modular connector by pushing the connector slide mechanism.

❏ Refit:

- the battery tray (see) (80A, Battery),
- the battery (see) (80A, Battery)
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Check the automatic transmission oil level (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Filling**, page **23A-2**) .

K4M, and DP0

❑ If replacing the oil distributor, clear the auto-adaptive strategies using command **RZ005 Clear auto-adaptive strategies** and reset the oil ageing counter on the automatic transmission computer using the **Diagnostic tool**, run command **CF074 « Write gearbox oil change date »** .

After running command **RZ005**, it is essential to carry out a test drive performing all gear changes, both up and down, several times to store the new values.

M4R, and 701, and DP0, and 021

Special tooling required	
Mot. 1672	Lower engine support.

Equipment required
component jack

Tightening torques ▽	
automatic gearbox bell housing bolts	**44 Nm**
converter nuts	**25 Nm**
subframe bolt	**105 Nm**
converter nuts	**25 Nm**

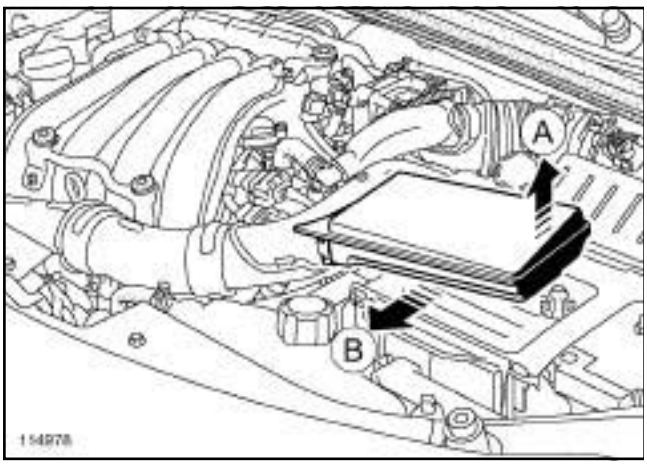
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

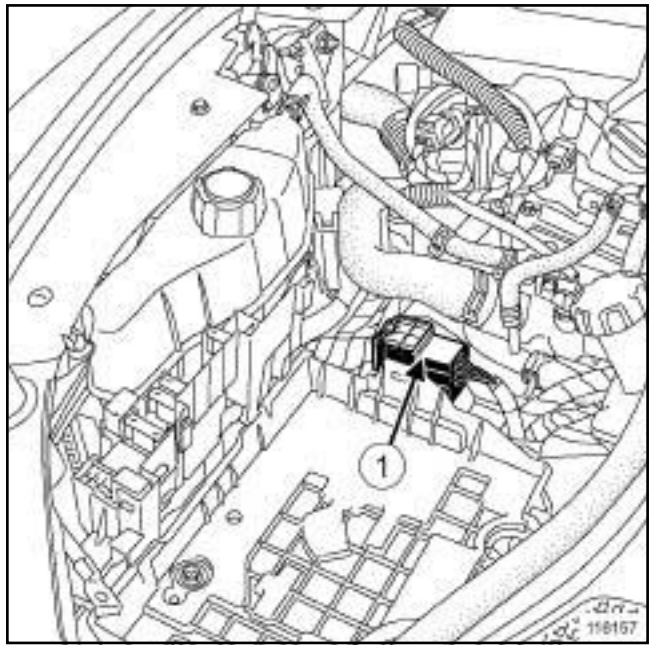
- the engine cover,
- the engine undertray.



114978

❏ Remove the air resonator on the battery following the direction of the arrows (**A**) then (**B**) .

❏ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).



116157

❏ Remove:

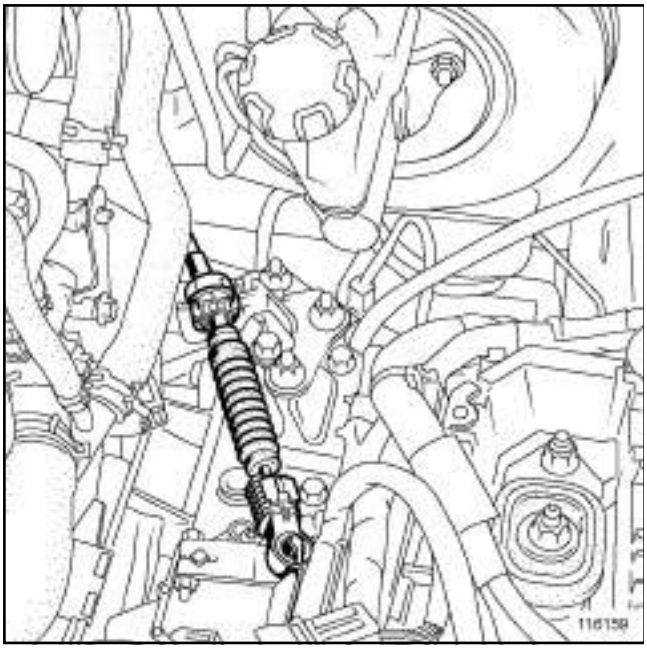
- the modular connector (**1**) ,
- the air filter (see **Air filter: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see) (80A, Battery).

❏ Drain the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

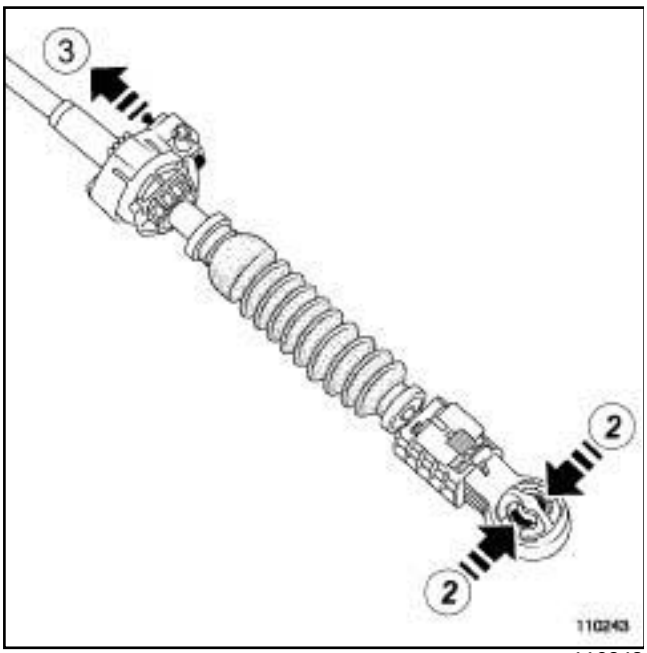
❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the cooling radiator (see **Cooling radiator: Removal - Refitting**) (19A, Cooling).

M4R, and 701, and DP0, and 021



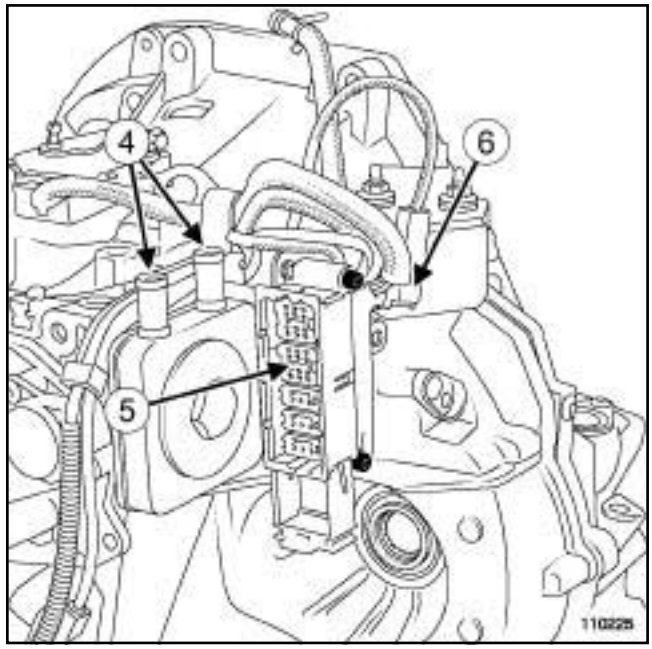
116159



110243

❑ Remove:

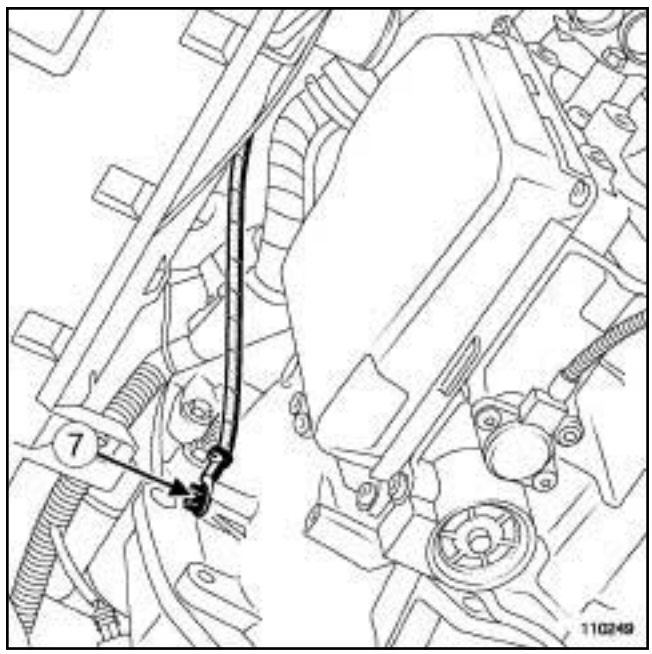
- the multifunction switch control (**2**) ,
- the multifunction switch sheath stop (**3**) .



110225

❑ Disconnect:

- the cooling hoses at (**4**) on the automatic gearbox,
- the automatic gearbox connector (**5**) ,
- the connector (**6**) from the automatic gearbox speed sensor,



110249

❑ Remove:

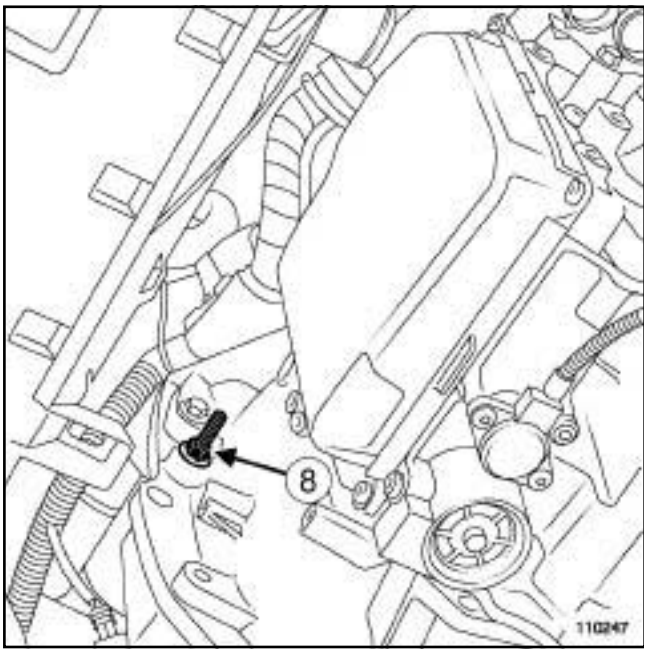
- the bolt (**7**) securing the automatic gearbox earth strap,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),

M4R, and 701, and DP0, and 021

- the converter nuts via the starter aperture.

❑ Remove:

- the wiring channel mounting nuts on the body,
- the wiring channel mounting nuts on the engine.

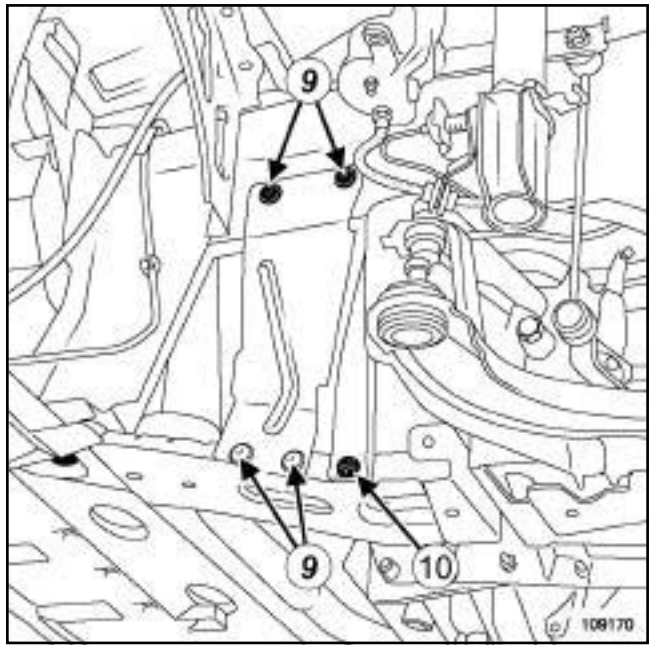


110247

❑ Unscrew the nut (**8**) from the automatic gearbox upper stud.

❑ Remove:

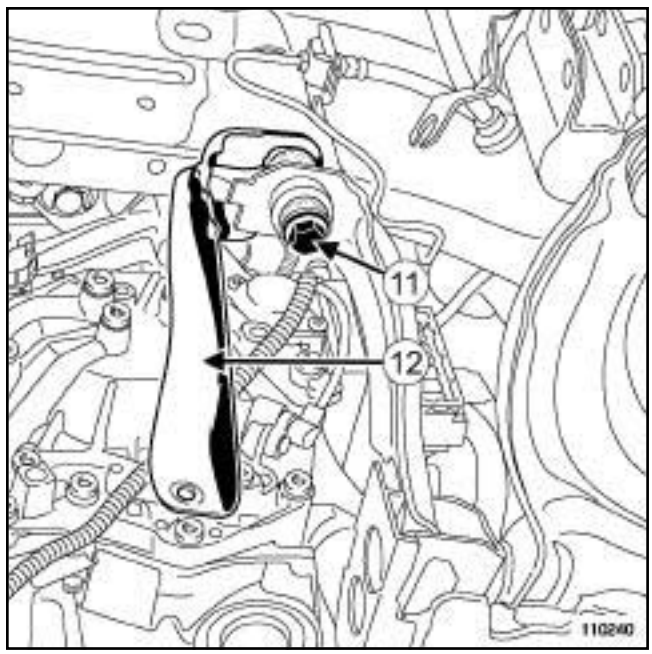
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .



109170

❑ Remove:

- the side stiffener bolts (**9**) ,
- the side stiffener,
- the tie-rod bolt (**10**) .

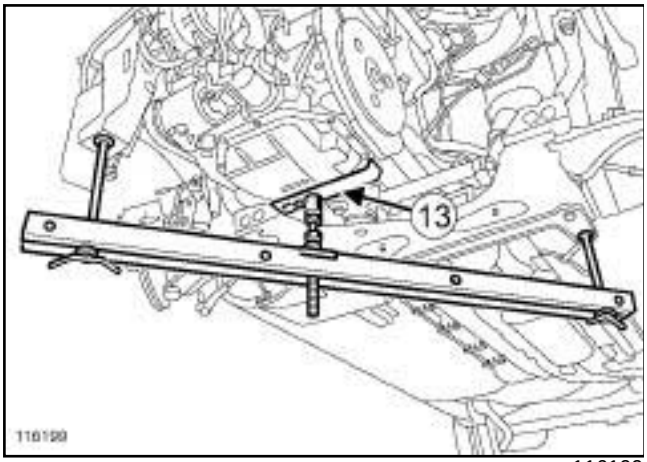


110240

❑ Loosen the subframe bolt (**11**) .

❑ Move the tie rod (**12**) back to enable access to the automatic gearbox.

❑ Remove the radiator support cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).



116199

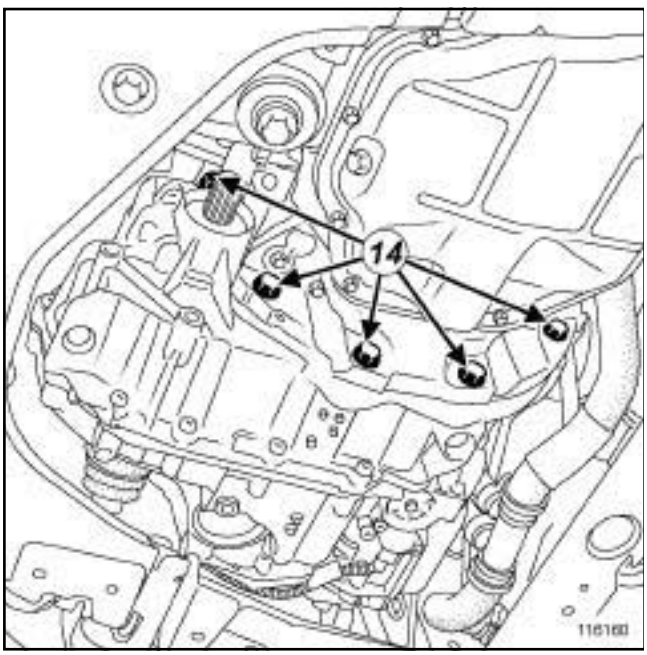
❏ Fit the tool **(Mot. 1672)** making sure that the support (**13**) is positioned as shown on the diagram.

❏ Remove:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the automatic gearbox bell housing upper bolts.

II - OPERATION FOR REMOVAL OF PART CONCERNED

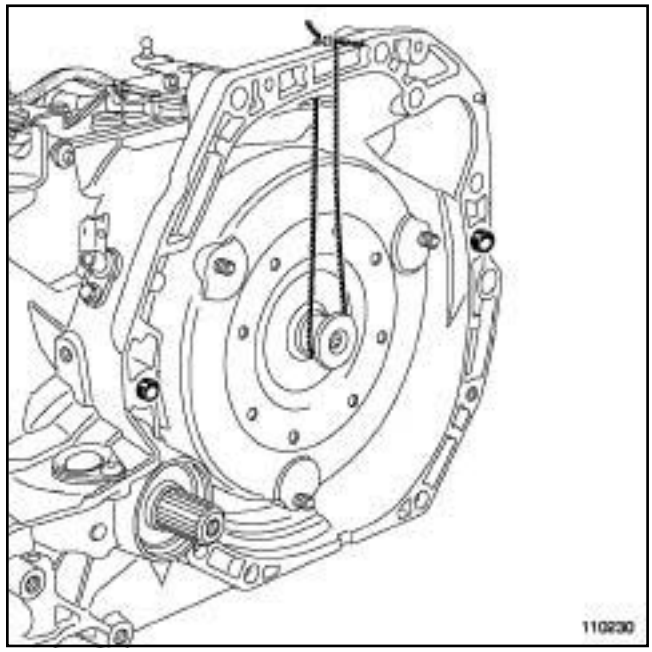
❏ Fit the **component jack** beneath the automatic transmission.



116160

❏ Remove:

- the lower bolts (**14**) on the automatic gearbox bell housing,
- the automatic gearbox.

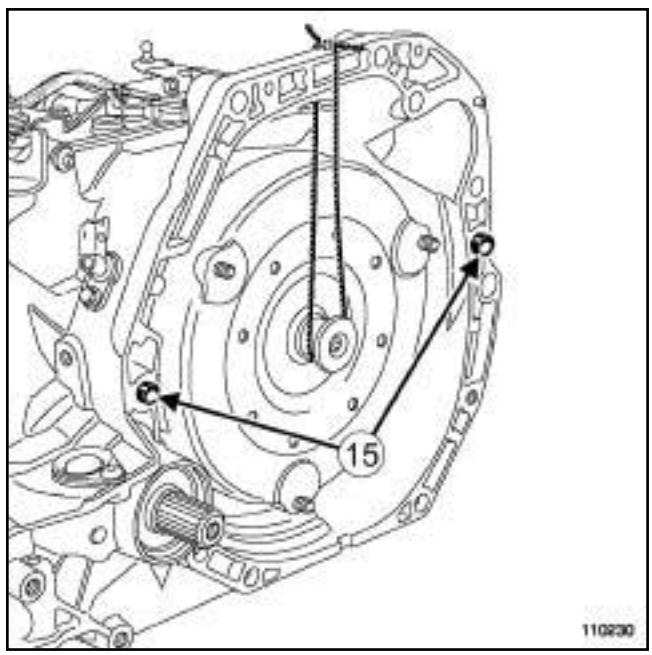


110230

❏ Attach the converter with string to stop it being detached.

REFITTING

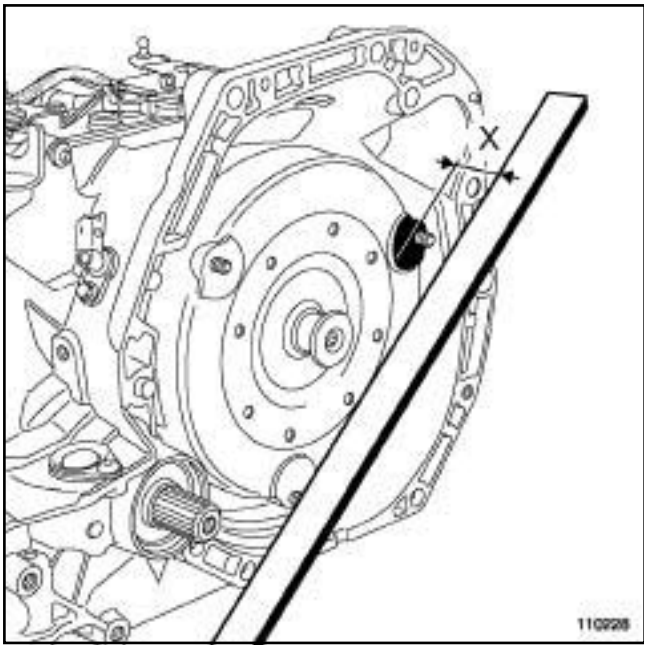
I - REFITTING PREPARATION OPERATION



110230

❏ Check that the centring dowels (**15**) are in place.

M4R, and 701, and DP0, and 021



110228

❑ Check the positioning of the converter in relation to the engine/automatic gearbox coupling face using a rule and a slide; the value should be at least (**X**) **= 18.22 mm ± 1**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the automatic gearbox,
- the lower bolts on the automatic gearbox bell housing,
- the converter nuts via the starter aperture.

Note:

Ensure that the converter is perfectly inserted in the input shaft.

Note:

Do not reuse the converter nuts or the inertia flywheel nuts if they have been removed; always fit new nuts.

III - FINAL OPERATION.

❑ Remove the tool **component jack** under the automatic gearbox.

❑ Refit the automatic gearbox upper bolts.

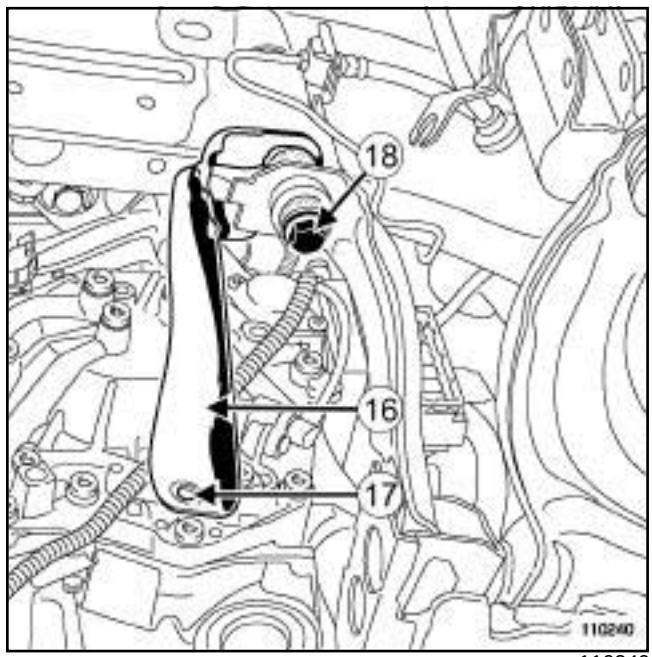
❑ Tighten to torque:

- the **automatic gearbox bell housing bolts (44 Nm)**,
- the **converter nuts (25 Nm)**.

❑ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

❑ Remove the **(Mot. 1672)**.

❑ Refit the radiator support cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).



110240

❑ Fit the tie-rod (**16**) .

❑ Refit the tie-rod bolt at (**17**) .

❑ Torque tighten the **subframe bolt (105 Nm)** (**18**) .

❑ Refit:

- the side stiffener,
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the wiring channel mounting nuts on the body,
- the wiring channel mounting nuts on the engine.

❑ Torque tighten the **converter nuts (25 Nm)**.

M4R, and 701, and DP0, and 021

❑ Refit:

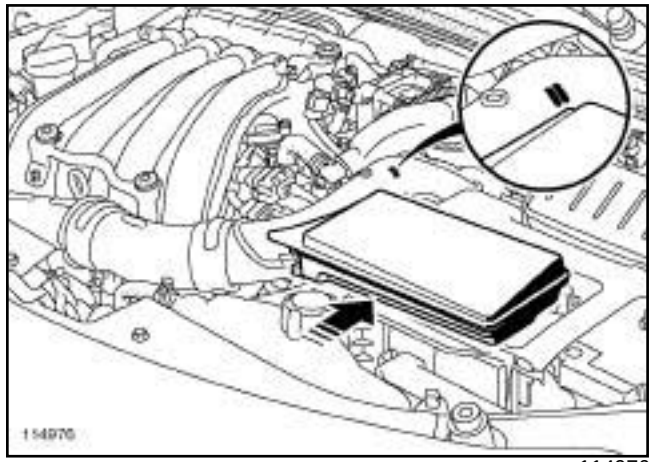
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the earth strap on the automatic gearbox,
- the automatic gearbox earth strap bolt.

❑ Connect:

- the automatic gearbox connector,
- the automatic gearbox speed sensor connector,
- the cooling hoses on the automatic gearbox.

❑ Refit:

- the multifunction switch sheath stop,
- the multifunction switch control,
- the cooling radiator (see **Cooling radiator: Removal - Refitting**) (19A, Cooling),
- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the headlights (see) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray (see) (80A, Battery),
- the air filter (see **Air filter: Removal - Refitting**) (12A, Fuel mixture),
- the modular connector,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).



114976

❑ Push the air resonator towards the rear of the vehicle so that the corner of the air resonator is between the two lines marked on the air inlet hose.

❑ Press on the air resonator to fit it onto the battery cover.

❑ Perform the following operations:

- fill the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling),
- bleed the cooling system (see) (19A, Cooling).

❑ Refit:

- the engine cover,
- the engine undertray.

K4M, and DP0

Special tooling required	
Mot. 582-01	Flywheel locking tool.

Equipment required
Diagnostic tool

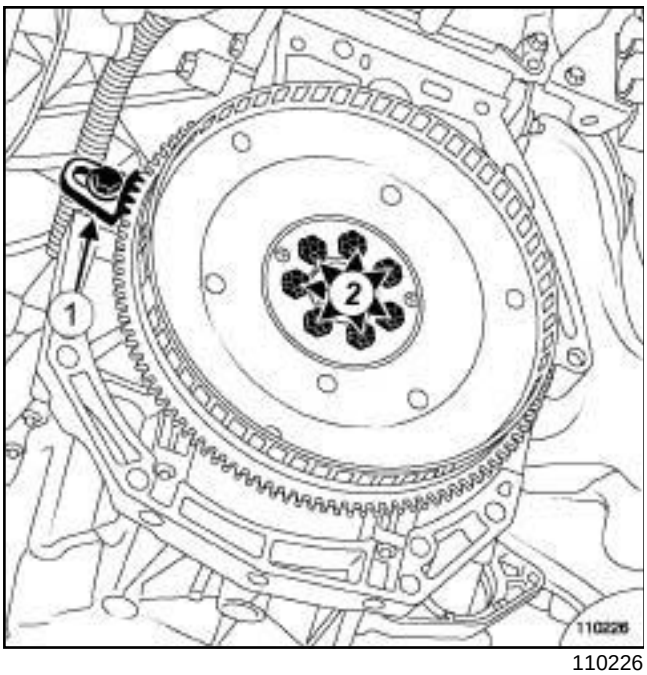
Tightening torques ▽	
drive plate bolts	**55 Nm + 50° ± 5**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



110226

❑ Set up the **(Mot. 582-01)** (**2**) .

❑ Remove:

- the bolts (**2**) ,
- the drive plate,
- tool **(Mot. 582-01)**.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the drive plate, ensuring it is correctly positioned in relation to the centring pins.

❑ Apply **LOCTITE FRENBLOC** to the bolt threads.

❑ Tighten the bolts on the drive plate.

❑ Torque and angle tighten the **drive plate bolts (55 Nm + 50° ± 5)** by immobilising the starter ring using the **(Mot. 582-01)**.

III - FINAL OPERATION.

❑ Refit the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) .

❑ Connect the **Diagnostic tool** for the conformity check.

M4R, and DP0

Special tooling required	
Mot. 919-02	Flywheel locking tool.

Tightening torques ▽	
drive plate bolts	**108 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❏ Remove:

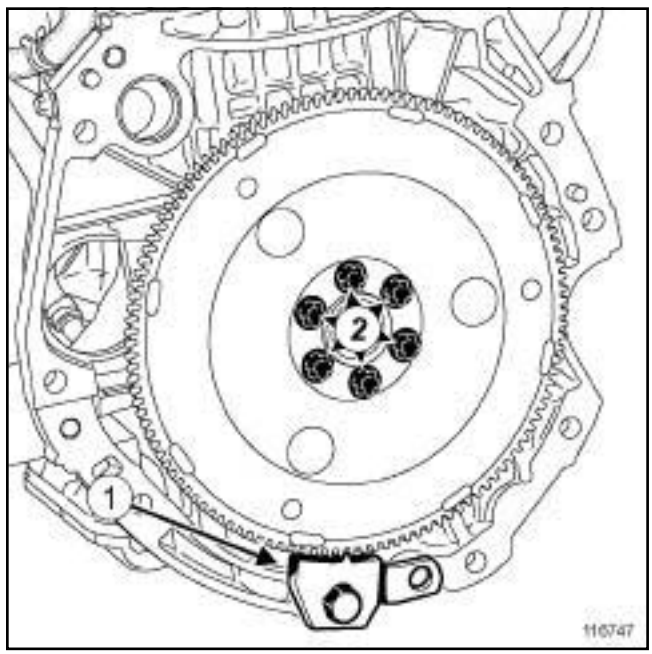
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery),

❏ Drain the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the cooling radiator (see **Cooling radiator: Removal - Refitting**) (MR 392, 19A, Cooling),
- the starter (see **Starter: Removal - Refitting**) (MR392, 16A, Starting-charging),
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116747

❏ Set up the **(Mot. 919-02)** (**1**) .

❏ Remove:

- the drive plate mounting bolts (**2**) ,
- the drive plate,
- the **(Mot. 919-02)**.

M4R, and DP0

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the drive plate, ensuring it is correctly positioned in relation to the centring pins.

❏ Apply **HIGH RESISTANCE THREAD LOCK** to the bolt threads.

❏ Finger tighten the drive plate mounting bolts.

❏ Torque and angle tighten the **drive plate bolts (108 Nm)** by immobilising the starter ring with the tool.

III - FINAL OPERATION.

❏ Refit:

- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) ,
- the left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) ,
- the starter (see **Starter: Removal - Refitting**) (MR392, 16A, Starting-charging),
- the cooling radiator (see **Cooling radiator: Removal - Refitting**) (MR 392, 19A, Cooling),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the headlights (see) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❏ Fill the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❏ Refit:

- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Bleed the cooling system (see) (MR 392, 19A, Cooling).

Tightening torques ▽	
gearbox connector mounting bolts	**20 Nm**

REMOVAL

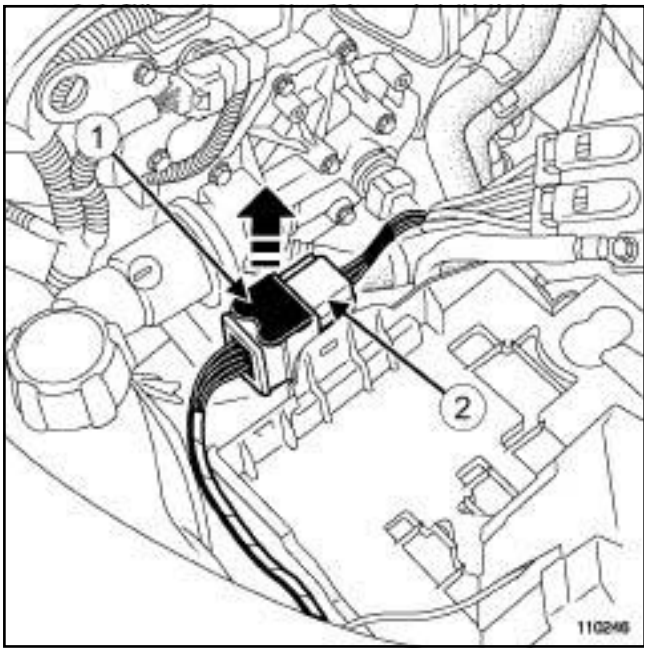
I - REMOVAL PREPARATION OPERATION

❏ Shift the selector lever to **Neutral**.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove

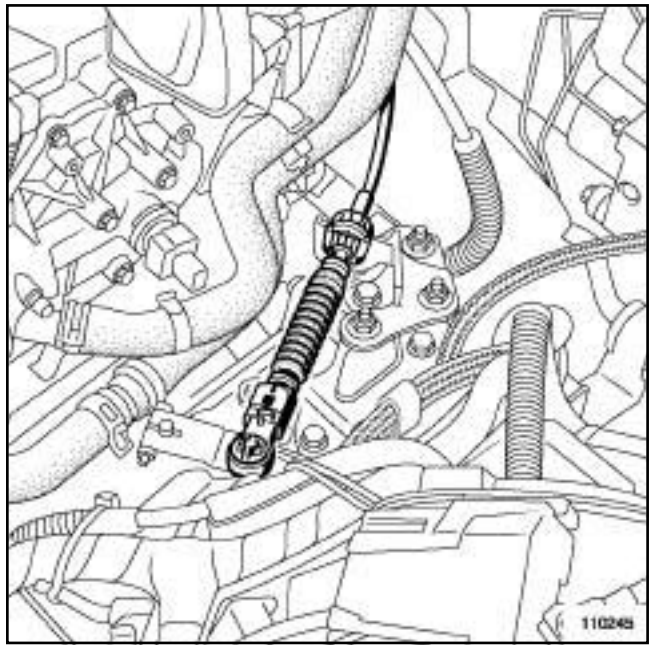
- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



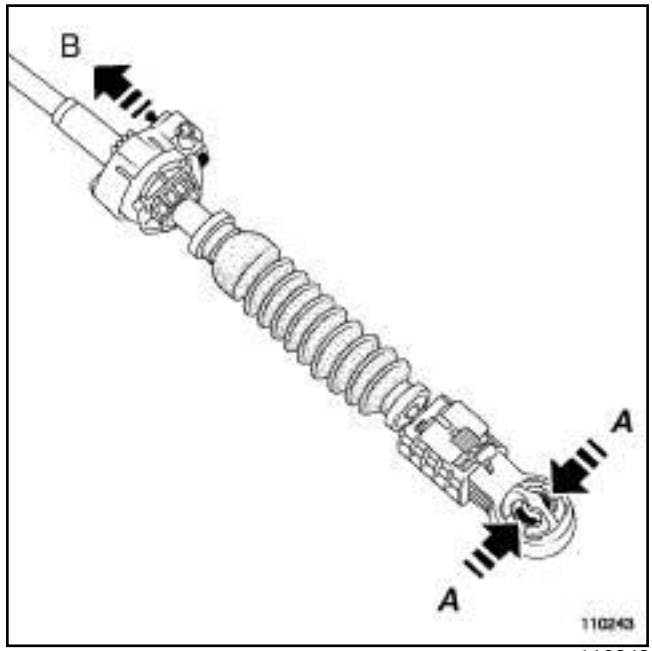
110246

❏ Pull the wiring connector lock (**1**) .

❏ Disconnect the modular connector (**2**) .



110245

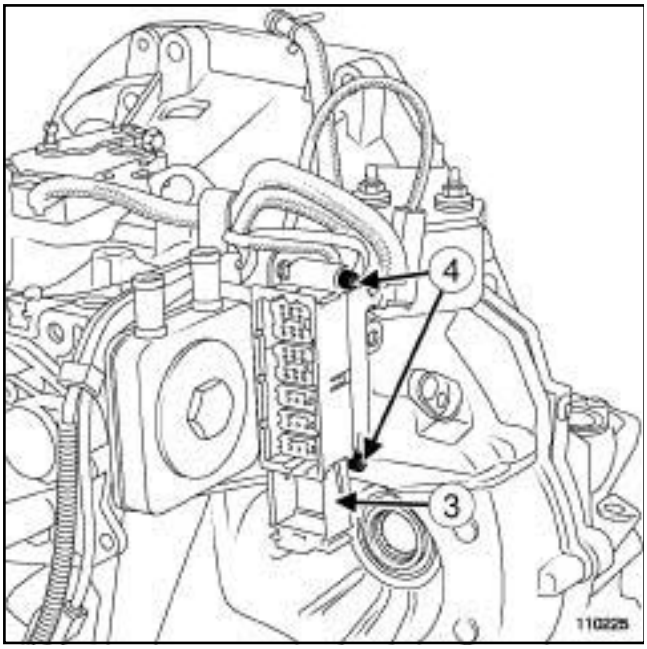


110243

❏ Uncouple the automatic transmission control linkage by pressing (**A**) .

❏ Pull the control cable sleeve stop lock (**B**) .

❏ Move the control cable away from its support.



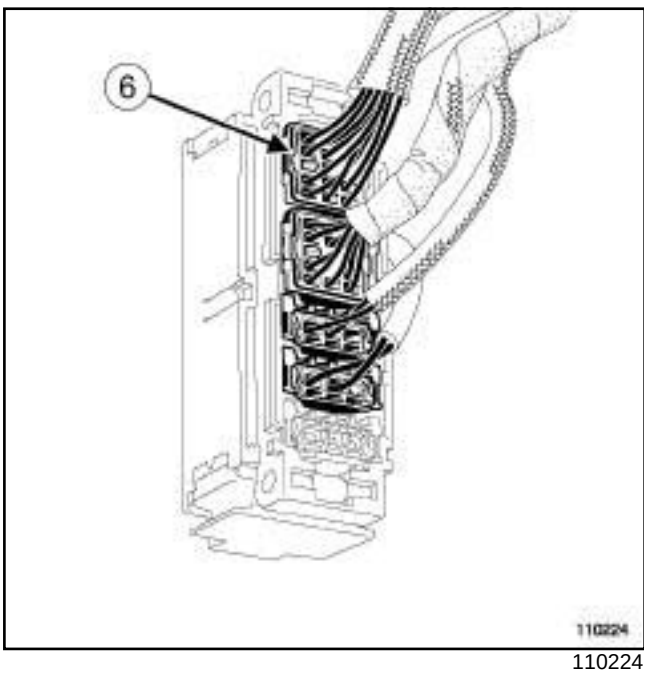
110225

❏ Pull the wiring connector lock (**3**) .

❏ Disconnect the vehicle wiring.

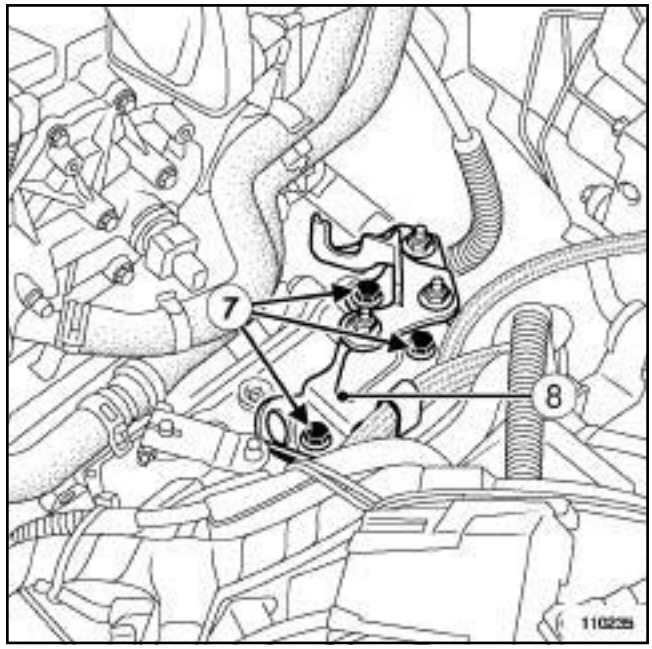
❏ Remove the gearbox connector mounting bolts (**4**) from the support plate.

II - REMOVAL OPERATION FOR THE PART CONCERNED



110224

❏ Remove the green connector (**6**) from the gearbox connector (12 track).



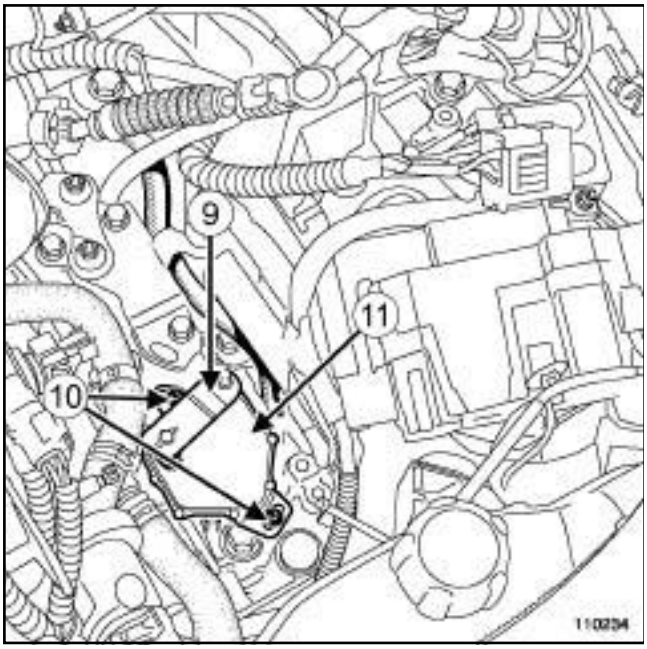
110235

❏ Remove:

- the automatic transmission control cable support mounting bolts (**7**) ,
- the automatic transmission control cable support (**8**) .

❏ Detach the multifunction switch harness from the automatic transmission wiring neck.

❏ Mark the position of the automatic transmission control linkage.



110234

❑

Remove:

- the automatic transmission control linkage (**9**) ,
- the multifunction switch mounting bolts (**10**) ,
- the multifunction switch (**11**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the multifunction switch into the **Neutral position**.

❑ Finger tighten the multifunction switch mounting bolts until contact.

❑ Refit the automatic transmission control linkage.

❑ Adjust the multifunction switch (see **23A, Automatic transmission, Multifunction switch: Adjustment**).

❑ Refit:

- the automatic transmission control cable support,
- the automatic transmission control cable support mounting bolt.

❑ Fit the green connector into the gearbox connector (12-track).

II - FINAL OPERATION

❑ Refit the gearbox connector mounting board mounting bolts.

❑ Torque tighten the **gearbox connector mounting bolts (20 Nm)**.

❑ Connect the automatic transmission wiring connector.

❑ Push the gearbox connector lock.

❑ Fit the automatic transmission control cable onto the mounting sheath stop.

❑ Push the control cable sheath stop lock.

❑ Connect the modular connector.

❑ Push the modular connector lock.

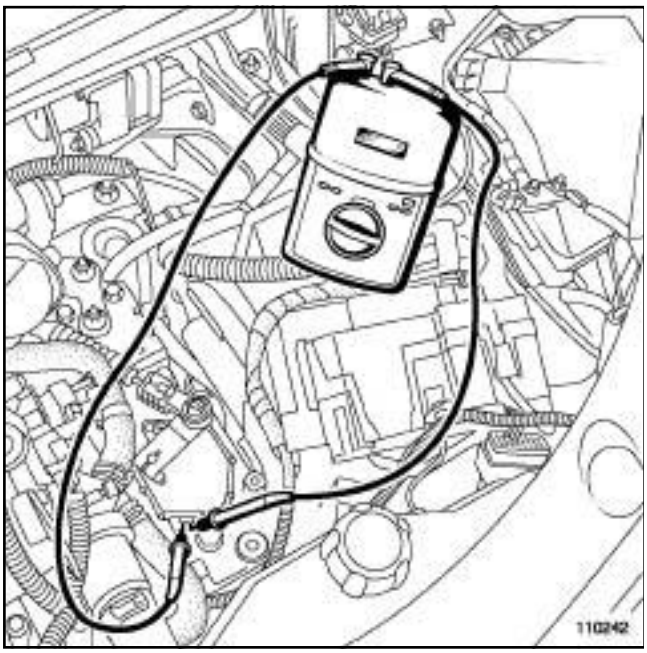
❑ refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Tightening torques ▽	
multifunction switch bolts	**10 N.m**

ADJUSTMENT



110242

- ❏ Put the multifunction switch into the Neutral position.
- ❏ Place the test probes of an ohmmeter on the multifunction switch position check tabs.
- ❏ Turn the multifunction switch by hand until the electric contact is closed (resistance at contact terminals to be measured **0 Ω** with a tolerance of **60 Ω**)
- ❏ Torque tighten the **multifunction switch bolts (10 N.m)**.
- ❏ Check that the resistance at the contact terminals is still **0 Ω** with a tolerance of **60 Ω** after tightening.
- ❏ Check that the system and gear selection are working correctly.

Tightening torques ▽	
speed sensor mounting bolt	**10 Nm**
gearbox connector mounting bolts	**20 Nm**

Do not drain or remove the automatic gearbox in order to remove the speed sensor.

The output speed sensor has been deleted and replaced with wheel speed sensors.

REMOVAL

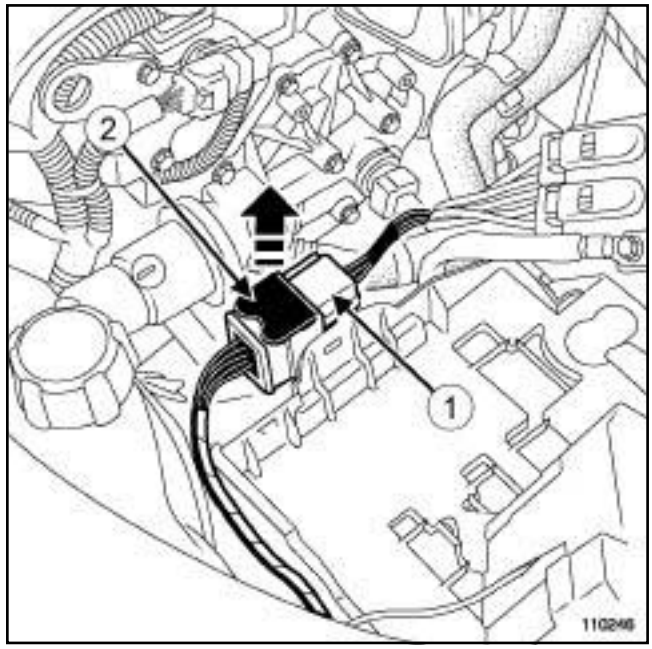
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

❏ Remove:

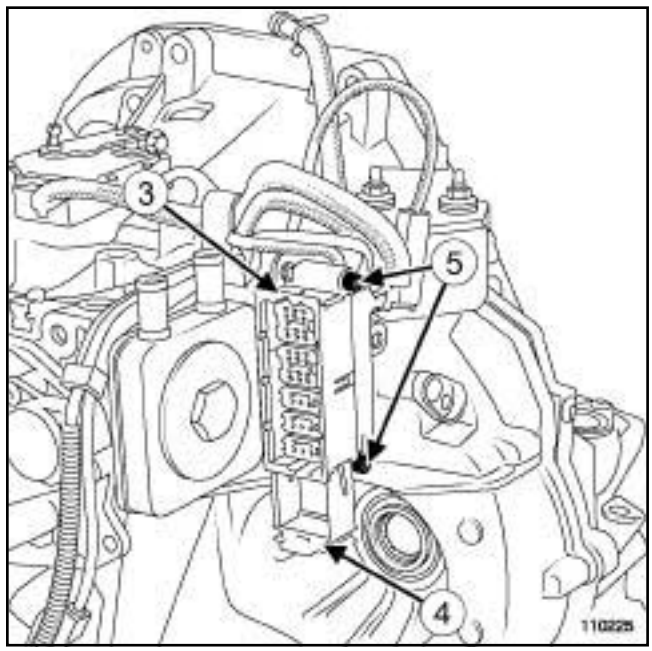
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection,
- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



110246

❏ Disconnect the modular connector (**1**) by pulling the sliding latch (**2**) .

II - REMOVAL OPERATION FOR THE PART CONCERNED

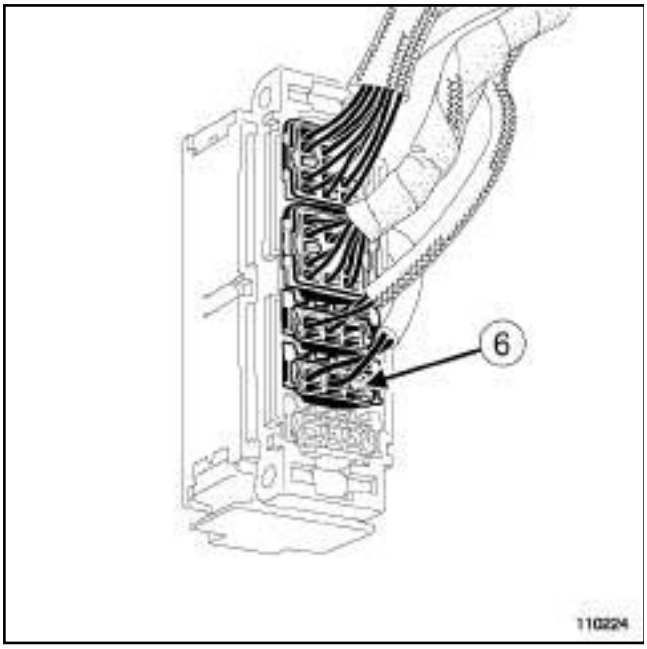


110225

❏ Disconnect the gearbox connector (**3**) by pulling the sliding latch (**4**) .

❏ Remove the gearbox connector mounting bolts (**5**) from the support plate.

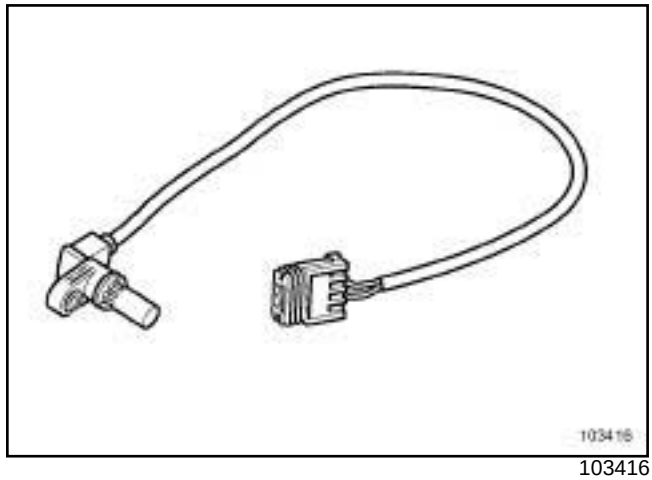
DP0



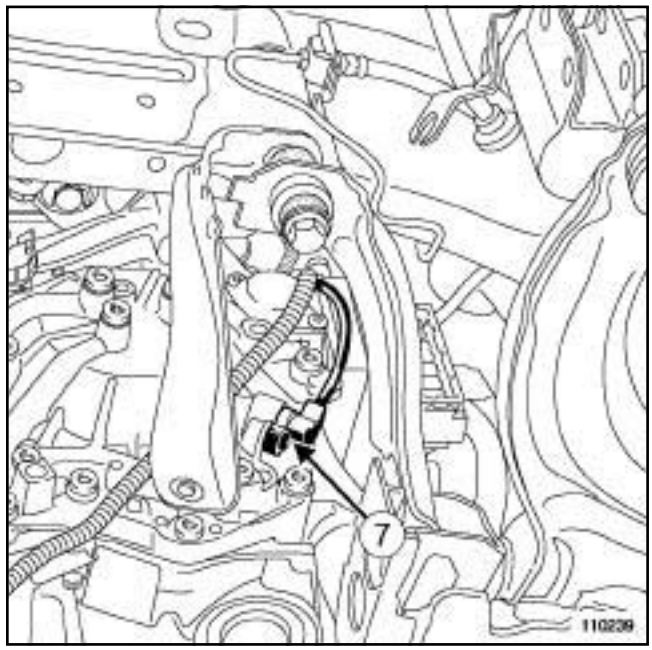
110224

❏ Extract the yellow connector (3-track) (**6**) from the gearbox connector.

❏ Release the speed sensor wiring harness from the automatic transmission wiring duct.



103416



110239

❏ Remove:

- the speed sensor mounting bolt,
- the speed sensor (**7**) .

WARNING
Protect the connector by sliding it into a water-proof plastic bag.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the speed sensor.

❏ Torque tighten the **speed sensor mounting bolt (10 Nm)**).

DP0

❑ Connect the green connector (3-track) of the gearbox connector.

II - FINAL OPERATION

❑ Refit the gearbox connector mounting board mounting bolts.

❑ Torque tighten the **gearbox connector mounting bolts (20 Nm)**.

❑ Connect

- the gearbox connector by pushing in the slide,
- the modular connector by pushing in the slide.

❑ refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see) (MR 392, 80A, Battery).

❑ Check the gearbox oil level (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Filling**, page **23A-2**) .

DP0

Tightening torques ▽	
pressure sensor mounting bolts	**8 N.m**
pressure sensor wiring harness mounting bolts	**8 N.m**
gearbox connector mounting bolts	**20 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on the two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

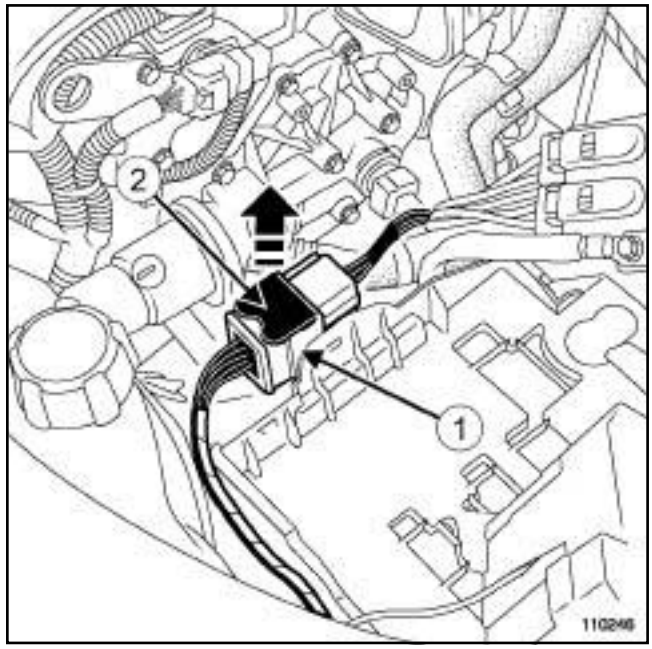
❏ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Remove:

- the front left-hand wheel (see **35A, Wheels and tyres, Wheel: Removal - Refitting**),
- the front left-hand wheel arch liner (see **MR Bodywork, 55A, Exterior protection, Wheel arch liner: Removal - Refitting**),
- the engine undertray.

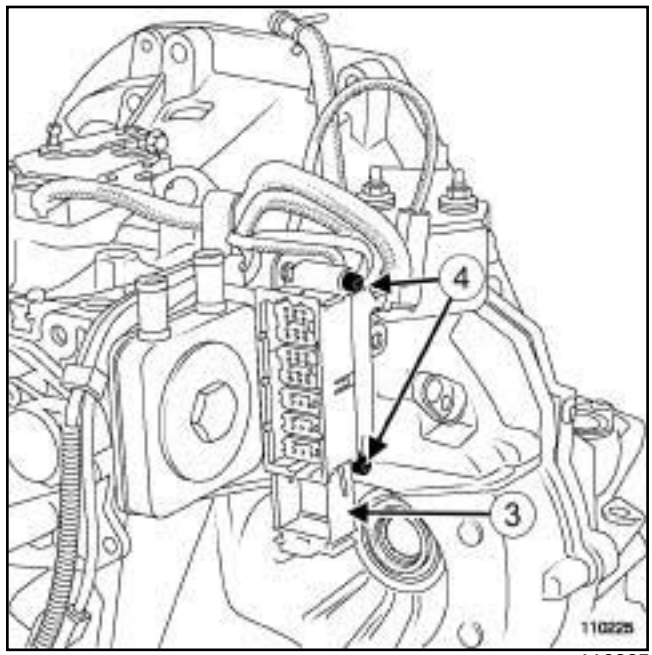
❏ Remove:

- the battery tray (see **80, Battery, Battery tray: Removal - Refitting**),
- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**).



110246

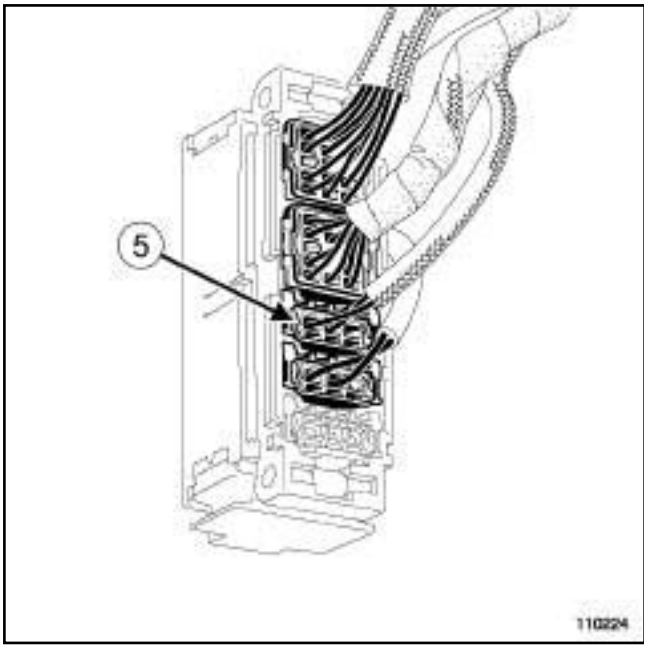
❏ Disconnect the modular connector (**1**) by pulling the sliding (**2**) .



110225

❏ Disconnect the gearbox connector from the mounting plate by pulling the slide (**3**) .

❏ Remove the gearbox connector mounting bolts (**4**) from the plate.

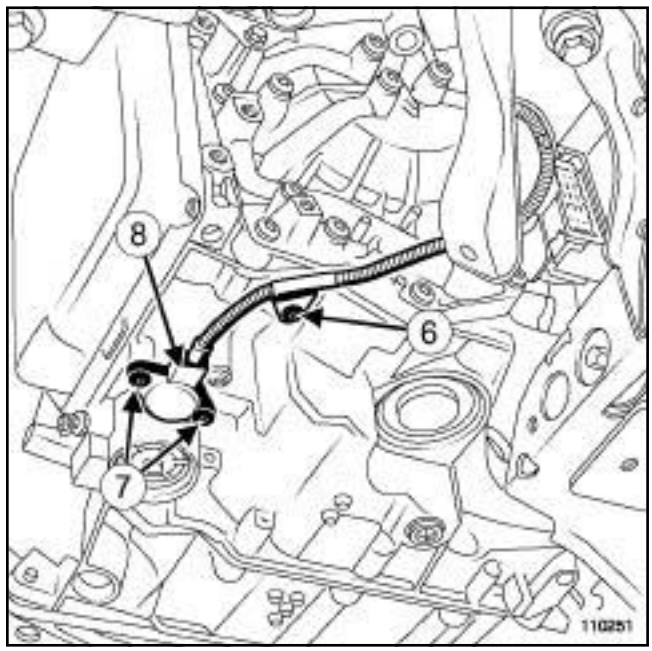


110224

❏ Remove the green connector (3-track) (**5**) from the gearbox connector on the mounting plate.

❏ Release the pressure sensor wiring harness from the automatic transmission wiring duct.

II - OPERATION FOR REMOVAL OF PART CONCERNED



110251

❏ Remove:

- the wiring harness mounting bolt (**6**) ,
- the pressure sensor mounting bolts (**7**) ,
- the pressure sensor (**8**) .

WARNING
Protect the connector by sliding it into a water-proof plastic bag.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the pressure sensor,
- the pressure sensor mounting bolts,
- the wiring harness mounting bolt.

❏ Tighten to torque:

- the **pressure sensor mounting bolts (8 N.m)**,
- the **pressure sensor wiring harness mounting bolts (8 N.m)**.

❏ Connect the pressure sensor harness from the automatic transmission wiring duct.

DP0

II - FINAL OPERATION

❏ Refit the gearbox connector mounting plate mounting bolts.

❏ Torque tighten the **gearbox connector mounting bolts (20 N.m)**.

❏ Connect the gearbox connector on the mounting plate by pulling out the slide.

❏ Refit:

- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**),
- the battery protective base (see **80A, Battery, Battery tray: Removal - Refitting**),

❏ Connect the modular connector by reinserting the slide.

❏ Refit the battery shield (see **80A, Battery, Battery tray: Removal - Refitting**).

❏ Refit:

- the front left-hand wheel arch liner (see **55A, Bodywork, Exterior protection, Wheel arch liner: Removal - Refitting**),
- the engine undertray,
- the front left-hand wheel (see **35A, Wheels and tyres, Wheel: Removal - Refitting**).

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Check the gearbox oil level (see **23A, Gearbox oil: Draining - Filling**).

DP0

Special tooling required	
Bvi. 1462	Locating ball spring adjustment bolt.

Equipment required
Diagnostic tool

Tightening torques ▽	
distributor mounting bolts	**7.5 Nm**
locating ball spring bracket mounting bolt	**9 Nm**
locating ball spring mounting bolt	**8 Nm**
cover mounting bolts	**10 Nm**
reinforcement plate mounting bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Shift the selector lever to **Neutral**.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

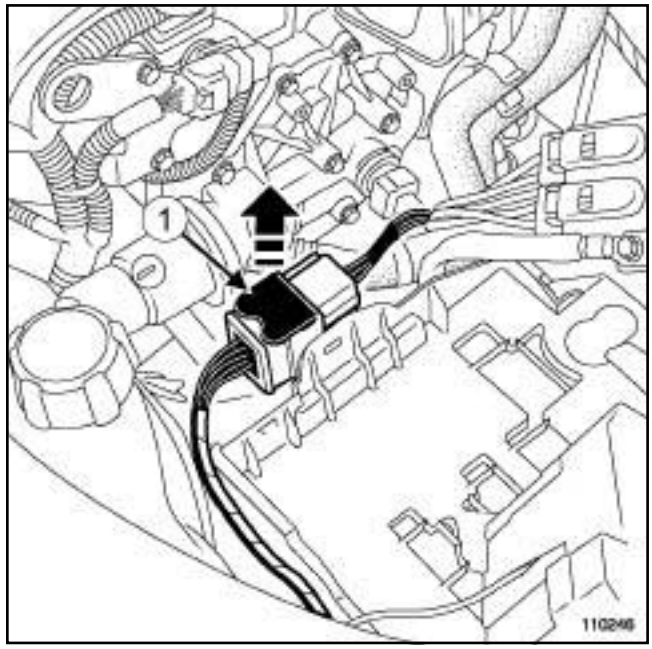
❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

❏ Drain the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Filling**, page **23A-2**) (MR 392, 23A, Automatic transmission).

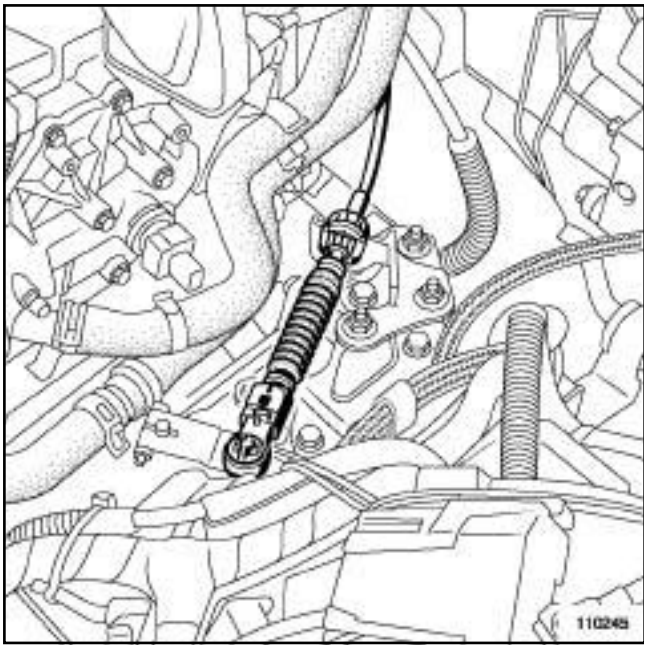
❏ Remove:

- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

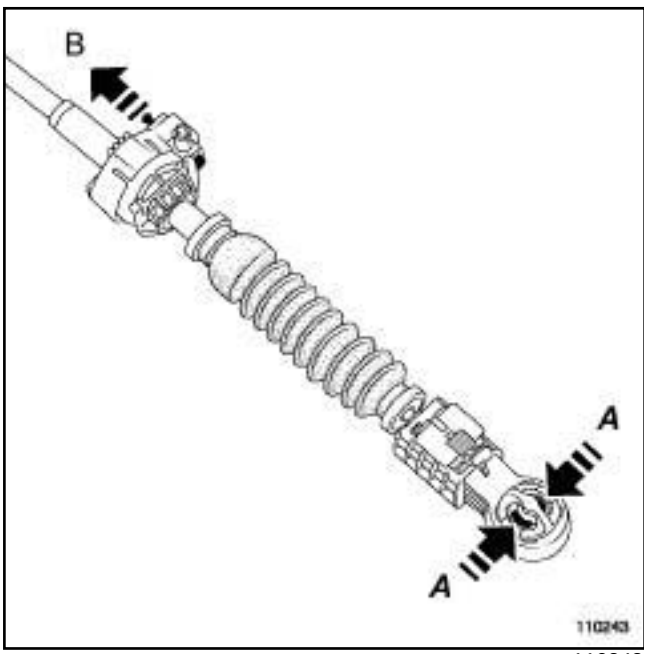


110246

❏ Disconnect the modular connector by pulling the sliding latch (**1**) .



110245



110243

❑ Remove:

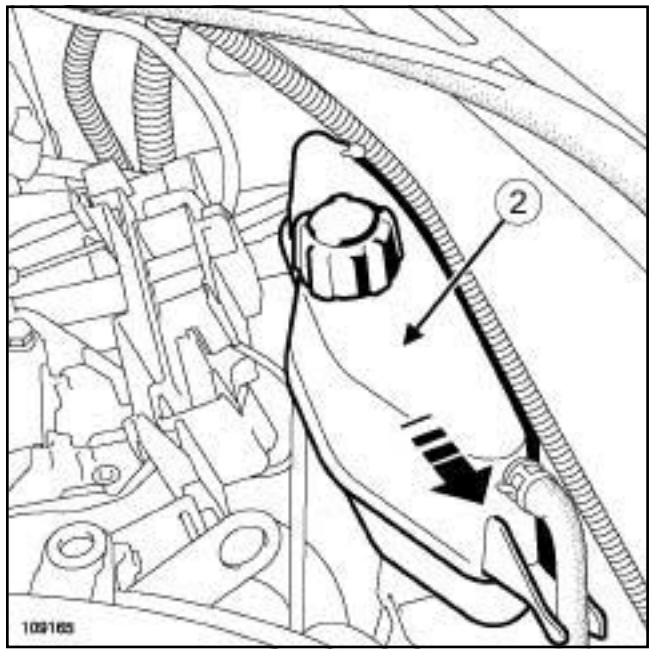
- the multifunction switch control cable by pressing at (**A**) .
- the control cable sleeve stop from the gearbox support by pulling the catch at (**B**) .

❑ Drain the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❑ Remove the expansion bottle hose at the radiator end

❑ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Remove the plastic rivet of the expansion bottle.



109165

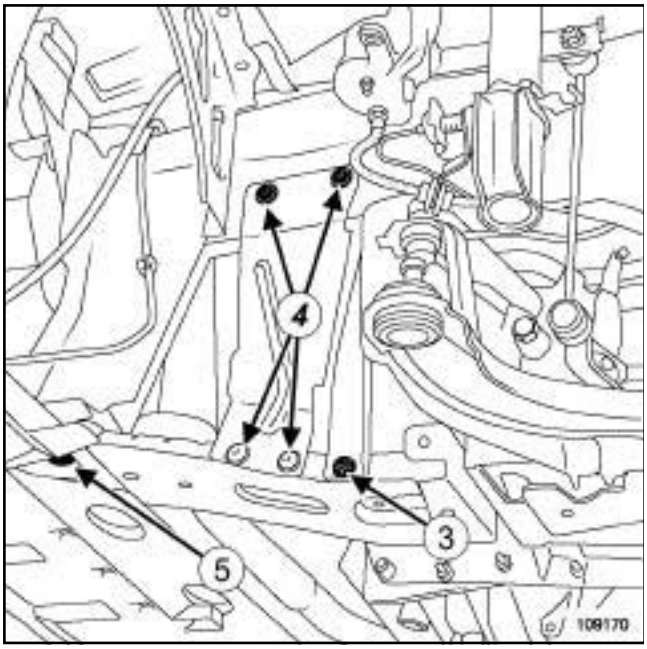
❑ Remove:

- the expansion bottle (**2**) in the direction of the arrow,
- the resonator.

❑ Remove:

- the cooling hoses at the automatic transmission side,
- the bottom cooling hose, to provide free access to the radiator.
- the fan assembly (see **Engine cooling fan assembly: Removal - Refitting**) (MR 392, 19A, Cooling).

❑ Attach the radiator to the upper cross member.

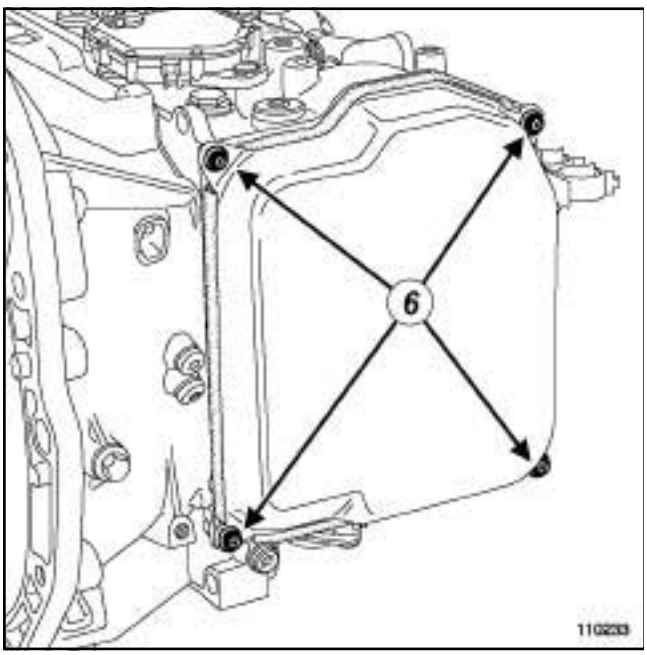


109170

❏ Remove:

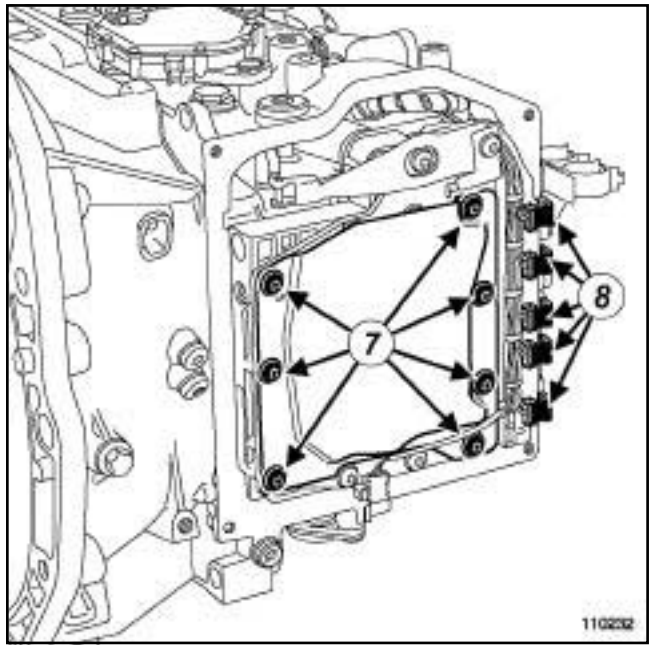
- the tie-rod mounting bolts (**3**) ,
- the mounting bolts (**4**) of the side stiffener,
- the radiator mounting lower cross member mounting bolts (**5**) ,
- the lower radiator cross member.

II - OPERATION FOR REMOVAL OF PART CONCERNED



110233

❏ Remove the hydraulic distributor cover mounting bolts (**6**) (oil may flow out).



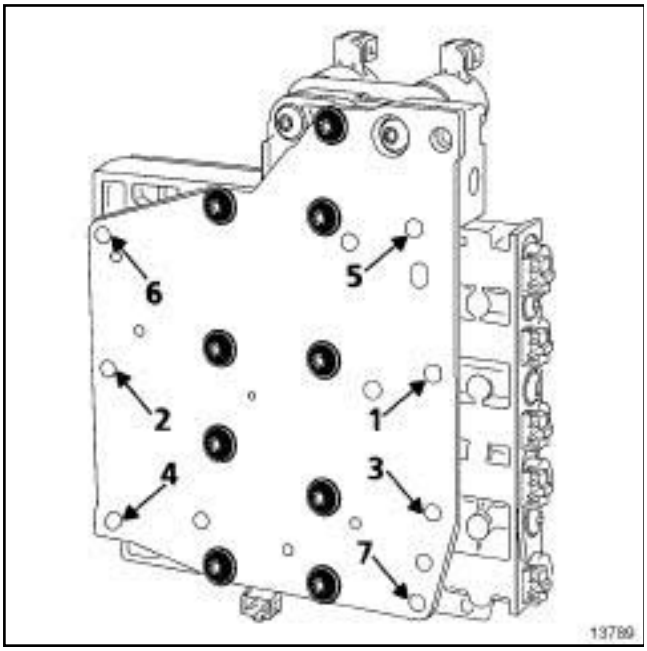
110232

❏ Remove the hydraulic distributor mounting bolts (**7**) .

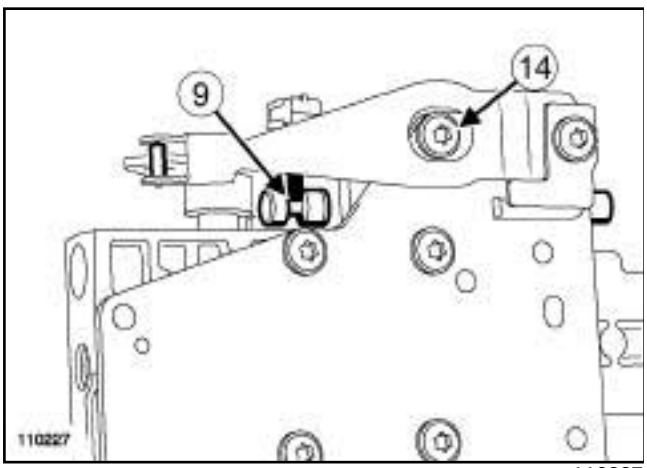
❏ Disconnect the hydraulic distributor solenoid valve connectors (**8**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



13789



110227

❏ Fit the distributor with its protection plate, centring it using the bolts ***(4)*** and ***(5)*** .

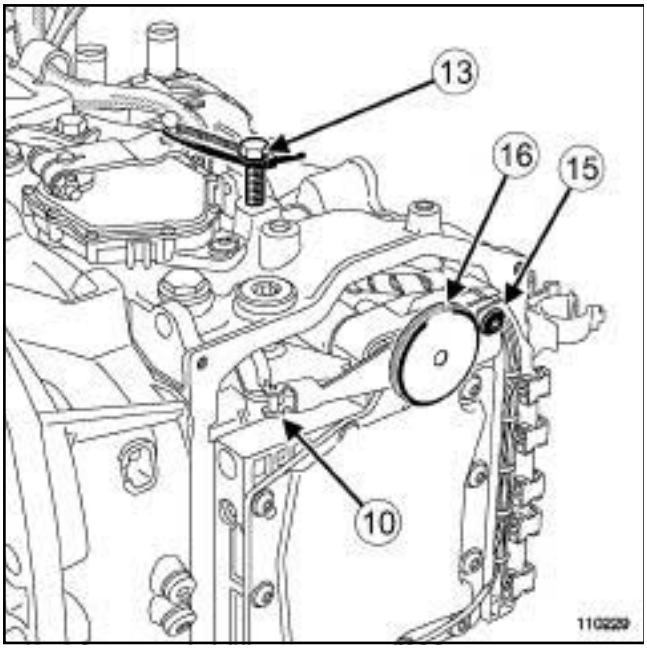
WARNING
Check that the distributor slide is properly engaged with the notched sector lug (**9**) .

❏ Refit the other bolts on the distributor.

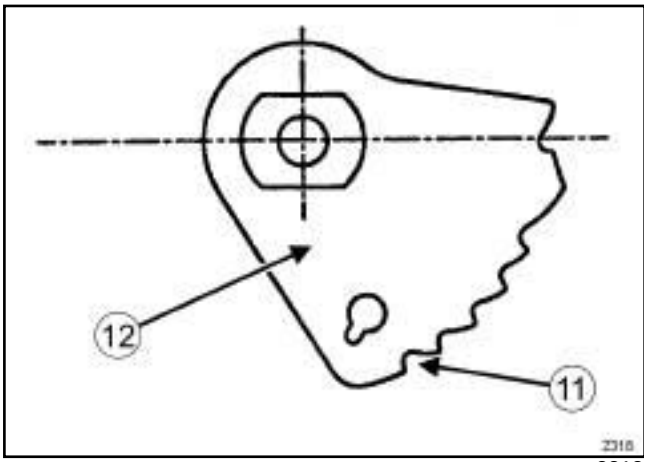
❏ Tighten to torque and in order the **distributor mounting bolts (7.5 Nm)**.

DP0

ADJUSTING THE LEAF SPRING LEVER



110229



2318

❏ Hold the multifunction switch lever in the end position (first selected) using a hose clip and a bolt (**13**) in the mechanism housing.

❏ Remove the bolt ***(14)*** .

❏ Fit the locating ball spring by fitting the bearing (**10**) into the groove (**11**) for the notched sector (**12**) corresponding to first selected.

❏ Fit the locating ball spring bracket mounting bolt (**15**) without tightening it.

❏ Fit the **(Bvi. 1462)** (**16**) in place of the bolt ***(14)*** .

❏ Screw the tool in fully whilst holding the locating ball spring.

❏ Torque tighten the **locating ball spring bracket mounting bolt (9 Nm)** (**15**) .

❏ Remove the **(Bvi. 1462)**.

❏ Refit the locating ball spring mounting bolt ***(14)*** .

❏ Torque tighten the **locating ball spring mounting bolt (8 Nm)**.

❏ Remove the hose clip and the bolt (**13**) .

❏ If the oil distributor is replaced, the auto-adapatives must be reset to zero using command **RZ005** « Clear auto-adaptives» and reset the oil age counter on the automatic transmission computer using the **Diagnostic tool**, run command **CF074** « Enter date of gearbox oil change » .

After running command **RZ005**, it is essential to carry out a test drive performing all gear changes, both up and down, several times to store the new values.

❏ Torque tighten:

- the **cover mounting bolts (10 Nm)**,
- the **reinforcement plate mounting bolts (21 Nm)**.

DP0

II - FINAL OPERATION

❑ Refit:

- the radiator lower cross member,
- the side reinforcement,
- the tie-rod,
- the fan assembly (see **Engine cooling fan assembly: Removal - Refitting**) (MR 392, 19A, Cooling),
- the bottom cooling hose,
- the cooling hoses at the automatic transmission side,
- the resonator,
- the expansion bottle,
- a new expansion bottle plastic attachment rivet,
- the expansion bottle hose,
- the multifunction switch control cable.

❑ Connect the modular connector.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery),

❑ Fill the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Filling**, page **23A-2**) (MR 392, 23A, Automatic transmission).

❑ Refit:

- the engine undertray,
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

DP0

Tightening torques ▽	
heat exchanger flow control solenoid valve mounting bolt	**10 Nm**

Do not drain or remove the automatic gearbox in order to remove the flow control solenoid valve

REMOVAL

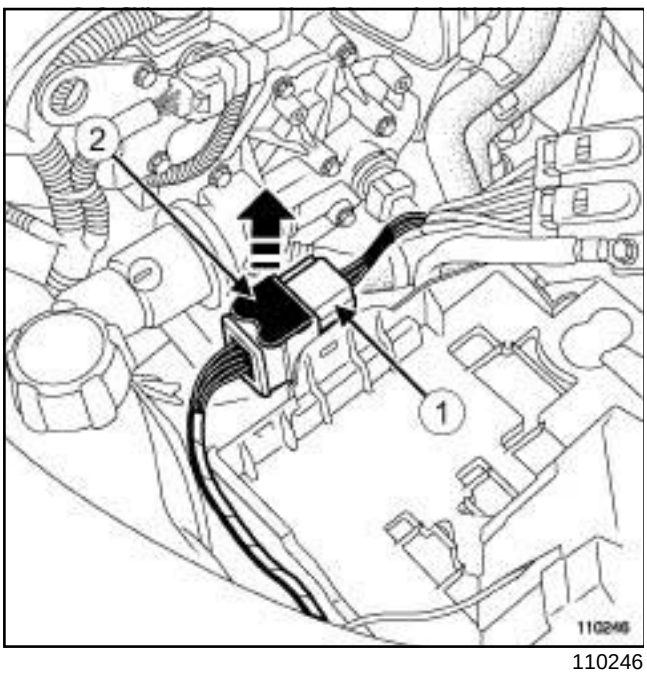
I - REMOVAL PREPARATION OPERATION

❏ Place the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❏ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Remove:

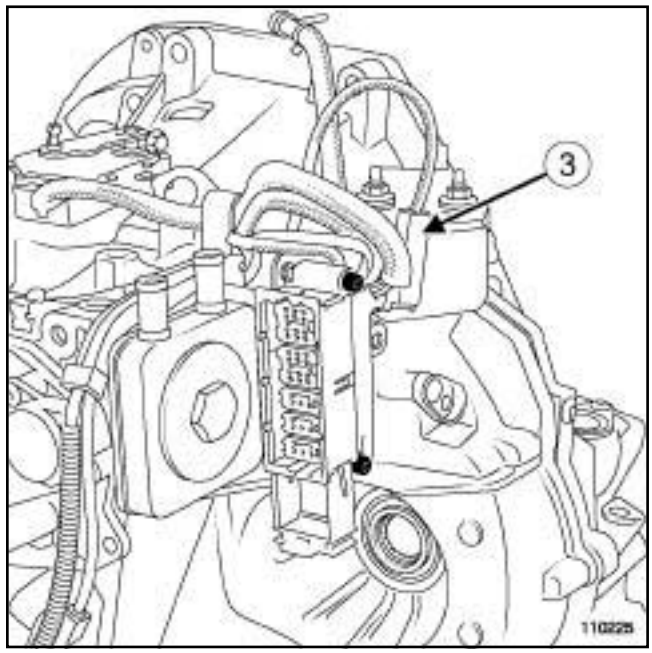
- the front left-hand wheel (see **35A, Wheels and tyres, Wheel: Removal - Refitting**).
- the front left-hand wheel arch liner (see **MR 393, Bodywork, 55A, Exterior Protection, Wheel arch liner: Removal - Refitting**).
- the battery tray (see **80A, Battery, Battery tray: Removal - Refitting**).
- the air filter unit (see **12A, Fuel mixture, Air filter unit), Removal - Refitting**).



110246

❏ Disconnect the modular connector (**1**) by pulling the connector sliding latch (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



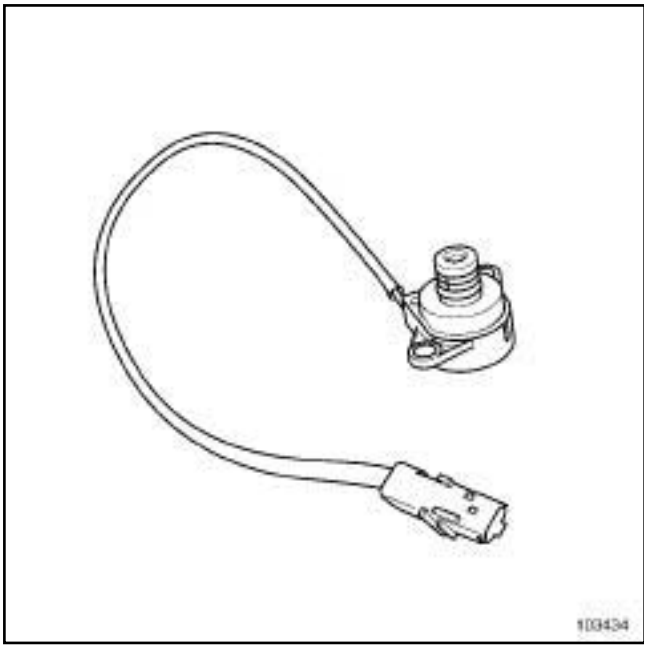
110225

❏ Disconnect the flow control solenoid valve connector (**3**) .

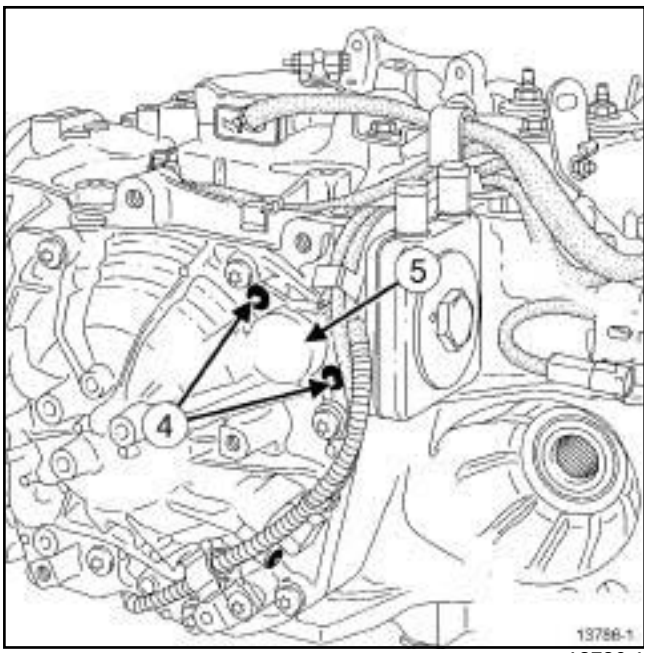
❏ Unclip the flow control solenoid valve connector (**3**) from the gearbox connector support.

❏ Release the flow control solenoid valve wiring harness from the automatic transmission wiring duct.

DP0



103434



13786-1

❑ Remove:

- the solenoid valve mounting bolts (**4**) ,
- the heat exchanger flow control solenoid valve (**5**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the heat exchanger flow control solenoid valve.

❑ Tighten to torque the **heat exchanger flow control solenoid valve mounting bolt (10 Nm)**.

❑ Clip the flow control solenoid valve connector to the gearbox connector support.

❑ Connect the flow control solenoid valve connector.

II - FINAL OPERATION

❑ Connect the modular connector by pushing the sliding latch.

❑ Refit:

- the air filter unit (see **12A, Fuel mixture, Air filter unit), Removal - Refitting**).
- the battery tray (see **80A, Battery, Battery tray: Removal - Refitting**).
- the front left-hand wheel arch liner (see **MR 393, Bodywork, 55A, Exterior Protection, Wheel arch liner: Removal - Refitting**).
- the front left-hand wheel (see **35A, Wheels and tyres, Wheel: Removal - Refitting**).

❑ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❑ Check the gearbox oil level (see **23A, Gearbox oil: Draining - Filling**).

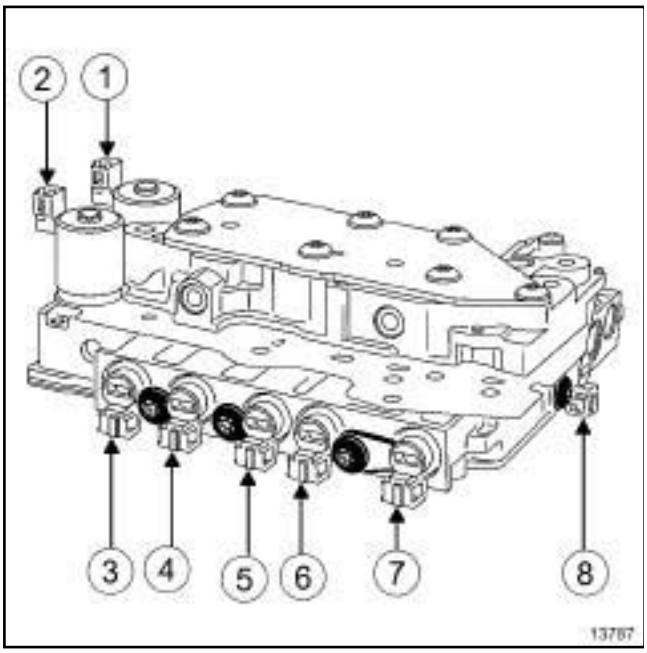
WARNING
Work as cleanly as possible to prevent foreign bodies from entering the system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the hydraulic distributor (see **23A**, **Automatic gearbox**, **Hydraulic distributor: Removal - Refitting**, page **23A-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



13787

(**1**) Modulating solenoid valve
(**2**) « Lock up» solenoid valve (lockup converter)
(**3**) Sequence solenoid valve 4
(**4**) Sequence solenoid valve 3
(**5**) Sequence solenoid valve 1
(**6**) Sequence solenoid valve 2
(**7**) Sequence solenoid valve 6
(**8**) Sequence solenoid valve 5

❑ Remove the hydraulic distributor solenoid valves.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the hydraulic distributor solenoid valves.

II - FINAL OPERATION

❑ Refit the hydraulic distributor (see **23A**, **Automatic gearbox**, **Hydraulic distributor: Removal - Refitting**, page **23A-34**) .

Tightening torques ▽	
gearbox support	**10 Nm**
gearbox connector	**20 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

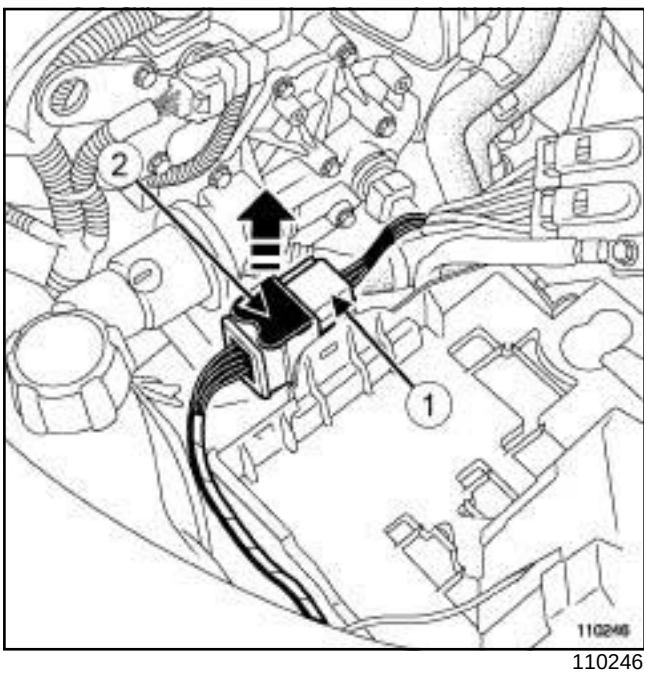
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Shift the selector lever to **Neutral**.

❏ Disconnect the battery (see) (MR 392, 80A, Battery).

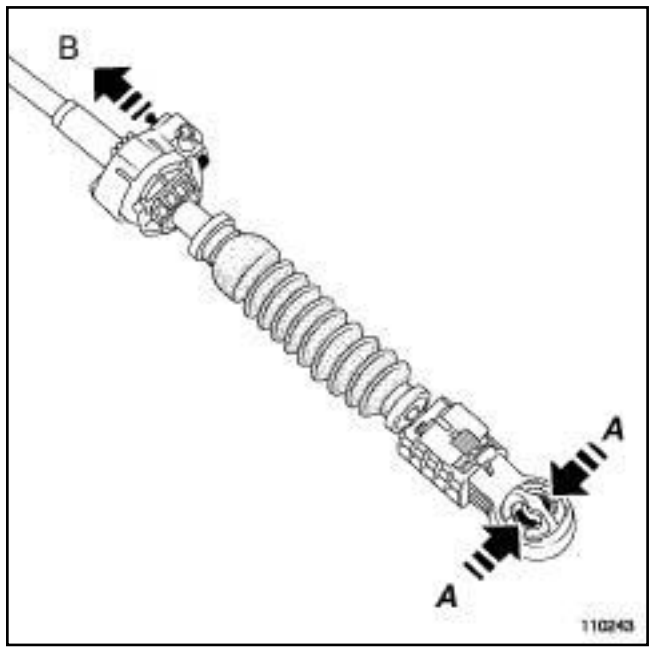
❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection,
- the engine undertray,
- the battery tray (see) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



110246

❏ Disconnect the modular connector (**1**) by pulling the sliding latch (**2**) .

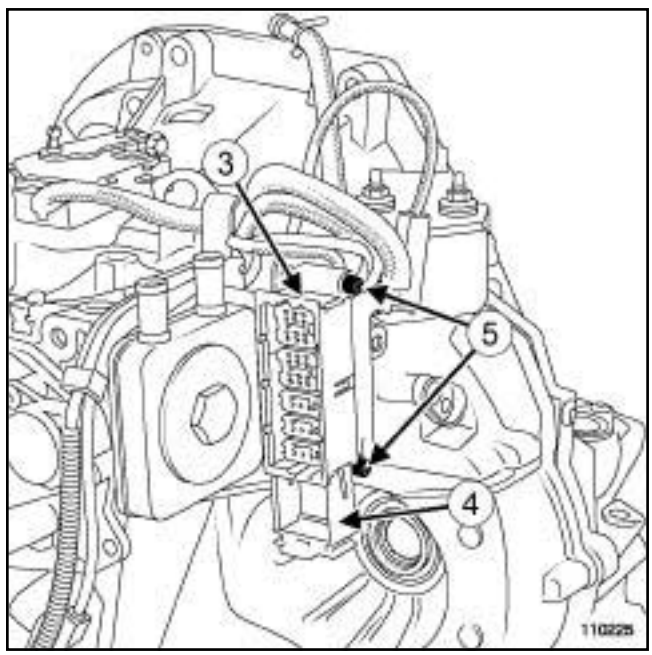


110243

❏ Remove:

- the multifunction switch control cable by pressing at (**A**) ,
- the control cable sleeve stop from the gearbox support by pulling the catch at (**B**) .

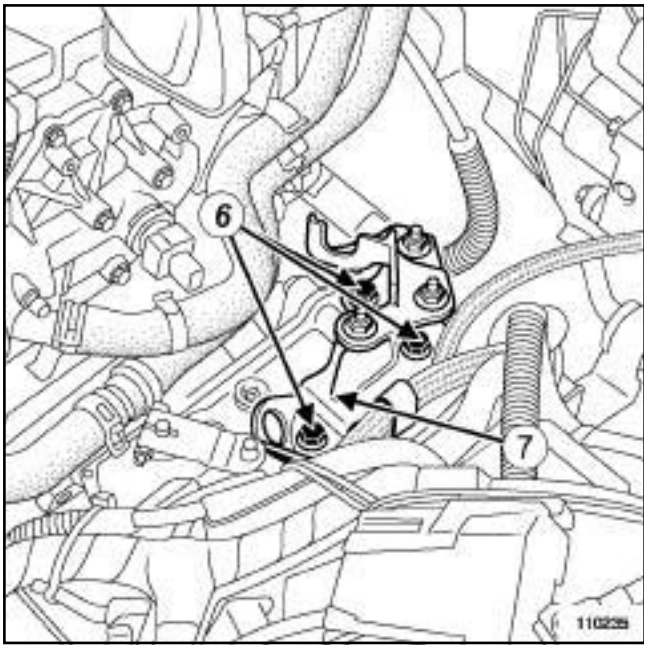
II - OPERATION FOR REMOVAL OF PART CONCERNED



110225

❏ Disconnect the gearbox connector (**3**) by pulling the sliding latch (**4**) .

❏ Remove the gearbox connector mounting bolts (**5**) .

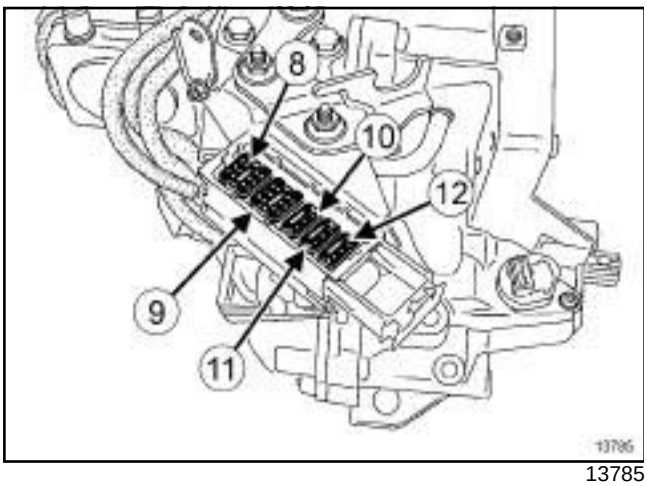


110235

❏ Remove:

- the gearbox connector support mounting bolts (**6**) ,
- the gearbox connector support (**7**) .
- the coloured connector concerned on the gearbox connector.

❏ Follow the five wiring harnesses connected to the gearbox connector.



13785

(**8**) Green connector (multifunction switch)

(**9**) Yellow connector (electronic interface)

(**10**) Green connector (line pressure)

(**11**) Yellow connector (turbo speed)

(**12**) Blue connector (exchanger flow control solenoid valve)

❏ Remove the five harnesses (these connectors can be removed separately from the gearbox connector when replacing certain components).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the five harnesses to the gearbox connector.

❏ Refit the gearbox mounting.

❏ Torque tighten:

- the **gearbox support (10 Nm)**,
- the **gearbox connector (20 Nm)**.

❏ Connect the gearbox connector by pushing in the slide.

❏ Fasten the multifunction switch control cable.

II - FINAL OPERATION

❏ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see) (MR 392, 80A, Battery).

❏ Connect:

- the modular connector reinserting the sliding latch,
- the battery (see) (MR 392, 80A, Battery).

❏ Refit:

- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection,
- the engine undertray,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

DP0

REMOVAL

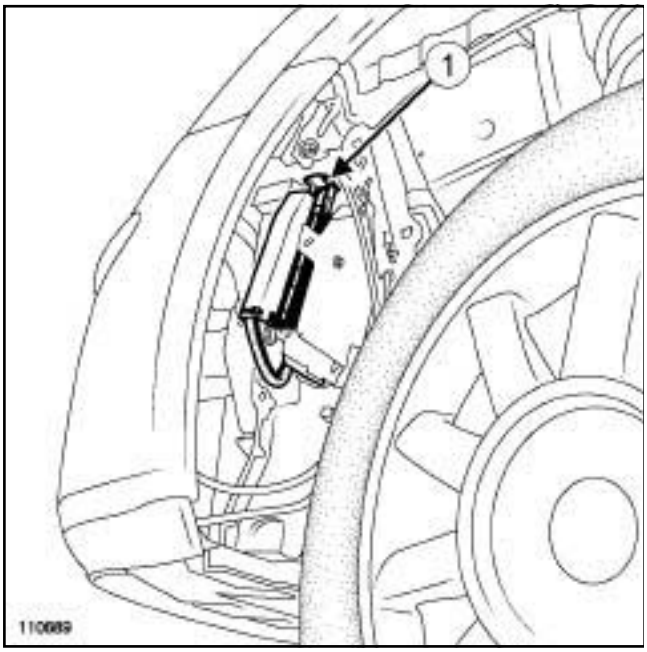
I - REMOVAL PREPARATION OPERATION

❑ Remove the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Remove the resonator on the battery.

❑ Disconnect the battery (see) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED



110689

❑ Disconnect the automatic transmission computer connector by pulling out the slide (**1**) .

❑ Unfasten the automatic transmission computer retaining strap.

❑ Remove the automatic transmission computer.

If replacing the automatic transmission computer

❑ Determine the oil age value using parameter **PR133 « Oil age counter »** and make a note of the value.

❑ Copy the value into the memory of the new computer using command **CF320** « Oil age counter transfer » .

❑ Confirm the entry using parameter «Oil age counter » .

❑ Enter the After Sales operation date using command **CF320 « Enter After-Sales operation date »** .

❑ Carry out a road test so that the new computer stores the programming.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the computer.

❑ Fasten the automatic transmission computer retaining strap.

❑ Connect the automatic transmission computer connector by pushing in the slide.

II - FINAL OPERATION.

❑ Refit the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Connect the battery (see) (MR 392, 80A, Battery).

DP0

Special tooling required	
Bvi. 1459	Right-hand driveshaft outlet seal fitting tool.
Bvi. 1460	Left-hand driveshaft outlet seal fitting tool.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Place the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❏ Remove the engine undertray.

❏ Remove the corresponding driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**) or (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**).

❏ Drain the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**).

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the faulty differential output seal using a screwdriver or a hook, taking care not to scratch the contact faces.

WARNING
Do not drop the seal spring into the automatic transmission.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the seal using tool **(Bvi. 1459)** on the left-hand side or tool **(Bvi. 1460)** on the right-hand side.

❏ Guide the assembly until the tool is resting on the automatic gearbox casing.

II - FINAL OPERATION

❏ Refit the corresponding driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**) or (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**).

❏ Fill and check the gearbox oil level (see **23A, Automatic gearbox, automatic gearbox oil: Draining - Filling**).

DP0

Special tooling required	
Bvi. 1400-01	Tool kit for operations on Aisin Warner type automatic transmission.
Bvi. 1457	Converter lip seal fitting tool.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

❑ Remove the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) (MR 392, 23A, Automatic transmission).

❑ Remove the converter by withdrawing it as far as possible without deviating from its axis.

Note:
The converter contains a large amount of oil which could escape when it is being removed.

II - OPERATION FOR REMOVAL OF PART CONCERNED

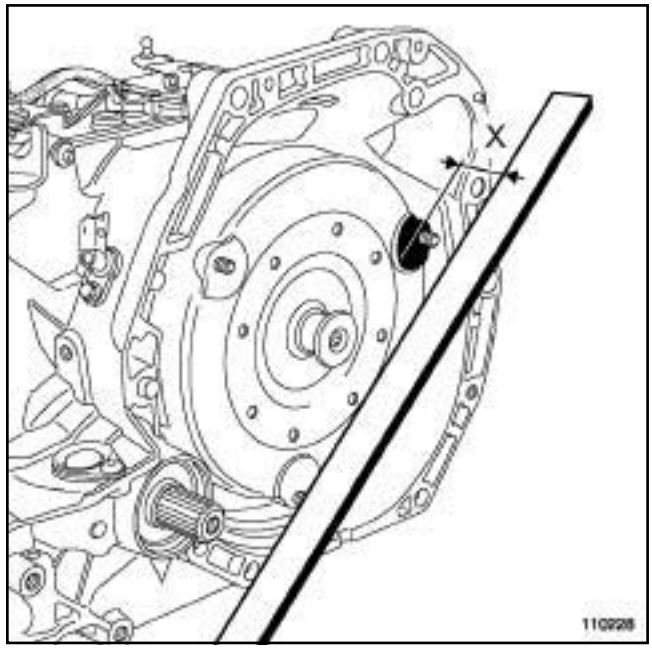
❑ Remove the seal, using the tool **(Bvi. 1400-01)**, taking care not to scratch the contact surfaces.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the new pre-lubricated seal to the stop, using the **(Bvi. 1457)**.

WARNING
Work as cleanly as possible to prevent foreign bodies from entering the system.
Lubricate all the contact faces.



110228

❑ Check the positioning of the converter in relation to the engine/automatic transmission coupling face using a straightedge and a steel ruler; the value should be (**X**) = **18.22 mm ± 1**.

II - FINAL OPERATION.

❑ Refit the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-7**) (MR 392, 23A, Automatic transmission).

Driveshaft: Precautions for the repair

DP0 or JH3 or JR5 or TL4

WARNING

A gearbox oil leak at the driveshaft may destroy it.

WARNING

Always replace seals whenever the driveshaft is removed.

WARNING

Grease the base of the bearing using **BR 2 +** grease to prevent the bearing from sticking.

Make sure that the O-ring is correctly positioned in the base of the relay bearing, if the bearing has one.

WARNING

Always replace the O-ring, if fitted to the bearing.

WARNING

Always replace the relay bearing support plate.

WARNING

Always replace the left-hand driveshaft locking spring ring, if the driveshaft has one.

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

DP0 or JH3 or JR5 – K4M or K9K or M4R, and TL4

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

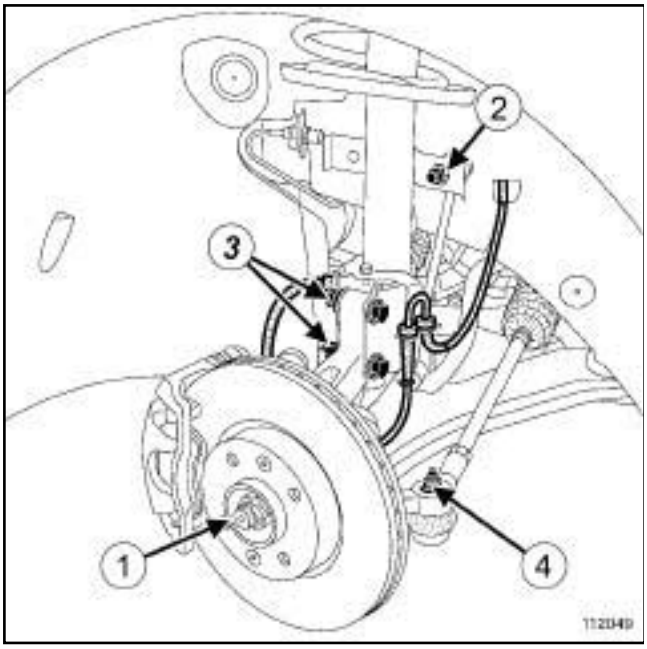
Tightening torques ▽	
hub nut	**280 Nm**
shock absorber base bolts	**110 Nm**
track rod end nut	**37 Nm**
anti-roll bar linkage upper ball joint nut	**37 Nm**
brake calliper support mounting bolts	**105 Nm**

REMOVAL

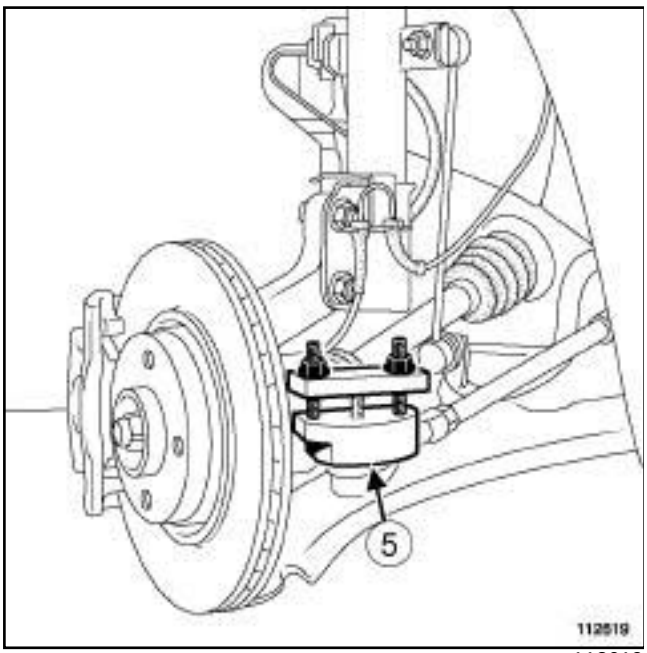
I - REMOVAL PREPARATION OPERATION

- ❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ❏ Remove the engine undertray.
- ❏ Remove the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

DP0 or JH3 or JR5 – K4M or K9K or M4R, and TL4



112049



112619

❑ Unclip the left-hand wheel speed sensor.

❑ Remove:

- the hub nut (**1**) , using the **(Rou. 604-01)**,
- the left-hand steering ball joint (**4**) , using the **(Tav. 476)** at (**5**) ,
- the left-hand upper ball joint of the anti-roll bar linkage (**2**) ,
- the left-hand brake calliper support mounting bolts (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components),
- the left-hand shock absorber lower mounting bolts (**3**) .

❑ Attach the brake calliper to the shock absorber spring.

II - REMOVAL OF PART CONCERNED

❑ Pivot the stub axle carrier to separate the driveshaft from the stub axle carrier.

❑ Remove the driveshaft from the gearbox.

REFITTING

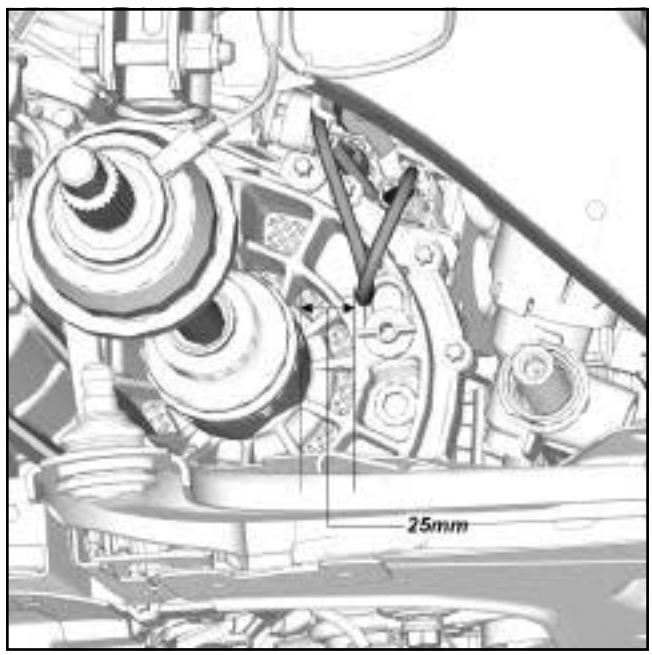
I - REFITTING PART CONCERNED

❑ Insert the driveshaft splines into the differential grooves.

❑ Insert the drive shaft splines in the hub grooves.

❑ Fit the left-hand shock absorber lower mounting bolts.

II - FINAL OPERATION



128087

❑

Note:

If equipped with the 5th injector.

After carrying out the operation, check that the dimension between the driveshaft and the hose for the 5th injector is at least 25mm.

To avoid damaging the hose.

DP0 or JH3 or JR5 – K4M or K9K or M4R, and TL4

❏ Fit:

- the left-hand track rod end,
- the left-hand upper ball joint of the anti-roll bar linkage,
- the left-hand brake calliper support mounting bolts (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ Tighten to torque:

- the **hub nut (280 Nm)**, using the **(Rou. 604-01)**,
- the **shock absorber base bolts (110 Nm)**,
- the **track rod end nut (37 Nm)**,
- the **anti-roll bar linkage upper ball joint nut (37 Nm)**,
- the **brake calliper support mounting bolts (105 Nm)** (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ Refasten the clips on the wheel speed sensor.

❏ Refit the engine undertray.

❏ Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

F4R, and TL4

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 1813	Extraction claw for clip secured type driveshafts

Equipment required
safety strap(s)
component jack

Tightening torques ▽	
front shock absorber turret bolts	**21 N.m**
front brake calliper bolts	**170 N.m**
track rod bolt	**37 N.m**
driveshaft nut	**280 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

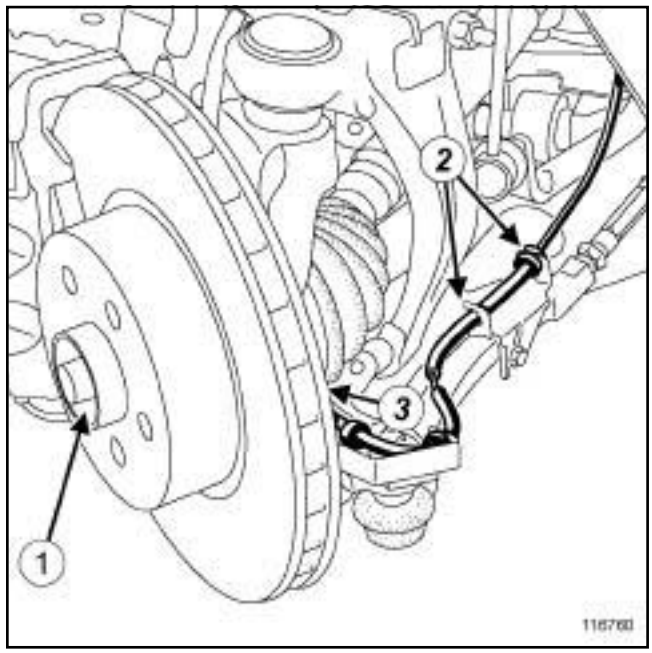
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Drain the gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



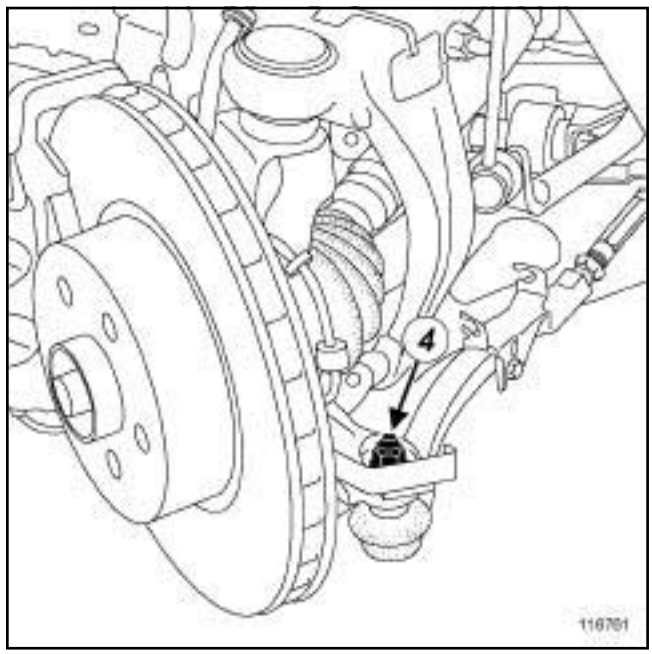
116760

❏ Remove the nut from the front left-hand driveshaft (**1**) using the tool **(Rou. 604-01)**.

❏ Unclip the ABS sensor wiring harness (**2**) .

❏ Remove the ABS sensor bolt (**3**) .

❏ Move the ABS sensor to one side.

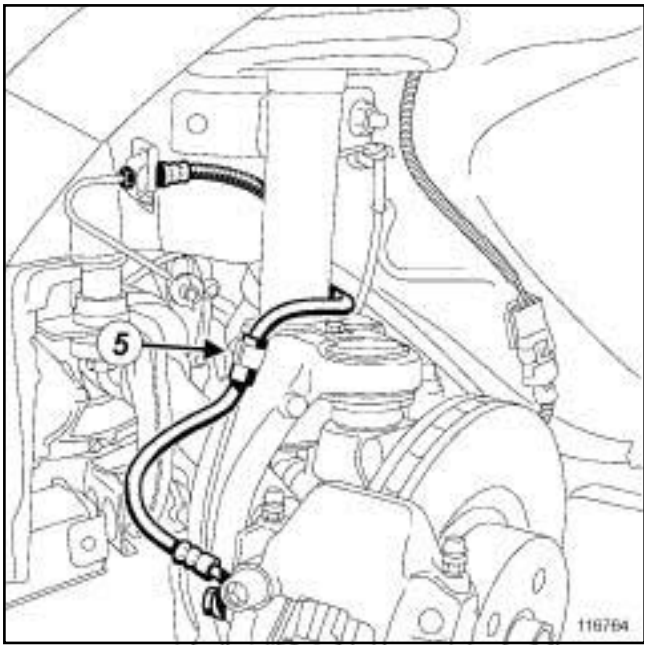


116761

❏ Remove:

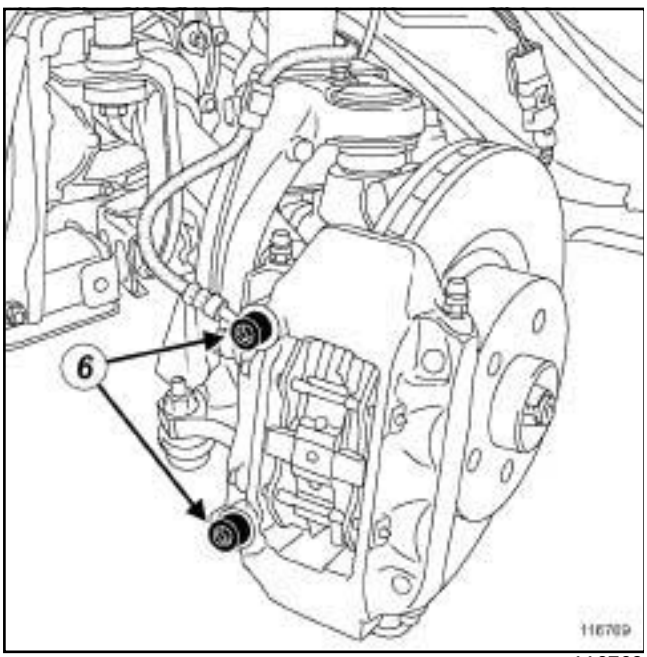
- the track rod nut (**4**) ,
- the track rod.

F4R, and TL4



116764

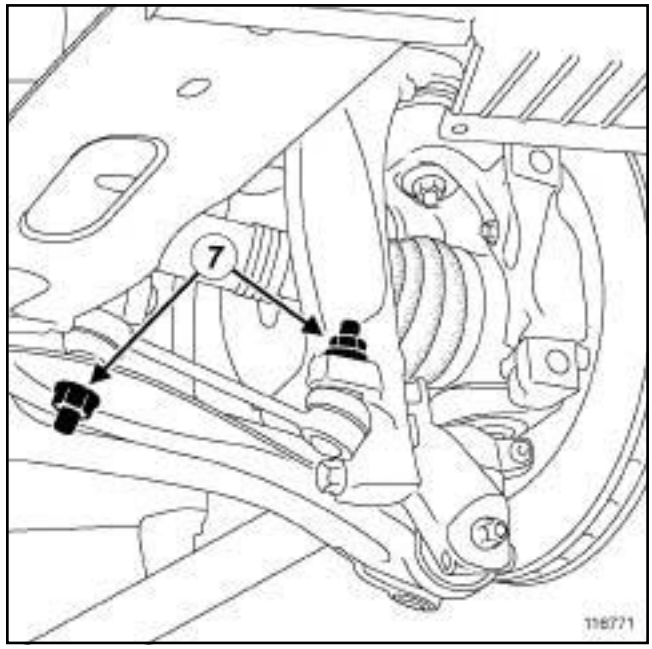
❏ Remove the bolt (**5**) from the clip on the front brake hose.



116769

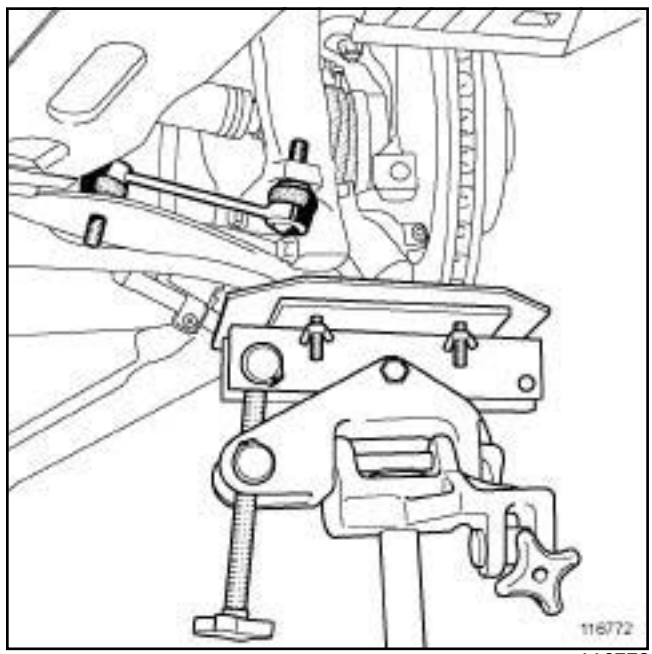
❏ Remove the front brake calliper bolts (**6**) .

❏ Move the front brake calliper away and attach it using a **safety strap(s)** to the spring of the front shock absorber.



116771

❏ Remove the linkage nuts (**7**) .



116772

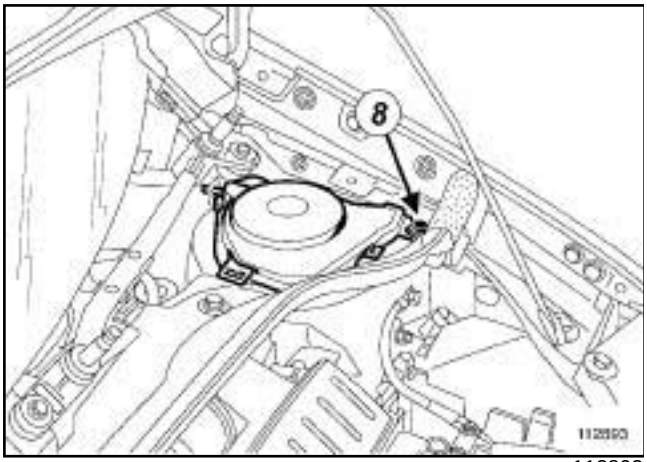
❏ Fit a **component jack** to compress the front suspension.

❏ Remove the linkage.

❏ Remove the **component jack**.

❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

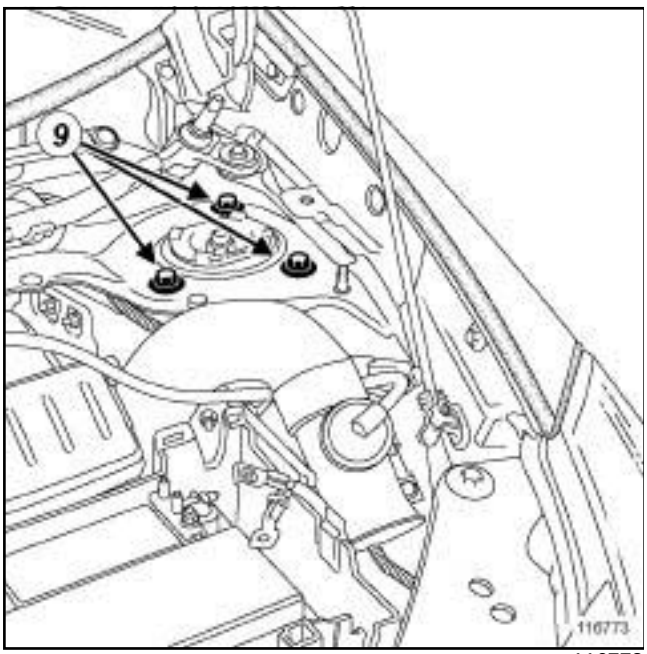
F4R, and TL4



112893

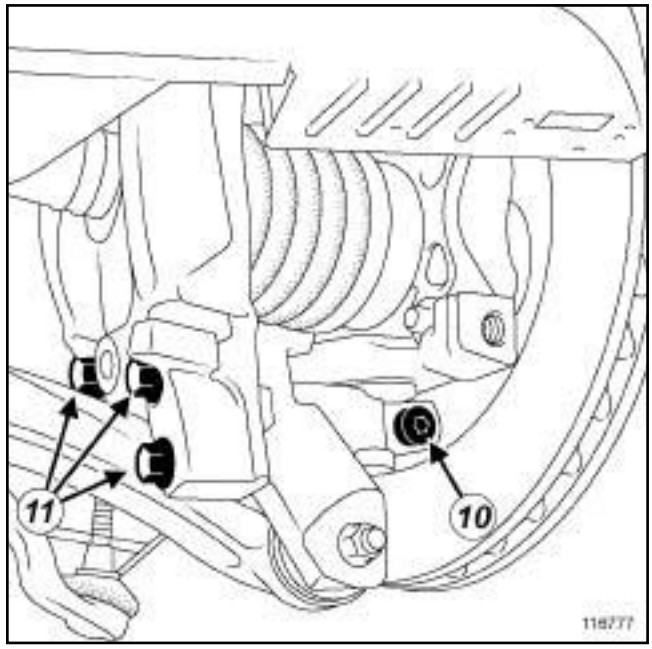
❏ Remove:

- the nut (**8**) from the cover of the front shock absorber turret,
- the cover of the front shock absorber turret.



116773

❏ Loosen the bolts (**9**) on the front shock absorber turret.



116777

❏ Remove:

- the hub carrier lower shaft bolt (**10**) ,
- the bolts (**11**) from the pivot support.

❏ Separate the spring - shock absorber - pivot assembly.

❏ Remove:

- the front left-hand driveshaft from the front left-hand wheel hub,
- the front left-hand driveshaft from the gearbox.

❏ Remove the front left-hand driveshaft using the tool **(Tav. 1813)** and.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Remove the left-hand side differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

❏ Refit a new differential output seal on the left-hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the front left-hand driveshaft by inserting it into the gearbox then into the front wheel hub.

❏ Refit:

- the bolts of the pivot support,

- the hub carrier lower shaft bolt.

❑ Torque tighten the **front shock absorber turret bolts (21 N.m)**.

❑ Fit a **component jack** to compress the front suspension.

❑ Refit the linkage.

❑ Remove the **component jack**.

❑ Refit the linkage nuts.

❑ Fit the front brake calliper.

❑ Torque tighten the **front brake calliper bolts (170 N.m)**.

❑ Refit the bolt of the clip on the front brake calliper hose.

❑ Position the track rod.

❑ Refit the track rod nut.

❑ Torque tighten the **track rod bolt (37 N.m)**.

❑ Refit:

- the ABS sensor,
- the ABS sensor bolt.

❑ Clip the ABS sensor wiring harness.

❑ Refit the driveshaft nut using the **(Rou. 604-01)**.

❑ Torque tighten the **driveshaft nut (280 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the cover of the front shock absorber turret,
- the nut for the cover of the front shock absorber turret,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

JH3 or JR5 – K4M or K9K or M4R, and TL4

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

Tightening torques ▽	
driveshaft relay bearing bracket mounting bolts	**21 Nm**
hub nut	**280 Nm**
shock absorber base bolts	**110 Nm**
track rod end nut	**37 Nm**
anti-roll bar linkage upper ball joint nut	**37 Nm**
brake calliper support mounting bolts	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

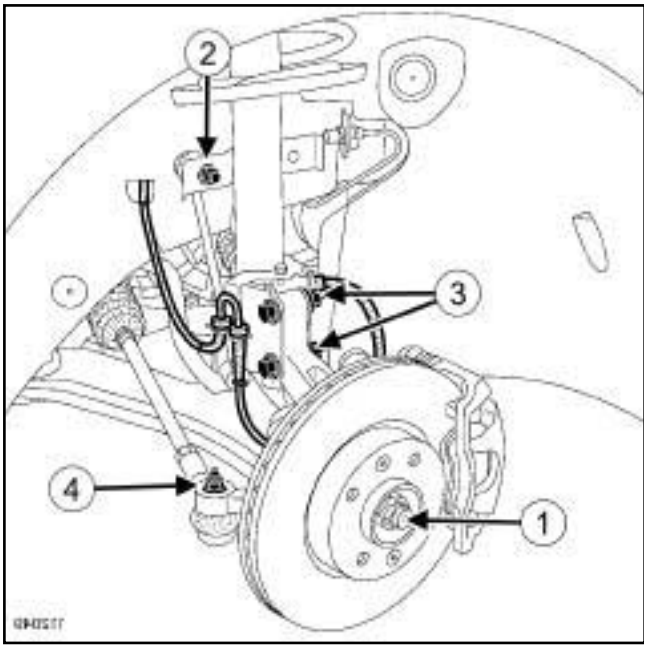
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the engine undertray.

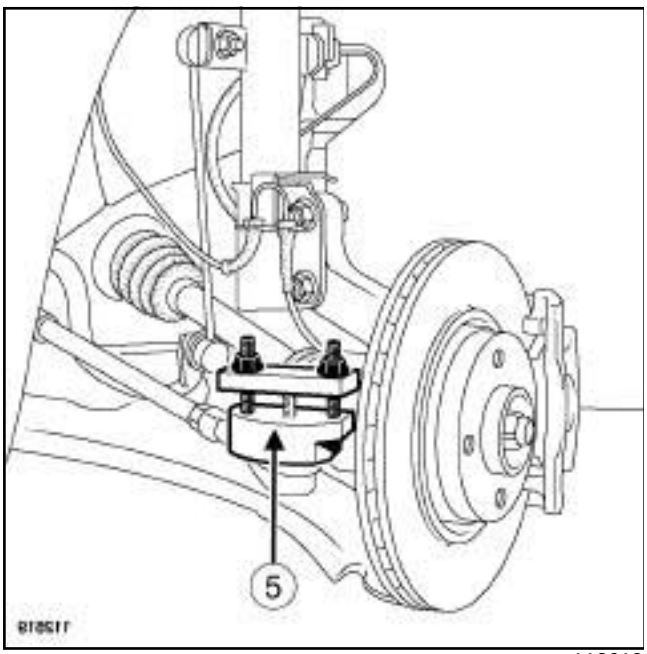
❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Remove the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR392, 35A, Wheels and tyres).

JH3 or JR5 – K4M or K9K or M4R, and TL4



112049



112619

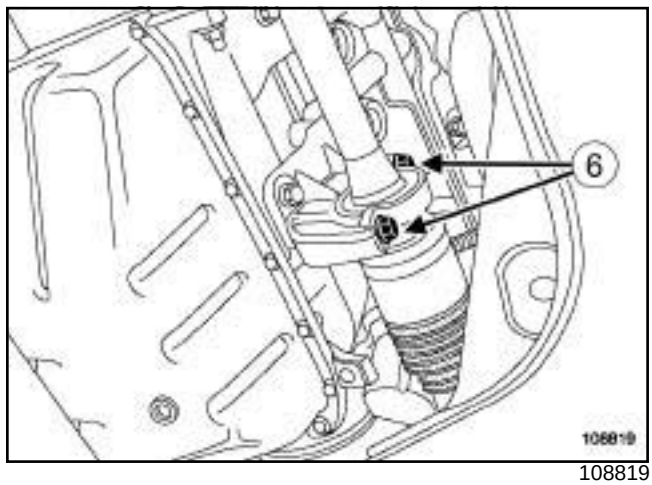
❏ Unclip the right-hand wheel speed sensor.

❏ Remove:

- the hub nut (**1**) using the **(Rou. 604-01)**,
- the anti-roll bar linkage right-hand upper ball joint (**2**) ,
- the right-hand track rod end (**4**) , using the **(Tav. 476)** at (**5**) ,
- the right-hand brake calliper support mounting bolts (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components),
- the right-hand shock absorber lower mounting bolts (**3**) .

❏ Attach the brake calliper to the shock absorber spring.

D4F, and 740 or 742, and JH3



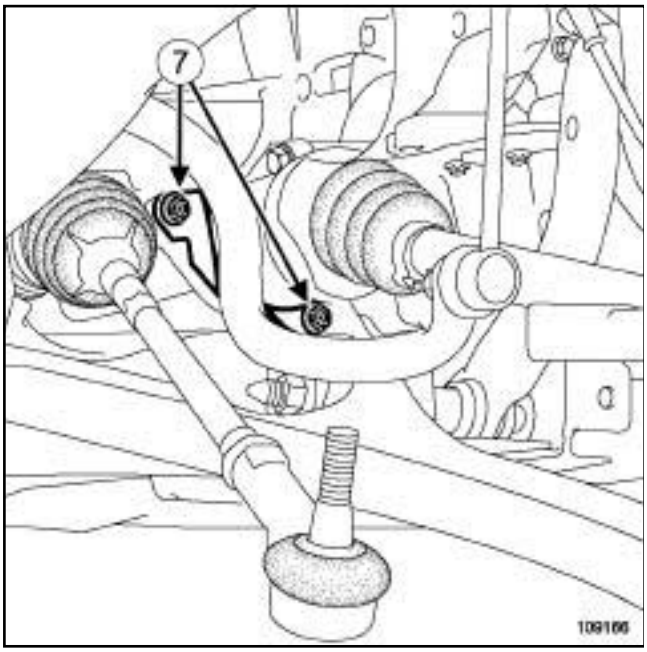
108819

❏ Remove:

- the driveshaft relay bearing bracket mounting bolts (**6**) ,
- the driveshaft relay bearing bracket.

JH3 or JR5 – K4M or K9K or M4R, and TL4

K4J, and 780, and JH3 – K4M, and 800, and JH3 – K9K, and 768, and JH3 – K9K, and 766, and JR5

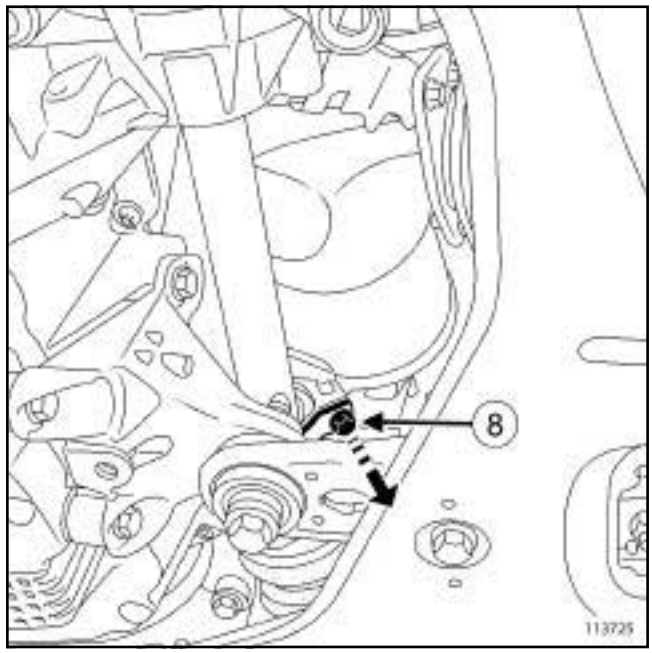


109166

❑ Remove:

- the driveshaft relay bearing bracket mounting bolts (**7**) ,
- the driveshaft relay bearing bracket.

K9K, and 764, and TL4



113725

❑ Remove the driveshaft relay bearing bracket mounting bolt (**8**) .

❑ Pivot the driveshaft relay bearing bracket.

II - REMOVAL OF PART CONCERNED

❑ Pivot the stub axle carrier to separate the driveshaft from the stub axle carrier.

❑ Remove the driveshaft from the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the lip seal mating face on the driveshaft.

WARNING
Do not refit a driveshaft if the lip seal mating face is damaged.

❑ Replace the differential output lip seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

JH3 or JR5 – K4M or K9K or M4R, and TL4

II - REFITTING PART CONCERNED

❏ Engage the driveshaft splines with the differential splines as straight as possible, so as to not damage the seal.

❏ Engage the driveshaft splines with the hub splines.

III - FINAL OPERATION.

❏ Tighten to torque:

- the **driveshaft relay bearing bracket mounting bolts (21 Nm)**,
- the **hub nut (280 Nm)**, using the **(Rou. 604-01)**,
- the **shock absorber base bolts (110 Nm)**,
- the **track rod end nut (37 Nm)**,
- the **anti-roll bar linkage upper ball joint nut (37 Nm)**,
- the **brake calliper support mounting bolts (105 Nm)** (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ Refasten the clips on the wheel speed sensor.

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❏ Refit the engine undertray.

❏ Refit the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

DP0

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

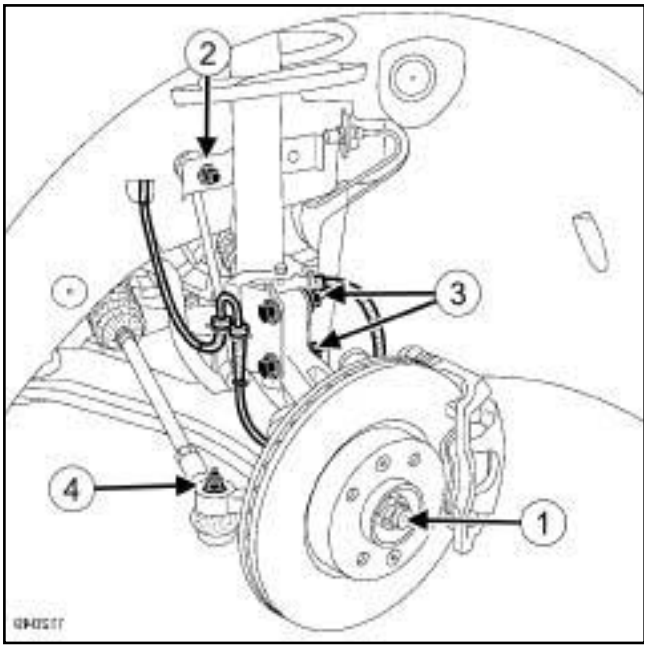
Tightening torques ▽	
driveshaft relay bearing bracket mounting bolt	**21 Nm**
hub nut	**280 Nm**
shock absorber base bolts	**110 Nm**
track rod end nut	**37 Nm**
anti-roll bar linkage upper ball joint nut	**37 Nm**
brake calliper support mounting bolts	**105 Nm**

REFITTING

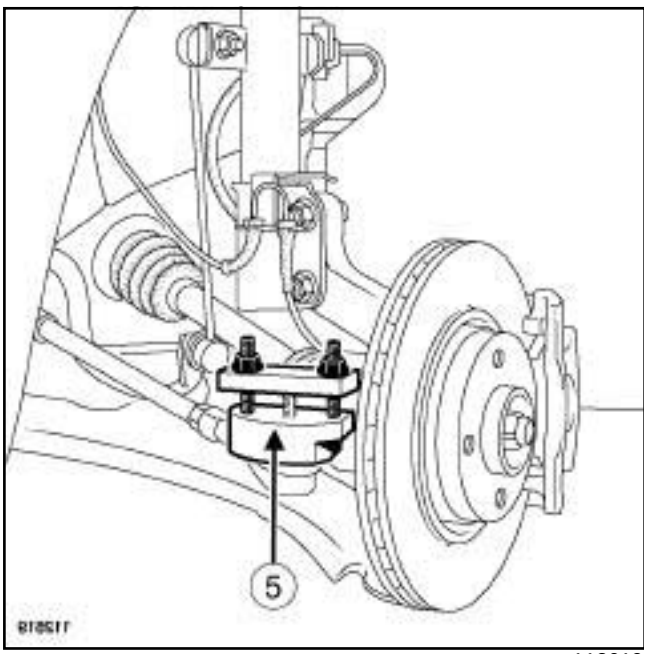
I - REMOVAL PREPARATION OPERATION

- ❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ❏ Remove the engine undertray.
- ❏ Remove the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

DP0



112049



112619

❏ Unclip the right-hand wheel speed sensor.

❏ Remove:

- the hub nut (**1**) using the **(Rou. 604-01)**,
- the anti-roll bar linkage right-hand upper ball joint (**2**) ,
- the right-hand track rod end (**4**) , using the **(Tav. 476)** at (**5**) ,
- the right-hand brake calliper support mounting bolts (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components),
- the right-hand shock absorber lower mounting bolts (**3**) .

❏ Attach the brake calliper to the shock absorber spring.

116200

❏ Remove the driveshaft relay bearing bracket mounting bolt (**6**) .

II - REMOVAL OF PART CONCERNED

❏ Pivot the stub axle carrier to separate the driveshaft from the stub axle carrier.

❏ Remove the driveshaft from the gearbox.

REMOVAL

I - REFITTING PART CONCERNED

❏ Insert the driveshaft splines into the differential grooves.

❏ Insert the drive shaft splines in the hub grooves.

❏ Fit:

- the right-hand shock absorber lower mounting bolts,
- the driveshaft relay bearing bracket.

❏ Refit the driveshaft relay bearing bracket mounting bolt ***(6)*** .

II - FINAL OPERATION

❏ Fit:

- the right-hand track rod end,

DP0

- the anti-roll bar linkage right-hand upper ball joint,
- the right-hand brake calliper support mounting bolts (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ Torque tighten:

- the **driveshaft relay bearing bracket mounting bolt (21 Nm)**,
- the **hub nut (280 Nm)**, using the **(Rou. 604-01)**,
- the **shock absorber base bolts (110 Nm)**,
- the **track rod end nut (37 Nm)**,
- the **anti-roll bar linkage upper ball joint nut (37 Nm)**,
- the **brake calliper support mounting bolts (105 Nm)** (see **Front brake calliper mounting: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ Refasten the clips on the wheel speed sensor.

❏ Refit the engine undertray.

❏ Refit the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

Front right-hand driveshaft: Removal - Refitting

F4R, and TL4

Special tooling required	
Rou. 604-01	Hub locking tool.

Equipment required
component jack

Tightening torques ▽	
driveshaft relay bearing support plate mounting bolts	**21 Nm**
brake calliper mounting bolts	**170 Nm**
track rod mounting bolt	**37 Nm**
driveshaft nut	**280 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

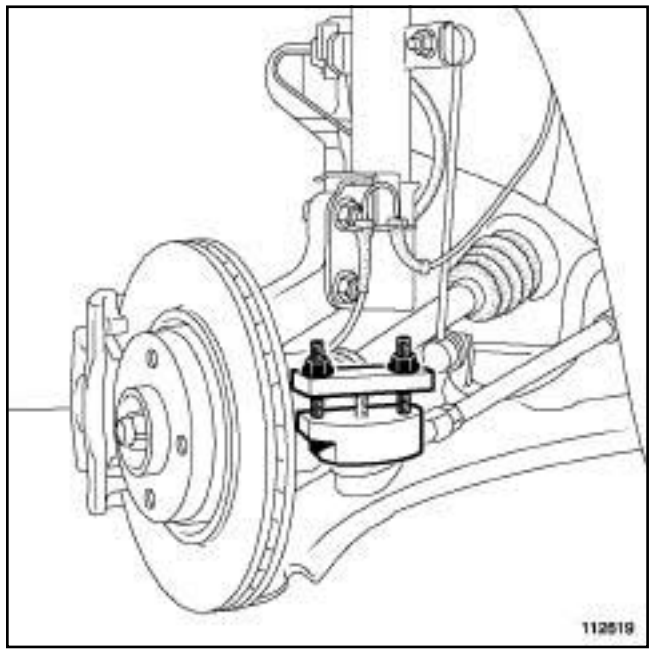
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

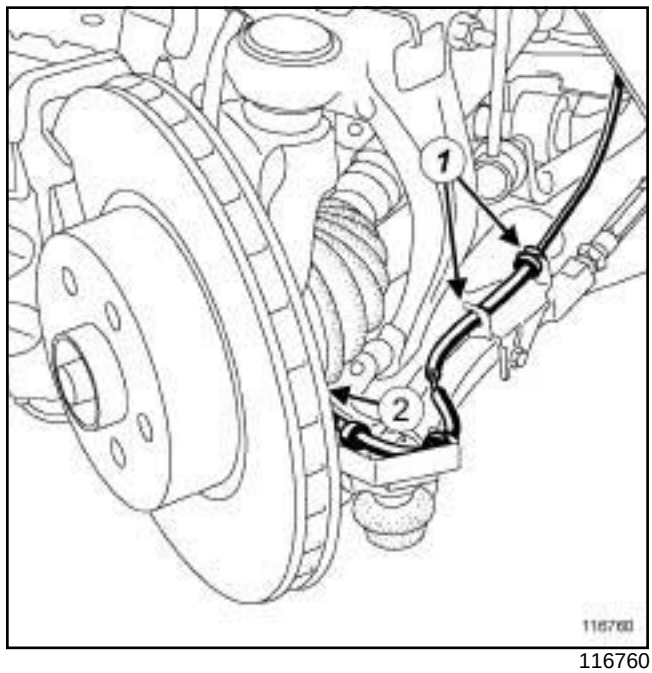
❏ Drain the gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112619

❏ Remove the driveshaft nut using the **(Rou. 604-01)**.



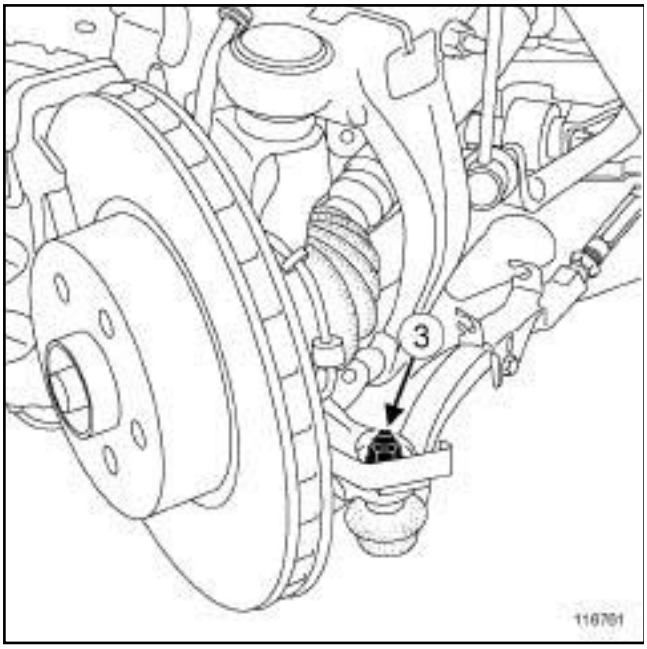
116760

❏ Unclip the ABS sensor wiring harness (**1**) .

❏ Remove the ABS sensor mounting bolt (**2**) .

❏ Move the ABS sensor to one side.

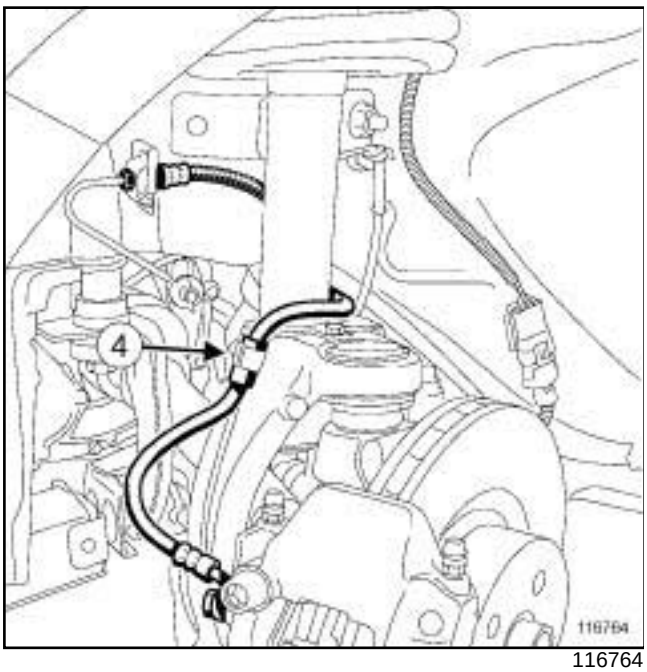
F4R, and TL4



116761

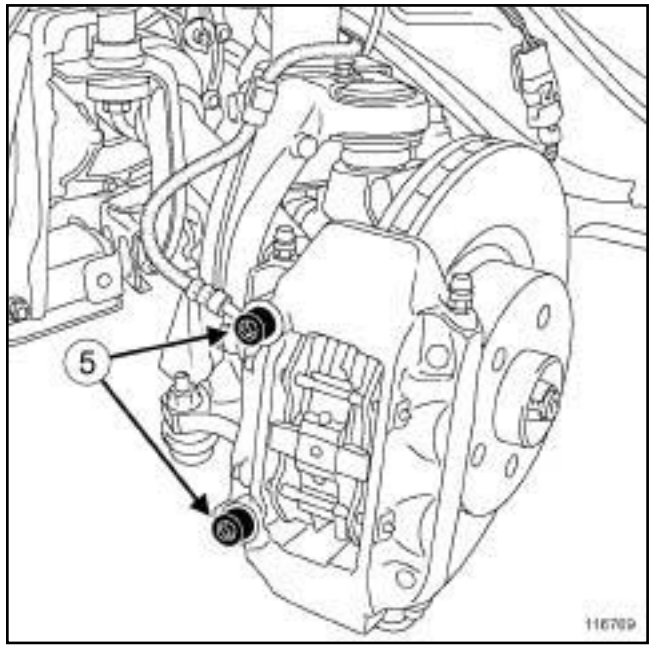
❏ Remove the track rod mounting nut (**3**) .

❏ Remove the track rod.



116764

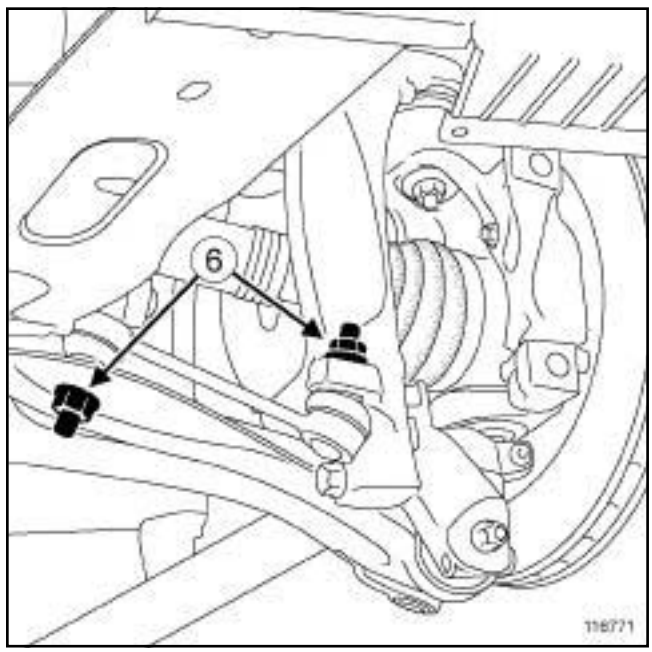
❏ Remove the calliper hose mounting bolt (**4**) .



116769

❏ Remove the brake calliper mounting bolts (**5**) .

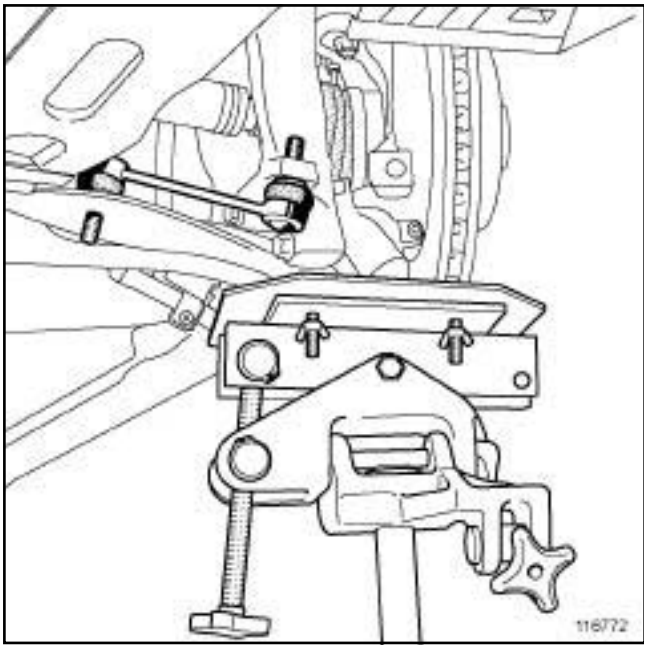
❏ Remove the brake calliper and strap it up (see **Front brake calliper: Removal - Refitting**) (MR 392, 31A, Front axle components).



116771

❏ Remove the linkage nuts (**6**) .

F4R, and TL4



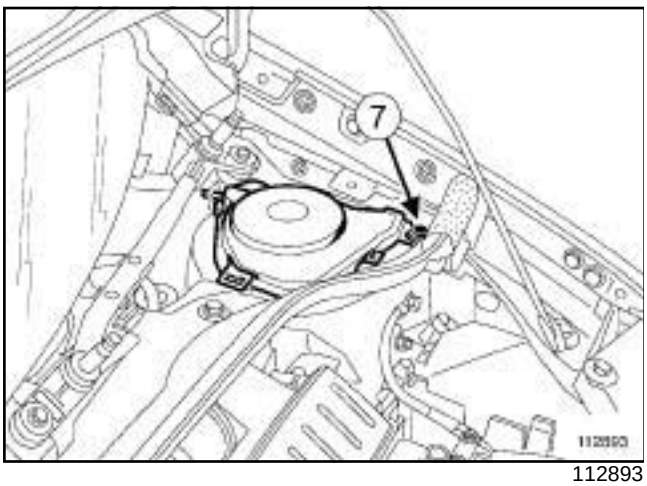
116772

❏ Fit a **component jack** to compress the suspension.

❏ Remove the linkage.

❏ Remove the **component jack**.

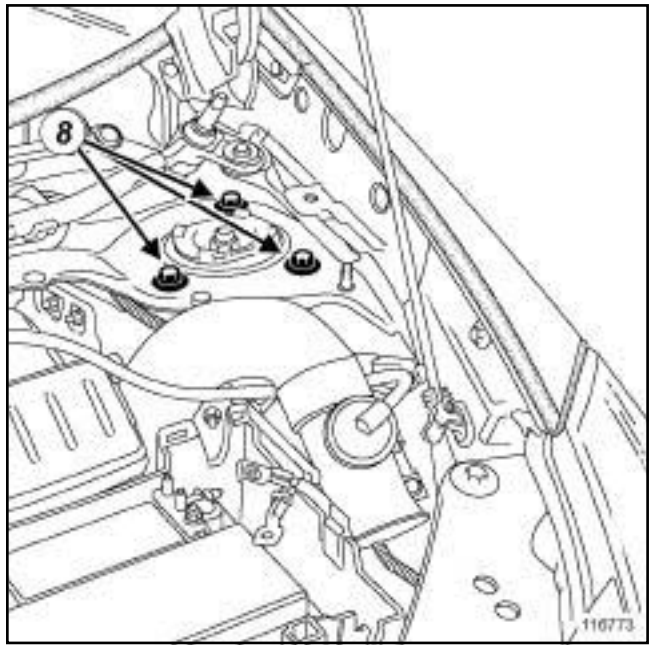
❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112893

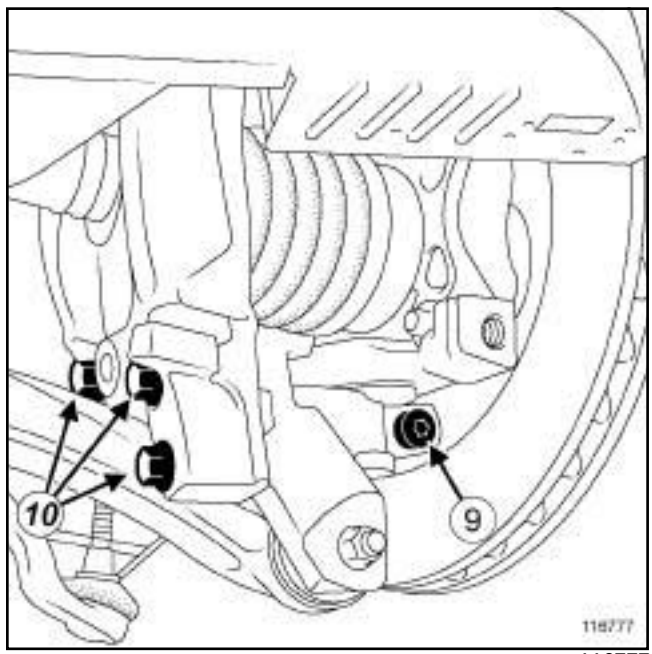
❏ Remove:

- the turret cover mounting nut (**7**) ,
- the turret cover.



116773

❏ Loosen the turret mounting bolts (**8**) .



116777

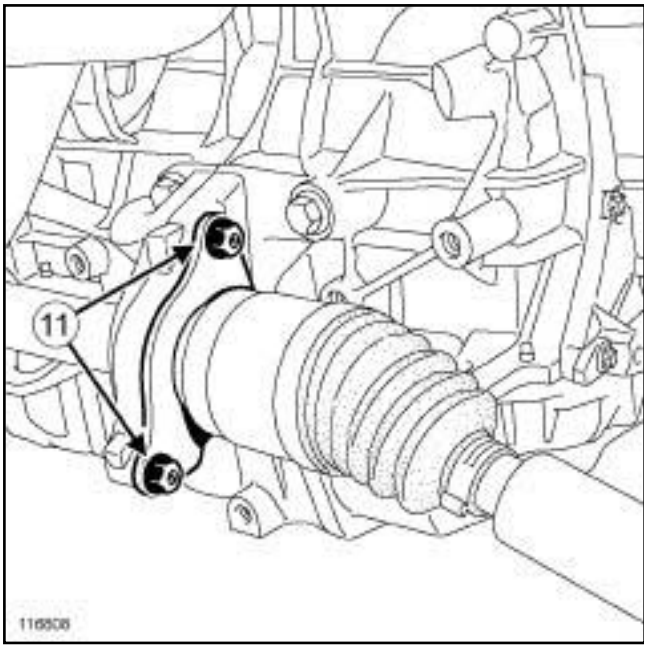
❏ Remove:

- the hub carrier lower axis locking bolt (**9**) ,
- the mounting bolts (**10**) from the pivot mounting.

❏ Remove the "spring - shock absorber - pivot" assembly.

❏ Extract the hub driveshaft.

F4R, and TL4



116808

❑ Remove the right-hand driveshaft relay bearing support plate mounting bolts (**11**) .

❑ Extract the driveshaft from the gearbox.

❑ Remove the right-hand driveshaft.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Replace the differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-46**) .

> **WARNING**
> Always replace the differential output lip seal with a new one whenever the driveshafts are removed.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the driveshaft by inserting it into the gearbox and then the hub carrier.

❑ Refit:

- the driveshaft relay bearing support plate,
- the driveshaft relay bearing support plate mounting bolts.

❑ Torque tighten the **driveshaft relay bearing support plate mounting bolts (21 Nm)**

❑ Refit:

- the pivot mounting bolts,
- the hub carrier lower axis locking bolt.

❑ Fit a **component jack** to compress the suspension.

❑ Refit the linkage.

❑ Remove the **component jack**.

❑ Refit the linkage mounting bolts.

❑ Refit the brake calliper mounting bolts.

❑ Tighten to torque the **brake calliper mounting bolts (170 Nm)**.

❑ Refit the calliper hose mounting bolt.

❑ Position the track rod.

❑ Refit the track rod mounting nut.

❑ Tighten to torque the **track rod mounting bolt (37 Nm)**.

❑ Refit the ABS sensor.

❑ Clip the ABS sensor wiring harness.

❑ Refit the driveshaft nut using the **(Rou. 604-01)**.

❑ Tighten to torque the **driveshaft nut (280 Nm)**

III - FINAL OPERATION.

❑ Refit:

- the turret cover,
- the turret cover mounting nut,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-3**) .

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R, and TL4

REMOVAL

I - REMOVAL PREPARATION OPERATION

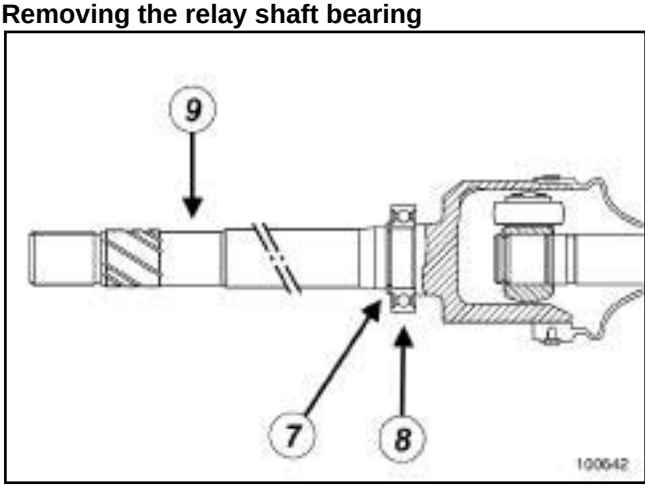
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

II - REMOVAL OF PART CONCERNED

Removing the relay shaft bearing



100642

❑ Remove the lock ring (**7**) from the bearing (**8**) .

❑ Extract the bearing (**8**) using a press and an extractor.

❑ Take care not to scratch the contact surface of the lip seal on the relay shaft (**9**) .

REFITTING

I - REFITTING PART CONCERNED

❑ Lubricate the contact surface of the shaft into which the bearing is inserted.

❑ Insert the new bearing.

❑ Fit the bearing to the end using a tube, so that it rests on the inner bearing race.

❑ Fit a new lock ring.

❑ Clean and grease the bearing hole into which the bearing will be inserted.

II - FINAL OPERATION.

❑ Refit the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

M4R, and TL4

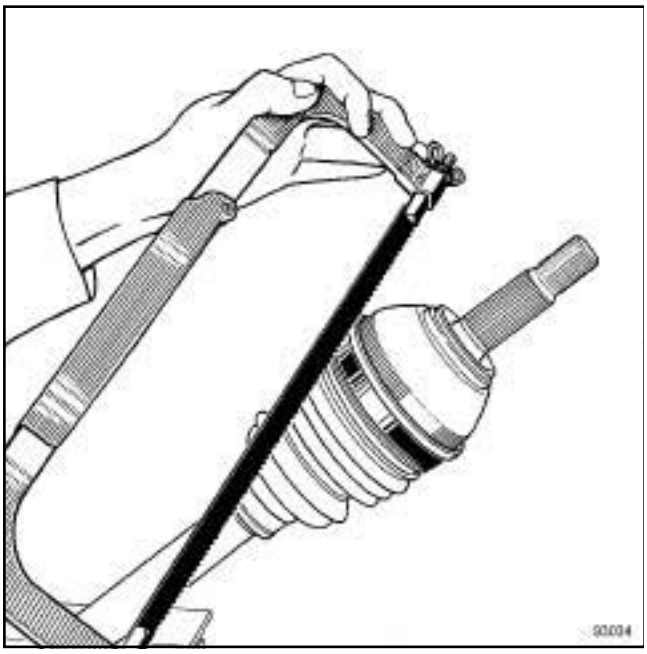
Special tooling required	
Tav. 1796	Driveshaft bowl-shaped spindle extractors
Emb. 880	Pin extractor tool.
Tav. 1784	Pliers for the driveshaft gaiter collar.
Tav. 1168	"Clic" type clip pliers for driveshafts with a thermoplastic gaiter.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

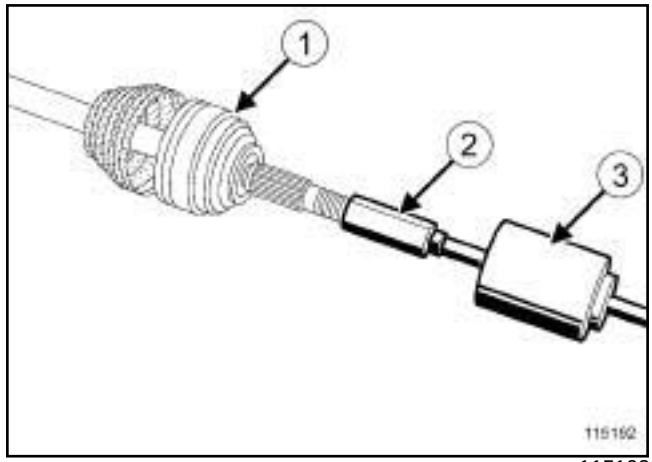
II - OPERATION FOR REMOVAL OF PART CONCERNED



93034

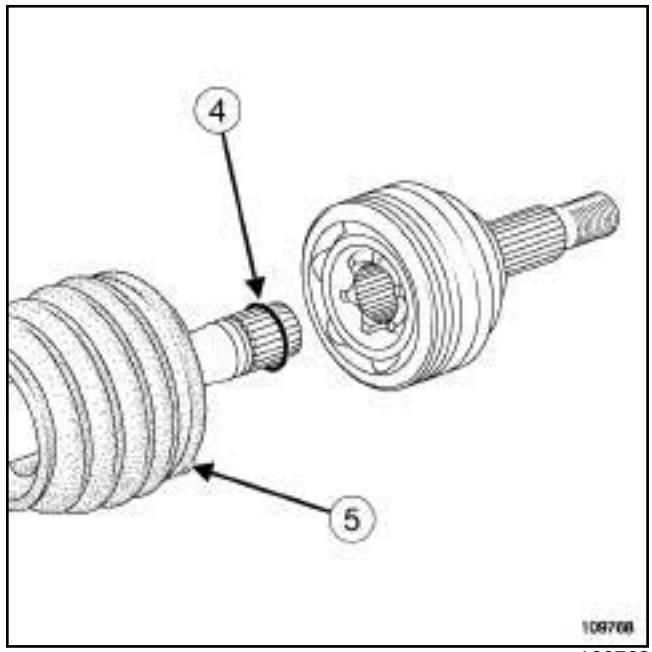
❏ Cut the clips taking care not to damage the groove of the stub axle bowl.

❏ Push back the gaiter to release the stub axle bowl.



115192

❏ Remove the stub axle bowl (**1**) using the **(Tav. 1796)** (**2**) and the extractor **(Emb. 880)** (**3**) .



109768

❏ Remove:

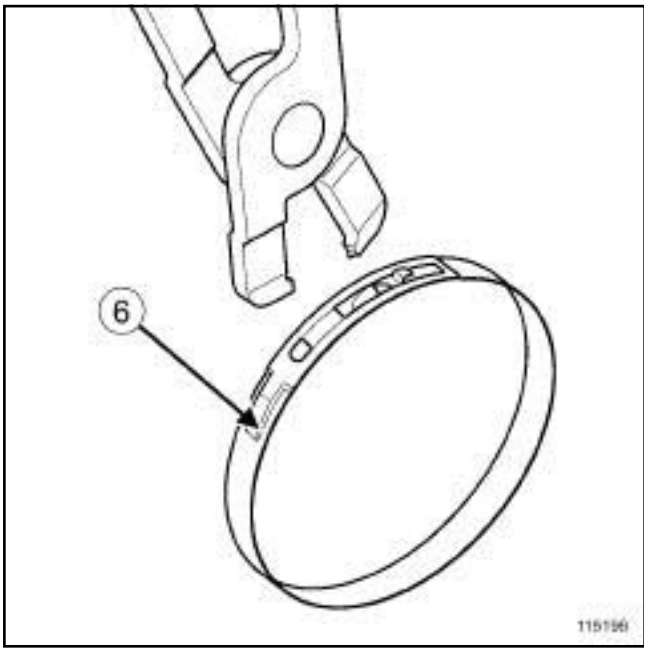
- the locking spring ring (**4**) ,
- the gaiter (**5**) .

❏ Remove as much grease as possible from the stub axle bowl.

M4R, and TL4

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

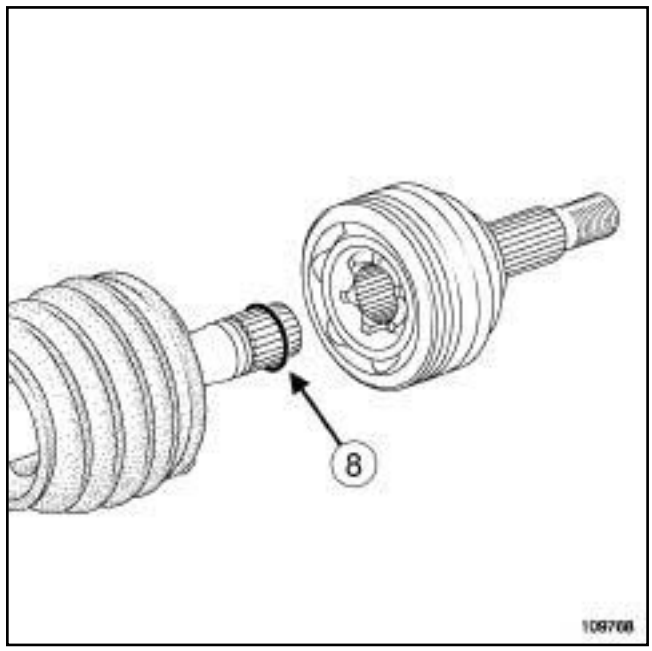


115196

115197

❑ Use:

- the **(Tav. 1784)** for the clip with profile end (**6**) ,
- the **(Tav. 1168)** for the jubilee type clip (**7**) .



109768

❑ Always replace the locking spring ring (**8**) each time the stub axle bowl is removed.

❑ Fit the small clip.

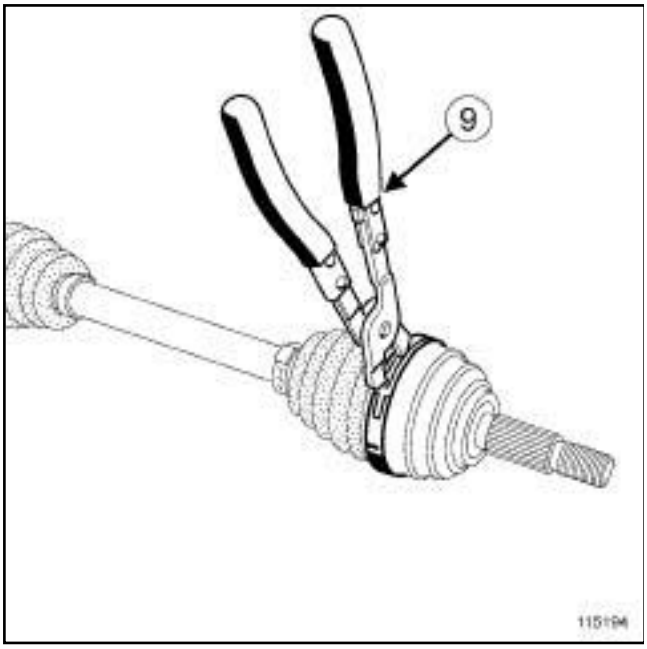
❑ Fit the gaiter.

❑ Fit the stub axle bowl manually until the locking spring ring clicks behind the ball hub.

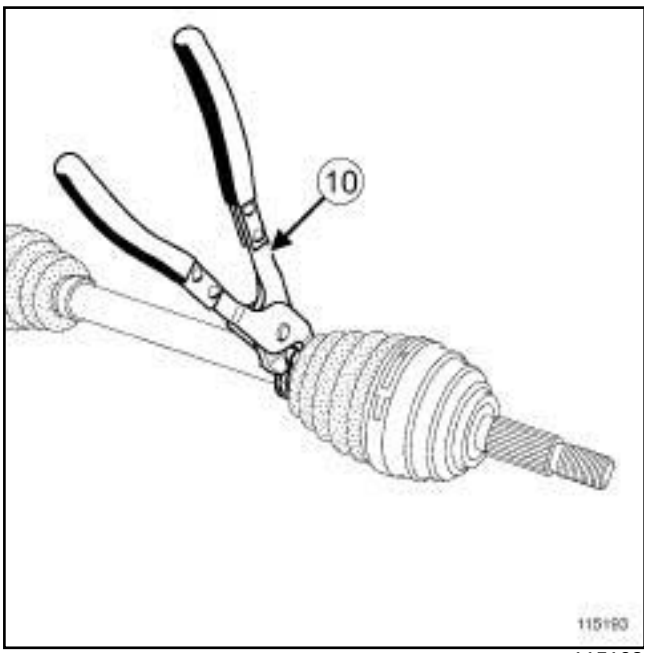
❑ Spread the quantity of grease around the gaiter and the stub axle bowl.

❑ Insert the lips of the gaiter into the grooves of the stub axle bowl and propeller shaft.

M4R, and TL4



115194



115193

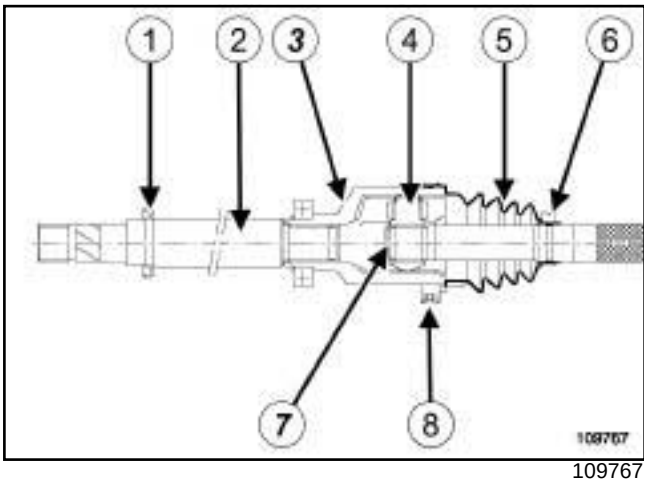
❑ Fit the clips, tightening them using the **(Tav. 1784)** (**9**) or the **(Tav. 1168)** (**10**) depending on the type of clip.

II - FINAL OPERATION.

❑ Refit the driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

DP0 or JH3 or JR5 or TL4

Special tooling required	
Tav. 1168	"Clic" type clip pliers for driveshafts with a thermoplastic gaiter.



109767

(**1**) Deflector
(**2**) Propeller shaft
(**3**) Driveshaft yoke sleeve
(**4**) Spider
(**5**) RC gaiter
(**6**) Tightening clip
(**7**) Lock ring
(**8**) Tightening ring

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

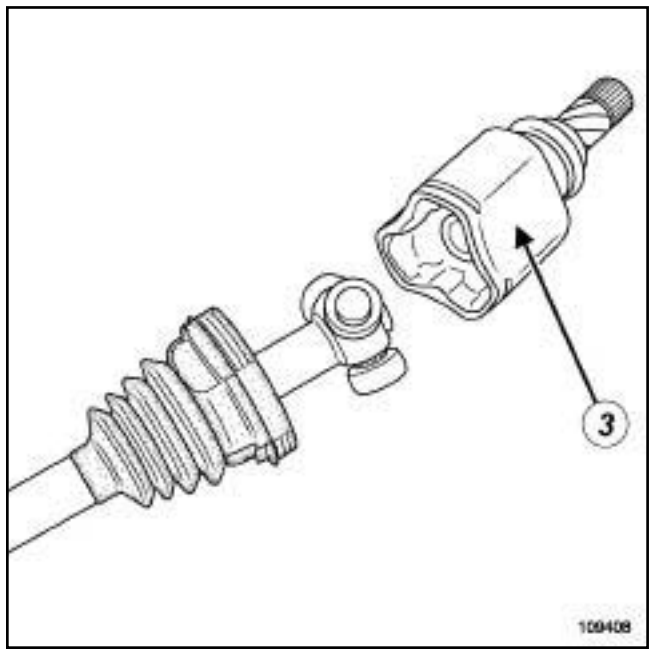
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the ring (**8**) and the tightening clip (**6**) using cutting pliers or a metal saw, taking care not to damage the yoke sleeve.

❑ Push back the gaiter (**5**) to release the driveshaft yoke sleeve.

❑ Remove as much grease as possible.

WARNING
Never use thinners to clean the components.



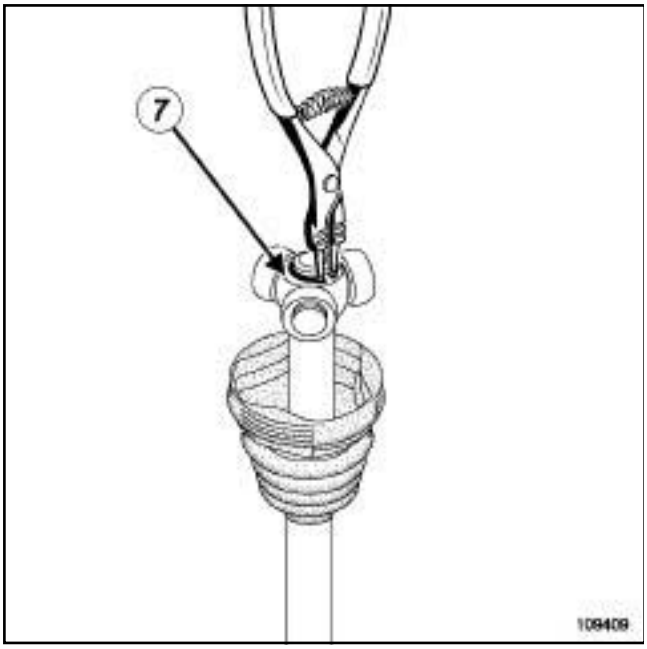
109408

❑ Remove the driveshaft yoke sleeve (**3**) .

Note:

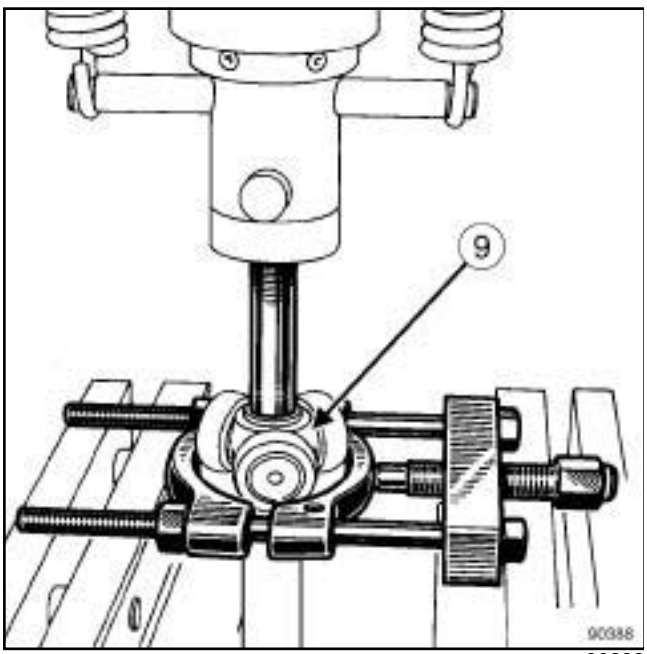
- Since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced.
- Do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

DP0 or JH3 or JR5 or TL4



109409

❏ Remove the lock ring (**7**) using the tool.



90388

❏ Extract the spider (**9**) , using a press and a releasing type extractor.

> Note:
>
> Mark the position of the spider before extracting it.

❏ Remove the propeller shaft gaiter.

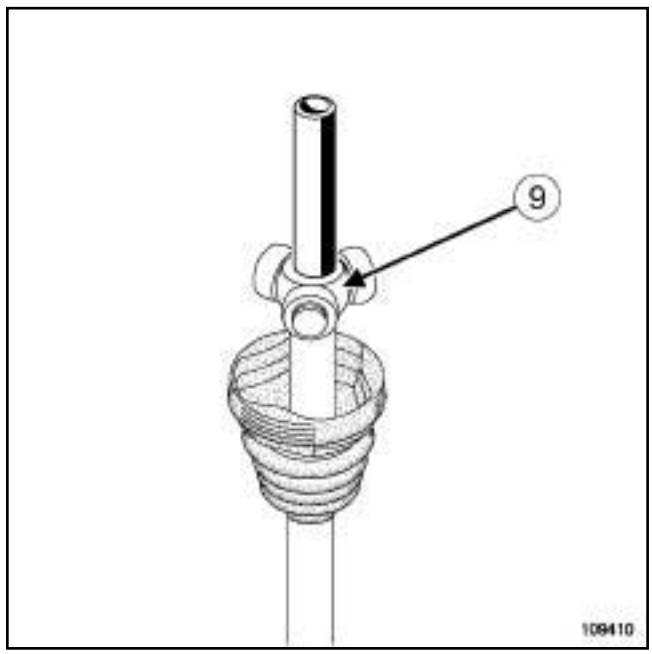
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the small tightening clip (**6**) to the propeller shaft.

❏ Slightly lubricate the propeller shaft to facilitate fitting the gaiter.

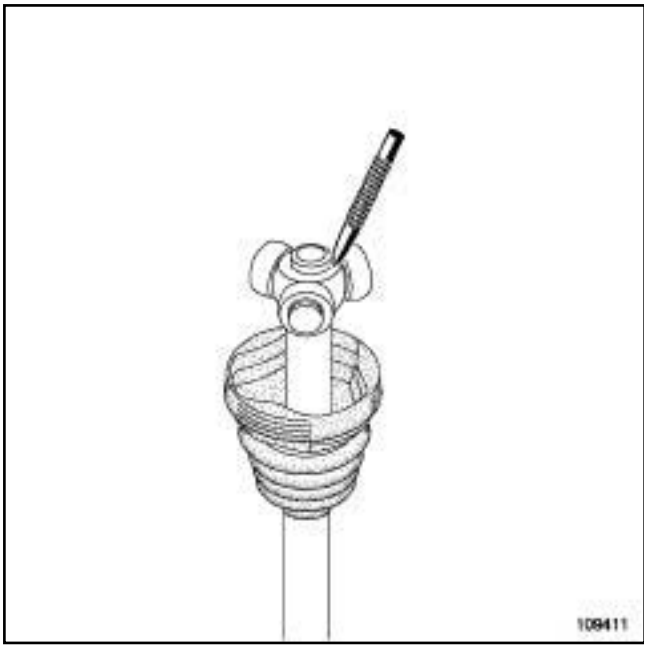
❏ Refit the propeller shaft gaiter.



109410

❏ Refit the spider (**9**) in the position marked during removal.

DP0 or JH3 or JR5 or TL4



109411

❏ Refit the retaining lock ring (**7**) or crimp at three points at **120°** by folding the metal of the splines down onto the propeller shaft.

❏ Lubricate the driveshaft yoke sleeve (**3**) .

❏ Fit the driveshaft yoke sleeve (**3**) onto the spider.

❏ Divide the quantity of grease between the gaiter (**5**) and the driveshaft yoke sleeve (**3**) .

Note:

Be sure to observe the prescribed quantity of lubricant.

❏ Position the lips of the gaiter (**5**) in the grooves of the driveshaft yoke sleeve and the propeller shaft.

❏ Insert a smooth rod with a rounded end between the gaiter and propeller shaft to control the amount of air inside the joint.

❏ Refit the clips, tightening with tool **(Tav. 1168)**.

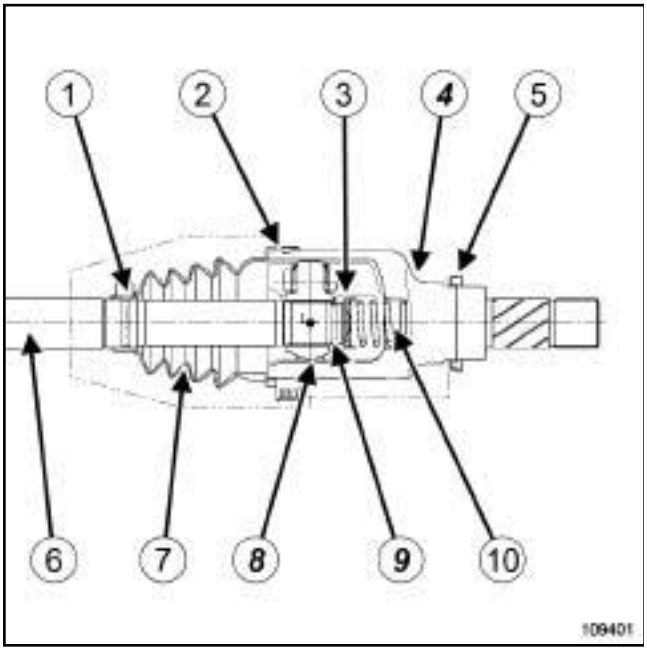
II - FINAL OPERATION.

❏ Refit the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-9**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

DP0 or JH3 or JR5 or TL4

Special tooling required	
Tav. 1168	"Clic" type clip pliers for driveshafts with a thermoplastic gaiter.



109401

(**1**) Tightening clip
(**2**) Tightening ring
(**3**) Cup
(**4**) Driveshaft yoke sleeve
(**5**) Deflector
(**6**) Propeller shaft
(**7**) RC gaiter
(**8**) Spider
(**9**) Lock ring
(**10**) Spring

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

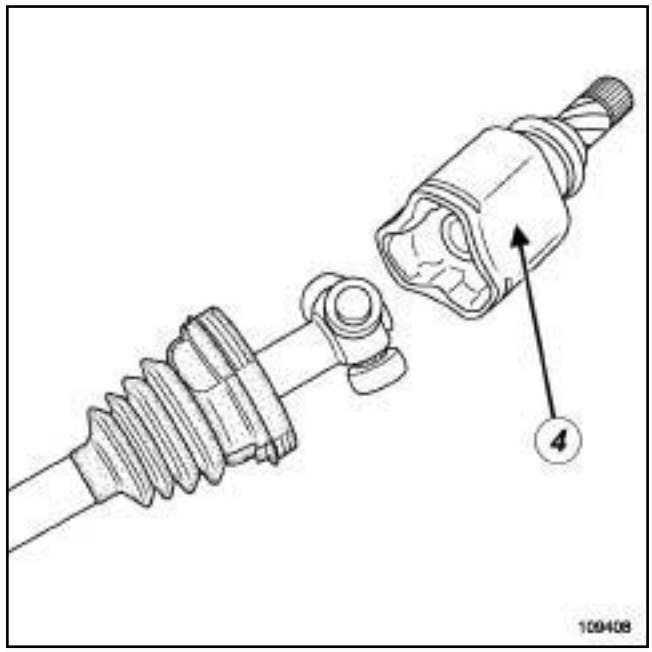
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Cut the clip (**1**) and tightening ring (**2**) using cutting pliers or a metal saw, taking care not to damage the driveshaft yoke sleeve.

❑ Push back the gaiter (**7**) to release the driveshaft yoke sleeve.

❑ Remove as much grease as possible.

WARNING
Never use thinners to clean the components.



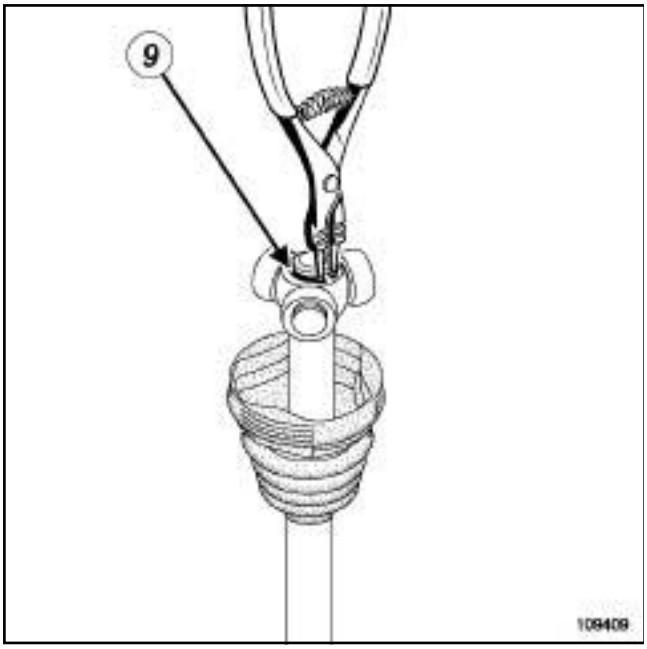
109408

❑ Remove the driveshaft yoke sleeve (**4**) .

Note:

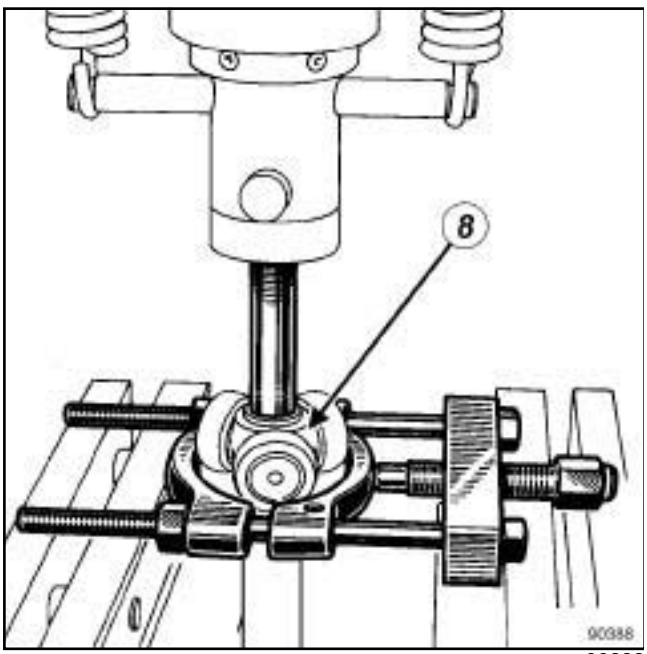
- since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced.
- Do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

DP0 or JH3 or JR5 or TL4



109409

❑ Remove the lock ring (**9**) .



90388

❑

Note:

Mark the position of the spider before extracting it.

Extract the spider (**8**) , using a press and a releasing type extractor.

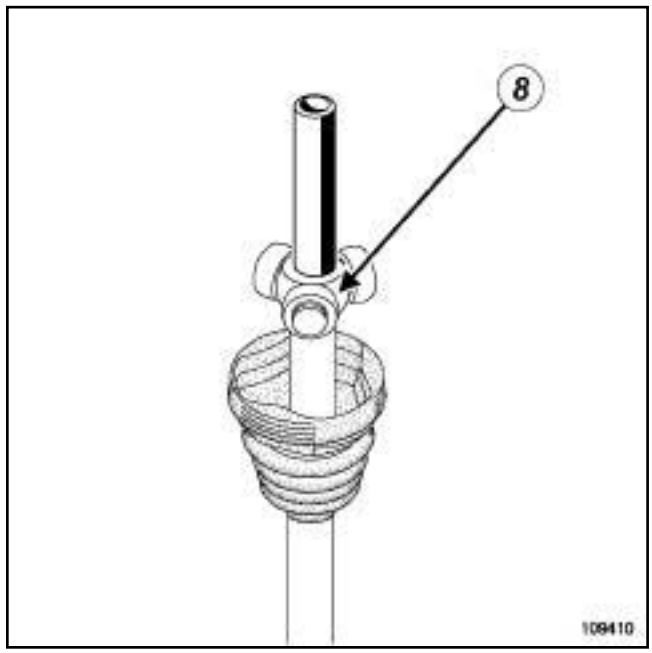
❑ Remove the propeller shaft gaiter.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the small tightening clip (**1**) to the propeller shaft.

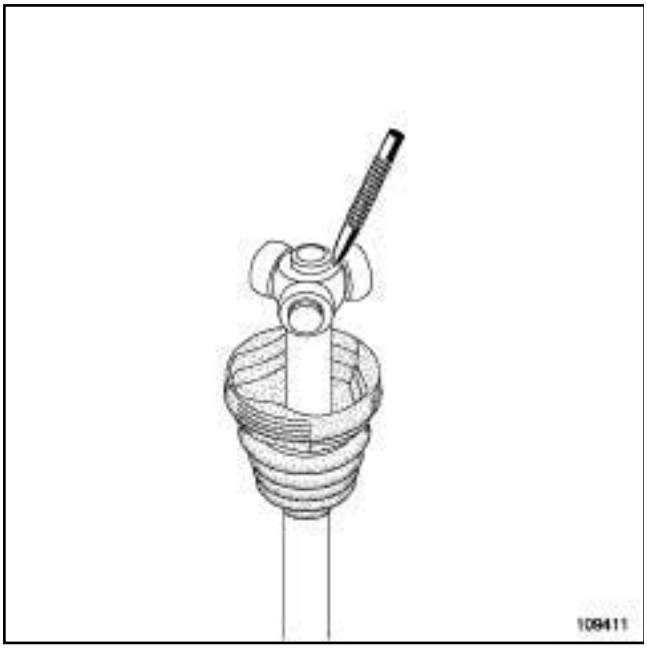
❑ Slightly lubricate the driveshaft to facilitate fitting gaiter (**7**) .



109410

❑ Refit the spider (**8**) in the position marked during removal.

DP0 or JH3 or JR5 or TL4



109411

❏ Refit the lock ring (**9**) .

❏ Lubricate the driveshaft yoke sleeve (**4**) .

❏ Fit the driveshaft yoke sleeve (**4**) onto the spider.

❏ Divide the quantity of grease between the gaiter (**7**) and the driveshaft yoke sleeve (**4**) .

Note:

Be sure to observe the prescribed quantity of lubricant (see) .

❏ Position the lips of the gaiter (**7**) in the grooves of the driveshaft yoke sleeve and the propeller shaft.

❏ Insert a smooth rod with a rounded end between the gaiter and propeller shaft to control the amount of air inside the joint.

❏ Fit the clips, tightening with the **(Tav. 1168)**.

II - FINAL OPERATION.

❏ Refit the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-2**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

RENAULT

3 Chassis

30A GENERAL INFORMATION

31A FRONT AXLE COMPONENTS

33A REAR AXLE COMPONENTS

35A WHEELS AND TYRES

35B TYRE PRESSURE MONITOR

36A STEERING ASSEMBLY

36B POWER ASSISTED STEERING

37A MECHANICAL COMPONENT CONTROLS

38C ANTI-LOCK BRAKING SYSTEM

X85

JULY 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Section 3

Contents

Pages

30A GENERAL INFORMATION

Brake circuit: Operating diagram 30A-1

Brake circuit: Precautions for the repair 30A-2

Braking circuit: Bleed 30A-4

Brake circuit: Tightening torque 30A-6

Brake fluid: Specifications 30A-8

Brake: Specifications 30A-9

Steering: Tightening torque 30A-10

Underbody heights: Adjustment value 30A-11

Front axle system: Tightening torque 30A-14

Front axle assembly: Adjustment values 30A-18

Front axle system: Adjustment 30A-23

Rear axle system: Tightening torque 30A-24

Rear axle assembly: Adjustment values 30A-26

Rigid brake pipe: Repair 30A-30

31A FRONT AXLE COMPONENTS

Front brake pads: Removal - Refitting 31A-1

Front brake hose: Removal - Refitting 31A-4

Front brake calliper: Removal - Refitting 31A-6

Front brake calliper: Repair 31A-10

Front brake calliper mounting: Removal - Refitting 31A-12

Front brake disc protector: Removal - Refitting 31A-14

Front brake disc: Removal - Refitting 31A-15

Front brake disc: Description 31A-20

Hydraulic unit - master cylinder brake pipe: Removal - Refitting 31A-21

Hydraulic unit - underbody union brake pipe: Removal - Refitting 31A-23

Hydraulic unit - front left-hand calliper brake pipe: Removal - Refitting 31A-26

Hydraulic unit - front right-hand calliper brake pipe: Removal - Refitting 31A-29

Front driveshaft hub carrier: Removal - Refitting 31A-31

Contents

31A FRONT AXLE COMPONENTS

Front hub carrier bearing: Removal - Refitting 31A-35

Front shock absorber and spring: Removal - Refitting 31A-41

Front driveshaft lower arm: Removal - Refitting 31A-47

Front driveshaft lower arm ball joint: Check 31A-53

Front axle subframe: Removal - Refitting 31A-55

Front anti-roll bar: Removal - Refitting 31A-69

33A REAR AXLE COMPONENTS

Rubber bush: Adjustment 33A-1

Rear brake pads: Removal - Refitting 33A-3

Rear brake hose: Removal - Refitting 33A-5

Rear brake calliper: Repair 33A-6

Rear brake calliper: Removal - Refitting 33A-8

Rear brake calliper mounting: Removal - Refitting 33A-10

Rear brake disc protector: Removal - Refitting 33A-11

Rear brake disc: Removal - Refitting 33A-12

Rear brake disc: Description 33A-14

Rear brake lining: Removal - Refitting 33A-15

Rear brake cylinder: Removal - Refitting 33A-17

Rear brake drum: Removal - Refitting 33A-19

Rear brake drum: Description 33A-21

33A REAR AXLE COMPONENTS

Rigid brake pipe: Removal - Refitting 33A-22

Shock absorber: Removal - Refitting 33A-24

Rear suspension spring: Removal - Refitting 33A-27

Rear drum bearing: Removal - Refitting 33A-29

Rear disc bearing: Removal - Refitting 33A-30

Rear stub axle carrier: Removal - Refitting 33A-32

Complete rear axle system: Removal - Refitting 33A-37

35A WHEELS AND TYRES

Wheel: Removal - Refitting 35A-1

Wheel: Balancing 35A-7

Tyres: Removal - Refitting 35A-10

Tyre: Repair 35A-12

Tyre pressure: Identification 35A-15

Tyres: Identification 35A-17

Wheel rim: Identification 35A-18

Emergency spare wheel winch: Removal - Refitting 35A-19

35B TYRE PRESSURE MONITOR

Tyre pressure monitor: List and location of components 35B-1

Tyre pressure monitor computer: Removal - Refitting 35B-3

Contents

36A STEERING ASSEMBLY

Steering box: Removal - Refitting 36A-1

Track rod: Removal - Refitting 36A-3

Axial ball joint linkage: Removal - Refitting 36A-5

Steering column: List and location of components 36A-7

Steering column: Removal - Refitting 36A-9

Steering box gaiter: Removal - Refitting 36A-13

Bulkhead seal: Removal - Refitting 36A-14

Intermediate shaft: Removal - Refitting 36A-15

Steering column adjustment handle: Removal - Refitting 36A-18

Steering wheel: Removal - Refitting 36A-22

36B POWER ASSISTED STEERING

Power-assisted steering: Function 36B-1

Power-assisted steering box: List and location of components 36B-2

Power-assisted steering box: Removal - Refitting 36B-3

Electric power-assisted steering computer: Configuration 36B-10

37A MECHANICAL COMPONENT CONTROLS

Manual gear control: Adjustment 37A-1

Master cylinder: Removal - Refitting 37A-2

Master cylinder - front right-hand calliper brake pipe: Removal - Refitting 37A-20

Master cylinder - front left-hand calliper brake pipe: Removal - Refitting 37A-22

Master cylinder - underbody union brake pipe: Removal - Refitting 37A-24

Brake servo non-return valve: Removal - Refitting 37A-26

Brake servo: Removal - Refitting 37A-32

Vacuum pump: Removal - Refitting 37A-68

Accelerator pedal: Removal - Refitting 37A-69

Emergency brake assist: Function 37A-73

Brake pedal: Removal - Refitting 37A-74

Brake pedal switch: Removal - Refitting 37A-79

Brake compensator: Removal - Refitting 37A-81

Brake compensator: Check 37A-83

Brake compensator: Adjustment 37A-87

Parking brake lever: Removal - Refitting 37A-88

Parking brake lever: Adjustment 37A-90

Clutch control: List and location of components 37A-91

Clutch pedal: Removal - Refitting 37A-92

Contents

37A MECHANICAL COMPONENT CONTROLS

Clutch pedal spring: Removal - Refitting 37A-96

Clutch pedal switch: Removal - Refitting 37A-97

Clutch circuit: Bleed 37A-100

Clutch master cylinder: Removal - Refitting 37A-107

Clutch circuit: Removal - Refitting 37A-113

Gear control: List and location of components 37A-121

Gear control unit: Removal - Refitting 37A-125

Parking brake cables: Removal - Refitting 37A-134

Brake servo: Check 37A-137

38C ANTI-LOCK BRAKING SYSTEM

Hydraulic unit without ESP: Removal - Refitting 38C-1

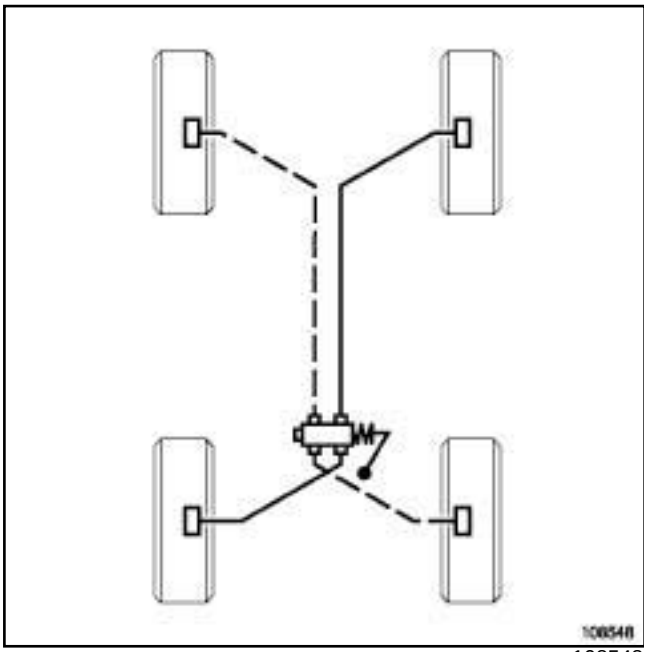
Hydraulic unit with ESP: Removal - Refitting 38C-8

Wheel speed sensor: Removal - Refitting 38C-13

Lateral acceleration and yaw sensor: Removal - Refitting 38C-14

Braking computer: Removal - Refitting 38C-16

« X » braking system with load-sensitive compensator

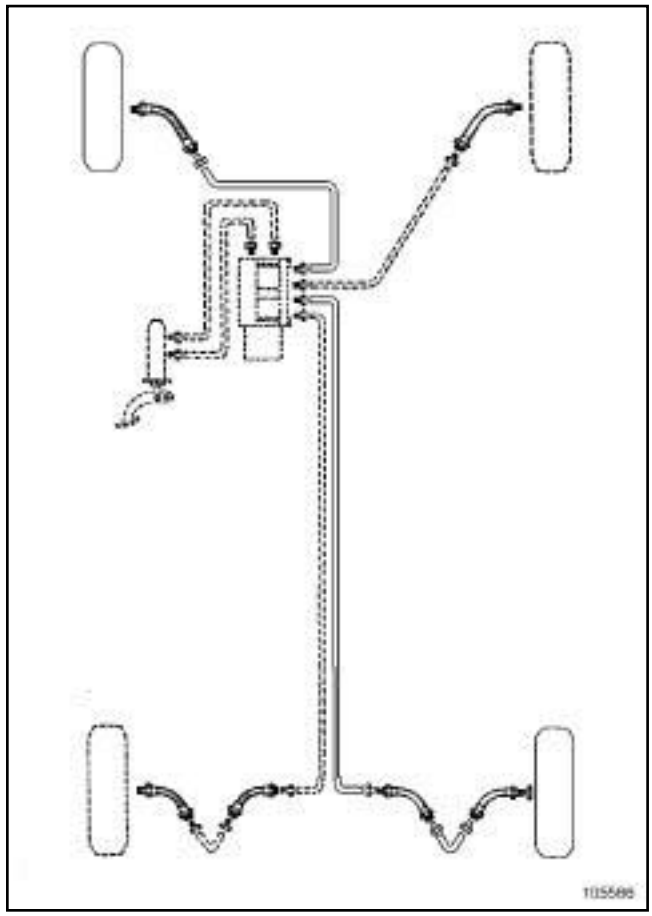


108548

IMPORTANT

This is a diagram of the general principle, do not use it as a reference for take-off points or circuit allocation. When replacing components in a vehicle's braking circuit, always mark the pipes before removing them.

« X » braking system with ABS



105586

IMPORTANT

This is a diagram of the general principle, do not use it as a reference for take-off points or circuit allocation. When replacing components in a vehicle's braking circuit, always mark the pipes before removing them.

I - SAFETY

1 - Advice to be followed before any operation

For an operation requiring the use of a lift, follow the safety advice (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

The brake regulation circuit must be free of all hydraulic and electrical faults.

In case of incorrect handling, the brake fluid can cause serious injury and damage. Follow the manufacturer's instructions for brake fluid.

To prevent dust from entering the master cylinder reservoir and the brake circuit, the plug must be removed just before filling and closed immediately afterwards,

2 - Instructions to be followed during the operation

Do not press on the brake pedal during work on the brake system.

If, during work on the brake system, any damage on any part is observed, it must be repaired before driving the vehicle again.

Brake fluid is highly corrosive. Ensure any brake fluid spilt on parts of the vehicle is cleaned off.

Use brake fluids that comply with the Renault standard (see **Vehicle: Parts and consumables for the repair**) .

Check the brake fluid levels in the braking circuit and the bleeding device.

Check that the pressure of the bleeding device is between **1.5 bar and 2 bar**.

II - CLEANLINESS

1 - Advice to be followed before any operation

Protect any bodywork components that risk being damaged by brake fluid with a cover.

2 - Instructions to be followed during the operation

Fit blanking plugs recommended for the Siemens K9K injection system at the end of each pipe and in all the openings of the disconnected components of the brake circuit.

Clean around the braking system with **BRAKE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

Do not allow friction materials to come into contact with grease, oil or other lubricants and cleaning products which are mineral oil based.

III - GENERAL RECOMMENDATIONS

When replacing brake pads, always replace the pads on the other side as well.

When replacing a disc, always replace the disc on the opposite side.

When replacing brake discs, you must replace the brake pads.

WARNING

In order not to damage the brake hose:

- do not tension the hose,
- do not twist the hose,
- check that there is no contact with the surrounding components.

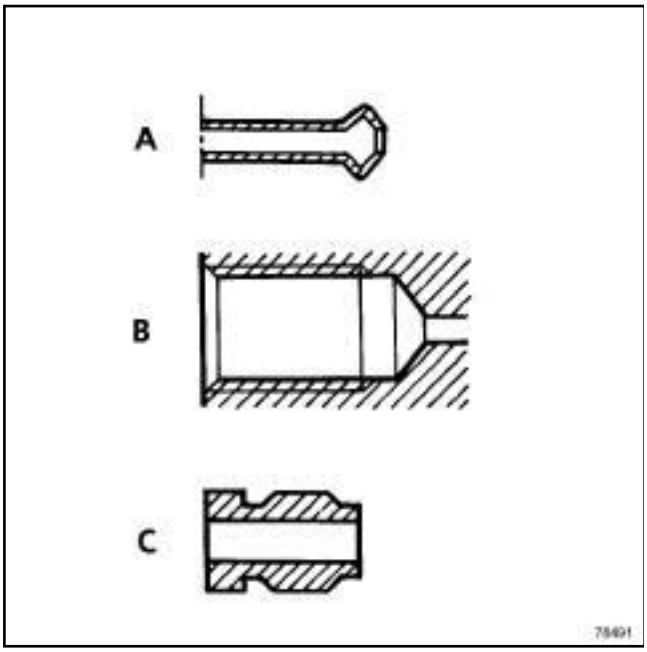
IMPORTANT

To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pad several times.

Always replace the rigid brake pipe clips.

Reminder:

- The pipes between the master cylinder, callipers and the hydraulic assembly are connected using threaded unions with a metric thread.
- Therefore, only parts specified in the Parts Catalogue for this vehicle should be used.



78491

Parts identification:

- shape of steel or copper pipe end piece (A),
- shape of connecting points on components (B),
- shape of unions (C): **11 mm** hexagonal.

Precautions to be taken before and during the brake circuit bleeding operation:

- use brake fluid which conforms to the Renault standard (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products),
- check the brake fluid levels in the brake circuit and the bleeding device,
- the braking regulation circuit must be free from all hydraulic and electrical faults,
- check that the pressure of the bleeding device is between **1.5 bars and 2 bars**.

Equipment required
pedal press
brake circuit bleeding device

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **30A**, **General information**, **Brake circuit: Precautions for the repair**, page **30A-2**) .

This procedure must be applied after one of the following components has been removed or replaced:

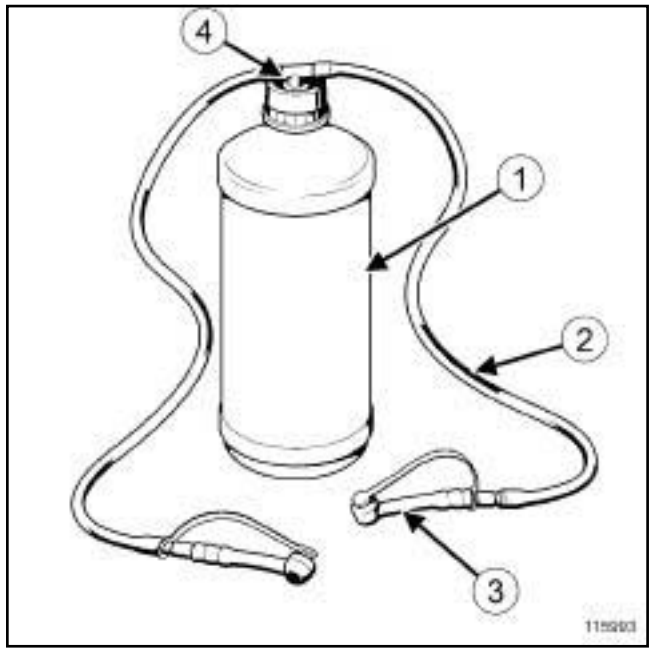
- the master cylinder,
- the brake fluid,
- the hydraulic unit,
- a rigid pipe,
- a hose,
- the reservoir,
- a calliper.

WARNING

Switch off the vehicle ignition so as not to activate the hydraulic unit solenoid valves when bleeding the brake circuit.

WARNING

The level must be between the «MIN» and « MAX » markings on the reservoir.



115993

❑ Use locally produced containers to collect the used brake fluid.

Front and rear callipers:

- 2 washer fluid containers (**1**) (1 litre),
- **4 mm** diameter transparent pipes (**2**) ,
- 4 pipettes (**3**) ,
- 2 T-unions (**4**) .

Note:

The new hydraulic unit is pre-filled.

When working on one of the following components, position a **pedal press** to limit the outflow of brake fluid and prevent any air from entering the master cylinder and the circuits downstream of the master cylinder:

- hydraulic unit,
- pipes between the hydraulic unit and brake callipers,
- brake hoses,
- brake calliper.

Remove the **pedal press** before carrying out the braking system bleeding procedure.

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Switch off the vehicle ignition.

❏ Connect the **brake circuit bleeding device** (after having received Renault approval) to the master cylinder reservoir (see the instructions for the equipment).

❏ Pressurise the brake circuit.

❏ Adjust the pressure to between **1.5 bar** < P < **2 bar** for **3 minutes** to stabilise it in the braking circuit.

❏ Close the circuit between the bleed screw and brake fluid reservoir without dumping the pressure.

> Note:
>
> The circuit between the bleed screw and brake fluid reservoir is closed in different ways depending on the type of equipment used:
>
> - valve,
> - switch.

❏ Fit the bleed containers to the four bleed screws of the callipers.

❏ Undo the calliper bleed screws:

- front left-hand,
- front right-hand,
- rear left-hand,
- rear right-hand.

❏ Open the circuit between the bleed screw and brake fluid reservoir and allow the liquid to run until all the air bubbles have been released.

❏ Tighten the bleed screws in the following order:

- front left-hand,
- front right-hand,
- rear left-hand,
- rear right-hand.

❏ Undo the calliper bleed screw:

- front left-hand,
- allow the fluid to run until all the air bubbles have been released,
- tighten the bleed screw on the calliper.

❏ Carry out the previous operation on the callipers:

- front right-hand,
- rear left-hand,
- rear right-hand.

❏ Close the bleed screw to dump the pressure in the brake circuit.

❏ Remove the **brake circuit bleeding device** from the master cylinder reservoir.

❏ Check pedal travel and resistance. If it is not correct, finish bleeding the brake circuit with the help of a second operator. Start the bleed operation by bleeding the calliper that is the furthest away from the master cylinder:

- hold down the brake pedal,
- open the circuit bleed screw to release the air from the brake circuit,
- close the circuit bleed screw,
- release the brake pedal.

❏ Top up the brake fluid level in the reservoir, if necessary. Check the sealing of the front and rear bleed screws and ensure that the sealing covers are in place (see **30A**, **General information**, **Brake circuit: Tightening torque**, page **30A-6**) .

❏ During a road test, trigger braking regulation to confirm that the brake pedal travel is correct.

❏ Clean off any traces of brake fluid on the vehicle using **BRAKE CLEANING PRODUCT** (see **Vehicle: Parts and consumables for the repair**)

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

I - FRONT AND REAR BRAKES

Description	Tightening torque (Nm)
Front calliper bleed screw	6.5
Rear calliper bleed screw	10
Front calliper inlet brake hose	17
Rear calliper inlet brake pipe	14
Brake hose on brake pipe	14
Front brake guide pin bolt	32
Calliper support bolt	105
Rear brake guide pin bolt	32
Disc mounting bolt	15
Brake cylinder mounting bolt	9

II - BRAKE CONTROL

Description	Tightening torque (Nm)
Brake servo mounting bolts	21
Master cylinder mounting nuts	50
Master cylinder outlet pipe	14
Mounting bolt securing the hydraulic unit to its support	8
Hydraulic unit pipe unions	14
Parking brake control mounting nuts	8
Bolts mounting hydraulic unit support on vehicle body	65

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

I - FRONT AND REAR BRAKES

Description	Tightening torque (Nm)
Front calliper bleed screw	14
Rear calliper bleed screw	10
Front calliper inlet brake hose	27
Rear calliper inlet brake pipe	14
Brake hose on brake pipe	14
Front brake calliper bolt	160
Rear brake guide pin bolt	32
Front brake disc mounting bolt	21
Rear brake disc mounting bolt	15

II - BRAKE CONTROL

Description	Tightening torque (Nm)
Brake servo mounting bolts	21
Master cylinder mounting nuts	50
Master cylinder outlet pipe	14
Mounting bolt securing the hydraulic unit to its support	8
Hydraulic unit pipe unions	14
Parking brake control mounting nuts	8
Bolts mounting hydraulic unit support on vehicle body	65

BRAKE FLUID REPLACEMENT INTERVAL

Our braking technology, and in particular the disc brakes (hollow pistons which conduct little heat, have a low volume of fluid in the cylinder, sliding callipers avoiding the need for a fluid reserve in the least cooled area of the wheel), has allowed us to prevent the risk of « vapour lock » as far as possible, even with heavy braking (mountainous area). However, current brake fluids are subject to minor deterioration during the first months of use due to slight humidity intake. This is why it is recommended that you change the brake fluid: see **maintenance booklet for the vehicle**.

1 - Topping up the level

Wear of the brake pads will result in a gradual drop in the fluid level in the reservoir.

Do not top up the fluid, as the level will rise again when the pads are next changed. The brake fluid level must not fall below the minimum mark.

2 - Approved brake fluid

Mixing two incompatible brake fluids in the brake circuit may lead to:

- serious risk of leakage due mainly to deterioration of the cups,
- deterioration in the operation of the ESP system.

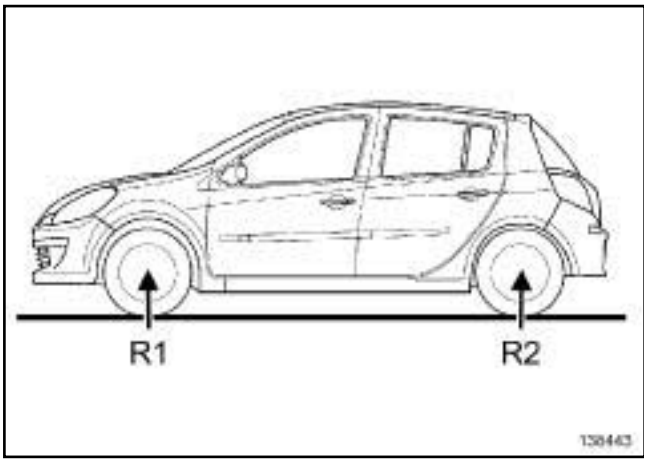
To prevent such risks, it is essential to use only brake fluids that comply with the RENAULT standard (see **Vehicle: Parts and consumables for the repair**) .

	Engine		
	D4F, K4J, K4M, K9K	M4R	F4R
Front brakes (mm)			
Outer diameter of calliper pistons	54	54	40
Disc diameter	260	280	312
Disc thickness (new)	22	24	28
Minimum disc thickness (1)	19.8	21.8	26
Maximum disc run-out	0.07		
Brake pad thickness (including backplate)	17.4	18	17.4
Minimum pad thickness (including backplate)	8	6	8
Rear brakes (mm)			
Outer diameter of calliper pistons	34		38
Internal drum diameter	203.2		//
Maximum internal drum diameter	204.4		//
Drum lining thickness (including mounting) (new)	5.5		//
Minimum drum lining thickness (including mounting)	2.4		//
Disc diameter	240		274
Disc thickness	8		11
Minimum disc thickness (1)	7		9.5
Maximum disc run-out	0.07		
Disc lining thickness (including mounting)	15.8		
Minimum disc lining thickness (including mounting)	7.5		

(1) Brake discs cannot be reworked. If they are too heavily worn or scratched they must be replaced.

Description	Tightening torque (Nm)
Steering wheel mounting bolt	44
Mounting nuts for the steering column	21
Intermediate shaft mounting bolt on steering column	32
Universal joint bolt on the steering rack	24

I - MEASURING POINTS

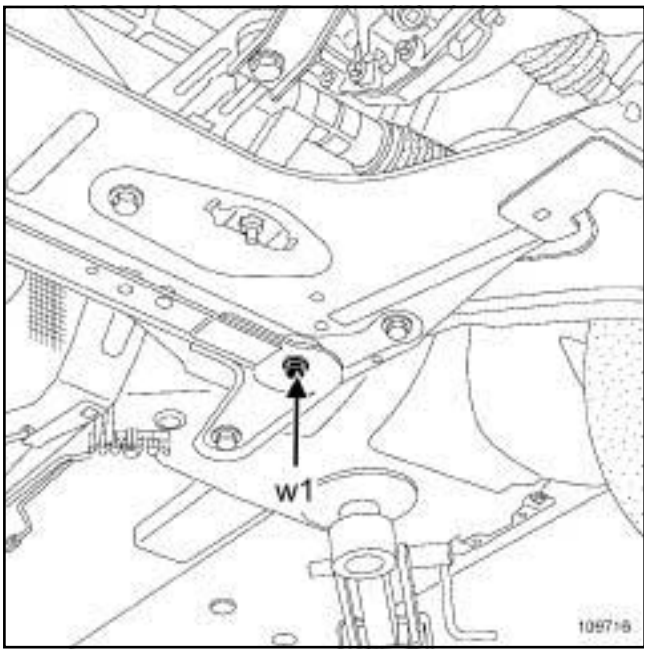


138443

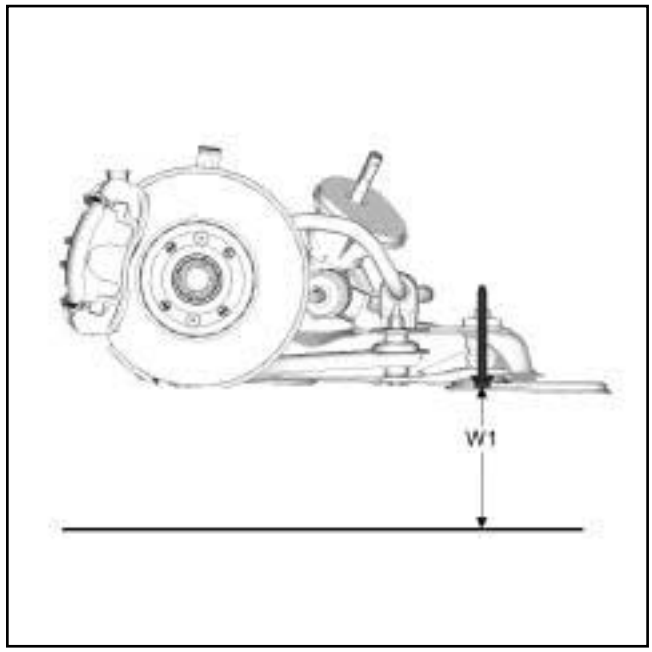
Radius under load:

- (**R1**) : Distance between the ground and the front wheel shaft
- (**R2**) : Distance between the ground and the rear wheel shaft

1 - Front height (W1)

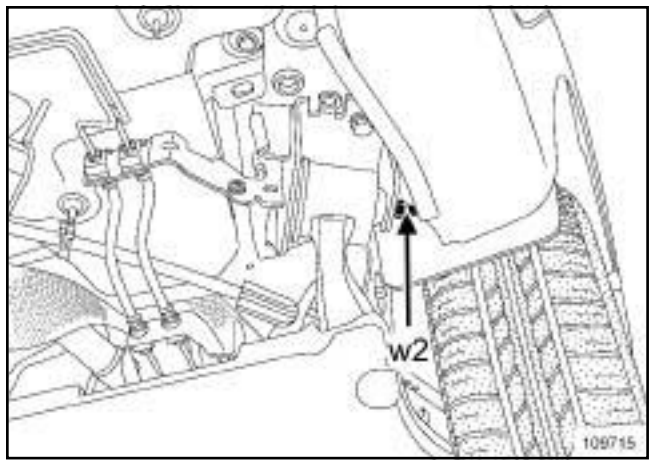


109716

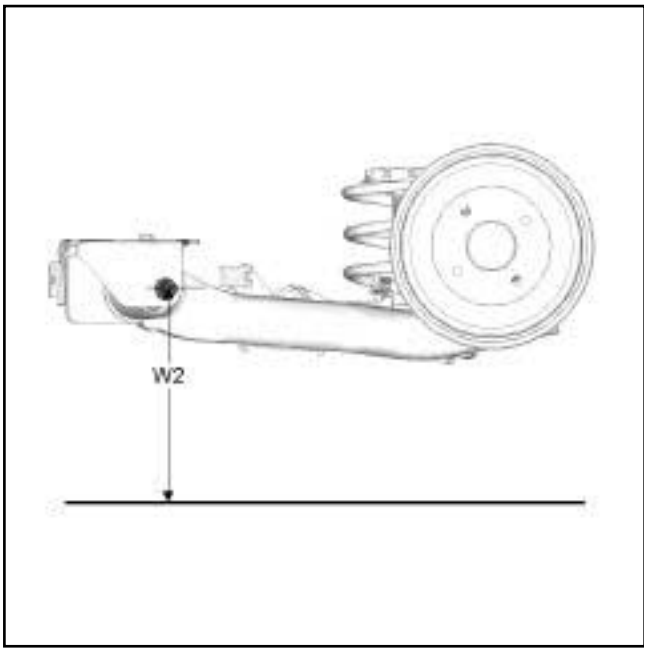


(**W1**) : Height between the ground and the rear cross member bolt head

2 - Rear height (W2)



109715



139130

(**W2**) : Height between the ground and the shaft of the rubber bush on the bearing

II - MEASURING PROCEDURE

Note:

For measurements ***(W1)*** and ***(W2)*** , take into account the height difference between the plates and the lift.

Measure the heights:

- R1,

- R2,

- W1 right-hand and left-hand,

- W2 right-hand and left-hand.

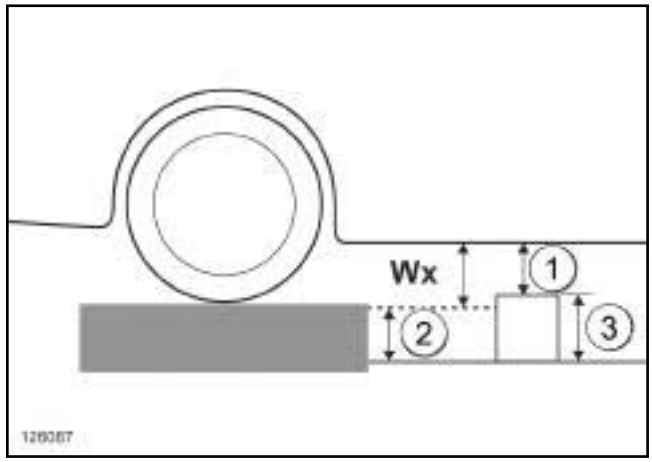
Note:

The value of Wx to be entered into the geometry bench is the average of the W1 heights, right-hand and left-hand and of the W2 heights, right-hand and left-hand.

Note:

If the measuring points are located in empty space (between the rails of the lift), use a bar.

1 - Plate higher than the lift:



126087

Measure the heights (**1**) , (**2**) , (**3**) .

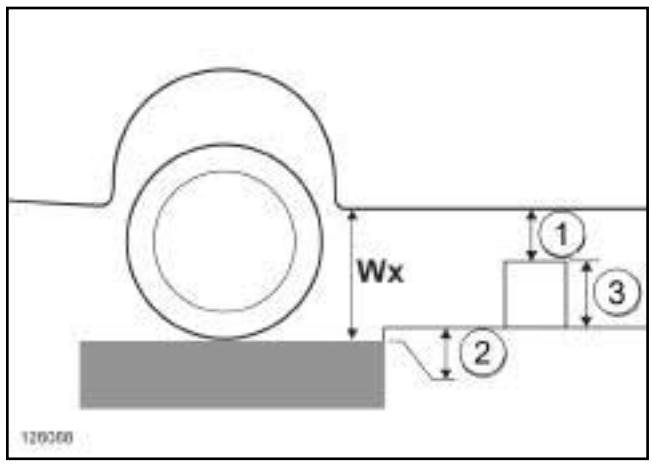
Example: (**1**) = 13 cm, (**2**) = 8 cm, (**3**) = 10 cm.

Calculate the height Wx:

Wx = height (**1**) + height (**3**) - height (**2**)

Wx = 15 cm

2 - Plate lower than the lift:



126088

Measure the heights (**1**) , (**2**) , (**3**) .

Example: (**1**) = 8 cm, (**2**) = 10 cm, (**3**) = 4 cm.

Calculate the height Wx:

Wx = height (**1**) + height (**2**) + height (**3**)

Wx = 22 cm

III - VEHICLE IN RUNNING ORDER POSITION

VODM (Vehicle in working order) position:

- Tank full,

- Empty vehicle (without luggage, etc.).

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

(W1) = **171 ± 13 mm**

(W2) = **259 ± 16 mm**

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and WITHOUT ADDITIONAL PACK

(W1) = **156 ± 5 mm**

(W2) = **257 ± 16 mm**

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and ADDITIONAL EXTREME PACK

(W1) = 148^{+7}_{-14} **mm**

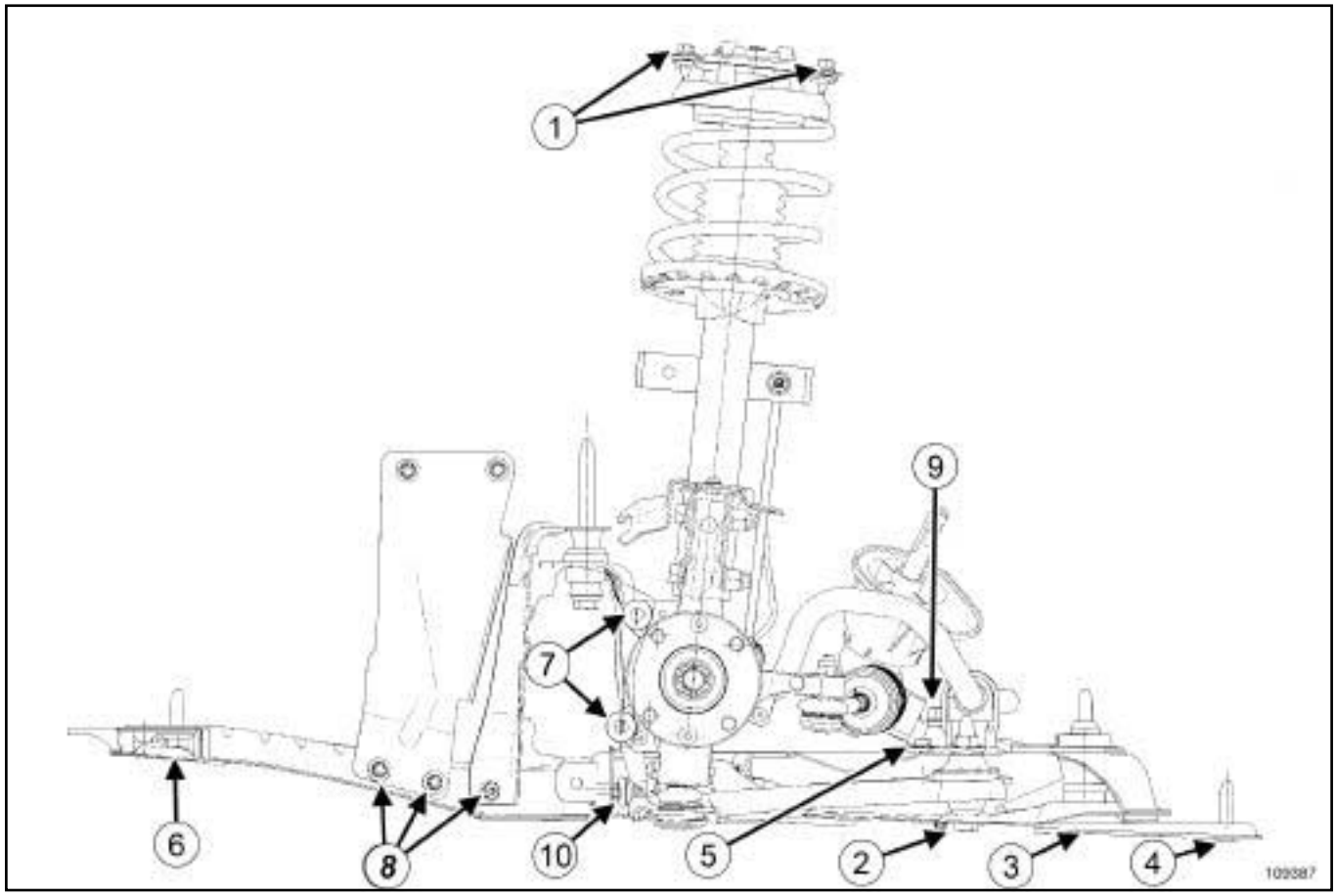
(W2) = 249^{+9}_{-16} **mm**

Note:

The position of the vehicle varies according to:

- the weight of the engine,
- the springs and shock absorbers,
- the tyres,
- the amount of fuel in the tank.

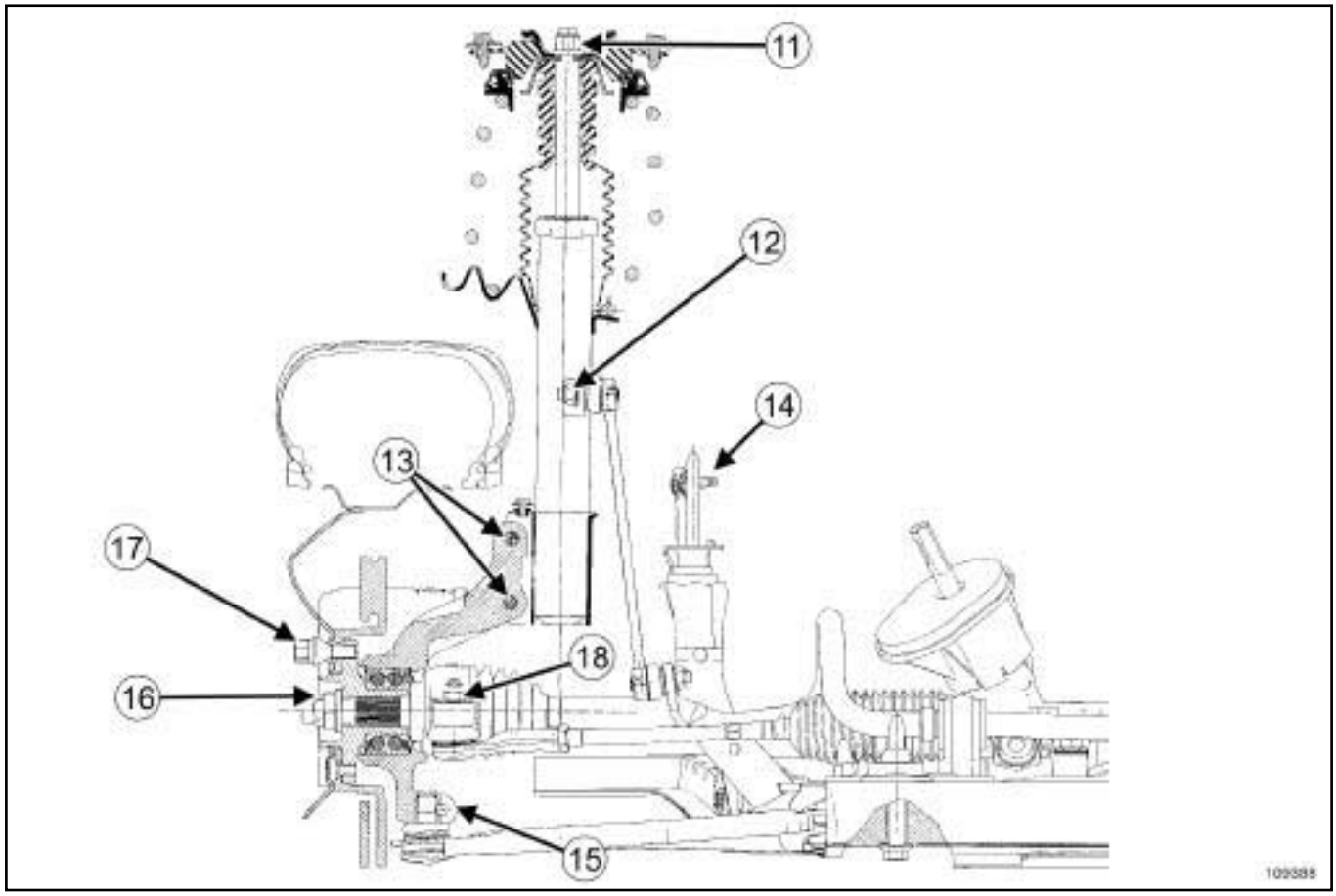
EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



109387

No.	Description	Tightening torque (N.m)
(**1**)	« Spring and shock absorber » assembly mounting bolt on body	21
(**2**)	Lower arm rear bolt	105
(**3**)	Sub-frame stud bolt	110
(**4**)	Rear cross member bolt	105
(**5**)	Anti-roll bar bearing mounting bolt on the sub-frame	21
(**6**)	Radiator cross member front mounting bolt	105
(**7**)	Calliper support bolt	105
(**8**)	Bolt mounting the side reinforcement on the radiator cross member	21
(**9**)	Bolt mounting the steering rack on the sub-frame	110
(**10**)	Lower arm front bolt	70

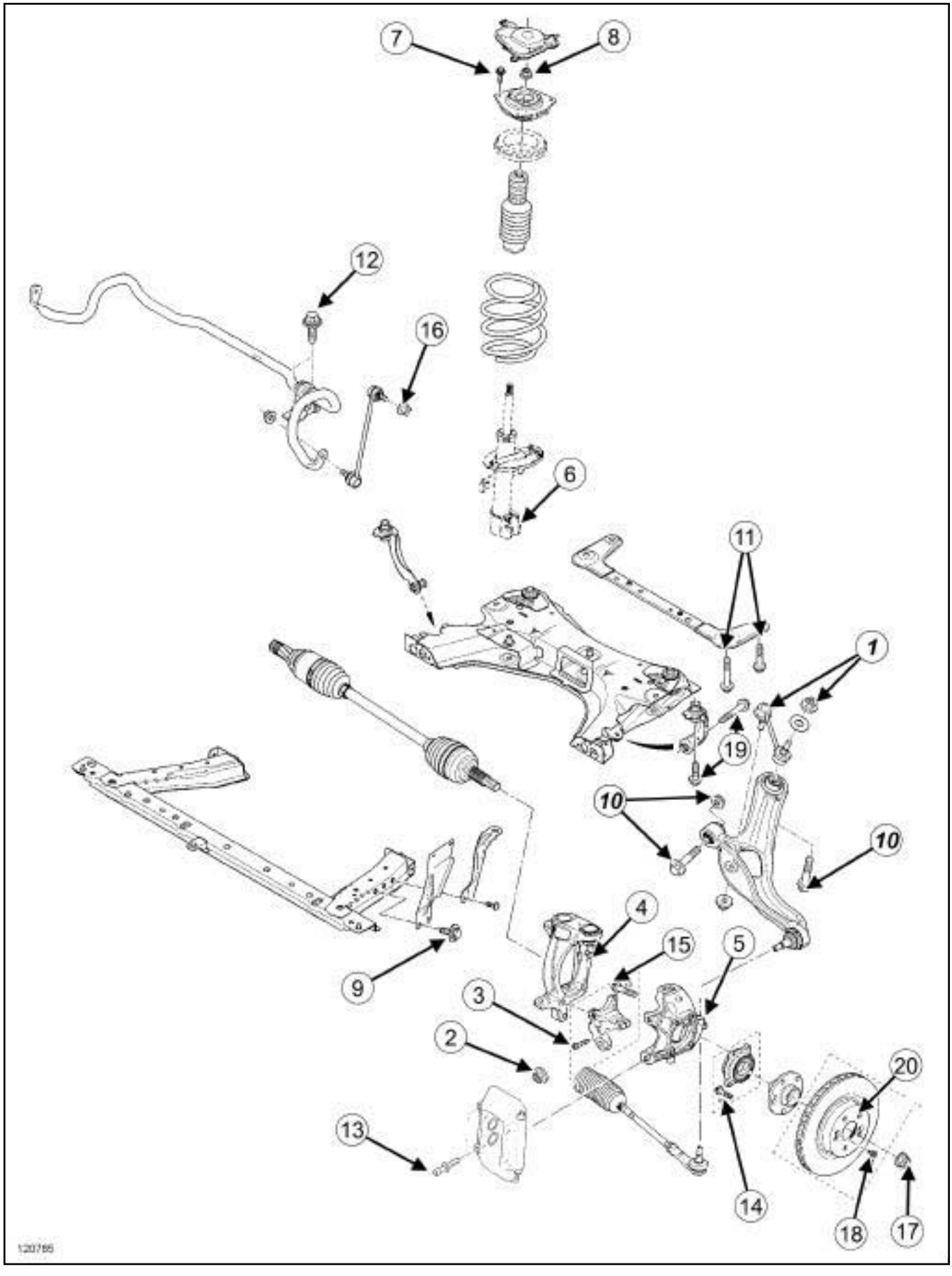
EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



109388

No.	Description	Tightening torque (N.m)
(**11**)	Shock absorber nut	62
(**12**)	Anti-roll bar tie-rod ball joint nut	44
(**13**)	Shock absorber base bolt	105
(**14**)	Subframe tie-rod bolt	105
(**15**)	Lower arm ball joint bolt	60
(**16**)	Driveshaft nut	280
(**17**)	Wheel bolts	105
(**18**)	Track rod end nut	35

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

120785

No.	Description	Tightening torque (Nm)
(**1**)	Anti-rolling linkage nut	80
(**2**)	lower ball joint nut	60
(**3**)	Hub carrier lower ball joint locking bolt	27
(**4**)	Hub carrier upper nut	80
(**5**)	Track rod end nut	37
(**6**)	Shock absorber lower nut	105
(**7**)	« spring - shock absorber » assembly bolt on the body	21
(**8**)	Shock absorber nut	62
(**9**)	Side stiffener bolt on the radiator cross member	21
(**10**)	Lower arm bolt	70
(**11**)	Acoustic tie-rod bolt	105
(**12**)	Anti-roll bar bearing bolt on the subframe	21
(**13**)	Brake calliper bolt	102 (170)
(**14**)	Bearing assembly bolt on the hub-carrier	120
(**15**)	Pivot lower ball joint holder assembly bolt	10
(**16**)	Anti-roll bar upper nut on the shock absorber	44
(**17**)	driveshaft nut	280
(**18**)	Disc bolt	21
(**19**)	Subframe tie-rod bolt	110
(**20**)	Wheel bolt	140

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

I - PRELIMINARY OPERATIONS

Before checking the axles on the test bench, check the tyre pressures (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

WARNING

The vehicle should be empty (no luggage or passengers on board) when the axle assembly values are checked.

Make sure that the steering wheel is positioned straight ahead during wheel alignment, such that the angular position of the steering wheel is correctly aligned with the straight-ahead position of the front wheels. The steering wheel being offset in relation to the position of the wheels may result in the vehicle being returned by the customer.

Position of vehicle: Vehicle in running order

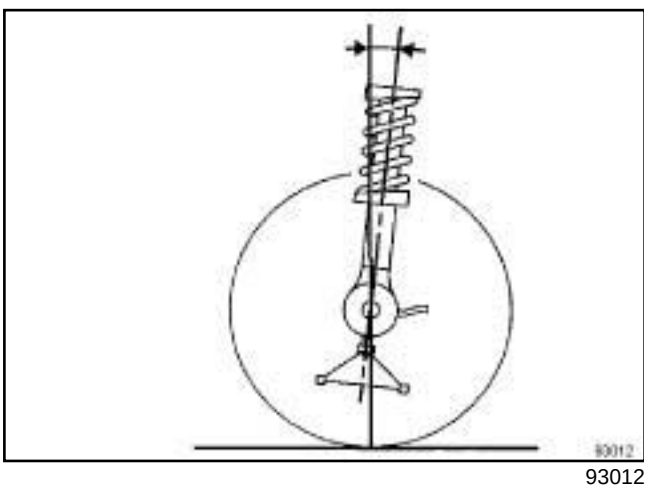
	Front in mm	Rear in mm
Underbody height	W1: 171 ± 13	W2: 259 ± 16

WARNING

Adjust the vehicle ground clearance in accordance with the specifications before checking the geometry of the wheels. If the ground clearance is not correct, adjust it by lowering or raising the body.

II - CASTOR

Not adjustable

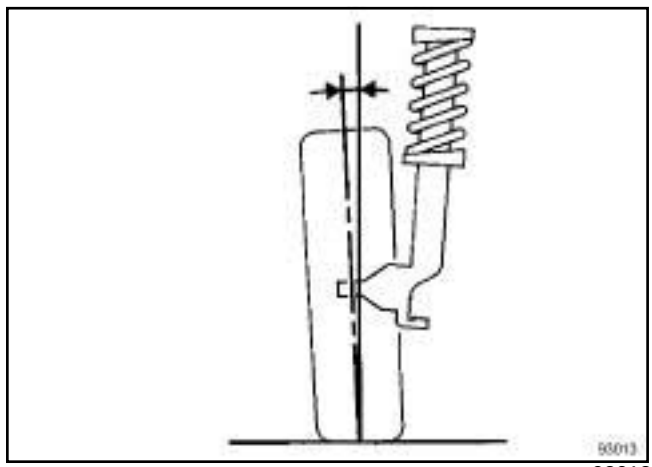


93012

Value	Position of vehicle
4° 30' ± 60' maximum right - left difference = 30'	Vehicle in running order

III - CAMBER

Not adjustable

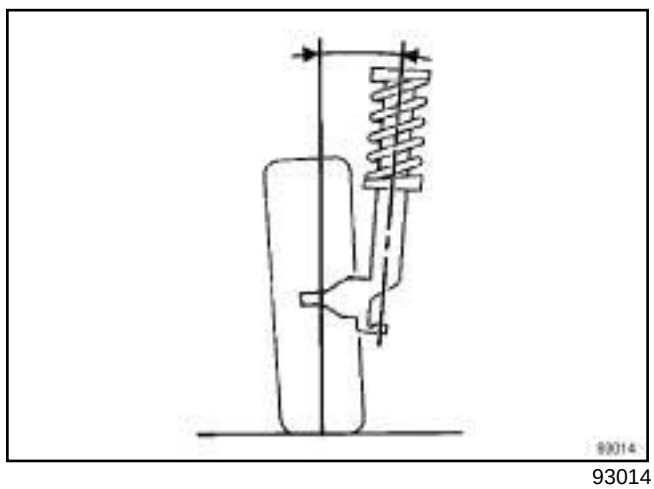


93013

Value	Position of vehicle
0° 00' ± 60' maximum right - left difference = 30'	Vehicle in running order

IV - PIVOT

Not adjustable



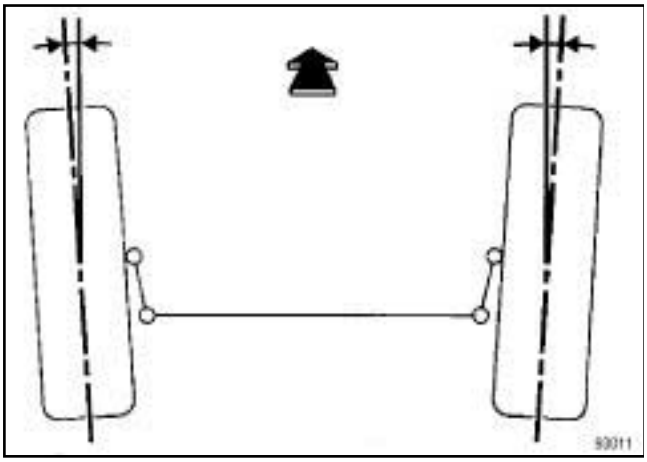
93014

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Value	Position of vehicle
9° 40' ± 35' maximum right - left difference = 30'	Vehicle in running order

V - WHEEL ALIGNMENT: MEANING OF SYMBOLS

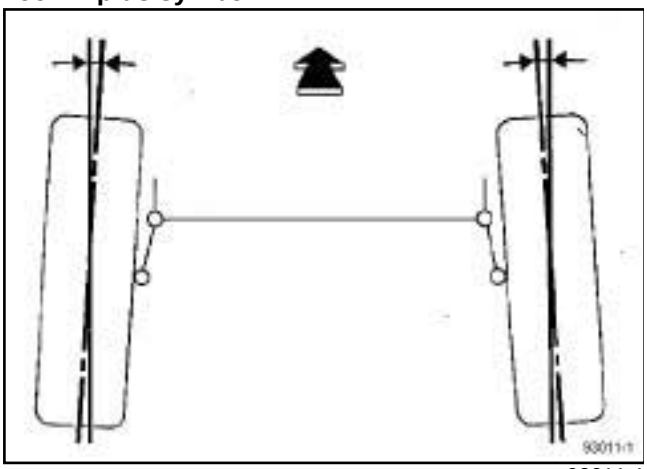
Toe-out: minus sign



93011

WARNING
Meaning of signs featured in this document, - = toe-out.

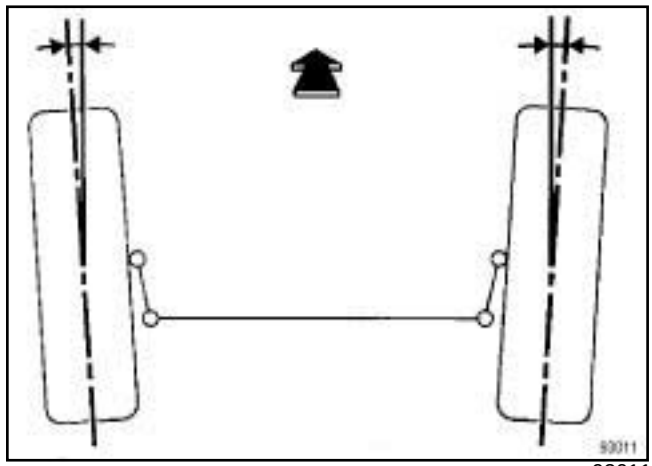
Toe-in: plus symbol



93011-1

WARNING
Meaning of signs used in this document, + = toe-in.

VI - WHEEL ALIGNMENT



93011

Value (for two wheels)	Position of vehicle
Toe-in: 0° 00' ± 10'	Vehicle in running order

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

I - PRELIMINARY OPERATIONS

Before checking the axles on the test bench, check the tyre pressures (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

Note:

The vehicle should be empty (no luggage or passengers on board) when the axle assembly values are checked.

Make sure that the steering wheel is in the straight-ahead position straight during wheel alignment adjustment to avoid offsetting the angular position of the steering wheel with the straight-ahead position front wheels. The steering wheel being offset in relation to the position of the wheels may result in the vehicle being returned by the customer.

WITHOUT ADDITIONAL PACK

Position of vehicle: Vehicle in running order

	Front in mm	**Rear in mm**
Underbody height	W1: 156 ± 5	W2: 257 ± 5

ADDITIONAL EXTREME PACK

Position of vehicle: Vehicle in running order

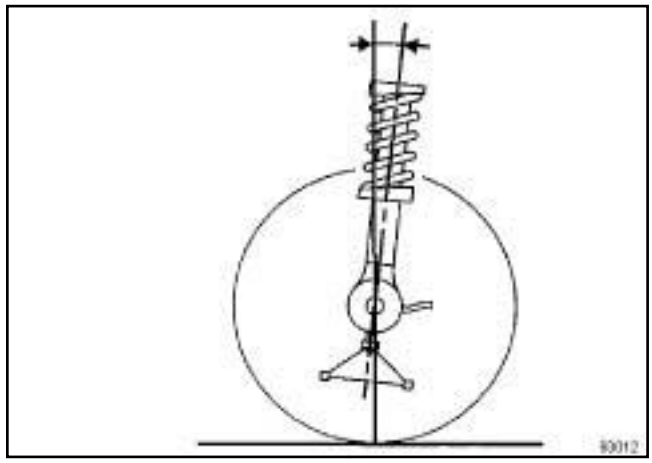
	Front in mm	**Rear in mm**
Underbody height	W1: 148^{+7}_{-14}	W2: 249^{+9}_{-16}

Note:

Adjust the vehicle ground clearance in accordance with the specifications before checking the geometry of the wheels. If the ground clearance is not correct, adjust it by lowering or raising the body.

II - CASTOR ANGLE

Not adjustable

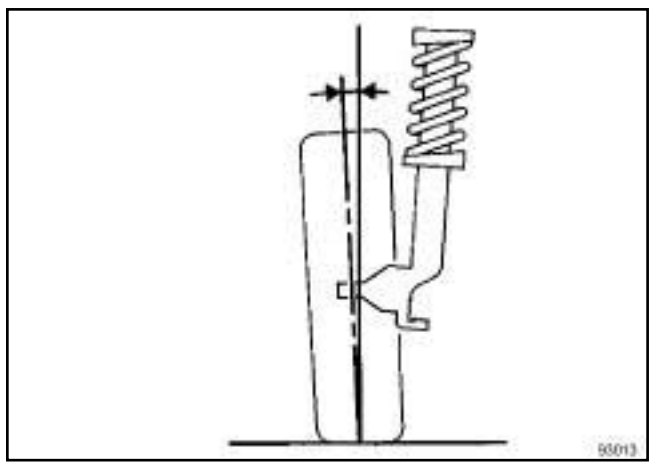


93012

Value	Position of vehicle
5°38' ± 39' Maximum left - right difference = 30'	Vehicle in running order

III - CAMBER

Not adjustable



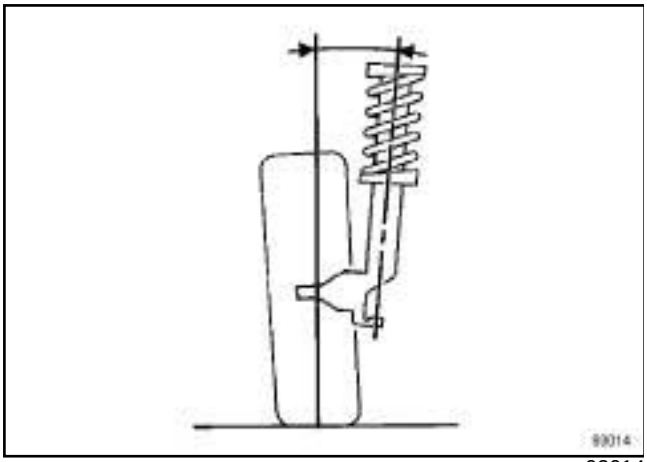
93013

Value	Position of vehicle
-0°59' ± 30' Maximum left - right difference = 30'	Vehicle in running order

IV - PIVOT

Not adjustable

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

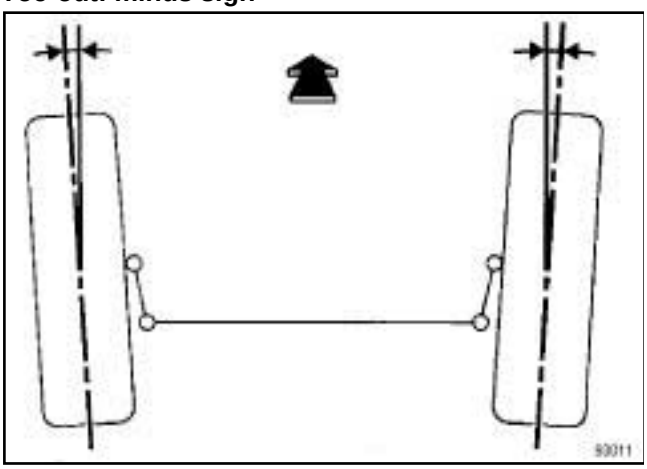


93014

Value	Position of vehicle
-8°57' ± 40' Maximum left - right difference = 30'	Vehicle in running order

V - WHEEL ALIGNMENT: MEANING OF SYMBOLS

Toe-out: minus sign



93011

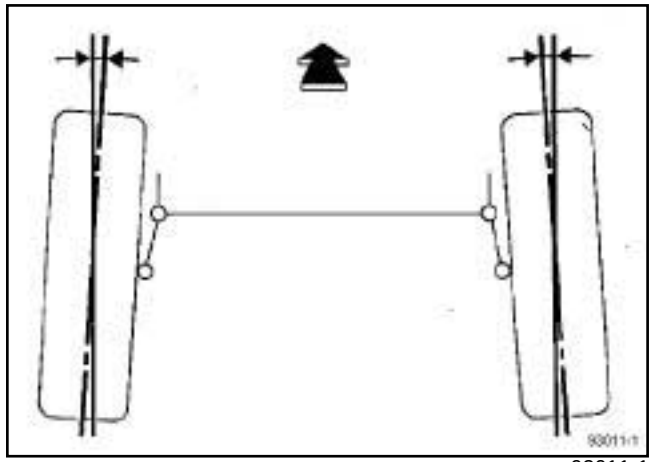
WARNING

Symbols used by RENAULT:

- -: toe-out,

- +: toe-in.

Toe-in: plus sign



93011-1

WARNING

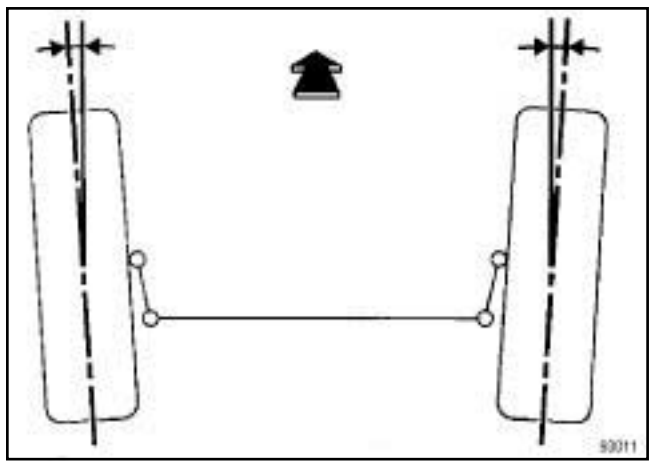
Symbols used by RENAULT:

- -: toe-out,

- +: toe-in.

VI - WHEEL ALIGNMENT

WITHOUT ADDITIONAL PACK

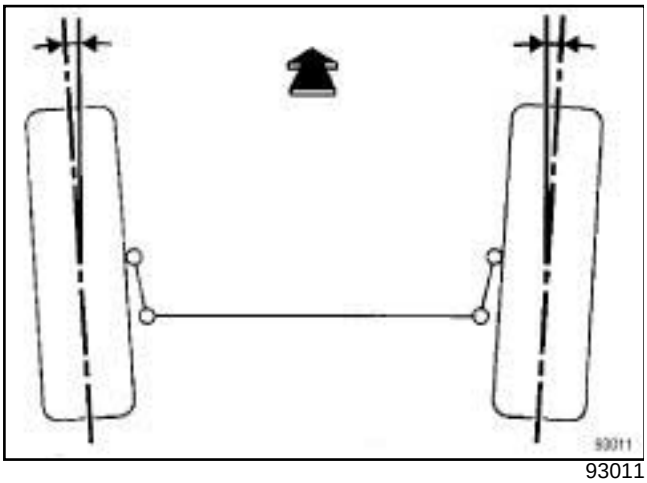


93011

Value (for two wheels)	Position of vehicle
-0°10' ± 8'	Vehicle in running order

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

ADDITIONAL EXTREME PACK



93011

Value (for two wheels)	Position of vehicle
-0°12' ± 12'	Vehicle in running order

Equipment required
flywheel immobiliser

Tightening torques ▽	
wheel alignment adjustment lock nuts	**53 N.m**

I - ADJUSTMENT PREPARATION STAGE

VEHICLE WITH CARD

❏

Note:

Throughout the axle assembly checking and adjustment process:

- the Renault Card must remain in the reader,
- do not press the « START » button.

❏ Check the geometry (see **Axle assemblies: Check**) .

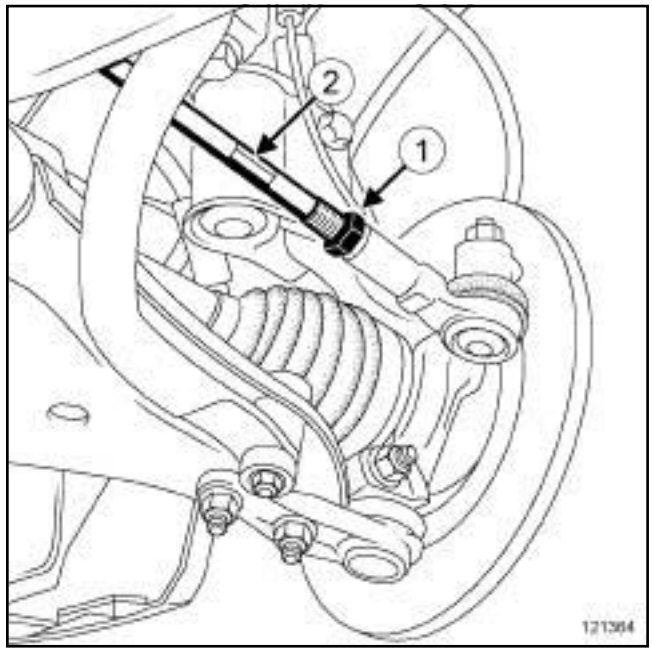
II - ADJUSTMENT OPERATION

1 - Wheel alignment

❏ Set the wheels straight ahead.

❏ Lock the steering wheel using a **flywheel immobiliser**.

❏ Adjust the wheel alignment by rotating the track rod sleeves.



121364

❏ Loosen the wheel alignment adjustment lock nut (**1**) .

❏ Turn the track rod sleeve (**2**) to the required value.

❏ After adjustment, torque tighten the **wheel alignment adjustment lock nuts (53 N.m)**.

2 - Castor angle

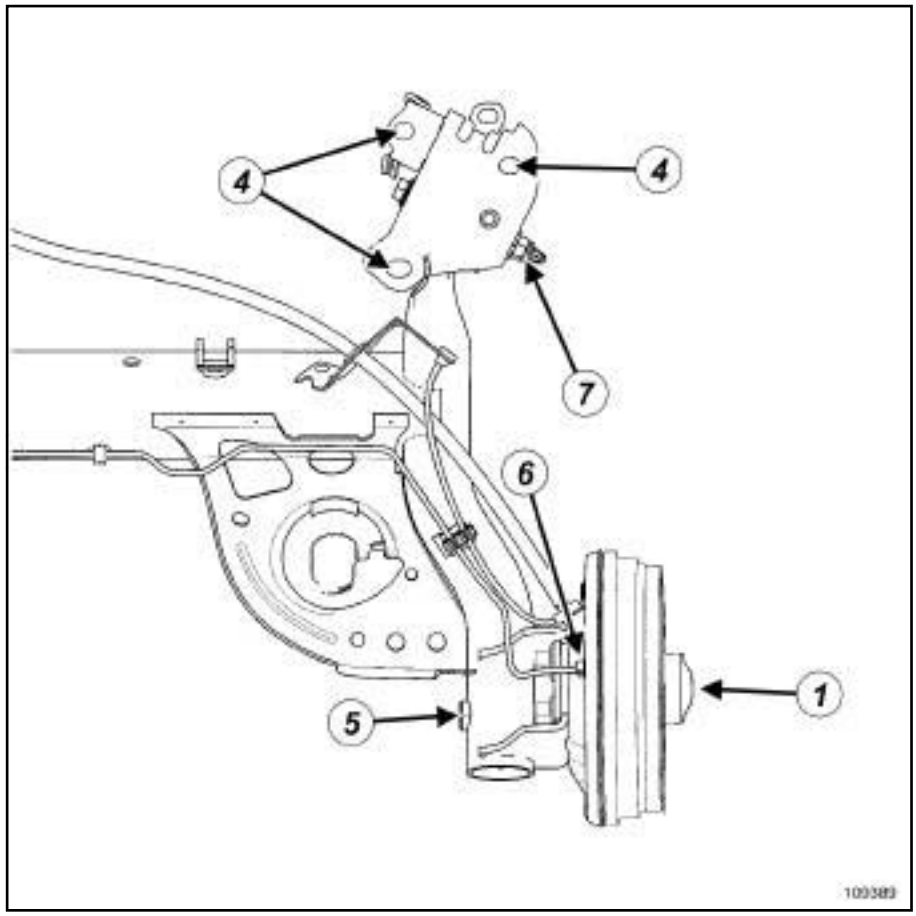
❏ Not adjustable.

3 - Camber

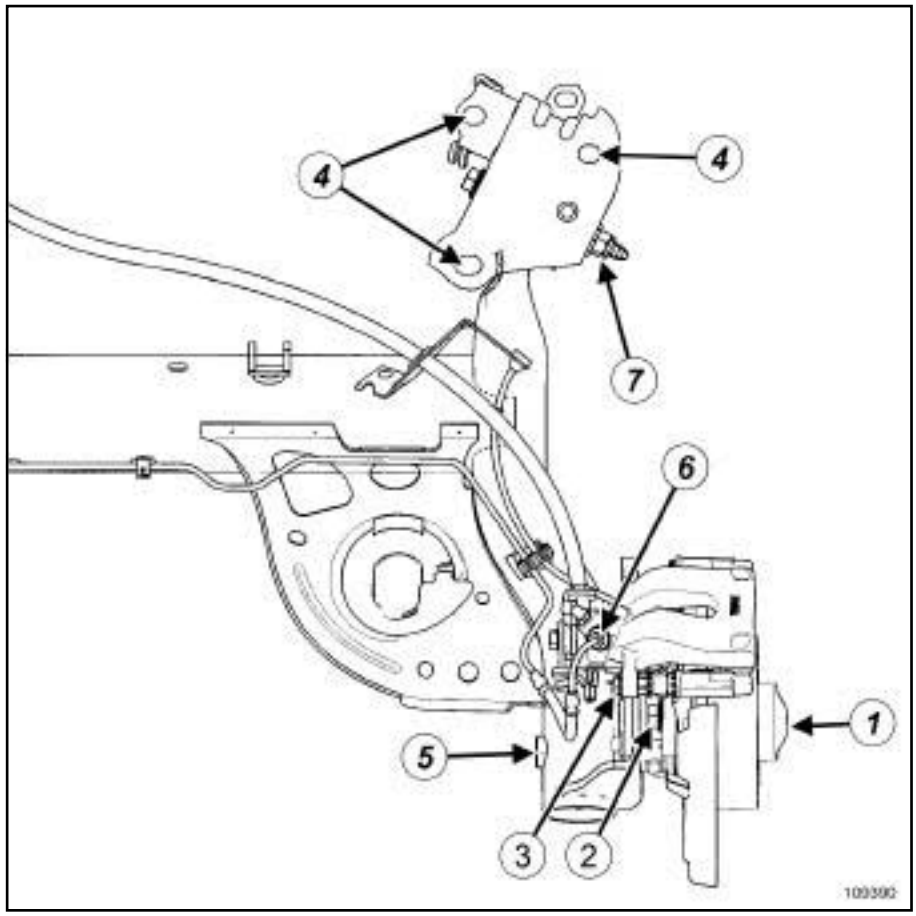
❏ Not adjustable.

4 - Pivot

❏ Not adjustable.



109389



109390

Mark	Description	Tightening torque (Nm)
(**1**)	Stub-axle (or drum) nut	175
(**2**)	Calliper mounting bolt	105
(**3**)	Guide pin bolt	32
(**4**)	Bearing mounting bolt	62
(**5**)	Shock absorber lower mounting bolt	105
	Shock absorber upper mounting nut	21
(**6**)	Brake pipe nut	14
(**7**)	Bearing - rear axle mounting bolt nut	105

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

I - PRELIMINARY OPERATIONS

Before checking the axles on the test bench, check the tyre pressures (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

WARNING
The vehicle should be empty (no luggage or passengers on board) when the axle assembly values are checked.

Make sure that the steering wheel is positioned straight ahead during wheel alignment, such that the angular position of the steering wheel is correctly aligned with the straight-ahead position of the front wheels. The steering wheel being offset in relation to the position of the wheels may result in the vehicle being returned by the customer.

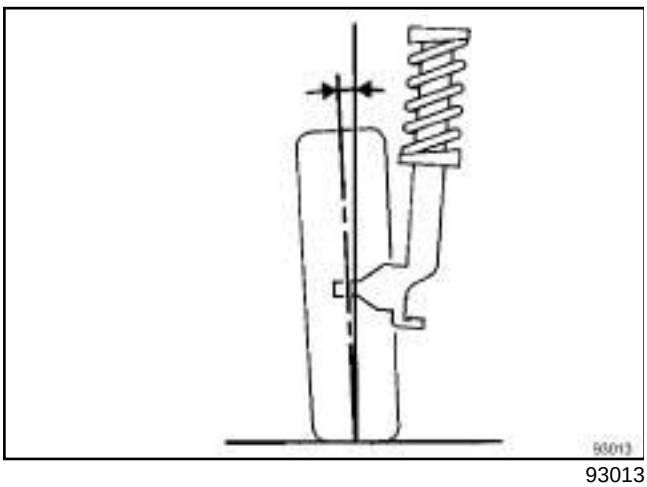
Position of vehicle: Vehicle in running order

	Front in mm	Rear in mm
Underbody height	W1: 171 ± 13	W2: 259 ± 16

WARNING
Adjust the vehicle ground clearance in accordance with the specifications before checking the geometry of the wheels. If the ground clearance is not correct, adjust it by lowering or raising the body.

II - CAMBER

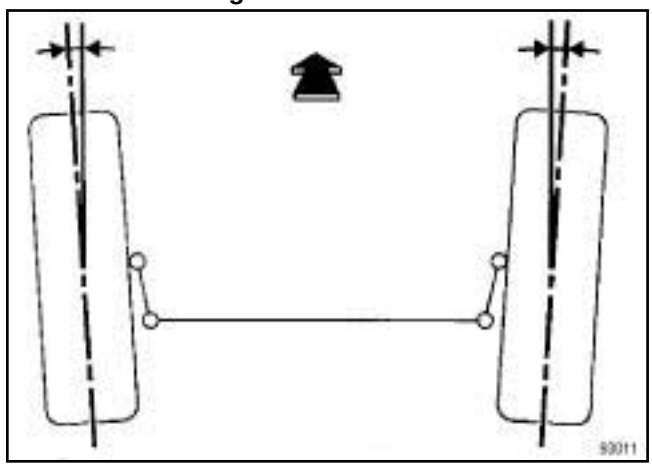
Not adjustable


93013

Value	Position of vehicle
-1° 10' ± 25'	Vehicle in running order

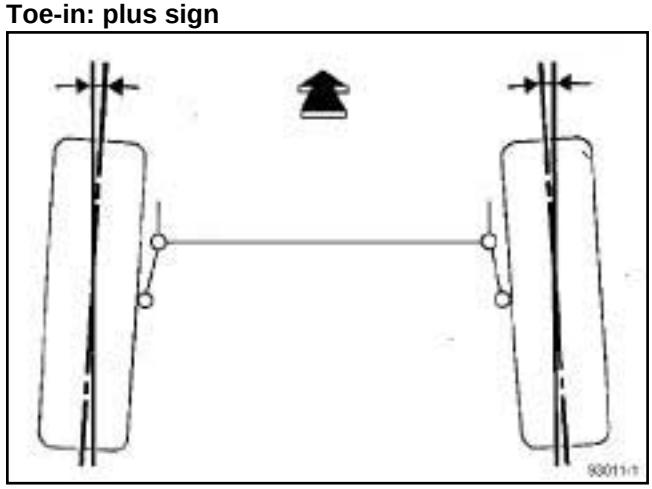
III - WHEEL ALIGNMENT: MEANING OF SYMBOLS

Toe-out: minus sign


93011

WARNING
Meaning of signs featured in this document, - = toe-out.

Toe-in: plus sign

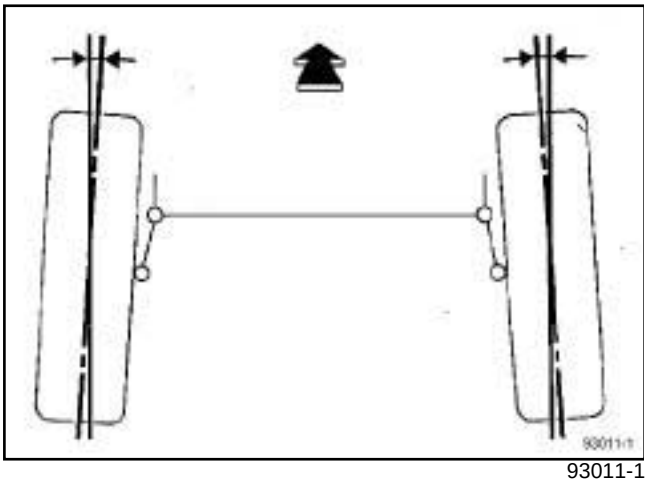

93011-1

WARNING
Meaning of signs used in this document, + = toe-in.

IV - WHEEL ALIGNMENT

Not adjustable.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



93011-1

1 - Normal suspension

Value (for two wheels)	Position of vehicle
Toe-in: 0° 30' ± 15'	Vehicle in running order

2 - Reinforced suspension

Value (for two wheels)	Position of vehicle
Toe-in: 0° 31' ± 15'	Vehicle in running order

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

I - PRELIMINARY OPERATIONS

Before checking the axles on the test bench, check the tyre pressures (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

Note:

The vehicle should be empty (no luggage or passengers on board) when the axle assembly values are checked.

Make sure that the steering wheel is in the straight-ahead position straight during wheel alignment adjustment to avoid offsetting the angular position of the steering wheel with the straight-ahead position front wheels. The steering wheel being offset in relation to the position of the wheels may result in the vehicle being returned by the customer.

WITHOUT ADDITIONAL PACK

	Front in mm	**Rear in mm**
Underbody height	W1: 156 ± 13	W2: 257 ± 16

ADDITIONAL EXTREME PACK

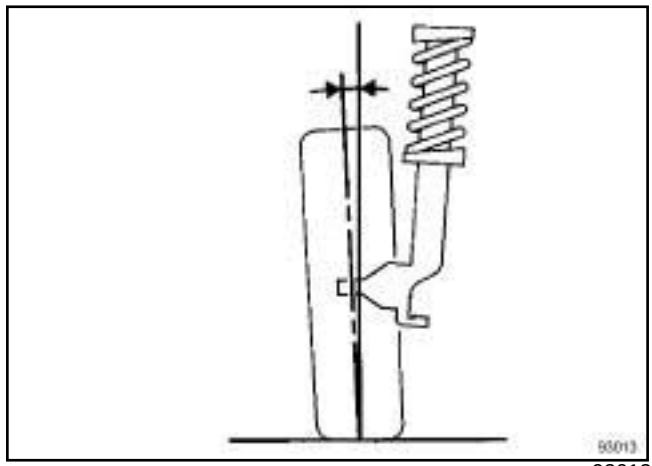
	Front in mm	**Rear in mm**
Underbody height	W1: 148^{+7}_{-14}	W2: 249^{+9}_{-16}

Note:

Adjust the vehicle ground clearance in accordance with the specifications before checking the geometry of the wheels. If the ground clearance is not correct, adjust it by lowering or raising the body.

II - CAMBER

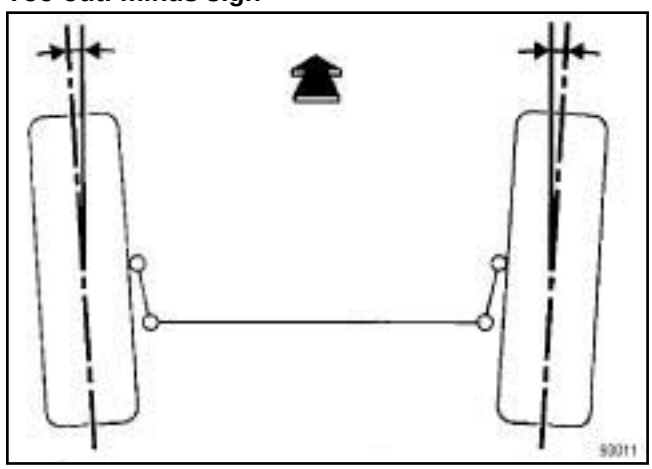
Not adjustable


93013

Value	Position of vehicle
-1°33' ± 20'	Vehicle in running order

III - WHEEL ALIGNMENT: MEANING OF SYMBOLS

Toe-out: minus sign


93011

WARNING

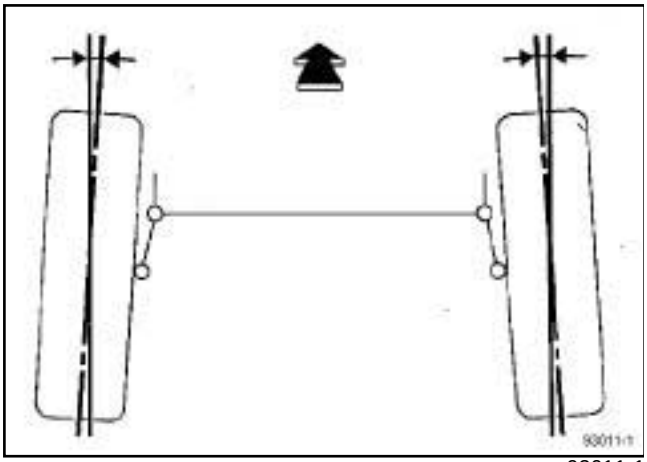
Symbols used by RENAULT:

- -: toe-out,

- +: toe-in.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Toe-in: plus sign



93011-1

WARNING

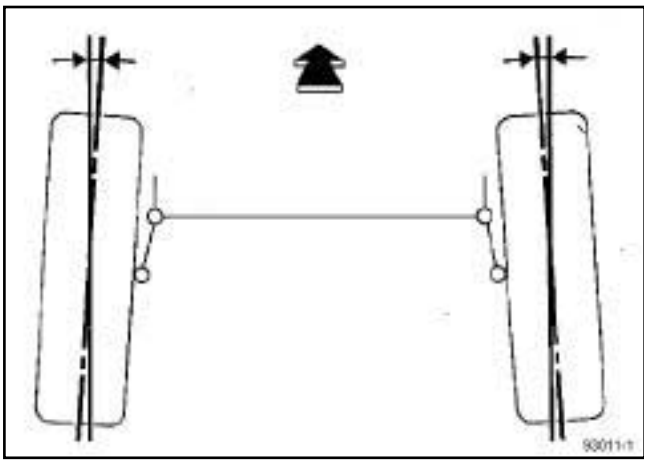
Symbols used by RENAULT:

- -: toe-out,

- +: toe-in.

IV - WHEEL ALIGNMENT

Not adjustable



93011-1

Value (for two wheels)	Position of vehicle
Toe-in: 0°31' ± 30'	Vehicle in running order

Equipment required
compressed air nozzle

Tightening torques ▽	
brake pipe bolts	**8 N.m**
underbody unions (female/male)	**6 N.m**

This procedure applies to copper pipes diameter **4.7 mm.**

Note:

This procedure does not apply to:

- hybrid pipes (pipe + hose),

- pipes with diameters **6 mm** and **8 mm.**

REPAIR

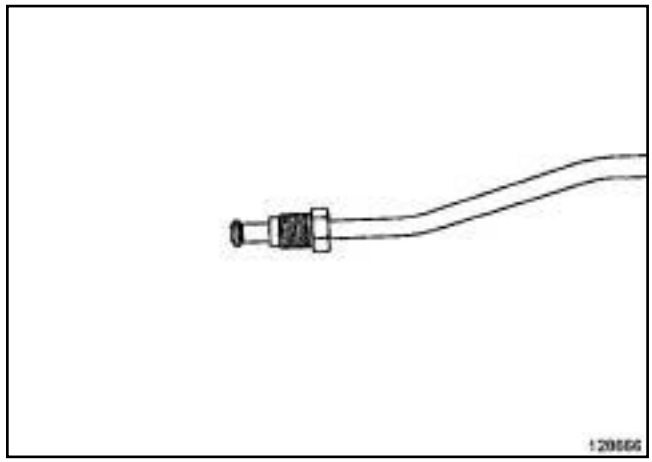
I - PIPE PREPARATION OPERATION

❑

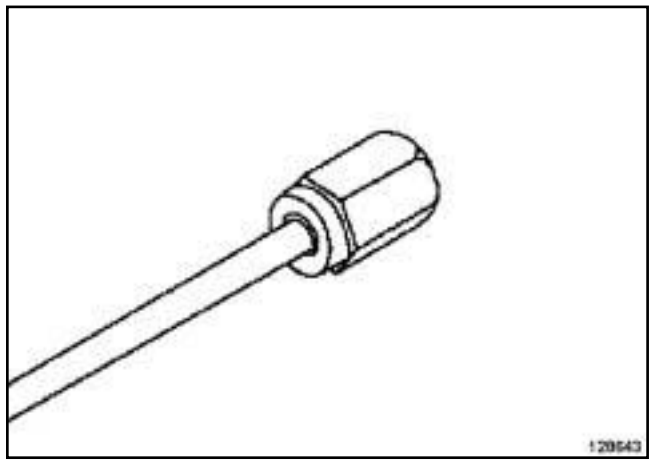
WARNING

To avoid causing a breakdown in hydraulic brake circuit , do not squash or bend the rigid pipe when cutting.

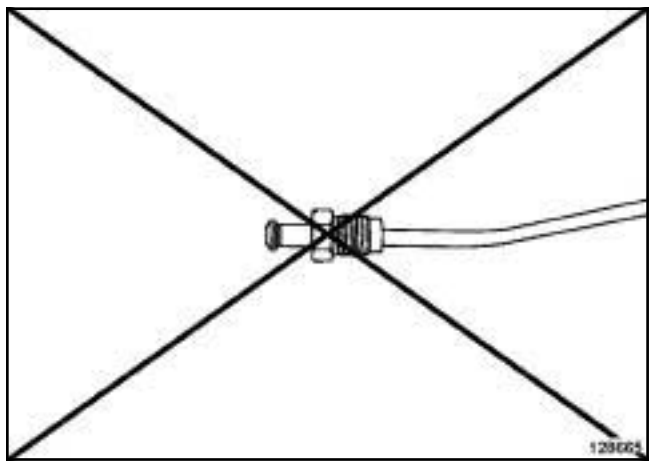
❑ Cut the pipe to the recommended length using a tube cutter (see **Garage equipment catalogue).**



128666



128643



128665

❑ Put the nuts or bolts on the pipe before forming the rivets.

II - MAKING THE RIVETS

❑

Note:

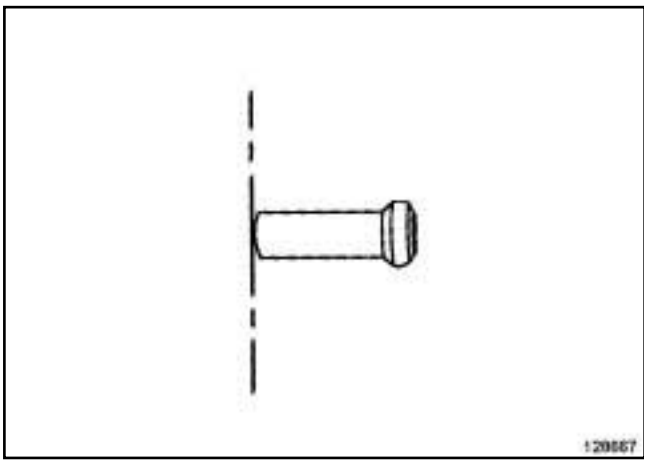
To make the rivets, fit the rivet press in a vice.

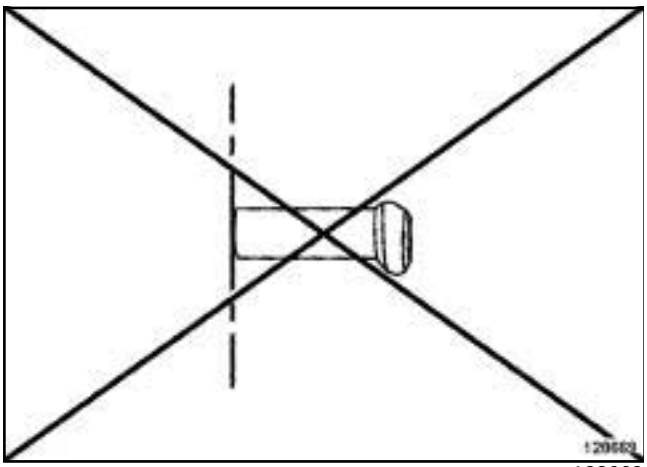
❏ Fit the pipe in the rivet press (see **Garage Equipment Catalogue**).

❏ Adjust the length of the pipe to be shaped.

❏ Torque tighten the press end piece(**40 N.m).**

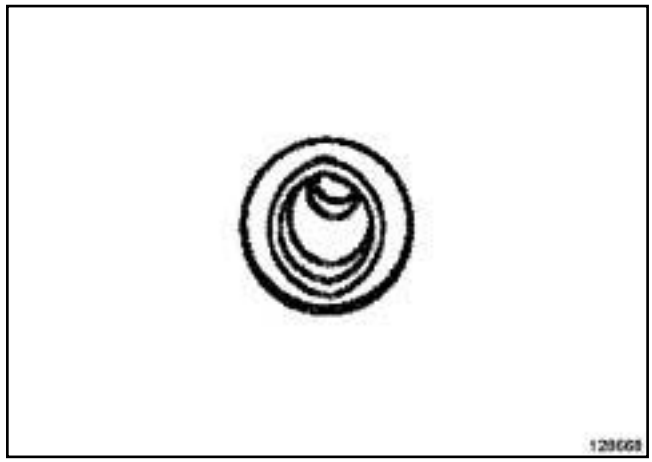
III - CHECKING THE RIVETS


128667

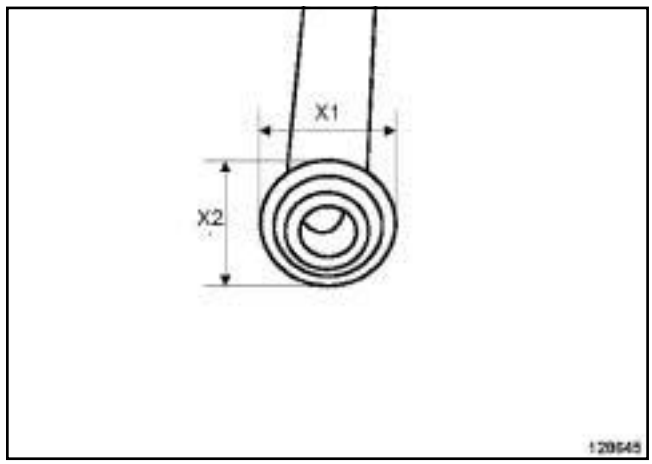

128669

❏ Visually inspect:

- the uniformity of the rivets' diameter,
- the rivet centring in relation to the pipe shaft.


128668

❏ Visually check that the internal diameter of the pipe is not oval-shaped.



128645

❏ Check that the diameter of the end panel is not oval shaped using a sliding calliper.

Correct diameter if (**X1**) = (**X2**)

IV - PREPARATION OF THE PIPE BEFORE BENDING

❏

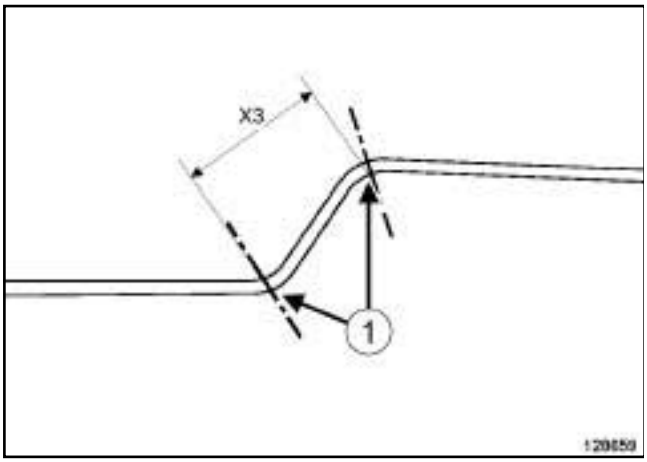
Note:

Impurities may spread inside the pipe while the rivets are being made.

❏ Blow inside the pipe in both directions using a **compressed air nozzle**.

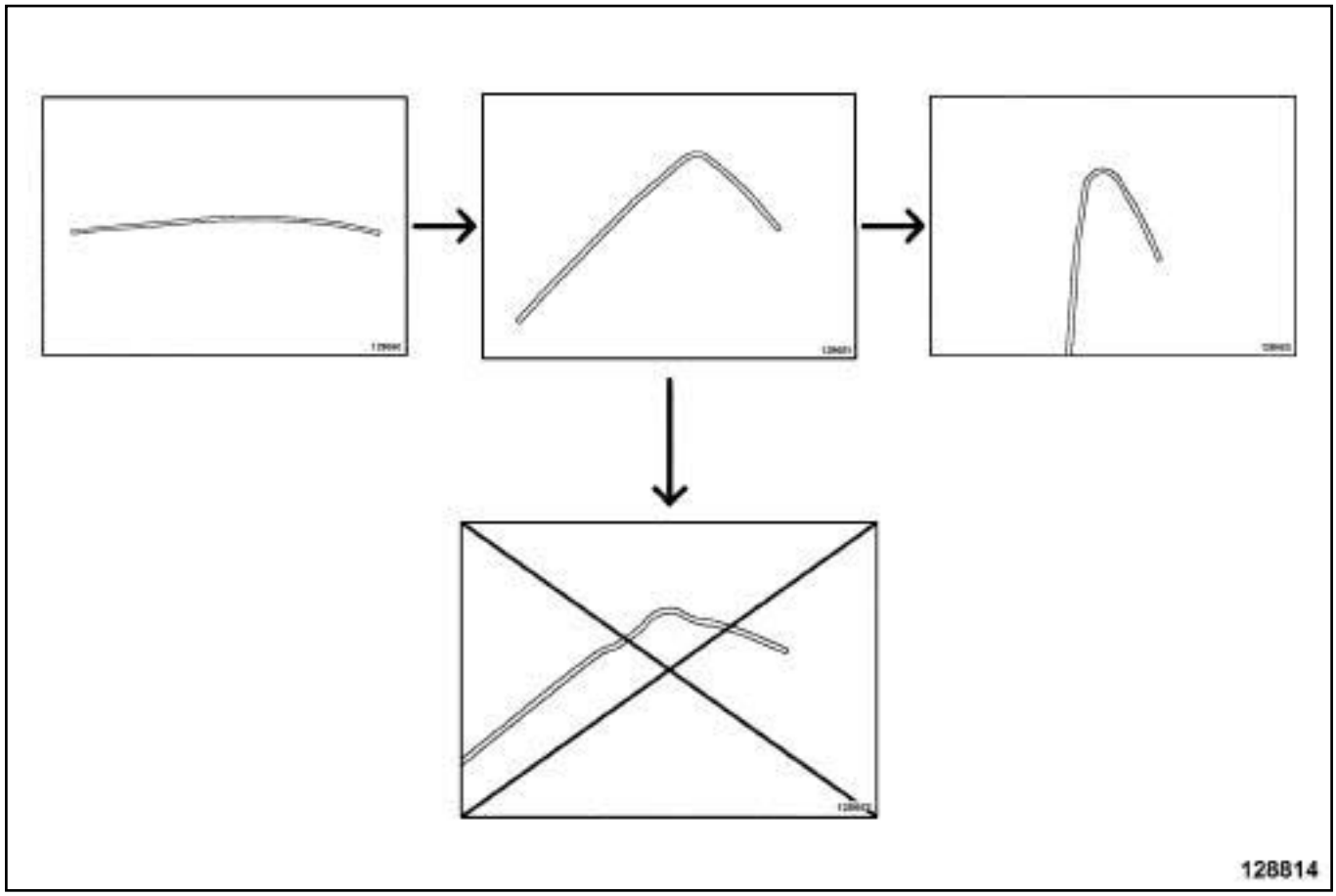
❏ Put plugs on the bolts or nuts at the ends of the pipe.

❏ Put the original pipe on a flat base plate that is the length of the pipe.



128659

❑ Measure the dimensions (**X3**) (in mm) curve after curve, between each curve radius « centre » (**1**) of the old pipe.



128814

❑

WARNING

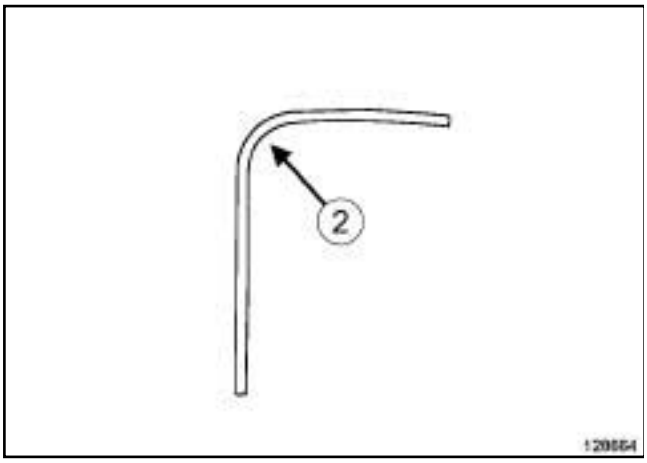
To avoid weakening the pipe, either bend once or bend progressively by increasing the bend (that is, by continually decreasing the curve radius). Do not install a rigid pipe on a vehicle that may have been bended and then unbended alternatively to reach the correct curve radius.

Note:

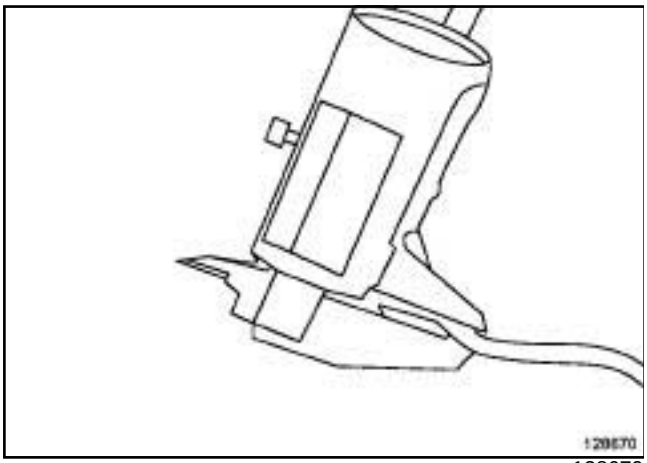
During the bending operation, the required angle should be passed slightly in order to compensate for material elasticity.

❑ Shape the pipe using a bender, curve after curve, while respecting the original shape of the pipe.

V - CHECKING BENDING



128664


128670

❑ Check the out-of-roundness of the outer diameter at the centre of the curve radius (**2**) using a sliding calliper (the out-of-roundness of the outer diameter is correct if it is less than 10% flattening):

- nominal diameter of the pipe: **4.75 mm**,
- minimum diameter after bending: **4.30 mm**.

VI - REFITTING THE PIPE

❑

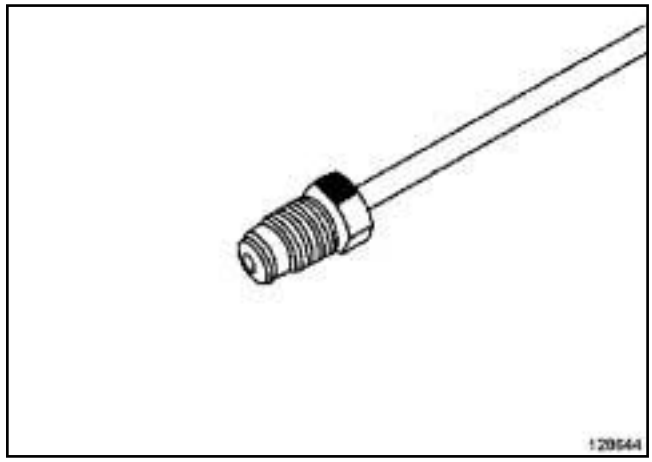
Note:

When refitting the rigid brake pipe:

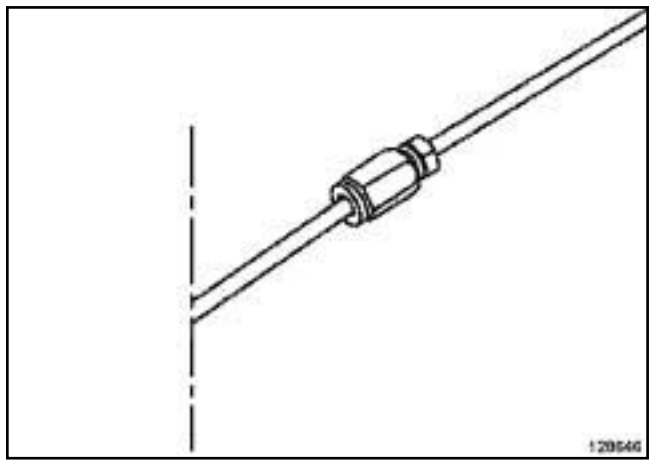
- respect the original routing as much as possible,
- adjust the pipe routing by hand when fitting inside the clips.

WARNING

Contact points between the rigid brake pipe and the surrounding components could cause damage to the pipe. In order to avoid these contacts, adjust the pipe routing by hand.


128644

❑ Torque tighten the **brake pipe bolts (8 N.m)**.


128646

❑ Torque tighten the **underbody unions (female/male) (6 N.m)**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Tightening torques ▽	
guide pin bolt	**32 Nm**

When replacing brake pads, be sure to replace the pads on the opposite side.

REMOVAL

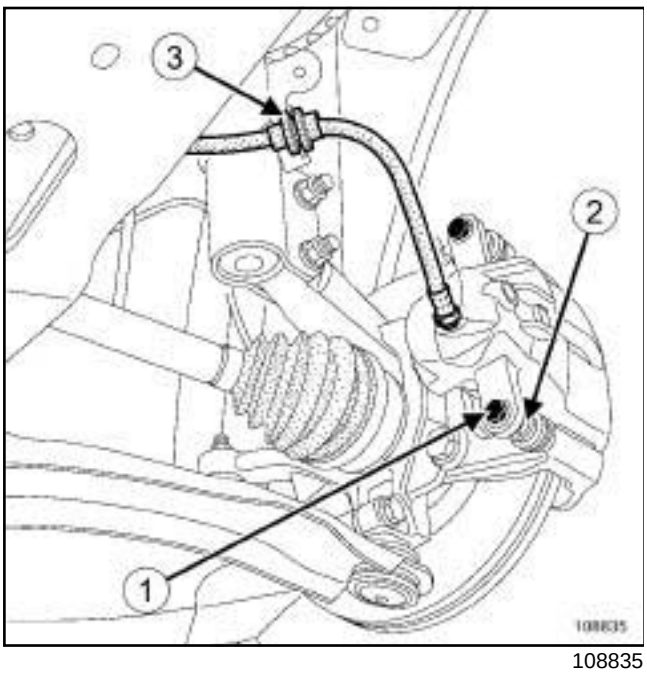
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Unlock the steering column.

❏ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108835

❏ Remove the lower guide pin bolt (**1**) while holding the nut (**2**) .

❏ Unclip the brake hose (**3**) from the shock absorber.

❏ Tilt the calliper upwards.

❏ Remove the pads.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check the thickness of the pads (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

❏ Replace any faulty parts.

❏ Clean the calliper mountings.

❏ Clean the callipers.

❏ Push the piston.

❏ Always replace the guide pin bolts after each removal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the pads, starting from the inside.

❏ Tilt the calliper downwards to return it to its original position.

❏ Refit the new guide pin bolt.

❏ Tighten to torque the **guide pin bolt (32 Nm)**.

❏ Secure the brake hose to the shock absorber.

WARNING
Do not twist the brake hose.

III - FINAL OPERATION

❏ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

IMPORTANT
Depress the brake pedal several times to bring the pistons, brake pads and discs into contact.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **Front axle components: Precautions for the repair**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

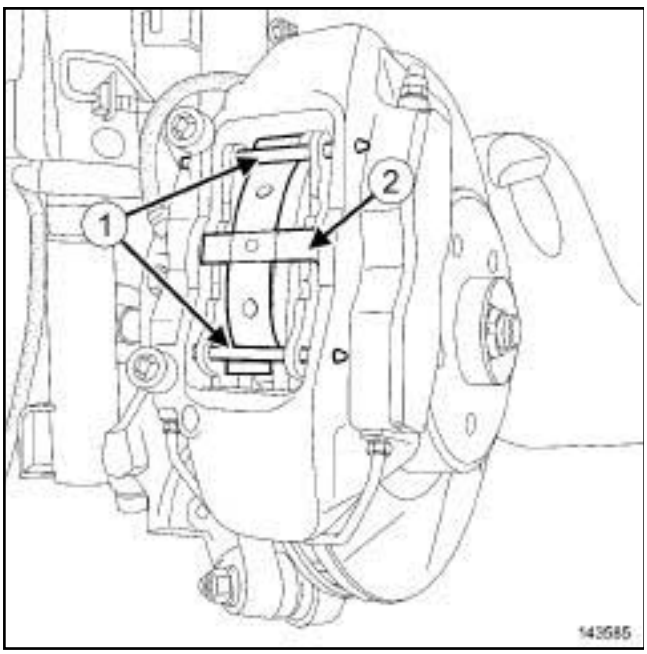
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Set the wheels straight ahead.

❑ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



143585

❑ Remove:

- the brake pad retaining pins (**1**) ,
- the spring (**2**) ,
- the brake pads.

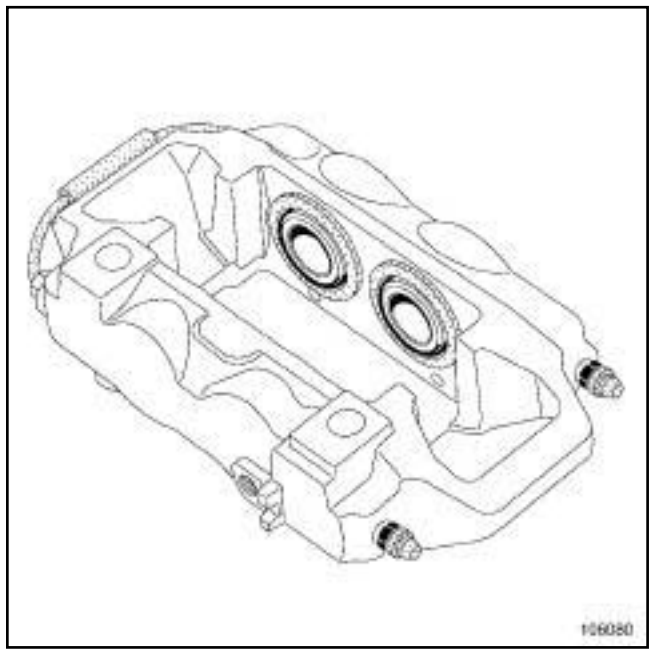
REFITTING

I - REFITTING PREPARATION OPERATION

❑ Measure the thickness of the pads and then compare them to the minimum values (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

❑ Do not allow friction materials to come into contact with grease, oil or other lubricants and cleaning products which are mineral oil based.

❑ Clean the callipers using a wire brush and **BRAKE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



106080

❑ Push the pistons back until they are at the end of their bores.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the new brake pads starting from the inside.

❑ Refit:

- the spring,
- the brake pad retaining pins.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

III - FINAL OPERATION

❑ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

WARNING

Depress the brake pedal several times to bring the pistons, brake pads and discs into contact.

Equipment required
pedal press

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Front axle components: Precautions for the repair**) .

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

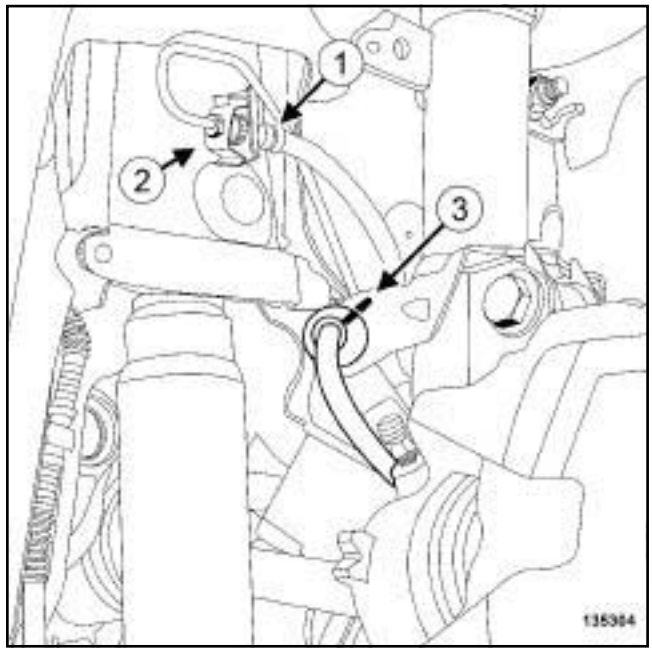
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Set the wheels straight ahead.

❏ Position a **pedal press** on the brake pedal to limit the outflow of brake fluid.

❏ Remove the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



135304

❏ Loosen the hose union (**1**) on the rigid pipe union.

❏ Remove the retaining (**2**) fork from the hose.

❏ To avoid the premature damage of the brake hose by friction, observe the following procedure before unclipping the hose:

❏ Set the wheels straight ahead.

❏ Mark the position of the cap on the base of the shock absorber using a permanent marker.

❏ Unclip the brake hose cap (**3**) from the shock absorber base.

❏ Loosen the hose union on the brake calliper.

❏ Remove the brake hose.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏

WARNING

In order not to damage the brake hose:

- do not tension the hose,
- do not twist the hose,
- check that there is no contact with the surrounding components.

❏ Set the wheels straight ahead.

❏ Refit the brake hose at the calliper end.

❏ Torque tighten the brake hose (see **30A**, **General information**, **Brake circuit: Tightening torque**, page **30A-6**)

❏ Clip the brake hose cap on to the base of the shock absorber, aligning the marks made using a permanent marker.

❏ Refit:

- the brake hose on the rigid pipe union,

- the hose retaining fork.

❏ Torque tighten the brake hose union on the rigid pipe union. (see **30A**, **General information**, **Brake circuit: Tightening torque**, page **30A-6**)

II - FINAL OPERATION

❏ Refit the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Remove the **pedal press** from the brake pedal.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Equipment required
pedal press

Tightening torques ▽	
guide pin bolts	**32 Nm**
brake hose	**17 Nm**

Note:

The callipers supplied as replacement parts are pre-filled.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

WARNING

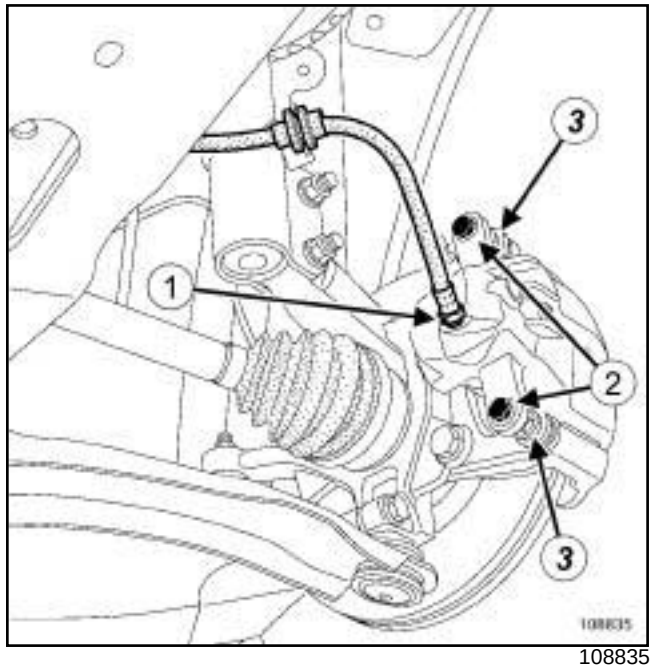
Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Unlock the steering wheel.

❏ Remove the front wheel on the side concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108835

❏ Unlock the brake hose (**1**) on the brake calliper.

❏ Remove:

- the two guide pin bolts (**2**) while holding the nuts (**3**) ,
- the brake calliper from the hose,
- the brake pads.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Check the condition of the gaiter and calliper piston (replace defective parts).

❏ Clean the backplate and the calliper.

❏ Push the piston back until it is at the end of its bore.

❏ Fit the pads, starting from the inside.

❏ Always replace the guide pin bolts after each removal.

WARNING

Do not twist the brake hose, and set the wheels straight ahead as turning the steering wheel increases the likelihood of the hose becoming twisted.

Make sure that there is no contact between the brake hose and the surrounding components.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

II - REFITTING OPERATION FOR PART CONCERNED

❏ Set the wheels straight ahead.

❏ Without using a tool, screw the calliper to the brake hose as tightly as possible.

❏ Refit:

- the pads starting from the inside,
- the calliper,
- the new guide pin bolts.

❏ Torque tighten:

- the **guide pin bolts (32 Nm)**,
- the **brake hose (17 Nm)**.

WARNING

- Refasten the brake hose and wheel speed sensor wiring if they have been unclipped.
- Do not twist the brake hose.

III - FINAL OPERATION.

❏ Bleed the brake circuit partially if the compensation reservoir is not completely emptied during the procedure. If necessary, bleed the circuit completely (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Check the brake fluid level.

IMPORTANT

Depress the brake pedal several times to bring the pistons, brake pads and discs into contact.

❏ Refit the wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Equipment required
pedal press

Tightening torques ▽	
brake calliper mounting bolts	**170 Nm**
brake hose mounting bolts on the brake calliper	**25 Nm**

Note:

The callipers supplied as replacement parts are pre-filled.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

WARNING

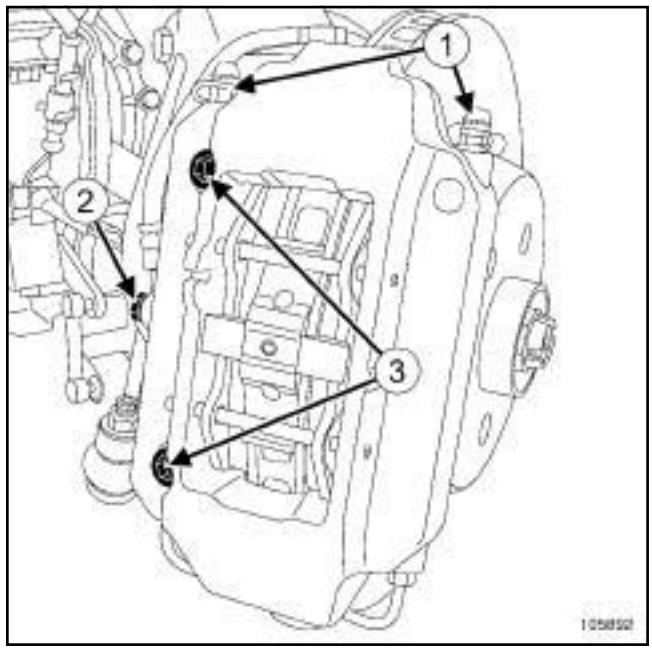
Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Unlock the steering wheel.

❏ Remove the front wheel on the side concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



105892

❏ Open the bleed screws (**1**) .

❏ Remove:

- the brake hose (**2**) on the brake calliper,
- the brake calliper mountings (**3**) ,
- the brake calliper,
- the brake pads.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Clean the calliper.

❏ Check the condition of the gaiters and calliper pistons (replace any faulty parts).

❏ Push the pistons back until they are at the end of their bores.

❏ Install the brake pads starting from the inside.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake calliper,
- the brake calliper mounting bolts.

❏ Torque tighten the **brake calliper mounting bolts (170 Nm)**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❑ Refit the brake hose.

WARNING

Refasten the brake hose and wheel speed sensor wiring if they have been unclipped.

Do not twist the brake hose.

❑ Torque tighten the **brake hose mounting bolts on the brake calliper (25 Nm)**.

❑ Remove the **pedal press**.

III - FINAL OPERATION.

❑ Partially bleed the brake circuit if the compensation reservoir has not been completely emptied during the operation. If necessary, bleed the circuit completely (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Check the brake fluid level.

IMPORTANT

Depress the brake pedal several times to bring the pistons, brake pads and discs into contact.

Correctly attach the brake hose and ABS sensor wiring.

❑ Refit the front wheel on the side concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

Special tooling required	
Fre. 1190-01	Brake calliper piston return tool.

Equipment required
pedal press

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Front axle components: Precautions for the repair**) .

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

REPAIR

I - REPAIR PREPARATION OPERATION

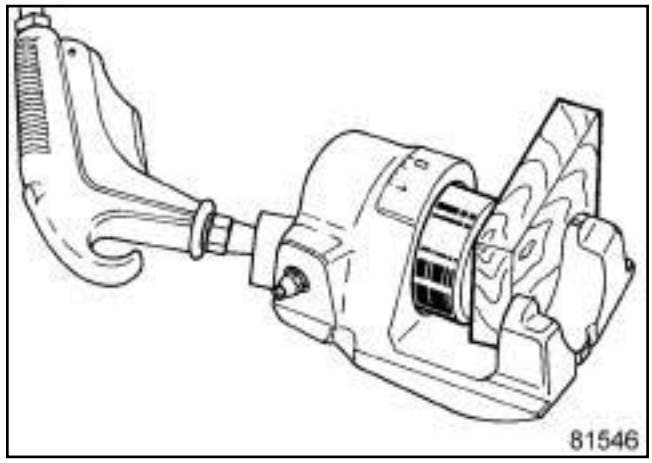
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Position the **pedal press** on the brake pedal to limit the outflow of brake fluid.

❏ Remove:

- the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake calliper (see **31A**, **Front axle components**, **Front brake calliper: Removal - Refitting**, page **31A-6**) .

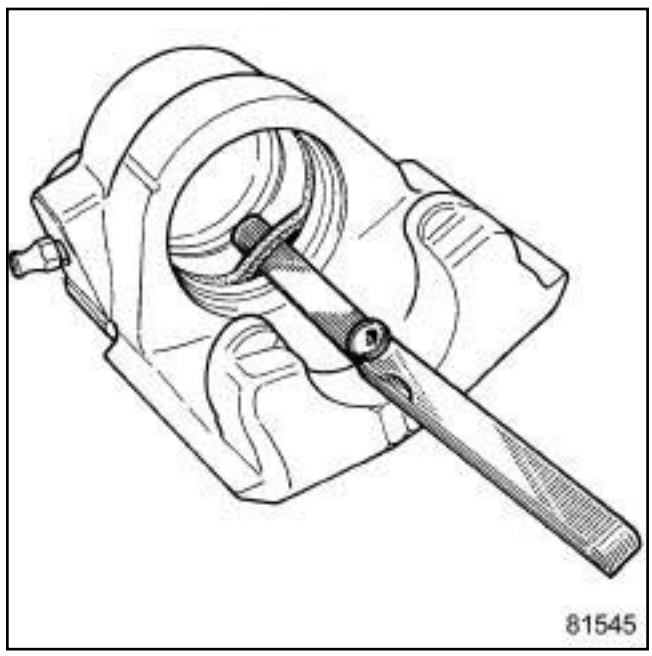
II - REPAIR OPERATION FOR PART CONCERNED



81546

❏ Remove the piston using compressed air, making sure to insert a wooden block between the calliper and the piston to avoid damaging it. Any trace of impact on the end panel will render the piston unfit for use.

❏ Remove the dust seal.



81545

❏ Remove the rectangular section seal from the calliper groove with a round edged spring blade (feeler gauge).

WARNING

The whole calliper must systematically be replaced if there are any scratches in the calliper bore.

❏ Clean the parts using methylated spirit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new rectangular section seal in the calliper groove,
- the piston (after having smeared it with the grease supplied in the repair kit) using the **(Fre. 1190-01)**,
- the dust seal.

II - FINAL OPERATION.

❑ Refit:

- the brake calliper (see **31A**, **Front axle components**, **Front brake calliper: Removal - Refitting**, page **31A-6**) ,
- the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Remove the **pedal press**.

IMPORTANT

To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pad several times.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Tightening torques ▽	
calliper mounting bolts	**105 Nm**

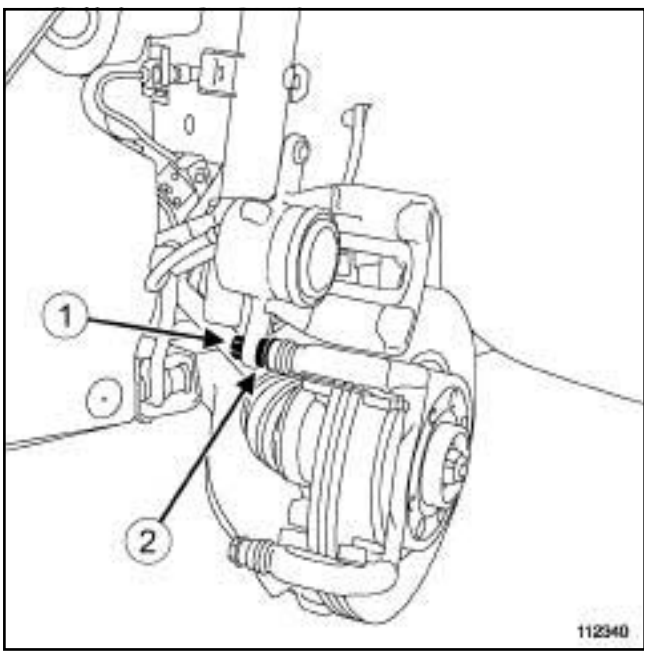
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) ;.

❏ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) .



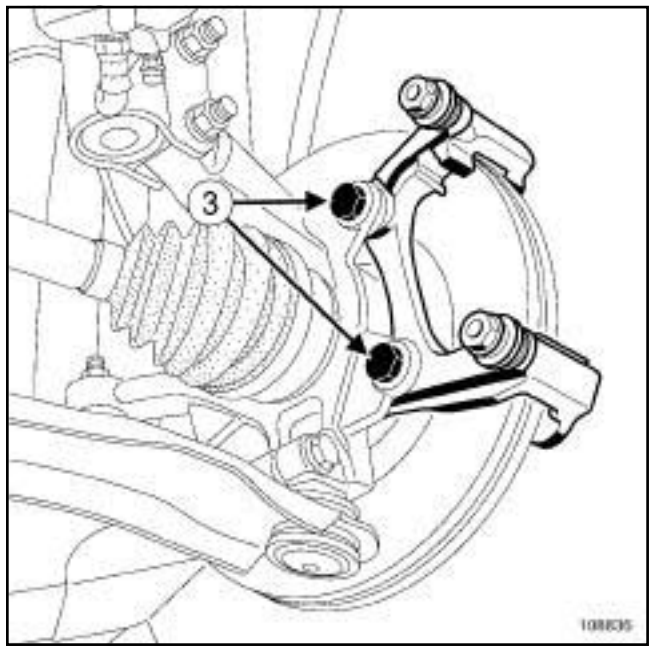
112340

❏ Remove the guide pin upper bolt (**1**) while holding the nut (**2**) .

WARNING
Do not twist the brake hose.

❏ Hang the brake calliper from the suspension spring.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108836

❏ Remove:

- the two calliper mounting bolts (**3**) ,
- the calliper mounting.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Clean the calliper mounting and the hub carrier.

❏ Coat the calliper mounting bolts with a **FRENBLOC** type product before fitting them.

❏ Always replace the guide pin bolts after each removal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the calliper mounting,
- the calliper mounting bolts.

❏ Torque tighten the **calliper mounting bolts (105 Nm)**.

❏ Refit the calliper and the new upper guide pin bolt.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

III - FINAL OPERATION.

- ❏ Refit the brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) .
- ❏ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

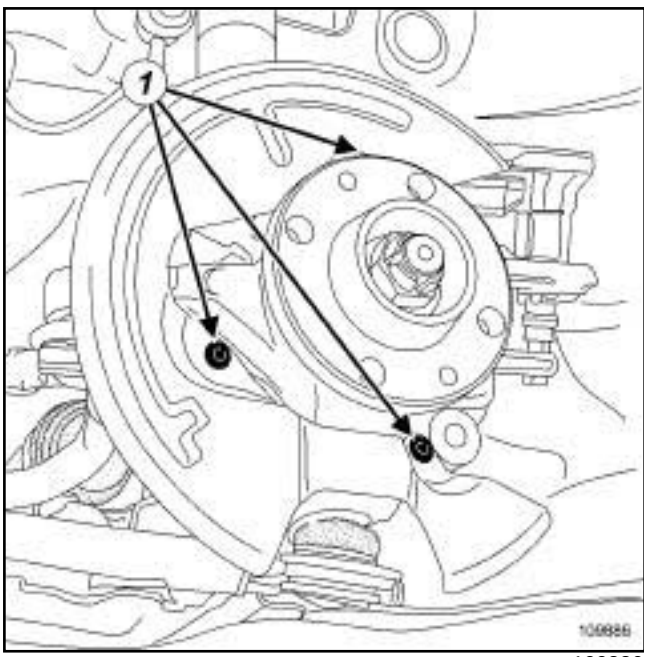
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the hub carrier (see **31A**, **Front axle components**, **Front driveshaft hub carrier: Removal - Refitting**, page **31A-31**) ,
- the hub carrier bearing (see **31A**, **Front axle components**, **Front hub carrier bearing: Removal - Refitting**, page **31A-35**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109886

❑ Drill out the brake disc protector mounting rivets (**1**) .

❑ Remove the brake disc protector.

REFITTING

I - REMOVAL PREPARATION OPERATION

❑ Always replace the bearing whenever a hub is removed.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake disc protector,
- the rivets.

III - FINAL OPERATION.

❑ Refit:

- the hub carrier bearing (see **31A**, **Front axle components**, **Front hub carrier bearing: Removal - Refitting**, page **31A-35**) ,
- the hub carrier (see **31A**, **Front axle components**, **Front driveshaft hub carrier: Removal - Refitting**, page **31A-31**) ,
- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Equipment required
parts washer

Brake discs cannot be reground. If there is excessive scoring or wear, they will need to be replaced (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **30A**, **General information**, **Brake circuit: Precautions for the repair**, page **30A-2**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

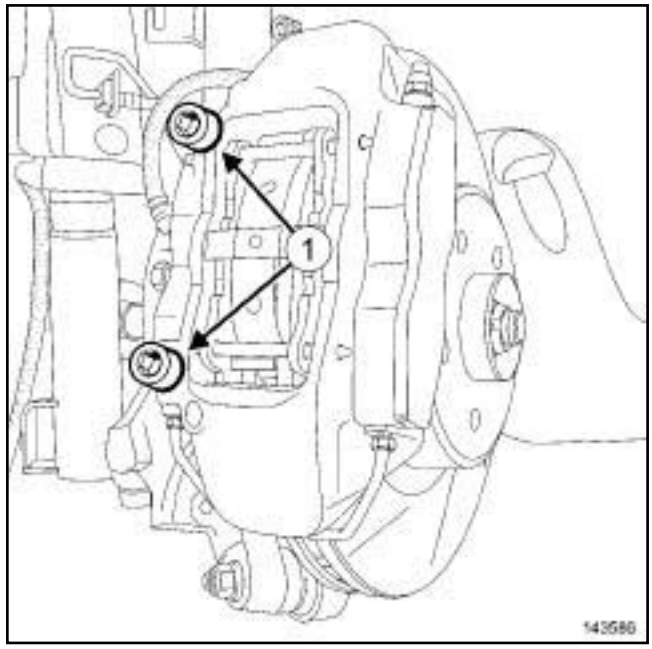
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

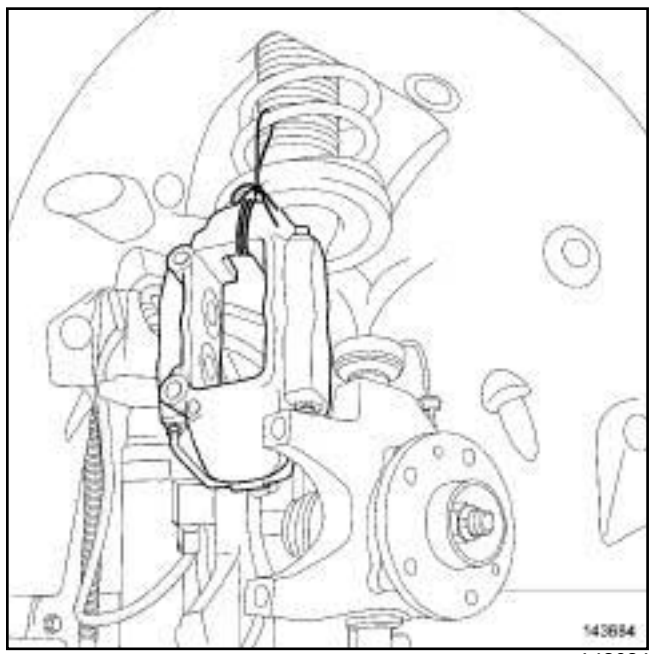
❏ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) .



143586

❏ Remove the bolts (**1**) from the front brake callipers.

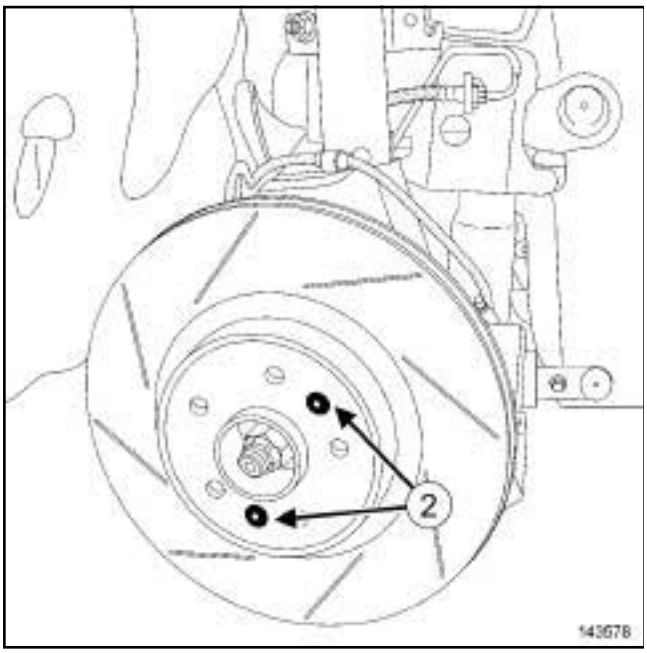


143684

❏ Suspend the brake callipers from the suspension springs.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

II - OPERATION FOR REMOVAL OF PART CONCERNED



143578

❑ Remove:

- the brake disc bolts (**2**) ,
- the brake discs.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the brake discs using a **parts washer**.

❑ Dry the surface of the discs.

❑ Clean the mating faces of the disc on the hub using a wire brush and **BRAKE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ **parts always to be replaced: Front brake disc bolt (13,03,03,11)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the brake discs with new bolts.

III - FINAL OPERATION

❑ Refit:

- the brake callipers,
- the brake calliper bolts.

❑ Torque tighten the bolts of the front brake callipers (see **30A**, **General information**, **Brake circuit: Tightening torque**, page **30A-6**) .

❑ Refit:

- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

WARNING

To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pad several times.

❑ Advise the customer to run-in the brake pads (no harsh braking).

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Equipment required
indelible pencil
parts washer

Brake discs cannot be reground. If there is excessive scoring or wear, they will need to be replaced (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **30A**, **General information**, **Brake circuit: Precautions for the repair**, page **30A-2**) (30A, General information),
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

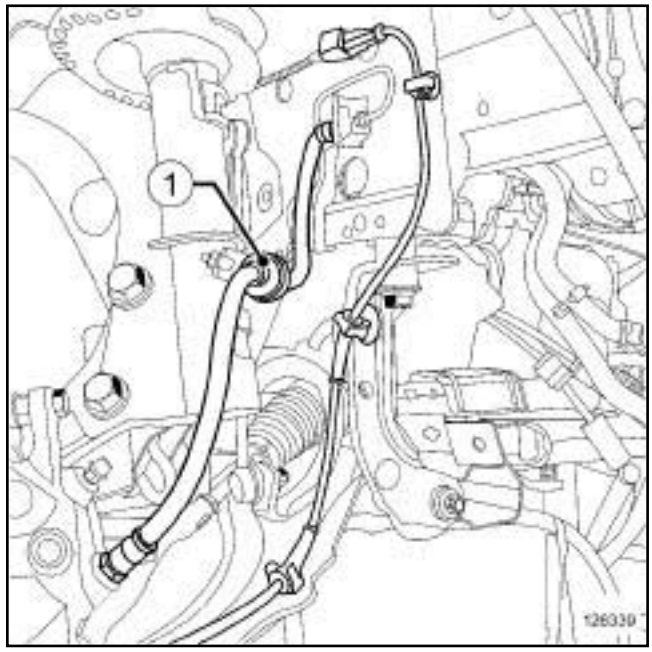
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Set the wheels straight ahead.

❏ Remove the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

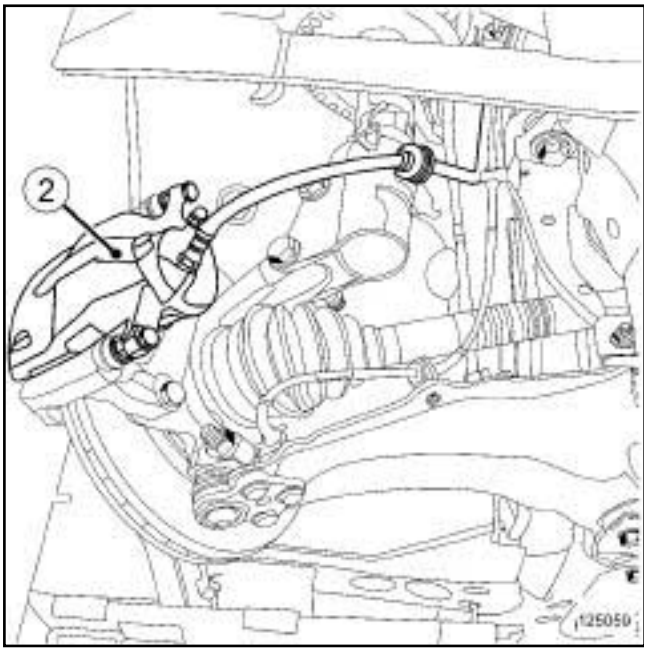


126339

❏ Mark the position of the cap (**1**) on the base of the shock absorber using a **indelible pencil**.

❏ Unclip the cap (**1**) from the base of the shock absorber.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



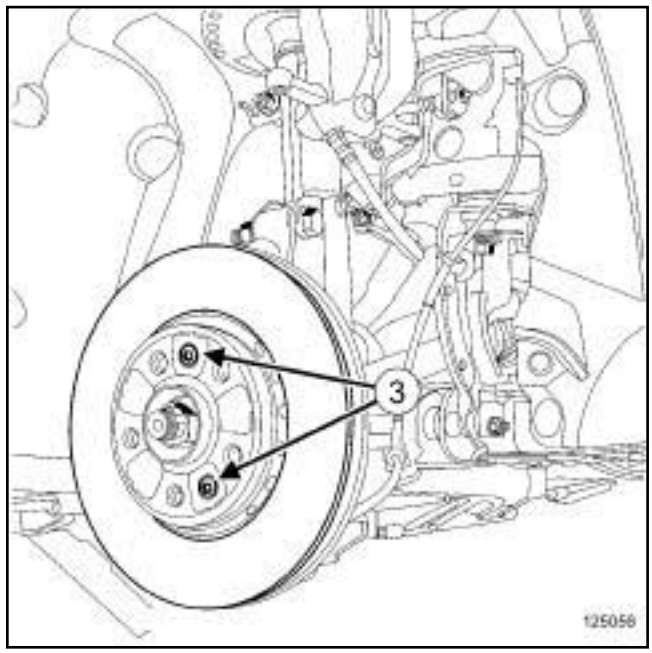
125059

❏ Remove the brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**)

❏ Remove the "brake calliper mounting - brake calliper" assembly (**2**) (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) .

❏ Hang the "brake calliper mounting - brake calliper" assembly (**2**) on the suspension spring.

II - OPERATION FOR REMOVAL OF PART CONCERNED



125056

❏ Remove:

- the brake disc bolt or bolts (**3**) ,

- the brake disc.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the brake discs using a **parts washer**.

❏ Dry the surface of the discs.

❏ Clean the mating faces of the disc on the hub using a wire brush and **BRAKE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❏ **parts always to be replaced: Front brake disc bolt (13,03,03,11)**

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake disc with new bolts.

❏ Torque tighten the new disc mounting bolts (see **30A**, **General information**, **Brake circuit: Tightening torque**, page **30A-6**)

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

III - FINAL OPERATION

- ❏ Refit the "brake calliper mounting - brake calliper" assembly (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) .
- ❏ Refit the brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**)
- ❏ Set the wheels straight ahead.
- ❏ Clip the cap on the base of the shock absorber while aligning the marks made with a **indelible pencil**.

WARNING

In order not to damage the brake hose:

- do not tension the hose,
- do not twist the hose,
- check that there is no contact with the surrounding components.

- ❏ Refit the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

IMPORTANT

To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pad several times.

- ❏ Advise the customer to run-in the brake pads (no harsh braking).

I - PREPARATION OPERATION FOR CHECK

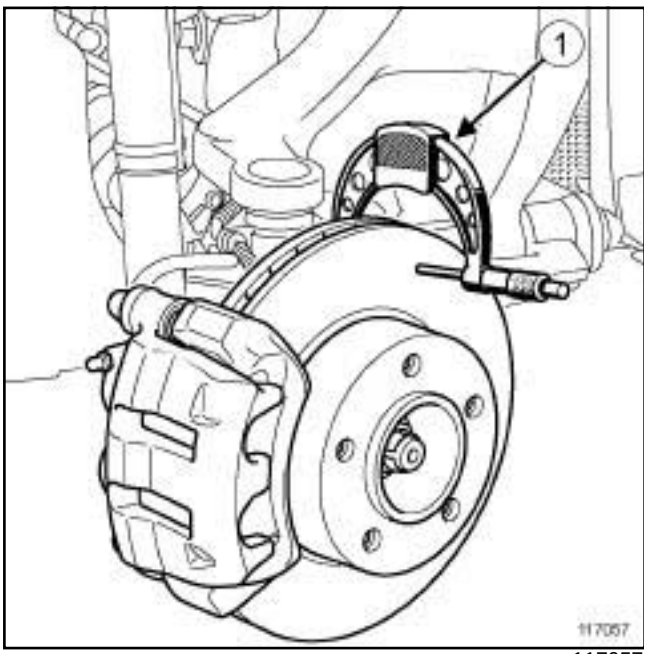
Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

Remove the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - CHECKING OPERATION FOR PART CONCERNED

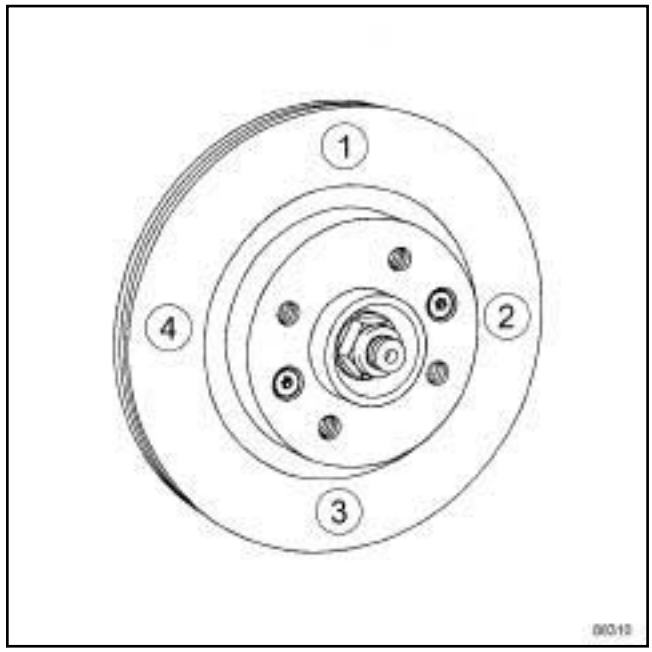
Note:

Use a Palmer type tool to check the thickness of the disc.



117057

Position the Palmer tool (**1**) to measure the disc thickness.



88310

Measure the thickness of the disc at 4 points in order (90˚ apart).

Compare the values with those recommended by the manufacturer (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

III - FINAL OPERATION

Replace the discs if necessary (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) .

Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

LEFT-HAND DRIVE

Equipment required
pedal press

Tightening torques ▽	
brake pipe unions on the hydraulic unit	**14 Nm**
brake pipe unions on the master cylinder	**17 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

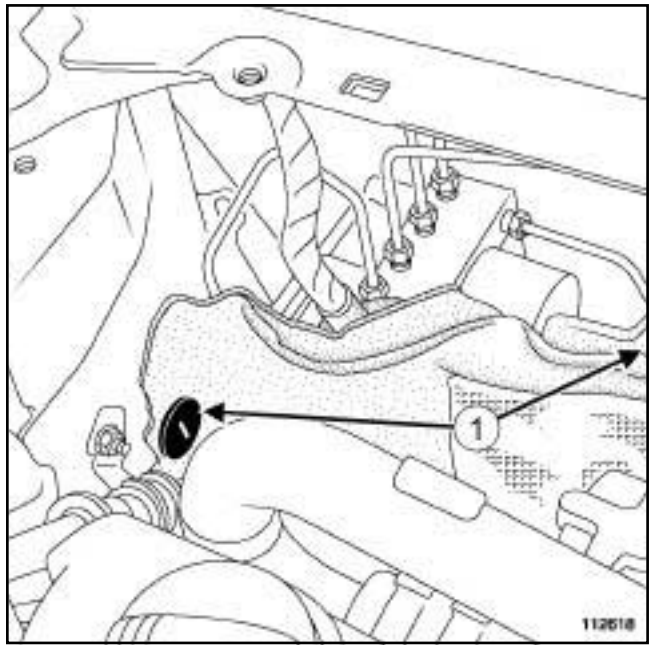
❏ Fit a **pedal press** on the brake pedal.

K4J or K4M or K9K

❏ Remove the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

- the front engine cover (if fitted to the vehicle),
- the air filter unit (see **Air filter unit: Removal - Refitting**) .

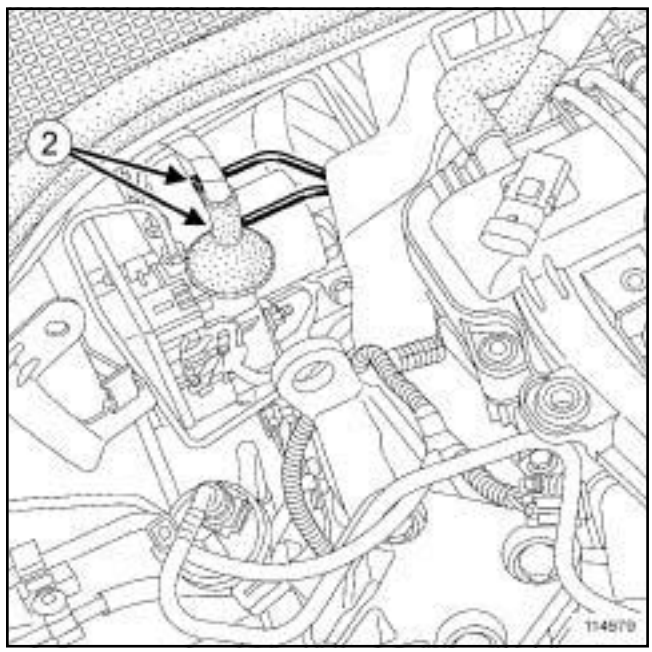


112618

❏ Remove the soundproofing clips (**1**) .

❏ Move the soundproofing to one side in order to see the pipes.

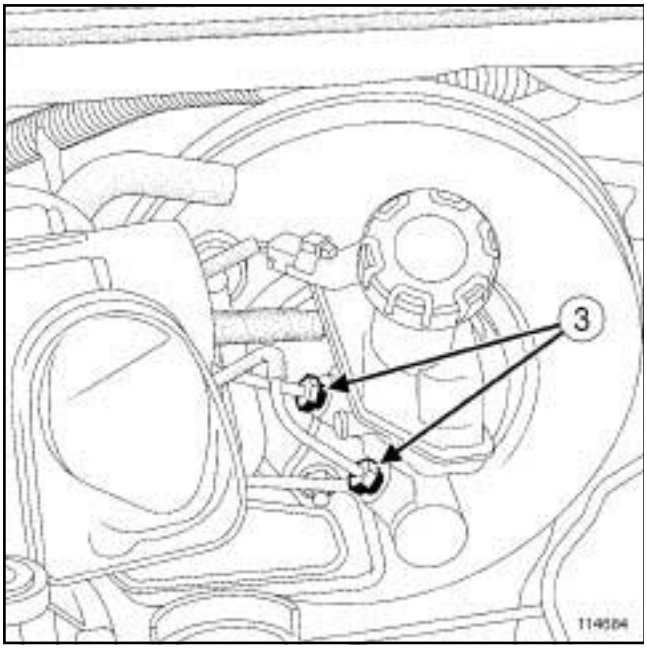
II - OPERATION FOR REMOVAL OF PART CONCERNED



114679

❏ Loosen the hydraulic unit brake pipe unions (**2**) .

LEFT-HAND DRIVE



114684

❏ Loosen the master cylinder brake pipe unions (**3**) .

❏ Remove the brake pipes between the hydraulic unit and master cylinder.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipes between the hydraulic unit and master cylinder.

❏ Tighten to torque:

- the **brake pipe unions on the hydraulic unit (14 Nm)**,
- the **brake pipe unions on the master cylinder (17 Nm)**.

II - FINAL OPERATION

❏ Refit:

- the bulkhead soundproofing material,
- the soundproofing clips,
- the air filter unit (see **Air filter unit: Removal - Refitting**) ,
- the engine cover (if fitted to the vehicle).

K4J or K4M or K9K

❏ Refit the battery (see **Battery: Removal - Refitting**) .

❏ Remove the brake pedal **pedal press**.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) .

LEFT-HAND DRIVE

Equipment required
refrigerant charging station
pedal press

Tightening torques ▽	
brake pipe unions on the hydraulic unit	**14 Nm**
underbody pipe unions	**14 Nm**
pipe union mounting bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Drain the coolant circuit using **refrigerant charging station**.

❏ Fit a **pedal press** on the brake pedal.

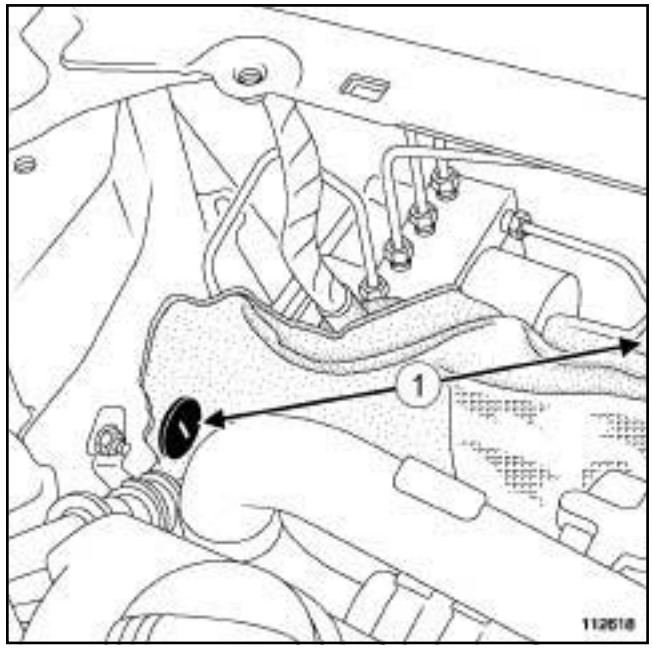
❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

K4J or K4M or K9K

❏ Remove the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

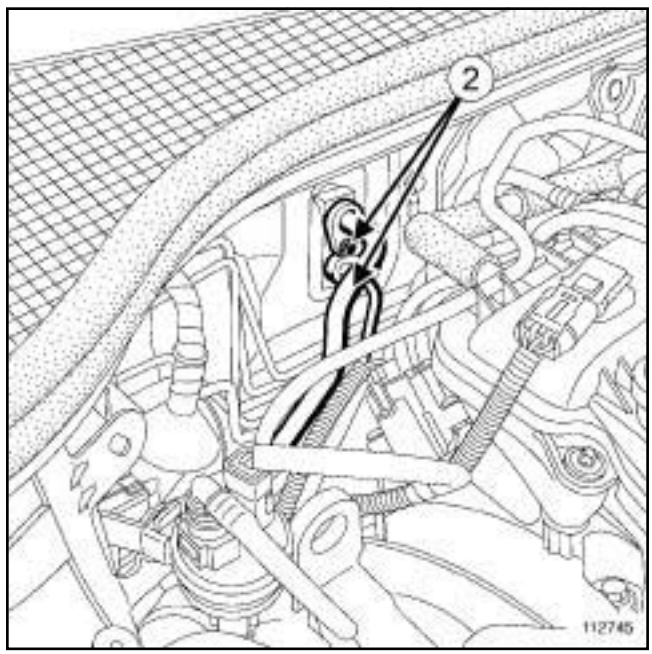
- the front engine cover (if fitted to the vehicle),
- the air filter unit (see **Air filter unit: Removal - Refitting**) .



112618

❏ Remove the two soundproofing clips (**1**) .

❏ Move the soundproofing to one side in order to see the pipes.



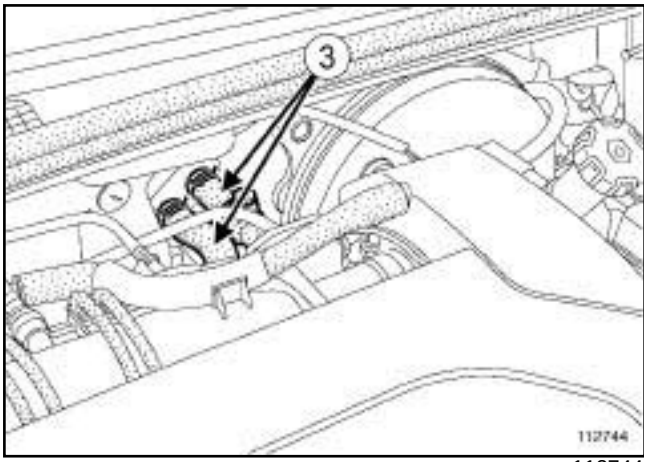
112745

❏ Remove bolts (**2**) mounting the pipe unions on the expansion valve.

❏ Separate the pipe unions from the expansion valve.

❏ Fit protective plugs in each opening.

LEFT-HAND DRIVE

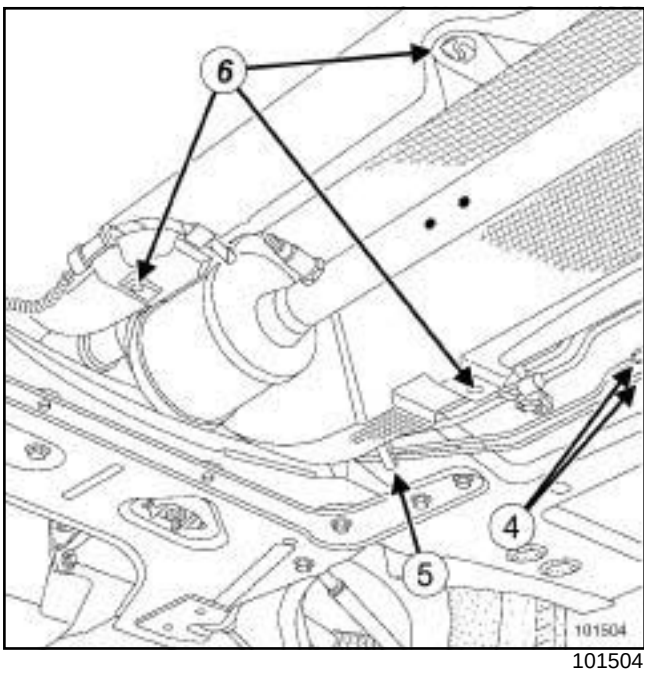


112744

❏ Fit hose clamps (**3**) .

❏ Disconnect the heater matrix hoses.

II - OPERATION FOR REMOVAL OF PART CONCERNED

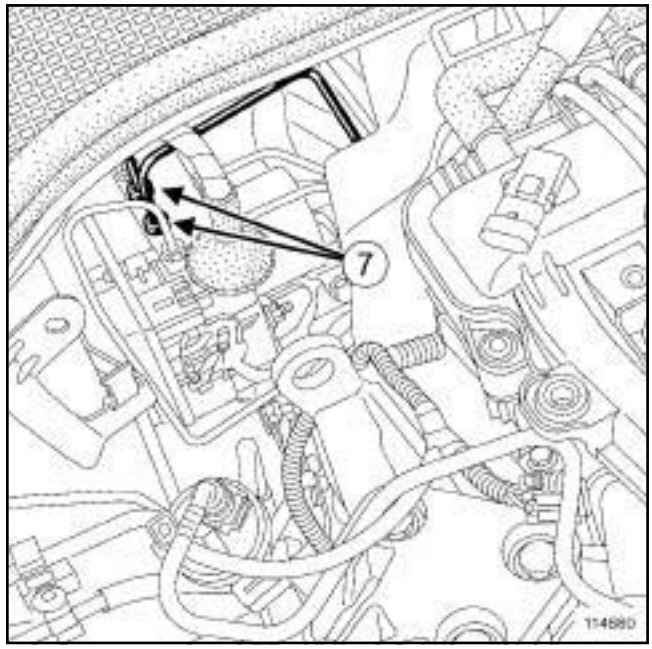


101504

❏ Loosen the underbody brake pipe unions (**4**) .

❏ Detach the brake pipes from the clips (**5**) .

❏ Remove the heat shield mountings (**6**) .



114680

❏ Loosen the hydraulic unit brake pipe unions (**7**) .

❏ Remove the brake pipes between the hydraulic unit and underbody unions.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Replace the seals on the expansion valve pipes.

❏ Oil the seals using recommended air conditioning oil to make fitting easier.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipes between the hydraulic unit and underbody unions.

❏ Refit the heat shield mountings.

❏ Clip the brake pipes into position.

❏ Tighten to torque:

- the **brake pipe unions on the hydraulic unit (14 Nm)**,
- the **underbody pipe unions (14 Nm)**.

III - FINAL OPERATION

❏ Connect the heater matrix hoses.

❏ Remove the hose clamps.

❏ Fit the pipe unions on the expansion valve with the new seal.

LEFT-HAND DRIVE

❏ Refit the bolts mounting the pipe unions on the expansion valve.

❏ Tighten to torque the **pipe union mounting bolts (8 Nm)**.

❏ Refit:

- the soundproofing on the bulkhead,
- the soundproofing mounting clips,
- the air filter unit (see **Air filter unit: Removal - Refitting**) ,
- the engine cover (if fitted to the vehicle).

K4J or K4M or K9K

❏ Refit the battery (see **Battery: Removal - Refitting**) .

❏ Remove the brake pedal **pedal press**.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Top up the coolant level.

❏ Fill the coolant circuit using **refrigerant charging station**.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

LEFT-HAND DRIVE

Equipment required
refrigerant charging station
pedal press

Tightening torques ▽	
brake pipe union on the hydraulic unit	**14 Nm**
pipe union on the hose	**14 Nm**
pipe union mounting bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Drain the coolant circuit using **refrigerant charging station**.

❏ Fit a **pedal press** on the brake pedal.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

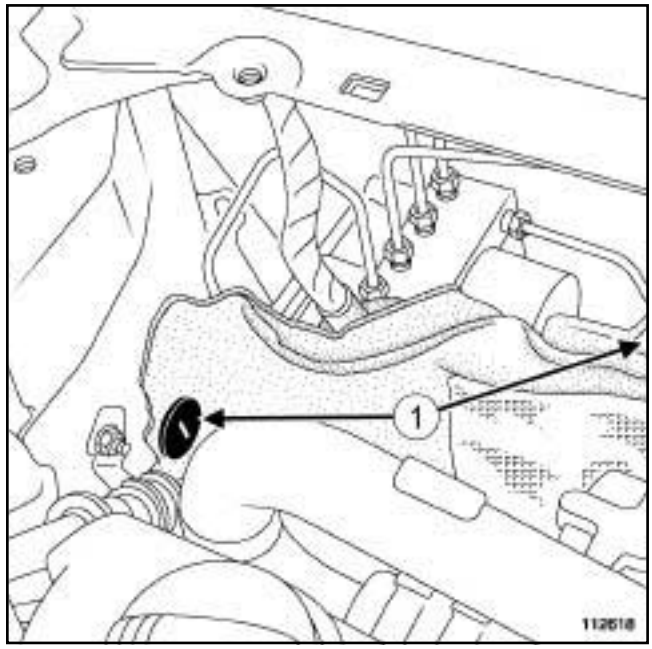
❏ Remove the front left-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

K4J or K4M or K9K

❏ Remove the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

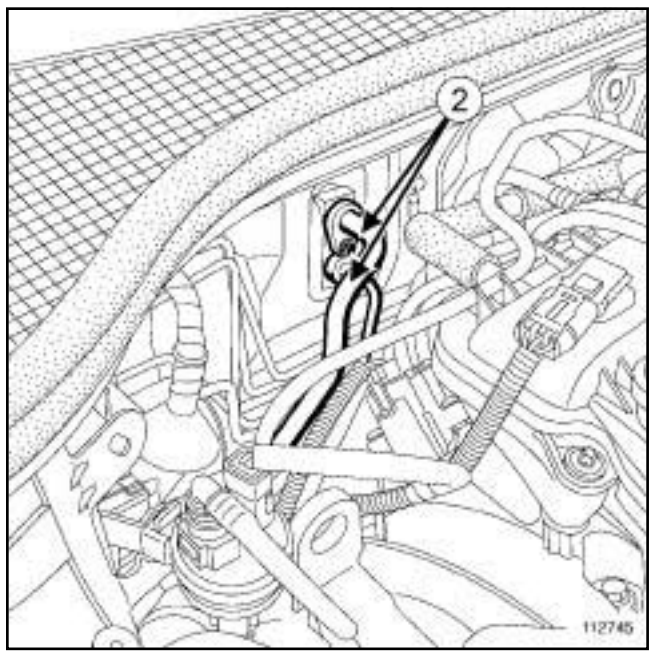
- the front engine cover (if fitted to the vehicle),
- the air filter unit (see **Air filter unit: Removal - Refitting**) .



112618

❏ Remove the soundproofing clips (**1**) .

❏ Move the soundproofing to one side in order to see the pipes.



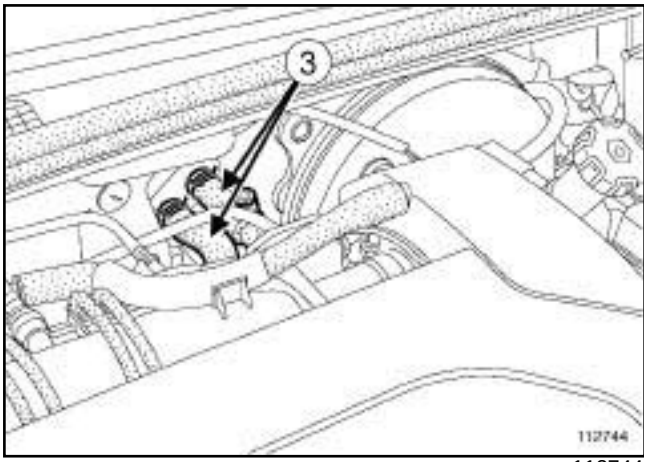
112745

❏ Remove the bolts (**2**) mounting the pipe unions on the expansion valve.

❏ Separate the pipe unions from the expansion valve.

❏ Fit protective plugs in each orifice.

LEFT-HAND DRIVE

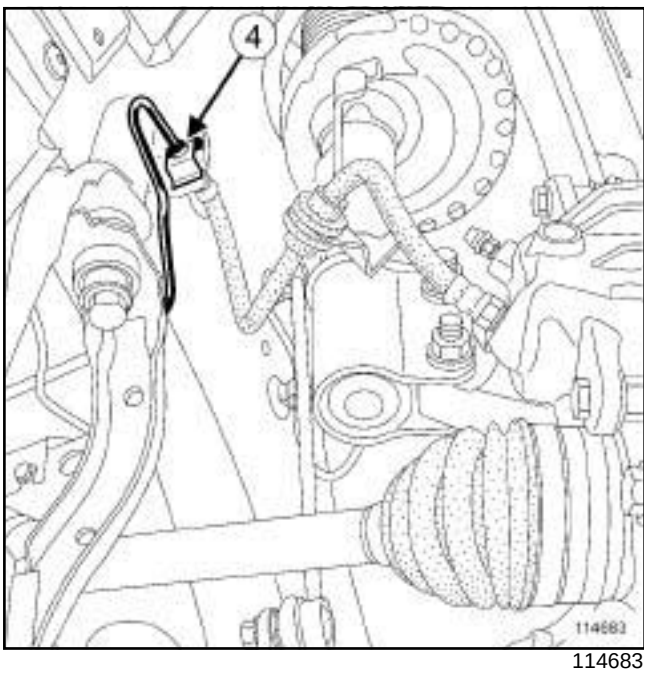


112744

❏ Fit hose clamps (**3**) .

❏ Disconnect the heater matrix hoses.

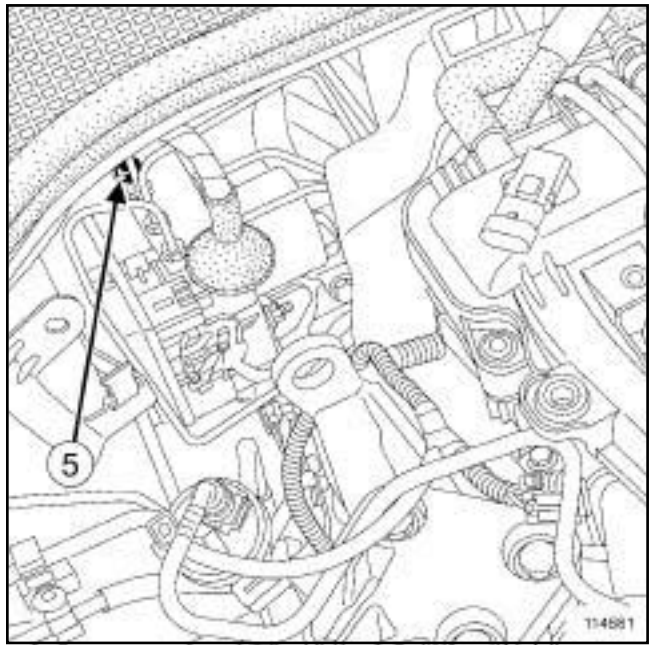
II - OPERATION FOR REMOVAL OF PART CONCERNED



114683

❏ Loosen the brake hose brake pipe union (**4**) .

❏ Detach the brake pipe from the clips.



114681

❏ Loosen the hydraulic unit brake pipe union (**5**) .

❏ Remove the brake pipe between the hydraulic unit and front left-hand brake hose.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Replace the seals on the expansion valve pipes.

❏ Oil the seals using recommended air conditioning oil to make fitting easier.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipe between the hydraulic unit and front left-hand brake hose.

❏ Clip the brake pipe into position.

❏ Tighten to torque:

- the **brake pipe union on the hydraulic unit (14 Nm)**,
- the **pipe union on the hose (14 Nm)**.

III - FINAL OPERATION

❏ Connect the heater matrix hoses.

❏ Remove the hose clamps.

❏ Fit the pipe unions on the expansion valve with new seals.

LEFT-HAND DRIVE

- ❑ Refit the bolts mounting the pipe unions on the expansion valve.
- ❑ Tighten to torque the **pipe union mounting bolts (8 Nm)**.
- ❑ Refit:
  - the soundproofing on the bulkhead,
  - the soundproofing mounting clips,
  - the air filter unit (see **Air filter unit: Removal - Refitting**) ,
  - the front engine cover (if fitted to the vehicle).

K4J or K4M or K9K

- ❑ Refit the battery (see **Battery: Removal - Refitting**) .

- ❑ Remove the **pedal press**.
- ❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .
- ❑ Top up the coolant level.
- ❑ Fill the coolant circuit using **refrigerant charging station**.
- ❑ Refit the front left-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .
- ❑ Connect the battery (see **Battery: Removal - Refitting**) .

LEFT-HAND DRIVE

Equipment required
refrigerant charging station
pedal press

Tightening torques ▽	
brake pipe union on the hydraulic unit	**14 Nm**
pipe union on the hose	**14 Nm**
pipe union mounting bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

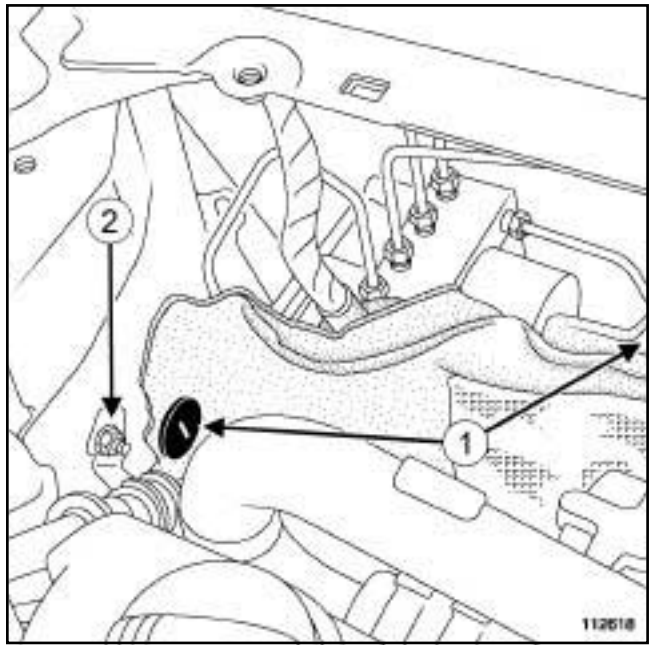
❏ Drain the coolant circuit using **refrigerant charging station**.

❏ Fit a **pedal press** on the brake pedal.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove:

- the front right-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front engine cover (if fitted to the vehicle).

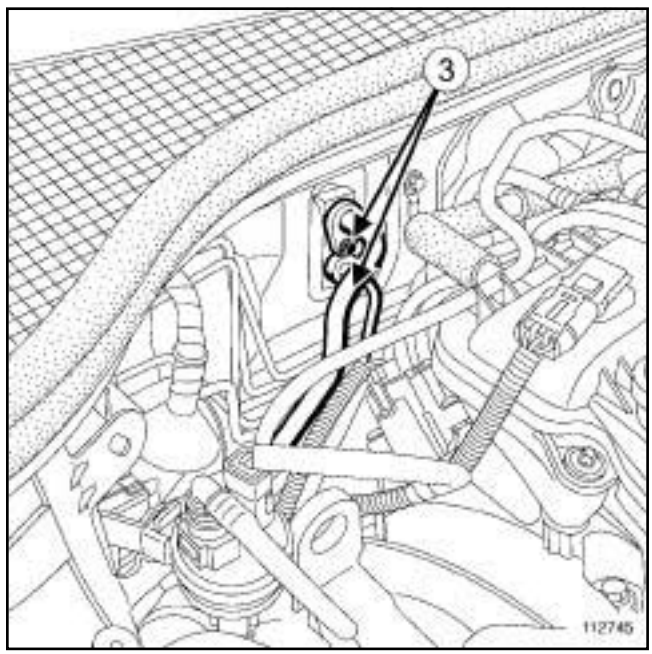


112618

❏ Remove the soundproofing clips (**1**) .

❏ Move the soundproofing clips to one side in order to see the pipes.

❏ Remove the coolant circuit pipe mounting nut (**2**) .



112745

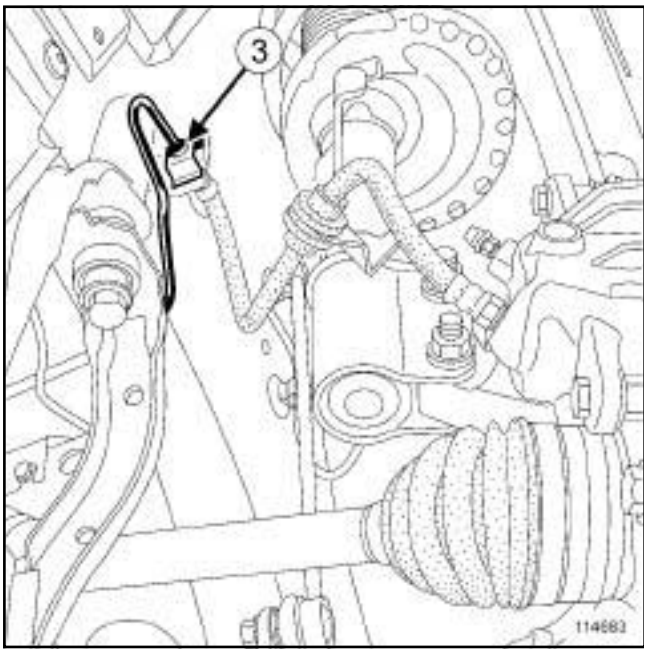
❏ Remove bolts (**3**) mounting the pipe unions on the expansion valve.

❏ Separate the pipe unions from the expansion valve.

❏ Fit protective plugs in each opening.

LEFT-HAND DRIVE

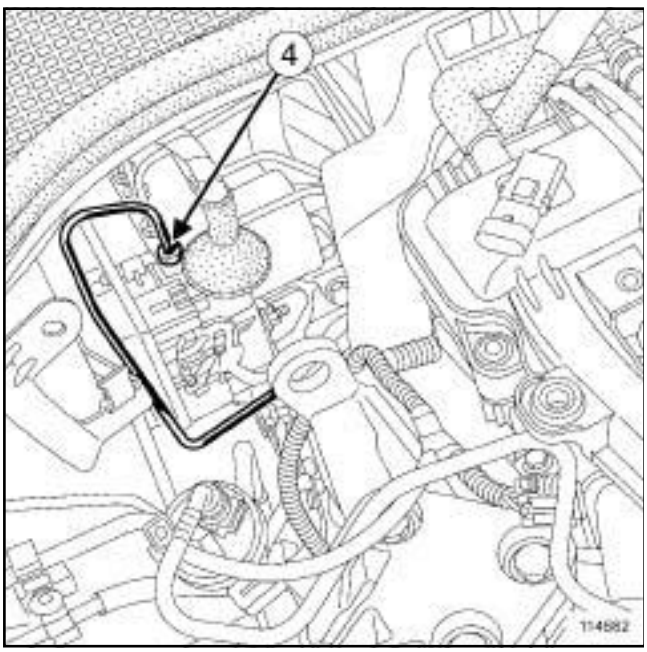
II - OPERATION FOR REMOVAL OF PART CONCERNED



114683

❏ Loosen the brake pipe union (**3**) .

❏ Detach the brake pipe from the clips.



114682

❏ Loosen the hydraulic unit brake pipe union (**4**) .

❏ Remove the brake pipes between the hydraulic unit and front left-hand brake hose.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Replace the seals on the expansion valve pipes.

❏ Oil the seals using recommended air conditioning oil to make fitting easier.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipe between the hydraulic unit and front left-hand brake hose.

❏ Clip the brake pipe.

❏ Tighten to torque:

- the **brake pipe union on the hydraulic unit (14 Nm)**,

- the **pipe union on the hose (14 Nm)**.

III - FINAL OPERATION

❏ Fit the pipe unions on the expansion valve with new seals.

❏ Refit the expansion valve pipe union mounting bolts.

❏ Tighten to torque the **pipe union mounting bolts (8 Nm)**.

❏ Refit the bulkhead soundproofing.

❏ Refit:

- the soundproofing mounting clips,

- the engine cover (if fitted to the vehicle).

❏ Remove the **pedal press**.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Fill the coolant circuit using tool **refrigerant charging station**.

❏ Refit the front right-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 1420-01	Screw jack for tools Tav. 1420, Tav.1050-04 , Tar. 1454, Tar. 1850.
Tav. 1050-04	Universal driveshaft push back tool (plate and claws without ram).
Tav. 476	Ball joint extractor.

Tightening torques ▽	
shock absorber lower bolts	**105 Nm**
lower ball joint bolt	**60 Nm**
track rod end nut	**35 Nm**
hub nut	**280 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

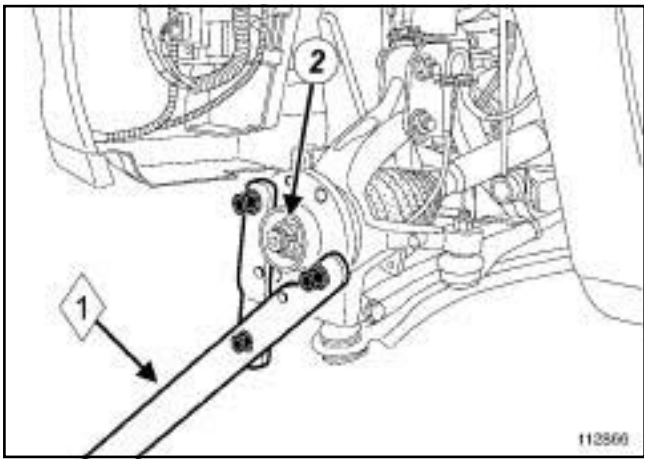
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❑ Remove:

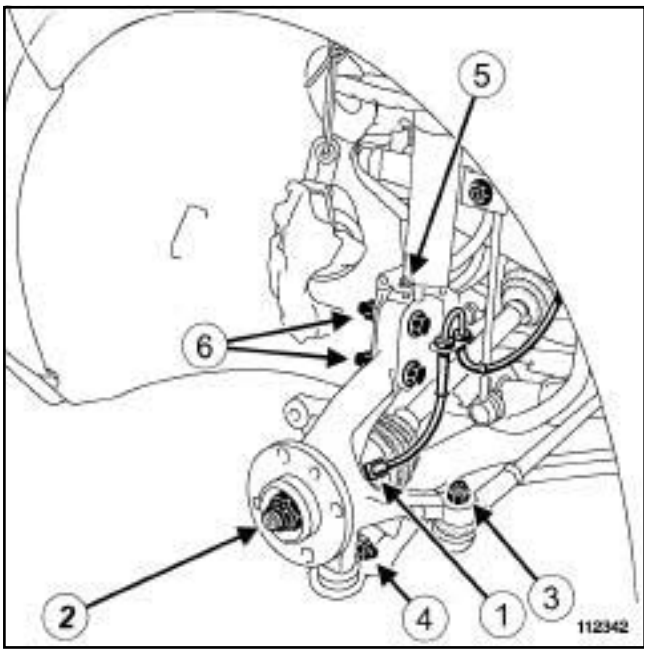
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

II - OPERATION FOR REMOVAL OF PART CONCERNED



112866



112342

❏ Unclip the ABS sensor (**1**) on the hub carrier.

WARNING

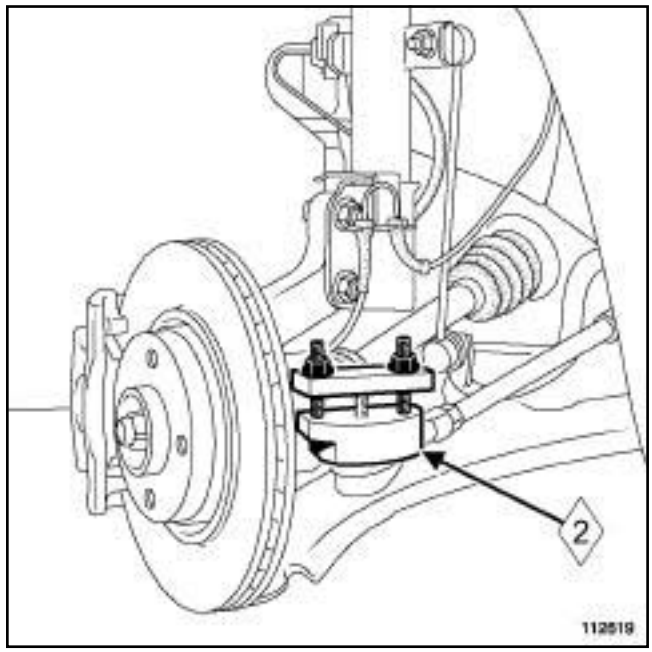
In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

❏ Remove:

- the hub nut (**2**) using the (**Hub locking tool**) **Rou. 604-01** ,
- the track rod end nut (**3**) ,
- the lower ball joint bolt (**4**) ,
- the bolt (**5**) from the ABS wiring bracket,
- the lower bolts (**6**) from the shock absorber.

❏ Separate the driveshaft from the hub carrier using the **(Tav. 1420-01)** and **(Tav. 1050-04)**, if necessary.



112619

❏ Extract the track rod end using the (**2**) **Tav. 476** .

❏ Remove the lower arm ball joints.

❏ Remove the front driveshaft hub carrier.

REFITTING

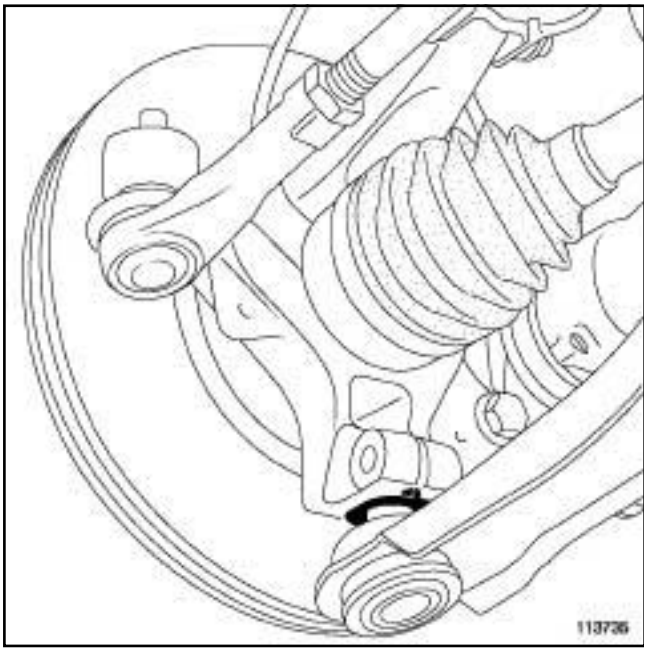
I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the front driveshaft hub carrier.

❏ Refit:

- the shock absorber lower bolts,
- the bolt to the ABS wiring bracket,
- the lower ball joint bolt,
- the track rod end nut,
- the hub nut.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



113735

❏ Check that the bush is correctly positioned on the lower arm ball joint.

❏ Clip the ABS sensor onto the hub carrier.

❏ Torque tighten:

- the **shock absorber lower bolts (105 Nm)**,
- the **lower ball joint bolt (60 Nm)**,
- the **track rod end nut (35 Nm)**,
- the **hub nut (280 Nm)**, using the **(Rou. 604-01)**.

II - FINAL OPERATION

❏ Refit:

- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Tightening torques ▽	
bolt mounting the shock absorber on the hub carrier	**105 Nm**

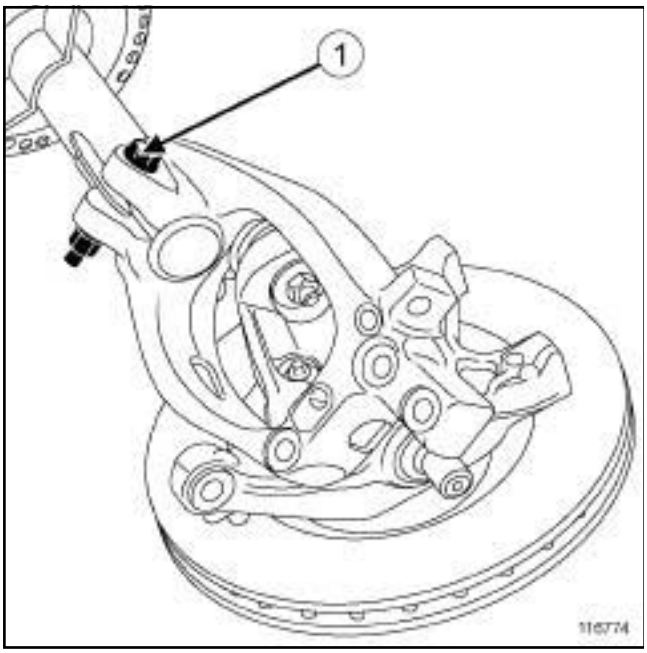
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the hub carrier/shock absorber assembly (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116774

❑ Remove:

- the bolt (**1**) mounting the shock absorber on the hub carrier,
- the hub carrier.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the hub carrier onto the shock absorber,
- the bolt mounting the shock absorber on the hub carrier.

❑ Torque tighten the **bolt mounting the shock absorber on the hub carrier (105 Nm)**.

II - FINAL OPERATION.

❑ Refit the hub carrier/shock absorber assembly (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

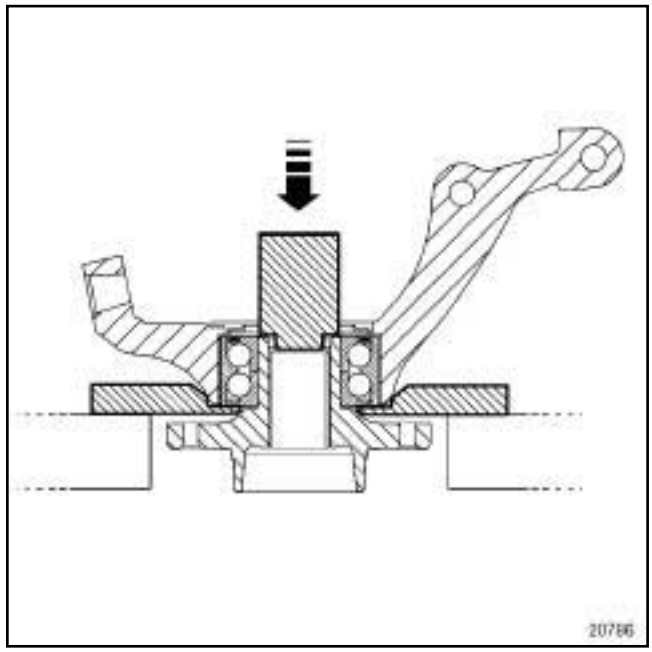
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the hub carrier (see **31A**, **Front axle components**, **Front driveshaft hub carrier: Removal - Refitting**, page **31A-31**) .

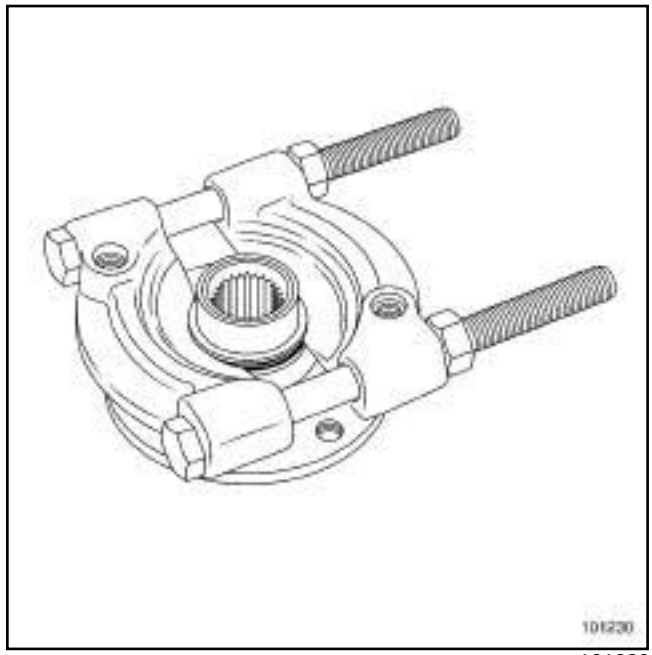
II - OPERATION FOR REMOVAL OF PART CONCERNED



20786

❑ Remove:

- the hub, with the press, applying pressure with a **35 mm** diameter tube,
- the circlip.

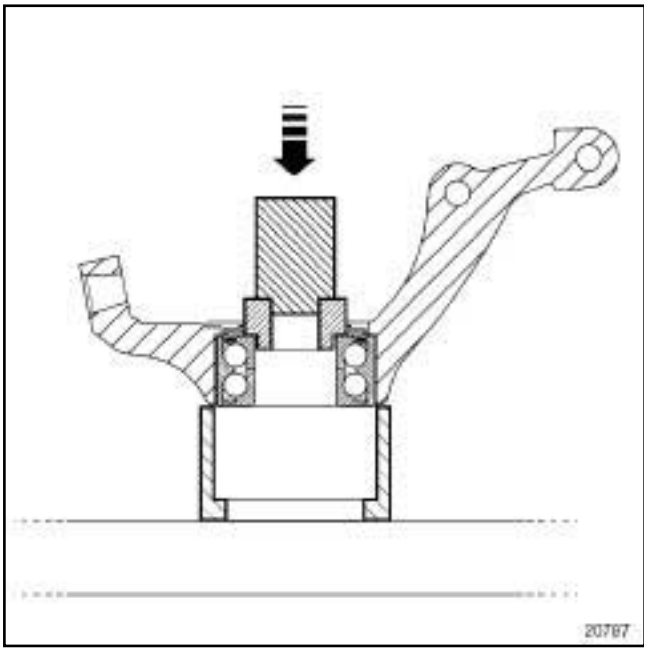


101230

❑ Remove the internal bush from the hub using a jawed extractor.

❑ Place the extractor jaws in the groove of the internal bush.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



20787

❏ Remove the bearing, applying pressure to the inner bush with a **46 mm** diameter tube

REFITTING

I - REFITTING PREPARATIONS OPERATION

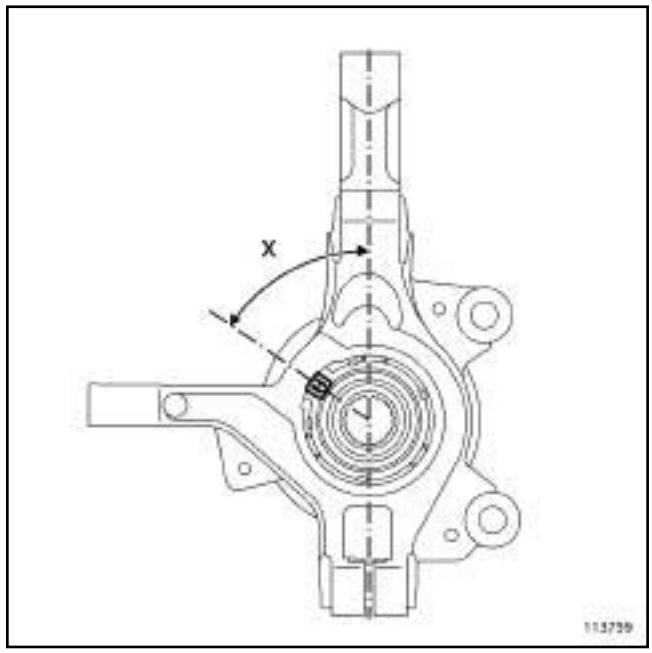
❏ Clean:

- the inner and outer surfaces of the new bearing in contact with the stub axle carrier and the hub,
- the stub axle carrier surfaces in contact with the new bearing,
- the hub surfaces in contact with the new bearing.

WARNING
To ensure that the wheel speed sensor works properly, do not mark the sensor target on the bearing.

WARNING
Do not press the bearing's inner bush so as to avoid damaging the bearing (very high shrink-fitting force).

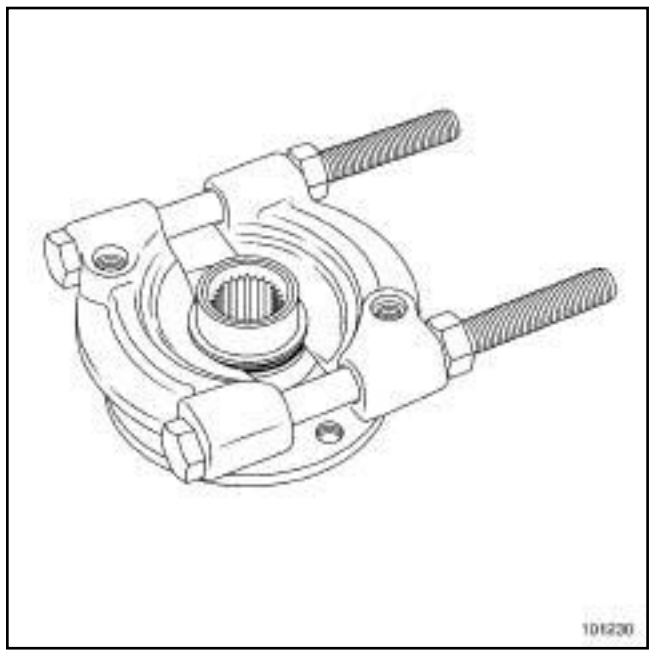
II - REFITTING OPERATION FOR PART CONCERNED



113759

❏ Refit the sensor holder.

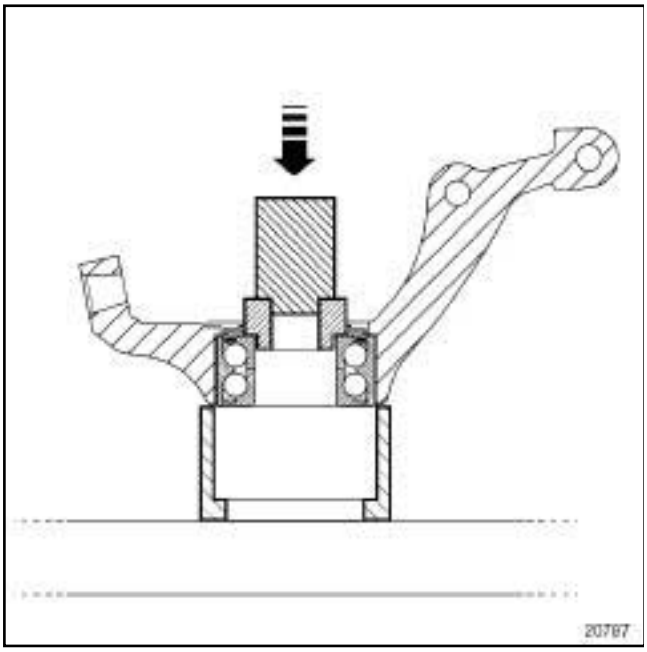
❏ Position the sensor holder at (**X**) = **35° ± 5°** from vertical. This position corresponds to the centre of the housing.



20788

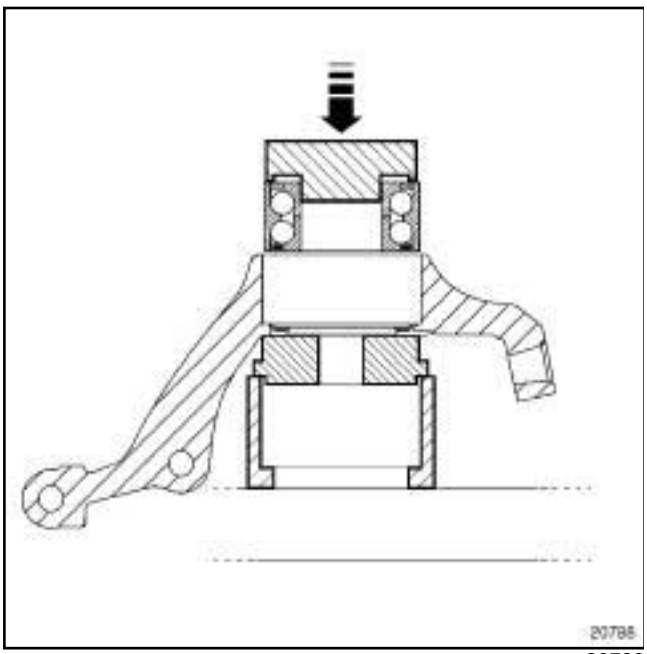
❏ Apply pressure to the outer bush with a tube with an external diameter of **70 mm**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



101933

❏ Refit the circlip.



20789

❏ Refit the hub using a tube with an outer diameter of **60 mm**.

III - FINAL OPERATION.

❏ Refit:

- the hub carrier (see **31A**, **Front axle components**, **Front driveshaft hub carrier: Removal - Refitting**, page **31A-31**) ,
- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the calliper supports (see **31A**, **Front axle components**, **Front brake calliper mounting: Removal - Refitting**, page **31A-12**) ,
- the front brake pads (see **31A**, **Front axle components**, **Front brake pads: Removal - Refitting**, page **31A-1**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Tightening torques ▽	
hub-bearing assembly bolts	**120 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

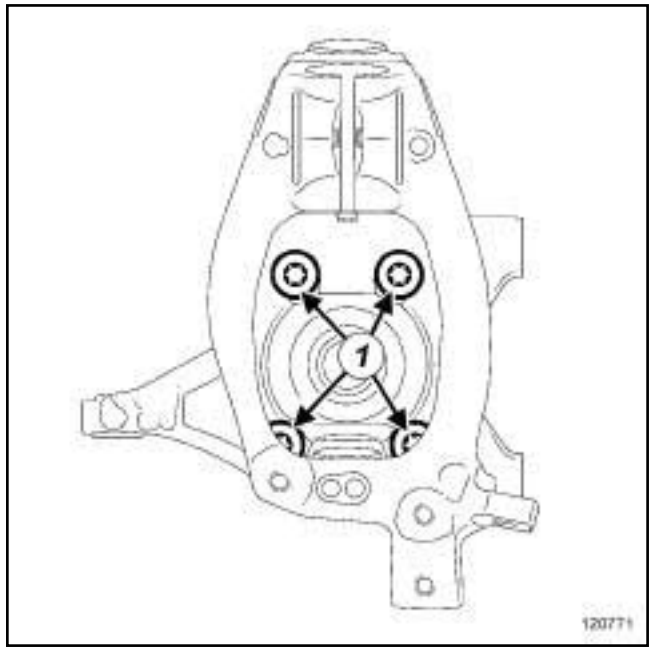
- the front wheel concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the hub carrier/shock absorber assembly concerned (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .
- the brake disc concerned (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) .

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

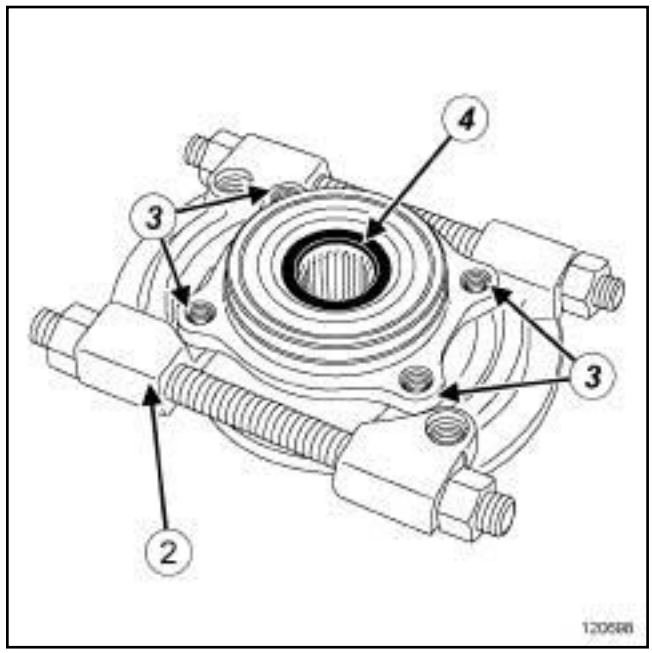
II - REMOVAL OPERATION FOR PART CONCERNED



120771

❑ Remove:

- the bolts (**1**) from the hub carrier « hub - bearing » assembly,
- the « hub - bearing » assembly.

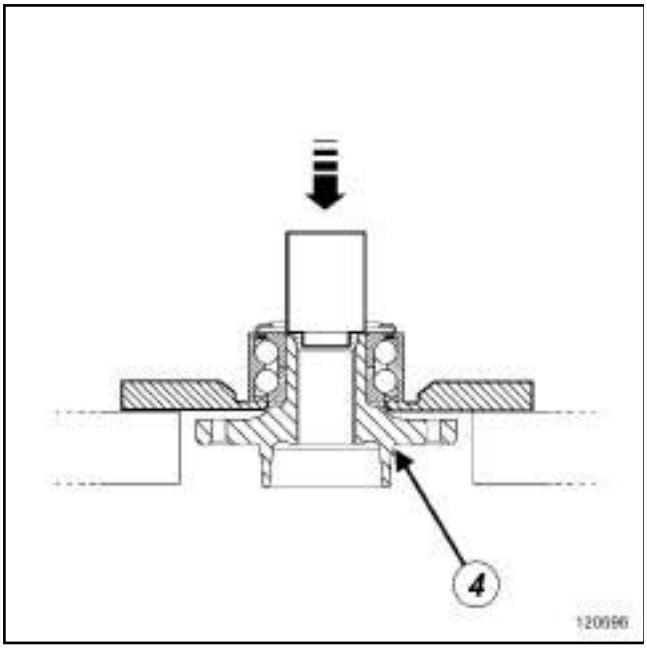


120698

❑ Fit an extractor with jaws (**2**) , to the « hub - bearing » assembly.

❑ Refit the ears (**3**) of the bearing section of the « hub - bearing » assembly to the jaws of the extractor.

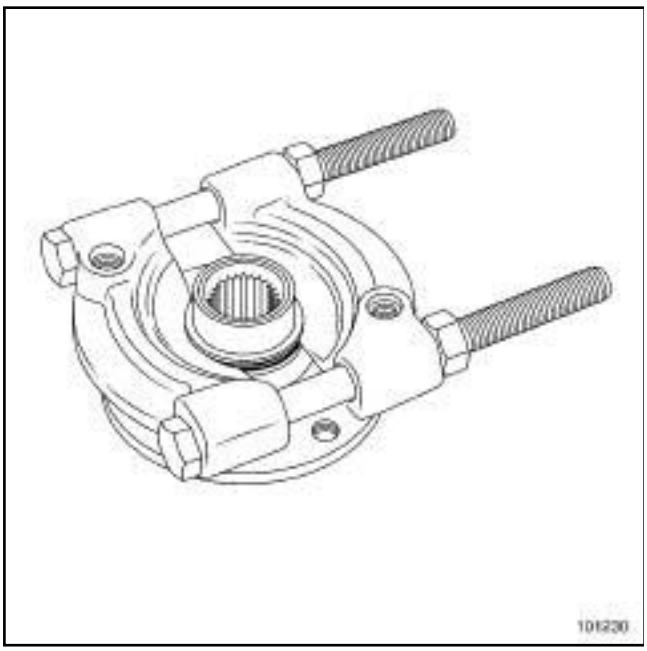
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



120696

❑ Refit the hub (**4**) , using the press, by applying pressure to the hub (**4**) using a tube with an outer diameter of between **40** and **44 mm**.

❑ Activate the hydraulic jack to separate the hub from the bearing.



101230

❑ Extract the internal bush from the hub using an extractor with jaws and a press.

❑ Place the extractor jaws in the neck of the inner bush.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ It is essential to check the condition of the hub surface before refitting the bearing.

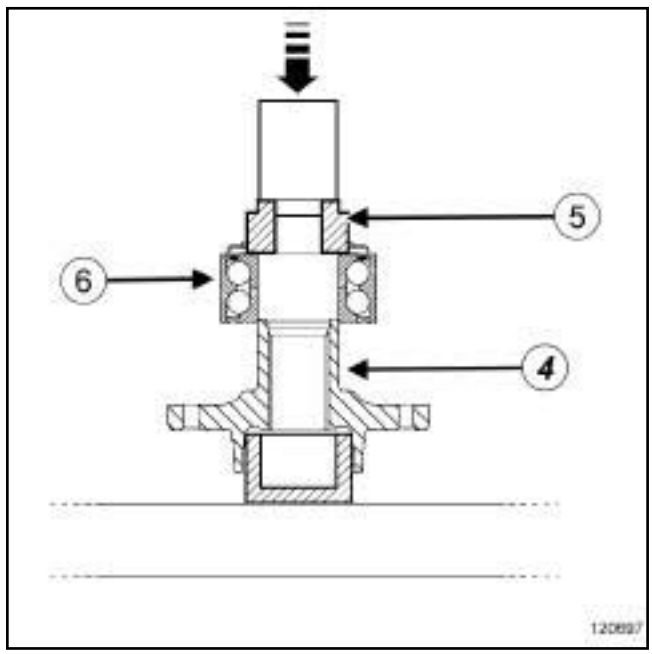
❑ Replace the hub if it is damaged.

❑ Clean the hub surfaces in contact with the new bearing.

WARNING

To ensure that the wheel speed sensor works properly, do not mark the sensor target on the bearing.

II - REFITTING OPERATION FOR PART CONCERNED



120697

❑ Position the hub (**4**) on the press body and offer up the new bearing (**6**) to the hub.

❑ Apply pressure to the inner bearing bush using a tube (**5**) with an outer diameter of between **57** and **63 mm**, ensuring that the assembly is correctly centred.

Note:

It is essential that the assembly is centred correctly to prevent the hub or bearing from being damaged.

❑ Activate the hydraulic jack to fit the bearing onto the hub.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❑ Refit:

- the « hub - bearing » assembly to the hub-carrier assembly,
- the « hub - bearing » assembly bolts.

❑ Torque tighten the **hub-bearing assembly bolts (120 Nm)**.

III - FINAL REFITTING OPERATION

❑ Refit:

- the brake disc (see **31A**, **Front axle components**, **Front brake disc: Removal - Refitting**, page **31A-15**) ,
- the hub carrier/shock absorber assembly concerned (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .
- the front wheel concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Equipment required
spring compressor
spanner for shock absorber rod nut

Tightening torques ▽	
shock absorber rod nut	**62 Nm**
shock absorber turret bolts	**21 Nm**
shock absorber lower mounting bolts	**105 Nm**
anti-roll bar tie rod ball joint nut	**44 Nm**
shock absorber cup cover nut	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

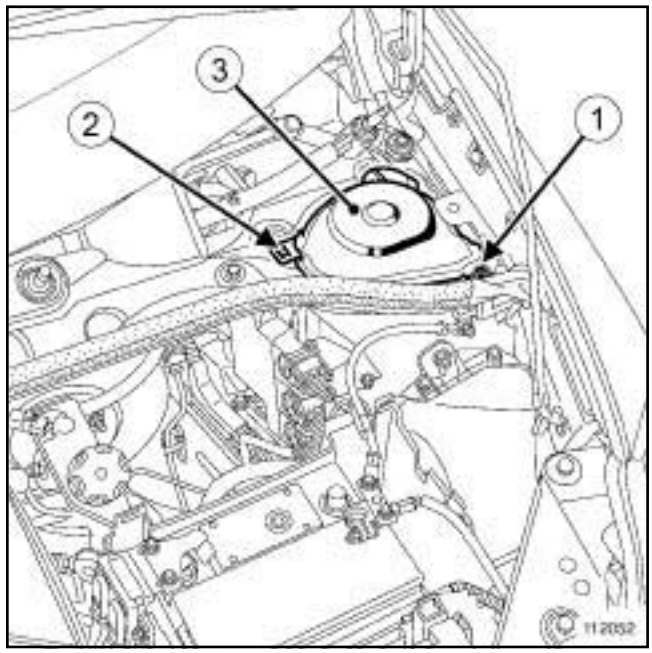
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



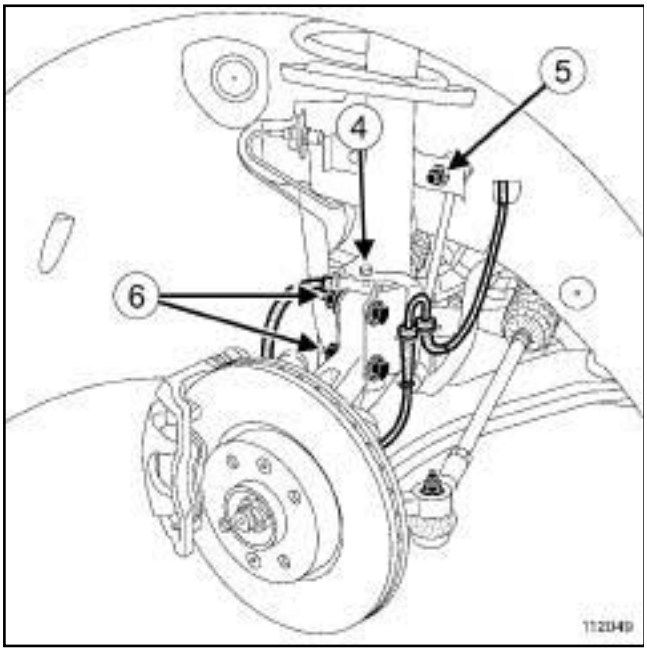
112052

❑ Remove the shock absorber cup cover nut (**1**) .

❑ Unclip the shock absorber cup cover at (**2**) .

❑ Remove the shock absorber cup cover (**3**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



112049

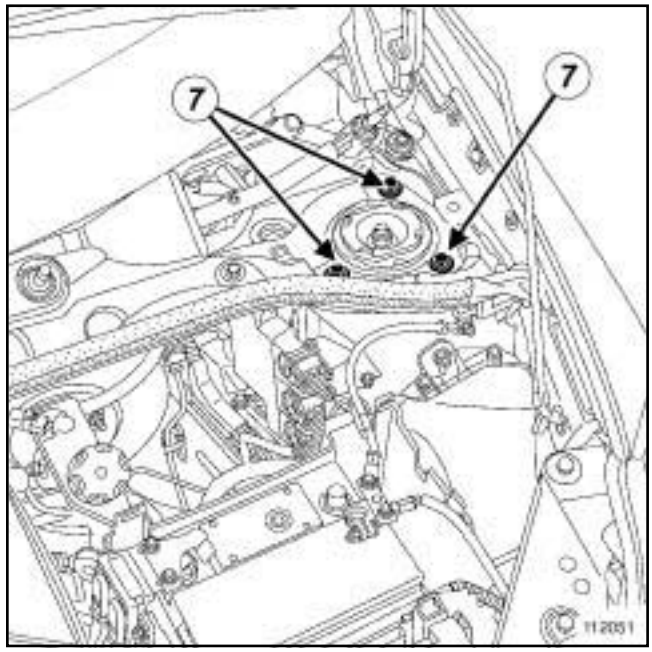
❏ Unclip:

- the brake hose,
- the wheel speed sensor.

❏ Remove:

- the hose retaining bracket bolt (**4**) ,
- the upper nut (**5**) from the anti-roll bar tie rod ball joint,
- the shock absorber lower mounting studs (**6**) .

❏ Suspend the hub carrier.



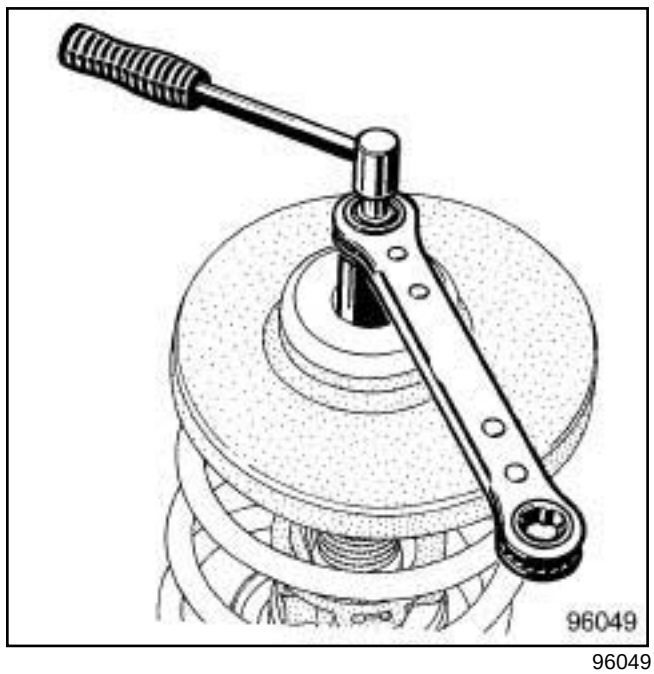
112051

❏ Remove:

- the bolts (**7**) from the shock absorber turret,
- the spring-shock absorber unit.

❏ Place the appropriate cups on the **spring compressor** and position the assembly on the spring.

❏ Detach the spring from the cups by compressing the spring.



96049

❏ Remove the shock absorber rod nut using the **spanner for shock absorber rod nut**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

❑ Separate the components which make up the spring-shock absorber unit.

REFITTING

I - REFITTING PREPARATIONS OPERATION

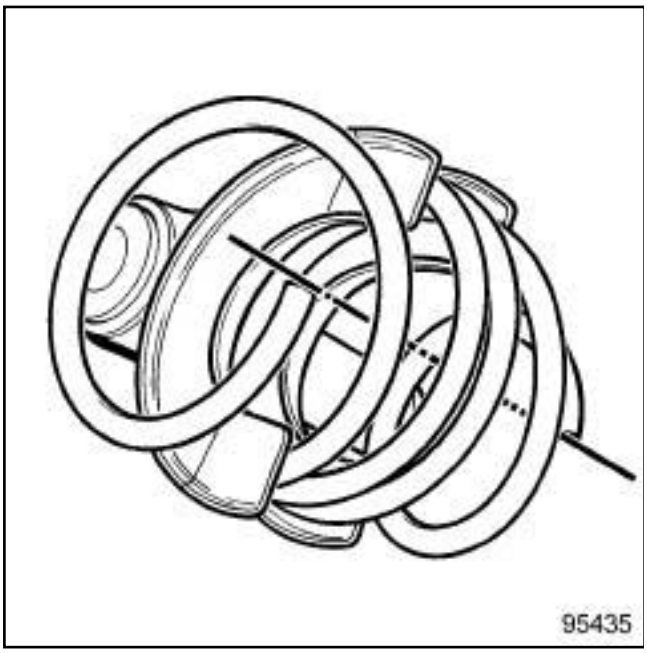
❑

Note:

When removing/refitting springs, you must not strike the springs as this could damage their surface treatments.

❑ Always replace the shock absorber rod nut and the upper lock nut of the anti-roll bar tie-rod ball joint.

II - REFITTING OPERATION FOR PART CONCERNED



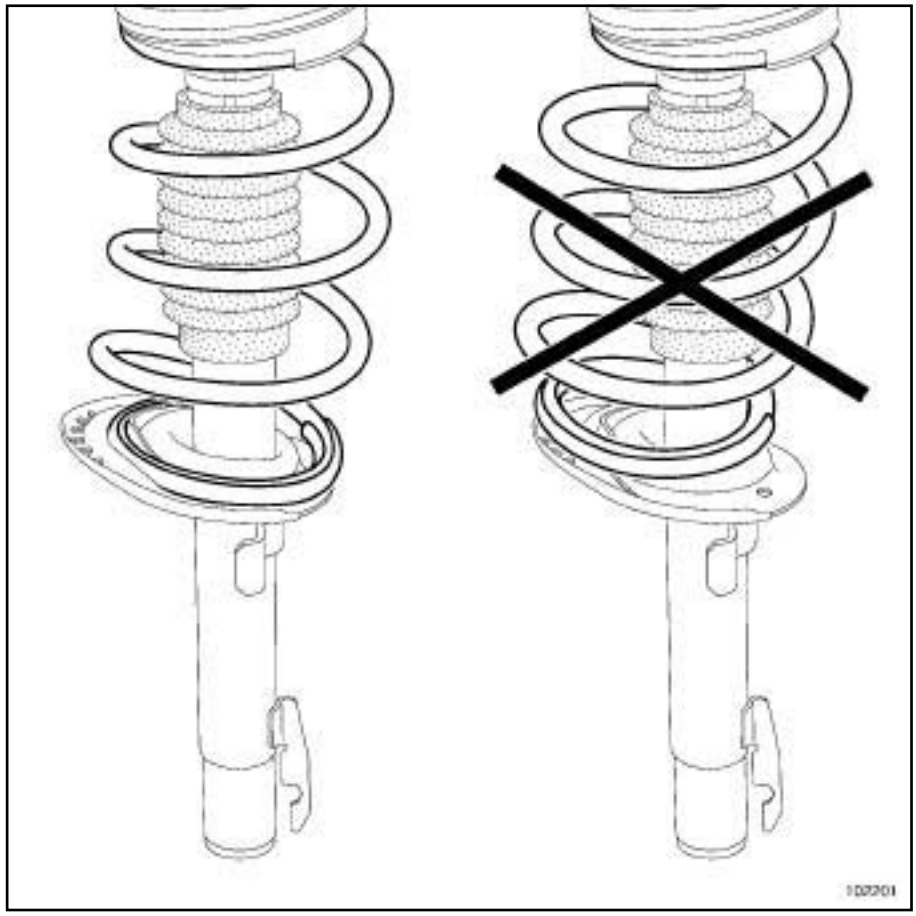
95435

❑ Fit the **spring compressor** in the vice.

Note:

When replacing the spring for easier fitting, ensure that the positioning and orientation of the spring and the tool cups are correct.

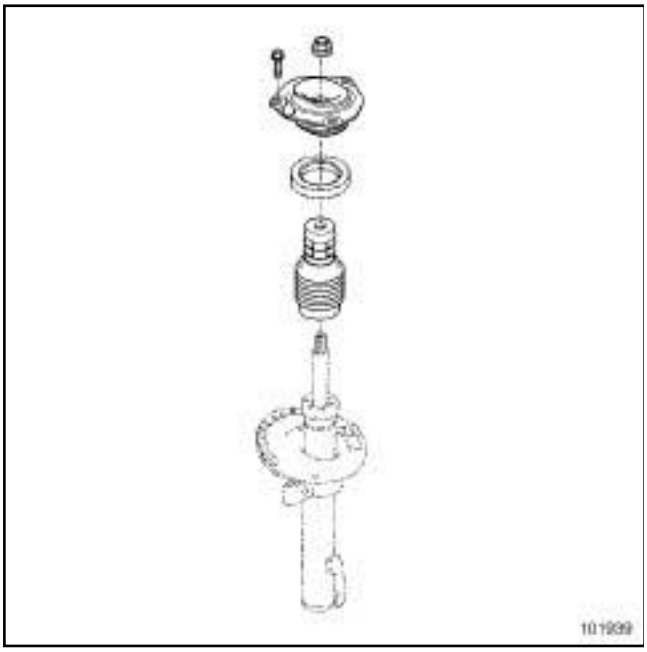
EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



102201

❑ Insert the spring in the neck of the cup.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

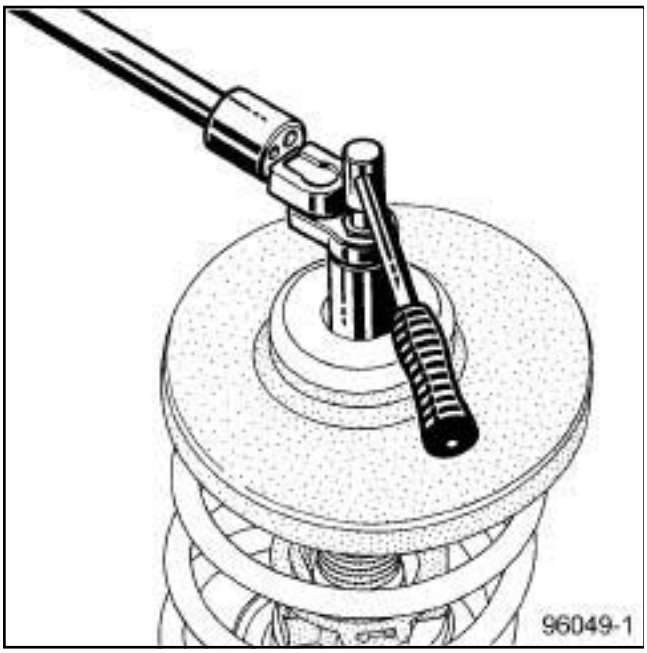


101939

❏ Respect the order and direction of fitting for the constituent parts.

Note:

Ensure the revolving stop is correctly orientated to make refitting easier.



96049-1

❏ Torque tighten the **shock absorber rod nut (62 Nm)**.

❏ Decompress the spring.

❏ Remove the spring compressor.

❏ Refit the spring-shock absorber unit.

❏ Refit:

- the spring-shock absorber unit,
- the shock absorber turret bolts.

❏ Torque tighten the **shock absorber turret bolts (21 Nm)**.

❏ Refit:

- the lower mounting bolts of the shock absorber,
- the new upper nut of the anti-roll bar tie-rod ball joint,
- the hose retaining bracket bolt,

❏ Torque tighten:

- the **shock absorber lower mounting bolts (105 Nm)**,
- the **anti-roll bar tie rod ball joint nut (44 Nm)**.

WARNING
Do not twist the brake hose.

❏ Fasten the brake hose.

❏ Fit the wheel speed sensor.

❏ Refit the shock absorber cup cover.

❏ Clip on the shock absorber cup cover.

❏ Refit the nut of the shock absorber cup cover.

❏ Torque tighten the **shock absorber cup cover nut (8 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Tightening torques ▽	
bolt mounting the shock absorber on the hub carrier	**105 Nm**

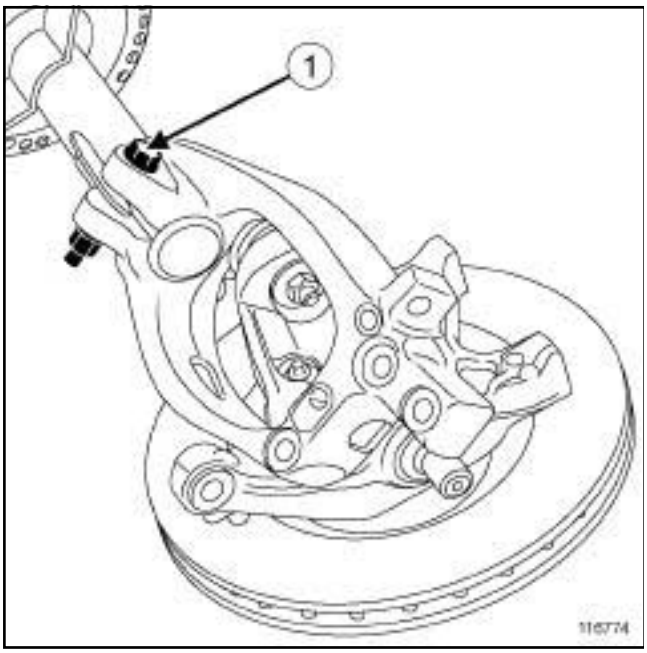
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the hub carrier/shock absorber assembly (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116774

❑ Remove:

- the bolt (**1**) mounting the shock absorber on the hub carrier,
- the shock absorber.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the shock absorber onto the hub carrier,
- the bolt mounting the shock absorber on the hub carrier.

❑ Torque tighten the **bolt mounting the shock absorber on the hub carrier (105 Nm)**.

II - FINAL OPERATION.

❑ Refit the hub carrier/shock absorber assembly (see **Hub carrier - shock absorber assembly: Removal - Refitting**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Equipment required
component jack
safety strap(s)

Tightening torques ▽	
front mounting stud on the lower arm of the sub-frame	**70 Nm**
rear mounting bolt on the lower arm of the sub-frame	**105 Nm**
lower ball joint stud	**62 Nm**
radiator cross member bolts	**105 Nm**
side reinforcement lower bolts	**21 Nm**

WARNING
Do not use the lower arm for support with a lifting system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Unlock the steering wheel.

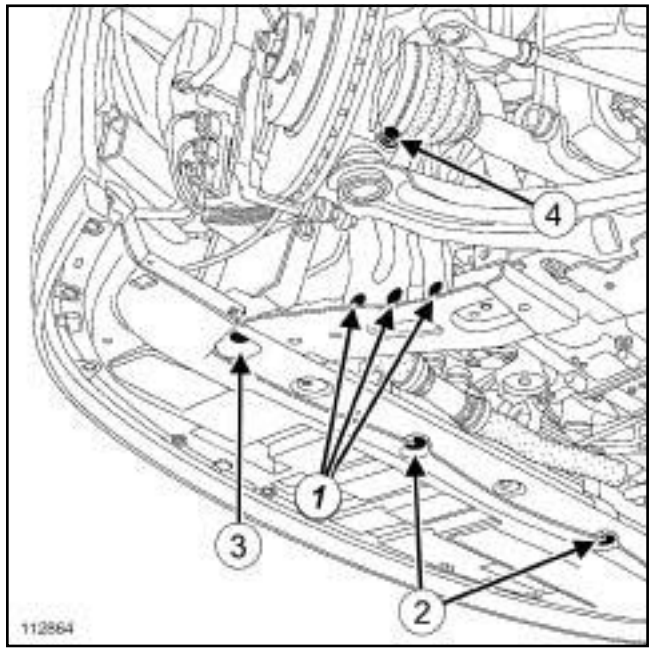
❏ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Strap the cooling radiator by the cooling radiator top hose and the bonnet opening striker plate.

❏ Remove:

- the wheel arch protector (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



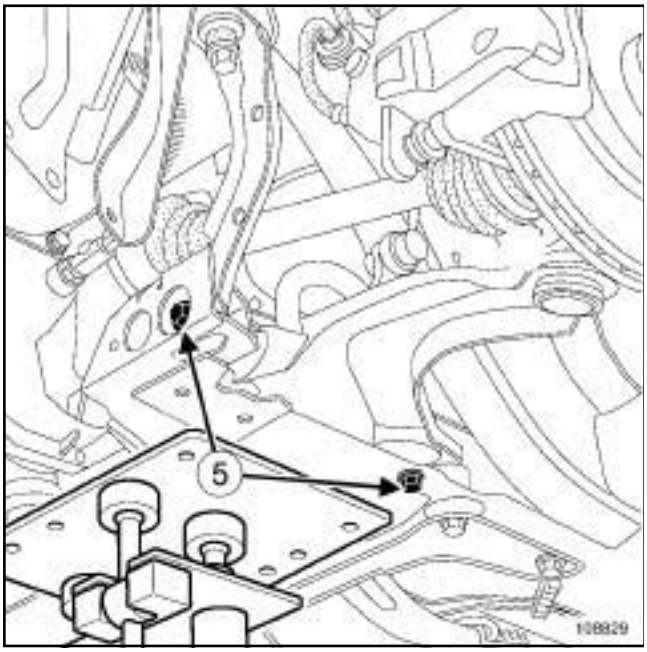
112864

❏ Remove:

- the side stiffener lower bolts (**1**) ,
- the bumper lower mounting bolts (**2**) ,
- the radiator cross member mounting bolt (**3**) ,
- the radiator cross member,
- the lower ball joint stud (**4**) .

❏ Remove the lower ball joint.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



108829

❑ Position the **component jack** under the sub-frame.

❑ Remove:

- the lower arm front and rear mounting bolts (**5**) ,
- the lower arm.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Always replace the sub-frame and arm mounting bolts after each removal.

❑ Leave the **component jack** under the sub-frame.

WARNING

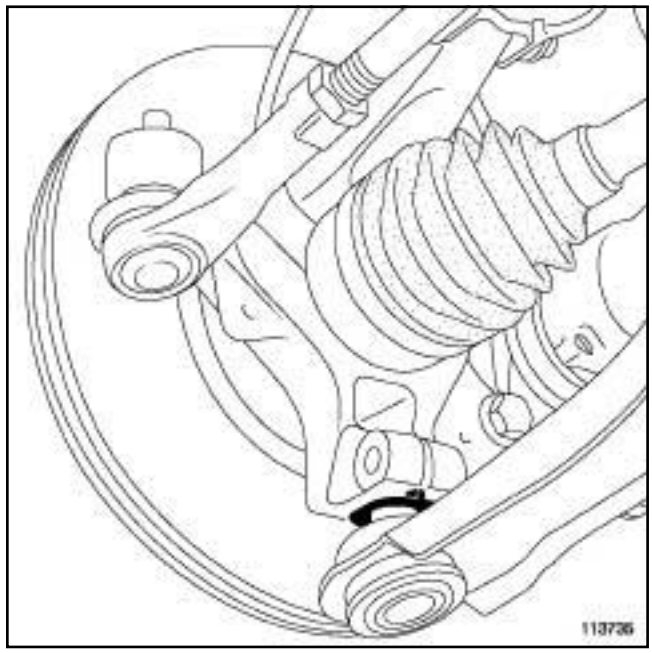
It is essential to place a **10 mm** thick shim between the radiator cross member and the sub-frame. Centre the radiator cross member pin in the sub-frame hole at the level of the lower arm front mounting, to torque tighten the radiator cross member mountings.

❑ Position the lower ball joint bolt head so that it faces the front of the vehicle.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the lower arm,
- the lower arm front and rear mounting bolts,
- the lower ball joint into its housing.



113735

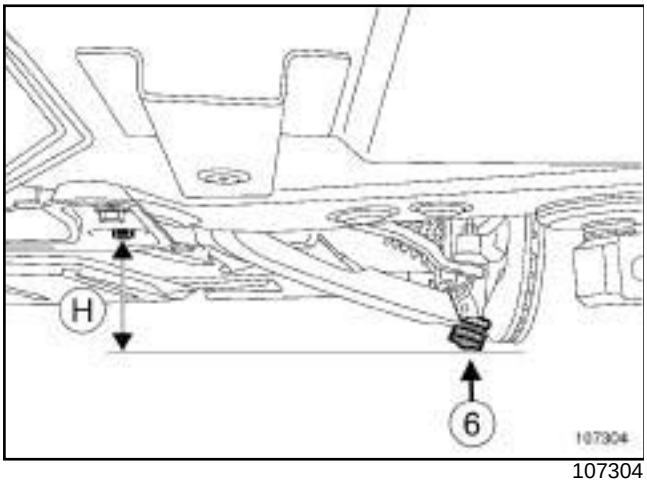
❑

WARNING

Check that the bush is correctly positioned on the lower arm ball joint.

❑ Remove the **component jack**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



107304

❑

WARNING
When refitting, position the lower arm below the sub-frame rear mounting bolt head (**H**) = **6 mm** to tighten the rubber bushes freely.

❑ Position the **component jack** in contact with the sub-frame rear mounting bolt head.

❑ Lower the **component jack** by (**H**) = **6 mm**.

❑ Rest the lower arm ball joint (**6**) on the **component jack** without adjusting the settings.

❑ In this position, tighten to torque:

- the **front mounting stud on the lower arm of the sub-frame (70 Nm)**,
- the **rear mounting bolt on the lower arm of the sub-frame (105 Nm)**

❑ Remove the **component jack**.

❑ Torque tighten the **lower ball joint stud (62 Nm)**.

❑ Refit the radiator cross member with **10 mm** shims.

❑ Torque tighten the **radiator cross member bolts (105 Nm)**.

❑ Refit the side reinforcement lower bolts.

❑ Torque tighten the **side reinforcement lower bolts (21 Nm)**.

III - FINAL OPERATION.

❑ Remove the **safety strap(s)** from the cooling radiator between the cooling radiator top hose and the bonnet opening striker panel.

❑ Refit:

- the engine undertray,
- the wheel arch protector (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Check the values of the axle assemblies (see **30A**, **General information**, **Front axle assembly: Adjustment values**, page **30A-18**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Equipment required
component jack

Tightening torques ▽	
front bolt mounting the lower arm on the sub-frame	**70 Nm**
rear bolt mounting the lower arm on the sub-frame	**105 Nm**
bolts between the lower arm and the hub carrier	**110 Nm**
hub carrier ball joint bolt	**27 Nm**
anti-roll tie-rod nuts	**80 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

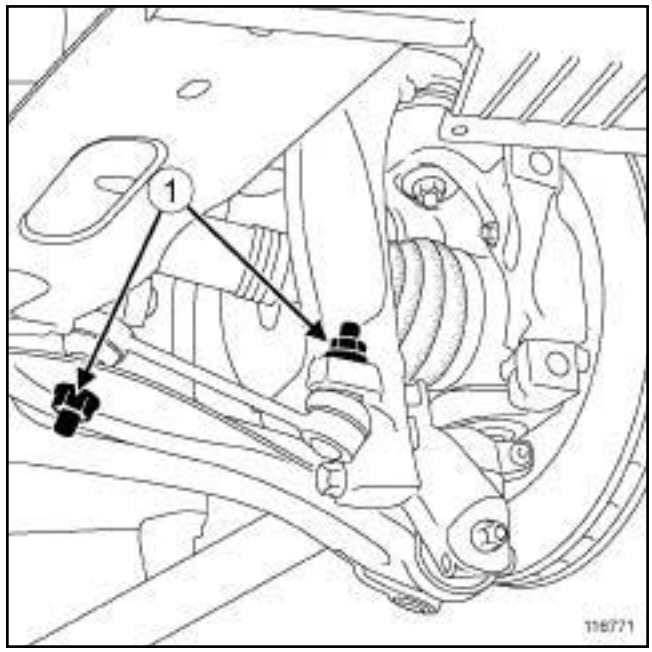
❏ Unlock the steering wheel.

❏ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Attach the cooling radiator by the radiator top hose and the bonnet opening striker plate.

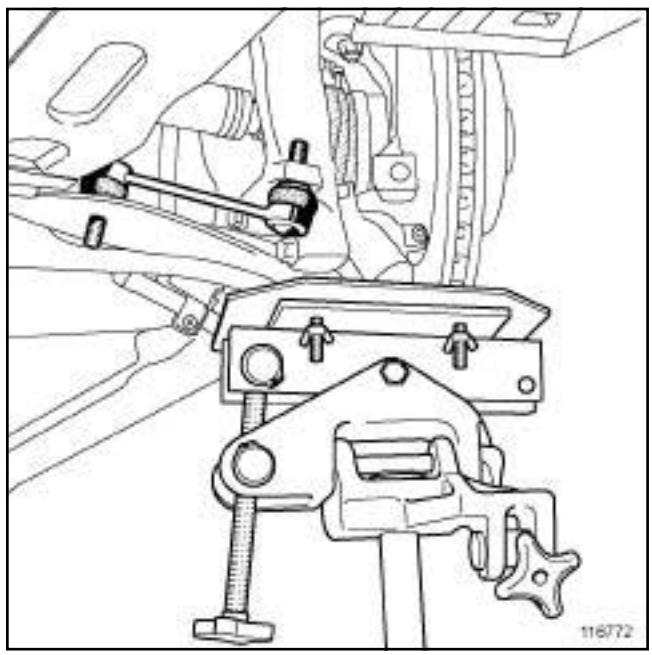
❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

II - OPERATION FOR REMOVAL OF PART CONCERNED



116771

❏ Remove the nuts (**1**) from the anti-roll tie rod.



116772

❏

Note:

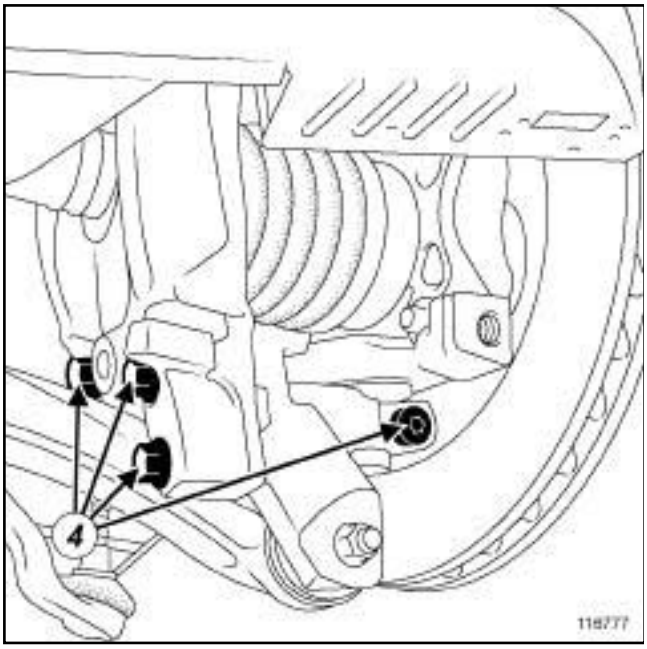
Do not fit the **component jack** against the brake disc.

Engage the driveshaft using a **component jack**.

❏ Remove the anti-roll tie-rod.

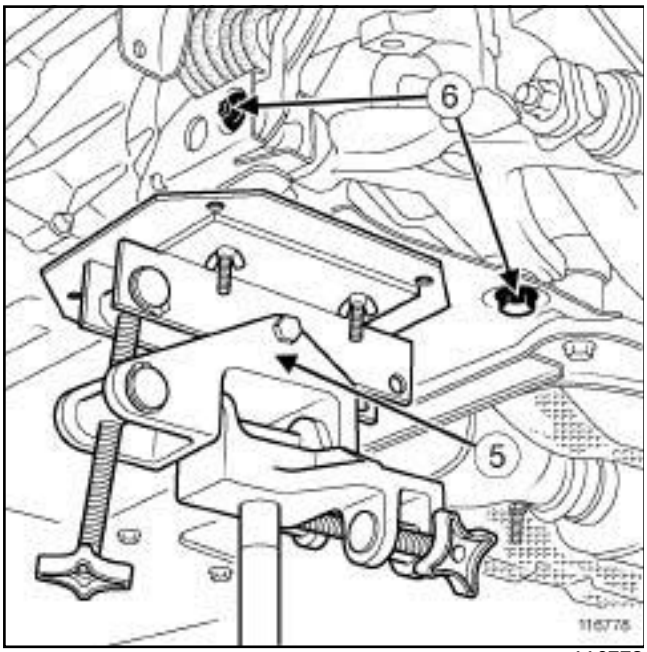
❏ Remove the **component jack**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116777

❑ Remove the bolts (**4**) from the hub carrier.



116778

❑ Fit a **component jack** (**5**) under the sub-frame to secure the sub-frame.

❑ Remove:

- the bolts (**6**) from the lower arm,
- the lower arm.

REFITTING

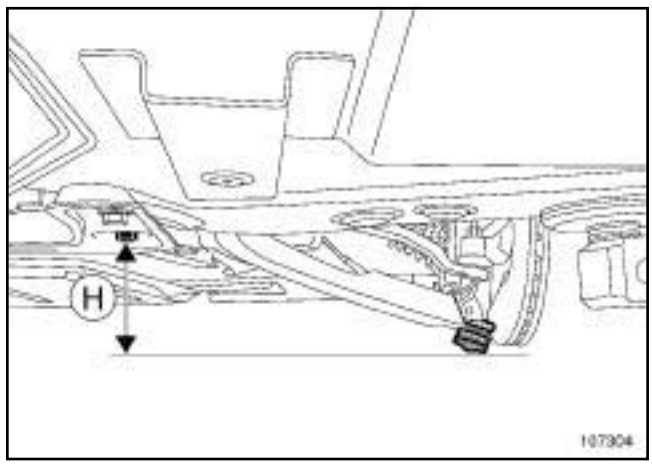
I - REFITTING PREPARATIONS OPERATION

❑ Always replace the driveshaft lower arm bolts after each removal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front driveshaft lower arm,
- the lower arm rear bolt on the sub-frame,
- the front bolt between the front driveshaft interior arm and the hub carrier.



107304

❑

WARNING

To tighten the rubber bushes freely, position the lower arm below the head of the rear bolt on the sub-frame (H) = **6 mm**.

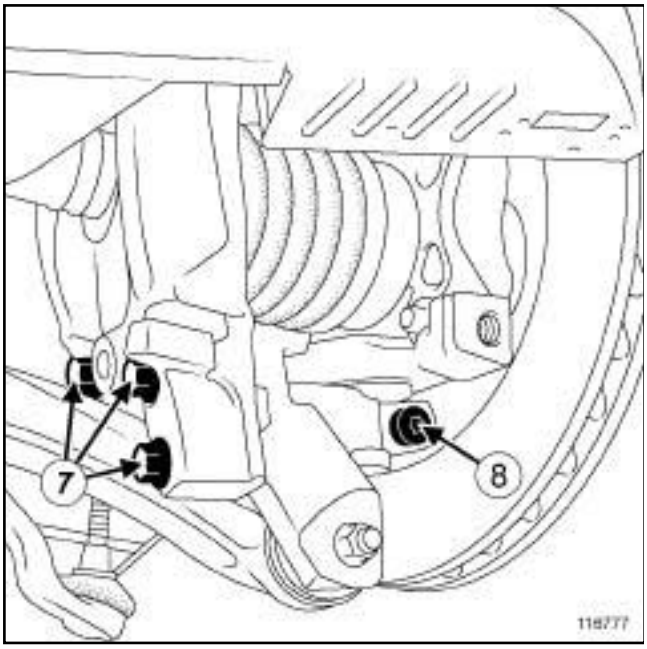
❑ Lower the **component jack** by **(H) = 6 mm**.

❑ In this position, tighten to torque:

- the **front bolt mounting the lower arm on the sub-frame (70 Nm)**,
- the **rear bolt mounting the lower arm on the sub-frame (105 Nm)**.

❑ Remove the **component jack**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116777

❏ Torque tighten:

- the **bolts between the lower arm and the hub carrier (110 Nm)** (**7**) ,
- the **hub carrier ball joint bolt (27 Nm)** (**8**) .

❏ Engage the driveshaft using a **component jack**.

❏ Refit the linkage between the lower arm and the hub carrier.

❏ Remove the **component jack**.

❏ Torque tighten the **anti-roll tie-rod nuts (80 Nm)**.

III - FINAL OPERATION.

❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

❏ Detach the radiator by the radiator top hose and the bonnet opening striker plate.

❏ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Check the values of the axle assemblies (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .

CHECK

CHECKING THE FRONT DRIVESHAFT LOWER ARM BALL JOINT

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

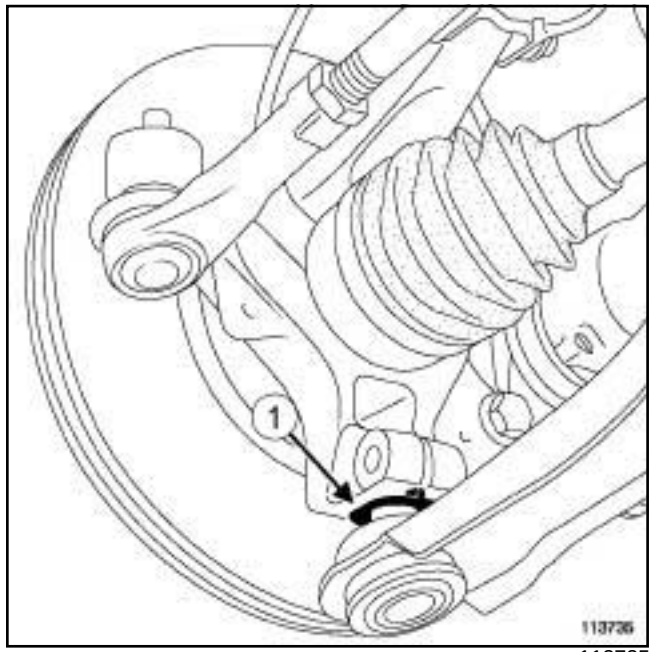
1 - Checking the condition of the front driveshaft lower arm ball joint gaiter

❑ Check:

- the gaiter crimping on the front driveshaft lower arm ball joint,
- that the front driveshaft lower arm ball joint gaiter is not torn.

If the front driveshaft lower arm ball joint gaiter is in poor condition and not crimped, replace the front driveshaft lower arm ball joint (see **Front driveshaft lower arm ball joint: Removal - Refitting**) .

2 - Checking the fitting of the front driveshaft lower arm ball joint



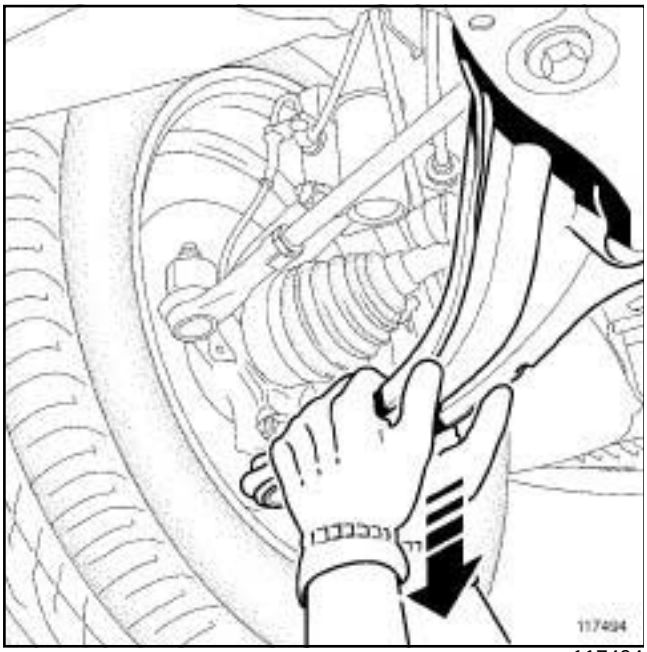
113735

❑ Check:

- that the "lower arm ball joint-lower arm bolt-hub carrier" assembly is correctly positioned,
- the correct positioning of the ring (**1**) on the front driveshaft lower arm ball joint,
- the tightening torque (see **30A**, **General information**, **Front axle system: Tightening torque**, page **30A-14**) .

If the front driveshaft lower arm ball joint is not fitted correctly, replace the front driveshaft lower arm ball joint (see **Front driveshaft lower arm ball joint: Removal - Refitting**) .

3 - Checking the front driveshaft lower arm ball joint clearance



117494

❏ Check that there is no play in the front driveshaft lower arm ball joint:

- from a position underneath the vehicle,
- using both hands, hold the front driveshaft lower arm as close as possible to the wheel,
- push downwards several times.

If there is play in the front driveshaft lower arm ball joint, replace the front driveshaft lower arm ball joint (see **Front driveshaft lower arm ball joint: Removal - Refitting**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Special tooling required	
Tav. 476	Ball joint extractor.

Equipment required
flywheel immobiliser
component jack
safety strap(s)

Tightening torques ▽	
sub-frame linkage bolt	**105 Nm**
rear cross member bolt	**105 Nm**
bolts to the subframe tie-rod	**105 Nm**
engine tie-bar bolt on the gearbox	**105 Nm**
lower ball joint studs	**60 Nm**
front bolts mounting the lower arm on the sub-frame	**70 Nm**
rear bolt mounting the lower arm on the sub-frame	**105 Nm**
radiator cross member bolts	**105 Nm**
anti-roll bar linkage ball joint nuts	**44 Nm**
track rod end nuts	**35 Nm**
side stiffener bolts	**21 Nm**
universal bolt joints	**24 Nm**

WARNING
Do not use the lower arm for support with a lifting system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

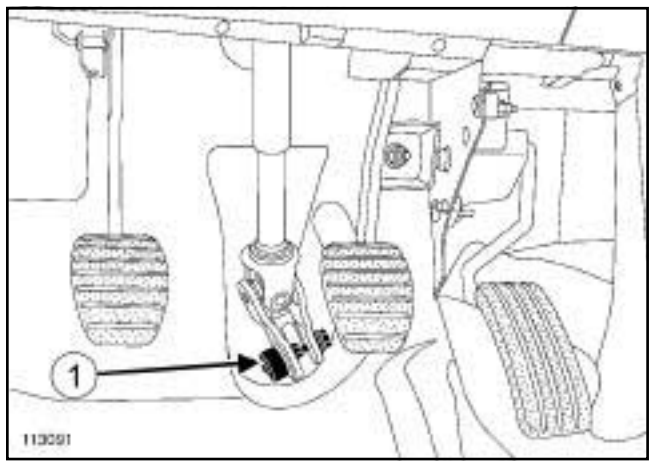
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Strap the cooling radiator by the cooling radiator top hose and the bonnet opening striker plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Lift the floor carpet to access the universal joint bolt.



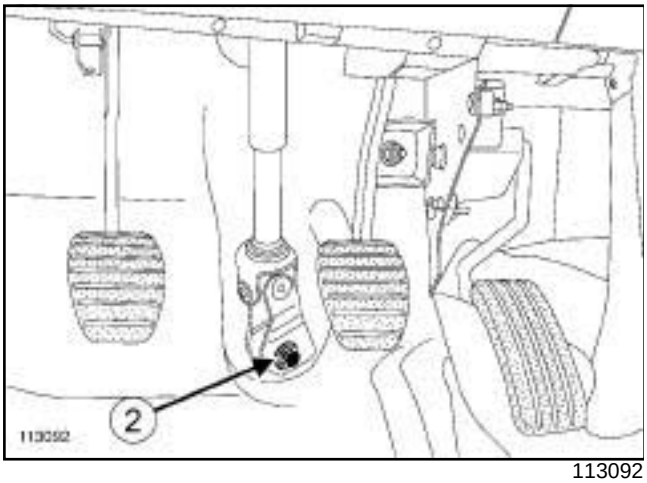
113091

❑ Remove the universal joint cover (**1**) (do not keep).

❑ Set the wheels straight ahead.

❑ Position the **flywheel immobiliser**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

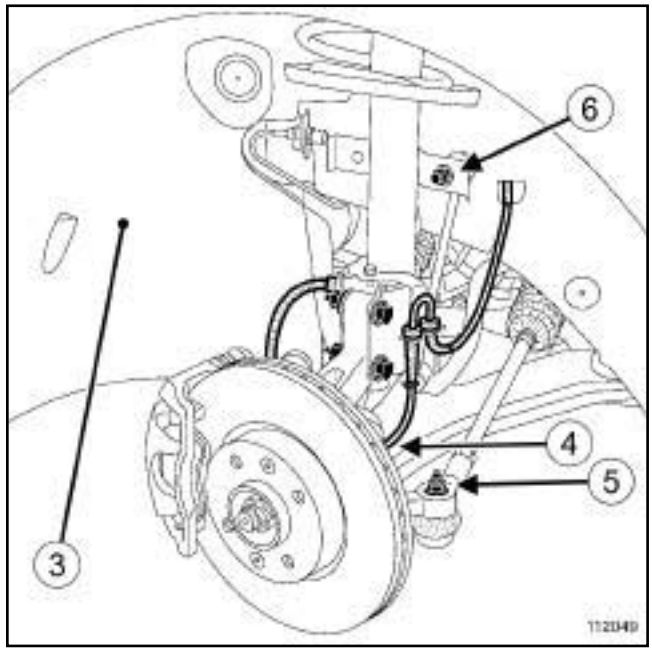


113092

❑ Remove the universal joint bolt (**2**) (do not keep),

WARNING
Tilt the universal joint to detach it from the pinion; do not pull out the intermediate shaft.

❑ Remove the universal joint from the steering rack.



112049

❑ Remove:

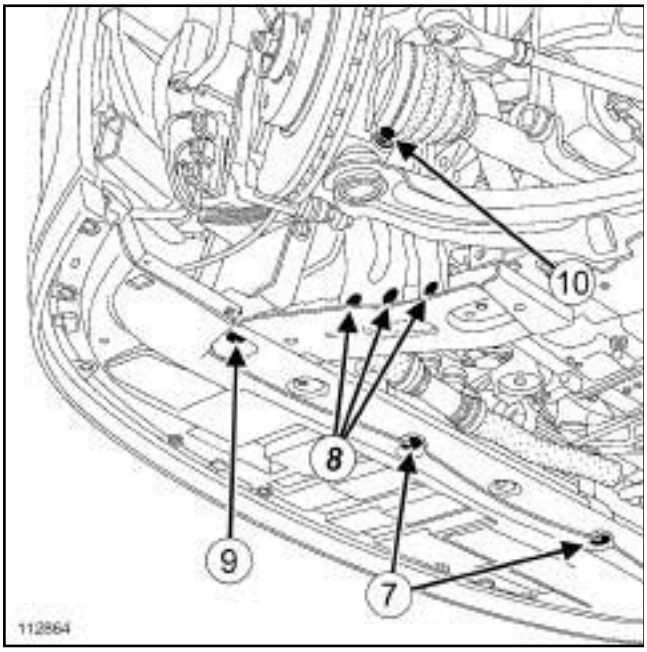
- the wheel arch (see **Front wheel arch liner: Removal - Refitting**) protectors (**3**) (55A, Exterior protection),
- the engine undertray.

❑ Unclip the wheel speed sensors (**4**) in the hub carrier.

❑ Remove:

- the track rod end nuts (**5**) ,
- the anti-roll bar tie-rod upper ball joint nuts (**6**) .

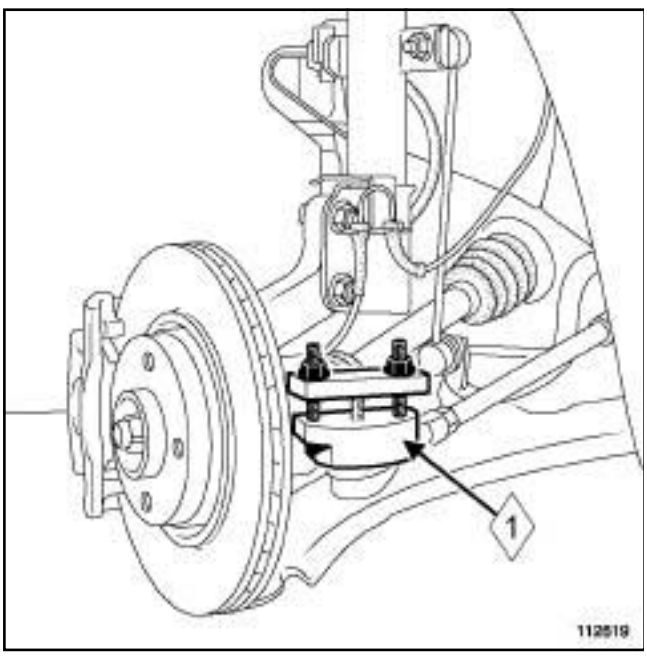
EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



112864

❏ Remove:

- the lower bumper bolts (**7**) ,
- the side stiffener lower bolts (**8**) ,
- the radiator cross member bolts (**9**) ,
- the radiator cross member,
- the lower ball joint stud (**10**) .

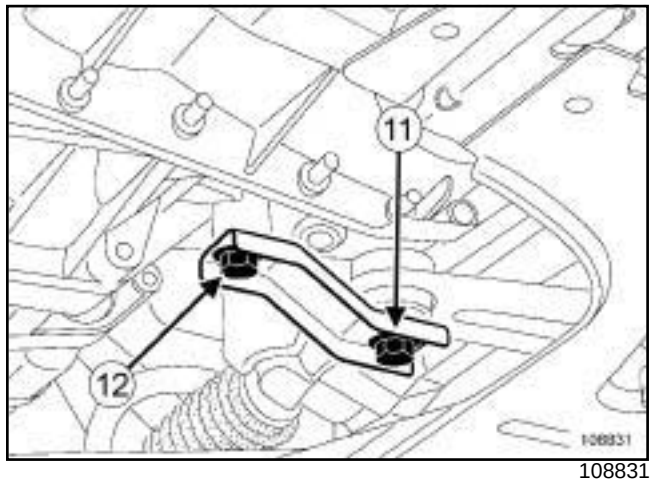


112619

❏ Remove:

- the track rod end using the **(Tav. 476)** (**1**) ,
- the anti-roll bar tie-rod upper ball joints.

JH3 or JR5



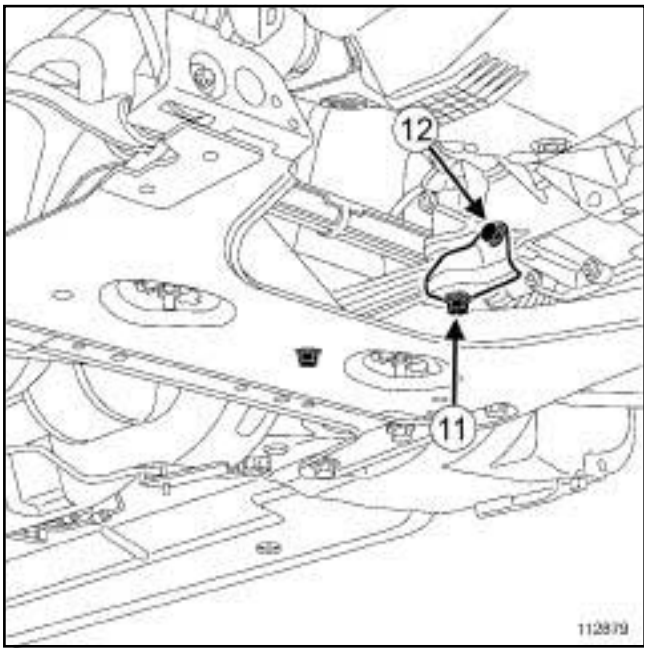
108831

❏ Remove the bolt (**11**) from the engine tie-bar on the gearbox.

❏ Loosen the bolt (**12**) on the engine tie-bar retaining bracket in order to be able to turn the retaining bracket.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

DP0

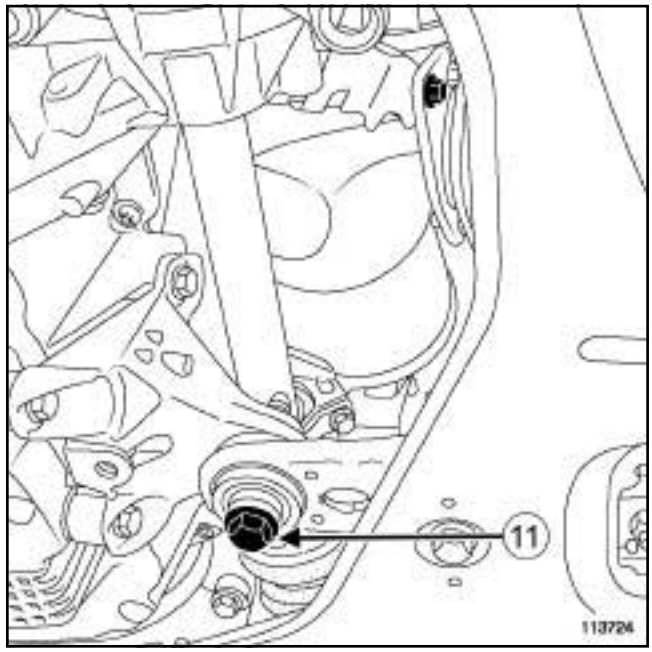


112879

❏ Remove the mounting bolt ***(11)*** from the engine tie-bar on the gearbox.

❏ Loosen the bolt ***(12)*** on the engine tie-bar retaining bracket in order to be able to turn the tie-bar.

TL4



113724

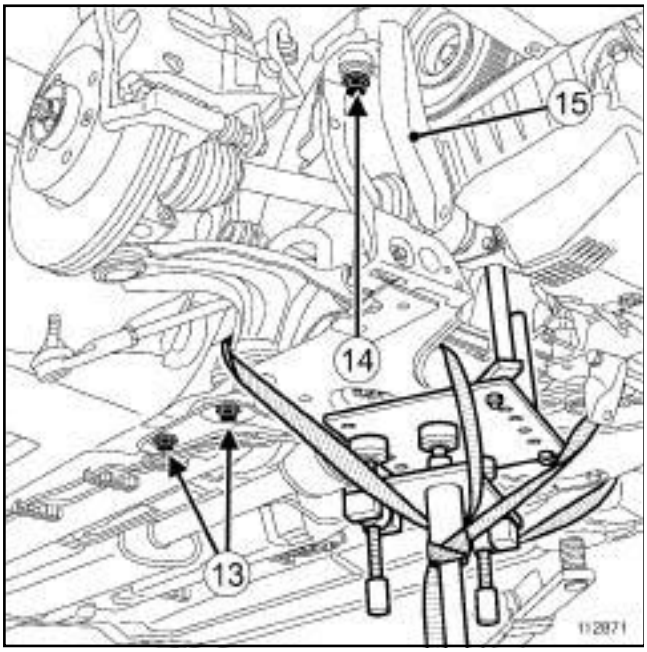
❏ Remove the engine tie-bar bolt (**11**) .

❏ Fit the **component jack** underneath the subframe.

❏ Strap the subframe to the **component jack**.

❏ Remove the lower arm ball joints.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

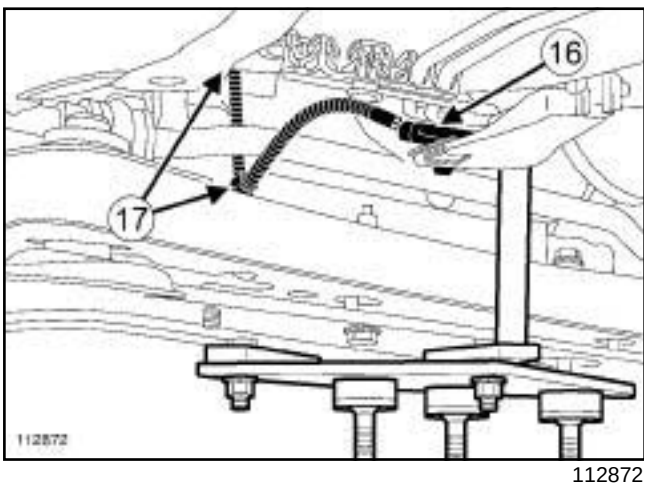


112871

❏ Remove:

- the rear cross member bolts (**13**) ,
- the rear cross member,
- the subframe bolts (**14**) on the body,
- the side reinforcements (**15**) .

❏ Lower the subframe by approximately **5 cm** using the **component jack**.



112872

❏ Disconnect the oxygen sensor connector (**16**) .

❏ Unclip the wiring (**17**) from the oxygen sensor.

❏ Disconnect (if fitted to the vehicle):

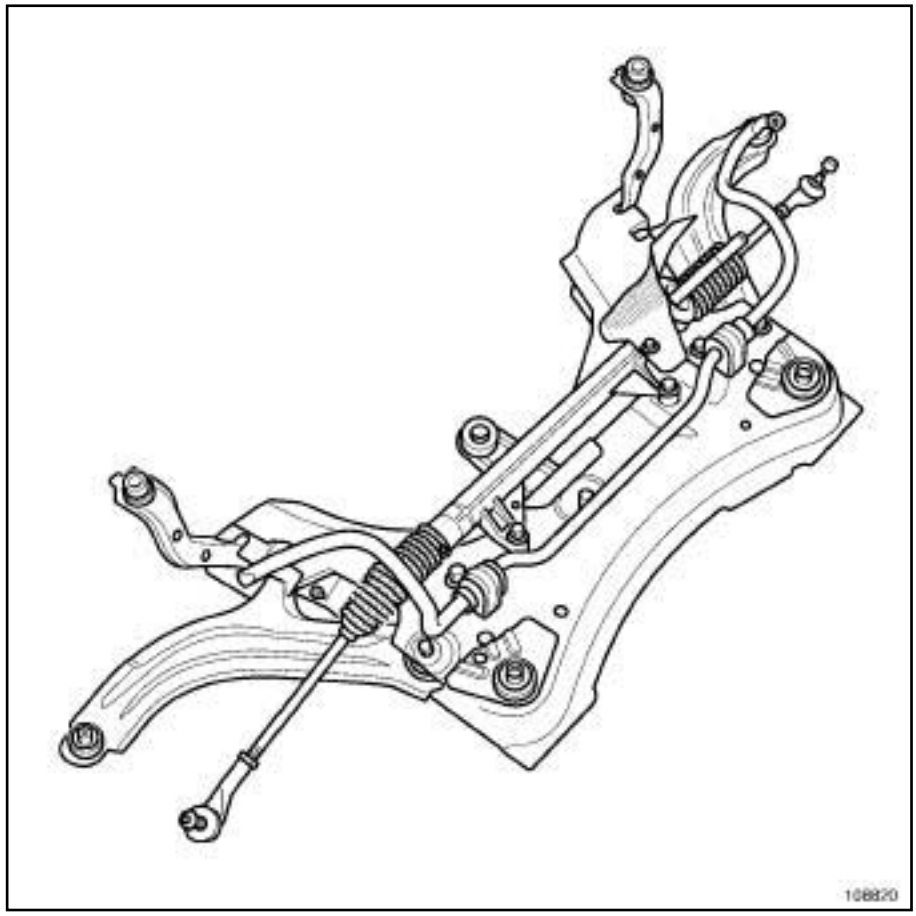
- the connector on the xenon bulb position sensor,
- the xenon bulb position sensor wiring harness connector under the wheel arch.

❏ Unclip the xenon bulb position sensor wiring (if fitted to the vehicle).

❏ Remove the sub-frame.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

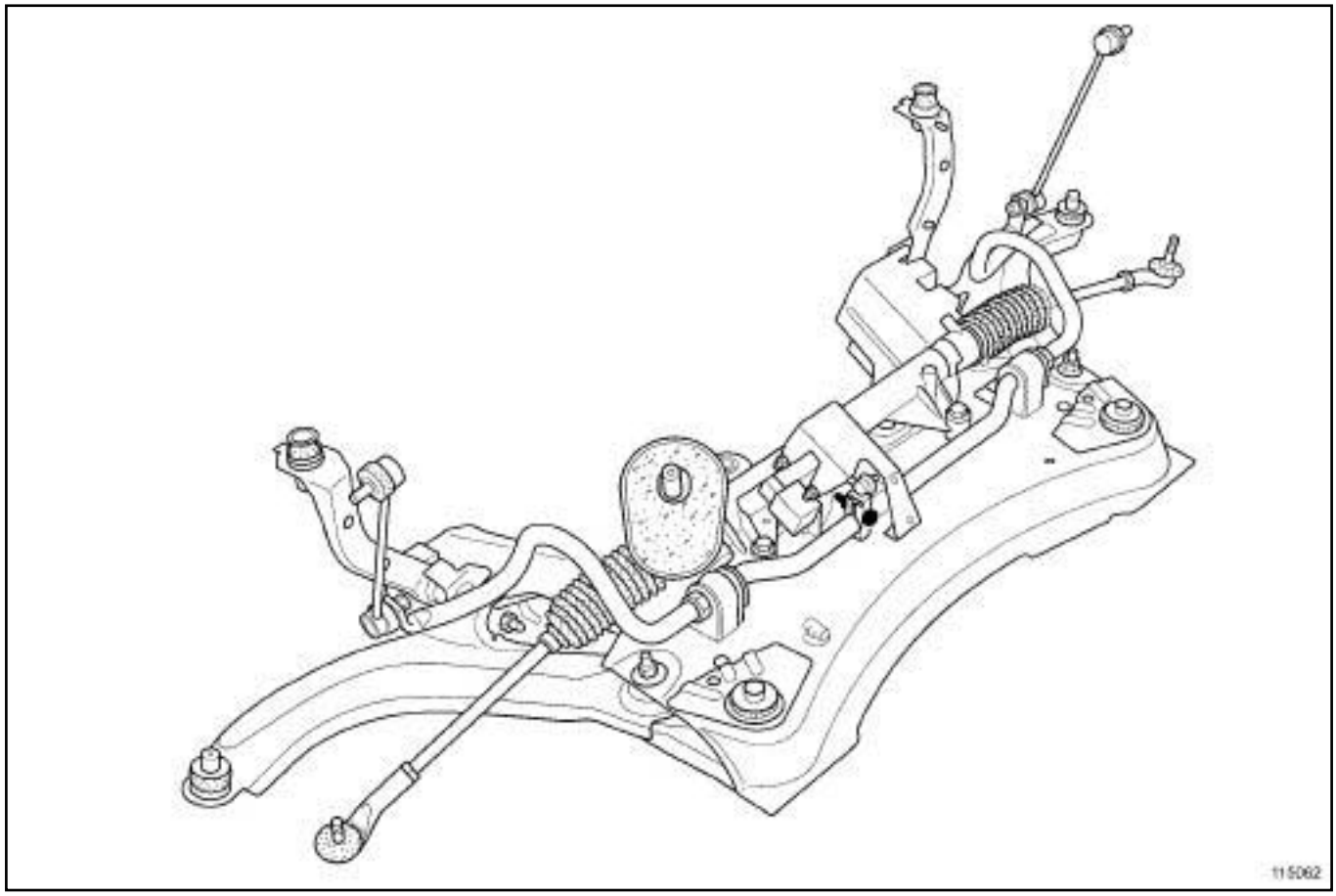
Subframe without xenon bulb



108820

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Subframe with xenon bulb



115062

❏ Remove the subframe fittings.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the following after each removal operation:

- the anti-roll bar link rod brake nuts,
- the universal joint bolt and cam nut.

❏ Degrease the contact surface areas of the subframe and the body using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the subframe equipment.

❏ Degrease the surfaces of the body which are in contact with the sub-frame and the cross member using surface cleaner.

❏ Position the subframe using **component jack**.

❏ Clip on the xenon bulb position sensor wiring harness (if fitted to the vehicle).

❏ Connect (if fitted to the vehicle):

- the connector on the xenon bulb position sensor,
- the xenon bulb position sensor wiring connector under the wheel arch.

❏ Clip the wiring to the oxygen sensor.

❏ Connect the oxygen sensor connector.

❏ Fit the sub-frame to the body.

❏ Refit:

- the rear cross member,
- the subframe and cross member bolts to the body,
- the subframe tie-rod bolts with the side reinforcements.

WARNING
Be sure to follow the subframe tightening order.

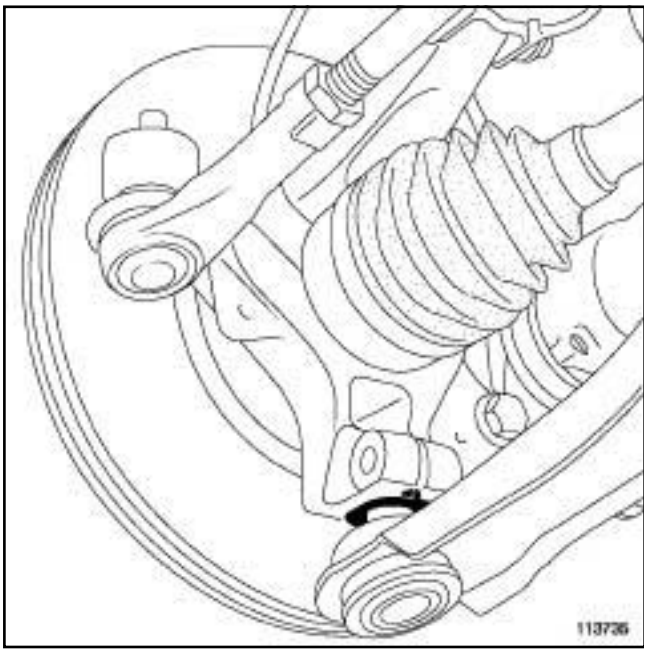
❏ Tighten to torque and in order:

- the **sub-frame linkage bolt (105 Nm)**,

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

- the **rear cross member bolt (105 Nm)**,
- the **bolts to the subframe tie-rod (105 Nm)**.

❑ Remove the **safety strap(s)** and the **component jack**.



113735

❑

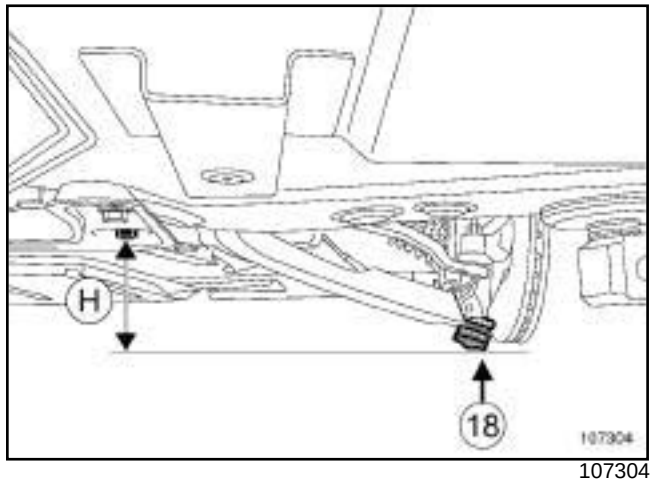
WARNING
Check that the bush is correctly positioned on the lower arm ball joint.

❑ Refit:

- the engine tie-bar bolt on the gearbox,
- the lower ball joints in the hub carrier,
- the lower ball joint bolts.

❑ Tighten to torque:

- the **engine tie-bar bolt on the gearbox (105 Nm)**,
- the **lower ball joint studs (60 Nm)**.



107304

❑

WARNING
When refitting, position the lower arm below the sub-frame rear mounting bolt head (**H**) = **6 mm** to tighten the rubber bushes freely.

❑ Place the **component jack** against the subframe rear bolt head.

❑ Lower the **component jack** by (**H**) = **6 mm**.

❑ Rest the lower arm ball joint (**18**) on the **component jack** without adjusting the settings.

❑ In this position, tighten to torque:

- the **front bolts mounting the lower arm on the subframe (70 Nm)**
- the **rear bolt mounting the lower arm on the subframe (105 Nm)**.

❑ Remove the **component jack**.

WARNING
A shim **10 mm** thick must be placed between the radiator cross member and the sub-frame. Centre the pin of the radiator cross member in the sub-frame opening at the level of the front lower arm mounting, to torque tighten the radiator cross member mountings.

❑ Refit the radiator cross member with **10 mm** shims.

❑ Torque tighten the **radiator cross member bolts (105 Nm)**.

❑ Refit:

- the ball joints and the nuts of the anti-roll bar link rod upper ball joints,
- the ball joints and the track rod end nuts.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

❑ Clip:

- the wheel speed sensors,
- the xenon bulb position sensor tie-rod (if fitted to the vehicle).

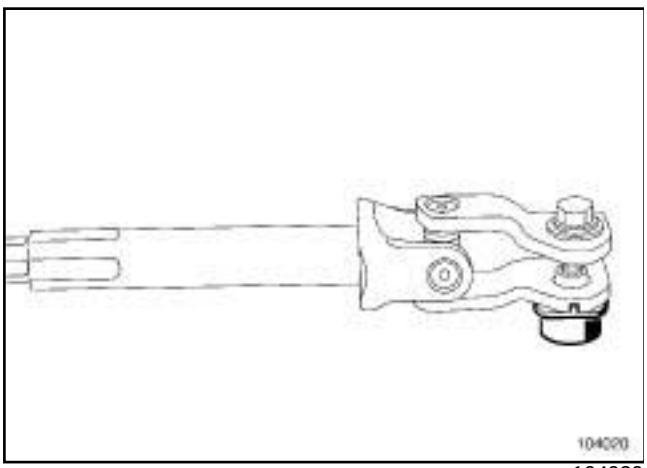
❑ Tighten to torque:

- the **anti-roll bar linkage ball joint nuts (44 Nm)**,
- the **track rod end nuts (35 Nm)**.

❑ Refit:

- the lower bolts on the bumper,
- the side reinforcement lower bolts,
- the engine undertray,
- the wheel arch protectors (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the new bolt and new nut of the universal joint.

❑ Set the wheels straight ahead.



104020

❑ Ensure that the universal joint nut and bolt are fitted the right way round.

WARNING
Do not separate the two sliding parts of the intermediate shaft.

❑ Refit:

- the universal joint,
- the new universal joint bolt,
- the new universal joint nut.

❑ Pretighten the universal joint nut and bolt.

❑ Pull the intermediate shaft to make sure that the bolt is present in the neck.

❑ Tighten to torque:

- the **side stiffener bolts (21 Nm)**,
- the **universal bolt joints (24 Nm)**.

❑ Refit the floor carpet.

Note:
Check that the floor carpet fits under the accelerator pedal end-stop.

III - FINAL OPERATION.

❑ Remove the **safety strap(s)** from the cooling radiator between the cooling radiator top hose and the bonnet opening striker panel.

❑ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Check the values of the axle assemblies (see **30A**, **General information**, **Front axle assembly: Adjustment values**, page **30A-18**) .

❑ It is essential to initialise the discharge bulb system (if fitted to the vehicle) (see **Fault finding - Configuration and programming** (80B, Headlights).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Special tooling required	
Tav. 476	Ball joint extractor.

Equipment required
flywheel immobiliser
component jack
safety strap(s)

Tightening torques ▽	
sub-frame linkage bolt	**105 Nm**
rear cross member bolt	**105 Nm**
bolts to the subframe tie-rod	**105 Nm**
bolts securing the engine tie-bar on the gearbox	**105 Nm**
sub-frame stiffener nuts	**62 Nm**
bolts between the lower arm and the hub carrier	**110 Nm**
hub carrier ball joint bolt	**27 Nm**
tie-bar nuts between the lower arms and the hub carriers	**80 Nm**
anti-roll bar return tie-bar upper ball joint nuts	**44 Nm**
track rod end nuts	**35 Nm**
universal joint bolt	**24 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

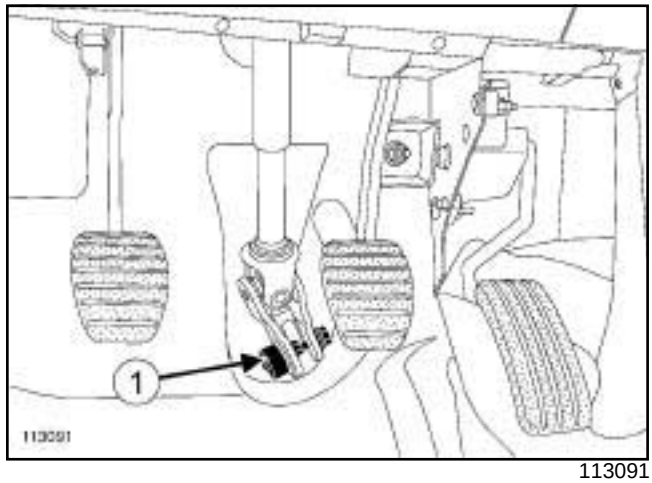
❏ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Attach the cooling radiator by the radiator top hose and the bonnet opening striker plate.

❏ Remove the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Lift the floor carpet to access the universal joint bolt.

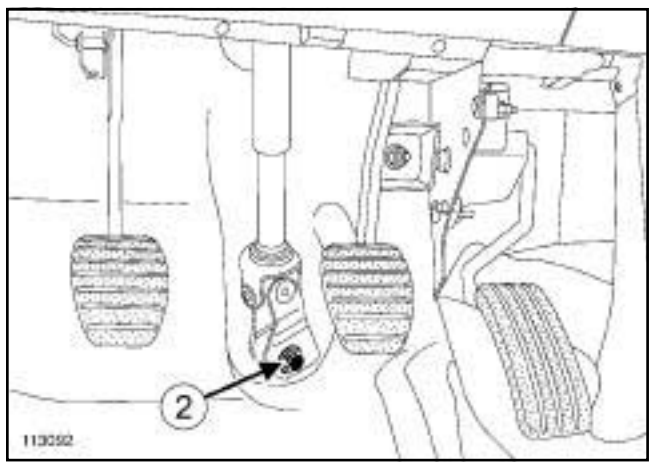


113091

❏ Remove the universal joint cover (**1**) (do not keep).

❏ Set the wheels straight ahead.

❏ Position the **flywheel immobiliser**.



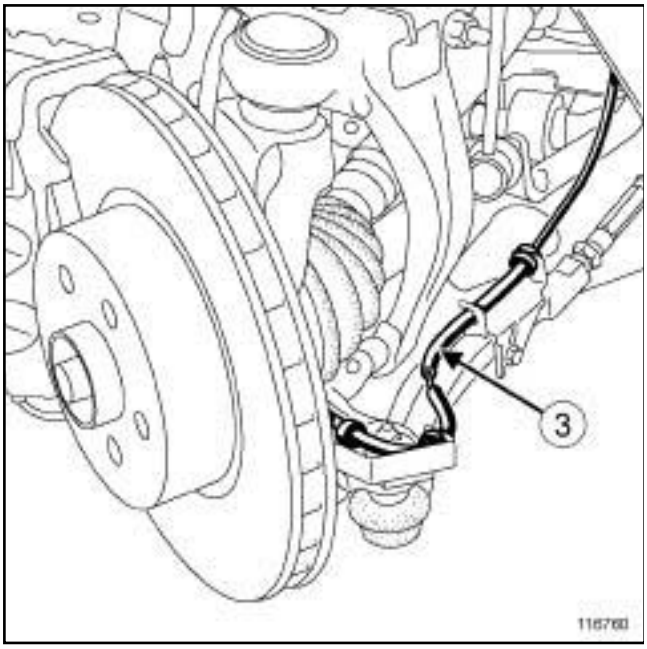
113092

❏ Remove the universal joint bolt (**2**) (do not keep),

WARNING
Swivel the universal joint to detach it from the sprocket; do not pull out the intermediate shaft.

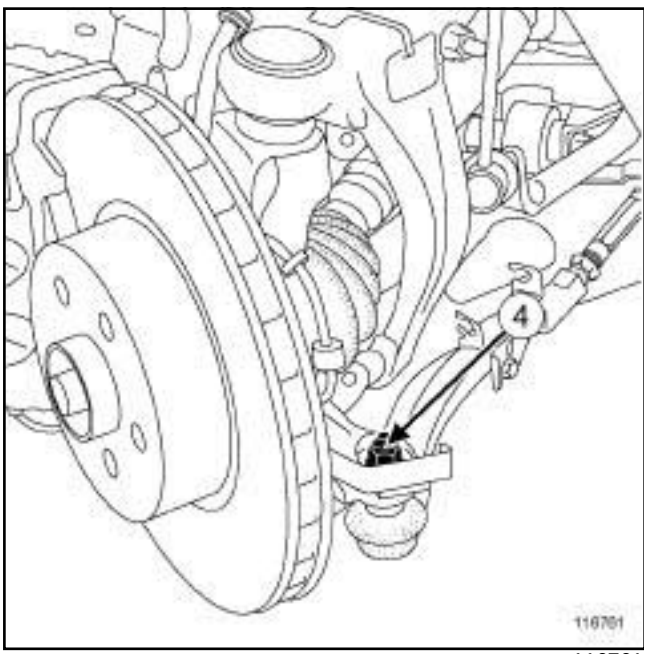
❏ Remove the universal joint from the steering rack.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116760

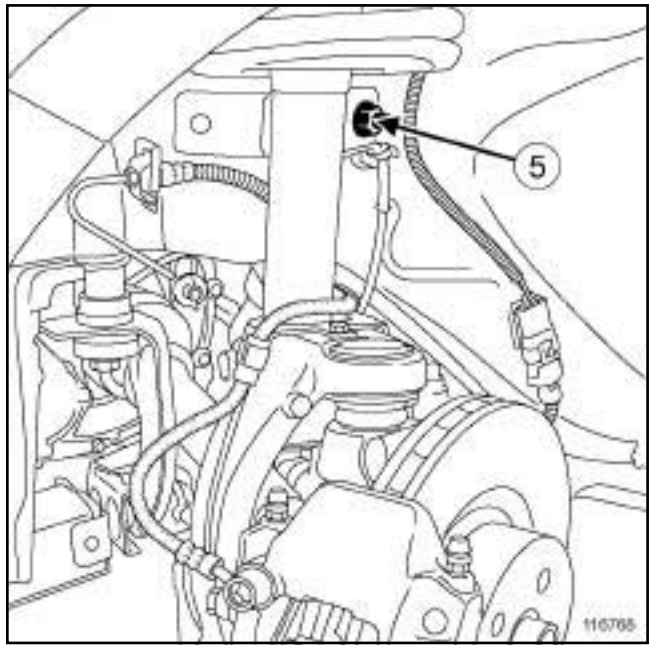
❏ Unclip the wheel speed sensor wiring (**3**) .



116761

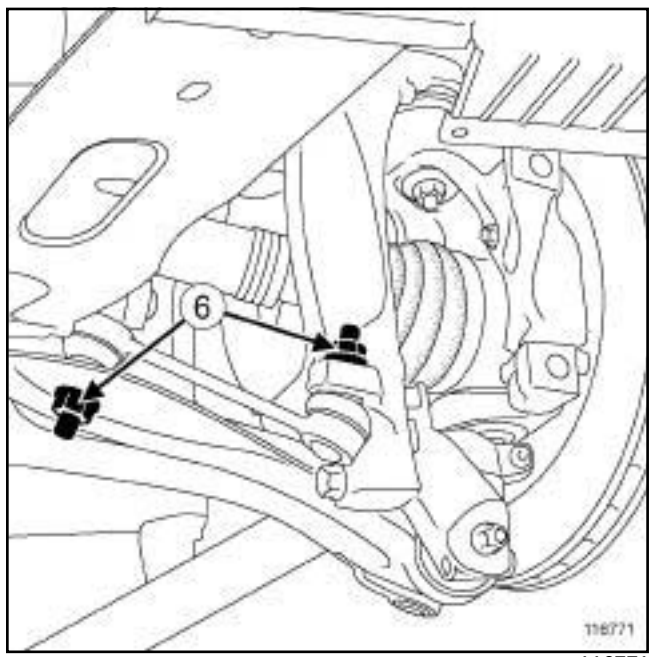
❏ Remove the track rod end nuts (**4**) .

❏ Extract the track rod ends using the **(Tav. 476)**.



116768

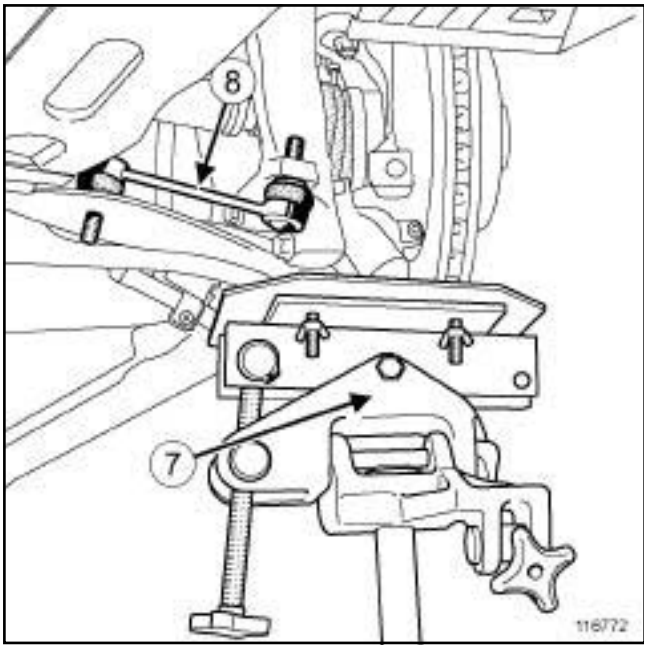
❏ Remove the anti-roll bar return tie-rod upper ball joint nuts (**5**) .



116771

❏ Remove the nuts (**6**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

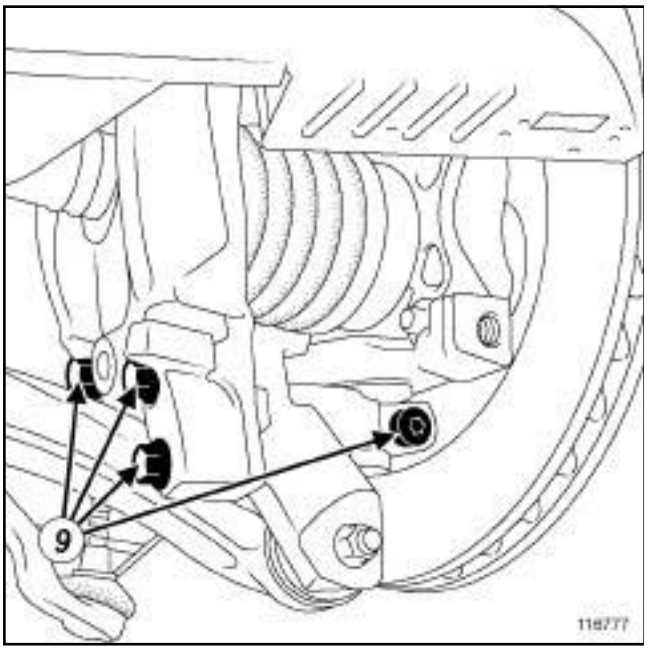


116772

❏ Engage the driveshafts using the **component jack** (**7**) .

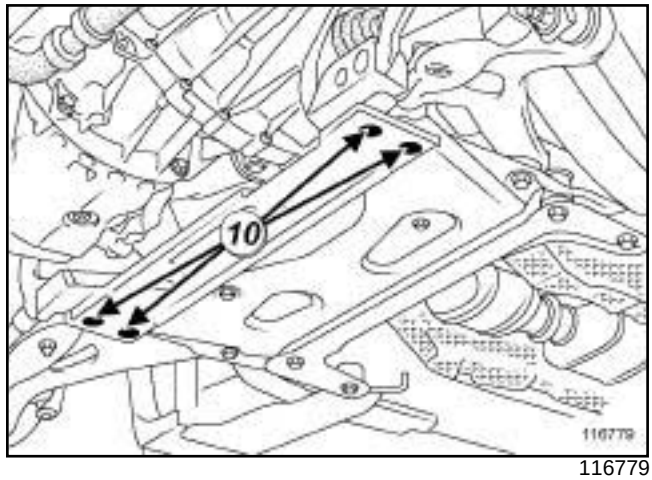
❏ Remove the linkages (**8**) .

❏ Remove the **component jack**.



116777

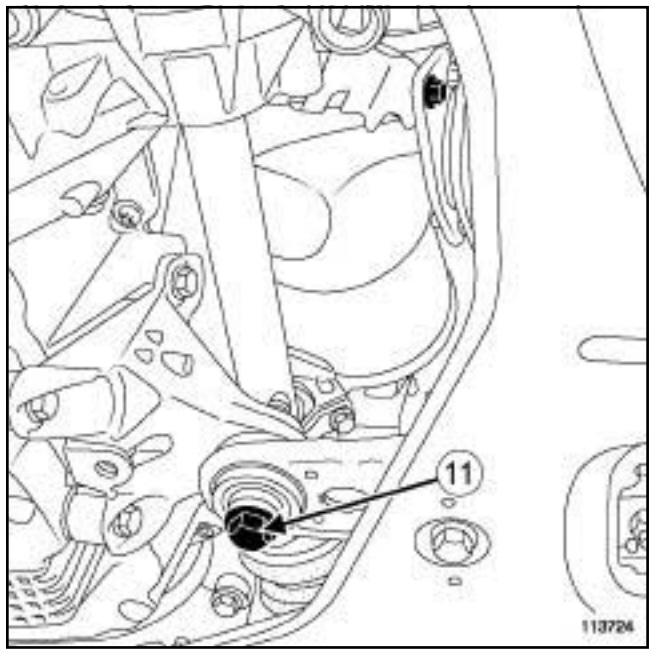
❏ Remove the bolts (**9**) between the lower arms and the hub carriers.



116779

❏ Remove:

- the sub-frame stiffener nuts (**10**) ,
- the sub-frame stiffener.



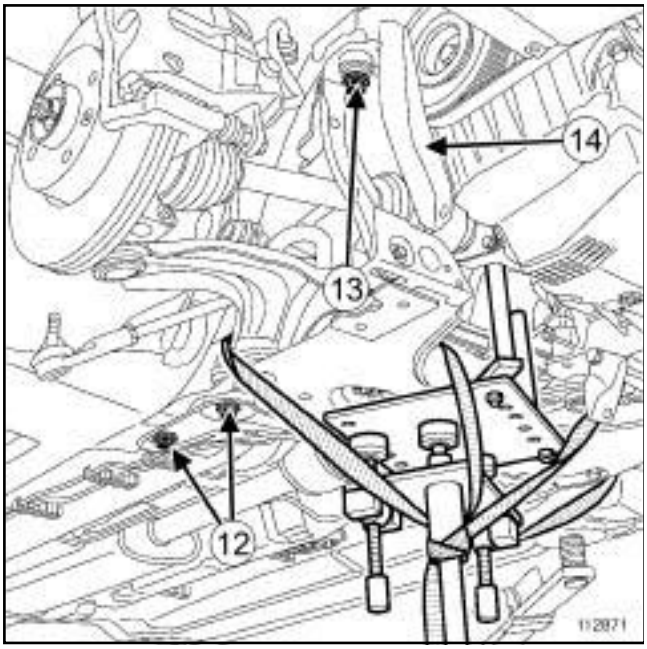
113724

❏ Remove the engine tie-bar bolt (**11**) .

❏ Place a **component jack** under the sub-frame.

❏ Strap the sub-frame onto the **component jack**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

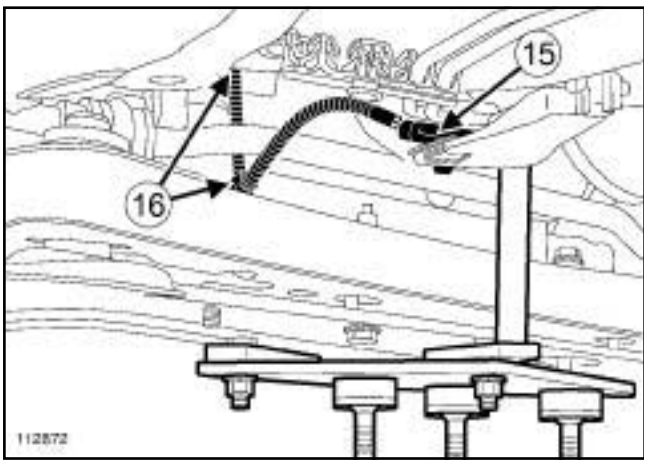


112871

❏ Remove:

- the rear cross member bolts (**12**) ,
- the rear cross member,
- the subframe bolts (**13**) on the body,
- the side reinforcements (**14**) .

❏ Lower the sub-frame by approximately **5 cm** using the **component jack**.



112872

❏ Disconnect the oxygen sensor connector (**15**) .

❏ Unclip the wiring (**16**) from the oxygen sensor.

❏ Disconnect the connector from the discharge bulb position sensor.

❏ Unclip the wiring from the discharge bulb position sensor.

❏ Remove the sub-frame.

❏ Remove the subframe fittings.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the anti-roll bar tie-bar brake nuts,
- the universal joint bolt and cam nut.

❏ Degrease the contact surface areas of the sub-frame and the body using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the subframe equipment.

❏ Offer up the sub-frame using an **component jack**.

❏ Clip the wiring onto the discharge bulb position sensor.

❏ Connect the connector to the discharge bulb position sensor.

❏ Clip the wiring onto the oxygen sensor.

❏ Connect the oxygen sensor connector.

❏ Fit the sub-frame to the body.

❏ Refit:

- the side stiffeners,
- the sub-frame bolts on the body,
- the rear cross member,
- the rear cross member bolts.

❏ Tighten to torque and in order:

- the **sub-frame linkage bolt (105 Nm)**,
- the **rear cross member bolt (105 Nm)**,
- the **bolts to the subframe tie-rod (105 Nm)**.

❏ Remove the **safety strap(s)** and the **component jack**.

❏ Refit the engine tie-bar bolt.

❏ Torque tighten the **bolts securing the engine tie-bar on the gearbox (105 Nm)**.

❏ Refit:

- the sub-frame stiffener,
- the sub-frame stiffener nuts.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

- ❏ Torque tighten the **sub-frame stiffener nuts (62 Nm)**.
- ❏ Refit the bolts between the lower arms and the hub carriers.
- ❏ Tighten to torque:
  - the **bolts between the lower arm and the hub carrier (110 Nm)**,
  - the **hub carrier ball joint bolt (27 Nm)**.
- ❏ Engage the driveshafts using the **component jack**.
- ❏ Refit the linkages between the lower arms and the hub carriers.
- ❏ Remove the **component jack**.
- ❏ Refit the tie-bar nuts between the lower arms and the hub carriers.
- ❏ Torque tighten the **tie-bar nuts between the lower arms and the hub carriers (80 Nm)**.
- ❏ Refit the anti-roll bar return tie-bar upper ball joint nut.
- ❏ Torque tighten the **anti-roll bar return tie-bar upper ball joint nuts (44 Nm)**.
- ❏ Refit the track rod ends.
- ❏ Torque tighten the **track rod end nuts (35 Nm)**.
- ❏ Clip the wiring onto the wheel speed sensors.
- ❏ Refit:
  - the universal joint,
  - the new universal joint bolt,
  - the new universal joint nut.
- ❏ Pretighten the universal joint nut and bolt.
- ❏ Pull the intermediate shaft to make sure that the bolt is present in the neck.
- ❏ Torque tighten the **universal joint bolt (24 Nm)**.
- ❏ Refit the floor carpet.

> Note:
>
> Check that the floor carpet reaches under the accelerator pedal end-stop.

III - FINAL OPERATION.

- ❏ Refit the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).
- ❏ Detach the radiator by the radiator top hose and the bonnet opening striker plate.
- ❏ Refit the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .
- ❏ Check the front axle geometry values (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .
- ❏ It is essential to initialise the discharge bulb system (see **Fault finding - Configuration and programming**) (80B, Headlights).

Special tooling required	
Sus. 1829	Gauge for positioning the headlight height control

Tightening torques ▽	
anti-roll bar bearing bolts on the subframe	**21 N.m**
steering box bolt on the subframe	**105 N.m**
bolt mounting the discharge bulb sensor on the anti-roll bar	**21 N.m**
bracket bolts	**8 N.m**
steering box bolt on the subframe	**105 N.m**

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

❏ Diameter of the anti-roll bar: **20.5 mm**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❏ Diameter of the anti-roll bar: **19.5 mm**.

REMOVAL

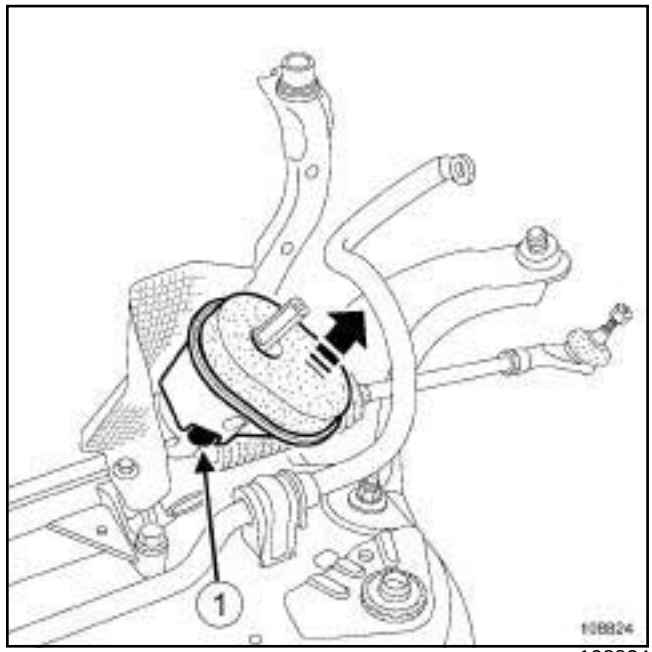
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Remove the front axle subframe (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) .

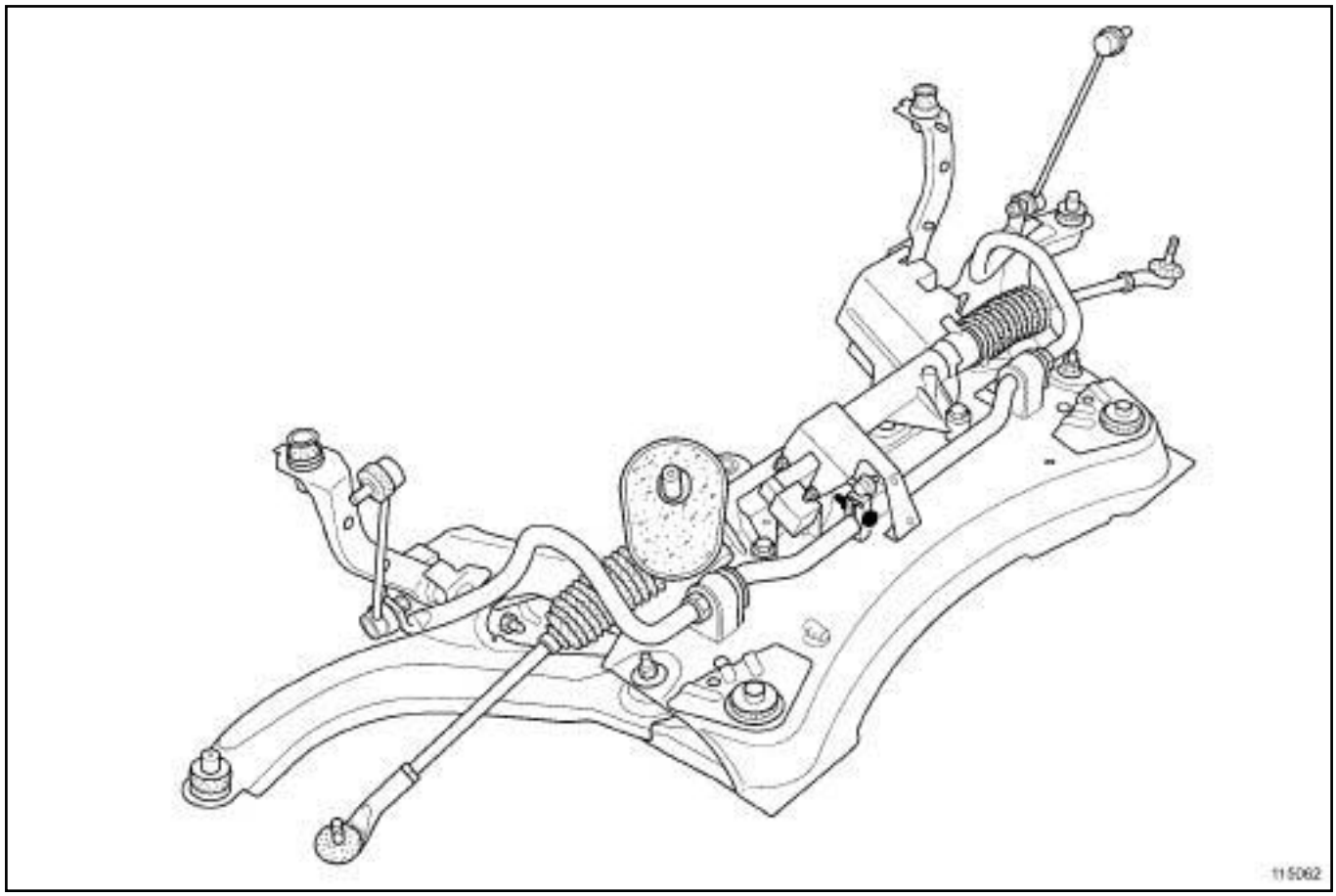
II - OPERATION FOR REMOVAL OF PART CONCERNED



108824

❏ Unclip the bulkhead seal at (**1**) using a flat-blade screwdriver.

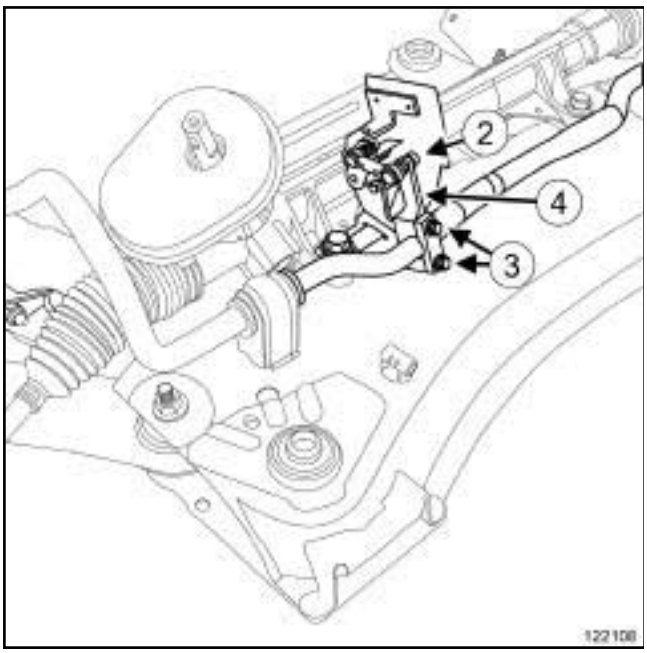
DISCHARGE LAMPS



115062

❑ Remove the discharge bulb sensor (see **Headlight beam adjustment front sensor: Removal - Refitting**) (MR 392, 80C, Discharge bulbs).

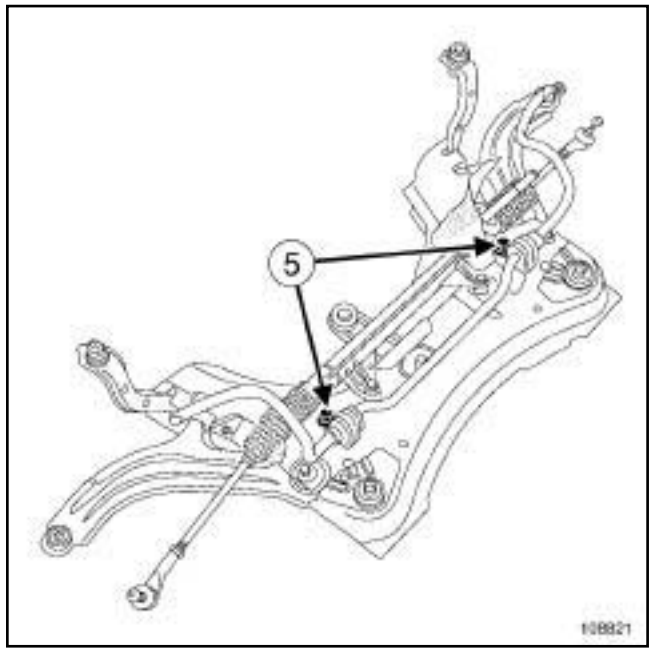
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DISCHARGE LAMPS



122108

❑ Remove:

- the tie rod nut (**2**) on the bracket,
- the tie rod from the bracket,
- the bolts (**3**) from the bracket,
- the anti-roll bar bracket (**4**) .



108821

❑ Remove:

- the anti-roll bar bolts (**5**) on the subframe,
- the anti-roll bar bearings,
- the anti-roll bar.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the anti-roll bar,
- the anti-roll bar bearings by correctly positioning the spigots on the anti-roll bar bearing retaining brackets in the holes of the sub-frame,
- the anti-roll bar bearing bolts to the subframe.

❑ Torque tighten the **anti-roll bar bearing bolts on the subframe (21 N.m)**.

DISCHARGE LAMPS

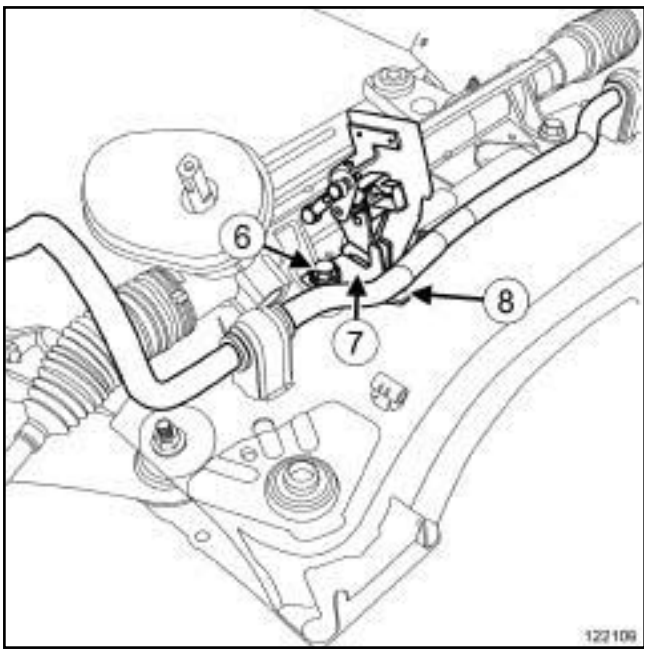
❑ Refit the discharge bulb sensor (see **Headlight beam adjustment front sensor: Removal - Refitting**) (MR 392, 80C, Discharge bulbs).

❑ Tighten to torque:

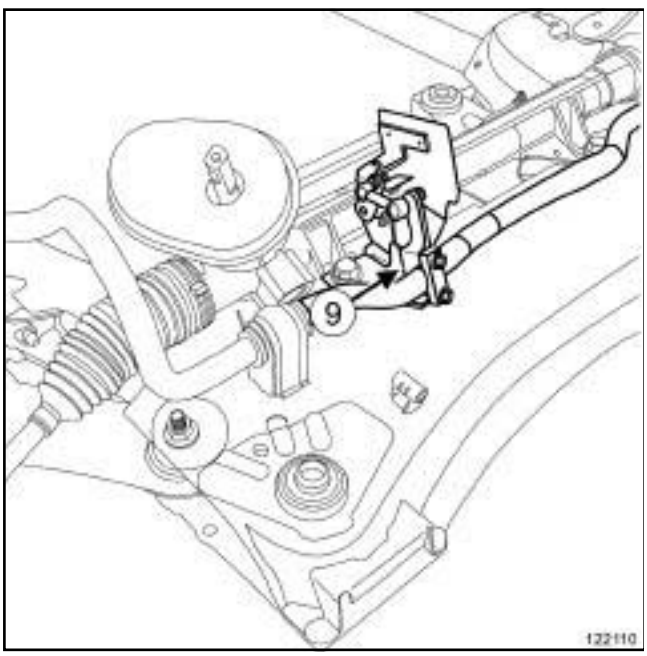
- the **steering box bolt on the subframe (105 N.m)**,

- the **bolt mounting the discharge bulb sensor on the anti-roll bar (21 N.m)**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DISCHARGE LAMPS



122109



122110

❑ Remove the steering box bolt (**6**) .

❑ Position the **(Sus. 1829)** (**7**) .

❑ Refit the steering box bolt.

❑ Fit the anti-roll bar against the **(Sus. 1829)** at (**8**) .

❑ Refit:

- the bracket onto the anti-roll bar against the **(Sus. 1829)** at (**9**) ,
- the bracket bolts,
- the tie rod onto the bracket,
- the tie rod nut.

❑ Torque tighten the **bracket bolts (8 N.m)**.

❑ Remove:

- the steering box bolt,
- the **(Sus. 1829)**.

❑ Refit the steering box bolt.

❑ Torque tighten the **steering box bolt on the subframe (105 N.m)**

❑ Fit the bulkhead seal in its original position.

II - FINAL OPERATION

❑ Refit:

- the axle subframe (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Be sure to initialise the xenon bulb system (if fitted to the vehicle); (see **Configurations and programming**) (MR 394, 80B, Headlights).

Equipment required
component jack

Tightening torques ▽	
rubber bush bolt	**105 N.m**

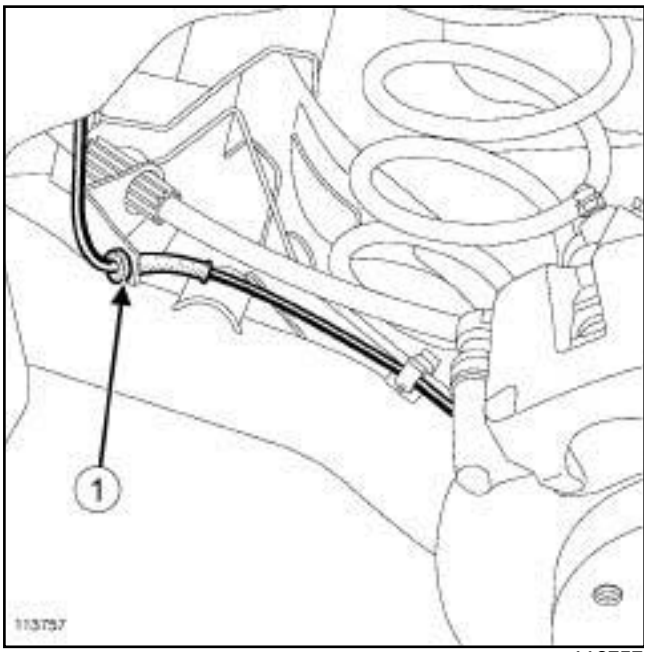
WARNING
Never use the rear axle as support for a lifting system.

ADJUSTMENT

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

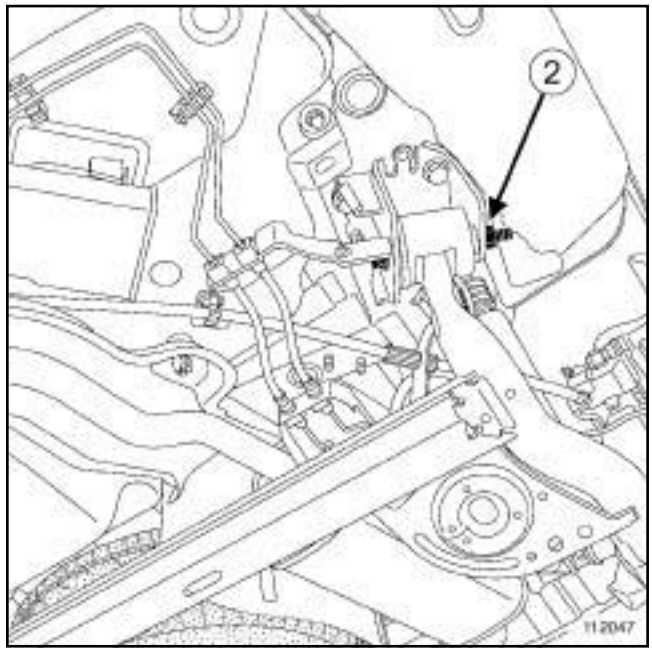
❏ Release the parking brake.

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .



113757

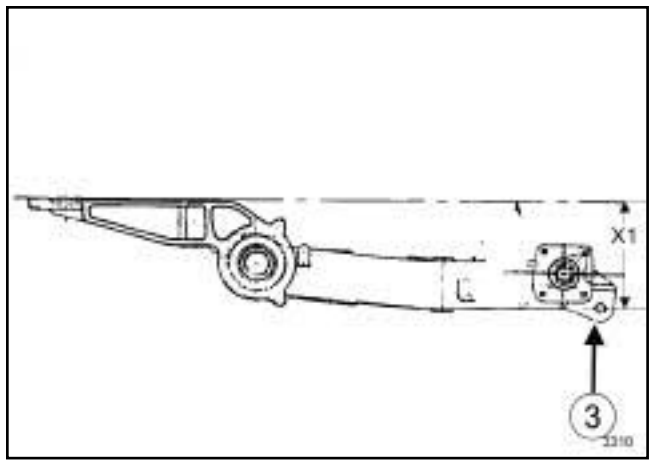
❏ Unclip the speed sensor harness at (**1**) .



112047

❏ Loosen the rubber bush nuts (**2**) .

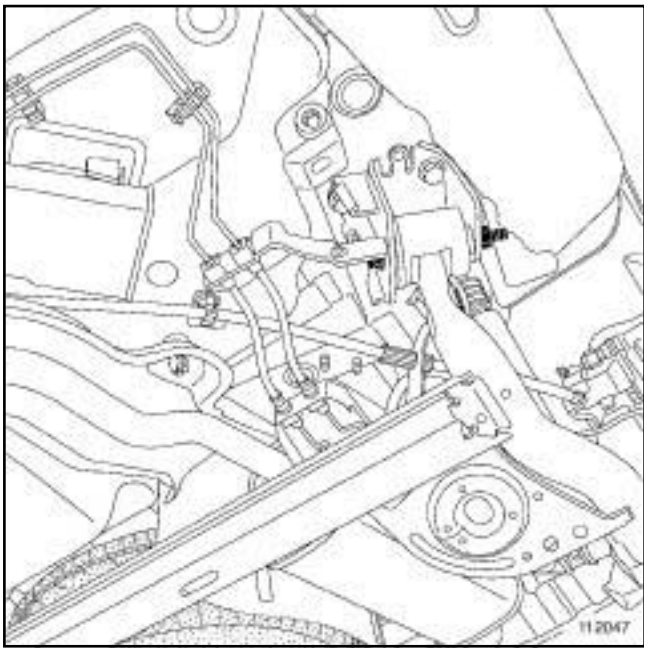
❏ Remove the springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .



3310

❏ Place the tool **component jack** in contact with a shim under the rear axle near the shock absorber at (**3**).

❏ Adjust the **component jack** in order to obtain a distance (**X1**) of **150 mm** between the lower mounting of the shock absorber and the side member.



112047

- ❏ Torque tighten the **rubber bush bolt (105 N.m)**.
- ❏ Do the same for the other side.
- ❏ Refit the springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .
- ❏ Clip on the speed sensor harness.
- ❏ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

16" ALUMINIUM WHEELS or 17" ALUMINIUM WHEELS or 16" STEEL WHEELS, and ELECTRONIC STABILITY PROGRAM

Special tooling required	
Fre. 1190-01	Brake calliper piston return tool.

Tightening torques ▽	
guide pin bolt	**32 Nm**

When replacing brake pads, be sure to replace the pads on the opposite side.

WARNING
To avoid damaging the parking brake cable protectors and causing premature wear of the system, do not handle the cables with a tool.

REMOVAL

I - REMOVAL PREPARATION OPERATION

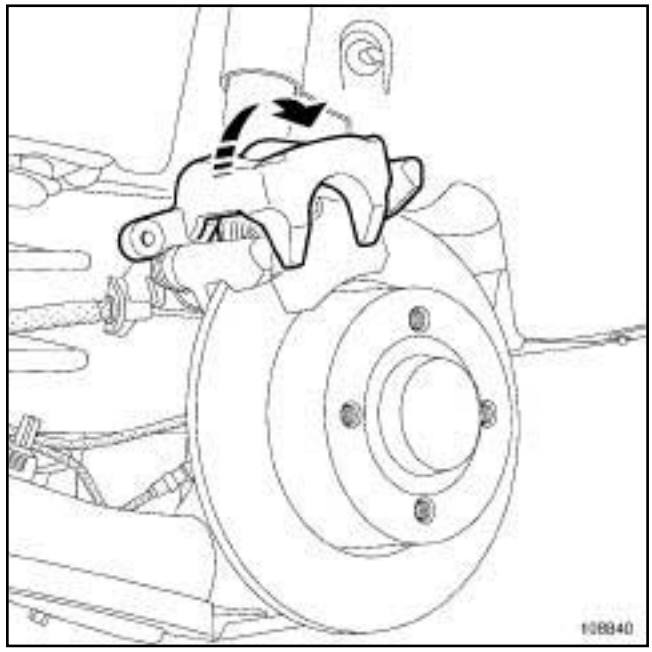
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Release the parking brake.

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the guide pin lower bolt.



108840

❏ Tilt the calliper upwards.

❏ Remove the brake pads.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check the thickness of the pads (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

❏ Replace any faulty parts.

❏ Clean the calliper mountings.

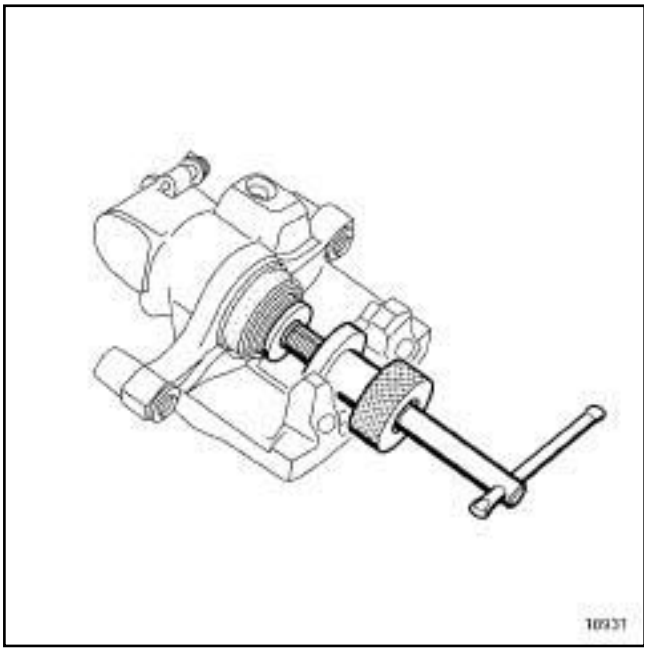
❏ Clean using a wire brush and **BRAKE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products):

- the calliper brackets,

- the callipers.

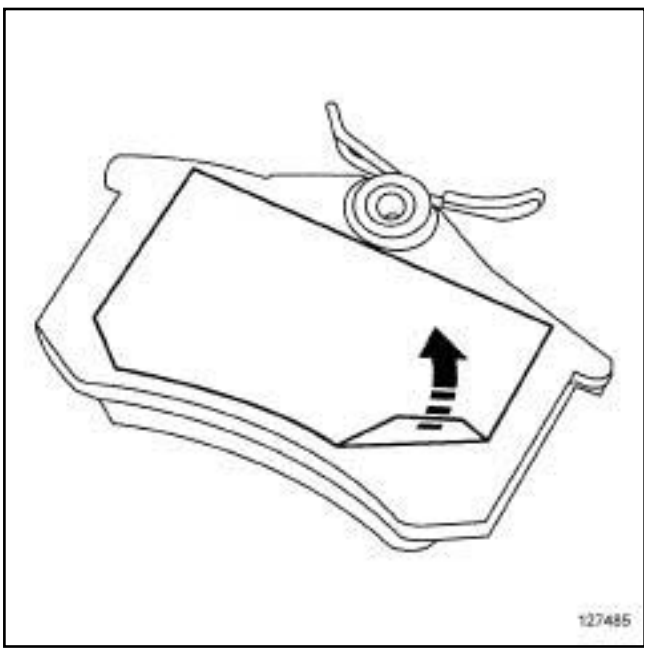
❏ Always replace the brake calliper guide pin bolts.

16" ALUMINIUM WHEELS or 17" ALUMINIUM WHEELS or 16" STEEL WHEELS, and ELECTRONIC STABILITY PROGRAM



18931

❑ Push the calliper piston back using the **(Fre. 1190-01)** until it reaches the end of its bore.



127485

❑ Remove the protective film from the brake pad.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the brake pads.

❑ Pivot the calliper downwards to return it to its original position.

❑ Refit a new guide pin bolt.

❑ Torque tighten the **guide pin bolt (32 Nm)**.

III - FINAL OPERATION.

❑ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

IMPORTANT

To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pad several times.

Equipment required
pedal press

Tightening torques ▽	
brake hose unions	**14 Nm**

REMOVAL

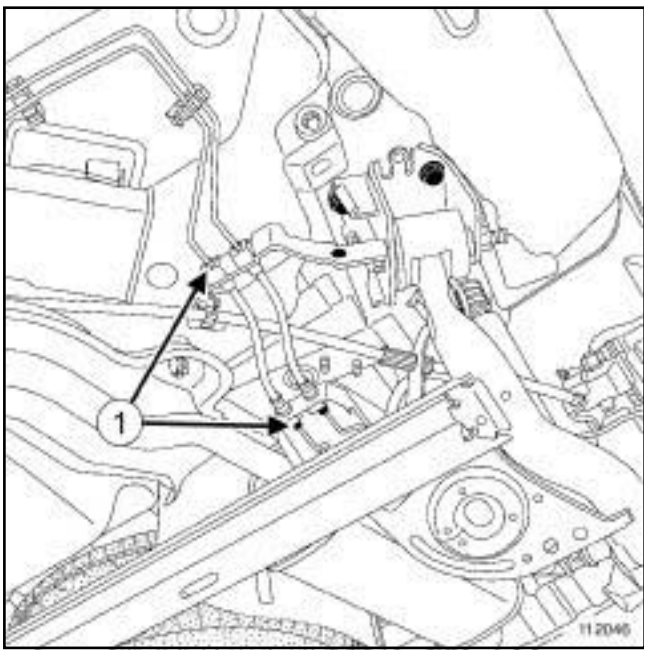
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

> **WARNING**
> Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

❑ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112046

❑ Remove:

- the unions (**1**) from the pipe concerned,
- the pipe concerned.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

> **WARNING**
> Do not twist the brake hose.
>
> Make sure that there is no contact between the brake hose and the surrounding components.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the hose.

❑ Torque tighten the **brake hose unions (14 Nm)**.

III - FINAL OPERATION.

❑ Remove the **pedal press** from the brake pedal.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Check the brake fluid level.

Special tooling required	
Fre. 1190-01	Brake calliper piston return tool.

Equipment required
pedal press

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

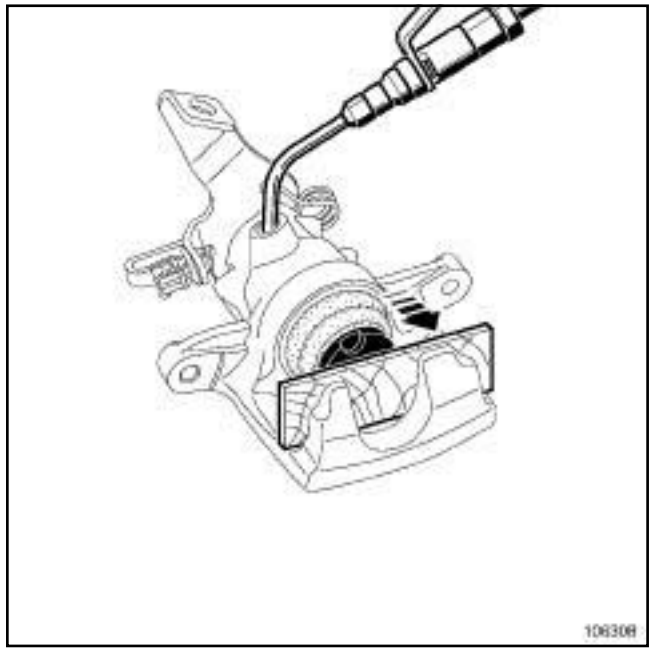
❑ Release the parking brake.

❑ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Position the **pedal press** on the brake pedal to limit the outflow of brake fluid.

❑ Remove the rear brake calliper (see **33A**, **Rear axle components**, **Rear brake calliper: Removal - Refitting**, page **33A-8**) .

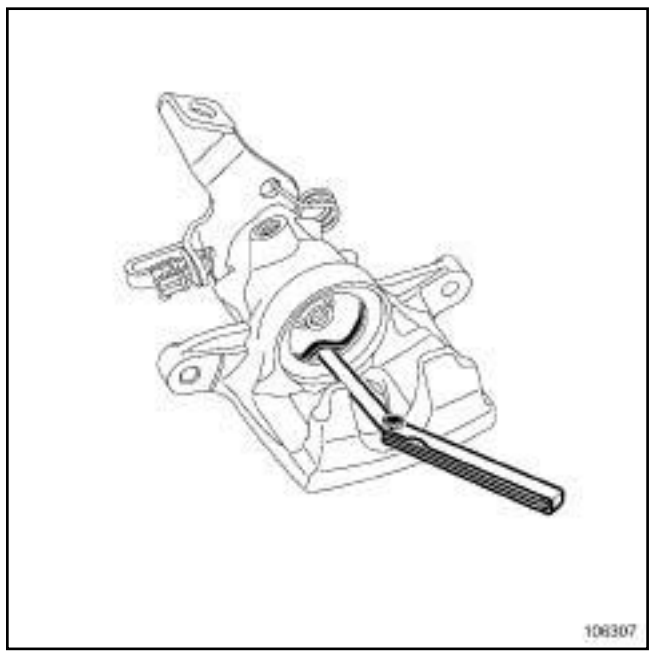
II - OPERATION FOR REMOVAL OF PART CONCERNED



106308

❑ Remove the piston using compressed air, making sure to insert a wooden block between the calliper and the piston.

❑ Remove the dust seal.



106307

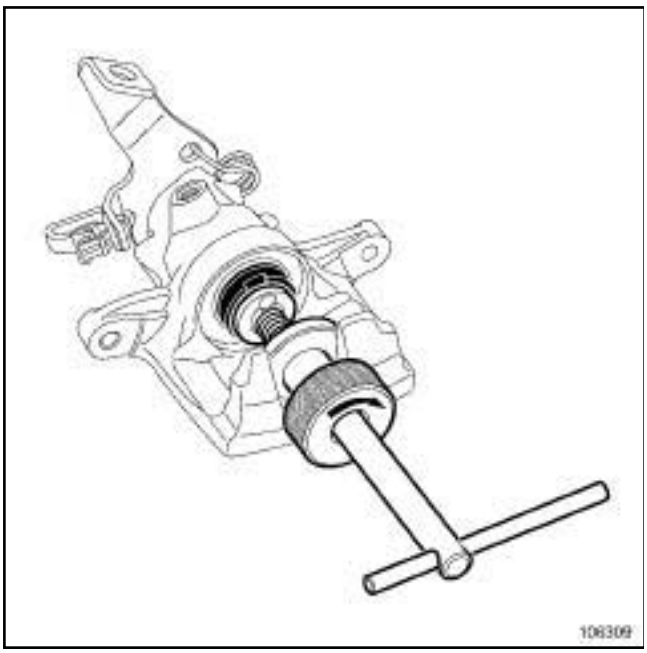
❑ Remove the rectangular section seal from the calliper groove with a round edged spring blade (feeler gauge).

❑ Replace the complete calliper if the bore is scratched.

❑ Clean the parts using methylated spirit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



106309

❏ Refit:

- the rectangular section seal in the calliper groove,
- the piston (after having smeared it with the grease supplied in the repair kit) using the **(Fre. 1190-01)**,
- the dust seal.

II - FINAL OPERATION.

❏ Refit:

- the brake calliper (see **33A**, **Rear axle components**, **Rear brake calliper: Removal - Refitting**, page **33A-8**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Remove the **pedal press**.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

IMPORTANT
To avoid any accident, bring the pistons, brake pads and brake discs into contact by depressing the brake pedal several times.

Special tooling required	
Fre. 1190-01	Brake calliper piston return tool.

Equipment required
pedal press

Tightening torques ▽	
guide pin bolts	**32 Nm**
rigid brake pipe	**14 Nm**

Note:

The callipers supplied as replacement parts are pre-filled.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

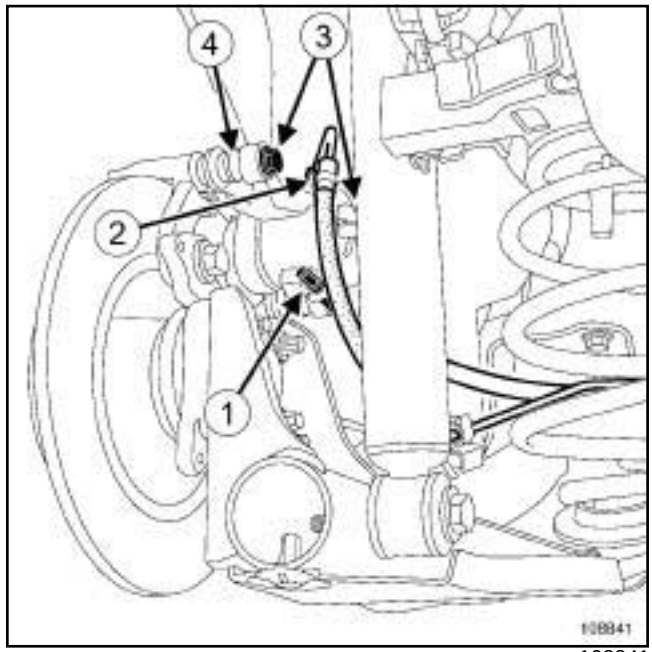
WARNING
Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

❏ Release the parking brake.

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Remove the rear wheel on the side concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108841

❏ Unclip the parking brake cable (**1**) .

❏ Remove the rigid brake pipe union (**2**) .

❏ Remove:

- the guide pin mounting bolts (**3**) , holding the nuts (**4**) ,
- the calliper,
- the brake pads.

❏ Fit a cap on the rigid brake pipe union.

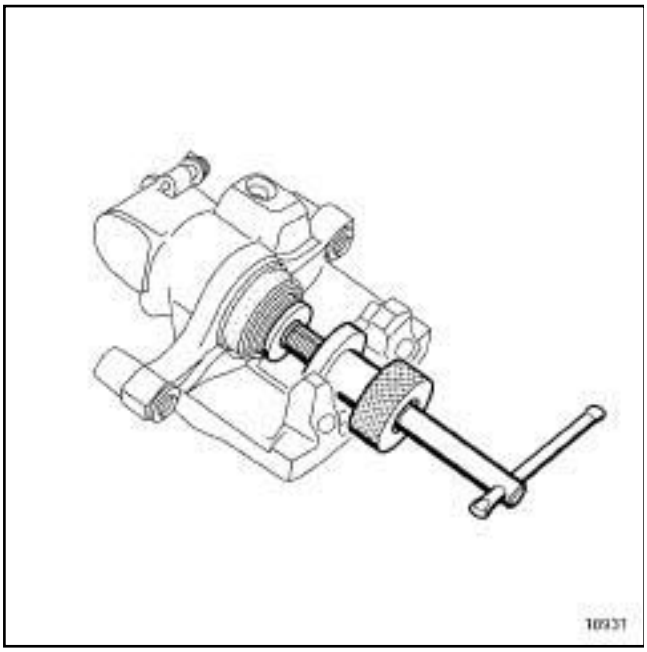
REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Check the condition of the calliper piston boot.

❏ Replace any faulty parts.

❏ Clean the backplate and the calliper.



18931

❑ Push the piston back using the **(Fre. 1190-01)** until it is at the end of its bore.

❑ Always replace the guide pin bolts after each removal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake pads,
- the calliper,
- the new guide pin bolts,
- the rigid brake pipe union.

❑ Torque tighten:

- the **guide pin bolts (32 Nm)**,
- the **rigid brake pipe (14 Nm)**.

❑ Refit the parking brake cable.

❑ Check that the parking brake cable stop is properly engaged in its housing.

III - FINAL OPERATION.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Check the brake fluid level.

❑ Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

WARNING

Depress the brake pedal several times to bring the pistons, brake pads and discs into contact.

DISC BRAKE

Tightening torques ▽	
calliper mounting bolt	**105 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

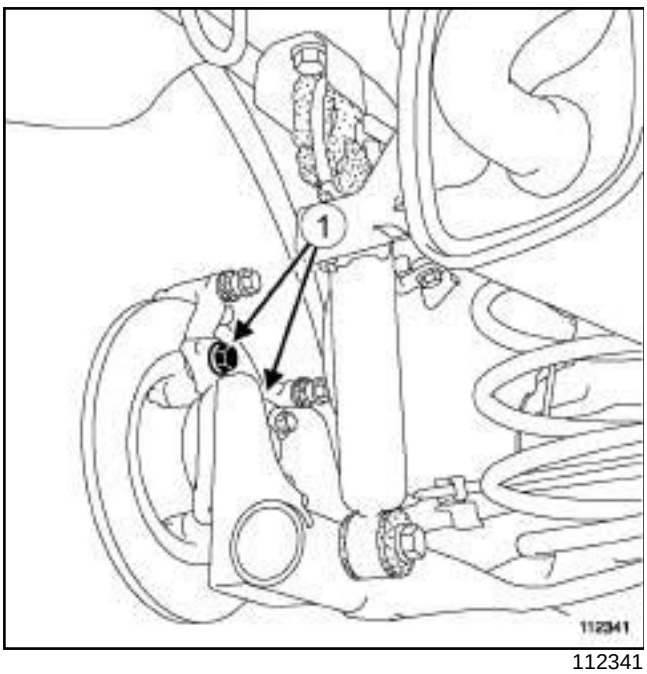
❏ Remove:

- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the upper guide pin bolt.

WARNING
Do not twist the brake hose.

❏ Suspend the brake calliper from the shock absorber without undoing the brake union.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112341

❏ Remove:

- the two calliper support mounting bolts (**1**) ,
- the calliper mounting.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the calliper mounting and the stub axle carrier.

❏ Coat the calliper mounting bolts with a **FRENBLOC** type product before fitting them.

❏ Always replace the guide pin bolts whenever they are removed.

II - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the calliper mounting,
- the calliper mounting bolts.

❏ Torque tighten **calliper mounting bolt (105 Nm)**.

❏ Refit the calliper and the new upper guide pin bolt.

III - FINAL OPERATION

❏ Refit:

- the brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Check the brake fluid level.

DISC BRAKE

REMOVAL

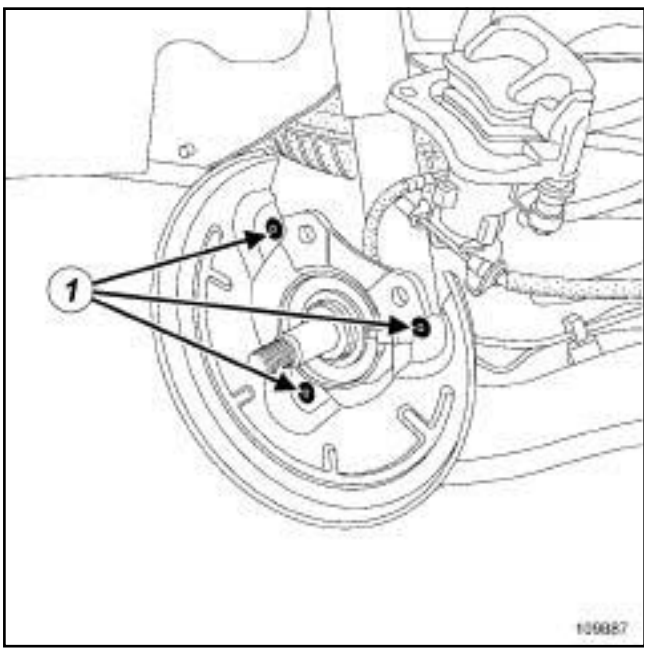
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❑ Remove:

- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) .

II - REMOVAL STAGE FOR THE PART CONCERNED



109887

❑ Drill out the rivets (**1**) .

❑ Remove the brake disc protector.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Clean any swarf from the stub-axle carrier

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the brake disc protector.

❑ Refit the rivets.

III - FINAL OPERATION.

❑ Refit:

- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) ,
- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

DISC BRAKE

Tightening torques ▽	
stub axle nuts	**175 Nm**

Brake discs cannot be reground. If there is excessive scoring or wear, they will need to be replaced (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

When replacing a brake disc, be sure to replace the disc on the opposite side.

Be sure to replace the brake pads if the brake discs are being replaced.

REMOVAL

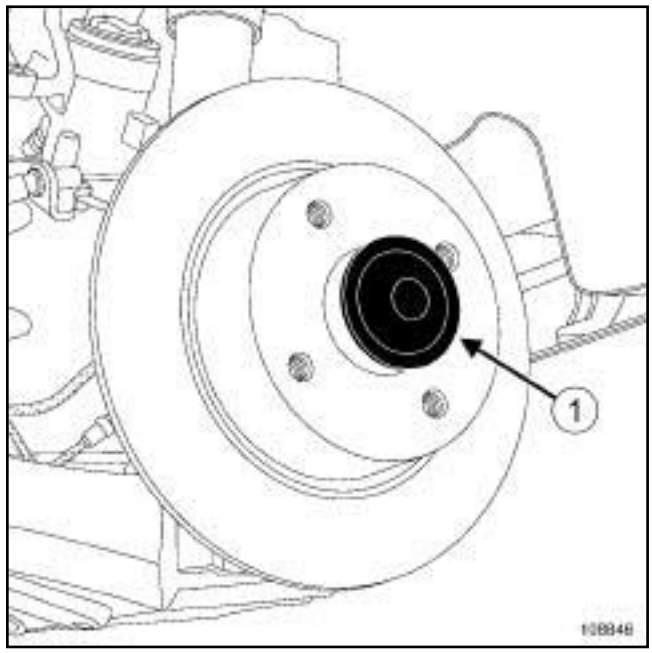
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

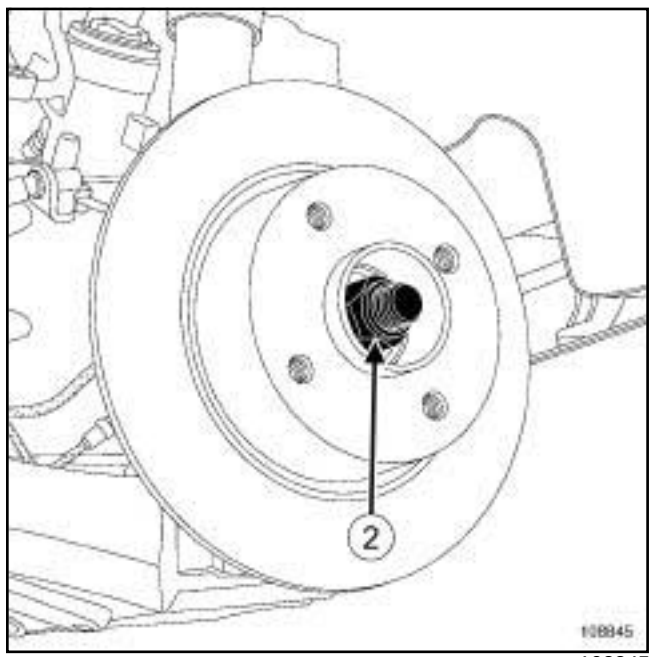
❑ Remove:

- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the calliper mountings (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108846



108845

❑ Remove:

- the hub covers (**1**)
- the stub axle nuts (**2**) ,
- the brake discs.

DISC BRAKE

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Clean the brake discs using a spray.

❏ Clean the stub axle.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake discs,
- the stub axle nuts.

❏ Torque tighten the **stub axle nuts (175 Nm)**.

❏ Refit the hub cover plug.

III - FINAL OPERATION.

❏ Refit:

- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

I - PREPARATION OPERATION FOR CHECK

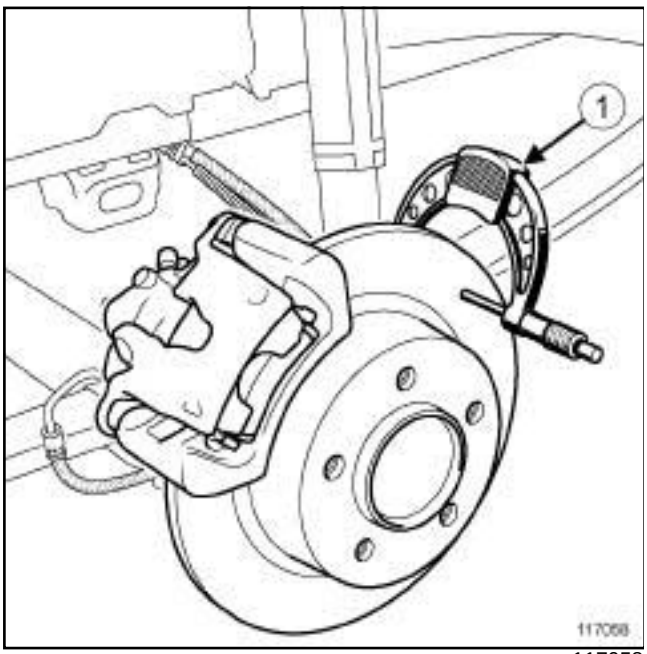
Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

Remove the rear wheel concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - CHECKING OPERATION FOR PART CONCERNED

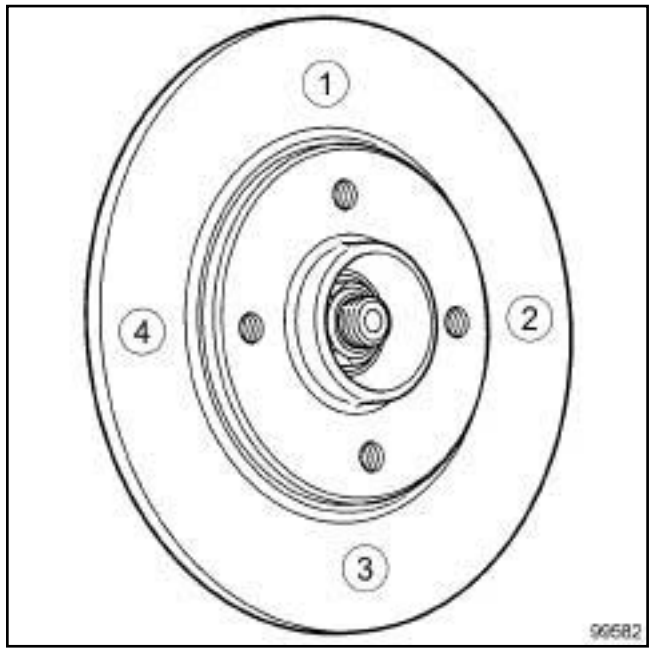
Note:

Use a Palmer type tool to check the thickness of the disc.



117058

Position the Palmer tool (**1**) to measure the disc thickness.



99582

Measure the thickness of the disc at 4 points in order (90˚ apart).

Compare the values with those recommended by the manufacturer (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

III - FINAL OPERATION

Replace the discs if necessary (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) .

Refit the rear wheel concerned (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

DRUM BRAKE

Replace all the brake pads on one axle at the same time. Never mix brake pads of different brands or qualities.

REMOVAL

I - REMOVAL PREPARATION OPERATION

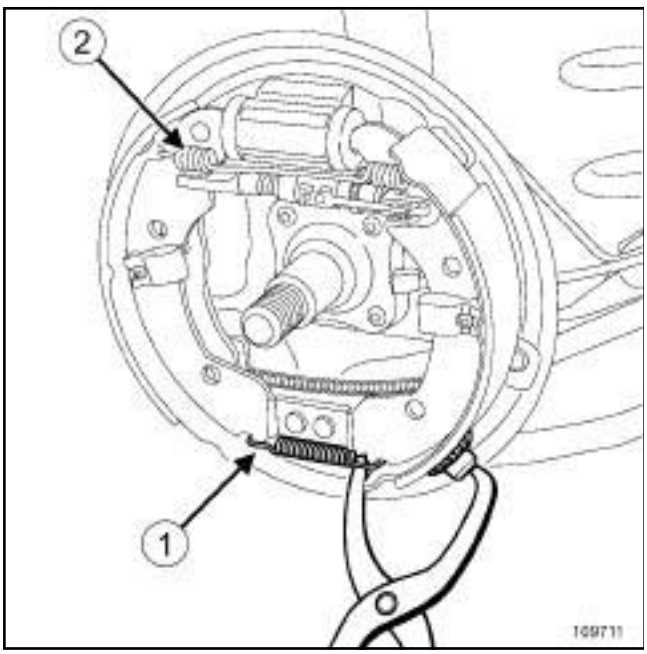
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Release the parking brake.

❏ Remove:

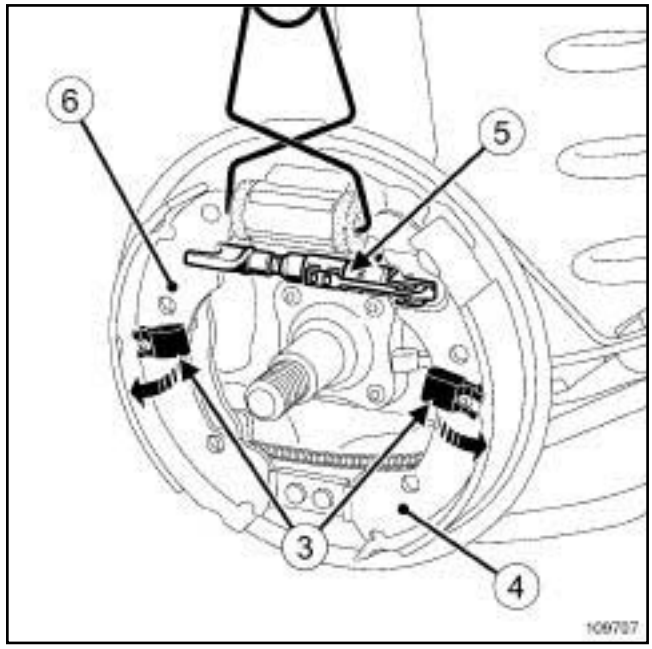
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109711

❏ Remove the lower spring (**1**) then the upper spring (**2**) using brake shoe pliers.



109707

❏ Place the pliers on the slave cylinder pistons.

❏ Remove:

- the shoe side retaining springs (**3**) by tilting them outwards,
- the leading shoe (**4**) ,
- the tie-rod (**5**) ,
- the trailing shoe (**6**) .

❏ Uncouple the parking brake cable from the parking brake lever.

REFITTING

I - REMOVAL PREPARATION OPERATION

❏ Remove any dust from the drums and flanges using a brake cleaner.

❏ Lightly grease the support linkage thread.

WARNING

The brake mechanism components are different on the left and right-hand sides, so it is important not to confuse them.

Note:

On the left-hand brake: the bolt thread has a right-hand thread.

On the right-hand brake: the bolt thread has a left-hand thread.

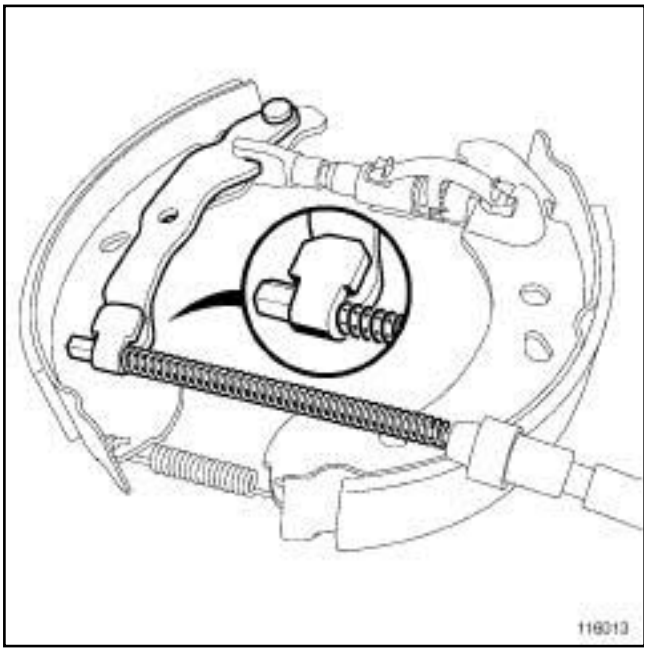
DRUM BRAKE

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the parking brake cable to the parking brake lever.

❏ Refit:

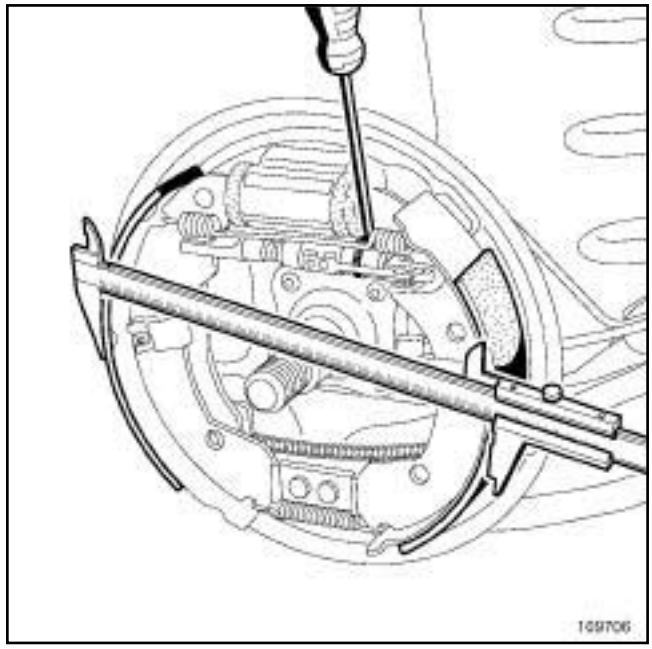
- the trailing shoe,
- the linkage,
- the leading shoe,
- shoe side retaining springs tilting them outwards,
- the upper spring,
- the lower spring.



116013

❏ Check that the parking brake cable is correctly positioned on the parking brake lever.

❏ Remove the pliers from the slave cylinder pistons.



109706

❏ Use a screwdriver to adjust the piston ring diameter with the linkage to obtain a diameter of **202.8 mm ± 0.1**

❏ Carry out the same adjustment on the other side.

❏ Adjust the parking brake if the lever stops between the first and second positions of the parking brake lever's travel (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**) .

III - FINAL OPERATION.

❏ Refit:

- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Adjust the brake pads by depressing the brake pedal repeatedly.

❏ Check that the automatic wear take up system is operating correctly (clicking noise from the drums when the brake pedal is repeatedly depressed).

DRUM BRAKE

Tightening torques ▽	
cylinder mounting bolts on the backplate	**9 Nm**
rigid pipe union on the brake cylinder	**14 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

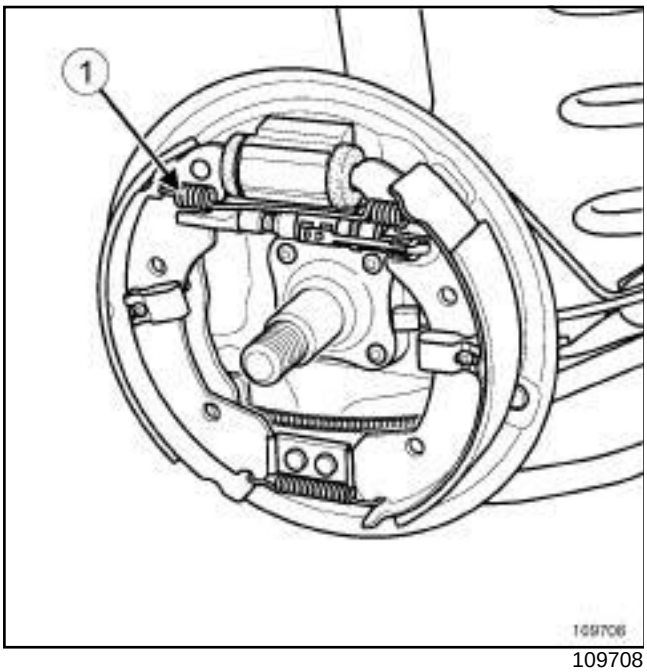
❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Release the parking brake.

❏ Remove:

- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

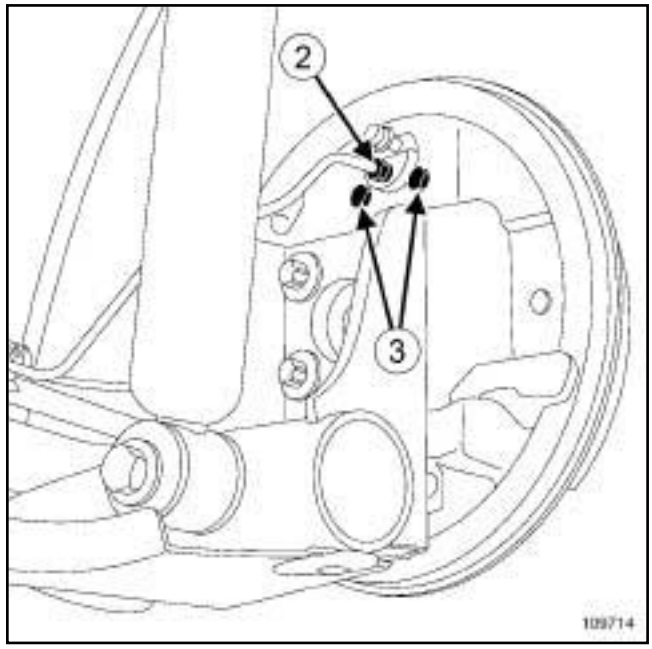
II - OPERATION FOR REMOVAL OF PART CONCERNED



109708

❏ Remove the upper return spring (**1**) using brake shoe pliers.

❏ Separate the shoes.



109714

❏ Unscrew the rigid pipe union (**2**) from the brake cylinder (be prepared for brake fluid running out).

❏ Fit a cap on the brake pipe union.

❏ Remove:

- the cylinder mounting bolts (**3**) on the backplate,
- the brake cylinder.

REFITTING

I - REMOVAL PREPARATION OPERATION

❏ Remove any dust from the drums and flanges using a brake cleaner.

❏ Check the condition of the brake cylinder boots and pistons (replace any faulty parts).

II - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the brake cylinder,
- the cylinder mounting bolts on the backplate,
- the rigid pipe union on the brake cylinder,
- the upper return spring using brake shoe pliers.

❏ Tighten to torque:

- the **cylinder mounting bolts on the backplate (9 Nm)**,
- the **rigid pipe union on the brake cylinder (14 Nm)**.

DRUM BRAKE

III - FINAL OPERATION

❑ Refit:

- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Adjust the brake shoes by pressing the brake pedal repeatedly.

Tightening torques ▽	
drum nut	**175 N.m**

❏ When replacing a brake drum, it is essential to replace the drum on the opposite side as well.

❏ Always replace the brake pads if the brake drums are being replaced.

IMPORTANT
The two brake drums must be of the same diameter. If one drum is reground, the other also must be reground. The maximum diameter is etched on the drum.

REMOVAL

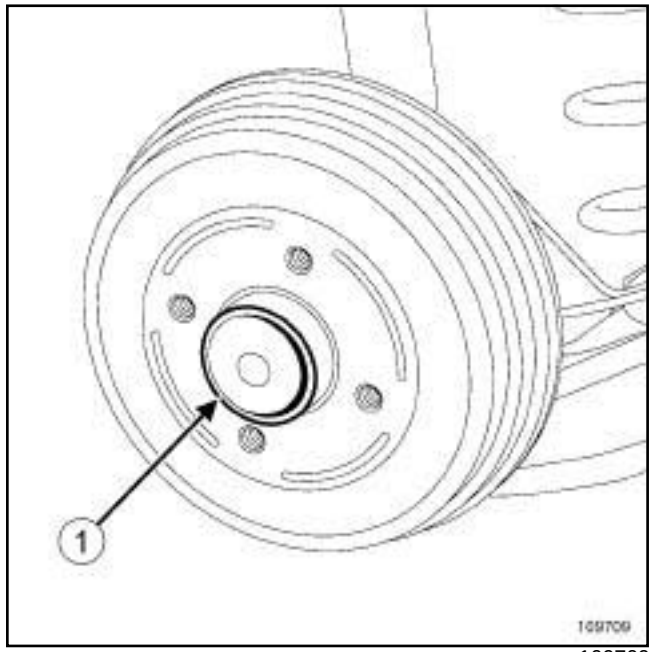
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

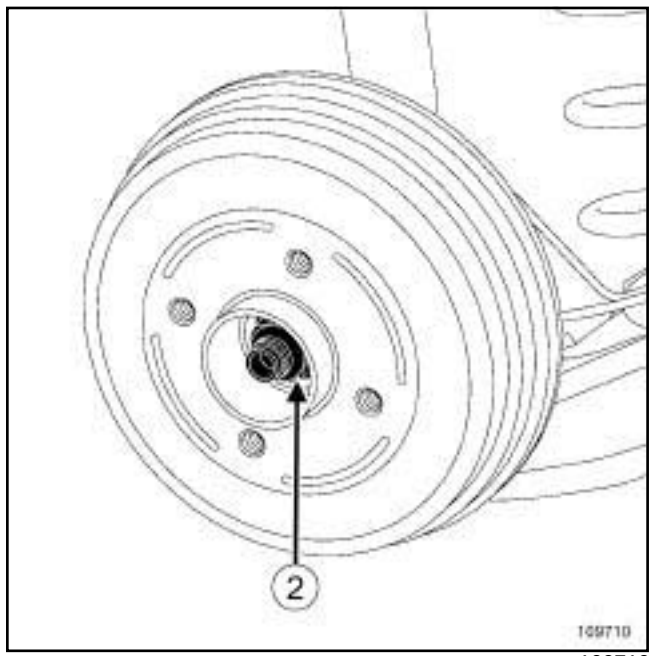
❏ Release the parking brake.

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109709



109710

❏ Remove:

- the drum caps (**1**) ,
- the drum nuts (**2**) ,
- the brake drums.

REFITTING

I - REMOVAL PREPARATION OPERATION

❏ Check the internal diameter of the drum.

❏ Replace any faulty parts.

❏ Clean:

- the brake linings,
- the brake drums.
- the stub axle.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Adjust the parking brake if the lever stops between the first and second position of the parking brake lever's travel (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**) .

❏ Refit:

- the brake drums.
- the drum nuts,
- the drum caps,

❏ Torque tighten the **drum nut (175 N.m)**.

III - FINAL OPERATION

❏ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Adjust the brake pads by depressing the brake pedal repeatedly.

Equipment required
sliding calliper

I - PREPARATION OPERATION FOR CHECK

Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

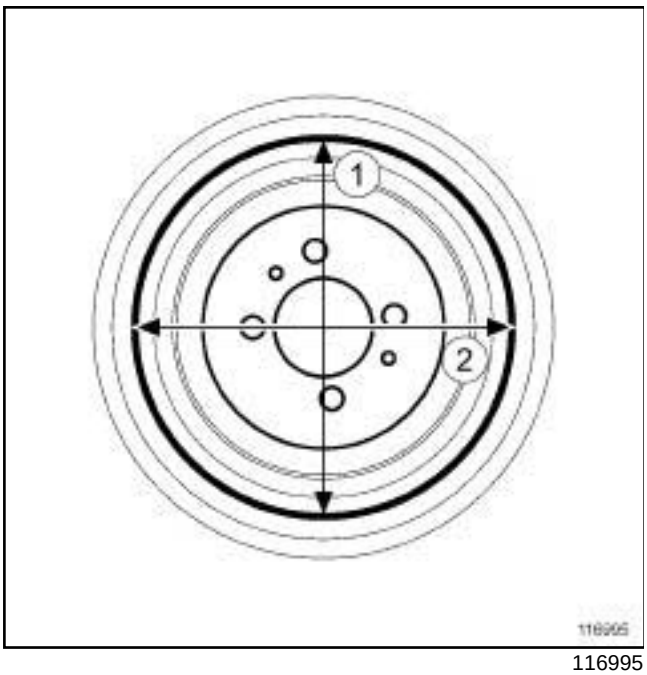
Remove:

- the rear wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

II - CHECKING OPERATION FOR PART CONCERNED

Note:

To check the internal diameter of the drum, use a **sliding calliper** type tool for drums.



116995

Position the **sliding calliper** to measure the internal diameters of the brake drum.

Measure the interior diameters of the brake drum on the perpendicular axes (**1**) and (**2**) .

Compare the values with those recommended by the manufacturer (see **30A**, **General information**, **Brake: Specifications**, page **30A-9**) .

III - FINAL OPERATION

Replace the rear drums if necessary (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

Refit the rear wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

Equipment required
pedal press

Tightening torques ▽	
rigid brake pipe at the rear axle	**14 Nm**
rigid brake pipe on the calliper	**14 Nm**

The pipes have a rigid section and a flexible section.

REMOVAL

I - REMOVAL PREPARATION OPERATION

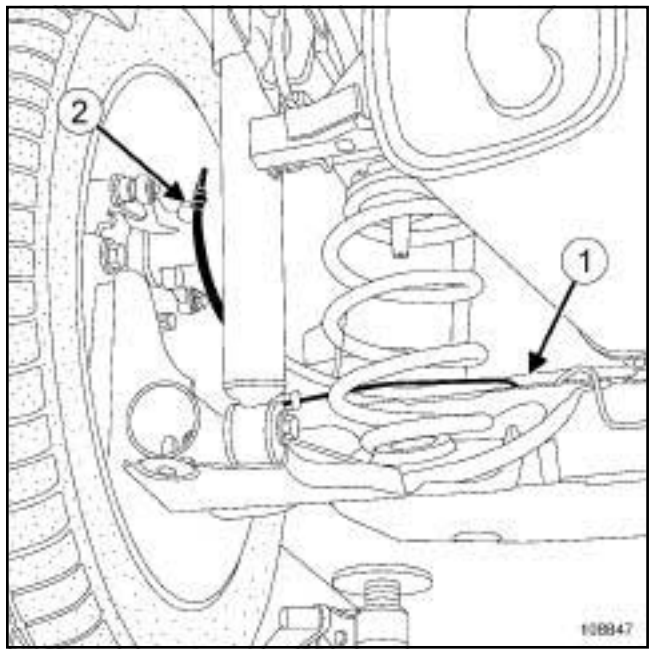
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Raise the lift.

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - rear left-hand rigid brake pipe



108847

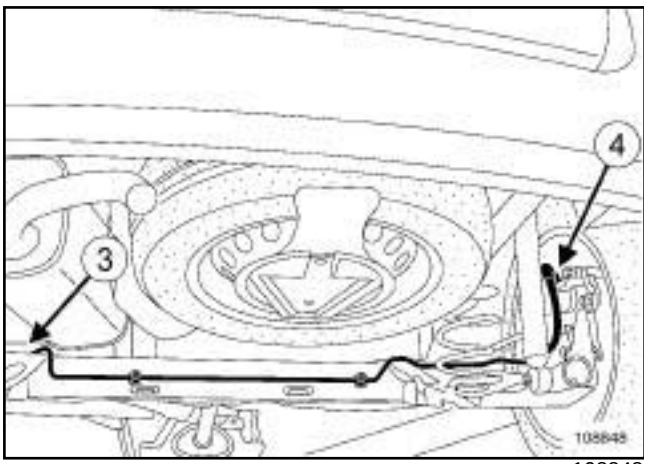
❏ Unscrew:

- the rigid brake pipe from the rear axle (**1**) ,
- the rigid brake pipe from the calliper (**2**) .

❏ Unclip the rear axle rigid brake pipe.

❏ Remove the rigid brake pipe.

2 - Rear right-hand rigid brake pipe



108848

❏ Unscrew:

- the rigid brake pipe from the rear axle (**3**) ,
- the rigid brake pipe from the calliper (**4**) .

❏ Unclip the rear axle rigid brake pipe.

❏ Remove the rigid brake pipe.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Always replace the rigid brake pipe mounting clips.

> **WARNING**
> Do not twist the brake hose.
> Make sure that there is no contact between the brake hose and the surrounding components.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rigid pipe in its original position.

❏ Torque tighten:

- the **rigid brake pipe at the rear axle (14 Nm)**,
- the **rigid brake pipe on the calliper (14 Nm)**.

III - FINAL OPERATION.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

Equipment required
component jack

Tightening torques ▽	
upper shock absorber nut	**21 N.m**
lower shock absorber bolt	**105 N.m**

WARNING
To prevent any damage, do not use the rear axle as support for the lifting system.

WARNING
To prevent any suspension asymmetry, replace both of the shock absorbers on the same axle.

WARNING
To prevent the components of the rear axle from deteriorating (rubber bushes, brake hoses, etc.) do not remove the two shock absorbers at the same time. Proceed one side at a time.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

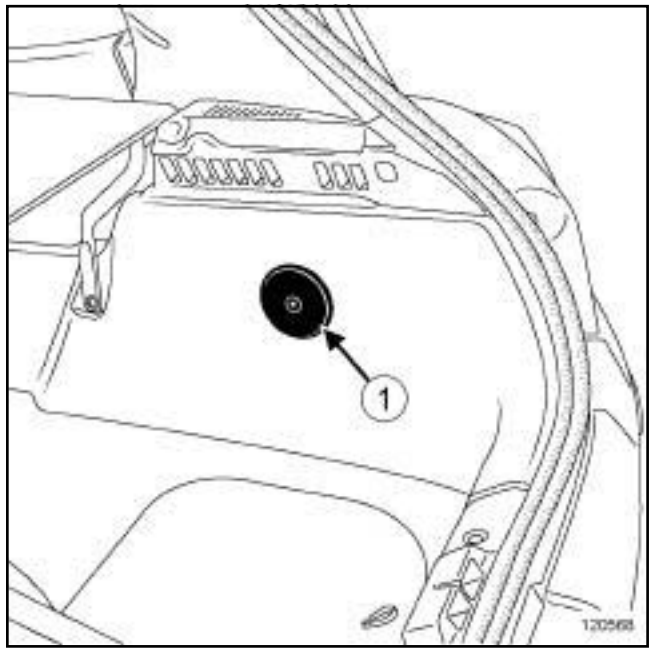
B85 or C85

❑ Remove the rear wheel arch trim (see **Rear wheel arch trim: Removal - Refitting**) (71A, Body internal trim).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❑ Remove the rear aerodynamic diffuser (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

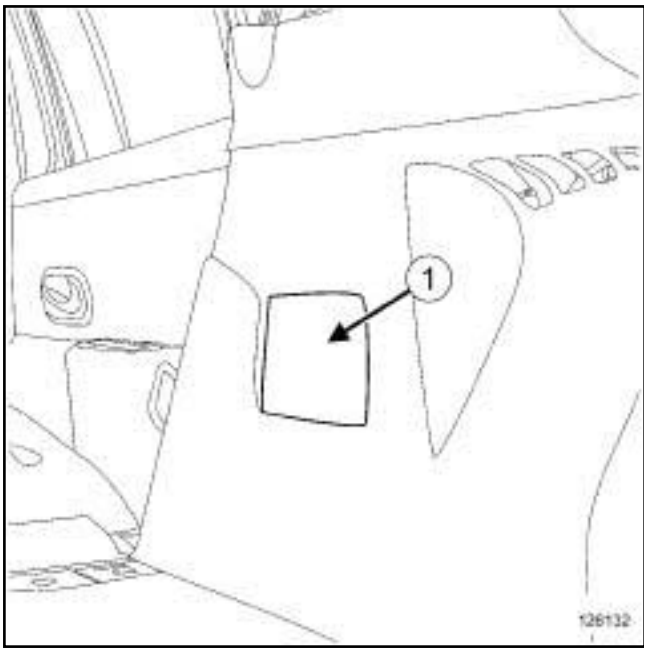
S85



120568

❑ Remove the flap (**1**) from the rear loading trim which gives access to the upper shock absorber nut.

K85

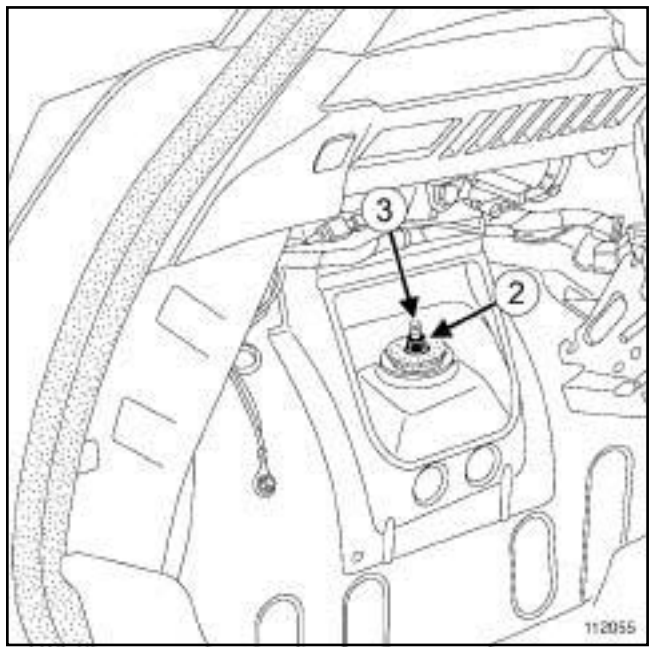


126132

❏ Pull down the rear bench seatbacks to gain access to the upper shock absorber nut.

❏ Remove the rear wheel arch trim flap (**1**) .

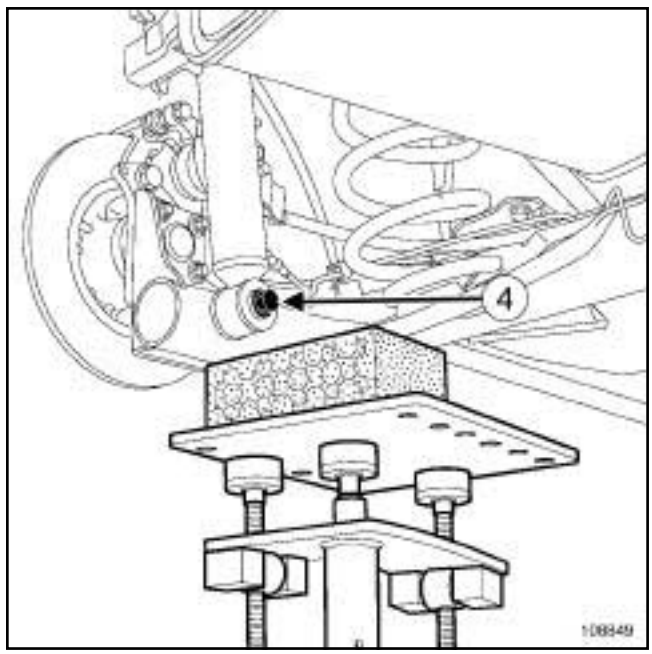
II - OPERATION FOR REMOVAL OF PART CONCERNED



112055

❏ Loosen the upper shock absorber nut (**2**) , whilst holding the bolt head ***(3)*** , with the wheels on the ground.

❏ Raise the lift.



108849

❏ Using a block, bring the **component jack** into contact under the rear axle, near the shock absorber.

❏ Remove the lower bolt (**4**) from the shock absorber.

❏ Remove the **component jack**.

❑ Remove:

- the upper shock absorber nut ***(2)*** ,
- the shock absorber.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ The upper shock absorber nut must always be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the shock absorber,
- the new shock absorber upper nut.

❑ Torque tighten the **upper shock absorber nut (21 N.m)** whilst holding the bolt head, with the wheels on the ground.

❑ Raise the lift.

❑ Using a block, bring the **component jack** into contact under the rear axle, near the shock absorber.

❑ Refit the shock absorber lower bolt.

❑ Torque tighten the **lower shock absorber bolt (105 N.m)** with the **component jack** in position.

❑ Repeat the operation on the opposite side.

III - FINAL OPERATION

B85 or C85

❑ Refit the rear wheel arch trim (see **Rear wheel arch trim: Removal - Refitting**) (71A, Body internal trim).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❑ Refit the rear aerodynamic diffuser (see **Aerodynamic diffuser: Removal - Refitting**) (55A, Exterior protection).

S85

❑ Refit the rear loading trim flap which gives access to the upper shock absorber nut.

K85

❑ Refit:

- the rear wheel arch trim flap that gives access to the upper shock absorber nut,
- the rear bench seatbacks.

Equipment required
component jack

Tightening torques ▽	
shock absorber lower mounting bolts	**105 Nm**

WARNING
Never use the rear axle as support for a lifting system.

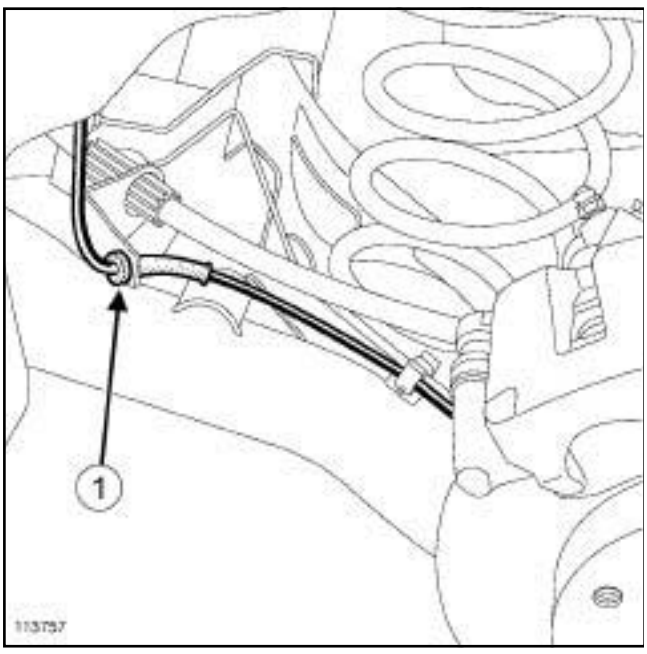
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

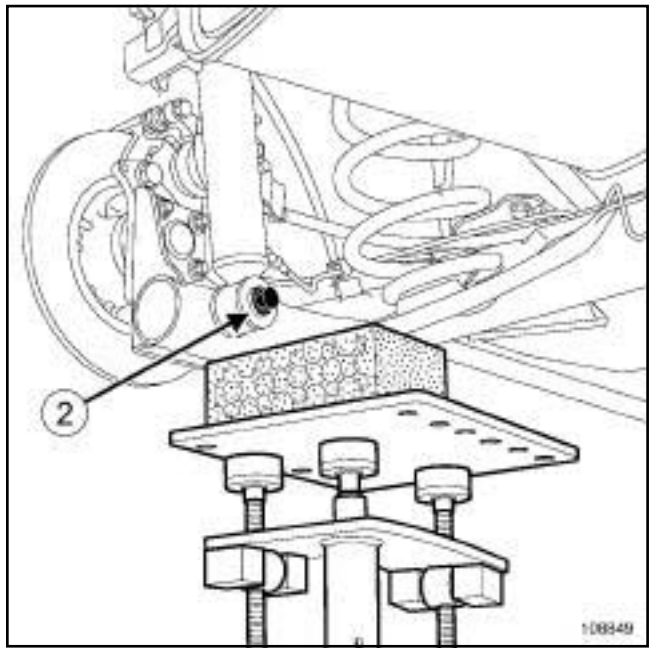
❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113757

❏ Unpick the wheel speed sensor wiring harnesses (**1**)



108849

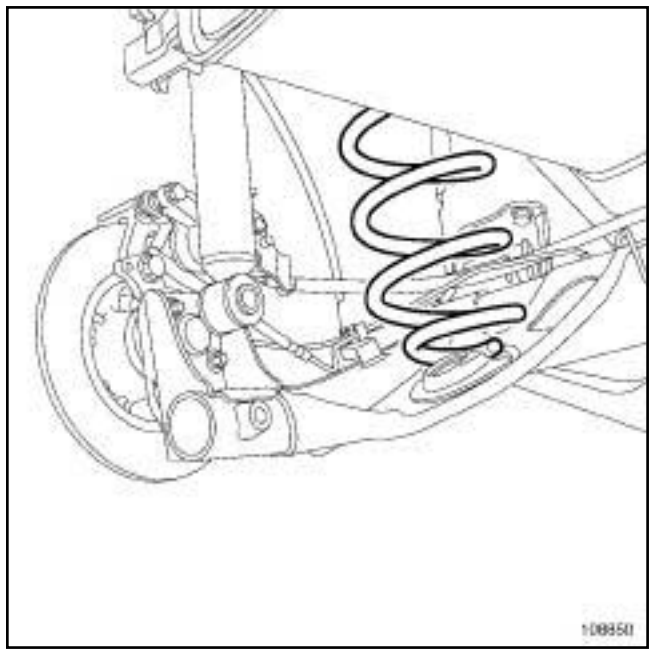
❏ Using a block, bring the **component jack** into contact under the rear axle, near the shock absorber.

❏ Mark the position where the springs are fitted.

❏ Remove the shock absorber lower mounting (**2**) .

❏ Remove the **component jack**.

❏ Repeat these operations on the opposite side.



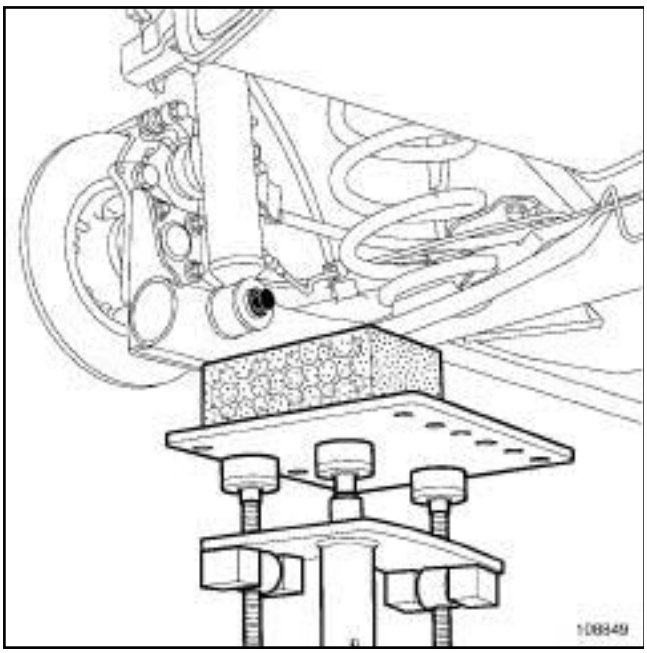
108850

❏ Remove the springs by withdrawing the **component jack**.

❏ Leave the rear axle suspended.

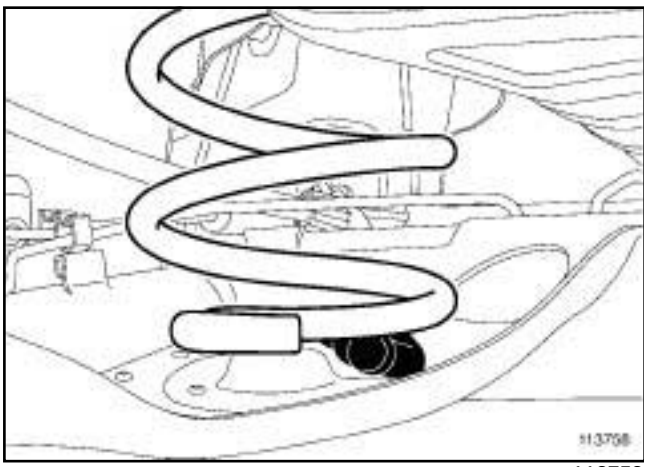
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



108849

❏ Using a block, bring the **component jack** into contact under the rear axle, near the shock absorber.



113758

❏ Refit the springs in their housing.

❏ Compress the rear axle.

❏ Refit the lower shock absorber mounting bolts.

❏ Torque tighten the **shock absorber lower mounting bolts (105 Nm)**.

❏ Mount the wheel speed sensor wiring.

II - FINAL OPERATION.

❏ Remove the **component jack**.

❏ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

Using a dial gauge connected to the drum, check that the end float is greater than **0.03 mm**.

REMOVAL

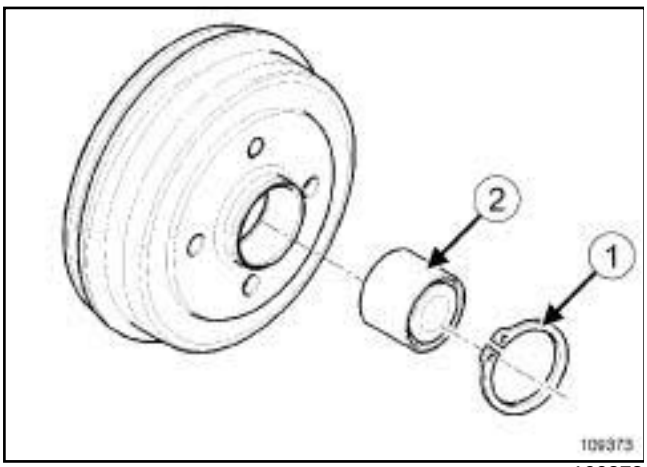
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove:

- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109373

❏ From the drum, remove:

- the bearing retaining circlip (**1**) ,
- the bearing (**2**) using a tube with an external diameter of **47 mm** and a press.

Note:

Check that the tube is pressing against the outer bush of the bearing.

REFITTING

I - REMOVAL PREPARATION OPERATION

❏ Clean:

- the internal and external surfaces of the new bearing in contact with the drum and the stub axle,
- the surfaces of the drum in contact with the new bearing,
- the stub-axle surfaces in contact with the new bearing,

❏

WARNING

It is essential to check the condition of the surface of the stub axle and the bore of the drum before refitting the bearing. Replace the stub axle carrier if it is faulty.

WARNING

Do not apply pressure to the inner bearing bush, to avoid damaging the bearing (significant force is required for fitting).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Lift the bearing until it presses onto the shoulder using a tube with an external diameter of **51 mm** and a press.

❏ Refit the circlip

III - FINAL OPERATION

❏ Refit:

- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

REMOVAL

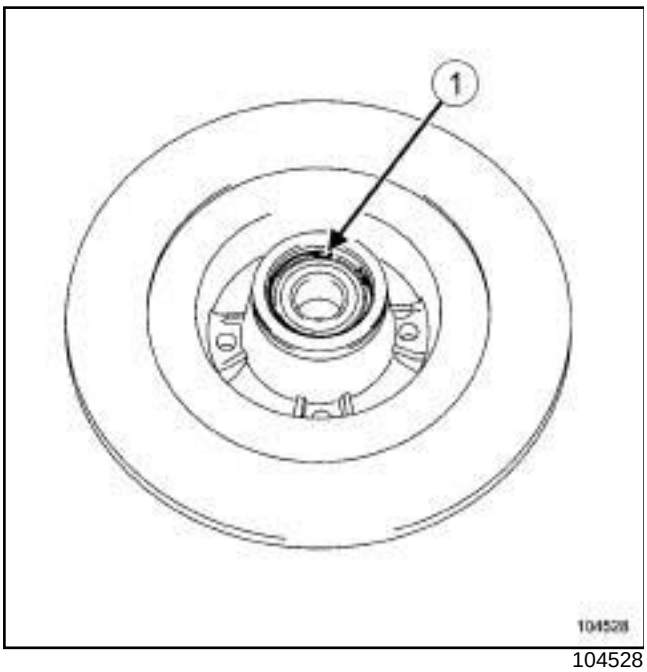
I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Remove:

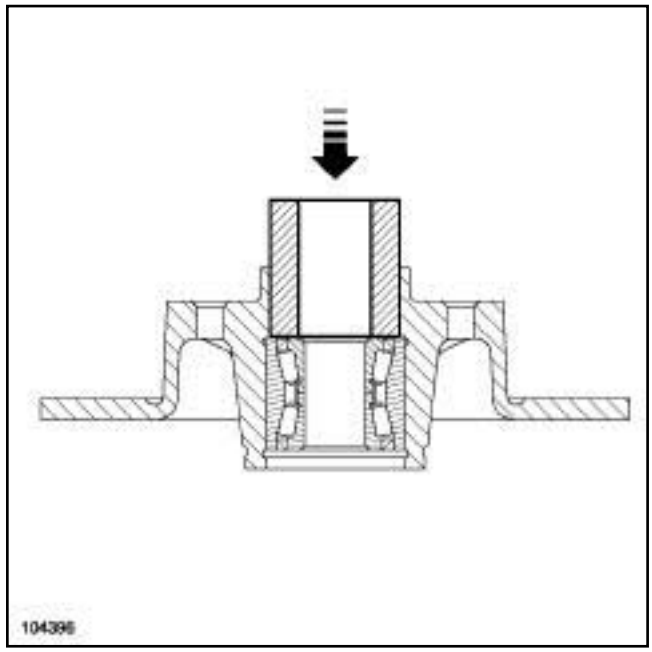
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



104528

❏ Remove circlip (**1**) .



104396

❏ Remove the bearing by applying pressure with a tube **50 mm** in diameter.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean:

- the internal and external surfaces of the new bearing in contact with the disc and the stub axle,
- the surfaces of the disc in contact with the new bearing,
- the stub-axle surfaces, in contact with the new bearing,

❏

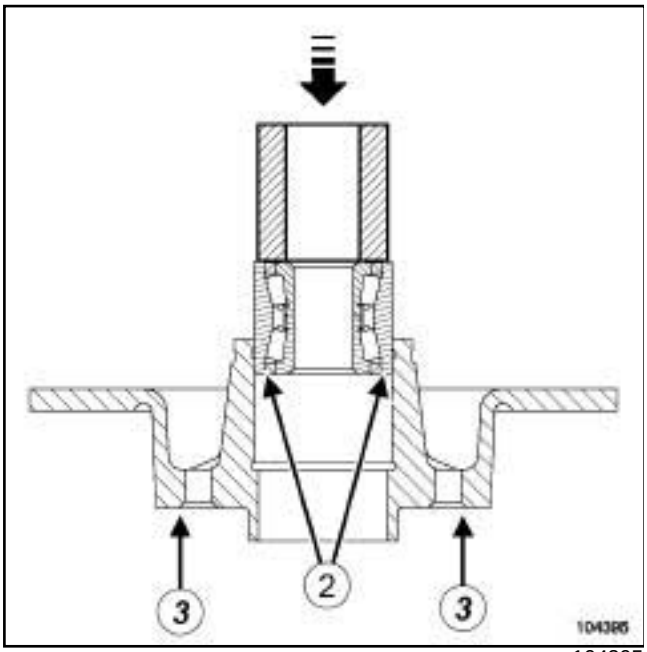
WARNING

It is essential to check the condition of the surface of the stub axle and the bore of the disc before refitting the bearing. Replace the stub axle carrier if it is faulty.

WARNING

Do not apply pressure to the inner bearing ring, to avoid damaging the bearing (significant force is required for fitting).

II - REFITTING OPERATION FOR PART CONCERNED



104395

❏ Raise the bearing until it presses on the retaining wall, using a press and a tube with an outer diameter of a maximum of **55 mm** and a minimum of **43 mm** (to prevent pressing on the inner ring). When the bearing is being fitted, the disc must be positioned on the pressure face (**3**) of the wheel.

The markings on the bearing must be located at (**2**) .

❏ Refit the circlip.

III - FINAL OPERATION

❏ Refit:

- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) ,
- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

DISC BRAKE

Equipment required
component jack

Tightening torques ▽	
stub axle carrier mounting bolts	**80 Nm**
shock absorber lower mounting bolt	**105 Nm**

REMOVAL

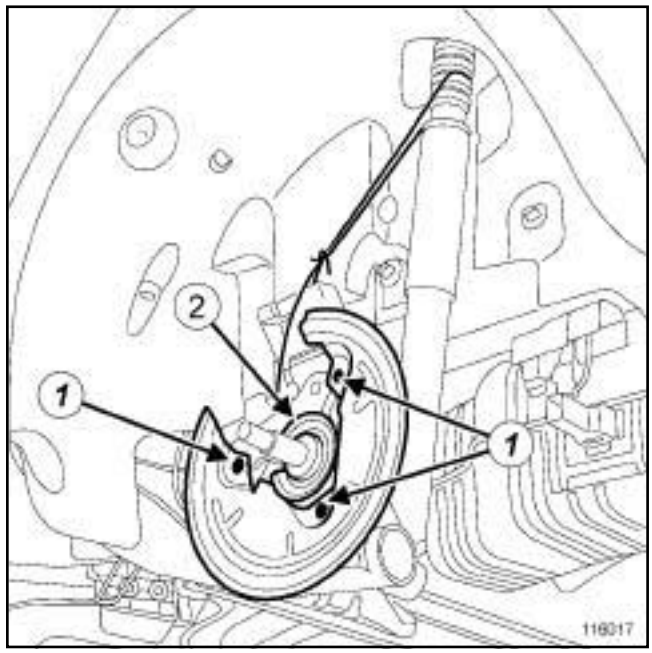
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the rear wheel in question (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116017

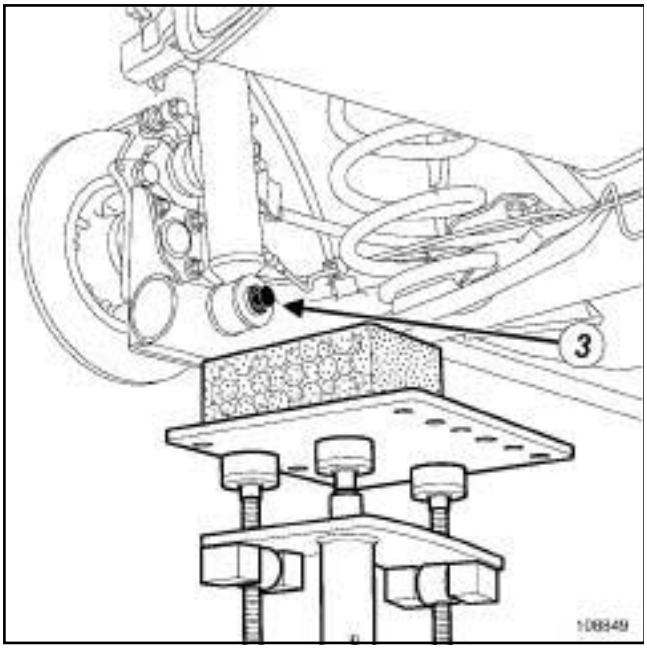
❑ Remove:

- the rivets (**1**) from the disc protector,
- the brake disc protector,
- the sensor holder (**2**) from the ABS sensor,

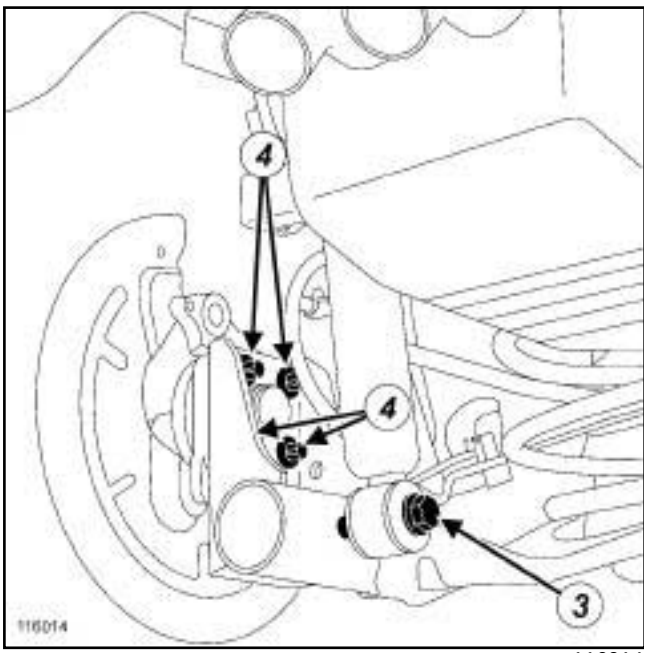
Note:

Mark the of the position of the inscription on the stub axle carrier for the purpose of refitting

DISC BRAKE



108849



116014

❑ Fit a **component jack** with a shim under the rear axle level with the shock absorber.

❑ Remove:

- the shock absorber lower mounting bolt (**3**) ,
- the mounting bolts (**4**) from the stub axle carrier,
- the stub axle carrier.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Clean the stub axle carrier.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

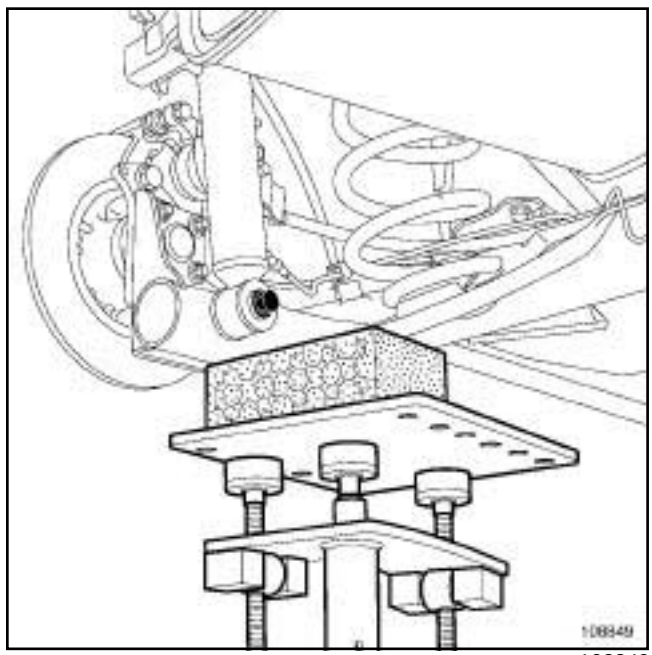
- the stub axle carrier,
- the stub axle carrier mounting bolts.

❑ Torque tighten the **stub axle carrier mounting bolts (80 Nm)**.

❑ Refit:

- the ABS sensor holder,
- the brake disc protector,
- the disc protector rivets.

III - FINAL OPERATION.



108849

❑ Refit and torque tighten the **shock absorber lower mounting bolt (105 Nm)** with the **component jack** fitted, with a shim, under the rear axle and level with the shock absorber.

❑ Remove the **component jack**.

❑ Refit:

- the rear brake disc (see **33A**, **Rear axle components**, **Rear brake disc: Removal - Refitting**, page **33A-12**) ,

DISC BRAKE

- the calliper mounting (see **33A**, **Rear axle components**, **Rear brake calliper mounting: Removal - Refitting**, page **33A-10**) ,
- the rear brake pads (see **33A**, **Rear axle components**, **Rear brake pads: Removal - Refitting**, page **33A-3**) ,
- the rear wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

DRUM BRAKE

Tightening torques ▽	
stub axle carrier mounting bolts	**80 Nm**
rigid pipe union on the brake cylinder	**14 Nm**

REMOVAL

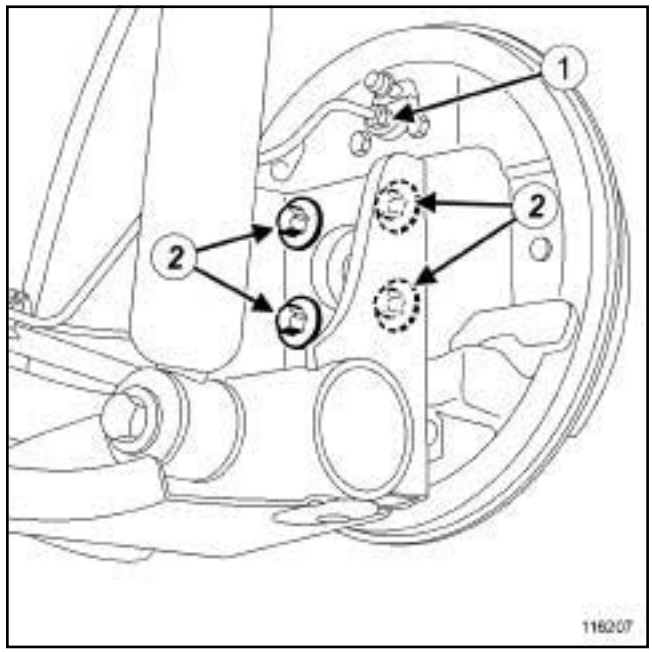
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

❏ Remove:

- the rear wheel in question (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116207

❏

Note:

Mark the of the position of the inscription on the stub axle carrier for the purpose of refitting

Remove:

- the rigid pipe union (**1**) on the brake cylinder,
- the mounting bolts (**2**) from the stub axle carrier,
- the stub axle carrier,
- the brake cylinder-flange-pad assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the stub axle carrier.

II - REFITTING OPERATION FOR PART CONCERNED

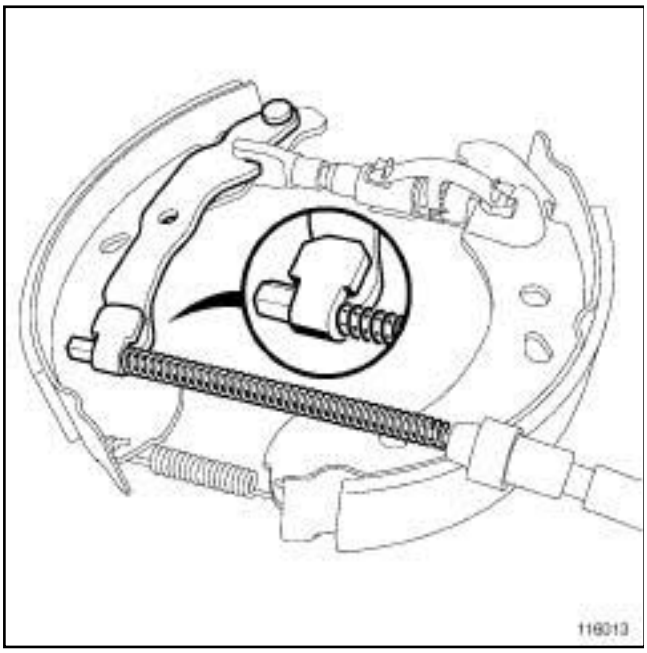
❏ Refit:

- the brake cylinder-flange-pad assembly,
- the stub axle carrier,
- the stub axle carrier mounting bolts,
- the rigid pipe union on the brake cylinder,

❏ Tighten to torque:

- the **stub axle carrier mounting bolts (80 Nm)**,

- the **rigid pipe union on the brake cylinder (14 Nm)**.



116013

❑ Check that the parking brake cable is correctly positioned on the parking brake lever.

III - FINAL OPERATION

❑ Refit:

- the brake drum (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) ,
- the rear wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
pedal press
safety strap(s)

Tightening torques ▽	
bearing mounting bolts	**62 Nm**
brake hose nuts	**14 Nm**

WARNING
Never use the rear axle as support for a lifting system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

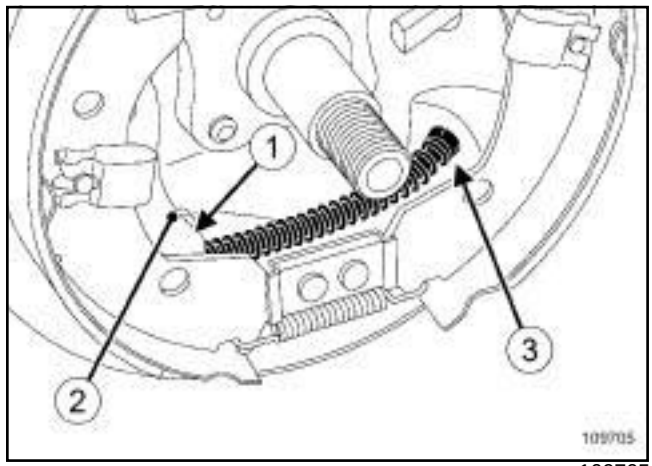
❏ Release the parking brake.

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

DRUM BRAKE



109705

❏ Remove the drums (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

❏ Remove the parking brake cable (**1**) from the lever (**2**) using pliers and a screwdriver.

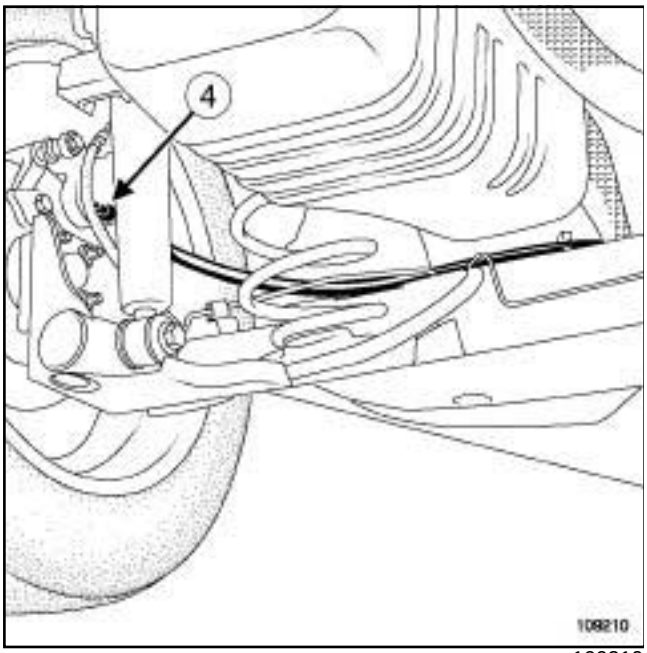
❏ Unclip the parking brake cable sheath (**3**) from the drum back-plate.

❏ Unclip the wheel speed sensors from the back-plate.

❏ Unclip the wheel speed sensors from the rear axle.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

DISC BRAKE

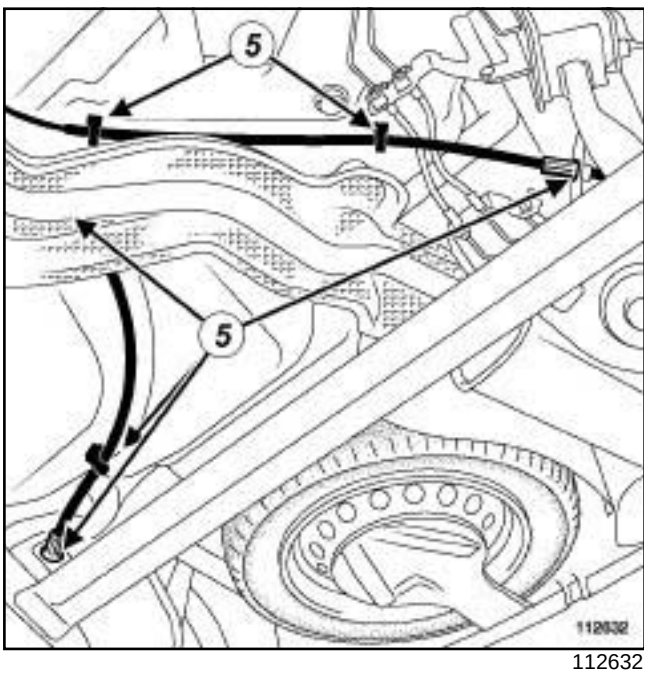


109210

❏ Remove the parking brake cables (**4**) at the brake callipers.

❏ Unclip the wheel speed sensors.

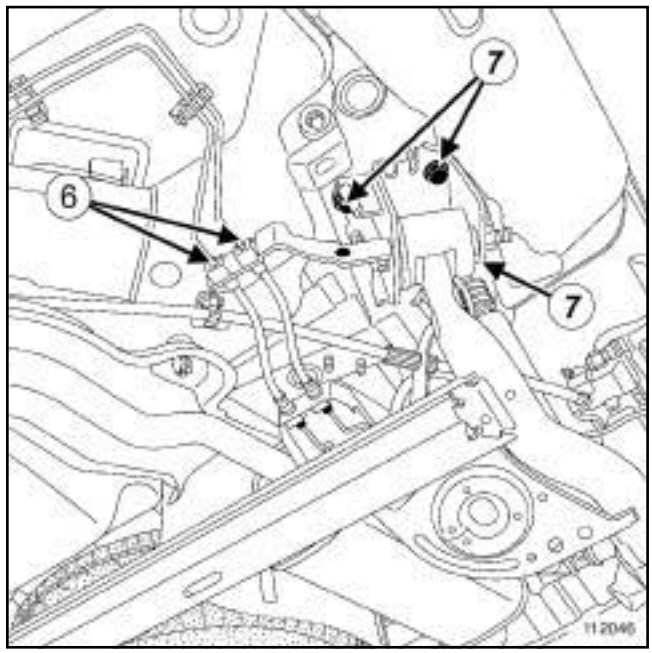
❏ Unclip the wheel speed sensors from the rear axle.



112632

❏ Unclip the parking brake cables from their guides (**5**) .

❏ Note the parking brake cable routing for refitting.

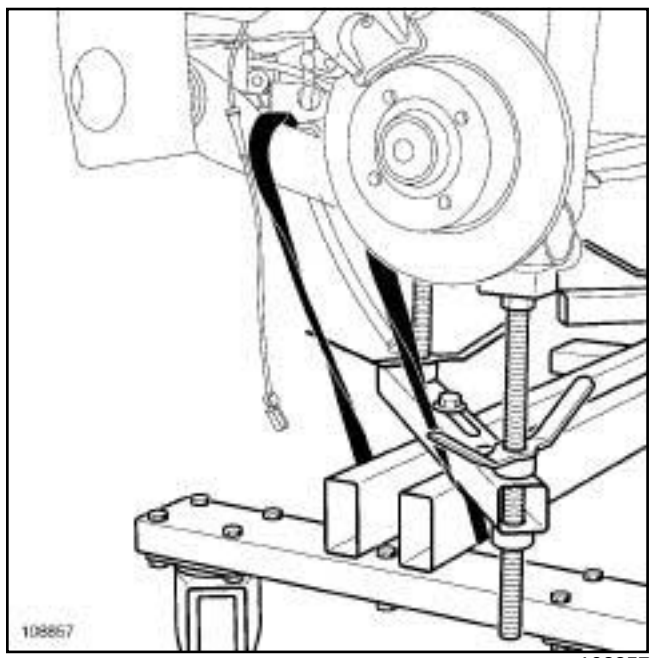


112046

❏ Unscrew the unions (**6**) connecting the rigid pipes and the brake hoses.

❏ Loosen the rear axle bearing bolts (**7**) .

❏ Remove the springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .



108857

❏ Fit the **(Mot. 1390)** under the rear axle.

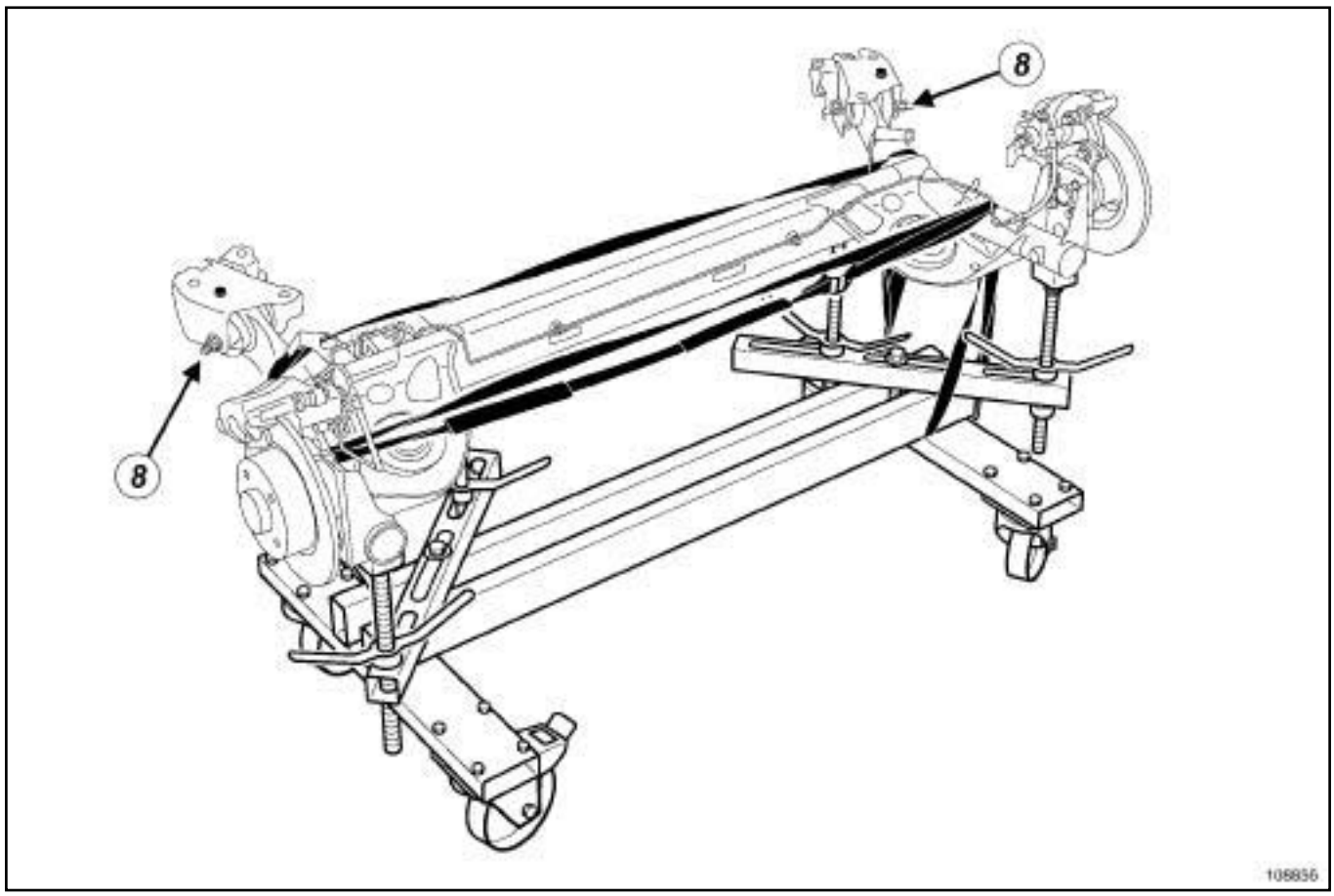
❏ Position the pads of the **(Mot. 1390)** in contact with the rear axle.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

❑ Put a **safety strap(s)** around the rear axle.

❑ Remove the rear axle bearing bolts.

❑ Raise the vehicle.



108856

❑ Remove the rear axle components (do not undo the rubber bush bolts (**8**)).

REFITTING

I - REMOVAL PREPARATION OPERATION

❑ Refit the rear axle equipment.

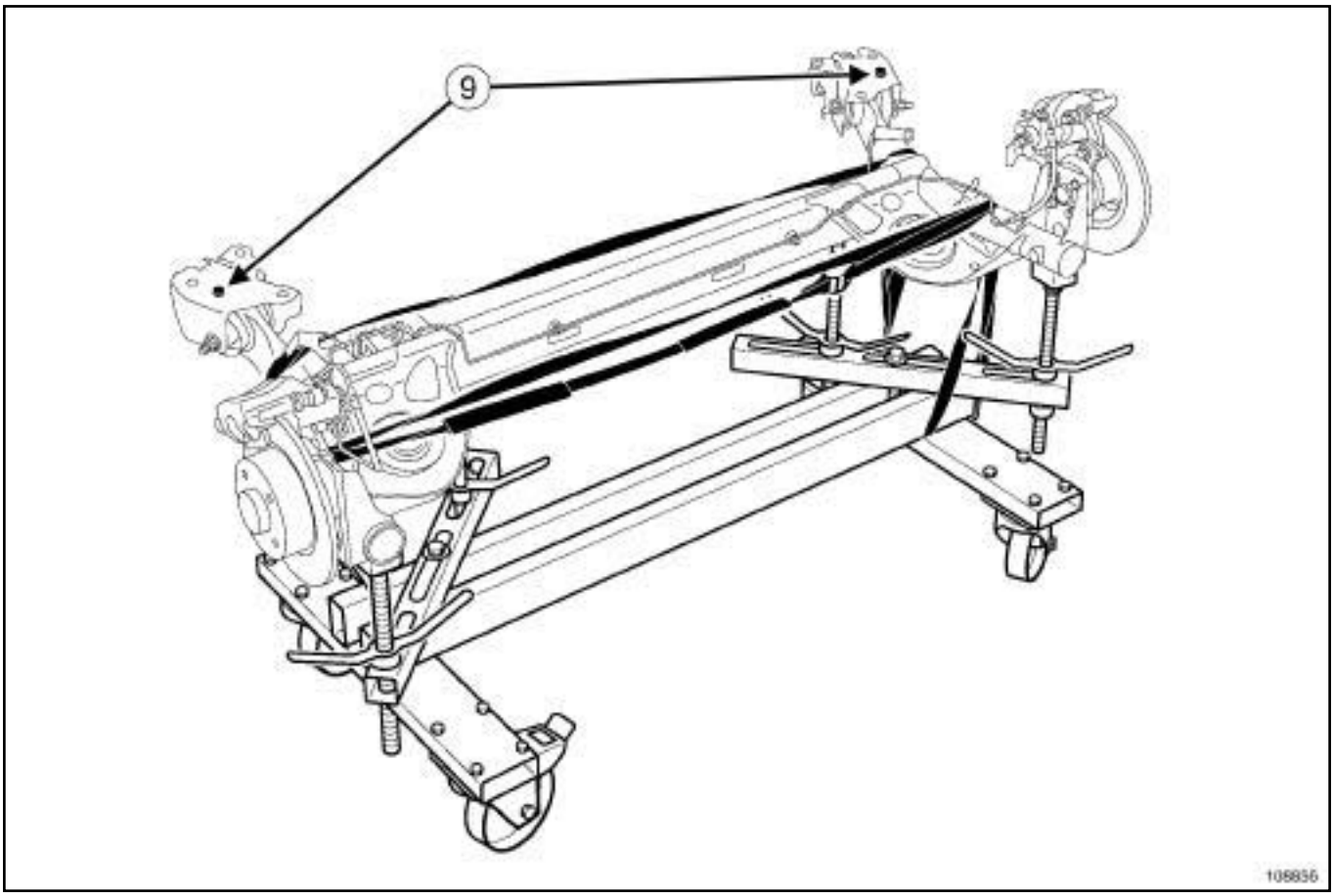
❑ Strap the rear axle onto the **(Mot. 1390)**.

❑ Degrease the surfaces of the body which are in contact with the rear axle bearing using surface cleaner.

❑ Position the rear axle under the vehicle.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

II - REFITTING OPERATION FOR PART CONCERNED

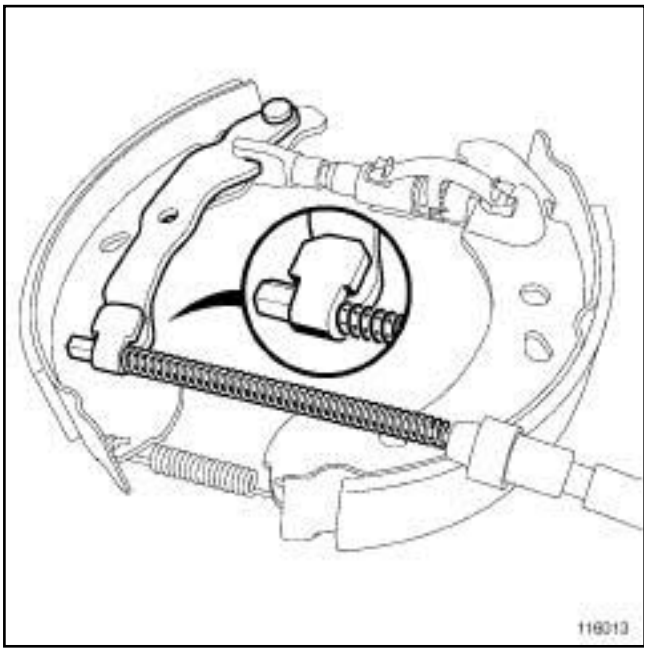


108856

- ❏ Lower the lift.
- ❏ Position the bearing centring devices (**9**) opposite the centring holes.
- ❏ Refit the mountings, starting with the left-hand bearing.
- ❏ Raise the lift.
- ❏ Remove the **safety strap(s)**.
- ❏ Remove the **(Mot. 1390)**.
- ❏ Insert the brake pipes into their housing.
- ❏ Screw on the brake hose nuts.
- ❏ Tighten to torque:
  - the **bearing mounting bolts (62 Nm)**,
  - the **brake hose nuts (14 Nm)**.
- ❏ Refit the springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .
- ❏ Clip on and connect the wheel speed sensor connectors.
- ❏ Refit the parking brake cables in their guides and on the calliper (or backplate).
- ❏ Check that the parking brake cable stops are properly inserted in their housing.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

DRUM BRAKE



116013

❑ Check that the parking brake cable is correctly positioned on the parking brake lever.

❑ Adjust the parking brake cables (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**) .

III - FINAL OPERATION

❑ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
pedal press
safety strap(s)

Tightening torques ▽	
bearing mounting bolts	**62 Nm**
brake hose nuts	**14 Nm**

WARNING
Never use the rear axle as support for a lifting system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

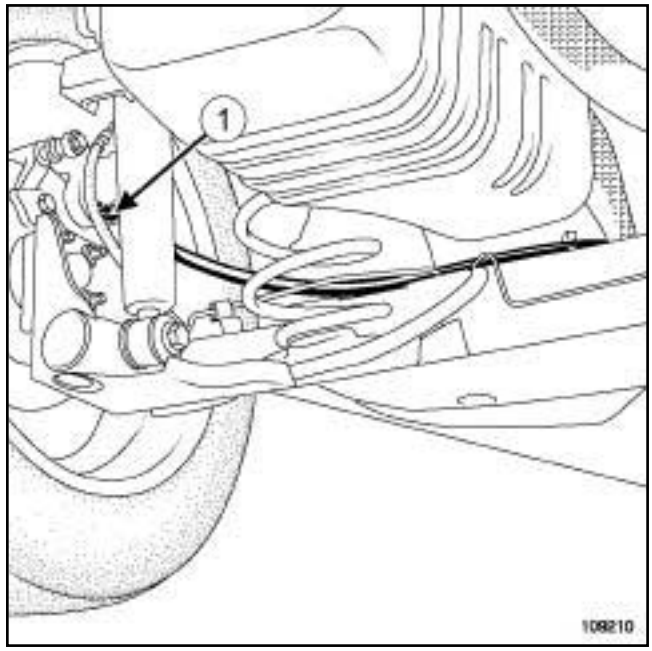
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Release the parking brake.

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

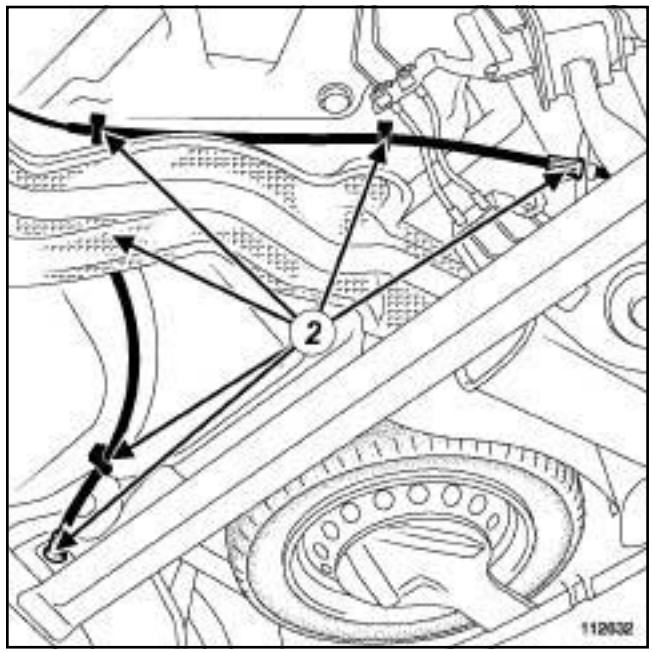


109210

❏ Remove the parking brake cables (**1**) at the brake callipers.

❏ Unclip the wheel speed sensors.

❏ Unfasten the wheel speed sensors from the rear axle.

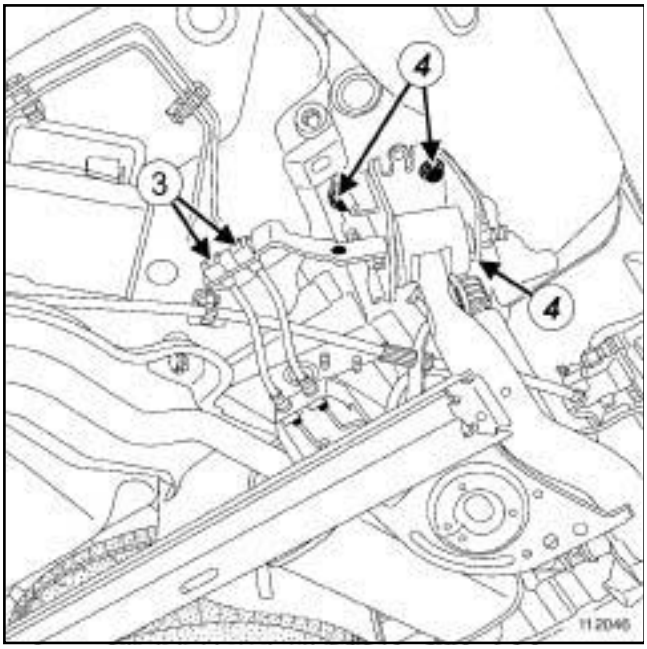


112632

❏ Unfasten the parking brake cables from their guides (**2**) .

❏ Note the parking brake cable routing for refitting.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

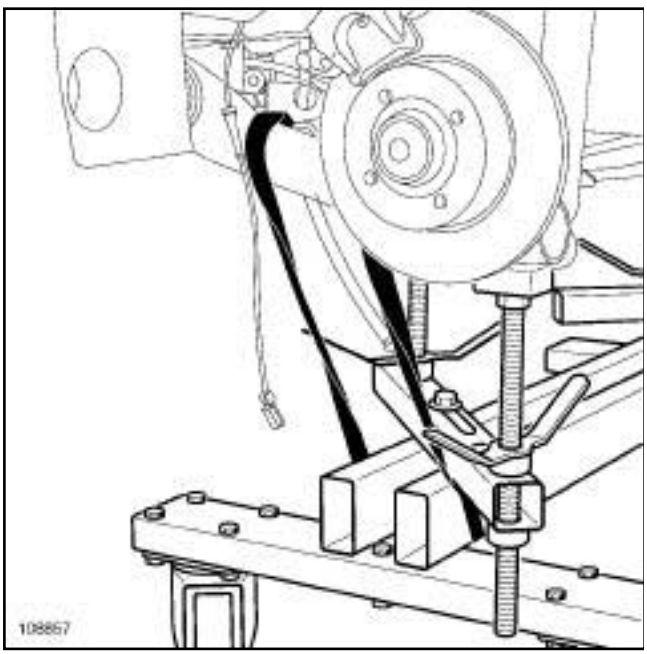


112046

❏ Unscrew the unions (**3**) connecting the rigid pipes and the brake hoses.

❏ Loosen the rear axle bearing bolts (**4**) .

❏ Remove the suspension springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .



108857

❏ Fit the **(Mot. 1390)** under the rear axle.

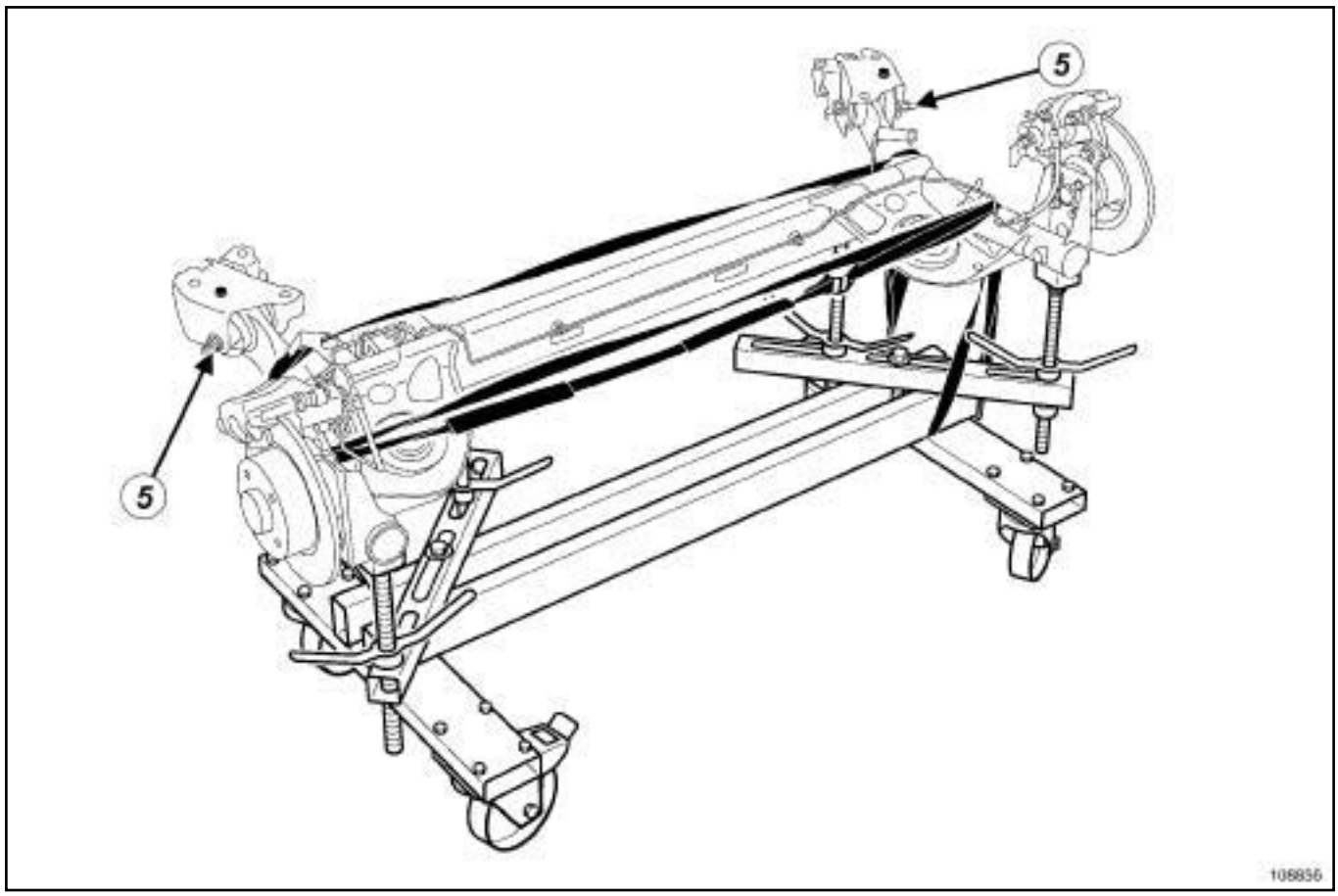
❏ Position the pads of the **(Mot. 1390)** in contact with the rear axle.

❏ Put a **safety strap(s)** around the rear axle.

❏ Remove the rear axle bearing bolts.

❏ Raise the vehicle.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



108856

❏ Remove the rear axle components (do not undo the rubber bush bolts (**5**)).

REFITTING

I - REFITTING PREPARATIONS OPERATION

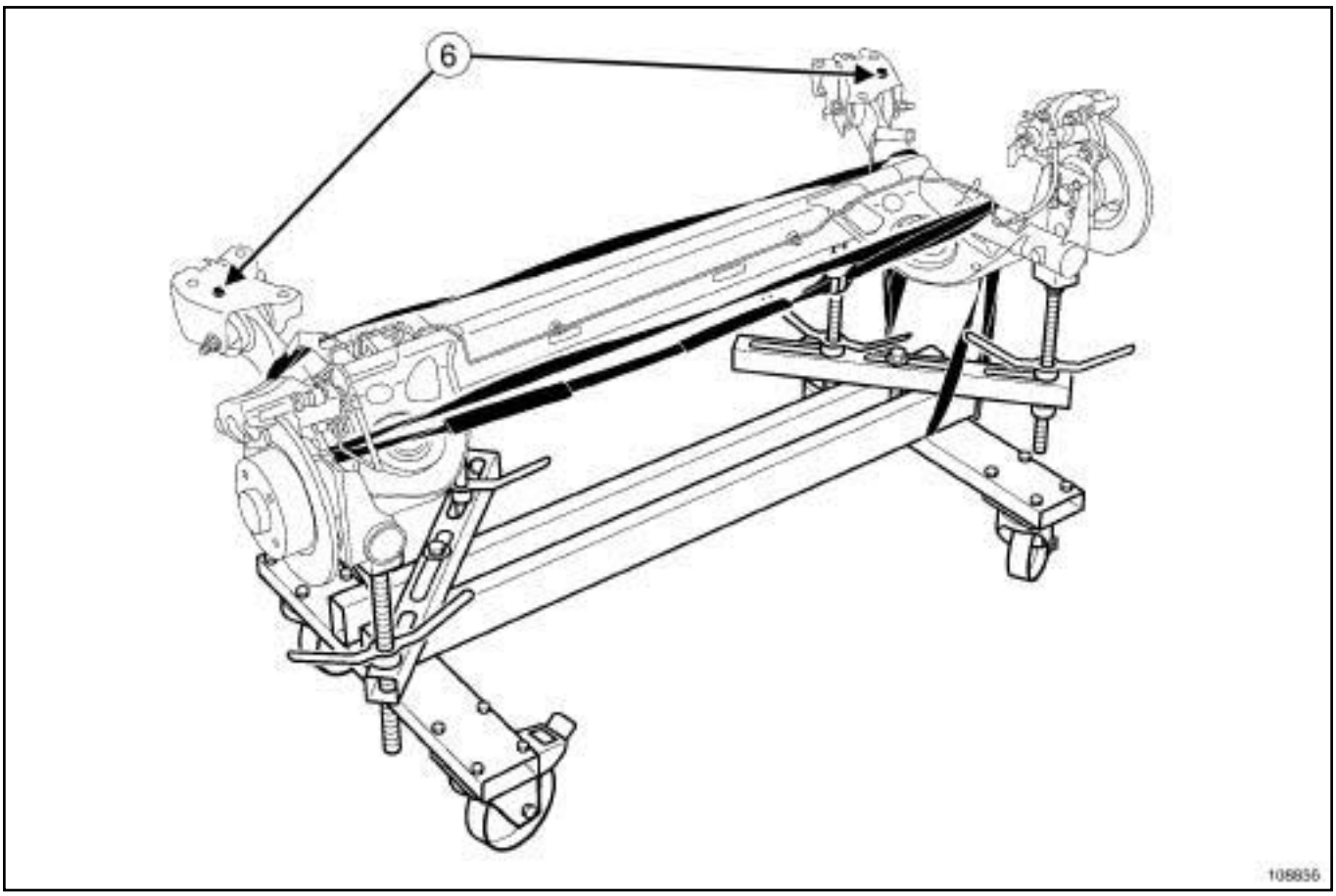
❏ Refit the rear axle equipment.

❏ Strap the rear axle onto the **(Mot. 1390)**.

❏ Position the rear axle under the vehicle.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

II - REFITTING OPERATION FOR PART CONCERNED



108856

- ❏ Lower the lift.
- ❏ Position the bearing centring devices (**6**) opposite the centring holes.
- ❏ Refit the mountings, starting with the left-hand bearing.
- ❏ Raise the lift.
- ❏ Remove the **safety strap(s)**.
- ❏ Remove the **(Mot. 1390)**.
- ❏ Insert the brake pipes into their housing.
- ❏ Screw on the brake hose nuts.
- ❏ Torque tighten:
  - the **bearing mounting bolts (62 Nm)**,
  - the **brake hose nuts (14 Nm)**.
- ❏ Refit the suspension springs (see **33A**, **Rear axle components**, **Rear suspension spring: Removal - Refitting**, page **33A-27**) .
- ❏ Clip on and connect the wheel speed sensor connectors.
- ❏ Refit the parking brake cables into the guides and onto the calliper.
- ❏ Check that the parking brake cable stops are properly inserted in their housing.
- ❏ Adjust the parking brake cables (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**)

III - FINAL OPERATION.

- ❏ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .
- ❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

Tightening torques ▽	
wheel bolts	**105 N.m**

The removal - refitting procedure is the same for alloy and steel wheels.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Release the parking brake.

❏ Remove the trim.

❏ Position the wheel so that the valve is at the top.

❏ Mark the position of the wheel on the hub.

> Note:
>
> This mark is necessary for:
>
> - marking the initial position of the wheel rim on the hub,
> - perform the balancing operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Loosen the wheel bolts with the wheels on the ground.

> Note:
>
> Use sockets with protective sheaths in order to avoid scratching the alloy wheel rims.

❏ Raise the lift.

❏ Remove:

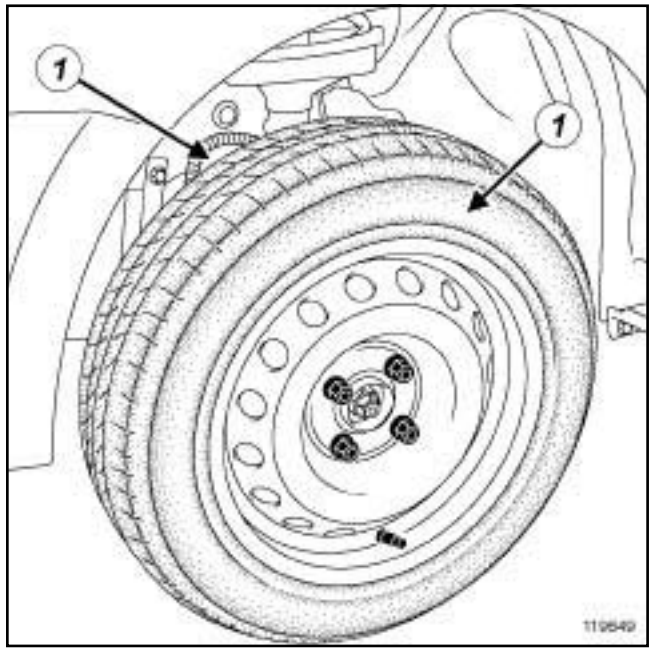
- the wheel bolts,
- the wheel.

If the wheel cannot be removed after the bolt has been undone:

❏ Position all the wheel bolts.

❏ Tighten the wheel bolts to bring all the bolt heads into contact with the wheel.

❏ Undo the wheel bolts by one turn.



119649

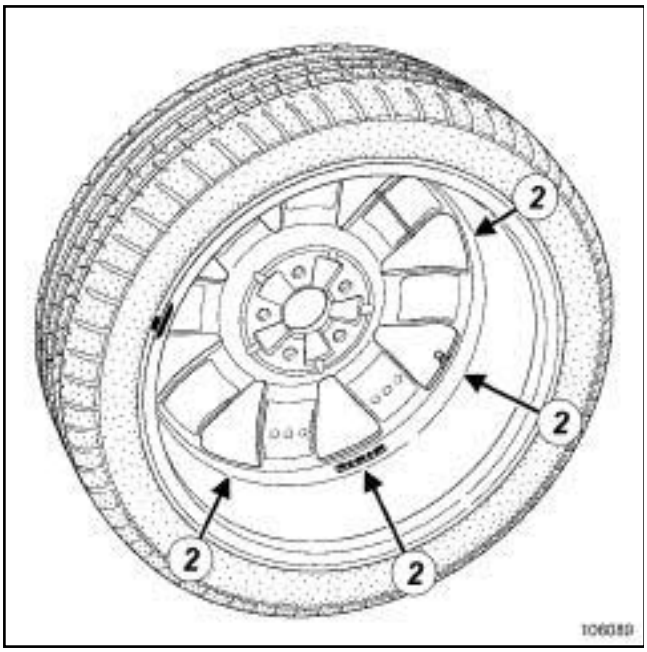
❏ Strike around the edge of the tyre walls (**1**) several times using a mallet on the inner and outer surfaces of the wheel to detach the wheel rim.

❏ Remove:

- the wheel bolts,
- the wheel.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

If this procedure does not work:



106089

❑ Strike the inner surface of the wheel (**2**) using a mallet and a wooden block to detach it.

> Note:
>
> Do not strike the surface of the wheel using excessive force as this may damage it.

❑ Remove:

- the wheel bolts,
- the wheel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the hub carrier using a wire brush.

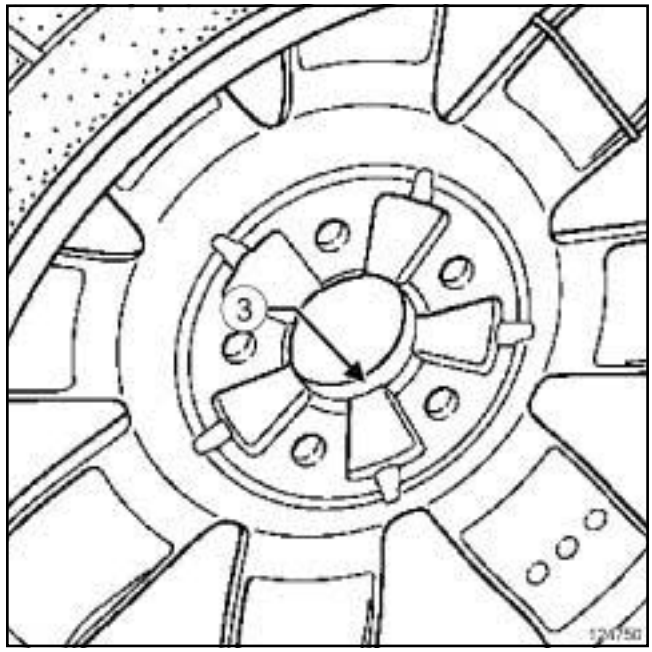
> Note:
>
> There are two types of wheel bolts for aluminium and steel wheel rims; do not swap them.

❑ Check the condition of the tyre.

❑ Do not move or remove the balance weights.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clean the mating surfaces between the wheel and the hub carrier using a wire brush.



124750

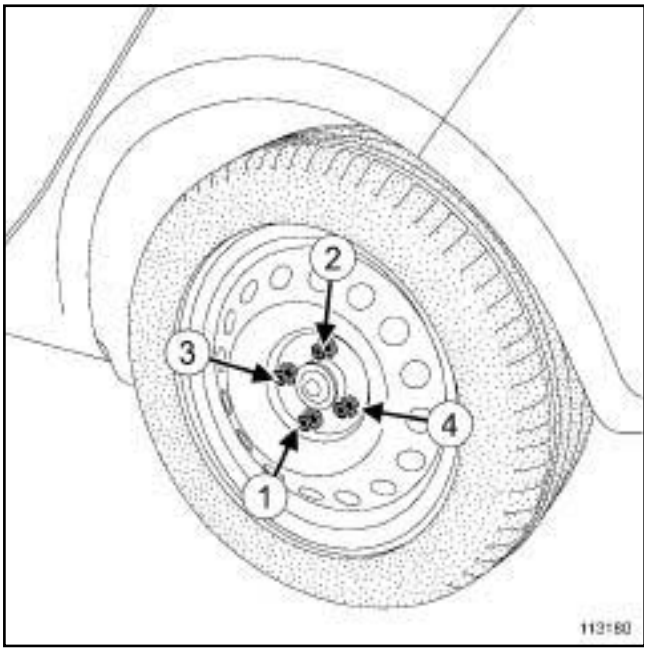
❑ Coat the wheel rim mating face (**3**) with **COPPER ANTI-SEIZE AGENT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Align the mark of the wheel rim with the mark on the hub, which was made at the time of the removal operation.

❑ Fit the wheel to the vehicle, positioning the valve at the top.

❑ Insert the wheel bolts.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



113180

- ❏ Tighten the wheel bolts to bring all the bolt heads into contact with the wheel.
- ❏ Pretighten the **wheel bolts (30 N.m)**, with the wheel hanging, starting with the bottom bolts.
- ❏ Rotate the wheel through **180°** to bring the valve into the bottom position.
- ❏ Position the vehicle on its wheels.
- ❏ Torque tighten in order the **wheel bolts (105 N.m)**.

III - FINAL OPERATION

- ❏ Refit the trim piece.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Tightening torques ▽	
wheel bolts	**140 Nm**

The removal - refitting procedure is the same for alloy and steel wheels.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Release the parking brake.

❏ Remove the trim.

❏ Position the wheel so that the valve is at the top.

❏ Mark the position of the wheel on the hub.

> Note:
>
> This mark is necessary for:
>
> - marking the initial position of the wheel rim on the hub,
> - perform the balancing operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Loosen the wheel bolts with the wheels on the ground.

> Note:
>
> Use sockets with protective sheaths in order to avoid scratching the alloy wheel rims.

❏ Raise the lift.

❏ Remove:

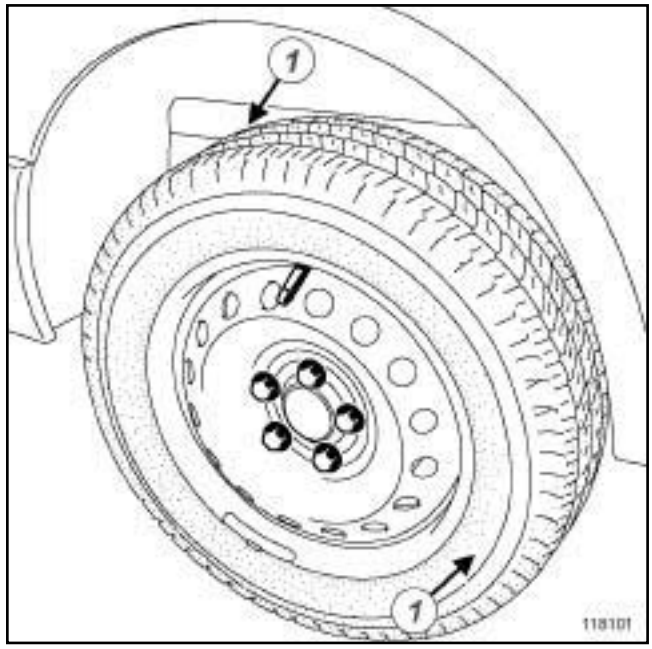
- the wheel bolts,
- the wheel.

If the wheel cannot be removed after the bolt has been undone:

❏ Position all the wheel bolts.

❏ Tighten the wheel bolts to bring all the bolt heads into contact with the wheel.

❏ Undo the wheel bolts by one turn.



118101

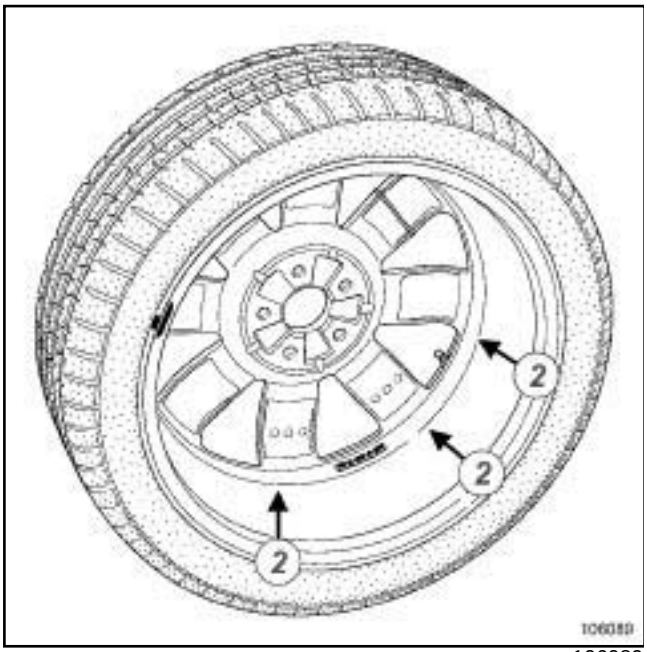
❏ Strike around the edge of the tyre walls (**1**) several times using a mallet on the inner and outer surfaces of the wheel to detach the wheel rim.

❏ Remove:

- the wheel bolts,
- the wheel.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

If this procedure does not work:



106089

❑ Strike the inner surface of the wheel (**2**) using a mallet and a wooden block to detach it.

> Note:
>
> Do not strike the surface of the wheel using excessive force as this may damage it.

❑ Remove:

- the wheel bolts,
- the wheel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the hub carrier using a wire brush.

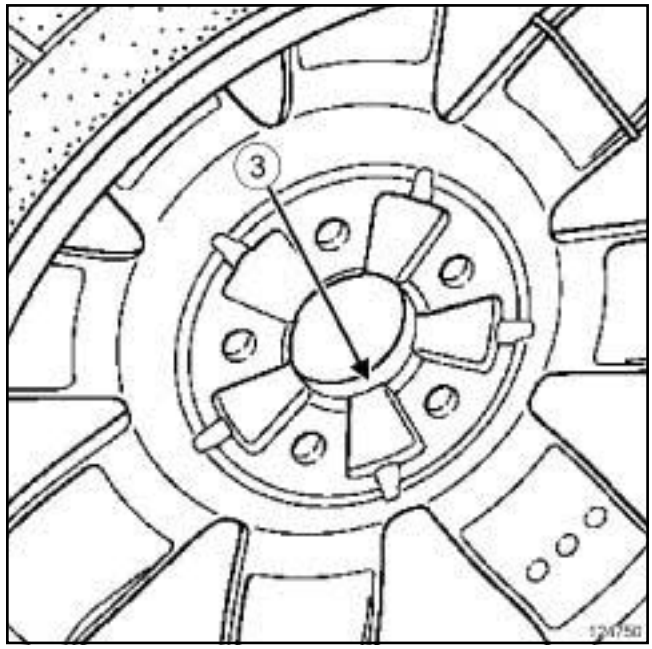
> Note:
>
> There are two types of wheel bolts for aluminium and steel wheel rims; do not swap them.

❑ Check the condition of the tyre.

❑ Do not move or remove the balance weights.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clean the mating surfaces between the wheel and the hub carrier using a wire brush.



124750

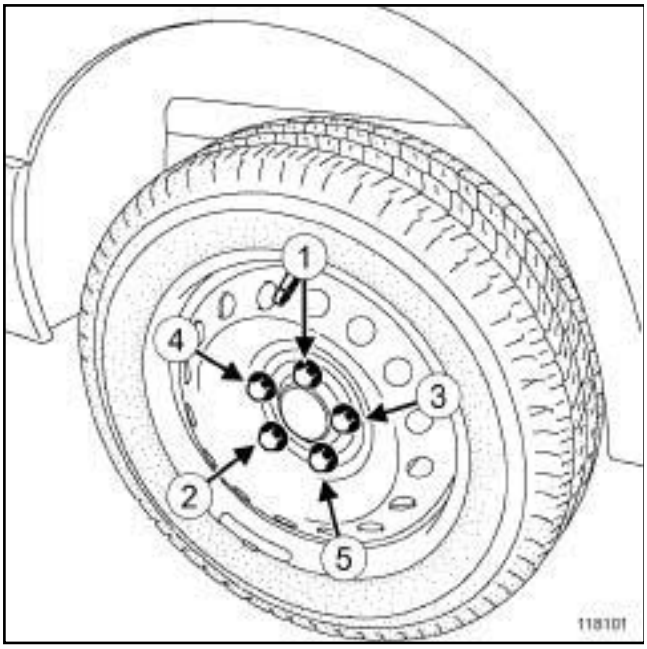
❑ Coat the wheel rim mating face (**3**) with **COPPER ANTI-SEIZE AGENT** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Align the mark of the wheel rim with the mark on the hub, which was made at the time of the removal operation.

❑ Fit the wheel to the vehicle, positioning the valve at the top.

❑ Insert the wheel bolts.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



118101

- ❏ Tighten the wheel bolts to bring all the bolt heads into contact with the wheel.
- ❏ Pretighten the **wheel bolts (30 N.m)**, with the wheel hanging, starting with the bottom bolts.
- ❏ Rotate the wheel through **180°** to bring the valve into the bottom position.
- ❏ Position the vehicle on its wheels.
- ❏ Tighten to torque and in order the **wheel bolts (140 Nm)**.

III - FINAL OPERATION

- ❏ Refit the trim piece.

I - PREREQUISITES FOR WHEEL BALANCING

❏ Wheel balancing is a measurement operation.

Several conditions must be met to achieve a reliable result in a single operation.

The wheel balancer must be installed in accordance with the manufacturer's instructions.

It is essential to calibrate the balancer according to the frequency recommended by the manufacturer.

Do not grease the threaded shaft.

Check the condition of the supports, centring components and mountings.

Replace any faulty parts (see manufacturer's instructions).

The wheel and the wheel balancer must be clean.

Driver's perception

❏ If the wheels are not correctly balanced this causes the steering wheel and/or the vehicle floor to vibrate.

These vibrations appear between **54 mph (90 km/h)** and **90 mph (150 km/h)**.

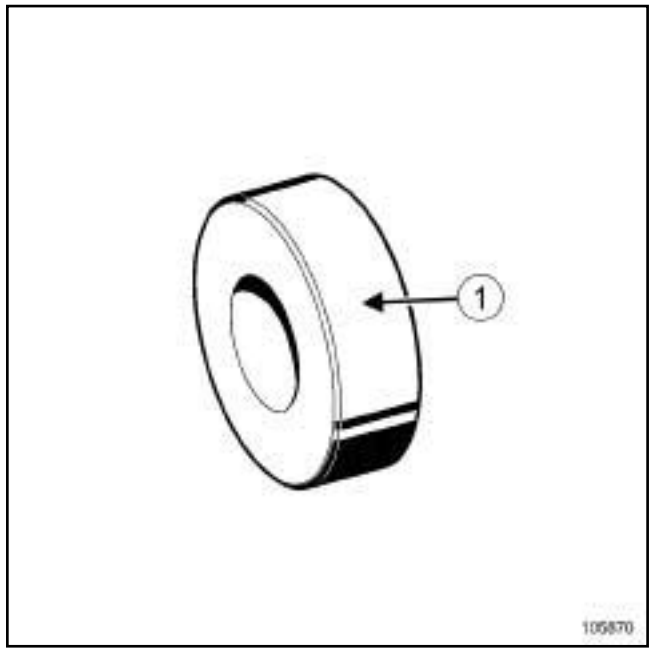
II - BALANCING PREPARATION OPERATION

❏ Adjust the tyre pressure (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

❏ Always carry out a road test for a minimum distance of **1 mile (2 km)** before balancing the wheels, in order to remove any flat spots on the tread caused by the vehicle being immobilised.

❏ Actions to be carried out immediately after the test drive:

- Position the vehicle on a two-post vehicle lift (see **Vehicle: Towing and lifting**) ,
- raise the vehicle,
- leave the four wheels hanging free,
- release the parking brake.



105870

❏

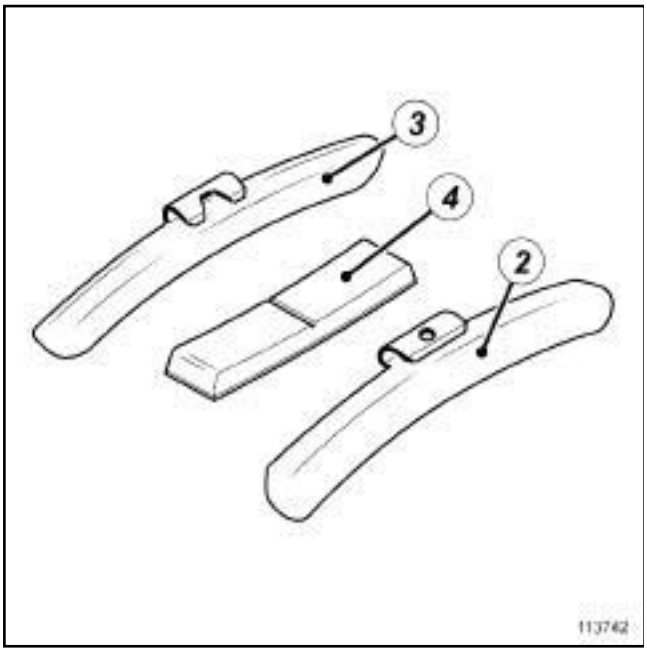
Note:

The ring is available from the supplier of the equipment used.

To reproduce the exact vehicle wheel assembly, use a ring (**1**) of diameter:

❏ **60 mm**

❏ There are three types of weight:



113742

(**2**) Steel wheel with flange

(**3**) Alloy wheel with flange

(**4**) Alloy wheel without flange

❏ In some countries, the use of lead weights is forbidden; in this case it is recommended to use **ZAMAK** weights instead.

Only use weights provided by the Parts Department.

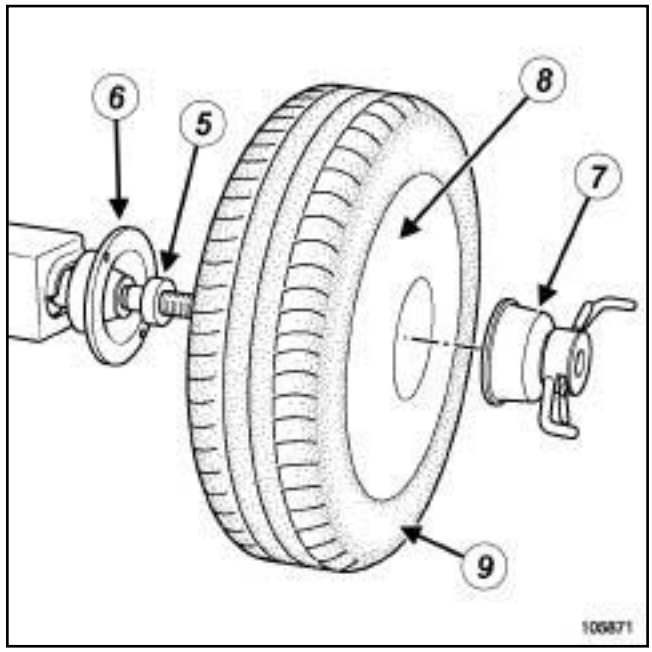
❏ Remove the wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Always clean the wheel, disc, and hub bearing surfaces.

III - PROCEDURE FOR BALANCING THE WHEEL IN QUESTION

❏ Make sure that the wheel balancer bearing surface and all the centring equipment (ring, thrust plate, etc.) are kept clean.

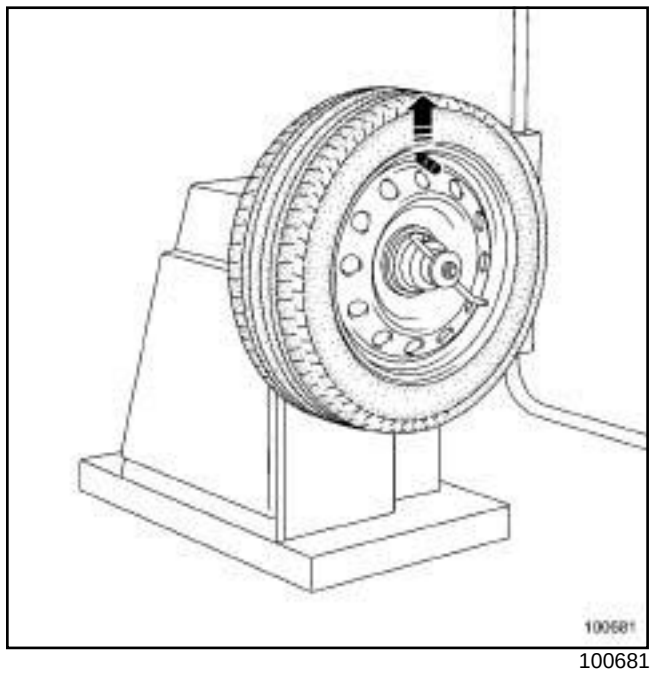
❏ Try not to scratch the (alloy) wheel rim with the wheel tightening device.



105871

❏ The wheel is fitted on the wheel balancer as follows:

- (**5**) ring,
- (**6**) wheel balancer back-plate,
- (**7**) wheel tightening device (certain alloy wheels require a device 200 mm in diameter to ensure that the wheel has been correctly tightened),
- (**8**) outer wheel plane,
- (**9**) wheel.



100681

❏ Place the wheel on the wheel balancer, with the valve at the top, then lock the wheel in place.

❏ Remove any stones trapped in the tyre tread.

❏ Enter the specific wheel parameters when starting the wheel balancer.

❏ Start the wheel balancer and check the wheel balance, which should be **0 g** on each plane of the wheel.

❏ If this is not the case, remove the old wheel balancing weights and repeat the wheel balancing procedure, checking that the wheel balance equals **0** on each wheel plane.

WARNING

To avoid detachment of the balance weights, use only weights which correspond to the vehicle wheel rims.

IV - FINAL OPERATION

❏ Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

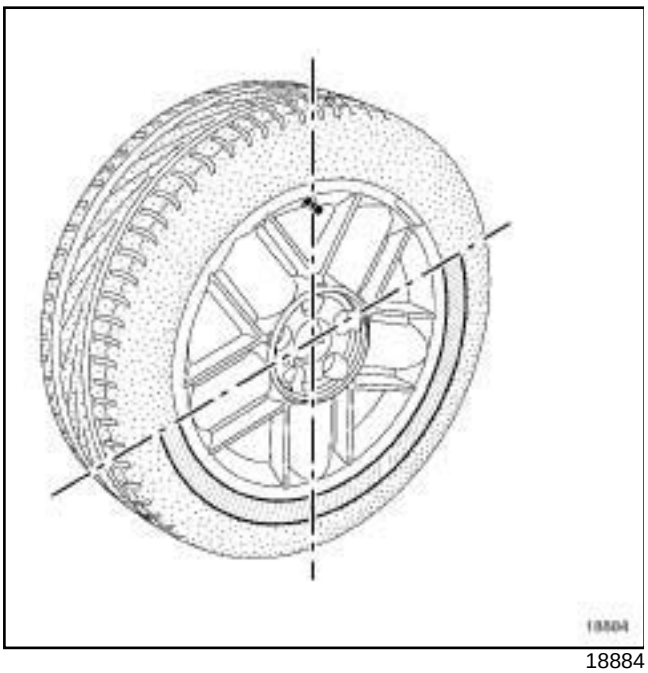
- the wheel in question (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the balance weights,
- the valve mechanism.

II - OPERATION FOR REMOVAL OF PART CONCERNED

TYRE PRESSURE SENSOR

❑

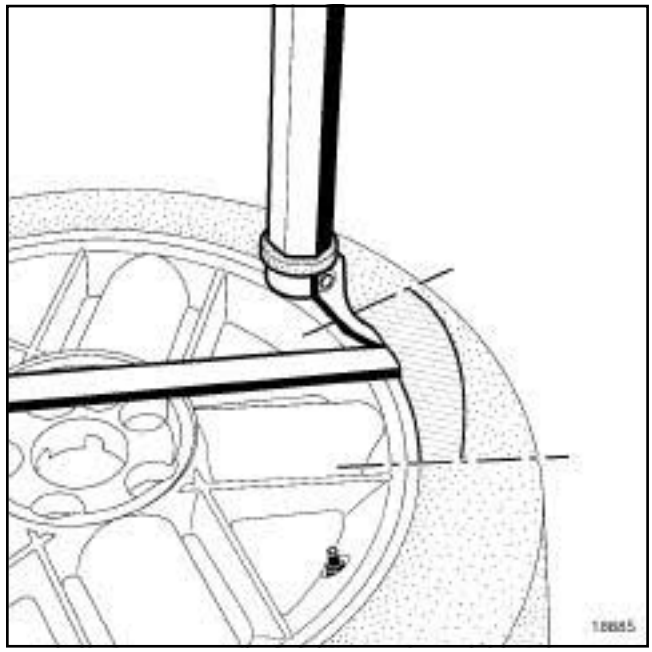
WARNING
To avoid any damage to the sensor, make sure the tyre bead never presses on the sensor.



18884

❑ Detach:

- the bead from the outside of the tyre, starting with the side opposite the valve,
- the bead from the inside of the tyre.



18885

❑ Position the tyre lever approximately **15 cm** from the valve on the outside of the wheel rim in order to remove the exterior bead from the tyre.

❑ Remove the exterior bead of the tyre, finishing at the valve.

❑ Position the tyre lever approximately **15 cm** from the valve on the outside of the wheel rim in order to remove the bead from inside the tyre.

❑ Remove the interior bead of the tyre, finishing at the valve.

REFITTING

I - REFITTING PREPARATION OPERATION

WITHOUT TYRE PRESSURE SENSOR

❑ **parts always to be replaced: Tyre valve (13,05, 02,02)**

❑ Lubricate the two tyre beads correctly using the **TYRE PASTE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Engage the lower tyre bead approximately **15 cm** after the valve.

❏ Finish fitting the tyre at the valve.

❏ Fit the exterior bead approximately **15 cm** after the valve using the tyre lever.

❏ Inflate the tyre to **3.5 bar** to press the tyre beads against the wheel rim.

III - FINAL OPERATION

❏ Refit the valve mechanism.

❏ Inflate the tyre to the recommended pressure (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .

> Note:
>
> It is not necessary to drive the vehicle before and after a new wheel is balanced.

❏ Balance the wheel (see **35A**, **Wheels and tyres**, **Wheel: Balancing**, page **35A-7**) .

❏ Refit the wheel in question (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

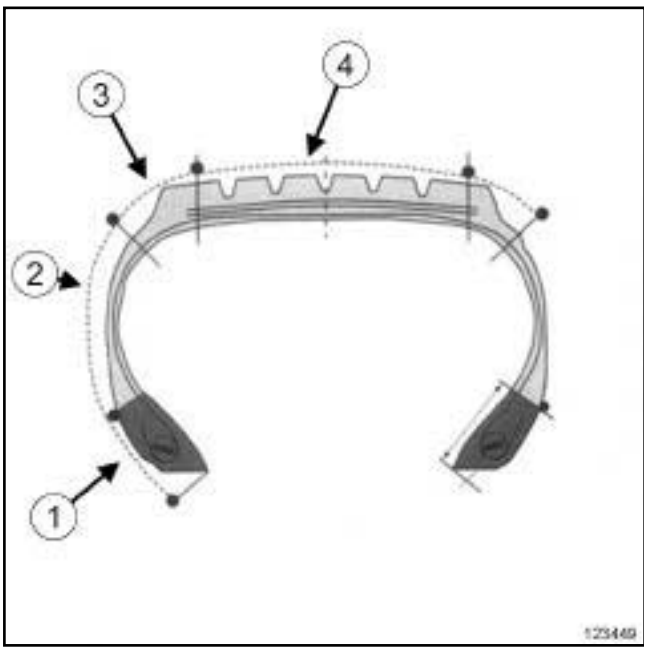
Perforation

There are two types of perforation:

- single perforation: perforation caused by nail etc. not requiring a reinforced tyre boot and which can be repaired when the tyres are cold,
- damage: rubber detachment etc. requiring repair and reinforcement of damaged plies.

This repair method only covers single perforations.

Tyre areas



123449

Areas which cannot be repaired:

- tyre bead (**1**) ,
- shoulder (**3**) .

Areas which can be repaired:

- sidewall (**2**) ,
- crown (**4**) .

Perforation table *

	Area	
	Crown: max Ø in mm	**Sidewall: max Ø in mm**
LV speed rating less than or equal to T	6	3
LV speed rating greater than or equal to H	6	0
LCV load index less than or equal to 121	6	3
HGV load index 122 to 177 (inc.)	10	3

LV: Light Vehicle

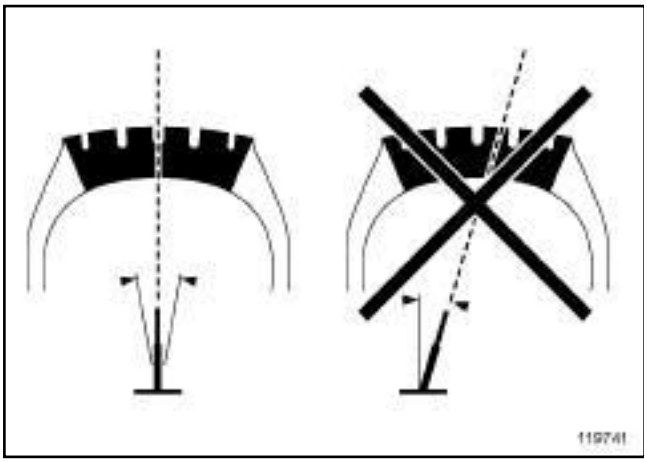
LCV: Light Commercial Vehicle

HGV: Heavy Goods Vehicle

***** If the diameter of the puncture is greater than these figures, replace the tyre.

The tyre cannot be repaired if:

- a compulsory marking has been worn away (see **35A**, **Wheels and tyres**, **Tyres: Identification**, page **35A-17**) ,
- the interior of the tyre shows signs of under-inflation or overloading,
- the rubber shows signs of chemical damage (hydrocarbons and other corrosive substances),
- incorrect and irreversible repairs have previously been made to the tyre,
- the carcass has been damaged,
- cuts or circumferential wear (cracks) are visible on the interior or exterior of the tyre,
- the tyre bead has been damaged (ply visible),
- the tyre's bead wires are visible, damaged or deformed,
- the tyre shows an irregular wear pattern which may impair vehicle handling,
- the repair requires two tyre boots to be overlapped,
- the manufacturer has expressly prohibited any repairs, in writing,
- there is damage to the shoulder area (junction between the sidewall and the crown),
- the angle of the perforation channel (hole) is greater than 15˚.



119741

Tyre inflation kit

using the tyre inflation kit, supplied with vehicles or available from retailers, will leave a film on the inner surface of the tyre.

Before carrying out the repair, clean the inner surface of the tyre and the valve with water.

If the tyre cannot be cleaned in this way, contact the tyre supplier for details of cleaning products which can be used.

REPAIR

I - REPAIR PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Inflate the tyre.

❏ Locate the perforation on the exterior of the tyre and mark it with chalk.

❏ Remove the tyre.

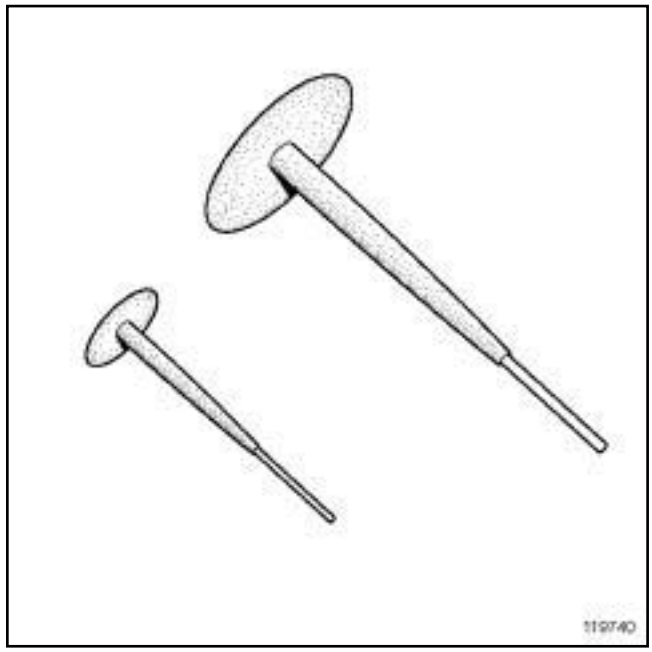
❏ Locate the perforation on the interior of the tyre and mark it with chalk.

❏ Remove the foreign body which caused the puncture.

❏ Determine the direction of the perforation channel.

❏ Determine the size of the hole:

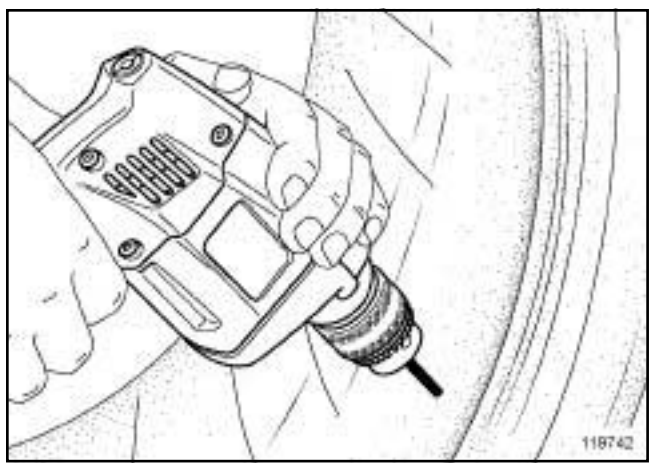
- measure the size of the foreign body,
- measure the extent of the damage to the tyre.



119740

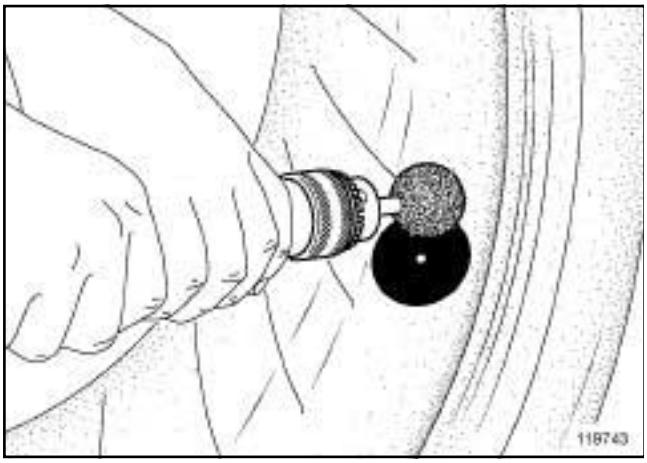
❏ Choose the size of plug (mushroom type plug) depending on the size of the hole.

II - REPAIR OPERATION



119742

❏ Use a drill fitted with a suitable bit, perpendicular to the surface of the tyre, to bore the interior then the exterior of the perforation channel.

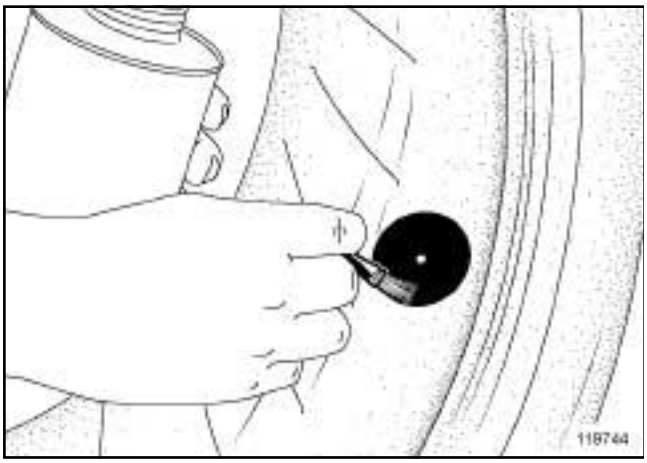


119743

❏ Carefully scrape the rubber seal around the perforation, to the size of the base of the plug (mushroom type plug).

> Note:
>
> If the rubber seal is damaged during this operation, replace the tyre.

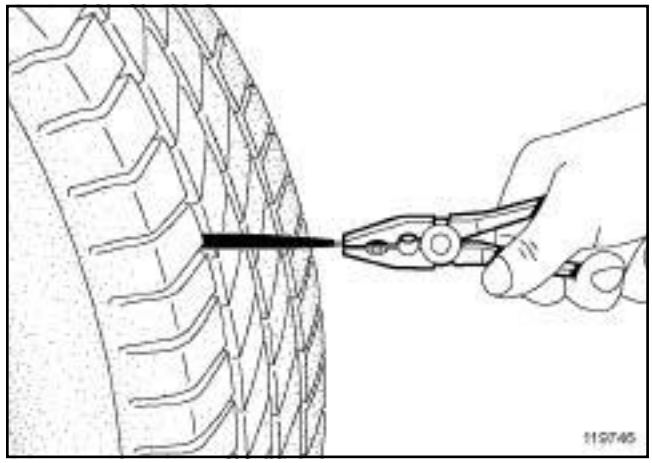
❏ Remove any dust and remaining particles of rubber using a clean, dry cloth.



119744

❏ Apply the solution to the scraped surface.

> Note:
>
> Respect the required drying time for the solution.



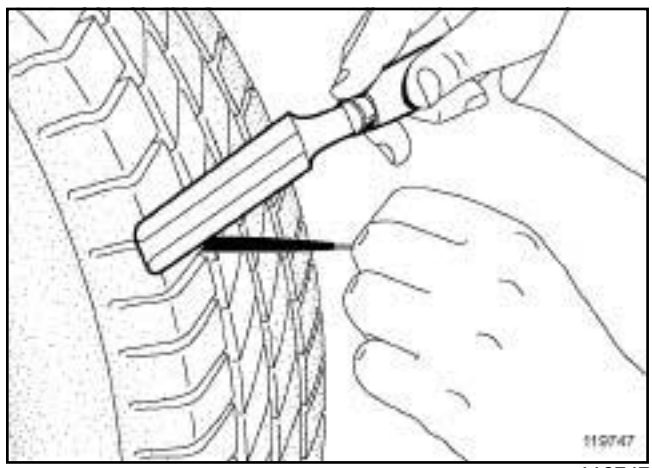
119746

❏ Fit the (mushroom type) plug via the interior of the tyre by pulling on it using pliers.

❏ Press gently on the base of the mushroom plug, inside the tyre.

❏ Refit the tyre.

❏ Inflate the tyre (see **35A**, **Wheels and tyres**, **Tyre pressure: Identification**, page **35A-15**) .



119747

❏ Cut the protruding end of the stalk without pulling on it.

❏ Check the tyre seal.

III - FINAL OPERATION.

❏ Balance the wheel (see **35A**, **Wheels and tyres**, **Wheel: Balancing**, page **35A-7**) .

❏ Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

Equipment required
Diagnostic tool

I - INFLATION

WARNING
If checking the tyre pressure when hot, increase the recommended pressure by **0.2** to **0.3 bar**.

B85 or C85 or S85

Tyre	Wheel rim	Tyre inflation pressure when cold (bar)				
		Front		Rear		Emergency spare wheel
		Normal	Motorway	Normal	Motorway	
165/65 R15 81T	5.5 J 15	**2.2**	**2.3**	**2**	**2**	**2.3**
185/60 R15 84H	6 J 15	**2.2**	**2.3**	**2**	**2**	**2.3**
185/60 R15 88H	6 J 15	**2.3**	**2.4**	**2**	**2**	**2.4**
195/50 R16 88V	6.5 J 16	**2.4**	**2.5**	**2.2**	**2.2**	**2.5**
185/65 R15 88V	6 J 15	**2.2**	**2.2**	**2**	**2**	**2.2**
175/65 R15 88H	6 J 15	**2.3**	**2.4**	**2.1**	**2.2**	**2.4**
215/45 R17 87W	7.5 J 17	**2.3**	**2.4**	**2.1**	**2.4**	**2.4**

The pressure values given are recommendations when cold.

K85

Tyre	Wheel rim	Tyre inflation pressure when cold (bar)				
		Front		Rear		Emergency spare wheel
		Normal	Motorway	Normal	Motorway	
165/65 R15 81T	5.5 J 15	**2.2**	**2.3**	**2.2**	**2.2**	**2.3**
185/60 R15 84H	6 J 15	**2.2**	**2.3**	**2.2**	**2.2**	**2.3**
185/60 R15 88H	6 J 15	**2.3**	**2.4**	**2.2**	**2.2**	**2.4**
195/50 R16 88V	6.5 J 16	**2.4**	**2.5**	**2.2**	**2.2**	**2.5**

II - CONFORMITY CHECK AND ADJUSTMENT

If the tyre size is changed, calibrate the electric power-assisted steering computer using the **Diagnostic tool** (see **MR 394 Fault finding, 36B, Electric power-assisted steering, Replacement of components**).

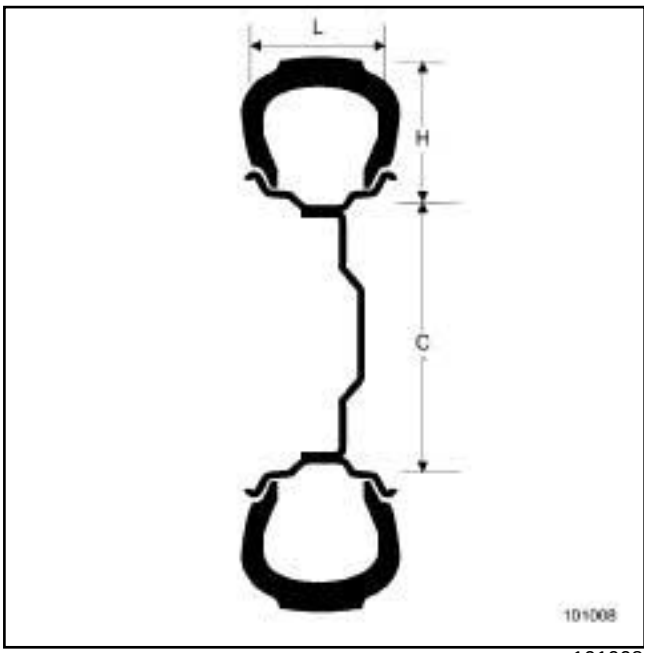
Wheel rim offset:

- steel wheel rim: **43 mm**,

- alloy wheel rims: **50 mm**.

For information on fitting chains, see «Driver's handbook » .

Example of a tyre identification mark: **205/65 R 15 91 V**.



101008

123448

205	Tyre width in mm (L)
65	Height/width ratio
R	Radial structure
15	Internal diameter in inches (c)
91	Load index
V	Speed code

Speed code table:

Code	Maximum speed in mph (km/h)
R	**170**
S	**180**
T	**190**
U	**200**
H	**210**
V	**240**
ZR	above **240**
W	**270**
Y	**300**

IDENTIFICATION

1 - Marking

There are two types of identification marking on the wheel rims:

- engraved marking for steel wheel rims,

- cast marking for alloy wheel rims.

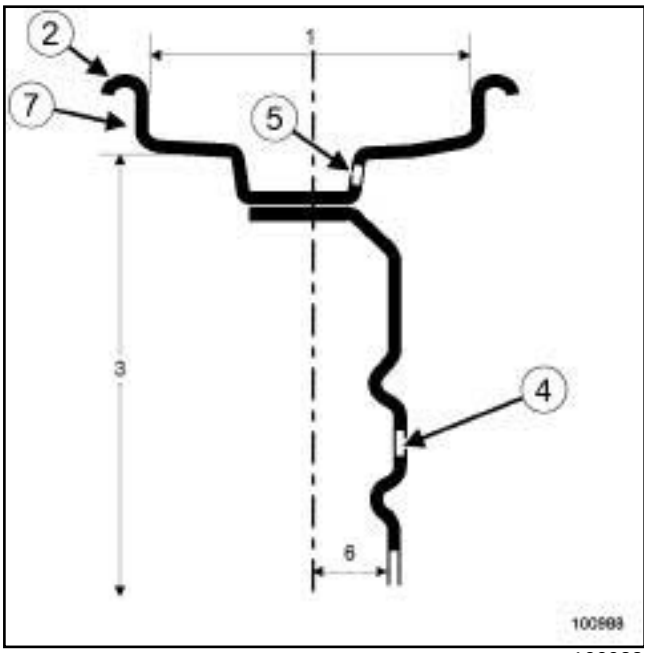
The marking gives the main dimensional specifications of the wheel rim.

This marking may be:

- complete, for example **6 J 15 5 CH 36,**

- simplified, for example **6 J 15**.

	Wheel type	**6 J 15**
1	Width (in inches)	6
2	Rim edge profile	J
3	Nominal diameter (in inches)	15
4	Number of holes	5
5	Anchorage profile of the tyre	CH
6	Offset (in mm)	36



100988

There are 3 types of wheel rim edges (**2**) :

- those with two flat edges,

- those with two raised edges,

- those with one flat edge and one raised edge.

2 - Installation diameter for the wheel bolts

The wheel bolts are positioned with a pitch circle diameter of:

- 5 holes: **108 mm**,

- 4 holes: **100 mm**.

3 - Rim run-out

The maximum run-out is measured at the wheel rim edge ***(7)*** .

Steel wheel rims: **0.8 mm**

Alloy wheel rims: **0.3 mm**

4 - Out-of-roundness

The maximum out-of-round value is measured on the tyre bead bearing surface.

0.7 mm

Tightening torques ▽	
emergency spare wheel winch mounting nuts	**21 Nm**

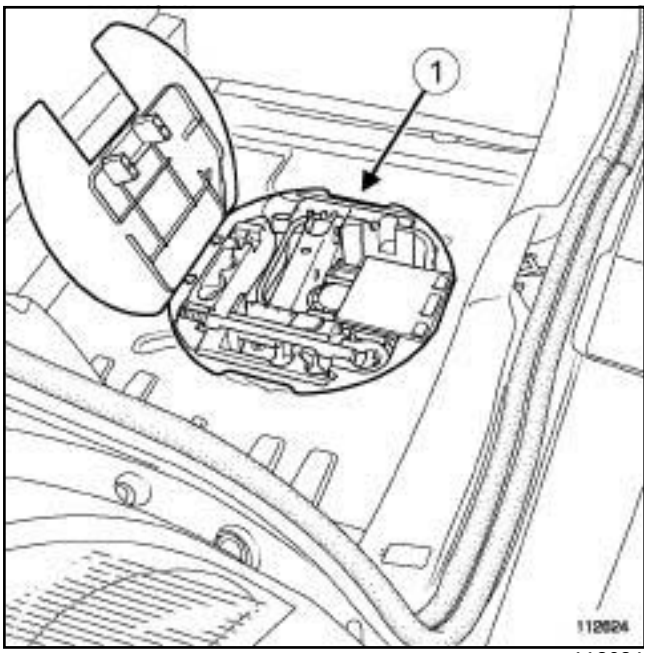
IMPORTANT
Only manipulate the emergency spare wheel lashing system when the vehicle is on the ground.

REMOVAL

I - REMOVAL PREPARATION OPERATION

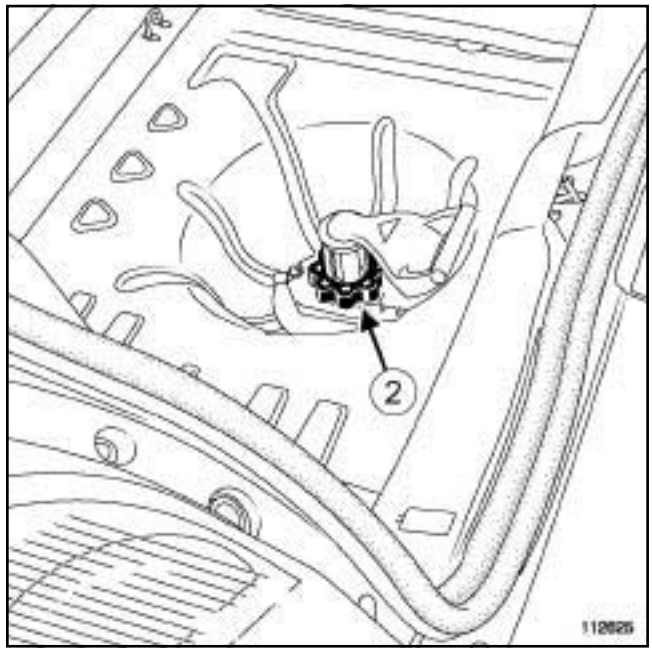
❏ Open the vehicle's boot.

❏ Lift the luggage compartment carpet.



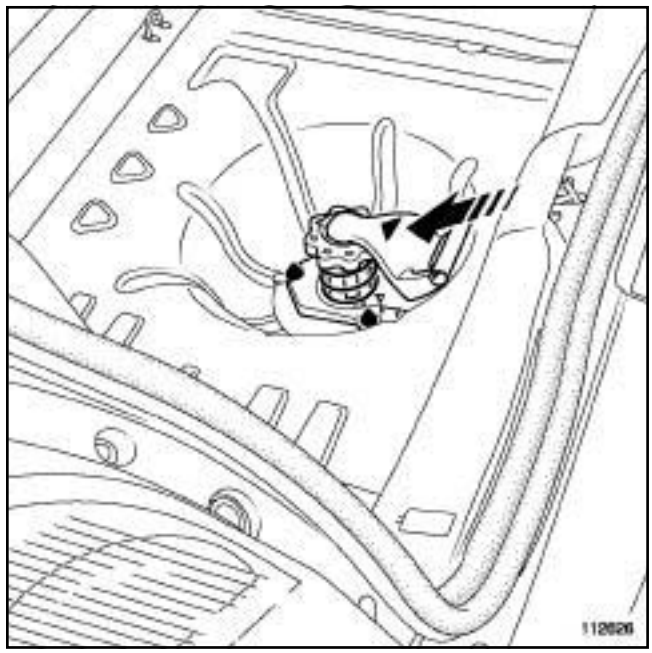
112624

❏ Remove the emergency spare wheel cover (**1**) .

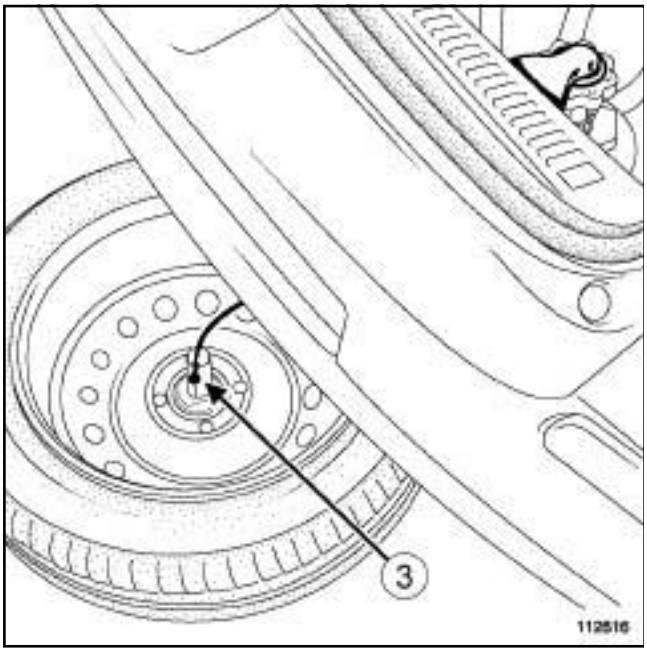


112625

❏ Fully undo the white wheel (**2**) .


112626

❏ Press the arrow several times until the emergency spare wheel falls on to the ground.

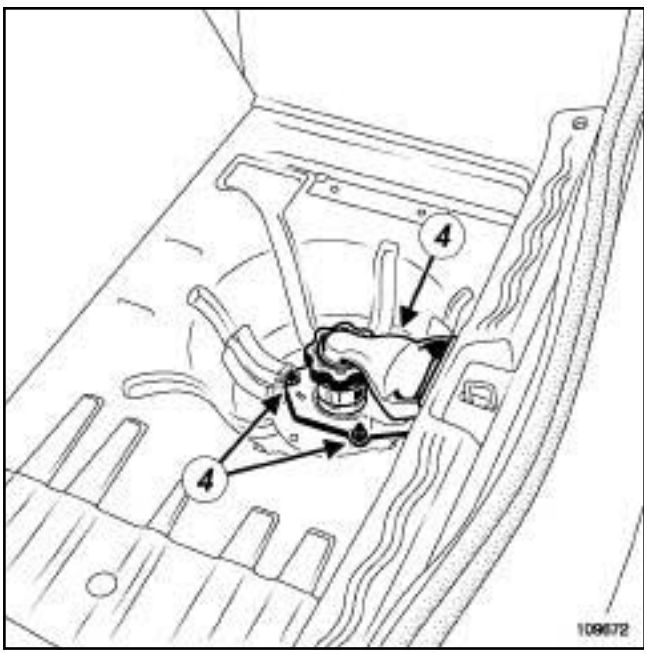


112616

❏ Remove the winch cable (**3**) from its housing.

❏ Remove the emergency spare wheel.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109672

❏ Remove:

- the winch mounting nuts (**4**) ,
- the emergency spare wheel winch.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏

> Note:
>
> The handle and winch are sold unassembled when purchased as a spare part. Assemble the two components for fitting operations.
>
> To assemble, clip the plastic cup located at the end of the cable onto the winch.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the emergency spare wheel winch,
- the winch mounting nuts.

❏ Torque tighten the **emergency spare wheel winch mounting nuts (21 Nm)**.

III - FINAL OPERATION.

❏ Check that there is a spacer under the floor; this should only be used for an emergency spare wheel fitted with a 165 tyre.

❏ Place the winch cable back into the housing.

❏ Pull the winch lever to reposition the emergency spare wheel.

❏ Tighten the white wheel whilst holding the lever.

❏ Continue tightening until you hear a click.

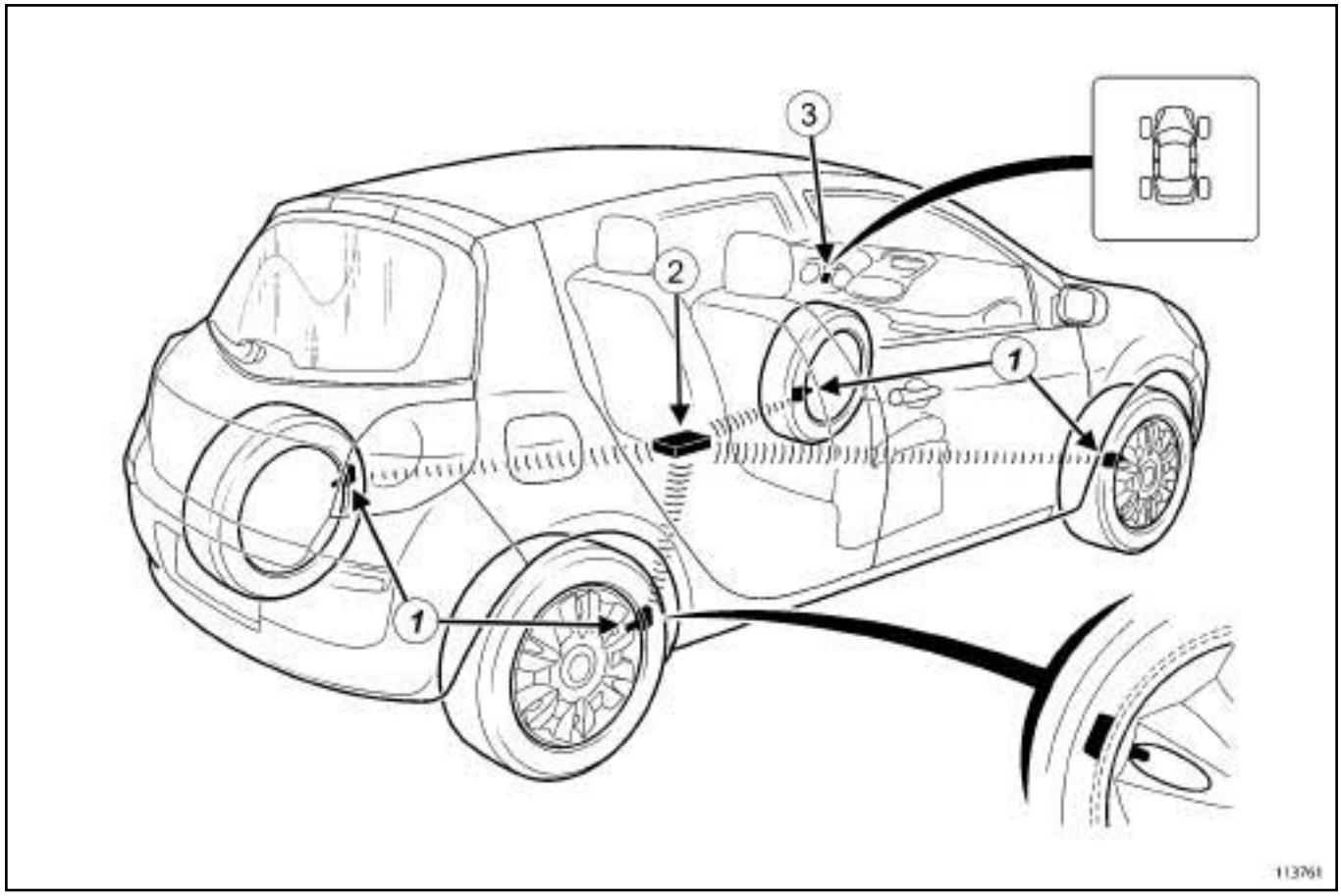
❏ Check that the emergency spare wheel has been correctly attached.

❏ Refit the emergency spare wheel cover.

❏ Refit the boot carpet.

❏ Close the boot.

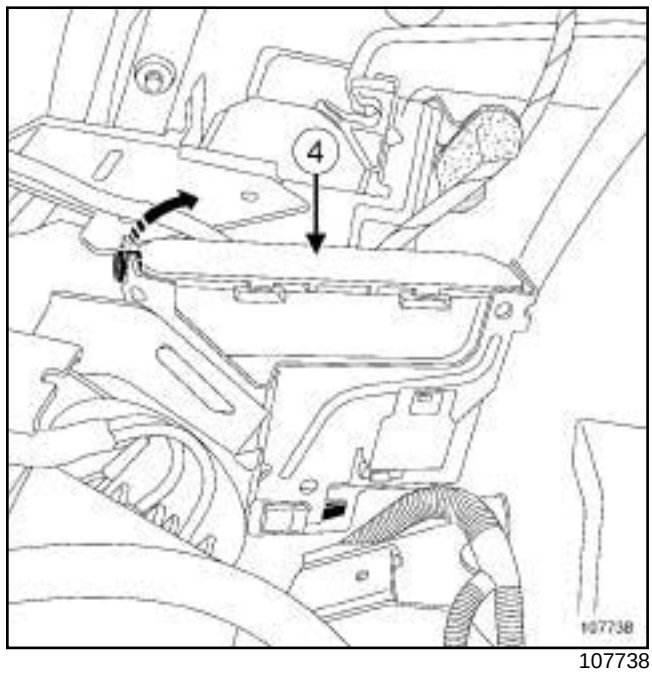
TYRE PRESSURE SENSOR



113761

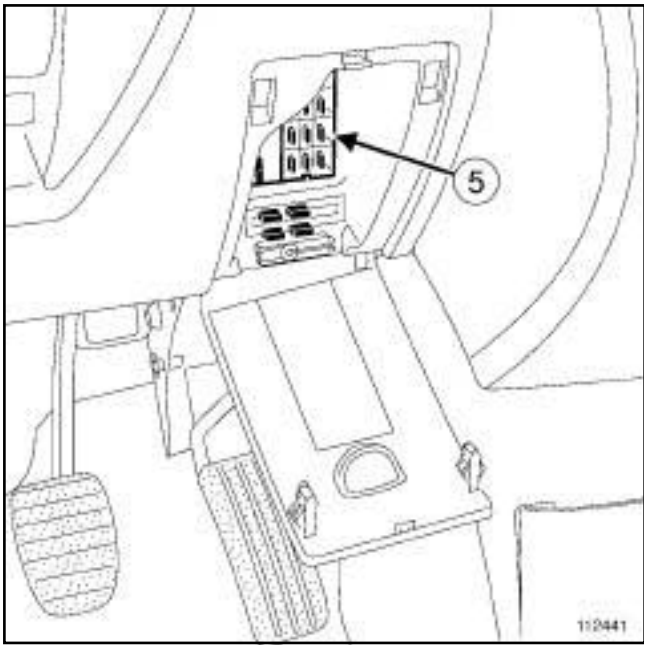
The system consists of:

- four pressure sensors (**1**) built into the valves (one per wheel); the sensors transmit a radio signal,
- a computer (**2**) which collects, decodes and processes sensor signals, and then determines which message to display,
- a display (**3**) integrated to the instrument panel,



107738

TYRE PRESSURE SENSOR

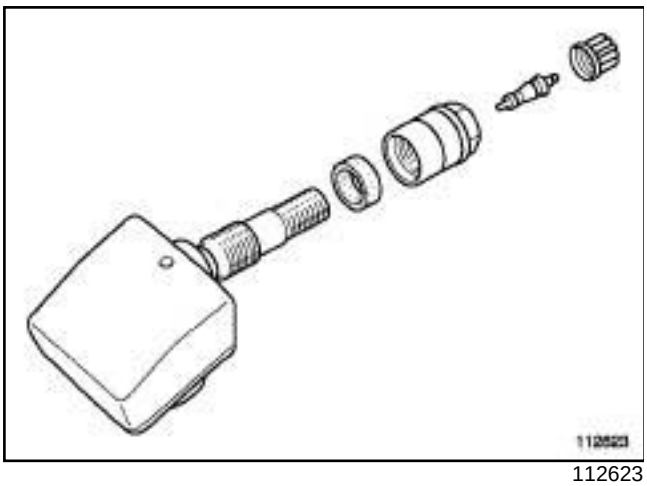


112441

- a UCH (**4**) located behind the passenger compartment relay/fuse box (**5**) .

Note:

The position of the sensor on each wheel is automatically identified by the UCH computer.



112623

The pressure sensor comprises:

- a conventional valve,
- a pressure sensor,
- a temperature sensor,
- an acceleration sensor,
- a specific radiofrequency transmitter,
- a non-removable battery.

TYRE PRESSURE SENSOR

Equipment required
Diagnostic tool

Tightening torques ▽	
computer mounting nuts	**20 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit (with the ignition on). Locking the airbag computer also unlocks the electric steering column lock.

IMPORTANT
Handling the pyrotechnic systems (airbag and pretensioners) near a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

IMPORTANT
The steering column must be replaced if the air-bag has been triggered.

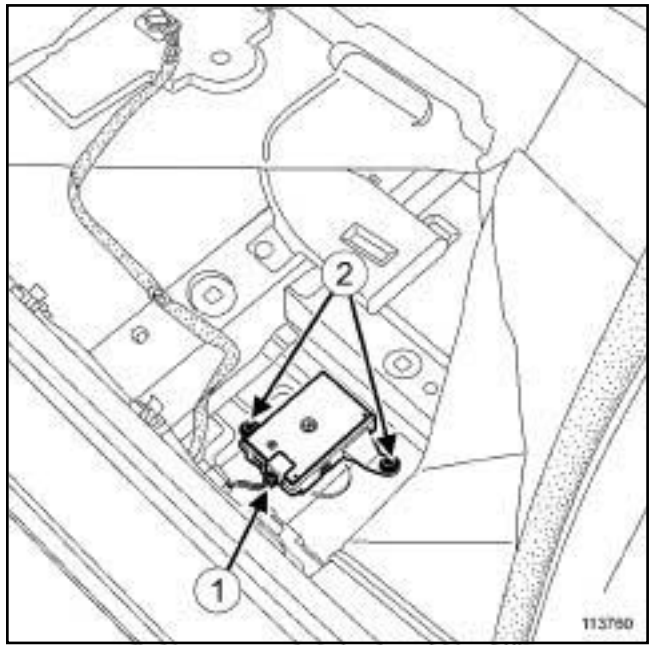
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the front left-hand seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❏ Remove the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Lift the carpet and the sound-insulation.



113760

❏ Disconnect the connector (**1**) .

❏ Remove:

- the computer mounting nuts (**2**) ,
- the computer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the carpet and the sound insulation.

❏ Refit:

- the computer's mounting nuts,
- the computer.

❏ Reconnect the connector.

❏ Torque tighten the **computer mounting nuts (20 Nm)**.

II - FINAL OPERATION.

❏ Refit the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❏ Refit the front left-hand seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

TYRE PRESSURE SENSOR

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

Tightening torques ▽	
steering box bolts on the front axle subframe	**105 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

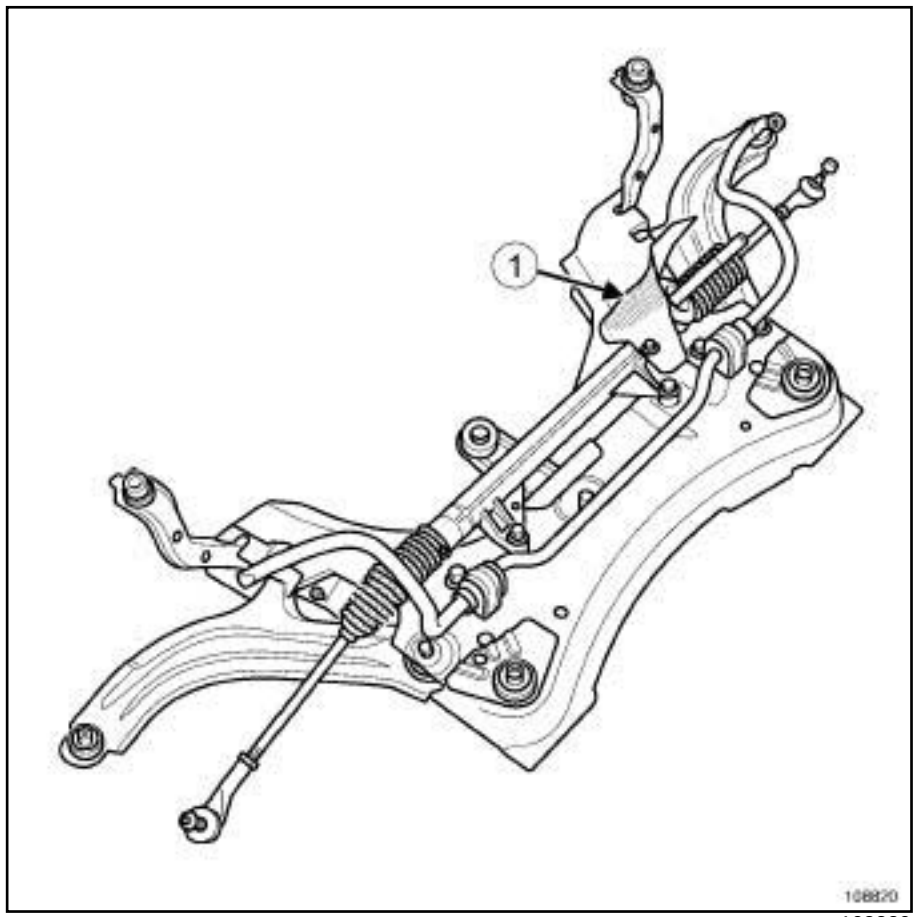
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the engine undertray bolts,
- the engine undertray,
- the front axle subframe (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

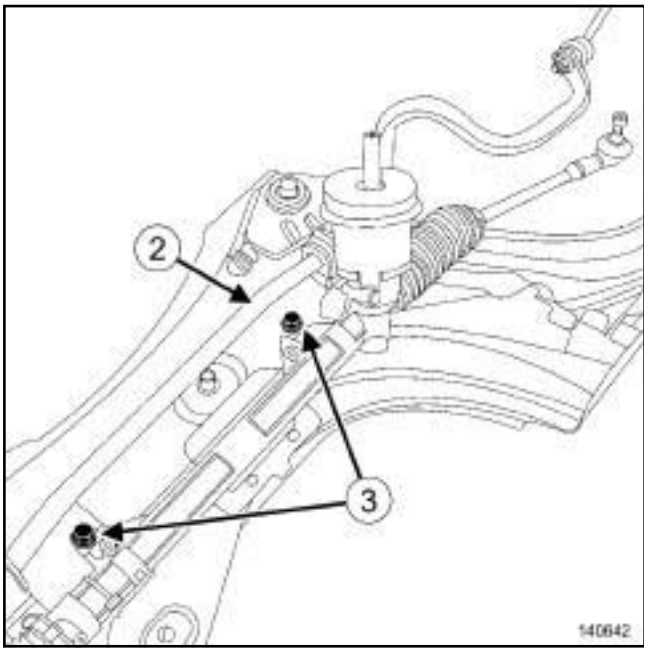
RIGHT-HAND DRIVE



108820

❑ Remove:

- the heat shield bolts from the steering box,
- the steering box heat shield (**1**) ,



140642

❑ Tilt the anti-roll bar (**2**) backwards.

❑ Remove:

- the steering box bolts (**3**) ,
- the steering box of the front axle subframe.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Steering box bolt (13,04,03,05)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the steering box on the front axle subframe.

❑ Tighten to torque the **steering box bolts on the front axle subframe (105 N.m)**.

❑ Tilt the anti-roll bar forward.

RIGHT-HAND DRIVE

❑ Refit the heat shield on the steering rack.

III - FINAL OPERATION

❑ Refit:

- the front axle sub-frame (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) ,
- the engine undertray,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Adjust the front axle (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .

DISCHARGE LAMPS

❑ It is essential to initialise the xenon bulb system (see **Fault finding - Replacement of components**) (80B, Headlights).

Special tooling required	
Tav. 476	Ball joint extractor.

Tightening torques ▽	
track rod ball joint nut	**37 N.m**
wheel alignment adjusting lock nut	**53 N.m**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Steering: Precautions for the repair**) .

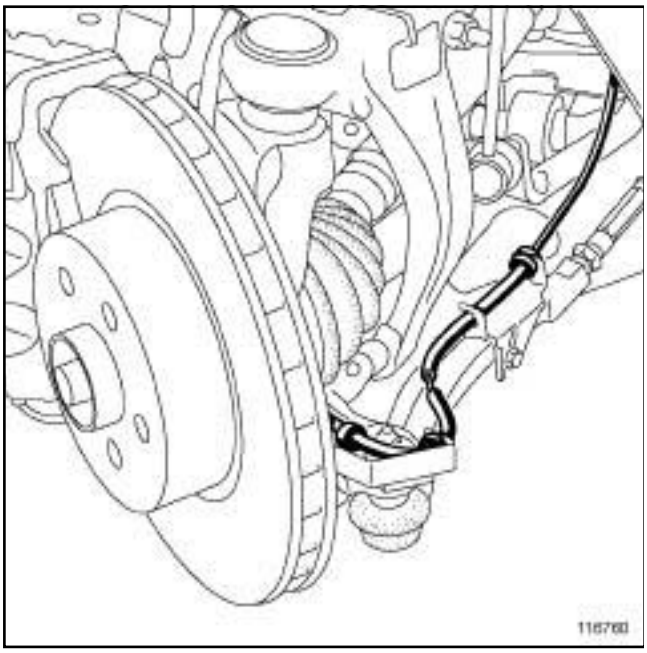
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

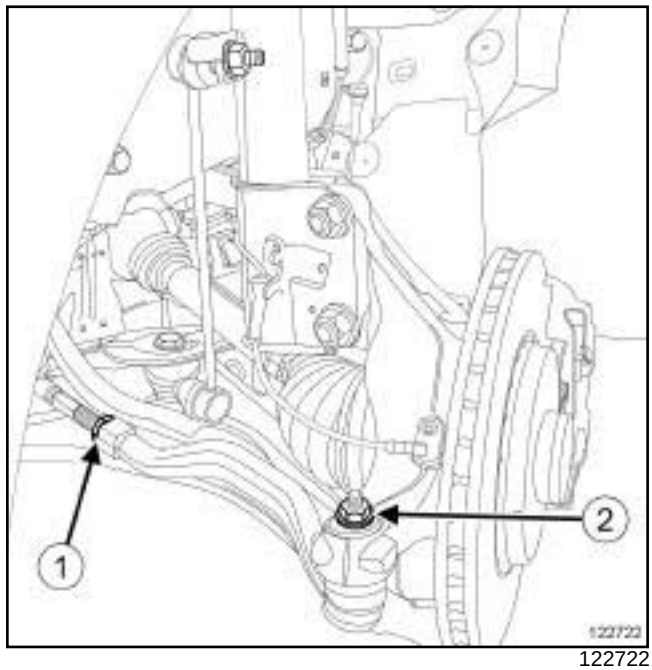
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116760

❏ Release the wheel speed sensor wiring

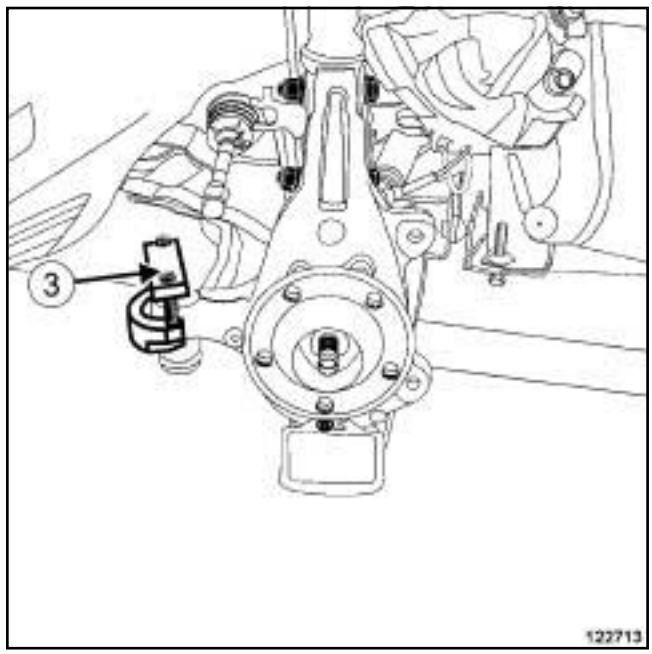
II - OPERATION FOR REMOVAL OF PART CONCERNED



122722

❏ Loosen the wheel alignment adjustment lock nut (**1**) .

❏ Remove the track rod ball joint nut (**2**) .



122713

❏ Extract the ball joint using (**3**) **(Tav. 476)**.

❏ Unscrew the track rod anti-clockwise and note the number of turns for refitting.

❏ Remove the track rod.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- ❏ Screw the track rod back in place by the number of turns noted during removal.
- ❏ Fit the track rod end in the hub carrier.
- ❏ Refit the track rod ball joint nut.
- ❏ Tighten to torque:
  - the **track rod ball joint nut (37 N.m)**,
  - the **wheel alignment adjusting lock nut (53 N.m)**.

II - FINAL OPERATION

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

- ❏ Refit the wheel speed sensor wiring.

- ❏ Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .
- ❏ Check the axle geometry (see **Axle assemblies: Check**) .
- ❏ If necessary, adjust the geometry of the axle assemblies (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .

Special tooling required	
Dir. 1305-01	Tool for removal - refitting of the axial ball joint (diameter 35 mm to 41 mm).
Dir. 1741	Steering rack locking tool.

Tightening torques ▽	
axial ball joint	**80 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❑ Remove the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Remove the track rod (see **36A**, **Steering assembly**, **Track rod: Removal - Refitting**, page **36A-3**) .

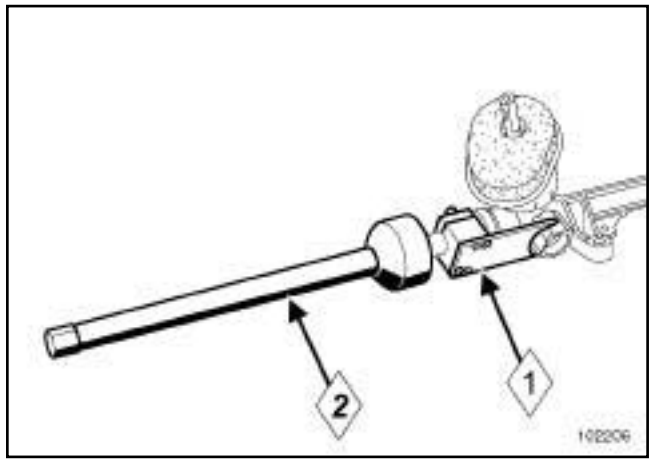
❑ Remove the steering rack gaiter (see **36A**, **Steering assembly**, **Steering box gaiter: Removal - Refitting**, page **36A-13**) .

❑ Unlock the steering column.

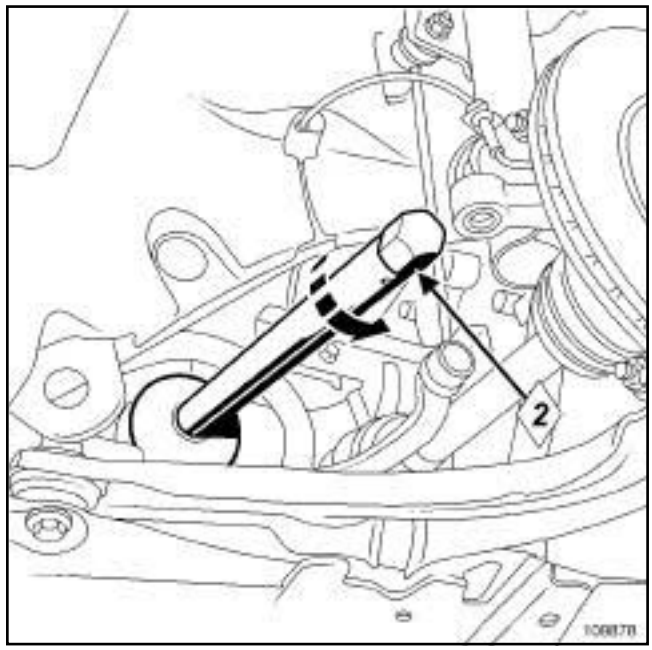
Note:

During this operation, the steering rack must be in place on the vehicle.

II - OPERATION FOR REMOVAL OF PART CONCERNED



102206



109878

❑ Set up the (**1**) **Dir. 1741** on the steering rack, at the pinion end.

❑ Unlock the axial ball joint using tool (**2**) **Dir. 1305-01** .

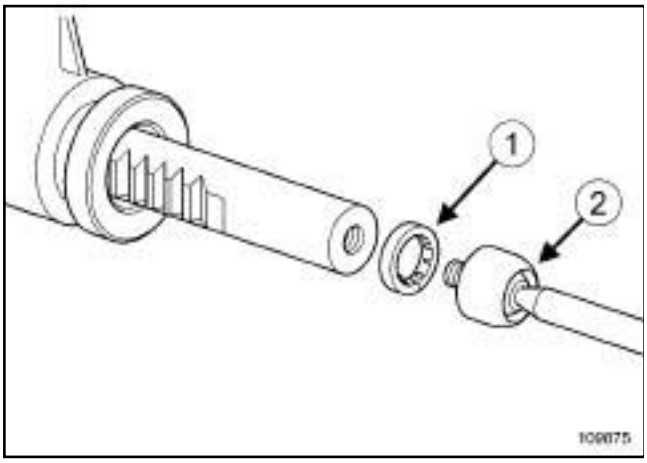
❑ Remove the axial ball joint.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Steering axial ball joint washer (13,04,02,04)**

II - REFITTING OPERATION FOR PART CONCERNED



109875

❏ Refit:

- a new washer (**1**) ,
- the axial ball joint (**2**) .

❏ Torque tighten the **axial ball joint (80 N.m)** using the tool **(Dir. 1305-01)**.

❏ Remove the **(Dir. 1741)**.

❏ Coat with **SILICONE GREASE** (see **Vehicle: Parts and consumables for the repair**) :

- the steering rack,
- the axial ball joint.

III - FINAL OPERATION.

❏ Refit the steering box gaiter (see **36A**, **Steering assembly**, **Steering box gaiter: Removal - Refitting**, page **36A-13**) .

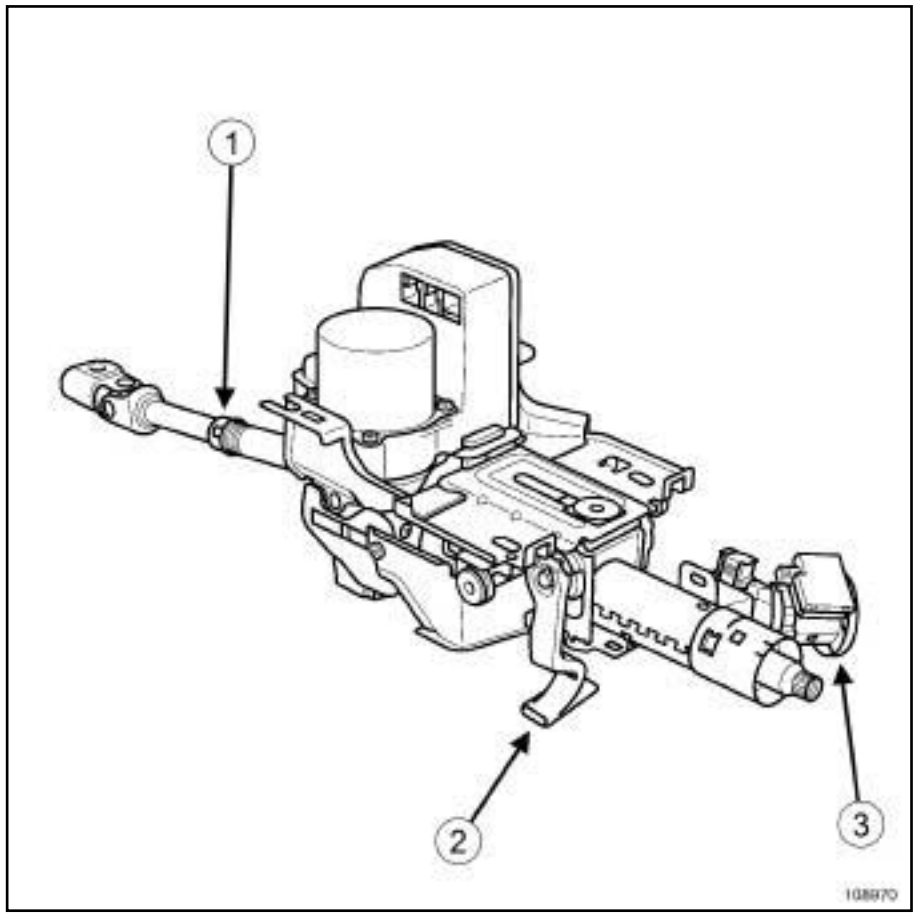
❏ Refit the track rod (see **36A**, **Steering assembly**, **Track rod: Removal - Refitting**, page **36A-3**) .

❏ Refit the wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Check the axle geometry (see **Axle assemblies: Check**) .

❏ If necessary, adjust the axle assemblies' geometry (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .

VEHICLE WITH KEY



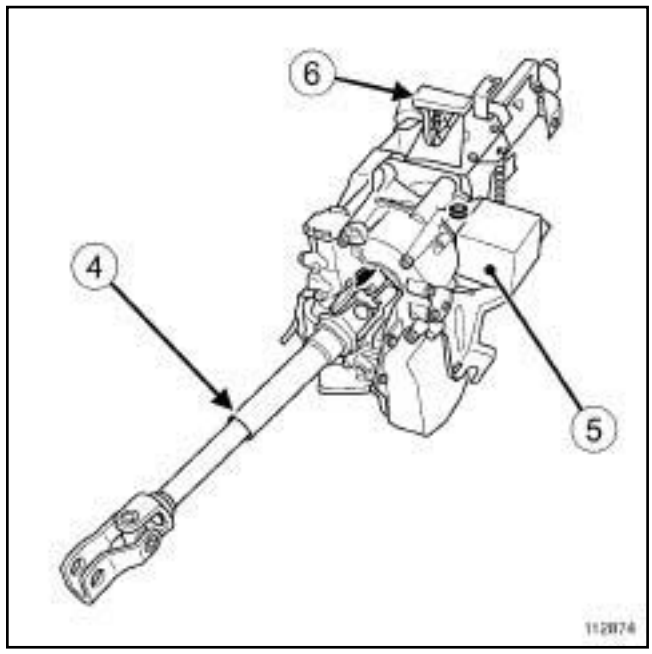
108970

(**1**) Intermediate shaft

(**2**) Steering column adjustment handle

(**3**) Key-operated switch

VEHICLE WITH CARD



112874

(**4**) Intermediate shaft

(**5**) Electric steering column lock

(**6**) Steering column adjustment handle

Equipment required
Diagnostic tool

Tightening torques ▽	
steering column bolts	**21 Nm**
bolt connecting the steering column to the intermediate shaft	**32 Nm**
universal joint bolt on the steering box	**24 Nm**

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Unlock the steering column.

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❏ Set the wheels straight ahead.

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbags and seat belt pretensioners).

❏ Remove the steering wheel (see **36A**, **Steering assembly**, **Steering wheel: Removal - Refitting**, page **36A-22**) .

❏ Remove the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).

VEHICLE WITH KEY

❏ Remove:

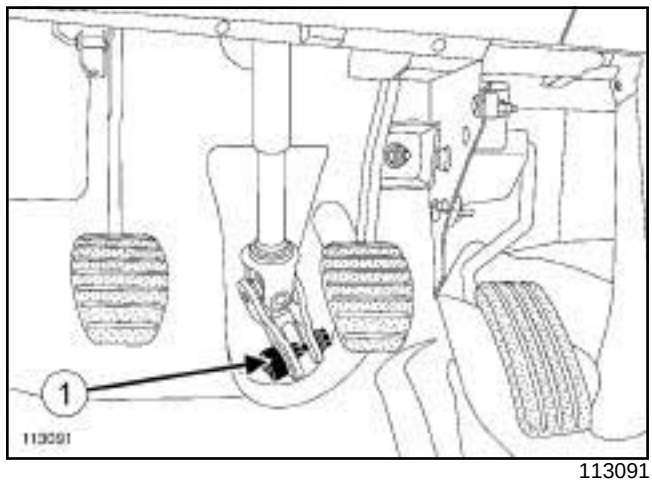
- the immobiliser antenna/transponder ring (see **Transponder ring: Removal - Refitting**) (MR 392, 82A, Immobiliser),
- the ignition switch, if replacing the steering column (see **Ignition switch: Removal - Refitting**) (MR 392, 82A, Immobiliser).

VEHICLE WITH CARD

❏ Remove the electric steering column lock (see **Electric steering column lock: Removal - Refitting**) (MR 392, 82A, Immobiliser).

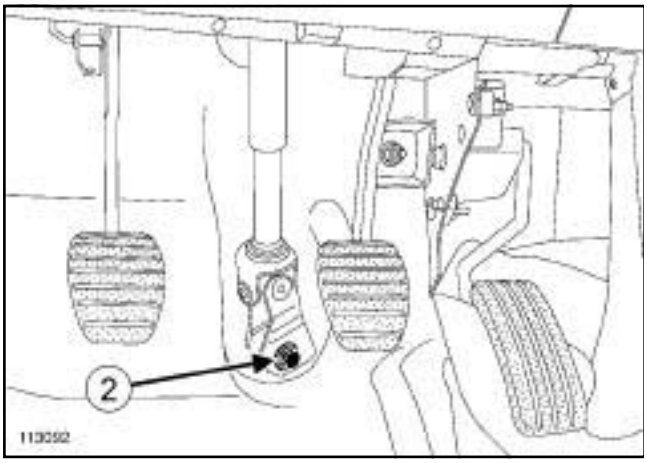
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Lift the floor carpet to access the universal joint bolt.



113091

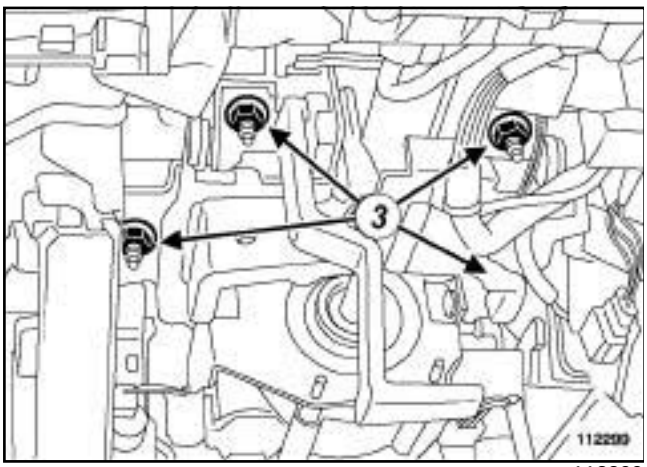
❏ Remove the universal joint cover (**1**) (do not keep).



113092

❏ Remove:

- the universal joint bolt (**2**) (do not keep),
- the universal joint nut (do not keep).

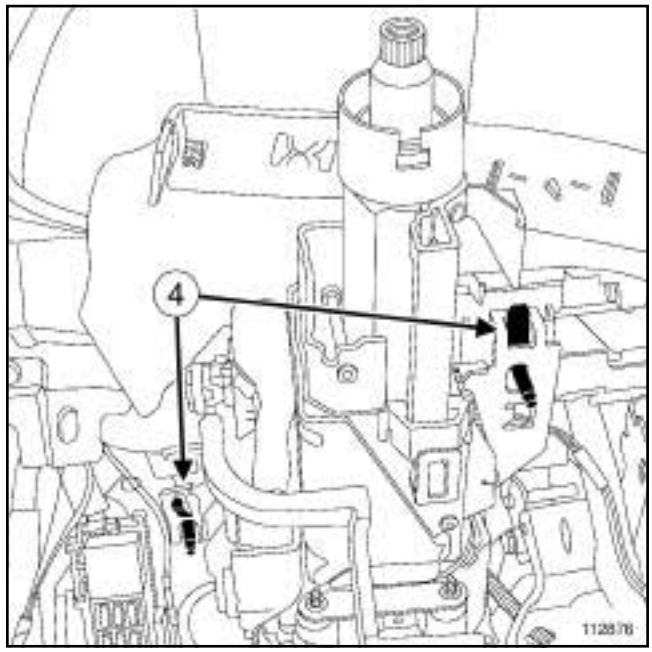


112299

❏ Remove the steering column bolts (**3**) on the cross member.

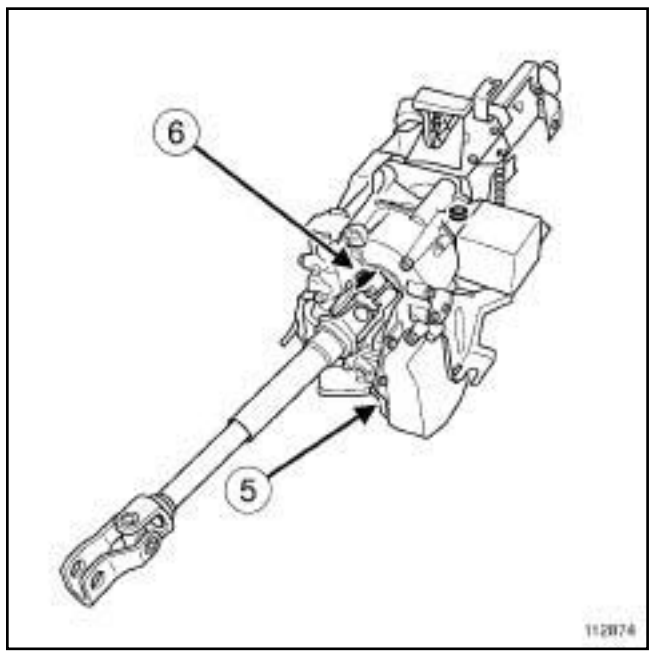
❏ Fit a shim, approximately **20 cm**, on the floor under the intermediate shaft bolt ***(6)*** to position the column before disconnecting the connections ***(5)*** .

> Note:
>
> The column cannot be set down directly on the floor since the cable is not long enough.



112876

❏ Remove the steering column from the pre-supports (**4**) to set it down on the shim.



112874

❏ Disconnect the three connectors (**5**) while holding the column on the shim.

❏ Remove:

- the steering column with the intermediate shaft,
- the bolt (**6**) connecting the steering column to the intermediate shaft,
- the steering column intermediate shaft.

REFITTING

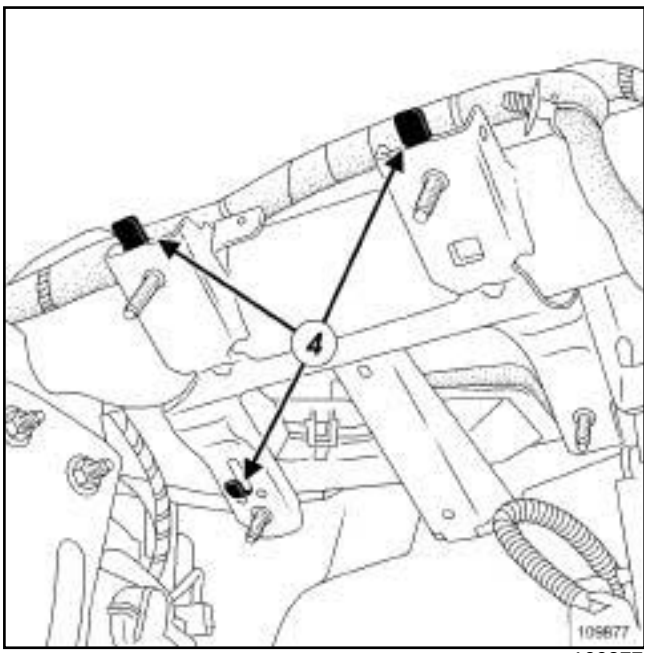
I - REFITTING PREPARATIONS OPERATION

❑ Always replace:

- the steering wheel bolt after each removal,
- the universal joint bolt and cam nut after each removal.

WARNING
Do not separate the two sliding parts of the intermediate shaft.

II - REFITTING OPERATION FOR PART CONCERNED



109877

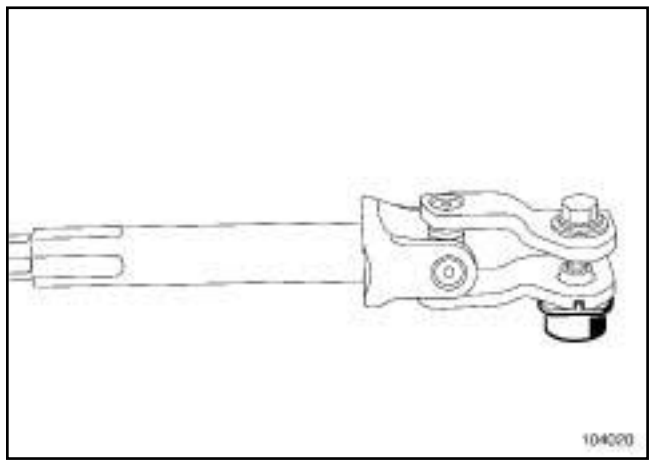
❑ Refit:

- the intermediate shaft of the steering column,
- the bolt connecting the steering column to the intermediate shaft,
- the steering column connectors,
- the steering column with the intermediate shaft,
- the steering column bolts on the cross member.

Note:
Check that the steering column is held on the cross member using the front and rear pre-supports (**4**) before tightening it.

❑ Remove the shim.

❑ Torque tighten the **steering column bolts (21 Nm)**.



104020

❑ Observe the direction of fitting for the universal joint cam nut and bolt.

❑ Refit:

- the universal joint,
- the new universal joint bolt,
- the new universal joint nut.

❑ Pretighten the universal joint cam nut and bolt.

❑ Pull the intermediate shaft to make sure that the bolt is present in the neck.

❑ Torque tighten:

- the **bolt connecting the steering column to the intermediate shaft (32 Nm)**,
- the **universal joint bolt on the steering box (24 Nm)**.

❑ Refit the floor carpet.

Note:
Check that the floor carpet fits under the accelerator pedal end-stop.

III - FINAL OPERATION.

VEHICLE WITH CARD

❑ Refit the electric steering column lock (see **Electric steering column lock: Removal - Refitting**) (MR 392, 82A, Immobiliser).

VEHICLE WITH KEY

❑ Refit:

- the ignition switch, if replacing the steering column (see **Ignition switch: Removal - Refitting**) (MR 392, 82A, Immobiliser),
- the immobiliser antenna/transponder ring (see **Transponder ring: Removal - Refitting**) (MR 392, 82A, Immobiliser).

❑ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals),
- the steering wheel (see **36A**, **Steering assembly**, **Steering wheel: Removal - Refitting**, page **36A-22**) ,
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbags and seat belt pretensioners).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

❑ Configure the power-assisted steering computer (see **Fault finding - Replacement of components**) (MR 394, 36B, Electric steering).

REMOVAL

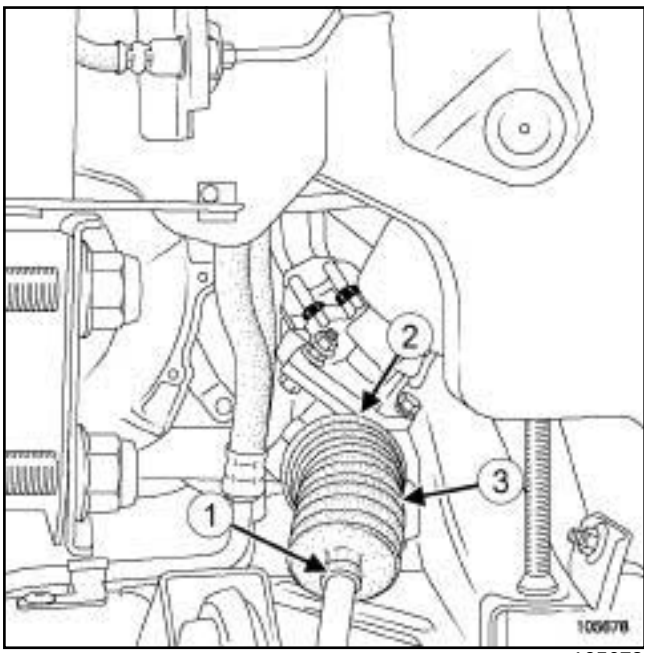
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the track rod, (see **36A**, **Steering assembly**, **Track rod: Removal - Refitting**, page **36A-3**)
- the wheel alignment adjusting lock nut.

II - OPERATION FOR REMOVAL OF PART CONCERNED



105678

❏

Note:

When removing the steering gaiter, blast the gaiter surfaces with compressed air to eliminate any impurities that could enter the steering box.

❏ Remove the gaiter retaining clip (**1**)

❏ Cut the gaiter retaining clip (**2**) .

❏ Remove the gaiter (**3**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the steering box gaiter,
- the retaining clips.

❏ Clean the contact surfaces between the steering box and the gaiter using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) .

❏ Coat the gaiter bearing face on the axial ball joint with **SILICONE LUBRICANT** (see **Vehicle: Parts and consumables for the repair**) to prevent the gaiter from twisting.

Note:

Be sure to centre the steering to ensure the air in the gaiters is equalised.

Note:

Be careful not to damage the gaiters: risk of irreversible damage.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- a new steering box gaiter,
- new retaining clips.

III - FINAL OPERATION.

❏ Refit:

- the wheel alignment adjustment lock nut,
- the track rod, (see **36A**, **Steering assembly**, **Track rod: Removal - Refitting**, page **36A-3**)
- the front wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Check the axle geometry (see **Axle assemblies: Check**) .

❏ If necessary, adjust the axle assemblies' geometry (see **30A**, **General information**, **Front axle system: Adjustment**, page **30A-23**) .

REMOVAL

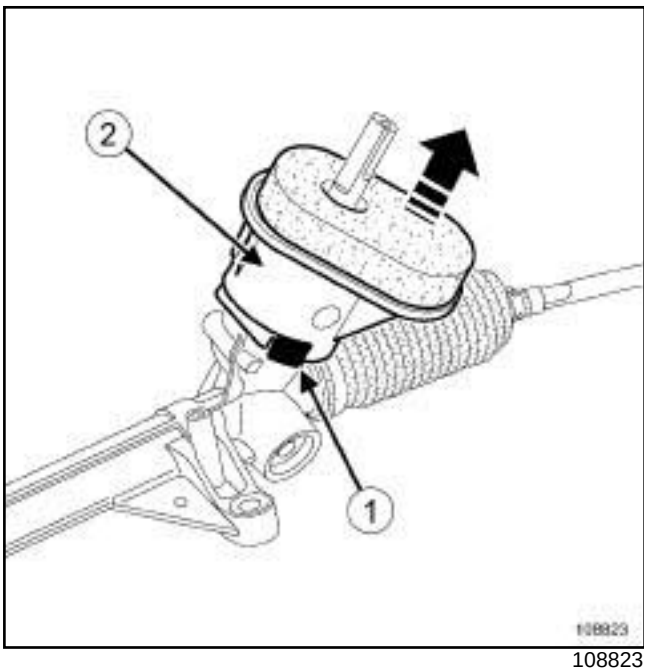
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the engine undertray,
- the steering box (see **36B**, **Power assisted steering**, **Power-assisted steering box: Removal - Refitting**, page **36B-3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



108823

❑ Unclip the bulkhead seal (**2**) at (**1**) using a flat-blade screwdriver.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the bulkhead seal in its original position.

II - FINAL OPERATION.

❑ Refit:

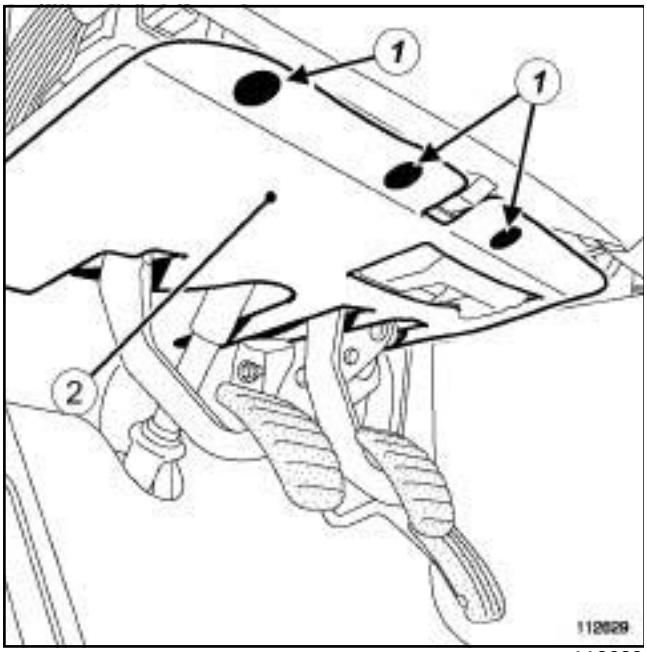
- the steering box (see **36B**, **Power assisted steering**, **Power-assisted steering box: Removal - Refitting**, page **36B-3**) ,
- the engine undertray,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

Tightening torques ▽	
universal joint bolt on the steering rack	**24 Nm**
bolt on the steering column	**32 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .



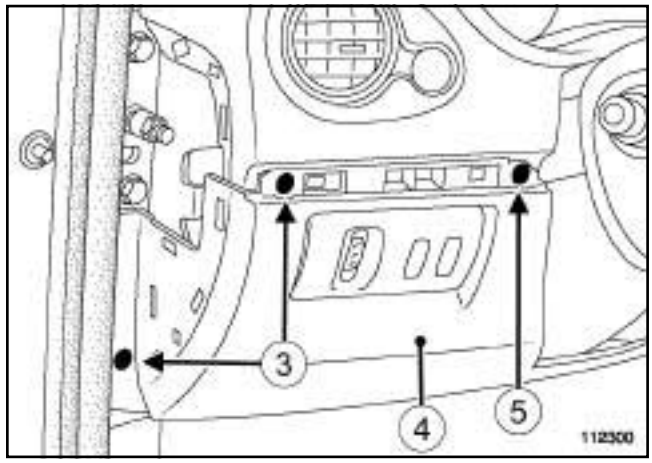
112629

❏ Remove:

- the mounting clips (**1**) from the lower trim of the driver's side dashboard,
- the lower trim (**2**) of the driver's side dashboard.

❏ Remove:

- the bolt-cover protective strip,
- the instrument panel's side cover.



112300

❏ Remove:

- the lower cover mounting bolts (**3**) ,
- the lower cover mounting clip (**5**) .

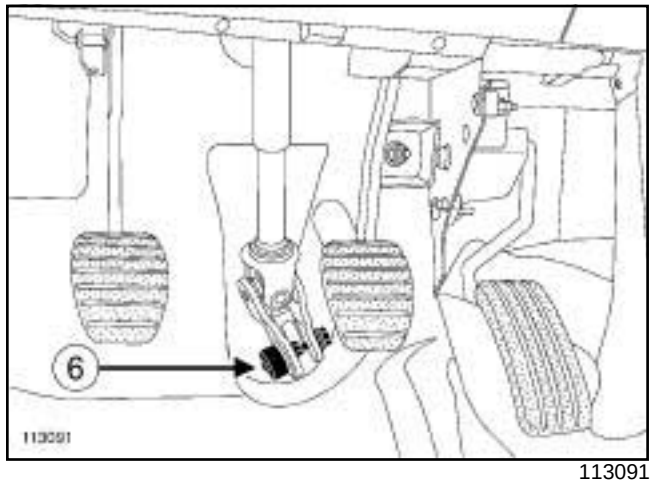
❏ Unclip the lower cover (**4**) .

❏ Disconnect the various connectors (depending on equipment level).

❏ Remove the lower cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED

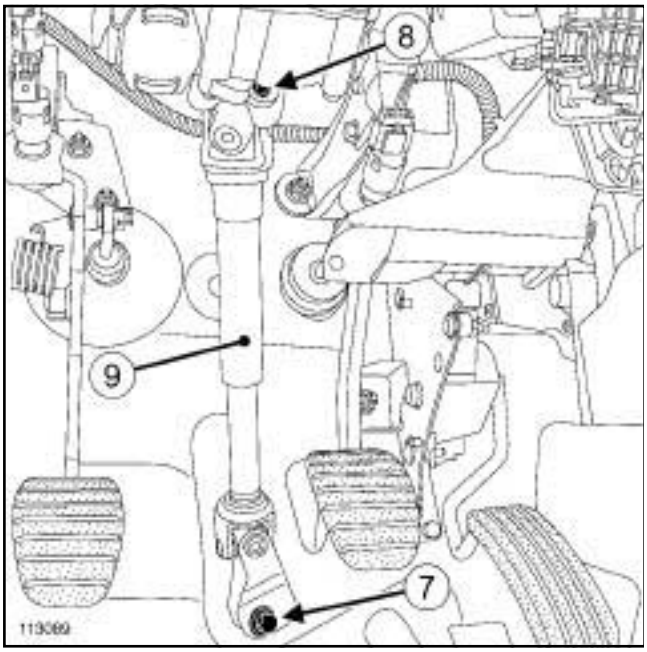
❏ Lift the floor carpet to access the universal joint bolt.



113091

❏ Remove the steering column universal joint cover (**6**) (do not keep).

❏ Set the wheels straight ahead.



113089

❏ Remove:

- the universal joint bolt (**7**) (do not keep),
- the universal joint nut (do not keep).
- the intermediate shaft bolt (**8**) on the column,
- the intermediate shaft (**9**) .

REFITTING

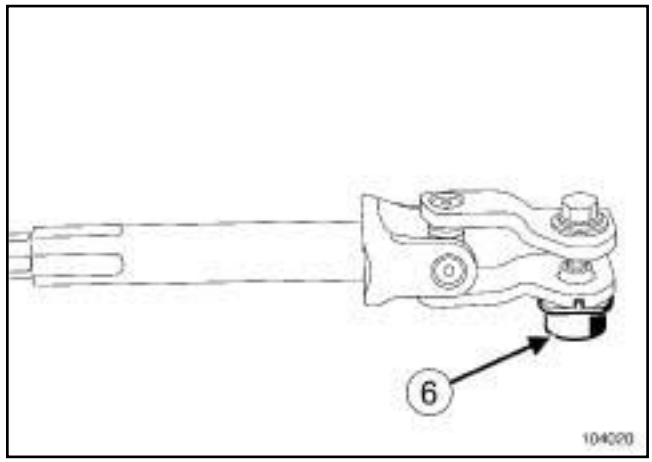
I - REFITTING PREPARATION OPERATION

❏ Always replace the universal joint bolt and cam nut after each removal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the intermediate shaft in its original position.

WARNING
Do not separate the two sliding parts of the intermediate shaft.



104020

❏ Ensure that the steering column universal joint cam nut and bolt are fitted the right way round.

Note:
- always replace the steering column universal joint bolt and cam nut (**6**) each time they are removed.
- on a new intermediate shaft, the universal joint cam nut is prefitted; do not remove the cover (**6**) .

❏ Refit the intermediate shaft to the column.

❏ Pretighten the mounting bolt of the shaft on the column.

❏ Pull the intermediate shaft to make sure that the bolt is present in the neck

❏ Refit:

- the universal joint,
- the universal joint cam nut and bolt.

❏ Pretighten the universal joint cam nut and bolt.

❏ Pull the intermediate shaft to make sure that the bolt is present in the neck

❏ Tighten to torque:

- the **universal joint bolt on the steering rack (24 Nm)**,
- the **bolt on the steering column (32 Nm)**.

❏ Refit the floor carpet.

Note:
Check that the floor carpet reaches under the accelerator pedal end-stop.

III - FINAL OPERATION

❏ Refit the lower cover.

❏ Connect the various connectors (depending on equipment level).

❏ Engage the lower cover clips.

❏ Refit:

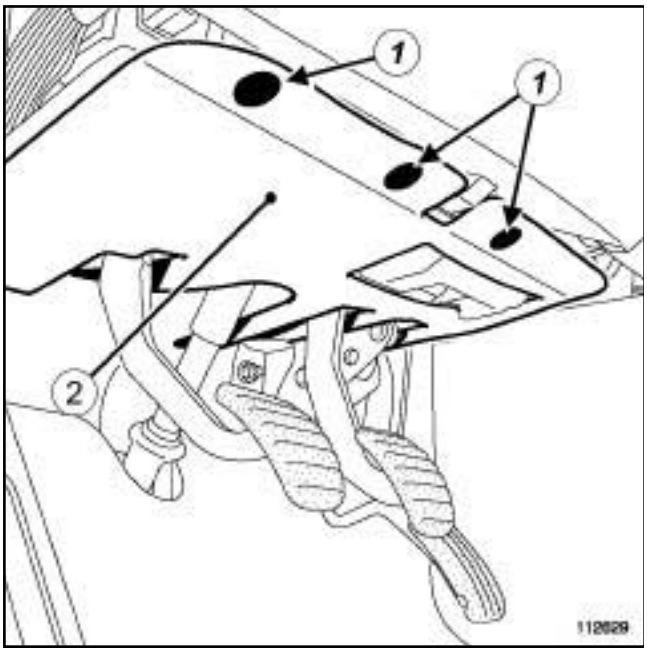
- the lower cover mounting clip,
- the lower cover mounting bolts,
- the instrument panel's side cover,
- the bolt-cover protective strip,
- the lower trim of the driver's side dashboard,
- the mounting clips on the lower trim of the driver's side dashboard.

❏ Connect the battery (see **Battery: Removal - Refitting**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) .



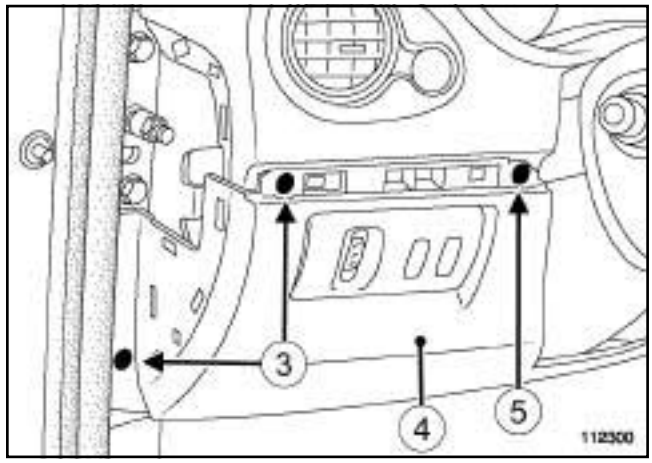
112629

❏ Remove:

- the mounting clips (**1**) on the lower trim of the driver's side dashboard,
- the lower trim (**2**) of the driver's side dashboard.

❏ Remove:

- the bolt-cover protective strip,
- the instrument panel's side cover.



112300

❏ Remove:

- the lower cover mounting bolts (**3**) ,
- the lower cover mounting clip (or bolt) (**5**) .

❏ Unclip lower cover (**4**) .

❏ Disconnect the various connectors (depending on equipment level).

❏ Remove the lower cover.

❏ Remove the mounting bolts of the half shells (see **Steering column switch assembly: Removal - Refitting**) .

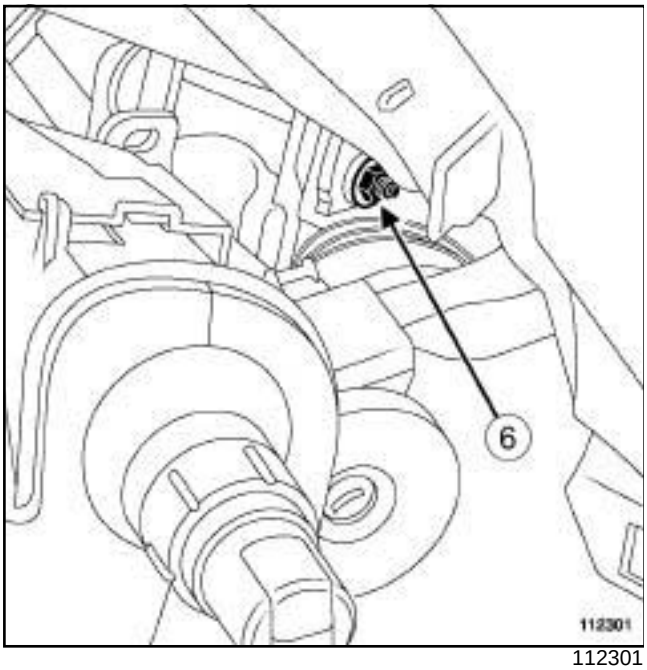
> Note:
>
> Do not remove the steering wheel switch assembly.

❏ Unclip the two half shells .

❏ Remove the lower half shell.

II - OPERATION FOR REMOVAL OF PART CONCERNED

VEHICLE WITH KEY



112301

❑ Remove:

- the nut (**6**) on the adjustment handle shaft,
- the locking mechanism,
- the adjustment handle.

VEHICLE WITH CARD

❑ Remove:

- the nut (**12**) on the adjustment handle shaft using an 18 mm spanner,
- the washer,
- the adjustment handle,
- the locking mechanism.

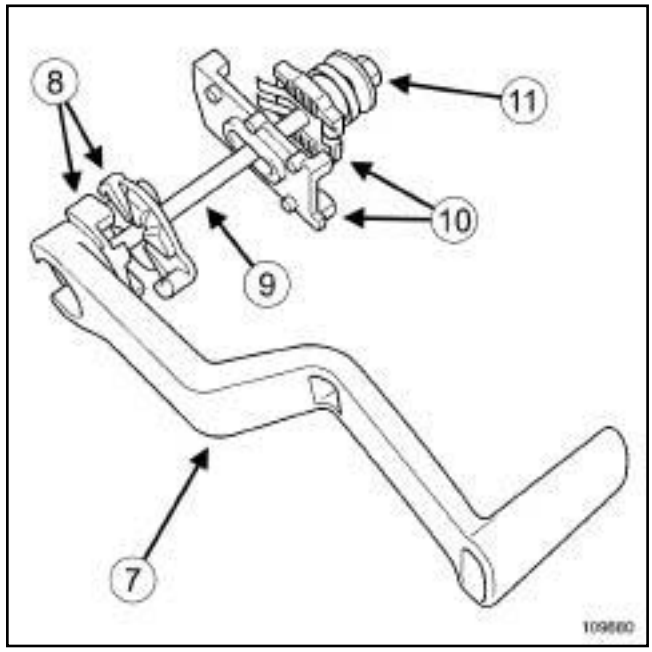
Note:

the connecting shaft is trapped on the steering column.

REFITTING

I - REFITTING PREPARATION OPERATION

VEHICLE WITH KEY



109880

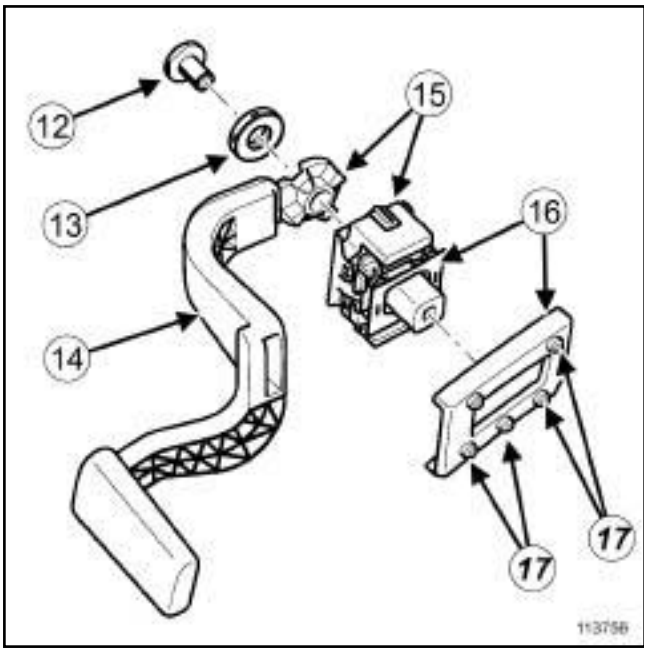
(**7**)	Handle
(**8**)	Indexed adjustment plates
(**9**)	Connection shaft
(**10**)	Locking mechanism
(**11**)	Adjustment handle shaft nut

❑

Note:

When the handle is refitted, ensure the two indexed adjustment plates and retaining spring are correctly positioned.

VEHICLE WITH CARD



113756

(**12**) Adjustment handle shaft nut
(**13**) Washer
(**14**) Handle
(**15**) Indexed adjustment plates
(**16**) Locking mechanism

❑

Note:

When refitting the handle, make sure that the studs (**17**) of the indexed adjustment plates are correctly positioned and that the direction of the locking mechanism is correct.

II - OPERATION FOR REFITTING PART CONCERNED

VEHICLE WITH KEY

❑ Refit:

- the adjustment handle.
- the locking mechanism,
- the adjustment handle mounting nut.

Note:

The amount of effort required to operate the handle is determined by how much it is tightened. Test to determine the correct tightening.

VEHICLE WITH CARD

❑ Refit:

- the locking mechanism,
- the adjustment handle,
- the washer,
- the nut on the adjustment handle shaft.

Note:

The amount of effort required to operate the handle is determined by how much it is tightened. Test to determine the correct tightening.

III - FINAL OPERATION

❑ Reattach the two half shells.

❑ Refit the mounting bolts of the half shells.

❑ Refit the lower cover.

❑ Connect the various connectors (depending on equipment level).

❑ Engage the lower cover clips.

❑ Refit:

- the lower cover mounting clip (or bolt),
- the lower cover mounting bolts,
- the instrument panel's side cover,
- the bolt-cover protective strip,

- the lower trim of the driver's side dashboard,
- the mounting clips on the lower trim of the driver's side dashboard.

❑ Connect the battery (see **Battery: Removal - Refitting**) .

Tightening torques ▽	
new steering wheel bolt	**44 N.m**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Steering: Precautions for the repair**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Apply the procedure for deactivating the safety systems. (see **Airbag and pretensioners: Precautions for the repair**)

❏

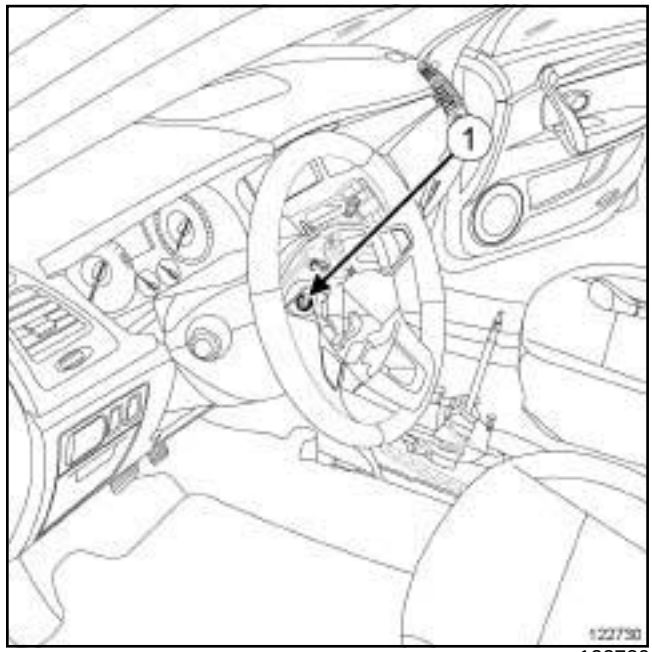
WARNING
Incorrect wheel alignment may damage the rotary switch.

❏ Remove the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) .

❏ Set the wheels straight ahead.

❏ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



122730

❏ Remove the steering wheel bolt (**1**) .

WARNING
To ensure that the electronic systems operate correctly, do not damage the locking systems of the connectors.

❏ Remove the steering wheel.

❏

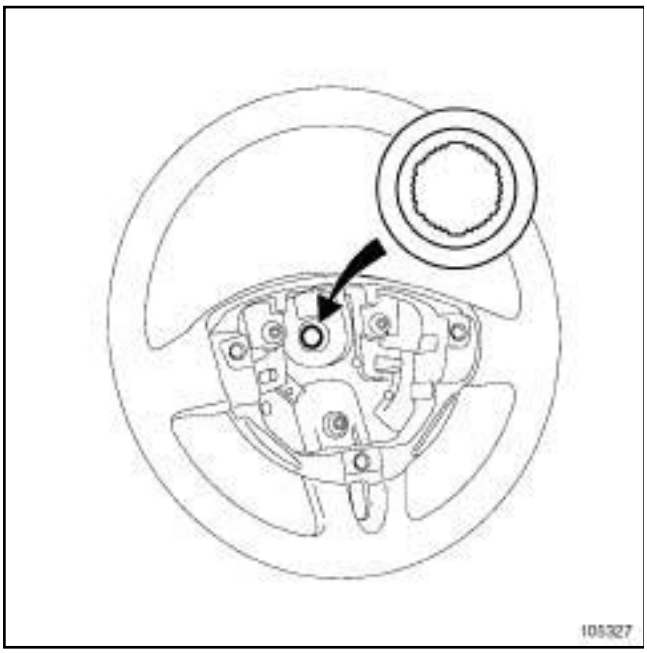
WARNING
To prevent damaging the rotary switch, do not turn the mobile section of the rotary switch.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Steering wheel bolt (13,04,01,09)**.

II - REFITTING OPERATION FOR PART CONCERNED



105327

❑

WARNING
In order not to damage the steering wheel or steering column, the steering wheel-column fool-proofing devices must be aligned.

❑ Refit the steering wheel.

❑ Connect the connectors.

❑ Refit the new steering wheel bolt.

❑ Torque tighten the **new steering wheel bolt (44 N.m)**.

III - FINAL OPERATION

❑ Refit the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) .

IV - CHECKING AFTER REPAIR

❑ Switch on the ignition.

❑ Check the operation of the rotary switch:

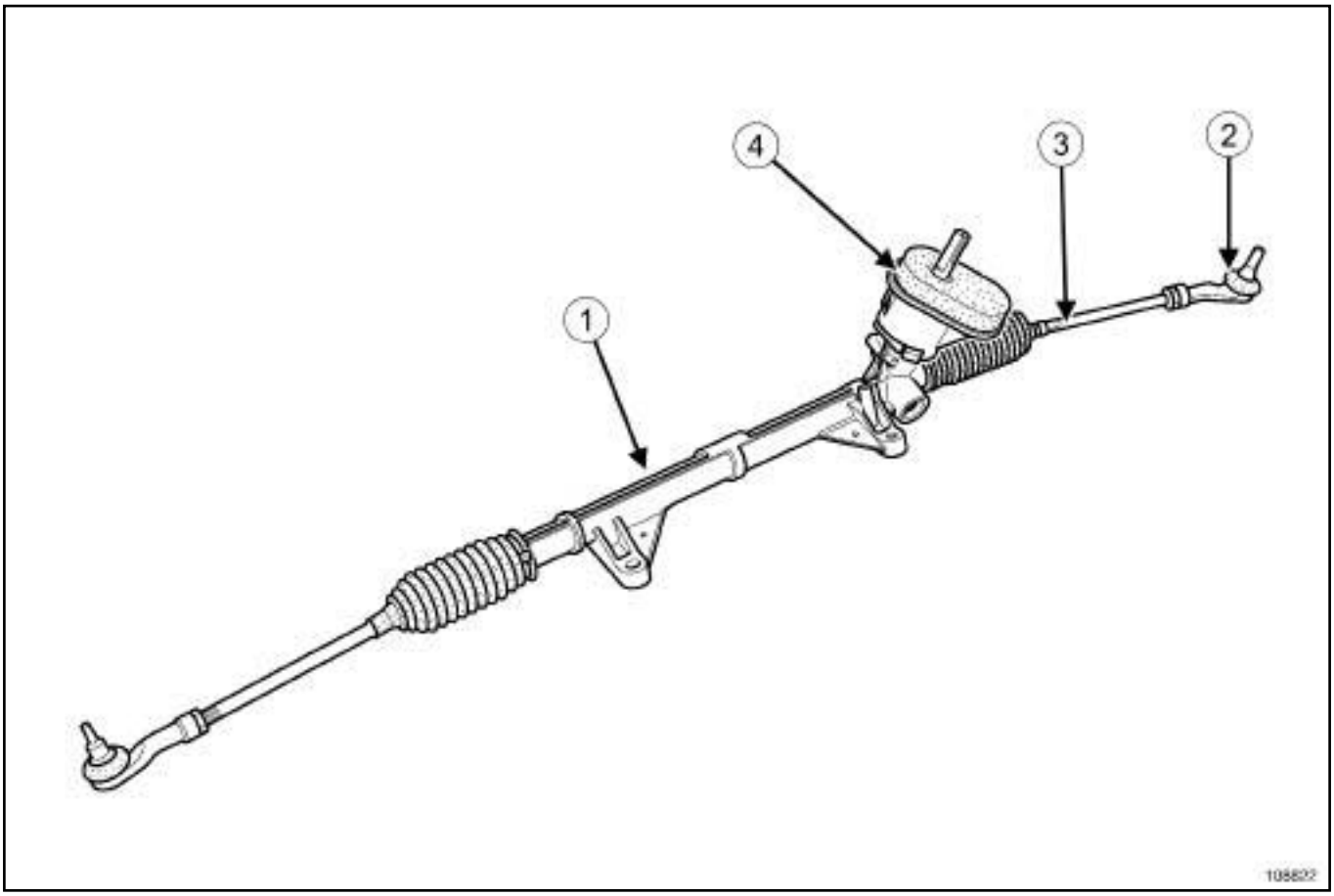
- turn the steering wheel to the left until it stops,
- turn the steering wheel to the right until it stops,
- check that there are no faults on the instrument panel.

Assistance varies according to vehicle speed.

IMPORTANT
Do not remove any steering column component.

Note:

During fault finding, the Service warning light flashes at a frequency of **2 Hz**.



108822

(**1**)	Steering rack
(**2**)	Track rod
(**3**)	Axial ball joint linkage
(**4**)	Bulkhead seal

JH3 or JR5, and LEFT-HAND DRIVE

Special tooling required	
Tav. 476	Ball joint extractor.

Tightening torques ▽	
steering box mounting bolts	**110 N.m**
engine tie-bar mounting bolt	**105 N.m**
exhaust downpipe mounting bolts	**21 N.m**
universal joint mounting bolt	**24 N.m**
anti-roll bar tie-rod nuts	**44 N.m**
track rod nuts	**35 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

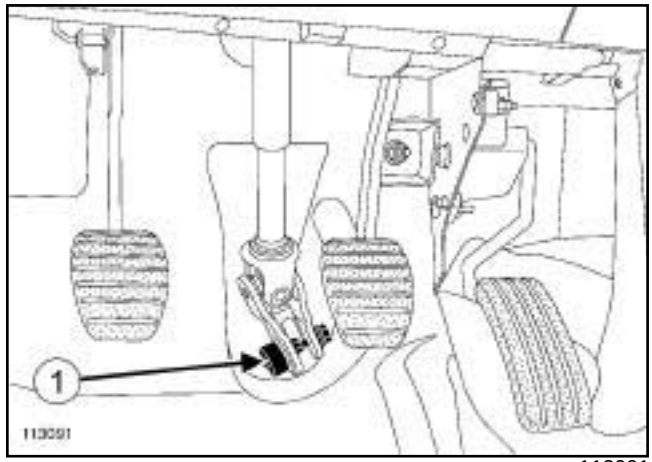
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED

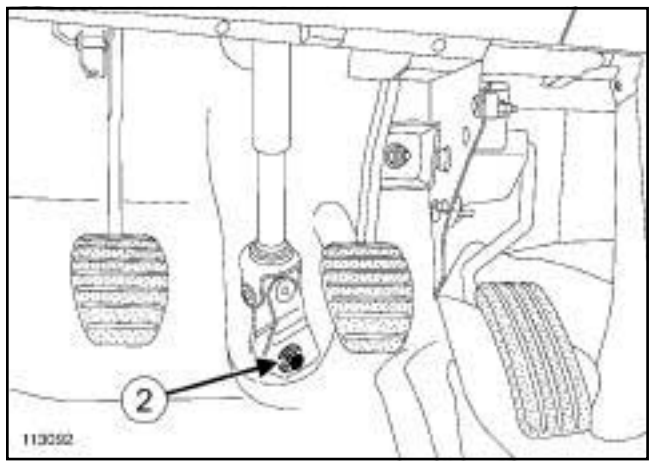
❏ Lift the floor carpet to access the universal joint bolt.



113091

❏ Remove the universal joint cover (**1**) (do not keep).

❏ Set the wheels straight ahead.

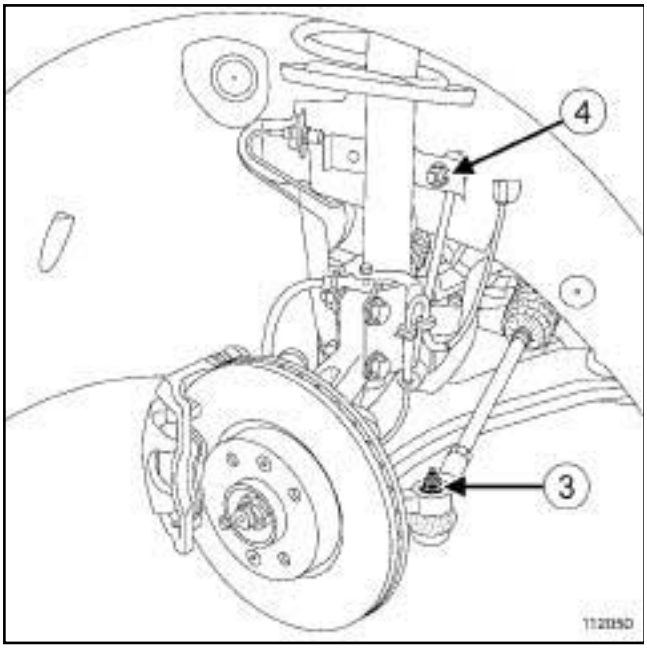


113092

❏ Remove the universal joint bolt (**2**) (do not keep),

❏ Remove the universal joint from the steering box.

JH3 or JR5, and LEFT-HAND DRIVE



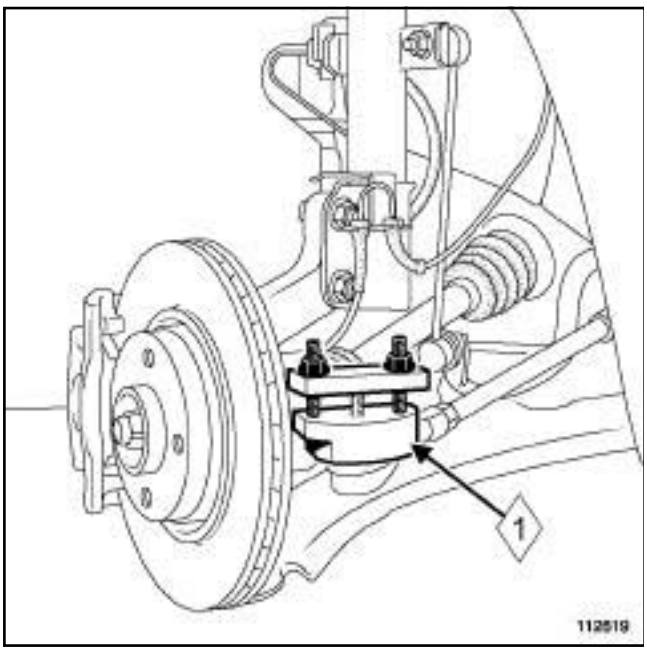
112050

❏ Remove:

- the mounting nuts (**3**) from the track rod,
- the anti-roll bar tie-bar upper nuts (**4**) .

Note:

It is necessary to rotate the anti-roll bar onto itself in order to make it easier to position the steering rack on the sub-frame cross member.

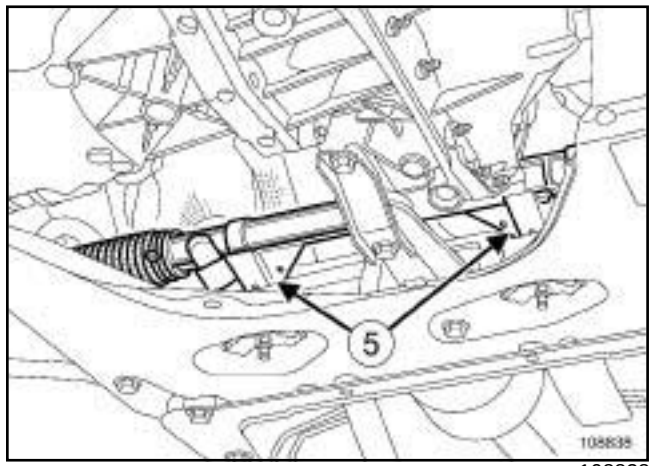


112619

❏ Extract the ball joint using (**1**) **Tav. 476** .

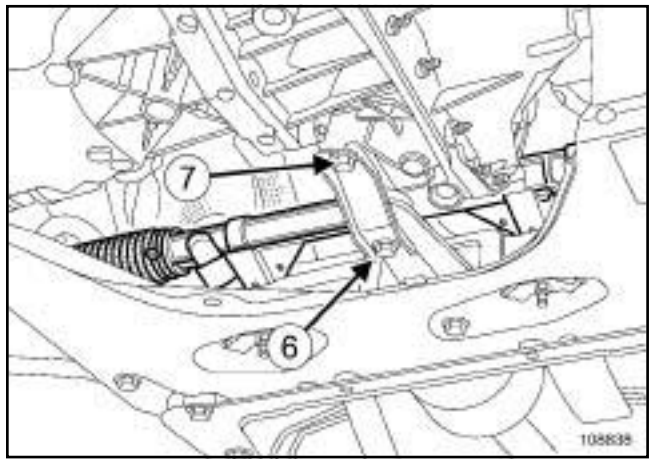
❏ Tilt the anti-roll bar towards the rear of the vehicle.

❏ Unclip the oxygen sensor wiring harness from the steering rack.



108838

❏ Remove the steering box mountings (**5**) .



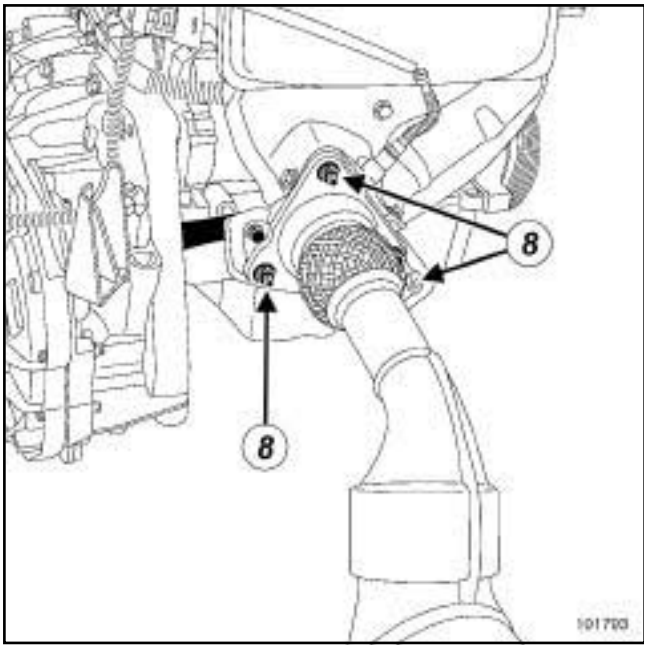
108838

❏ Remove the engine tie-bar mounting (**6**) on the engine.

❏ Loosen the engine tie-bar retaining bracket mounting bolt (**7**) in order to be able to turn the retaining bracket.

❏ Tip the engine forwards using a lever to remove the steering rack.

JH3 or JR5, and LEFT-HAND DRIVE



101793

❏ Remove the exhaust downpipe mounting bolts (**8**) , if necessary.

❏ Remove the steering rack, going towards the left-hand side of the vehicle; two people are required to carry out this operation.

If the vehicle is fitted with xenon bulbs, be careful not to damage the xenon bulb sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the following after each removal operation:

- the universal joint nut and bolt,
- the anti-roll bar link rod brake nuts.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

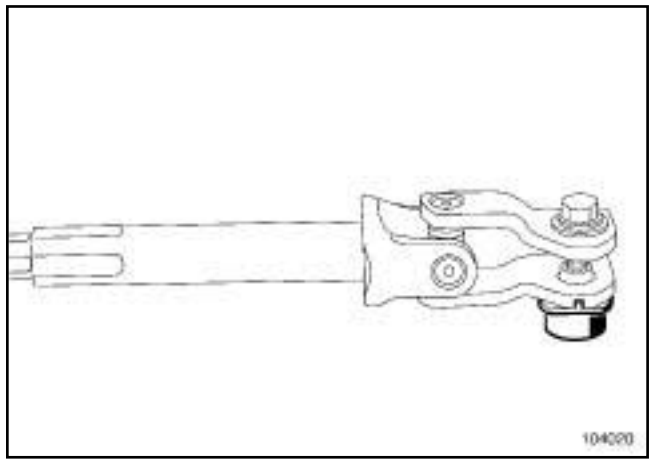
- the steering rack inserting it from the left-hand side of the vehicle, being careful not to damage the xenon bulb beam sensor,
- the xenon bulb beam sensor (if fitted to the vehicle),
- the steering rack mounting bolts.

❏ Torque tighten the **steering box mounting bolts (110 N.m)**, starting with the bolt on the right-hand side of the vehicle.

❏ Refit the engine tie-bar mountings.

❏ Torque tighten the **engine tie-bar mounting bolt (105 N.m)**.

❏ Refit the exhaust downpipe mounting bolts, if they were removed.



104020

❏ Respect the direction when fitting the universal joint nut and bolt.

❏ Refit:

- the universal joint,
- the new universal joint bolt,
- the new universal joint nut.

❏ Pre-tighten the universal joint nut and bolt.

❏ Pull the intermediate shaft to make sure that the bolt is present in the neck.

❏ Tighten to torque:

- the **exhaust downpipe mounting bolts (21 N.m)**,
- the **universal joint mounting bolt (24 N.m)**.

❏ Refit the floor carpet.

> Note:
>
> Check that the floor carpet fits under the accelerator pedal end-stop.

❏ Clip the oxygen sensor wiring harness back onto the steering rack.

❏ Tilt the anti-roll bar back into its original position.

❏ Place the ball joints back into their housing.

❏ Refit:

- the track rod mounting nuts,
- the anti-roll bar link rod lower nuts.

JH3 or JR5, and LEFT-HAND DRIVE

❑ Tighten to torque:

- the **anti-roll bar tie-rod nuts (44 N.m)**,
- the **track rod nuts (35 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the engine undertray,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Adjust the front axle assemblies (see **Adjusting the front axle system**) .

❑ Be sure to initialise the xenon bulb system (if fitted to the vehicle); (see **MR 394 Fault finding, 80C, Discharge bulbs, Replacement of components**).

DP0 or TL4, and LEFT-HAND DRIVE

Tightening torques ▽	
steering rack mounting bolts	**110 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

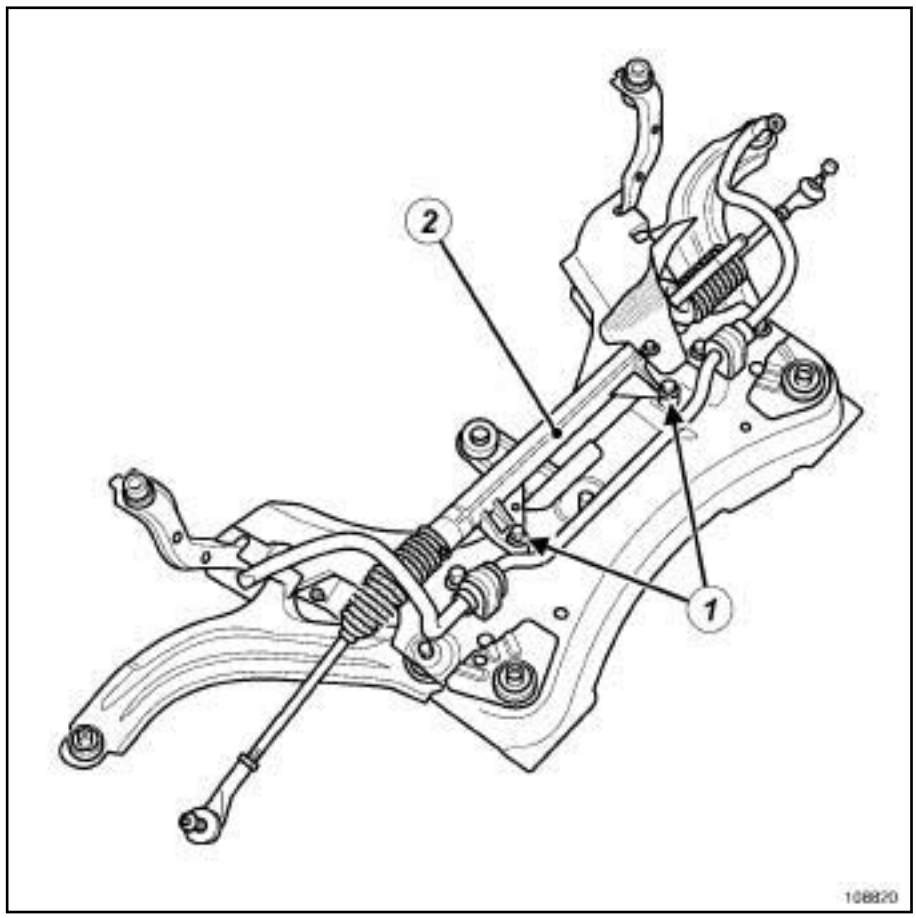
❑ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the sub-frame (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) .

DP0 or TL4, and LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED

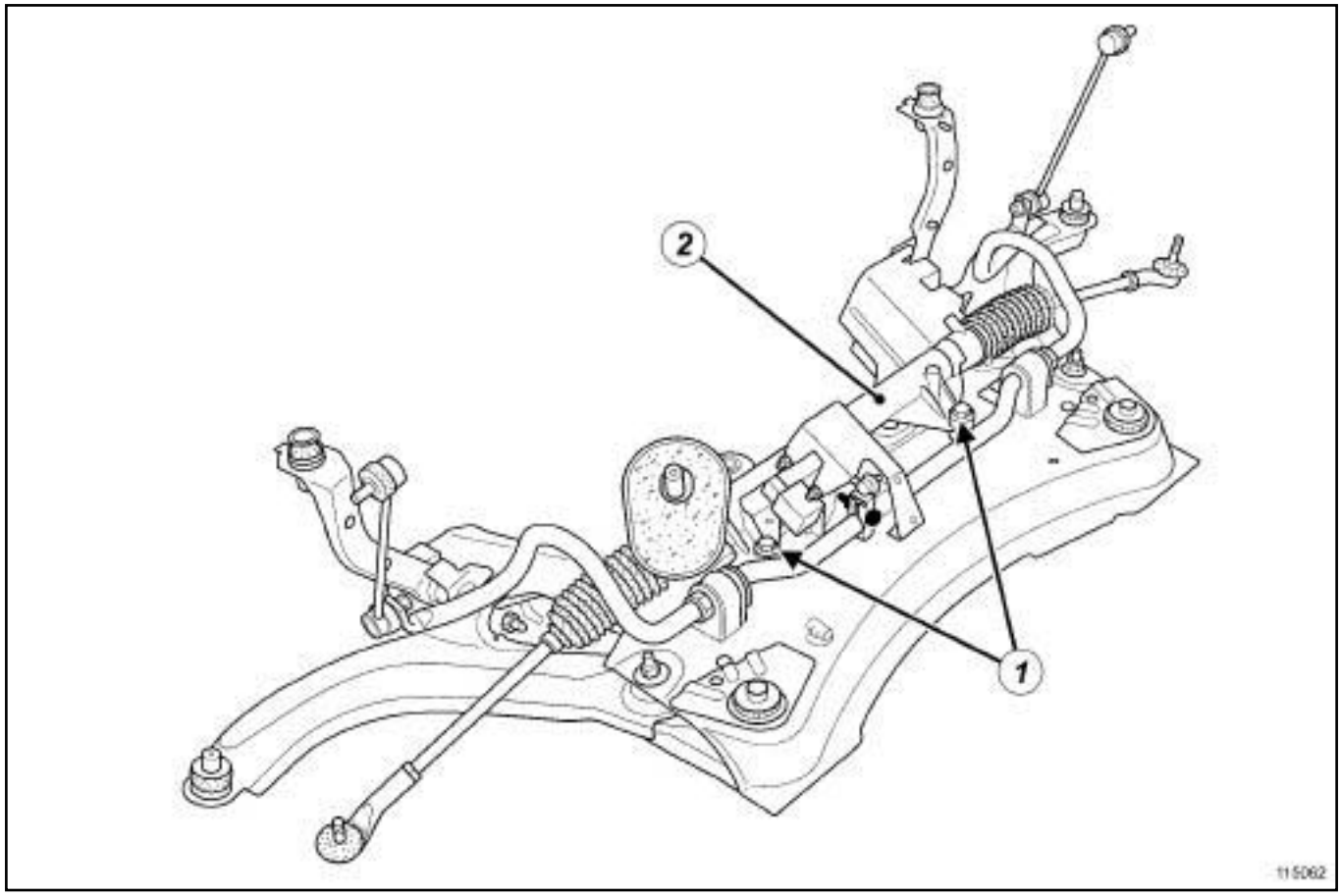
vehicle sub-frame without xenon bulbs



108820

DP0 or TL4, and LEFT-HAND DRIVE

vehicle sub-frame fitted with xenon bulbs



115062

❑ Remove:

- the steering rack mounting bolts (**1**) ,
- the steering rack (**2**) being careful not to damage the xenon bulb beam sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the following after each removal operation:

- the anti-roll bar link rod brake nuts,
- the universal joint bolt and cam nut.

> **WARNING**
> Be sure to insert a **10 mm** shim between the radiator cross member and the sub-frame, and centre the radiator cross member pin in the sub-frame opening on the lower arm front mounting, to torque tighten the radiator cross member mountings.

❑ Set the wheels straight ahead.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the steering rack,
- the xenon bulb beam sensor (if fitted to the vehicle),
- the steering rack mounting bolts.

❑ Tighten to torque the **steering rack mounting bolts (110 Nm)**.

III - FINAL OPERATION

❑ Refit:

- the sub-frame (see **31A**, **Front axle components**, **Front axle subframe: Removal - Refitting**, page **31A-55**) ,
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Adjust the front axle assemblies (see **Adjusting the front axle system**) .

❑ Be sure to initialise the xenon bulb system (if fitted to the vehicle); (see **MR 394 Fault finding, 80C, Xenon bulbs, Replacement of components**).

❑ Configure the power-assisted steering computer (see **MR 394 Diagnostic, 36B, Electric power assisted steering, Component replacements**).

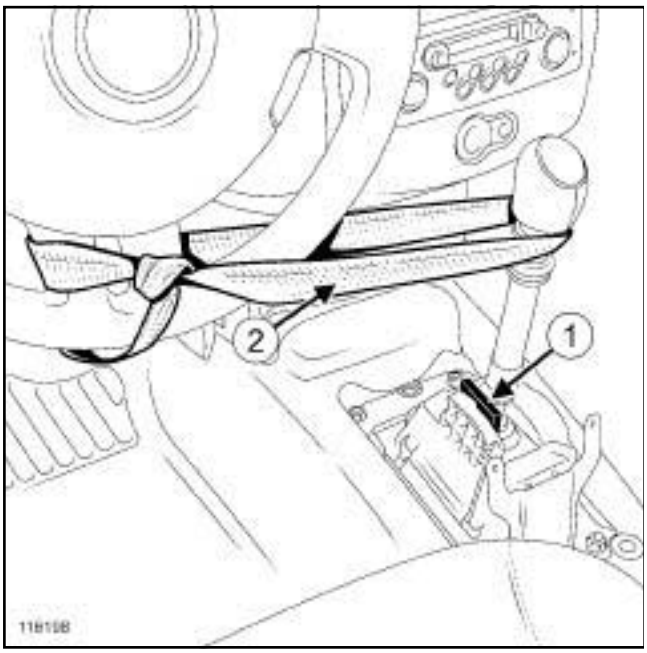
TL4

ADJUSTMENT

ADJUSTMENT OF SELECTION CABLE DURING A REMOVAL OPERATION

1 - Passenger compartment

❏ Shift the selector lever to third gear.



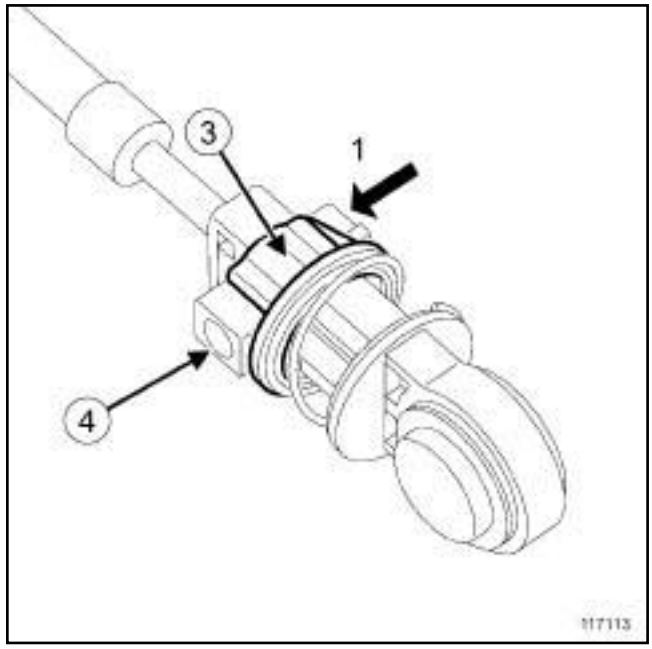
116198

❏ Fit a shim (**1**) (**6 mm** between the locking ring and reverse gear interlock on the selector lever.

❏ Use a strap (**2**) to immobilise the lever against the shim in third gear position.

2 - Engine compartment

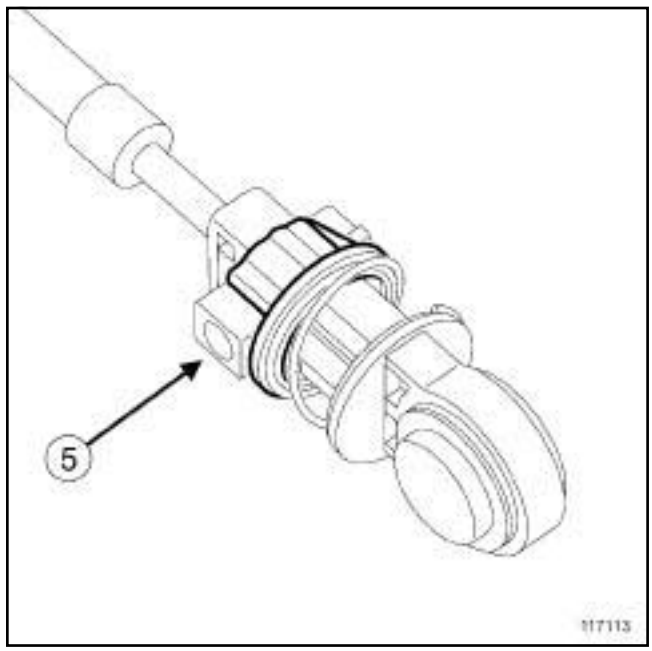
❏ Position the gear lever on the gearbox in "third gear engaged" position.



117113

❏ Unlock the selector cable adjustment clip by compressing the lock ring (**3**) and push the orange clip (**4**) upwards ⇨ (**1**) .

❏ Adjust the length of the cable accordingly and fit it onto the gear selection lever ball joint.



117113

❏ Lock the cable by pressing on the orange clip (**5**) .

❏ Check that gear selection is correct.

F4R or K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

Tightening torques ▽	
master cylinder reservoir mounting bolt	**8.5 Nm**
nuts mounting the master cylinder	**25 Nm**
brake pipes on the master cylinder	**17 Nm**

WARNING

Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

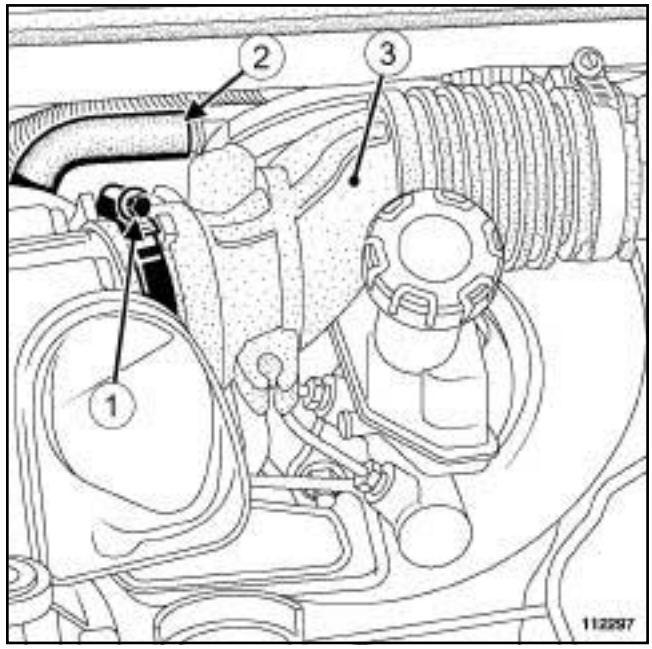
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



112297

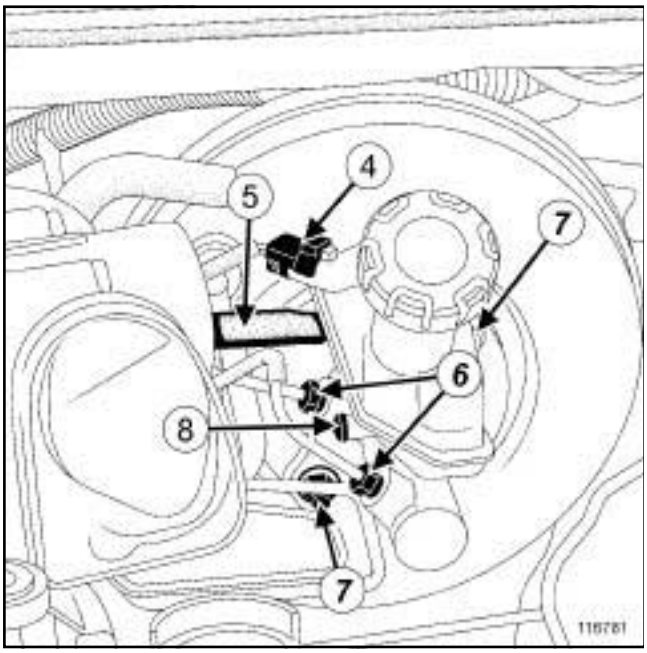
❏ Loosen the air duct clip (**1**) .

❏ Withdraw the pipe (**2**) on the air duct.

❏ Remove the air duct (**3**) .

F4R or K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



116781

❑ Disconnect the electrical connector (**4**) from the master cylinder reservoir.

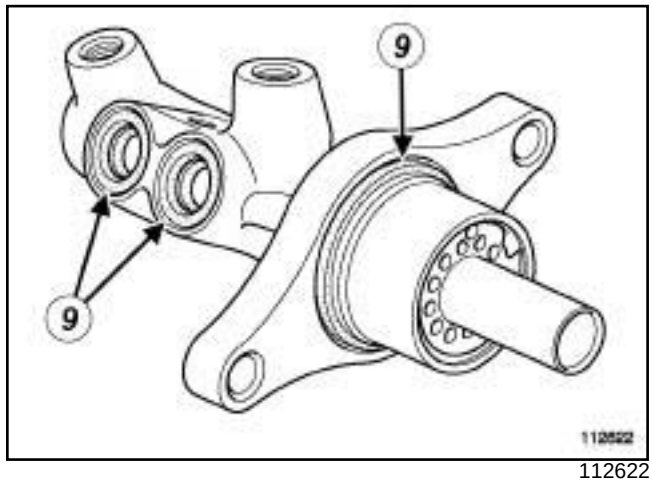
❑ Drain the master cylinder reservoir with a syringe.

❑ Remove:

- the clutch master cylinder pipe (**5**) , if fitted to the vehicle,
- the brake pipes (**6**) on the master cylinder,
- the master cylinder mounting nuts (**7**) on the servo,
- the « master cylinder/master cylinder reservoir» assembly,
- the master cylinder reservoir mounting bolt (**8**) on the master cylinder,
- the master cylinder reservoir.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

❑ The master cylinder seals (**9**) must be replaced.

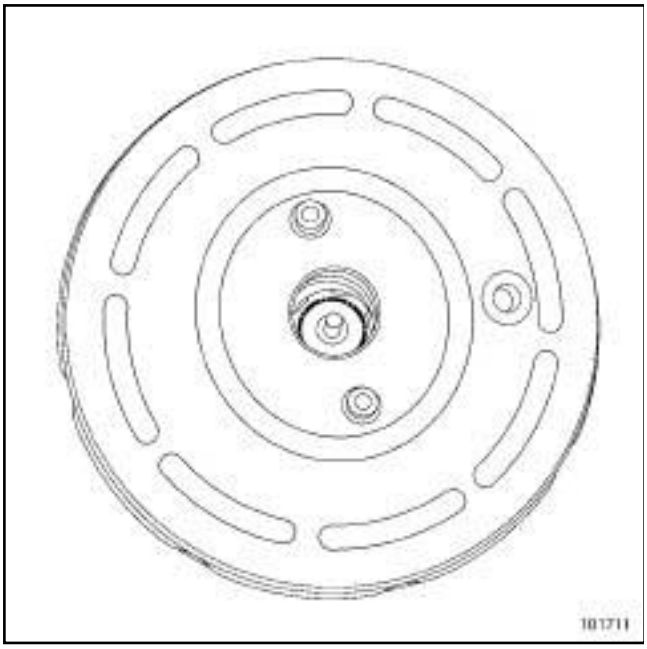
II - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the master cylinder reservoir onto the master cylinder correctly.

❑ Refit the master cylinder reservoir mounting bolt on the master cylinder.

❑ Torque tighten the **master cylinder reservoir mounting bolt (8.5 Nm)**.

F4R or K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE



101711

❏ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

WARNING
When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❏ Refit the nuts securing the master cylinder to the brake servo.

❏ Torque tighten the **nuts mounting the master cylinder (25 Nm)** on the servo.

❏ Refit the brake pipes to the master cylinder.

❏ Torque tighten the **brake pipes on the master cylinder (17 Nm)**.

JH3 or JR5 or TL4

❏ Refit the clutch master cylinder pipe.

❏ Connect the electrical connector on the master cylinder reservoir.

III - FINAL OPERATION.

❏ Refit:

- the air duct,
- the air duct pipe.

❏ Tighten the air duct clip.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

RIGHT-HAND DRIVE

Tightening torques ▽	
master cylinder reservoir bolt	**9 Nm**
master cylinder nuts	**25 Nm**
brake pipes on the master cylinder	**17 Nm**

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

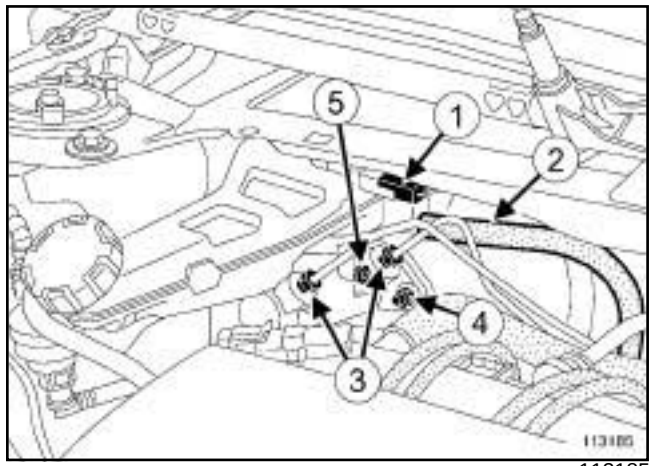
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the engine cover (if fitted to the vehicle),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113185

❏ Disconnect the connector (**1**) from the master cylinder reservoir.

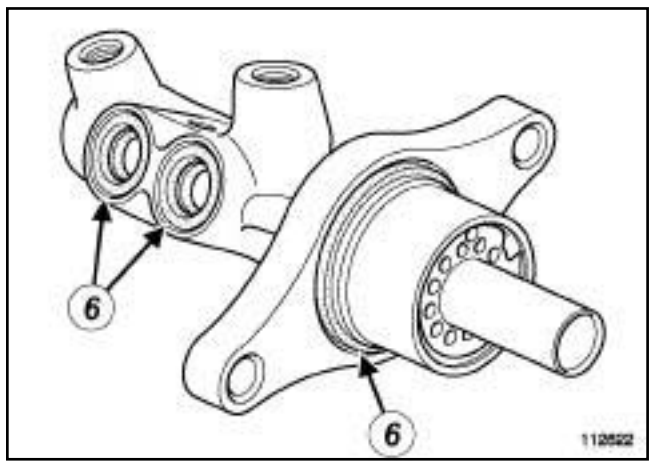
❏ Drain the master cylinder reservoir with a syringe.

❏ Remove:

- the clutch master cylinder pipe (**2**) , if fitted to the vehicle,
- the brake pipes (**3**) on the master cylinder,
- the master cylinder nuts (**4**) on the servo,
- the « master cylinder-reservoir » assembly,
- the master cylinder reservoir bolt (**5**) on the master cylinder,
- the master cylinder reservoir.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

❏ The master cylinder seals (**6**) must be replaced.

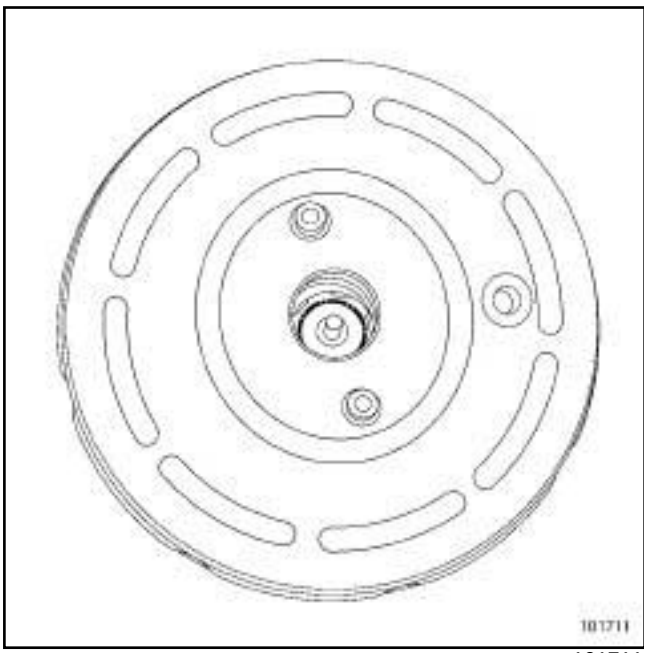
RIGHT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the master cylinder reservoir onto the master cylinder correctly.

❑ Refit the bolt securing the master cylinder reservoir to the master cylinder.

❑ Torque tighten the **master cylinder reservoir bolt (9 Nm)**.



101711

❑ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

❑ When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❑ Refit the master cylinder nuts to the brake servo.

❑ Torque tighten the **master cylinder nuts (25 Nm)** on the servo.

❑ Refit the brake pipes to the master cylinder.

❑ Torque tighten the **brake pipes on the master cylinder (17 Nm)**.

JH3 or JR5 or TL4

❑ Refit the clutch master cylinder pipe.

❑ Connect the master cylinder reservoir connector.

III - FINAL OPERATION.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

D4F, and LEFT-HAND DRIVE

Tightening torques ▽	
master cylinder reservoir mounting bolt	**8.5 Nm**
master cylinder mounting nuts	**25 Nm**
master cylinder brake pipes	**17 Nm**

WARNING

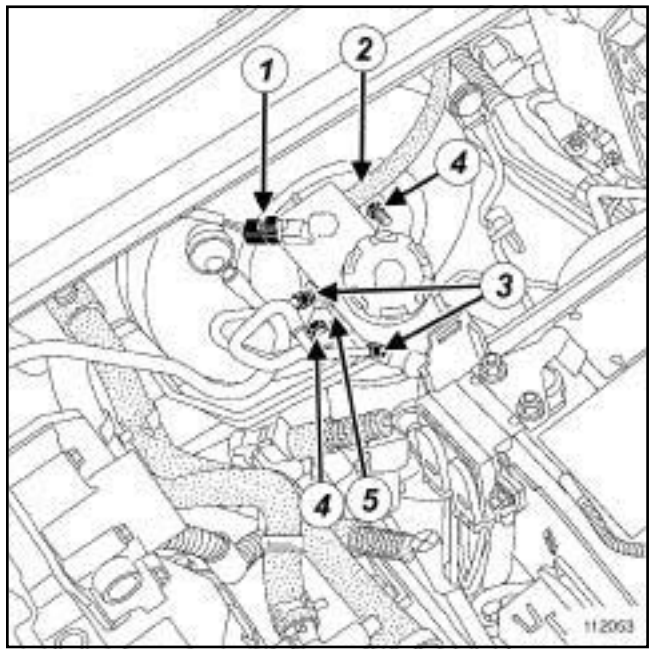
Prepare for brake fluid running out, to prevent damage to the mechanical parts and bodywork around the braking system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112053

❏ Disconnect the electrical connector (**1**) from the master cylinder reservoir.

❏ Drain the master cylinder reservoir with a syringe.

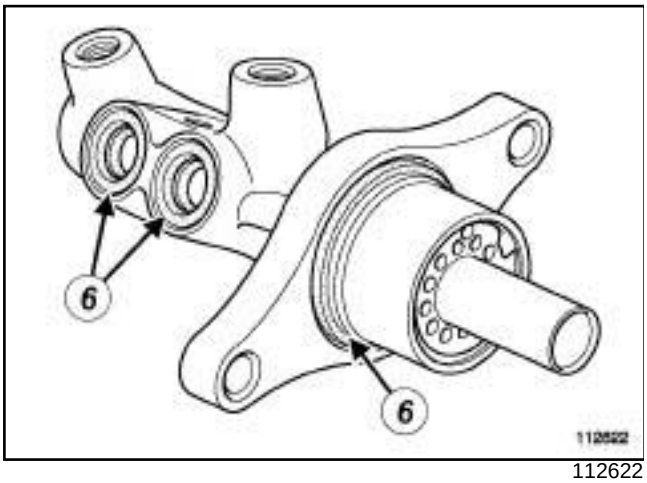
❏ Remove:

- the clutch master cylinder pipe (**2**) ,
- the brake pipes (**3**) on the master cylinder,
- the master cylinder mounting nuts (**4**) on the servo,
- the « master cylinder - master cylinder reservoir » assembly,
- the master cylinder reservoir mounting bolt (**5**) on the master cylinder,
- the master cylinder reservoir.

D4F, and LEFT-HAND DRIVE

REFITTING

I - REFITTING PREPARATION OPERATION



112622

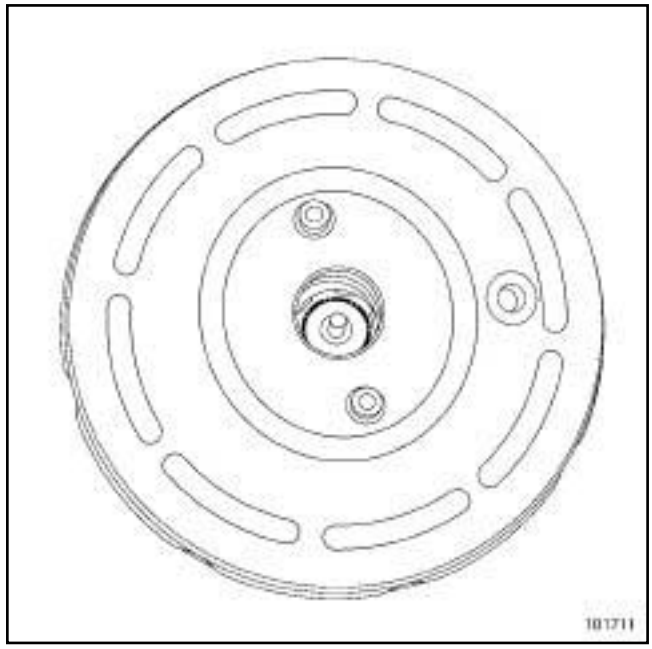
❏ The master cylinder seals (**6**) must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the master cylinder reservoir onto the master cylinder correctly.

❏ Refit the master cylinder reservoir mounting bolt on the master cylinder.

❏ Tighten to torque the **master cylinder reservoir mounting bolt (8.5 Nm)**.



101711

❏ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

WARNING
When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❏ Refit the nuts securing the master cylinder to the brake servo.

❏ Tighten to torque the **master cylinder mounting nuts (25 Nm)** on the brake servo.

❏ Refit the brake pipes to the master cylinder,

❏ Tighten to torque the **master cylinder brake pipes (17 Nm)** on the master cylinder.

❏ Connect the electrical connector on the master cylinder reservoir.

III - FINAL OPERATION

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

M4R, and RIGHT-HAND DRIVE

Tightening torques ▽	
master cylinder reservoir bolt	**9 Nm**
master cylinder nuts	**25 Nm**
brake pipes on the master cylinder	**17 Nm**

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

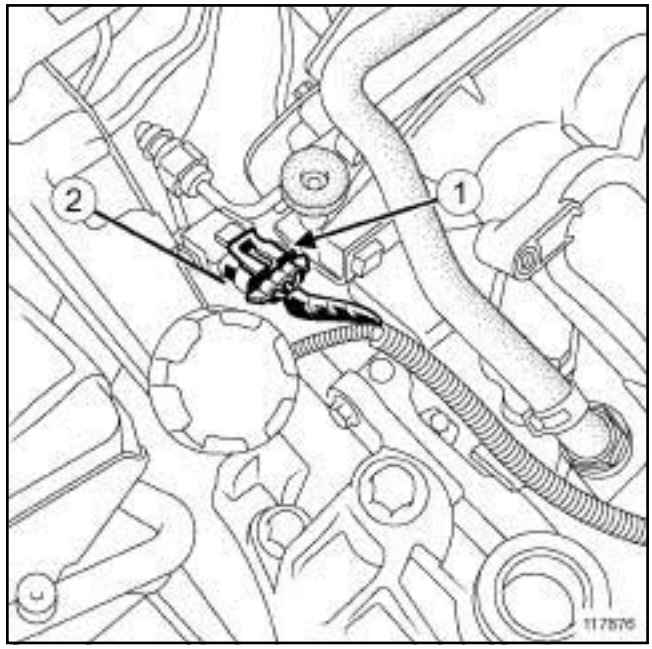
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the engine cover (if fitted to the vehicle),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



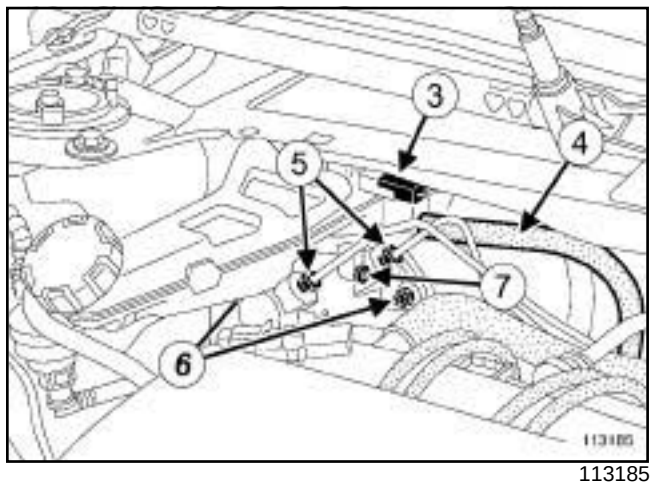
117876

❏ Disconnect the atmospheric pressure sensor connector (**1**) .

❏ Remove the atmospheric pressure sensor mounting bolt (**2**) .

❏ Move aside the atmospheric pressure sensor mounting.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113185

❏ Disconnect the connector (**3**) from the master cylinder reservoir.

❏ Drain the master cylinder reservoir with a syringe.

M4R, and RIGHT-HAND DRIVE

JH3 or JR5 or TL4

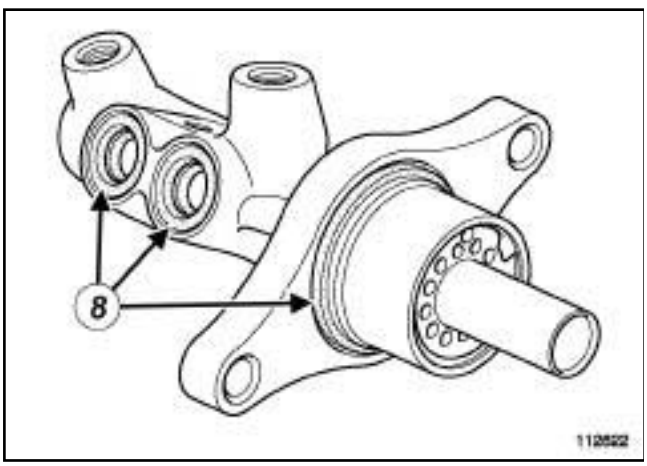
❑ Remove the clutch master cylinder pipe ***(4)*** .

❑ Remove:

- the brake pipes ***(5)*** on the master cylinder,
- the master cylinder nuts ***(6)*** on the brake servo,
- the « master cylinder-reservoir » assembly,
- the master cylinder reservoir bolt ***(7)*** on the master cylinder,
- the master cylinder reservoir.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

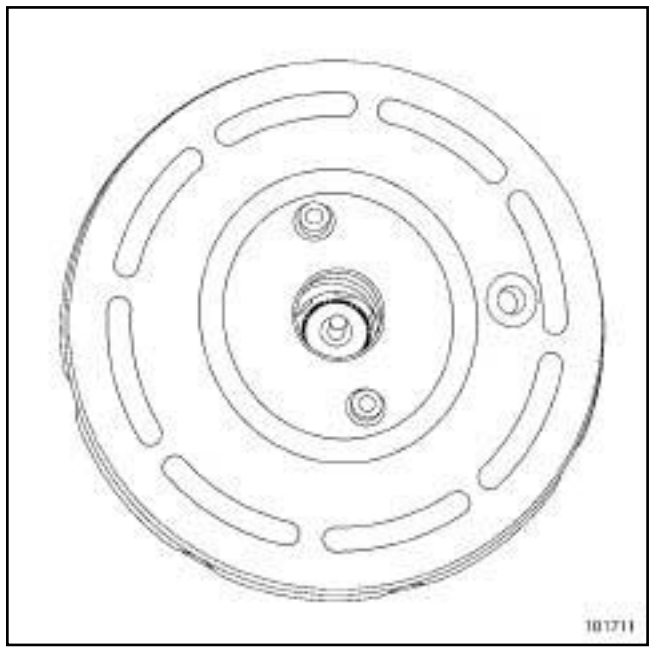
❑ The master cylinder seals (**8**) must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the master cylinder reservoir onto the master cylinder correctly.

❑ Refit the bolt securing the master cylinder reservoir to the master cylinder.

❑ Torque tighten the **master cylinder reservoir bolt (9 Nm)**.



101711

❑ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

WARNING
When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❑ When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❑ Refit the master cylinder nuts to the brake servo.

❑ Torque tighten the **master cylinder nuts (25 Nm)** on the servo.

❑ Refit the brake pipes to the master cylinder.

❑ Torque tighten the **brake pipes on the master cylinder (17 Nm)**.

JH3 or JR5 or TL4

❑ Refit the clutch master cylinder pipe.

❑ Connect the master cylinder reservoir connector.

III - FINAL OPERATION.

❑ Refit the atmospheric pressure sensor mounting.

❑ Tighten the atmospheric pressure sensor mounting bolt.

M4R, and RIGHT-HAND DRIVE

❑ Connect the atmospheric pressure sensor connector.

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

F4R, and RIGHT-HAND DRIVE

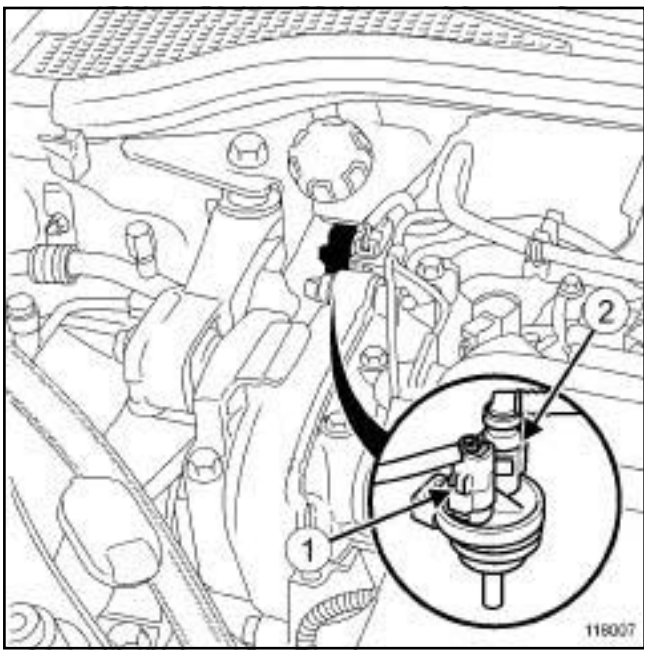
Tightening torques ▽	
master cylinder reservoir bolt	**9 Nm**
master cylinder nuts	**25 Nm**
brake pipes on the master cylinder	**17 Nm**

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).



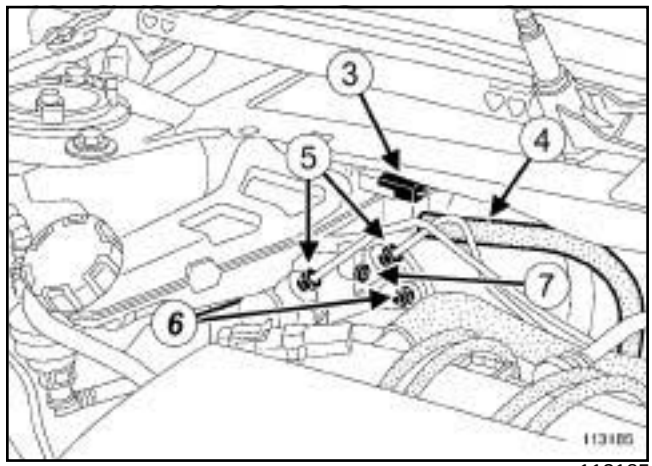
118007

❏ Disconnect:

- the fuel vapour absorber bleed solenoid valve connector (**1**) ,
- the fuel vapour absorber pipe (**2**) on the solenoid valve.

❏ Move aside the fuel vapour absorber bleed solenoid valve.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113185

❏ Disconnect the connector (**3**) from the master cylinder reservoir.

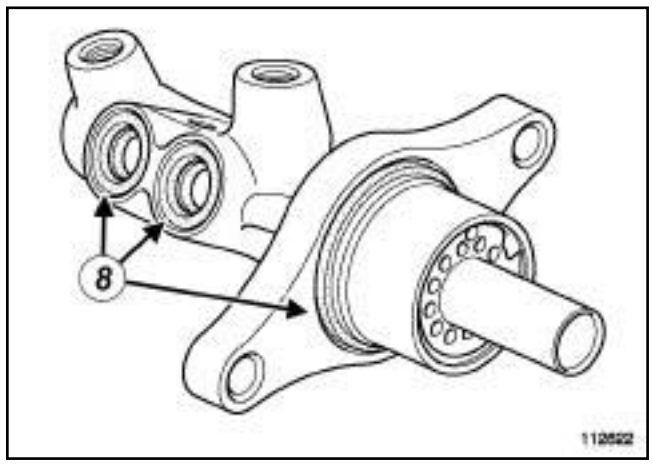
❏ Drain the master cylinder reservoir with a syringe.

❏ Remove:

- the clutch master cylinder pipe (**4**) ,
- the brake pipes (**5**) on the master cylinder,
- the master cylinder nuts (**6**) on the brake servo,
- the « master cylinder-reservoir » assembly,
- the master cylinder reservoir bolt (**7**) on the master cylinder,
- the master cylinder reservoir.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

❏ The master cylinder seals (**8**) must be replaced.

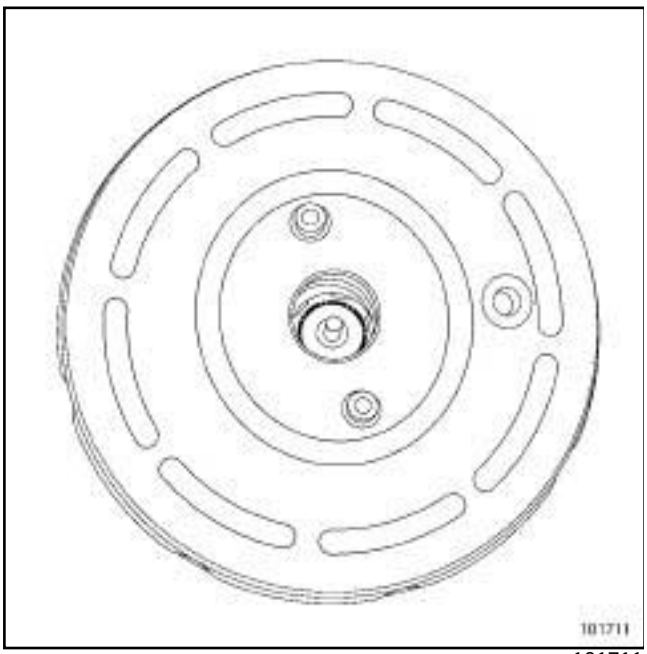
F4R, and RIGHT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the master cylinder reservoir onto the master cylinder correctly.

❏ Refit the bolt securing the master cylinder reservoir to the master cylinder.

❏ Torque tighten the **master cylinder reservoir bolt (9 Nm)**.



101711

❏ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

❏ When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❏ Refit the master cylinder nuts to the brake servo.

❏ Torque tighten the **master cylinder nuts (25 Nm)** on the servo.

❏ Refit the brake pipes to the master cylinder.

❏ Torque tighten the **brake pipes on the master cylinder (17 Nm)**.

III - FINAL OPERATION.

❏ Refit the clutch master cylinder pipe.

❏ Connect the electrical connector on the master cylinder reservoir.

❏ Refit the fuel vapour absorber bleed solenoid valve.

❏ Connect:

- the fuel vapour absorber pipe on the solenoid valve,
- the fuel vapour absorber bleed solenoid valve connector.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
master cylinder reservoir bolt	**8.5 Nm**
master cylinder nuts	**25 Nm**
brake pipes on the master cylinder	**17 Nm**

REMOVAL

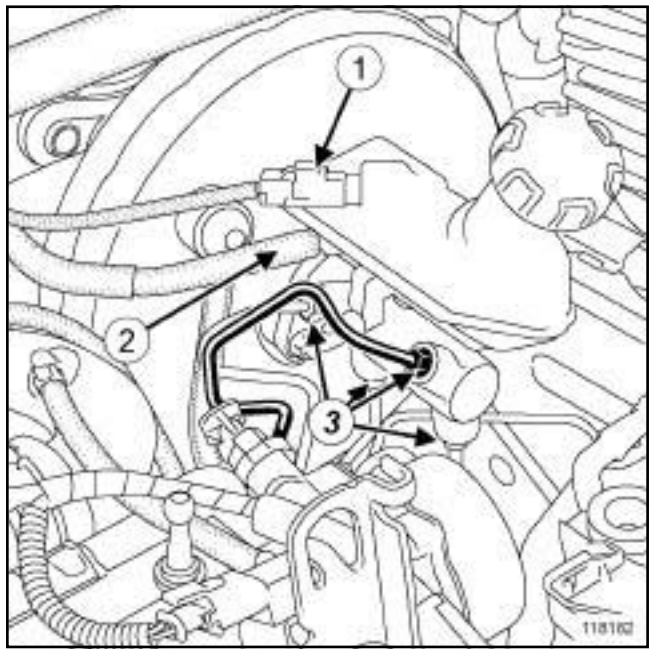
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the engine undertray,
- the air filter box air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the air filter box outlet air pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118182

❑ Disconnect the electrical connector (**1**) from the master cylinder reservoir.

❑ Remove:

- the clutch master cylinder pipe (**2**) ,
- the brake pipes (**3**) from the master cylinder,
- the master cylinder nuts on the brake servo,
- the « master-cylinder and reservoir » assembly,
- the master cylinder reservoir bolt,
- the master cylinder reservoir.

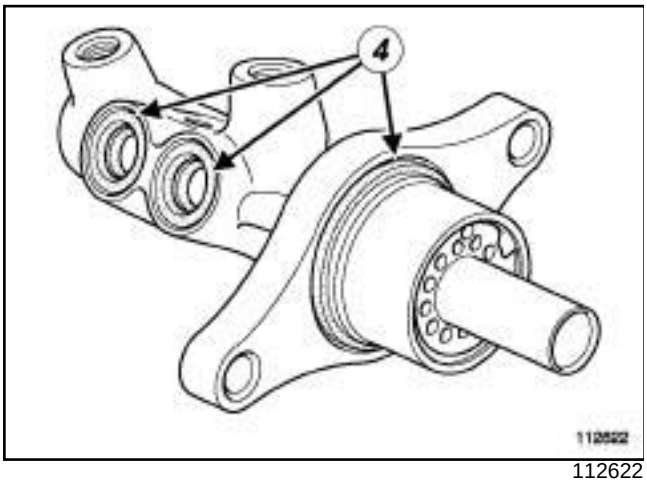
WARNING

Prepare for the flow of fluid, and protect the surrounding components.

WITHOUT ANTI-LOCK BRAKING SYSTEM

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

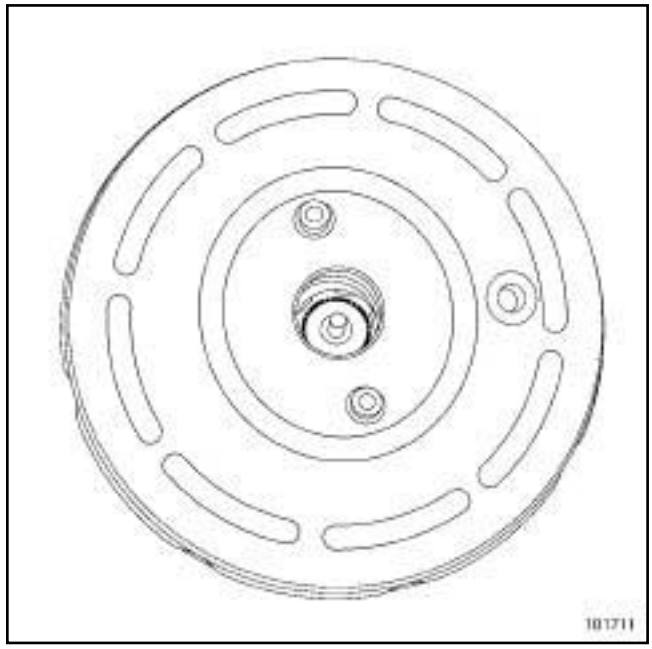
❏ The master cylinder seals must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the master cylinder reservoir onto the master cylinder correctly.

❏ Refit the bolt securing the master cylinder reservoir to the master cylinder.

❏ Torque tighten the **master cylinder reservoir bolt (8.5 Nm)**.



101711

❏ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

WARNING
When refitting the master cylinder, be sure the cup is centred in the brake servo.

❏ Screw the master cylinder nuts onto the brake servo.

❏ Torque tighten the **master cylinder nuts (25 Nm)** on the brake servo.

❏ Refit the brake pipes to the master cylinder.

❏ Torque tighten the **brake pipes on the master cylinder (17 Nm)**.

III - FINAL OPERATION.

❏ Refit the clutch master cylinder pipe.

❏ Connect the electrical connector on the master cylinder reservoir.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Refit:

- the air filter box outlet air pipe,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),

WITHOUT ANTI-LOCK BRAKING SYSTEM

- the air filter box air inlet pipe,
- the engine undertray,
- the engine cover.

D4F, and 784, and RIGHT-HAND DRIVE

Tightening torques ▽	
brake fluid reservoir bolt	**9 Nm**
master cylinder nuts	**25 Nm**
brake pipes on the master cylinder	**17 Nm**
upstream oxygen sensor	**44 Nm**

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

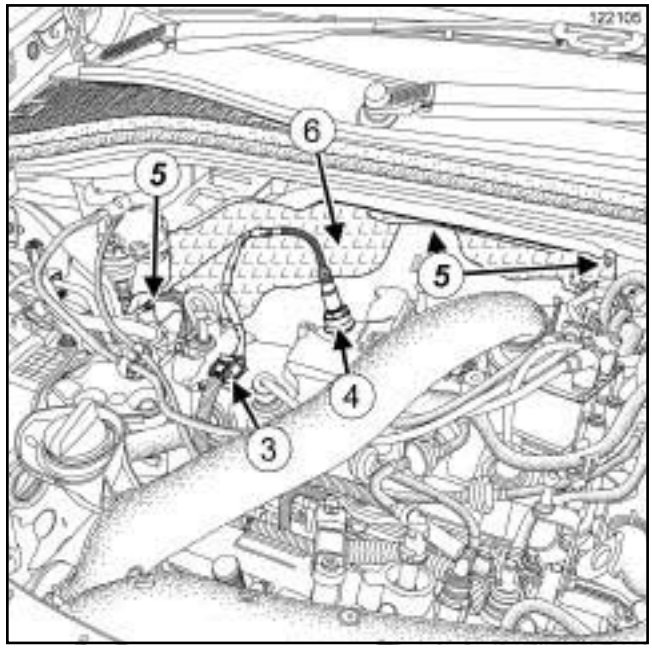
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

122106

❏ Remove:

- the engine cover,
- the bolts (**1**) from the turbocharger heat shield,
- the turbocharger heat shield (**2**) .



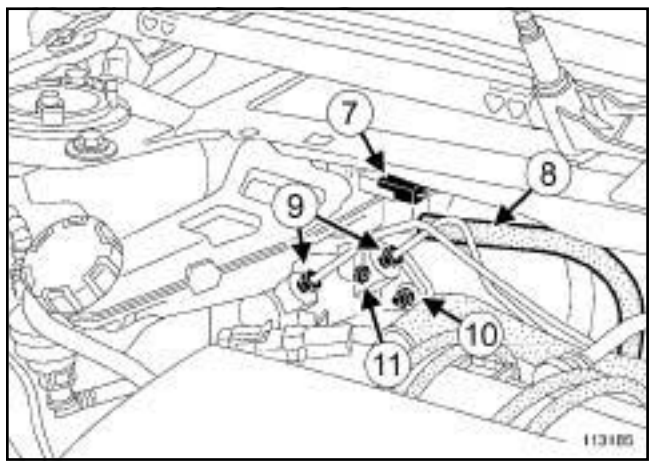
122105

❏ Disconnect the upstream oxygen sensor connector at (**3**) .

❏ Remove:

- the upstream oxygen sensor (**4**) ,
- the bulkhead heat shield clips (**5**) ,
- the bulkhead heat shield (**6**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113185

❏ Drain the brake fluid reservoir with a syringe.

❏ Disconnect the brake fluid level sensor connector (**7**) .

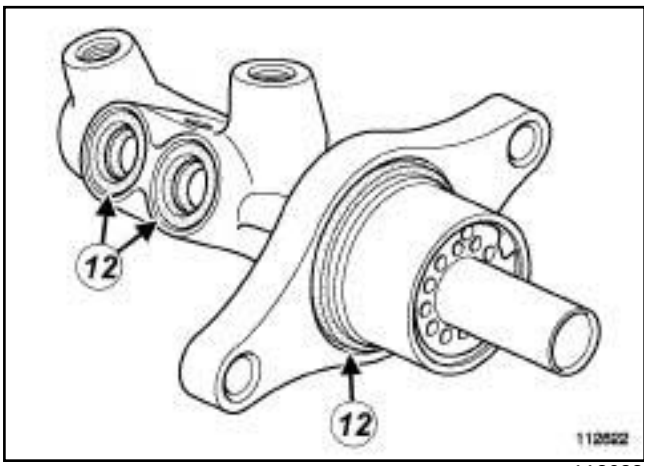
❏ Remove:

- the clutch master cylinder pipe (**8**) from the brake fluid reservoir,

- the master cylinder brake pipes (**9**) ,
- the master cylinder nuts (**10**) ,
- the “master cylinder-reservoir” assembly,
- the brake fluid reservoir bolt (**11**) ,
- the brake fluid reservoir from the master cylinder.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112622

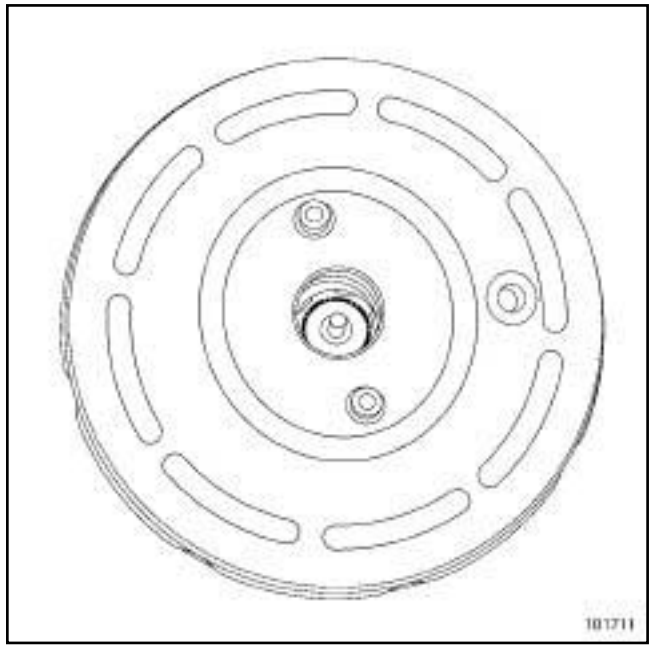
❏ The master cylinder seals (**12**) must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake fluid reservoir to the master cylinder,
- the brake fluid reservoir bolt.

❏ Torque tighten the **brake fluid reservoir bolt (9 Nm)**.



101711

❏ Line up the master cylinder with the brake servo so that the pushrod goes into the master cylinder housing.

❏ When refitting the master cylinder, be sure that the cup is centred in the brake servo.

❏ Refit:

- the master cylinder nuts,
- the master cylinder brake pipes,
- the cylinder pipe to the brake fluid reservoir.

❏ Torque tighten:

- the **master cylinder nuts (25 Nm)**,
- the **brake pipes on the master cylinder (17 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the bulkhead heat shield,
- the bulkhead heat shield clips,
- the upstream oxygen sensor.

❏ Torque tighten the **upstream oxygen sensor (44 Nm)**.

❏ Connect the upstream oxygen sensor connector.

❏ Refit:

- the turbocharger heat shield,
- the heat shield bolts,
- the engine cover.

D4F, and 784, and RIGHT-HAND DRIVE

- ❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
brake pipe nut on the master cylinder	**17 Nm**
brake pipe nut on the brake hose	**14 Nm**

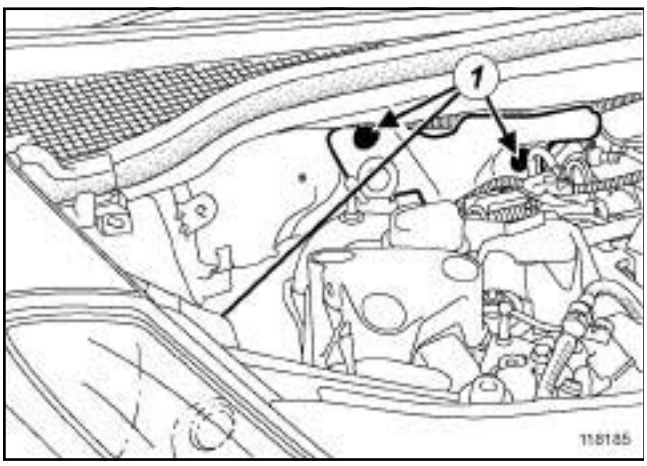
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the engine undertray,
- the air filter unit air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the air filter box outlet air pipe.



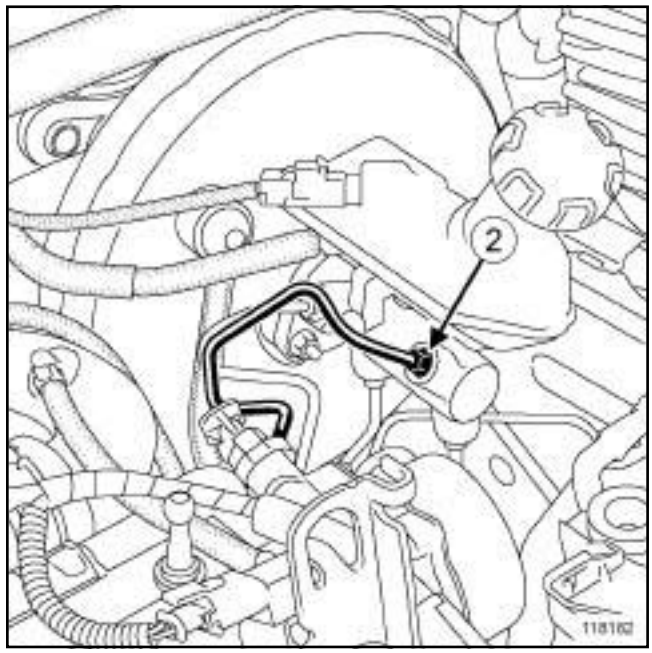
118185

❑ Remove the clips (**1**) from the soundproofing.

❑ lift away the upper section of the soundproofing.

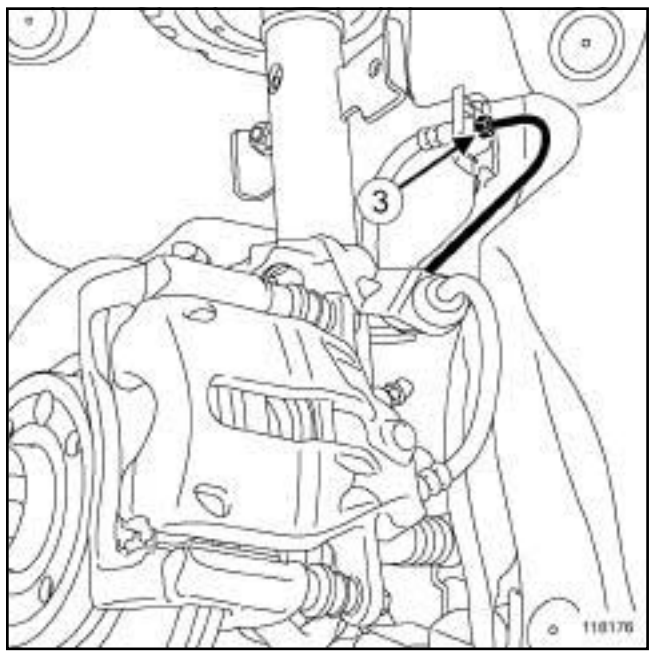
❑ Remove the front right-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



118182

❑ Loosen the brake pipe nut (**2**) on the master cylinder.



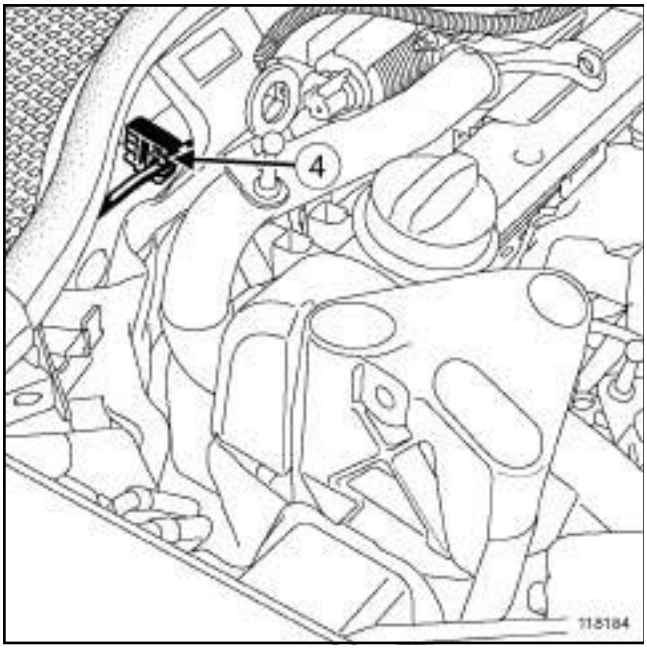
118176

❑ Loosen the brake pipe nut (**3**) on the brake hose.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM



118184

❏ Unclip the brake pipe at (**4**) .

❏ Remove the brake pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipe.

❏ Screw on:

- the brake pipe nut on the master cylinder,
- the brake pipe nut on the brake hose.

❏ Tighten to torque:

- the **brake pipe nut on the master cylinder (17 Nm)**,
- the **brake pipe nut on the brake hose (14 Nm)**.

❏ Attach the brake pipe.

II - FINAL OPERATION.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Refit:

- the front right-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the upper section of the soundproofing,
- the soundproofing pad clips,
- the air filter box air outlet pipe,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit air inlet pipe,
- the engine undertray,
- the engine cover.

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
brake pipe nut on the master cylinder	**17 Nm**
brake pipe nut on the brake hose	**14 Nm**

REMOVAL

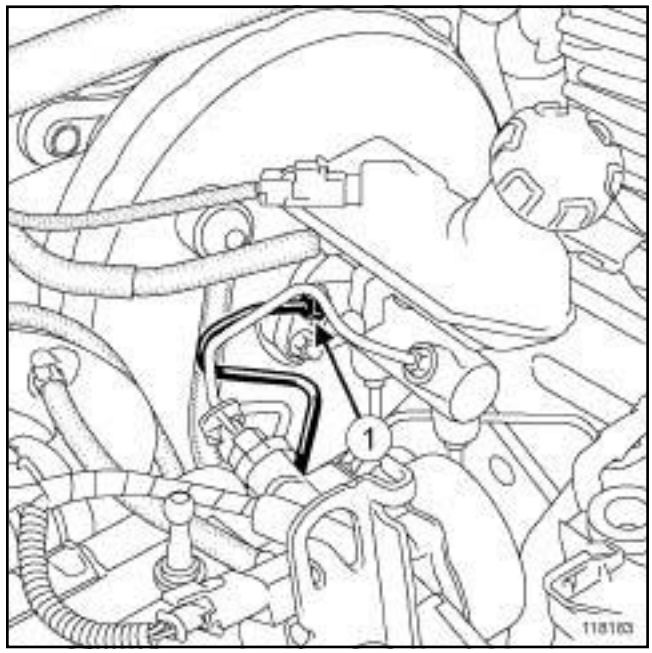
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

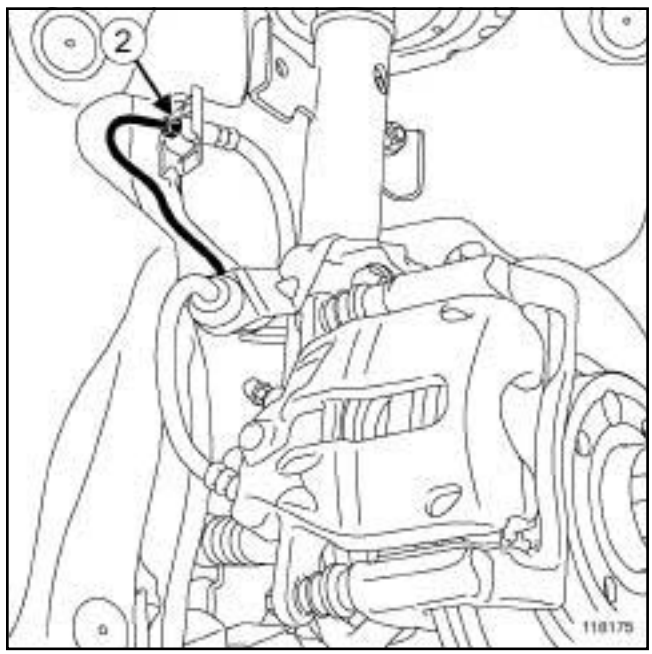
- the engine cover,
- the engine undertray,
- the air filter box air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the air filter box outlet air pipe,
- the front left-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



118183

❑ Loosen the brake pipe nut (**1**) on the master cylinder.



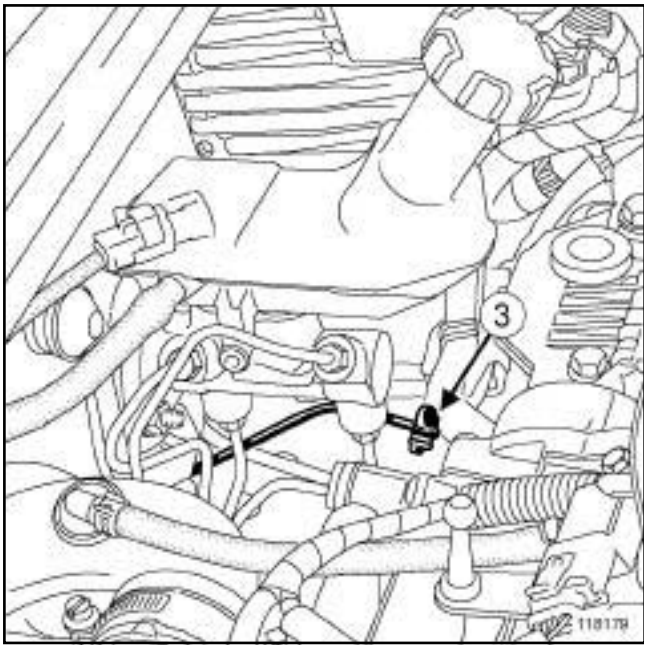
118175

❑ Loosen the brake pipe nut (**2**) on the brake hose.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM



118179

❏ Unclip the brake pipe at (**3**) .

❏ Remove the brake pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipe.

❏ Screw on:

- the brake pipe nut on the master cylinder,
- the brake pipe nut on the brake hose.

❏ Torque tighten:

- the **brake pipe nut on the master cylinder (17 Nm)**,
- the **brake pipe nut on the brake hose (14 Nm)**.

❏ Attach the brake pipe.

II - FINAL OPERATION.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Refit:

- the front left-hand wheel (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the air filter box outlet air pipe,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box air inlet pipe,
- the engine undertray,
- the engine cover.

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
brake pipe nuts on the master cylinder	**17 Nm**
brake pipe nuts on the under body unions	**17 Nm**

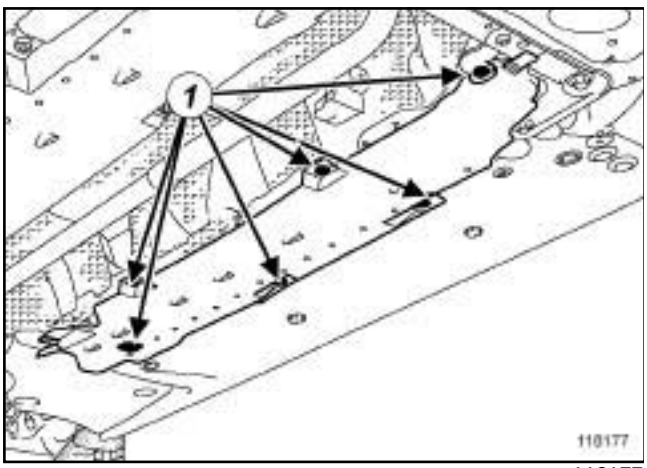
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Remove:

- the engine cover,
- the engine undertray,
- the air filter box air inlet pipe,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the air filter box outlet air pipe.

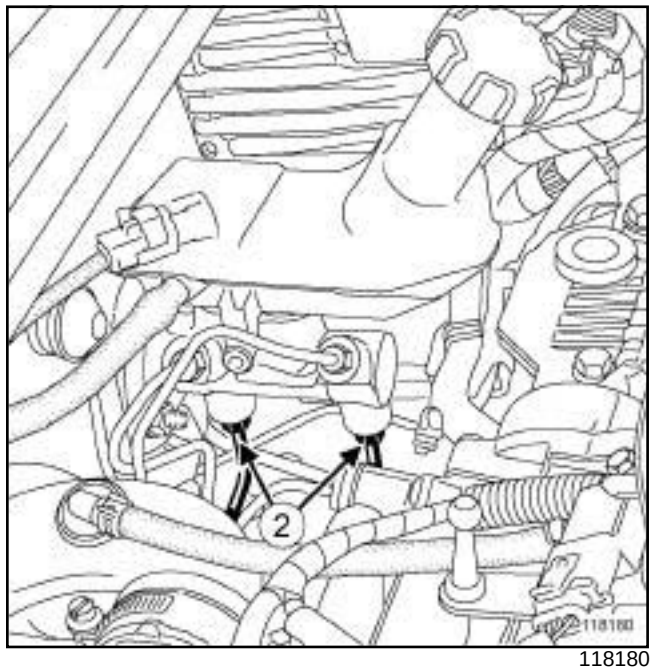


118177

❏ Remove:

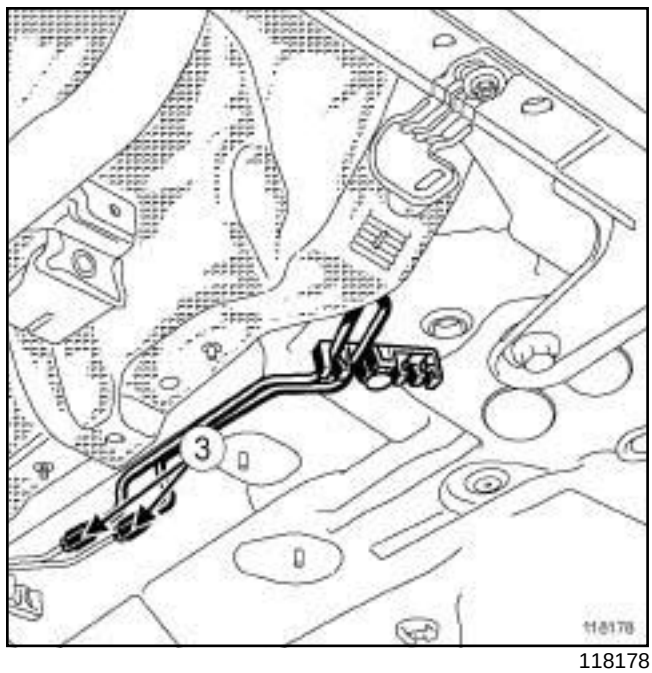
- the brake pipe protective housing nuts (**1**) ,
- the brake pipe protective housing.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118180

❏ Loosen the brake pipe nuts (**2**) on the master cylinder.



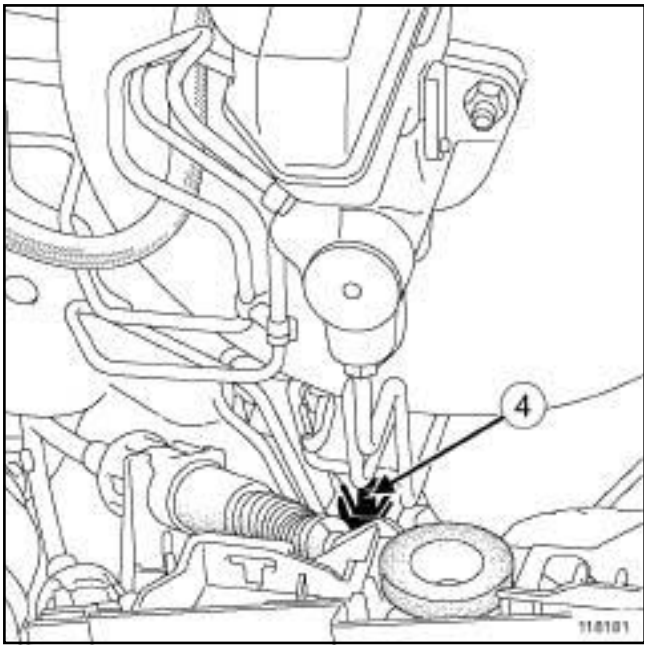
118178

❏ Loosen the brake pipe nuts (**3**) on the under body unions.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

LEFT-HAND DRIVE, and WITHOUT ANTI-LOCK BRAKING SYSTEM



118181

❏ Unclip the brake pipes at (**4**) .

❏ Remove the brake pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the brake pipes.

❏ Screw on:

- the brake pipe nuts on the master cylinder,
- the brake pipe nuts on the under body unions.

❏ Torque tighten:

- the **brake pipe nuts on the master cylinder (17 Nm)**,
- the **brake pipe nuts on the under body unions (17 Nm)**.

❏ Attach the brake pipe.

II - FINAL OPERATION.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Refit:

- the brake pipe protective housing,
- the brake pipe protective housing nuts,
- the air filter box outlet air pipe,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery protective shield (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box air inlet pipe,
- the engine undertray,
- the engine cover.

LEFT-HAND DRIVE

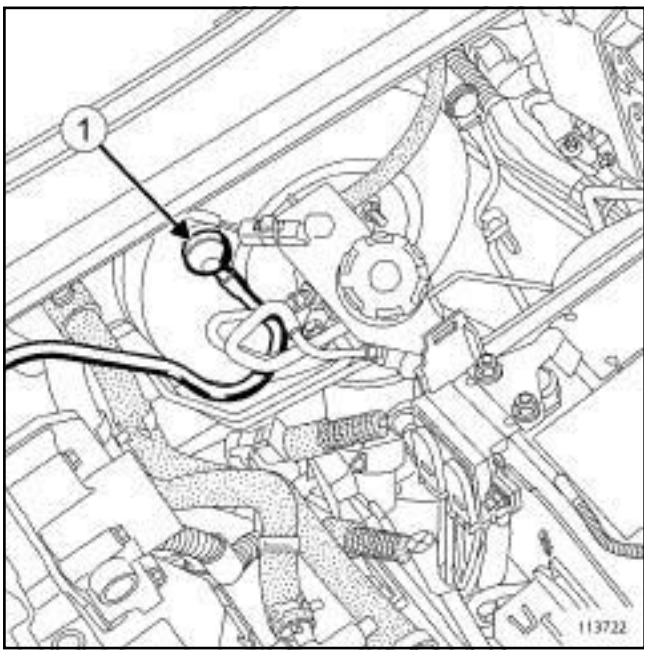
REMOVAL

I - REMOVAL PREPARATION OPERATION

K4J or K4M or K9K

❑ Remove the engine cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED

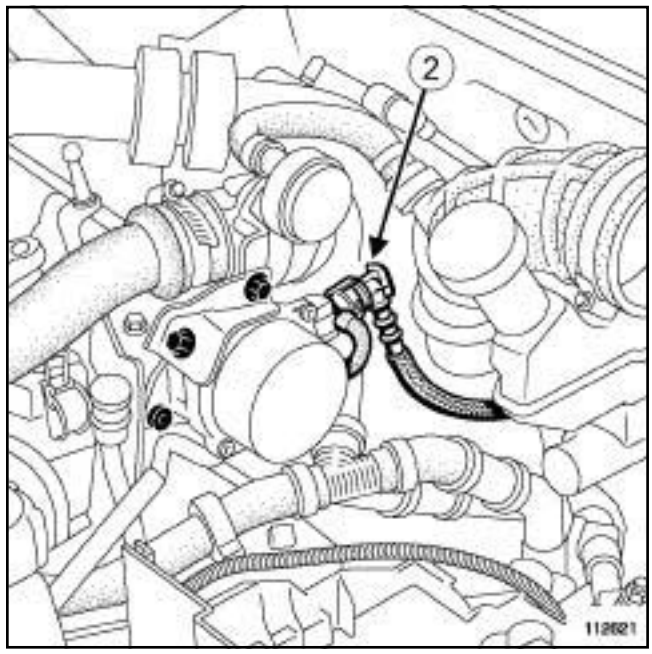


113722

❑ Disconnect the non-return valve (**1**) at the servo.

❑ Pull and turn the non-return valve to release it from the rubber sealing washer.

K9K

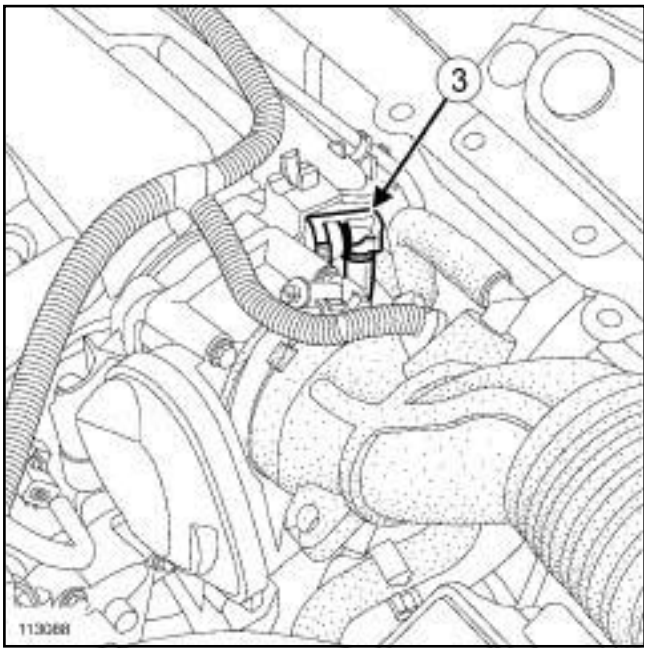


112621

❑ Disconnect the non-return valve (**2**) at the vacuum pump.

LEFT-HAND DRIVE

K4J or K4M



113088

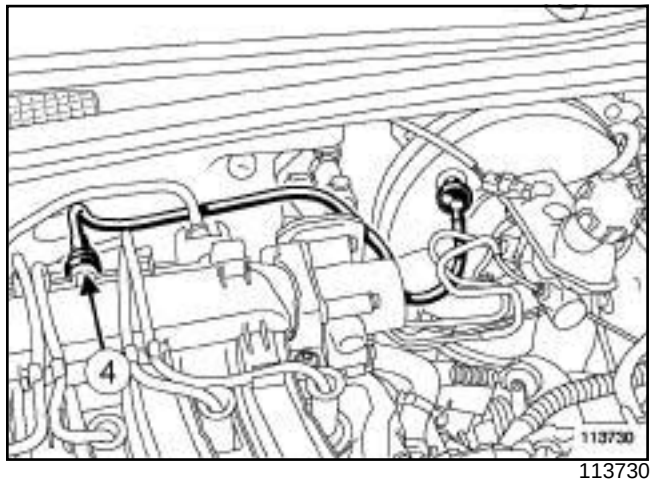
❑

Note:

Do not damage the vacuum tube on the plenum chamber. If it is damaged, the plenum chamber will have to be replaced.

Disconnect the non-return valve (**3**) at the plenum chamber.

D4F



113730

❑

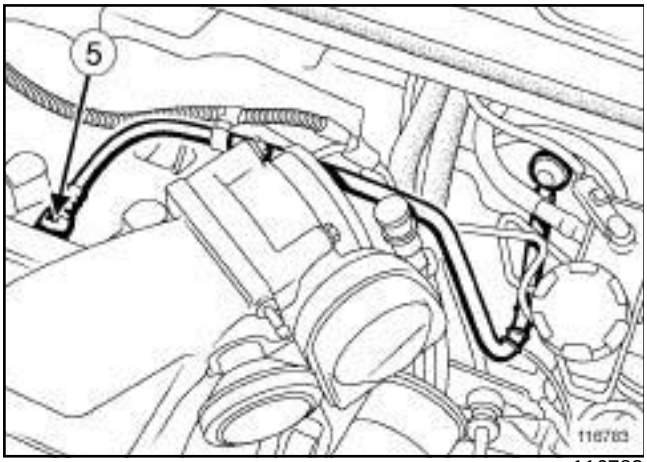
Note:

Do not damage the vacuum tube on the plenum chamber. If it is damaged, the plenum chamber will have to be replaced.

Disconnect the non-return valve (**4**) at the inlet manifold.

LEFT-HAND DRIVE

F4R



116783

❑

Note:

Do not damage the vacuum tube on the plenum chamber. If it is damaged, the plenum chamber will have to be replaced.

Disconnect the non-return valve (**5**) at the plenum chamber.

❑ Remove the non-return valve.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Check the condition of the sealing washer and the non-return valve.

❑ Replace any faulty parts.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the non-return valve.

K9K

❑ Connect the non-return valve at the vacuum pump,

D4F or F4R or K4J or K4M

❑ Connect the non-return valve at the inlet manifold.

❑ Connect the non-return valve on the servo,

III - FINAL OPERATION.

K4J or K4M or K9K

❑ Refit the engine cover.

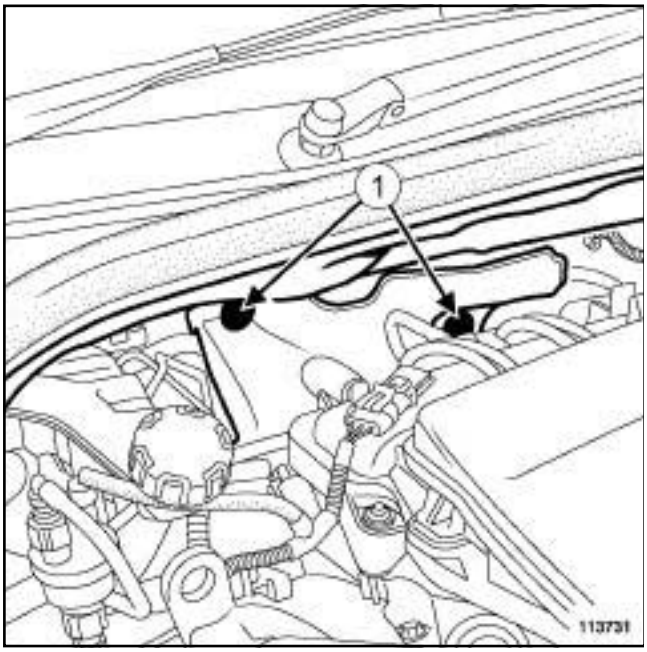
RIGHT-HAND DRIVE

REMOVAL

I - REMOVAL PREPARATION OPERATION

K4J or K4M or K9K

❏ Remove the engine cover.

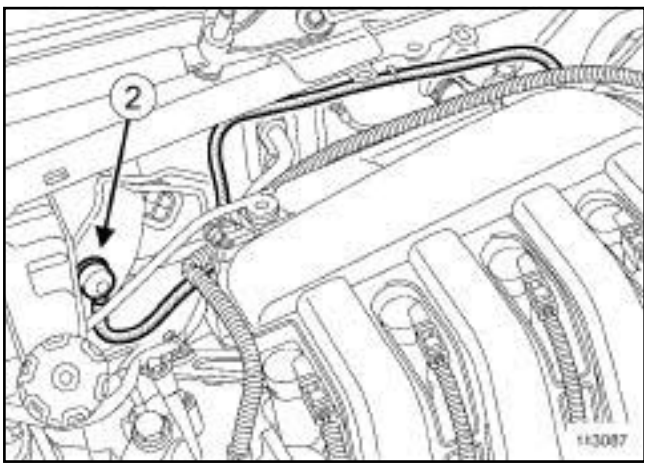


113731

❏ Remove the soundproofing retaining clips (**1**) .

❏ lift away the upper section of the soundproofing.

II - OPERATION FOR REMOVAL OF PART CONCERNED

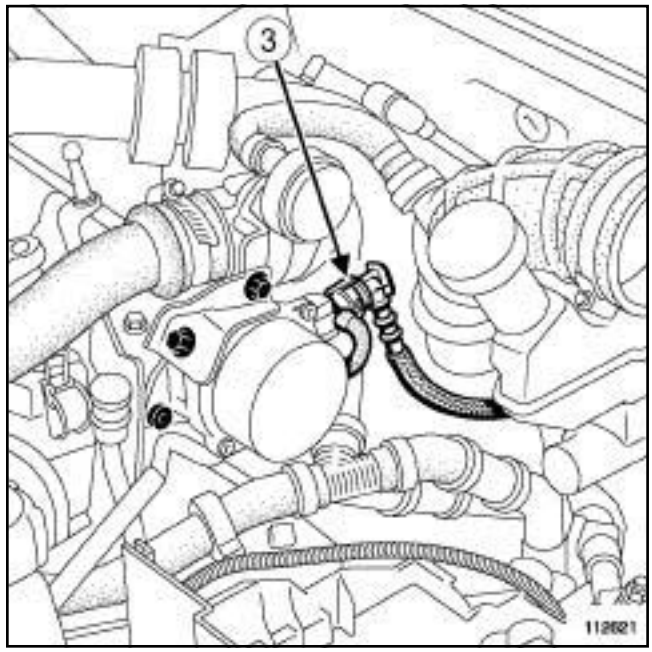


113087

❏ Disconnect the non-return valve (**2**) at the servo,

❏ Pull and turn the non-return valve to release it from the rubber sealing washer.

K9K

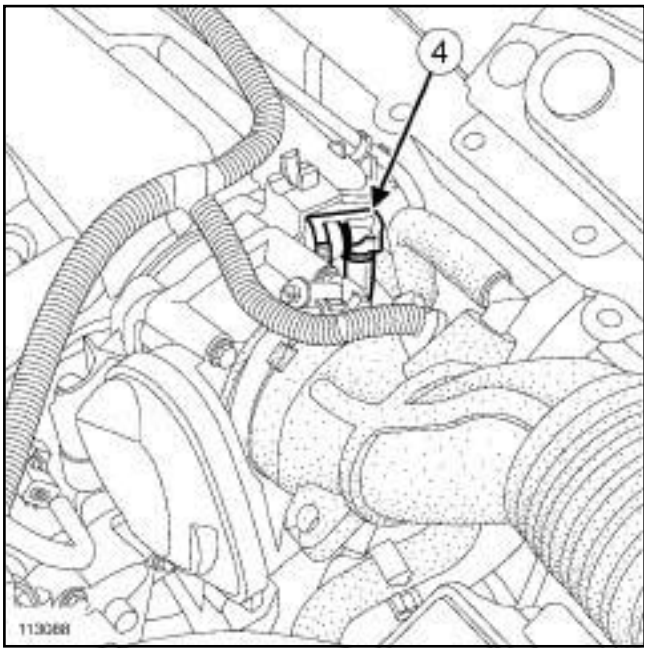


112621

❏ Disconnect the non-return valve (**3**) at the vacuum pump,

RIGHT-HAND DRIVE

K4J or K4M



113088

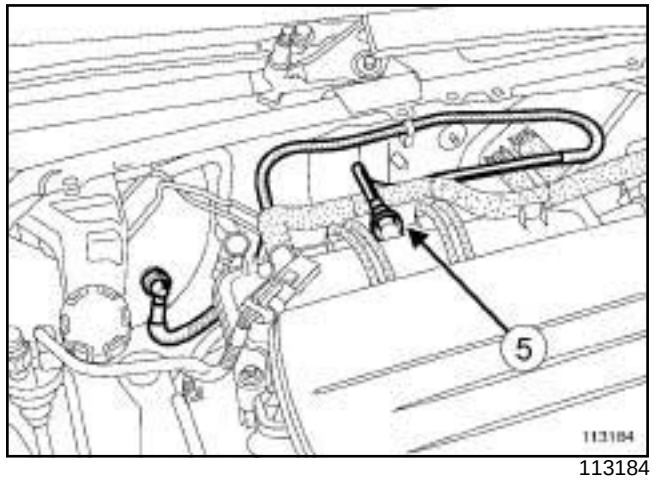
❑

Note:

Do not damage the vacuum tube on the plenum chamber. If it is damaged, the plenum chamber will have to be replaced.

Disconnect the non-return valve (**4**) at the plenum chamber.

D4F



113184

❑

Note:

Do not damage the vacuum tube on the plenum chamber. If it is damaged, the plenum chamber will have to be replaced.

Disconnect the non-return valve (**5**) at the inlet manifold.

❑ Remove the non-return valve.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the rubber sealing washer and the non-return valve.

❑ Replace any faulty parts.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the non-return valve.

K9K

❑ Connect the non-return valve at the vacuum pump,

RIGHT-HAND DRIVE

D4F or K4J or K4M

❏ Connect the non-return valve at the inlet manifold.

❏ Connect the non-return valve at the servo,

III - FINAL OPERATION

❏ Refit the upper section of the soundproofing.

❏ Refit the soundproofing retaining clips

K4J or K4M or K9K

❏ Refit the engine cover.

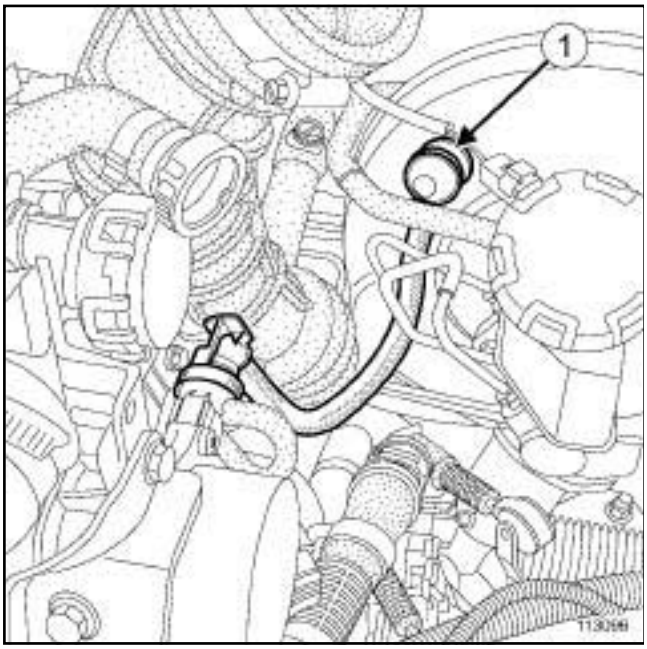
K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

Tightening torques ▽	
spacer mounting bolts	**21 Nm**
brake servo mounting nuts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

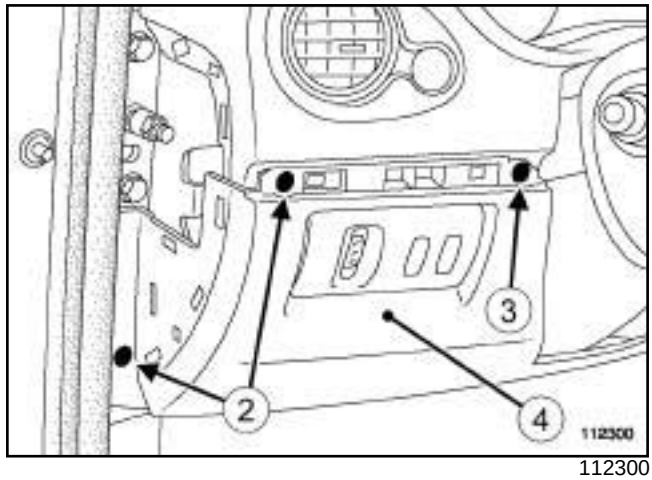
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).



113096

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the non-return valve (**1**) from the servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the lower cover strip,
- the side section of the lower cover.



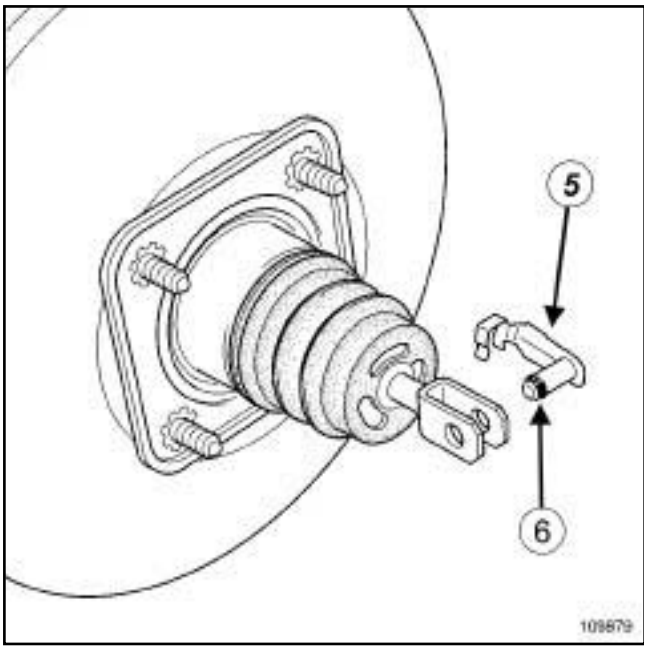
112300

❏ Remove:

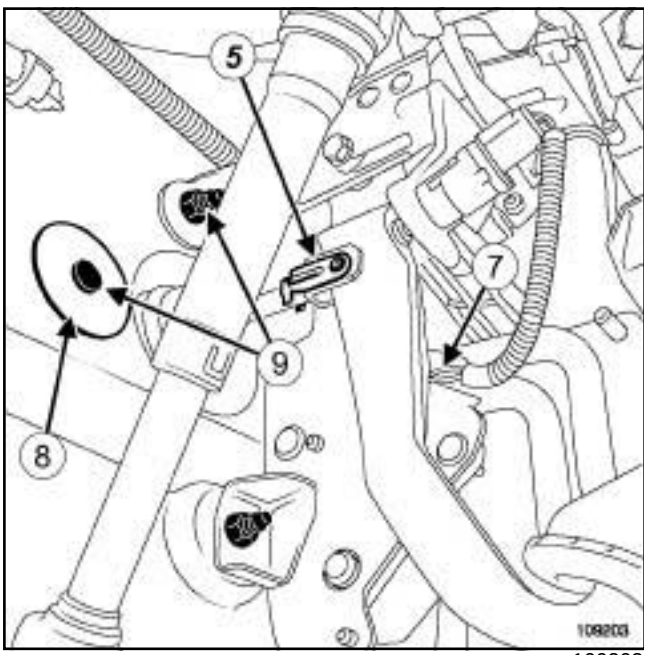
- the bolts (**2**) ,
- the clip (**3**) ,
- the lower cover (**4**) , disconnecting the various connectors.

K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



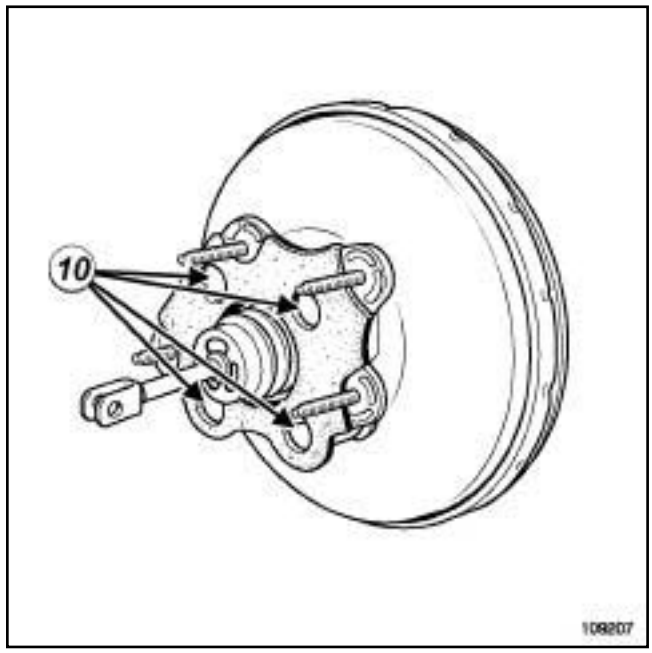
109879



109203

❑ Remove:

- the double safety connecting shaft (**5**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move ring (**6**) using a flat-blade screwdriver.
- the connector (**7**) from the accelerator pedal,
- the accelerator pedal connector wiring harness clip,
- the blanking cover (**8**) from the brake servo mounting nut,
- the brake servo mounting nuts (**9**) ,
- the brake servo.



109207

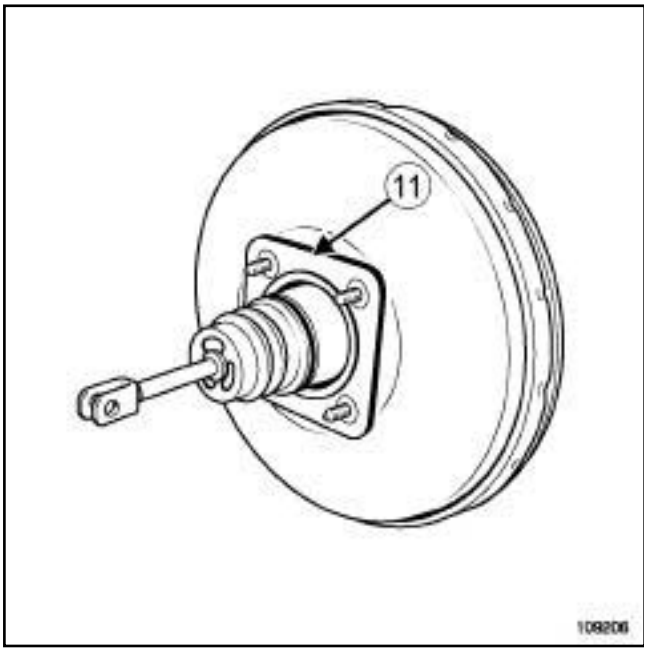
❑ Remove:

- the mounting bolts (**10**) from the brake servo spacer,
- the brake servo spacer.

K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

REFITTING

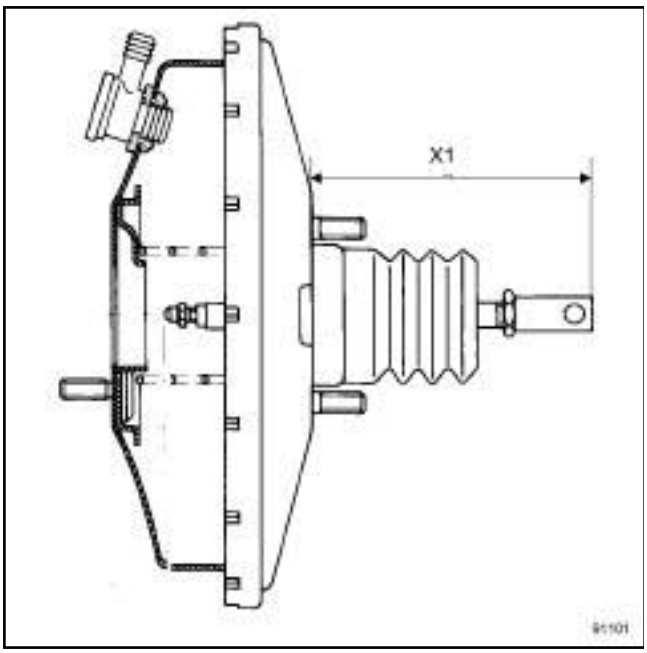
I - REFITTING PREPARATIONS OPERATION



109206

❑ Check that the brake servo seal (**11**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❑ Check the following dimension before refitting: (**X1**) = **171 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake servo spacer,
- the brake servo spacer mounting bolts.

❑ Torque tighten the **spacer mounting bolts (21 Nm)**.

❑ Refit:

- the brake servo,
- the brake servo mounting nuts.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❑ Torque tighten the **brake servo mounting nuts (21 Nm)**.

❑ Refit:

- the brake servo mounting nut blanking cover,
- the accelerator pedal connector wiring harness clip,
- the accelerator pedal connector.

III - FINAL OPERATION.

❑ Refit:

- the lower cover, connecting the various connectors.
- the clip,
- the bolts,
- the side section of the lower cover.
- the lower cover strip,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Reconnect the non-return valve at the servo.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

IMPORTANT
Check that the brake servo pushrod-brake pedal connecting shaft is locked in place.

K4J or K4M or K9K or M4R, and LEFT-HAND DRIVE

❑ Adjust the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

K9K, and RIGHT-HAND DRIVE

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
brake servo nuts	**21 Nm**
sub-frame bolts	**105 Nm**

REMOVAL

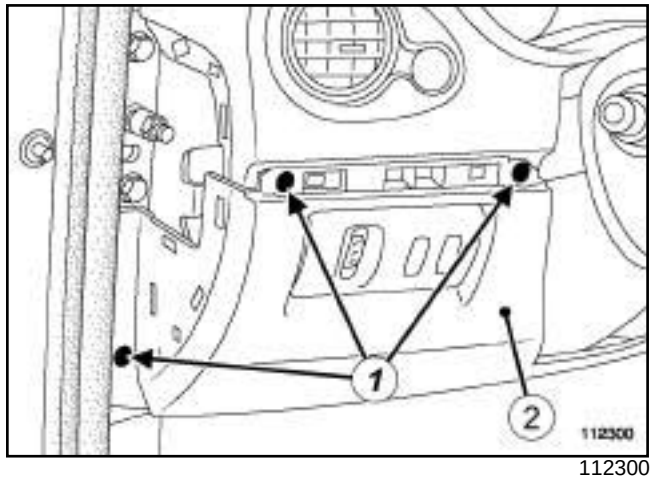
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the engine undertray,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the non-return valve on the servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the lower cover strip,
- the dashboard side panel.

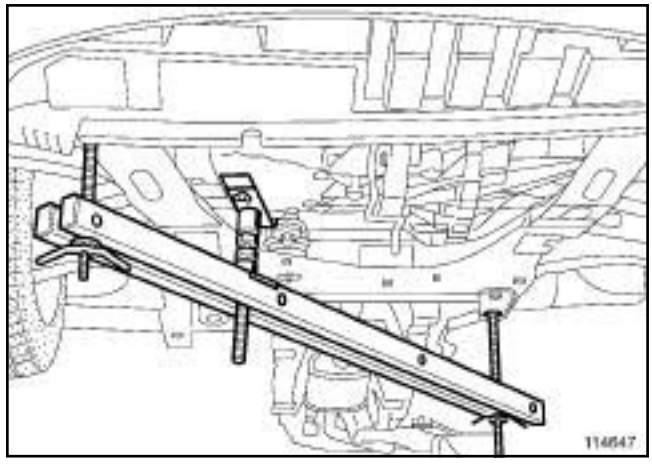


112300

❏ Remove:

- the bolts (**1**) ,
- the lower cover (**2**) , disconnecting the various connectors.
- the master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) ,
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting).

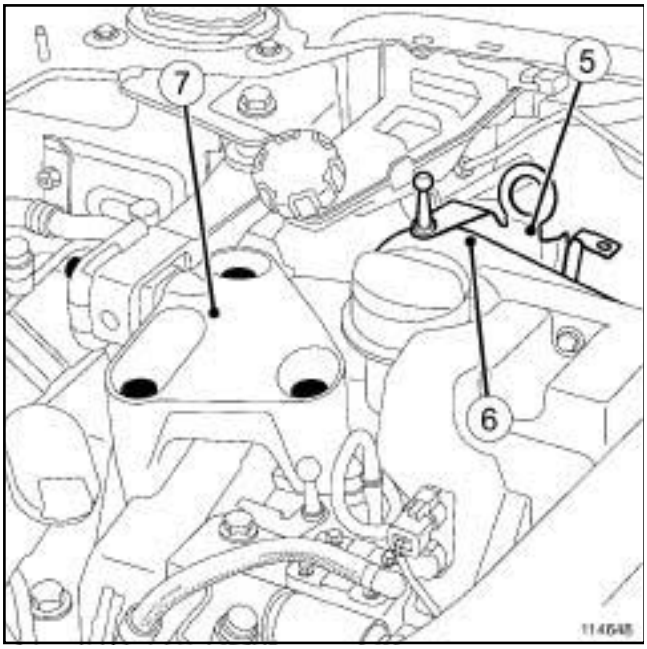
❏ Remove the sub-frame bolts to fit the tool as shown below.



114647

❏ Position the **(Mot. 1672)**.

K9K, and RIGHT-HAND DRIVE



114648

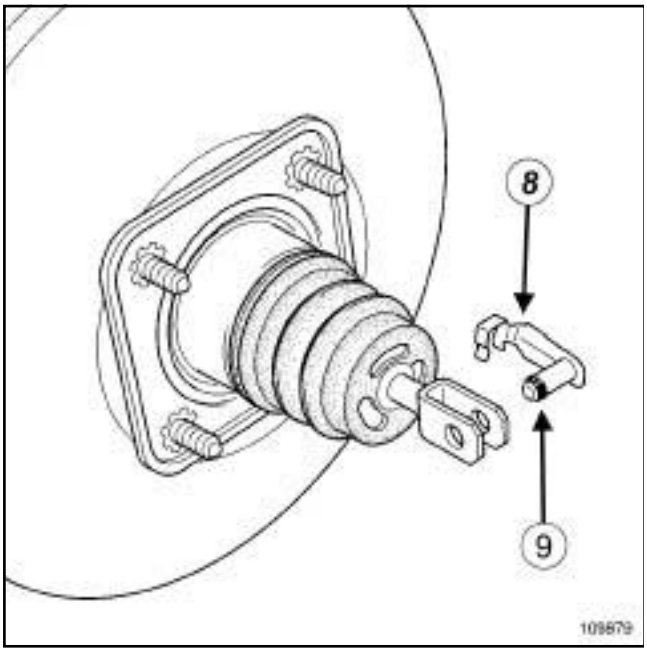
❑ Remove:

- the lifting eye bolt,
- the lifting eye (**5**) ,
- the EGR tube bolt,
- the EGR tube (**6**) ,
- the right-hand suspended mounting support (**7**) using only the **(Mot. 1672)** (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

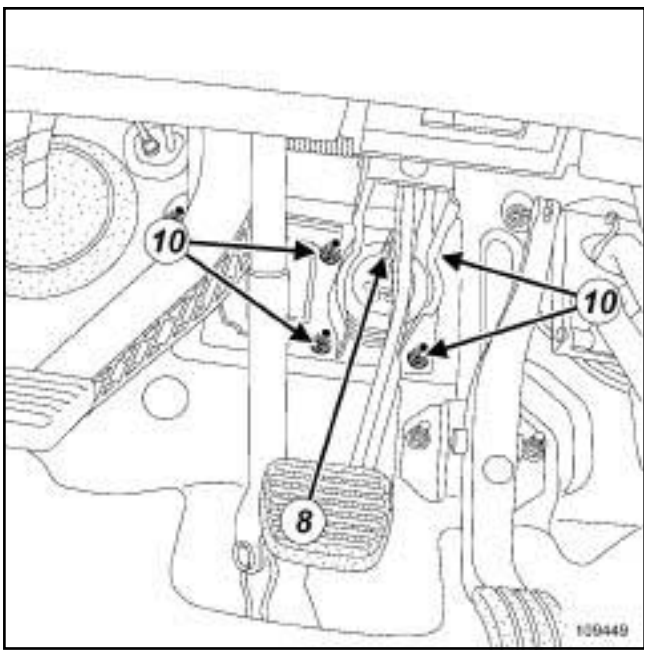
❑ Lower the engine as much as possible using the **(Mot. 1672)**.

K9K, and RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879



109449

❑ Remove:

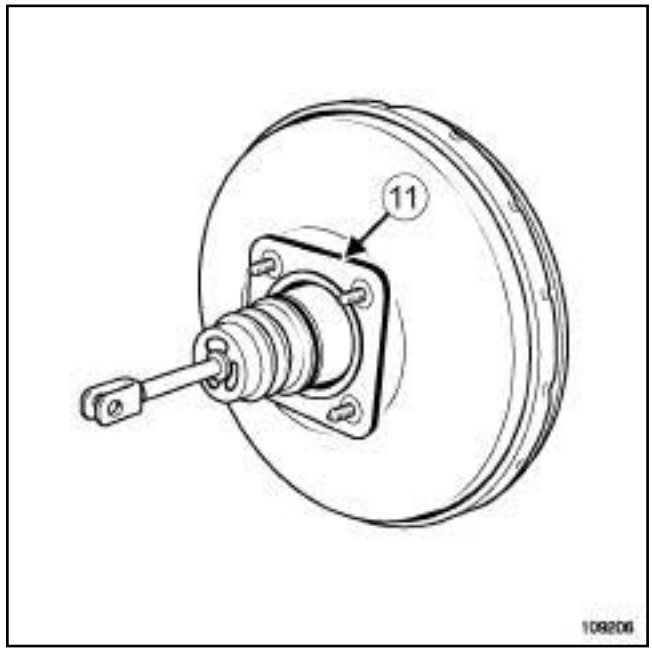
- the double safety connecting shaft (**8**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move ring (**9**) using a flat-blade screwdriver.
- the brake servo nuts (**10**) ,
- the brake servo.

Note:

To pass the servo between the bulkhead and the engine, the pushrod must be oriented towards the bottom, with the engine slightly pulled forward.

REFITTING

I - REFITTING PREPARATIONS OPERATION

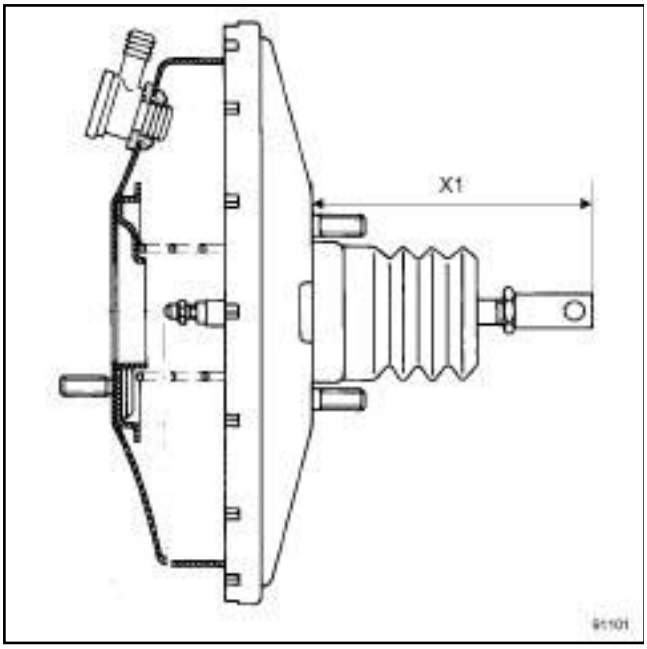


109206

❑ Check that the brake servo seal (**11**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.

K9K, and RIGHT-HAND DRIVE



91101

❏ Before refitting, check that the dimension: (**X1**) = **128 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake servo,
- the brake servo nuts.

❏ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❏ Torque tighten the **brake servo nuts (21 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the right-hand suspended mounting support (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the EGR tube,
- the EGR tube bolt,
- the lifting eye,
- the lifting eye bolt.

❏ Remove the **(Mot. 1672)**.

❏ Refit:

- the sub-frame bolts,
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) ,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the engine cover.

❏ Torque tighten the **sub-frame bolts (105 Nm)**.

❏ Bleed:

- the clutch circuit (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) ,
- the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Adjust:

- the brake switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) ,
- the clutch switch (see **Clutch pedal position sensor: Removal - Refitting**) .

❏ Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

❏ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover strip,

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and LEFT-HAND DRIVE

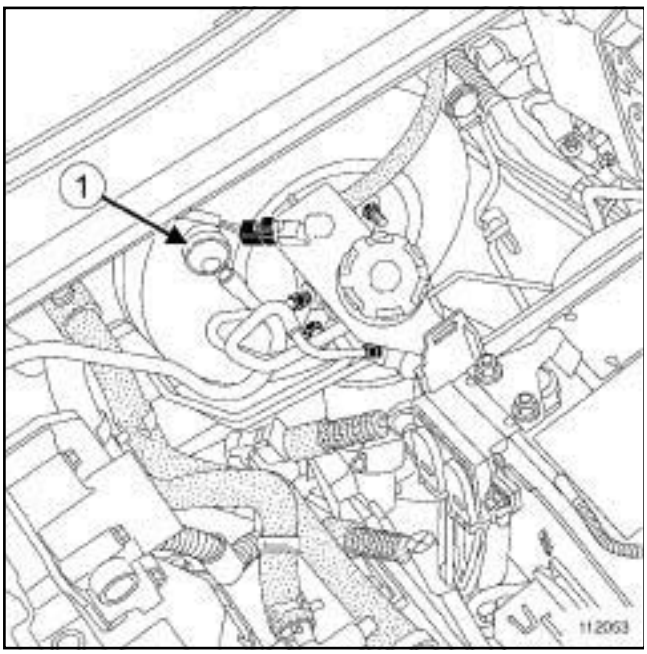
Tightening torques ▽	
spacer mounting bolts	**21 Nm**
brake servo mounting nuts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

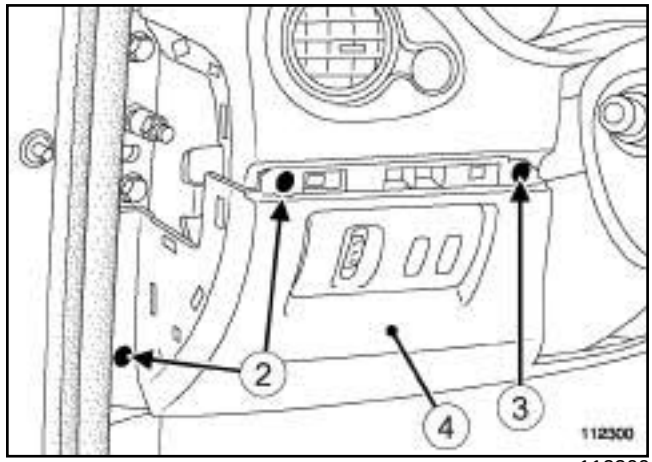
❏ Disconnect the battery (see **Battery: Removal - Refitting**) .



112053

❏ Remove:

- the non-return valve (**1**) from the servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the lower cover strip,
- the side section of the lower cover.



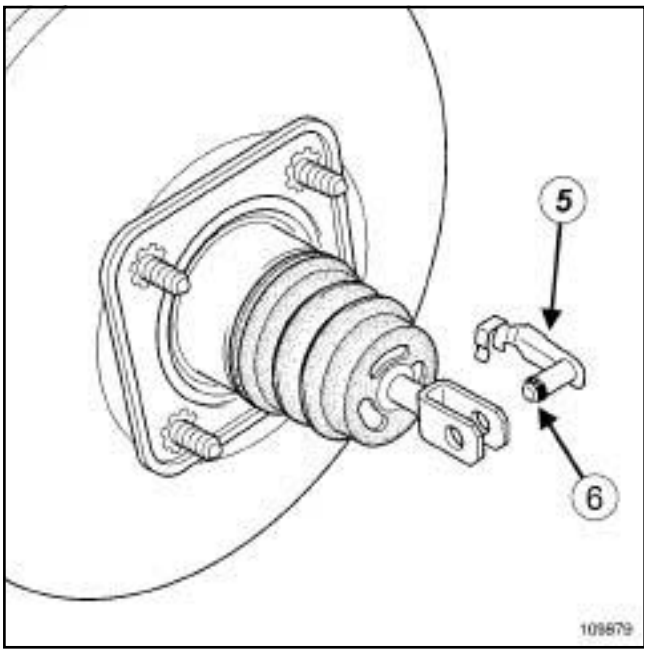
112300

❏ Remove:

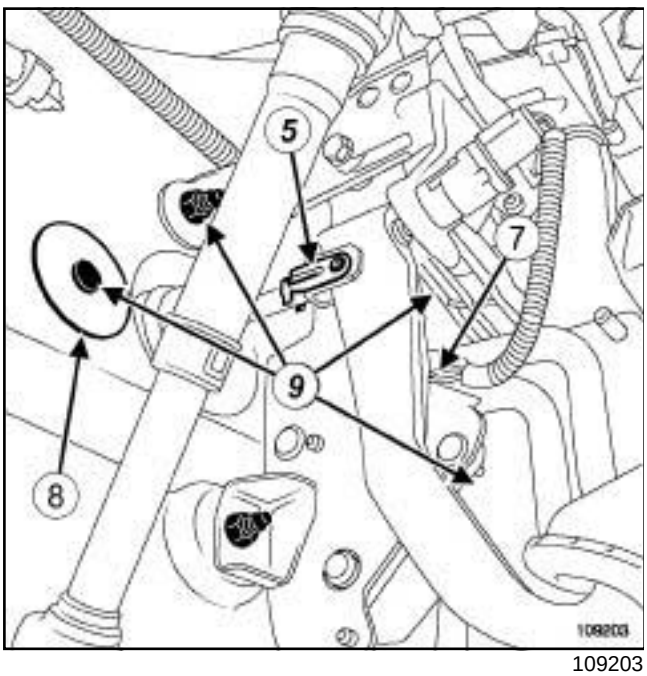
- the bolts (**2**) ,
- the clip (**3**) .
- the lower cover (**4**) , disconnecting the various connectors.

D4F, and LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



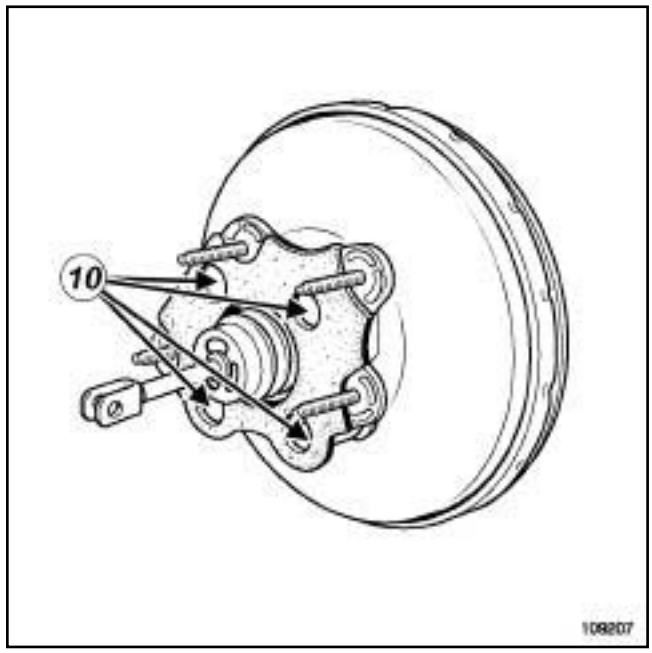
109879



109203

❑ Remove:

- the double safety connecting shaft (**5**) from between the brake servo pushrod and the brake pedal and, after tilting the connecting shaft upwards, move ring (**6**) using a flat-blade screwdriver.
- the accelerator pedal connector (**7**) ,
- the accelerator pedal connector wiring harness clip,
- the brake servo mounting nut blanking cover (**8**) ,
- the brake servo mounting nuts (**9**) ,
- the brake servo.



109207

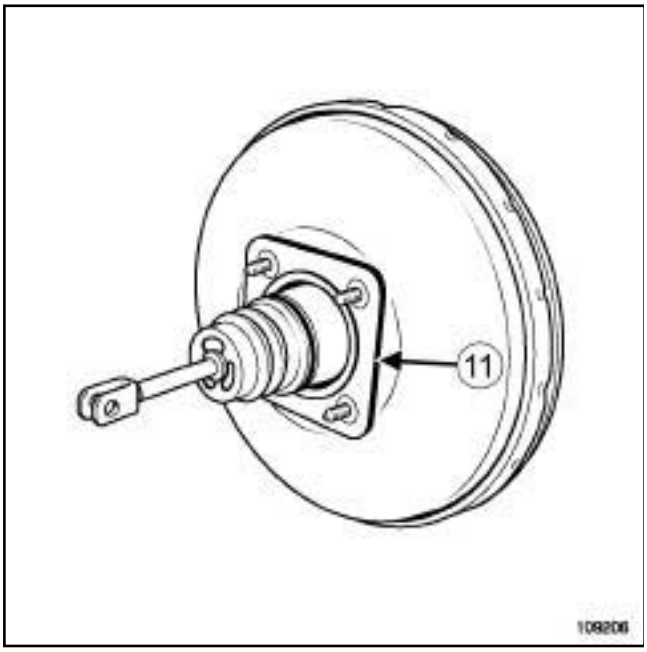
❑ Remove:

- the brake servo spacer mounting bolts (**10**) ,
- the brake servo spacer.

D4F, and LEFT-HAND DRIVE

REFITTING

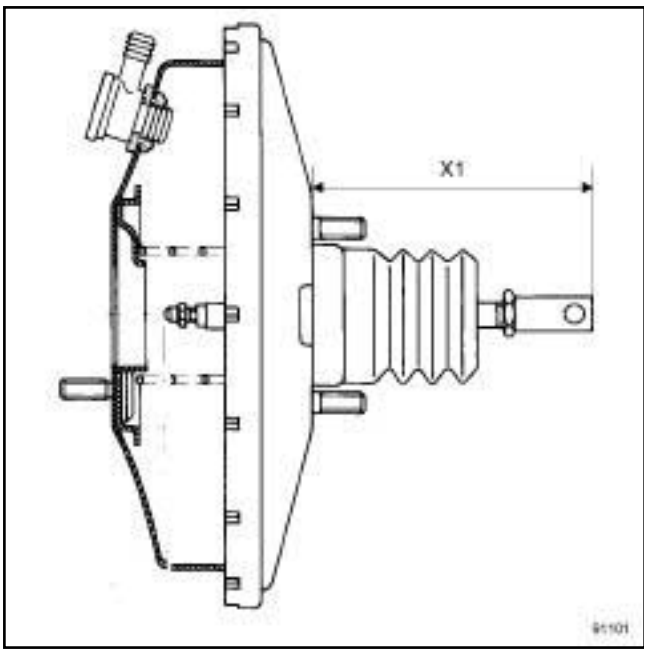
I - REFITTING PREPARATION OPERATION



109206

❑ Check that the brake servo seal (**11**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❑ Check the following dimension before refitting: (**X1**) = **174 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake servo spacer.
- the brake servo spacer mounting bolts,

❑ Tighten to torque the **spacer mounting bolts (21 Nm)**.

❑ Refit:

- the brake servo,
- the brake servo mounting nuts,

❑ The shaft connecting the brake servo pushrod and the brake pedal must be put back from right to left, and from top to bottom.

❑ Tighten to torque the **brake servo mounting nuts (21 Nm)**.

❑ Refit:

- the brake servo mounting nut blanking cover,
- the accelerator pedal connector wiring harness clip,
- the accelerator pedal connector.

III - FINAL OPERATION

❑ Refit:

- the lower cover, connecting the various connectors.
- the clip,
- the bolts,
- the side section of the lower cover.
- the lower cover strip,

❑ Refit:

- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

IMPORTANT
Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

❑ Adjust the brake circuit (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

K4J or K4M, and RIGHT-HAND DRIVE

Tightening torques ▽	
brake servo nuts	**21 Nm**

REMOVAL

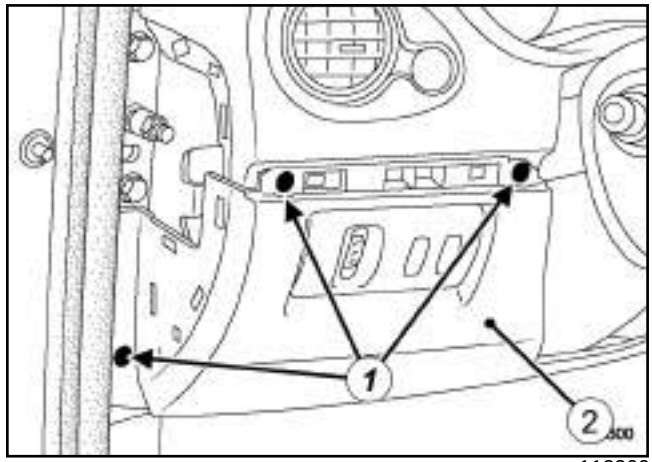
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the non-return valve on the servo,
- the air intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the lifting eye bolt,
- the lifting eye,
- the lower cover strip,
- the dashboard side panel.



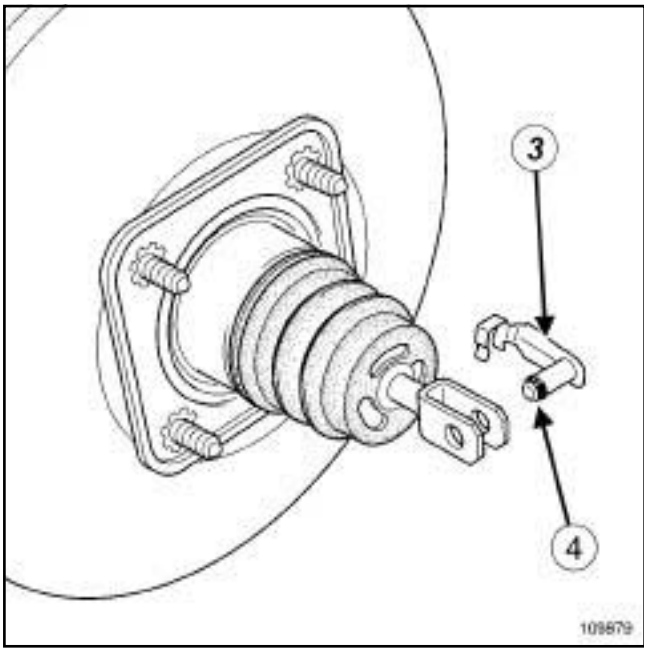
112300

❑ Remove:

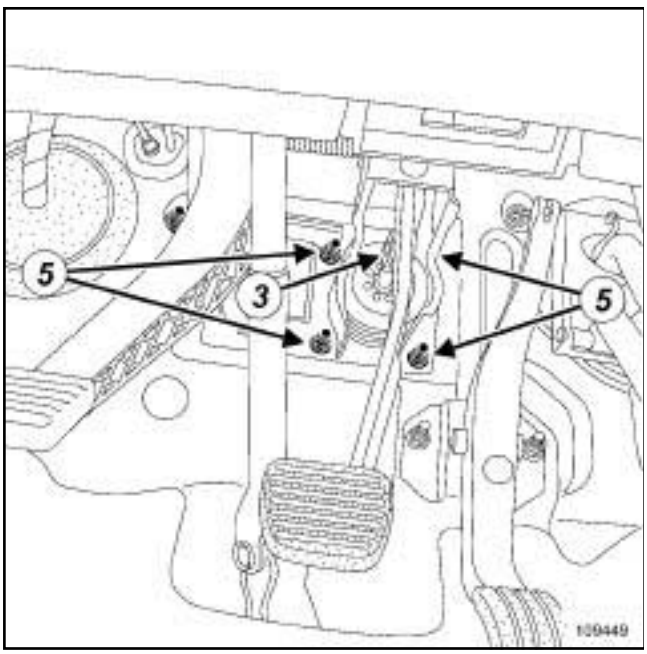
- the bolts (**1**) ,
- the lower cover (**2**) , disconnecting the various connectors.

K4J or K4M, and RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879



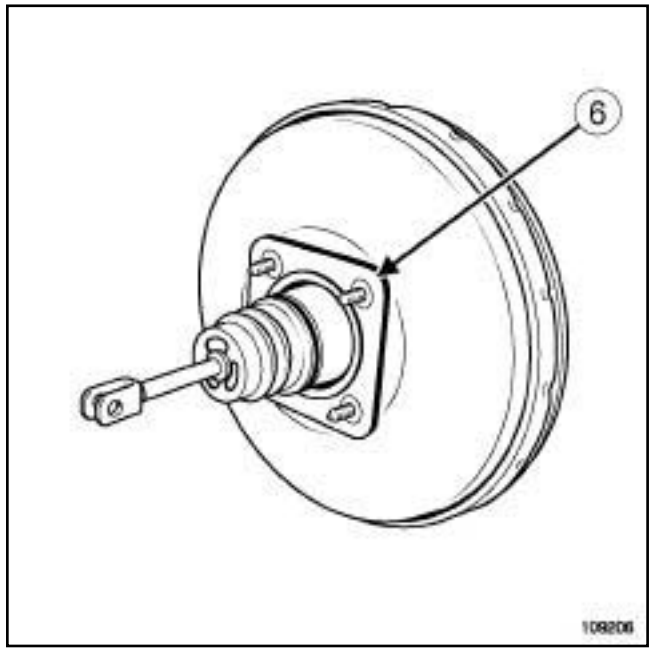
109449

❑ Remove:

- the double safety connecting shaft (**3**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move ring (**4**) using a flat-blade screwdriver.
- the brake servo nuts (**5**) ,
- the brake servo.

REFITTING

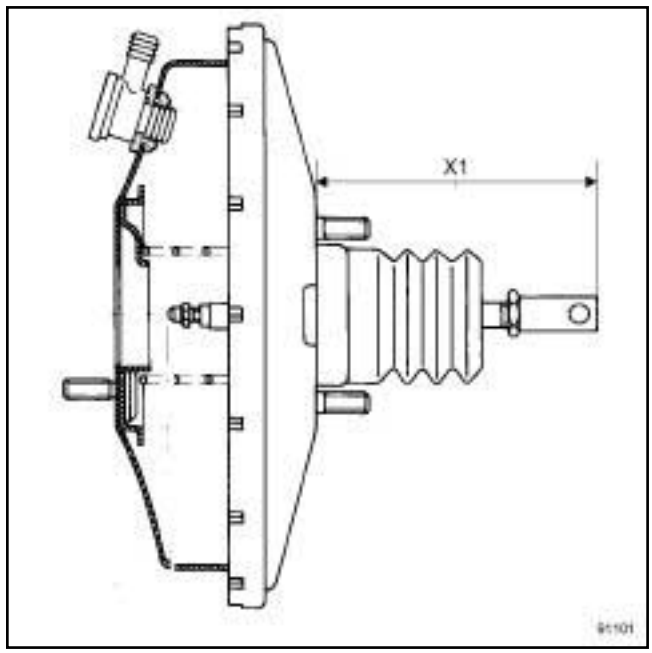
I - REFITTING PREPARATIONS OPERATION



109206

❑ Check that the brake servo seal (**6**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❑ Before refitting, check that the dimension: (**X1**) = **128 mm**.

K4J or K4M, and RIGHT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake servo,
- the brake servo nuts.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❑ Torque tighten the **brake servo nuts (21 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the lifting eye bolt,
- the lifting eye,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,
- the air intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❑ Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Adjust the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

❑ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover strip,

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and RIGHT-HAND DRIVE

Tightening torques ▽	
brake servo nuts	**21 Nm**

REMOVAL

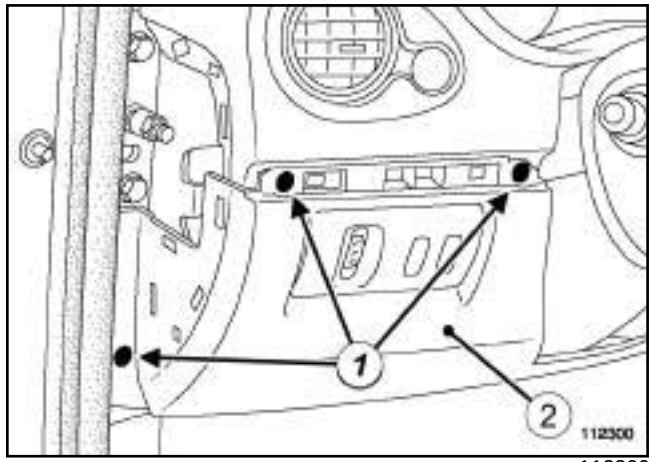
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the non-return valve on the servo,
- the air intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the ignition coil (see **Coils: Removal - Refitting**) (MR 392, 17A, Ignition),
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the lower cover strip,
- the dashboard side panel.



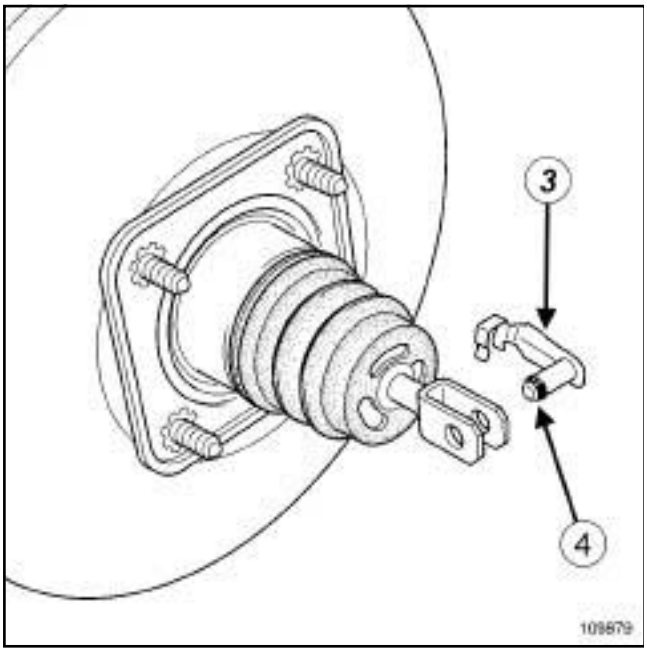
112300

❑ Remove:

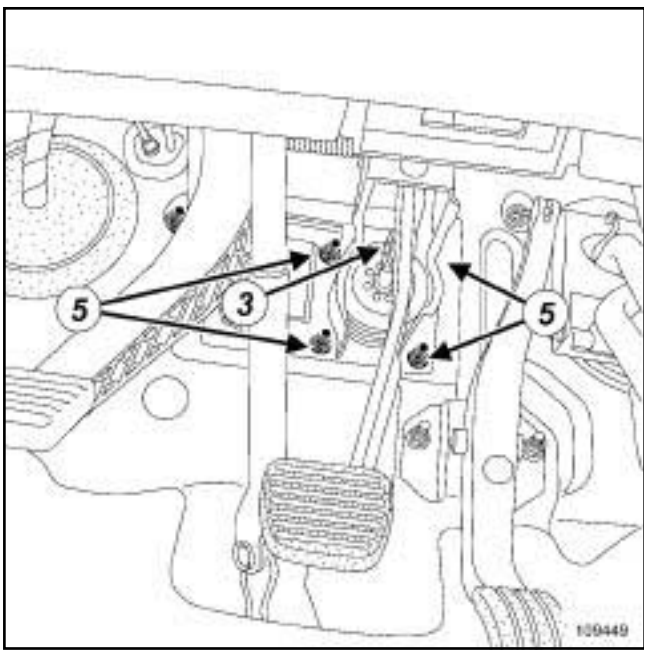
- the bolts (**1**) ,
- the lower cover (**2**) , disconnecting the various connectors.
- the clutch master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) .

D4F, and RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879



109449

❑ Remove:

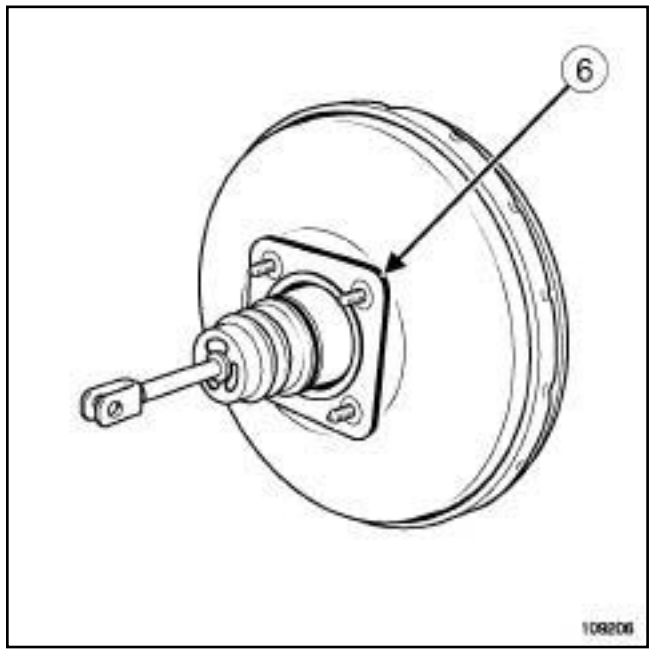
- the double safety connecting shaft (**3**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move ring (**4**) using a flat-blade screwdriver.
- the brake servo nuts (**5**) ,
- the brake servo.

Note:

To remove the servo between the engine and the bulkhead, the pushrod must be facing down.

REFITTING

I - REFITTING PREPARATIONS OPERATION

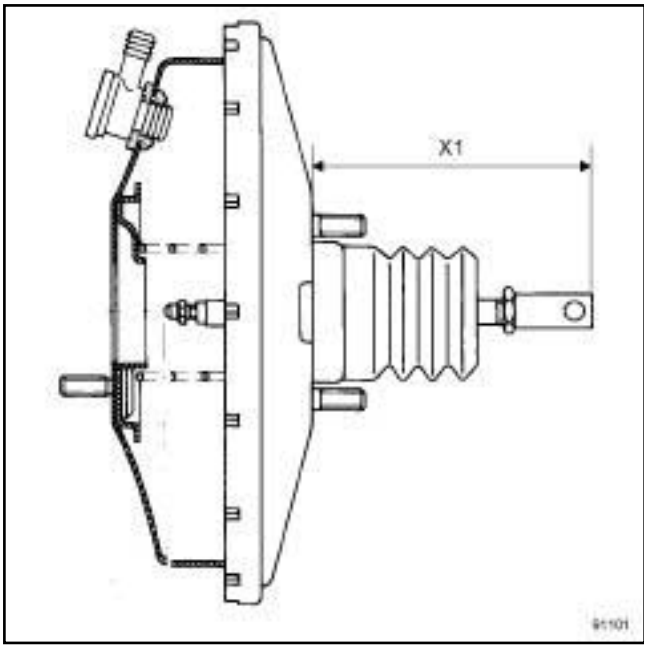


109206

❑ Check that the brake servo seal (**6**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.

D4F, and RIGHT-HAND DRIVE



91101

❏ Before refitting, check that the dimension: (**X1**) = **128 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake servo,
- the brake servo nuts.

❏ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❏ Torque tighten the **brake servo nuts (21 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the clutch master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) ,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,
- the ignition coil (see **Coils: Removal - Refitting**) (MR 392, 17A, Ignition),
- the air intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❏ Bleed:

- the clutch circuit (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) ,
- the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Adjust:

- the brake switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) ,
- the clutch switch (see **Clutch pedal position sensor: Removal - Refitting**) .

❏ Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

❏ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover strip,

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

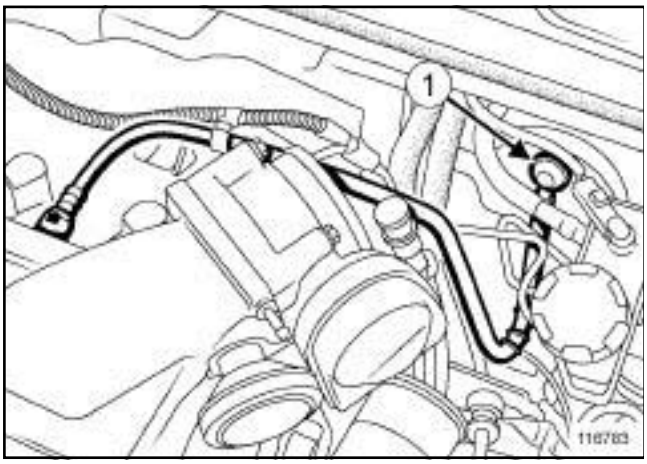
F4R, and LEFT-HAND DRIVE

Tightening torques ▽	
spacer mounting bolts	**21 Nm**
brake servo mounting nuts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

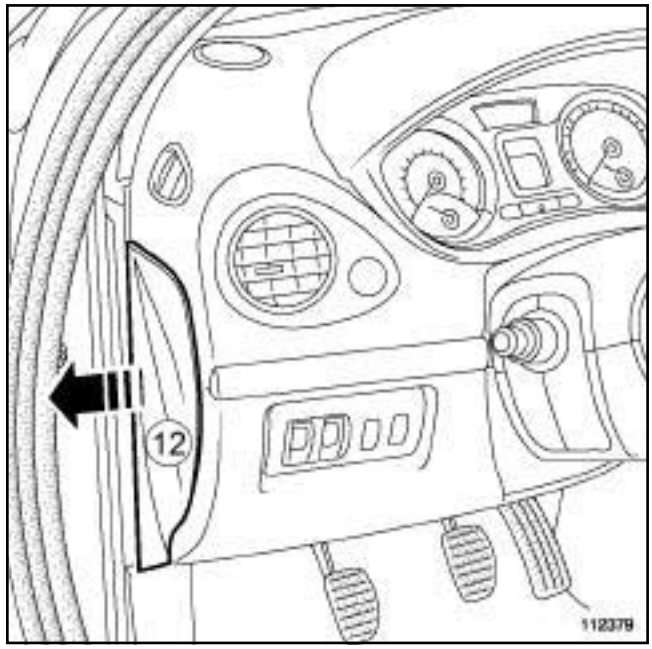
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).



116783

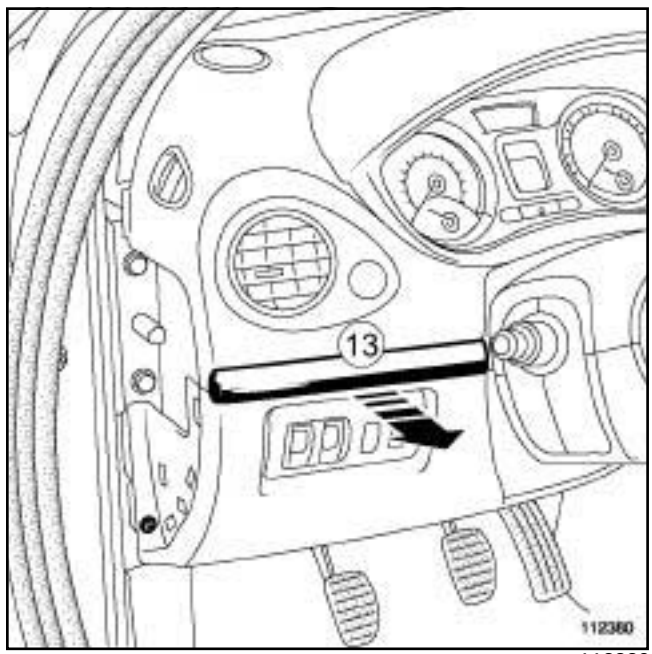
❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the non-return valve (**1**) from the servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,



112379

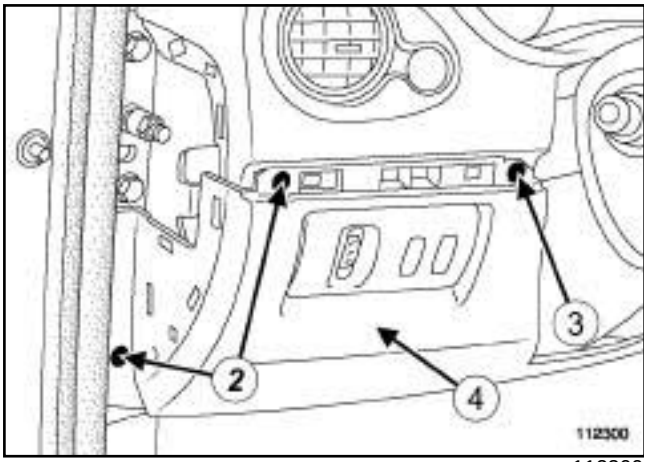
❏ Remove the side panel (**12**) .



112380

❏ Unclip the trim (**13**) .

F4R, and LEFT-HAND DRIVE

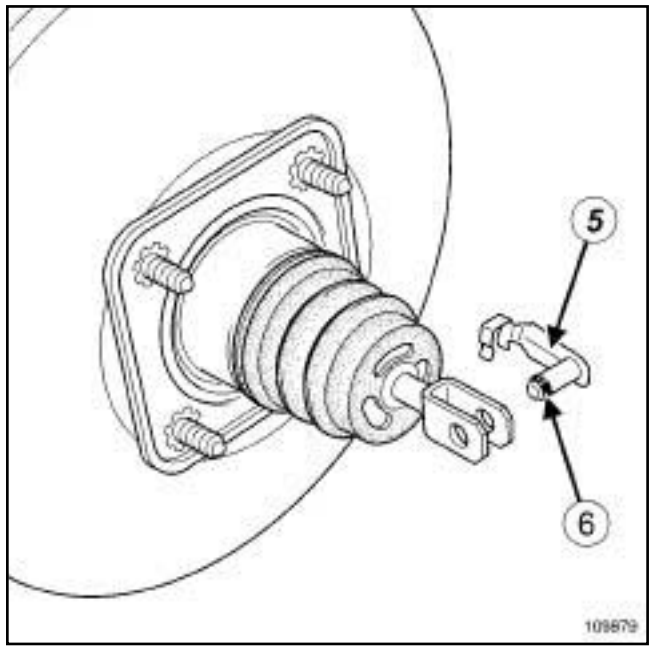


112300

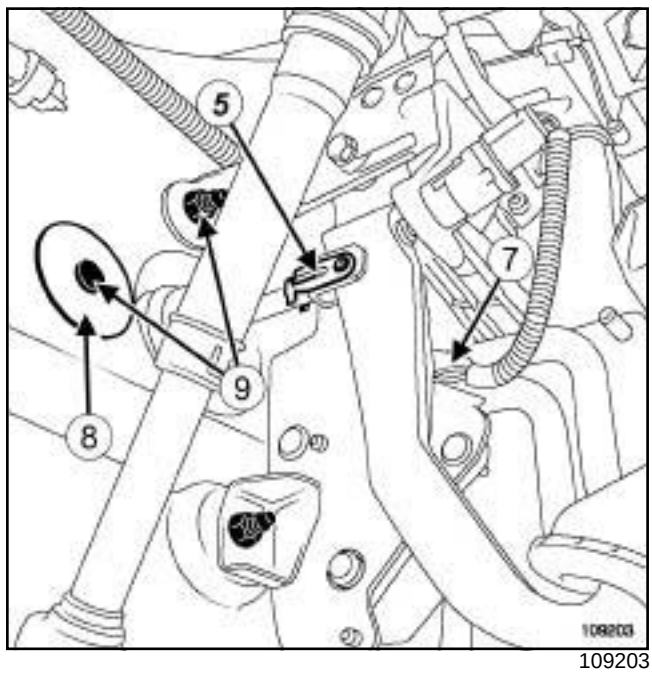
❑ Remove:

- the bolts (**2**) ,
- the clip (**3**) .
- the lower cover (**4**) , disconnecting the various connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879



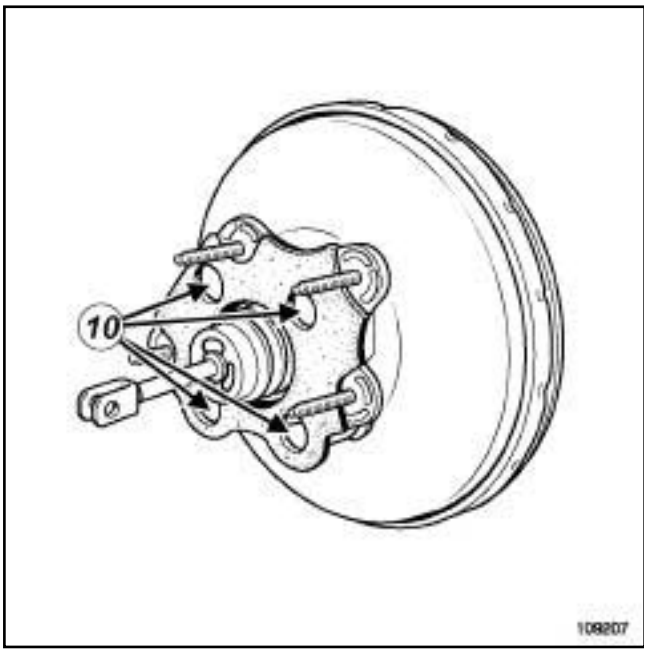
109203

❑ Remove:

- the double safety connecting shaft (**5**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move ring (**6**) using a flat-blade screwdriver.
- the connector (**7**) from the accelerator pedal,
- the accelerator pedal connector wiring harness clip,
- the blanking cover (**8**) from the brake servo mounting nut,

F4R, and LEFT-HAND DRIVE

- the brake servo mounting nuts (**9**) ,
- the brake servo.



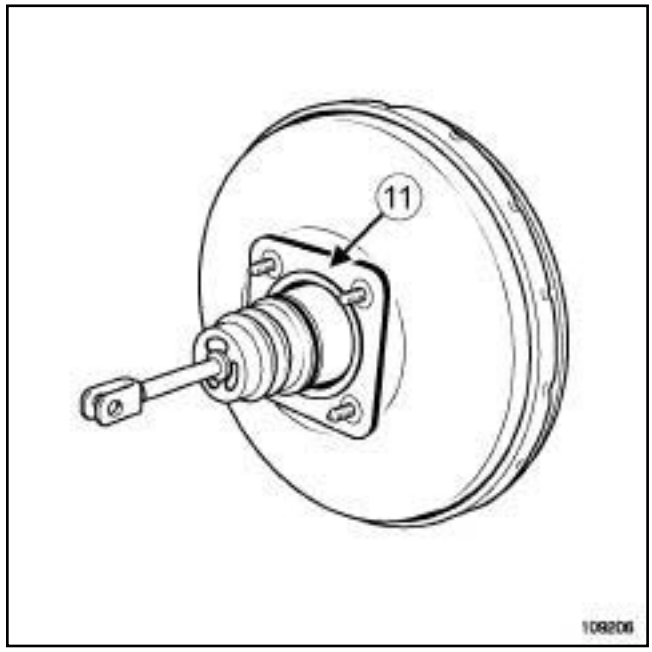
109207

❑ Remove:

- the mounting bolts (**10**) from the brake servo spacer,
- the brake servo spacer.

REFITTING

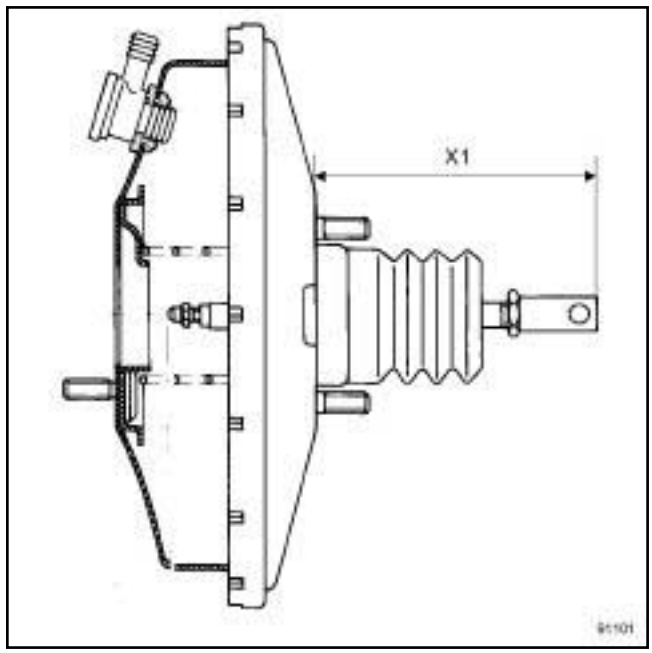
I - REFITTING PREPARATIONS OPERATION



109206

❑ Check that the brake servo seal (**11**) is present; replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❑ Check the following dimension before refitting: (**X1**) = **171 mm**.

F4R, and LEFT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake servo spacer,
- the brake servo spacer mounting bolts.

❑ Torque tighten the **spacer mounting bolts (21 Nm)**.

❑ Refit:

- the brake servo,
- the brake servo mounting nuts.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❑ Torque tighten the **brake servo mounting nuts (21 Nm)**.

❑ Refit:

- the brake servo mounting nut blanking cover,
- the accelerator pedal connector wiring harness clip,
- the accelerator pedal connector,
- the double safety connecting piece between the brake servo pushrod and the brake pedal.

III - FINAL OPERATION.

❑ Refit:

- the lower cover, connecting the various connectors.
- the clip,
- the bolts,
- the dashboard trim piece,
- the dashboard side panel,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Connect the non-return valve on the servo,

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

IMPORTANT
Check that the brake servo pushrod-brake pedal connecting shaft is locked in place.

❑ Adjust the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

M4R, and RIGHT-HAND DRIVE

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Tightening torques ▽	
brake servo nuts	**21 Nm**

REMOVAL

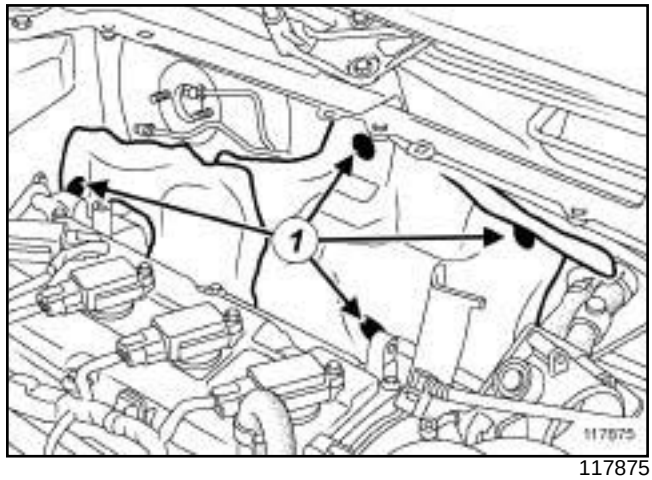
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

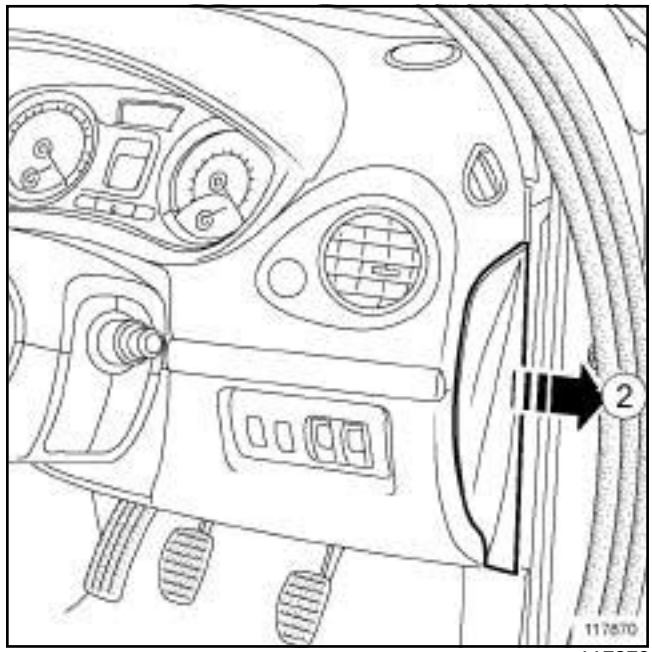
- the engine cover,
- the engine undertray,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the non-return valve on the servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



117875

❏ Remove the clips (**1**) from the acoustic shield.

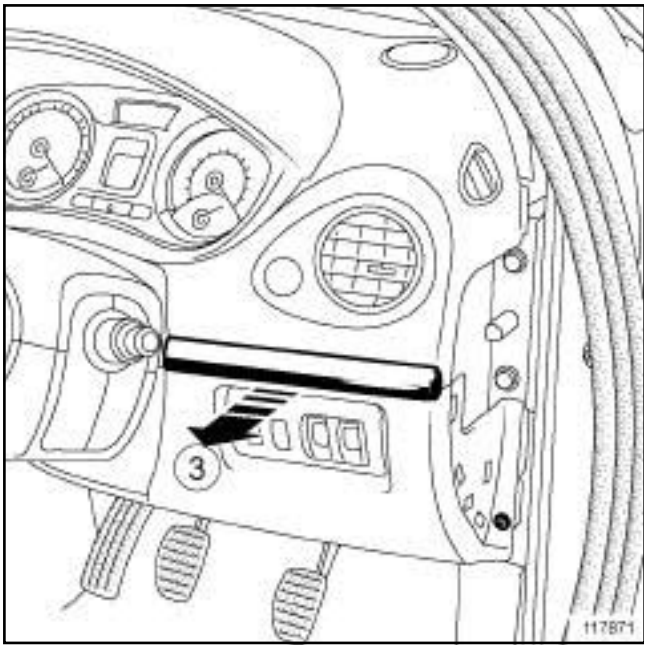
❏ Move aside the acoustic shield.



117870

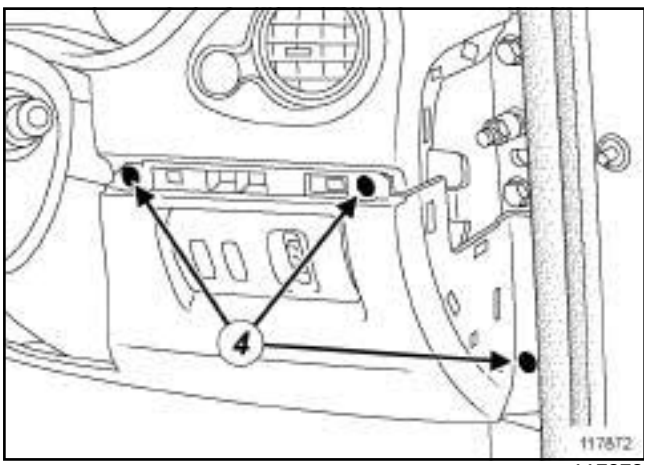
❏ Remove the dashboard side face (**2**) .

M4R, and RIGHT-HAND DRIVE



117871

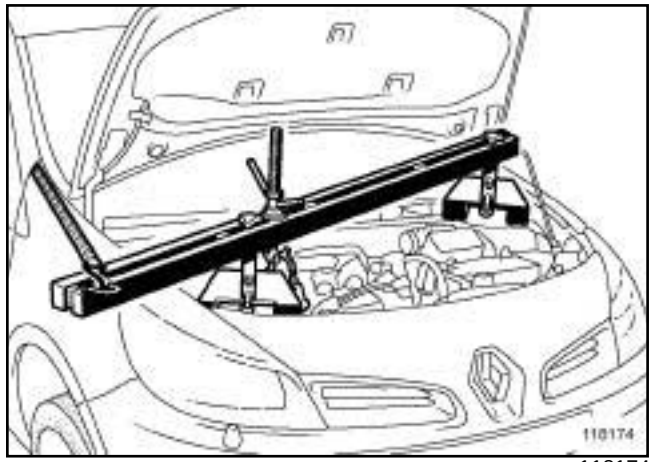
❏ Unclip protective strip (**3**) .



117872

❏ Remove:

- the bolts (**4**) from the lower cover,
- the lower cover, disconnecting the various connectors.
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting).



118174

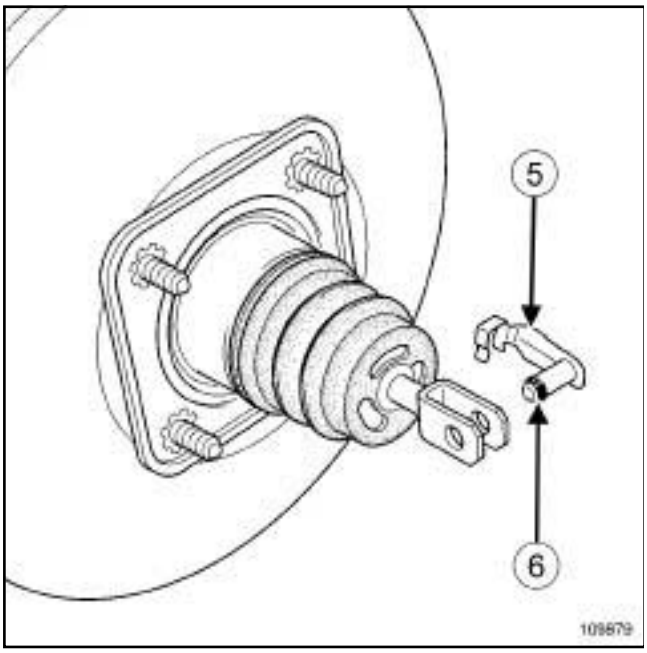
❏ Fit the **(Mot. 1453)**.

❏ Remove the right-hand suspended mounting support (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

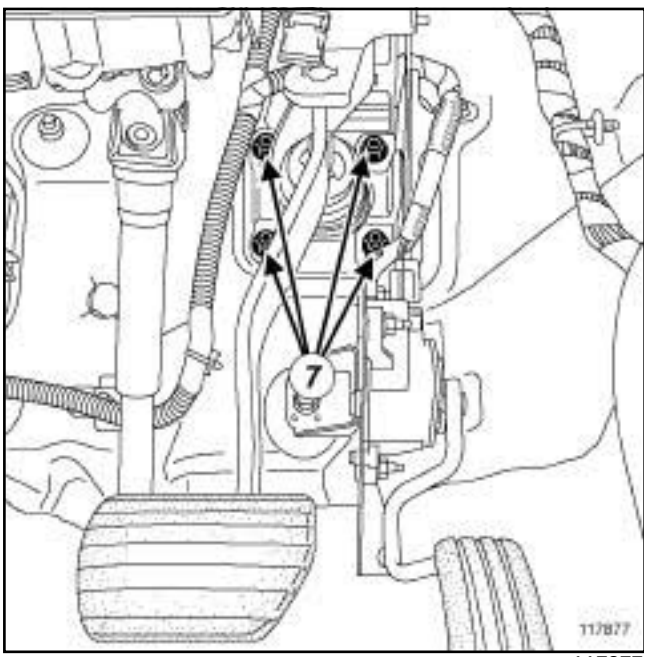
❏ Lower the engine as much as possible using the **(Mot. 1453)**.

M4R, and RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879

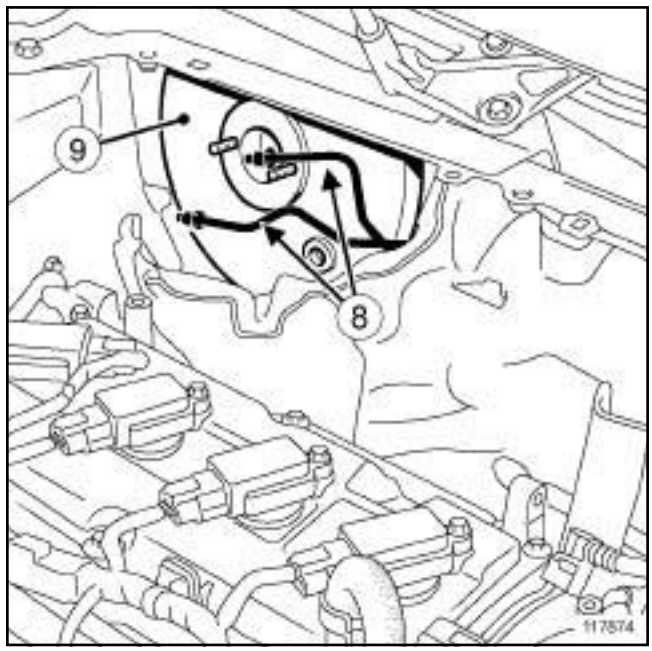


117877

❏ Tilt the connecting shaft (**5**) upwards.

❏ Remove:

- the double safety connecting shaft using a flat-blade screwdriver to move the ring (**6**) ,
- the brake servo nuts (**7**) .



117874

❏ Move aside the brake pipes (**8**) .

❏ Remove the brake servo (**9**) .

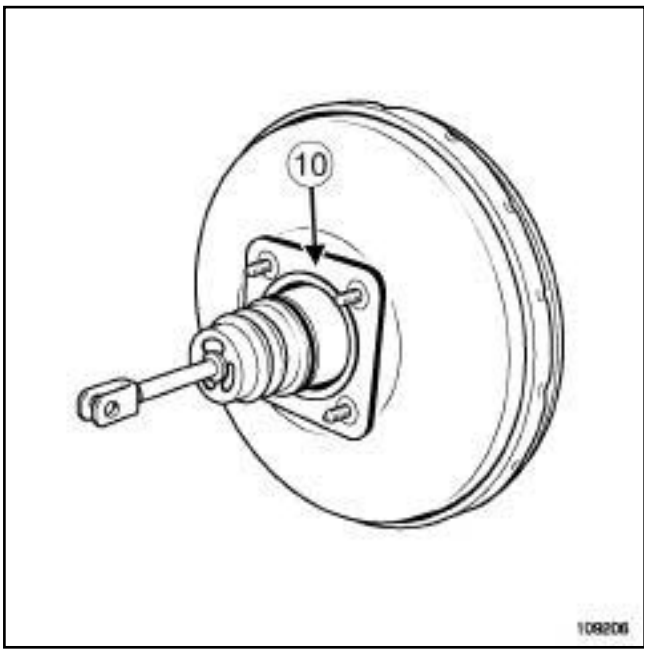
Note:

To pass the servo between the bulkhead and the engine, the pushrod must be oriented towards the bottom, with the engine slightly pulled forward.

M4R, and RIGHT-HAND DRIVE

REFITTING

I - REFITTING PREPARATIONS OPERATION

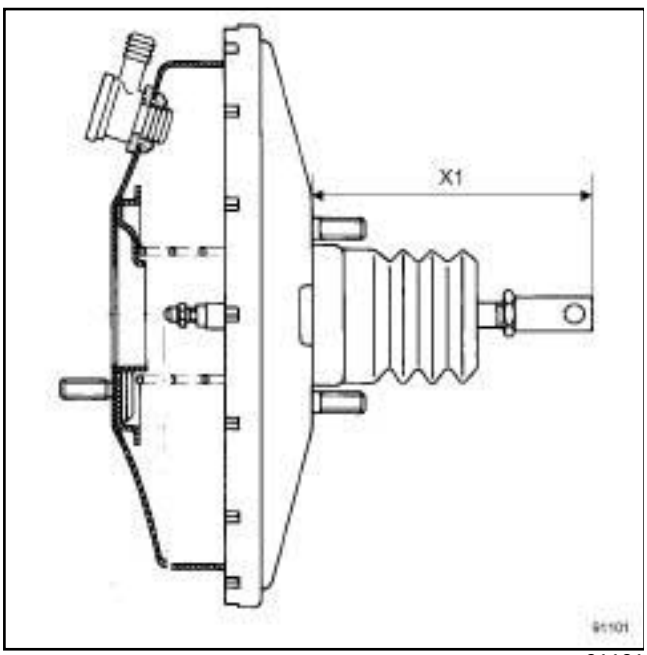


109206

❑ Check that the brake servo sealing ring is in place (**10**) .

❑ Replace the seal if it is damaged.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❑ Before refitting, check that the dimension: (**X1**) = **128 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the brake servo,
- the brake servo nuts.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❑ Torque tighten the **brake servo nuts (21 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the bulkhead acoustic shield,
- the bulkhead acoustic shield clips,
- the right-hand suspended mounting support (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❑ Remove the **(Mot. 1453)**.

❑ Refit:

- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray,
- the engine cover.

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Adjust the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

❑ Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

M4R, and RIGHT-HAND DRIVE

❑ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover strip,

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

F4R, and RIGHT-HAND DRIVE

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
brake servo nuts	**21 Nm**
cooling radiator mounting cross member bolt	**105 Nm**
sub-frame rear bolt	**110 Nm**

REMOVAL

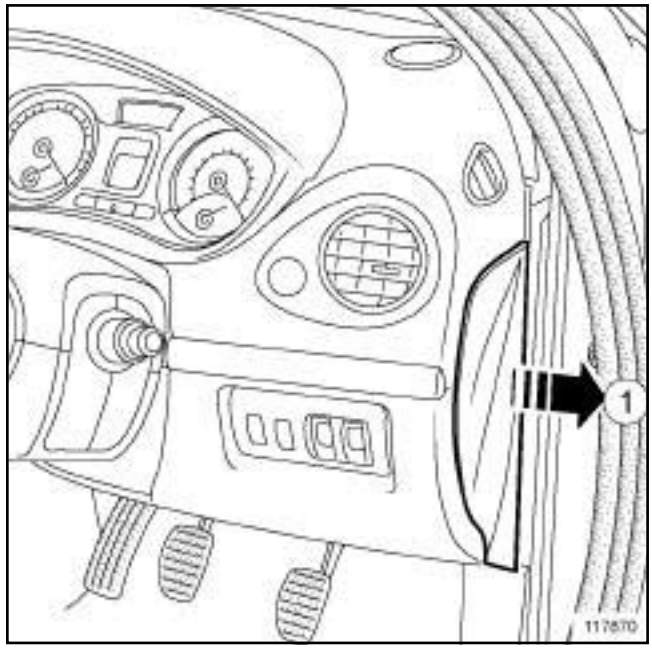
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

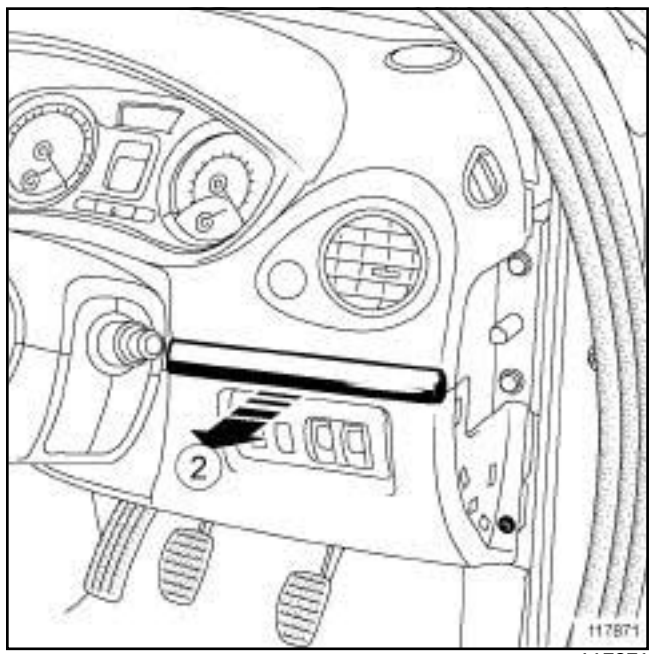
❏ Remove:

- the engine undertray,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the non-return valve at the brake servo,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) .



117870

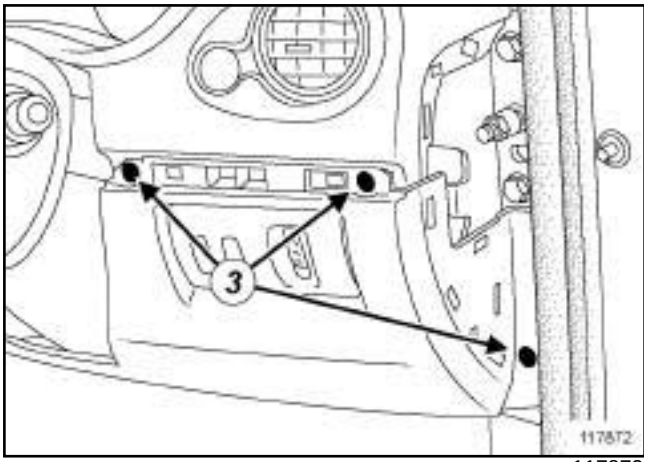
❏ Remove the dashboard side face (**1**) .



117871

❏ Unclip the lower cover protective strip (**2**) .

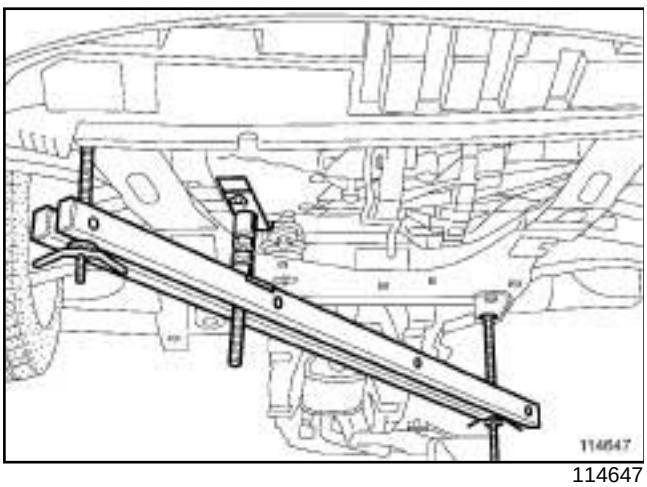
F4R, and RIGHT-HAND DRIVE



117872

❑ Remove:

- the bolts (**3**) from the lower cover,
- the lower cover, disconnecting the various connectors.
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the cooling radiator mounting cross member bolt,
- the sub-frame rear bolt.



114647

❑ Position the **(Mot. 1672)**.

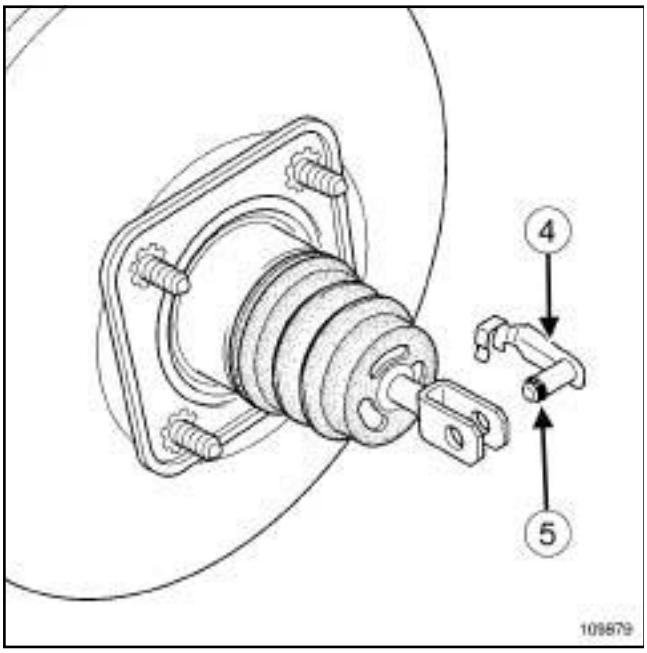
❑ Remove:

- the right-hand suspended mounting support (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the throttle valve (see **Throttle valve: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

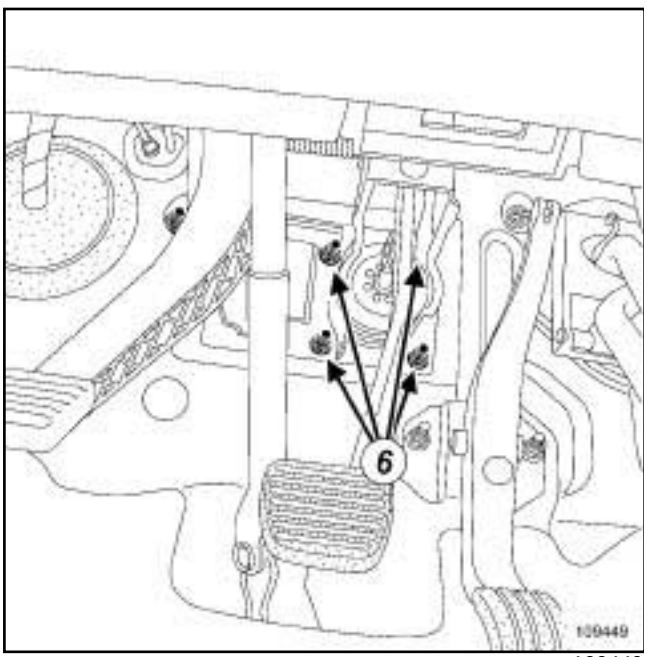
❑ Lower the engine as much as possible using the **(Mot. 1672)**.

F4R, and RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



109879



109449

❏ Tilt the connecting shaft (**4**) upwards.

❏ Remove:

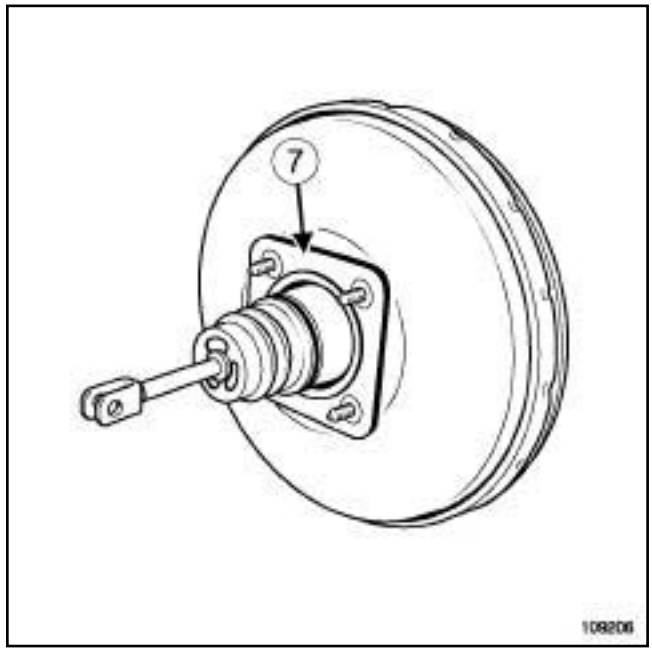
- the double safety connecting shaft using a screwdriver to move the ring (**5**) ,
- the brake servo nuts (**6**) ,
- the brake servo.

Note:

To pass the servo between the bulkhead and the engine, the pushrod must be oriented towards the bottom, with the engine slightly pulled forward.

REFITTING

I - REFITTING PREPARATIONS OPERATION



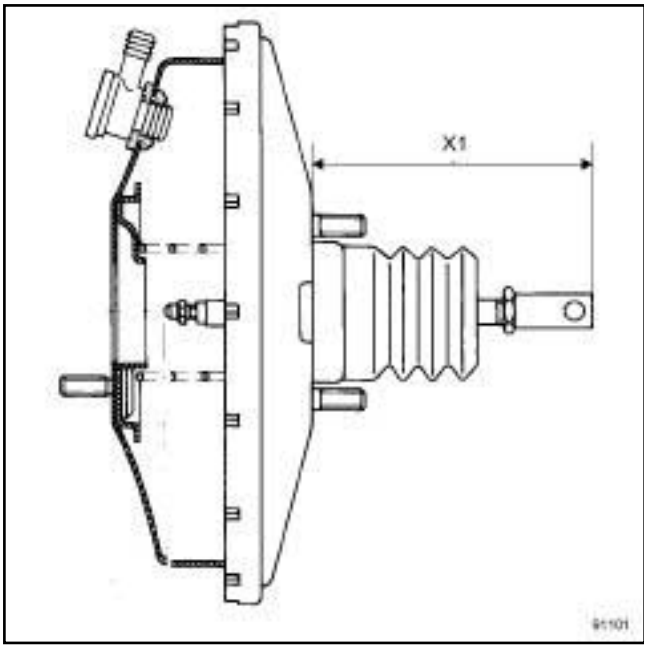
109206

❏ Check that the brake servo sealing ring is in place (**7**) .

❏ Replace the seal if it is damaged.

❏ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.

F4R, and RIGHT-HAND DRIVE



91101

❏ Before refitting, check that the dimension: (**X1**) = **128 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake servo,
- the brake servo nuts.

❏ The shaft connecting the brake servo pushrod and the brake pedal must be refitted from right to left, and from top to bottom.

❏ Torque tighten the **brake servo nuts (21 Nm)**.

III - FINAL OPERATION.

❏ Refit the right-hand suspended mounting support (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❏ Remove the **(Mot. 1672)**.

❏ Refit:

- the throttle valve (see **Throttle valve: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the rear engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the cooling radiator mounting cross member bolt,
- the sub-frame rear bolt.

❏ Torque tighten:

- the **cooling radiator mounting cross member bolt (105 Nm)**,
- the **sub-frame rear bolt (110 Nm)**.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the non-return valve on the servo,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Adjust the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

❏ Check that the connecting shaft between the brake servo pushrod and the brake pedal is locked in place.

❏ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover strip,

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

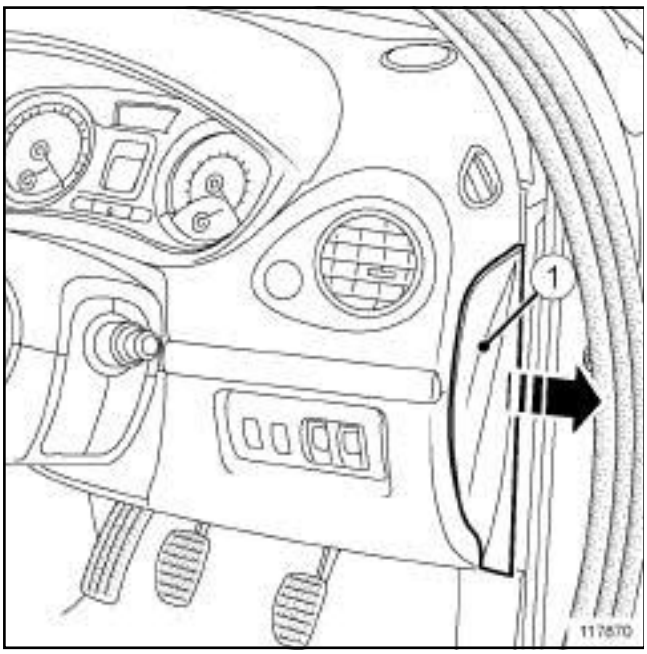
D4F, and 784, and RIGHT-HAND DRIVE

Special tooling required	
Mot. 1672	Lower engine support.

Tightening torques ▽	
brake servo nuts	**25 Nm**
sub-frame rear bolt	**110 Nm**
right-hand side radiator mounting cross member bolt	**105 Nm**
oxygen sensor	**44 Nm**

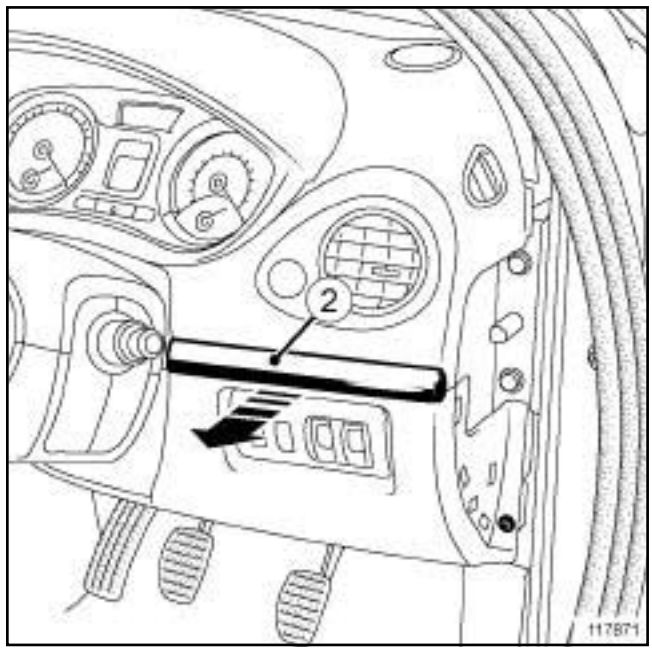
REMOVAL

I - REMOVAL PREPARATION OPERATION

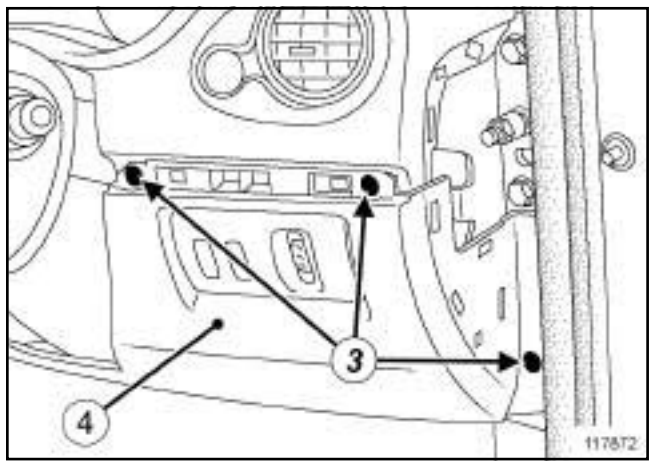


117870

❏ Remove the dashboard side face (**1**) .



117871



117872

❏ Remove:

- the protective strips from the lower cover (**2**) ,
- the bolts (**3**) ,
- the lower cover (**4**) , disconnecting the various connectors.

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the engine cover,
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

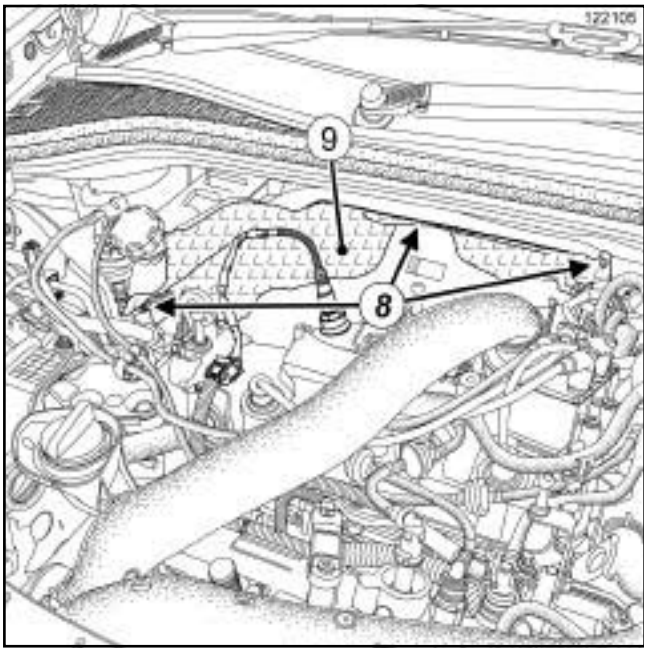
D4F, and 784, and RIGHT-HAND DRIVE

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

122106

❑ Remove:

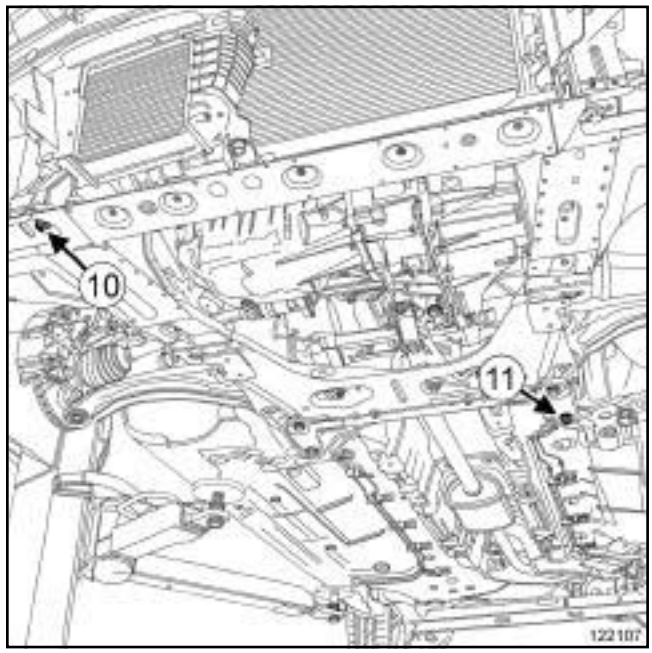
- the bolts (**5**) ,
- the turbocharger heat shield (**6**) ,
- the upstream oxygen sensor (**7**) .



122105

❑ Remove:

- the clips (**8**) ,
- the bulkhead heat shield (**9**) ,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the clutch master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting).

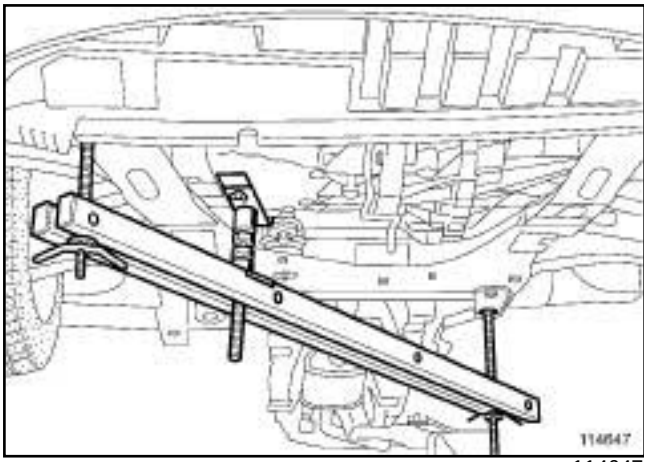


122107

❑ Remove:

- the radiator mounting cross member bolt (**10**) ,
- the sub-frame rear bolt (**11**) .

D4F, and 784, and RIGHT-HAND DRIVE



114647

❏ Fit the **(Mot. 1672)** as shown above.

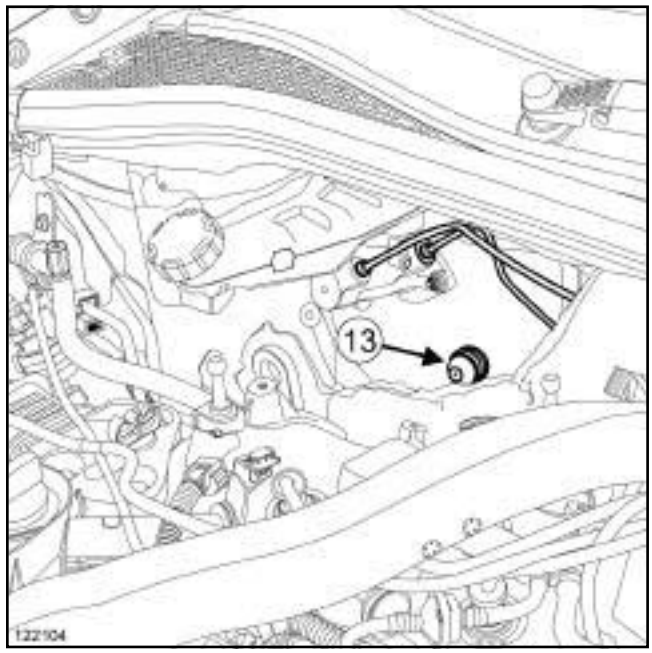
❏ Remove the front left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❏ Fully lower the engine using the **(Mot. 1672)**.

122106

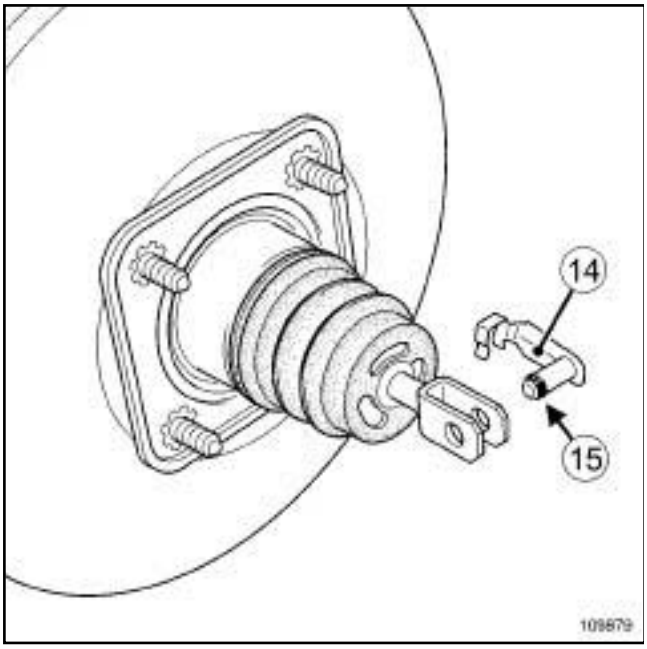
❏ Remove the petrol vapour rebreathing solenoid valve (**12**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

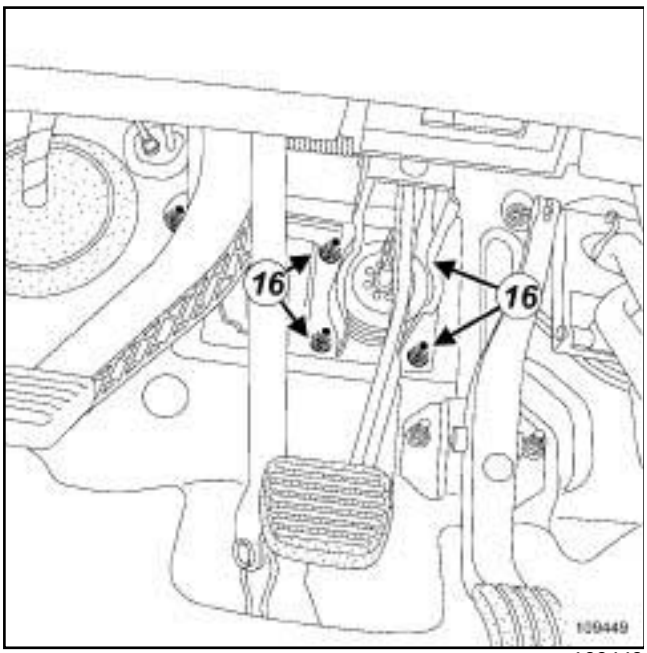


122104

❏ Remove the brake servo non-return valve (**13**) (see **37A**, **Mechanical component controls**, **Brake servo non-return valve: Removal - Refitting**, page **37A-26**) .



109879



109449

❑ Remove:

- the double safety connecting shaft (**14**) between the brake servo pushrod and the brake pedal by pressing on the ring (**15**) with a flat-blade screwdriver,
- the brake servo nuts (**16**) ,
- the brake servo.

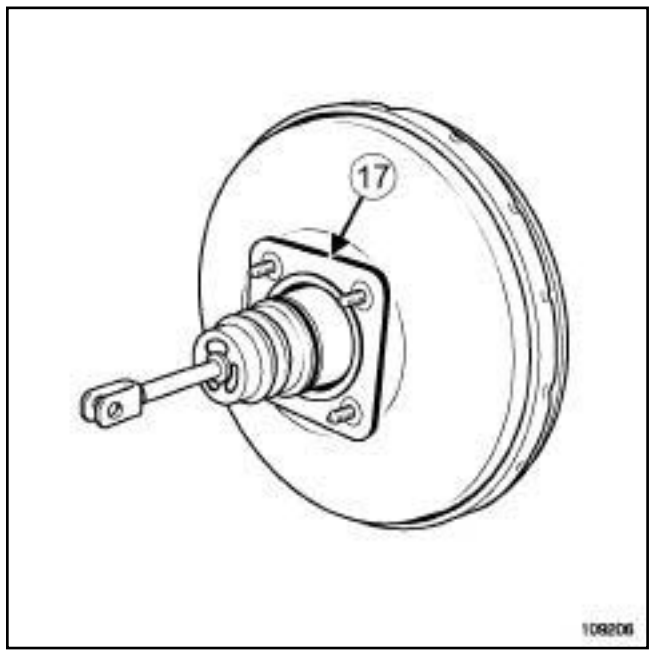
Note:

To remove the brake servo, the engine must be tilted towards the front of the vehicle.

REFITTING

❑ It is essential to replace the sub-frame rear bolts.

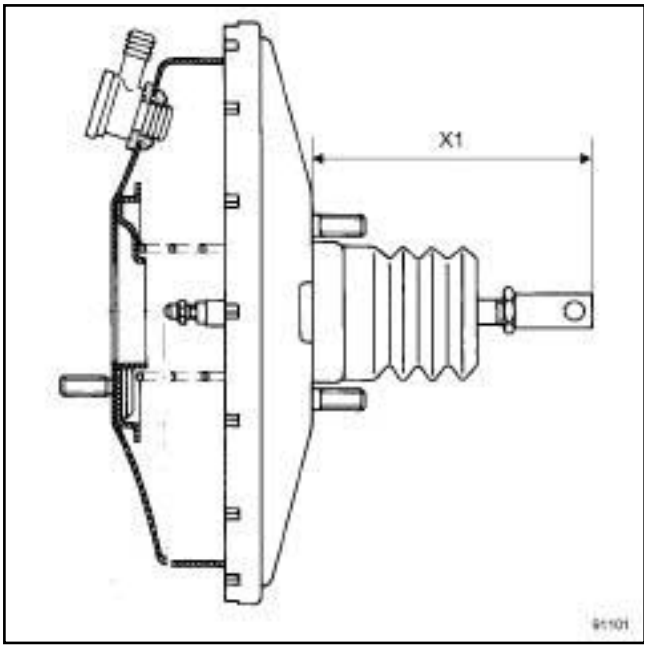
I - REFITTING PREPARATIONS OPERATION



109206

❑ Check that the brake servo seal (**17**) is in place and replace the seal if it is faulty.

❑ The shaft connecting the brake servo pushrod and the brake pedal must be replaced every time it is removed.



91101

❏ Check the following dimension before refitting: (**X1**) = **128 mm**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake servo,
- the brake servo nuts.

❏ The connecting shaft between the brake servo push-rod and the brake pedal must be refitted from right to left and from top to bottom.

❏ Torque tighten the **brake servo nuts (25 Nm)**.

III - FINAL OPERATION.

❏ Fit the petrol vapour rebreathing solenoid valve onto its mounting.

❏ Refit the front left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting).

❏ Remove the **(Mot. 1672)**.

❏ Refit:

- the sub-frame rear bolt,
- the right-hand side radiator mounting cross member bolt.

❏ Torque tighten:

- the **sub-frame rear bolt (110 Nm)**,
- the **right-hand side radiator mounting cross member bolt (105 Nm)**.

❏ Refit:

- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the clutch master cylinder (see **37A**, **Mechanical component controls**, **Clutch master cylinder: Removal - Refitting**, page **37A-107**) ,
- the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) ,
- the bulkhead heat shield,
- the bulkhead heat shield clips,
- the upstream oxygen sensor.

❏ Torque tighten the **oxygen sensor (44 Nm)**.

❏ Refit:

- the turbocharger heat shield,
- the turbocharger heat shield bolts,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine cover.

❏ Bleed:

- the clutch circuit (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) ,
- the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the vehicle from the lift.

❏ Adjust:

- the brake switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) ,
- the clutch switch (see **37A**, **Mechanical component controls**, **Clutch pedal switch: Removal - Refitting**, page **37A-97**) .

D4F, and 784, and RIGHT-HAND DRIVE

❑ Refit:

- the lower cover and connect the various connectors,
- the lower cover bolts,
- the dashboard side panel,
- the lower cover protective strips.

K9K

Tightening torques ▽	
vacuum pump bolts	**21 Nm**
vacuum pump retaining bracket bolt	**21 Nm**

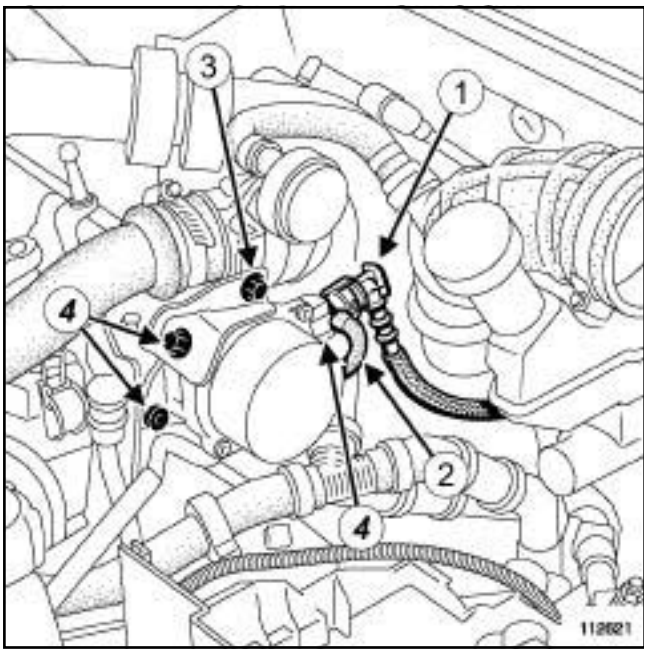
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the engine covers,
- the air filter duct.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112621

❑ Undo the vacuum pump retaining bracket bolt (**3**) .

❑ Remove:

- the hose (**1**) connected to the brake servo,
- the pipe (**2**) ,
- the vacuum pump bolts (**4**) ,
- the vacuum pump.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Be sure to replace the vacuum pump seal.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the vacuum pump with the new seal,
- the vacuum pump bolts.

❑ Torque tighten:

- the **vacuum pump bolts (21 Nm)**,
- the **vacuum pump retaining bracket bolt (21 Nm)**.

❑ Refit:

- the pipe,
- hose connected to the brake servo,

III - FINAL OPERATION.

❑ Refit:

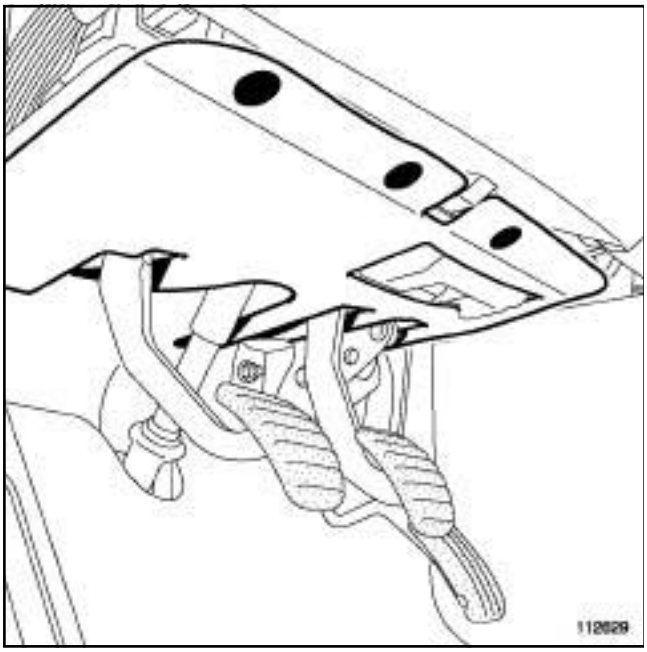
- the air filter duct,
- the engine covers.

VERSION WITHOUT ADAPTATION SUPPLEMENT

Tightening torques ▽	
accelerator pedal mounting nuts	8 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

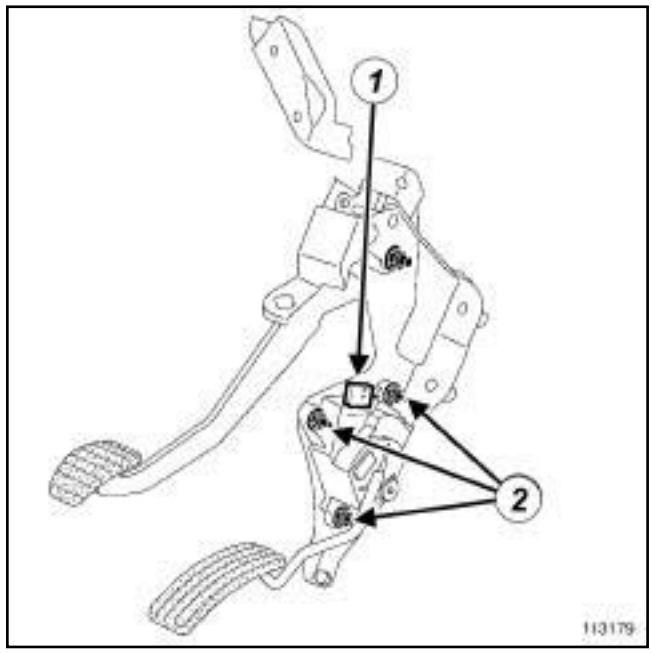


112629

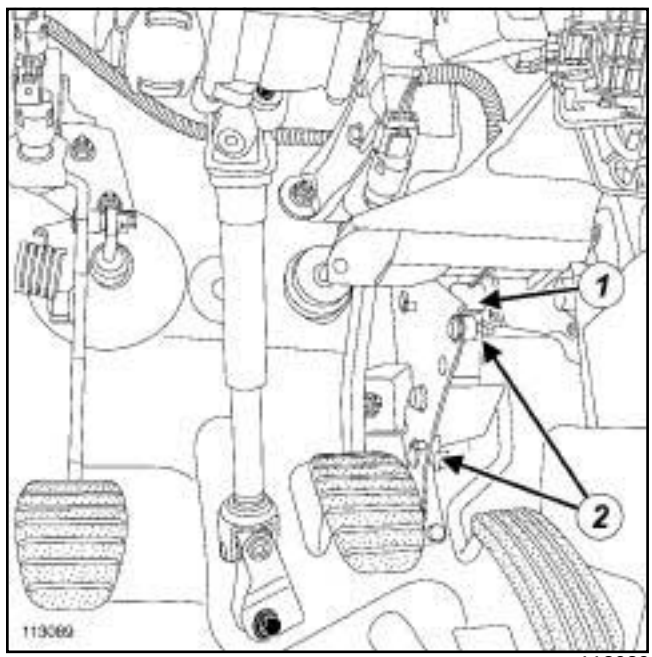
❑ Remove:

- the retaining clips on the driver side dashboard lower trim,
- the driver side dashboard lower trim.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113179



113089

❑ Disconnect the accelerator pedal potentiometer connector (**1**) .

❑ Remove:

- the accelerator pedal mounting nuts (**2**) ,
- the accelerator pedal.

VERSION WITHOUT ADAPTATION SUPPLEMENT

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the accelerator pedal,
- the accelerator pedal mounting nuts,

❏ Connect the accelerator pedal potentiometer connector.

❏ Torque tighten the **accelerator pedal mounting nuts (8 N.m)**.

II - FINAL OPERATION

❏ Refit:

- the driver's side dashboard lower trim,
- the retaining clips on the driver side dashboard lower trim,

SCHOOL VEHICLE

Tightening torques ▽	
accelerator pedal bolts, driver's side	**8 Nm**
accelerator pedal shaft, instructor's side	**16 Nm**

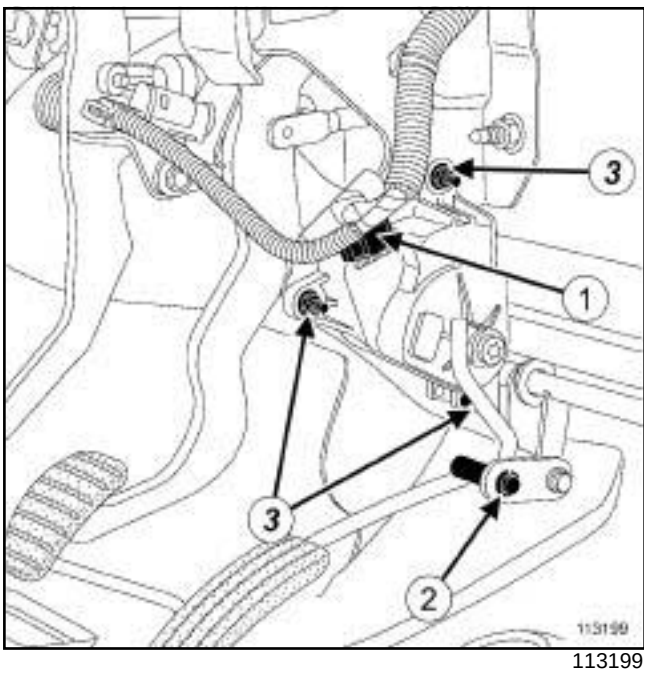
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - student side



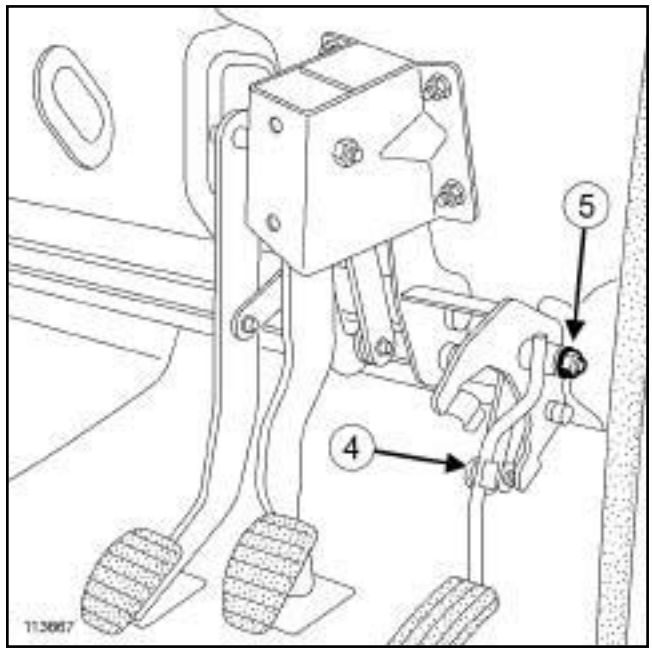
113199

❏ Disconnect the accelerator pedal potentiometer connector (**1**) .

❏ Remove:

- the circlip (**2**) from the accelerator pedal to the link bar connection control lever,
- the accelerator pedal bolts (**3**) ,
- the accelerator pedal.

2 - Instructor side



113667

❏ Remove:

- the circlip (**4**) from the accelerator pedal to the link bar connection control lever,
- the accelerator pedal nut (**5**) ,
- the accelerator pedal shaft,
- the accelerator pedal.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Always replace the connecting circlips whenever they have been removed.

II - REFITTING OPERATION FOR PART CONCERNED

1 - student side

❏ Refit:

- the accelerator pedal,
- the accelerator pedal bolts ***(3)*** ,
- the circlip ***(2)*** from the accelerator pedal to the link bar connection control lever.

❏ Torque tighten the **accelerator pedal bolts, driver's side (8 Nm)**.

❏ Connect the accelerator pedal potentiometer connector ***(1)*** .

SCHOOL VEHICLE

2 - instructor side

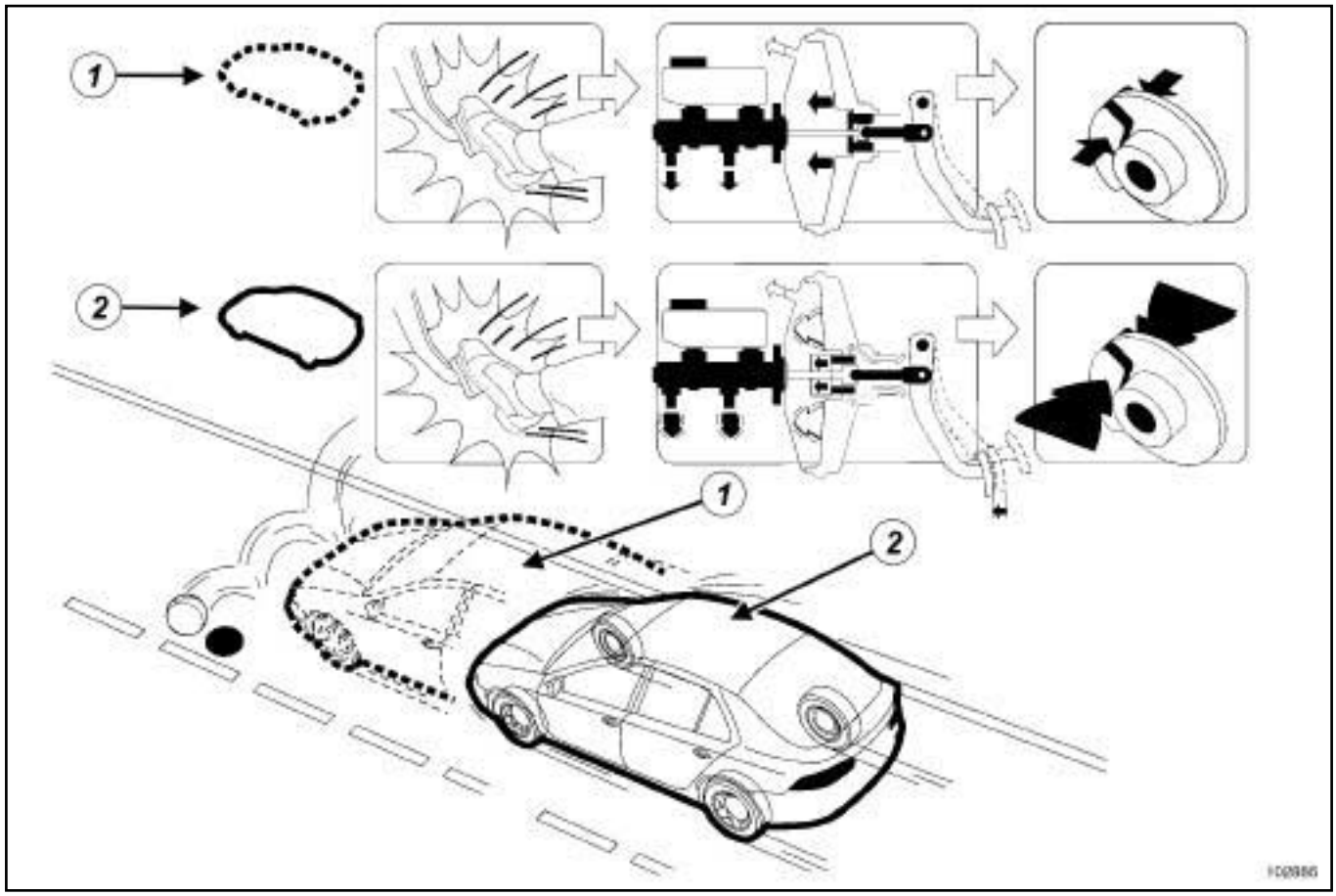
❑ Refit:

- the accelerator pedal,
- the accelerator pedal shaft,
- the accelerator pedal nut ***(5)*** ,
- the circlip ***(4)*** from the accelerator pedal to the link bar connection control lever.

❑ Torque tighten the **accelerator pedal shaft, instructor's side (16 Nm)**.

III - FINAL OPERATION.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



102886

(**1**) Without emergency brake assist

(**2**) With emergency brake assist

Emergency brake assist is a system which supplements ABS.

Emergency brake assist enables the system to recognise the situation and act immediately to provide the best possible stopping distance.

Emergency braking is calculated according to how quickly the brake pedal is depressed; in this situation, braking assistance immediately reaches its maximum level of output.

The system works conditionally for current braking systems.

The emergency brake assist is a mechanical system built into the brake servo and completely independent of any electronic component.

The brake servo is fitted with a magnet which reacts by locking the control unit when the pedal is depressed sharply.

SCHOOL VEHICLE

Tightening torques ▽	
brake pedal stud, on the driver's side	**16 Nm**
shaft for the brake and clutch pedals, on the driver's side	**35 Nm**

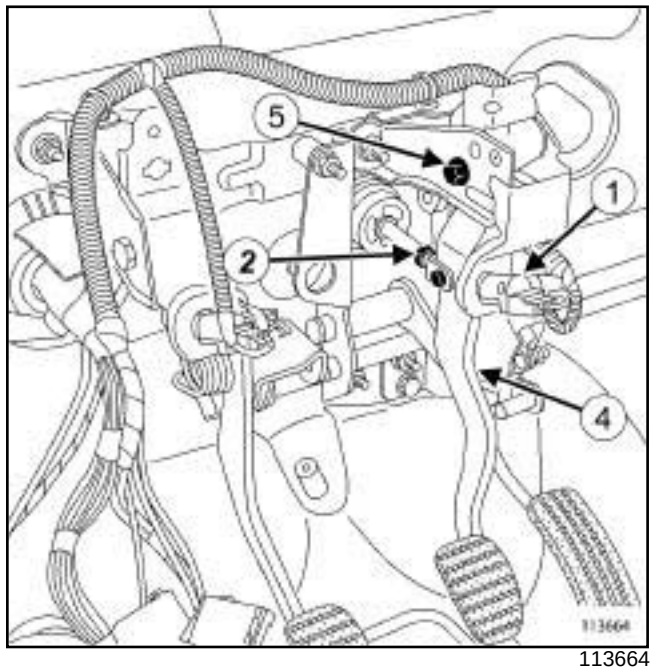
REMOVAL

I - REMOVAL PREPARATION OPERATION

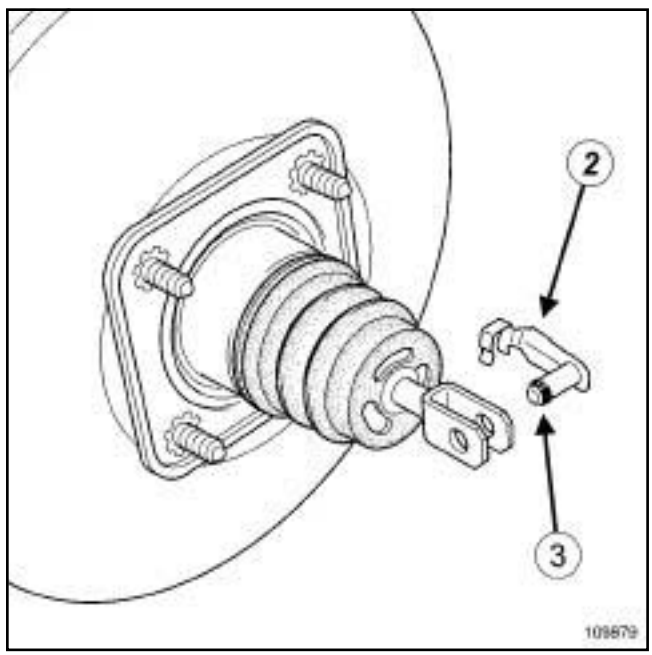
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - student side



113664



109879

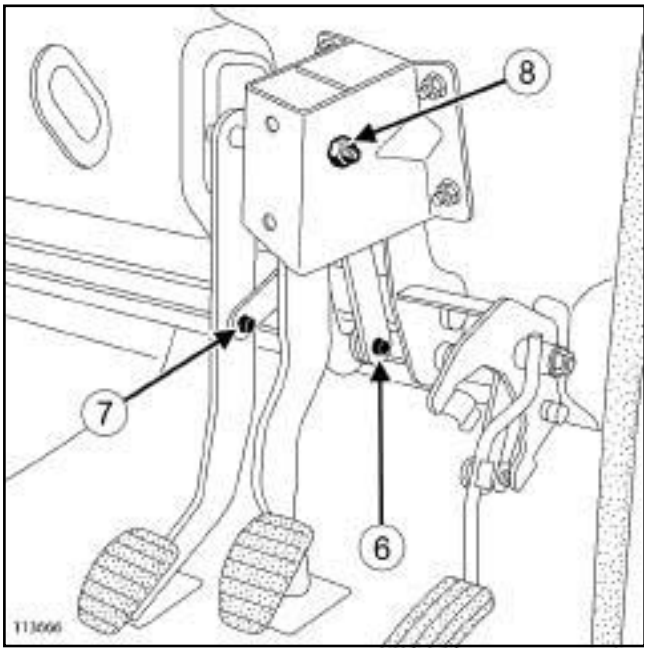
❑ Remove:

- the brake light switch (**1**) (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) ,
- the double safety connecting shaft (**2**) from between the brake servo pushrod and the brake pedal, and, after tilting the connecting shaft upwards, move the ring (**3**) using a flat-blade screwdriver.

SCHOOL VEHICLE

- the circlip (**4**) from the brake pedal to the link bar connection control lever,
- the brake pedal stud (**5**) ,
- the brake pedal.

2 - Instructor side



113666

❑ Remove:

- the circlip (**6**) from the brake pedal connection control lever to the link bar,
- the circlip (**7**) from the clutch pedal to the link bar,
- the brake and clutch pedal shaft (**8**) ,
- the brake and clutch pedals,
- the circlip from the brake pedal to the connection control lever,
- the connection control lever.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑ Always replace the connecting circlips whenever they have been removed.

II - REFITTING OPERATION FOR PART CONCERNED

1 - student side

❑ Refit:

- the brake pedal,
- the brake pedal stud ***(5)*** ,
- the circlip ***(4)*** from the brake pedal to the link bar connection control lever,
- the double safety connecting shaft ***(2)*** between the brake servo pushrod and the brake pedal, from right to left, and from top to bottom,
- the brake light switch (**1**) (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

❑ Torque tighten the **brake pedal stud, on the driver's side (16 Nm)**.

2 - instructor side

❑ Refit:

- the connection control lever,
- the circlip from the brake pedal to the connection control lever,
- the brake and clutch pedals,
- the shaft ***(8)*** for the brake and clutch pedals,
- the circlip ***(7)*** from the clutch pedal to the link bar connection control lever,
- the circlip ***(6)*** from the brake pedal connection control lever to the link bar.

❑ Torque tighten the **shaft for the brake and clutch pedals, on the driver's side (35 Nm)**.

III - FINAL OPERATION.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

VERSION WITHOUT ADAPTATION SUPPLEMENT

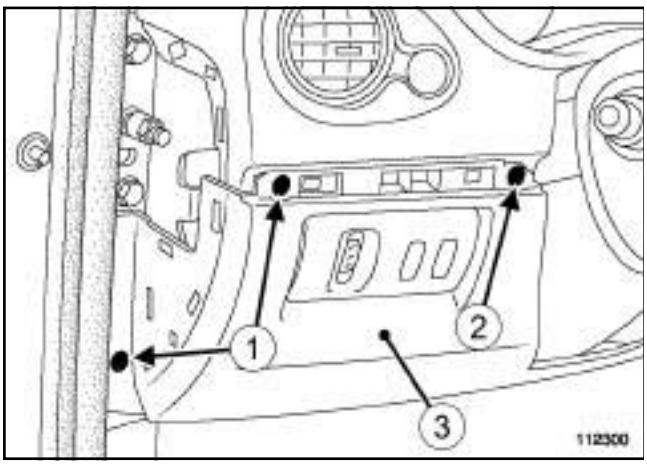
Tightening torques ▽	
pedal assembly nuts	**21 N.m**
nuts of the brake pedal impacter	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the lower cover moulding,
- the side section to the lower cover.

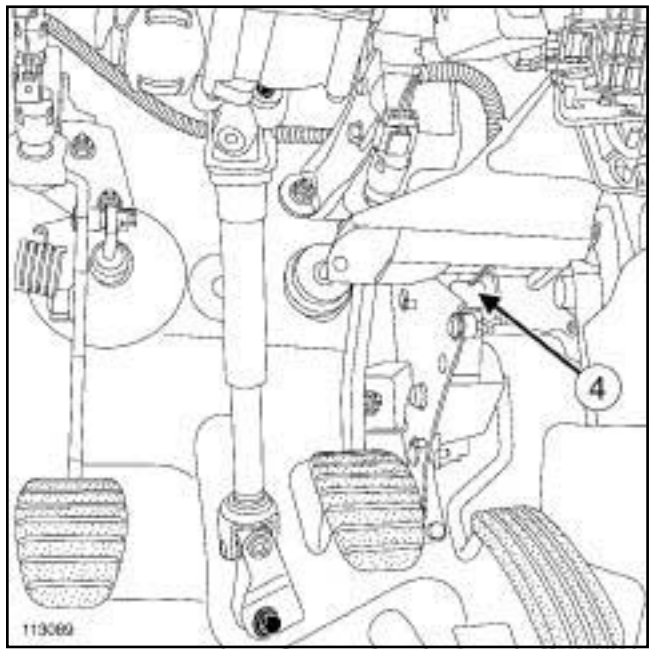


112300

❏ Remove:

- the bolts (**1**) ,
- the clip (**2**) ,
- the lower cover (**3**) , disconnecting the various connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED

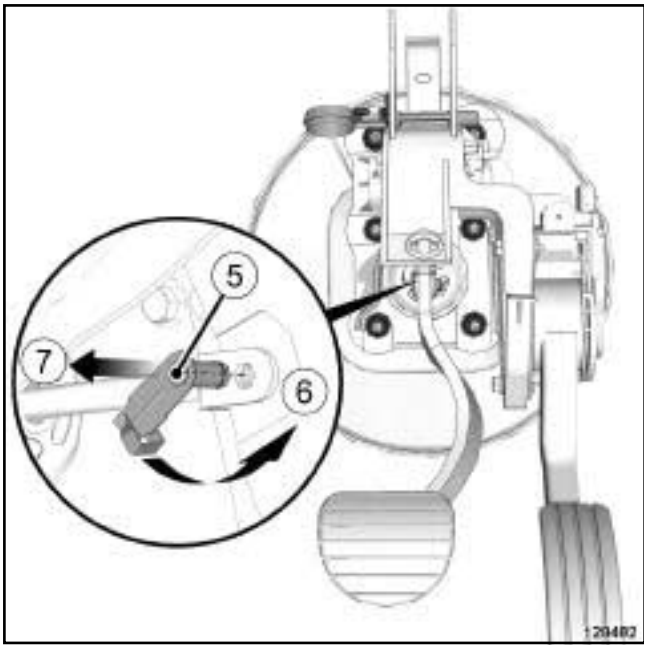


113089

❏ Disconnect the accelerator pedal connector (**4**) .

❏ Remove the brake pedal switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

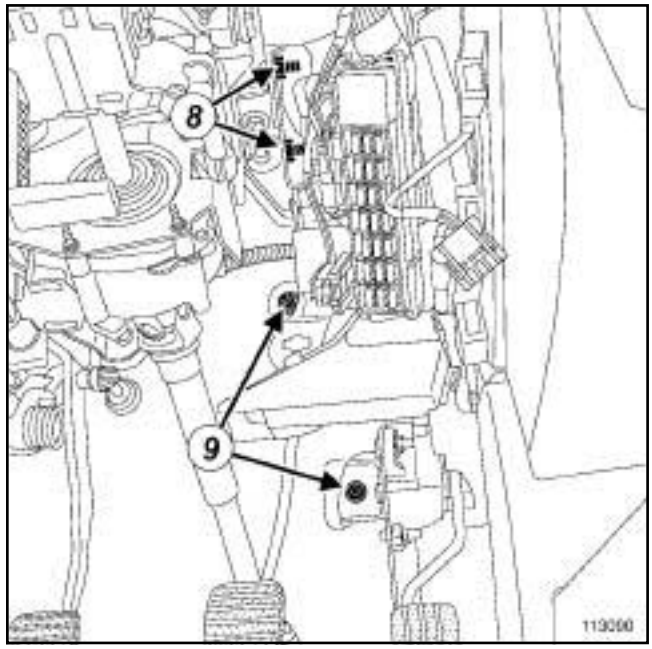
VERSION WITHOUT ADAPTATION SUPPLEMENT



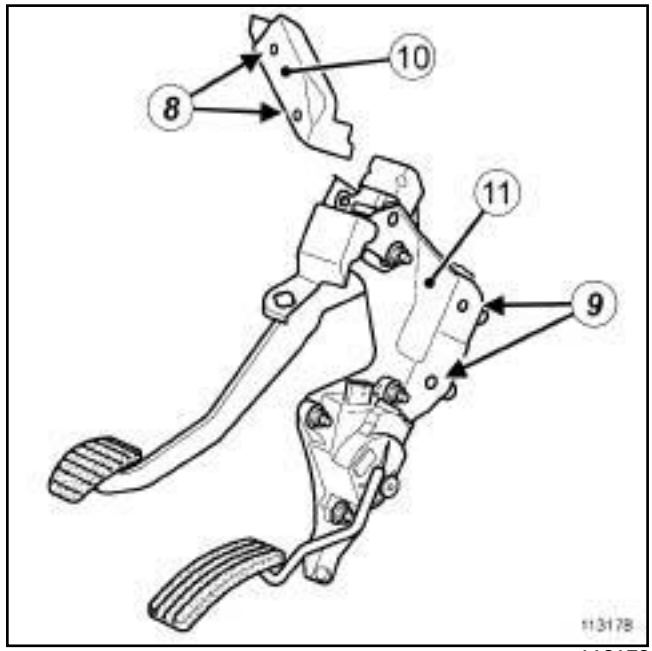
128482

❑ Remove the dual safety connecting shaft (**5**) between the brake pedal to the brake servo pushrod.

- unlock the shaft in accordance with (**6**) ,
- extract the shaft in accordance with (**7**) .



113090



113178

❑ Remove:

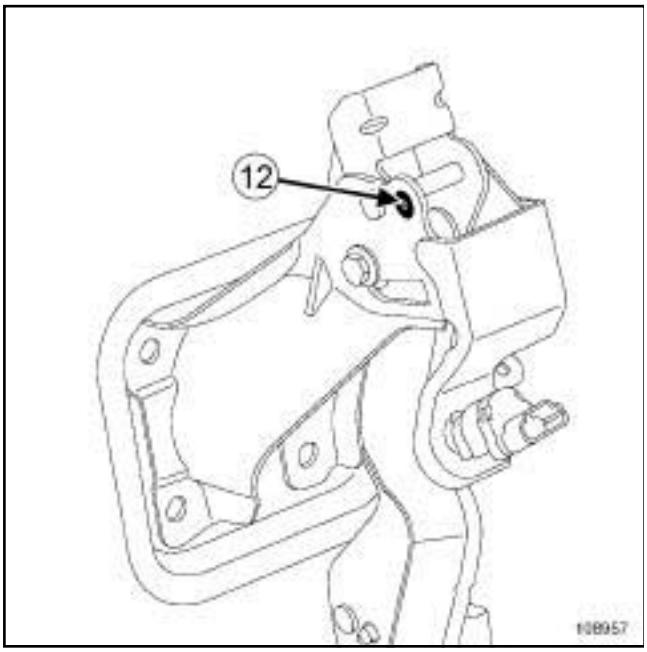
- the impacter nuts (**8**) ,
- the nuts (**9**) of the pedal yoke,
- the impacter (**10**) ,
- « the brake - accelerator pedal assembly » .

VERSION WITHOUT ADAPTATION SUPPLEMENT

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the **parts always to be replaced: Connecting shaft between the brake pedal and the brake servo pushrod (30,03,02,07)**.



108957

❑

Note:

Check that the brake pedal collapse rivet (**12**) is not faulty; if it is, replace the pedal.

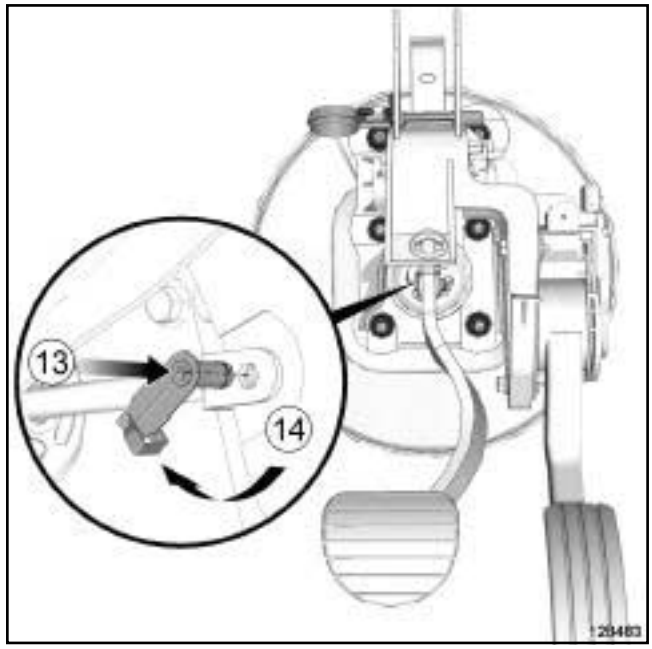
II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- « the brake - accelerator pedal assembly » ,
- the brake pedal impacter.

❑ Tighten to torque:

- the **pedal assembly nuts (21 N.m)**,
- the **nuts of the brake pedal impacter (21 N.m)**.



128483

❑ Refit a new connecting shaft between the brake pedal and the brake servo pushrod:

- insert the shaft in accordance with (**13**) ,
- lock the shaft in accordance with (**14**) .

❑ Refit the brake light switch (see **37A**, **Mechanical component controls**, **Brake pedal switch: Removal - Refitting**, page **37A-79**) .

❑ Connect the accelerator pedal connector.

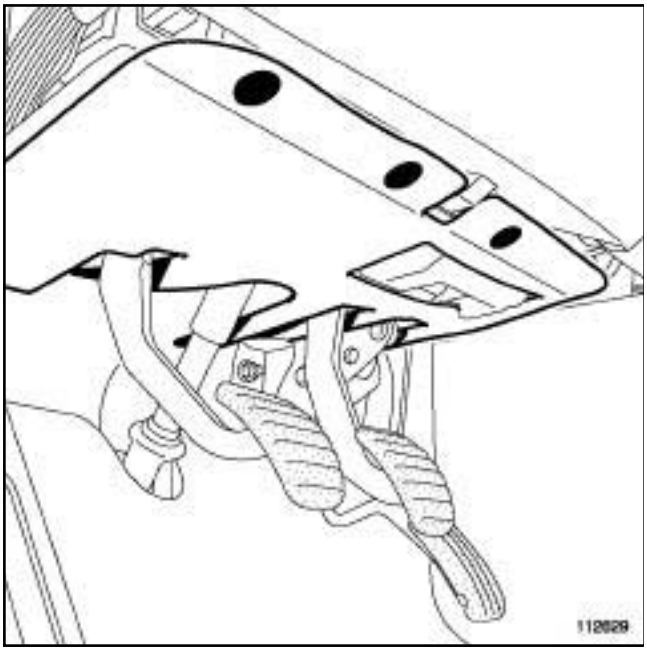
III - FINAL OPERATION

❑ Refit:

- the lower cover, connecting the various connectors.
- the clip,
- the bolts,
- the side section to the lower cover.
- the lower cover moulding,

REMOVAL

I - REMOVAL PREPARATION OPERATION

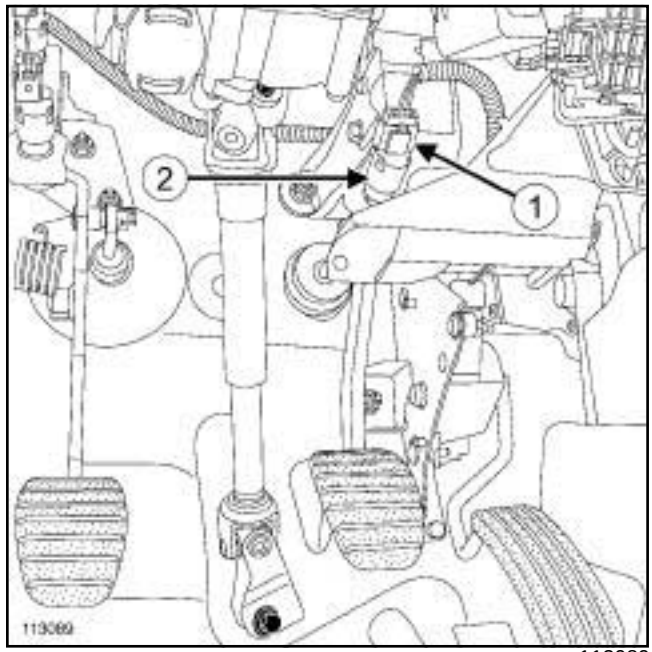


112629

❏ Remove:

- the retaining clips on the driver side dashboard lower trim,
- the driver side dashboard lower trim.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113089

❏

WARNING

Handle the brake light switch (**2**) with care.

Actuate piston (**4**), only, to adjust the dimension (**X**).

❏ Disconnect the brake light switch connector (**1**) .

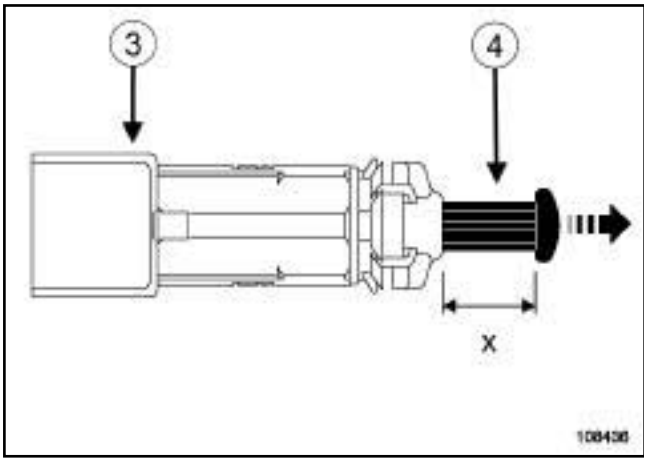
❏ Turn the brake light switch (**2**) a quarter of a turn anti-clockwise.

❏ Remove the brake light switch.

REFITTING

I - REFITTING PREPARATIONS OPERATION

When removing and refitting or when replacing the brake light switch



108436

❑

WARNING

Handle the brake light switch (**3**) with care.

Act on piston (**4**) , only, to adjust dimension (**X**) .

The brake light switch must always be replaced:

- if the piston (**4**) is separated from the switch (**3**) ,
- if the dimension (**X**) has to be adjusted more than 3 times during the operation.

❑ Measure the dimension (**X**) of the piston (**4**) . If the dimension (**X**) is less than **19 mm**, carefully pull the end of the piston to adjust the dimension (**X**) to between **19 mm** minimum and **20 mm** maximum.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Depress the brake pedal by hand.

❑ Position the brake light switch on the pedal assembly.

❑ Lock the brake light switch by turning it a quarter of a turn clockwise.

❑ Carefully follow the return of the brake pedal.

Note:

The brake pedal switch has an automatic adjustment which adapts to the pedal position.

The automatic adjustment makes a clicking noise when in operation.

❑ Connect the brake light switch connector.

III - FINAL OPERATION.

❑ Check that the brake light switch is operating correctly:

- depress the brake pedal to switch on the lights,
- release the brake pedal to extinguish the lights.

❑ Refit:

- the driver side dashboard lower trim.
- the retaining clips on the driver side dashboard lower trim,

WITHOUT ANTI-LOCK BRAKING SYSTEM

Special tooling required	
Fre. 1085-01	Pressure gauge for checking the brake circuit pressure: from 0 to 250 bar.

Equipment required
pedal press

Tightening torques ▽	
bolts of the brake limiter retaining bracket	**10 N.m**
brake limiter bolts	**18 N.m**
hydraulic unions	**17 N.m**
bolt of the brake limiter rod on the rear axle	**10 N.m**

REMOVAL

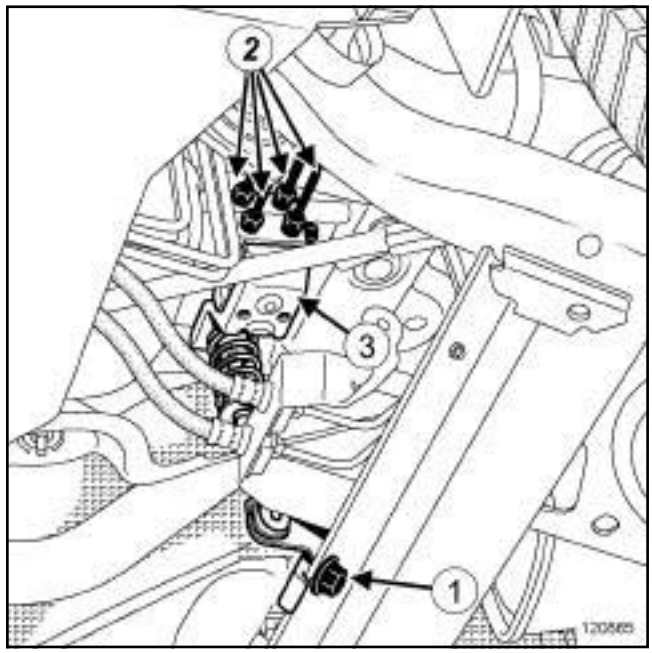
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Fit the tool **pedal press** in order to limit the outflow of the brake fluid.

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

II - OPERATION FOR REMOVAL OF PART CONCERNED



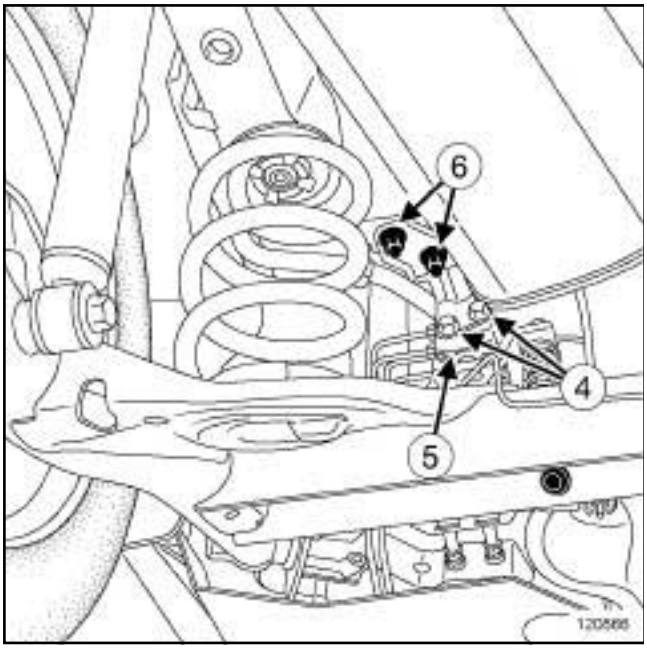
120865

❏ Remove the bolt (**1**) of the brake limiter rod on the rear axle.

❏ Mark the position of the brake pipes (**2**) at the brake limiter (**3**) .

❏ Disconnect the brake pipes (**2**) from the brake limiter (**3**) .

WITHOUT ANTI-LOCK BRAKING SYSTEM



120866

❏ Remove:

- the bolts (**4**) of the brake limiter (**5**) ,
- the brake limiter (**5**) .

❏ Undo, but do not remove, the bolts (**6**) of the brake limiter retaining bracket.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the brake limiter,
- the brake limiter bolts.

❏ Tighten to torque:

- the **bolts of the brake limiter retaining bracket (10 N.m)**,
- the **brake limiter bolts (18 N.m)**.

❏ Connect the brake pipes on the brake limiter as marked at the time of the removal.

❏ Torque tighten the **hydraulic unions (17 N.m)**.

❏ Refit the bolt of the brake limiter rod on the rear axle.

❏ Torque tighten the **bolt of the brake limiter rod on the rear axle (10 N.m)**.

II - FINAL OPERATION.

❏ Remove the **pedal press**.

❏ Bleed the brake circuit using the tool **(Fre. 1085-01)** (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

Brake compensator: Check

WITHOUT ANTI-LOCK BRAKING SYSTEM

Special tooling required	
Fre. 1085-01	Pressure gauge for checking the brake circuit pressure: from 0 to 250 bar.

Equipment required
brake circuit bleeding device

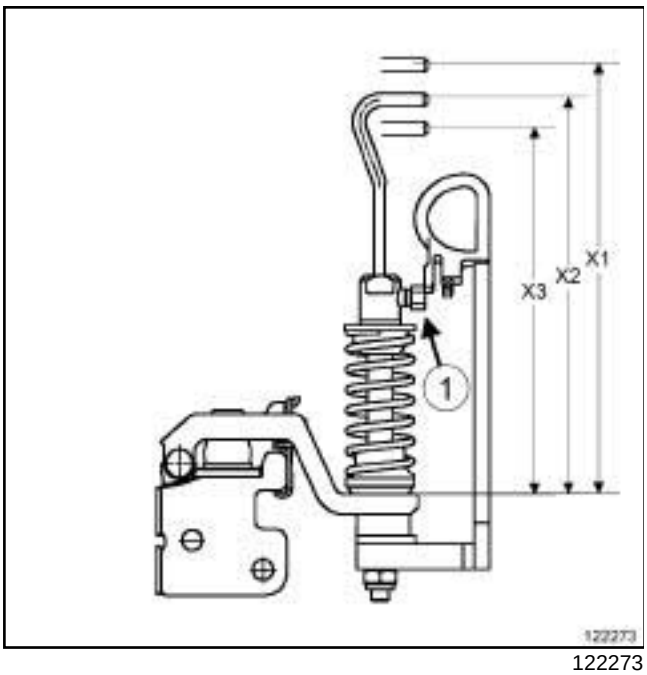
Tightening torques ▽	
adjusting screw	**12 Nm**

CHECK

❏ Position the vehicle on a four-post lift equipped with an intermediate lifting system (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting).

I - CHECKING THE DIMENSION OF THE BRAKING COMPENSATOR ROD IN THE REBOUND POSITION (WHEELS SUSPENDED)

❏ Raise the vehicle using the intermediate lift.



122273

❏ Check the compensator rod dimension (**X1**) .

The dimension should be **155 mm**.

❏ The compensator is set in the factory, therefore the rod dimension should be correct.

If this is not the case, the compensator is either:

- not adjusted: adjust it,
- damaged: replace the component (see **37A**, **Mechanical component controls**, **Brake compensator: Removal - Refitting**, page **37A-81**) .

II - ADJUSTING THE ROD DIMENSION IN THE REBOUND POSITION (WHEELS SUSPENDED)

❏ Loosen the adjusting screw (**1**) .

❏ Adjust to the dimension of **155 mm**.

❏ Torque tighten the **adjusting screw (12 Nm)**.

III - CHECKING THE OUTPUT PRESSURE

❏ Lower the intermediate lift so that the dimension of the (**X2**) compensator rod is equal to **142 mm**.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

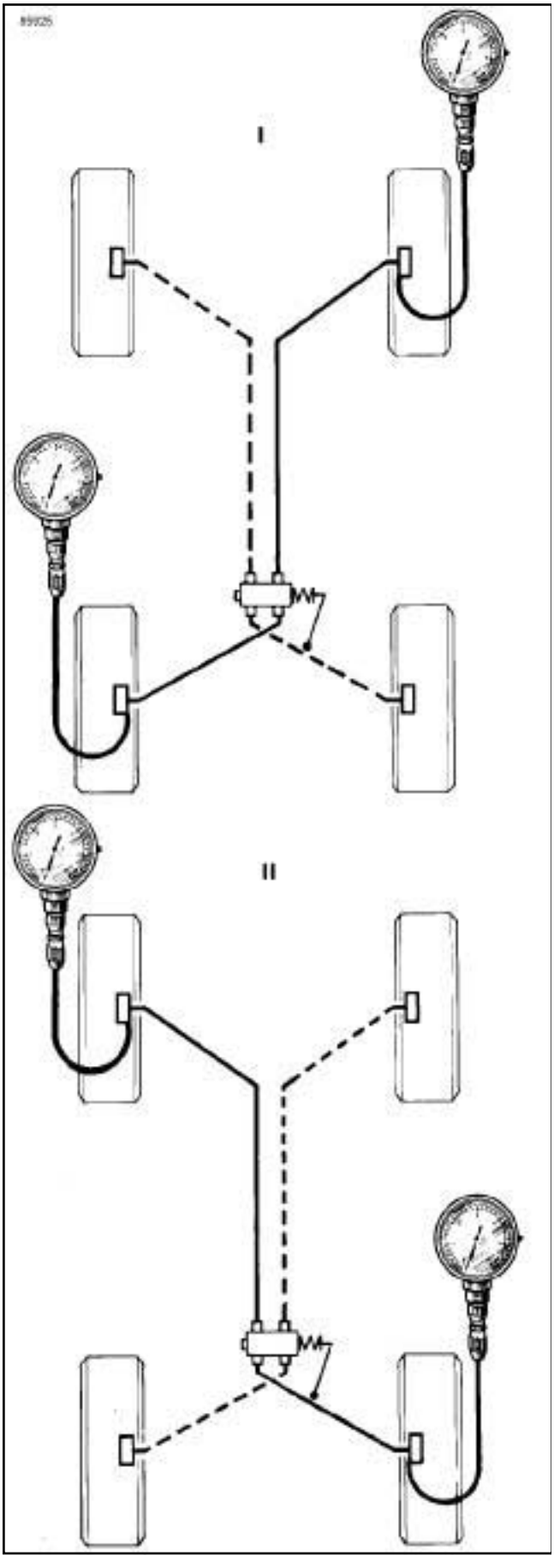
Brake compensator: Check

WITHOUT ANTI-LOCK BRAKING SYSTEM

1 - Checking the output pressure for an input pressure (PE) = 60 bar

Brake compensator: Check

WITHOUT ANTI-LOCK BRAKING SYSTEM



85925

❑ Fit the pressure gauges of the **(Fre. 1085-01)** in accordance with the diagram **I**.

❑ Bleed the pressure gauges using the **brake circuit bleeding device** by opening the pressure gauge bleed screws.

❑ Depress the brake pedal until the value **PE = 60 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS1**.

❑ Position the pressure gauges in accordance with diagram **II**.

❑ Bleed the pressure gauges using the **brake circuit bleeding device** by opening the pressure gauge bleed screws.

❑ Depress the brake pedal until the value **PE = 60 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS2**

❑ Check the differences in pressure at the rear brake output, **PS1 - PS2 ≤ 4 bar**.

❑ Check the value of **Pm** :

Pm = (PS1 + PS2) / 2

Pm = 28 ± 4 bar

2 - Checking the output pressure for an input pressure (PE) = 100 bar

❑ Depress the brake pedal until the value **PE = 100 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS2**.

❑ Position the pressure gauges in accordance with diagram **I**.

❑ Bleed the pressure gauges using the **brake circuit bleeding device** by opening the pressure gauge bleed screws.

❑ Depress the brake pedal until the value **PE = 100 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS1'**.

❑ Check the differences in pressure at the rear brake output, **PS1' - PS2' ≤ 4 bar**.

❑ Check the value of **Pm'** :

Pm = (PS1' + PS2') / 2

Pm = 28 ± 4 bar

WITHOUT ANTI-LOCK BRAKING SYSTEM

3 - Checking the output pressure values

❑ **PS1** for **PE = 60 bar**

PS1' for **PE = 100 bar**

PS1 - PS1' = 6 ± 1 bar

❑ **PS2** for **PE = 60 bar**

PS2' for **PE = 100 bar**

PS2 - PS2' = 6 ± 1 bar

4 - Checking the output pressures by compressing the spring by 5 mm

❑ Compress the brake limiter spring by **5 mm** (**X3**) .

❑ Depress the brake pedal until the value **PE = 100 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS1''**.

❑ Position the pressure gauges in accordance with diagram **II**.

❑ Bleed the pressure gauges using the **brake circuit bleeding device** by opening the pressure gauge bleed screws.

❑ Depress the brake pedal until the value **PE = 100 bar** is obtained on the front pressure gauge.

❑ Read the value on the rear pressure gauge **PS2''**.

❑ Check the differences in pressure at the rear brake output, **PS1'' - PS2'' ≤ 4 bar**.

❑ Check the value of **Pm** :

Pm = (PS1'' + PS2'') / 2

Pm = 28 ± 4 bar

5 - Checking value D'

❑ **D' = 20.6 ± 2 bar**

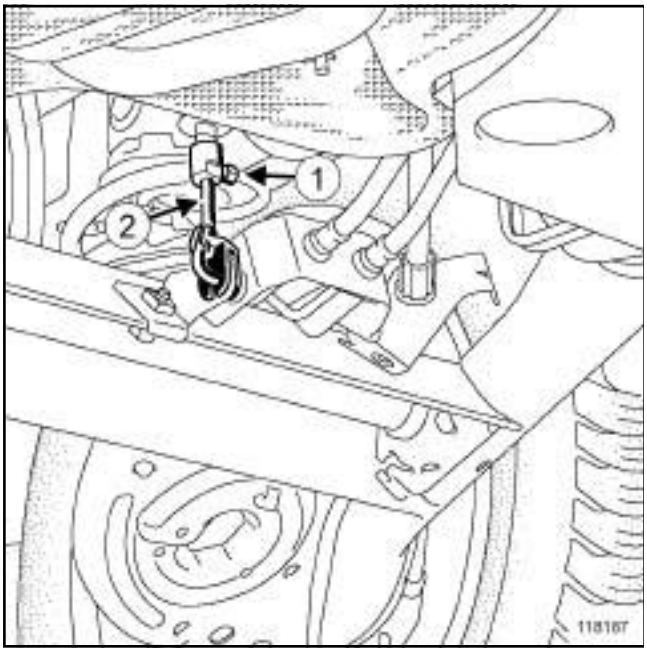
D'1 = PS1'' - PS1

D'2 = PS2'' - PS2

WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
adjusting screw	**12 Nm**

ADJUSTMENT

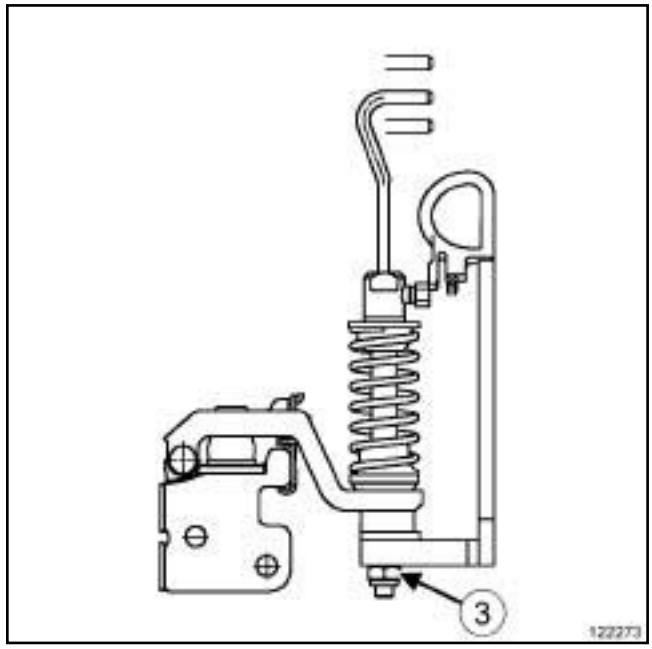


118187

❏ Loosen the bolt (**1**)

❏ Adjust the rod dimension to the rebound position value (wheels suspended) of **155 mm**.

❏ Torque tighten the **adjusting screw (12 Nm)**.



122273

❏

Note:

When adjusting the brake limiter, do not move the rod nut (**3**) .

Tightening torques ▽	
parking brake lever mounting nuts	**21 Nm**

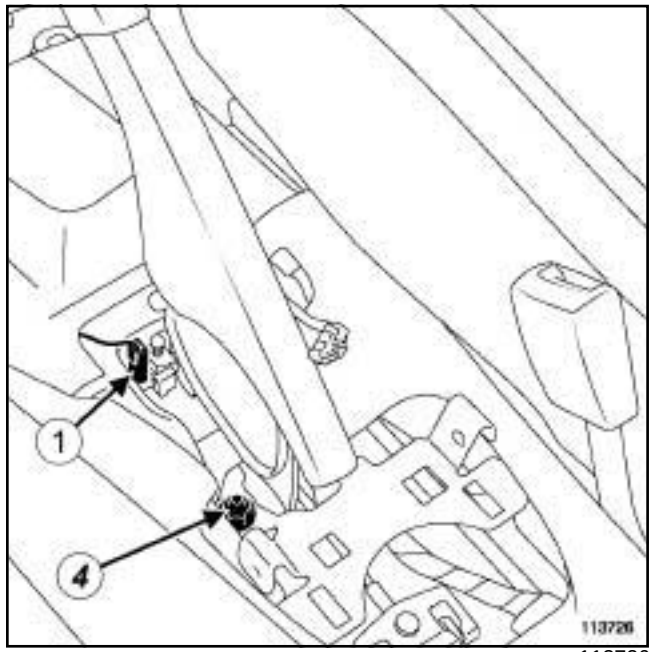
REMOVAL

I - REMOVAL PREPARATION OPERATION

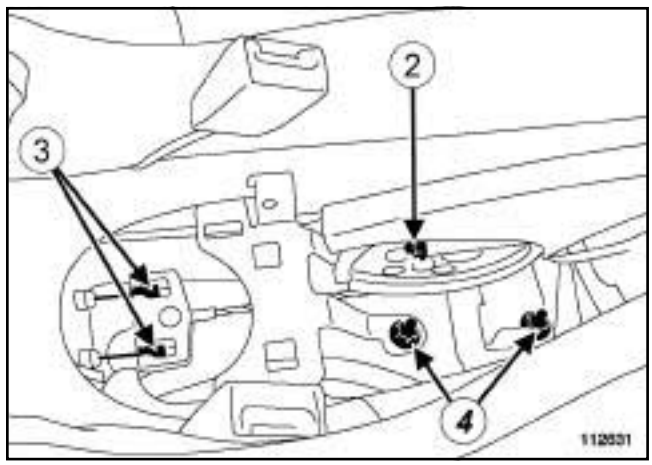
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113726



112631

❑ Disconnect the parking brake lever switch (**1**) .

❑ Loosen the adjusting nut (**2**) for the parking brake cables enough to be able to remove the parking brake cables.

❑ Remove the parking brake cables (**3**) .

❑ Remove:

- the parking brake lever mounting nuts (**4**) ,
- the parking brake lever.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the parking brake lever,
- the nuts securing the parking brake lever.

❏ Torque tighten the **parking brake lever mounting nuts (21 Nm)**.

❏ Refit the parking brake cables into their housing.

❏ Connect the switch on the parking brake lever.

❏ Adjust the parking brake cables (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**) .

II - FINAL OPERATION.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

A poorly adjusted parking brake:

- prevents correct operation of the automatic compensation system for the brake shoes,
- causes premature wear of brake shoes.

ADJUSTMENT

I - ADJUSTMENT PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .

❏ Apply the parking brake five times to condition the cables for normal use.

❏ Put the parking brake lever into the released position.

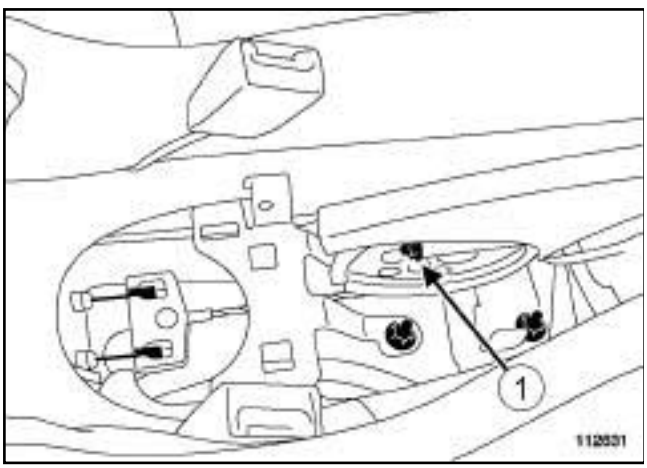
❏ Check that the rear wheels turn freely. If they do not, check the following components and if necessary repair:

- the parking brake cables,
- the calliper piston,
- the automatic compensation system,
- calliper

❏ Remove the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Remove the centre console (see **Centre console: Removal - Refitting**) .

II - OPERATION FOR ADJUSTMENT OF PART CONCERNED



112631

❏ Loosen the nut (**1**) to release the cables.

❏ Position the parking brake lever at the 2nd notch.

❏ Move the adjustment nut until the disc or drum can no longer be turned by hand.

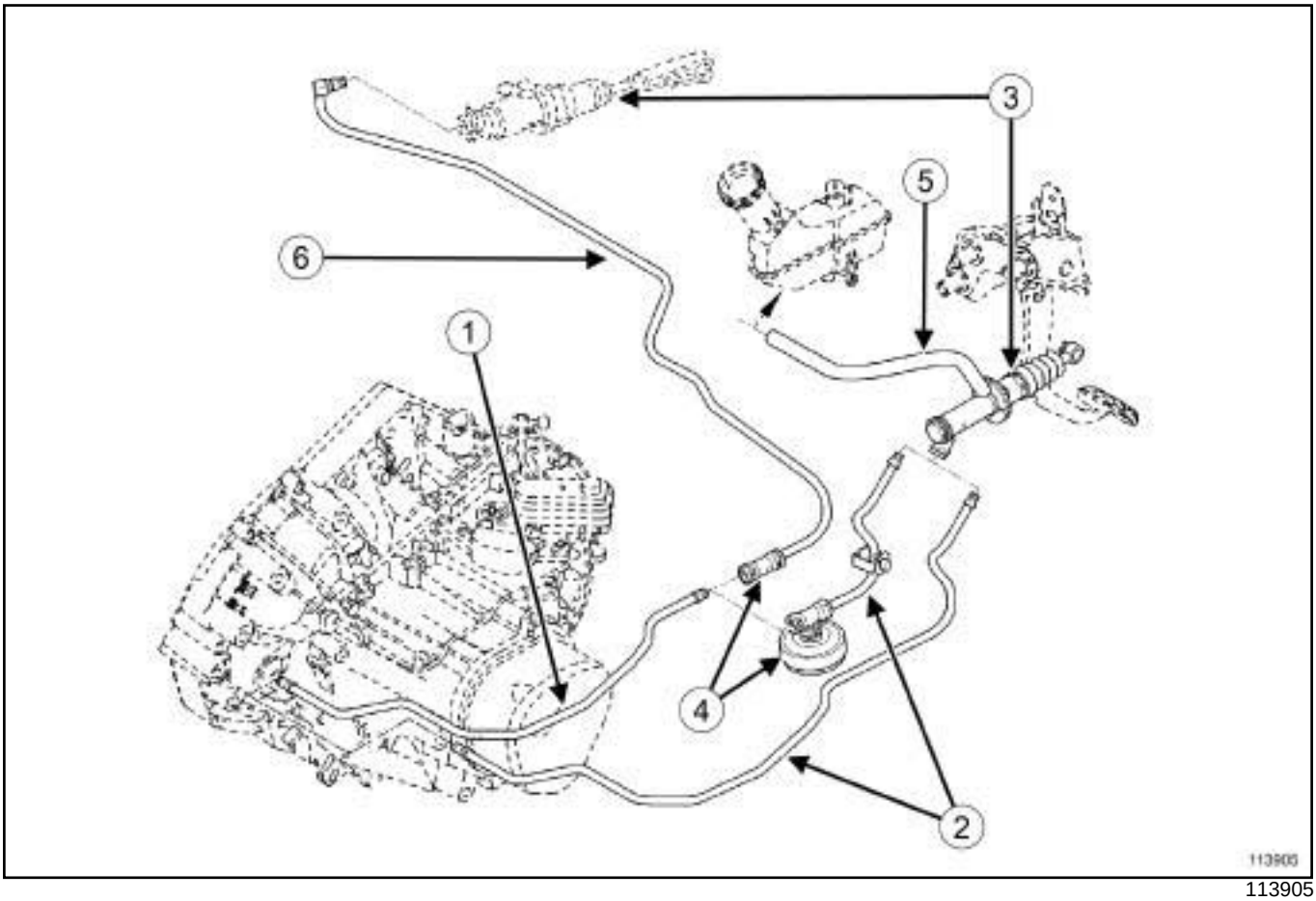
❏ Pull the brake lever several times.

❏ Put the parking brake lever into the released position.

❏ The disc or the drum must be able to turn freely. If not, move the nut gradually until the disc or drum can turn freely.

❏ Refit the rear wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

No.	Description
(**1**)	Slave cylinder supply pipe (engine compartment)
(**2**)	Left-hand drive slave cylinder supply pipe (engine compartment)
(**3**)	Master cylinder (engine compartment / passenger compartment connection)
(**4**)	Brake pipe connector
(**5**)	Master cylinder supply pipe (engine compartment)
(**6**)	Right-hand drive slave cylinder supply pipes (engine compartment)



113905

5-SPEED MANUAL GEARBOX or 6-SPEED MANUAL GEARBOX, and VERSION WITHOUT ADAPTATION SUPPLEMENT

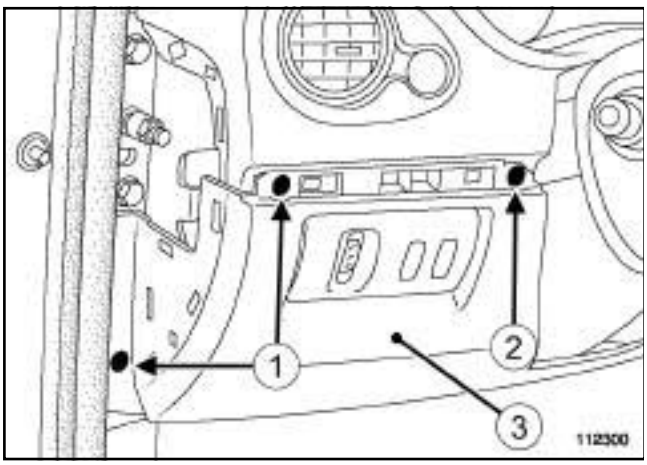
Tightening torques ▽	
clutch pedal plate mounting nuts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the lower cover strip,
- the side section of the lower cover.



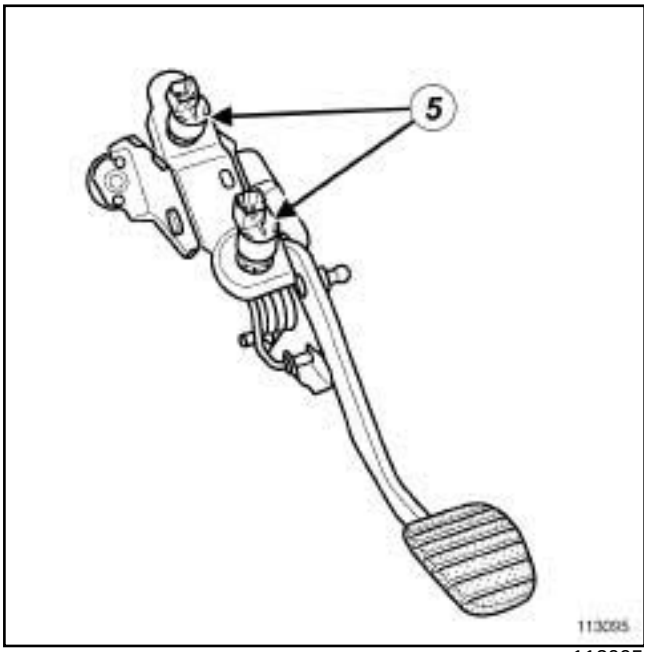
112300

❏ Remove:

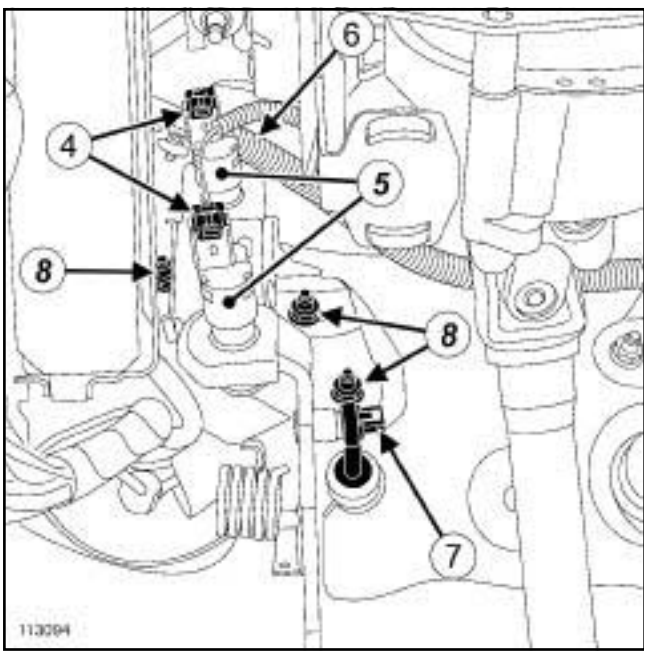
- the bolts (**1**) ,
- the clip (**2**) .
- the lower cover (**3**) , disconnecting the various connectors.

5-SPEED MANUAL GEARBOX or 6-SPEED MANUAL GEARBOX, and VERSION WITHOUT ADAPTATION SUPPLEMENT

II - OPERATION FOR REMOVAL OF PART CONCERNED



113095



113094

❏ Disconnect the connector(s) (**4**) from the clutch switch(es).

Note:

If the vehicle is keyless, the clutch pedal is fitted with two switches.

❏ Remove the clutch switch(es) (**5**) by turning a quarter of a turn anti-clockwise.

❏ Unclip the wiring harness (**6**) from the clutch pedal.

❏ Remove the master cylinder ball joint (**7**) from the clutch pedal.

❏ Remove:

- the clutch pedal mounting nuts (**8**) ,
- the clutch pedal.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the clutch pedal,
- the clutch pedal mounting nuts,

❏ Torque tighten the **clutch pedal plate mounting nuts (21 Nm)**.

❏ Refit the clutch cylinder ball joint on the pedal.

❏ Clip the harness on the clutch pedal.

❏ Refit the clutch switch(es) (see **Clutch pedal position sensor: Removal - Refitting**) .

II - FINAL OPERATION.

❏ Refit:

- the lower cover, connecting the various connectors.
- the clip,
- the bolts,
- the side section of the lower cover.
- the lower cover strip,

5-SPEED MANUAL GEARBOX or 6-SPEED MANUAL GEARBOX, and SCHOOL VEHICLE

Tightening torques ▽	
clutch pedal stud, on the driver's side	**16 Nm**
shaft for the brake and clutch pedals, on the driver's side	**35 Nm**

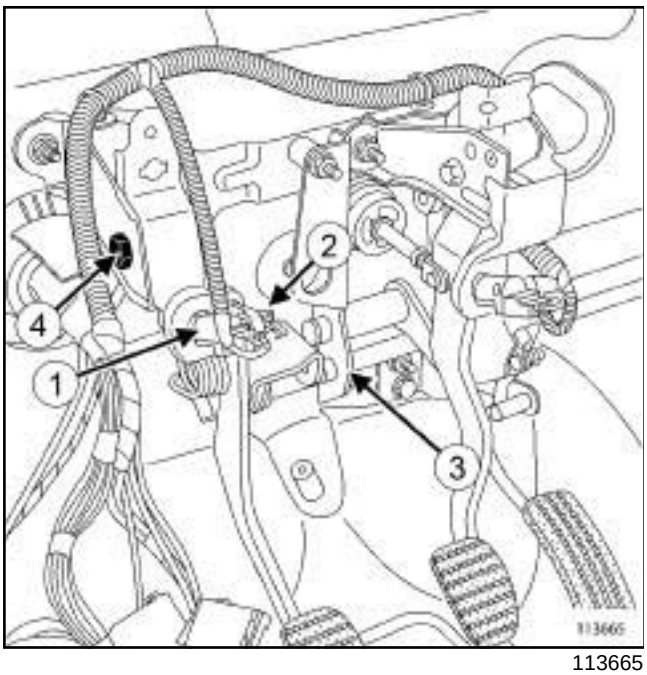
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - student side

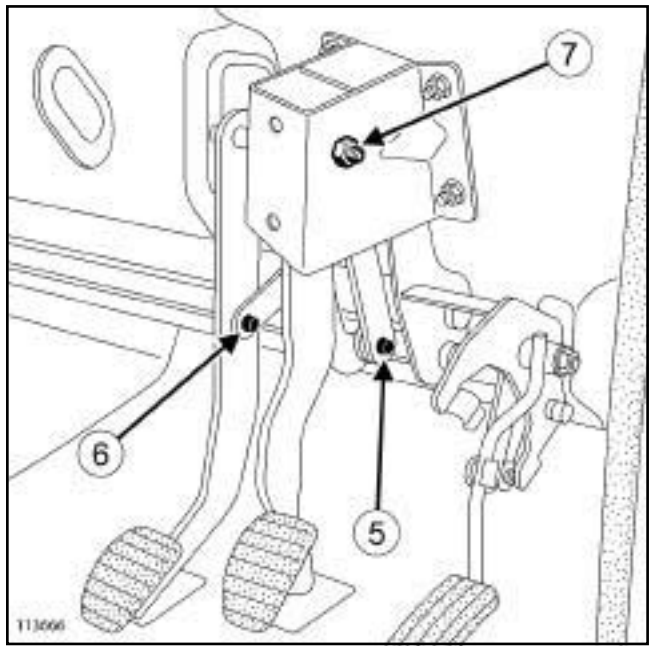


113665

❏ Remove:

- the clutch switch (**1**) (see **Clutch pedal position sensor: Removal - Refitting**) ,
- the clutch master cylinder ball joint (**2**) from the clutch pedal,
- the circlip (**3**) from the clutch pedal to the link bar connection control lever,
- the clutch pedal bolt (**4**) ,
- the clutch pedal.

2 - Instructor side



113666

❏ Remove:

- the circlip (**5**) from the brake pedal connection control lever to the link bar,
- the circlip (**6**) from the clutch pedal to the link bar connection control lever,
- the brake and clutch pedal shaft (**7**) ,
- the brake and clutch pedals.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❏ Always replace the connecting circlips whenever they have been removed.

II - REFITTING OPERATION FOR PART CONCERNED

1 - student side

❏ Remove:

- the clutch pedal,
- the clutch pedal stud ***(4)*** ,
- the circlip ***(3)*** from the clutch pedal to the link bar connection control lever,
- the clutch master cylinder ball joint ***(2)*** from the clutch pedal,
- the clutch switch ***(1)*** (see **Clutch pedal position sensor: Removal - Refitting**) .

5-SPEED MANUAL GEARBOX or 6-SPEED MANUAL GEARBOX, and SCHOOL VEHICLE

❑ Torque tighten the **clutch pedal stud, on the driver's side (16 Nm)**.

2 - instructor side

❑ Refit:

- the brake and clutch pedals,
- the shaft ***(7)*** for the brake and clutch pedals,
- the circlip ***(6)*** from the clutch pedal to the link bar connection control lever,
- the circlip ***(5)*** from the brake pedal connection control lever to the link bar.

❑ Torque tighten the **shaft for the brake and clutch pedals, on the driver's side (35 Nm)**.

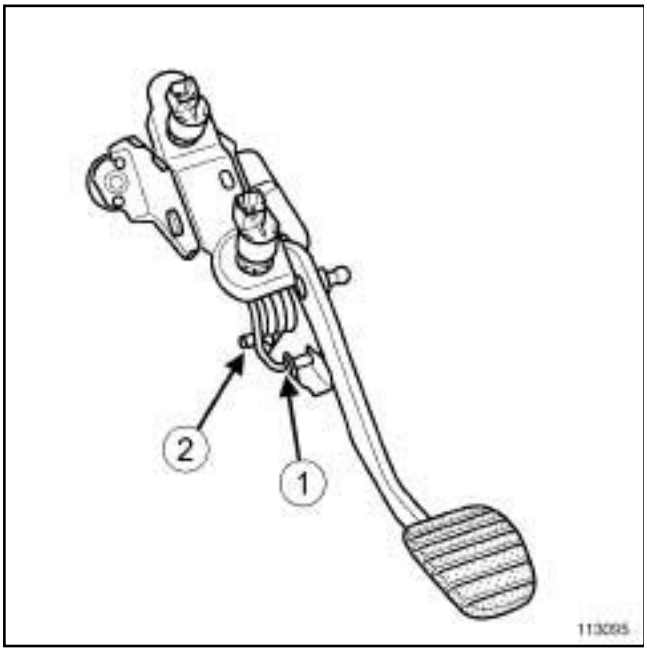
III - FINAL OPERATION.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Equipment required
pedal press

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113095

❏ Remove the clutch pedal spring at (**1**) using a flat-blade screwdriver.

❏ Fit the **pedal press** on the clutch pedal.

❏ Remove the spring from its mounting at (**2**) using a flat-blade screwdriver.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Refit the spring onto its mounting.

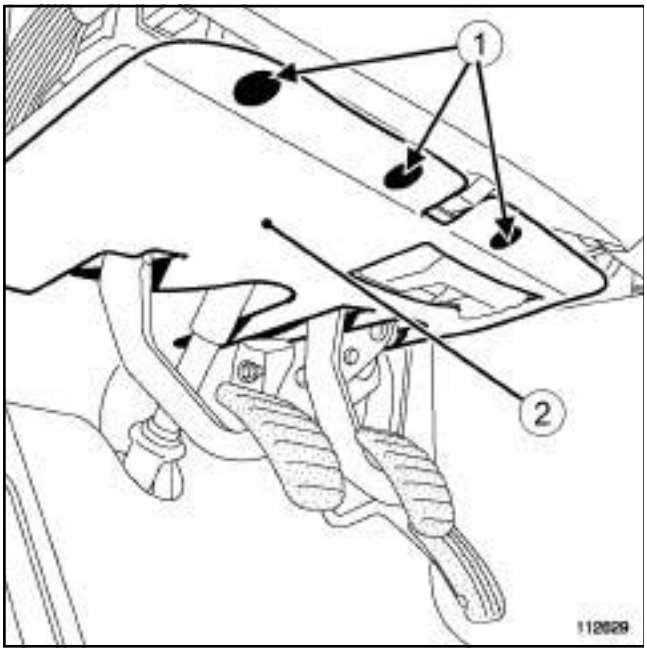
❏ Remove the **pedal press**.

❏ Refit the spring onto the clutch pedal.

JH3 or JR5 or TL4, and CRUISE CONTROL – JH3 or JR5 or TL4, and VEHICLE WITH CARD

REMOVAL

I - REMOVAL PREPARATION OPERATION



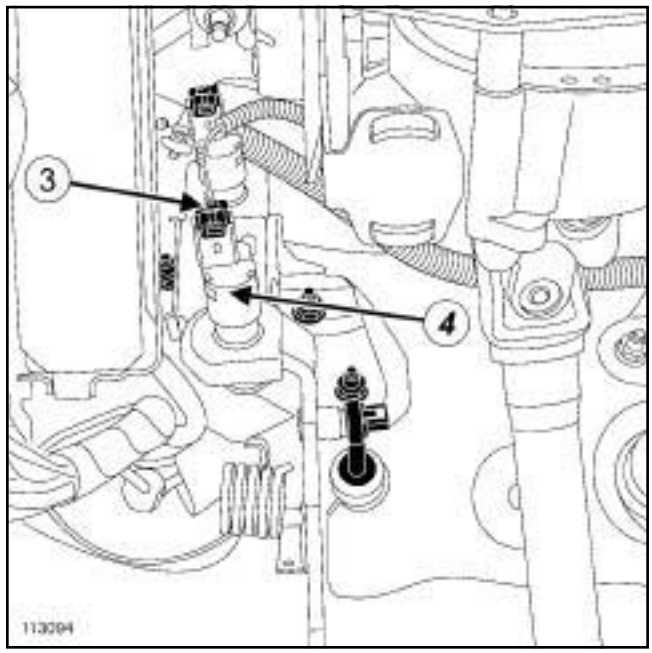
112629

❑ Remove:

- the driver side dashboard lower trim clips (**1**) ,
- the driver side dashboard lower trim (**2**) .

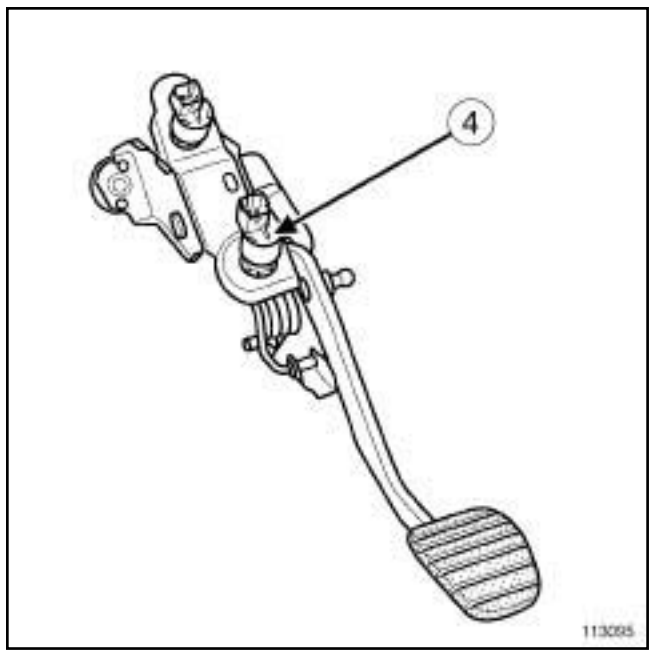
II - OPERATION FOR REMOVAL OF PART CONCERNED

CRUISE CONTROL



113094

❑ Disconnect the clutch switch connector (**3**) .



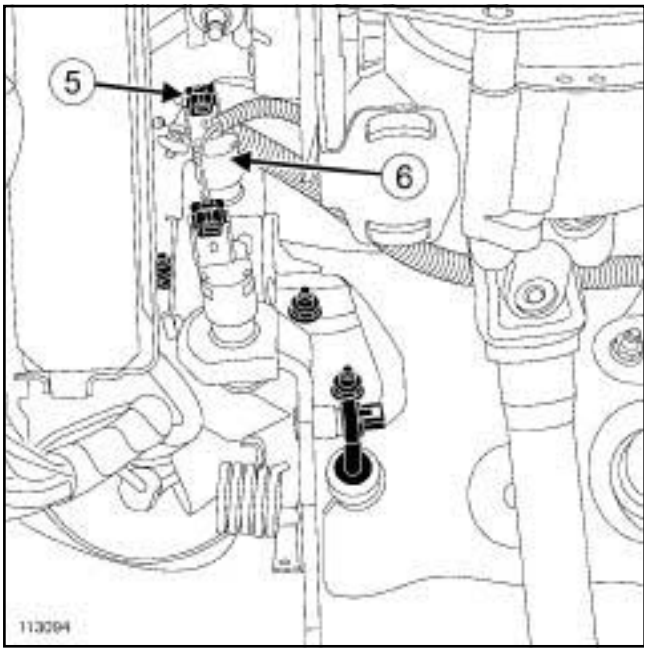
113095

❑ Turn the clutch switch (**4**) one quarter of a turn anti-clockwise.

❑ Remove the clutch switch (**4**) .

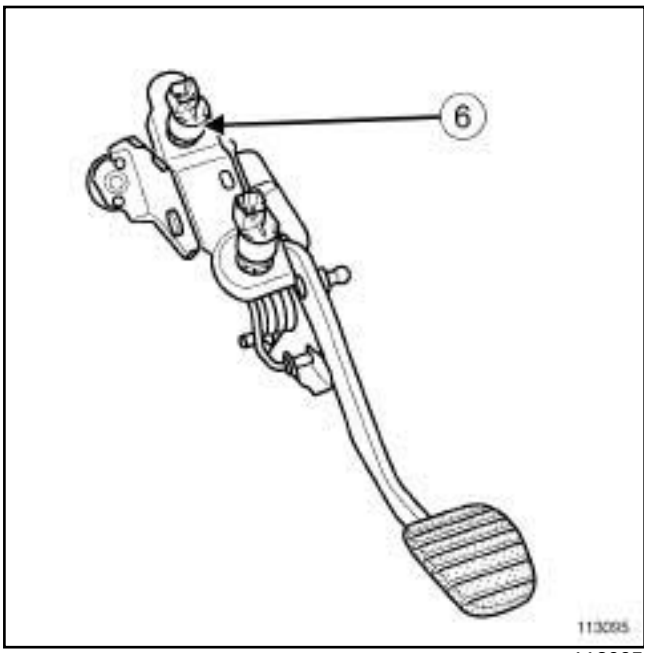
JH3 or JR5 or TL4, and CRUISE CONTROL – JH3 or JR5 or TL4, and VEHICLE WITH CARD

VEHICLE WITH CARD



113094

❏ Disconnect the clutch switch connector (**5**) .



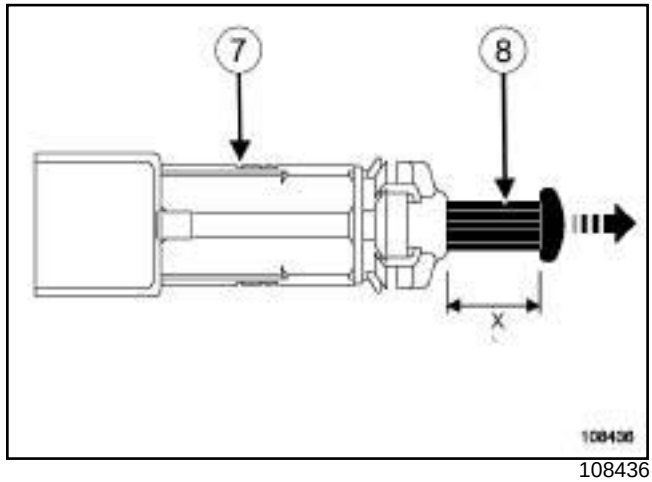
113095

❏ Turn the clutch switch (**6**) one quarter of a turn anti-clockwise.

❏ Remove the clutch switch (**6**) .

REFITTING

I - REFITTING PREPARATION OPERATION



108436

❏

WARNING

To avoid damaging the clutch switch (**7**) :

- handle the switch with care,
- only activate the piston during the adjustment phase,
- do not perform more than 3 adjustments to dimension (X),
- do not separate the piston from the switch.

Replace the switch:

- if the piston is separated from the switch
- if more than 3 consecutive adjustments to dimension (X) have been performed.

❏ Measure dimension (**X**) of the piston (**8**) . If dimension (**X**) is less than **21 mm**, carefully pull on the end of the piston to adjust the dimension (**X**) between **21 mm minimum** and **23 mm maximum**.

II - REFITTING OPERATION FOR PART CONCERNED

CRUISE CONTROL

❏ Depress the clutch pedal by hand.

❏ Position the clutch pedal on the pedal assembly.

❏ Lock the clutch switch by turning it a quarter of a turn clockwise.

JH3 or JR5 or TL4, and CRUISE CONTROL – JH3 or JR5 or TL4, and VEHICLE WITH CARD

❏ At the same time, carefully return the clutch pedal.

Note:

The clutch pedal switch has an automatic adjustment feature, adapting to the pedal position.

The automatic adjustment makes a clicking noise when in operation.

❏ Connect clutch switch connector.

VEHICLE WITH CARD

❏ Position the clutch pedal on the pedal assembly.

❏ Lock the clutch switch by turning it a quarter of a turn clockwise.

❏ Carefully depress the clutch pedal.

Note:

The clutch pedal switch has an automatic adjustment feature, adapting to the pedal position.

The automatic adjustment makes a clicking noise when in operation.

❏ Connect clutch switch connector.

III - FINAL OPERATION.

❏ Refit the driver side dashboard lower trim.

JH3 or JR5 or TL4

Equipment required
brake circuit bleeding device
hydraulic circuit bleed syringe

Bleed in the event of:

- dead travel,
- pedal at mid-travel,
- pedal to the floor,
- poor gear changing.

I - PRECAUTIONS DURING REPAIR

Risks relating to contamination.

❑ The hydraulic clutch system is very sensitive to contamination. The risks caused by contamination are:

- impossible to change gears,
- damage to or destruction of the clutch system,
- leaks on the hydraulic circuit.

All the operations on the hydraulic clutch circuit system must be carried out under excellent cleanliness conditions. This ensures that no impurities enter the hydraulic circuit during the operation.

The cleanliness principles apply to all components of the hydraulic clutch circuit.

Items causing contamination are:

- metal or plastic swarf,
- fibres:
  - cardboard,
  - brushes,
  - paper,
  - clothing,
  - cloth,
  - dust and particles in the air,
  - etc.

Cleaning cloths.

❑ Use lint-free cleaning cloths (see **Products recommended for the repair**) (04B, Consumables - Products).

Each cloth must only be used once.

There are two types of equipment used to bleed the clutch circuit:

❑ ARC50 via the brake fluid reservoir.

❑ Syringe via the bleed hole located on the clutch slave cylinder.

There are two procedures used to bleed the clutch circuit:

❑ If no parts of the hydraulic clutch circuit are removed:

- Carry out the bleed operation using the ARC50 via the brake fluid reservoir or using a new syringe via the bleed hole located on the clutch slave cylinder.

❑ If no parts of the hydraulic clutch circuit are removed:

- Only carry out the bleed operation using a new syringe by injecting the brake fluid via the bleed hole on the clutch slave cylinder.

Note:

- Even the tiniest air bubble in the circuit can cause faulty operation (pedal failing to return properly, crunching sound when changing gear, etc.).
- Incorrect bleeding can lead to incorrect detection of faults and unnecessary part replacements.

Consumables required for the repair:

❑ Bleed the clutch circuit using approved (see **Vehicle: Parts and consumables for the repair**) brake fluid (04B, consumables - products).

II - PREPARATION OPERATION

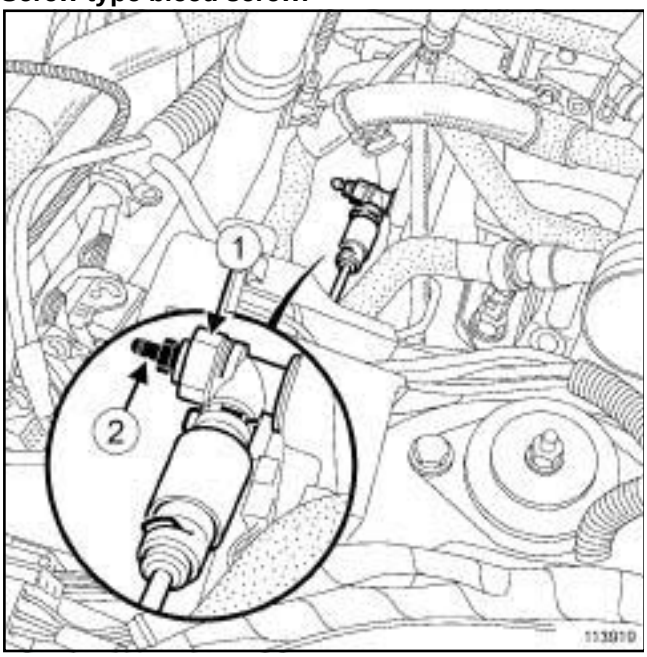
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove the engine undertray.

JH3 or JR5 or TL4

There are several versions of bleed screw:

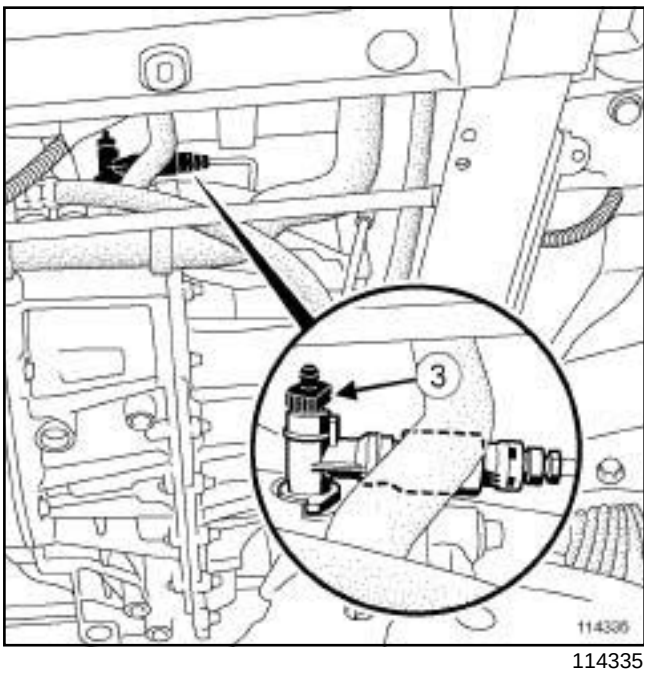
Screw type bleed screw.



113919

❏ To open the bleed screw, hold the plastic union (**1**) using a ring spanner and undo the bleed screw (**2**) .

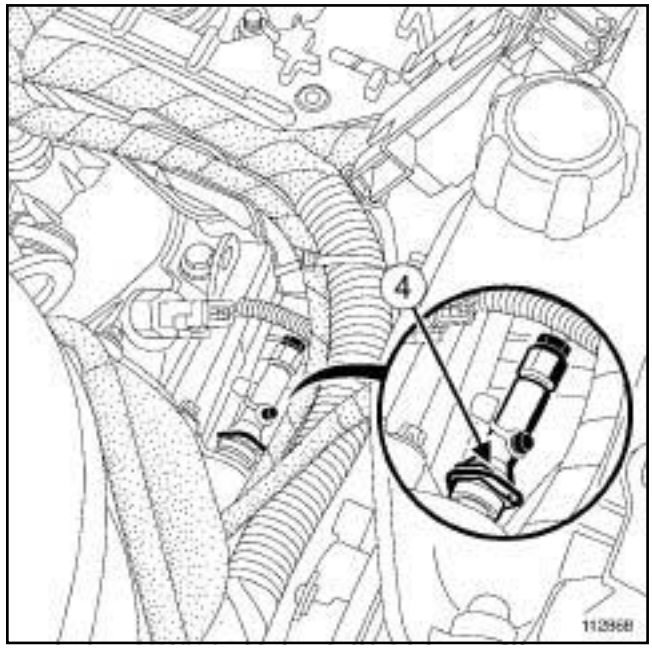
Half-turn bleed screw.



114335

❏ To open the bleed screw, fully turn the bleed screw (**3**) by hand.

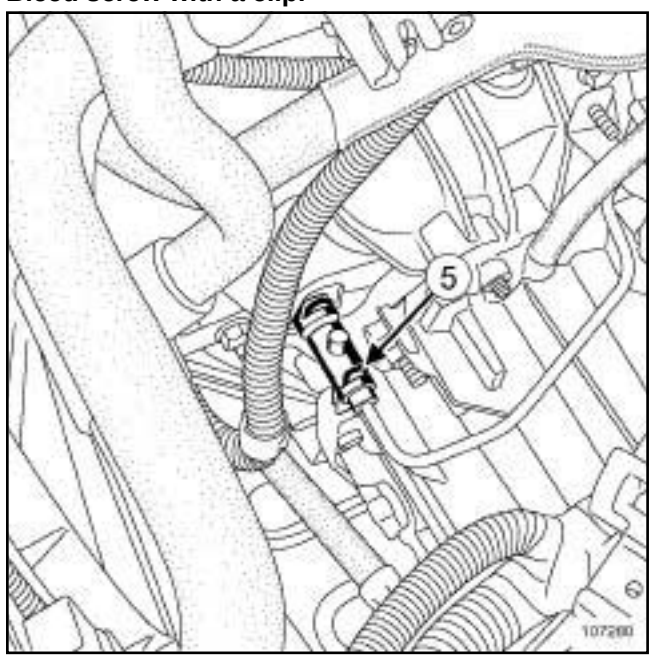
Bleed screw with a clip.



112868

❏ To open the bleed screw, press and hold the clip (**4**) while pulling by one notch.

Bleed screw with a clip.

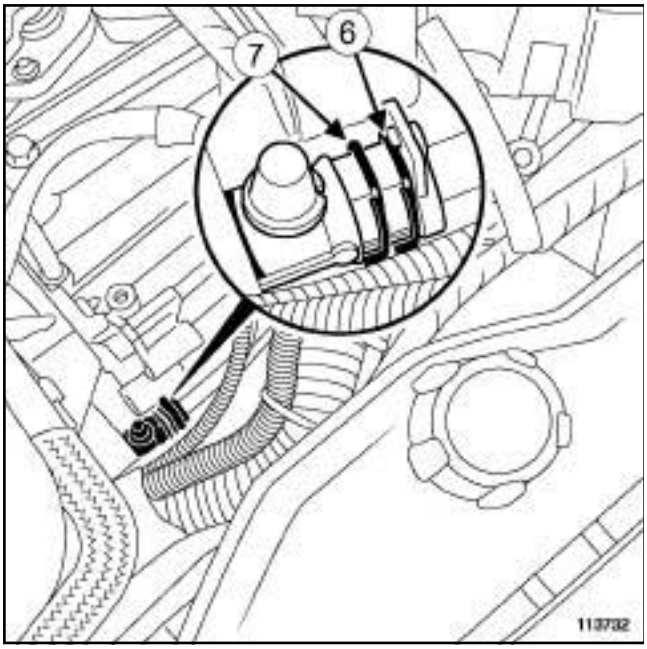


107280

❏ To open the bleed screw, lift the clip (**5**) while pulling by one notch.

JH3 or JR5 or TL4

Bleed screw with two clips.



113732

❏ To open the bleed screw, lower the clip (**6**) and lift the clip (**7**) while pulling by one notch.

III - BLEED PROCEDURE IF NO PARTS OF THE HYDRAULIC CIRCUIT ARE REMOVED

1 - Bleed using the ARC50.

❏ Keep the clutch pedal in the upper position using a strap attached to the steering wheel to ensure continuity of the hydraulic circuit during the bleed operation.

Note:

Take care not to disrupt the adjustment of the clutch start of travel switch.

❏ Connect the **brake circuit bleeding device** (after having received Renault approval) to the master cylinder reservoir (see the instructions for the equipment).

❏ Remove the bleed plug from the clutch slave cylinder.

❏ Connect a transparent pipe to the bleed hole running to an empty container placed under the bleed hole.

❏ Open the bleed screw.

❏ Open the circuit between the bleeding device and the brake fluid reservoir.

❏ Let the brake fluid run until all air bubbles have been released.

❏ Stop the bleeding device to dump the pressure in the clutch circuit.

❏ Close the bleed screw.

❏ Remove the transparent pipe from the bleed hole.

❏ Refit the bleed plug.

❏ Top up the brake fluid level in the master cylinder reservoir after disconnecting the bleed device.

❏ Disengage and engage the clutch quickly around twenty times.

❏ Check that the clutch system is operating correctly.

❏ Repeat the bleed operation if necessary.

❏ Check the adjustment of the switch. (see **37A**, **Mechanical component controls**, **Clutch pedal switch: Removal - Refitting**, page **37A-97**) (37A, mechanical control elements).

JH3 or JR5 or TL4

2 - Bleed using a new syringe.

❑ Keep the clutch pedal in the upper position using a strap attached to the steering wheel to ensure continuity of the hydraulic circuit during the bleed operation.

Note:

Take care not to disrupt the adjustment of the clutch start of travel switch.

❑ Remove the bleed plug from the clutch slave cylinder.

❑ Connect a transparent pipe of sufficient length to the bleed hole (at least thirty centimetres) in order to place it at the same height as the reservoir.

❑ Open the bleed screw.

❑ Fill the brake fluid master cylinder reservoir until brake fluid flows out of the bleed screw.

Note:

The transparent pipe must remain at the same height as the master cylinder reservoir to prevent air from entering inside the clutch circuit.

❑ Connect a new **hydraulic circuit bleed syringe** filled with a useful volume of **60 ml** of approved brake fluid to the end of the transparent pipe.

❑ Slowly inject the entire contents of the syringe into the hydraulic clutch circuit without injecting any of the air from the top section of the syringe.

❑ Close the bleed screw.

❑ Remove the transparent pipe from the bleed hole.

❑ Refit the bleed plug.

❑ Top up the brake fluid level in the master cylinder reservoir.

❑ Disengage and engage the clutch quickly around twenty times.

❑ Check that the clutch system is operating correctly.

❑ Repeat the bleed operation if necessary.

❑ Check the adjustment of the switch. (see **37A**, **Mechanical component controls**, **Clutch pedal switch: Removal - Refitting**, page **37A-97**) (37A, mechanical control elements).

IV - BLEED PROCEDURE IF PARTS OF THE HYDRAULIC CIRCUIT ARE REMOVED.

❑

WARNING

The master cylinder pipe must be disconnected from its take-off point on the brake fluid reservoir, to avoid any foreign matter penetrating inside the hydraulic brake circuit.

WARNING

Prepare for the flow of fluid and protect the surrounding components.

Note:

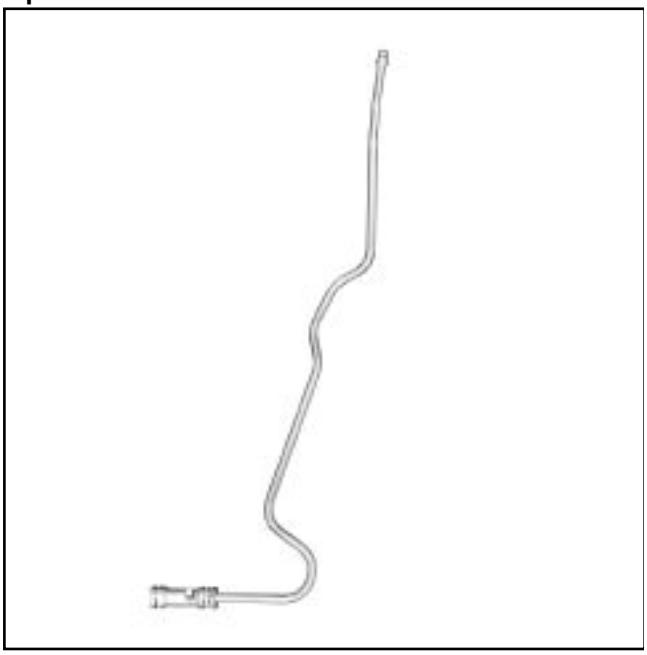
Prefill the hydraulic circuit pipe equipped with a filter.

Position the filter head facing downwards to ensure that it fills.

JH3 or JR5 or TL4

There are several versions of pipe with and without a filter:

Pipe without filter.



141812

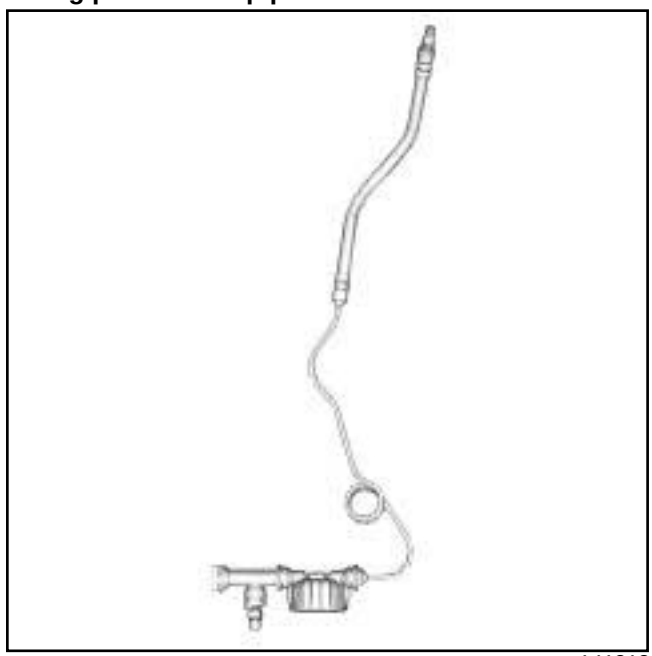
Filling position for pipe with filter.

141811

Filling position for pipe with filter.

141810

Filling position for pipe with filter.



141813

❏ Prefill the clutch pipe using the syringe.

❏ Plug the prefilled pipe on the master cylinder end to stop any brake fluid from escaping.

JH3 or JR5 or TL4

141809

❑ Prefill the hydraulic tappet using the new syringe (by gravity).

❑ Refit the part(s) concerned.

V - BLEED PROCEDURE AFTER A REMOVING A COMPONENT OF THE HYDRAULIC CIRCUIT.

❑ Keep the clutch pedal in the upper position using a strap attached to the steering wheel to ensure continuity of the hydraulic circuit during the bleed operation.

Note:

Take care not to disrupt the adjustment of the clutch start of travel switch.

❑ Remove the bleed plug from the clutch slave cylinder.

❑ Connect a transparent pipe of sufficient length to the bleed hole (at least thirty centimetres) in order to place it at the same height as the reservoir.

❑ Open the bleed screw.

❑ Fill the brake fluid master cylinder reservoir until brake fluid flows out of the bleed screw.

Note:

The transparent pipe must remain at the same height as the master cylinder reservoir to prevent air from entering inside the clutch circuit.

❑ Connect a new syringe containing **60 ml** of approved brake fluid to the end of the transparent pipe.

❑ Slowly inject the entire contents of the syringe into the hydraulic clutch circuit without injecting any of the air from the top section of the syringe.

❑ Close the bleed screw.

❑ Remove the transparent pipe from the bleed hole.

❑ Refit the bleed plug.

❑ Top up the brake fluid level in the master cylinder reservoir.

❑ Disengage and engage the clutch quickly around twenty times.

❑ Check that the clutch system is operating correctly.

❑ Repeat the bleed operation if necessary.

❑ Check the adjustment of the switch. (see **37A**, **Mechanical component controls**, **Clutch pedal switch: Removal - Refitting**, page **37A-97**) (37A, mechanical control elements).

JH3 or JR5 or TL4

VI - FINAL OPERATION

❑ Refit the engine undertray.

❑ Remove the vehicle from the two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

LEFT-HAND DRIVE

REMOVAL

I - REMOVAL PREPARATION OPERATION

K4J or K4M or K9K

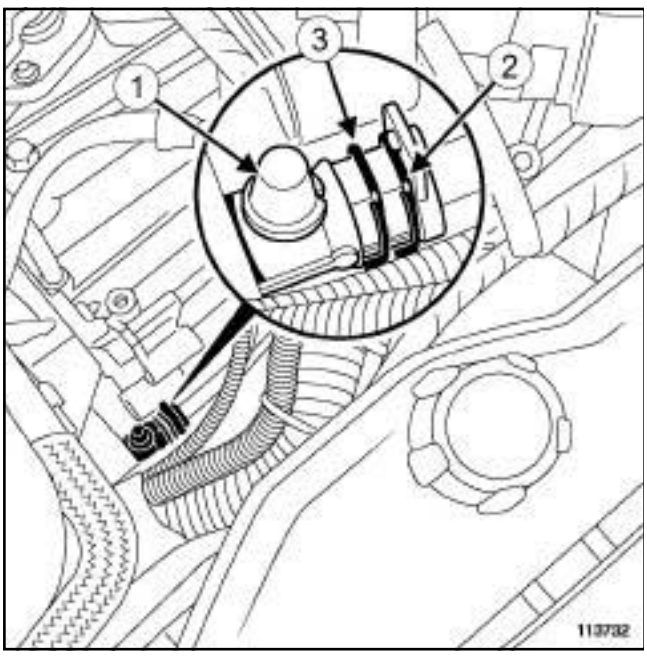
❑ Remove:

- the battery (see **Battery: Removal - Refitting**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Fit a hose clamp on the connection between the brake fluid reservoir and the master cylinder.

JH3 or JR5



113732

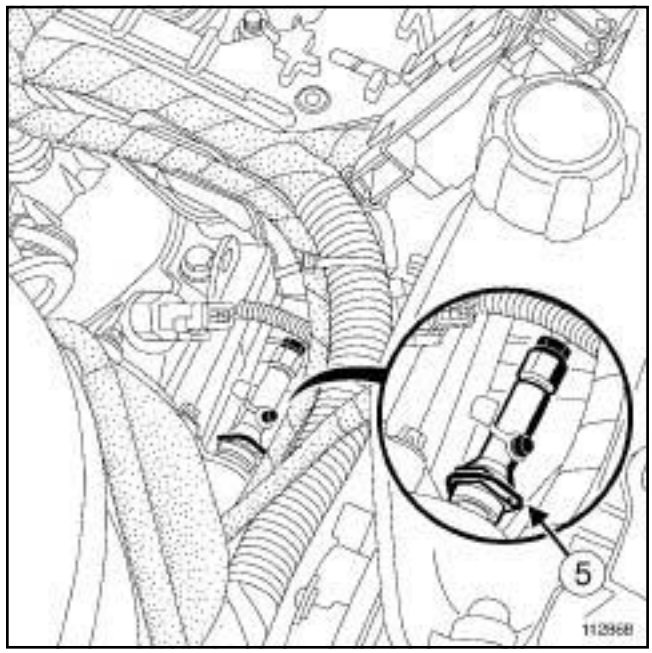
❑ Remove the bleed plug (**1**) .

❑ Fasten the clip (**2**) to lock the clutch control pipe.

❑ Remove clip (**3**) .

❑ Pull out the clutch control pipe one notch to free the bleed hole.

TL4



112868

❑ Press on the clip (**5**) and pull the clutch control pipe.

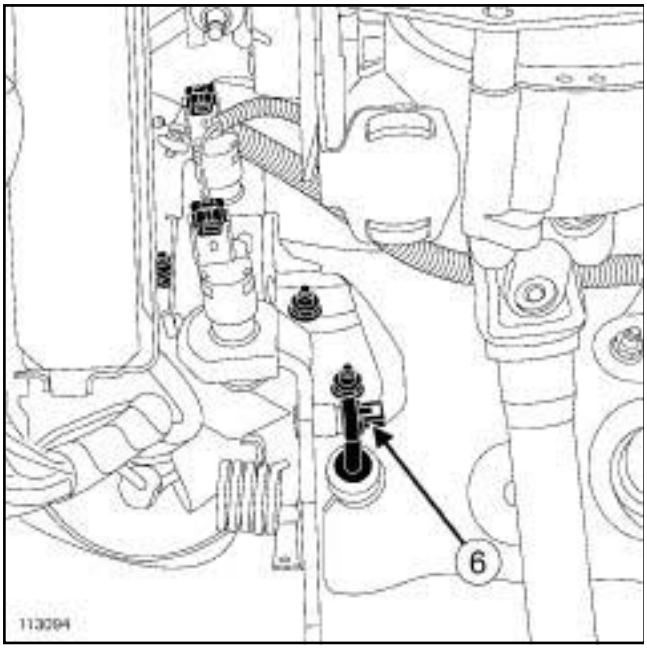
Note:

Expect some brake fluid to run out.

❑ Connect a transparent pipe between the bleed hole and an empty container placed under the bleed hole.

❑ Depress the clutch pedal with your hand (to drain the master cylinder and the clutch pipe).

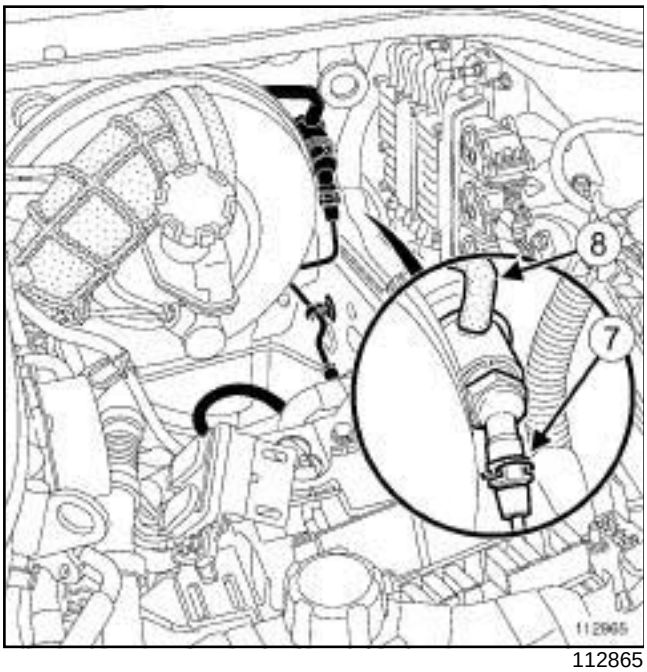
LEFT-HAND DRIVE



113094

❏ Uncouple the clutch pedal master cylinder ball joint (**6**) in the passenger compartment.

❏ Place a cloth under the master cylinder.



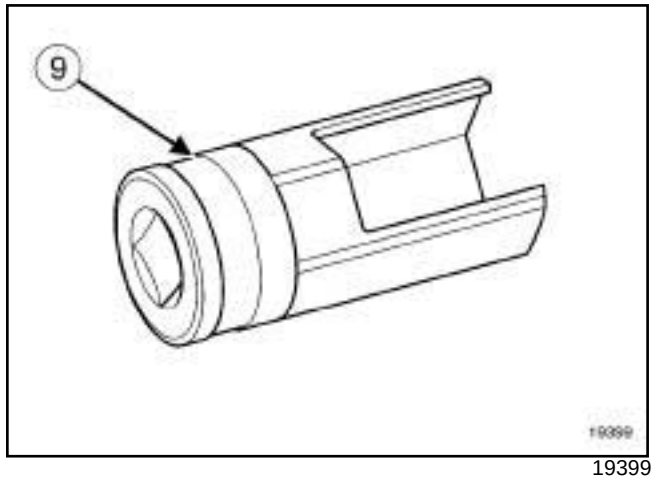
112865

❏ Lift the master cylinder clip (**7**) .

❏ Uncouple the pipe from the master cylinder.

❏ Disconnect the pipe (**8**) between the master cylinder and the brake fluid reservoir.

❏ Fit plugs to the openings.

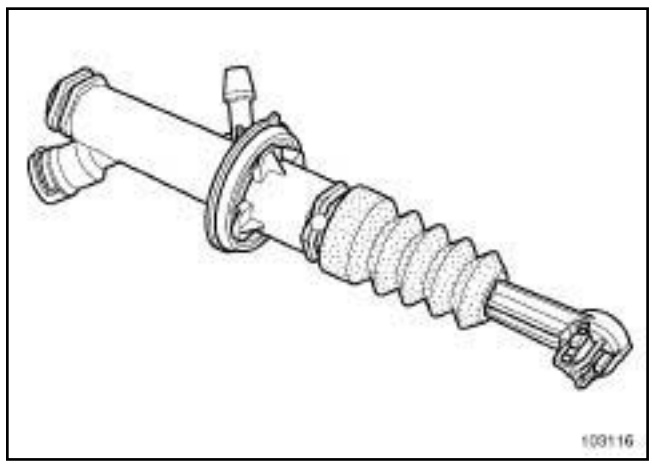


19399

❏ Remove the master cylinder by turning it one quarter of a turn clockwise (bayonet type mounting) using the (**9**) (Emb. 1596).

REFITTING

I - REFITTING PREPARATIONS OPERATION



103116

❏ Check the condition of the seals.

LEFT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the master cylinder by turning it one quarter of a turn anti-clockwise (bayonet type mounting) using tool (Emb. 1596).

Note:

The master cylinder has a foolproofing device, it only fits in one position.

WARNING

Do not use the branching pipe as a support when fitting the master cylinder.

❏ Remove the plugs from the openings.

❏ Refit the pipe to the master cylinder.

❏ Press the master cylinder clip.

❏ Refit the pipe between the master cylinder and the brake fluid reservoir.

Note:

Lubricate both ends of the supply pipe with brake fluid to facilitate fitting on the brake fluid reservoir take-off pipe.

❏ Refit the clutch pedal master cylinder ball joint in the passenger compartment.

III - FINAL OPERATION.

❏ Bleed the clutch control (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) .

K4J or K4M or K9K

❏ Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) ,
- the battery (see **Battery: Removal - Refitting**) .

❏ Check that the clutch system is operating correctly.

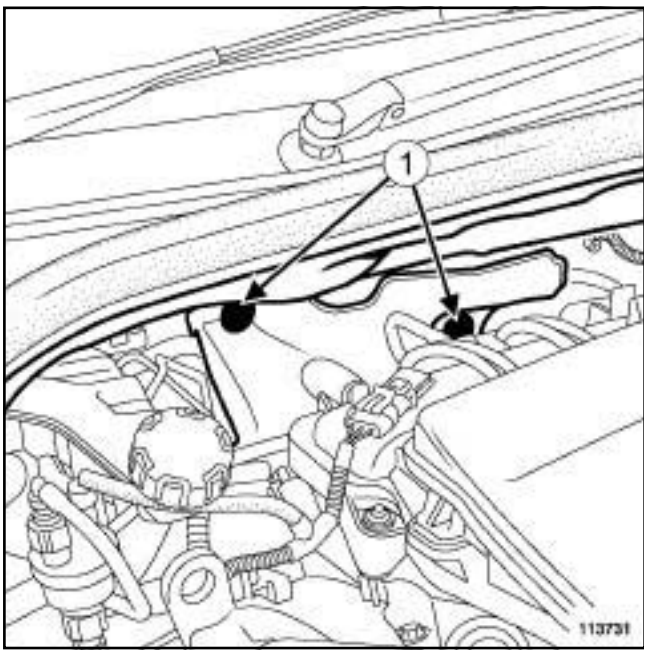
RIGHT-HAND DRIVE

REMOVAL

I - REMOVAL PREPARATION OPERATION

K4J or K4M or K9K

❏ Remove the air inlet duct.



113731

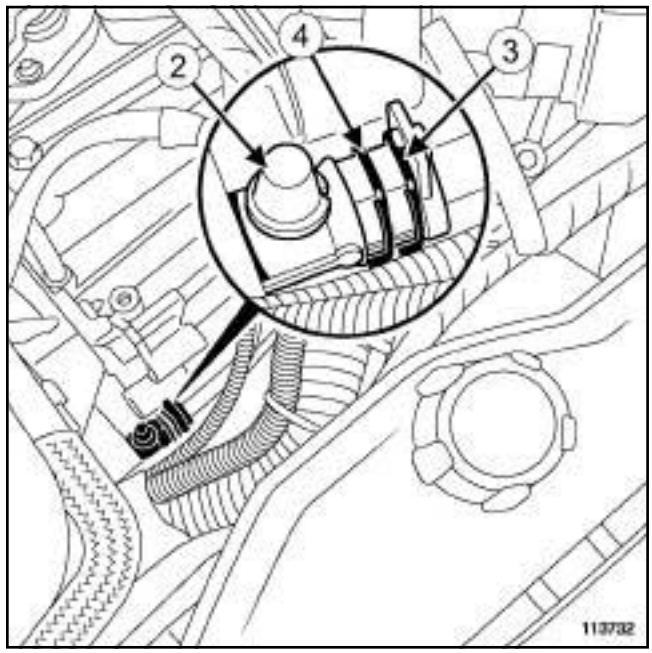
❏ Remove the soundproofing clips (**1**) .

❏ Move the soundproofing to one side to access the master cylinder.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Fit a hose clamp on the connection between the brake fluid reservoir and the master cylinder.

JH3 or JR5



113732

❏ Remove the bleed plug (**2**) .

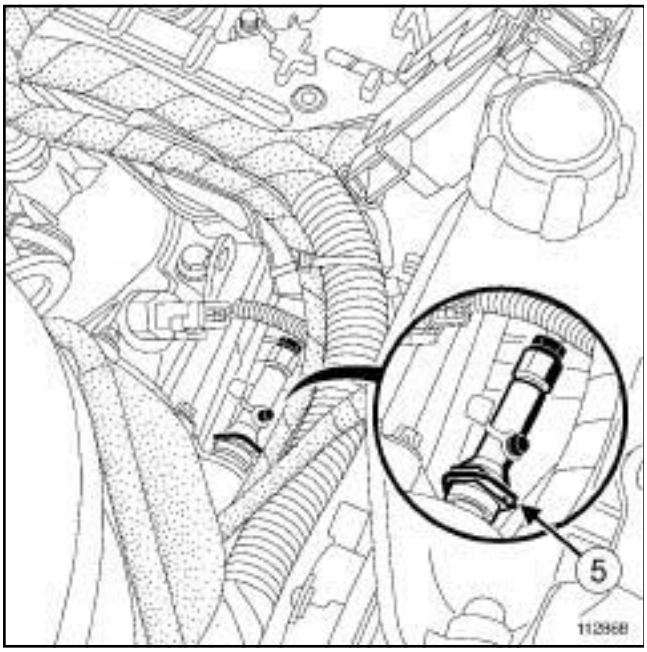
❏ Fasten the clip (**3**) to lock the clutch control pipe.

❏ Remove clip (**4**) .

❏ Pull out the clutch control pipe one notch to free the bleed hole.

RIGHT-HAND DRIVE

TL4



112868

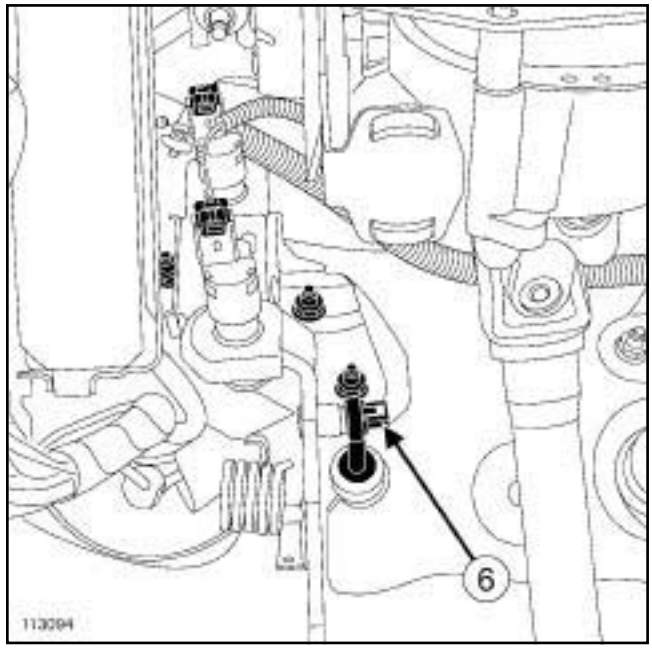
❏ Press clip (**5**) and pull the clutch control pipe out one notch.

Note:

Expect some brake fluid to run out.

❏ Connect a transparent pipe between the bleed hole and an empty container placed under the bleed hole.

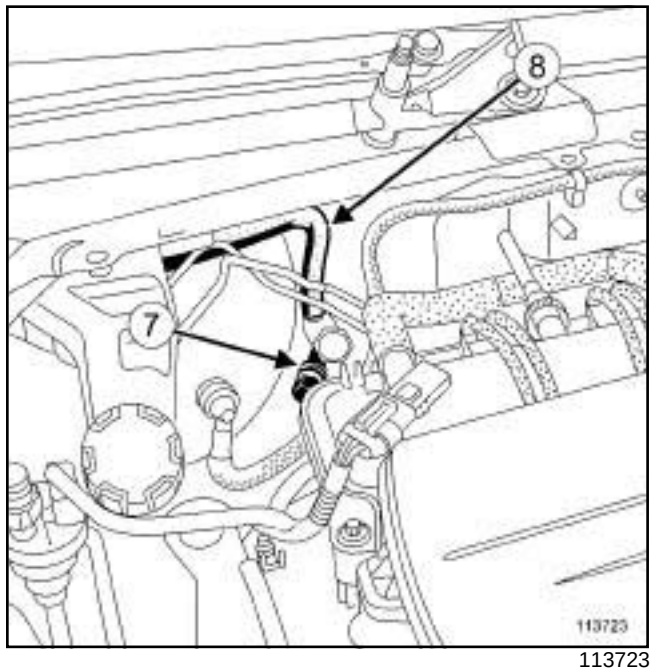
❏ Depress the clutch pedal with your hand (to drain the master cylinder and the clutch pipe).



113094

❏ Disconnect the master cylinder ball joint (**6**) from the clutch pedal in the passenger compartment.

❏ Place a cloth under the master cylinder.



113723

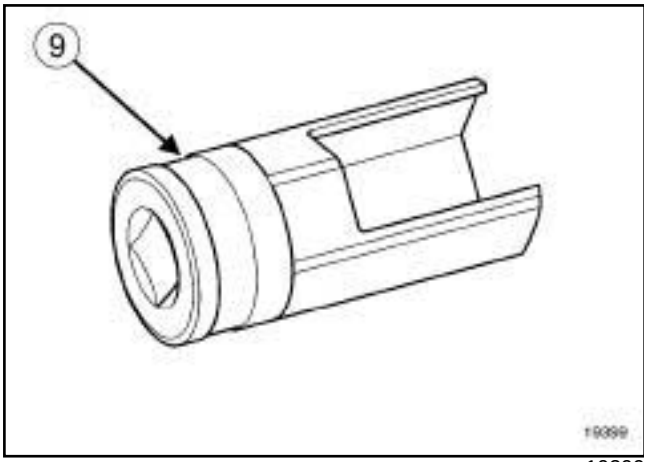
❏ Lift up the master cylinder clip (**7**) .

❏ Uncouple the pipe from the master cylinder.

❏ Disconnect the pipe (**8**) between the master cylinder and the brake fluid reservoir.

❏ Fit plugs into the openings.

RIGHT-HAND DRIVE

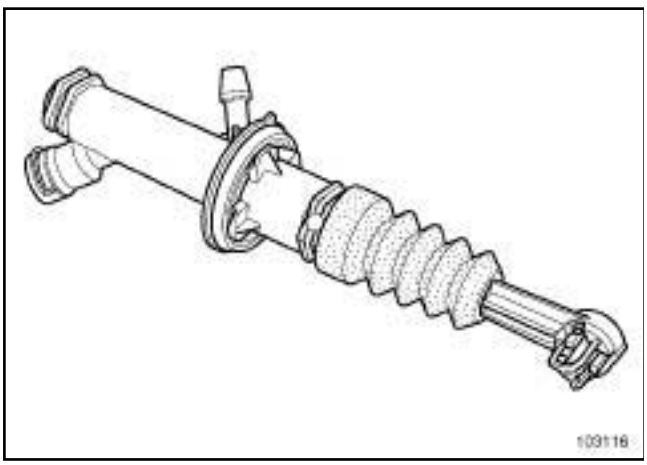


19399

❏ Remove the master cylinder by turning it one quarter of a turn clockwise (bayonet type mounting) using the (Emb. 1596 (**9**)).

REFITTING

I - REFITTING PREPARATIONS OPERATION



103116

❏ Check the condition of the seals.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the master cylinder by turning it one quarter of a turn anti-clockwise (bayonet type mounting) using the (Emb. 1596) ***(9)*** .

Note:

The master cylinder has a foolproofing device, it only fits in one position.

WARNING

Do not use the branching pipe as a support when fitting the master cylinder.

❏ Remove the plugs from the openings.

❏ Refit the pipe to the master cylinder.

❏ Press the master cylinder clip.

❏ Refit the pipe between the master cylinder and the brake fluid reservoir.

note:

Lubricate both ends of the supply pipe with brake fluid to facilitate fitting on the brake fluid reservoir take-off pipe.

❏ Refit the clutch pedal master cylinder ball joint in the passenger compartment.

III - FINAL OPERATION.

❏ Bleed the clutch control (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) .

❏ Reposition the soundproofing.

❏ Refit the soundproofing clips.

❏ Check that the clutch system is operating correctly.

JH3 or JR5

Note:

Each time an operation is carried out on the hydraulic clutch system, bleed the circuit:

- between the reservoir and the bleed hole,
- between the bleed hole and the clutch release bearing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

K4J or K4M

❑ Remove the resonator.

❑ Remove the air inlet duct.

K4J or K4M or K9K

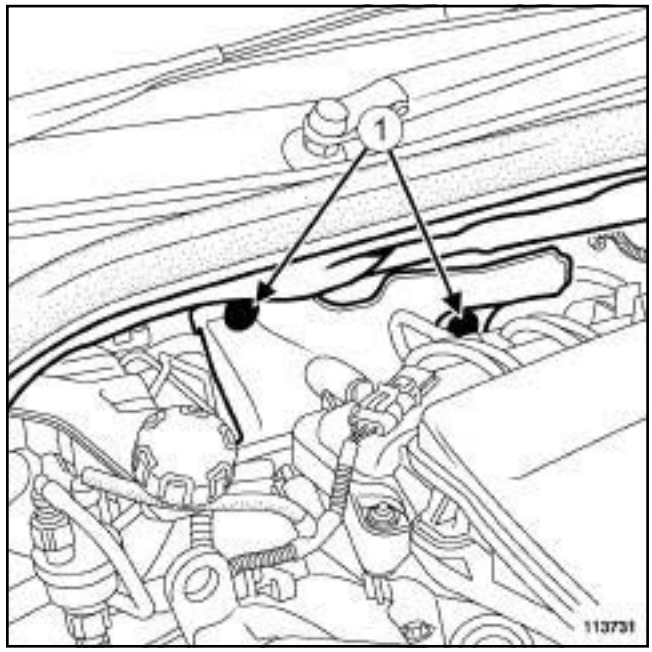
❑ Remove:

- the battery (see **Battery: Removal - Refitting**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) .

D4F

❑ Remove the air filter unit (see **Air filter unit: Removal - Refitting**) .

RIGHT-HAND DRIVE

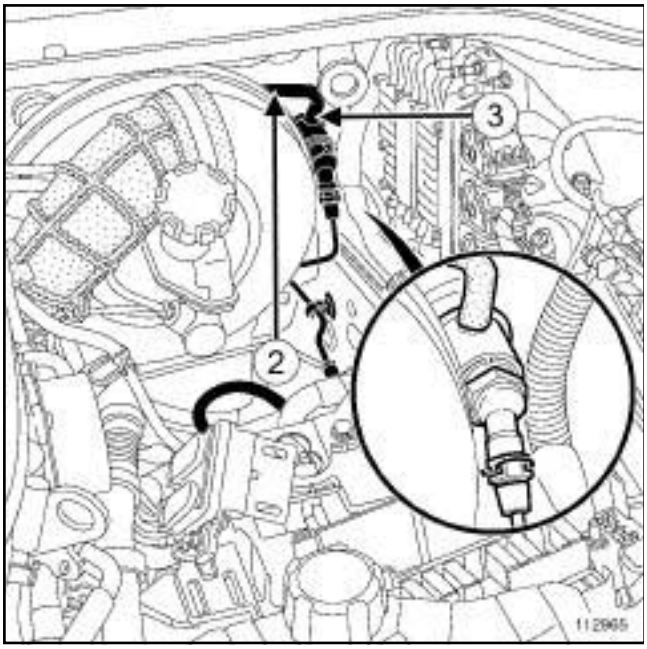


113731

❑ Remove:

- the soundproofing mounting clips (**1**) ,
- the soundproofing partially from the bulkhead in the engine compartment.

JH3 or JR5

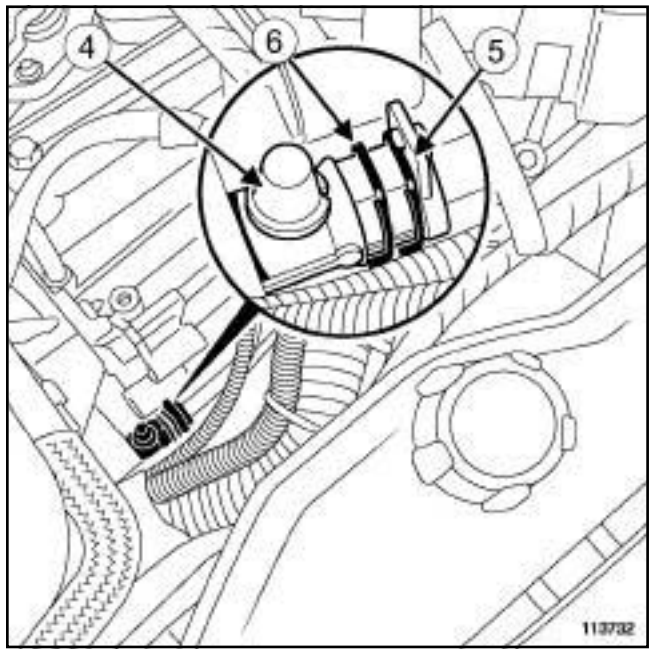


112865

❏ Fit a hose clamp on the connection (**2**) between the brake fluid reservoir and the master cylinder.

❏ Disconnect the hose (**3**) on the master cylinder.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113732

❏ Remove the bleed plug (**4**) .

❏ Connect a transparent pipe between the bleed hole and an empty container placed under the bleed hole.

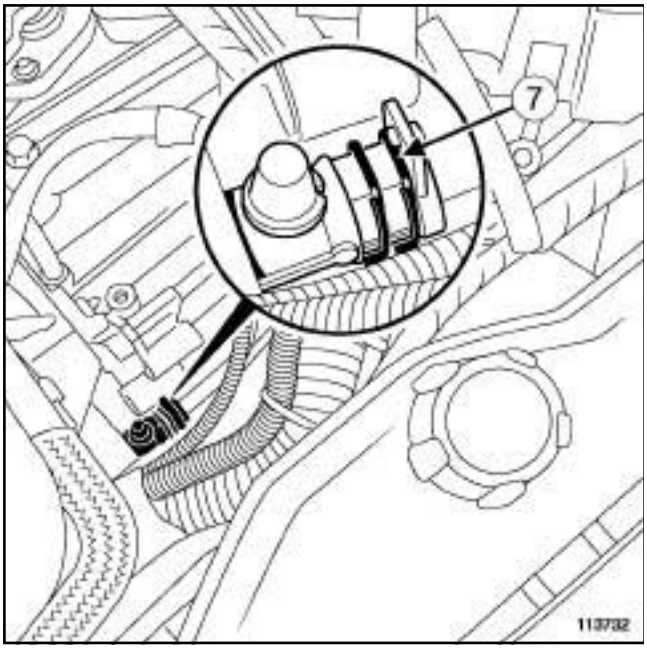
❏ Fasten the clip (**5**) to lock the clutch control pipe.

❏ Lift up the clip (**6**) .

❏ Pull out the clutch control pipe one notch to free the bleed hole.

❏ Depress the pedal using your hand (to drain the master cylinder and the clutch pipe).

JH3 or JR5

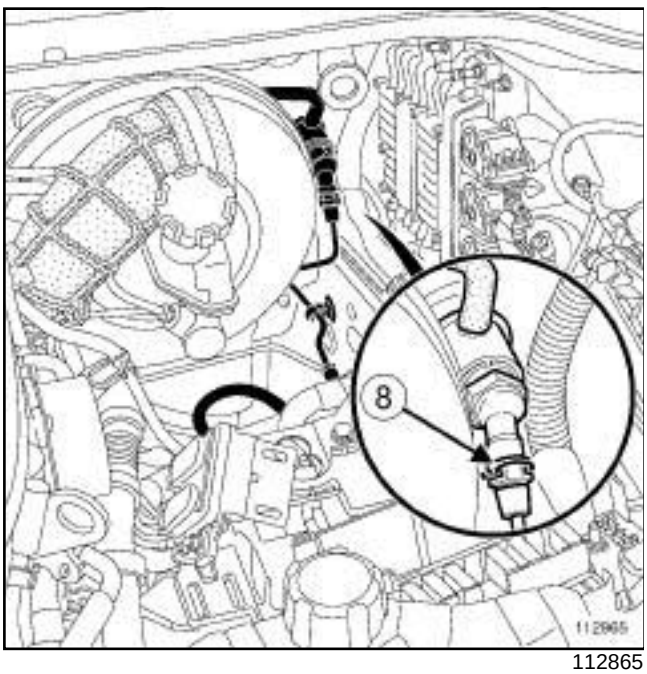


113732

❏ Lift up the clip (**7**) .

❏ Disconnect the pipes from the slave cylinder.

❏ Fit plugs into the openings.



112865

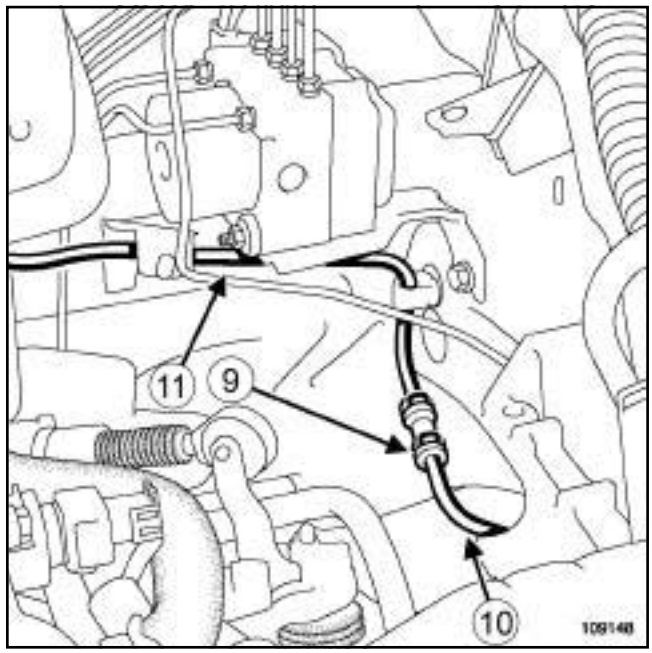
❏ Place a cloth under the master cylinder.

❏ Lift up the master cylinder clip (**8**) .

❏ Uncouple the pipe from the master cylinder.

❏ Fit plugs into the openings.

RIGHT-HAND DRIVE



109148

❏ Lift up the clip (**9**) on the sleeve at the gearbox end.

❏ Disconnect the pipe from the sleeve.

❏ Fit plugs into the openings.

❏ Remove:

- the pipe (**10**) between the slave cylinder and the sleeve,
- the pipe (**11**) between the master cylinder and the sleeve.

LEFT-HAND DRIVE

❏ Remove the clutch control pipe between the master cylinder and the slave cylinder.

JH3 or JR5

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

RIGHT-HAND DRIVE

❏ Refit:

- the pipe between the slave cylinder and the sleeve,
- the pipe between the master cylinder and the sleeve.

❏ Remove the plugs from the sleeve openings.

❏ Connect the pipe to the sleeve.

❏ Fasten the sleeve clip on the gearbox end.

LEFT-HAND DRIVE

❏ Refit the clutch control pipe between the master cylinder and the slave cylinder.

❏ Remove the plugs from the master cylinder openings.

❏ Connect the pipe to the master cylinder.

❏ Fasten the clip onto the master cylinder.

❏ Remove the cloth from under the master cylinder.

❏ Remove the plugs from the slave cylinder openings.

❏ Connect the slave cylinder pipe.

❏ Fasten the clip on the pipe side.

❏ Connect the hose to the master cylinder.

II - FINAL OPERATION

❏ Remove the hose clamp from the connection between the brake fluid reservoir and the master cylinder.

❏ Bleed the clutch control (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) .

❏ Check that the clutch system is operating correctly.

❏ Refit the bleed plug.

RIGHT-HAND DRIVE

❏ Refit:

- the bulkhead soundproofing in the engine compartment,
- the soundproofing mounting clips.

D4F

❏ Refit the air filter unit (see **Air filter unit: Removal - Refitting**) .

K4J or K4M or K9K

❏ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) ,
- the battery (see **Battery: Removal - Refitting**) .

K4J or K4M or K9K

❏ Refit the air inlet duct.

K4J or K4M

❏ Refit the resonator.

TL4

Note:

For every operation on the hydraulic clutch system, it is essential to bleed:

- between the reservoir and the bleed hole,
- between the bleed hole and the clutch thrust bearing.

REMOVAL

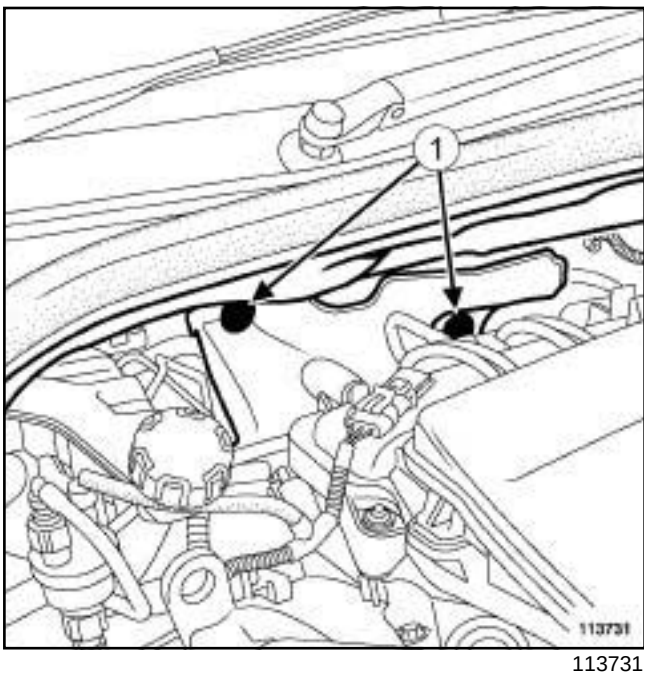
I - REMOVAL PREPARATION OPERATION

❏ Remove the air inlet duct.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) .

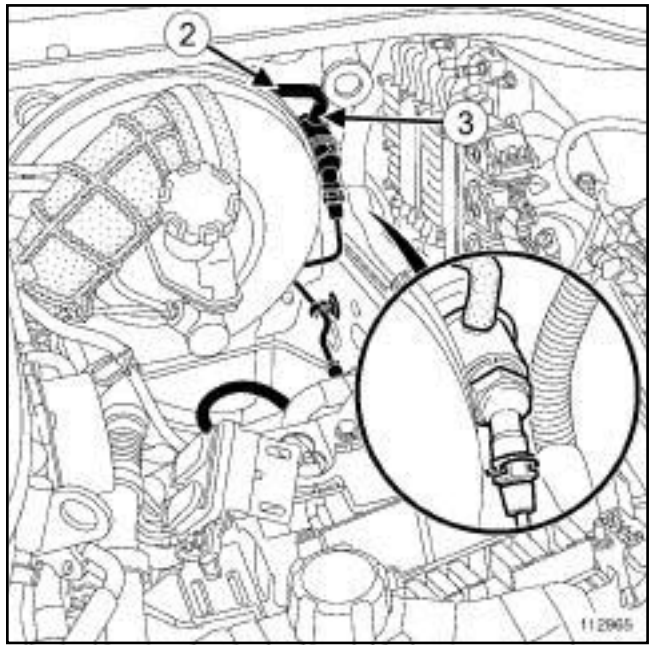
RIGHT-HAND DRIVE



113731

❏ Remove:

- the soundproofing mounting clips (**1**) ,
- the soundproofing partially from the bulkhead in the engine compartment.



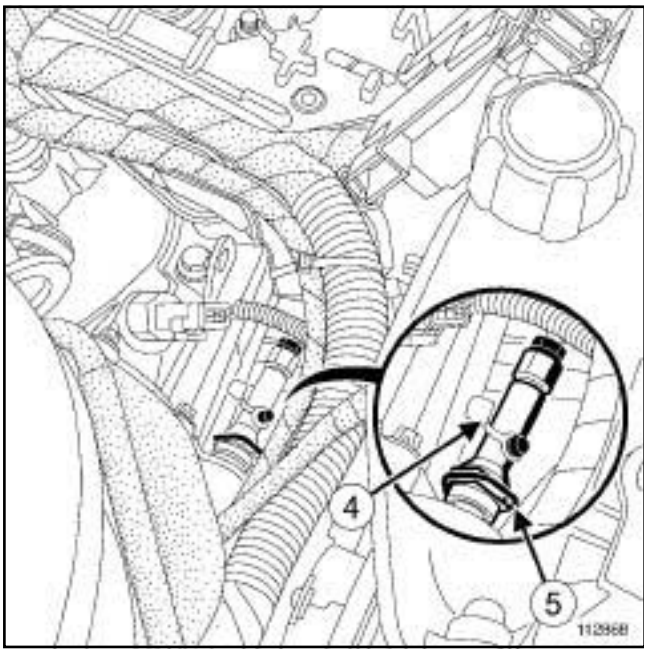
112865

❏ Fit a hose clamp on the connection (**2**) between the brake fluid reservoir and the master cylinder.

❏ Disconnect the hose (**3**) on the master cylinder.

TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED



112868

❏ Remove the bleed plug (**4**) .

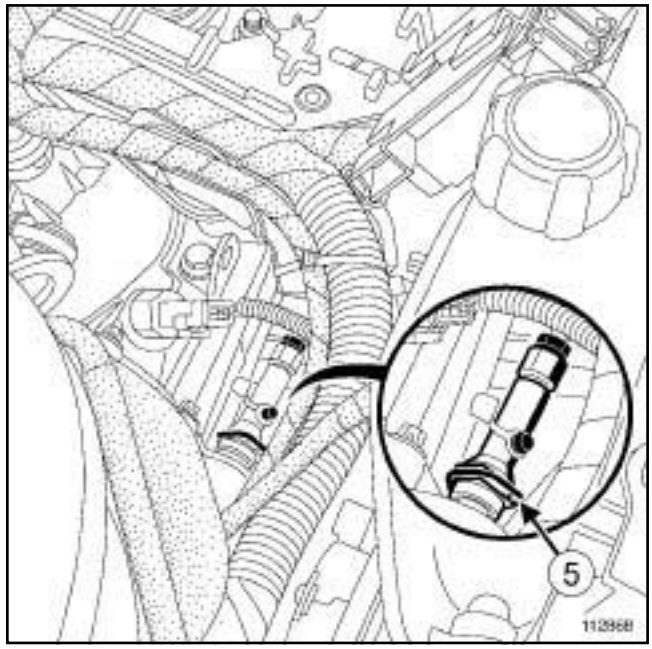
❏ Connect a transparent pipe between the bleed hole and an empty container placed under the bleed hole.

❏ Press clip (**5**) .

WARNING
Do not pull the clip. If it is incorrectly handled in any way, the pipe will need to be replaced.

❏ Pull out the master cylinder control pipe by one notch.

❏ Depress the clutch pedal with your hand (to drain the master cylinder and the clutch pipe).

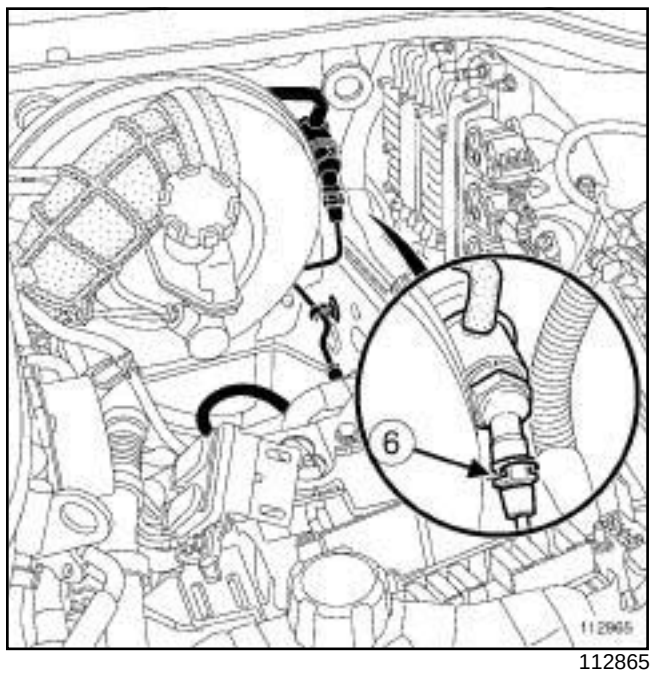


112868

❏ Press clip (**5**) .

❏ Disconnect the pipes from the slave cylinder.

❏ Fit plugs into the openings.



112865

❏ Place a cloth under the master cylinder.

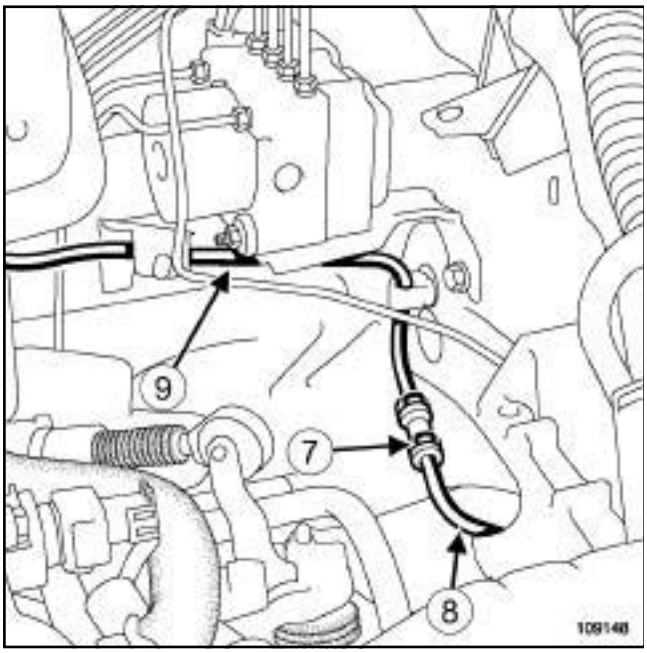
❏ Lift the master cylinder clip (**6**) .

❏ Uncouple the pipe from the master cylinder.

❏ Fit plugs into the openings.

TL4

RIGHT-HAND DRIVE



109148

❏ Lift up the clip (**7**) on the sleeve at the gearbox end.

❏ Disconnect the pipe from the sleeve.

❏ Fit plugs into the openings.

❏ Remove:

- the pipe (**8**) between the slave cylinder and the sleeve,
- the pipe (**9**) between the master cylinder and the sleeve.

LEFT-HAND DRIVE

❏ Remove the clutch control pipe between the master cylinder and the clutch slave cylinder.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check the condition of the pipe seals, replacing them if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

RIGHT-HAND DRIVE

❏ Refit:

- the pipe between the slave cylinder and the sleeve,
- the pipe between the master cylinder and the sleeve.

❏ Remove the plugs from the sleeve openings.

❏ Connect the pipe to the sleeve.

❏ Fasten the sleeve clip on the gearbox end.

LEFT-HAND DRIVE

❏ Refit the clutch control pipe between the master cylinder and the slave cylinder.

❏ Remove the plugs from the master cylinder openings.

❏ Connect the pipe to the master cylinder.

❏ Fasten the clip onto the master cylinder.

❏ Remove the cloth from under the master cylinder.

❏ Remove the plugs from the slave cylinder openings.

❏ Connect the slave cylinder pipe to the first notch.

❏ Fasten the clip on the pipe side.

❏ Connect the hose to the master cylinder.

III - FINAL OPERATION.

❏ Remove the hose clamp from the connection between the brake fluid reservoir and the master cylinder.

❏ Bleed the clutch control (see **37A**, **Mechanical component controls**, **Clutch circuit: Bleed**, page **37A-100**) .

❏ Check that the clutch system is working properly.

❏ Refit the bleed plug.

RIGHT-HAND DRIVE

❏ Refit:

- the bulkhead soundproofing in the engine compartment,

TL4

- the soundproofing mounting clips.

❑ Refit the air inlet duct.

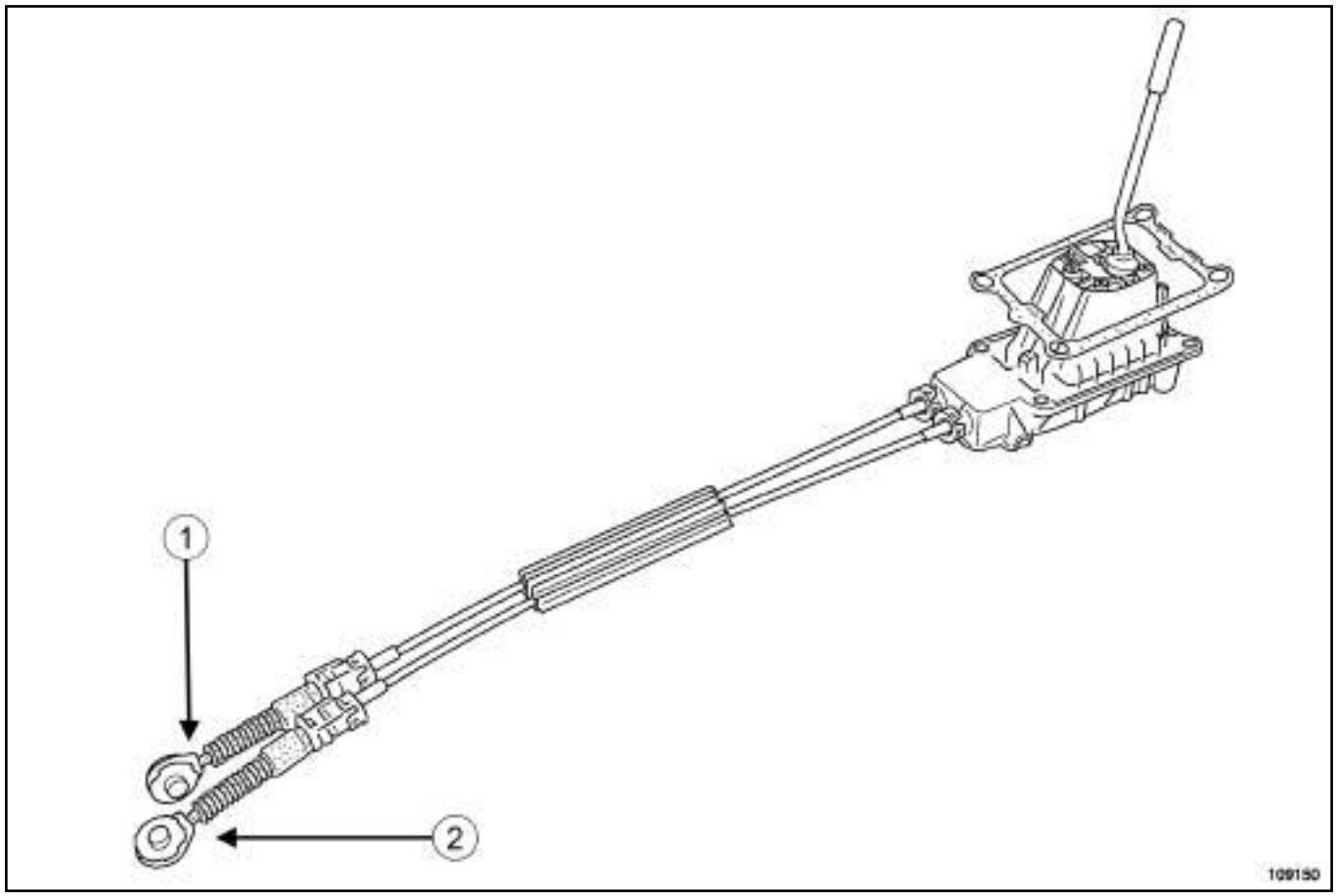
❑ Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) ,
- the battery (see **Battery: Removal - Refitting**) .

❑ Refit the resonator.

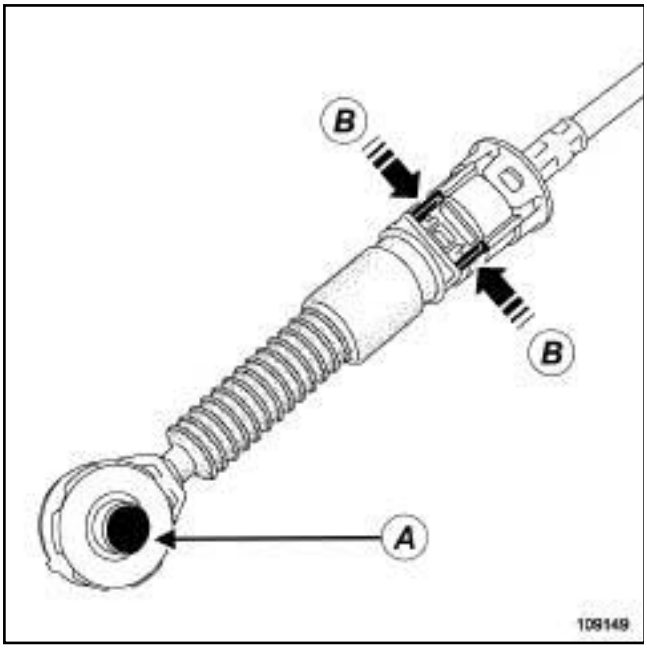
JH3 or JR5

Mark	Description
(**A**)	Gear selection cable
(**B**)	Gear cable



109150

JH3 or JR5



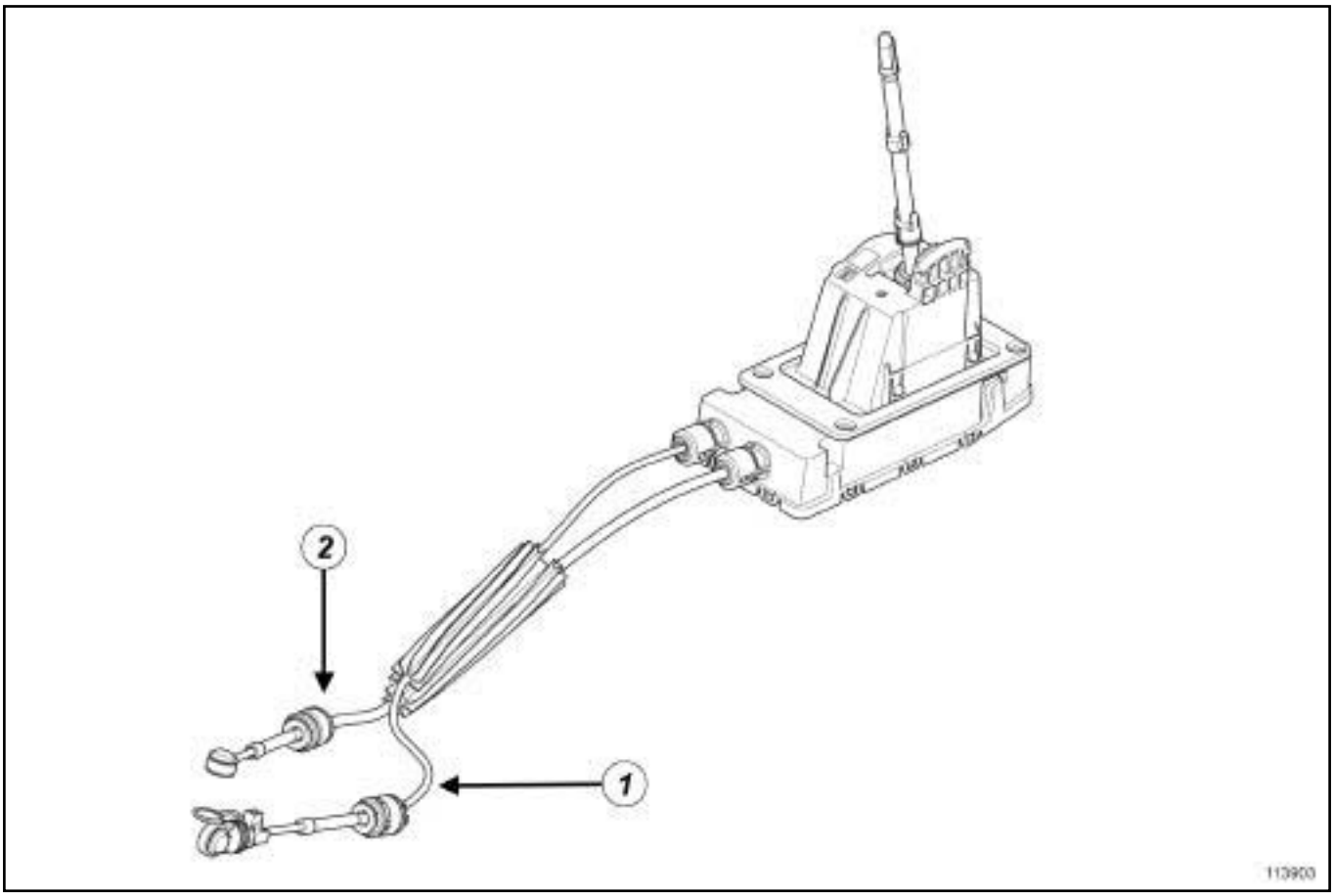
109149

(**A**) Press at « A » to separate the gearbox control cables from the anchoring ball joint on the gearbox

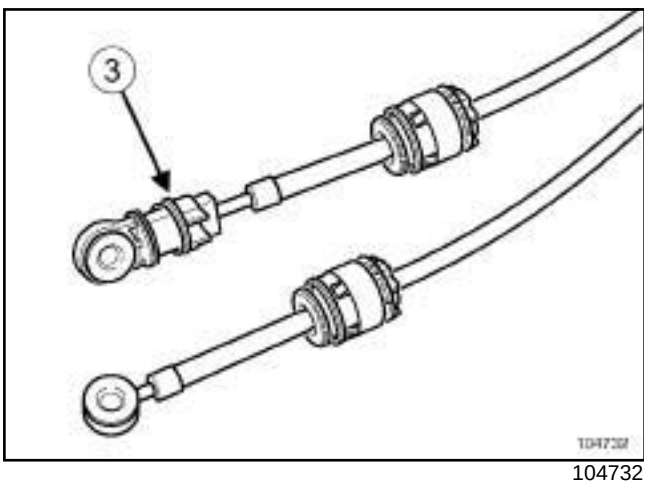
(**B**) Press at « B » to separate the gearbox control cables from the sheath stops on the gearbox

TL4

Mark	Description
(**1**)	Gear selection cable
(**2**)	Gear cable



113903



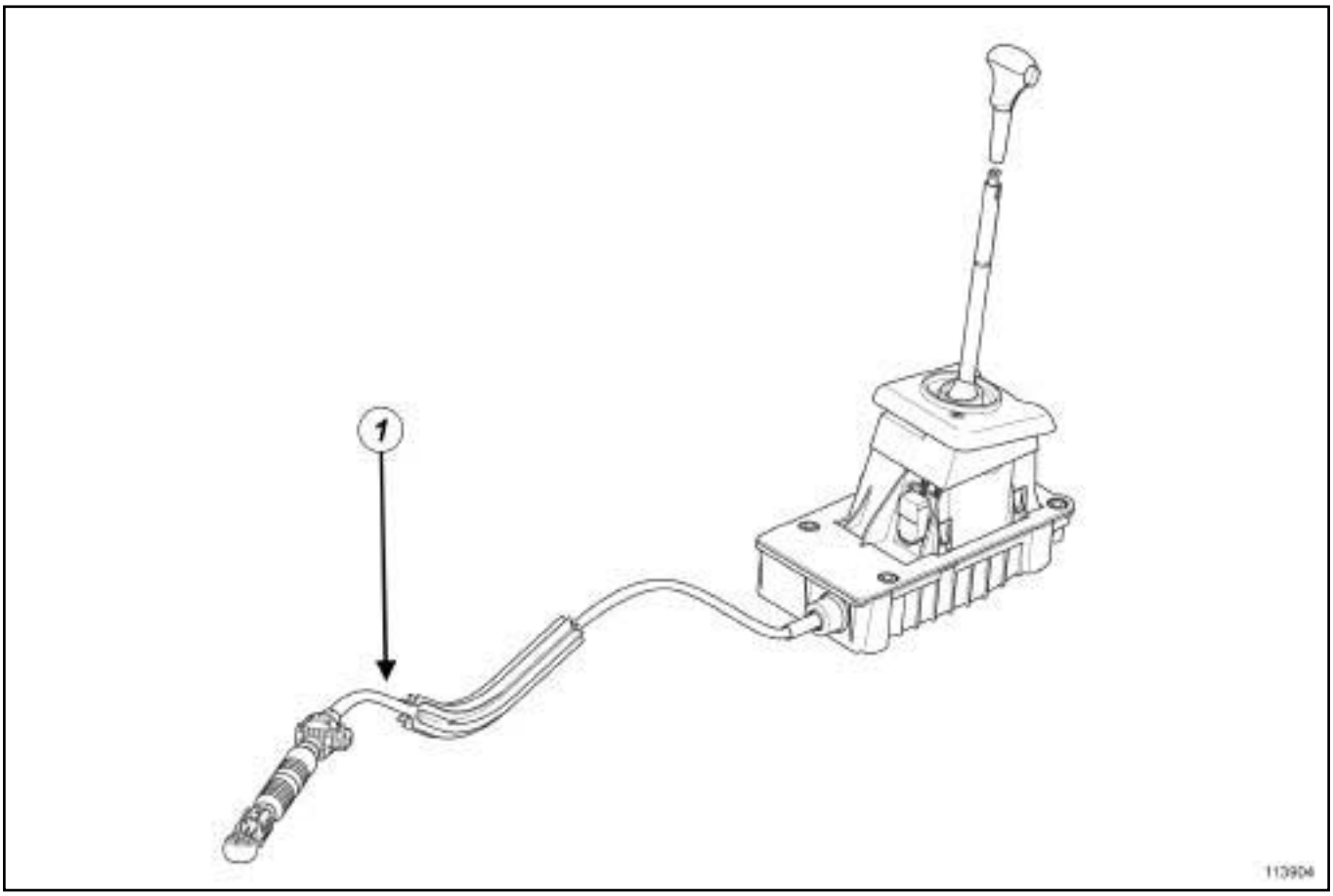
104732

Note:

The external control of the TL4 gearbox has an adjusting system (**3**) on the selection cable.

DP0

No.	Description
(**1**)	Gear selection cable



113904

JH3 or JR5 or TL4

Tightening torques ▽	
control unit mounting bolts	**21 N.m**
exhaust bracket mountings	**25 Nm**
exhaust pipe rubber bush mountings	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

K4J or K4M or K9K

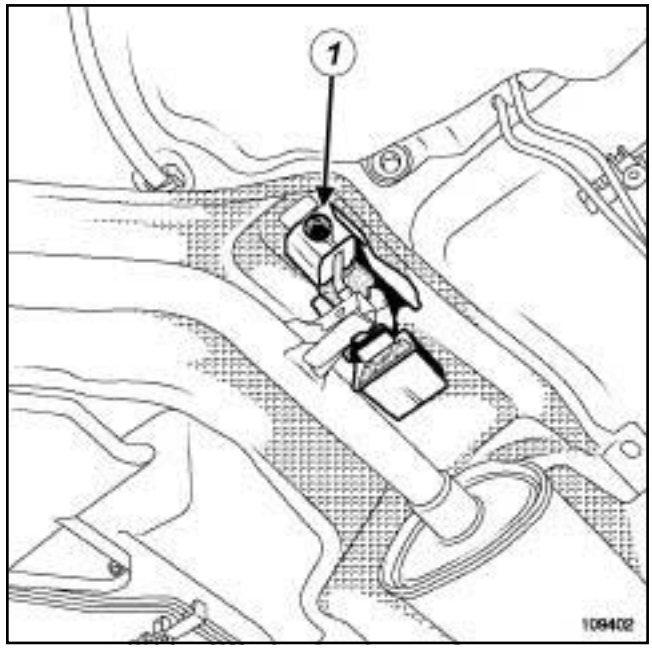
❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

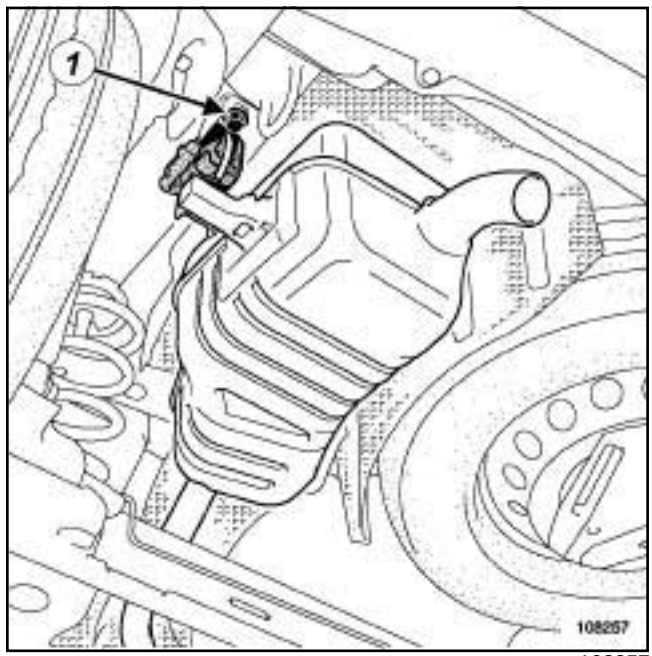
D4F

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the engine undertray.



109402



108257

❑ Remove:

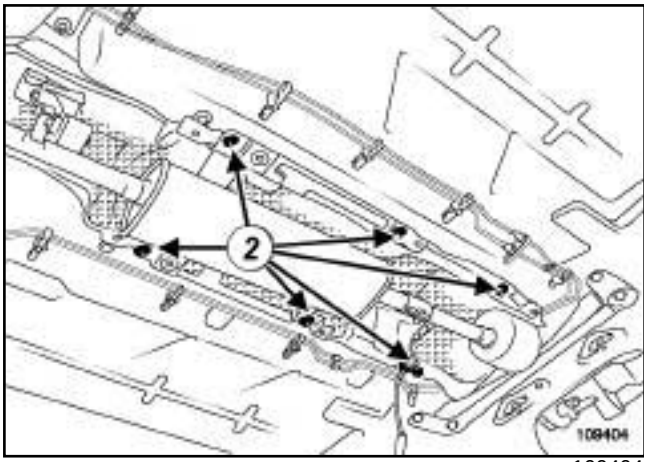
- the exhaust bracket mountings,
- the exhaust pipe rubber bush mountings (**1**) .

❑ Let the exhaust pipe rest on the rear axle.

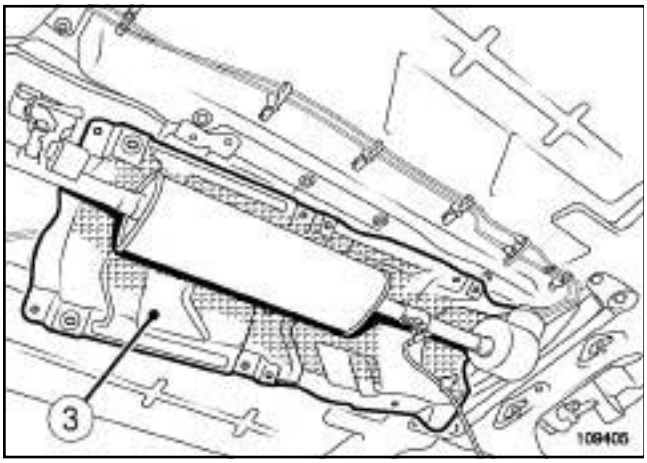
Note:

The oxygen sensor wiring harness must not be under tension.

JH3 or JR5 or TL4



109404



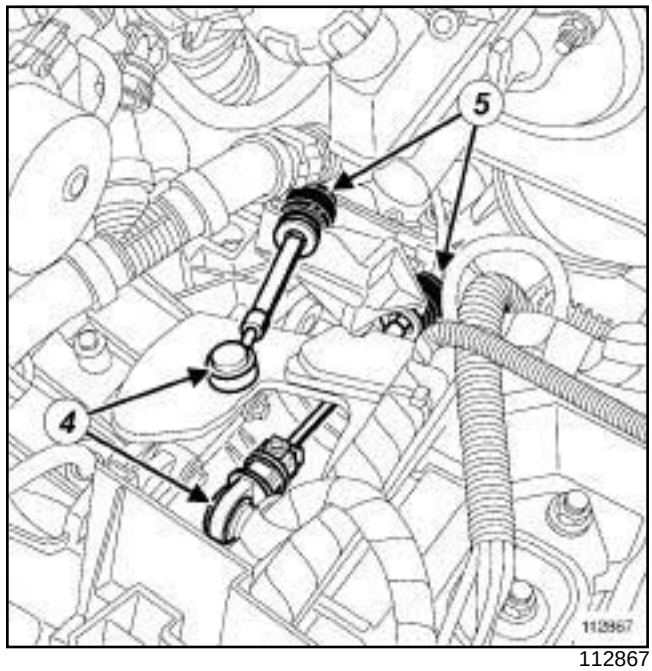
109405

❑ Remove:

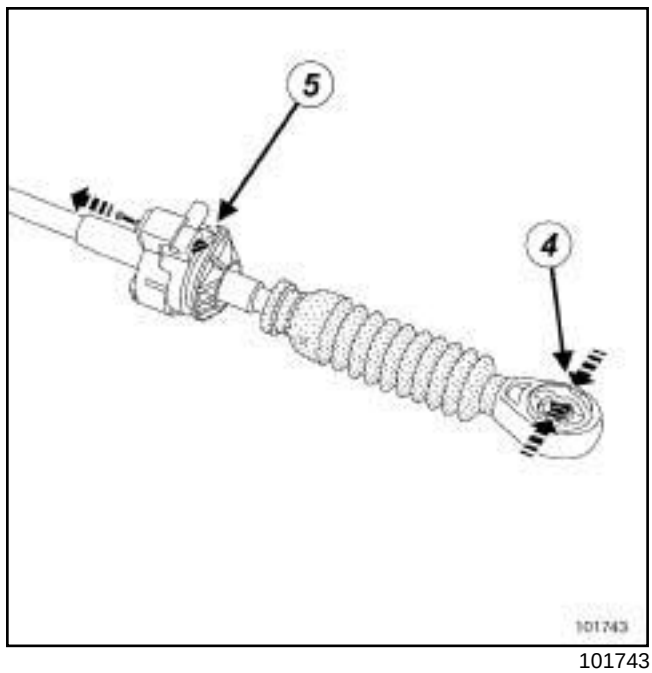
- the heat shield mountings (**2**) ,
- heat shield (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

TL4



112867



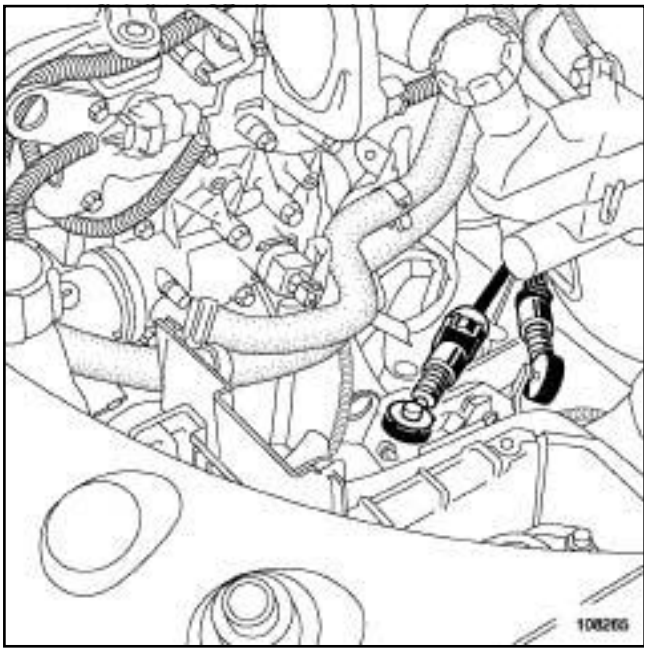
101743

❑ Unclip the two gear lever cables on the gearbox at:

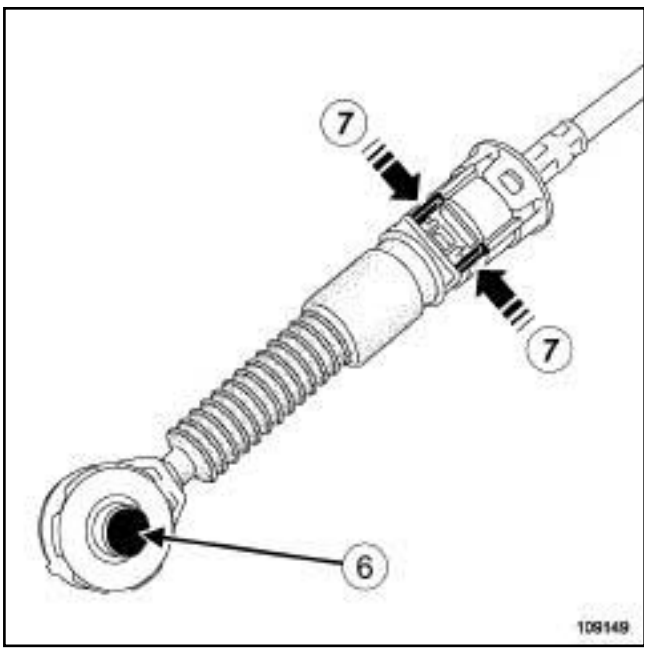
- the anchoring ball joints (**4**) ,
- the cable sleeve stops (**5**) .

JH3 or JR5 or TL4

JH3 or JR5



108265



109149

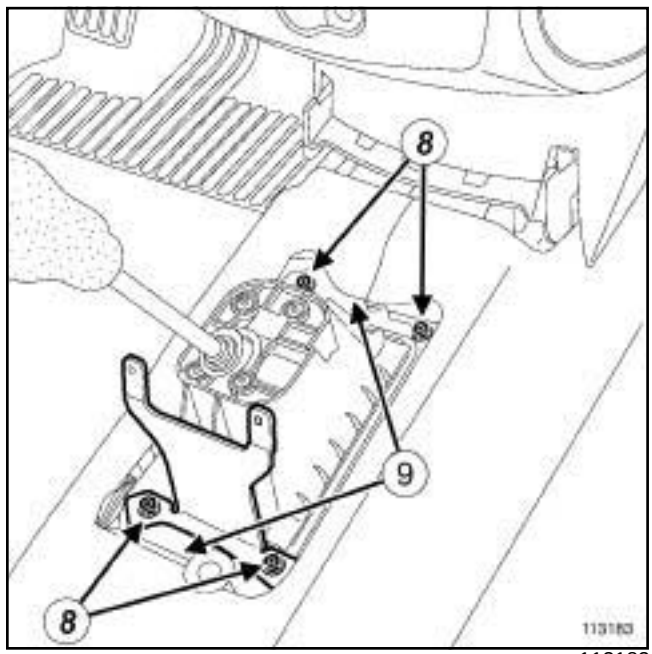
❑ Unclip:

- the gear control cables from the gearbox by pressing at (**6**) ,
- the gearbox control cable sleeve stops by pulling the catch (**7**) .

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Unclip the gear lever gaiter with its knob.

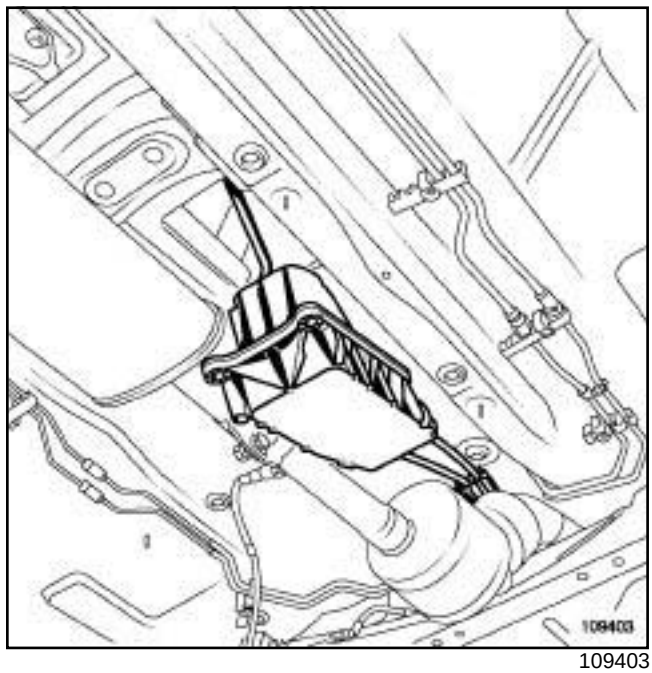
❑ Remove the soundproofing pad covering the gear control unit.



113183

❑ Remove the gear selection unit mountings (**8**) .

❑ Unclip the gear selection unit from the floor at (**9**) .



109403

❑ Lower the gearbox control unit so it is resting on the exhaust.

JH3 or JR5 or TL4

❑ Remove the gear control unit by feeding it out between the exhaust and the tunnel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ The external control unit and the selector levers on the gearbox must be in the neutral position to facilitate attachment of the control cables to the gearbox.

When refitting the exhaust pipe rubber mounting bushes, make sure that they are perfectly in line with the axis of the vehicle.

There is no system to adjust the control cables on JH3 and JR5 gearboxes.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Reposition the gear control unit by feeding it between the exhaust and the tunnel.

❑ Reclip the gear control unit to the floor.

❑ Refit the gear control unit mountings.

❑ Torque tighten the **control unit mounting bolts (21 N.m)**.

TL4

❑ Adjust the selection cable (see **37A**, **Mechanical component controls**, **Manual gear control: Adjustment**, page **37A-1**) .

❑ Refit the soundproofing covering the gear control unit.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Reclip the gear lever gaiter with its knob.

❑ Reclip:

- the gearbox control cable sleeve stops,
- the gearbox control cables.

III - FINAL OPERATION.

❑ Refit:

- the heat shield,
- the heat shield mountings.

❑ Refit:

- the exhaust pipe at the silencer,
- the mountings from the exhaust pipe rubber mounting bushes,
- the exhaust bracket mountings.

❑ Tighten to torque:

- the **exhaust bracket mountings (25 Nm)**,
- the **exhaust pipe rubber bush mountings (8 Nm)**.

K4J or K4M or K9K

❑ Refit:

- the engine undertray,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F

❑ Refit the engine undertray.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

DP0

Tightening torques ▽	
control unit mounting bolts	**21 N.m**
exhaust manifold mountings	**25 N.m**
exhaust pipe rubber bush mountings	**8 N.m**

REMOVAL

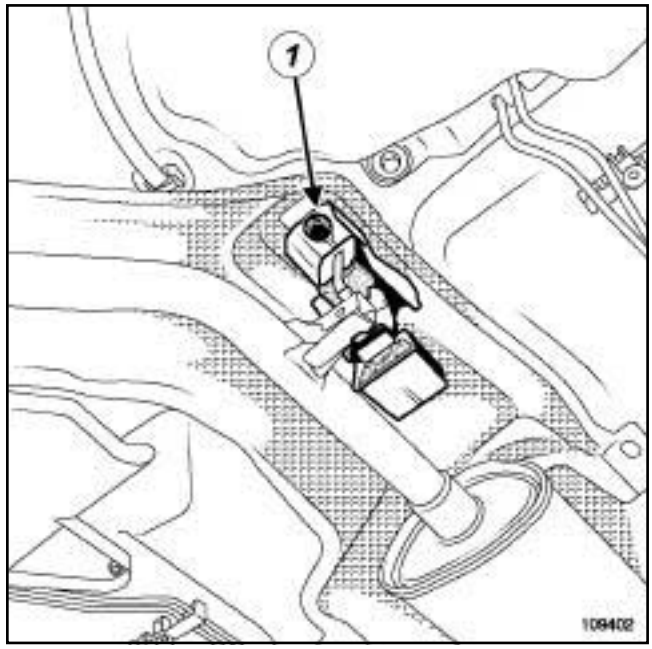
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

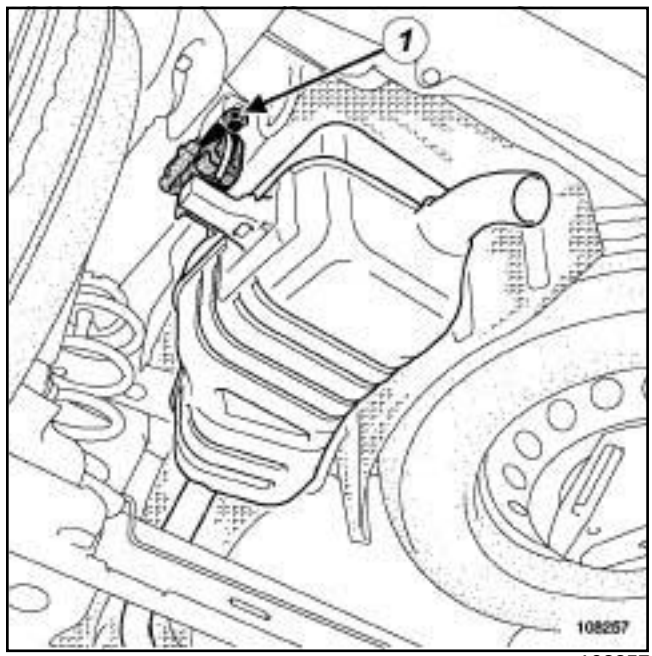
❏ Move the gear lever to the **Neutral** position.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the engine undertray.



109402



108257

❏ Remove:

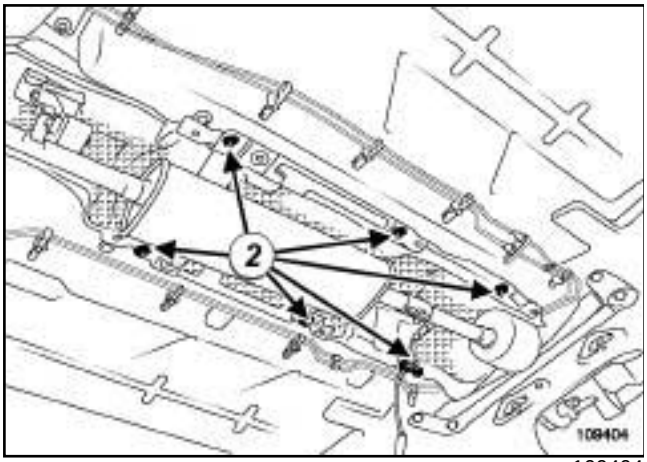
- the exhaust pipe rubber bush mountings (**1**) ,
- the exhaust manifold mountings.

❏ Let the exhaust pipe rest on the rear axle.

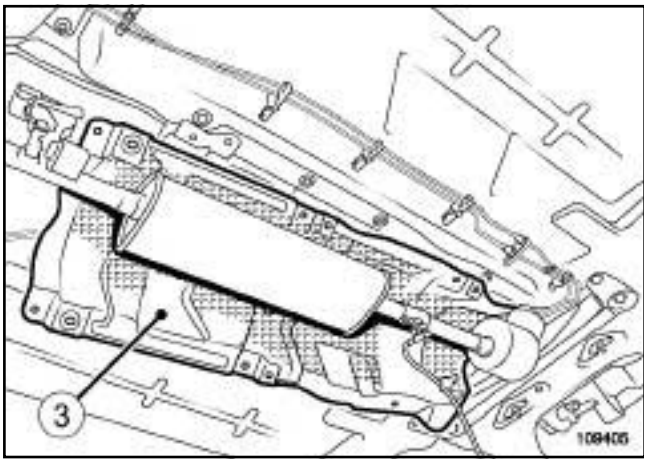
Note:

The oxygen sensor wiring harness must not be under tension.

DP0



109404

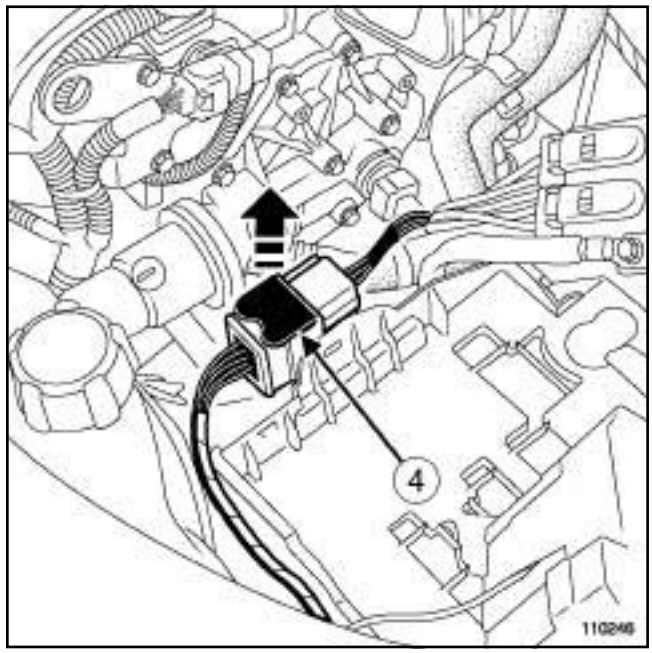


109405

❑ Remove:

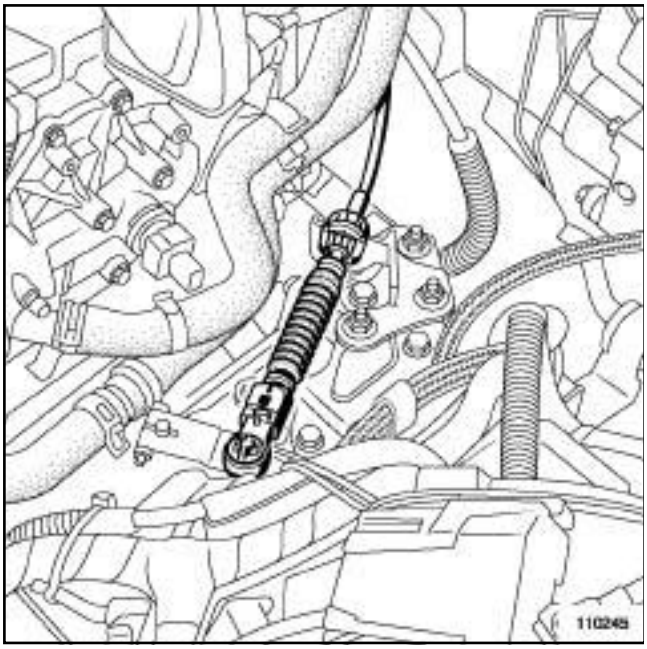
- the heat shield mountings (**2**) ,
- the heat shield (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

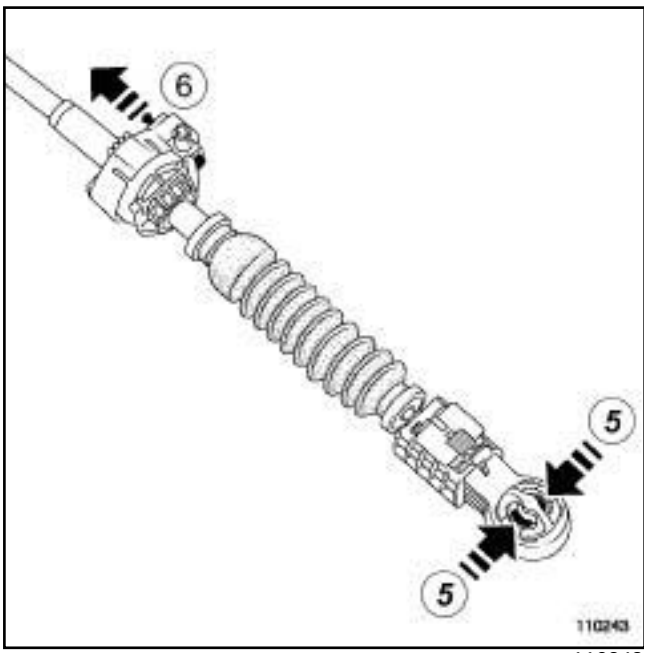


110246

❑ Disconnect the automatic gearbox wiring harness connector by pulling out the slide (**4**) .



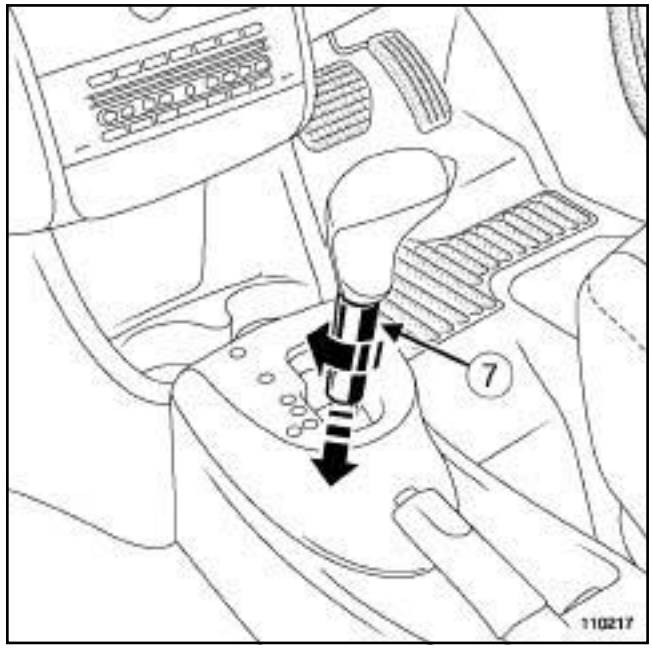
110245



110243

❏ Remove:

- the multifunction switch control cable ball joint by pressing at (**5**) ,
- the control cable sheath stop from the modular connector support by pulling the catch at (**6**) .



110217

❏ Turn the part (**7**) a quarter of a turn.

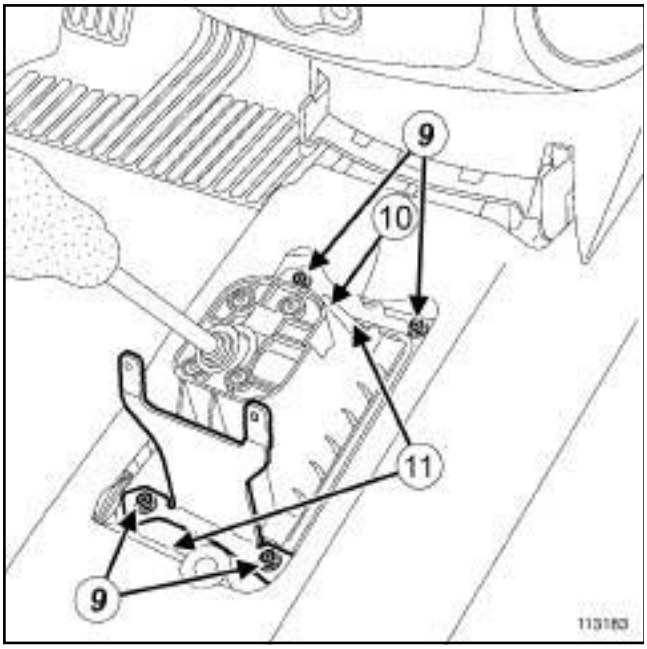
❏ Lower the part (**7**) .

110216

❏ Remove:

- the control lever knob (**8**) , lifting it up and off,
- the part (**7**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the soundproofing pad covering the gear control unit.

DP0

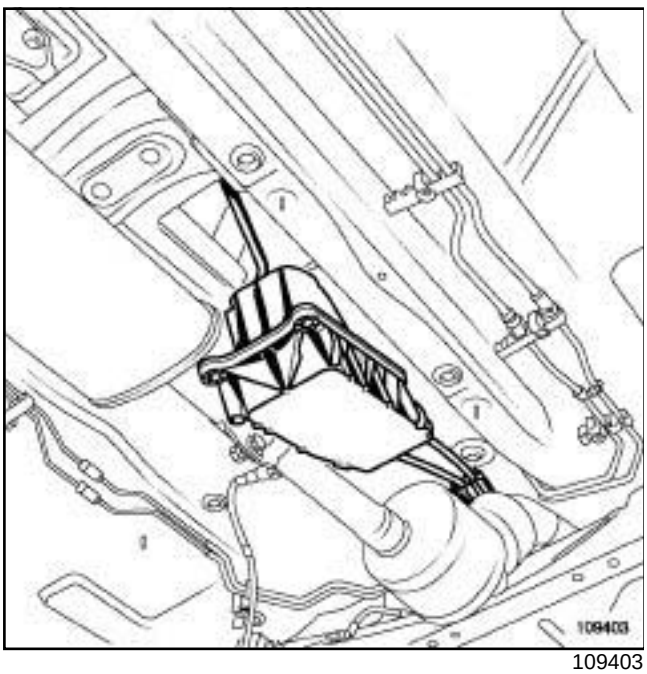


113183

❑ Remove the gear selection unit mountings (**9**) .

❑ Disconnect the control unit connector (**10**) .

❑ Unclip the gear selection unit from the floor at (**11**) .



109403

❑ Lower the gearbox control unit so it is resting on the exhaust.

❑ Remove the gear control unit by feeding it out between the exhaust and the tunnel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ When refitting the exhaust pipe rubber mountings, make sure that they are perfectly in line with the axis of the vehicle.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Reposition the gear control unit by feeding it between the exhaust and the tunnel.

❑ Reclip the gear control unit to the floor.

❑ Refit the gear control unit mountings.

❑ Torque tighten the **control unit mounting bolts (21 N.m)**.

❑ Connect the control unit connector.

❑ Refit:

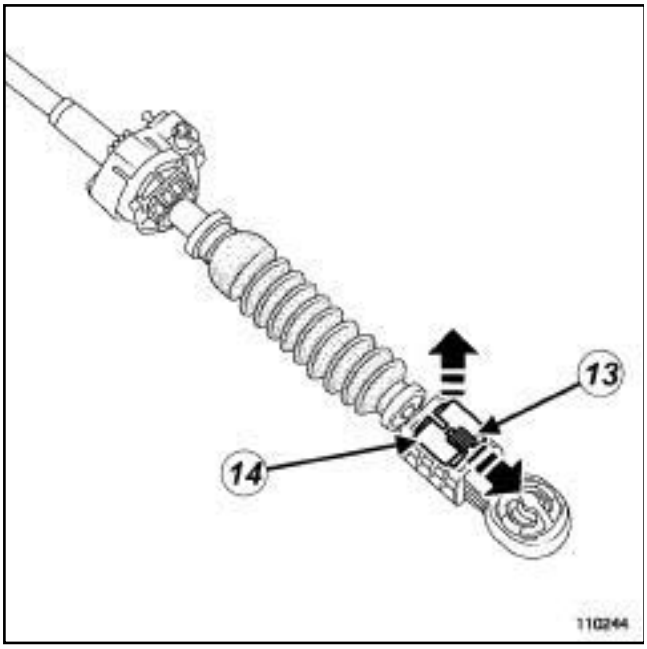
- the soundproofing pad covering the gear control unit,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the part (**7**),
- the control lever knob.

❑ Turn the part (**7**) a quarter of a turn.

❑

WARNING

- Mark the position of the gear lever clearly before starting the operation: if this is not possible, put the selector and the multifunction switch in the **Neutral** position.



110244

❏ Push the clip (**13**) forward.

❏ Lift the clip (**14**) upward.

❏ Clip the control cable into the sleeve stop.

❏ Clip the cable end piece to the multifunction switch ball joint.

❏ Fasten the clip (**13**) to lock the cable end piece.

❏ Check that the system and gear selection are working correctly.

❏ Connect the automatic gearbox wiring harness connector.

III - FINAL OPERATION

❏ Refit:

- the heat shield,
- the heat shield mountings.

❏ Refit:

- the exhaust pipe at the silencer,
- the exhaust manifold mountings,
- the exhaust pipe rubber bush mountings.

❏ Torque tighten:

- the **exhaust manifold mountings (25 N.m)**,
- the **exhaust pipe rubber bush mountings (8 N.m)**.

❏ Refit:

- the engine undertray,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

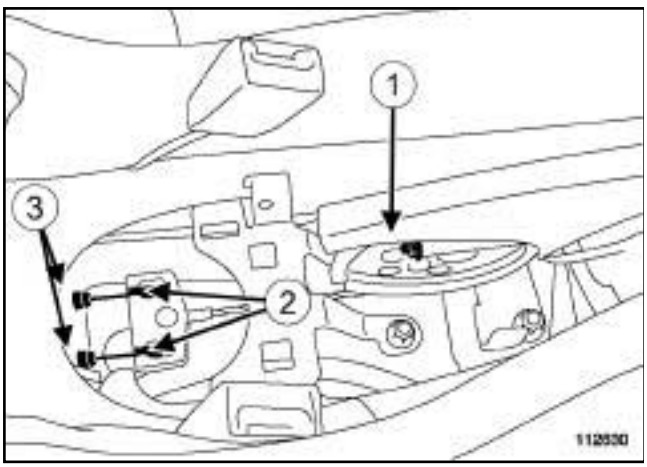
❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

DRUM BRAKE

❑ Remove:

- the wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the drums (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



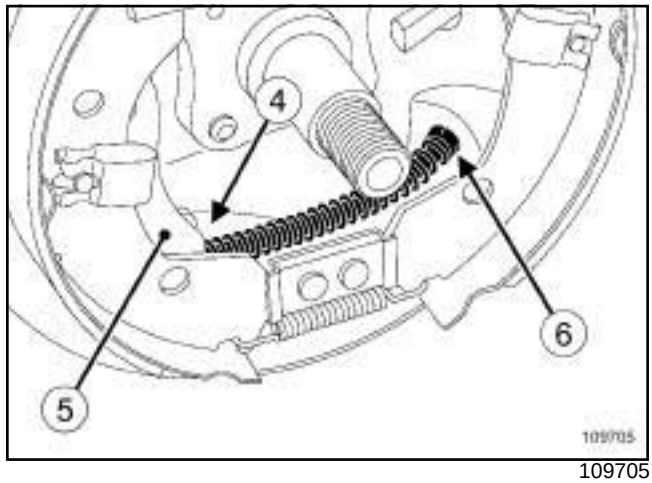
112630

❑ Loosen the adjusting nut (**1**) for the parking brake cables enough to be able to remove the parking brake cables.

❑ Remove the parking brake cables (**2**) at the control lever.

❑ Unclip the sheath (**3**) from its stop on the bodywork using a pair of pliers.

DRUM BRAKE

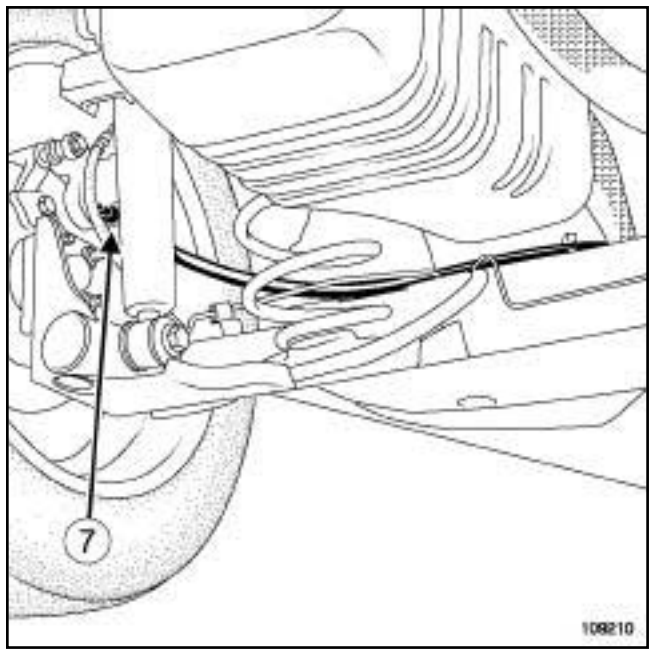


109705

❑ Remove the parking brake cable (**4**) from the lever (**5**) using pliers and a screwdriver.

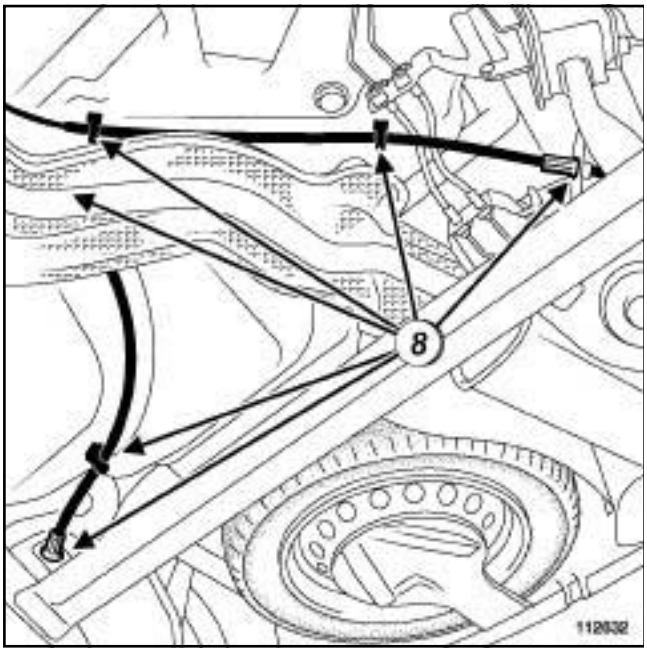
❑ Unclip the parking brake cable sheath (**6**) from the drum back-plate.

DISC BRAKE



109210

❑ Remove the parking brake cables (**7**) at the brake callipers.



112632

❏ Unclip the parking brake cables from their guides (**8**) .

❏ Remove the parking brake cables:

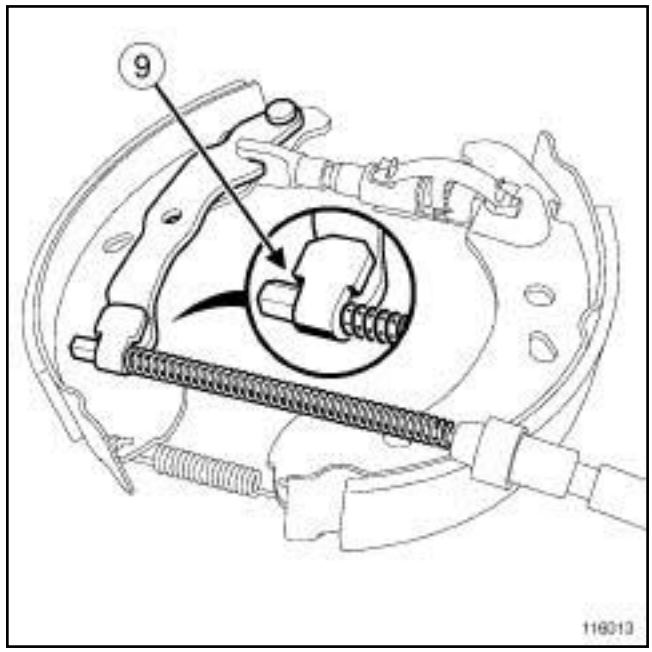
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the parking brake cables.

❏ Hook the parking brake cables onto their guides.

DRUM BRAKE



116013

❏ Reattach the parking brake cable sheath onto the drum back-plate.

❏ Refit the parking brake cable back into the lever housing using a pair of pliers and a screwdriver.

❏ Check that the cables (**9**) are correctly positioned on the levers.

DISC BRAKE

❏ Refit the parking brake cables at the brake callipers.

❏ Reattach the sheath stop to the bodywork ***(3)*** .

❏ Refit the parking brake cables at the control lever.

❏ Adjust the parking brake cables (see **37A**, **Mechanical component controls**, **Parking brake lever: Adjustment**, page **37A-90**) .

II - FINAL OPERATION.

DRUM BRAKE

❏ Refit:

- the drums (see **33A**, **Rear axle components**, **Rear brake drum: Removal - Refitting**, page **33A-19**) ,

- the wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE

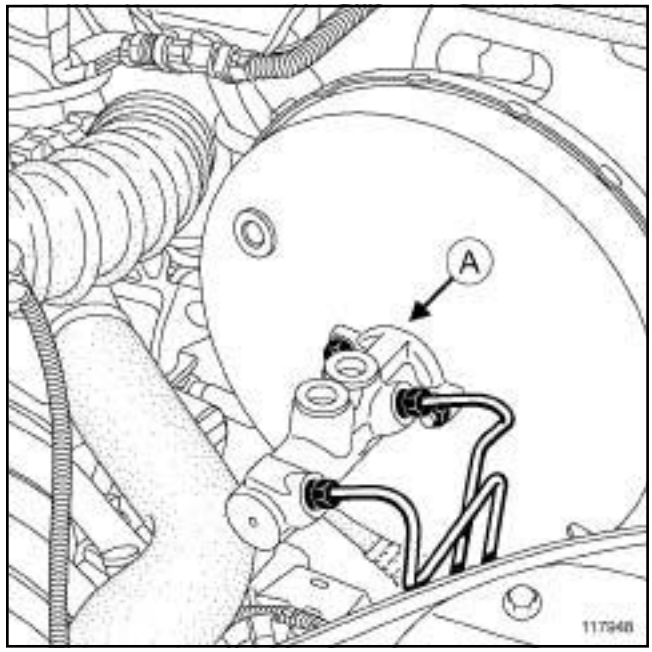
122228

There is no "RENAULT" tool to check the braking assistance circuit.

Use a vacuum pump fitted with couplings, part numbers **7701349942** and **7700105874** with hose part number **8200027352** or **8200376245**.

CHECK

I - CHECKING THE SEALS



117948

❑ When checking the brake servo seal, ensure that there is a perfect seal between this and the master cylinder (**A**) .

If there is a leak in this area, replace the seal between the brake servo and the master cylinder (see **37A**, **Mechanical component controls**, **Master cylinder: Removal - Refitting**, page **37A-2**) .

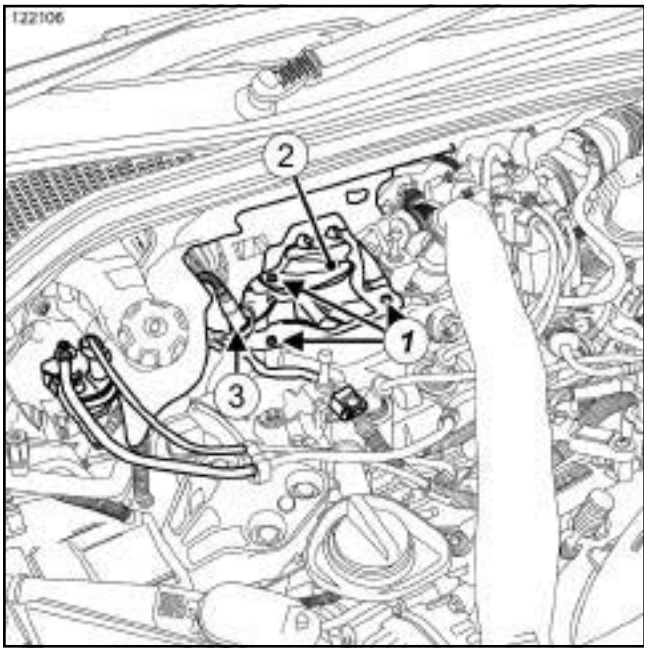
The brake servo seals must be checked on the vehicle with the hydraulic circuit operational.

II - CHECKING THE BRAKE SERVO

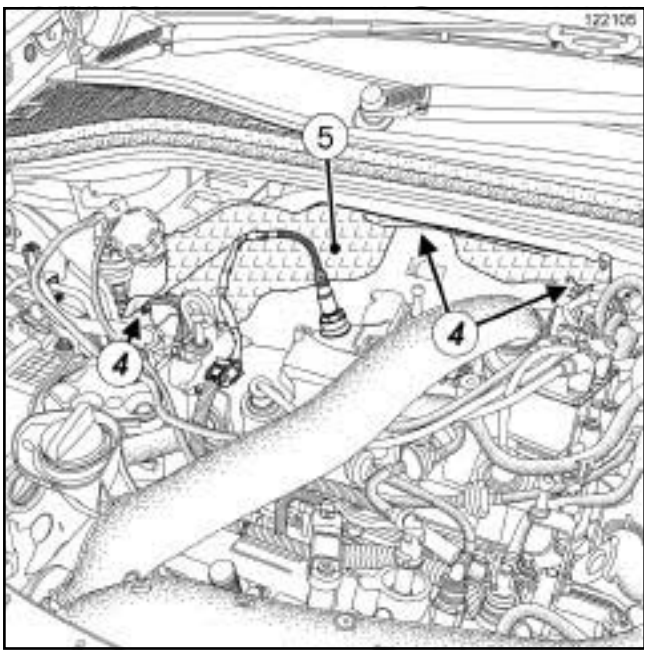
❑ Remove the front engine cover (if fitted to the vehicle).

RIGHT-HAND DRIVE

D4F, and 784



122106

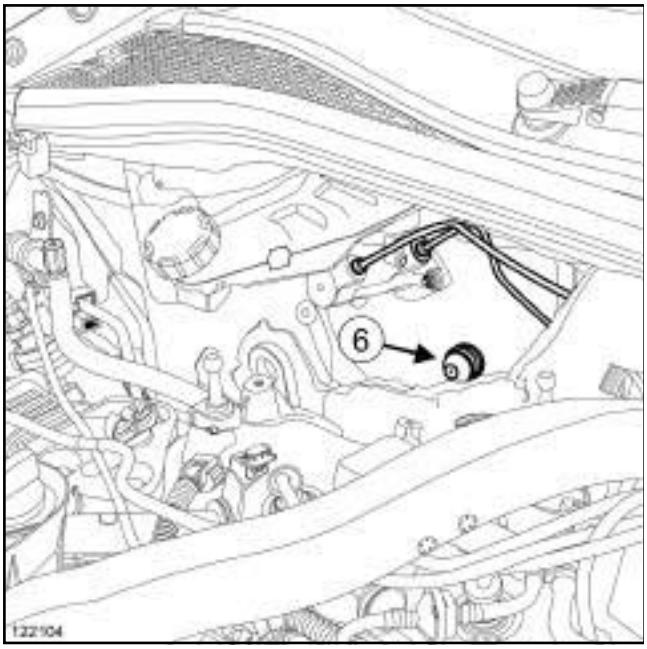


122105

❑ Remove:

- the bolts (**1**) from the turbocharger heat shield,
- the turbocharger heat shield (**2**) ,
- the oxygen sensor (**3**) (see **Oxygen sensors: Removal - Refitting**) (MR 392, 17B, Petrol injection),
- the bulkhead heat shield clips (**4**) ,
- the bulkhead heat shield (**5**) .

RIGHT-HAND DRIVE



122104

122236

❏ Remove the non-return valve (**6**) of the brake servo (see **37A**, **Mechanical component controls**, **Brake servo non-return valve: Removal - Refitting**, page **37A-26**) .

❏ Connect a vacuum pump directly to the brake servo.

❏ Activate the vacuum pump to obtain a vacuum of **500 mbar**.

❏ Check that the vacuum does not fall by more than **33 mbar** in **15 seconds**.

If the vacuum falls by more than **33 mbar** in **15 seconds**, there is a leak which may be located:

- in the non-return valve seal, in which case replace the seal (see **37A**, **Mechanical component controls**, **Brake servo non-return valve: Removal - Refitting**, page **37A-26**) ,
- in the pushrod diaphragm, in which case replace the brake servo (see **37A**, **Mechanical component controls**, **Brake servo: Removal - Refitting**, page **37A-32**) .

❏ Refit the non-return valve on the brake servo (see **37A**, **Mechanical component controls**, **Brake servo non-return valve: Removal - Refitting**, page **37A-26**) .

D4F, and 784

❏ Refit:

- the bulkhead heat shield,
- the bulkhead heat shield clips,
- the oxygen sensor (see **Oxygen sensors: Removal - Refitting**) (MR 392, 17B, Petrol injection),
- the turbocharger heat shield,
- the turbocharger heat shield bolts.

III - CHECKING THE NON-RETURN VALVE

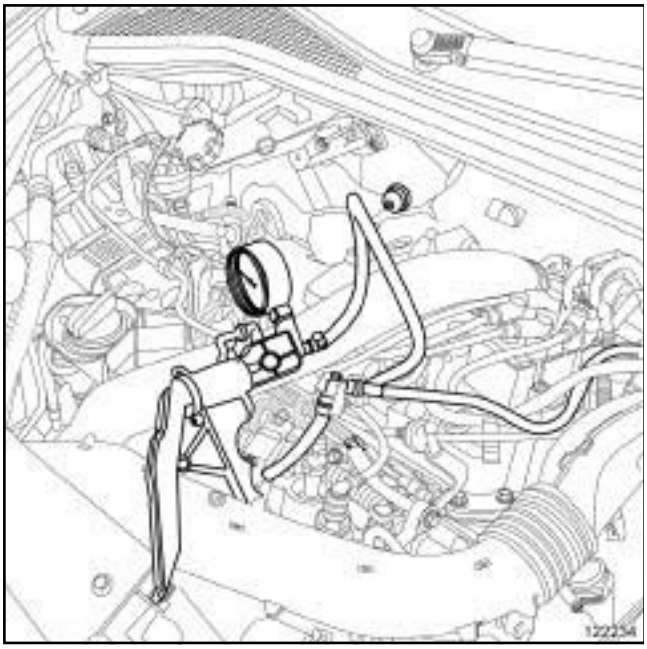
D4F or F4R or K4J or K4M or M4R

❏ Disconnect the non-return valve on the inlet manifold side.

K9K

❏ Disconnect the non-return valve on the vacuum pump side.

RIGHT-HAND DRIVE


122234

❑ Connect a vacuum pump to the end of the non-return valve.

❑ Activate the vacuum pump to obtain a vacuum of **500 mbar**.

❑ Check that the vacuum pressure does not drop. If it does, the non-return valve is pierced. Replace the valve (see **37A**, **Mechanical component controls**, **Brake servo non-return valve: Removal - Refitting**, page **37A-26**) .

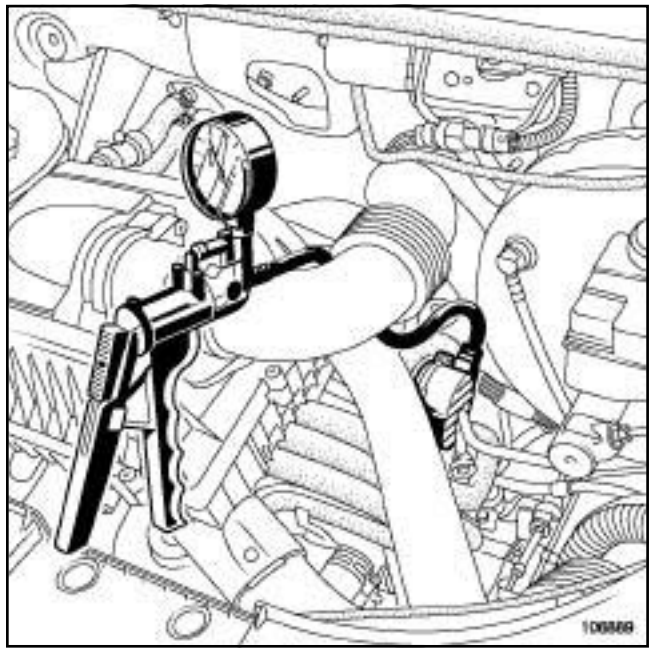
D4F or F4R or K4J or K4M or M4R

❑ Refit the non-return valve on the inlet manifold.

❑ Refit the front engine cover (if fitted to the vehicle).

IV - CHECKING THE VACUUM PUMP

K9K


106889

❑ Connect the external vacuum pump to the engine vacuum pump.

❑ Start the engine.

❑ Check the following values:

- **550 mbar** in **5 seconds** at an engine speed of **700 rpm**,
- **700 mbar** in **3 seconds** and **900 mbar** in **5 seconds** at an engine speed of **4050 rpm**.

❑ Replace the vacuum pump if the values are different (see **37A**, **Mechanical component controls**, **Vacuum pump: Removal - Refitting**, page **37A-68**) .

❑ Refit the non-return valve to the vacuum pump.

LEFT-HAND DRIVE

Equipment required
pedal press

Tightening torques ▽	
hydraulic unit nuts on its mounting	**8 Nm**
brake pipe unions on the hydraulic assembly	**14 Nm**

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Position a **pedal press** on the brake pedal to limit the outflow of brake fluid.

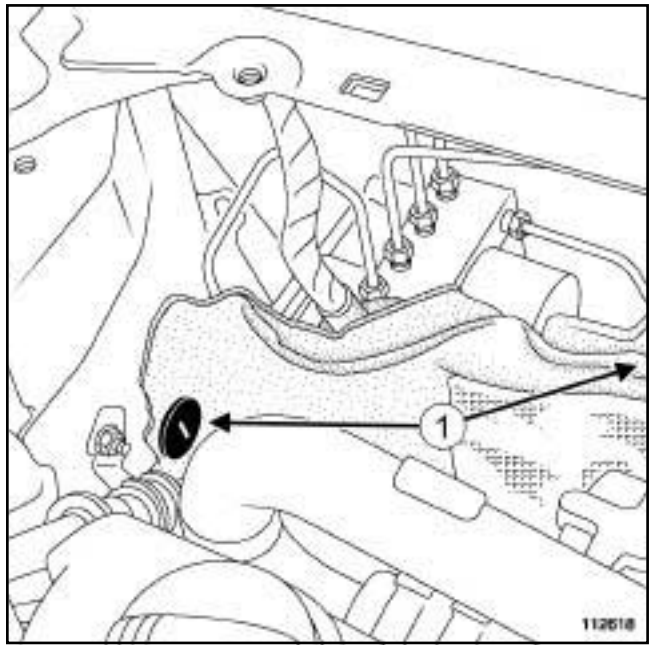
K9K

❏ Remove:

- the wiper arms (see **Wiping arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment).

M4R

❏ Remove the intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

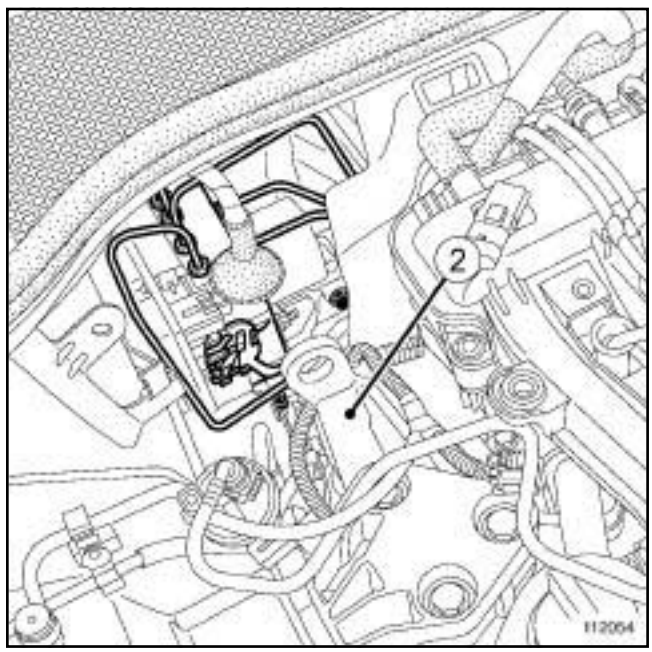


112618

❏ Remove the two soundproofing clips (**1**) .

❏ Remove the soundproofing to access the hydraulic unit.

K4J or K4M



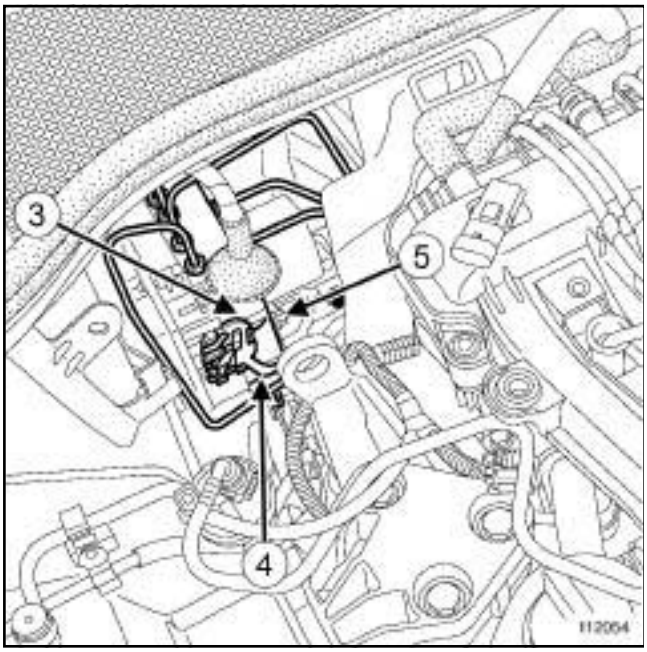
112054

❏ Remove the lifting eye (**2**) .

LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED

D4F or K4J or K4M or M4R



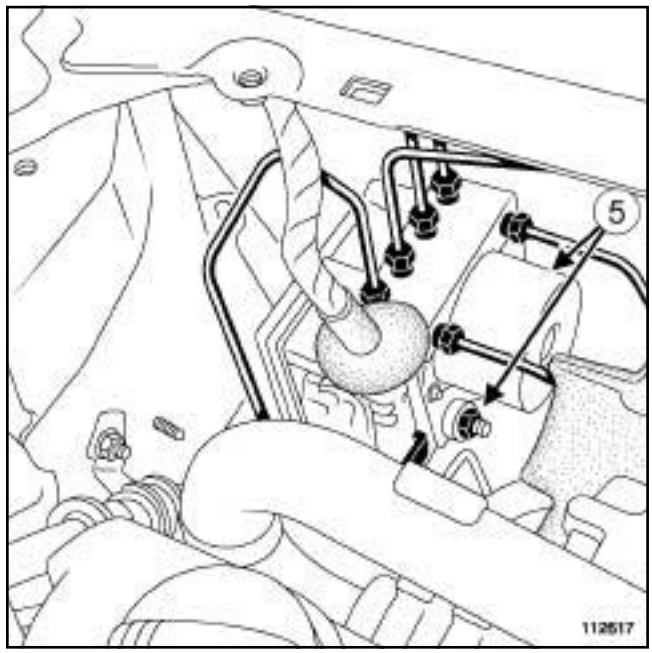
112054

❏ Disconnect the connector (**3**) from the hydraulic unit computer by lifting the lock on the connector (**4**) .

❏ Remove the brake pipe unions from the hydraulic unit.

❏ Undo the hydraulic unit nuts (**5**) on its support.

K9K



112617

❏ Disconnect the computer connector from the hydraulic unit.

❏ Remove the brake pipe unions on the hydraulic unit.

❏ Undo the hydraulic unit nuts (**5**) on its mounting.

❏ Remove the hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the hydraulic unit.

❏ Torque tighten the **hydraulic unit nuts on its mounting (8 Nm)**.

❏ Refit the brake pipe unions to the hydraulic unit.

❏ Torque tighten the **brake pipe unions on the hydraulic assembly (14 Nm)**.

❏ Connect the computer connector on the hydraulic unit.

LEFT-HAND DRIVE

II - FINAL OPERATION.

K4J or K4M

❑ Refit the lifting eye.

M4R

❑ Refit the intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

K9K

❑ Refit:

- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the wiper arms (see **Wiping arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing).

❑ Remove the **pedal press** from the brake pedal.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

RIGHT-HAND DRIVE

Equipment required
pedal press
brake circuit bleeding device

Tightening torques ▽	
nuts on the hydraulic unit support	**8 Nm**
brake pipe unions on the hydraulic assembly	**14 Nm**

WARNING
Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

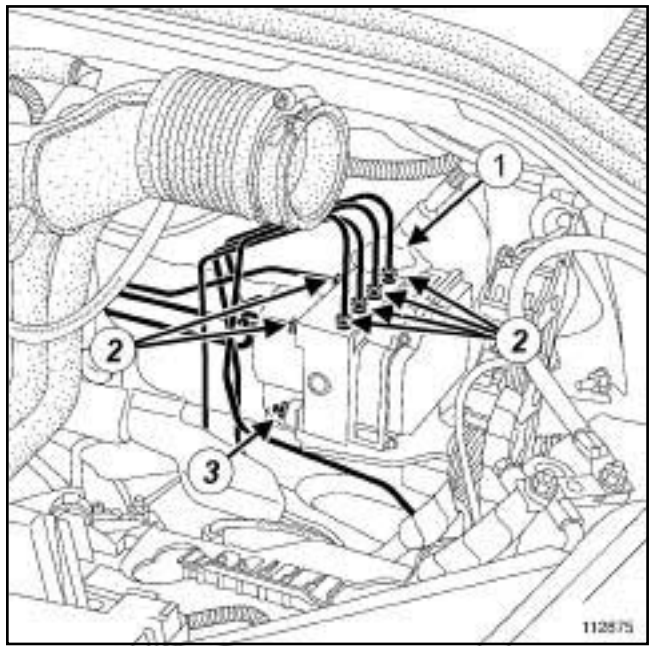
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112875

❏ Lift the bracket at the bottom of the computer connector (**1**) on the hydraulic unit.

❏ Disconnect the computer connector from the hydraulic unit.

❏ Remove:

- the brake pipe unions (**2**) on the hydraulic unit,
- the nuts (**3**) on the hydraulic unit support,
- the hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the hydraulic unit,
- the nuts on the hydraulic unit support.

❏ Torque tighten the **nuts on the hydraulic unit support (8 Nm)**.

❏ Finger tighten the brake pipe unions on the hydraulic unit.

❏ Torque tighten the **brake pipe unions on the hydraulic assembly (14 Nm)**.

❏ Connect the computer connector on the hydraulic unit.

❏ Lower the computer connector bracket on the hydraulic unit.

RIGHT-HAND DRIVE

II - FINAL OPERATION.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the **pedal press** tool on the brake pedal.

❑ Bleed the braking circuit using the **brake circuit bleeding device** (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

D4F, and 784, and LEFT-HAND DRIVE

Equipment required
pedal press

Tightening torques ▽	
hydraulic unit nuts	**8 Nm**
brake pipe unions on the hydraulic unit	**14 Nm**

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

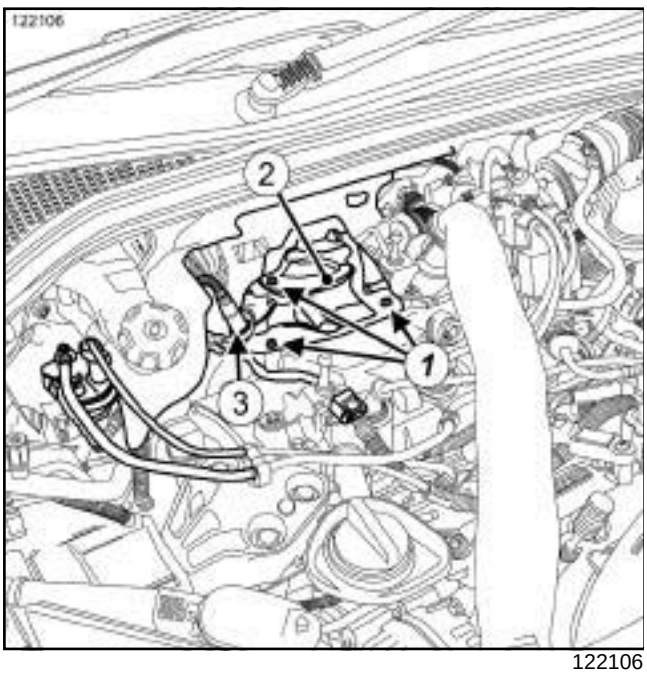
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Position the **pedal press** on the brake pedal to limit the outflow of brake fluid.

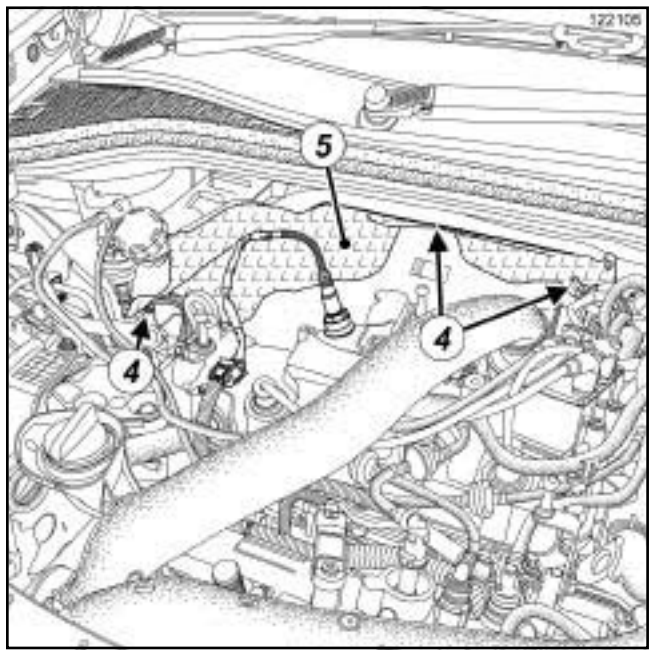
❏ Remove the front engine cover.



122106

❏ Remove:

- the bolts (**1**) from the turbocharger heat shield,
- the turbocharger heat shield (**2**) ,
- the oxygen sensor (**3**) (see **Oxygen sensors: Removal - Refitting**) (MR 392, 17B, Petrol injection).



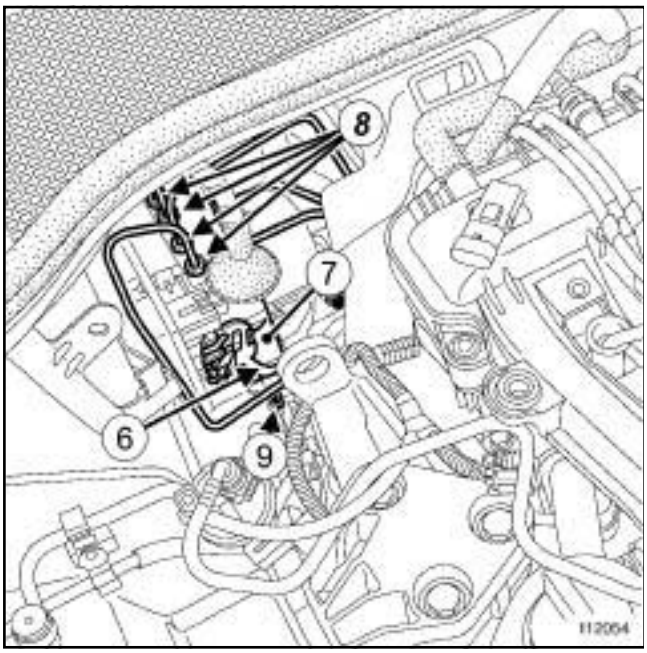
122105

❏ Remove:

- the bulkhead heat shield clips (**4**) ,
- the bulkhead heat shield (**5**) .

D4F, and 784, and LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



112054

❑ Lift the lock (**6**) at the bottom of the hydraulic unit computer connector.

❑ Disconnect the hydraulic unit computer connector (**7**) .

❑ Remove:

- the hydraulic unit brake pipe unions (**8**) ,
- the hydraulic unit nuts (**9**) ,
- the hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the hydraulic unit,
- the hydraulic unit nuts,
- the hydraulic unit brake pipe unions.

❑ Torque tighten:

- the **hydraulic unit nuts (8 Nm)**,
- the **brake pipe unions on the hydraulic unit (14 Nm)**.

❑ Connect the hydraulic unit computer connector.

❑ Lower the hydraulic unit computer connector lock.

II - FINAL OPERATION.

❑ Refit:

- the bulkhead heat shield,
- the bulkhead heat shield clips,
- the oxygen sensor (see **Oxygen sensors: Removal - Refitting**) (MR 392, 17B, Petrol injection).

❑ Refit:

- the turbocharger heat shield,
- the heat shield bolts,
- the engine cover.

❑ Remove the **pedal press** from the brake pedal.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

LEFT-HAND DRIVE

Equipment required
pedal press

Tightening torques ▽	
nuts mounting the hydraulic unit on its mounting	**8 Nm**
brake pipe unions on the hydraulic assembly	**14 Nm**

WARNING
Prepare for brake fluid outflow, to prevent damage to the mechanical parts and bodywork around the braking system.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Fit the **pedal press** to the brake pedal to limit the outflow of brake fluid.

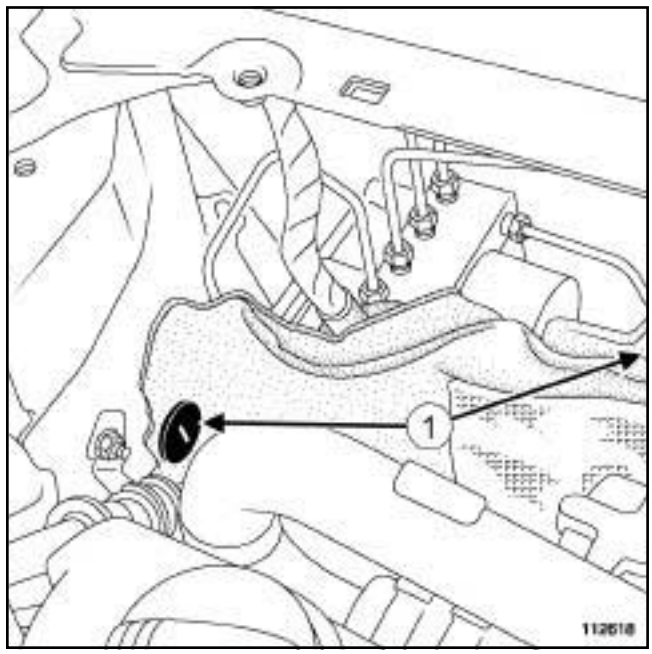
F4R or K9K

❑ Remove:

- the wiper arms (see **Wiping arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment).

M4R

❑ Remove the intake distributor (see **Inlet distributor: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



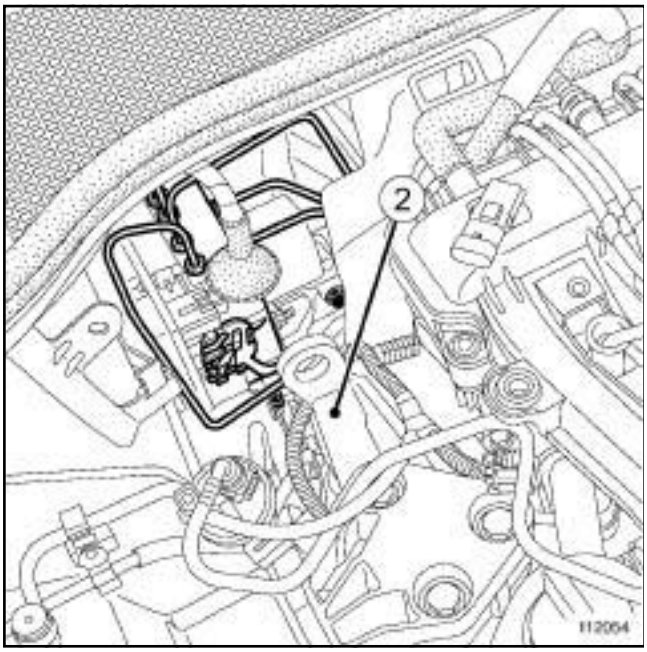
112618

❑ Remove the two soundproofing clips (**1**) .

❑ Move the soundproofing aside to access the hydraulic unit.

LEFT-HAND DRIVE

K4J or K4M

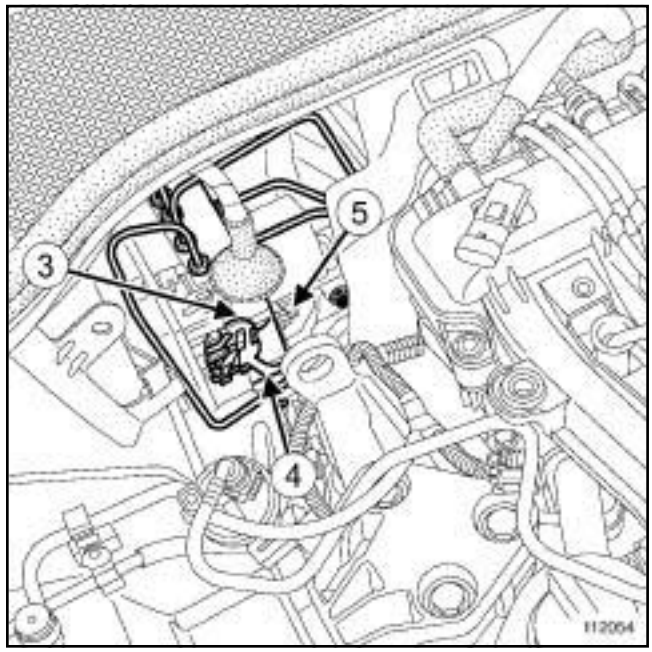


112054

❏ Remove the lifting eye (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

D4F or K4J or K4M or M4R



112054

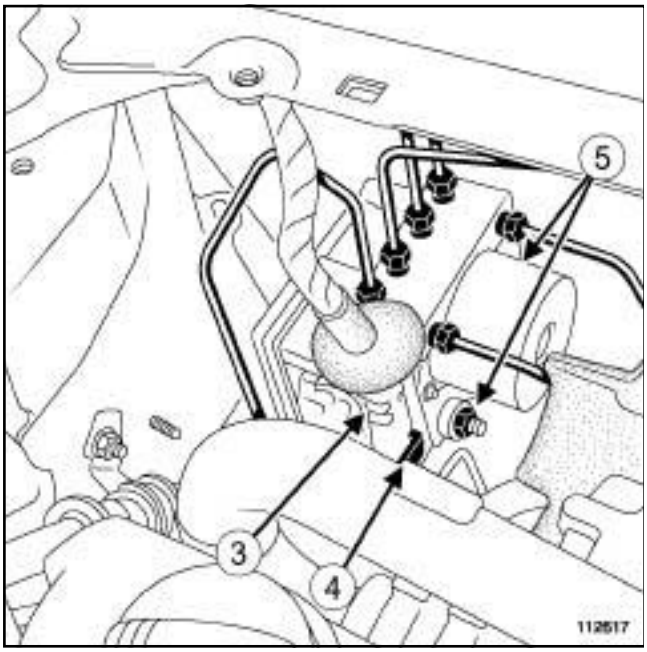
❏ Disconnect the hydraulic unit computer connector (**3**) by lifting the lug (**4**) .

❏ Remove the brake pipe unions on the hydraulic unit.

❏ Loosen the nuts (**5**) mounting the hydraulic unit on its mounting.

LEFT-HAND DRIVE

F4R or K9K



112617

❏ Disconnect the hydraulic unit computer connector (**3**) by lifting the lug (**4**) .

❏ Remove the brake pipe unions on the hydraulic unit.

❏ Loosen the nuts (**5**) mounting the hydraulic unit on its mounting.

❏ Remove the hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the hydraulic unit.

❏ Torque tighten the **nuts mounting the hydraulic unit on its mounting (8 Nm)**.

❏ Refit the six brake pipe unions on the hydraulic unit.

❏ Torque tighten the **brake pipe unions on the hydraulic assembly (14 Nm)**.

❏ Connect the hydraulic unit computer connector.

II - FINAL OPERATION.

K4J or K4M

❏ Refit the lifting eye.

F4R or K9K

❏ Refit:

- the scoop under the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 392, 56A, Exterior equipment),
- the wiper arms (see **Wiping arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing).

❏ Remove the **pedal press** tool on the brake pedal.

❏ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

RIGHT-HAND DRIVE

Equipment required
pedal press

Tightening torques ▽	
nuts on the hydraulic unit support	**8 Nm**
brake pipe unions on the hydraulic assembly	**14 Nm**

WARNING
Prepare for the flow of fluid, and protect the surrounding components.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

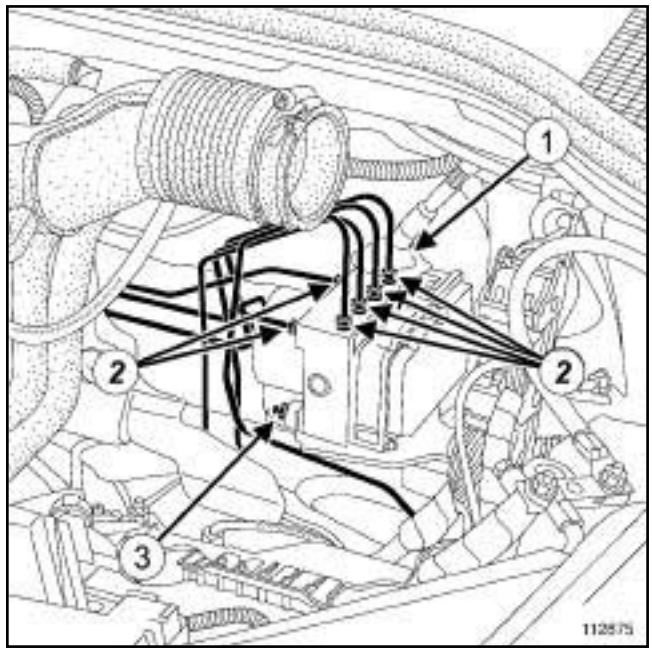
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Position a **pedal press** on the brake pedal to limit the outflow of brake fluid.

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112875

❏ Lift the lock at the bottom of the hydraulic unit computer connector (**1**) .

❏ Disconnect the computer connector from the hydraulic unit.

❏ Remove:

- the brake pipe unions (**2**) on the hydraulic unit,
- the nuts (**3**) on the hydraulic unit support,
- the hydraulic unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the hydraulic unit,
- the nuts on the hydraulic unit support.

❏ Torque tighten the **nuts on the hydraulic unit support (8 Nm)**.

❏ Finger tighten the brake pipe unions on the hydraulic unit.

❏ Torque tighten the **brake pipe unions on the hydraulic assembly (14 Nm)**.

❏ Connect the computer connector on the hydraulic unit.

❏ Lower the hydraulic unit computer connector lock.

RIGHT-HAND DRIVE

II - FINAL OPERATION.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the **pedal press** from the brake pedal.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Bleed the brake circuit (see **30A**, **General information**, **Braking circuit: Bleed**, page **30A-4**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Tightening torques ▽	
wheel speed sensor mounting bolt	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

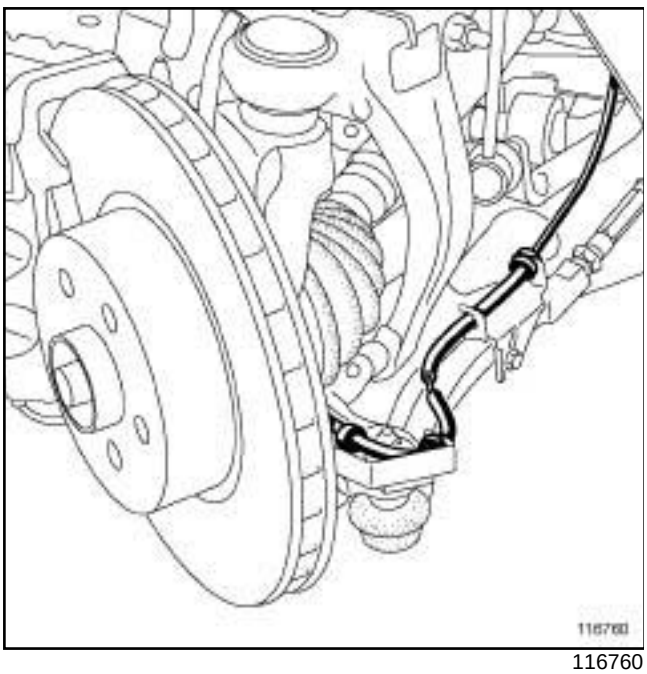
❏ Position the vehicle on a two-post lift (see **02A, Lifting Equipment, Vehicle: Towing and lifting**).

❏ Disconnect the battery (see **80A, Battery, Battery: Removal - Refitting**).

❏ Remove:

- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) ,
- the wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liner: Removal - Refitting**).

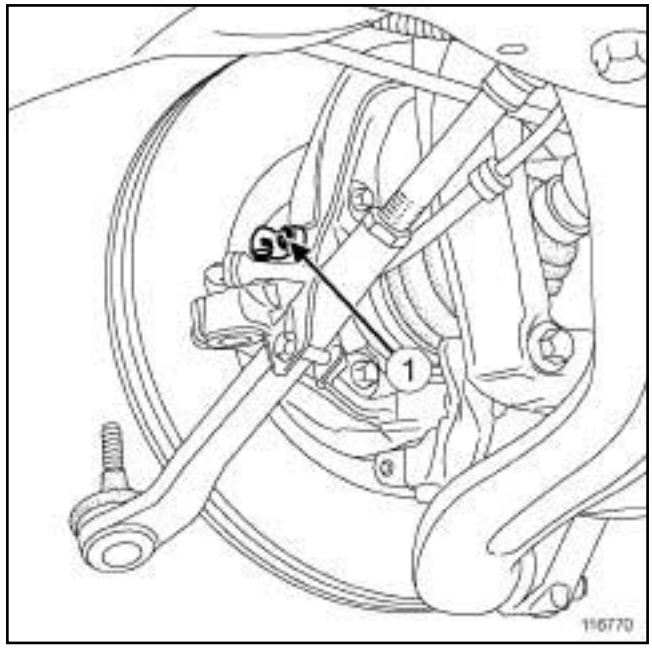
II - OPERATION FOR REMOVAL OF PART CONCERNED



116760

❏ Detach the wheel speed sensor wiring harness.

❏ Disconnect the wheel speed sensor in the wheel arch.



116770

❏ Remove:

- the mounting bolt (**1**) from the wheel speed sensor,
- the wheel speed sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the wheel speed sensor,
- the mounting bolt to the wheel speed sensor.

❏ Torque tighten the **wheel speed sensor mounting bolt (8 Nm)**.

❏ Connect the wheel speed sensor in the wheel arch.

II - FINAL OPERATION.

❏ Refit:

- the wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liner: Removal - Refitting**),
- the front wheels (see **35A**, **Wheels and tyres**, **Wheel: Removal - Refitting**, page **35A-1**) .

❏ Connect the battery (see **80A, Battery, Battery: Removal - Refitting**).

Equipment required
Diagnostic tool

Tightening torques ▽	
yaw speed and transverse acceleration sensor mounting nuts	**6 Nm**

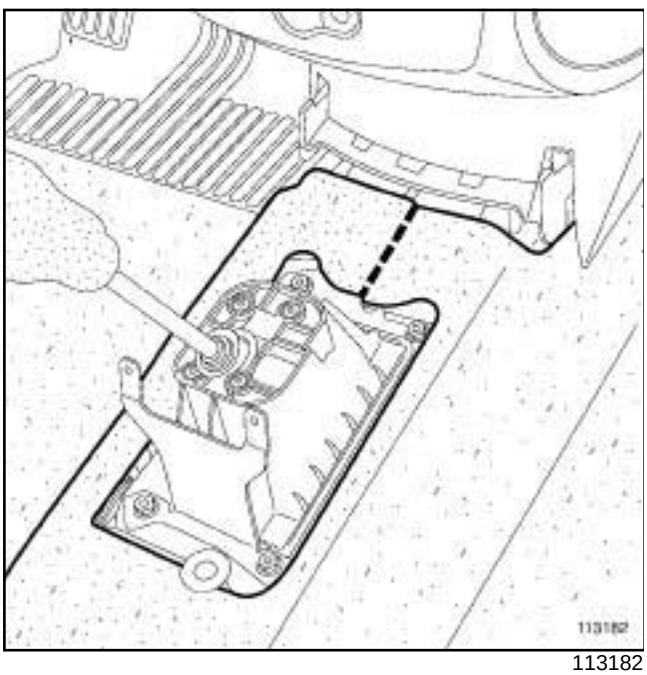
REMOVAL

I - REMOVAL PREPARATION OPERATION

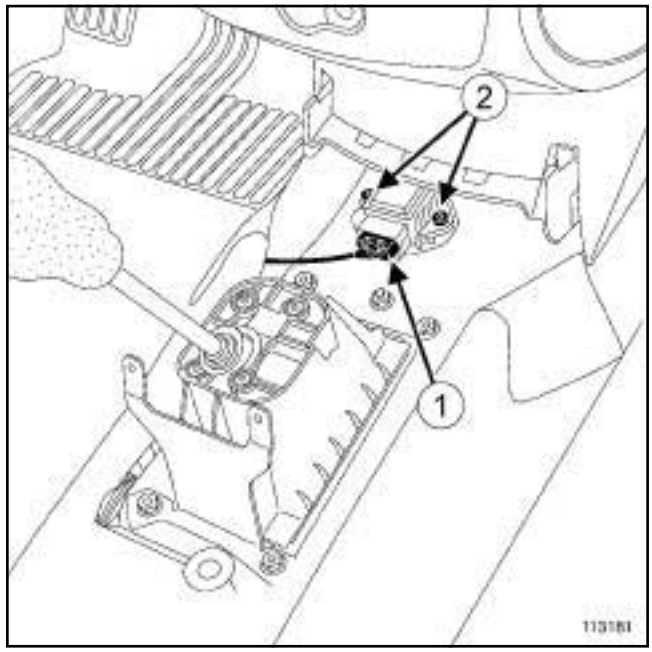
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED


113182

❏ Cut the carpet using a sharp tool.



113181

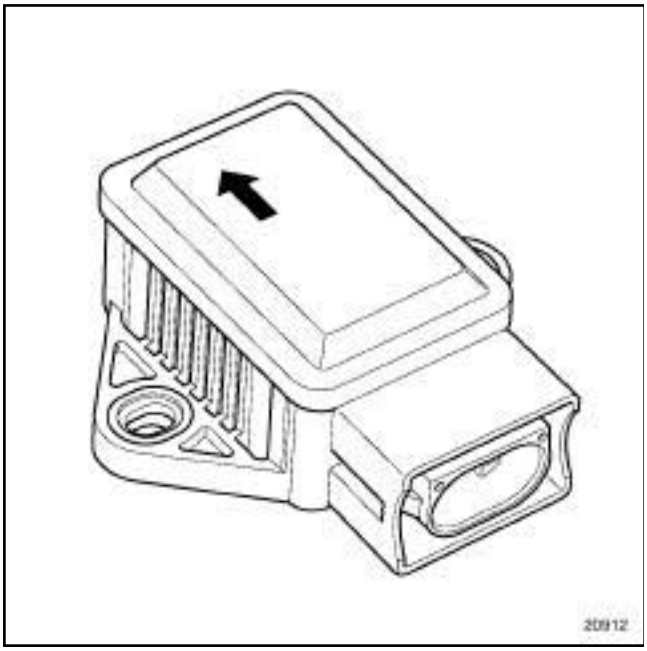
❏ Disconnect the connector (**1**) .

❏ Remove:

- the mounting bolts (**2**) from the lateral acceleration and yaw sensor,
- the sensor.

REFITTING

I - REFITTING PREPARATIONS OPERATION



20912

❑

WARNING

The sensor must be fitted facing the vehicle's direction of travel (as shown by the arrow).

Be sure to replace any sensor which has sustained an impact.

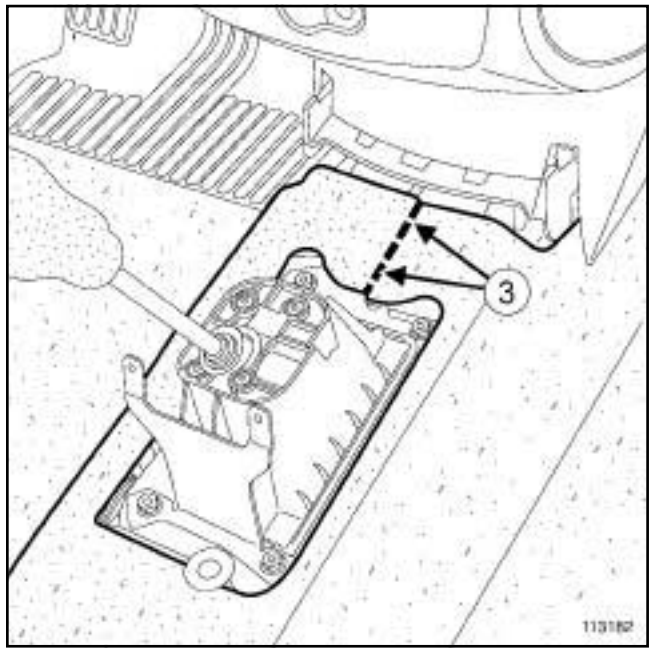
II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sensor,
- yaw speed and transverse acceleration sensor mounting bolts.

❑ Connect the connector.

❑ Torque tighten the **yaw speed and transverse acceleration sensor mounting nuts (6 Nm)**.



113182

❑ Fit the carpet at (**3**) with **PIG'S SNOUT CLIPS (Part no. 77 01 047 751)**.

III - FINAL OPERATION.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

IMPORTANT

Be sure to confirm the repair with a road test and a check using the **Diagnostic tool**.

Special tooling required	
Mot. 1608	Torque screwdriver 1 to 6.6 N.m.

Equipment required
Diagnostic tool

Tightening torques ▽	
braking computer bolts	**3 Nm**

❑

Note:

Removal of the ESP or ABS computer is allowed.

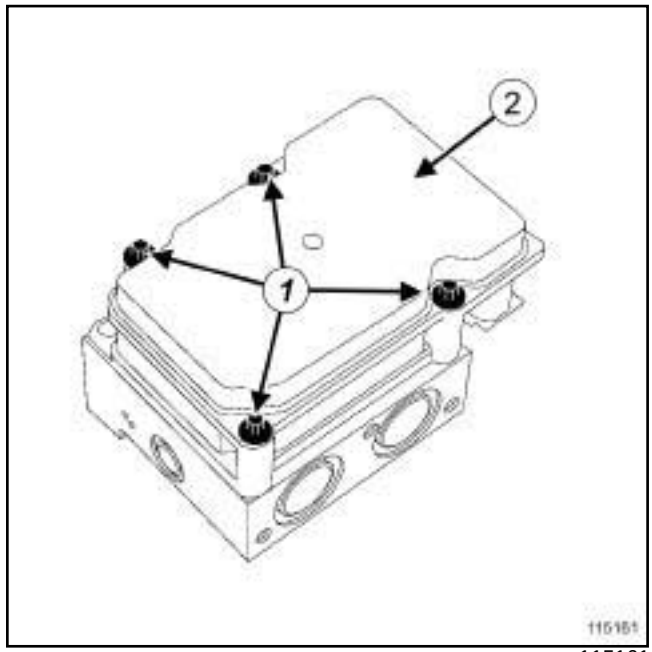
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the entire hydraulic unit (see **Hydraulic brake unit: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



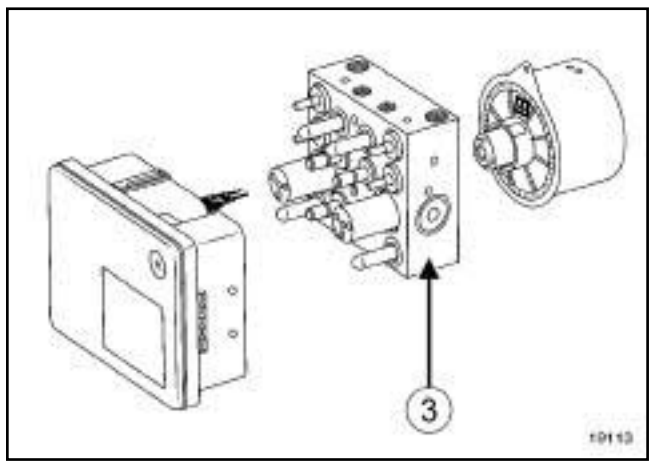
115161

❑ Remove:

- the (**1**) braking computer bolts on the pressure modulation unit,
- the braking computer (**2**) .

REFITTING

I - REFITTING PREPARATIONS OPERATION



19113

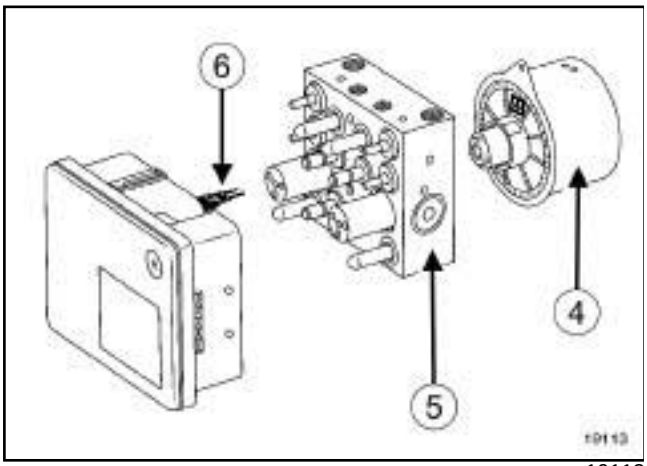
❑ Do not clean the pressure modulation unit (**3**) .

❑ Always replace the braking computer bolts.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the braking computer, holding it by its edge.

> Note:
>
> Do not try to force the braking computer into place when refitting; it should fit in without any resistance.



19113

❏ Fit the hydraulic pump (**4**) securely onto the pressure modulation unit (**5**) .

> Note:
>
> When a new braking computer is being fitted, remember to attach the interconnection fork (**6**) between the pressure modulation unit and the braking computer.

❏ Refit the braking computer bolts on the pressure modulation unit.

❏ Torque tighten the **braking computer bolts (3 Nm)** using the **(Mot. 1608)**.

III - FINAL OPERATION.

❏ Refit the entire hydraulic unit (see **Hydraulic brake unit: Removal - Refitting**) .

❏ Configure the speedometer index using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 38C, Anti-lock braking system.

❏ Clear any faults stored by the braking computer.

❏ Carry out a road test to confirm the repair.

RENAULT

4 Panelwork

40A GENERAL INFORMATION

41A FRONT LOWER STRUCTURE

41B CENTRE LOWER STRUCTURE

41C SIDE LOWER STRUCTURE

41D REAR LOWER STRUCTURE

42A FRONT UPPER STRUCTURE

43A SIDE UPPER STRUCTURE

44A REAR UPPER STRUCTURE

45A TOP OF BODY

47A SIDE OPENING ELEMENTS

48A NON-SIDE OPENING ELEMENTS

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Chapitre 4

Contents

Pages

40A GENERAL INFORMATION

Specialised bodywork tools: Use 40A-1

Structural bodywork documentation: Use 40A-5

Vehicle on repair bench: Description 40A-7

Subframe: Specifications 40A-11

Hollow section inserts: List and location of components 40A-16

Earths on body: List and location of components 40A-23

Vehicle structure, removable section: Description 40A-28

Vehicle structure, front section: Description 40A-30

Vehicle structure, side section: Description 40A-32

Vehicle structure, centre section: Description 40A-37

Vehicle structure, rear section: Description 40A-39

Structural components to be positioned on the repair bench: Description 40A-45

41A FRONT LOWER STRUCTURE

Front end lower cross member: General description 41A-1

Front impact cross member: Removal - Refitting 41A-2

Radiator mounting cross member: General description 41A-3

Radiator mounting cross member: Removal - Refitting 41A-4

Front side member: General description 41A-5

Front side member: Description 41A-8

Front side member, centre section: General description 41A-11

Front side member, centre section: Description 41A-12

Front side member closure panel, front section: General description 41A-13

Front side member closure panel, front section: Description 41A-15

Battery tray bracket: General description 41A-17

Radiator cross member mounting: General description 41A-18

Radiator cross member mounting: Description 41A-19

Contents

41A FRONT LOWER STRUCTURE

Front subframe front mounting: General description 41A-20

Engine stand: General description 41A-21

Engine stand: Description 41A-22

Front half unit: Description 41A-24

Subframe rear mounting: General description 41A-28

Front towing eye: General description 41A-29

Engine tie-rod attachment: Description 41A-30

41B CENTRE LOWER STRUCTURE

Centre floor front side cross member: General description 41B-1

Centre floor front side cross member: Description 41B-3

Front cross member under front seat: General description 41B-5

Front cross member under front seat: Description 41B-6

Rear cross member under front seat: General description 41B-7

Rear cross member under front seat: Description 41B-8

Centre floor, side section: General description 41B-9

Centre floor, side section: Description 41B-11

41C SIDE LOWER STRUCTURE

Sill panel: Description 41C-1

Sill panel closure panel: Description 41C-11

Sill panel reinforcement: General description 41C-16

Sill panel reinforcement: Description 41C-17

41D REAR LOWER STRUCTURE

Luggage retaining cross member: Removal - Refitting 41D-1

Rear floor, front section: General description 41D-2

Rear floor, front section: Description 41D-4

Rear floor, rear section: General description 41D-6

Rear floor, rear section: Description 41D-7

Rear side member assembly: Description 41D-10

Rear side member: General description 41D-13

Rear side member, rear section: Description 41D-16

Rear floor front cross member reinforcement: General description 41D-17

Rear floor front cross member reinforcement: Description 41D-19

Rear floor centre cross member: General description 41D-20

Rear floor centre cross member: Description 41D-21

Rear floor rear cross member: Description 41D-23

Rear impact lower cross member: Removal - Refitting 41D-24

Contents

41D REAR LOWER STRUCTURE

Rear towing eye: General description 41D-25

Rear floor extension: Description 41D-26

Rear side member extension: Description 41D-28

42A FRONT UPPER STRUCTURE

Front wing: General description 42A-1

Front wing: Removal - Refitting 42A-3

Front wing: Adjustment 42A-6

Front wing: Conversion 42A-9

Front wing lower mounting support: General description 42A-11

Front wing lower mounting support: Removal - Refitting 42A-12

Front wing upper mounting support: General description 42A-13

Front wing upper mounting support: Removal - Refitting 42A-14

Front end panel: General description 42A-17

Front end panel: Removal - Refitting 42A-18

Scuttle side panel: General description 42A-20

Scuttle side panel: Description 42A-22

Upper reinforcement of scuttle side panel: General description 42A-24

Upper reinforcement of scuttle side panel: Description 42A-25

Front wheel arch: General description 42A-27

42A FRONT UPPER STRUCTURE

Front wheel arch: Description 42A-28

Dashboard cross member: Removal - Refitting 42A-31

Windscreen aperture lower cross member closure panel: General description 42A-36

Windscreen aperture lower cross member closure panel: Description 42A-37

Bulkhead lower cross member: General description 42A-39

Bulkhead side reinforcement: General description 42A-40

43A SIDE UPPER STRUCTURE

A-pillar: General description 43A-1

A-pillar: Description 43A-2

A-pillar reinforcement: General description 43A-5

A-pillar reinforcement: Description 43A-6

Windscreen pillar lining: General description 43A-7

Windscreen pillar lining: Description 43A-8

B-pillar: General description 43A-12

B-pillar reinforcement: General description 43A-15

B-pillar reinforcement: Description 43A-17

B-pillar lining: General description 43A-21

Body side: General description 43A-22

Body side: Description 43A-24

Body side, front section: General description 43A-27

Contents

43A SIDE UPPER STRUCTURE

Body side, front section: Description 43A-28

Upper body: General description 43A-33

Upper body: Description 43A-35

Side roof rail lining: General description 43A-39

Side roof rail lining: Description 43A-40

Front jacking point: General description 43A-41

44A REAR UPPER STRUCTURE

Rear wing panel: General description 44A-1

Rear wing panel: Description 44A-3

Rear wing panel rain channel: General description 44A-11

Rear wing panel rain channel: Description 44A-12

Strut ball joint: General description 44A-13

Rear lights mounting: General description 44A-14

Rear lights mounting: Description 44A-15

Light mounting lining: Description 44A-18

Outer rear wheel arch: General description 44A-22

Outer rear wheel arch: Description 44A-24

Body side rear lining: Description 44A-30

Rear end panel: General description 44A-40

Rear end panel: Description 44A-41

44A REAR UPPER STRUCTURE

Rear end panel lining: General description 44A-43

Rear end panel lining: Description 44A-44

45A TOP OF BODY

Roof: General description 45A-1

Roof: Description 45A-2

Roof front cross member: General description 45A-10

Roof centre cross member: General description 45A-11

Roof centre cross member: Description 45A-12

Roof rear cross member: General description 45A-14

Roof rear cross member: Description 45A-15

47A SIDE OPENING ELEMENTS

Front side door: Removal - Refitting 47A-1

Front side door: Adjustment 47A-3

Front side door: Stripping - rebuilding 47A-7

Rear side door: Removal - Refitting 47A-8

Rear side door: Adjustment 47A-10

Rear side door: Stripping - rebuilding 47A-13

Fuel filler flap cover: Removal - Refitting 47A-14

Contents

48A **NON-SIDE OPENING ELEMENTS**

Bonnet: Removal - Refitting 48A-1

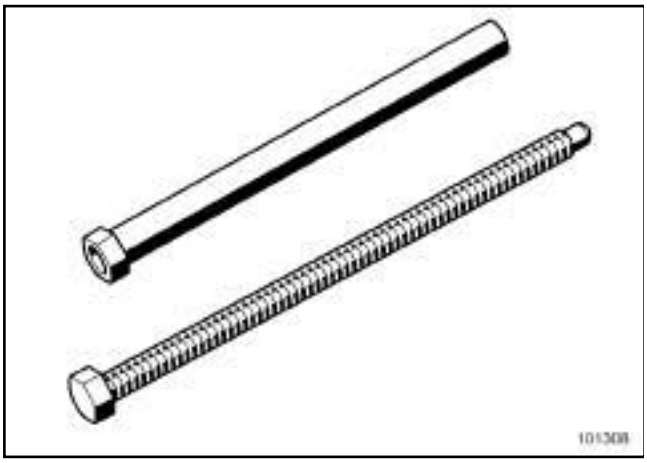
Bonnet: Adjustment 48A-3

Tailgate: Removal - Refitting 48A-6

Tailgate: Adjustment 48A-8

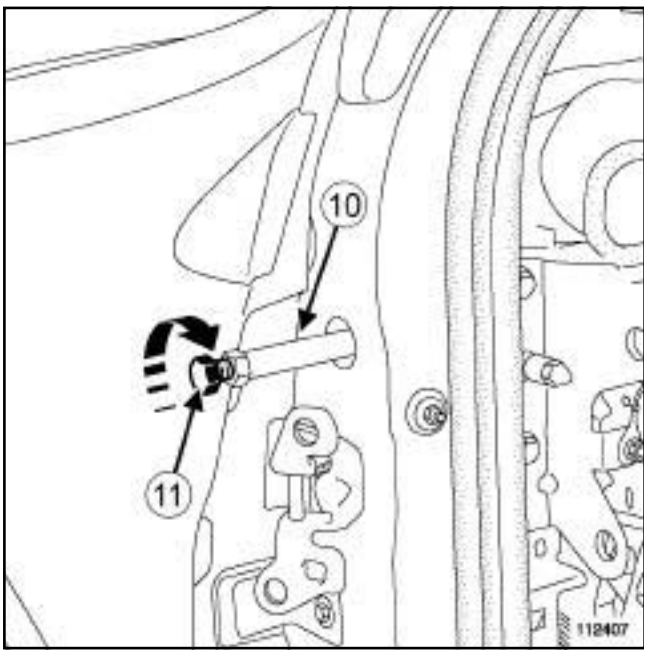
Tailgate: Stripping - Rebuilding 48A-11

USING THE DASHBOARD CROSS MEMBER REMOVAL TOOL Car. 1765



101308

❏ Use this tool as indicated in the dashboard removal procedure.

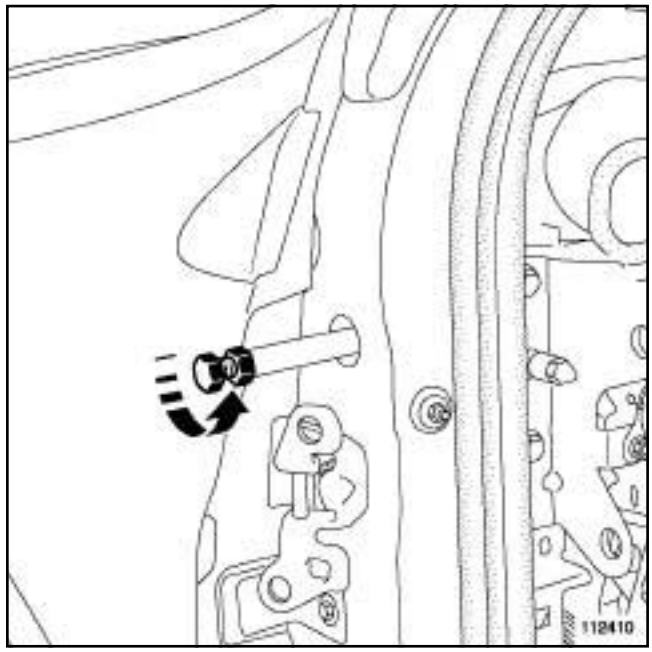


112407

❏ Fit the tool **Car. 1765** as far as the stop (**10**) .

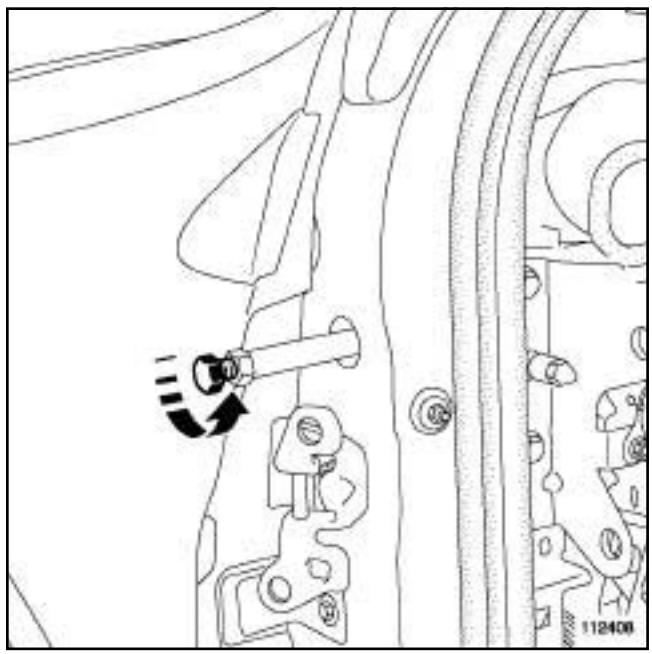
Screw the rod (**11**) onto the body (**10**) as far as the stop.

Firmly lock tool body in the same way as a lock nut against the dashboard cross member nut while holding hexagon bolt.



112410

❏ Unscrew the whole tool as far as the stop and tighten it gently (during this operation, the beam nut, which has a left-hand thread, screws into the beam and disengages it from the A-pillar).



112408

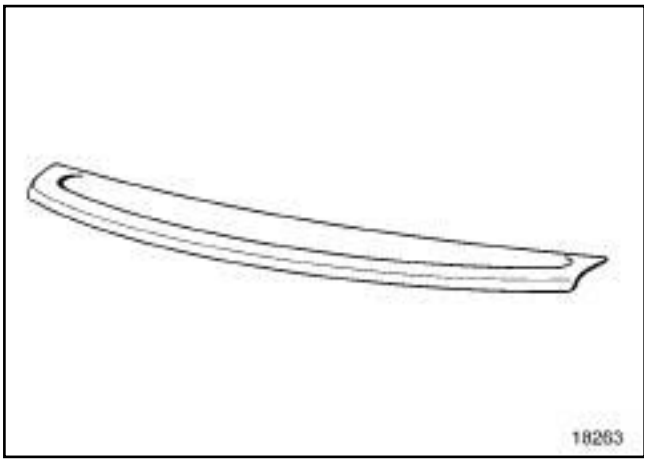
❏ Hold the tool body ***(10)*** and unlock the rod ***(11)*** .

Unscrew dashboard cross member rod to remove the tool.

WARNING

To maintain the adjustment of the dashboard cross member and therefore make refitting easier, only loosen the lock nut on one side.

USING THE DASHBORAD PROTECTION TOOL Car. 1764

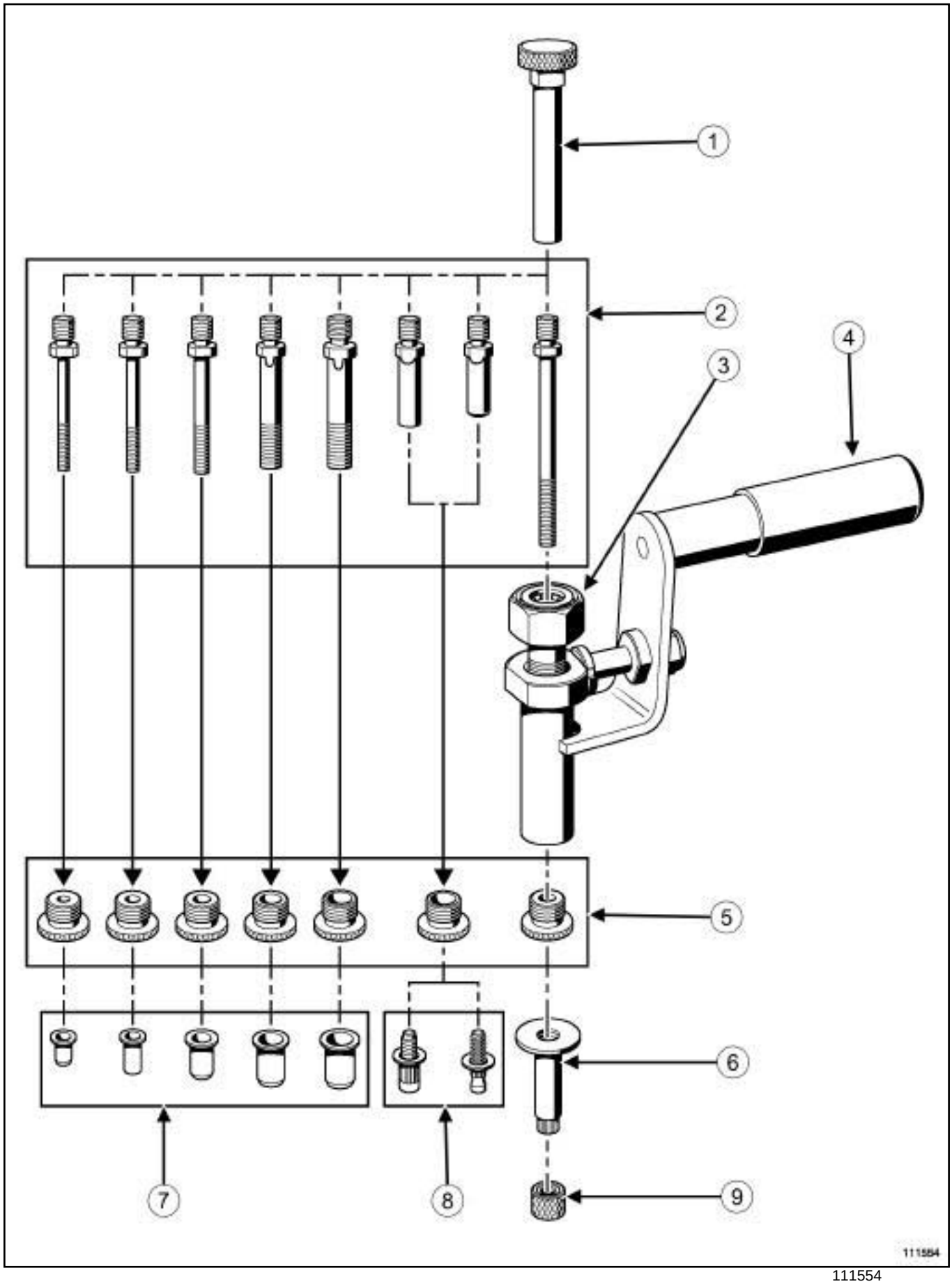


18263

❑ Use this tool when replacing the windscreen:

- remove the A-pillar trims,
- position the dashboard protector to prevent damage.

PREPARING THE TOOL Car. 1504



111554

❑ (**1**) Mandrel mounting
- (**2**) Mandrels
- (**3**) Tightening bolt
- (**4**) Body
- (**5**) Anvils
- (**6**) Special nut
- (**7**) Nuts
- (**8**) Studs
- (**9**) Thrust nut

- Select the mandrel, anvil and insert assembly adapted to the crimping operation to be carried out.
- Into the mandrel mounting (**1**) , screw the mandrel (**2**) (left-hand thread).
- Tighten the bolt (**3**) onto the body (**4**) until the stop (left-hand thread).
- Into the body (**4**) , screw the anvil (**5**) (left-hand thread).
- Fit the assembly (**1**) and (**2**) into the body of the tool.
- Screw the insert (left-hand thread) onto the pull rod.

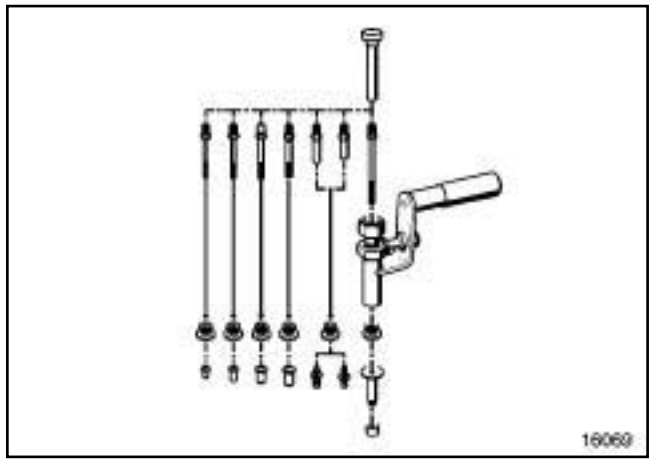
To fit the special nut (**6**) , position the mandrel across the crimped nut and tighten it onto the thrust nut (**9**) .

WARNING

Each time a panel is stripped in the workshop (e.g. when drilling), degrease and wipe the area and then use a fine paintbrush to apply the following:

- a pre-treatment primer,
- a two-part primer,
- paint in the vehicle body colour.

USING TOOL CAR. 1504



16069

❑ Turn the bolt using a **24** spanner, holding the tool handle manually.

WARNING

The operator should be able to feel when the crimping is complete (more force required for tightening). The insert has been crimped correctly when there is no more rotational play, carry out this check before unscrewing the "pull rod - mandrel" assembly.

B85 or C85

I - - CLASSIFYING INFORMATION

This information is classified in two complementary documents:

1 - Vehicle structure bodywork repair procedures (MR of the vehicle concerned)

This document comprises two sections:

a - Section 0:

This section does not contain repair methods, it only contains description information; It consists of several subsections:

- 01C Vehicle bodywork specifications,
- 02A Lifting equipment,
- 02B Bodywork innovations,
- 03B Collision,
- 04E Painting,
- 05B Bodywork equipment and tooling.

b - Section 4:

This section consists of several subsections:

- 40A General information,
- 41A Lower front structure,
- 41B Lower central structure,
- 41C Lower side structure,
- 41D Lower rear structure,
- 42A Upper front structure,
- 43A Upper side structure,
- 44A Upper rear structure,
- 45A Top of body,
- 47A Side opening elements,
- 48A Non-side opening elements.

These subsections are linked to the Replacement Parts Catalogue and contain two types of information:

- Section 1: **General description**. This section contains information relating to generic structural spare parts and to their design. This information may be the same for several vehicles.
- Section 2: **Description, Removal - Refitting, Strip - Rebuild and Adjustment**. This section contains information relating to structural spare parts and the special features of the vehicle concerned.

Note:

Always read both parts in order to have all the necessary information to repair the vehicle.

2 - Fundamentals of the structure bodywork repair (MR 400)

This document comprises two sections:

a - Section 0:

This section does not contain any repair procedures; it only contains descriptive information and has only one subsection:

- 03B Collision

b - Section 4:

This section contains information about using the equipment and products, and basic operating ranges which concern the bodyshop technician. This section only has one subsection.

- 40A Structure general information

II - INFORMATION SEARCH

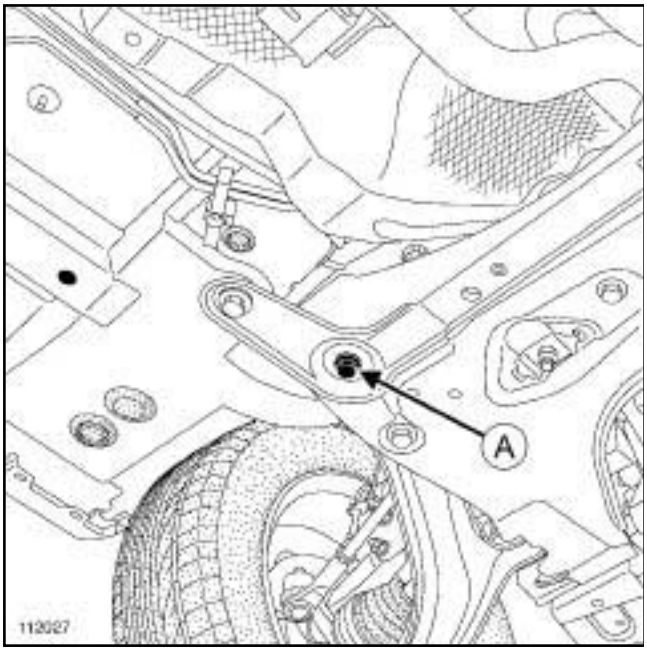
Questions	Answers
Features of specific tools to repair a given vehicle.	Refer firstly to section 0 of the Vehicle MR then refer to the « special tooling catalogue » or the « garage equipment catalogue » .
Features of specific products to repair a given vehicle.	Firstly refer to section 0 of the Vehicle MR then refer to the « IXELL product catalogue » .
Use of a specific tool to repair a given vehicle.	firstly refer to subsection 0 of the Vehicle MR.
Using a bodywork tool.	Firstly refer to subsection 40 of the Vehicle MR then MR 400.

B85 or C85

Questions	Answers
Information concerning the replacement parts of a given vehicle regarding: - the possibilities of replacement with the position on vehicle, - an adaptation before the assembly, - a cutting place with the special notes on this cut, - special notes on right-left symmetry. - special features of the version or equipment.	Refer to the subsection which corresponds to the part concerned: 41 to 48 of the Vehicle MR, section 2
Information concerning the spare parts of a given vehicle, the composition and the specifications of each part it contains.	Firstly refer to the parts description exploded view in subsection 40 of the Vehicle MR.
	If this is detailed in the document, refer to subsections 41 to 48 of the Vehicle MR part 2 which corresponds with the part concerned.
	If this does not appear in the description, refer to subsection 41 to 48 for the part in the next level up.
Information concerning: - details of panel overlap on a joint, - a procedure and an operational mode relating to a new type of assembly in Renault, - a method for using a tool or a new product which is unfamiliar in Renault.	Refer to the subsection which corresponds to the part concerned: 41 to 48 of the Vehicle MR then subsection 40 of Vehicle MR 400.
Towing and raising a vehicle after an accident.	Firstly refer to subsection 40 of the Vehicle MR then the equipment catalogue.
Conveyance and handling of a vehicle after an accident.	Firstly refer to subsection 40 of the MR 400 then the equipment catalogue.
Combination of impacts to repair a given vehicle.	Refer to section 0 of the Vehicle MR
Logic of the impact combination.	Refer to section 0 of the Vehicle MR
Fault finding on an impact for a given vehicle.	Firstly refer to section 0 of the Vehicle MR then section 0 of Repair Manual 400.
Logic of impact fault finding.	See section 0 of MR 400.
General instructions for: - repair, - safety, - preparing a vehicle, - tool classification, - precautions for repair.	See section 0 of MR 400.

I - MAIN REFERENCE POINTS BEFORE TRIM-SETTING

1 - Front sub-frame in place

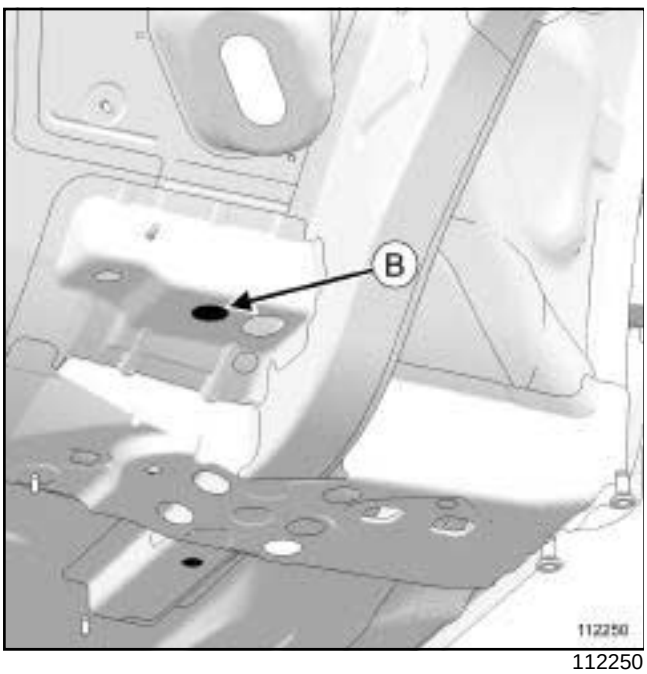


112027

The jig crowns the front sub-frame rear mounting bolt (**A**) .

Use this situation for a rear impact or a light frontal impact without removal of the mechanical components.

2 - Front mechanical components removed



112250

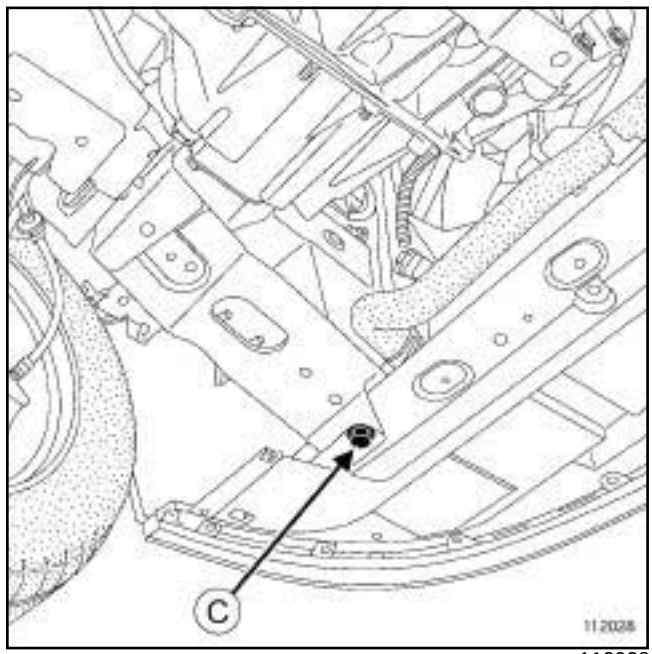
The jig rests under the sub-frame mounting unit and is centred in the threaded hole (**B**) .

Use this situation for a frontal impact with removal of the mechanical components.

Note:

If it is suspected that one of these points may be deformed, use two additional points located in an area not affected by the impact in order to confirm trim-setting.

II - SECONDARY FRONT TRIM-SETTING REFERENCE POINT



112028

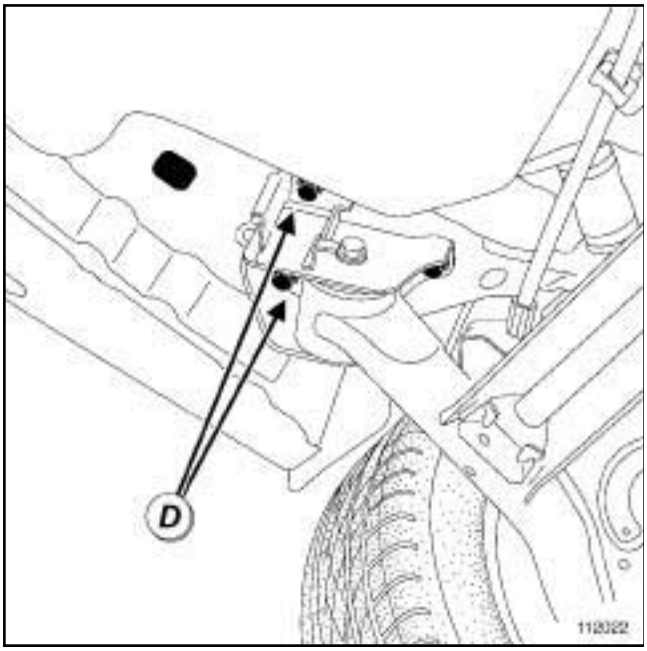
The body jig covers radiator mounting cross member mounting bolt (**C**) .

Use this situation to confirm the trim-setting following a rear impact, (e.g.: to replace a rear side member assembly).

It is used to confirm the vehicle level in case of doubt about the deformation of a main rear reference point.

III - MAIN REAR TRIM-SETTING REFERENCE POINT

1 - Rear mechanical components in place

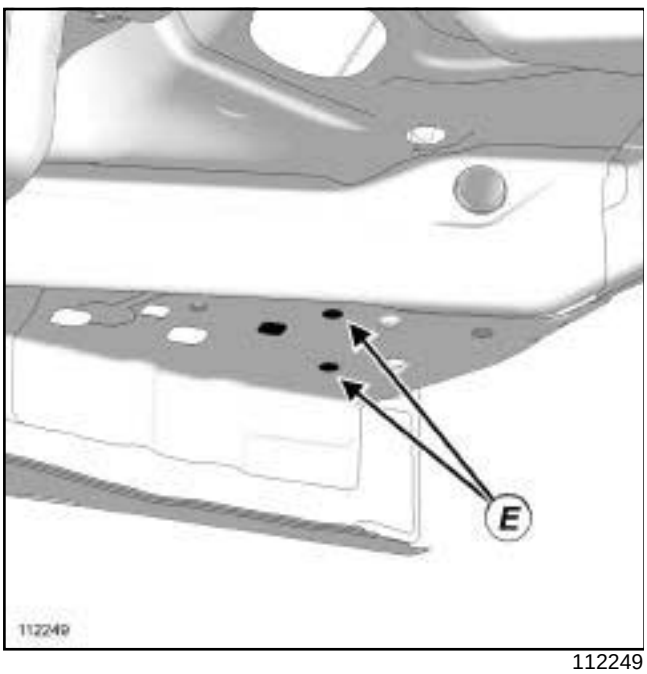


112022

The jig supports the underside of the rear axle fork and is centred in rear axle mounting bolt tapped hole (**D**) .

Use this situation for a frontal impact or a light rear impact.

2 - Rear mechanical components removed



112249

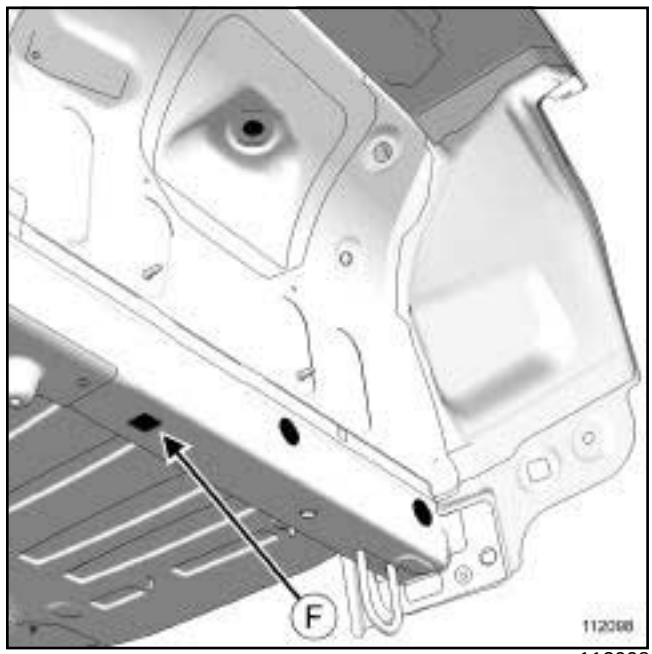
The jig rests under the rear side member and is centred in the tapped hole (**E**) .

Use this situation for a rear impact with removal of the mechanical components.

Note:

If it is suspected that one of these points may be deformed, use two additional points located in an area not affected by the impact in order to confirm trim-setting.

IV - SECONDARY REAR TRIM-SETTING REFERENCE POINT



112098

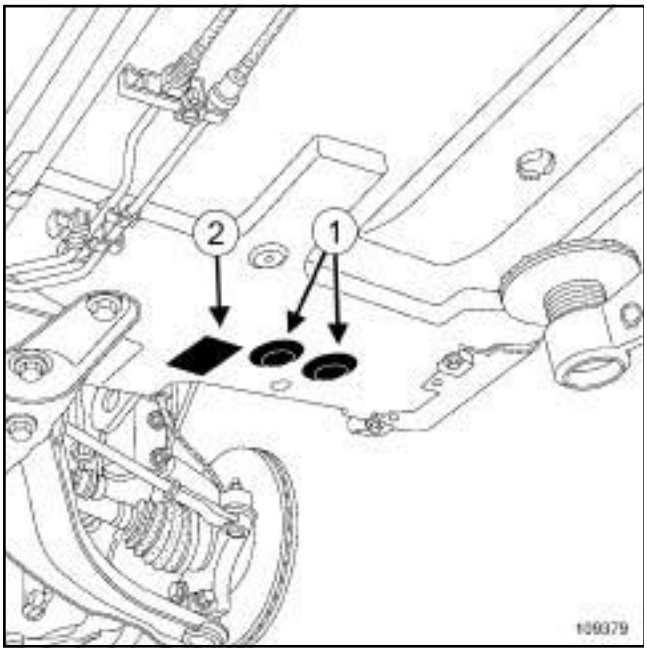
The jig rests under the rear side member and is positioned in square hole (**F**) .

Use this situation to confirm the trim-setting following a frontal impact (e.g.: to replace a complete front half unit).

It is used to confirm the vehicle trim setting in case of doubt about the deformation of a main front reference point.

V - FITTING THE VEHICLE ANCHORING KIT

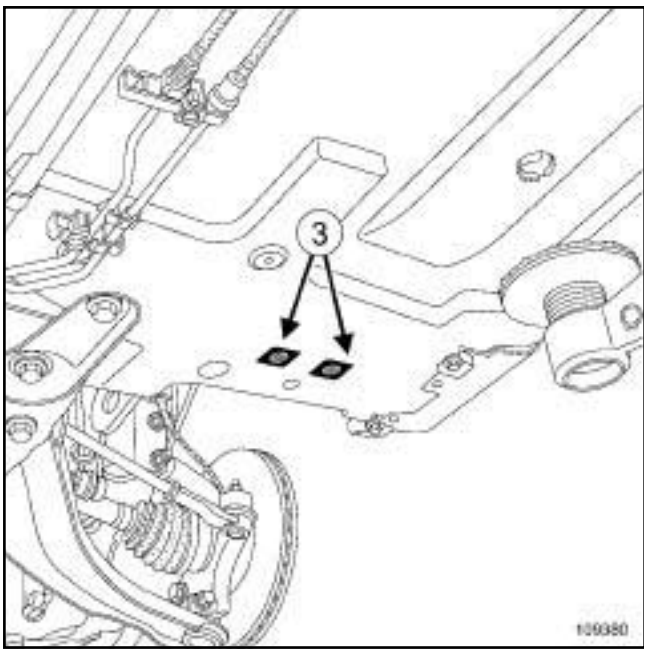
1 - At the front



109379

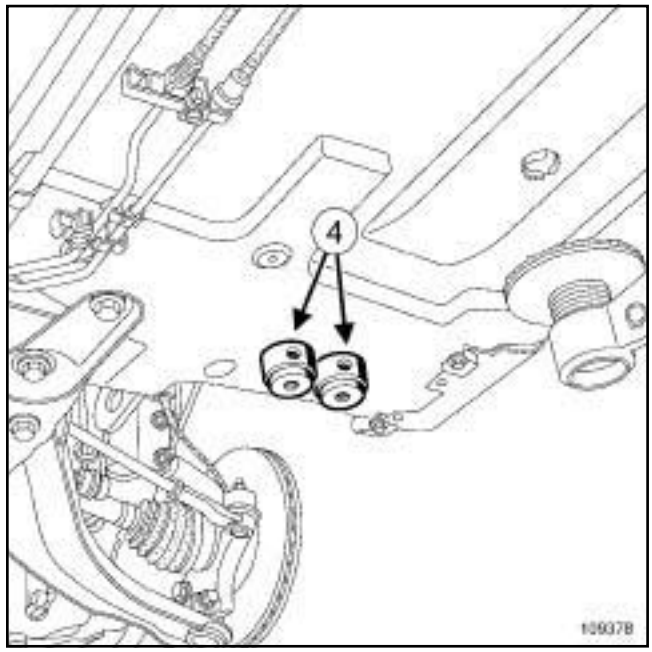
Remove

- the wheels,
- the blanking covers (**1**) and (**2**) .



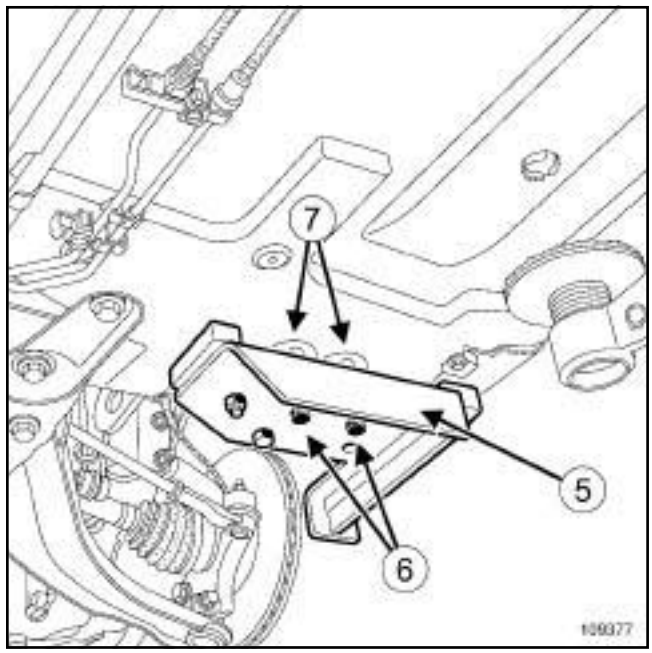
109380

Fit inserts (**3**) .



109378

Fit the mountings (**4**) without tightening them.

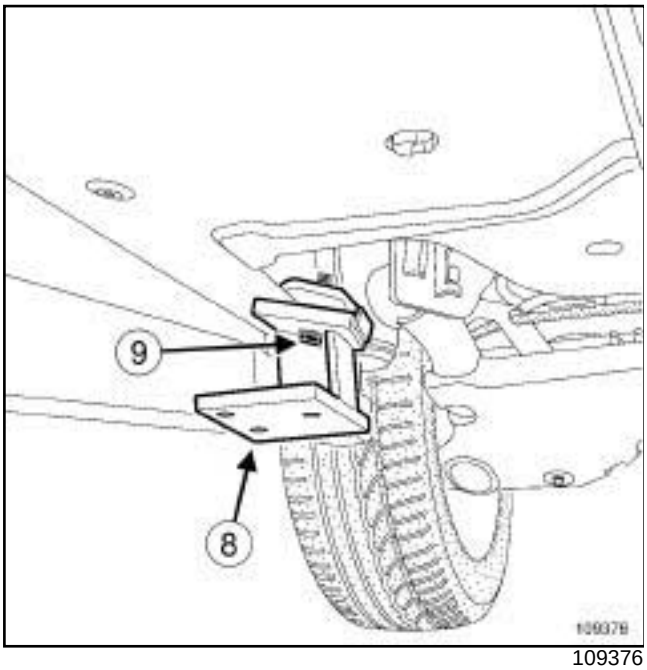


109377

Position the (**5**) and secure it with the bolts (**6**) .

Finish the tightening operation with the mountings (**7**) .

2 - At the rear



109376

Position the clamp (**8**) on the horizontal flange on the rear section of the sill panel and lock it with the bolt (**9**) .

Position the vehicle on the body jig bench clamps.

WARNING

The sub-frame on this vehicle is protected by products which guarantee the 12-year anti-corrosion warranty.

After the operation, protect the hollow sections of the front side cross members and refit the blanking covers. Replace any damaged blanking covers.

Re-apply the anti-gravel protection if it has deteriorated.

K85

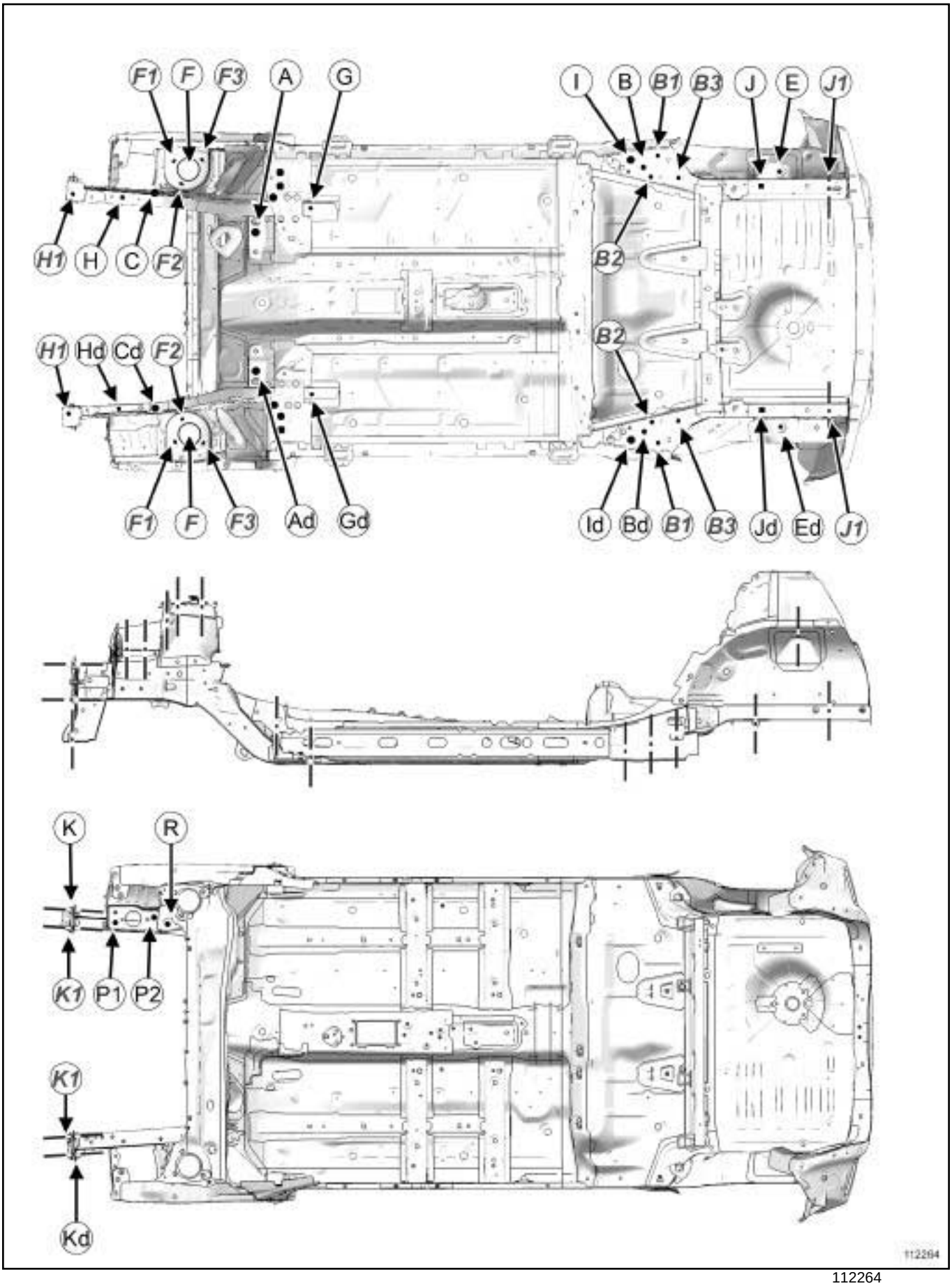
No.	Description	X	Dimension Y	Dimension Z	Diameter	Angle (in degrees)
	Front sub-frame rear mounting with mechanical components	**301**	**305**	**6.5**	**M12**	
	Rear axle guide	**1921**	**-582**	**118**	**20 x 20**	
	Rear axle assembly front mounting, without mechanical components	**2077.3**	**-633**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2077.3**	**-633**	**113**	**M10**	
	Rear axle assembly front mounting, without mechanical components	**2047.4**	**-541.3**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2047.4**	**-541.3**	**113**	**M10**	
	Rear axle assembly front mounting, without mechanical components	**2166**	**-536**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2166**	**-536**	**113**	**M10**	
	Front subframe front mounting	**-141.5**	**-478**	**260.5**	**M12**	
	Front subframe front mounting	**-141.5**	**468**	**256**	**M12**	
	Rear shock absorber upper mounting	**2614.2**	**-561.9**	**534.4**	∅ **20**	
	Front shock absorber upper stop	**6.81**	**-583.6**	**669.4**	∅ **98**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**-55.5**	**-618.4**	**673.8**	**M8**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**-23.3**	**-518.7**	**669.2**	**M8**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**68.1**	**-624**	**660**	**M8**	X **7°** ; Y **1°**
	Front side member rear mounting	**547**	**-410**	**9.8**	∅ **16**	
	Front side member front leader pin	**-283.5**	**-460.8**	**292.8**	**16 x 16**	

	Front side member front leader pin	**-305.5**	**471.3**	**292.8**	**16 x 16**	
	Front side member front mounting without mechanical components	**-502**	**-476**	**83.5**	**M12**	
	Front side member front mounting with mechanical components	**-502**	**-476**	**77.5**	**M12**	
	Front side member front mounting without mechanical components	**-525**	**492**	**83.5**	**M12**	
	Front side member front mounting with mechanical components	**-525**	**492**	**77.5**	**M12**	
	Rear side member front leader pin	**1957.5**	**-614**	**118**	**20 x 20**	
	Rear side member rear leader pin	**2533**	**-497.9**	**176.8**	**20 x 20**	
	Rear side member rear leader pin	**2533**	**487.5**	**176.8**	**20 x 20**	
	Rear side member rear mounting	**2942**	**-529.4**	**220**	**∅ 12.2**	**90°**
	Rear side member rear mounting	**2942**	**519.4**	**220**	**∅ 12.2**	**90°**
	Front end cross member leader pin	**-498.2**	**-530.9**	**265**	**∅ 16**	**90°**
	Front end cross member leader pin	**-496.4**	**534.9**	**265**	**∅ 16**	**90°**
	Front end cross member mounting	**-503.6**	**-453**	**415**	**M10**	**90°**
	Front end cross member mounting	**-503.3**	**464.6**	**415**	**M10**	**90°**
	Engine mounting	**-317**	**489**	**449**	**M10**	**180°**
	Engine mounting	**-147**	**511**	**449**	**M10**	**180°**
	Additional engine mounting (tie-rod)	**-86.2**	**481.1**	**604.5**	**M12**	**180°**

B85 or C85 or S85

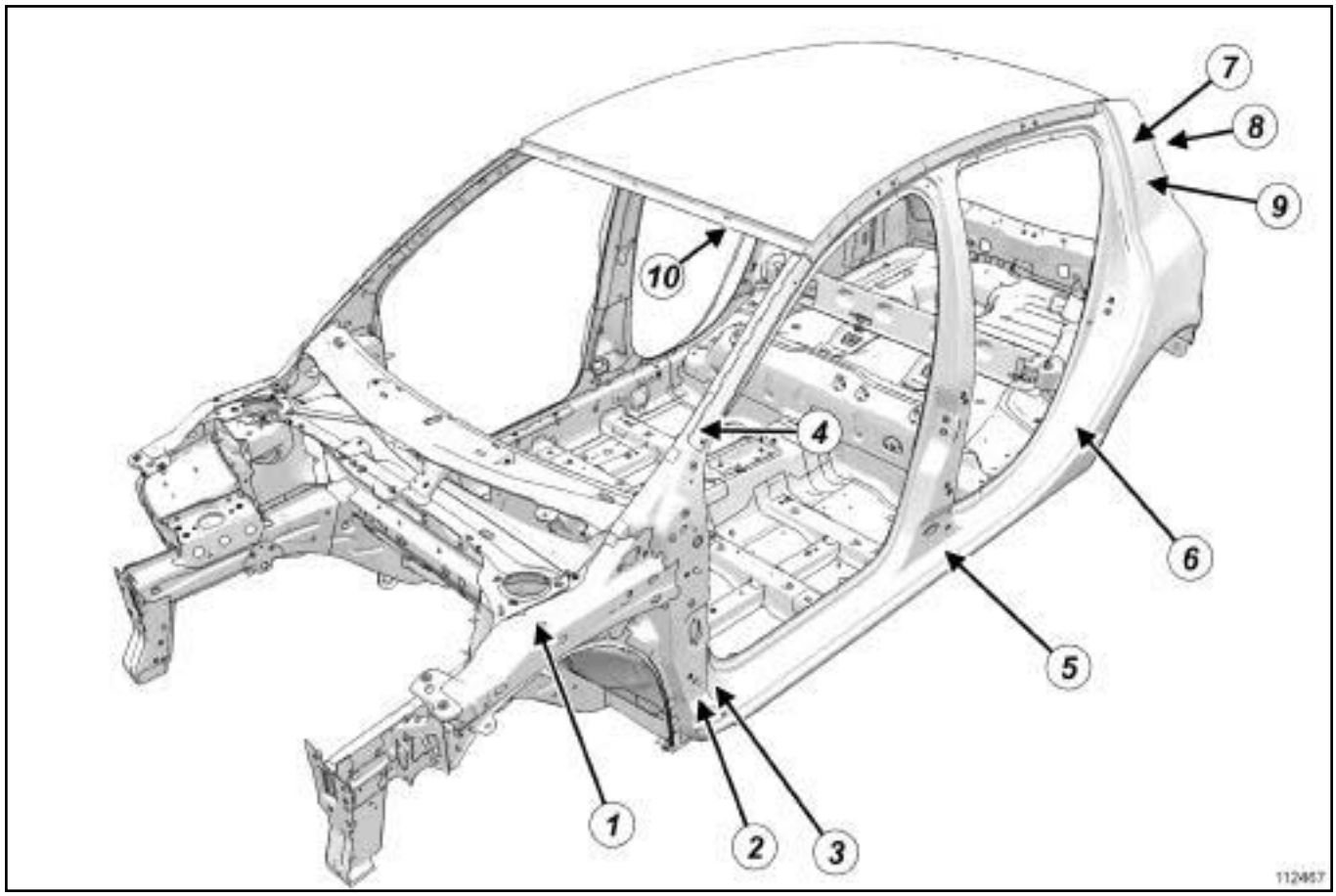
No.	Description	X	Dimension Y	Dimension Z	Diameter	Angle (in degrees)
	Front sub-frame rear mounting with mechanical components	**301**	**305**	**6.5**	**M12**	
	Rear axle guide	**1921**	**-582**	**118**	**20 x 20**	
	Rear axle assembly front mounting, without mechanical components	**2077.3**	**-633**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2077.3**	**-633**	**113**	**M10**	
	Rear axle assembly front mounting, without mechanical components	**2047.4**	**-541.3**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2047.4**	**-541.3**	**113**	**M10**	
	Rear axle assembly front mounting, without mechanical components	**2166**	**-536**	**118**	**24 x 24**	
	Rear axle assembly front mounting, with mechanical components	**2166**	**-536**	**113**	**M10**	
	Front subframe front mounting	**-141.5**	**-478**	**260.5**	**M12**	
	Front subframe front mounting	**-141.5**	**468**	**256**	**M12**	
	Rear shock absorber upper mounting	**2614.2**	**-561.9**	**534.4**	∅ **20**	
	Front shock absorber upper stop	**6.81**	**-583.6**	**669.4**	∅ **98**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**-55.5**	**-618.4**	**673.8**	**M8**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**-23.3**	**-518.7**	**669.2**	**M8**	X **7°** ; Y **1°**
	Front shock absorber upper mounting	**68.1**	**-624**	**660**	**M8**	X **7°** ; Y **1°**
	Front side member rear mounting	**547**	**-410**	**9.8**	∅ **16**	
	Front side member front leader pin	**-283.5**	**-460.8**	**292.8**	**16 x 16**	

	Front side member front leader pin	**-305.5**	**471.3**	**292.8**	**16 x 16**	
	Front side member front mounting without mechanical components	**-502**	**-476**	**83.5**	**M12**	
	Front side member front mounting with mechanical components	**-502**	**-476**	**77.5**	**M12**	
	Front side member front mounting without mechanical components	**-525**	**492**	**83.5**	**M12**	
	Front side member front mounting with mechanical components	**-525**	**492**	**77.5**	**M12**	
	Rear side member front leader pin	**1957.5**	**-614**	**118**	**20 x 20**	
	Rear side member rear leader pin	**2533**	**-497.9**	**176.8**	**20 x 20**	
	Rear side member rear leader pin	**2533**	**487.5**	**176.8**	**20 x 20**	
	Rear side member rear mounting	**2876**	**-529.4**	**220**	**∅ 12.2**	**90°**
	Rear side member rear mounting	**2876**	**519.4**	**220**	**∅ 12.2**	**90°**
	Front end cross member leader pin	**-498.2**	**-530.9**	**265**	**∅ 16**	**90°**
	Front end cross member leader pin	**-496.4**	**534.9**	**265**	**∅ 16**	**90°**
	Front end cross member mounting	**-503.6**	**-453**	**415**	**M10**	**90°**
	Front end cross member mounting	**-503.3**	**464.6**	**415**	**M10**	**90°**
	Engine mounting	**-317**	**489**	**449**	**M10**	**180°**
	Engine mounting	**-147**	**511**	**449**	**M10**	**180°**
	Additional engine mounting (tie-rod)	**-86.2**	**481.1**	**604.5**	**M12**	**180°**


F1
F
F3
A
G
I
B
B1
B3
J
E
J1
H1
H
C
F2
B2
H1
Hd
Cd
F2
B2
F1
F
F3
Ad
Gd
Id
Bd
B1
B3
Jd
Ed
J1
K
R
K1
P1
P2
K1
Kd
112264

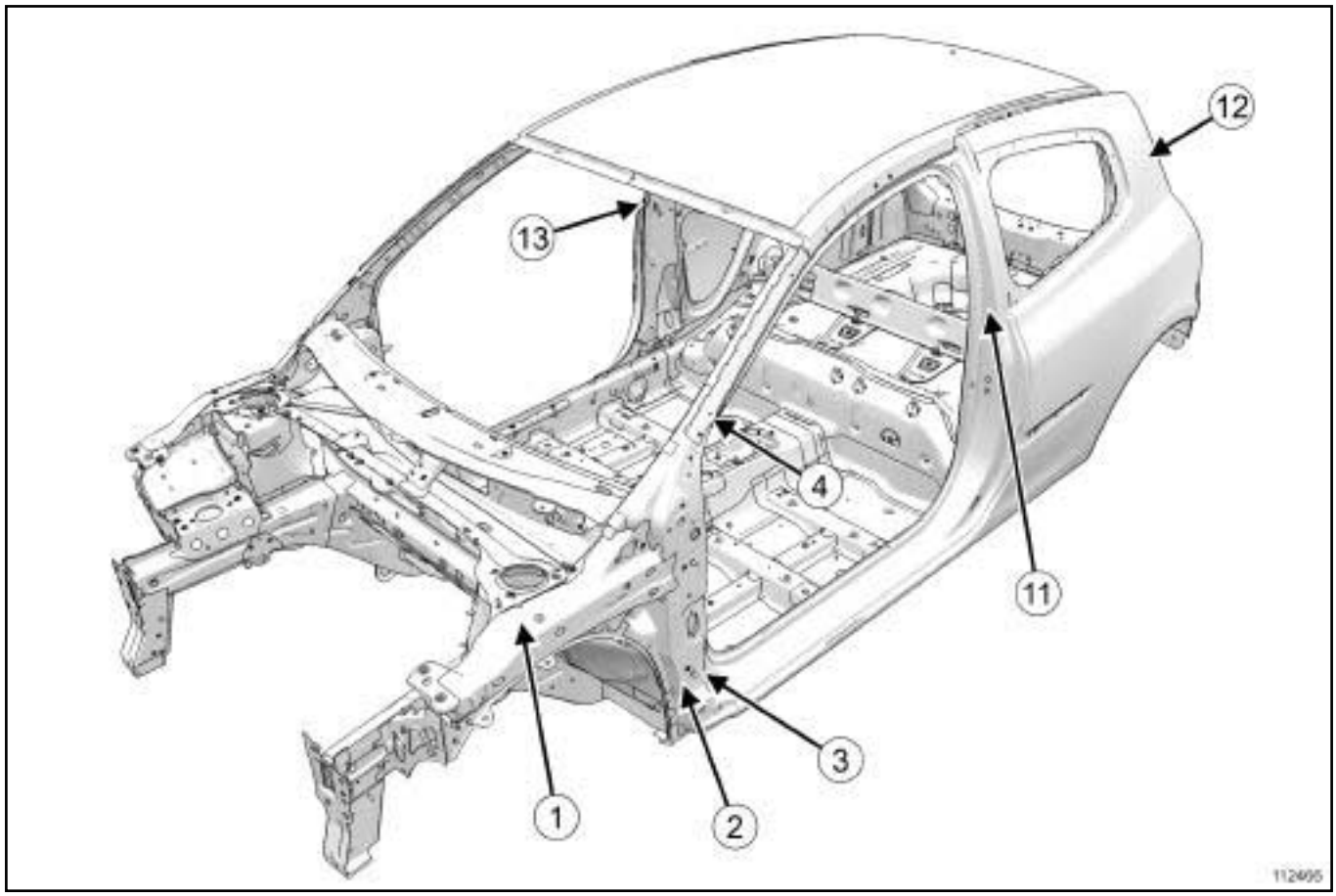
112264

B85



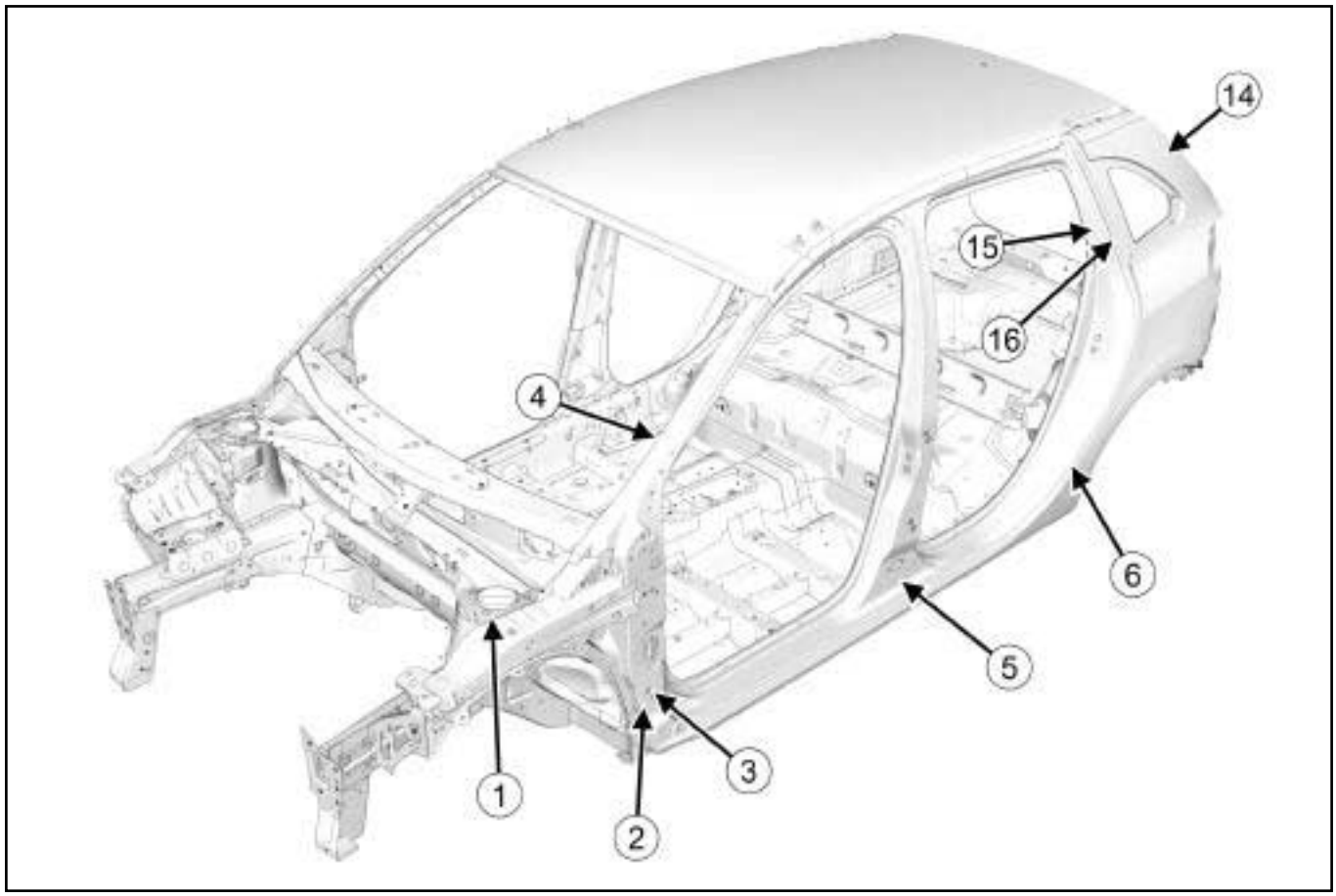
112467

C85 or S85

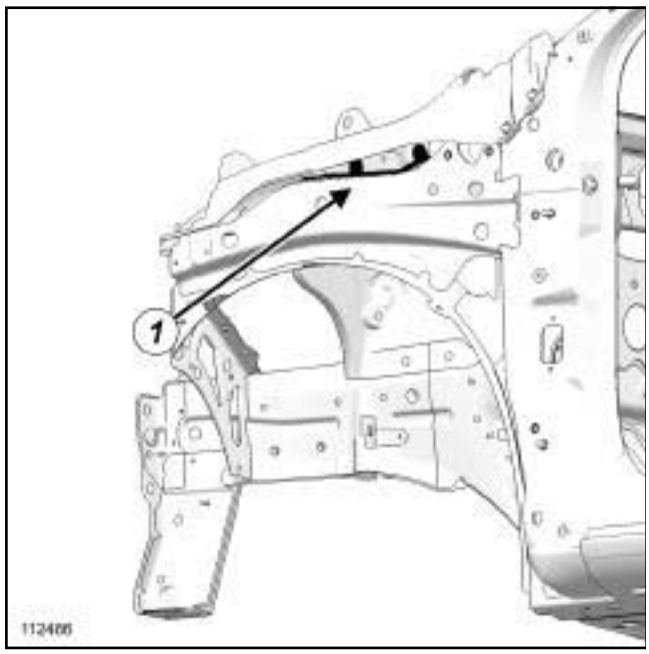


112466

K85

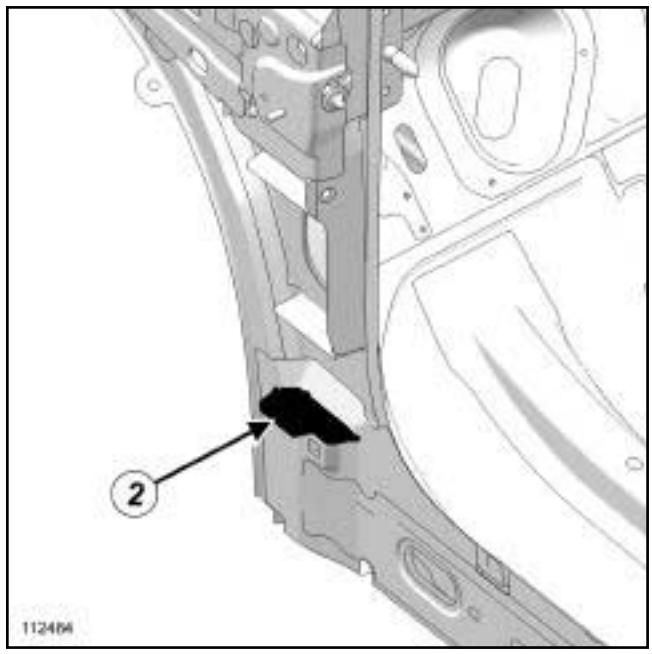


126694



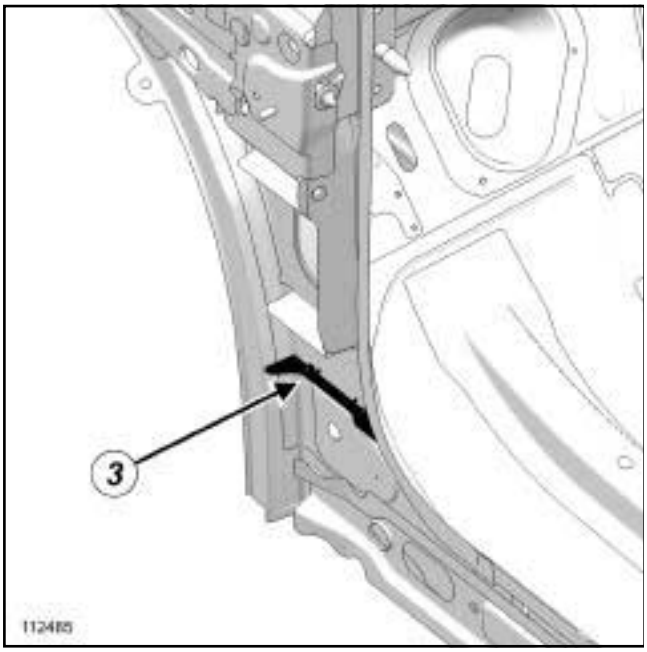
112486

Front wing upper mounting bracket insert (**1**) .



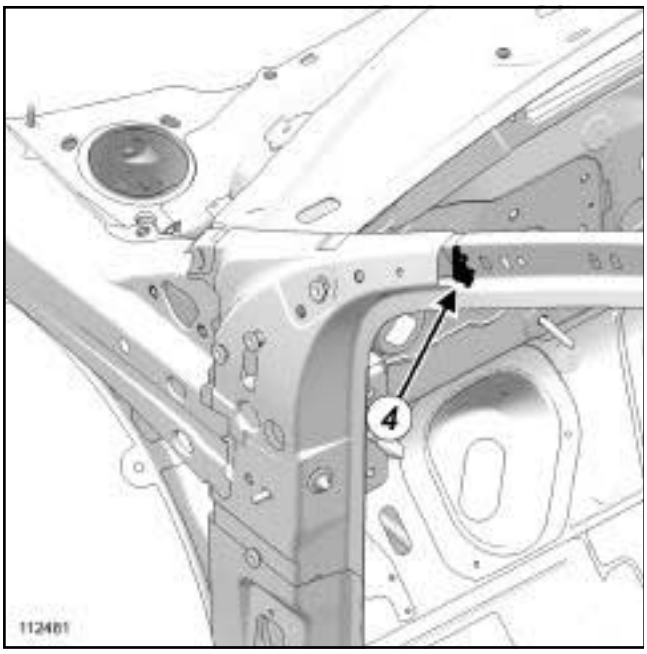
112484

Exterior A-pillar insert (**2**) .



112485

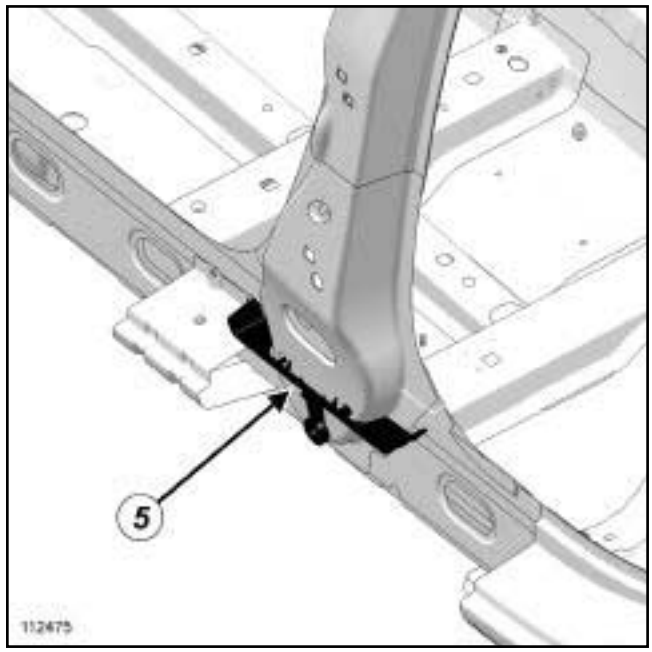
Interior A-pillar insert (**3**) .



112481

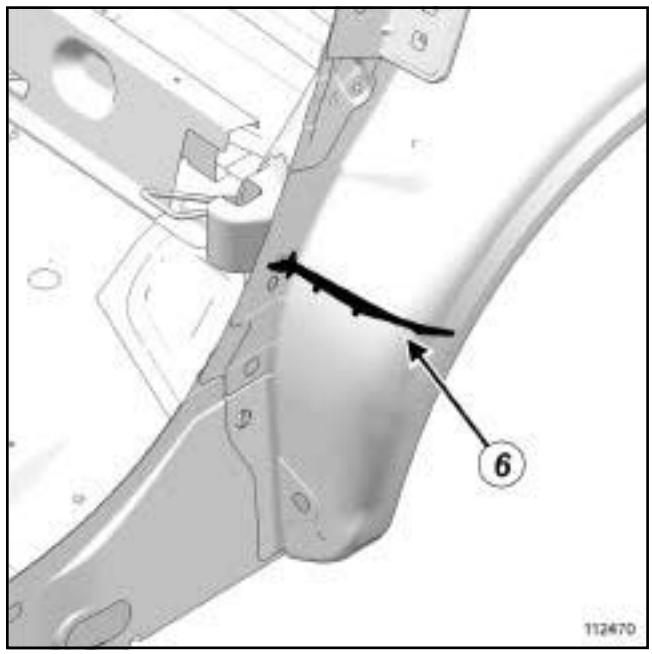
A-pillar insert (**4**) .

B85 or K85



112475

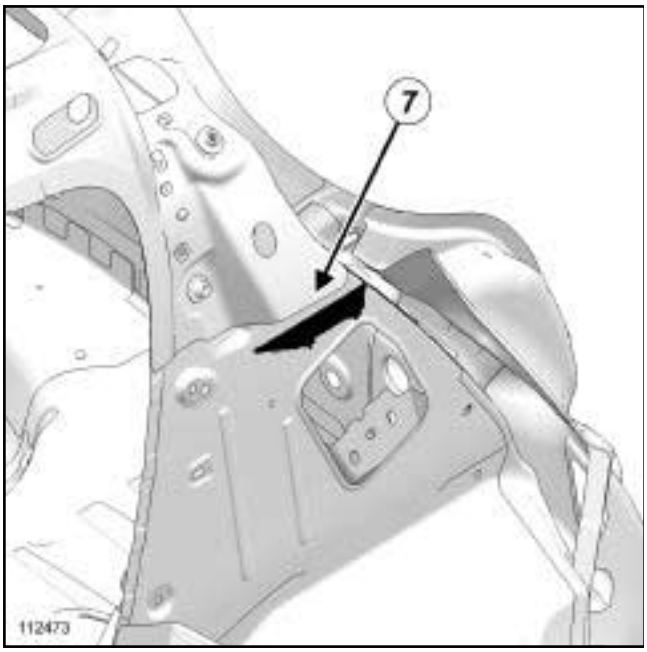
B-pillar insert (**5**) .



112470

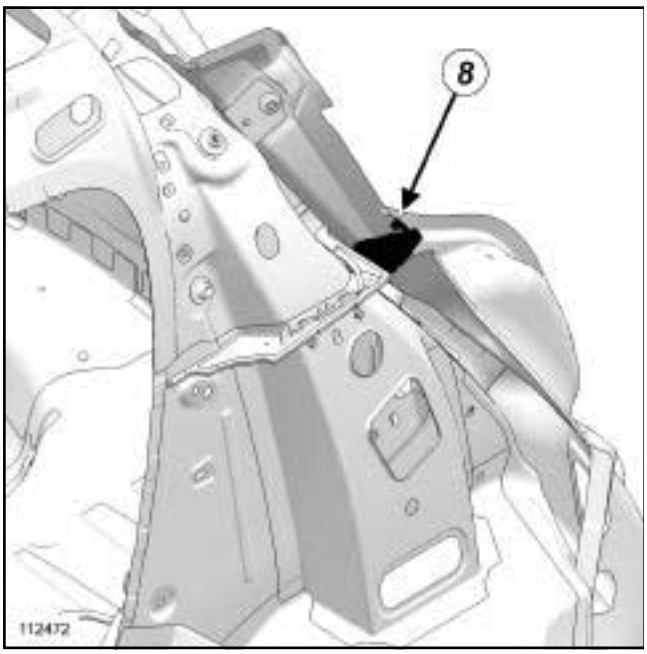
Wheel arch insert (**6**) .

B85



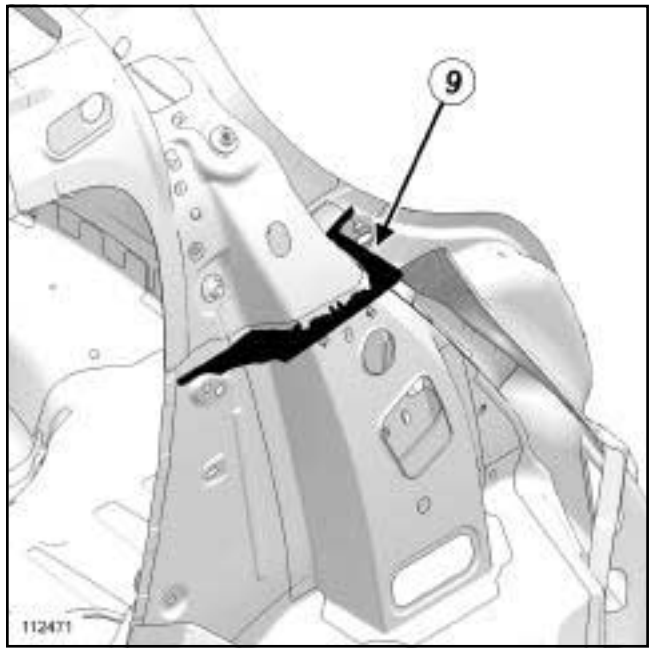
112473

Interior quarter panel insert (**7**) .



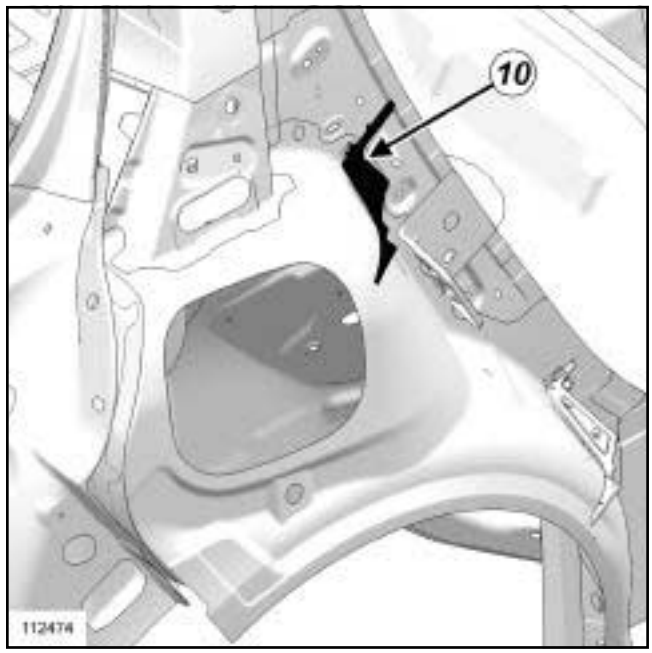
112472

Rear quarter panel insert (**8**) .



112471

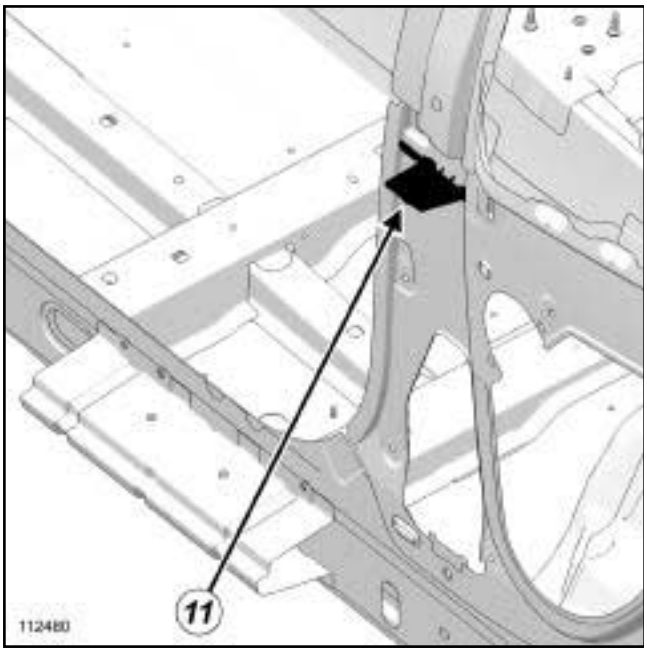
Exterior quarter panel insert (**9**) .



112474

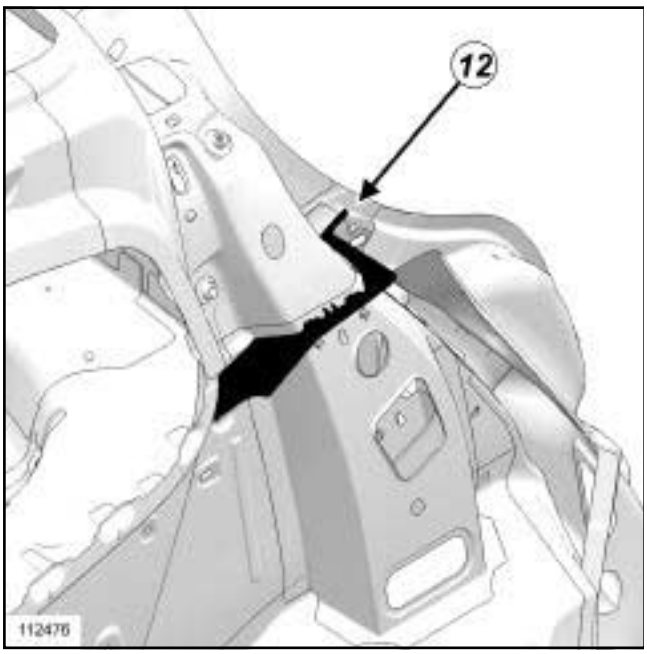
Right-hand quarter panel insert (**10**) .

C85 or S85



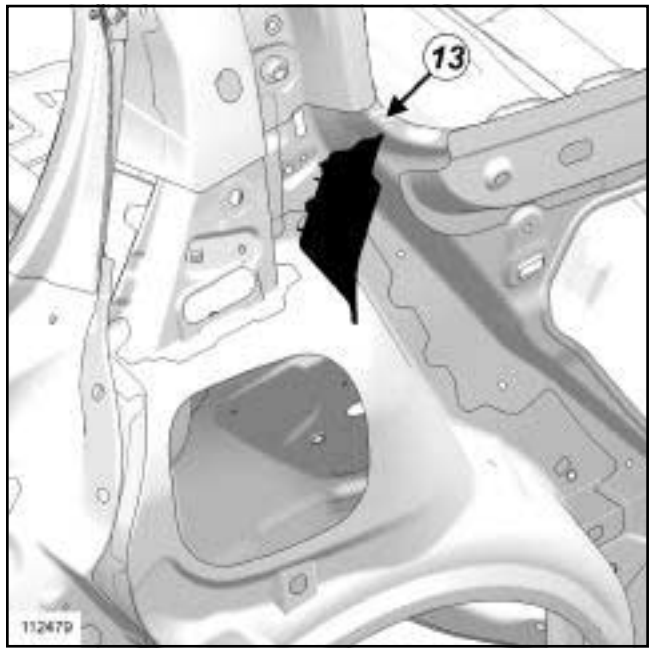
112480

B-pillar insert (**11**) .



112476

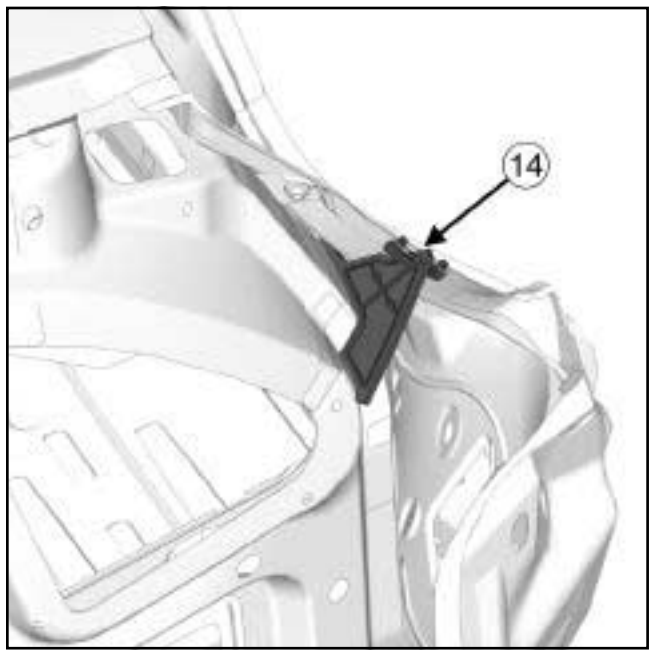
Exterior quarter panel insert (**12**) .



112479

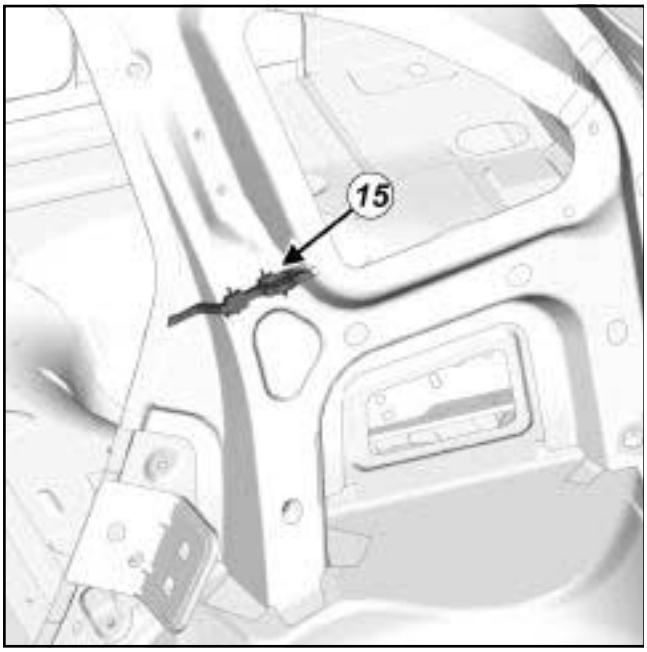
Quarter panel insert (**13**) .

K85



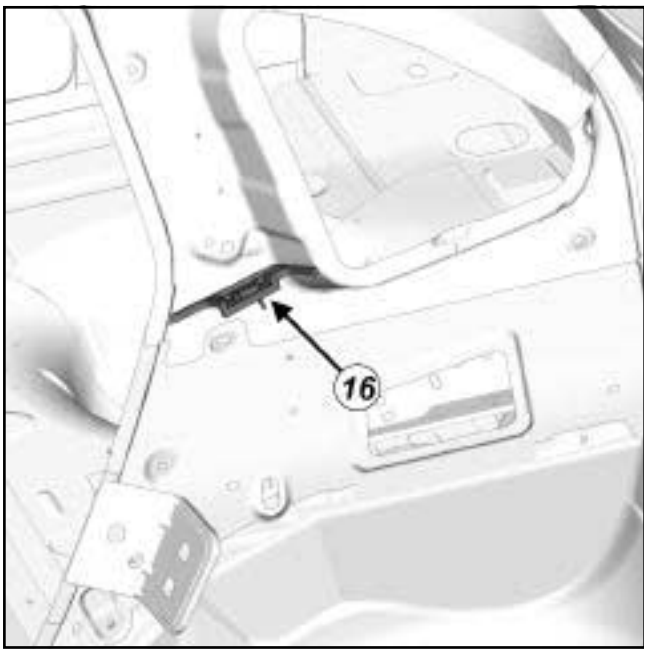
126695

Rear quarter panel insert (**14**) .



126696

Front quarter panel insert (**15**) .



126697

Interior quarter panel insert (**16**) .

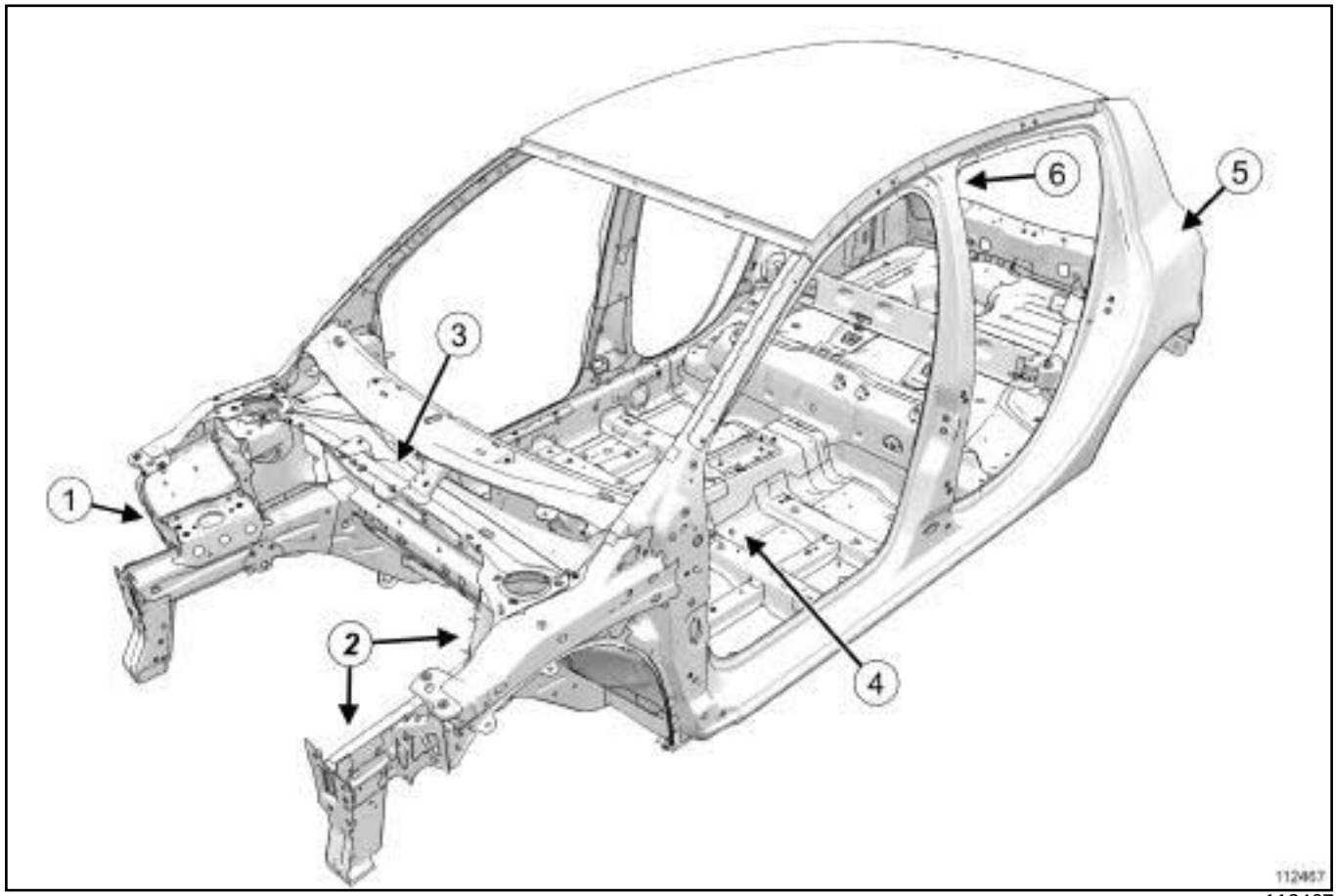
WARNING

To avoid damaging the vehicle's electrical and electronic components, disconnect the earths of any wiring near the weld area.

Position the welding machine earth as close as possible to the weld zone (see **MR 400**).

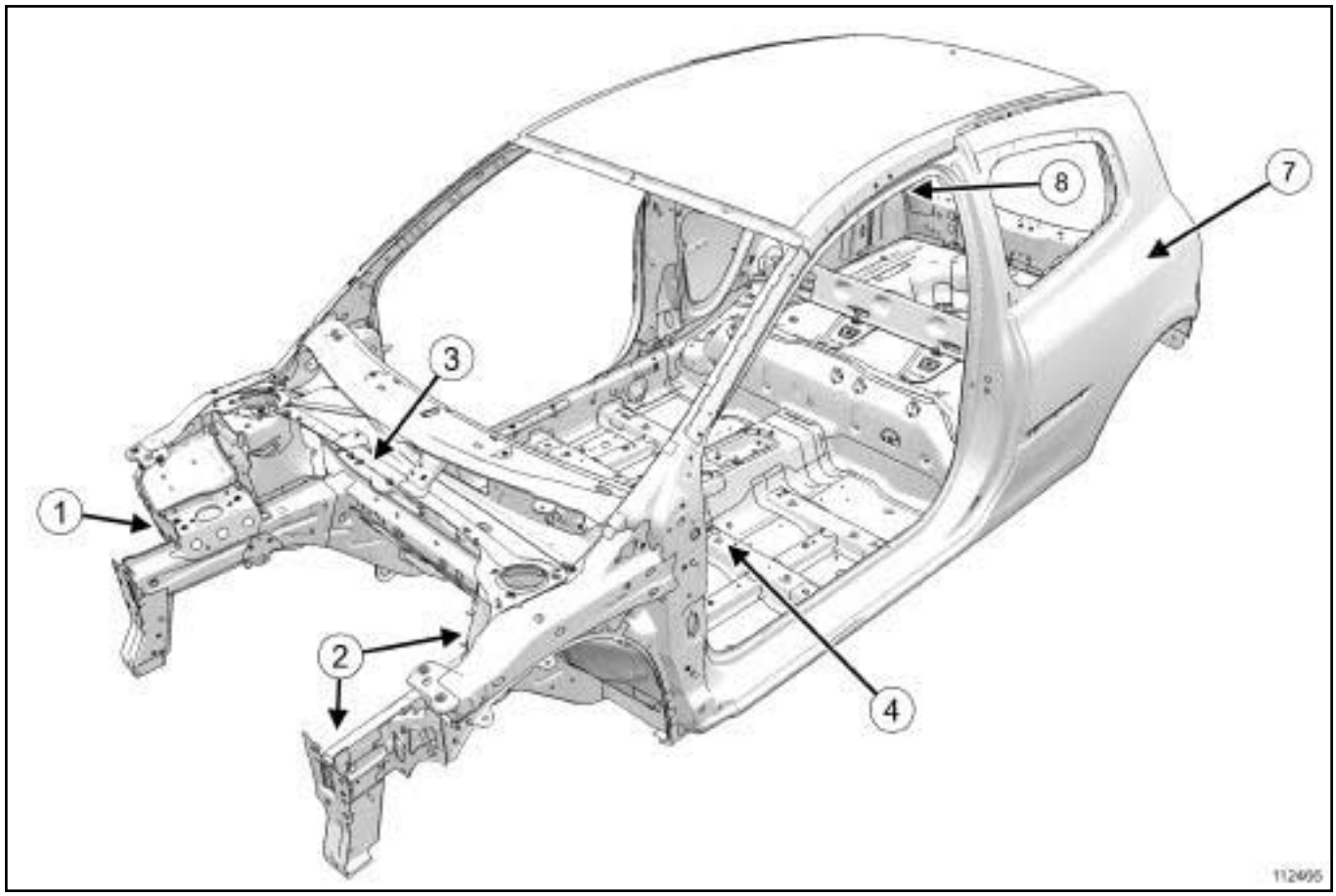
For the earth stud replacement procedure, see **MR 400**.

B85

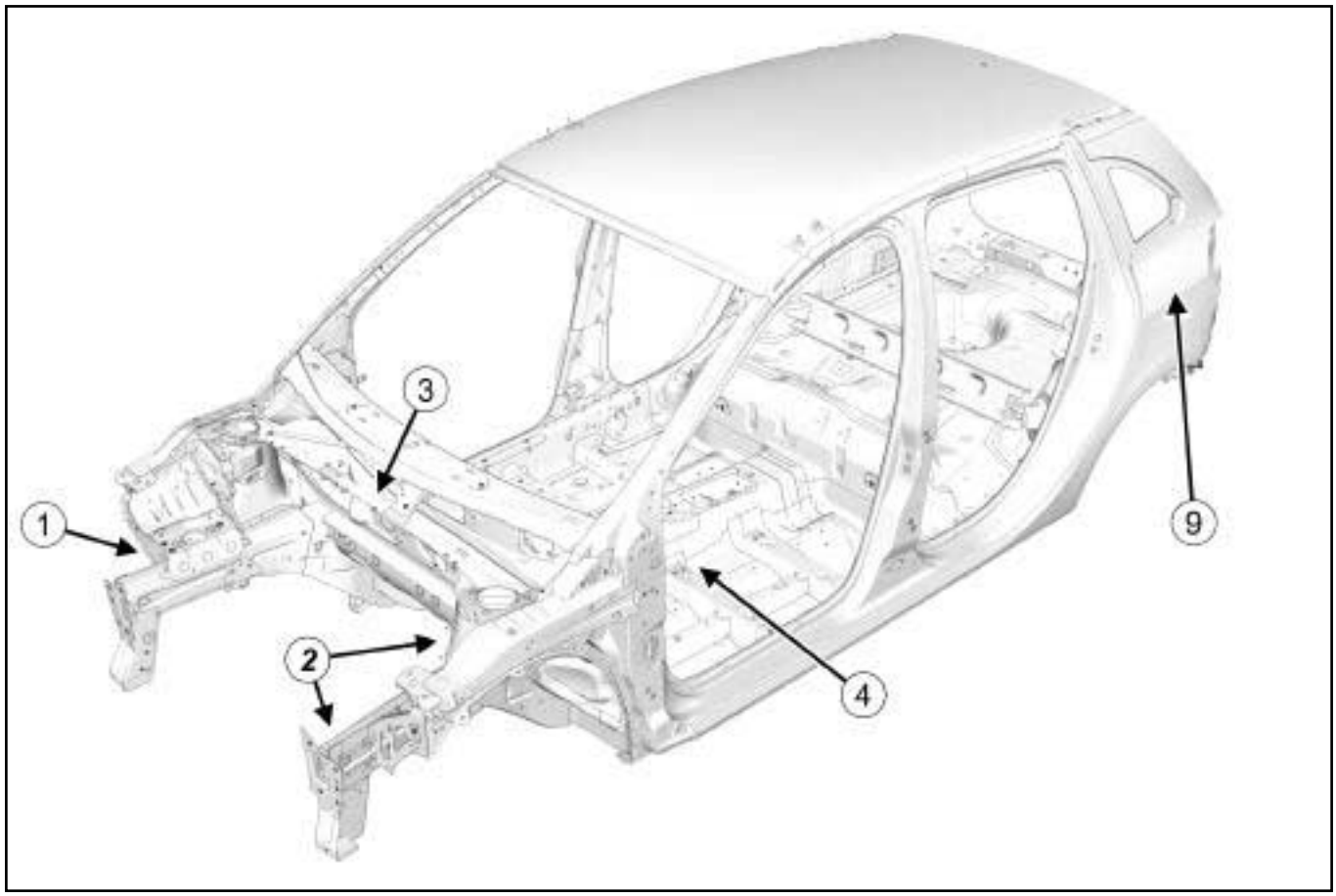


112467

C85 or S85

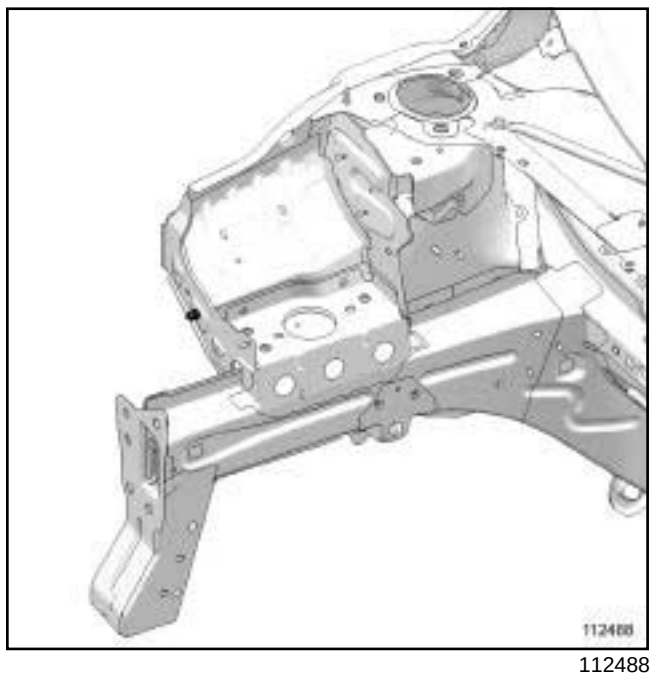


K85



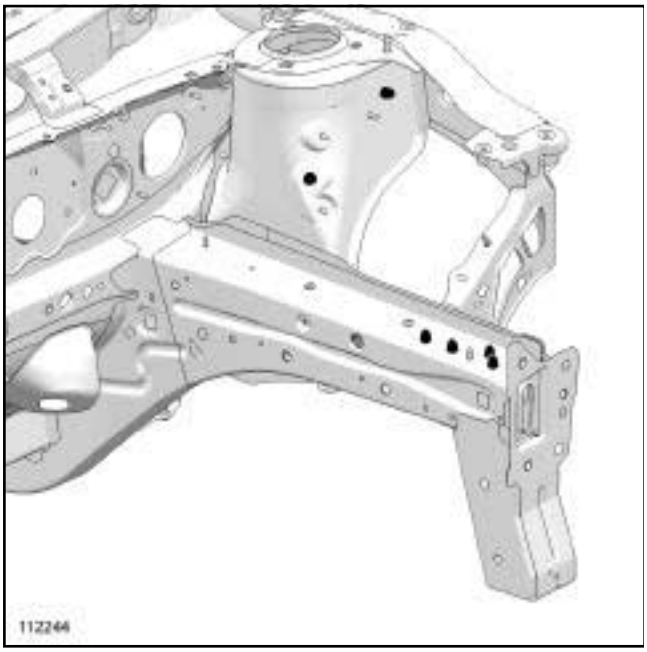
126694

DETAILED VIEW OF THE POSITION OF EARTHS ON THE VEHICLE



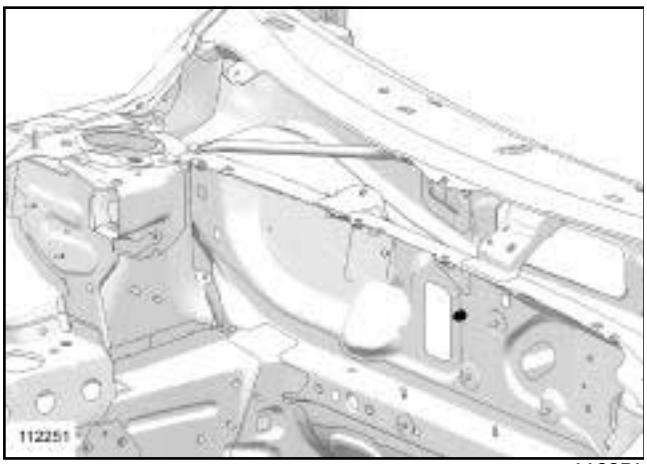
112488

Earth stud on the right-hand front end side cross member ***(1)*** .



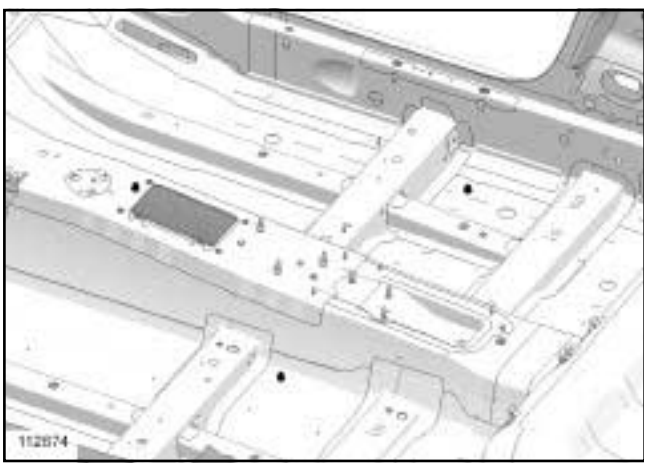
112244

Earth studs on left-hand front half unit ***(2)*** .



112251

Earth stud on bulkhead ***(3)*** .

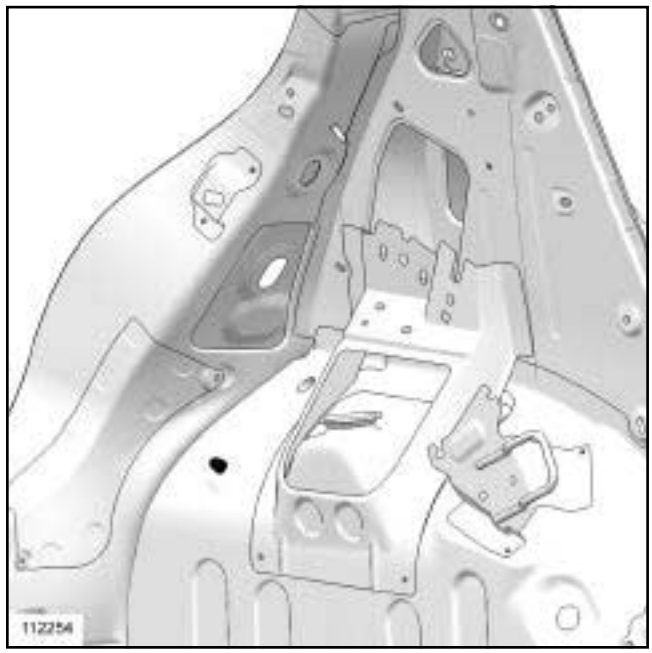


112674

Earth studs on left and right-hand centre floor, side section, and tunnel ***(4)*** .

B85

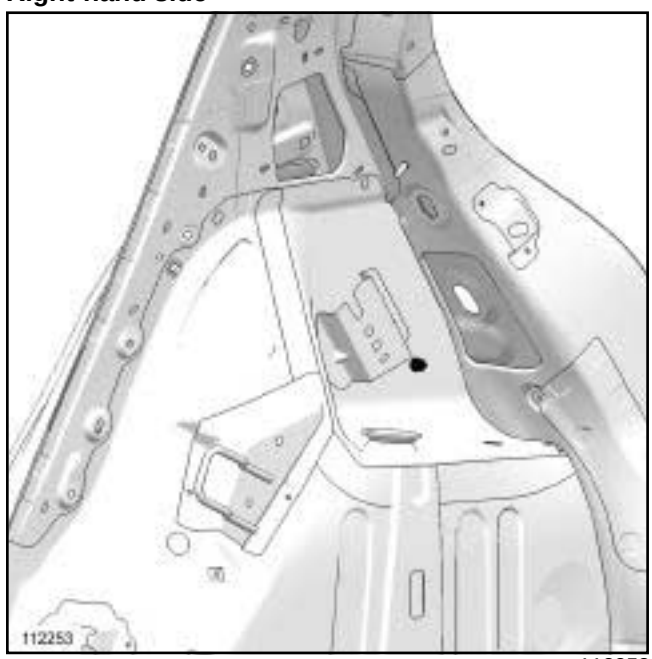
Left side



112254

Earth stud on left-hand inner wheel arch ***(5)*** .

Right-hand side

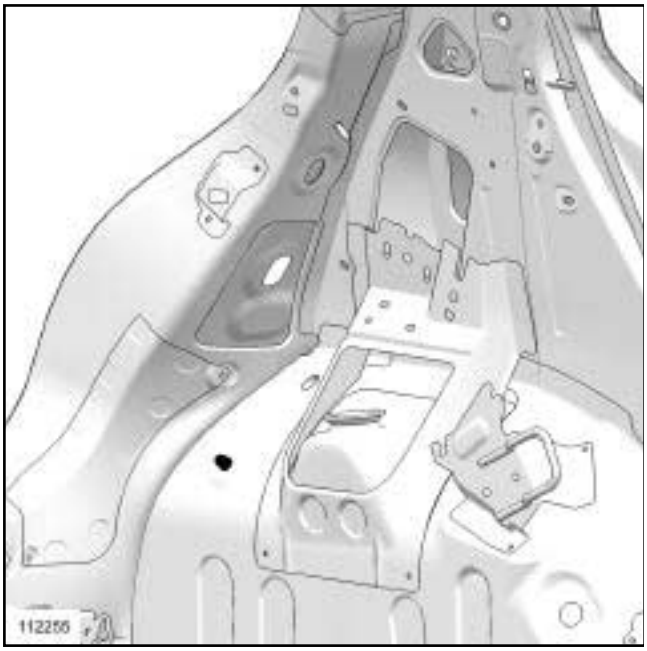


112253

Earth stud on right-hand inner wheel arch.

C85 or S85

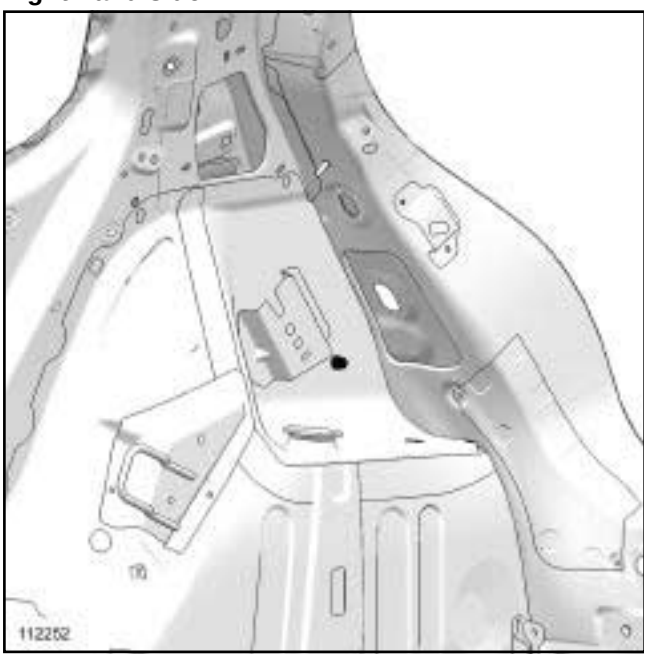
Left side



112255

Earth stud on left-hand inner wheel arch ***(7)*** .

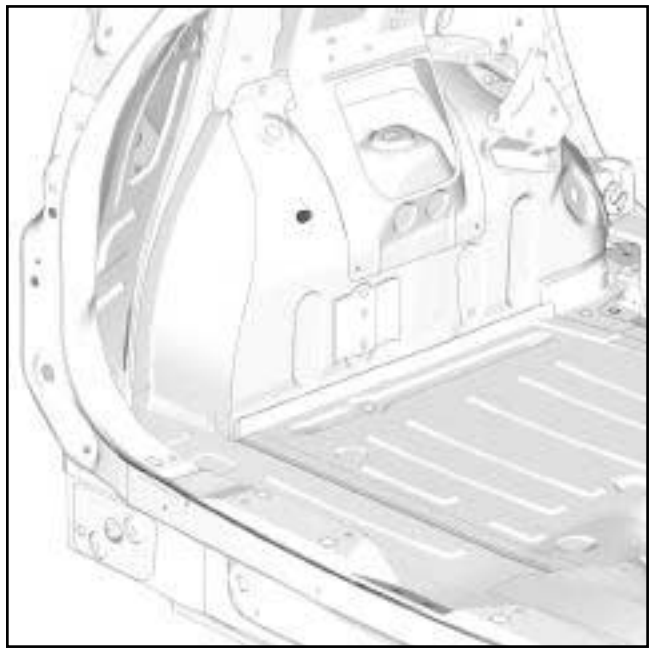
Right-hand side



112252

Earth stud on right-hand inner wheel arch ***(8)*** .

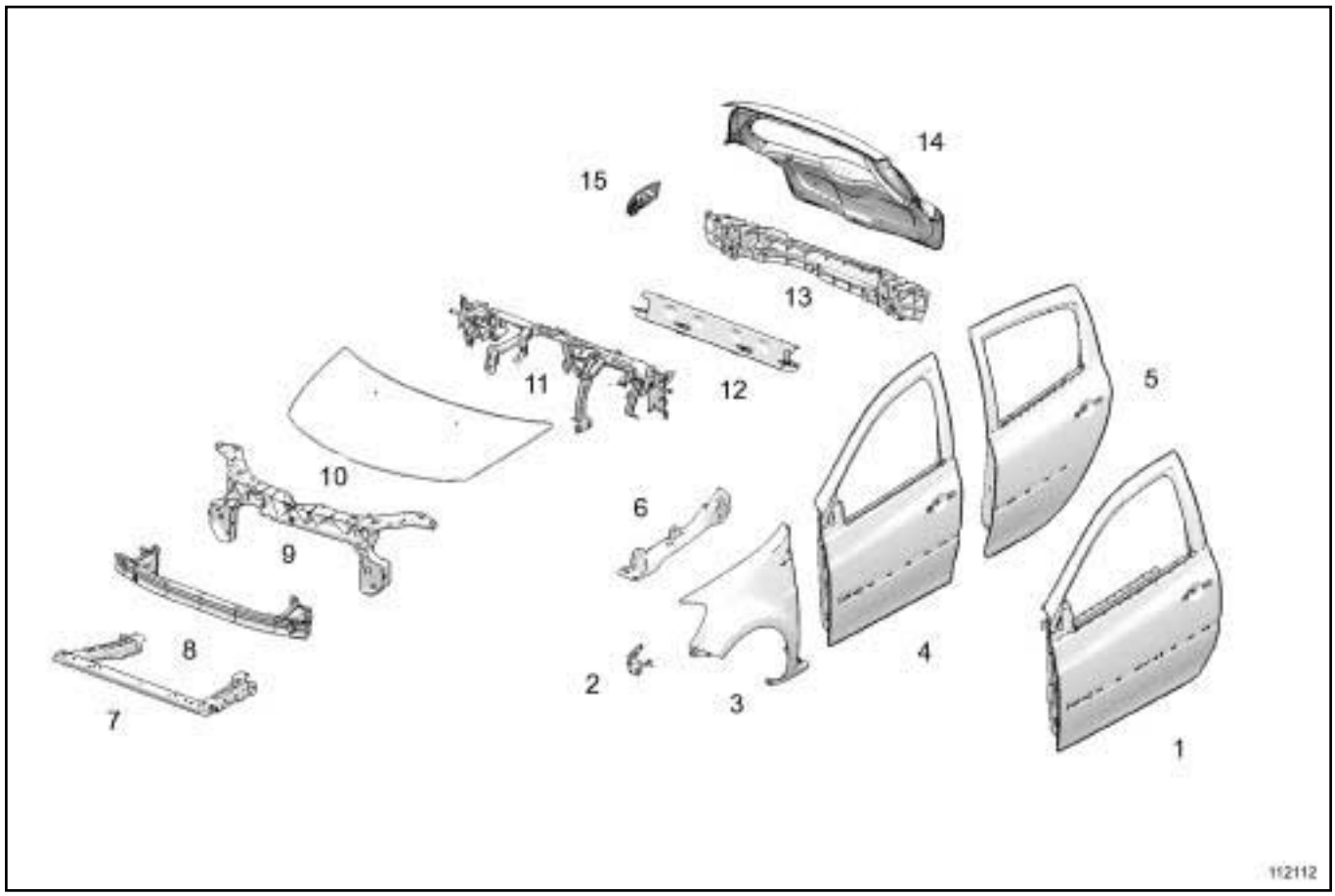
K85



126698

Earth stud on left-hand rear wheel arch ***(9)*** .

STRUCTURE WHICH CAN BE DISMANTLED

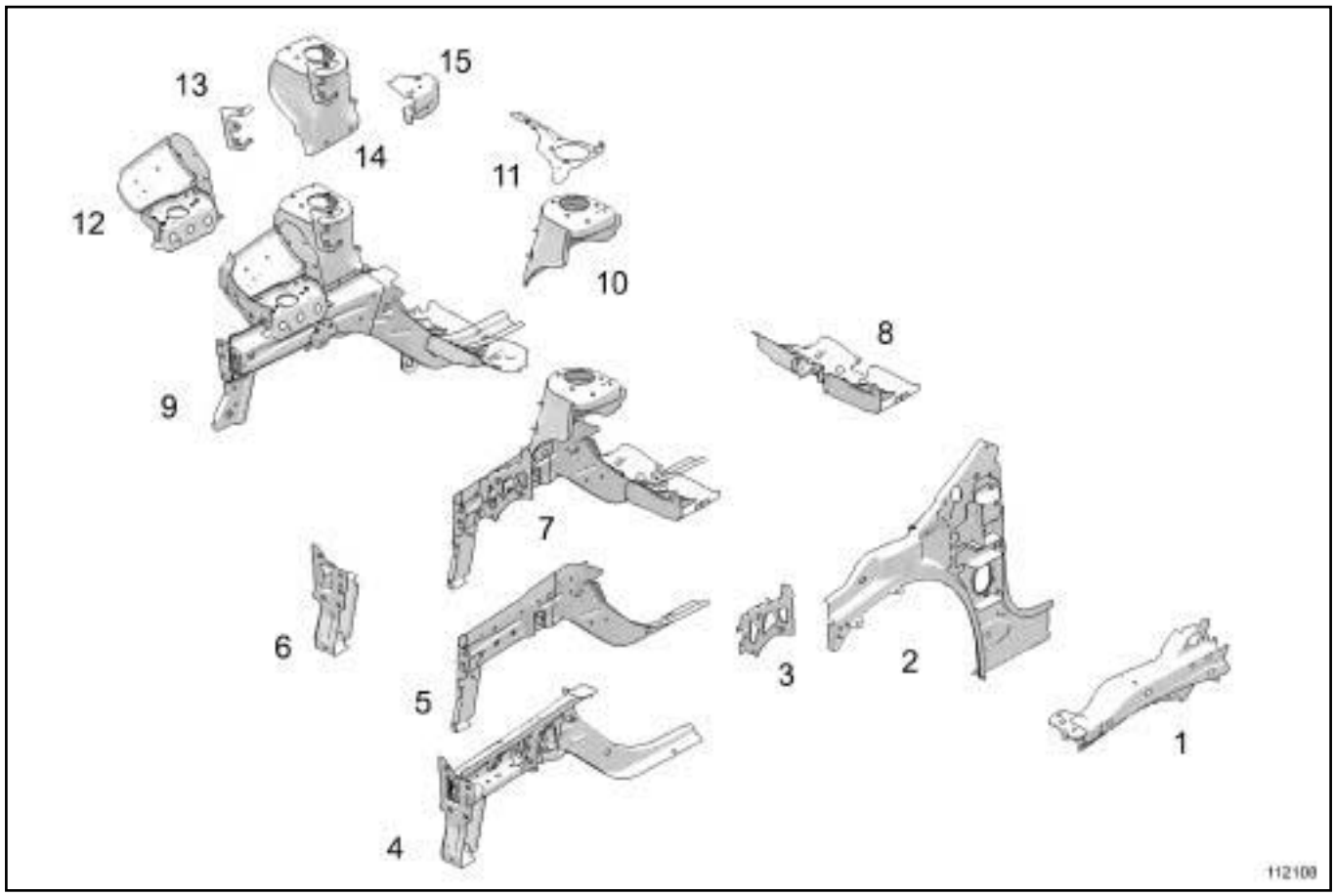


112112

No.	Description	Classification	Type
(**1**)	Front side door	(see **47A**, **Side opening elements**, **Front side door: Removal - Refitting**, page **47A-1**)	
(**2**)	Front wing lower mounting support	(see **42A**, **Front upper structure**, **Front wing lower mounting support: Removal - Refitting**, page **42A-12**)	SMC
(**3**)	Front wing	(see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**)	Noryl
(**4**)	Front side door	(see **47A**, **Side opening elements**, **Front side door: Removal - Refitting**, page **47A-1**)	
(**5**)	Rear side door	(see **47A**, **Side opening elements**, **Rear side door: Removal - Refitting**, page **47A-8**)	

(**6**)	Front wing upper mounting support	(see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**)	
(**7**)	Radiator support cross member	(see **41A**, **Front lower structure**, **Radiator mounting cross member: Removal - Refitting**, page **41A-4**)	
(**8**)	Frontal impact cross member	(see **41A**, **Front lower structure**, **Front impact cross member: Removal - Refitting**, page **41A-2**)	Aluminium
(**9**)	Front end panel	(see **42A**, **Front upper structure**, **Front end panel: Removal - Refitting**, page **42A-18**)	Polypropylene
(**10**)	Bonnet	(see **48A**, **Non-side opening elements**, **Bonnet: Removal - Refitting**, page **48A-1**)	Aluminium
(**11**)	Dashboard cross member	(see **42A**, **Front upper structure**, **Dashboard cross member: Removal - Refitting**, page **42A-31**)	
(**12**)	Luggage retainer cross piece	(see)	
(**13**)	Rear impact lower cross member	(see **41D**, **Rear lower structure**, **Rear impact lower cross member: Removal - Refitting**, page **41D-24**)	Polypropylene
(**14**)	Tailgate	(see **48A**, **Non-side opening elements**, **Tailgate: Removal - Refitting**, page **48A-6**)	
(**15**)	Fuel filler flap cover	(see **47A**, **Side opening elements**, **Fuel filler flap cover: Removal - Refitting**, page **47A-14**)	Noryl

FRONT STRUCTURE



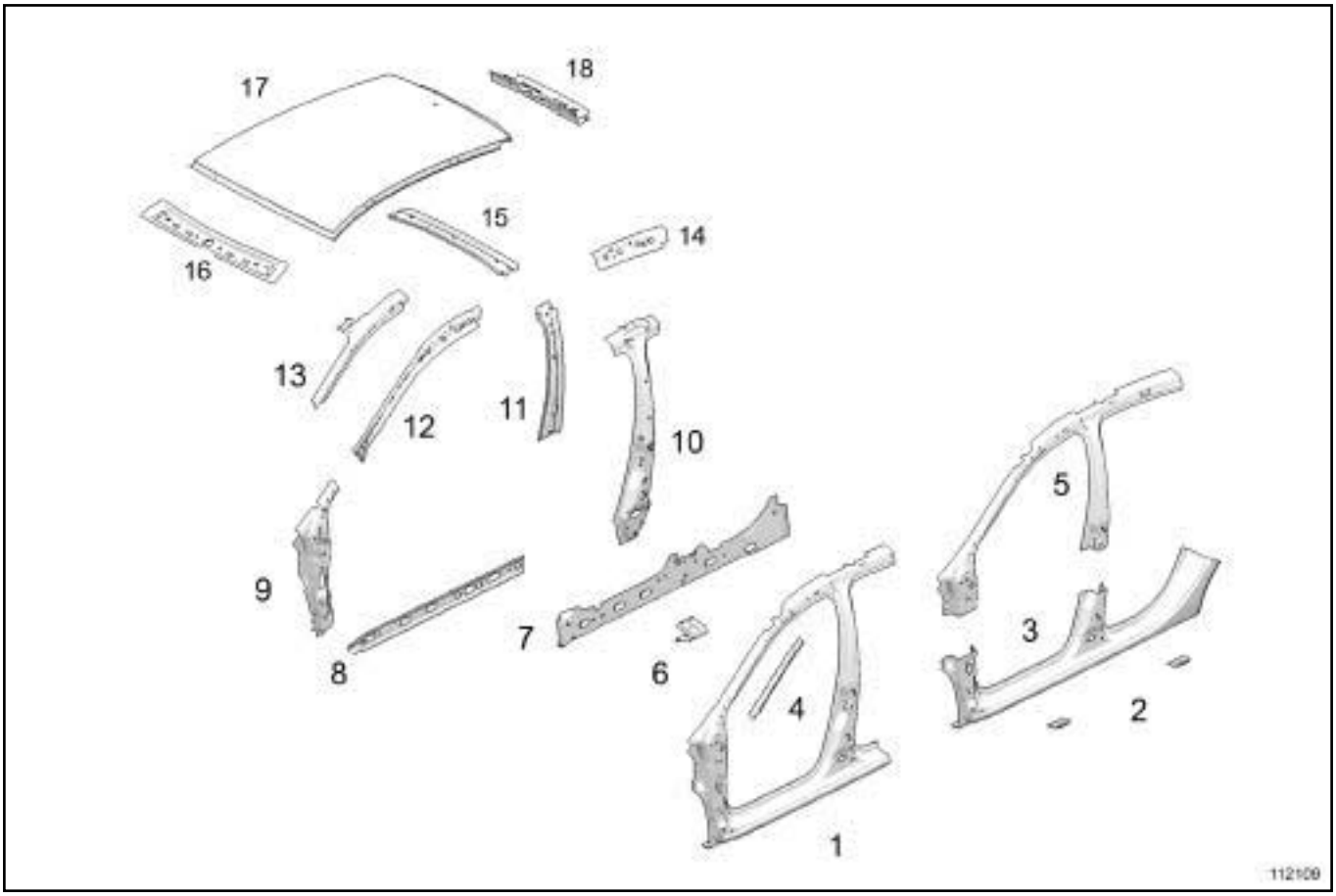
112108

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Scuttle side panel upper reinforcement	(see **42A**, **Front upper structure**, **Upper reinforcement of scuttle side panel: Description**, page **42A-25**)	HLE	1.2
(**2**)	Scuttle side panel	(see **42A**, **Front upper structure**, **Scuttle side panel: Description**, page **42A-22**)	HLE/ THLE	0.85/2
(**3**)	Front end side cross member	(see **41A**, **Front lower structure**, **Engine stand: Description**, page **41A-22**)	HLE	1.5
(**4**)	Front side member	(see **41A**, **Front lower structure**, **Front side member: Description**, page **41A-8**)	HLE/ THLE	1.6/2.6
(**5**)	Front side member closure panel	(see **41A**, **Front lower structure**, **Front side member closure panel, front section: Description**, page **41A-15**)	HLE/ THLE	1.6/2.7

No.	Description	Classification	Type	Thickness (mm)
(**6**)	Radiator cross member mounting	(see **41A**, **Front lower structure**, **Radiator cross member mounting: Description**, page **41A-19**)	HLE	1.2/2.5
(**7**)	Front left-hand half unit	(see **41A**, **Front lower structure**, **Front half unit: Description**, page **41A-24**)		
(**8**)	Centre floor front side cross member	(see **41B**, **Centre lower structure**, **Centre floor front side cross member: Description**, page **41B-3**)	HLE	1
(**9**)	Front right-hand half unit	(see **41A**, **Front lower structure**, **Front half unit: Description**, page **41A-24**)		
(**10**)	Front left-hand wheel arch	(see **42A**, **Front upper structure**, **Front wheel arch: Description**, page **42A-28**)	HLE	1.2/2
(**11**)	Heater bulkhead reinforcement	(see **41A**, **Front lower structure**, **F ront side member: Description**, page **41A-8**) ;		1.5
(**12**)	Engine stand	(see **41A**, **Front lower structure**, **Engine stand: Description**, page **41A-22**)	HLE	1.5/2
(**13**)	Windscreen wiper mounting	(see **42A**, **Front upper structure**, **Front wheel arch: Description**, page **42A-28**)		1.5
(**14**)	Front right-hand wheel arch	(see **42A**, **Front upper structure**, **Front wheel arch: Description**, page **42A-28**)	HLE	1.2/2
(**15**)	Engine tie-rod attachment	(see **41A**, **Front lower structure**, **Engine tie-rod attachment: Description**, page **41A-30**)	HLE	2

SIDE STRUCTURE

B85 or K85

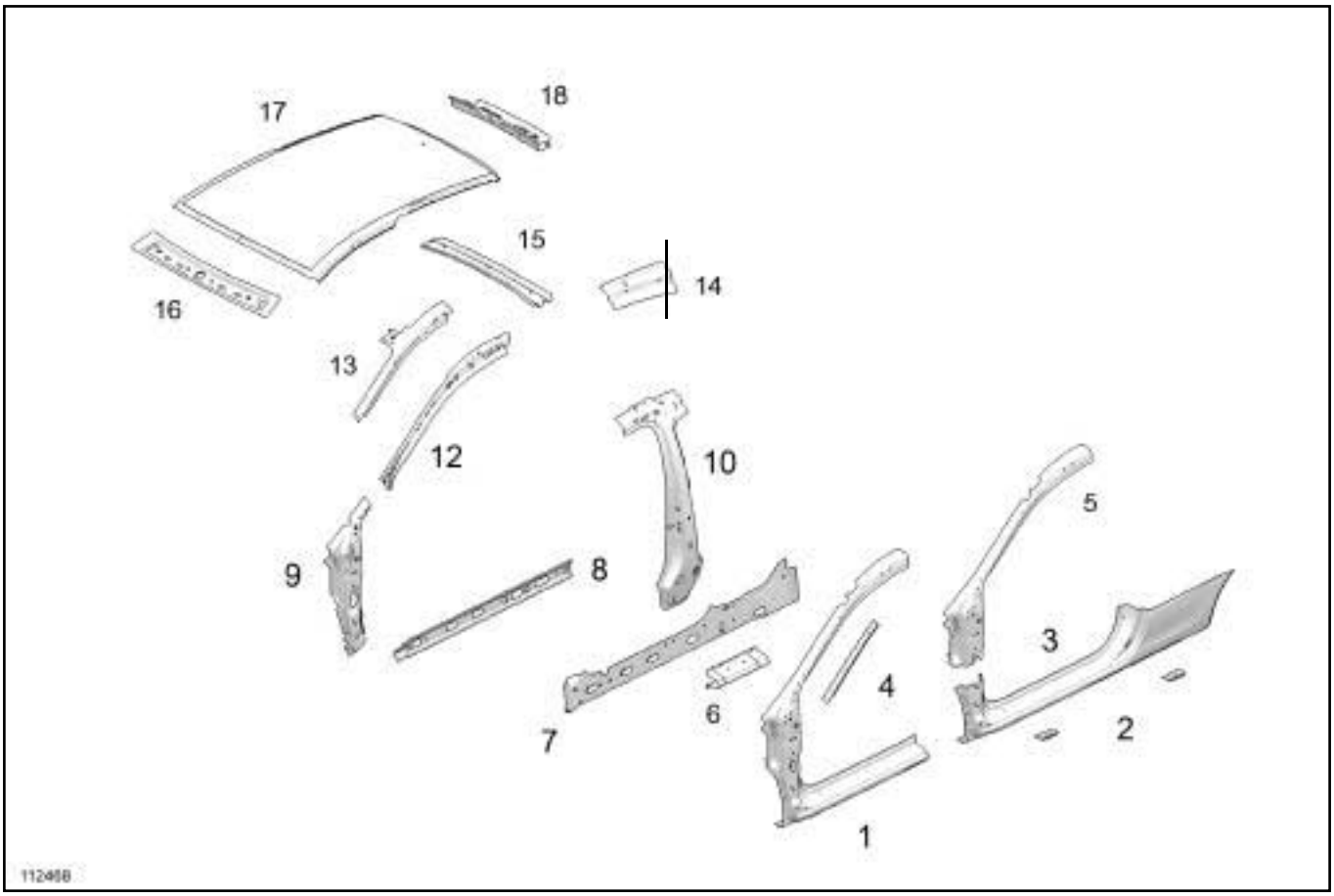


112109

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Body side front section	(see **43A**, **Side upper structure**, **Body side, front section: Description**, page **43A-28**)		**0.65/0.95**
(**2**)	Jacking point bridge piece	(see **41C**, **Side lower structure**, **Sill panel: Description**, page **41C-1**)	VHEL	**2**
(**3**)	Sill panel	(see **41C**, **Side lower structure**, **Sill panel: Description**, page **41C-1**)		**0.65/0.95**
(**4**)	Double seal mounting	(see **43A**, **Side upper structure**, **Body side, front section: Description**, page **43A-28**)		**0.8**

No.	Description	Classification	Type	Thickness (mm)
(**5**)	Upper body	(see **43A**, **Side upper structure**, **Upper body: Description**, page **43A-35**)		**0.65/0.95**
(**6**)	Side impact reinforcement	(see **MR 400**)	HLE	**1.5**
(**7**)	Sill panel closure panel	(see **41C**, **Side lower structure**, **Sill panel closure panel: Description**, page **41C-11**)	HLE	**1.2**
(**8**)	Sill panel reinforcement	(see **41C**, **Side lower structure**, **Sill panel reinforcement: Description**, page **41C-17**)	HLE	**1.5**
(**9**)	A-pillar reinforcement	(see **43A**, **Side upper structure**, **A-pillar reinforcement: Description**, page **43A-6**)	HLE	**1.2**
(**10**)	B-pillar reinforcement	(see **43A**, **Side upper structure**, **B-pillar reinforcement: Description**, page **43A-17**)	VHEL	**1.8**
(**11**)	B-pillar lining	(see **43A**, **Side upper structure**, **B-pillar reinforcement: Description**, page **43A-17**)	HLE	**1.3**
(**12**)	Windscreen pillar lining	(see **43A**, **Side upper structure**, **Windscreen pillar lining: Description**, page **43A-8**)	HLE	**1.4**
(**13**)	Front roof drip moulding stiffener	(see **43A**, **Side upper structure**, **Windscreen pillar lining: Description**, page **43A-8**)	HLE	**1.2**
(**14**)	Roof drip moulding lining	(see **43A**, **Side upper structure**, **Side roof rail lining: Description**, page **43A-40**)		**0.95**
(**15**)	Roof centre cross member	(see **45A**, **Top of body**, **Roof centre cross member: Description**, page **45A-12**)	VHEL	**1.8**
(**16**)	Roof front cross member	(see **45A**, **Top of body**, **Roof front cross member: General description**, page **45A-10**)		**0.65**
(**17**)	Roof	(see **45A**, **Top of body**, **Roof: Description**, page **45A-2**)		**0.75**
(**18**)	Roof rear cross member	(see **45A**, **Top of body**, **Roof rear cross member: Description**, page **45A-15**)	HLE	**0.95**

C85 or S85

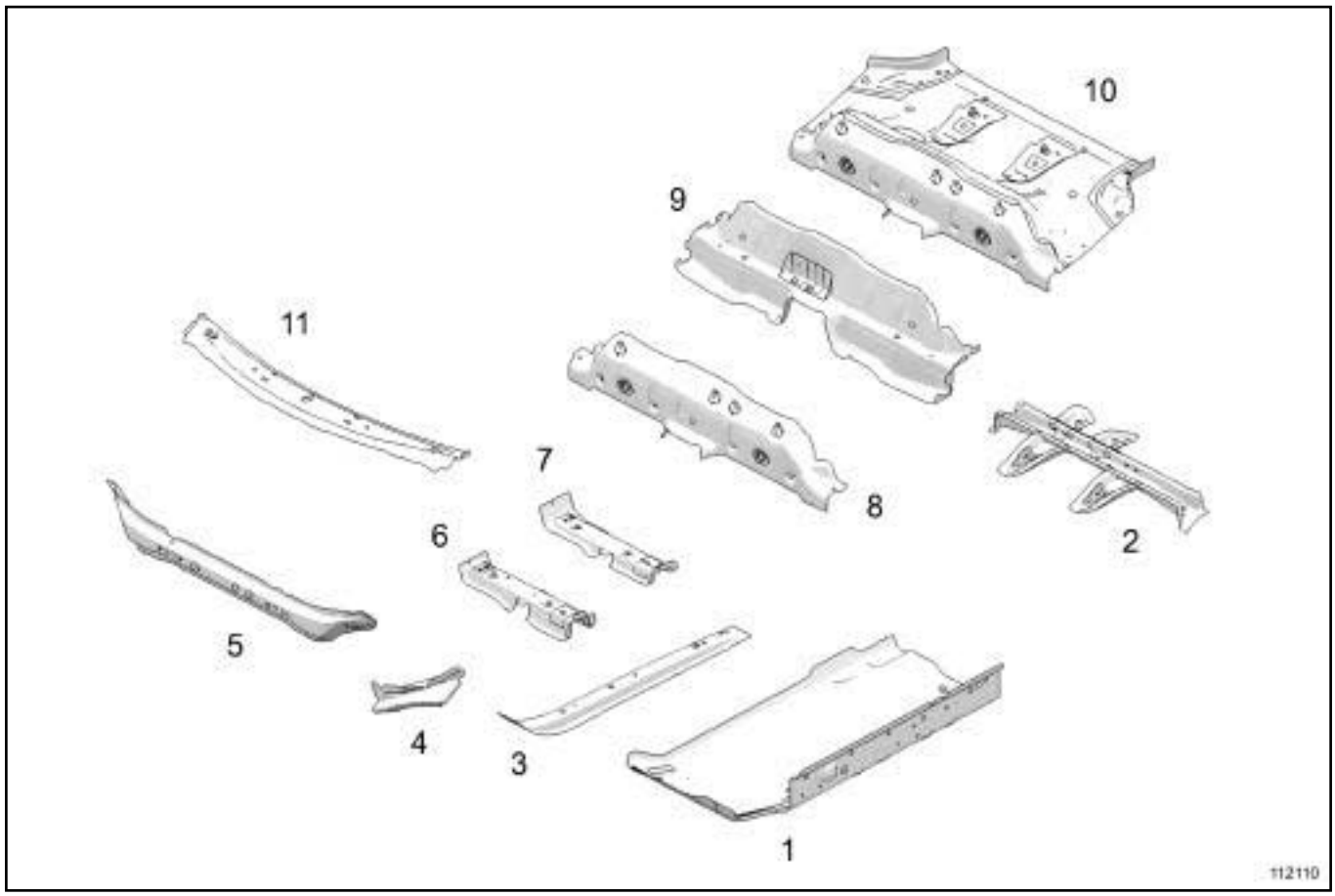


112468

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Body side front section	(see **43A**, **Side upper structure**, **A-pillar: Description**, page **43A-2**)		**0.65/0.95**
(**2**)	Jacking point bridge piece	(see **41C**, **Side lower structure**, **Sill panel: Description**, page **41C-1**)	VHEL	**2**
(**3**)	Sill panel	(see **41C**, **Side lower structure**, **Sill panel: Description**, page **41C-1**)		**0.65/0.95**
(**4**)	Double seal mounting	(see **43A**, **Side upper structure**, **A-pillar: Description**, page **43A-2**)		**0.8**
(**5**)	Upper body	(see **43A**, **Side upper structure**, **Upper body: Description**, page **43A-35**)		**0.65/0.95**
(**6**)	Side impact reinforcement	(see **MR 400**)	HLE	**1.5**

No.	Description	Classification	Type	Thickness (mm)
(**7**)	Sill panel closure panel	(see **41C**, **Side lower structure**, **Sill panel closure panel: Description**, page **41C-11**)	HLE	**1.2**
(**8**)	Sill panel reinforcement	(see **41C**, **Side lower structure**, **Sill panel reinforcement: Description**, page **41C-17**)	HLE	**1.5**
(**9**)	A-pillar reinforcement	(see **43A**, **Side upper structure**, **A-pillar reinforcement: Description**, page **43A-6**)	HLE	**1.2**
(**10**)	B-pillar reinforcement	(see **43A**, **Side upper structure**, **B-pillar reinforcement: Description**, page **43A-17**)	VHEL	**1.8**
(**12**)	Windscreen pillar lining	(see **43A**, **Side upper structure**, **Windscreen pillar lining: Description**, page **43A-8**)	HLE	**1.4**
(**13**)	Front roof drip moulding stiffener	(see **43A**, **Side upper structure**, **Windscreen pillar lining: Description**, page **43A-8**)	HLE	**1.2**
(**14**)	Roof drip moulding lining	(see **43A**, **Side upper structure**, **Side roof rail lining: Description**, page **43A-40**)		**0.95**
(**15**)	Roof centre cross member	(see **45A**, **Top of body**, **Roof centre cross member: Description**, page **45A-12**)	VHEL	**1.8**
(**16**)	Roof front cross member	(see **45A**, **Top of body**, **Roof front cross member: General description**, page **45A-10**)		**0.65**
(**17**)	Roof	(see **45A**, **Top of body**, **Roof: Description**, page **45A-2**)		**0.75**
(**18**)	Roof rear cross member	(see **45A**, **Top of body**, **Roof rear cross member: Description**, page **45A-15**)	HLE	**0.95**

CENTRAL STRUCTURE



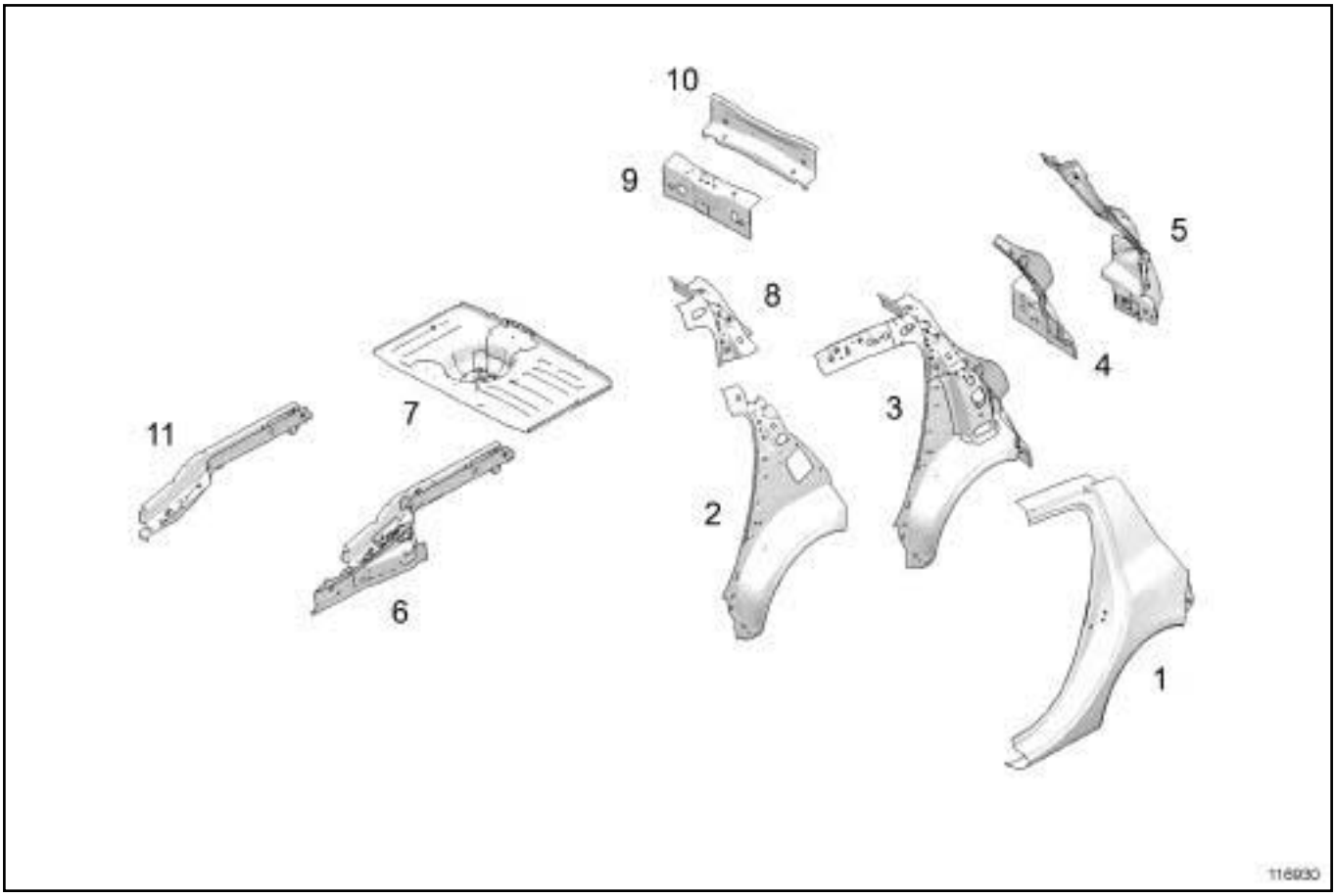
112110

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Centre floor, side section	(see **41B**, **Centre lower structure**, **Centre floor, side section: Description**, page **41B-11**)	HLE	0.65/1.2
(**2**)	Rear floor centre cross member	(see **41D**, **Rear lower structure**, **Rear floor centre cross member: Description**, page **41D-21**)	HLE	1/1.2
(**3**)	Front side member centre section	(see **41A**, **Front lower structure**, **Front side member, centre section: Description**, page **41A-12**)	Very high yield strength	2
(**4**)	Bulkhead side reinforcement	(see **42A**, **Front upper structure**, **Bulkhead side reinforcement: General description**, page **42A-40**)	Very high yield strength	1.6

No.	Description	Classification	Type	Thickness (mm)
(**5**)	Bulkhead lower cross member	(see **42A**, **Front upper structure**, **Bulkhead lower cross member: General description**, page **42A-39**)	Very high yield strength	1.7
(**6**)	Front cross member under front seat	(see **41B**, **Centre lower structure**, **Front cross member under front seat: Description**, page **41B-6**)	HLE	1.1
(**7**)	Rear cross member under front seat	(see **41B**, **Centre lower structure**, **Rear cross member under front seat: Description**, page **41B-8**)	HLE	1.1
(**8**)	Floor partition cross member	(see **41D**, **Rear lower structure**, **Rear floor, front section: Description**, page **41D-4**)		0.65
(**9**)	Rear floor front cross member reinforcement	(see **41D**, **Rear lower structure**, **Rear floor front cross member reinforcement: Description**, page **41D-19**)		1.2
(**10**)	Front section of rear floor	(see **41D**, **Rear lower structure**, **Rear floor, front section: Description**, page **41D-4**)		0.65
(**11**)	Windscreen aperture lower cross member closure panel	(see **42A**, **Front upper structure**, **Windscreen aperture lower cross member closure panel: Description**, page **42A-37**)		0.7

REAR STRUCTURE

B85

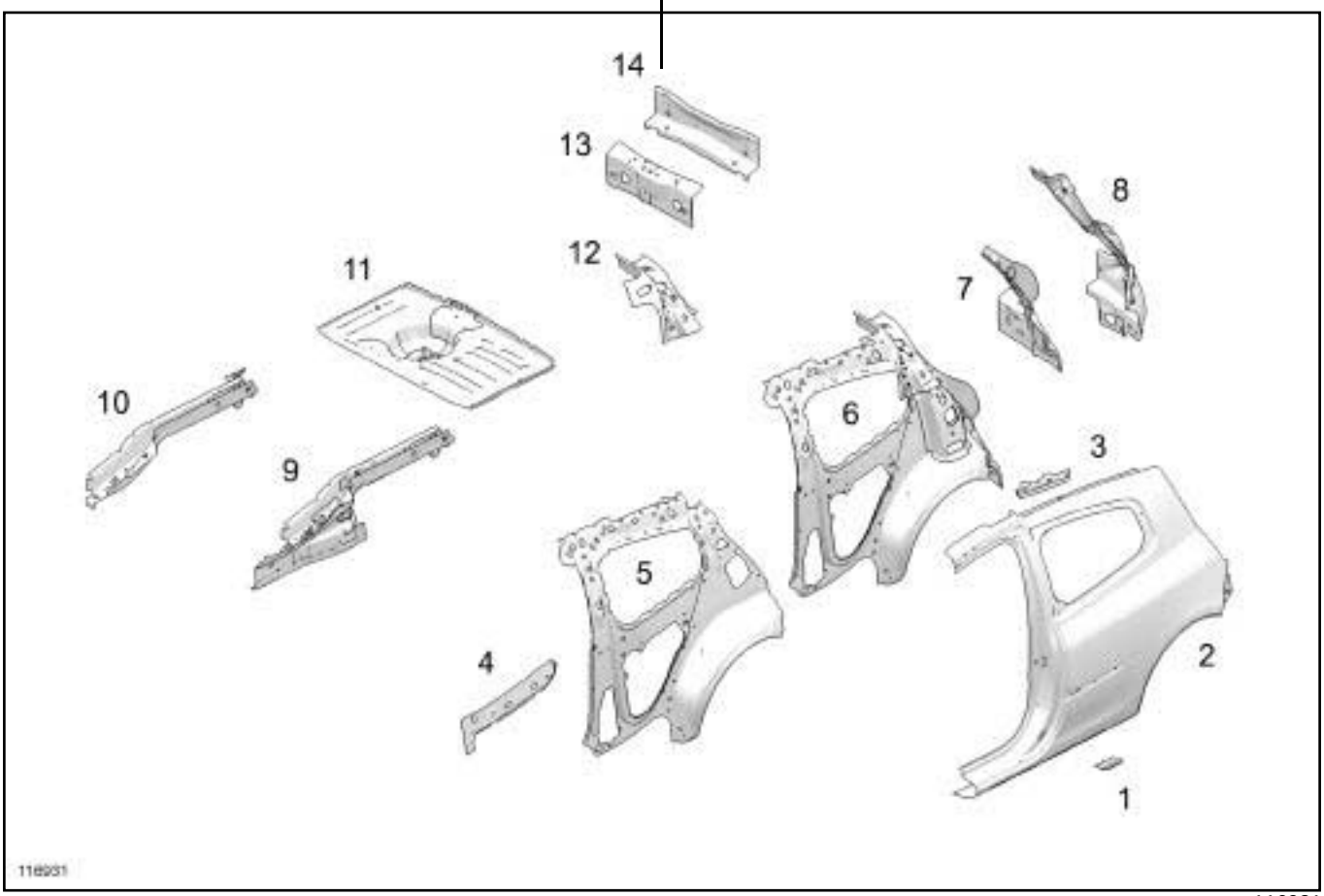


116930

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Rear wing panel	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)		**0.75**
(**2**)	Outer rear wheel arch	(see **44A**, **Rear upper structure**, **Outer rear wheel arch: Description**, page **44A-24**)		**0.65**
(**3**)	Body side rear lining	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**0.65/2**
(**4**)	Lights support lining	(see **44A**, **Rear upper structure**, **Light mounting lining: Description**, page **44A-18**)		**0.85/1**
(**5**)	Rear light mounting	(see **44A**, **Rear upper structure**, **Rear lights mounting: Description**, page **44A-15**)		**0.85/2**
(**6**)	Rear side member assembly	(see **41D**, **Rear lower structure**, **Rear side member assembly: Description**, page **41D-10**)	HLE/ THLE	**1.2/2**
(**7**)	Rear floor rear section	(see **41D**, **Rear lower structure**, **Rear floor, rear section: Description**, page **41D-7**)		**0.65/1.5**

No.	Description	Classification	Type	Thickness (mm)
(**8**)	Quarter panel upper reinforcement	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**1.2**
(**9**)	Rear end panel lining	(see **44A**, **Rear upper structure**, **Rear end panel lining: Description**, page **44A-44**)		**0.85/1.2**
(**10**)	Rear end panel	(see **44A**, **Rear upper structure**, **Rear end panel: Description**, page **44A-41**)	HLE	**0.85**
(**11**)	Rear section of rear side member	(see **41D**, **Rear lower structure**, **Rear side member, rear section: Description**, page **41D-16**)		**1.5/2**

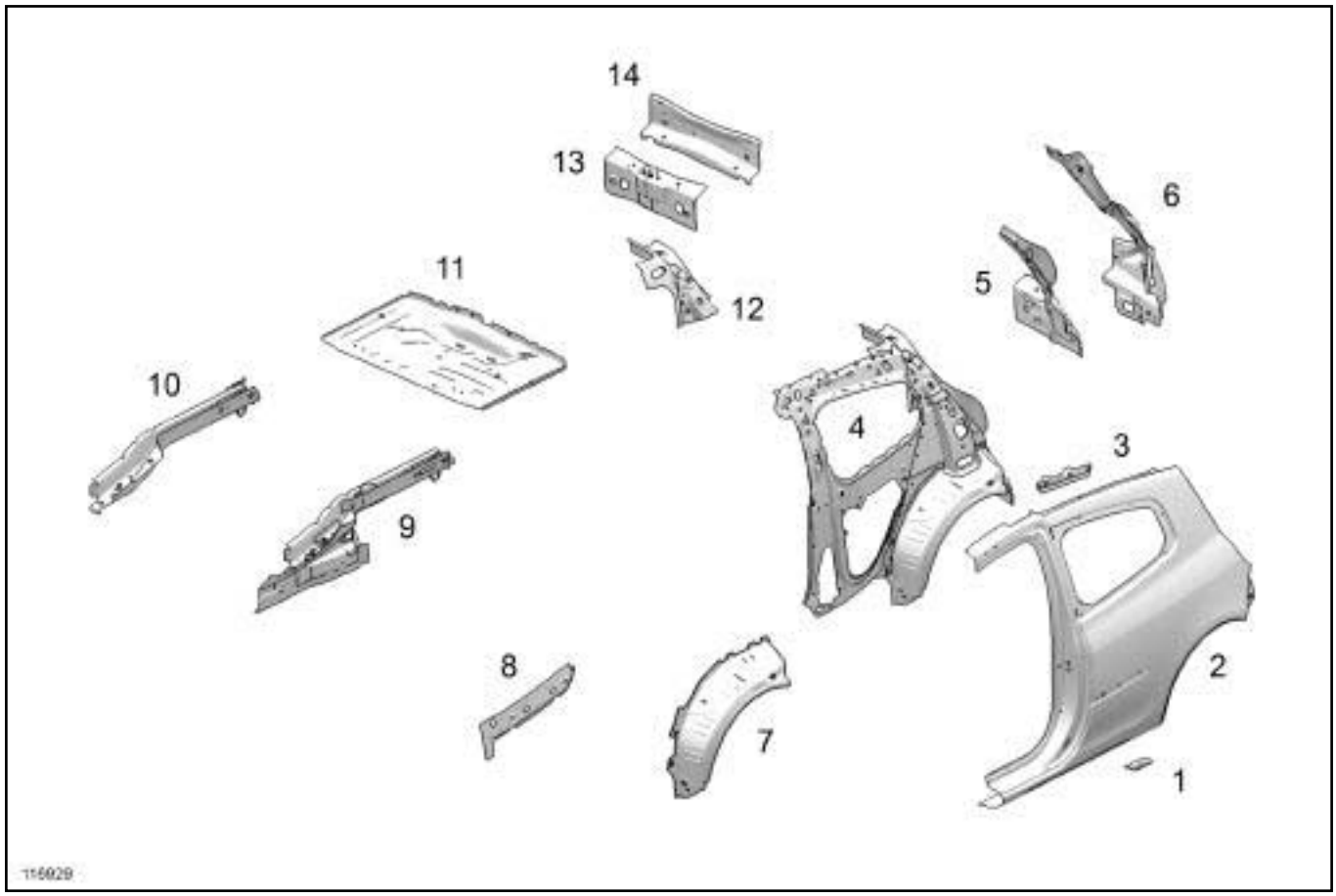
C85 or S85, and EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5



116931

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Jacking point bridge piece	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)	VHEL	**2**
(**2**)	Rear wing panel	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)		**0.75**
(**3**)	Rear airbag deflector	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**0.95**
(**4**)	Quarter panel strip reinforcement	(see **43A**, **Side upper structure**, **B-pillar reinforcement: Description**, page **43A-17**)	HLE	**1.8**
(**5**)	Outer wheel arch	(see **44A**, **Rear upper structure**, **Outer rear wheel arch: Description**, page **44A-24**)		**0.65**
(**6**)	Body side rear lining	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**0.65/2**
(**7**)	Lights support lining	(see **44A**, **Rear upper structure**, **Light mounting lining: Description**, page **44A-18**)		**0.85/1**
(**8**)	Rear light mounting	(see **44A**, **Rear upper structure**, **Rear lights mounting: Description**, page **44A-15**)		**0.85/2**
(**9**)	Rear side member assembly	(see **41D**, **Rear lower structure**, **Rear side member assembly: Description**, page **41D-10**)	HLE/ THLE	**1.2/2.8**
(**10**)	Rear section of rear side member	(see **41D**, **Rear lower structure**, **Rear side member, rear section: Description**, page **41D-16**)		**1.5/2**
(**11**)	Rear floor rear section	(see **41D**, **Rear lower structure**, **Rear floor, rear section: Description**, page **41D-7**)		**0.65/1.5**
(**12**)	Quarter panel upper reinforcement	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**1.2**
(**13**)	Rear end panel lining	(see **44A**, **Rear upper structure**, **Rear end panel lining: Description**, page **44A-44**)		**0.85/1.2**
(**14**)	Rear end panel	(see **44A**, **Rear upper structure**, **Rear end panel: Description**, page **44A-41**)	HLE	**0.85**

C85, and EQUIPMENT LEVEL SPORT

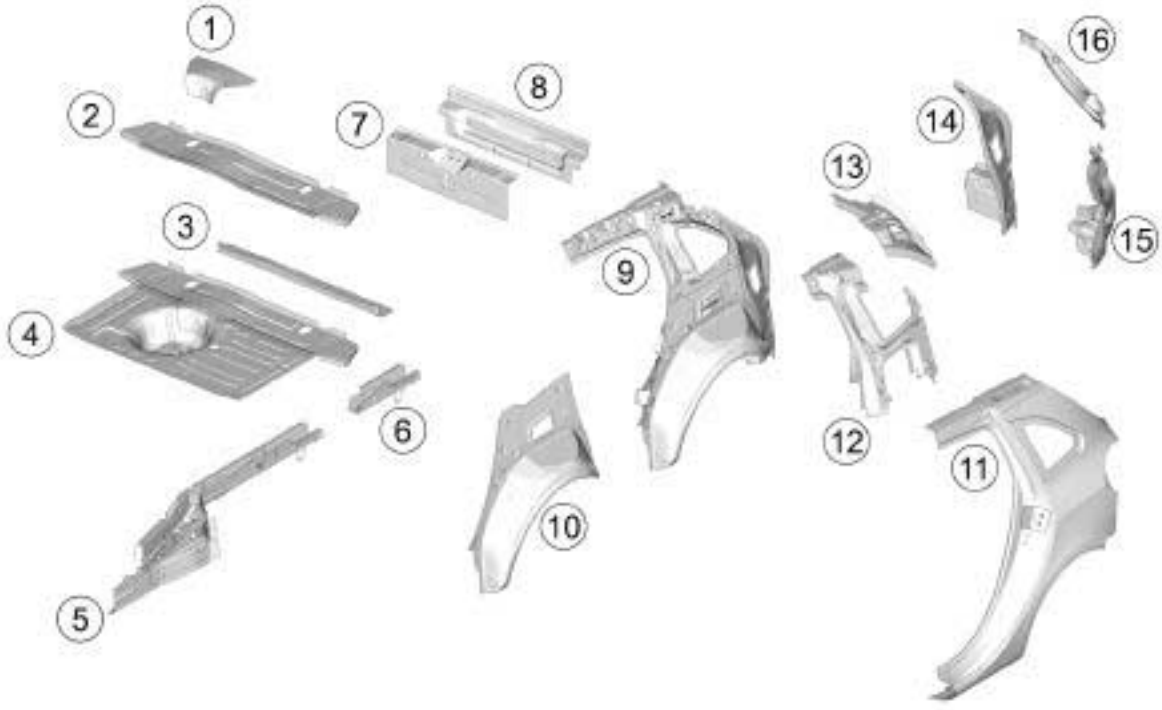


116929

No.	Description	Classification	Type	Thickness (mm)
(**1**)	Jacking point bridge piece	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)	VHEL	**2**
(**2**)	Rear wing panel	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)		**0.75**
(**3**)	Rear airbag deflector	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**0.95**
(**4**)	Body side rear lining	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**0.65/2**
(**5**)	Lights support lining	(see **44A**, **Rear upper structure**, **Light mounting lining: Description**, page **44A-18**)		**0.85/1**
(**6**)	Rear light mounting	(see **44A**, **Rear upper structure**, **Rear lights mounting: Description**, page **44A-15**)		**0.85/2**
(**7**)	Outer rear wheel arch	(see **44A**, **Rear upper structure**, **Outer rear wheel arch: Description**, page **44A-24**)		**0.65**

No.	Description	Classification	Type	Thickness (mm)
(**8**)	Quarter panel strip reinforcement	(see **43A**, **Side upper structure**, **B-pillar reinforcement: Description**, page **43A-17**)	HLE	**1.8**
(**9**)	Rear side member assembly	(see **41D**, **Rear lower structure**, **Rear side member assembly: Description**, page **41D-10**)	HLE/ THLE	**1.2/2.8**
(**10**)	Rear section of rear side member	(see **41D**, **Rear lower structure**, **Rear side member, rear section: Description**, page **41D-16**)		**1.5/2**
(**11**)	Rear floor rear section	(see **41D**, **Rear lower structure**, **Rear floor, rear section: Description**, page **41D-7**)		**0.65/1.5**
(**12**)	Quarter panel upper reinforcement	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)		**1.2**
(**13**)	Rear end panel lining	(see **44A**, **Rear upper structure**, **Rear end panel lining: Description**, page **44A-44**)		**0.85/1.2**
(**14**)	Rear end panel	(see **44A**, **Rear upper structure**, **Rear end panel: Description**, page **44A-41**)	HLE	**0.85**

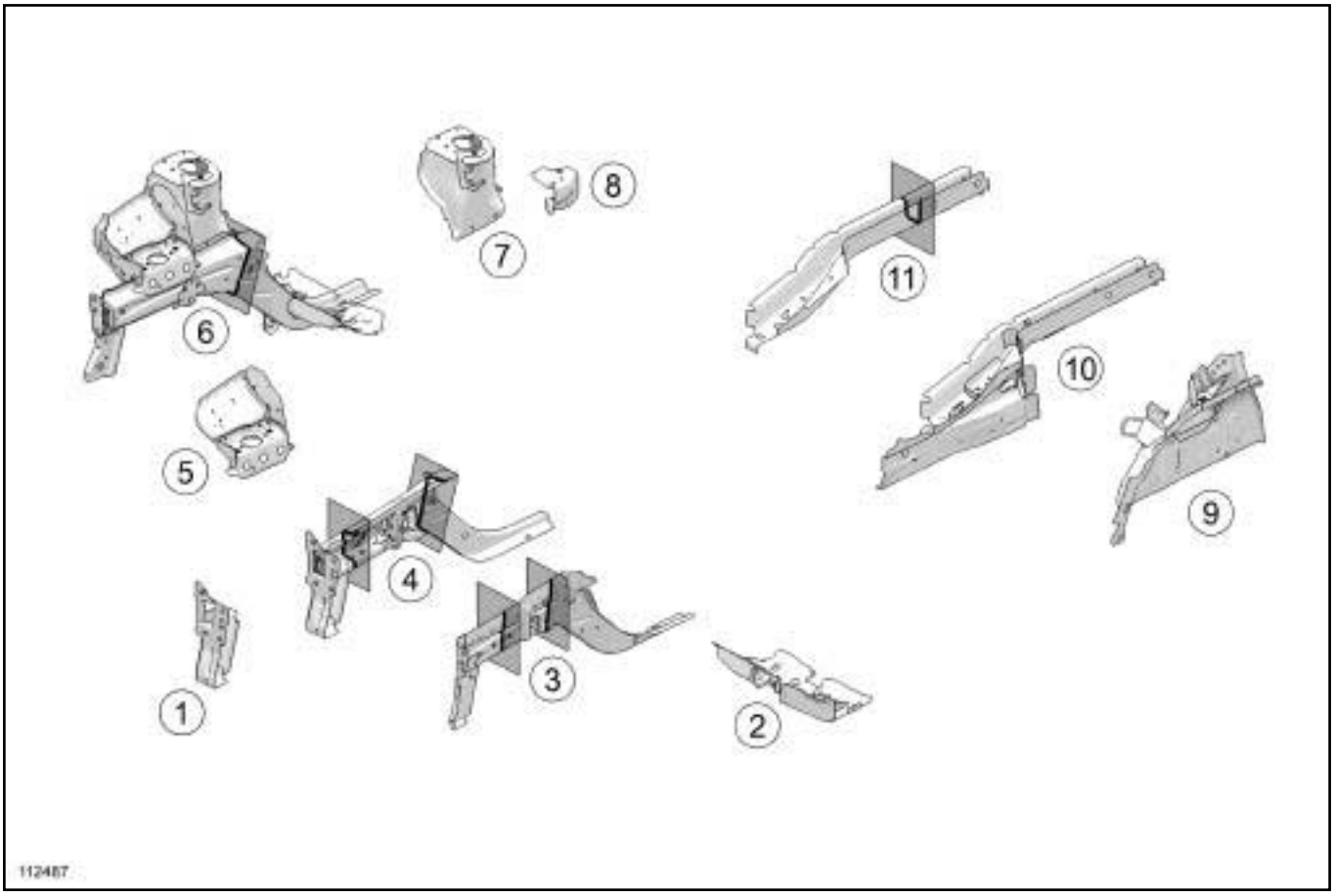
K85



126693

No.	Description	Classification	Type	Thick-ness (mm)
(**1**)	Emergency spare wheel arch stiffener	(see **41D**, **Rear lower structure**, **Rear floor extension: Description**, page **41D-26**)	HLE	**1,7**
(**2**)	Rear floor extension	(see **41D**, **Rear lower structure**, **Rear floor extension: Description**, page **41D-26**)	HLE	**0.65**
(**3**)	Rear floor rear cross member	(see **41D**, **Rear lower structure**, **Rear floor rear cross member: Description**, page **41D-23**)	HLE	**1.2**
(**4**)	Rear floor rear section	(see **41D**, **Rear lower structure**, **Rear floor, rear section: Description**, page **41D-7**)	Mild steel	**0.65**
(**5**)	Rear side member assembly	(see **41D**, **Rear lower structure**, **Rear side member assembly: Description**, page **41D-10**)	HLE	**1.5**
(**6**)	Rear side member extension	(see **41D**, **Rear lower structure**, **Rear side member extension: Description**, page **41D-28**)	HLE	**2**
(**7**)	Rear end panel lining	(see **44A**, **Rear upper structure**, **Rear end panel lining: Description**, page **44A-44**)	Mild steel	**0.85**
(**8**)	Rear end panel	(see **44A**, **Rear upper structure**, **Rear end panel: Description**, page **44A-41**)	Mild steel	**0.95**
(**9**)	Body side rear lining	(see **44A**, **Rear upper structure**, **Body side rear lining: Description**, page **44A-30**)	Mild steel	**0.6**
(**10**)	Outer rear wheel arch	(see **44A**, **Rear upper structure**, **Outer rear wheel arch: Description**, page **44A-24**)	Mild steel	**0.67**
(**11**)	Rear wing panel	(see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**)	Mild steel	**0.75**
(**12**)	Quarter panel stiffener	(see)		
(**13**)	C-pillar stiffener	(see)	HLE	**1.2**
(**14**)	Lights support lining	(see **44A**, **Rear upper structure**, **Light mounting lining: Description**, page **44A-18**)	Mild steel	**0.85**
(**15**)	Rear light mounting	(see **44A**, **Rear upper structure**, **Rear lights mounting: Description**, page **44A-15**)	Mild steel	**0.85**
(**16**)	Rear wing panel rain channel	(see **44A**, **Rear upper structure**, **Rear wing panel rain channel: Description**, page **44A-12**)	Mild steel	**0.95**

I - PARTS REQUIRING THE USE OF A BODY JIG BENCH



112487

(**1**) Radiator cross member support

(**2**) Centre floor front side cross member

(**3**) Front side member closure panel

(**4**) Front side member

(**5**) Engine stand

(**6**) Front half-unit

(**7**) Front wheel arch

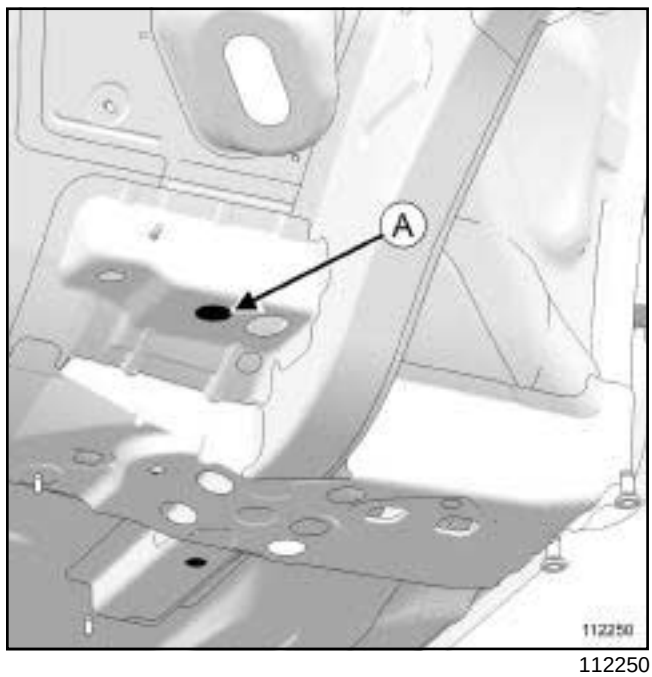
(**8**) Engine tie-rod attachment

(**9**) Inner rear wheel arch

(**10**) Rear side member

(**11**) Rear section of rear side member

II - FRONT SUBFRAME REAR MOUNTING



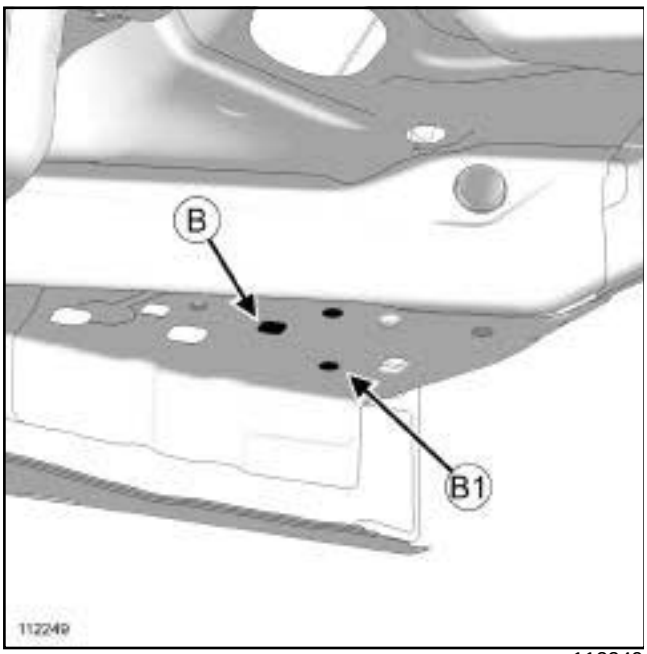
112250

The jig rests under the subframe mounting unit and is centred in the threaded hole (**A**) .

It is used for replacing a complete front half unit.

IMPORTANT
This/these point/s help(s) to ensure axle geometry.

III - REAR AXLE ASSEMBLY FRONT MOUNTING



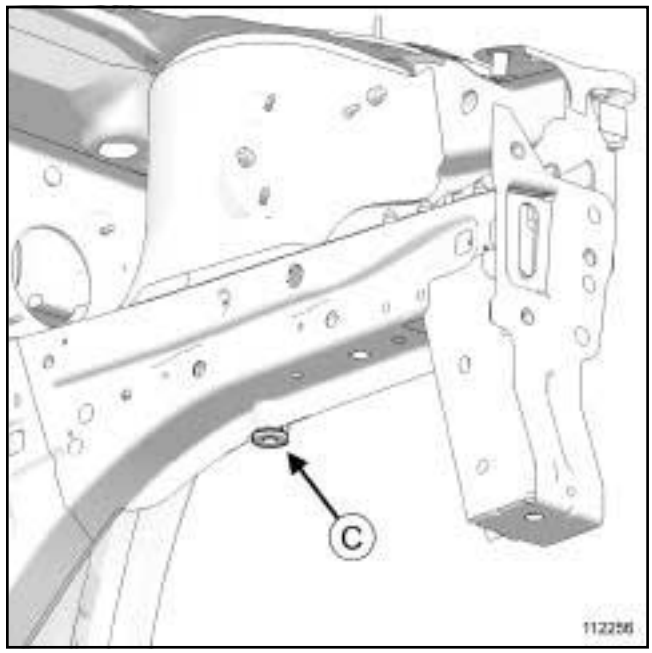
112249

The jig supports the underneath of the rear axle assembly mounting unit and is centred on square hole (**B**) and fixed on tapped hole (**B1**) of the rear axle bearing mounting.

It is used for replacing a rear side member assembly.

IMPORTANT
This/these point/s help(s) to ensure axle geometry.

IV - FRONT SUB-FRAME FRONT MOUNTING



112256

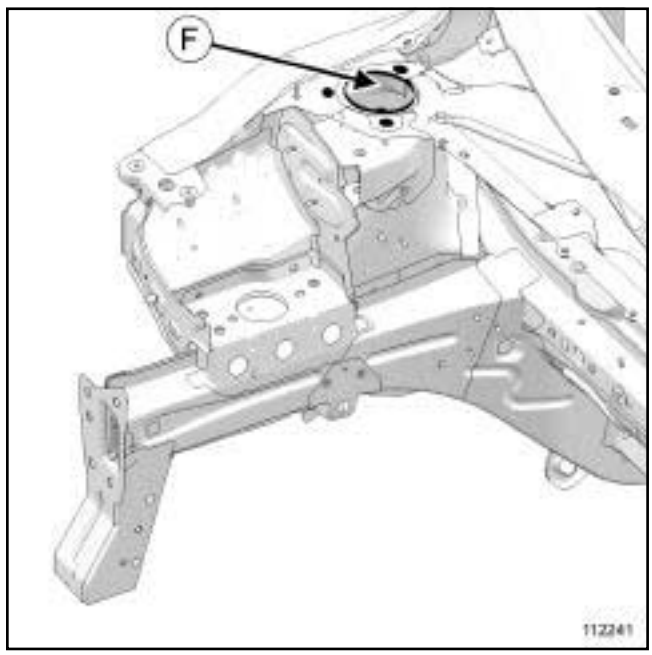
The jig supports the underneath of the front sub-frame mounting and is centred on tapped hole (**C**) .

It is used when replacing:

- a complete front side member,
- a front half unit.

IMPORTANT
This/these point/s help(s) to ensure axle geometry.

V - FRONT SHOCK ABSORBER UPPER MOUNTING



112241

The jig supports the underneath of the shock absorber cup and is centred on the hole (**F**) of the shock absorber cup.

It is used when replacing:

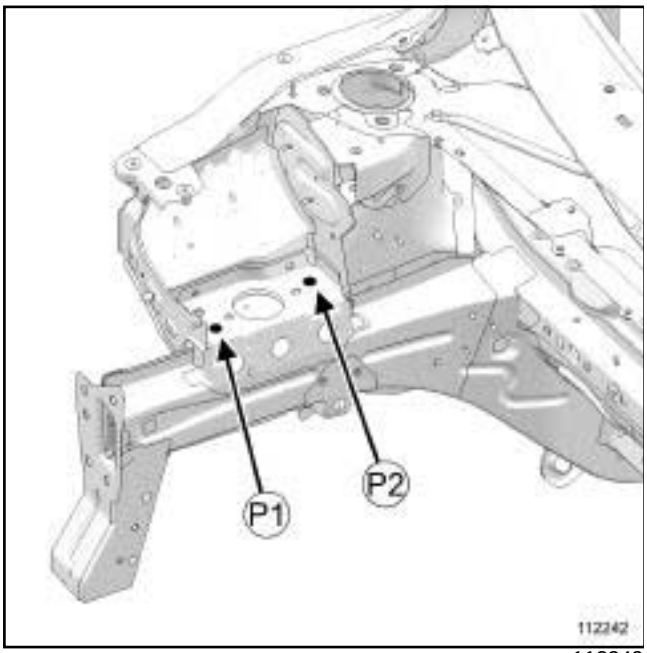
- a wheel arch,

- a front half unit.

It is also used in straightening.

IMPORTANT
This/these point/s help(s) to ensure axle geometry.

VI - ENGINE MOUNTING



112242

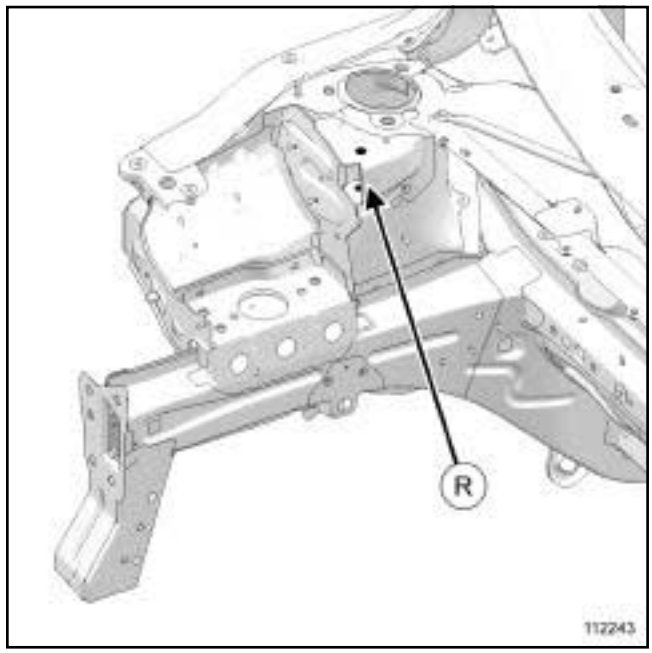
The jig rests on the engine mounting and is centred in engine mounting securing holes (**P1**) and (**P2**) .

It is used with the mechanical components removed for the replacement of:

- a front half unit.

- the engine mounting.

VII - ENGINE TIE-ROD ATTACHMENT



112243

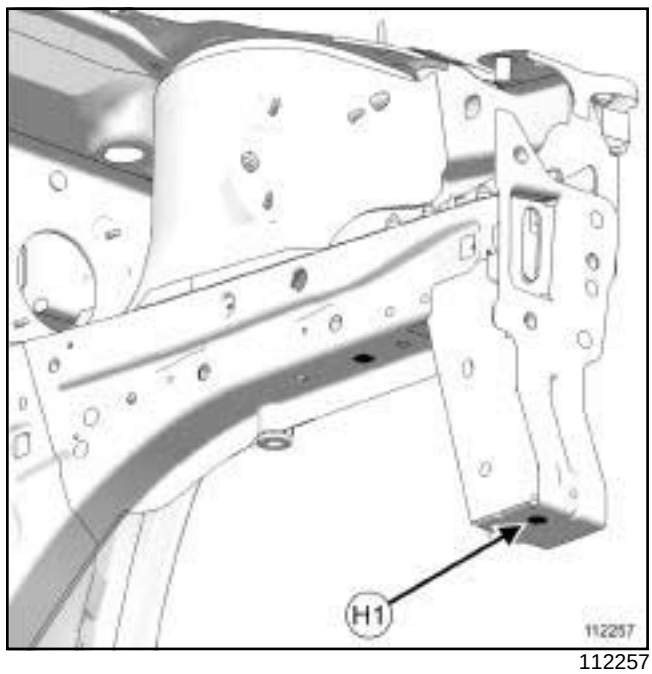
The jig supports the engine tie-rod attachment mounting and is centred on hole (**R**) .

It is used with the mechanical components removed for the replacement of:

- the engine tie-rod attachment,

- a front half unit.

VIII - RADIATOR MOUNTING CROSS MEMBER MOUNTING



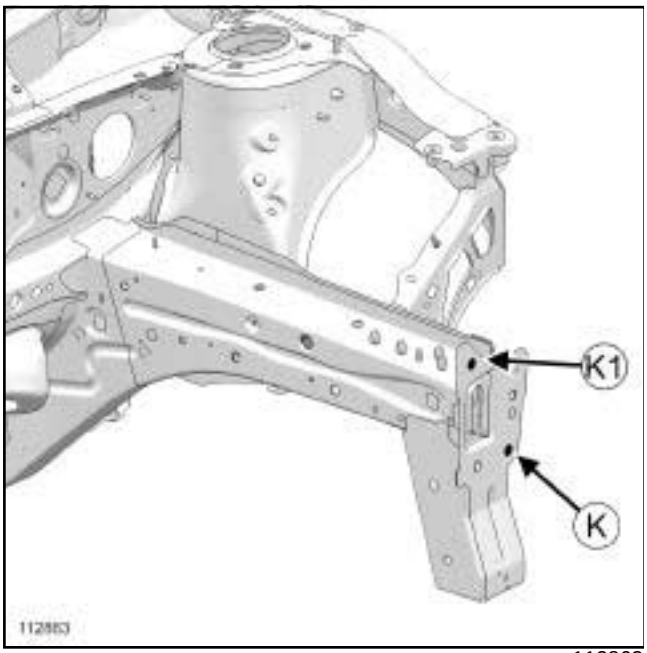
112257

The jig supports the underneath of the radiator cross member and is centred in tapped hole (**H1**) .

It is used when replacing:

- the radiator cross member mounting,
- the front side member completely or partially,
- a half unit.

IX - FRONT IMPACT CROSS MEMBER MOUNTING



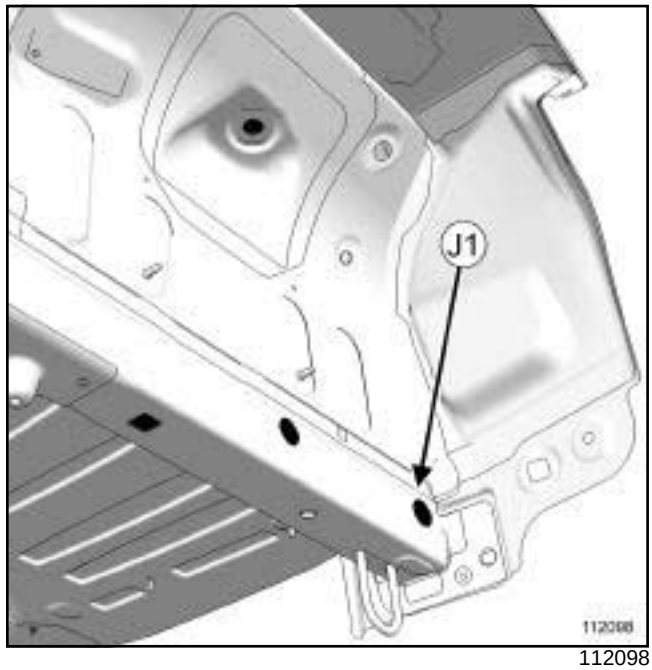
112863

The jig rests vertically against the radiator cross member mounting unit and is centred in mounting holes (**K**) and (**K1**) .

It is used when replacing:

- the radiator cross member mounting,
- the front side member completely or partially,.

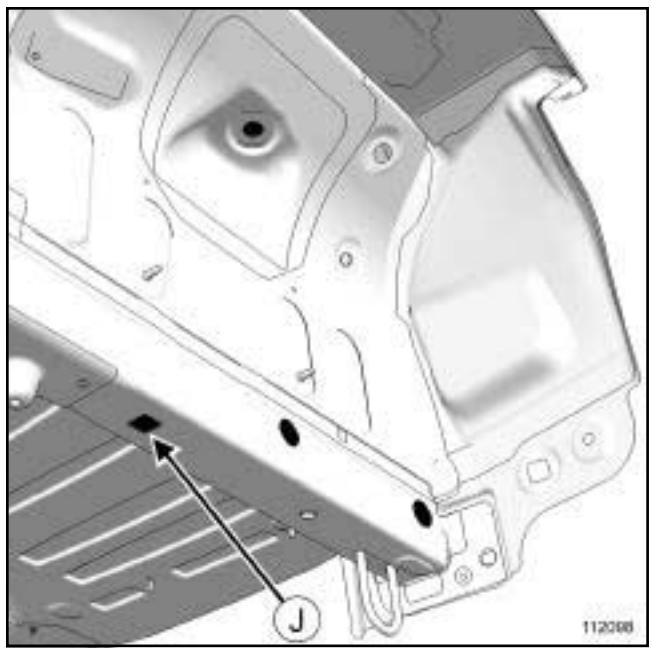
X - END OF REAR SIDE MEMBER



112098

The jig rests vertically against the side member and is centred in hole (**J1**) .

It is used for partially replacing a rear side member.



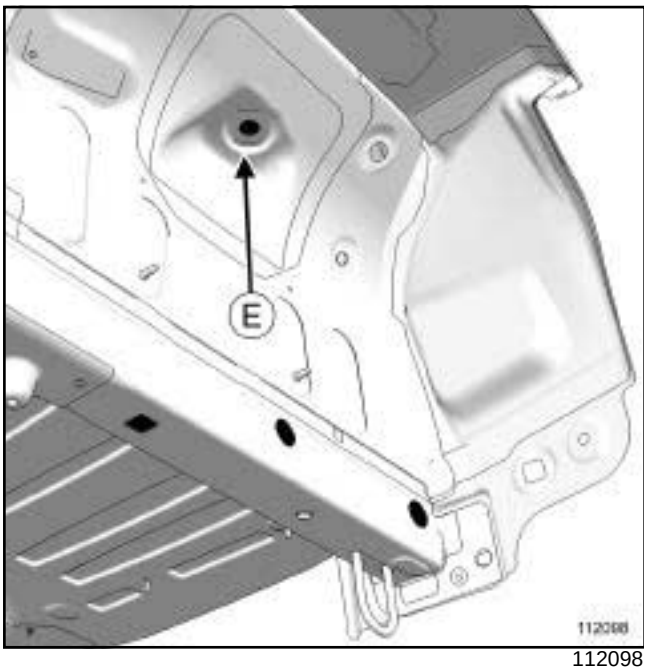
112098

The jig rests under the rear side member and is centred in hole (**J**) .

It should be used with the mechanical components in place to realign a rear side member.

It is used with the mechanical components removed, under the same conditions, to replace the complete rear side member.

XI - INNER REAR WHEEL ARCH



112098

The jig supports the underneath of the rear shock absorber cup and is centred on hole (**E**) .

Use it when replacing the rear wheel arch.

WARNING

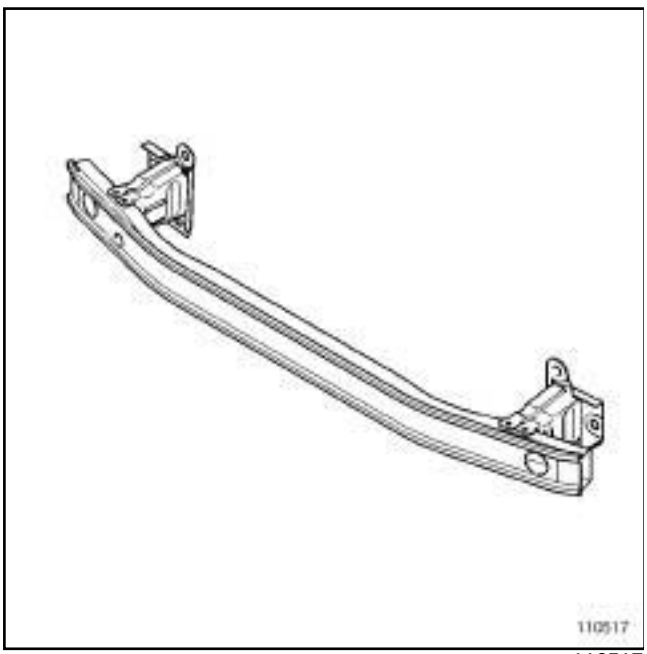
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



110517

A special feature of this part is that it is bolted to the ends of the front side members via the radiator cross member mounting support.

Tightening torques ▽	
side mounting bolts (1)	**44 Nm**

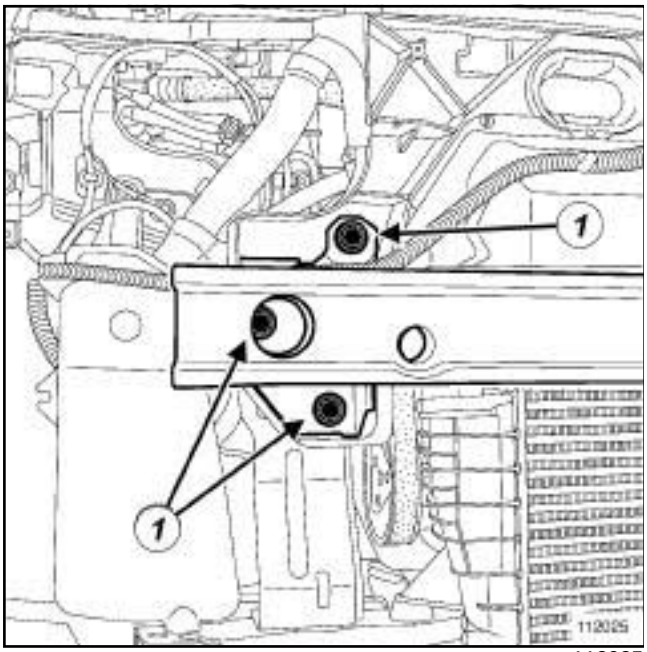
I - REMOVAL

1 - REMOVAL PREPARATION OPERATION

❑

- Remove the front bumper (see **Front bumper: Removal - Refitting**) .
- Remove the headlights (see) (see **Xenon headlight: Removal - Refitting**) .

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112025

❑ Remove side mounting bolts (**1**) (three on either side).

II - REFITTING

1 - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the side mounting bolts.

❑

WARNING

The cross member contributes to the structural rigidity of the engine compartment. For this reason, the tightening torque must be observed following any operation.

Torque tighten the **side mounting bolts (1) (44 Nm)**.

2 - FINAL OPERATION

❑ Refit the headlights (see) (see **Xenon headlight: Removal - Refitting**) .

- Refit the front bumper (see **Front bumper: Removal - Refitting**) .

Note:

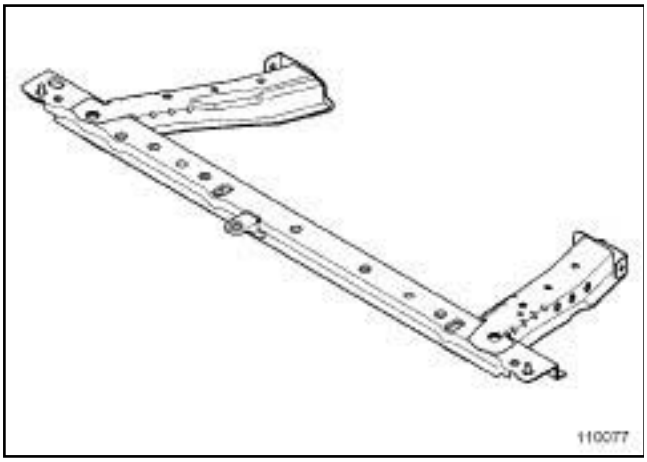
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110077

This steel part, which bolts onto the front axle subframe, combines two functions:

- distribution of front impact forces,

- radiator support cross member.

Tightening torques ▽	
the mounting bolts (1)	**21 Nm**
mounting bolts (2)	**105 Nm**

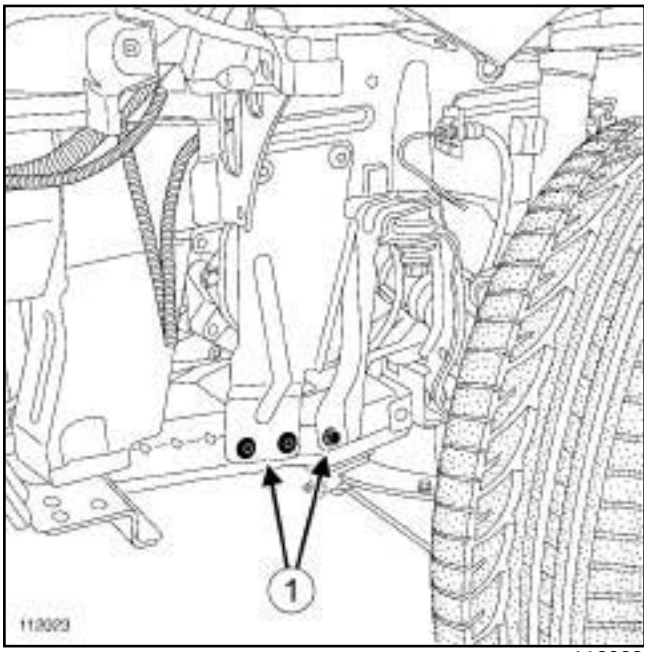
I - REMOVAL

1 - REMOVAL PREPARATION OPERATION

❏ Remove the front bumper (see **Front bumper: Removal - Refitting**) .

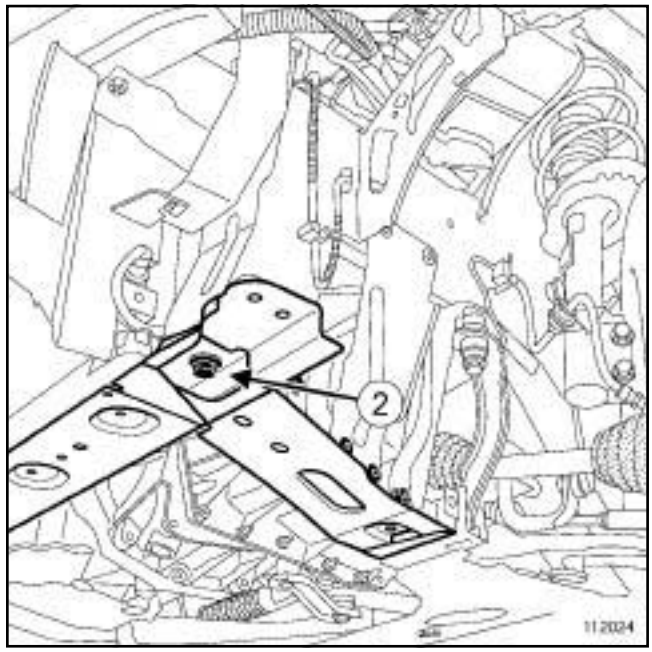
- Attach the radiator upper section.
- Remove the engine undertray.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112023

❏ Remove the mounting bolts (**1**) from each side.



112024

❏ Remove the mounting bolt (**2**) from each side.

II - REFITTING

1 - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the mounting bolts ***(1)*** and ***(2)*** .

❏ Torque tighten the

- **the mounting bolts (1) (21 Nm)**,
- **mounting bolts (2) (105 Nm)**.

2 - FINAL OPERATION

❏ Refit the engine undertray.

- Detach the radiator upper section.
- Refit the front bumper (see **Front bumper: Removal - Refitting**) .

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

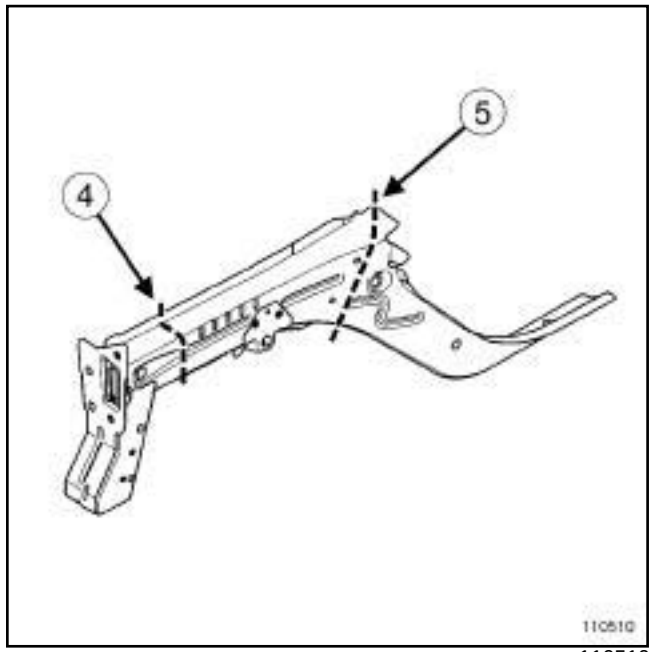
For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT

110509

The special feature of this type of part is that it combines the functions of front section and rear section of the front side member and that it is made of two different kinds of panels of different thicknesses assembled by laser butt welding.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110510

1 - Cut 1:

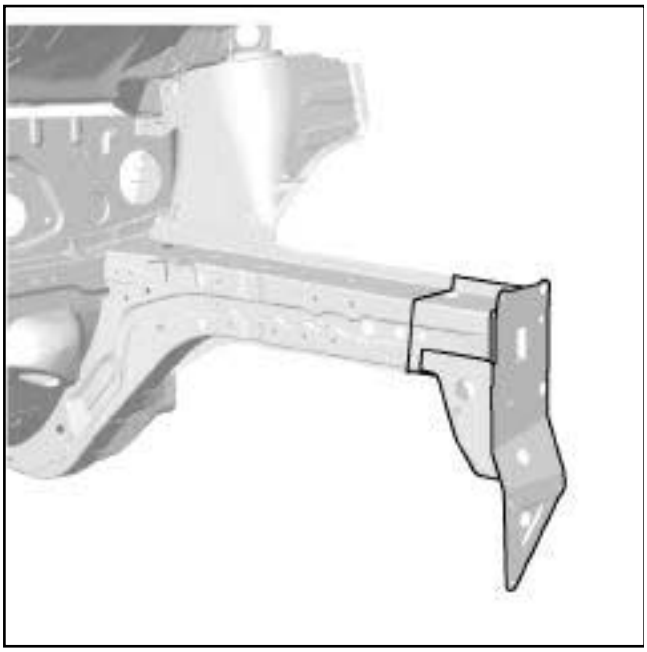
This line shows the centre of the area in which it is possible to carry out a partial replacement.

This operation allows you to access the inside of the hollow section of the structural element to straighten it.

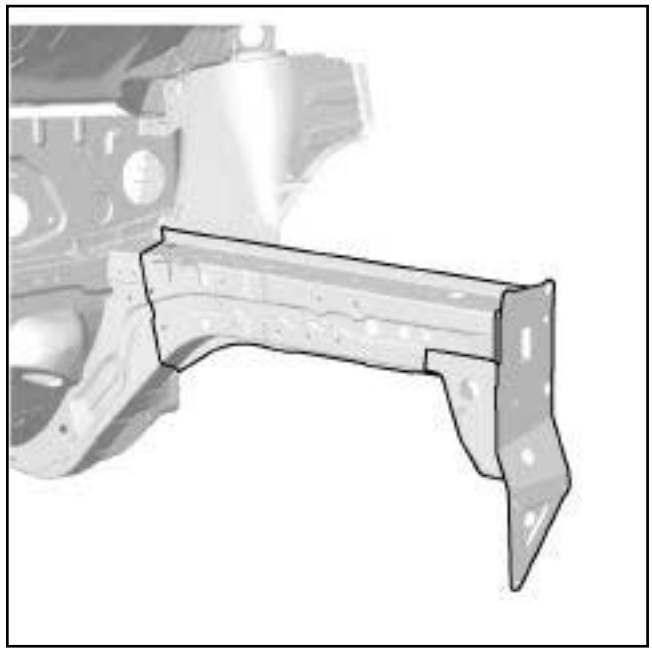
Note:

For the partial replacement of parts constituting a single structural component, it is essential to stagger the welds of each of the components.

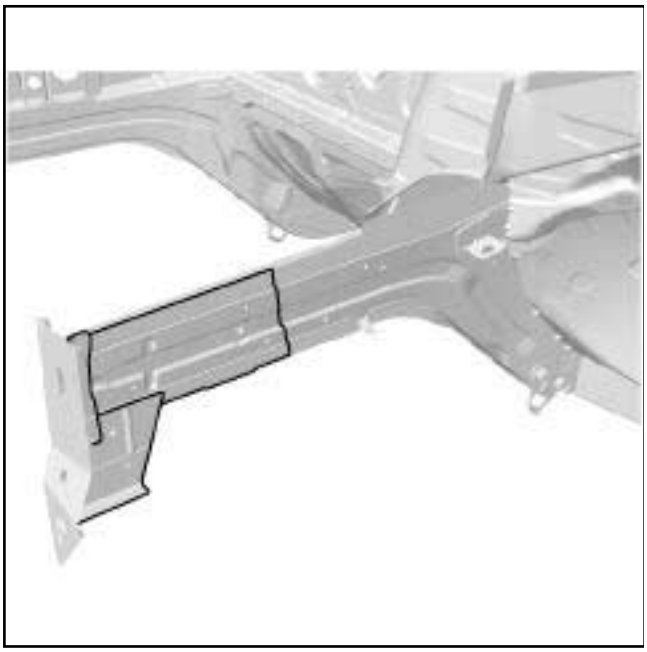
In this case, the side member weld line must be staggered from that of its closure panel.



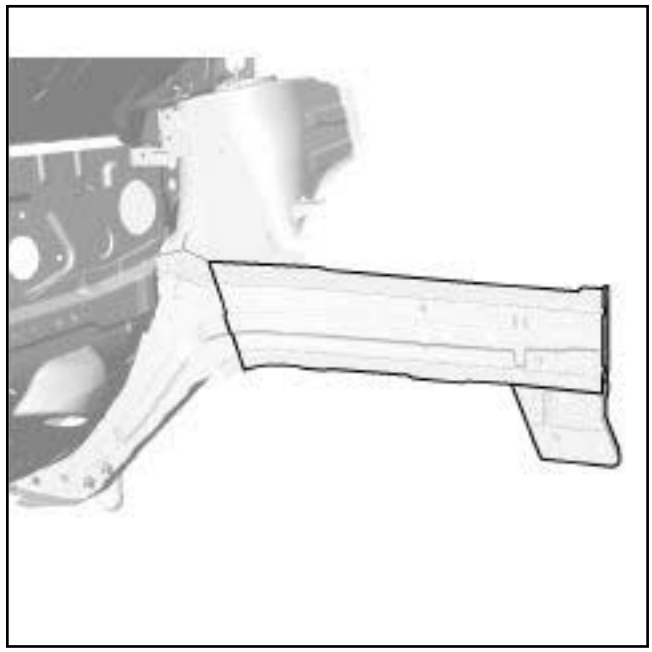
130093



130095



130094



130096

2 - Cut 2:

The cut is made along the butt weld.

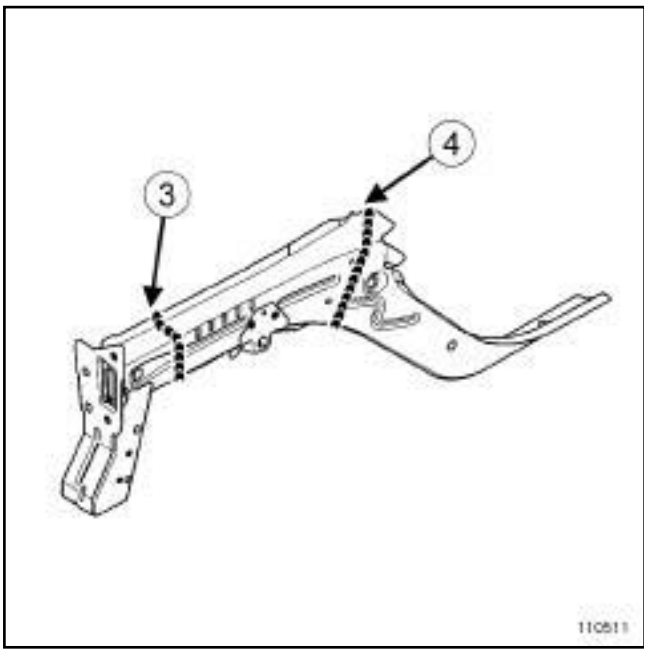
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

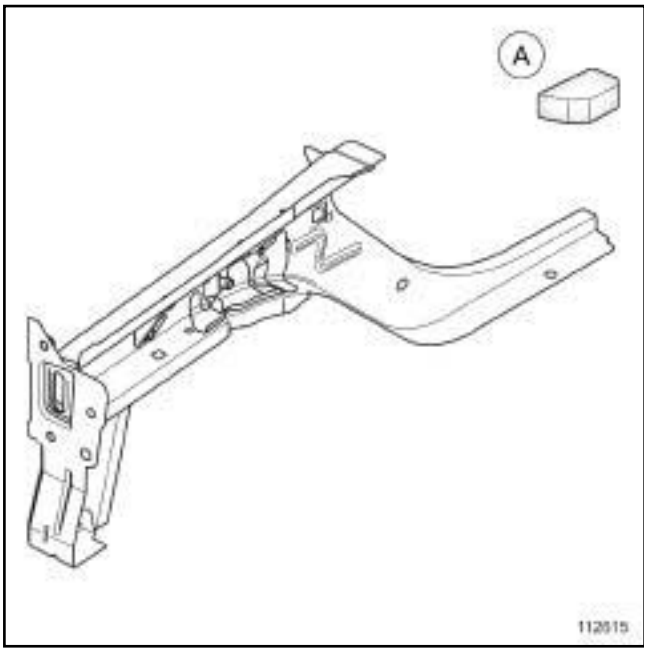
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110511

Lines (**3**) and (**4**) on the diagram show a butt weld by continuous EGW welding.

Weld (**4**) along the butt weld line.



112615

To replace this part, order the front side member expanding insert (**A**) .

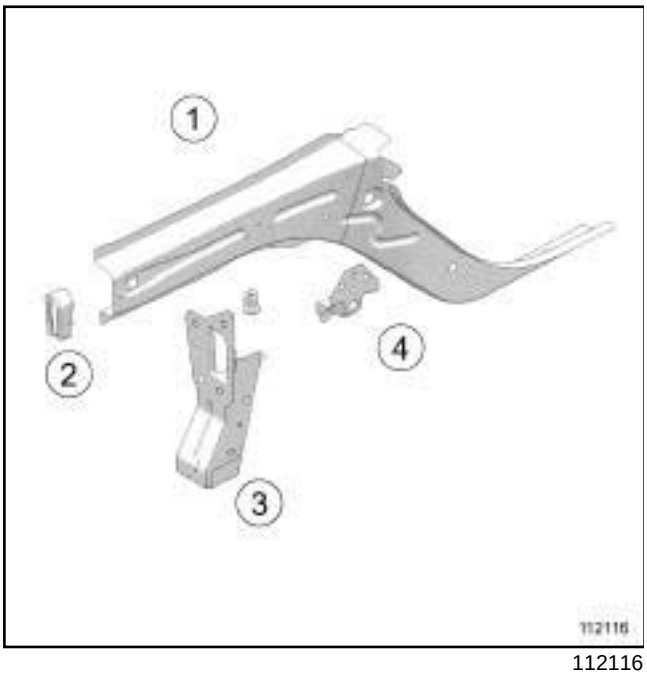
The options for replacing this part are as follows:

- partial replacement of front end section,

- partial replacement of the front section.

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART



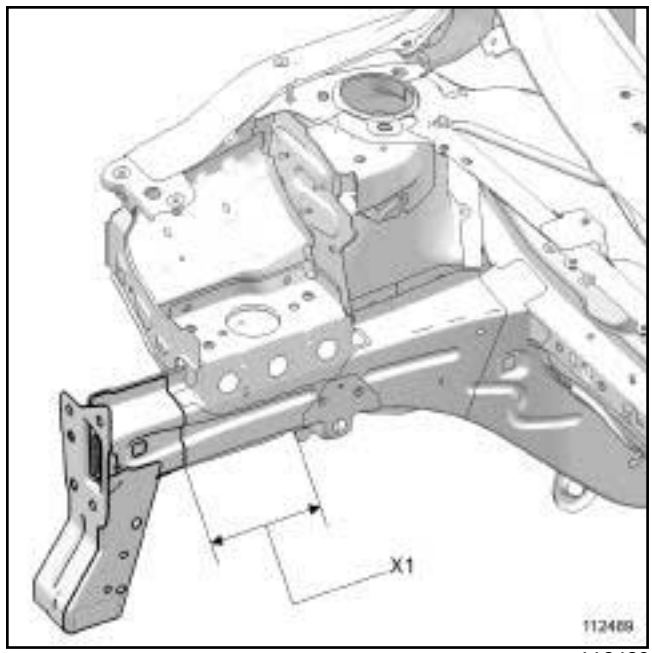
112116

No.	Description	Type	Thick-ness (mm)
(**1**)	Front side member	HLE/ THLE	**1.6** / **2.6**
(**2**)	Impact reinforce-ment	HLE	**2**
(**3**)	Radiator cross member mounting	HLE	**1.2** / **2.5**
(**4**)	Front subframe mounting support	HLE	**2**

II - PART FITTED

1 - Partial replacement of front end section (right-hand side)

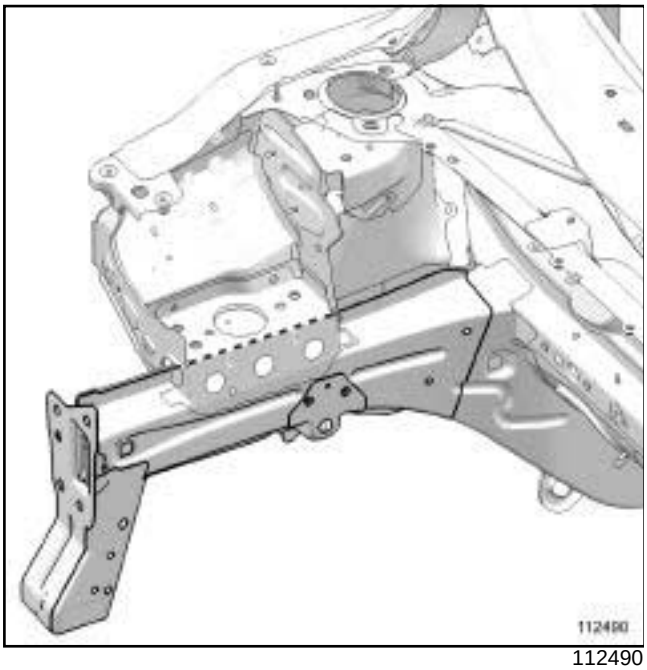
WARNING
Position this part correctly; its position is determined by the position of the inner reinforcements.



112489

(**X1**) = **180 mm**

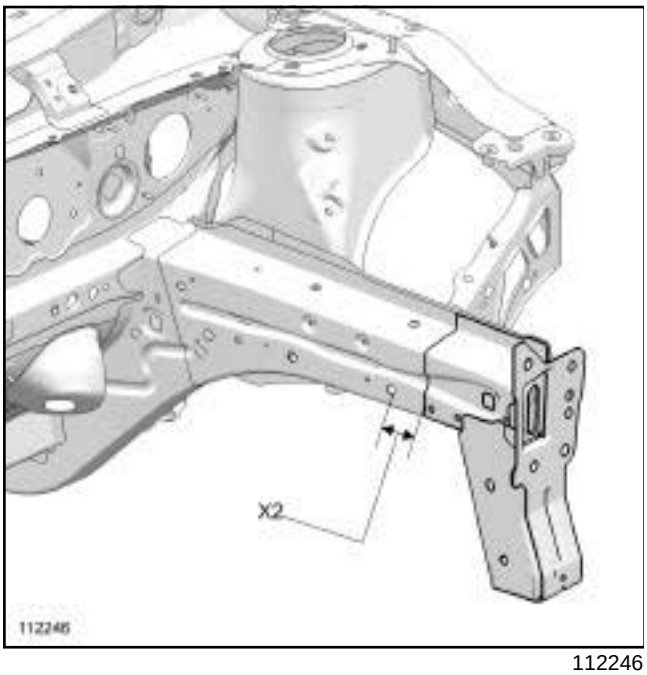
2 - Partial replacement of the front section



112490

WARNING
The cut is made along the line of the original butt weld.

3 - Partial replacement of front end section (left-hand side)

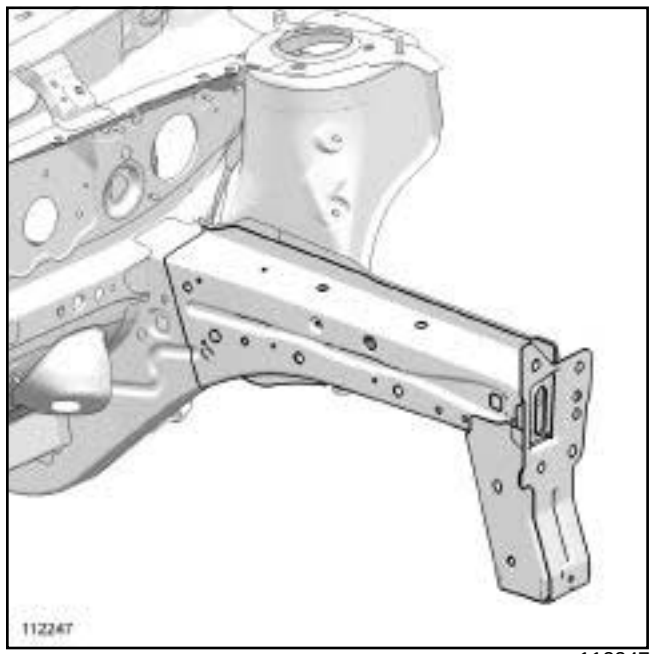


112246

(**X2**) = **60 mm**

WARNING
Position this part correctly; its position is determined by the position of the inner reinforcements.

4 - Partial replacement of the front section

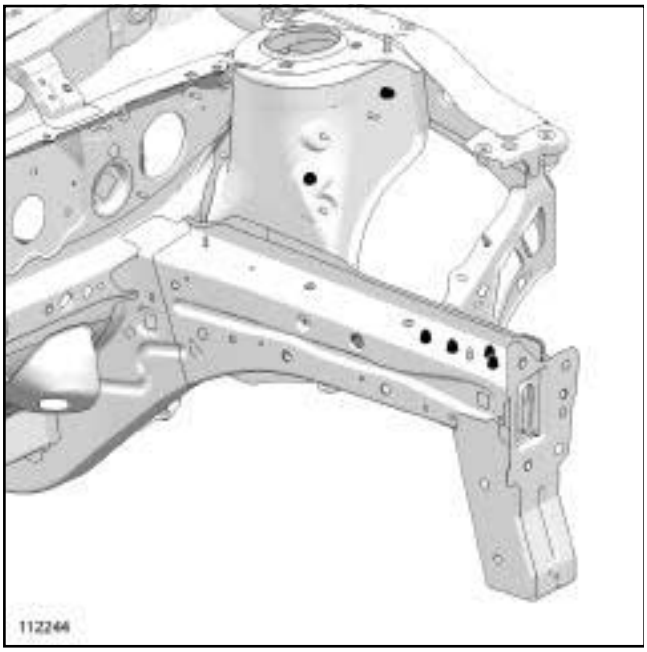


112247

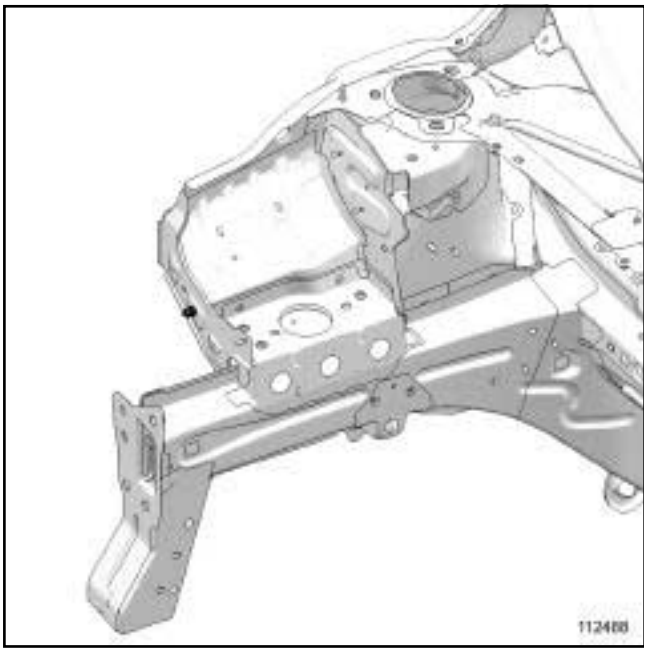
WARNING
The cut is made along the line of the original butt weld.

III - POSITIONING OF LOCAL ELECTRICAL EARTHS

WARNING
- To avoid damaging the vehicle's electrical and electronic components, be sure to disconnect the earths of any wiring near the weld zone.
- The welding machine earth must be placed as close as possible to the weld zone.



112244



112488

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

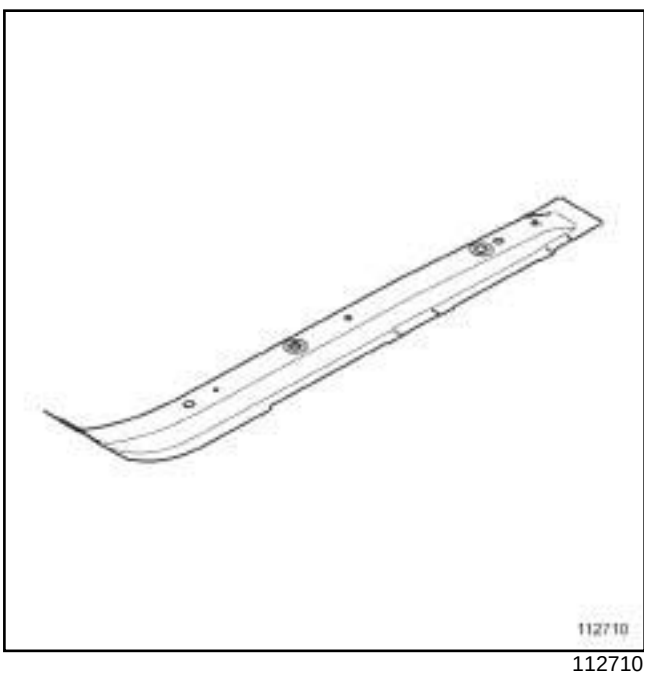
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

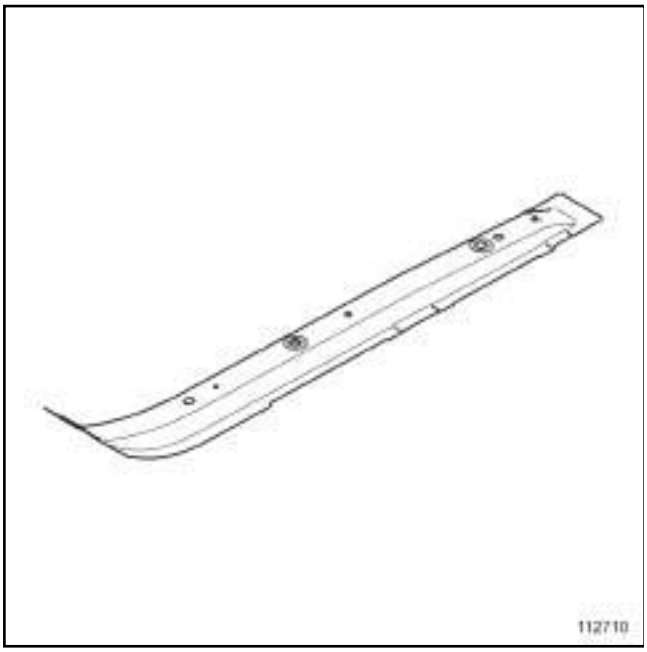
DESIGN OF THE STRUCTURAL COMPONENT



112710

This is a basic part; its only function is that of front side member, centre section.

WARNING
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

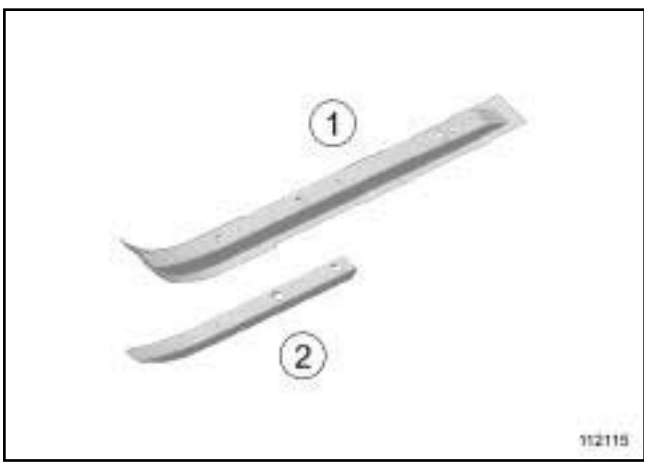


112710

There is only one way of replacing this part:

- Complete replacement:

I - COMPOSITION OF THE SPARE PART



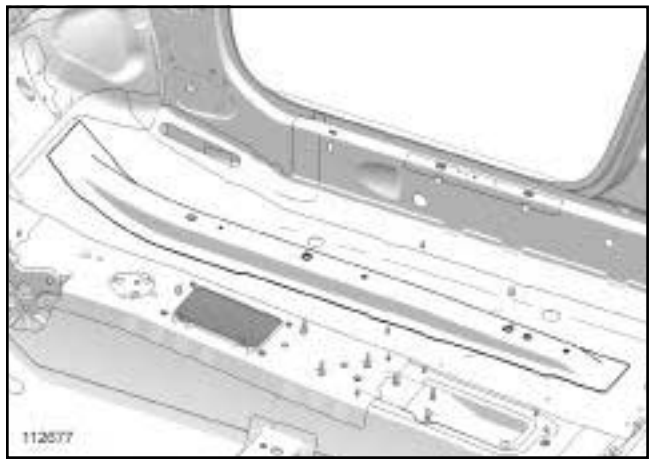
112115

No.	Description	Type	Thick-ness (mm)
(**1**)	Centre side member	Very high yield strength	**2**
(**2**)	Centre side member reinforcement	VHEL	**2.5**

II - PART FITTED

WARNING

- To avoid damaging the vehicle's electrical and electronic components, be sure to disconnect the earths of any wiring near the weld zone.
- The welding machine earth must be placed as close as possible to the weld zone.



112677

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT

130106

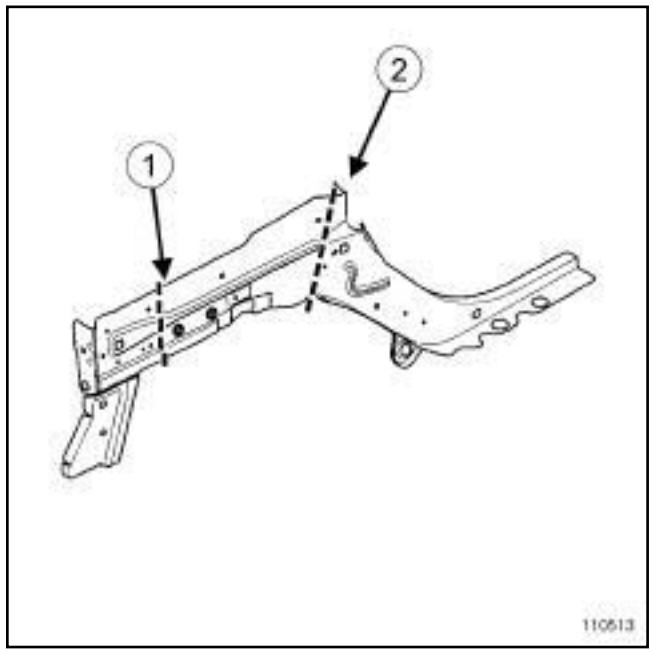
The special feature of this type of part is that it combines the functions of both the front section and rear section of the front side member closure panel and that it is made of two different kinds of panels of different thicknesses assembled by laser butt welding.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT

Note:

For the partial replacement of parts constituting a single structural component, it is essential to stagger the welds of each of the components.

For removal of the side member (see **41A**, **Front lower structure**, **Front side member: Description**, page **41A-8**) .

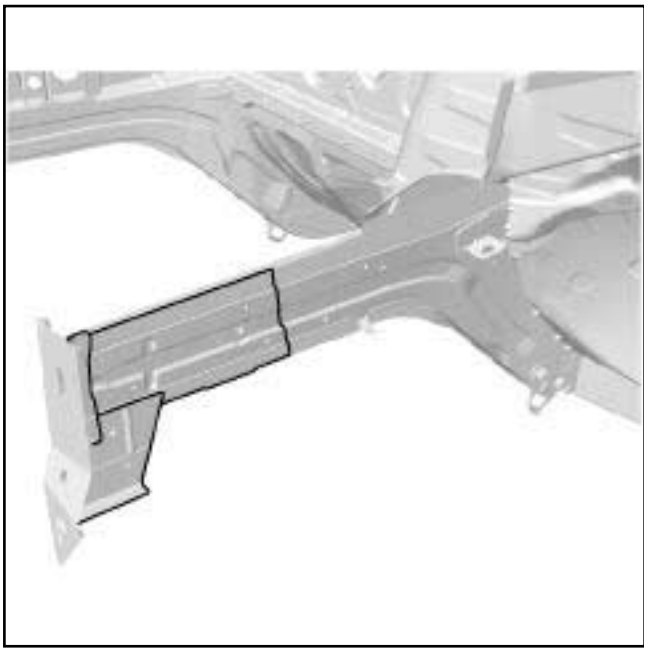


110513

1 - Cut 1:

This line shows the centre of the area in which it is possible to carry out a partial replacement.

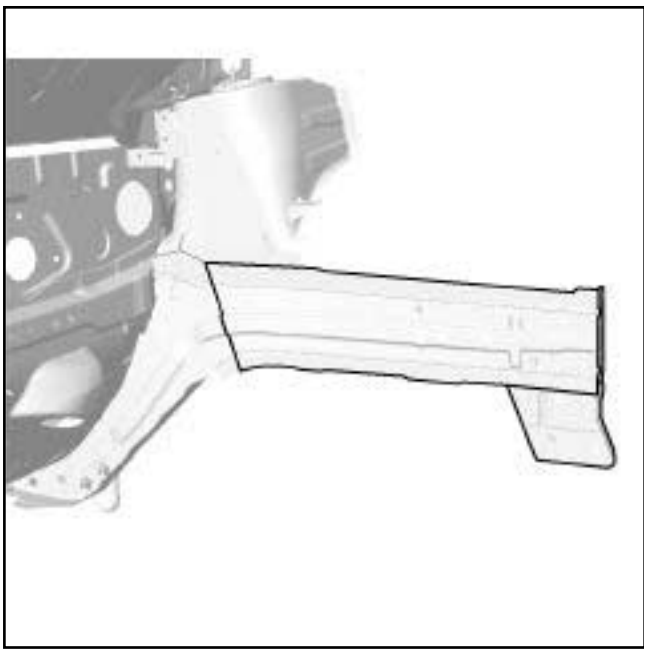
This operation allows you to access the inside of the hollow section of the structural component to straighten it.



130108

2 - Cut 2:

The cut must be made on the splice.



130109

III - ASSEMBLY INSTRUCTIONS FOR A PARTIAL REPLACEMENT

In this case, the side member weld line must be staggered from that of its closure panel.

Note:

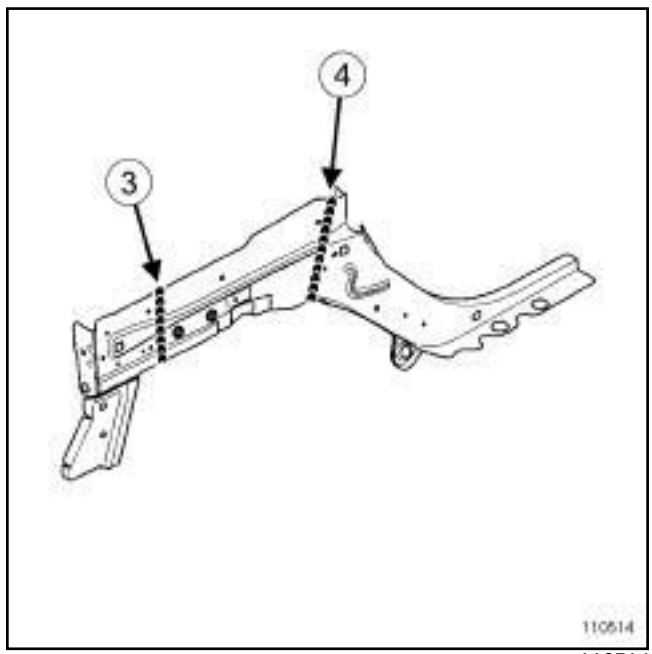
For the partial replacement of parts constituting a single structural component, it is essential to stagger the welds of each of the components.

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

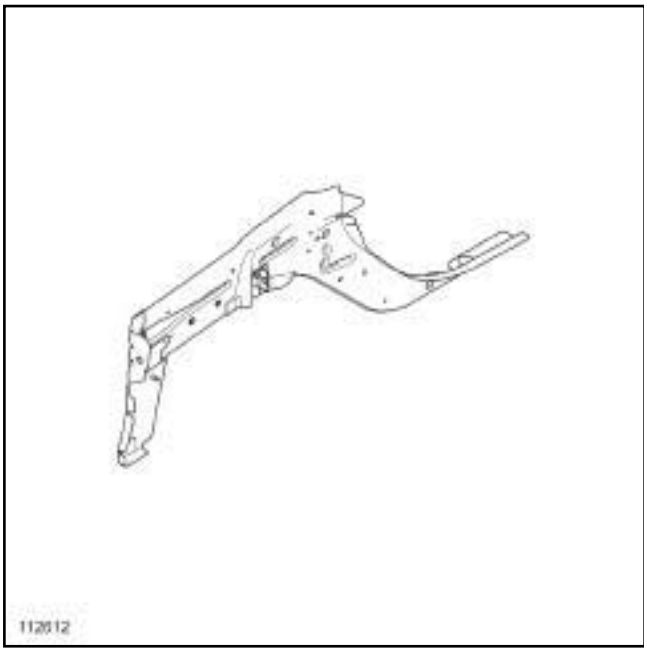
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110514

Lines (**3**) and (**4**) on the diagram show a butt weld by continuous EGW welding.

Weld (**4**) along the butt weld line.



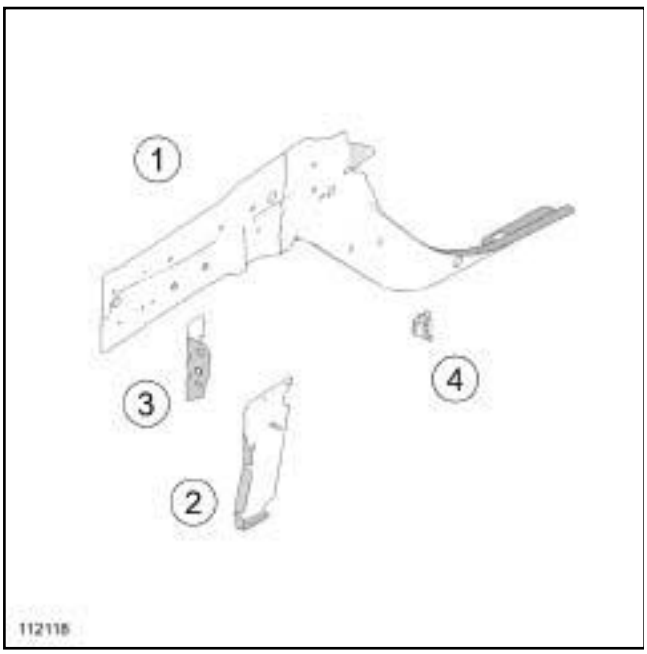
112612

The options for replacing this part are as follows:

- partial replacement of front end section,
- partial replacement of the front section.

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART



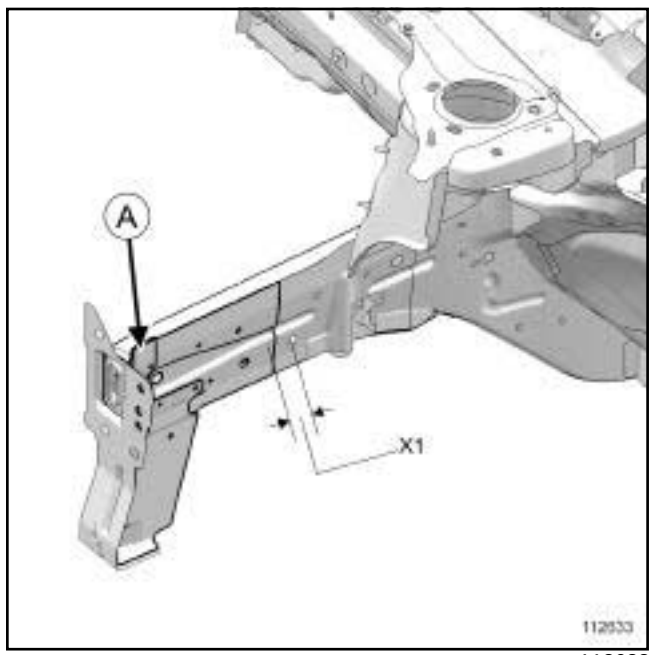
112118

No.	Description	Type	Thick-ness (mm)
(**1**)	Side member closure panel	HLE/ THLE	**1.6** / **2.7**
(**2**)	Radiator cross member mounting closure panel	HLE	**1.2**
(**3**)	Connecting bracket	HLE	**2**
(**4**)	Flexible brake pipe mounting		**2**

II - PART FITTED

1 - Partial replacement of the front end section

WARNING
Position this part correctly; its position is determined by the position of the inner reinforcements.



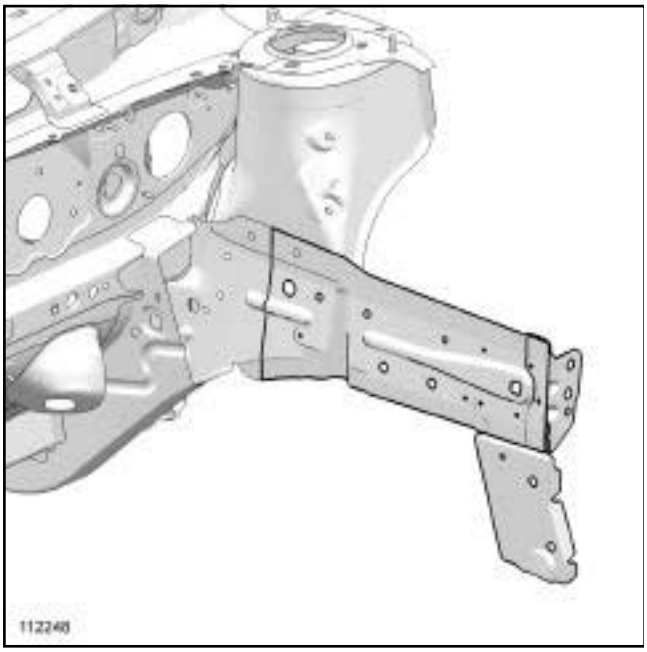
112633

(**X1**) = **40 mm**

IMPORTANT
For weld joints in three thicknesses (**A**) , the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

2 - Partial replacement of the front section

To make this cut, first remove the front side member part section along the line of the butt weld.



112248

WARNING

The cut is made along the line of the original butt weld.

Battery tray bracket: General description

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part. Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT

This part is bolted to the front side member. It is made of plastic. The type of plastic is indicated on the part itself.

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

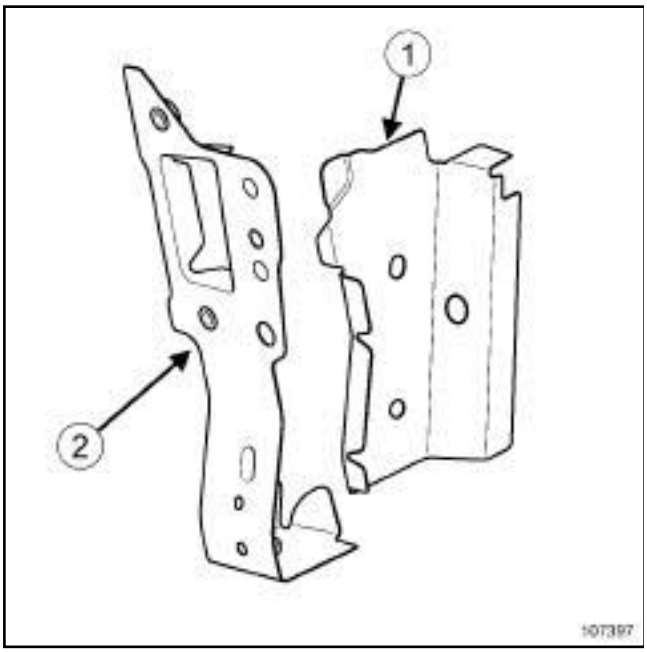
IMPORTANT

The straightening bench must be used.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



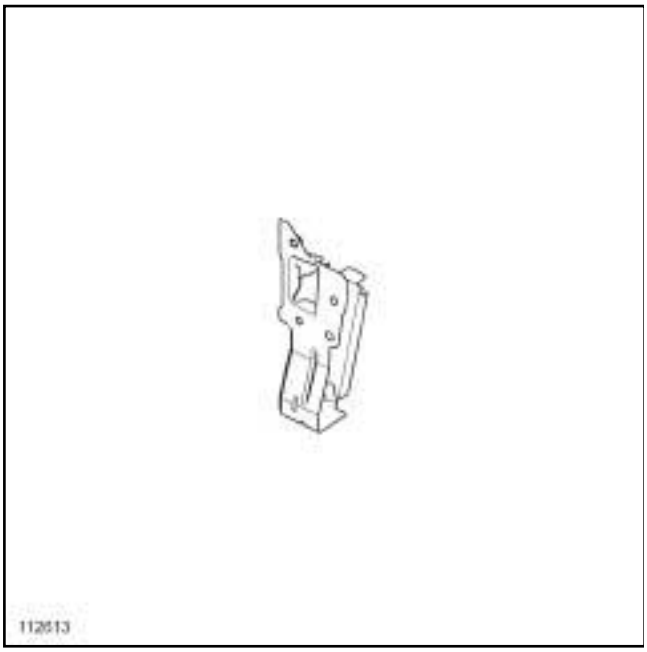
107397

It is composed of the following components:

- cross member mounting component (**1**) ,
- mounting support unit (**2**) .

This part acts as:

- a radiator cross member support,
- front end cross member support,
- front end panel support.



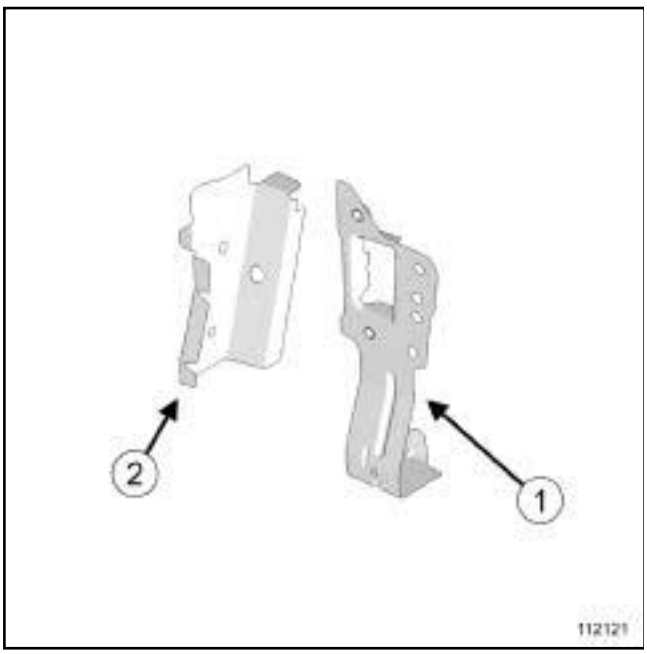
112613

There is only one way of replacing this part:

- complete replacement.

IMPORTANT
A straightening bench is essential when simultaneously replacing the left-hand and right-hand parts.

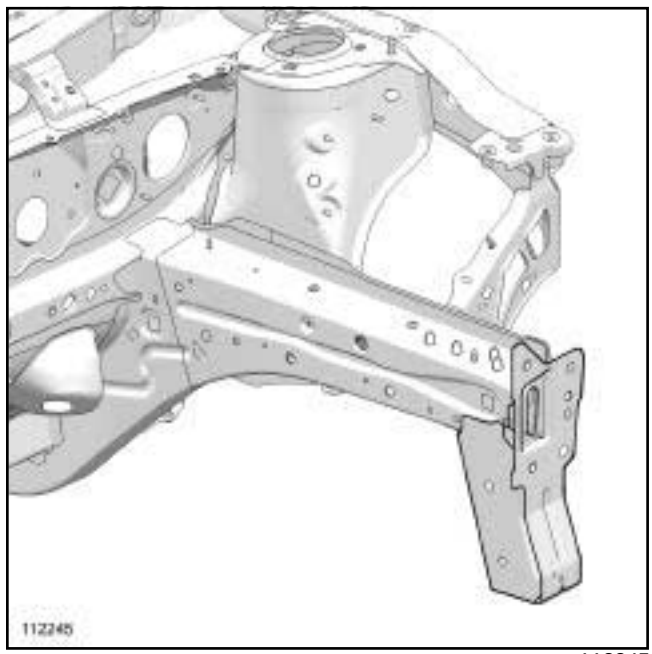
I - COMPOSITION OF THE SPARE PART



112121

No.	Description	Type	Thickness (mm)
(**1**)	Radiator cross member mounting closure panel	HLE	**2.5**
(**2**)	Radiator cross member mounting unit	HLE	**1.2**

II - PART FITTED



112245

WARNING
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

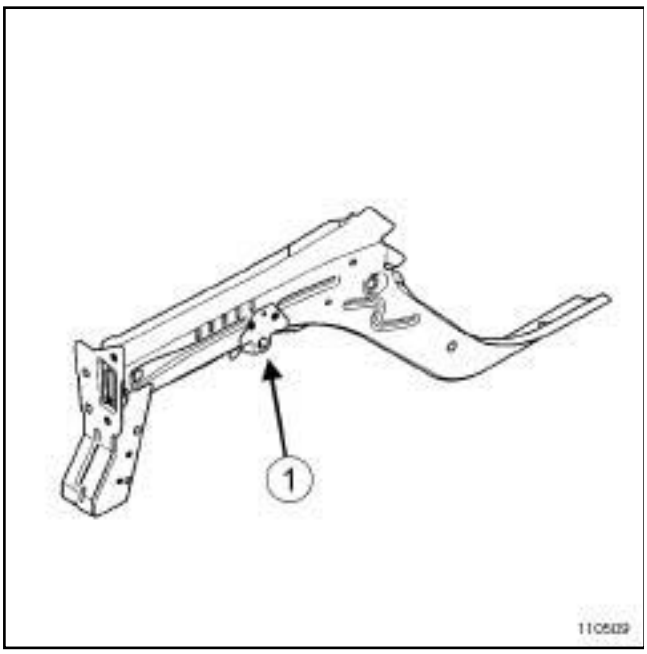
Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT

1 - Right-hand side



110509

The subframe mounting (**1**) is attached to the side member.

2 - Left side

The mounting is integrated into the side member.

IMPORTANT

Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

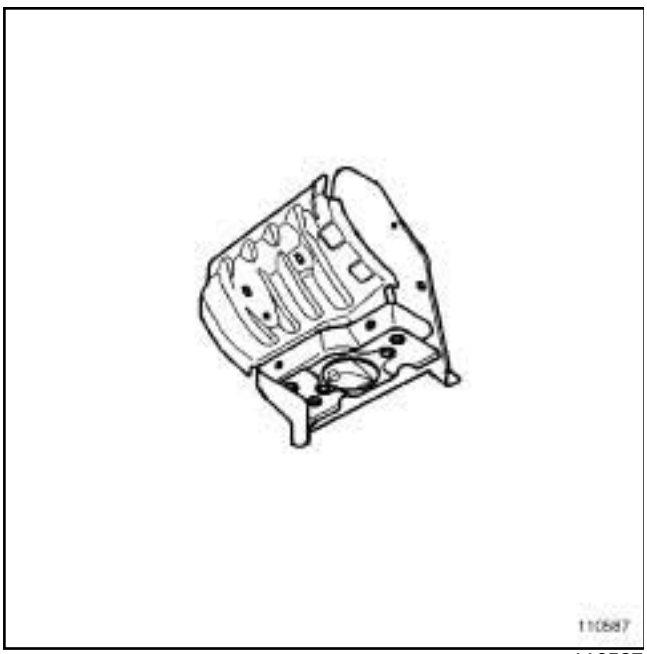
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110587

This is a basic part; it only functions as an engine mounting.

112702

To replace this part, order, in addition, the front end side cross member (**A**) .

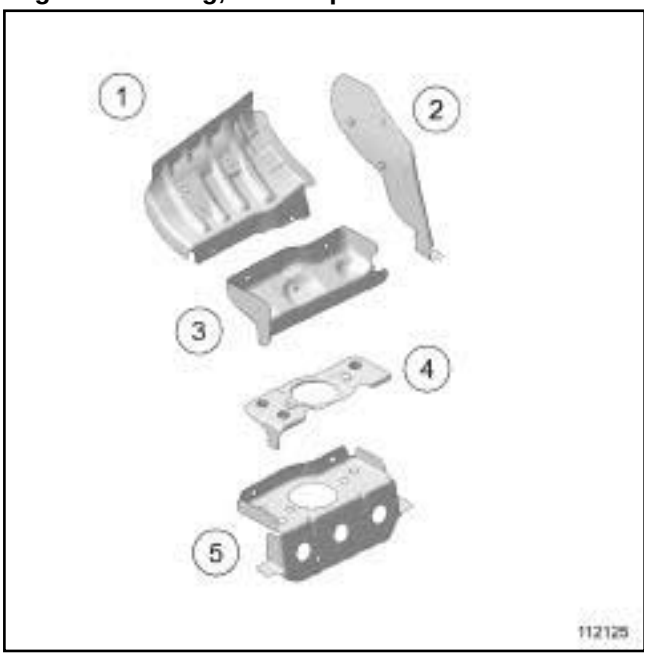
There is only one way of replacing this part:

- complete replacement.

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART

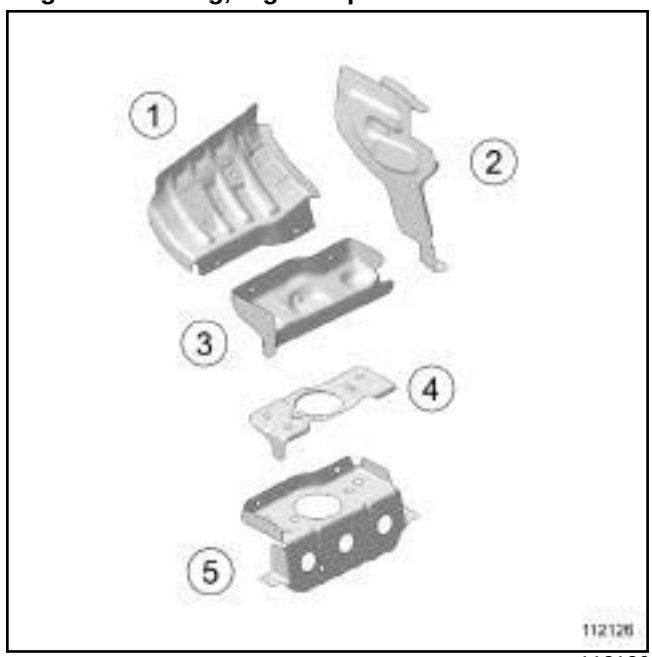
Engine mounting, low torque



112125

No.	Description	Type	Thickness (mm)
(**1**)	Engine mounting upper section	HLE	**1.5**
(**2**)	Engine mounting rear section	HLE	**1.5**
(**3**)	Engine mounting centre section	HLE	**2**
(**4**)	Engine mounting reinforcement	HLE	**1**
(**5**)	Engine mounting lower section	HLE	**2**

Engine mounting, high torque



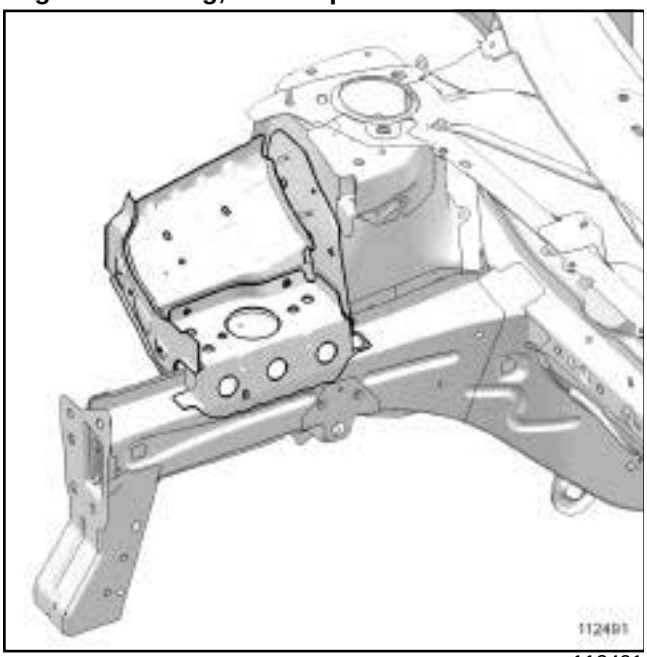
112126

No.	Description	Type	Thickness (mm)
(**1**)	Engine mounting upper section	HLE	**1.5**
(**2**)	Engine mounting rear section	HLE	**1.5**

No.	Description	Type	Thickness (mm)
(**3**)	Engine mounting centre section	HLE	**2**
(**4**)	Engine mounting reinforcement	HLE	**1**
(**5**)	Engine mounting lower section	HLE	**2**

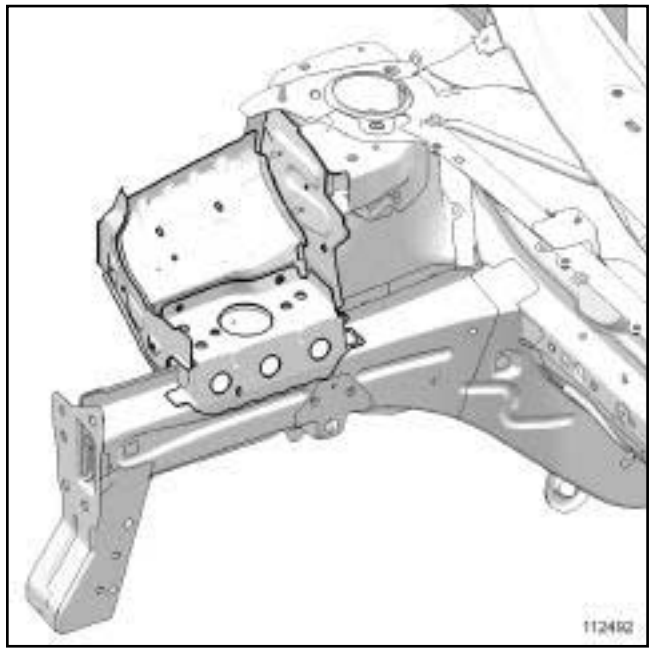
II - PART FITTED

Engine mounting, low torque



112491

Engine mounting, high torque



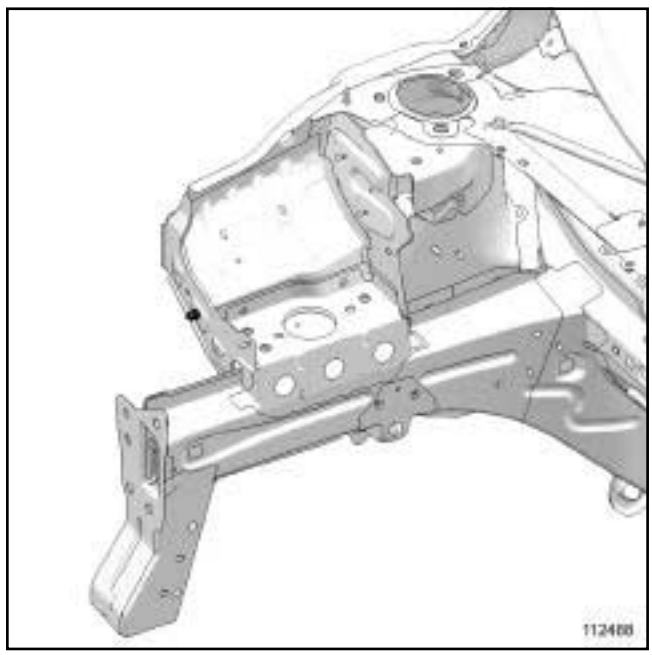
112492

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

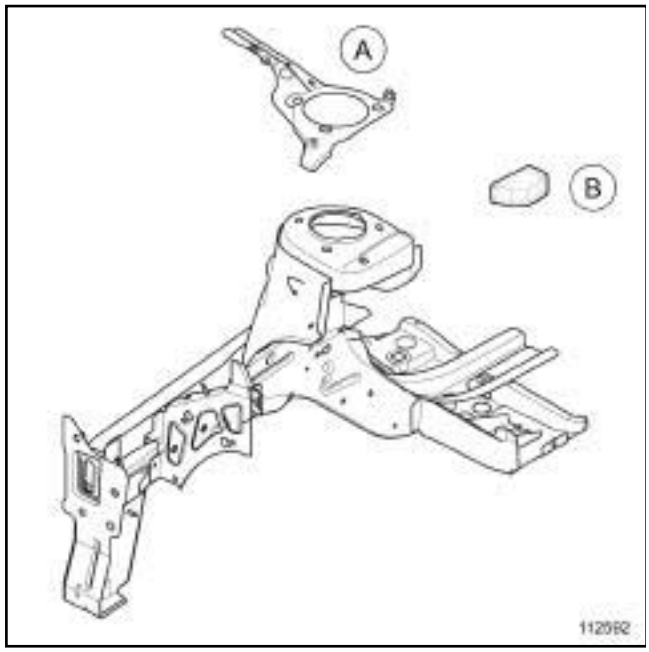
III - POSITIONING OF LOCAL ELECTRICAL EARTHS

For the earth stud fitting procedure (see **40A**, **General information**, **Earths on body: List and location of components**, page **40A-23**)



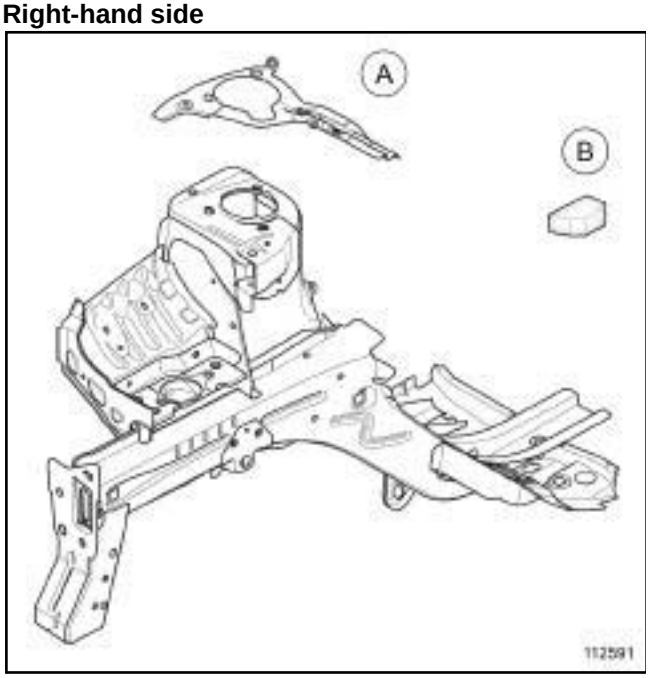
112488

Left-hand side



112592

Right-hand side



112591

To replace this part, order the heater bulkhead reinforcement ***(A)*** and the side member expanding insert ***(B)*** .

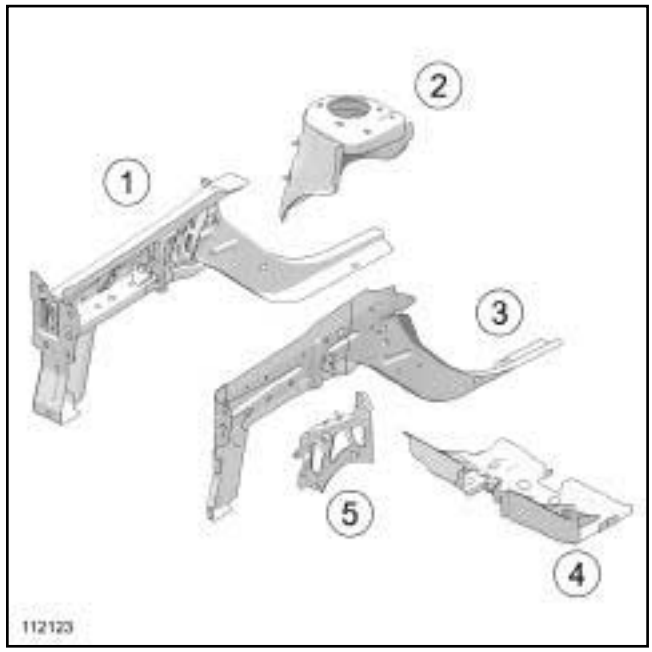
There is only one way of replacing this part:

- complete replacement.

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART

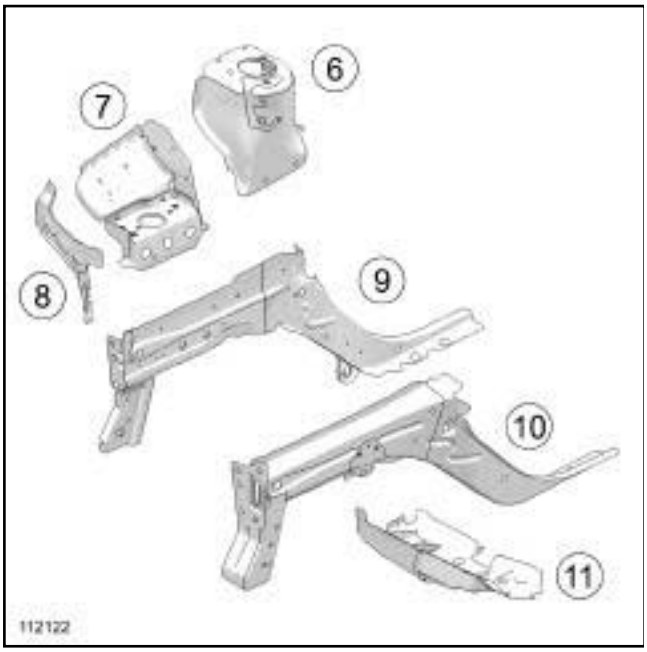
Left side



112123

No.	Description	Type	Thickness (mm)
(**1**)	Front side member	HLE/ THLE	**1.6** / **2.6**
(**2**)	Wheel arch	HLE	**1.2** / **2**
(**3**)	Side member closure panel	HLE/ THLE	**1.6** / **2.7**
(**4**)	Centre floor front side cross member	HLE	**1**
(**5**)	Front end side cross member	HLE	**1.5**

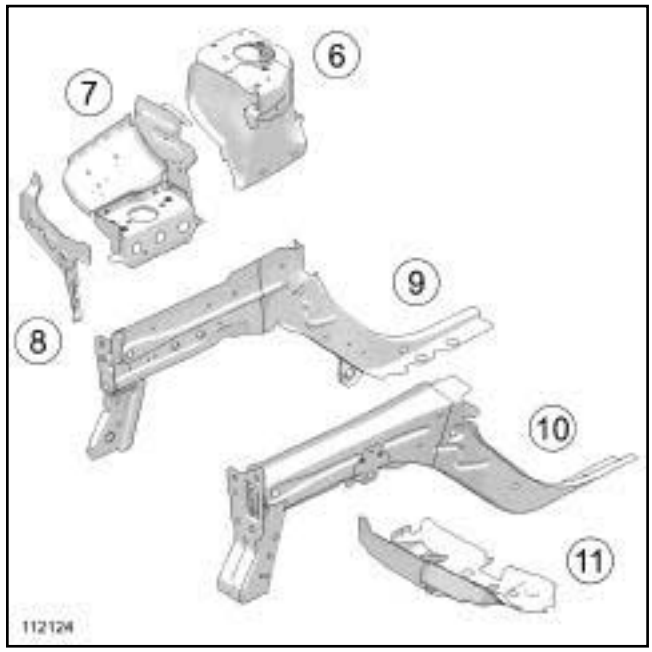
Right-hand side, low torque



112122

No.	Description	Type	Thick-ness (mm)
(**6**)	Wheel arch	HLE	**1.2** / **2**
(**7**)	Engine stand	HLE	**1.5** / **2**
(**8**)	Front end side cross member	HLE	**1.5**
(**9**)	Side member closure panel	HLE/ THLE	**1.6** / **2.7**
(**10**)	Front side mem-ber	HLE/ THLE	**1.6** / **2.6**
(**11**)	Centre floor front side cross member	HLE	**1**

Right-hand side, high torque



112124

No.	Description	Type	Thickness (mm)
(**6**)	Wheel arch	HLE	**1.2** / **2**
(**7**)	Engine stand	HLE	**1.5** / **2**
(**8**)	Front end side cross member	HLE	**1.5**
(**9**)	Side member closure panel	HLE/ THLE	**1.6** / **2.7**
(**10**)	Front side mem-ber	HLE/ THLE	**1.6** / **2.6**
(**11**)	Centre floor front side cross member	HLE	**1**

II - PART FITTED

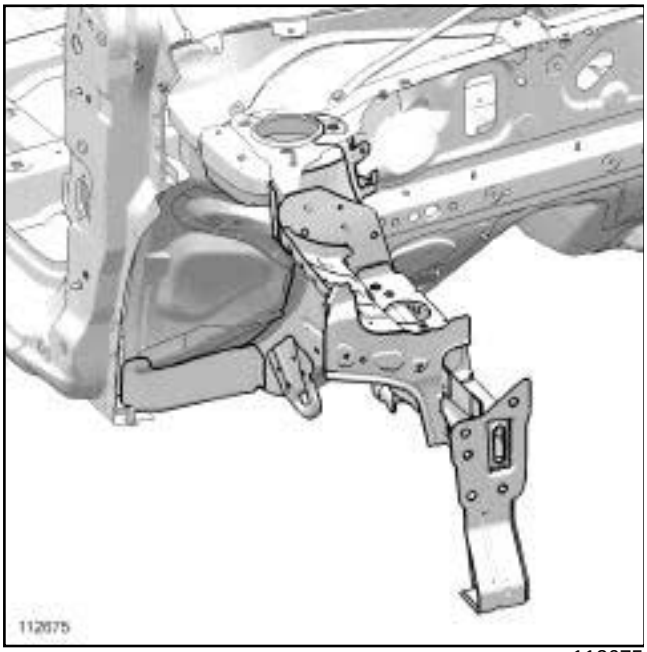
IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

WARNING

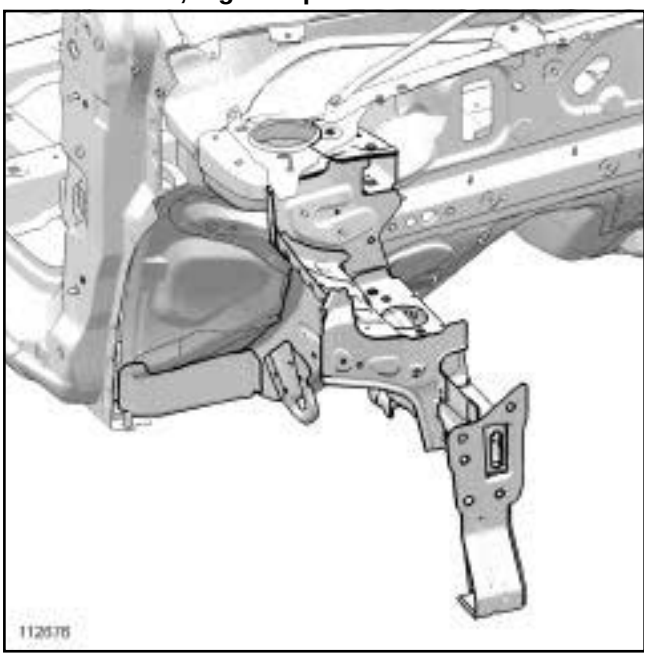
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Front half unit, low torque

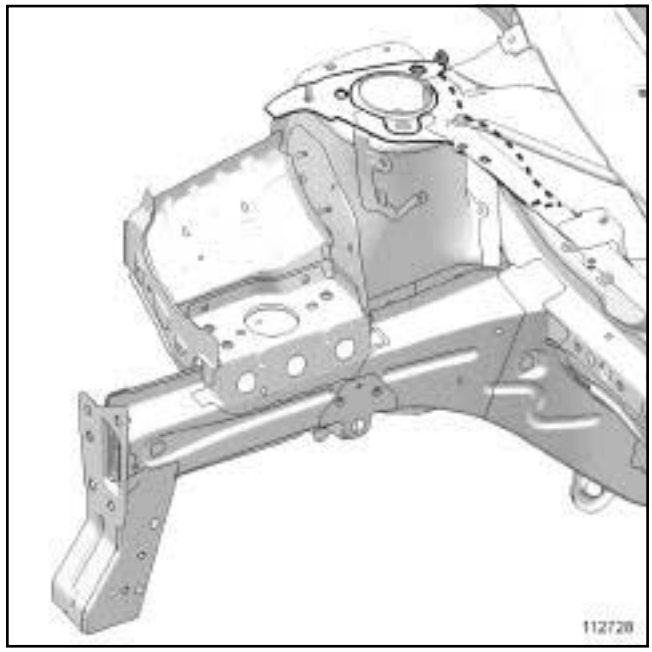


112675

Front half unit, high torque



112676

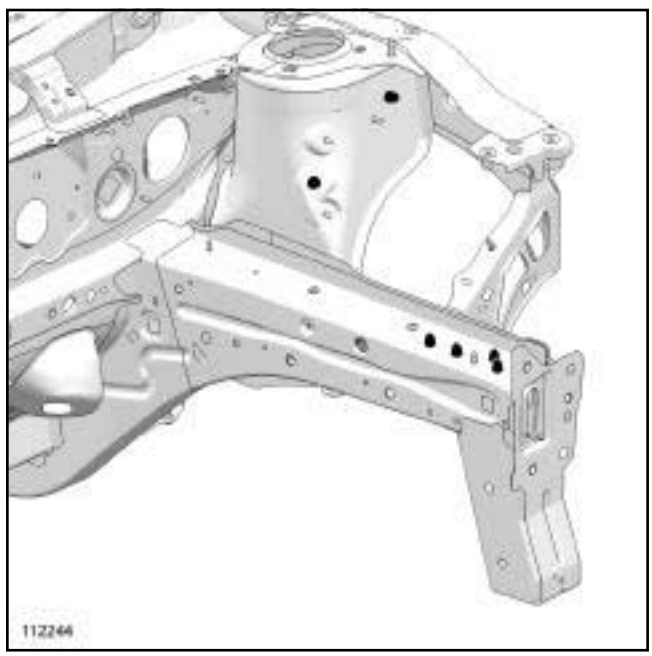


112728

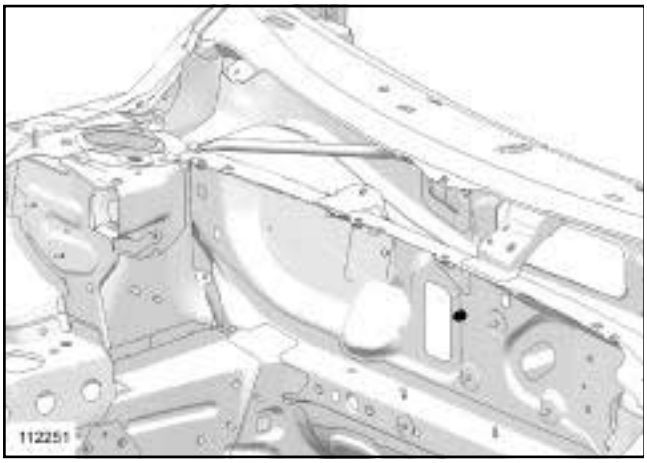
Note:

The heater bulkhead reinforcement is available separately (see **Parts Catalogue**).

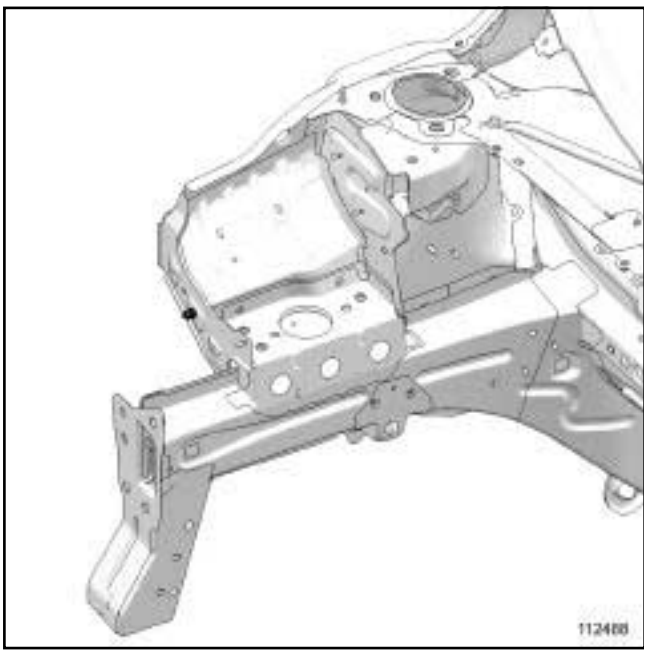
III - POSITIONING OF LOCAL ELECTRICAL EARTHS



112244



112251



112488

IMPORTANT

To avoid damaging the vehicle's electric and electronic components, the battery and the earths of any wiring harness near the weld area must be disconnected.

The earth of the welding machine must be placed as close as possible to the weld area.

IMPORTANT

Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

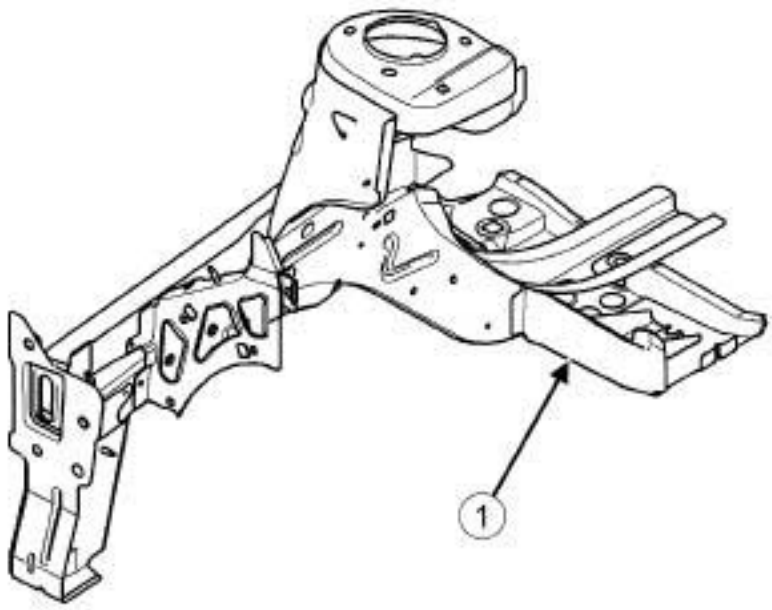
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110489

110489

The front sub-frame rear mounting (**1**) is welded to the front half unit.

Note:

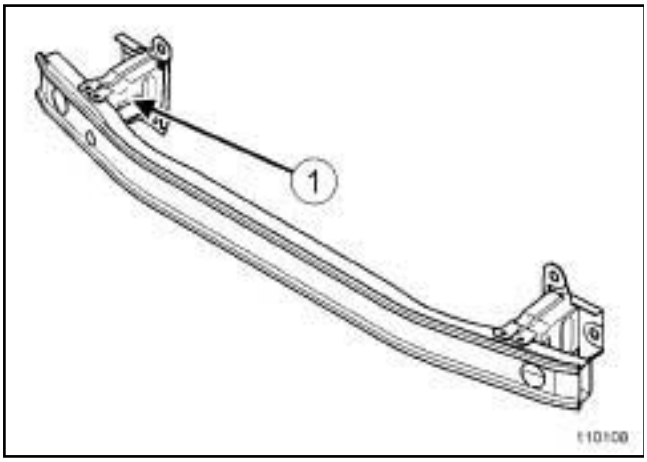
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

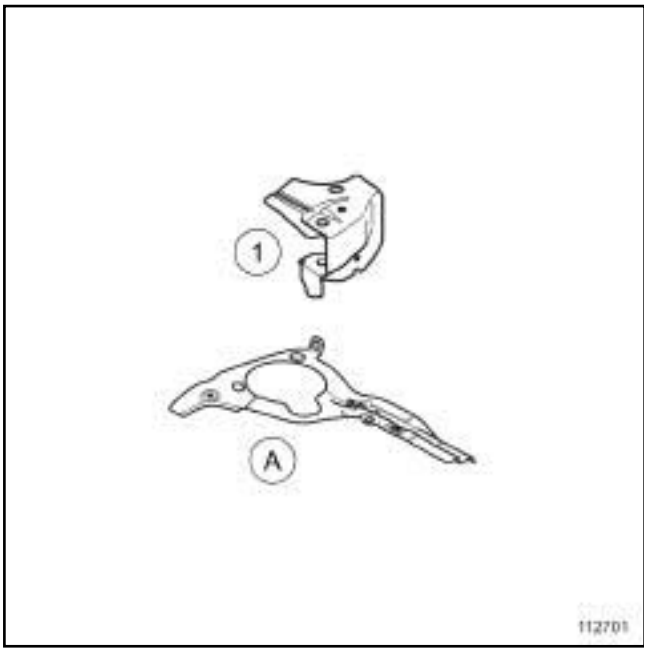
For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110108

This part is welded to the right hand unit (**1**) of the frontal impact cross member and therefore cannot be replaced. Replace the cross member unit if the thread is damaged.



112701

To replace this part, order the heater bulkhead reinforcement (**A**) .

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

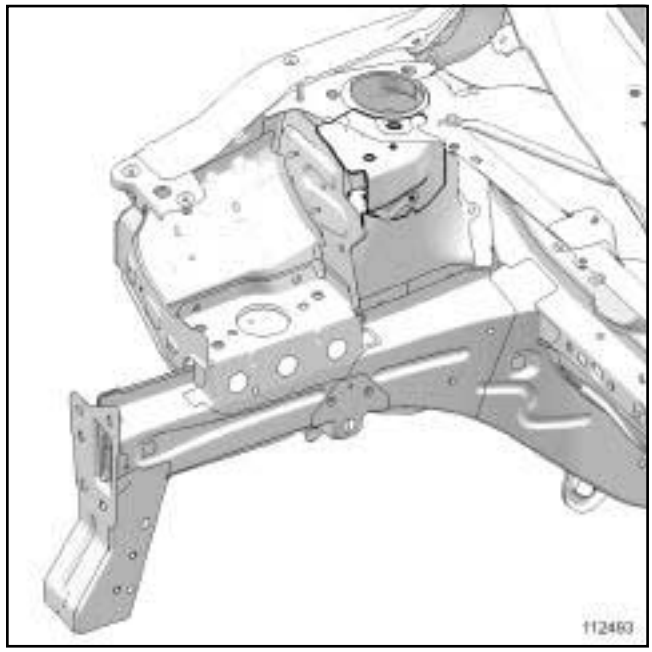
Part supplied on its own.

No.	Description	Type	Thickness (mm)
(1)	Engine tie-rod attachment	HLE	**2**

II - PART FITTED

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.



112493

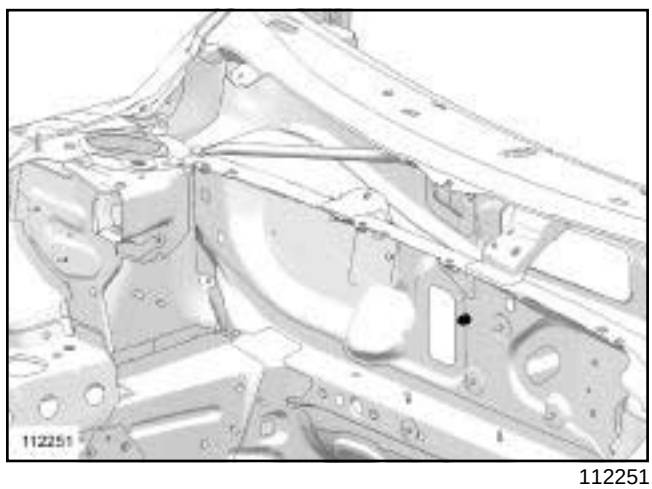
WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

III - POSITIONING OF LOCAL ELECTRICAL EARTHS

WARNING

- The wiring harness earths near the weld zone must be disconnected to avoid damaging the electrical and electronic components of the vehicle.
- The welding machine earth must be placed as close as possible to the weld zone.



112251

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

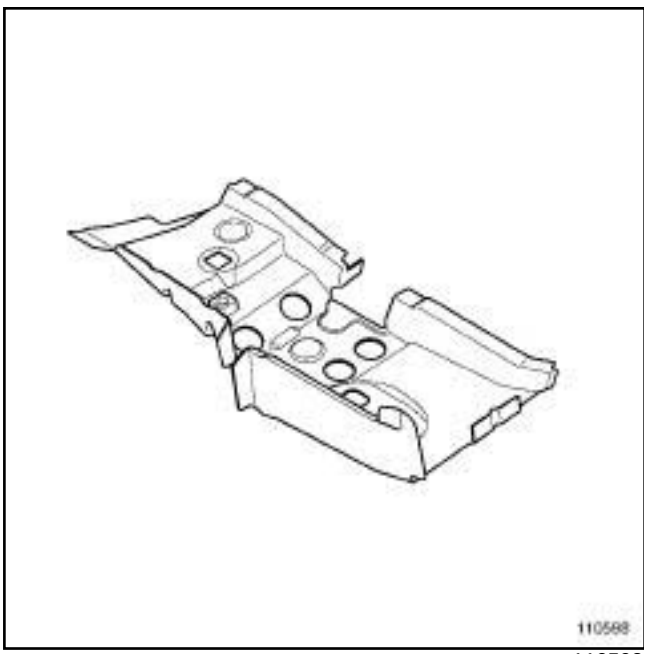
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400**.

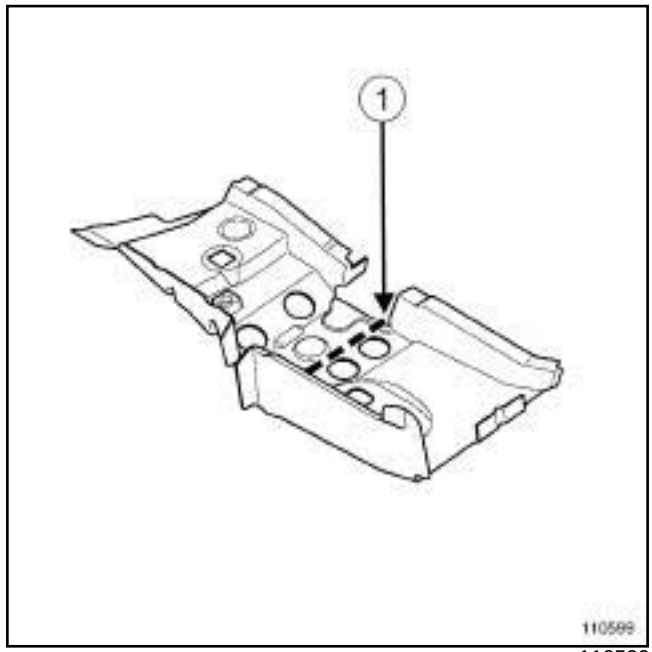
I - DESIGN OF THE STRUCTURAL COMPONENT



110598

This is a basic part; it only fulfils the function of a centre floor front side cross member.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110599

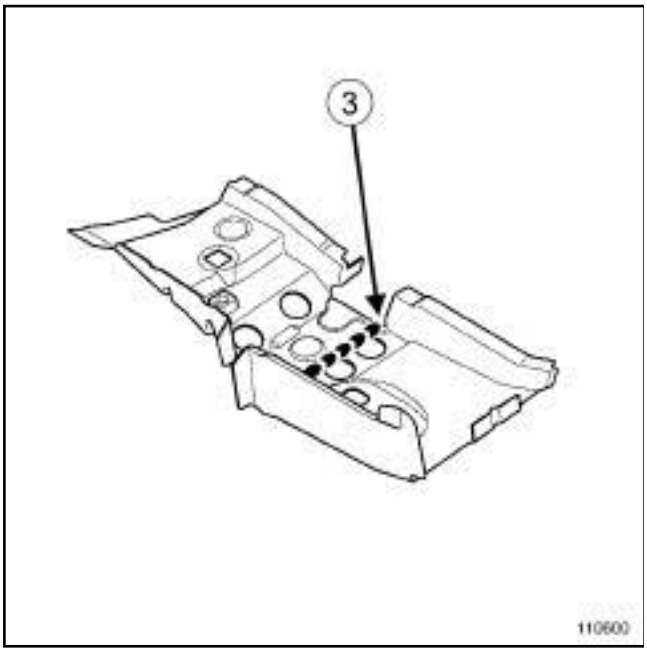
The line (**1**) in the drawing shows the area in which it is possible to carry out a partial replacement.

III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

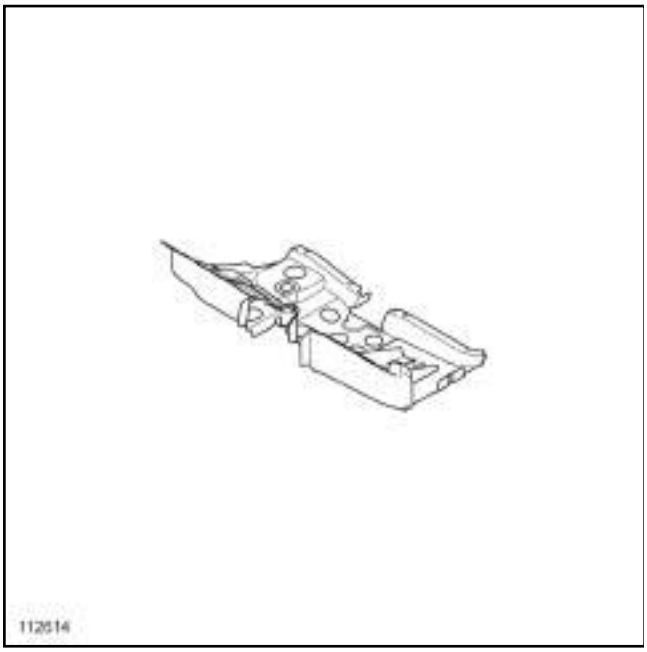
WARNING
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110600

Line (**3**) on the drawing shows a butt weld by continuous EGW welding.



112614

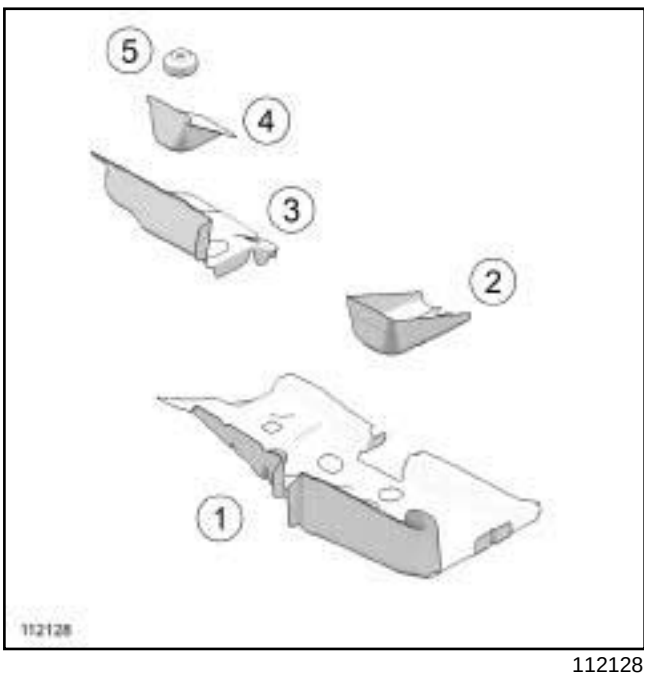
The options for replacing this part are as follows:

- partial replacement of side section,

- complete replacement.

IMPORTANT
For complete replacement, the straightening bench must be used.

I - COMPOSITION OF THE SPARE PART

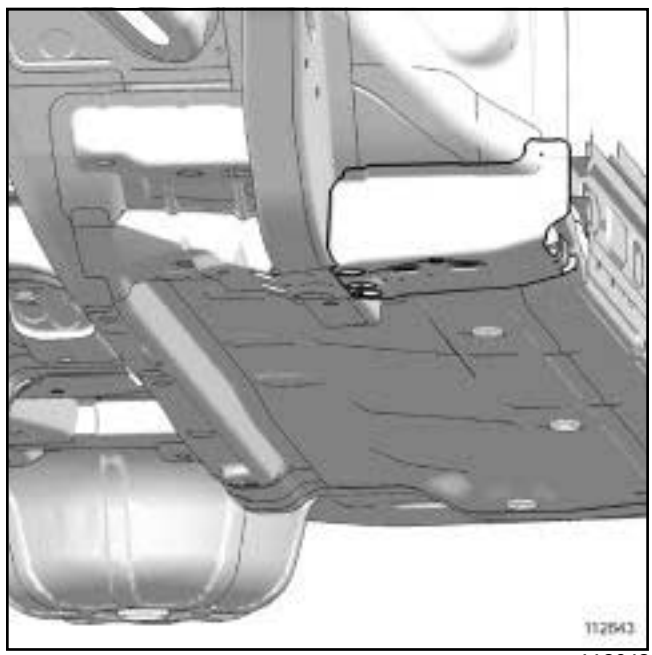


112128

No.	Description	Type	Thick-ness (mm)
(**1**)	Centre floor front side cross member	HLE	**1**
(**2**)	Side cross member reinforcement	HLE	**2**
(**3**)	Sub-frame assembly mounting unit	HLE	**2**
(**4**)	Sub-frame mounting reinforcement	HLE	**2.6**
(**5**)	Welded nut		

II - PART FITTED

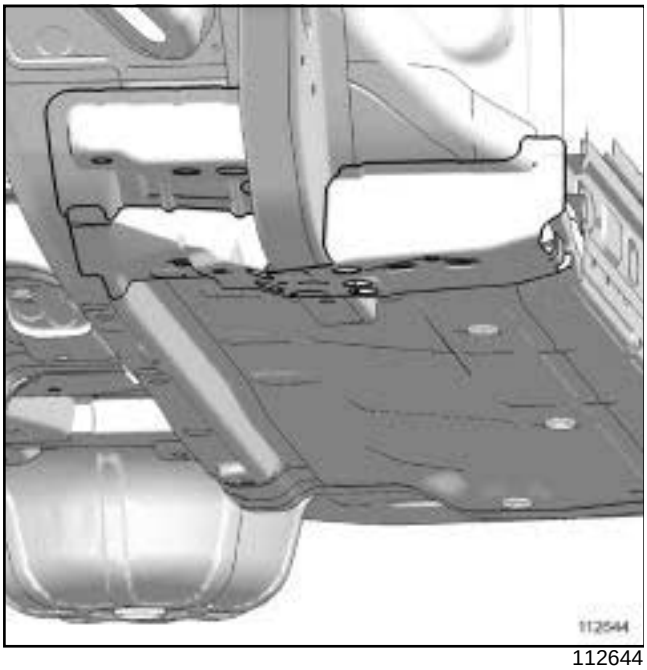
1 - Partial replacement of side section



112643

WARNING
The correct position of this cut must be observed, as it is determined according to the cut of the internal reinforcements or the acoustic inserts.

2 - Complete replacement



112644

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Note:

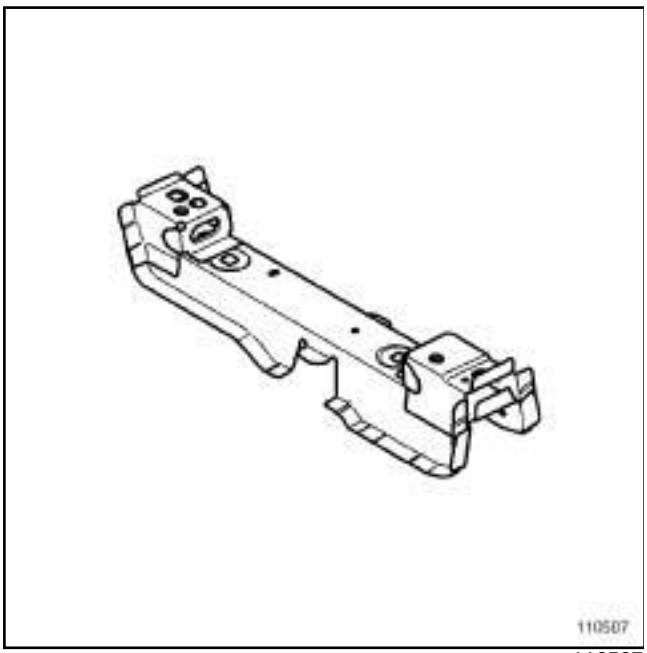
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

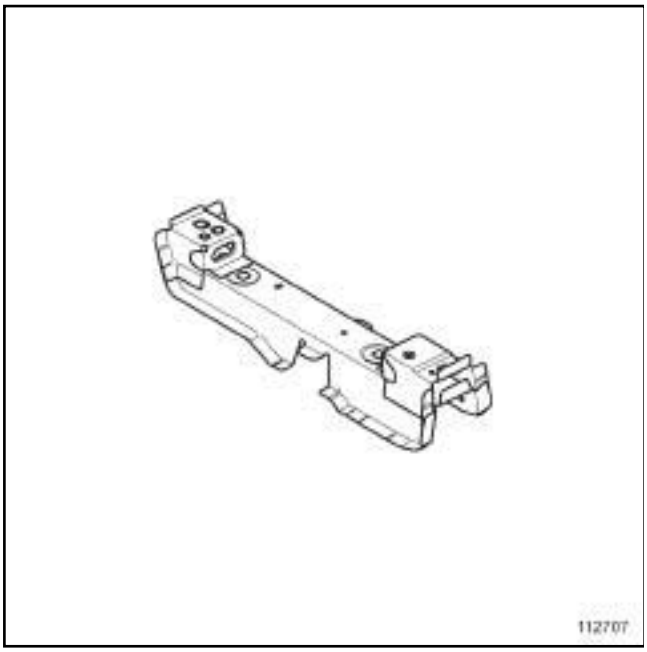
For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110507

This is a basic part; its function is to secure the front section of the front seat and to stiffen the bodywork in the event of a side impact.

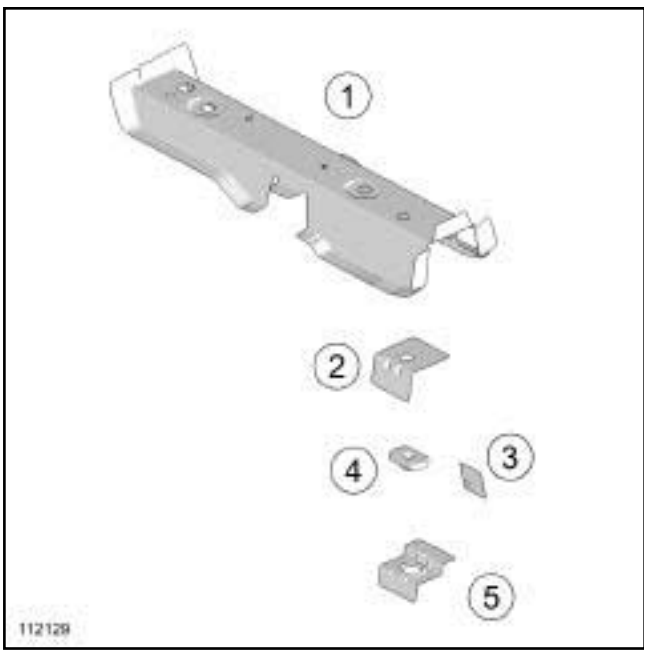


112707

There is only one way of replacing this part:

- complete replacement.

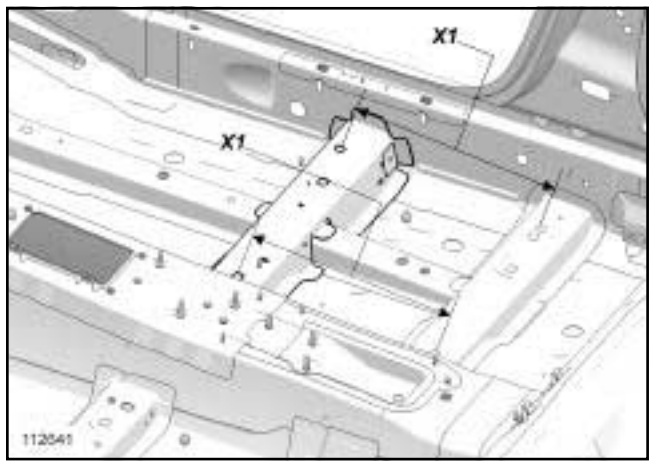
I - COMPOSITION OF THE SPARE PART



112129

No.	Description	Type	Thick-ness (in mm)
(**1**)	Front cross member under front seat	HLE	**1.1**
(**2**)	Seat mounting reinforcement	HLE	**1.5**
(**3**)	Outer seat mounting support	HLE	**1.5**
(**4**)	Seat mounting component retainer		**0.8**
(**5**)	Inner seat mounting support	HLE	**1.5**

II - PART FITTED



112641

(**X1**) = **355 mm**

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Note:

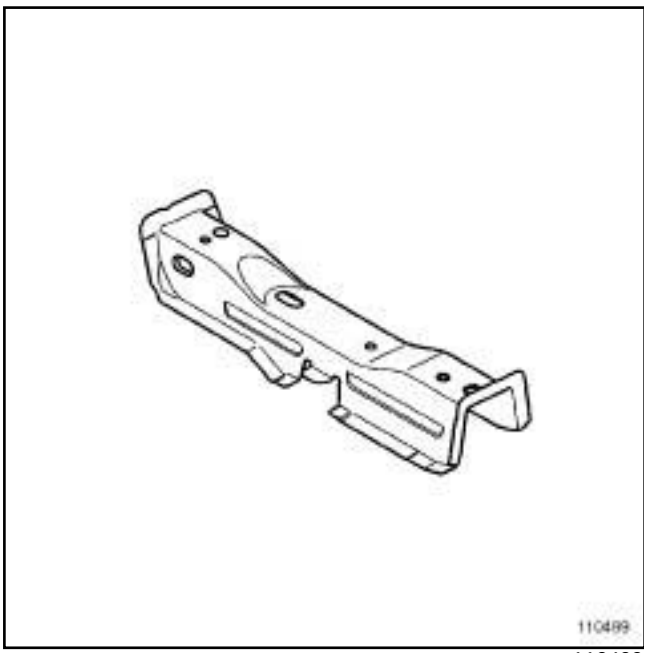
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

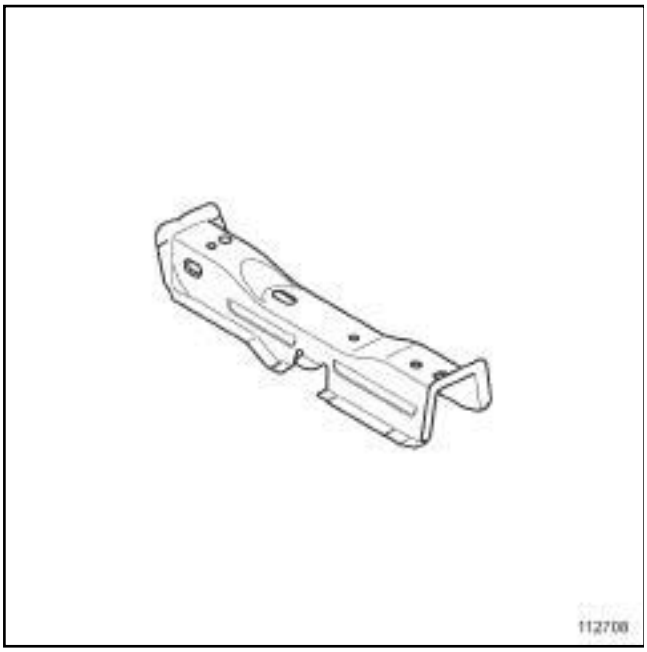
For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110499

This is a basic part. It serves as a mounting for the rear part of the front seat and to rigidify the body in the event of a side impact.

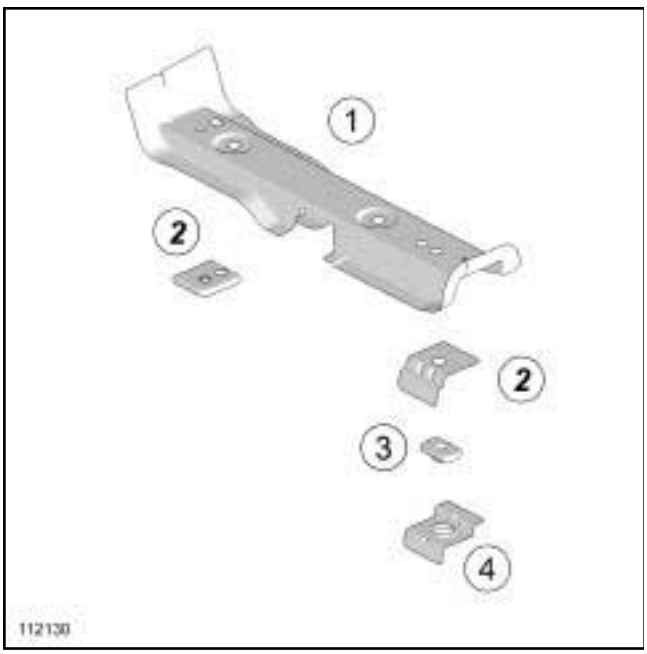


112708

There is only one way of replacing this part:

- complete replacement.

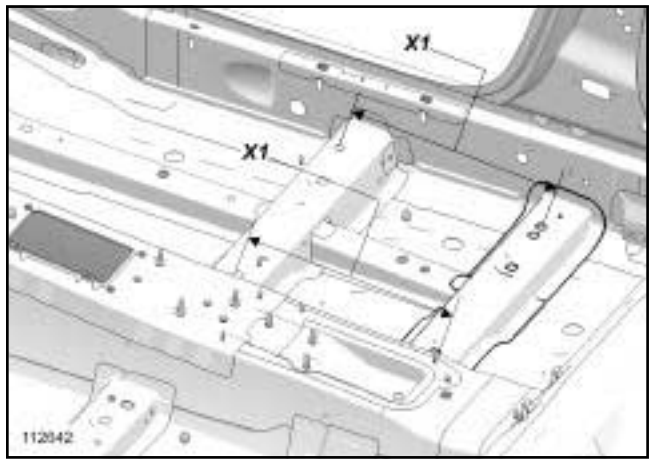
I - COMPOSITION OF THE SPARE PART



112130

No.	Description	Type	Thick-ness (mm)
(**1**)	Rear cross member under front seat	HLE	**1.1**
(**2**)	Seat mounting reinforcement	HLE	**1.5**
(**3**)	Seat mounting component retainer		**0.8**
(**4**)	Inner seat mounting support	HLE	**1.5**

II - PART FITTED



112642

(**X1**) = **355 mm**

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

WARNING

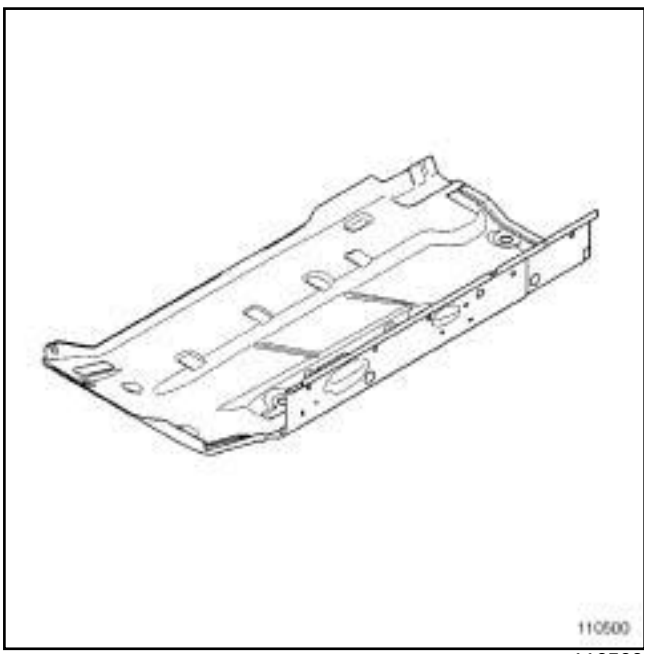
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, (see **MR 400**).

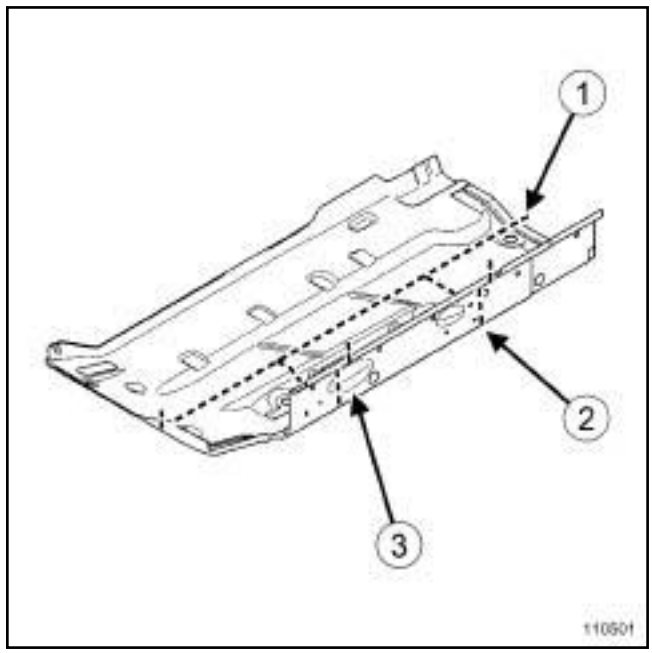
I - DESIGN OF THE STRUCTURAL COMPONENT



110500

The special feature of this type of part is that it combines the functions of the centre floor side section and the sill panel closure panel and it is made of two different kinds of panel of different thicknesses assembled by laser butt welding.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110501

These cutting lines show the area in which it is possible to carry out a partial replacement of the centre floor side section.

Cut 1, 2 and 3:

- cut (**1**) affects the partial replacement of the centre floor side section,
- cuts (**1**) and (**2**) affect the partial replacement of the rear section of the centre floor side section
- cuts (**1**) and (**3**) affect the partial replacement of the front section of the centre floor side section.

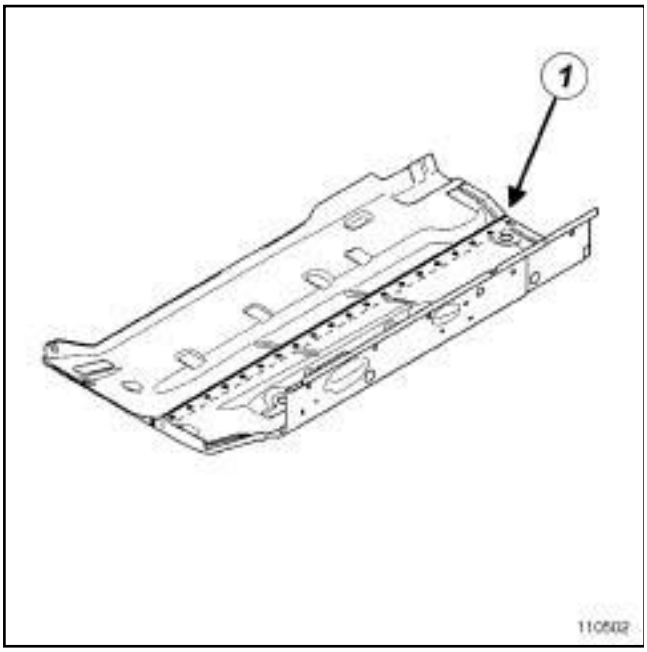
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

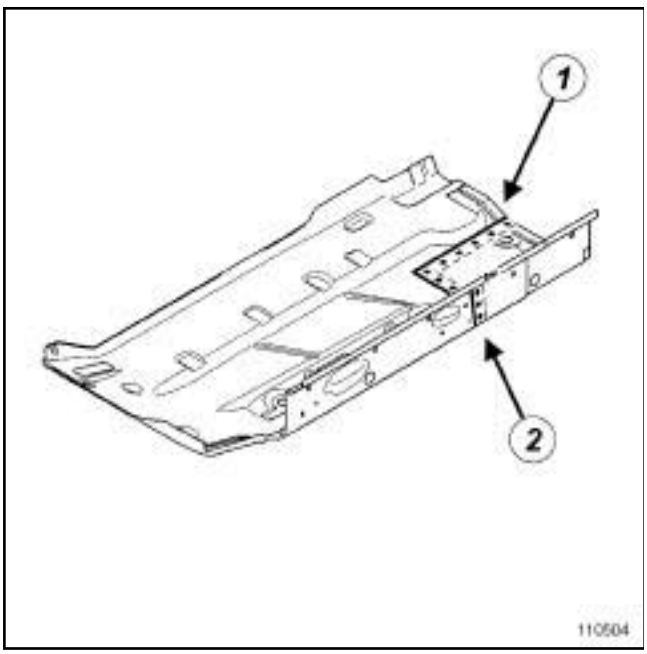
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General Information**).



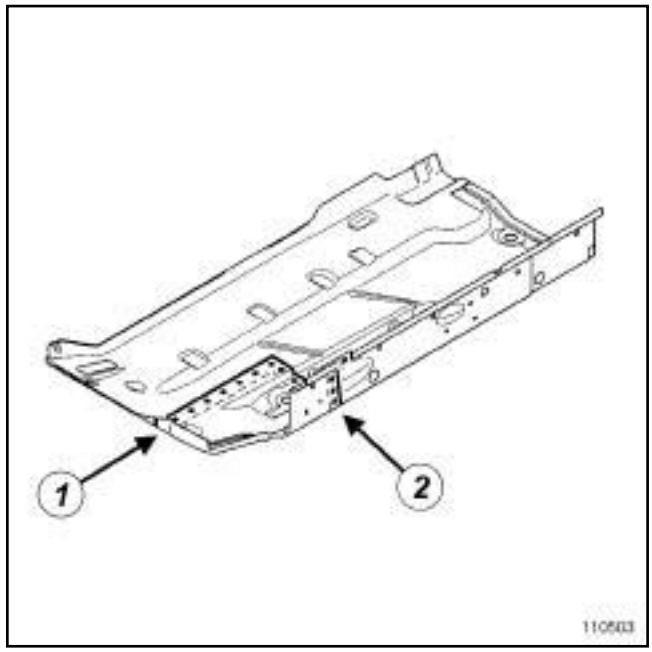
110502

Line (**1**) on the diagram shows partial replacement and a weld by joggling with plug welds at regular intervals.



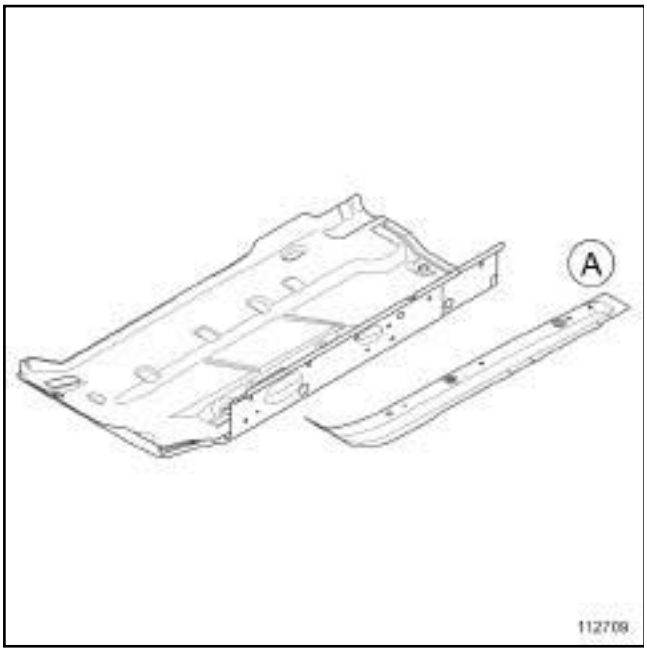
110504

Lines (**1**) and (**2**) on the diagram show the partial rear replacement and a weld by joggling with plug welds at regular intervals.



110503

Lines (**1**) and (**2**) on the diagram show the partial front replacement and a weld by joggling with plug welds at regular intervals.



112709

B85 or C85

To replace this part, also order the centre part of the front side member ***(A)*** .

The options for replacing this part are as follows:

- partial replacement of front side section,
- partial replacement of rear side section,
- partial replacement of side section.

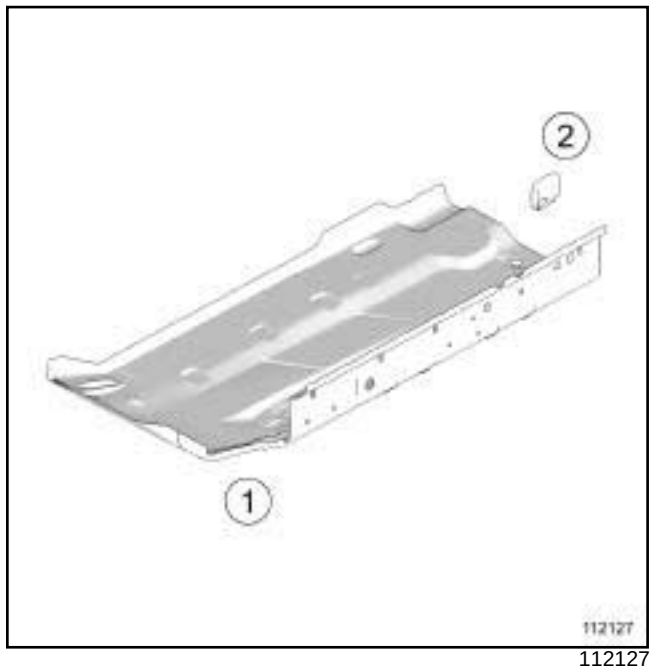
K85

To replace this part, also order the separation net piece and the centre part of the front side member ***(A)*** .

The options for replacing this part are as follows:

- partial replacement of front side section,
- partial replacement of rear side section,
- partial replacement of side section.

I - COMPOSITION OF THE SPARE PART



112127

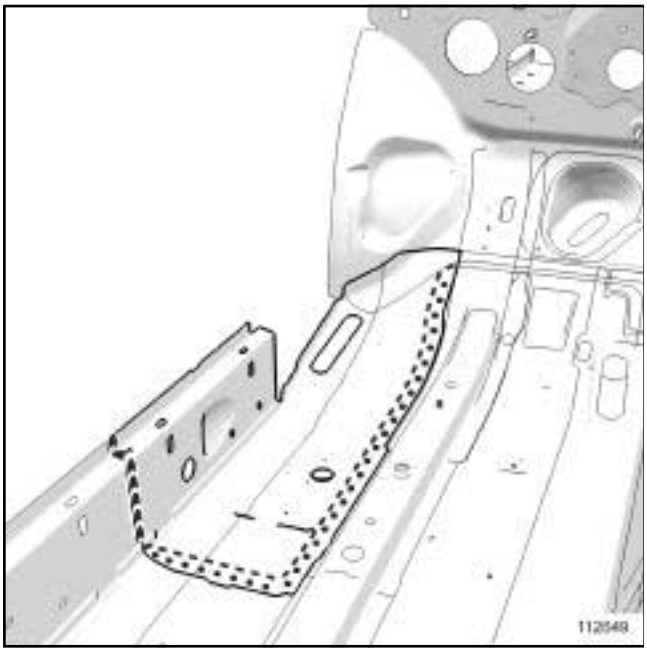
No.	Description	Type	Thick-ness (mm)
(**1**)	Centre floor, side section	HLE	**0.65** / **1.2**
(**2**)	Satellite support fixing reinforce-ment	HLE	**2**

II - PART FITTED

1 - Partial replacement of front side section

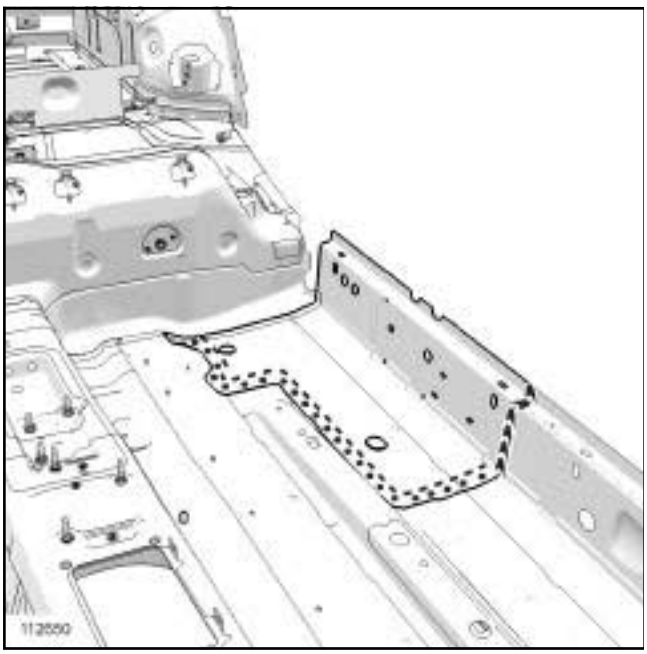
Note:

In the three cases below, the area to be cut is beneath the front cross member under the front seat.



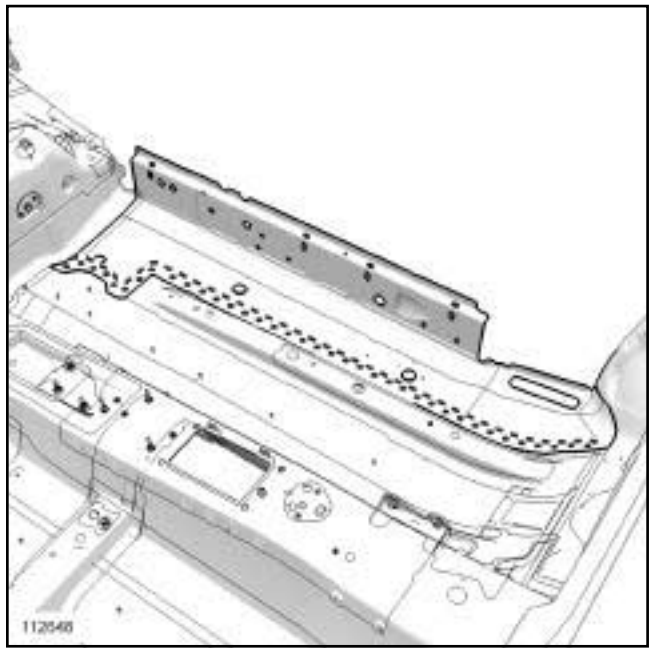
112649

2 - Partial replacement of rear side section



112650

3 - Partial replacement of side section



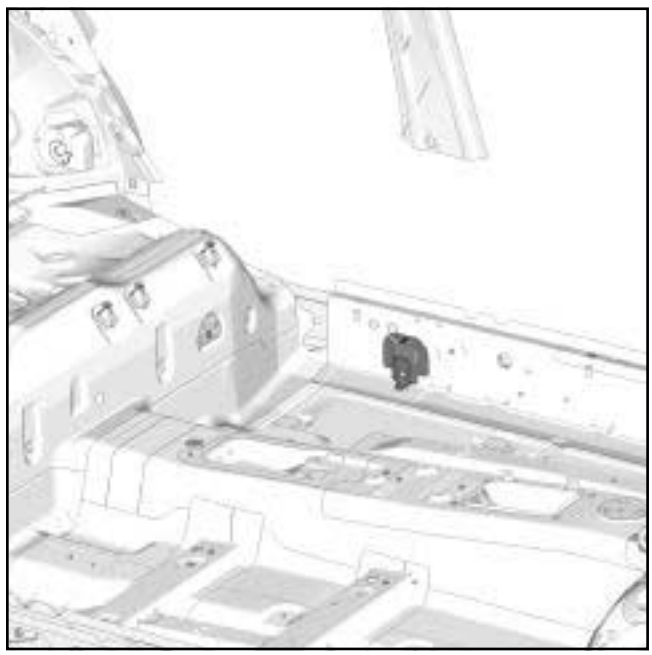
112648

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

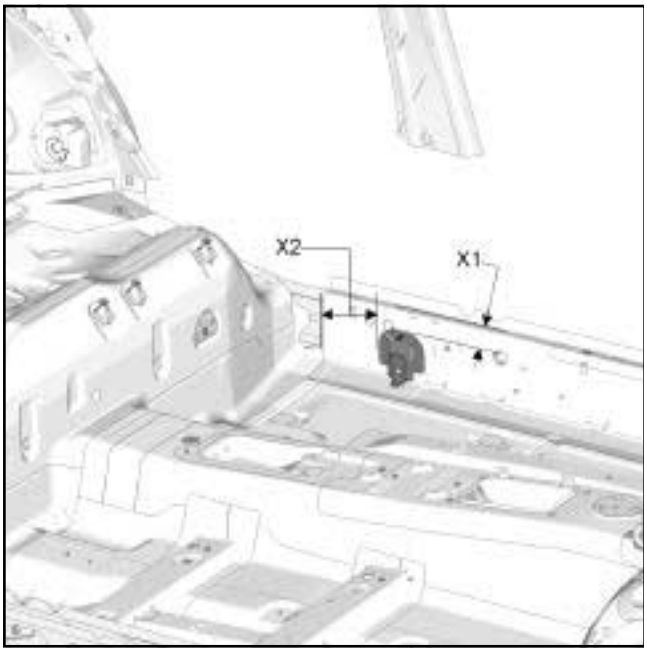
4 - Detailed view of separation net piece replacement

K85



126699

Positioning dimensions

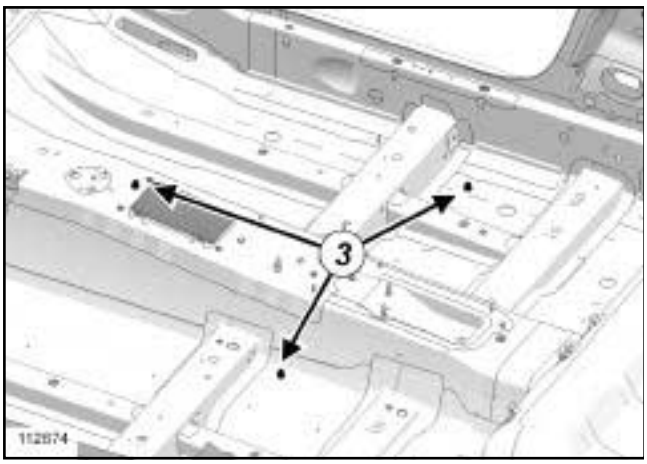


126699

(**X1**) = **40.76 mm**

(**X2**) = **120.92 mm**

III - POSITIONING OF LOCAL ELECTRICAL EARTHS



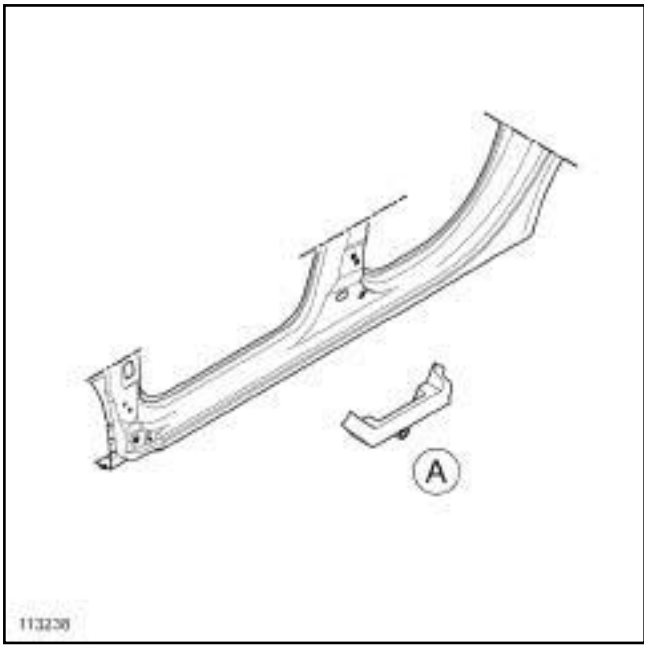
112674

WARNING

To avoid damaging the vehicle's electrical and electronic components, disconnect the earths of any wiring near the weld area.

Position the welding machine earth as close as possible to the weld zone (see **MR 400**).

B85 or K85



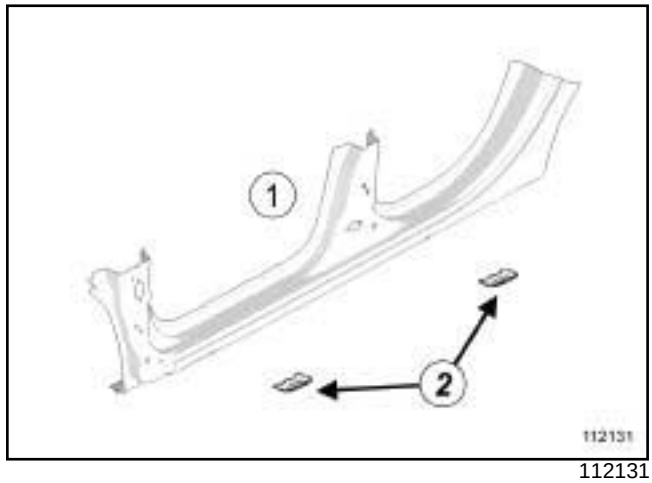
113238

To replace this part, also order the expanding inserts corresponding to each of the following cases.

The options for replacing this part are as follows:

- partial replacement of the front end section, order the exterior A-pillar insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) ,
- partial replacement under door:
- partial replacement of the front section, order the insert (**A**) and the exterior A-pillar insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) ,
- partial replacement of the rear end section, order the wheel arch insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) ,
- partial replacement of the rear section, order the insert (**A**) and the wheel arch insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) ,
- complete replacement, order the insert (**A**) , the exterior A-pillar insert and the wheel arch insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) .

I - COMPOSITION OF THE SPARE PART

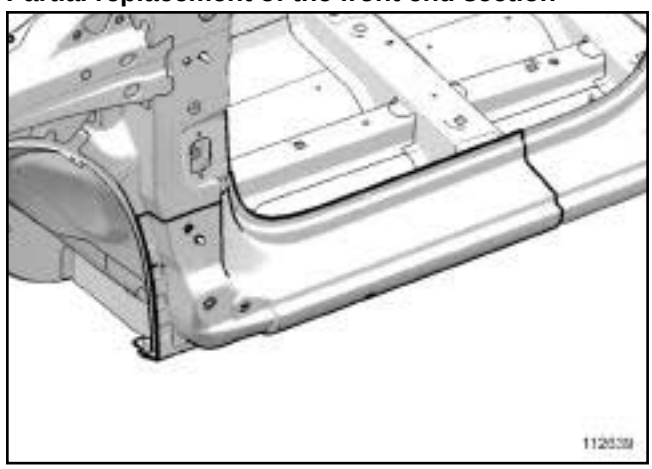


112131

No.	Description	Type	Thickness (mm)
(**1**)	Sill panel	HLE	**0.65/0.95**
(**2**)	Jacking point	HLE	**2**

II - PART FITTED

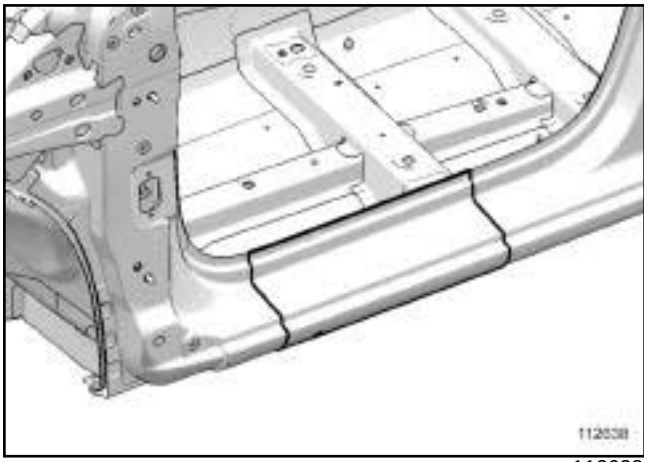
Partial replacement of the front end section



112639

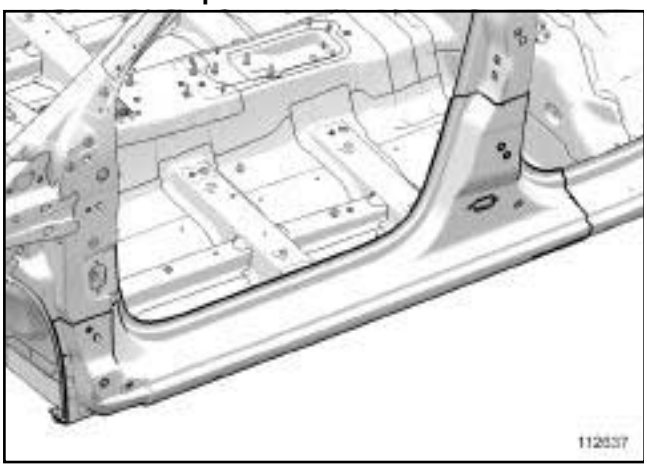
B85 or K85

Replacement under door



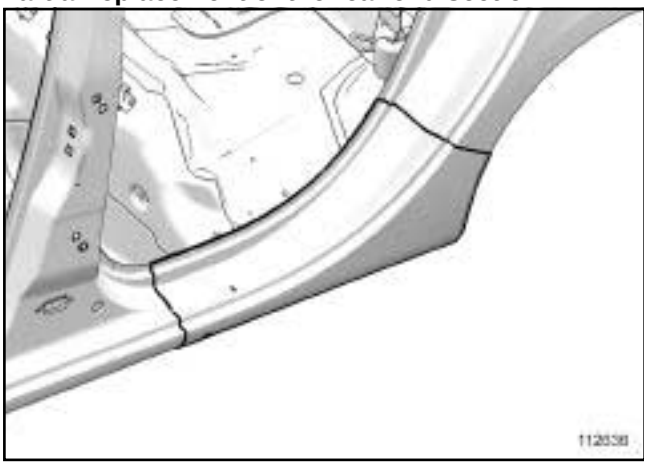
112638

Front section replacement



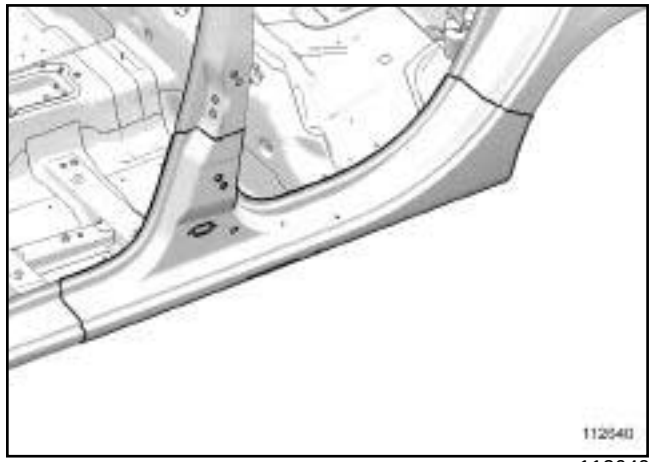
112637

Partial replacement of the rear end section



112636

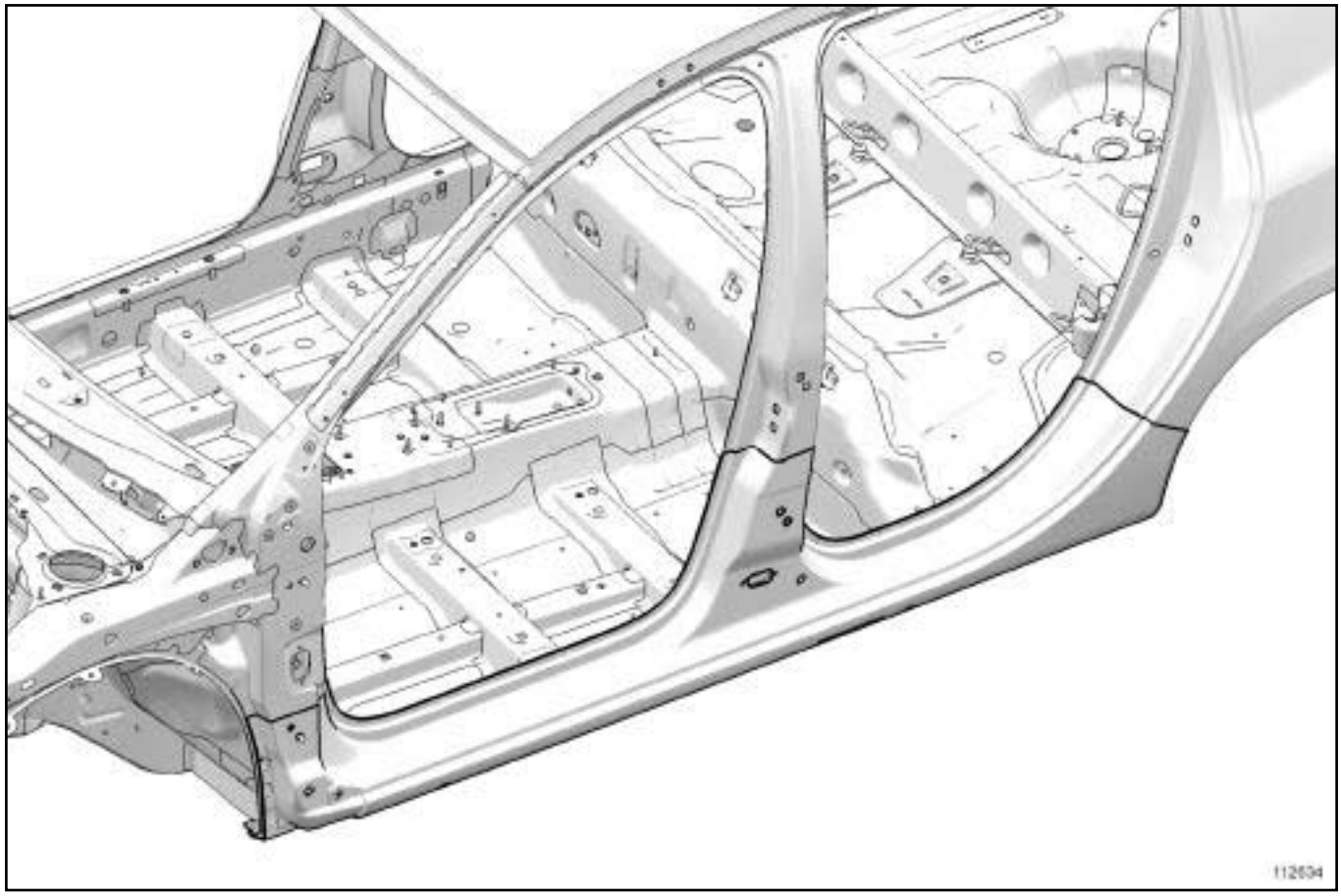
Partial replacement of the rear section



112640

B85 or K85

Complete replacement

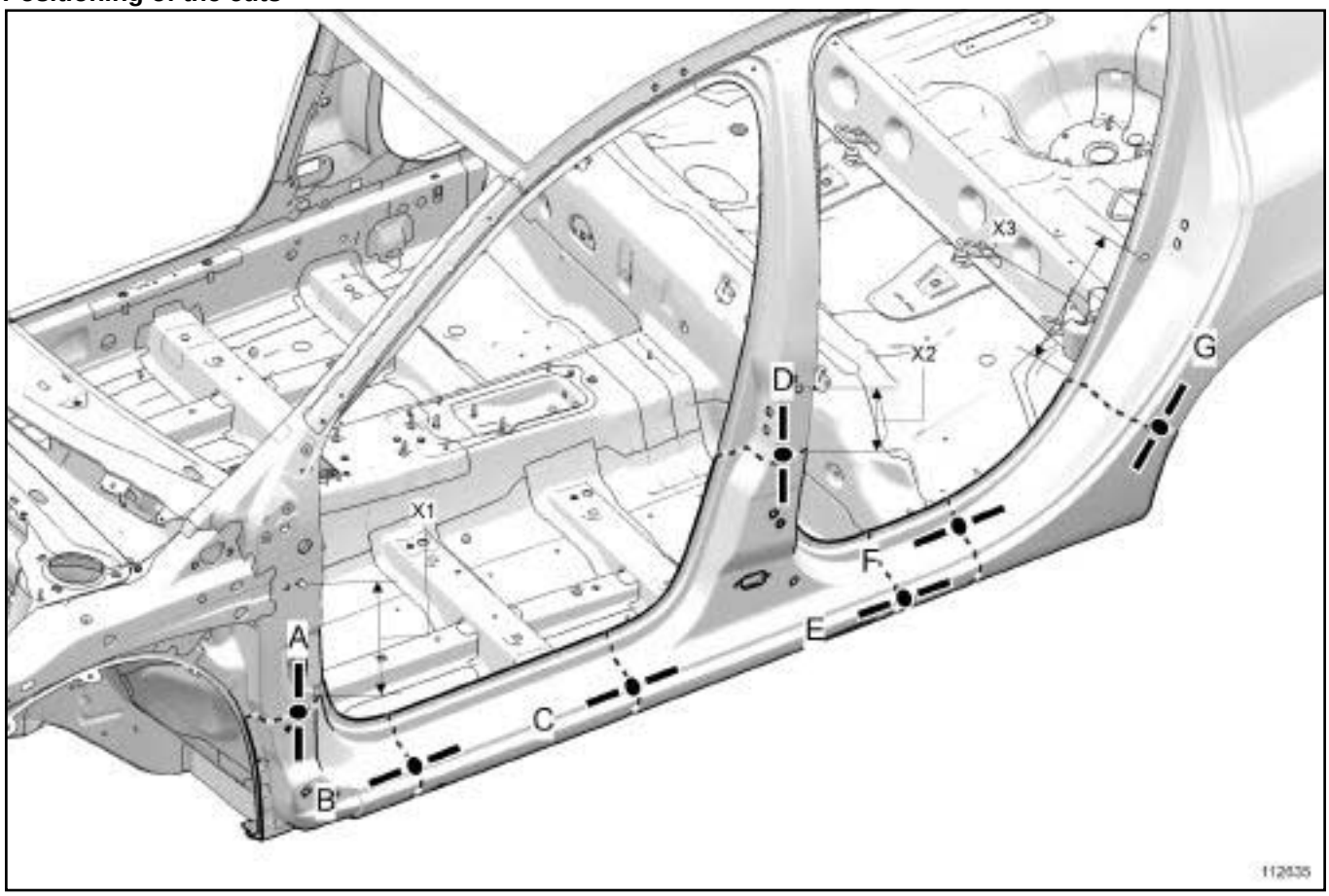


112634

B85 or K85

III - SPECIAL NOTES ON THE CUTS

Positioning of the cuts



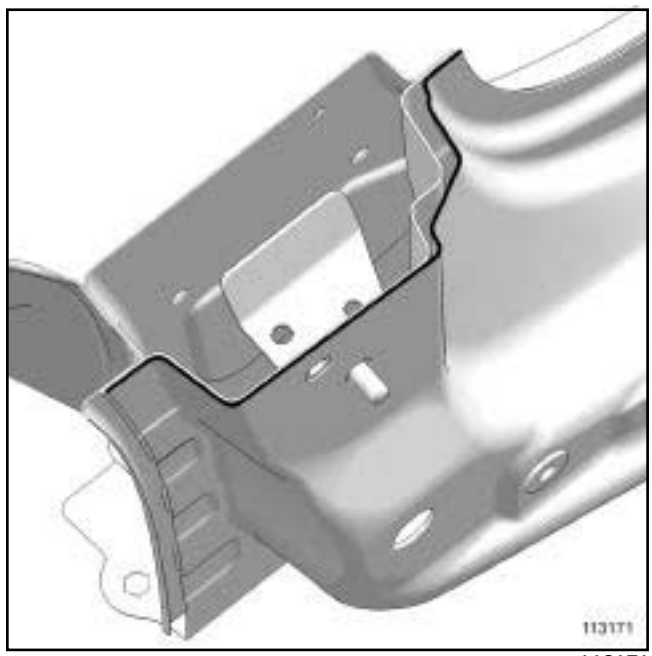
112635

WARNING

Respect the position of this cut which has been determined in accordance with the position of the inner stiffeners or acoustic inserts, in order to prevent damaging the parts (inner stiffener and/or acoustic insert).

- (**X1**) = **28 cm**
- (**X2**) = **13 cm**
- (**X3**) = **26 cm**

Detailed view of cut A



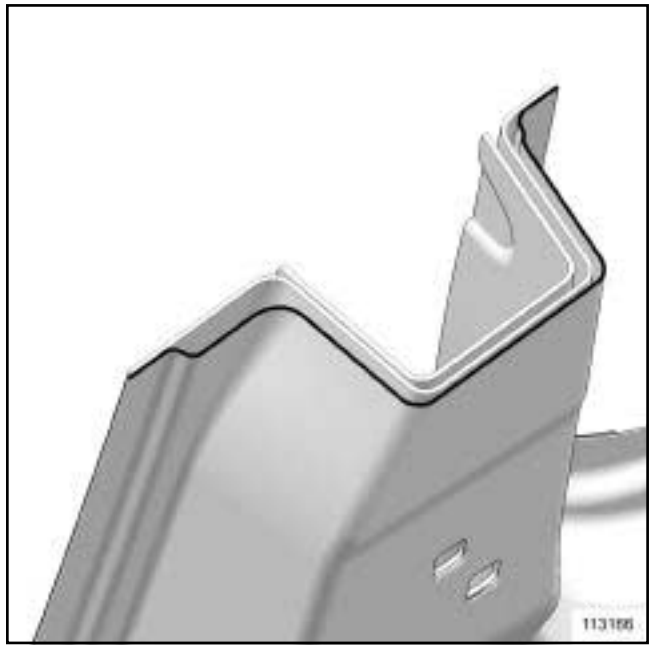
113171

B85 or K85

Detailed view of cut B

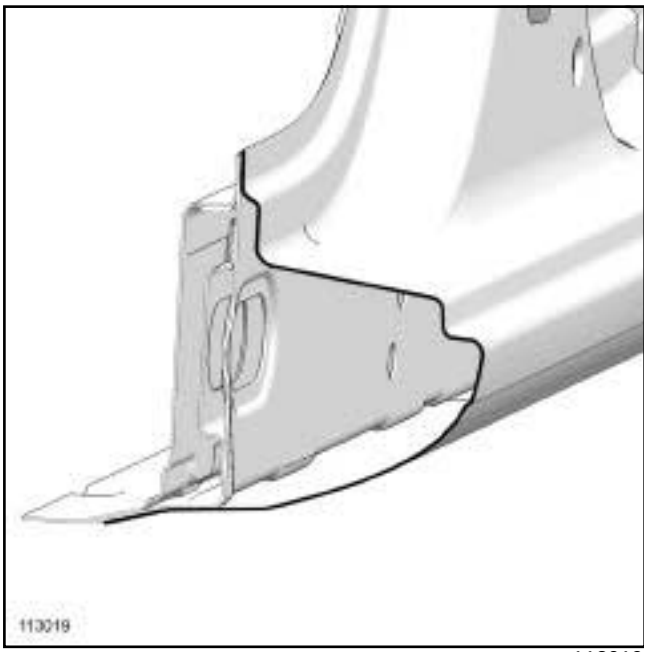
113020

Detailed view of cut D



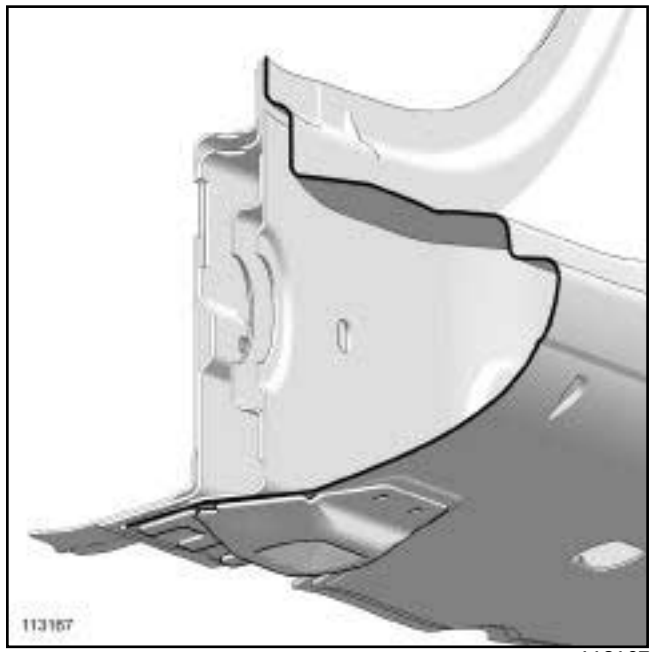
113166

Detailed view of cut C



113019

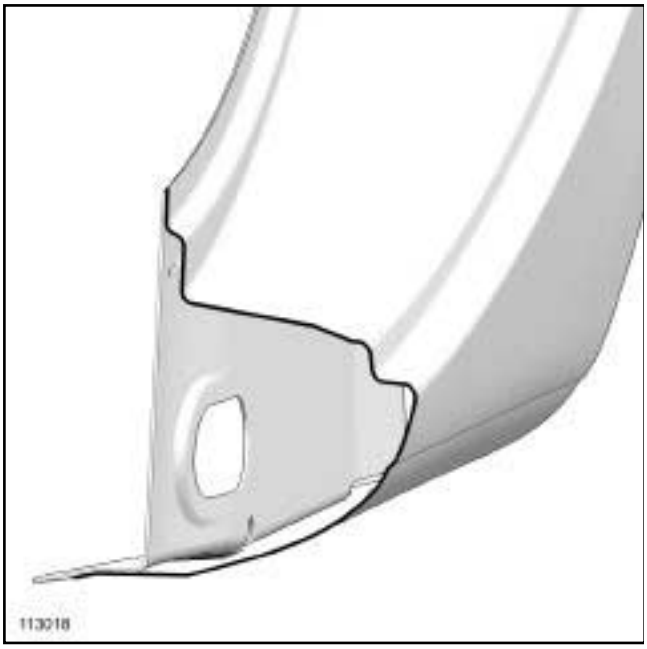
Detailed view of cut E



113167

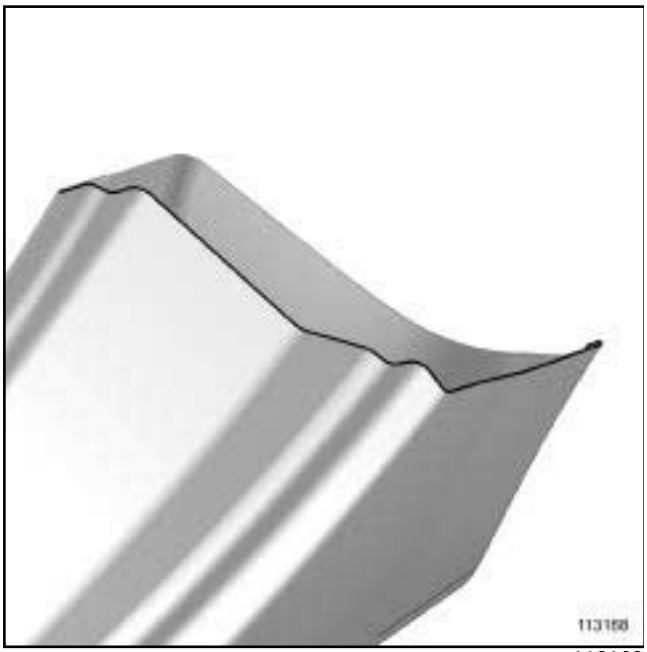
B85 or K85

Detailed view of cut F



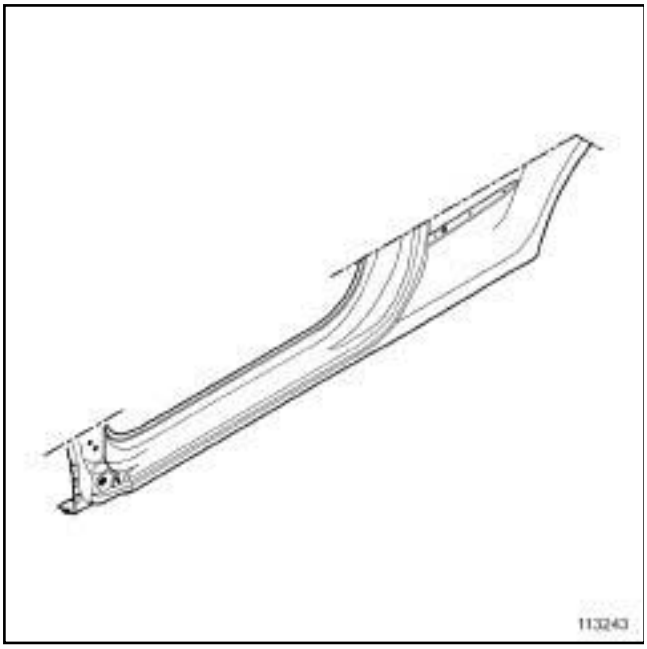
113018

Detailed view of cut G



113168

C85 or S85

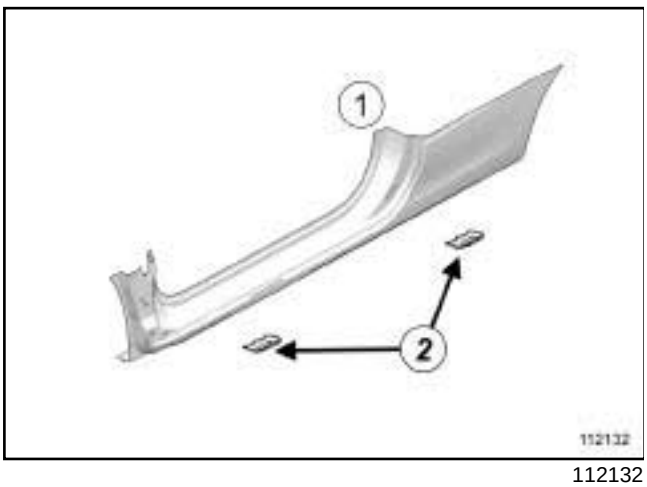


113243

The options for replacing this part are as follows:

- partial replacement of the front end section: also order the A-pillar insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) ,
- partial replacement under door:
- partial replacement of the rear end section,
- complete replacement: also order the A-pillar insert (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) .

I - COMPOSITION OF THE SPARE PART

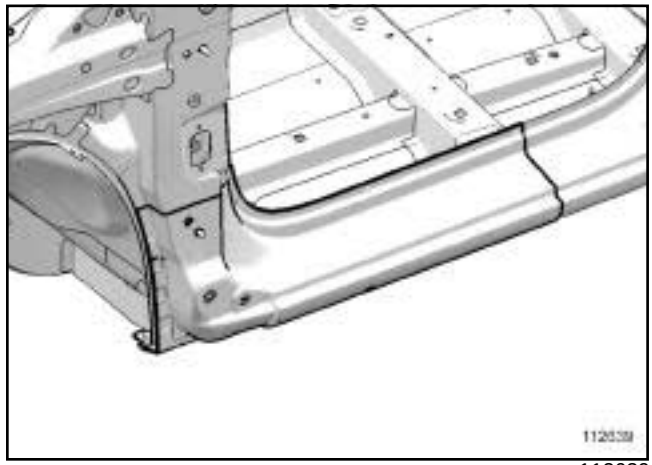


112132

No.	Description	Type	Thick-ness (mm)
(**1**)	Sill panel	HLE	**0.65/0.95**
(**2**)	Jacking point	HLE	**2**

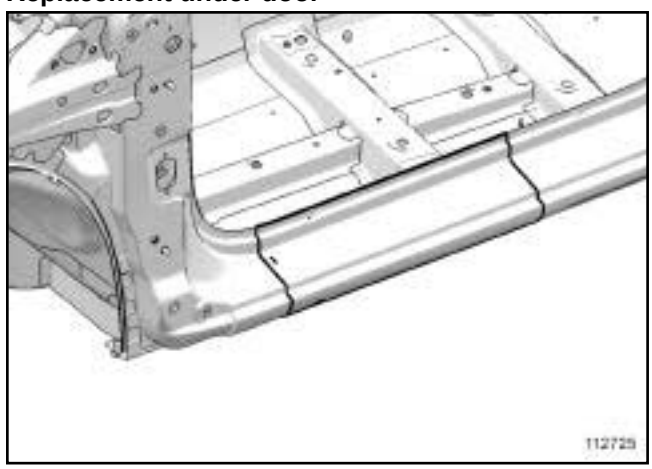
II - PART FITTED

Partial replacement of the front end section



112639

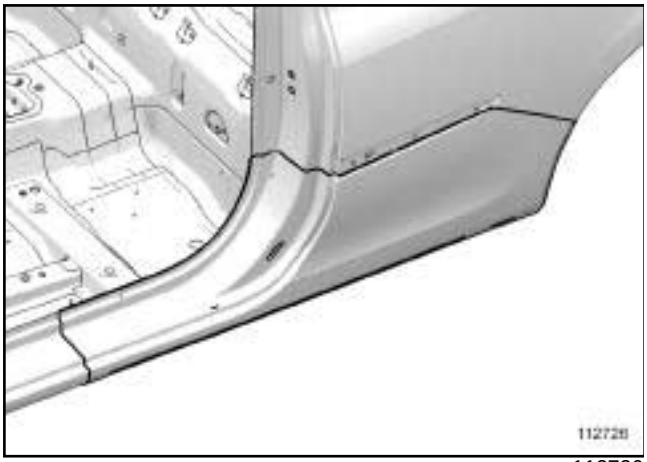
Replacement under door



112725

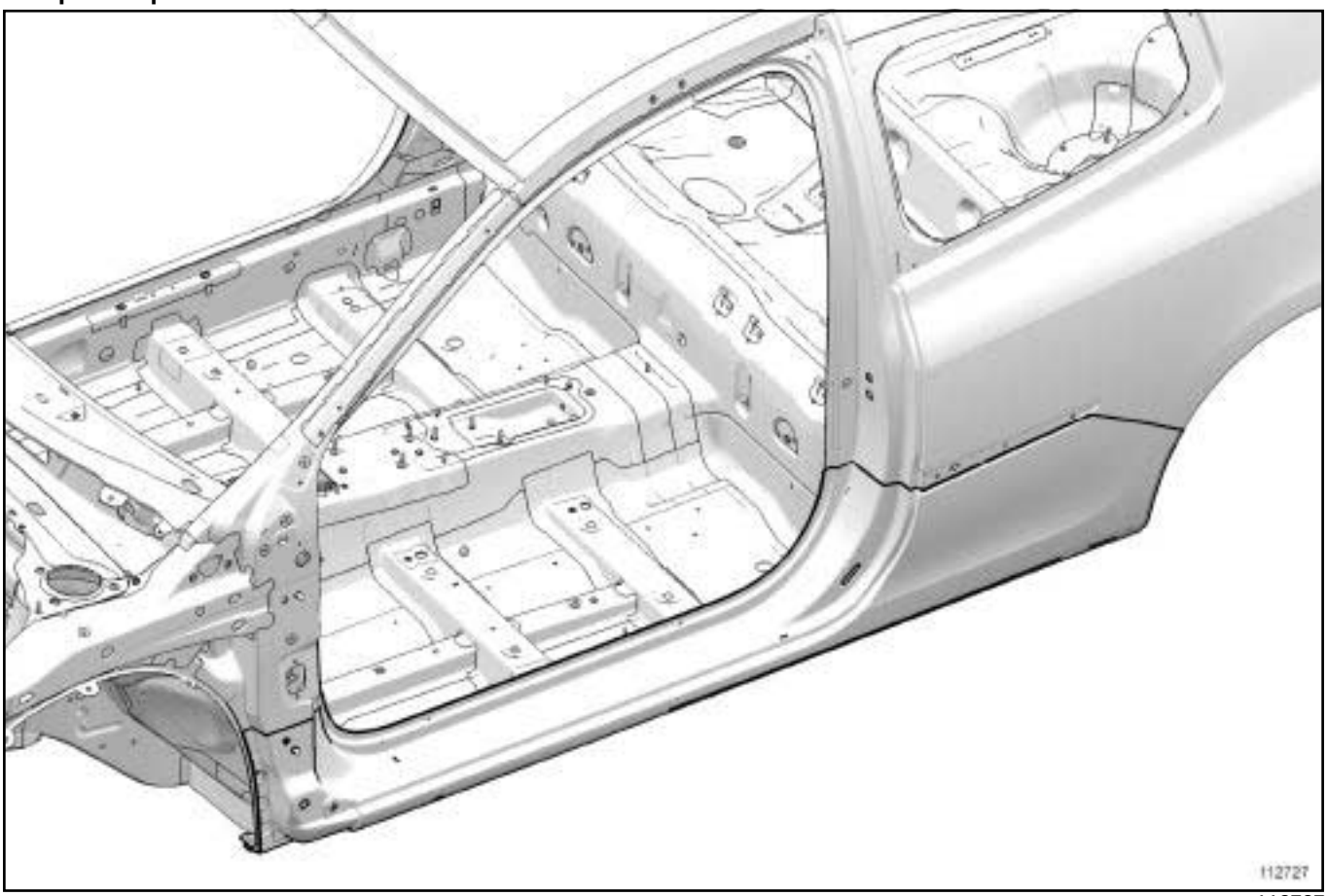
C85 or S85

Partial replacement of the rear end section



112726

Complete replacement

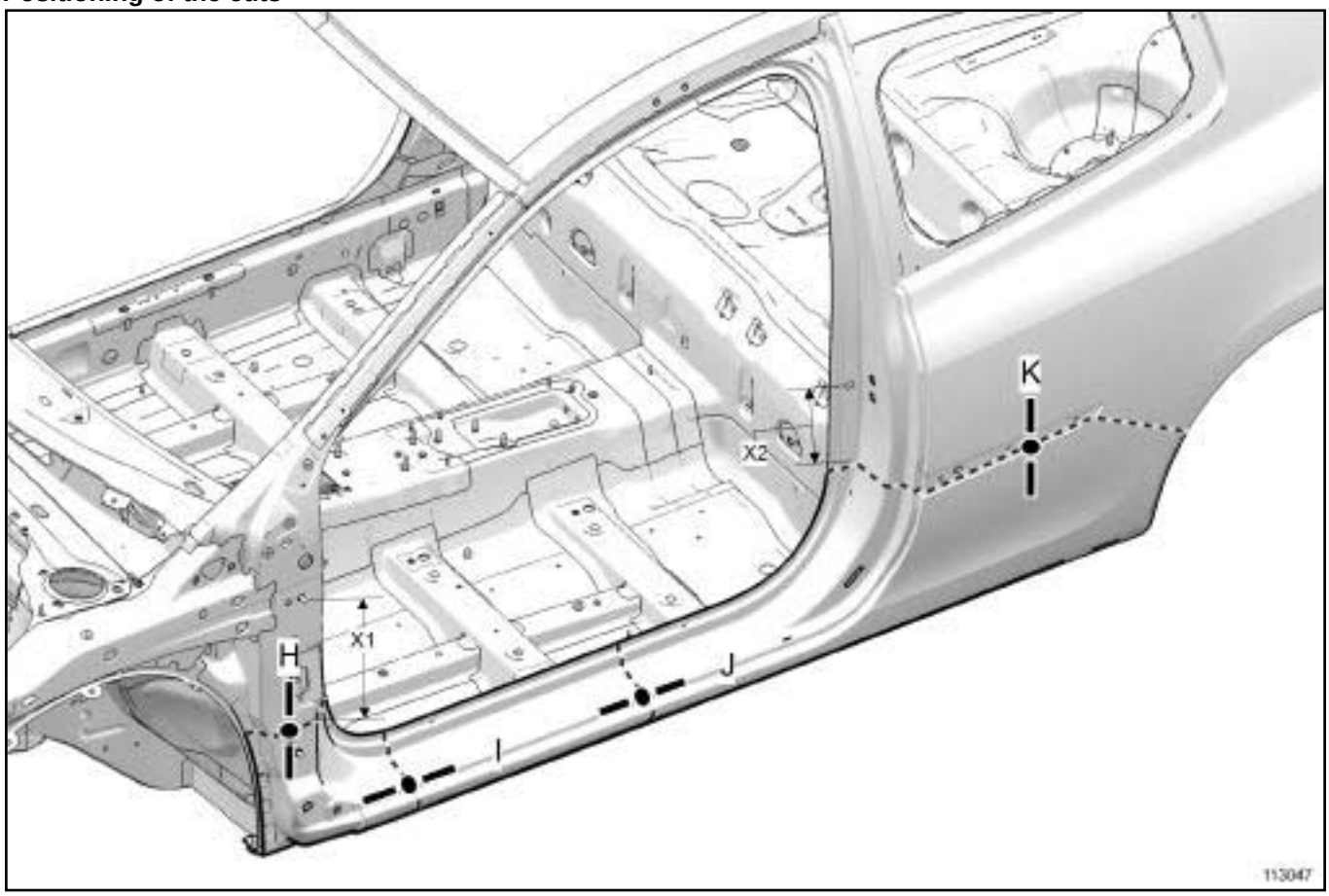


112727

C85 or S85

III - SPECIAL NOTES ON THE CUTS

Positioning of the cuts



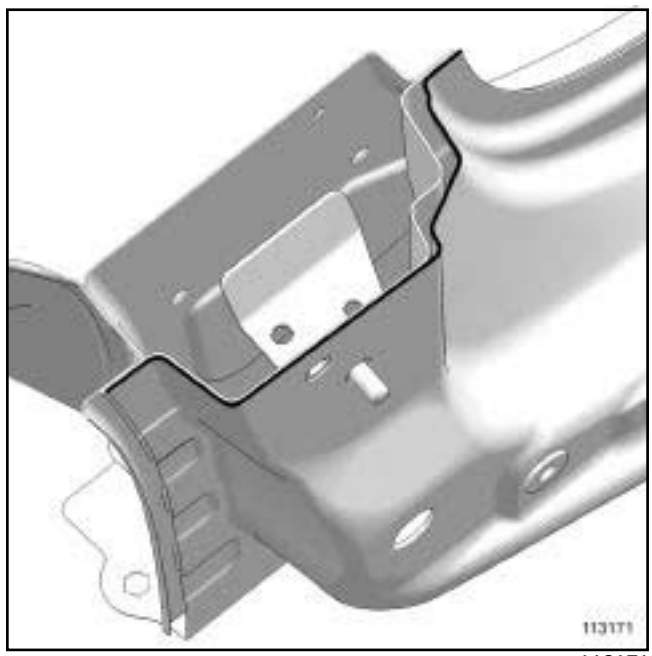
113047

WARNING

Respect the position of this cut which has been determined in accordance with the position of the inner stiffeners or acoustic inserts, in order to prevent damaging the parts (inner stiffener and/or acoustic insert).

- (**X1**) = **28 cm**
- (**X2**) = **17 cm**

Detailed view of cut H



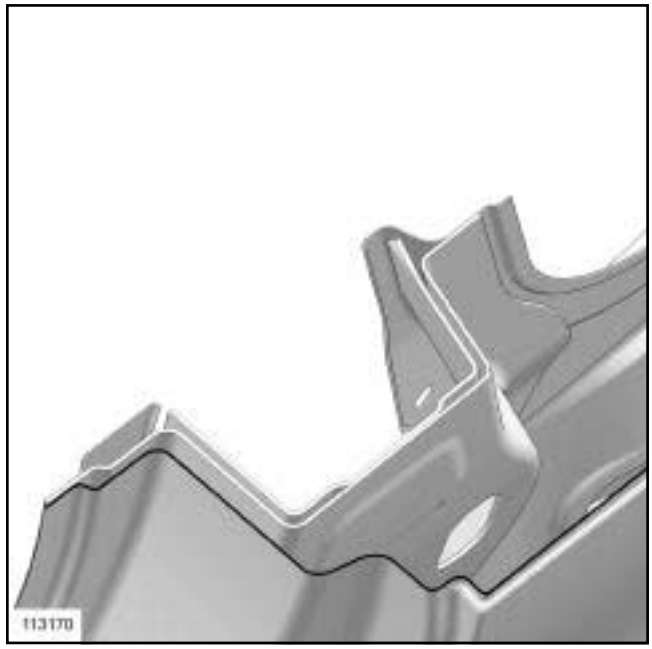
113171

C85 or S85

Detailed view of cut I

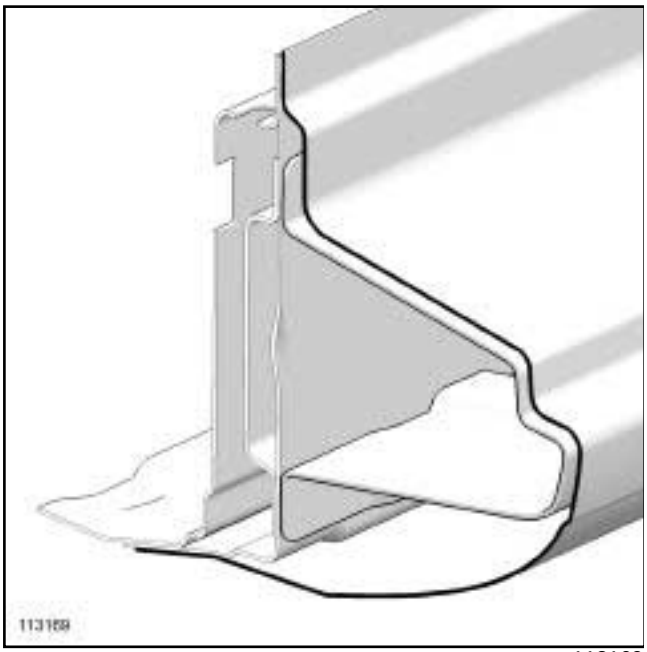
113020

Detailed view of cut K



113170

Detailed view of cut J

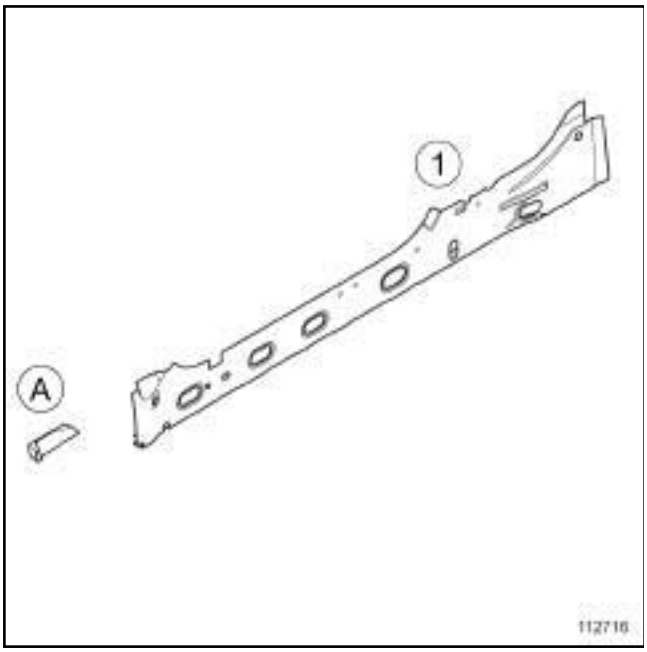


113169

Detailed view of cut K

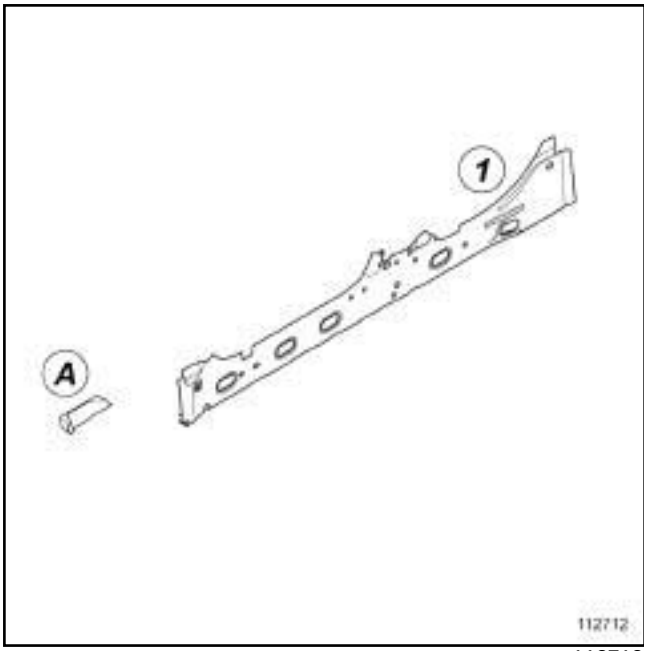
113172

C85 or S85



112716

B85 or K85



112712

To replace this component, also order the expanding insert for the A-pillar (**A**) .

The options for replacing this part are as follows:

- partial replacement of the front section,
- partial replacement of the rear section,
- complete replacement.

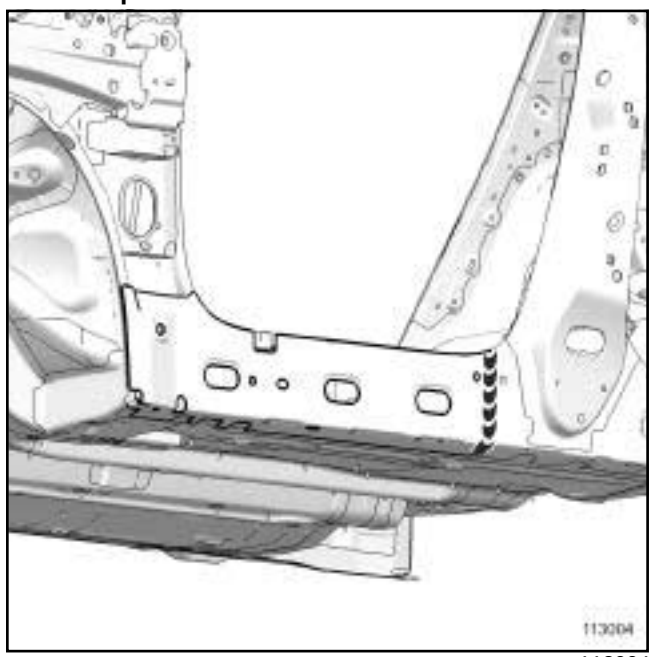
I - COMPOSITION OF THE SPARE PART

No.	Description	Type	Thick-ness (mm)
(1)	Sill panel closure panel	HLE	**1.2**

II - PART FITTED

B85 or K85

Partial replacement of the front section

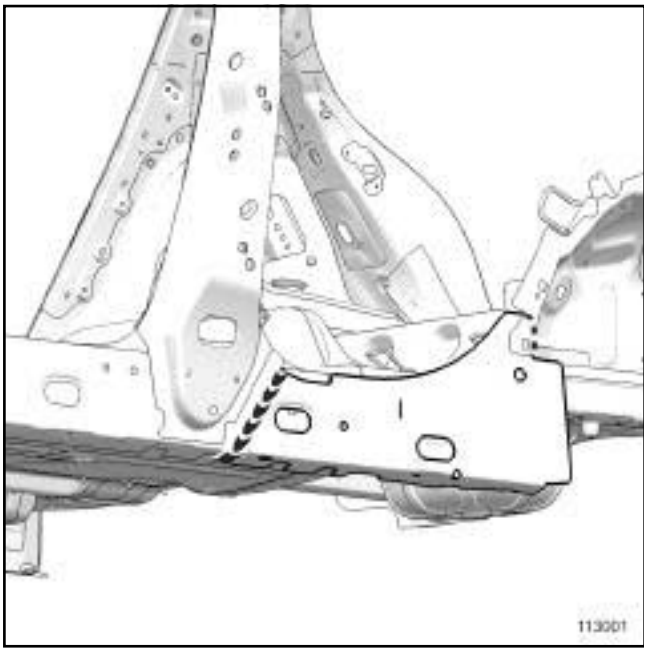


113004

WARNING

To maintain mechanical properties during a partial replacement of parts constituting a single structural component, stagger the welds of each of the components.

Partial replacement of the rear section



113001

WARNING

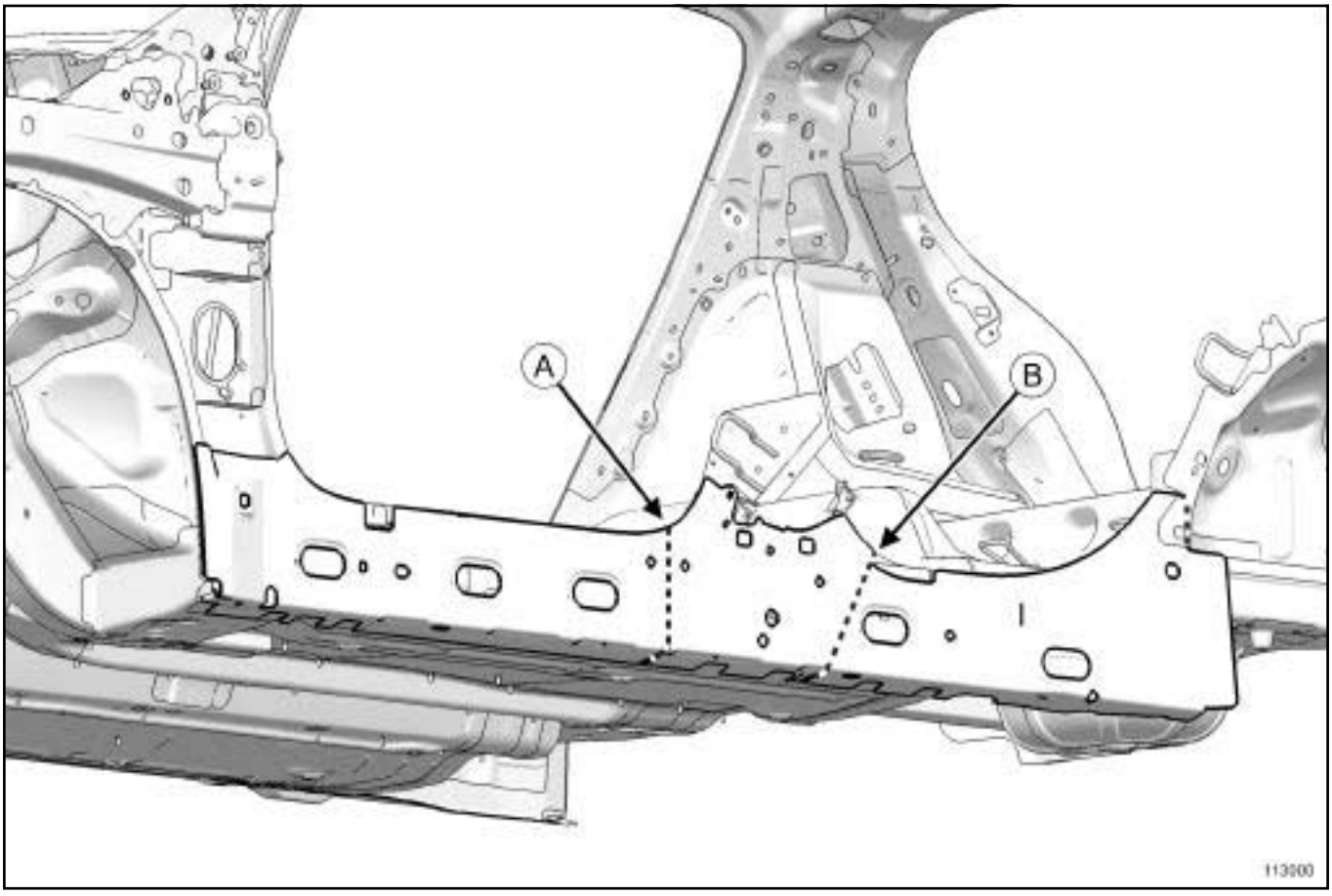
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

III - SPECIAL NOTES ON THE CUTS

B85 or K85

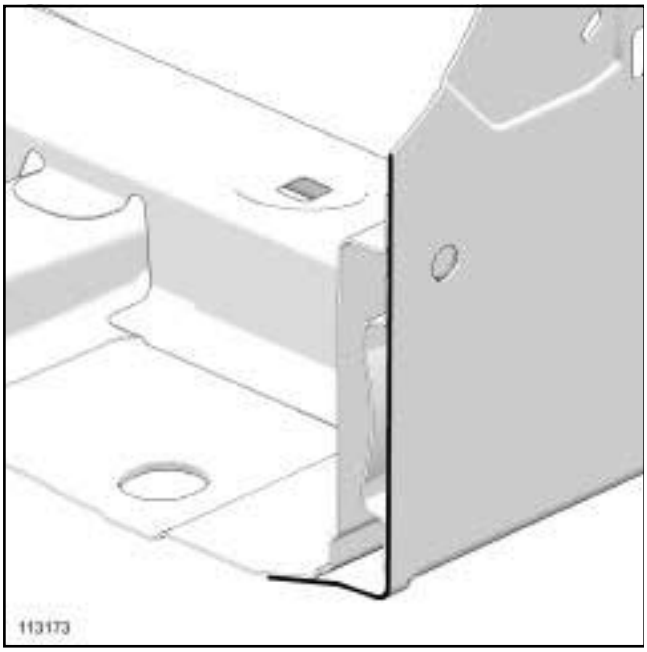
Note:

The position of the cuts given in the procedure can be modified according to the severity of impact.



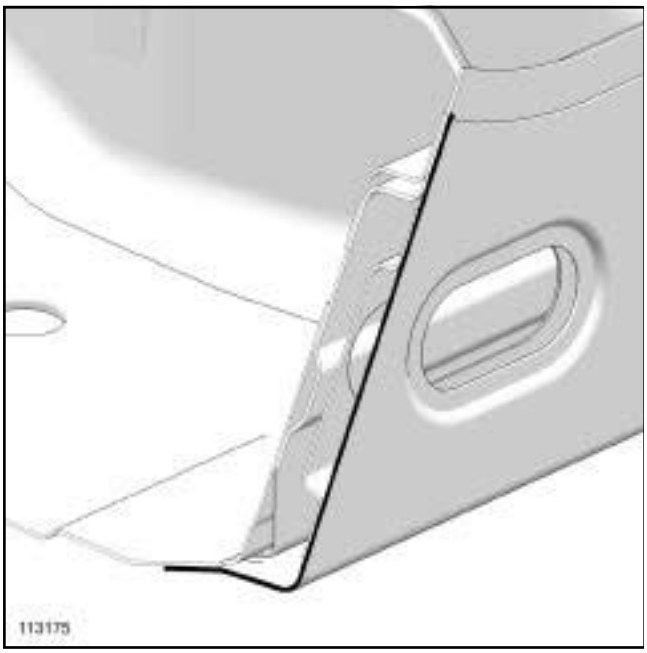
113000

Detailed view of cut A



113173

Detailed view of cut B

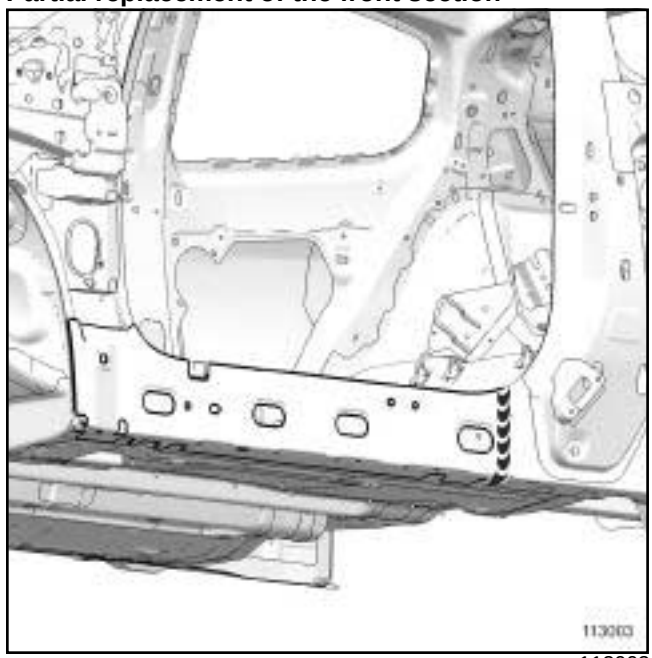


113175

IV - PART FITTED

C85 or S85

Partial replacement of the front section

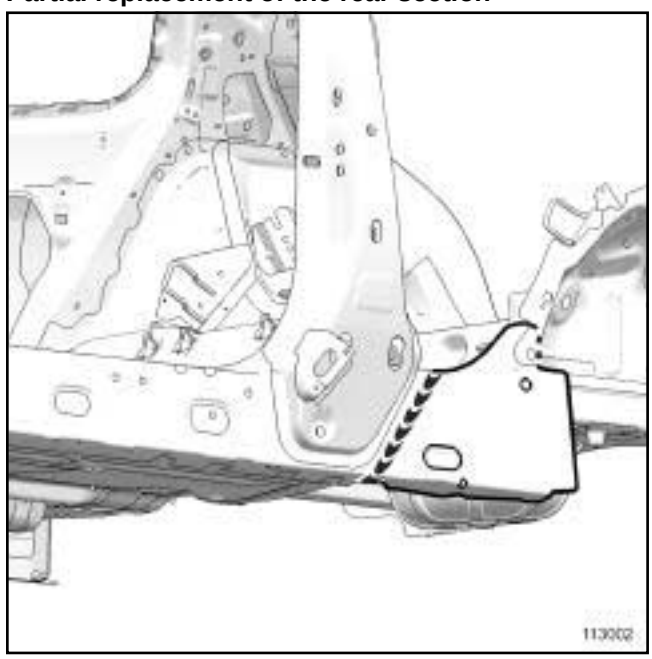


113003

WARNING

To maintain mechanical properties during a partial replacement of parts constituting a single structural component, stagger the welds of each of the components.

Partial replacement of the rear section



113002

WARNING

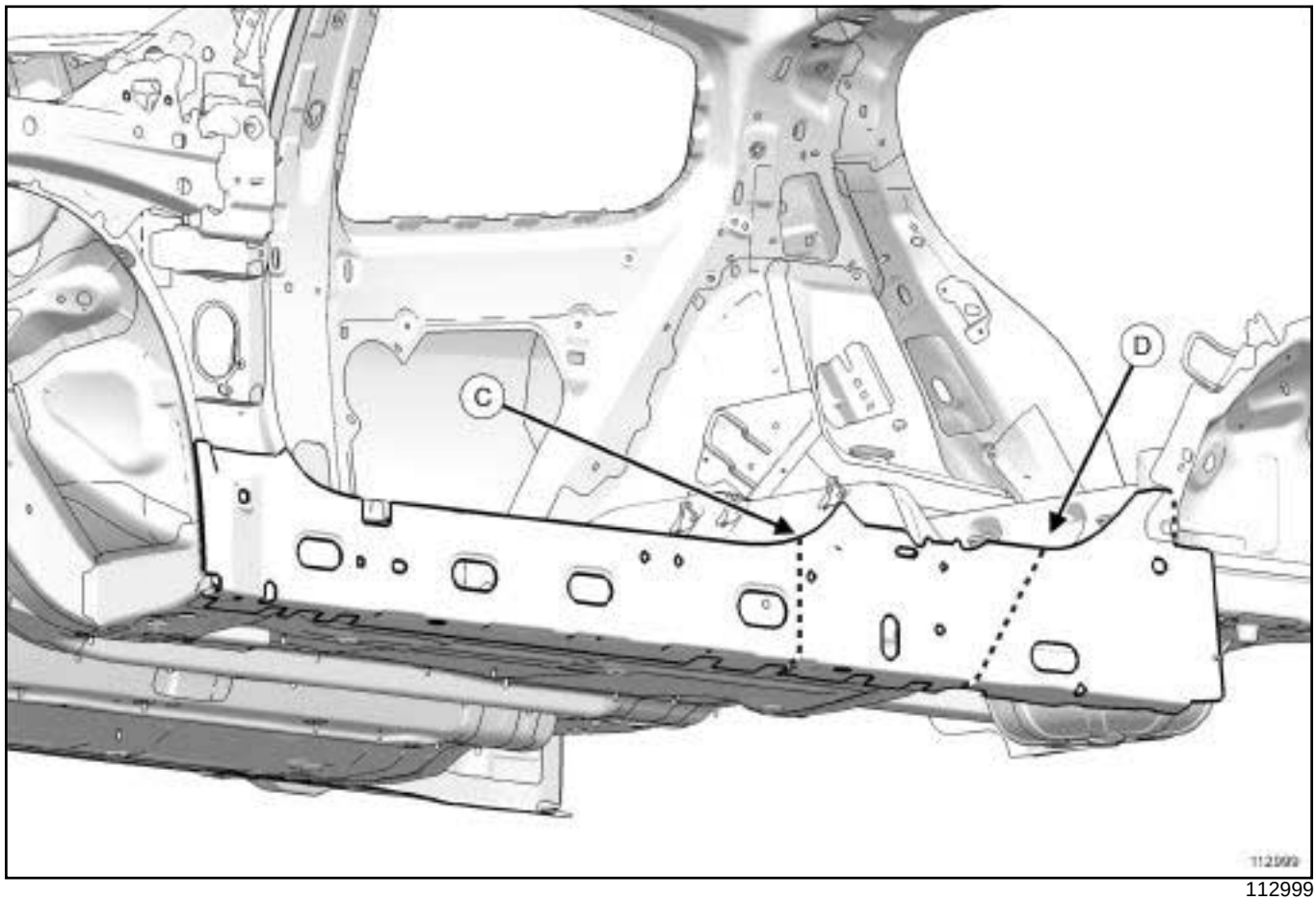
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

V - SPECIAL NOTES ON THE CUTS

C85 or S85

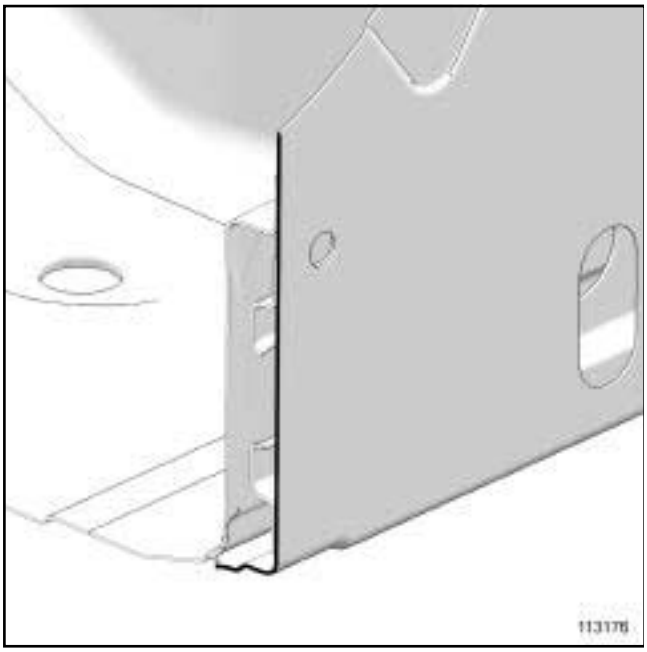
Note:

The position of the cuts given in the procedure can be modified according to the severity of impact.



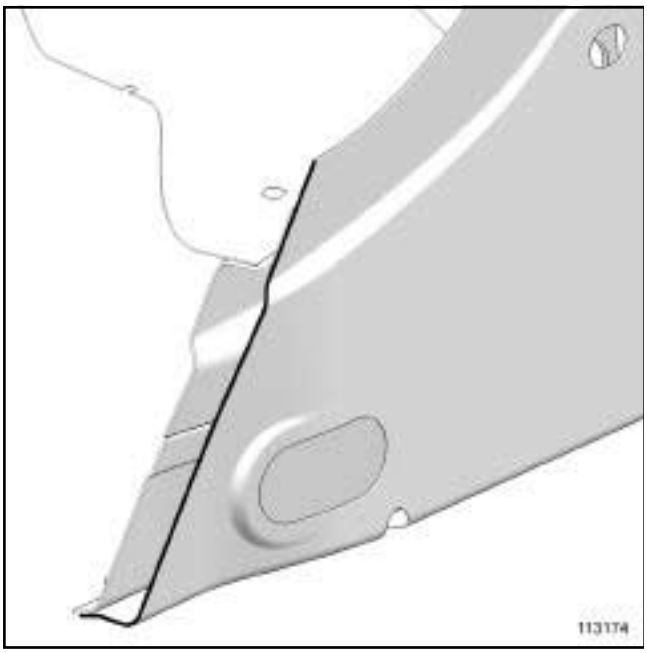
112999

Detailed view of cut C



113176

Detailed view of cut D



113174

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

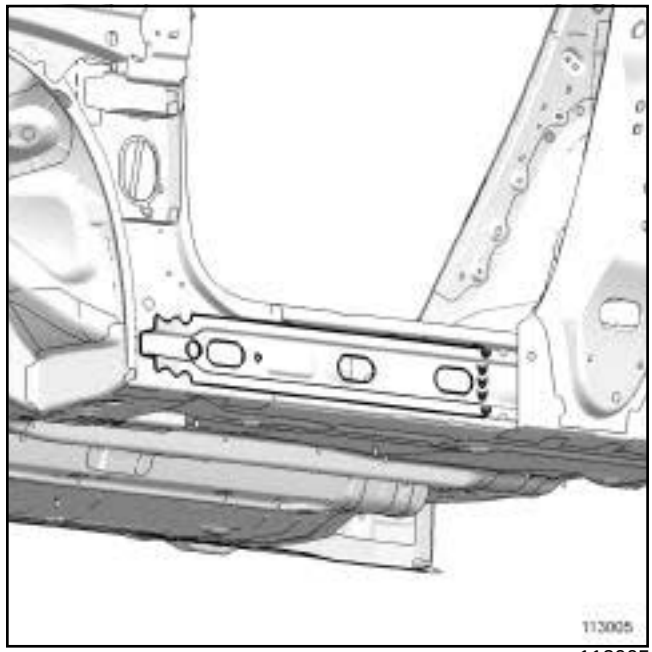
For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT

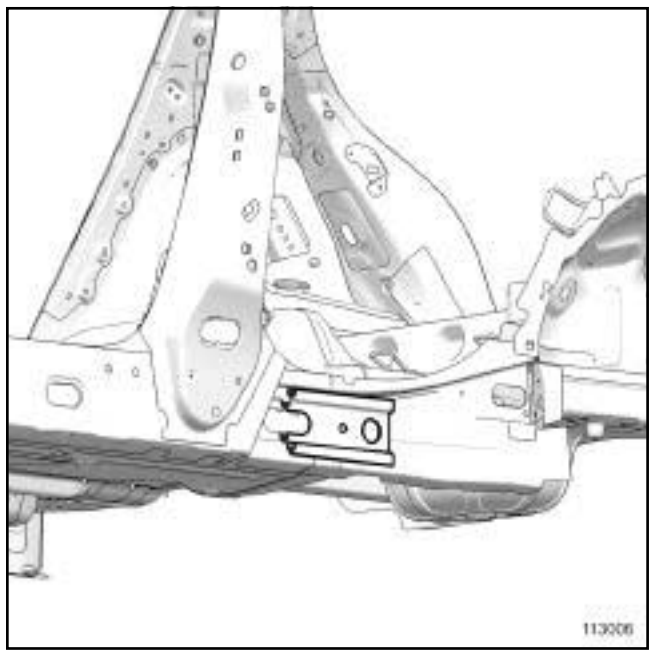
113262

Replacement of the sill panel reinforcement is linked to replacement of the inner sill panel.

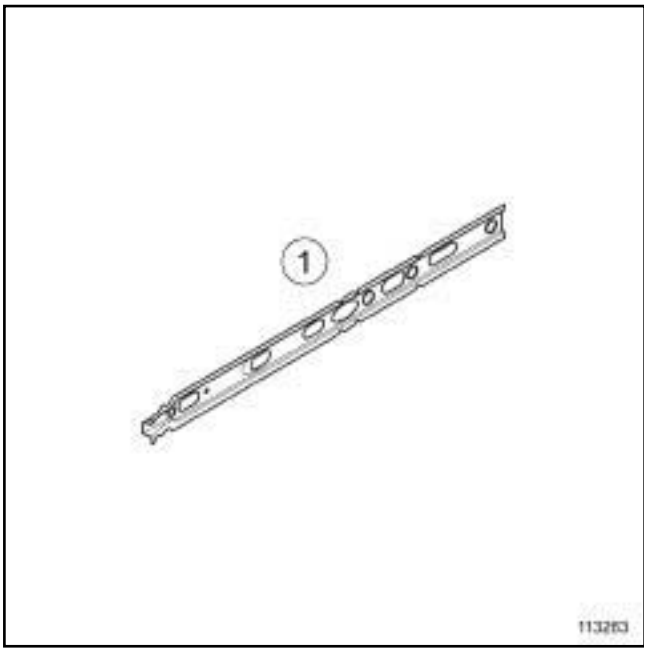
II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



113005



113006



113263

The options for replacing this part are as follows:

- partial replacement of the front section,
- partial replacement of the rear section,
- complete replacement.

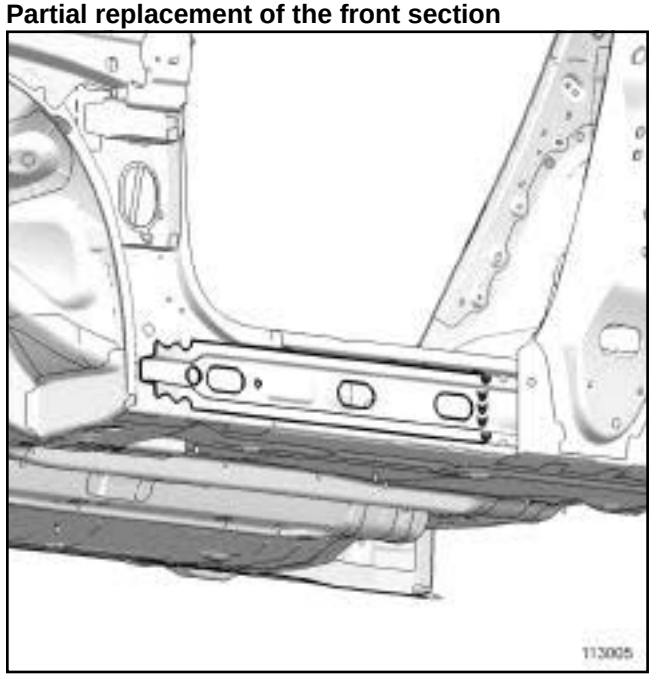
Description and thickness of the component

No.	Description	Type	Thickness (mm)
(**1**)	Sill panel reinforcement	HLE	1.5

PART FITTED

B85

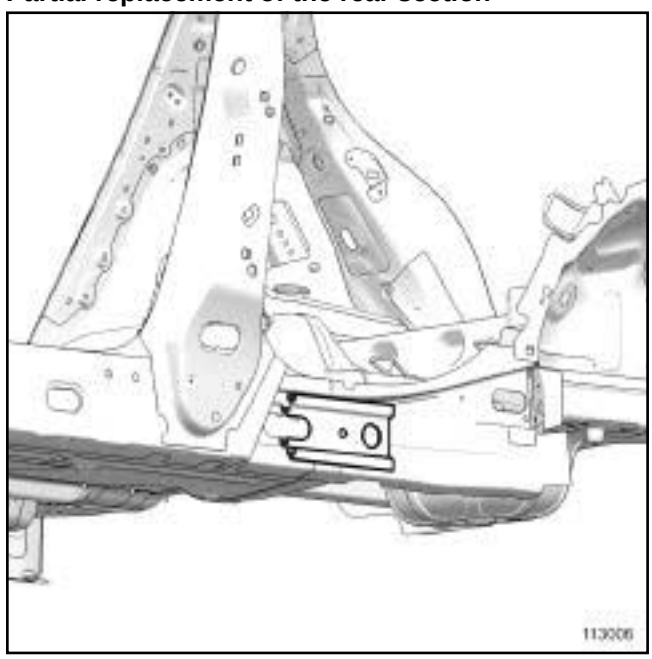
Partial replacement of the front section



113005

WARNING
For the partial replacement of parts constituting a single structural component, it is essential to stagger the welds of each of the components.

Partial replacement of the rear section



113006

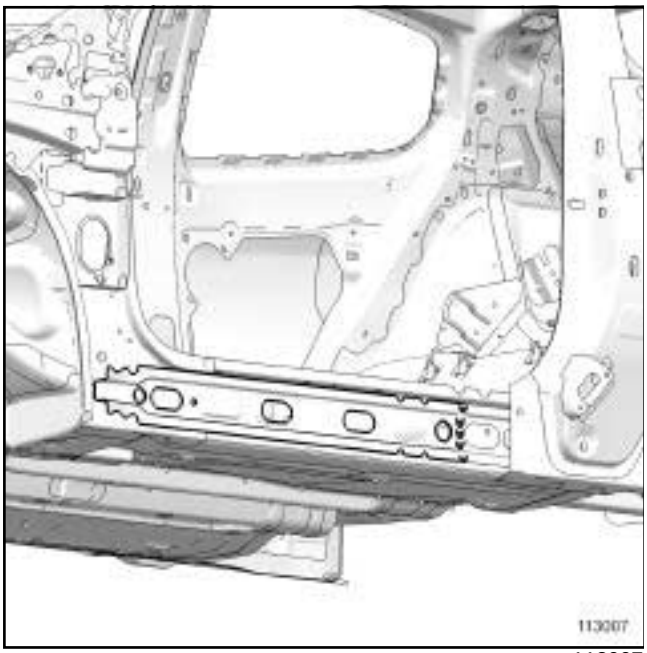
WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

C85

WARNING

For the partial replacement of parts constituting a single structural component, it is essential to stagger the welds of each of the components.



113007

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Tightening torques ▽	
the mounting bolts (1)	**21 N.m**
the mounting bolts (2)	**21 N.m**

I - REMOVAL

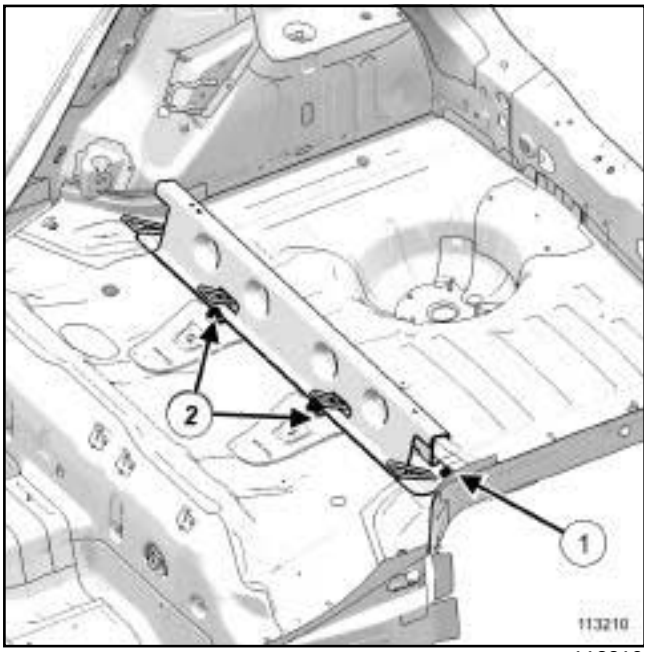
1 - REMOVAL PREPARATION OPERATION

❏ Remove the luggage compartment carpet (see) .

Remove the rear bench seat (see) .

Remove the protective carpet of the luggage retaining cross member.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



113210

❏ Remove:

- the mounting bolts (**1**) on each side,
- the mounting bolts (**2**) on each side.

II - REFITTING

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the mounting bolts (**1**) on each side,
- the mounting bolts (**2**) on each side.

Tighten to torque:

- **the mounting bolts (1) (21 N.m)**,
- **the mounting bolts (2) (21 N.m)**.

2 - FINAL OPERATION

❏ Refit the protective carpet of the luggage retaining cross member.

Refit the rear bench seat (see) .

Refit the luggage compartment carpet (see) .

WARNING

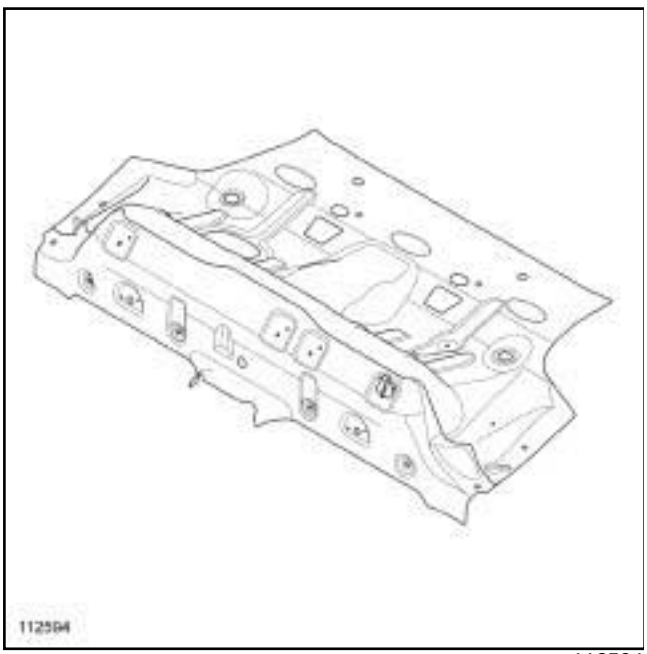
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

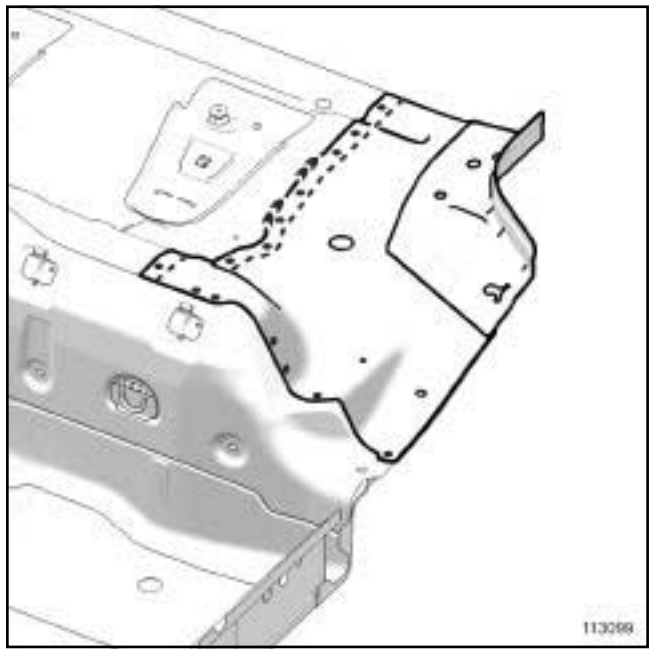
I - DESIGN OF THE STRUCTURAL COMPONENT



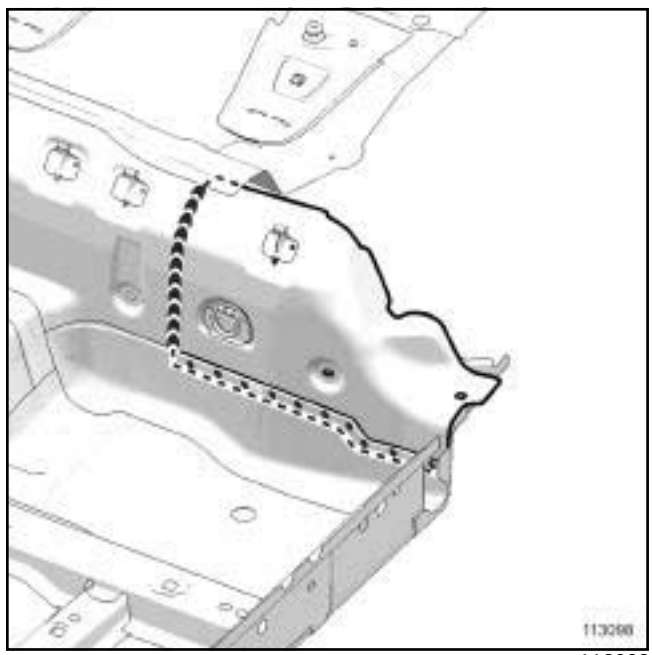
112594

This is a basic part; its only function is that of rear floor front section.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



113099



113098

Cut 1:

This line marks the area in which it is possible to make a partial replacement.

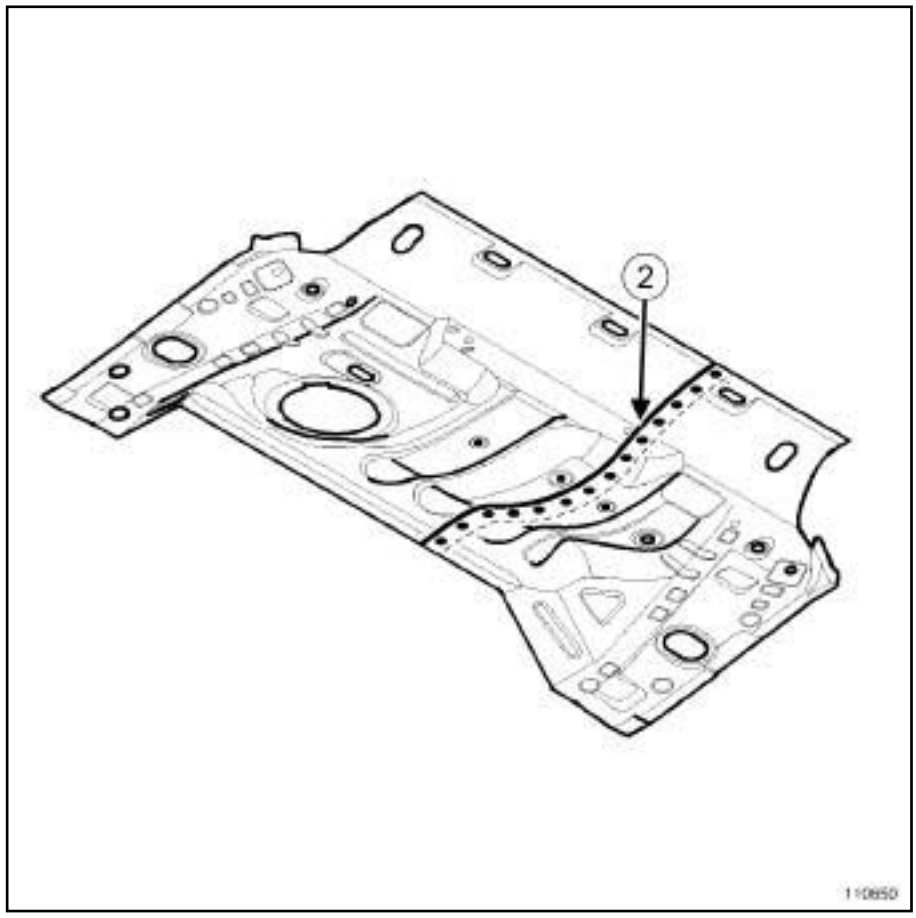
III - ASSEMBLY INSTRUCTIONS FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

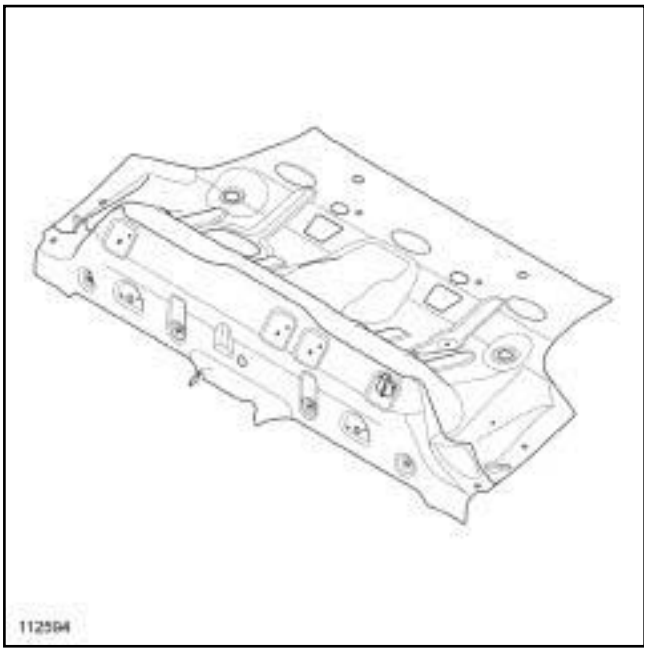
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110650

Line (**2**) on the diagram shows a joint made by joggling connected with plug welds at regular intervals.

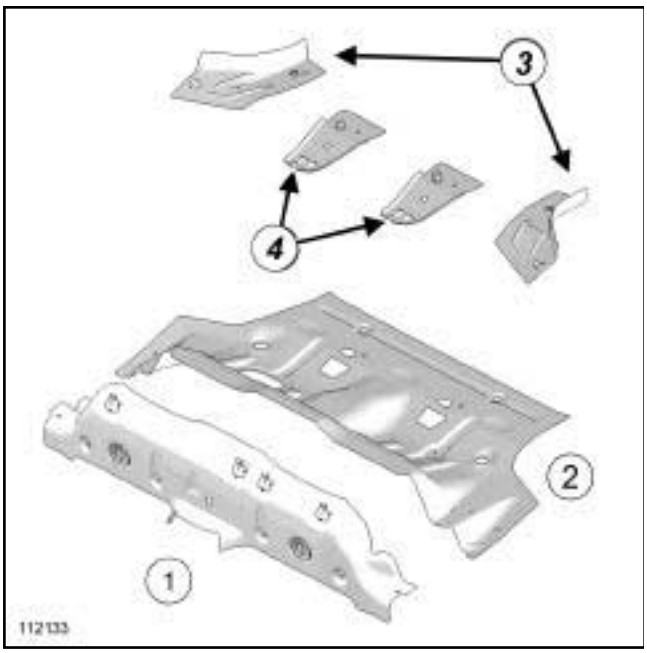


112594

The options for replacing this part are as follows:

- partial replacement of the rear section,
- complete replacement.

I - COMPOSITION OF THE SPARE PART



112133

B85 or C85 or S85

No.	Description	Type	Thickness (mm)
(**1**)	Floor cross member		**0.65**
(**2**)	Front section of rear floor		**0.65**
(**3**)	Floor side reinforcement	HLE	**1.5**
(**4**)	Central reinforcement of seat	HLE	**1.5**

K85

No.	Description	Type	Thickness (mm)
(1)	Emergency spare wheel arch rear reinforcement	HLE	**1,7**
(2)	Rear floor rear section	Mild steel	**0.65**
(3)	Rear section of rear floor extension	HLE	**0.65**
(4)	Emergency spare wheel mounting reinforcement	HLE	**1.5**

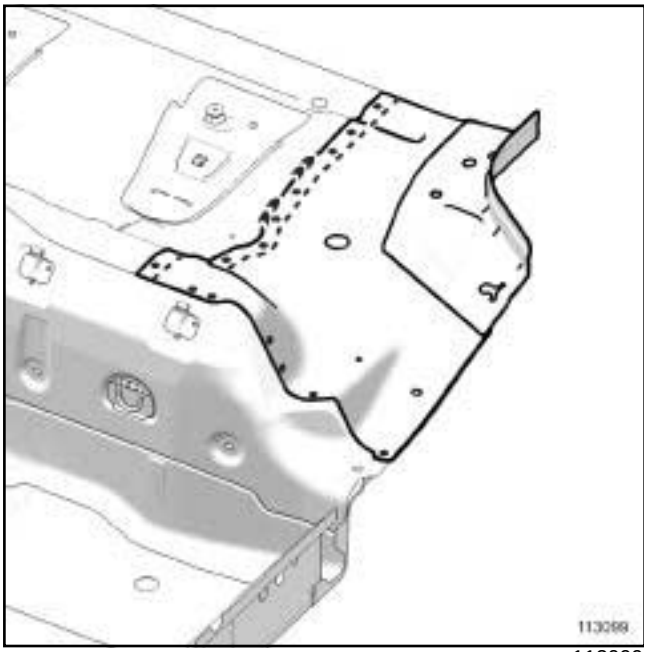
II - PART FITTED

Partial replacement of the rear section

WARNING
To maintain mechanical properties during a partial replacement of parts constituting a single structural component, stagger the welds of each of the components.

WARNING

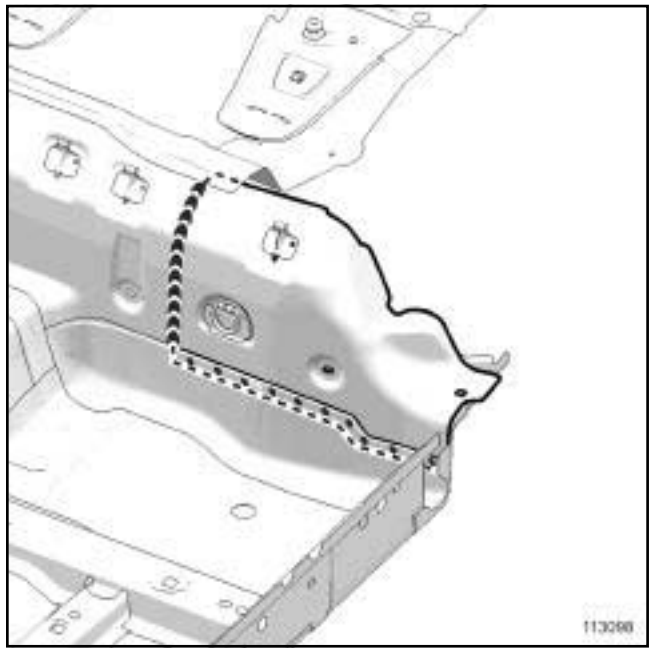
Respect the position of this cut which has been determined in accordance with the position of the inner stiffeners or acoustic inserts, in order to prevent damaging the parts (inner stiffener and/or acoustic insert).



113099

Note:

Carry out partial replacement by superposition of panels, and make two welds.



113098

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

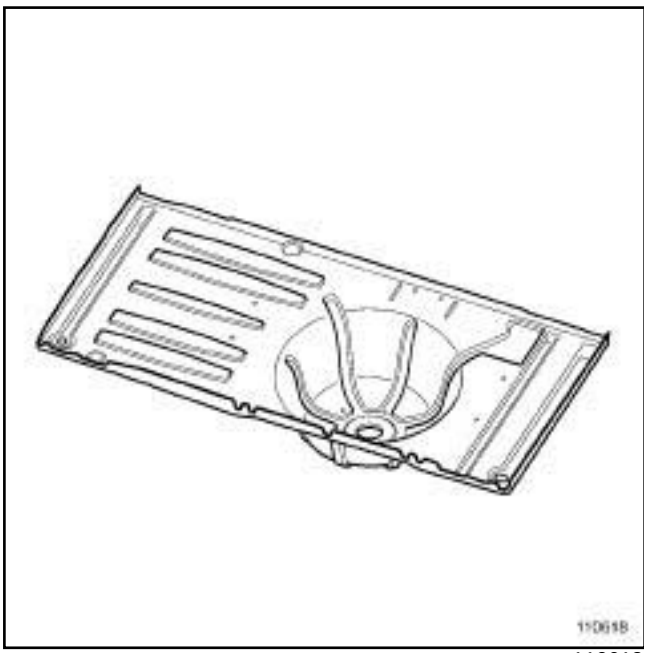
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT



110618

The distinctive feature of this part is that it combines the functions of the rear section of the rear floor and the emergency spare wheel mounting bracket.

Partial replacement is not possible for this part.

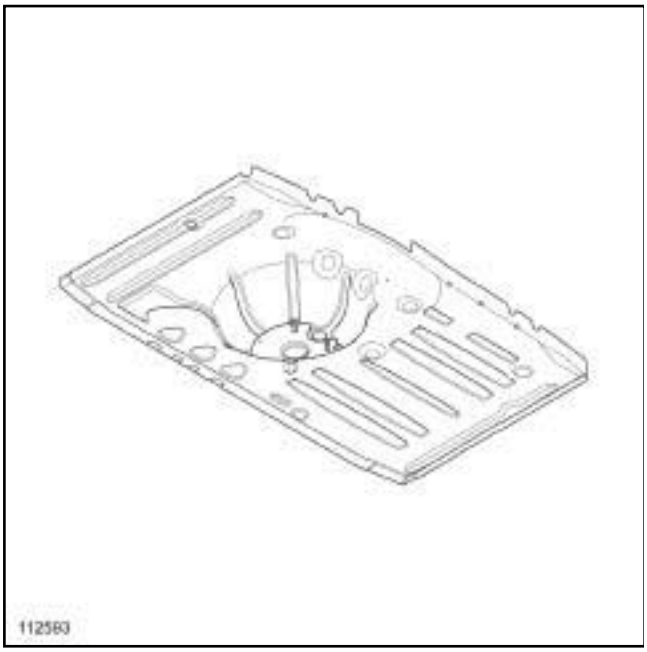
II - ASSEMBLY INSTRUCTIONS FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



112593

There is only one way of replacing this part:

- complete replacement.

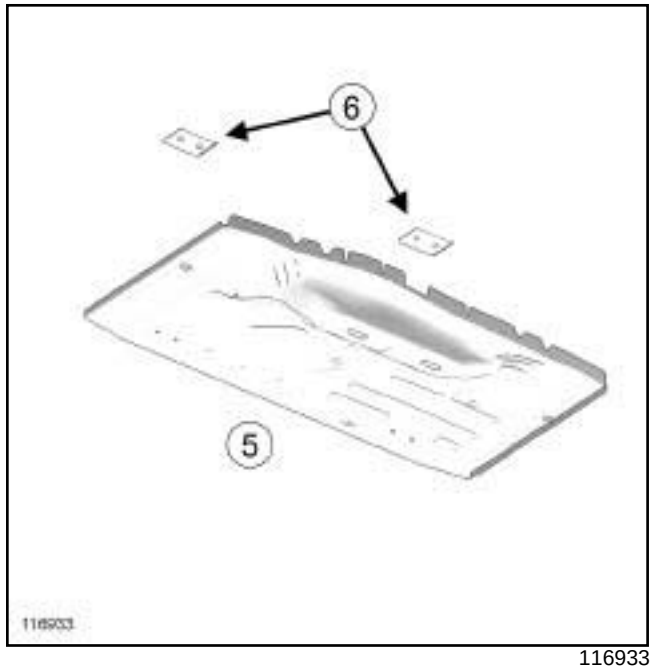
I - COMPOSITION OF THE SPARE PART

B85 or C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

112134

No.	Description	Type	Thickness (mm)
(**1**)	Rear section of floor	-	**0.65**
(**2**)	Emergency spare wheel side mounting reinforcement	HLE	**1.5**
(**3**)	Emergency spare wheel mounting reinforcement	HLE	**1.5**
(**4**)	Rear wheel arch reinforcement	HLE	**1.5**

C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116933

No.	Description	Type	Thickness (mm)
(**5**)	Rear floor rear section	-	**0.65**
(**6**)	Rear floor reinforcement	-	**1.5**

K85

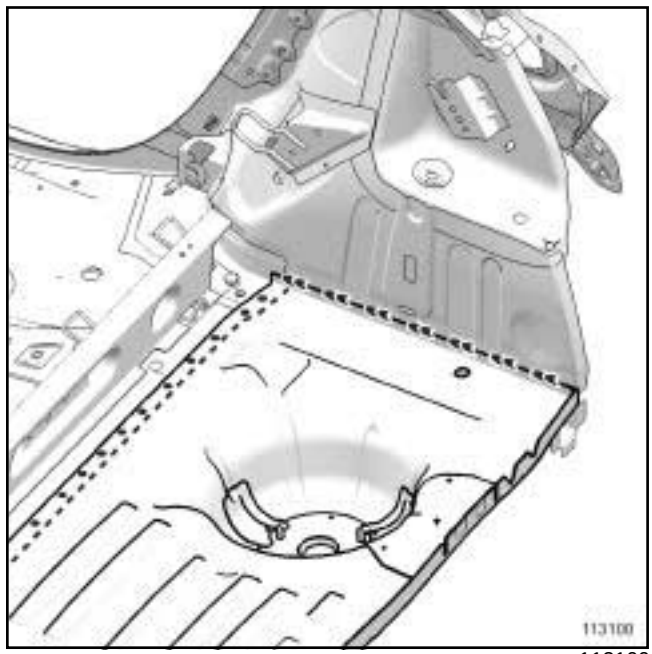
126701

No.	Description	Type	Thickness (mm)
(**7**)	Rear floor rear section	Mild steel	**0.65**
(**8**)	Emergency spare wheel mounting reinforcement	HLE	**1.5**
(**9**)	Emergency spare wheel arch rear reinforcement	HLE	**1.7**
(**10**)	Rear floor extension	HLE	**0.65**

II - PART IN POSITION

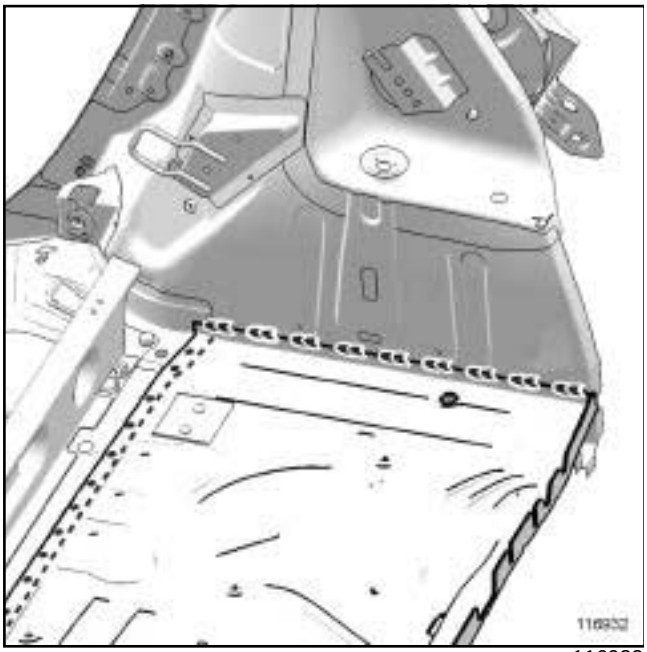
Complete replacement

B85 or C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



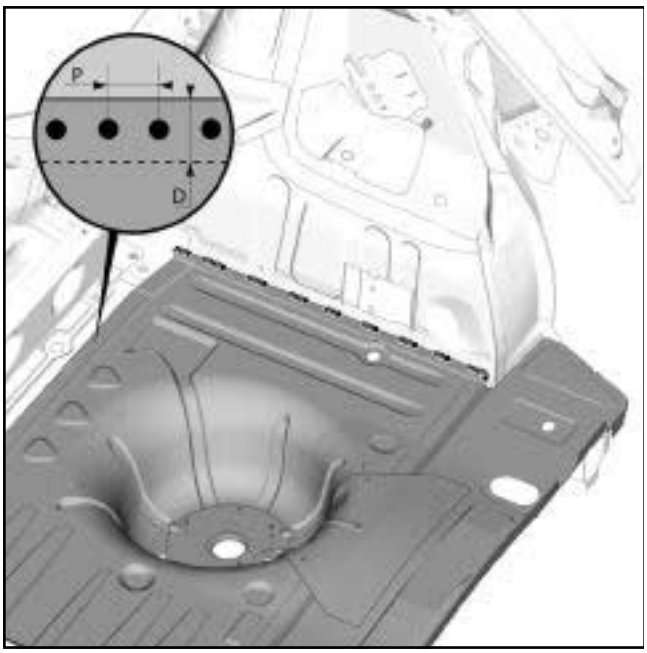
113100

C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116932

K85



126702

P = pitch

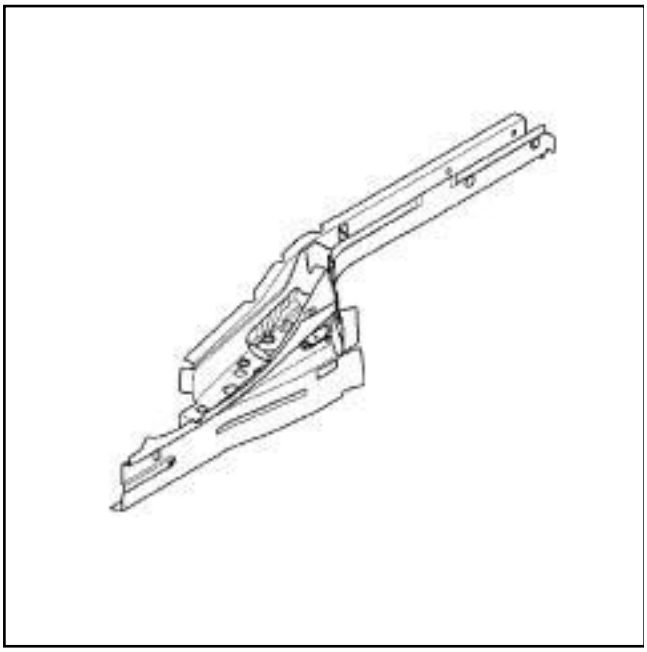
D = distance covered

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, these should be replaced with anchoring beading.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).



126792

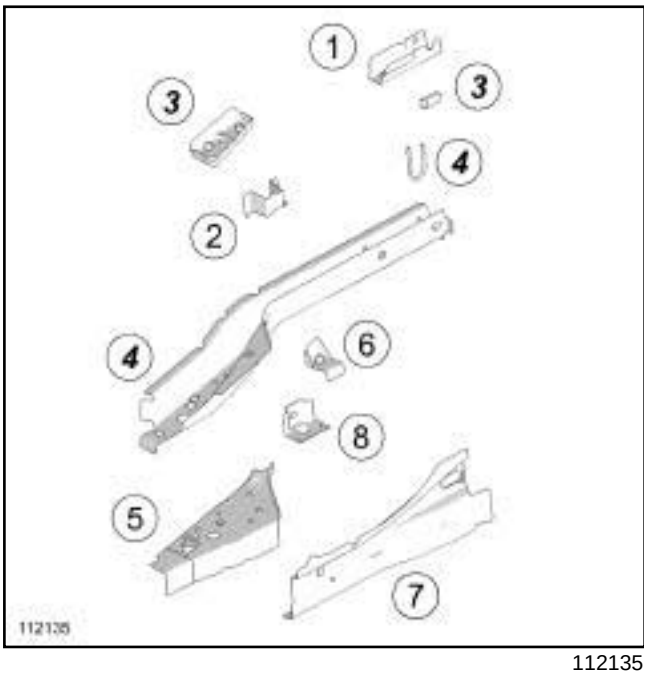
There is only one way of replacing this part:

- complete replacement.

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

I - COMPOSITION OF THE SPARE PART

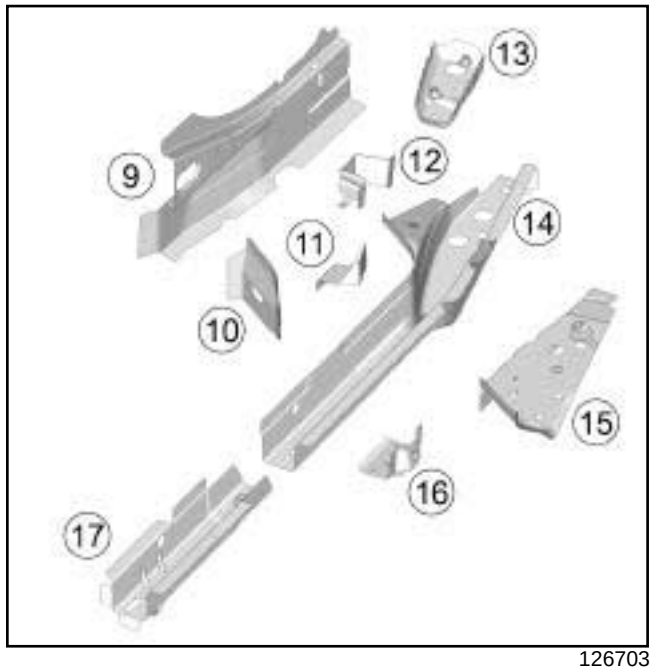
B85 or C85 or S85



112135

No.	Description	Type	Thick-ness (mm)
(**1**)	Towing ring reinforcement	HLE	**2**
(**2**)	Central reinforcement	HLE	**1.5**
(**3**)	Rear axle mounting interior reinforcement	HLE	**2.8**
(**4**)	Rear side member	HLE	**1.5**
(**5**)	Sill connection component		**1.2**
(**6**)	Rear axle mounting exterior reinforcement	HLE	**2.8**
(**7**)	Sill reinforcement	VHEL	**1.5**
(**8**)	Suspension spring support	HLE	**2**

K85



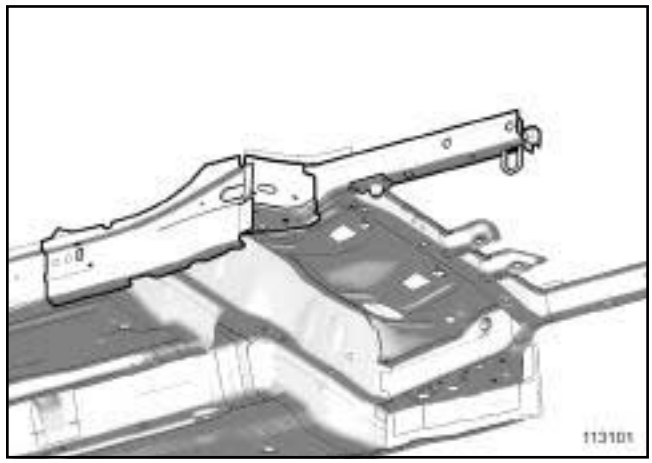
126703

No.	Description	Type	Thick-ness (mm)
(**9**)	Sill reinforcement	VHEL	**1.5**
(**10**)	Upper sill connection component	Mild steel	**1.2**
(**11**)	Rear axle mounting exterior reinforcement	HLE	**2.8**
(**12**)	Rear central side member reinforcement	HLE	**1.5**
(**13**)	Rear axle mounting interior reinforcement	HLE	**2.8**
(**14**)	Rear side member	HLE	**1.5**
(**15**)	Lower sill connection component	HLE	**1.5**
(**16**)	Suspension spring support	HLE	**2**
(**17**)	Side member extension	HLE	**2**

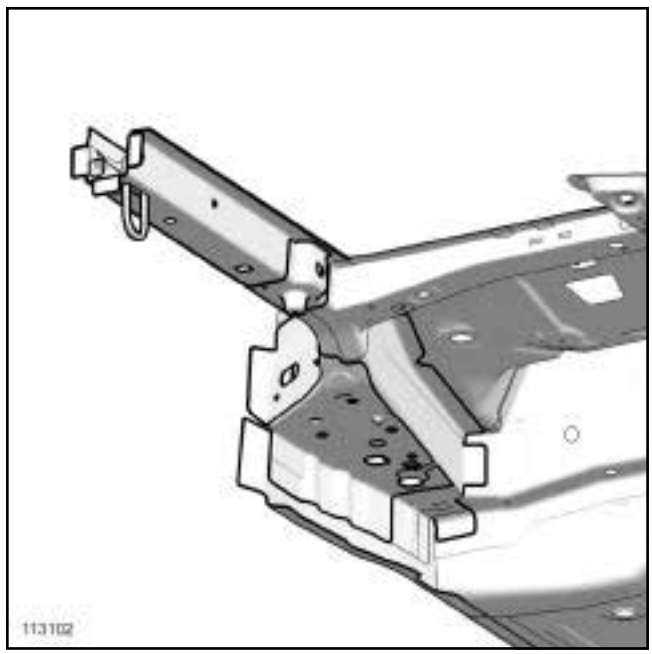
II - PART IN POSITION

Complete replacement

B85 or C85 or S85

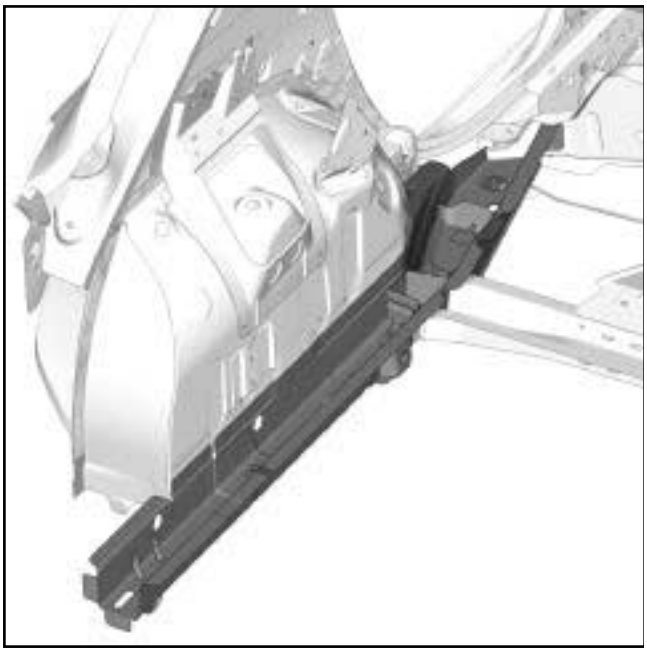


113101

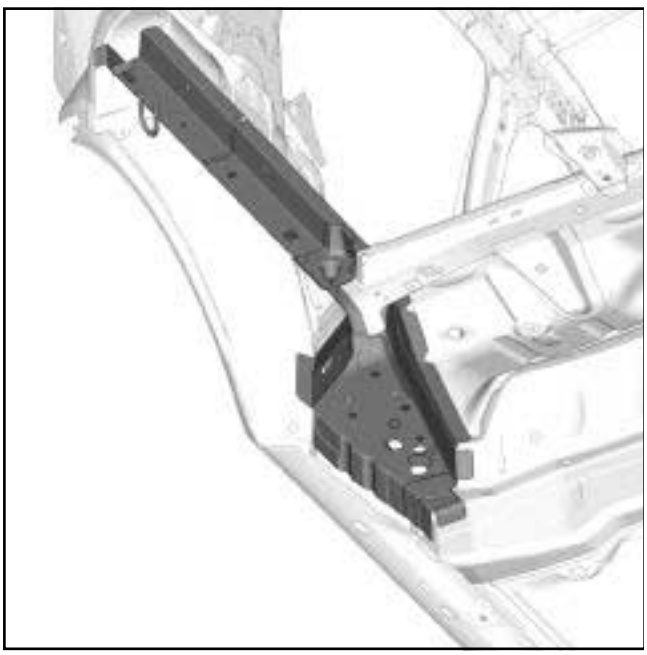


113102

K85



126704



126705

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

For more detailed information on welded connections with three thicknesses, see **MR 400**.

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

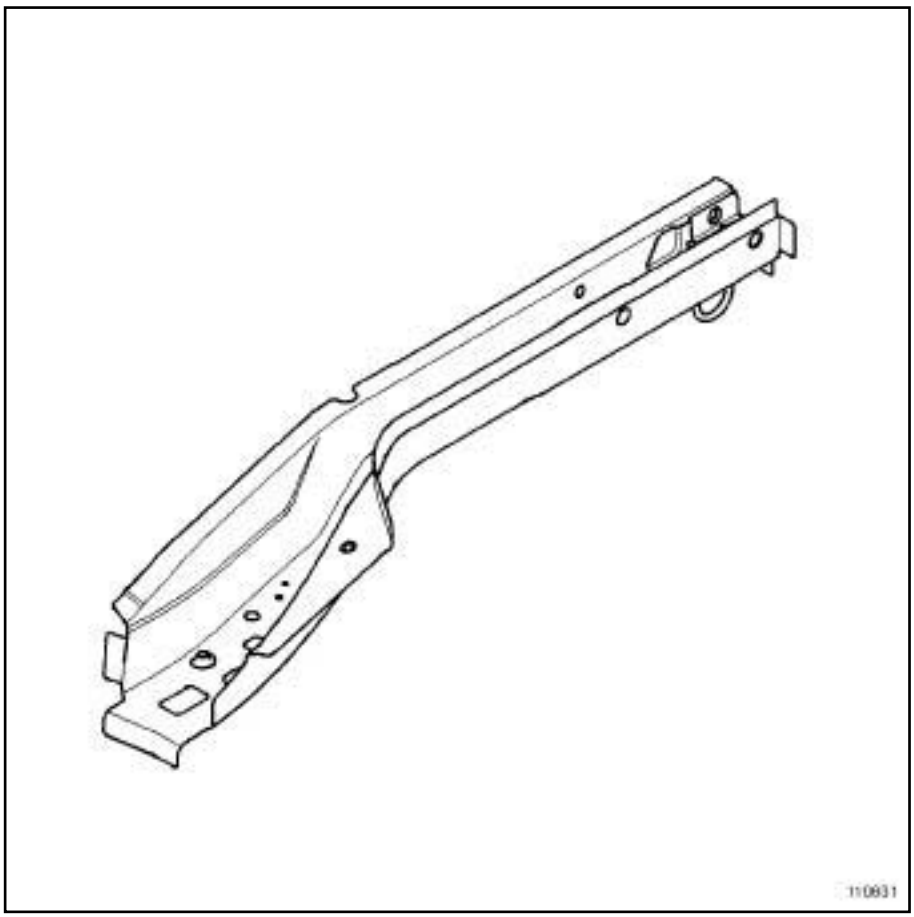
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400**.

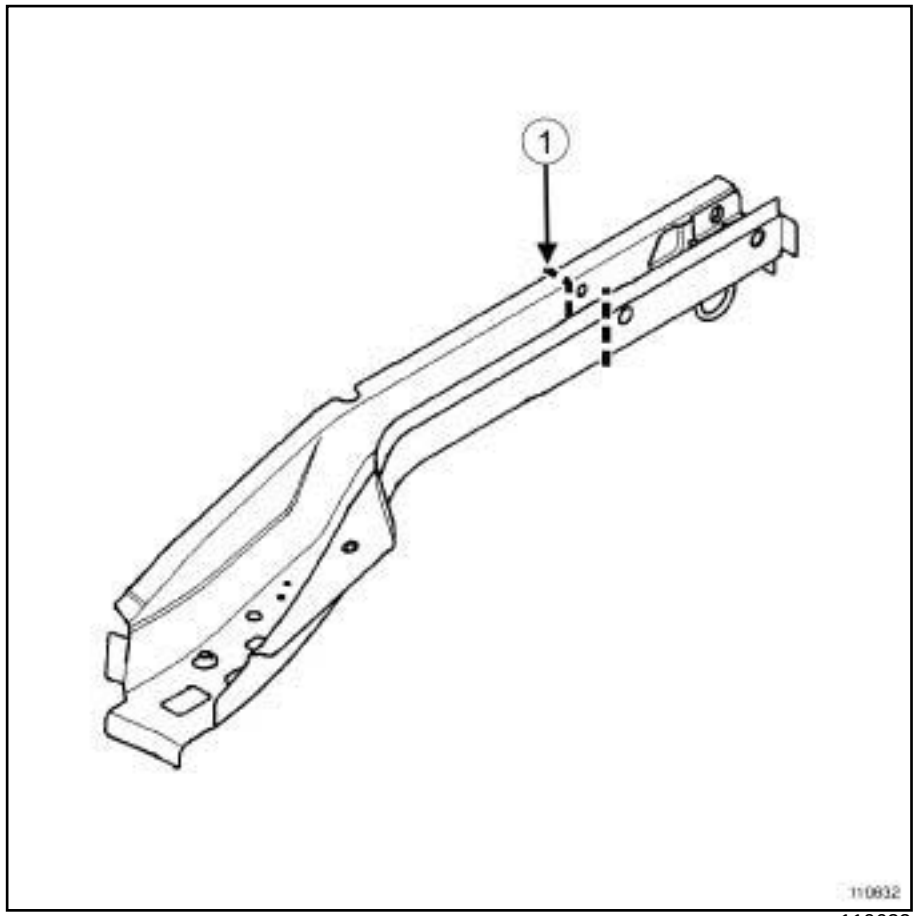
I - DESIGN OF THE STRUCTURAL COMPONENT



110631

This is a basic part; it simply fulfils the function of a rear side member.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110632

Cut 1:

This line marks the area in which it is possible to make a partial replacement.

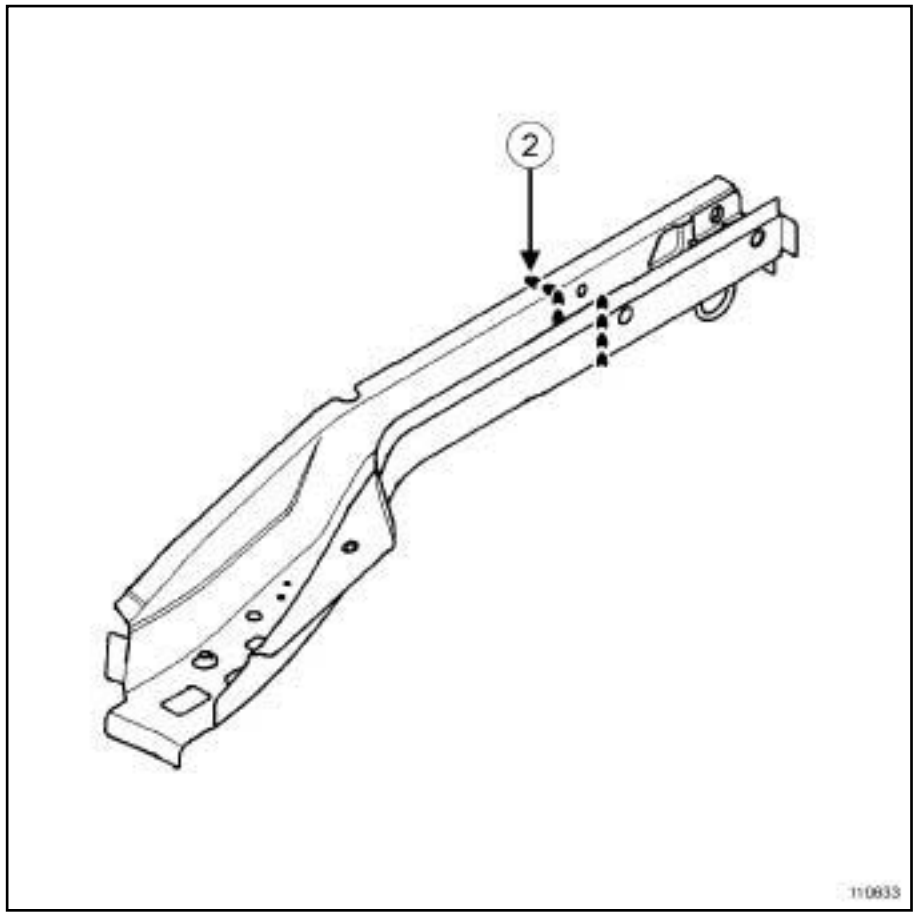
III - ASSEMBLY INSTRUCTIONS FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

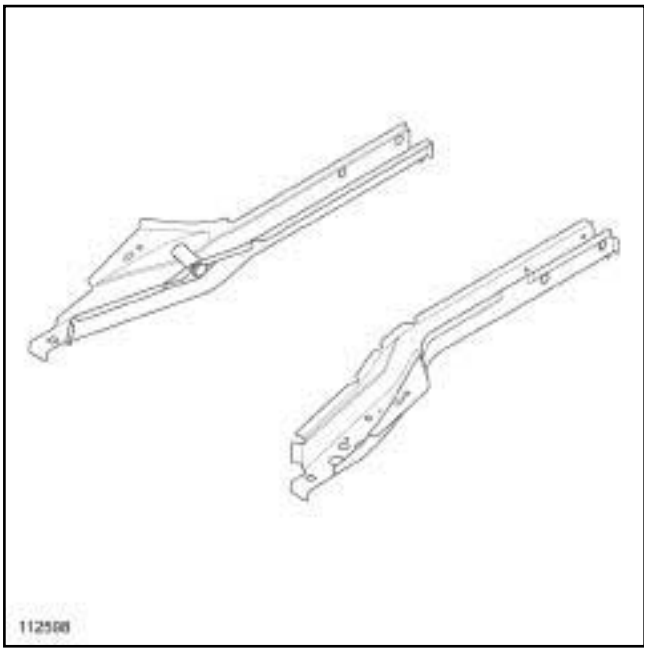
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110633

The line (**2**) on the drawing shows a butt weld made by continuous **GMAW** welding.



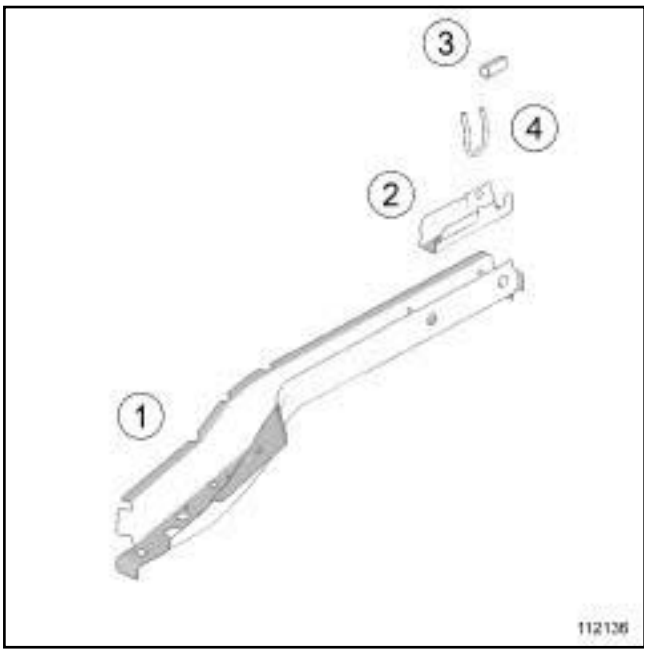
112598

There is only one way of replacing this part:

- Partial replacement of the rear section.

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART



112136

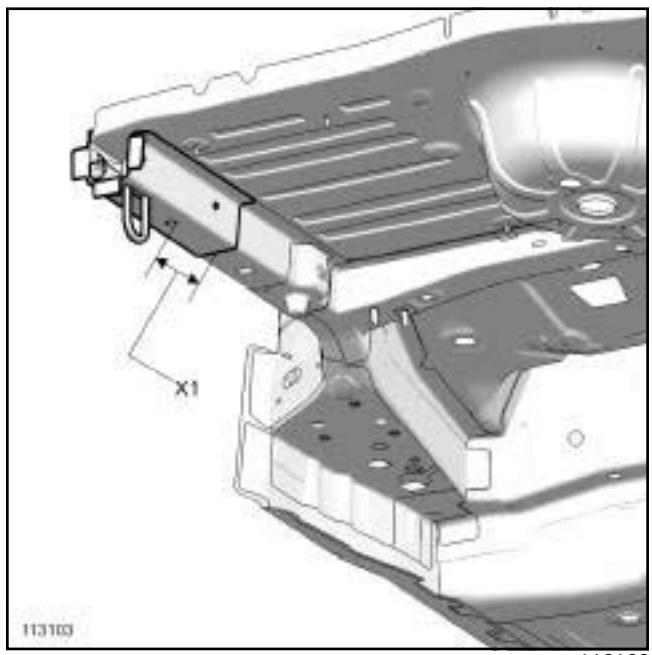
No.	Description	Type	Thick-ness (mm)
(**1**)	Rear side member	HLE	1.5
(**2**)	Towing ring rein-forcement	HLE	2
(**3**)	Threaded bushing		
(**4**)	Towing ring		∅ 8

II - PART IN POSITION

Partial replacement of the rear section

WARNING
The correct position of this cut must be observed, as it is determined according to the mounting points for the mechanical components.

WARNING
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.



113103

X1 = 70 mm

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

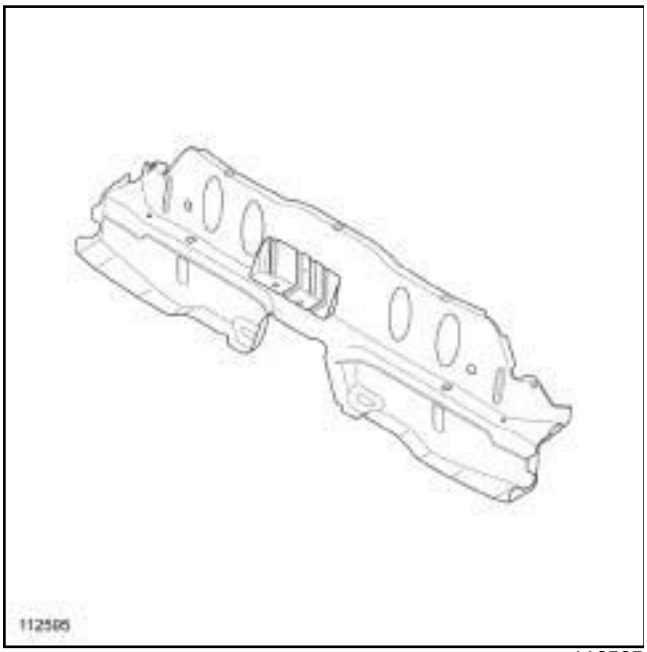
Before reading this general information, check that there are no special features associated with this vehicle. These special features will be specified if applicable in other parts of this sub-section dealing with the part.

Note:

For detailed information on a specific connection, (see

Workshop Repair Manual 400, 40A, General information).

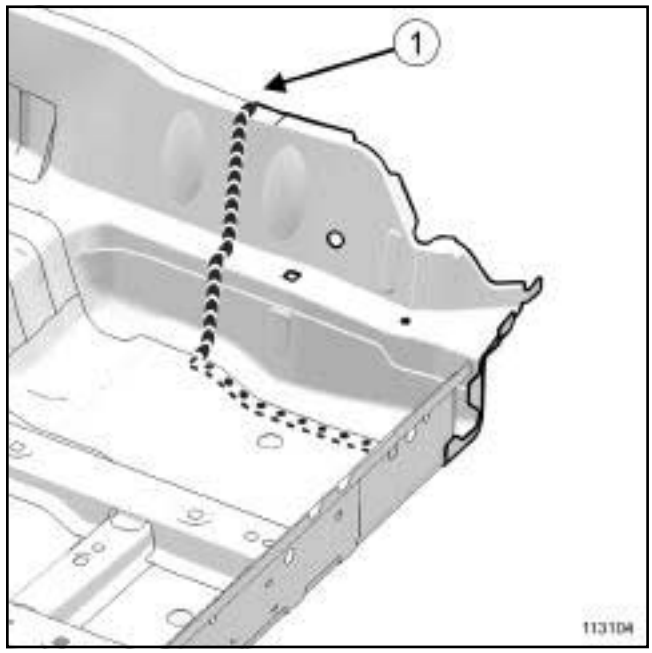
I - STRUCTURAL COMPONENT DESIGN



112595

This is a basic part; it simply fulfils the function of a rear floor front cross member stiffener.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



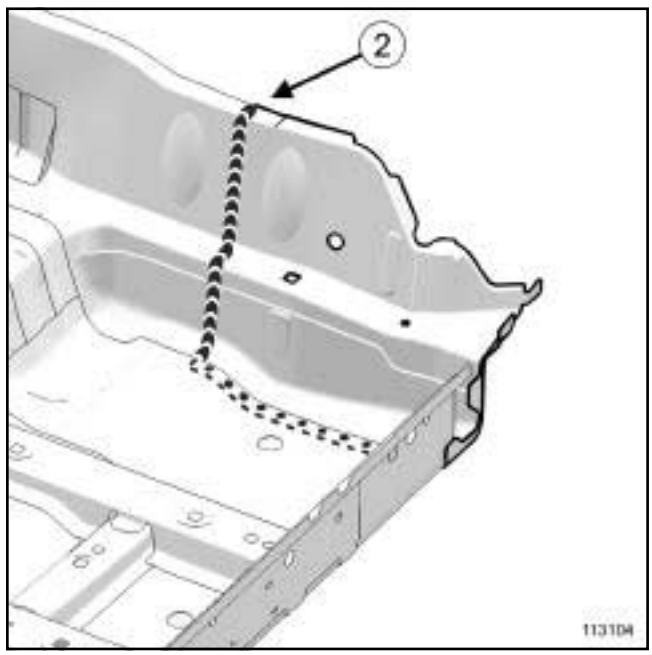
113104

This line (**1**) marks the place in which it is possible to make a partial replacement.

This operation allows you to access the inside of the hollow section of the structural element to straighten it.

III - ASSEMBLY INSTRUCTIONS FOR A PARTIAL REPLACEMENT

Only the connecting pieces relevant to partial replacement by cutting are shown.



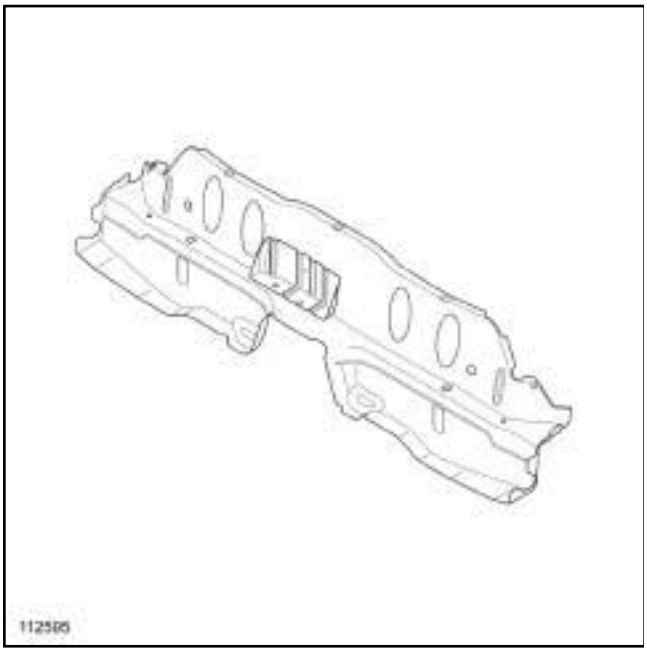
113104

Line (**2**) of the drawing shows a butt weld by continuous MAG welding.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, these should be replaced with plug welds after holes have been drilled in the first panel.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General information**).

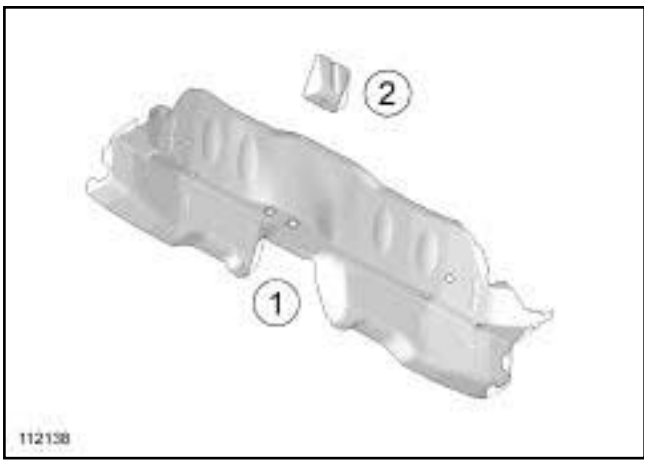


112595

The options for replacing this part are as follows:

- partial replacement of side section,
- complete replacement.

I - COMPOSITION OF THE SPARE PART



112138

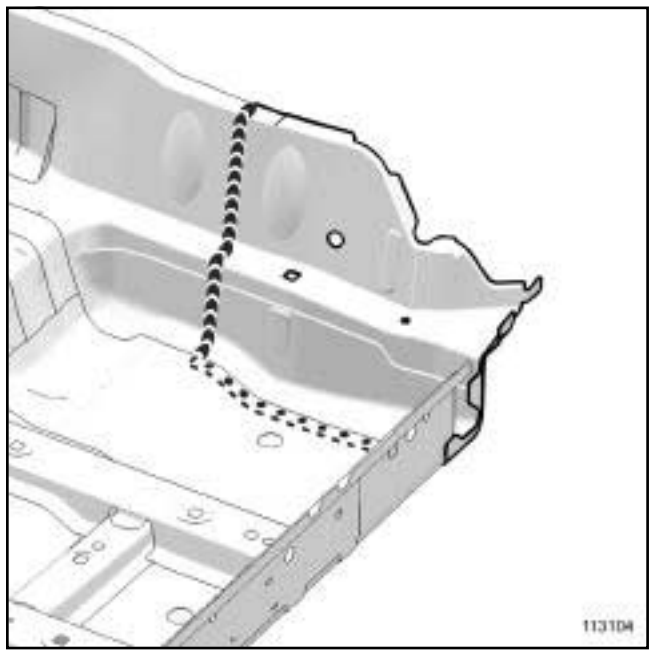
No.	Description	Type	Thickness (mm)
(**1**)	Front cross member reinforcement	HLE	1.2
(**2**)	Exhaust mounting bracket	HLE	2

II - PART IN POSITION

Partial replacement of side section

WARNING

The correct position of this cut must be observed, as it is determined according to the position of the reinforcements and the areas to be cut on adjacent parts.



113104

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

WARNING

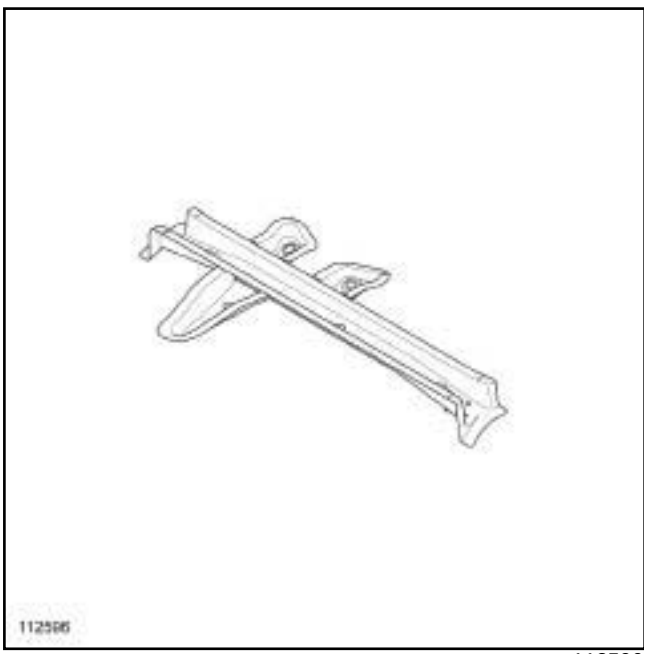
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

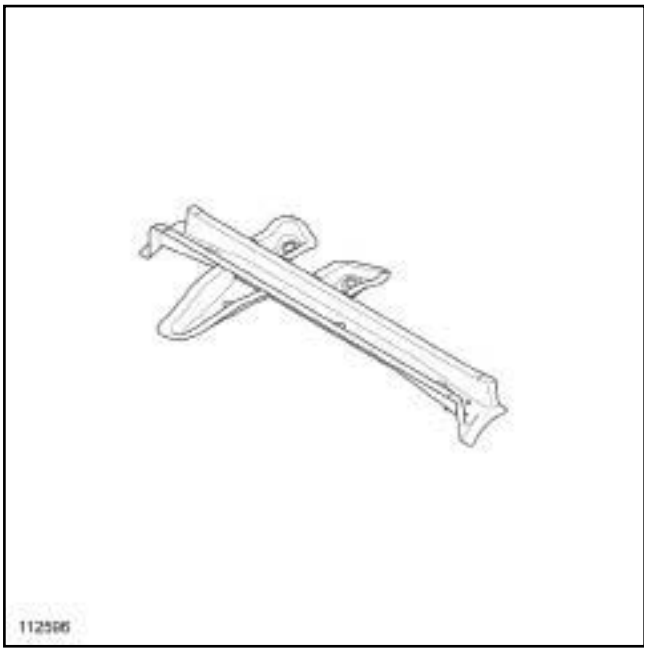
For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



112596

This is a basic part; it only fulfils the function of a rear floor centre cross member.



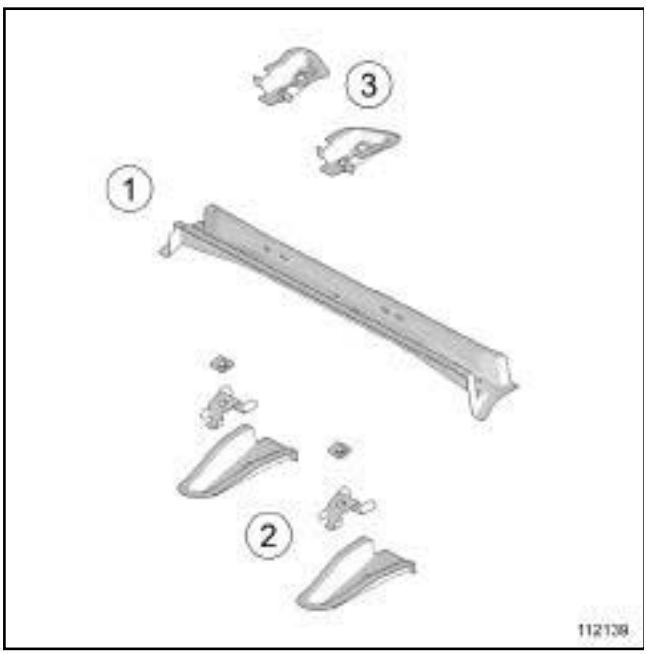
112596

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

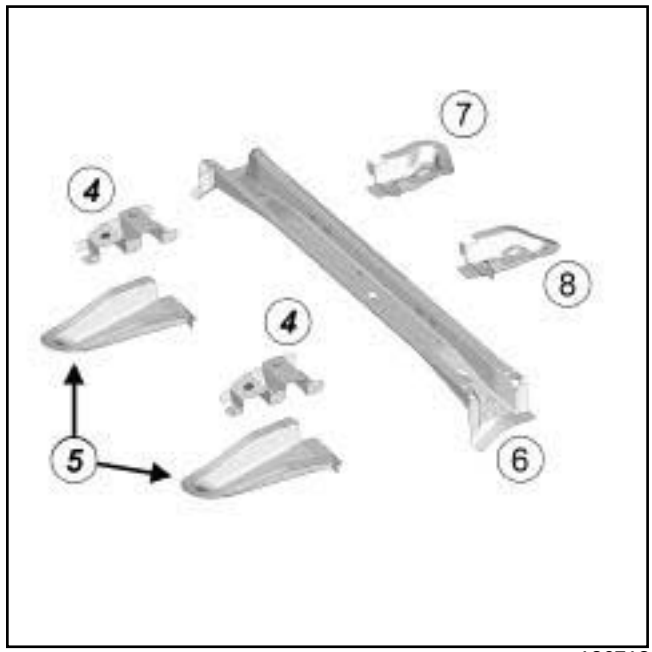
B85 or C85 or S85



112139

No.	Description	Type	Thickness (mm)
(**1**)	Rear centre cross member	HLE	**1.4**
(**2**)	Fuel tank protection component	HLE	**1**
(**3**)	Fuel tank mounting reinforcement	HLE	**1**

K85

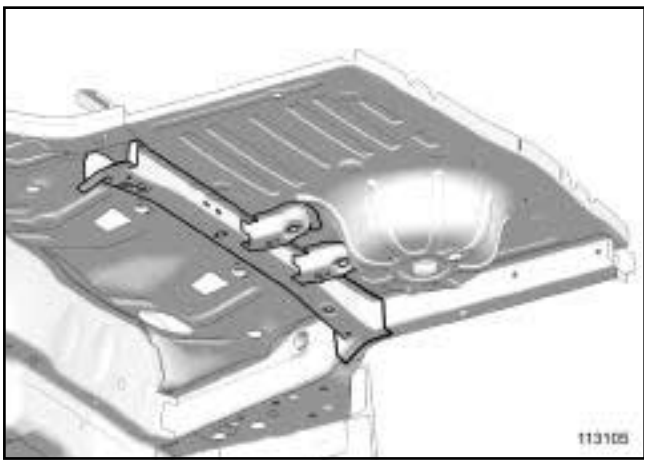


126712

No.	Description	Type	Thick-ness (mm)
(**4**)	Seat belt anchor-age point rein-forcement	HLE	**1.2**
(**5**)	Side member	HLE	**1.2**
(**6**)	Rear centre cross member	HLE	**1.2**
(**7**)	Tank mounting reinforcement	HLE	**1**
(**8**)	Fuel tank protec-tion component	HLE	**1**

II - PART IN POSITION

Complete replacement



113105

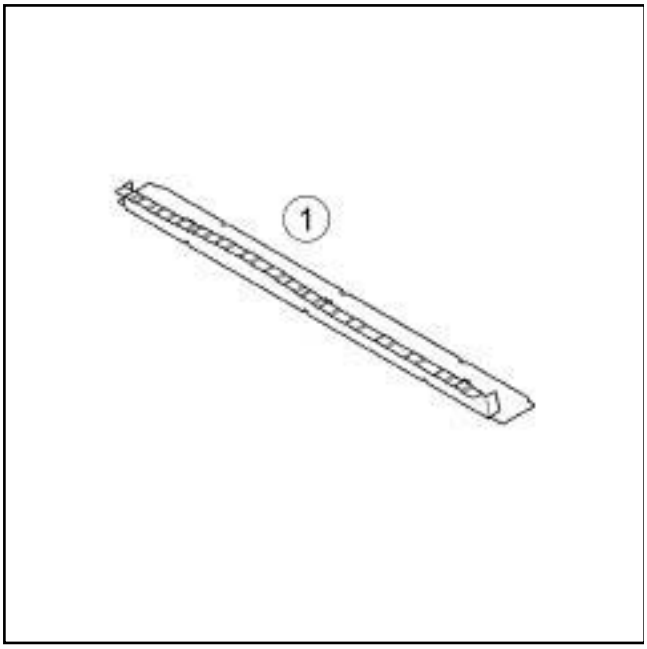
WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

For more detailed information on welded connec-tions with three thicknesses, see **MR 400**.

K85



126783

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

No.	Description	Type	Thick-ness (mm)
(1)	Rear floor rear cross member	HLE	**1.2**

II - PART IN POSITION

126713

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Tightening torques ▽	
side mounting nuts	**12 Nm**

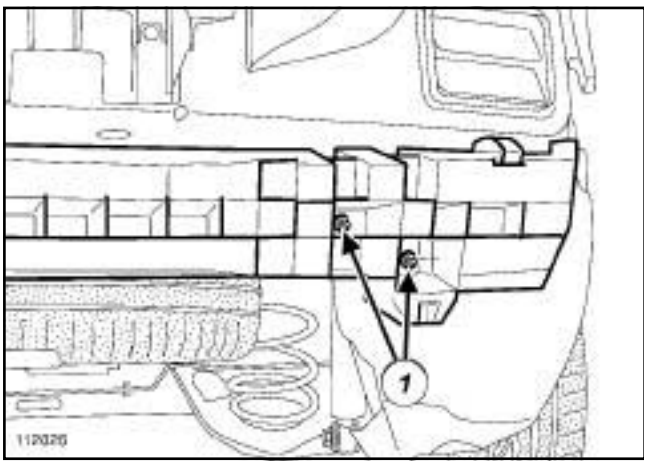
I - REMOVAL

1 - REMOVAL PREPARATION OPERATION

❏ Remove the two rear wing lights (see **Rear wing light: Removal - Refitting**) .

- Remove the rear bumper (see **Rear bumper: Removal - Refitting**) .

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112026

❏ Remove the side mounting nuts (**1**) (two on each side).

II - REFITTING

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit the side mounting nuts.

Torque tighten the ***(1)*** **side mounting nuts (12 Nm)**.

2 - FINAL operation

❏ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) .

- Refit the two rear wing lights (see **Rear wing light: Removal - Refitting**) .

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

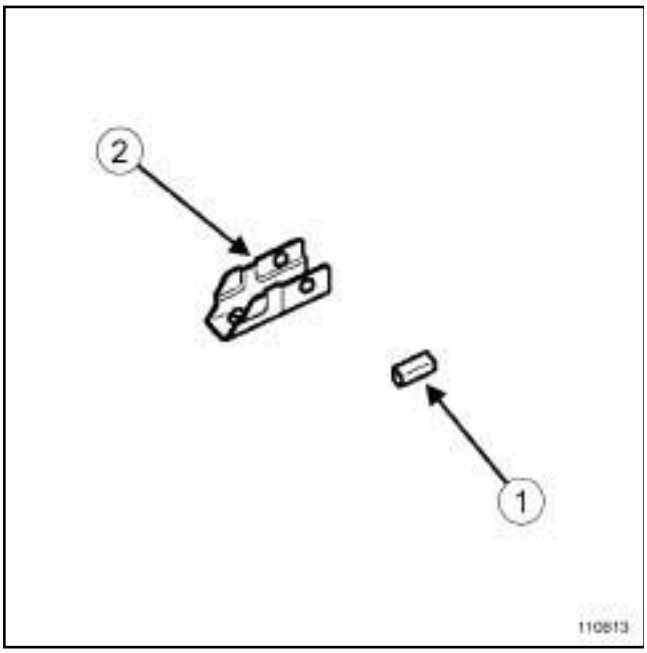
Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For detailed information about a specific connecting piece, see:

(**MR 400, 40A, General information**).

DESIGN OF THE STRUCTURAL COMPONENT



110613

This component is composed of two parts:

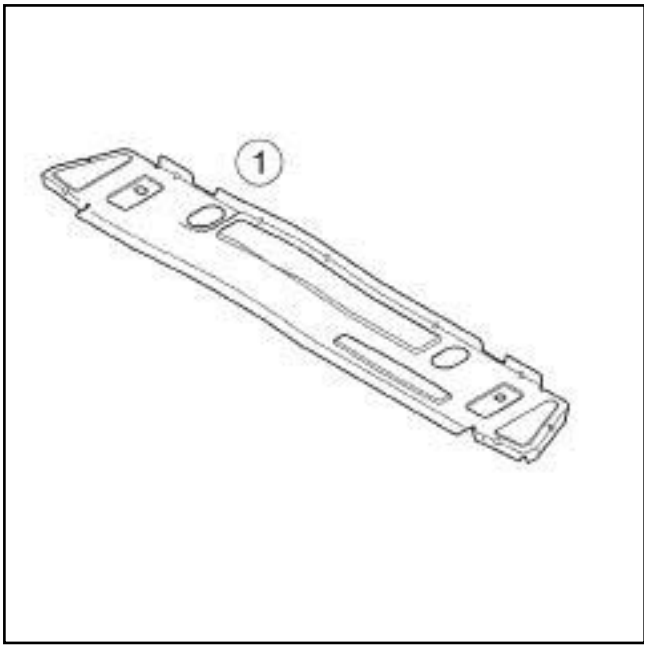
- tapped and welded tow eye (**1**) ,

- tow eye mounting (**2**) .

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

K85



126780

To replace this part, also order the centre floor reinforcement.

There is only one way of replacing this part:

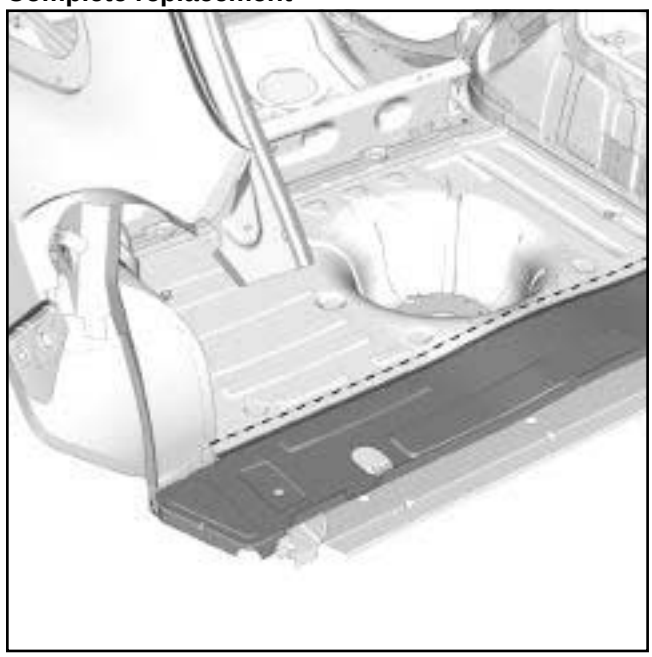
- complete replacement.

I - COMPOSITION OF THE SPARE PART

No.	Description	Type	Thickness (mm)
(1)	Allonge de plancher arrière	HLE	**0.65**

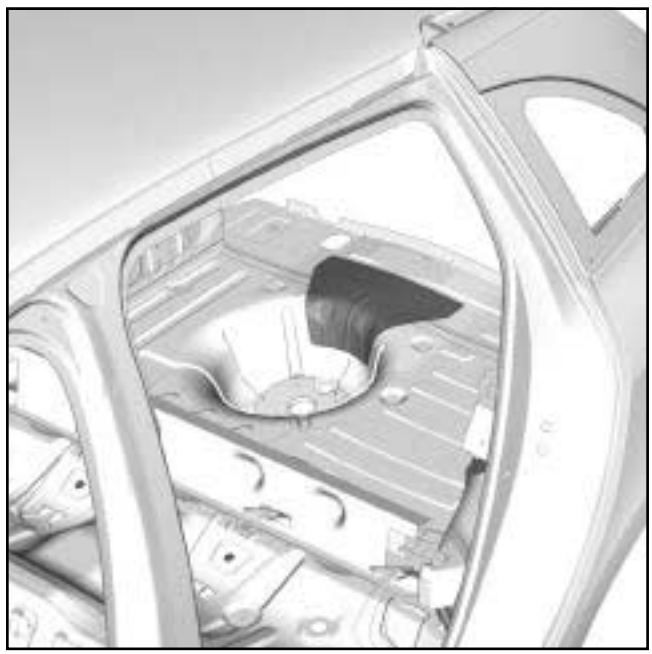
II - PART IN POSITION

Complete replacement



126710

Vue de détail 1

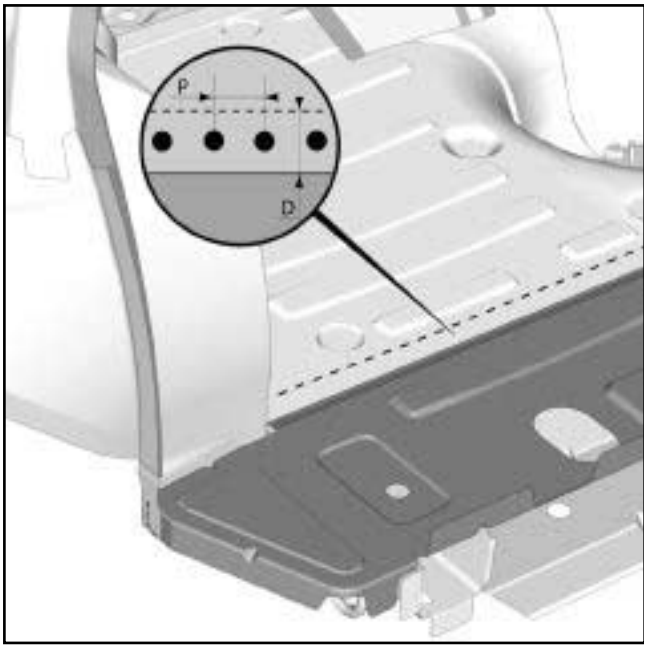


126709

Lors du remplacement de l'allonge de plancher arrière, commander en supplément le renfort bac de roue de secours.

K85

Vue de détail 2



126711

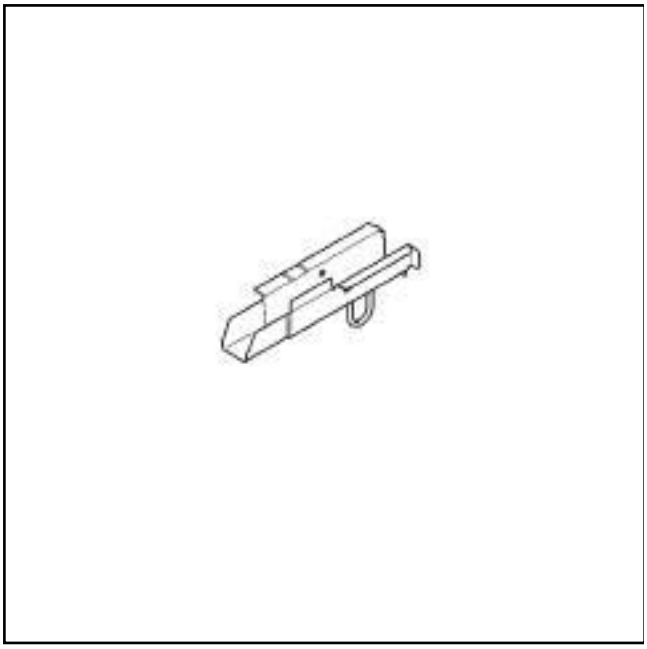
P = pas

D = distance de recouvrement

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

K85

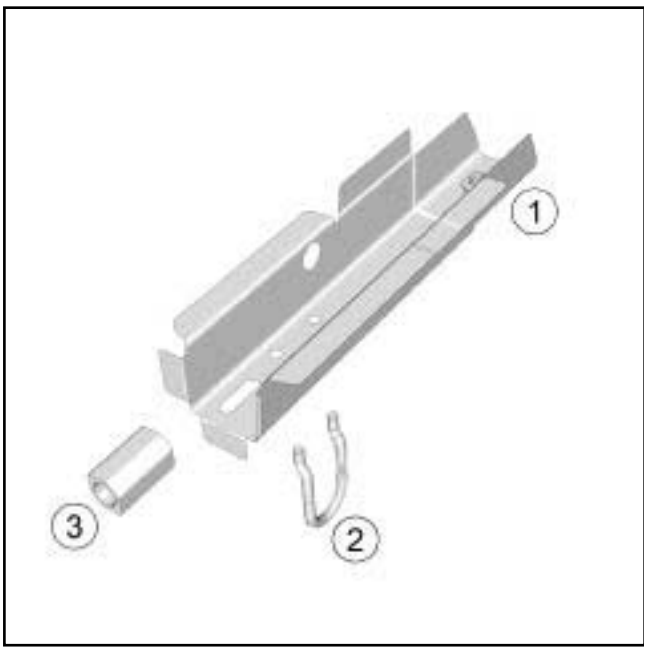


126782

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

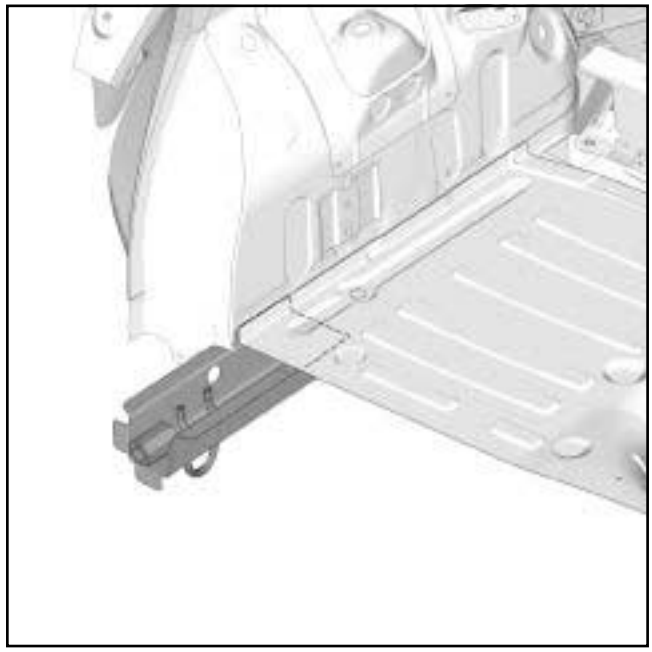


126708

No.	Description	Type	Thick-ness (mm)
(**1**)	Allonge de long-eron arrière droit	Mild steel	**2**
(**2**)	Rear towing ring		
(**3**)	Douille anneau d'arrimage	Mild steel	

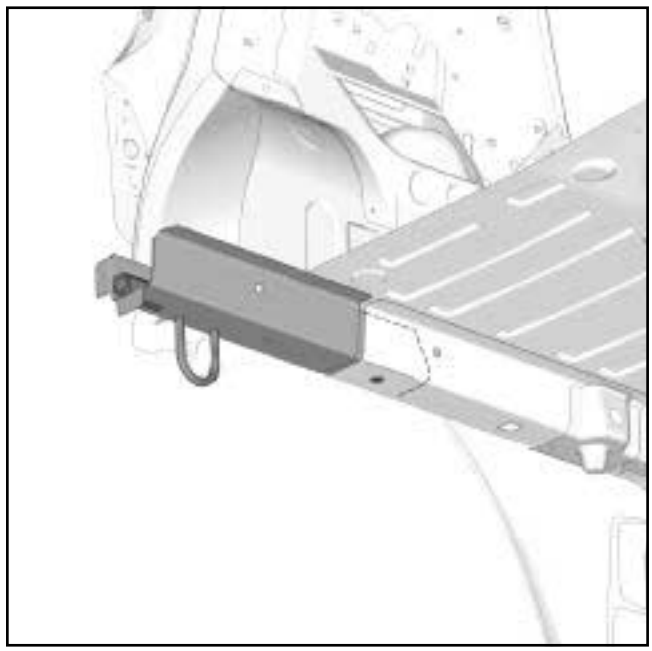
II - PART IN POSITION

Vue de dessus



126706

Vue de dessous



126707

K85

WARNING

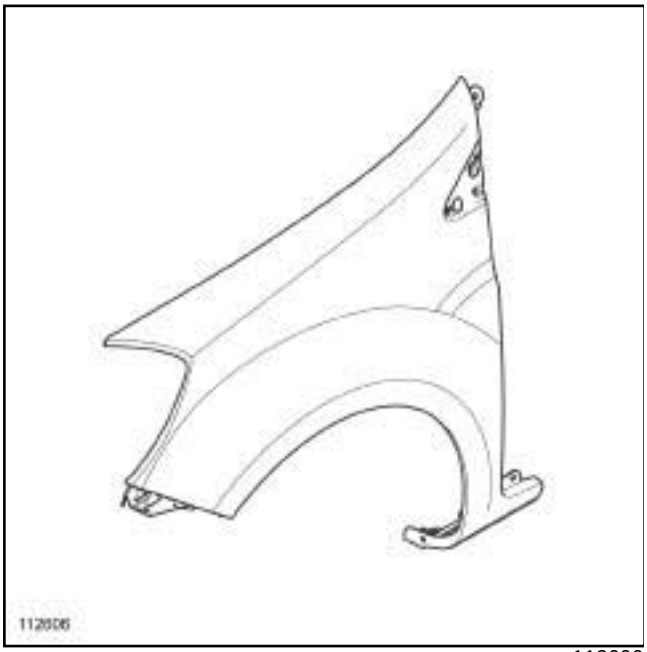
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

I - DESIGN OF THE STRUCTURAL COMPONENT



112606

This type of front wing has the following characteristics:

- plastic wing (NORYL),
- wing bolted to its upper mounting bracket.

II - REMOVAL - REFITTING

Note:

In all cases of removal of a component without its replacement with a new one, mark the position of the mountings before removing the mountings to avoid adjustments during refitting.

To remove or replace the front wing, remove:

- the front wheel arch liner,
- the front bumper,
- the headlight,
- the windscreen lower trim piece.

III - ADJUSTMENT

Note:

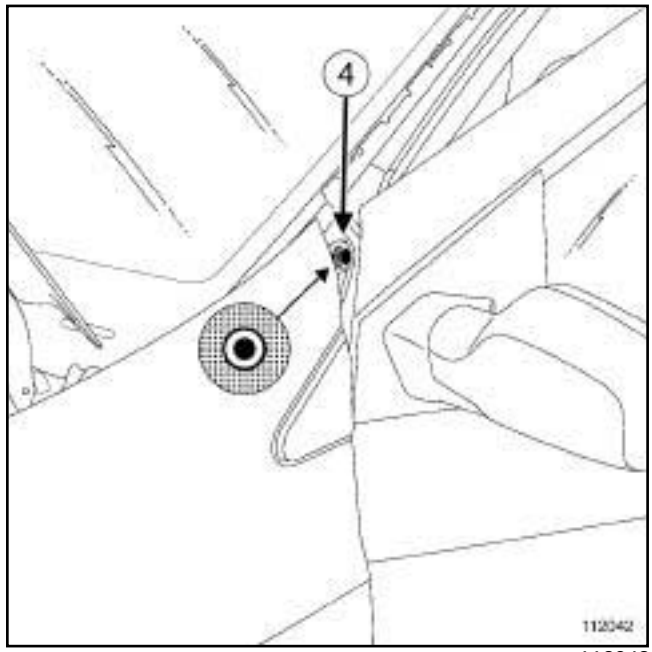
The front wing is the penultimate removable component to be fitted to the vehicle body in the factory.

For final adjustment, correctly position all the other components including the bumper and the headlights for them to be correctly positioned.

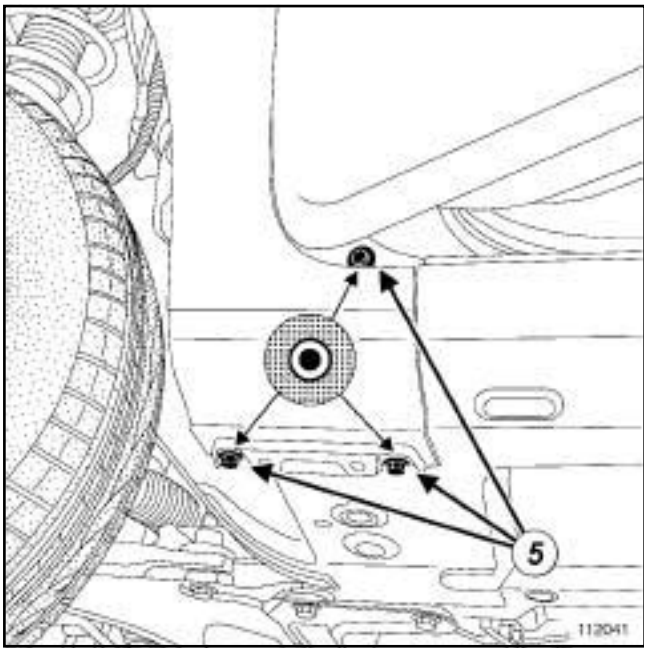
Two main areas of adjustment may be identified:

- the adjustment of the rear area,
- the adjustment of the front area

1 - Adjustment of the rear area:



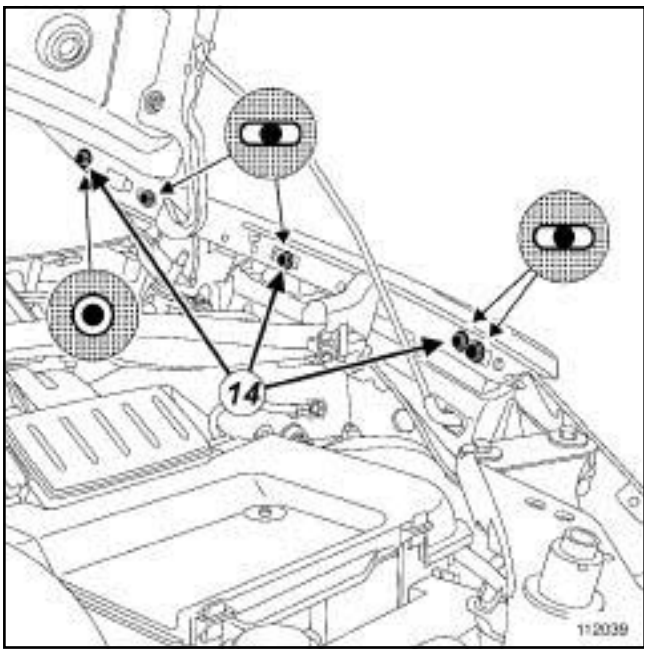
112042



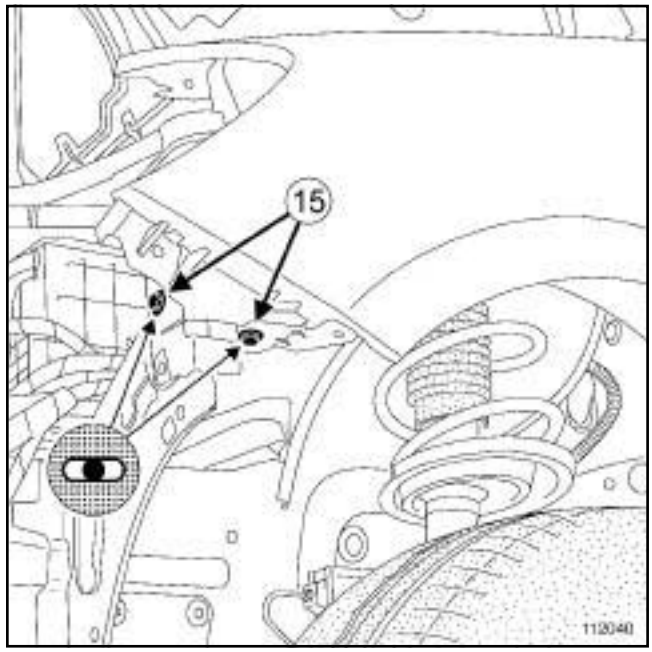
112041

Adjust the flush fitting and alignment with the front door using mountings (**4**) and (**5**) .

2 - Adjustment of the front area:



112039



112040

Adjust the alignment of the front wing using mountings (**14**) and (**15**) .

Tightening torques ▽	
bolt (1)	**6.5 Nm**
bolt (2)	**6.5 Nm**
bolt (3)	**6.5 Nm**
bolt (4)	**6.5 Nm**
bolt (5)	**6.5 Nm**
bolt (6)	**4.5 Nm**
bolt (7)	**4.5 Nm**
bolt (8)	**4.5 Nm**
bolt (9)	**6.5 Nm**
nut (10)	**4.5 Nm**

The front wing is a structural bodywork component made of thermoplastic, and can be removed.

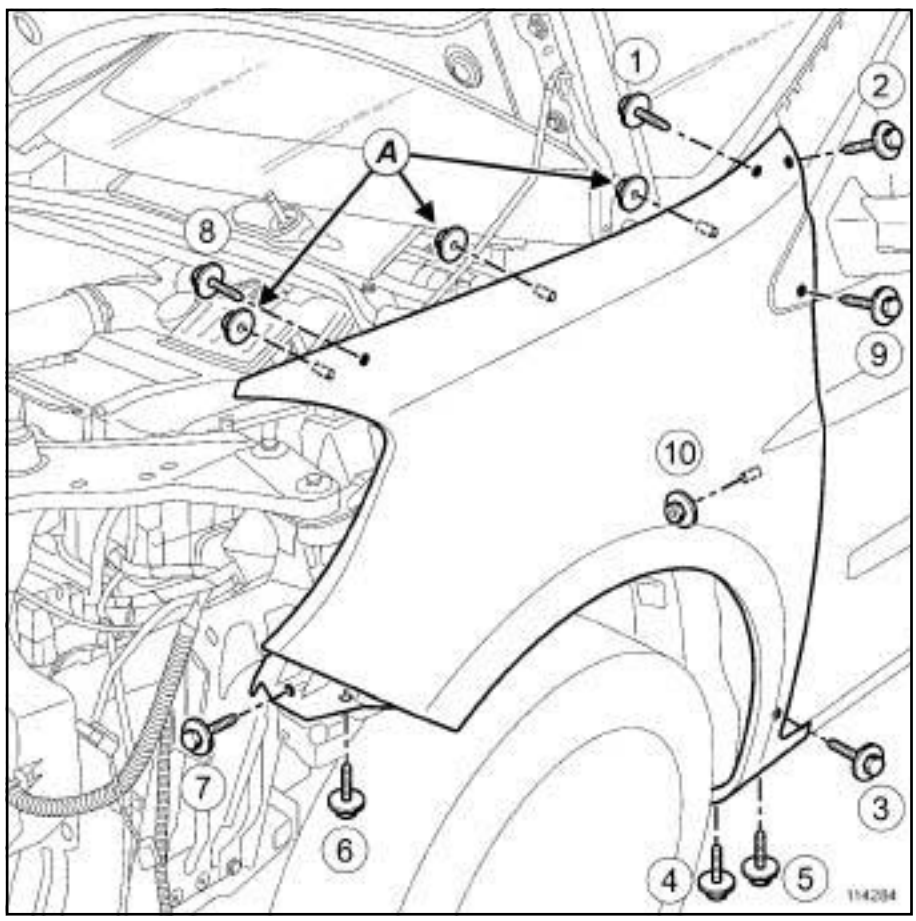
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlight (see) (MR 392, 80B, Headlights),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior accessories),
- the windscreen trim piece (see **Windscreen trim: Removal - Refitting**) (MR 393, 54A, Windows).

II - OPERATION FOR REMOVAL OF PART CONCERNED



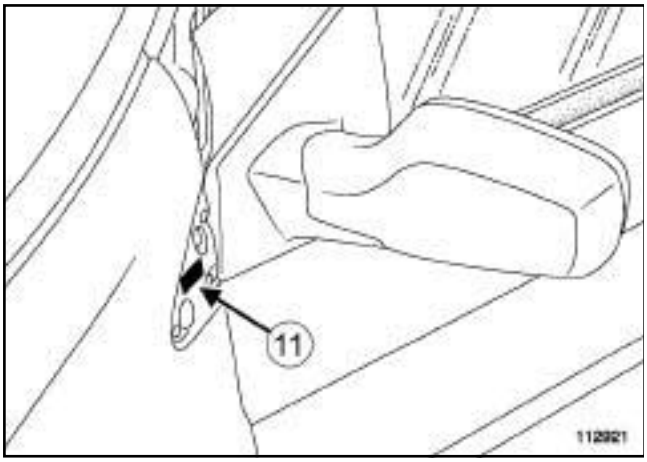
114284

❑ Remove:

- the front wing interior soundproofing material,
- the front wing mounting bolts,
- the mounting nut (**10**) ,
- the plastic nuts (**A**) ,
- the front wing.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112921

❑ In the event of a front wing replacement operation, provide the **Parts Department** with the details of the tyre dimensions written on the front wing (**11**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front wing,
- the plastic nuts ***(A)*** ,

Note:

Tighten the plastic nuts ***(A)*** moderately so as not to damage them.

❑ Refit:

- the front wing mounting bolts,
- the nut ***(10)*** ,
- the headlight (see) (MR 392, 80B, Headlights).

❑ Adjust the shut lines of the front wing. (see **42A**, **Front upper structure**, **Front wing: Adjustment**, page **42A-6**)

❑ Torque tighten:

- the **bolt (1) (6.5 Nm)**,
- the **bolt (2) (6.5 Nm)**,
- the **bolt (3) (6.5 Nm)**,
- the **bolt (4) (6.5 Nm)**,
- the **bolt (5) (6.5 Nm)**,
- the **bolt (6) (4.5 Nm)**,
- the **bolt (7) (4.5 Nm)**,
- the **bolt (8) (4.5 Nm)**,
- the **bolt (9) (6.5 Nm)**,
- **nut (10) (4.5 Nm)**.

WARNING

The tightening order must always be observed.

❑ Refit the front wing interior soundproofing material.

III - FINAL OPERATION.

❑ Refit:

- the windscreen trim piece (see **Windscreen trim: Removal - Refitting**) (MR 393, 54A, Windows),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior accessories),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

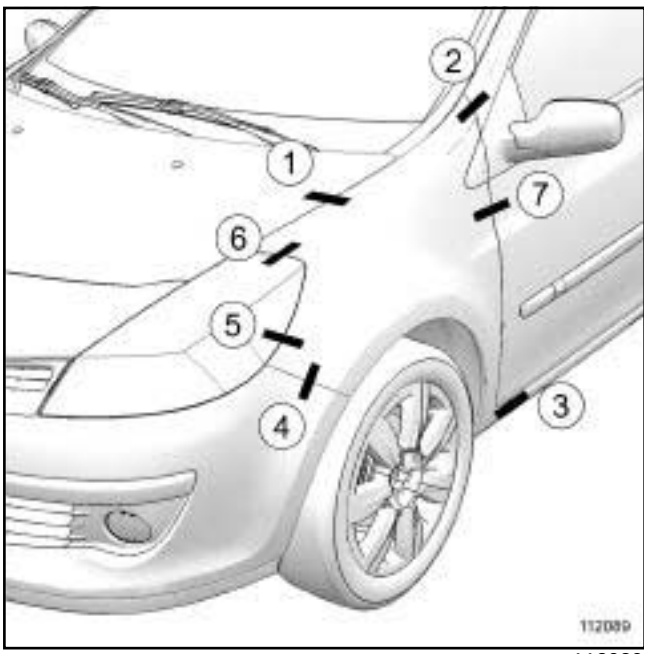
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

Tightening torques ▽	
bolt (A)	**6.5 Nm**
bolt (B)	**6.5 Nm**
bolts (D)	**6.5 Nm**
bolts (D)	**4.5 Nm**
bolt (E)	**4.5 Nm**
bolt (F)	**6.5 Nm**
nut (G)	**4.5 Nm**

ADJUSTMENT VALUES

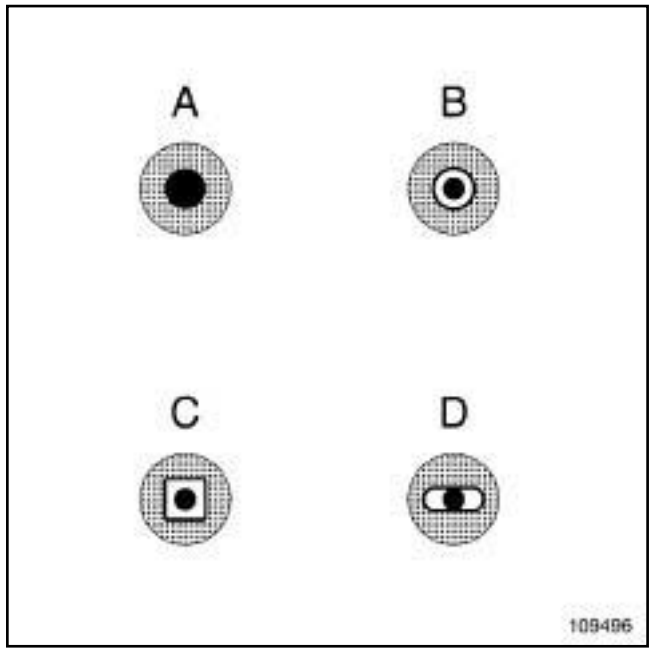
❏ For information regarding shut line values (see **Vehicle panel gaps: Adjustment value**) .

ADJUSTMENT



112089

❏ Observe the adjustment sequence.



109496

❏ Symbols A, B, C and D show the adjustment options.

The black dot in the centre represents the body of the bolt.

The grey section represents the component to be adjusted.

The white section represents the adjustment area.

I - ADJUSTMENT WITH BONNET

❏

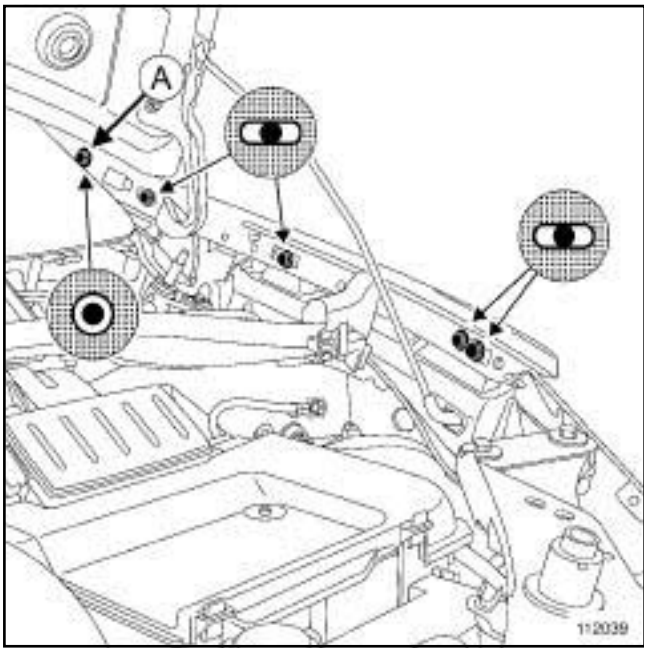
Note:

Adjust the front wing with bonnet during reinstallation of the front wing upper mounting support (see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**) .

II - ADJUSTMENT WITH BUMPER AND FRONT DOOR

❏ Remove:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front wing interior soundproofing material.



112039

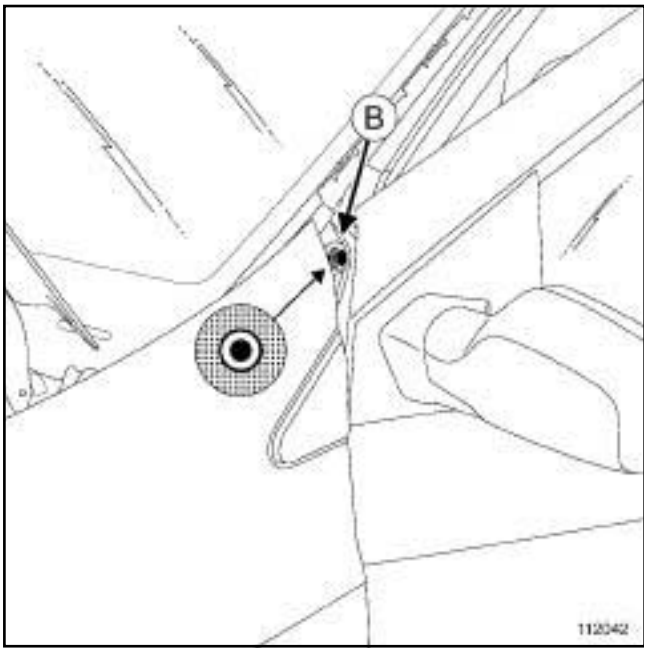
❏ Adjust the panel gaps with the front door.

❏ Torque tighten the **bolt (A) (6.5 Nm)**.

❏

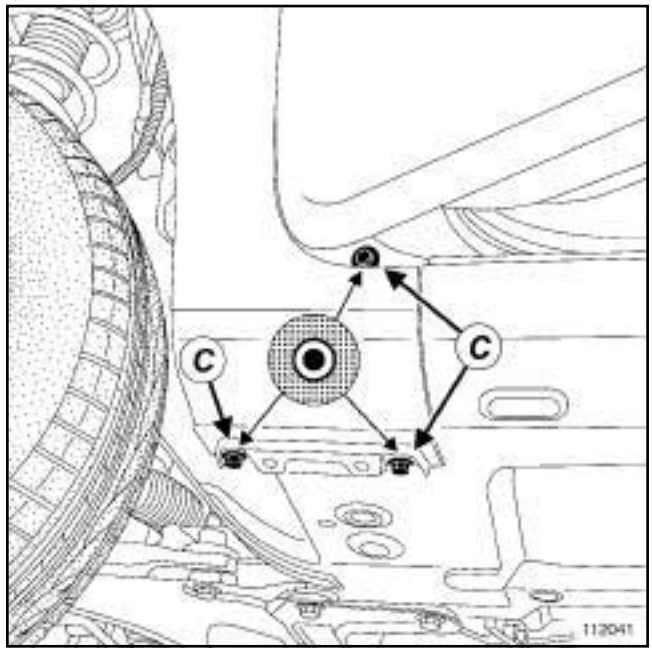
Note:

Tighten the plastic nuts moderately so as not to damage them.



112042

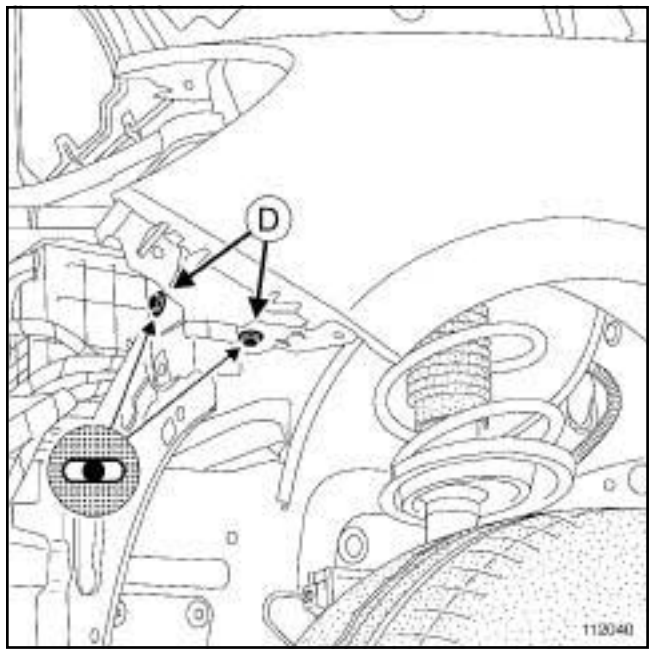
❏ Torque tighten the **bolt (B) (6.5 Nm)**.



112041

❏ Adjust the panel gaps with the front door and the sill panel.

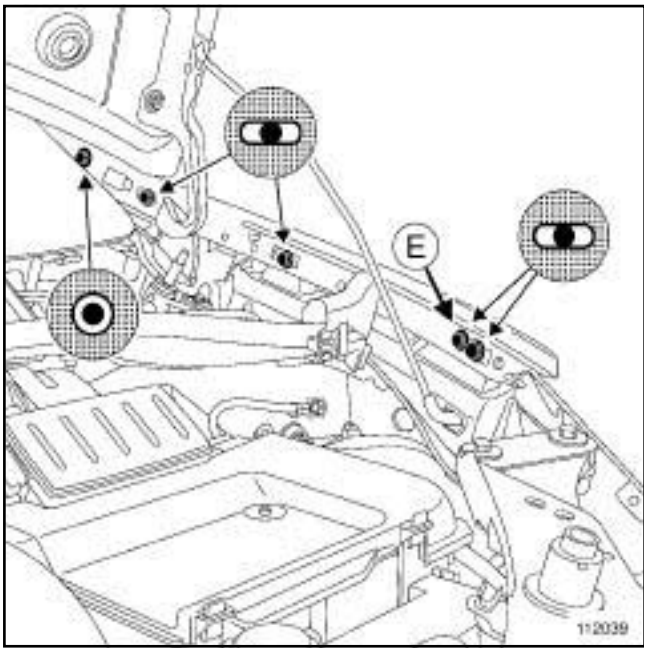
❏ Torque tighten the **bolts (D) (6.5 Nm)**.



112040

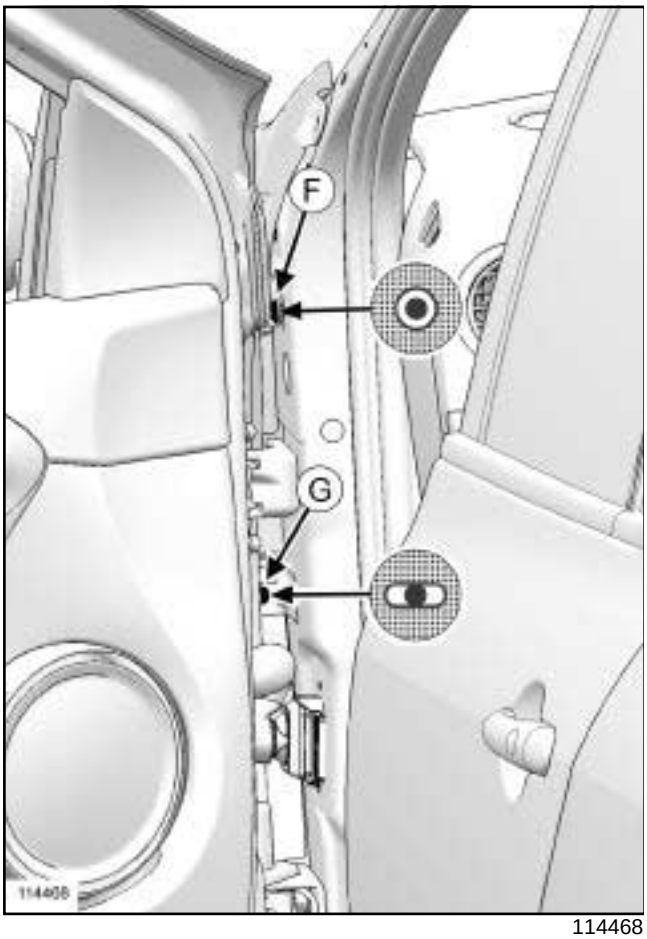
❏ Adjust the shut lines with the front bumper and the headlight.

❏ Torque tighten the **bolts (D) (4.5 Nm)**.



112039

❏ Torque tighten the **bolt (E) (4.5 Nm)**.



114468

❏ Adjust the panel gaps with the front door.

❏ Torque tighten:

- the **bolt (F) (6.5 Nm)**,
- the **nut (G) (4.5 Nm)**.

❏ Refit:

- the front wing interior soundproofing material,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) .

EQUIPMENT LEVEL EAG

For standardisation purposes, the Parts Department only supplies front wings that have no holes for attaching the sill panel extender mounting.

When replacing the front wing on a vehicle fitted with sill panel extenders, it is necessary to drill holes in the front wing in order to fit the original mounting.

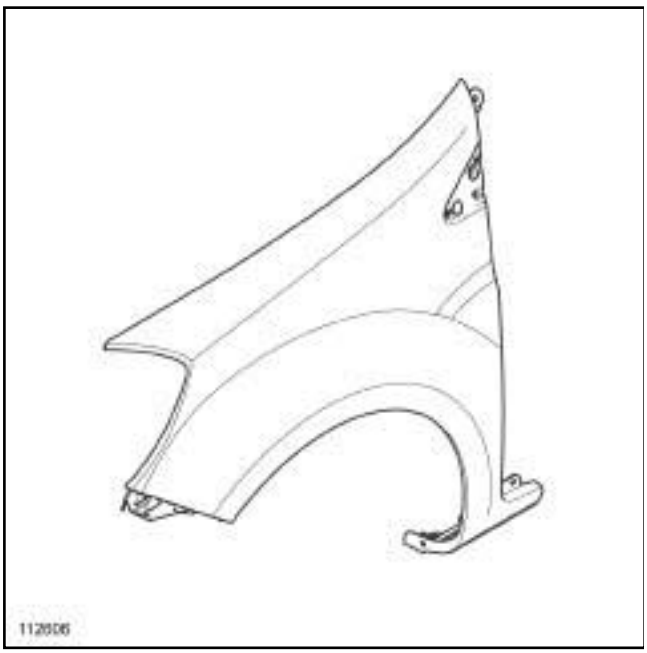
Note:

Below you will find the necessary operations for making the holes for the original sill panel extender mounting on the front wing.

Two cases are detailed:

- Case no. 1: making the holes for the original sill panel extender mounting before refitting the front wing on the vehicle.
- Case no. 2: making the holes for the original sill panel extender mounting after refitting the front wing on the vehicle.

I - COMPOSITION OF THE SPARE PART

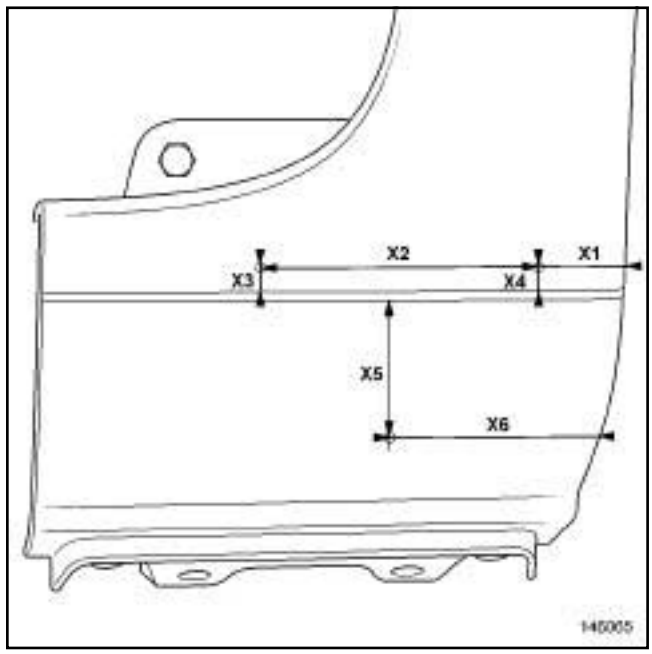


112606

❑ For a description of the front wing (see) (42A, Upper front structure).

II - SPECIAL NOTES ON THE CONVERSION

1 - Case no. 1:



146065

❑ Drill the three ∅ **5 mm** holes for the sill panel extender mounting at the following dimensions:

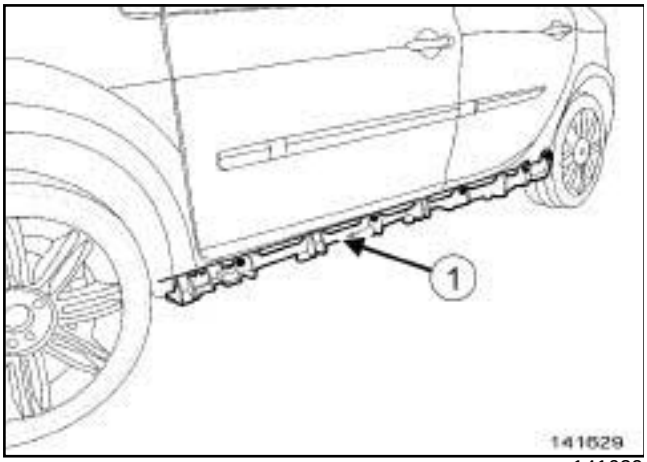
- X1 = **27.5 mm**,
- X2 = **87 mm**,
- X3 = **7.5 mm**,
- X4 = **7.5 mm**,
- X5 = **53.5 mm**,
- X6 = **70 mm**.

2 - Case no. 2:

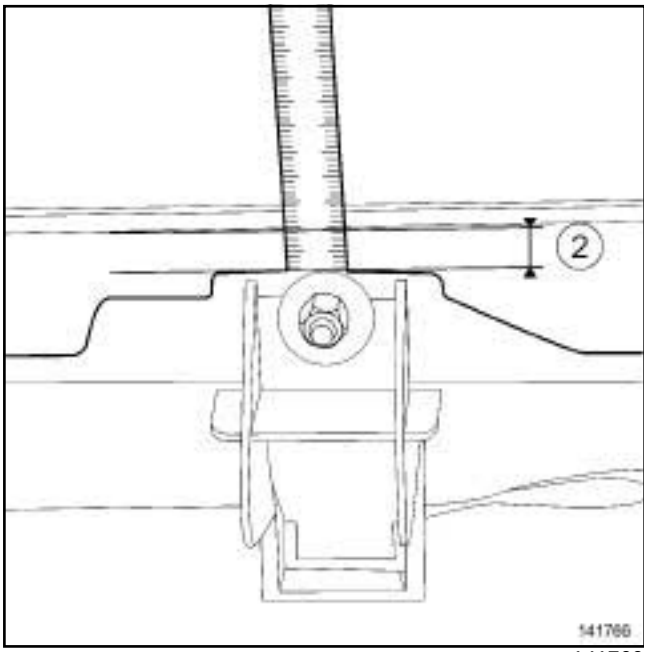
❑ Refit the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

❑ Adjust the front wing (see **42A**, **Front upper structure**, **Front wing: Adjustment**, page **42A-6**) .

EQUIPMENT LEVEL EAG



141629

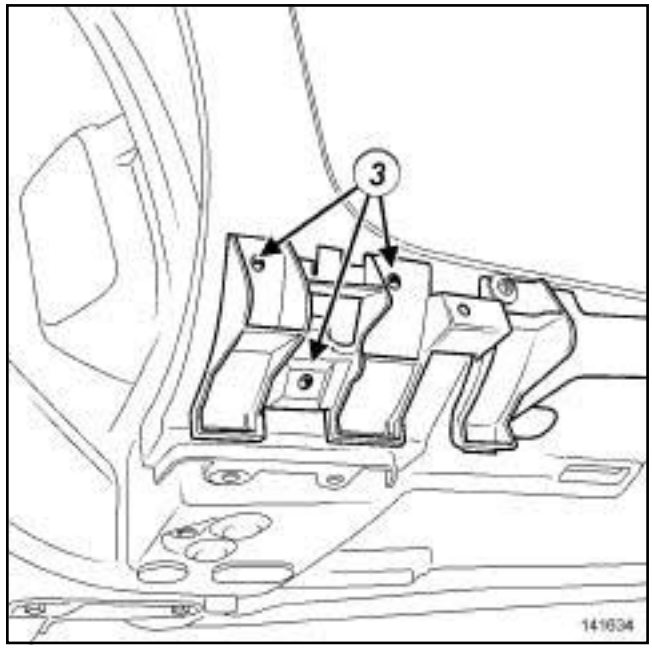


141766

❑ Fit the sill panel extender mounting (**1**) (see **Sill panel extension: Removal - Refitting**) (56A, Exterior equipment).

❑ Check the dimension (**2**) = **9.5 mm** between the crease line and the upper edge of the sill panel extender mounting (**1**) .

❑ Tighten the nuts.



141634

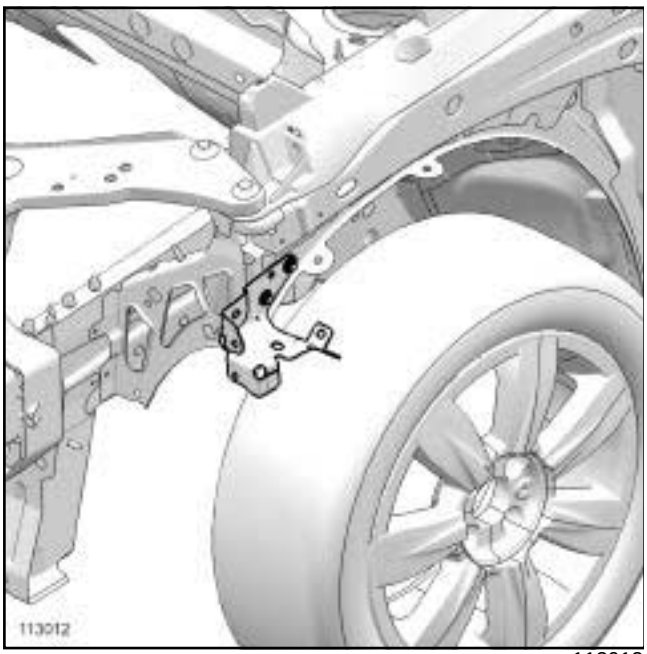
❑ Drill the three ∅ **5 mm** (**3**) holes for the sill panel extender mounting.

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT



113012

This is a basic part, it fulfils the function of a front wing lower mounting support and it enables the front wing to be adjusted in the Y axis.

This part is bolted to the scuttle side panel.

Tightening torques ▽	
nuts (1)	**6.5 Nm**

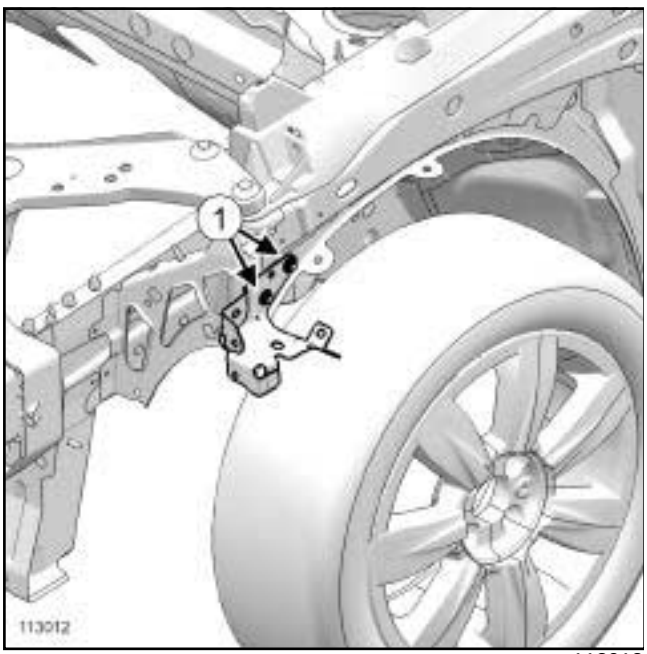
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlight (see) (MR 392, 80B, Headlights),
- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113012

❑ Remove:

- the nuts (**1**) ,
- the front wing lower mounting support.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front wing lower mounting support,
- the nuts ***(1)*** .

❑ Torque tighten the **nuts (1) (6.5 Nm)**.

II - FINAL OPERATION.

❑ Refit:

- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,
- the headlight (see) (MR 392, 80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT

112030

This is a basic part, it fulfils the function of front wing upper mounting support and it enables the front wing to be adjusted in the X and Y axes.

Tightening torques ▽	
front panel indexing bolts (3)	**21 Nm**
front wing upper mounting support bolts (1)	**8 Nm**
nuts (2) of the front panel mounting	**21 Nm**

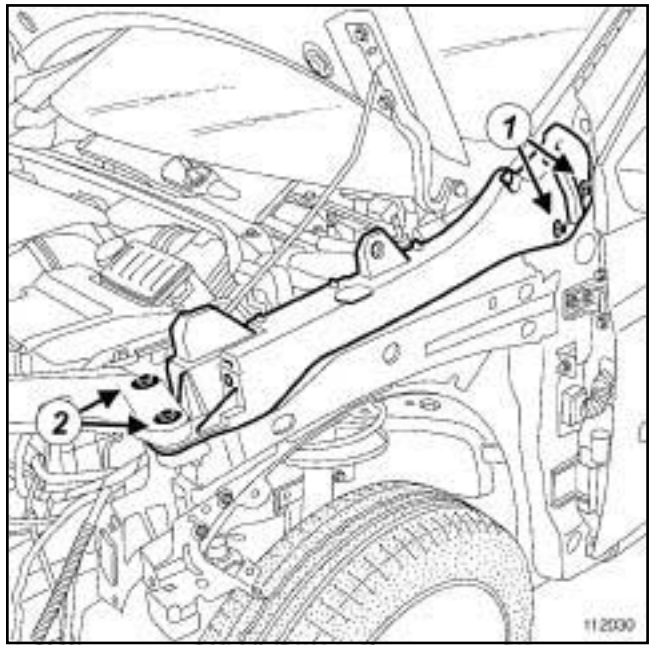
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheel arch liner, front section (see **Front wheel arch liner: Removal - Refitting**) ,
- (see **Front bumper: Removal - Refitting**) ,
- the front headlights (see) ,
- the front impact cross member (see **41A**, **Front lower structure**, **Front impact cross member: Removal - Refitting**, page **41A-2**) .
- Remove the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

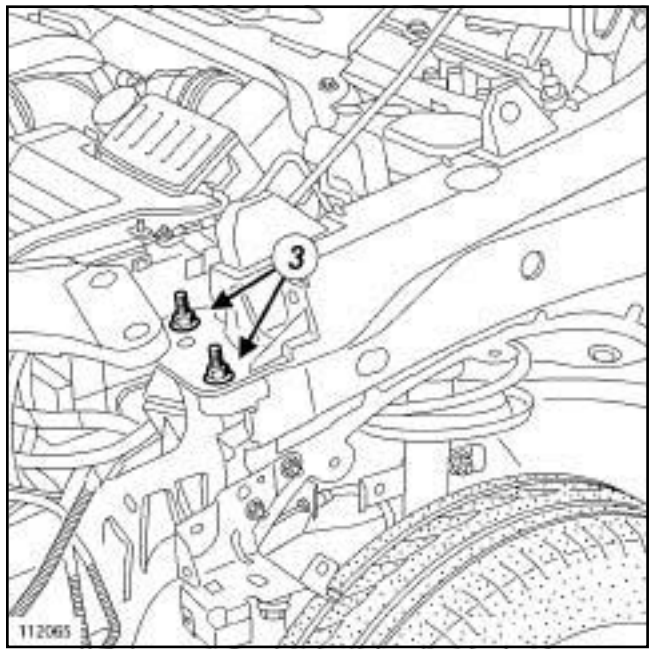
II - OPERATION FOR REMOVAL OF PART CONCERNED



112030

❑ Remove:

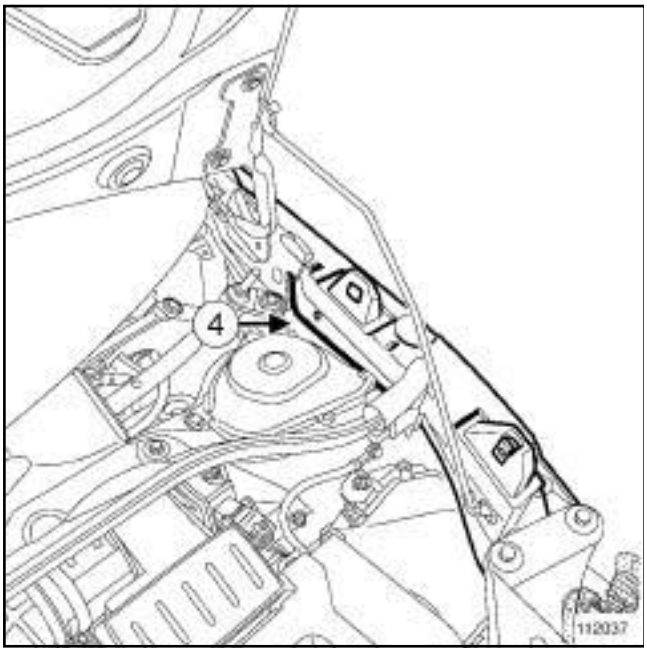
- the bolts (**1**) ,
- the mounting nuts (**2**) from each side of the front end panel (see **42A**, **Front upper structure**, **Front end panel: Removal - Refitting**, page **42A-18**) .



112065

❑ Partly remove the front end panel.

❑ Remove the indexing bolts (**3**) from the front end panel.



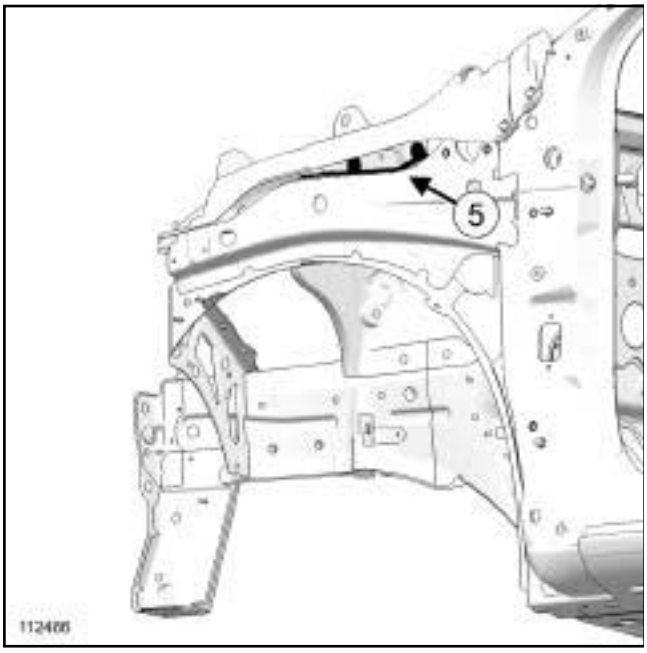
112037

❏ Cut out the expanding insert (**4**) .

❏ Remove the front wing upper mounting support.

REFITTING

I - REFITTING PREPARATIONS OPERATION



112486

❏ Fit the new expanding insert (**5**) on the upper mounting support of the front wing.

❏ Put a preformed mastic bead on the expanding insert.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front wing upper mounting support,
- the bolts ***(1)*** ,
- the indexing bolts ***(3)*** .

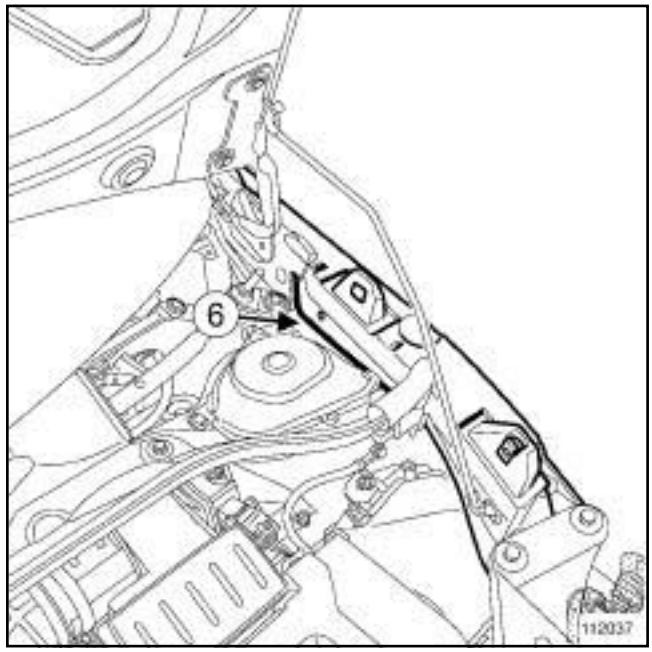
❏ Position the front wing on its bracket.

❏ Adjust the shut lines of the front wing. (see **42A**, **Front upper structure**, **Front wing: Adjustment**, page **42A-6**)

❏ Torque tighten the **front panel indexing bolts (3) (21 Nm)**.

❏ Remove the front wing.

❏ Torque tighten the **front wing upper mounting support bolts (1) (8 Nm)**.



112037

❏ Place an (**6**) **MJP** type seal at the expanding insert.

❏ Refit:

- the front end panel,
- the front panel mounting nuts ***(2)*** .

❏ Torque tighten the **nuts (2) of the front panel mounting (21 Nm)**.

III - FINAL OPERATION.

❏ Refit:

- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,

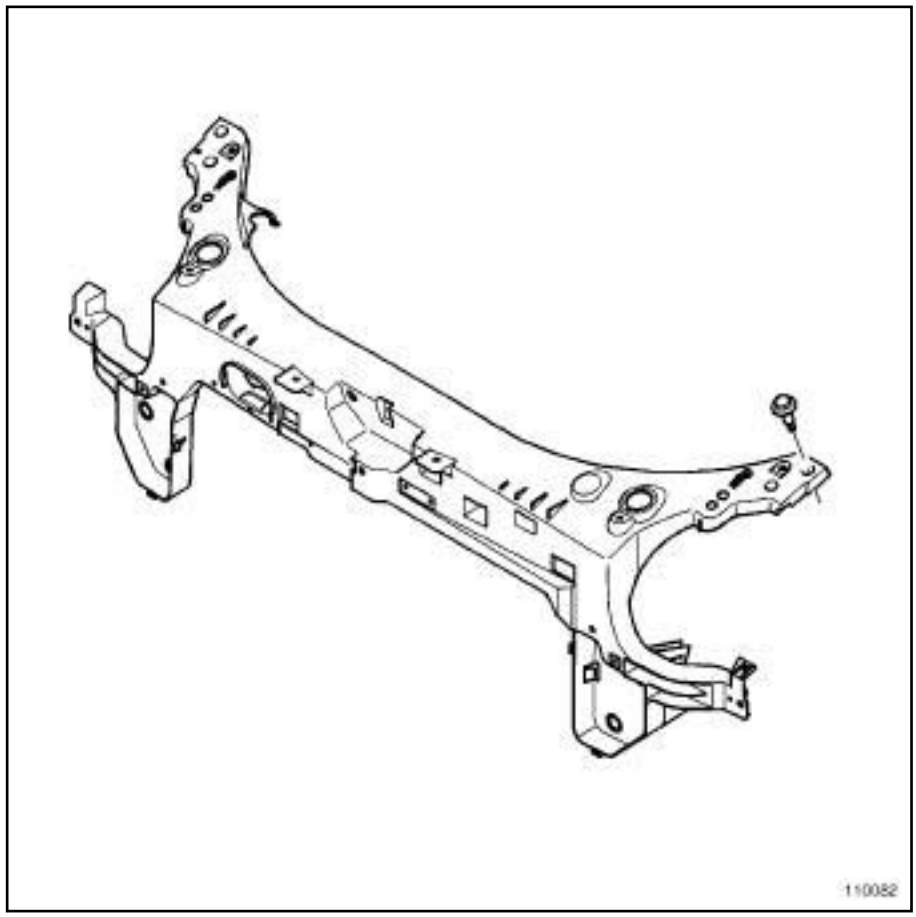
- the front impact cross member (see **41A**, **Front lower structure**, **Front impact cross member: Removal - Refitting**, page **41A-2**) .
- the front headlights (see) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front wheel arch liner, front section (see **Front wheel arch liner: Removal - Refitting**) .

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT



110082

A special feature of this part is that it is made out of composite materials; it cannot be repaired and is bolted onto the vehicle.

This part is attached to the ends of the front side member and cannot be adjusted.

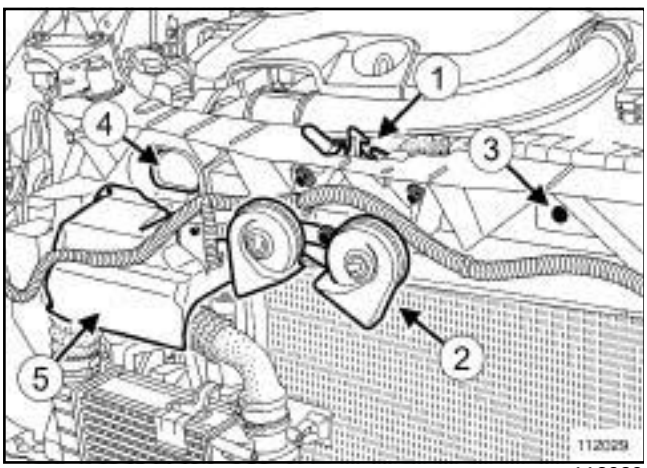
Tightening torques ▽	
nuts (7) of the front panel mounting	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the front wheel arch liner, front section (see **Front wheel arch liner: Removal - Refitting**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front headlights (see) ,
- the front impact cross member (see **41A**, **Front lower structure**, **Front impact cross member: Removal - Refitting**, page **41A-2**) .



112029

❏ Remove:

- the bonnet catch (**1**) (see **Bonnet lock: Removal - Refitting**) ,
- the buzzer (**2**) (see **Audible warning: Removal - Refitting**) ,
- the clip (**3**) from the expansion bottle.

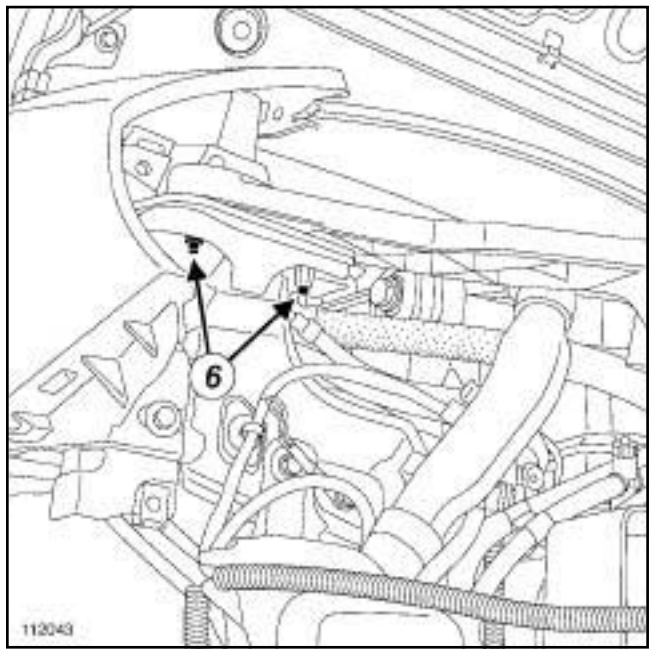
❏ Extract the expansion bottle from the front end panel.

❏ Unclip the wiring harness from the front end panel.

❏ Remove (depending on equipment level):

- the air inlet nozzle (**4**) ,
- the intercooler cover (**5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

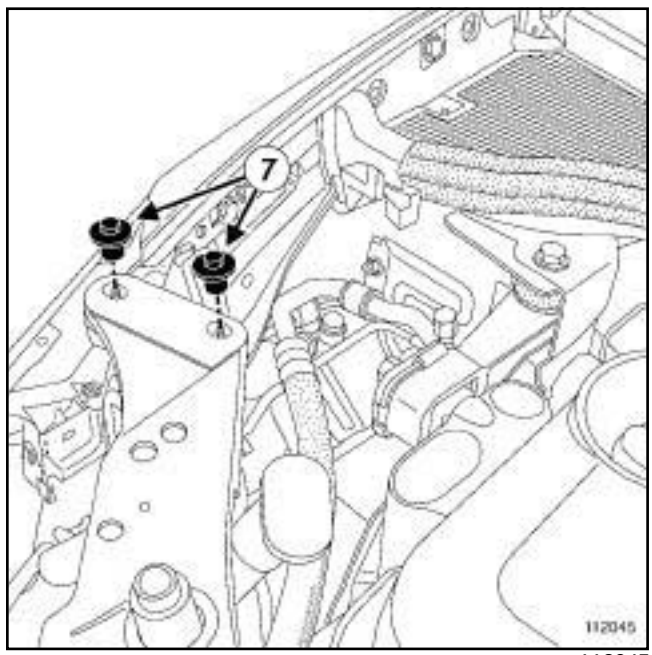


112043

❏

Note:

To maintain the adjustment of the front end panel, hold the indexing bolts (**6**) in position with a **5 mm** spanner while loosening the nuts.



112045

❏ Remove:

- the mounting nuts (**7**) ,
- the front end panel.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front end panel,
- the mounting nuts ***(7)*** .

❏ Torque tighten the **nuts (7) of the front panel mounting (21 Nm)**.

II - FINAL OPERATION.

❏ Refit (depending on equipment level):

- the intercooler cover ***(5)*** ,
- the air inlet nozzle ***(4)*** .

❏ Insert the expansion bottle into the front end panel.

❏ Refit:

- the clip ***(3)*** to the expansion bottle,
- the wiring harness,
- the buzzer ***(2)*** (see **Audible warning: Removal - Refitting**) ,
- the bonnet catch ***(1)*** (see **Bonnet lock: Removal - Refitting**) ,
- the front impact cross member (see **41A**, **Front lower structure**, **Front impact cross member: Removal - Refitting**, page **41A-2**) ,
- the front headlights (see) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front wheel arch liner, front section (see **Front wheel arch liner: Removal - Refitting**) .

Note:

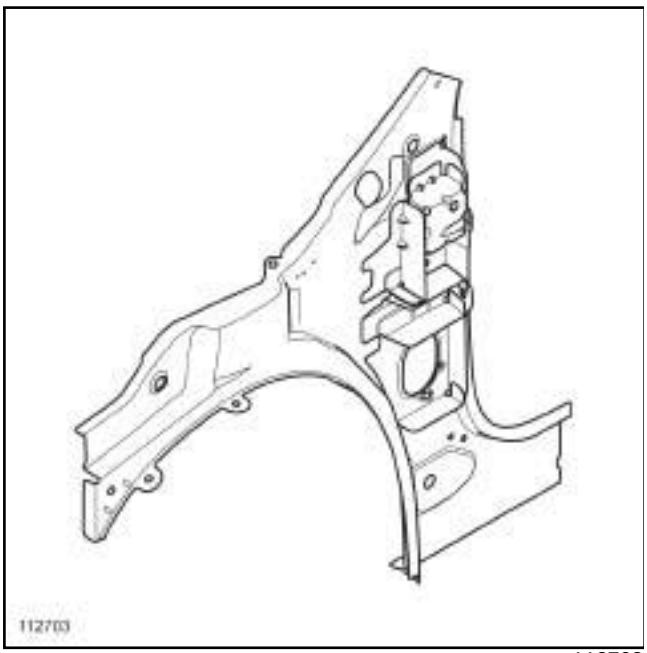
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT



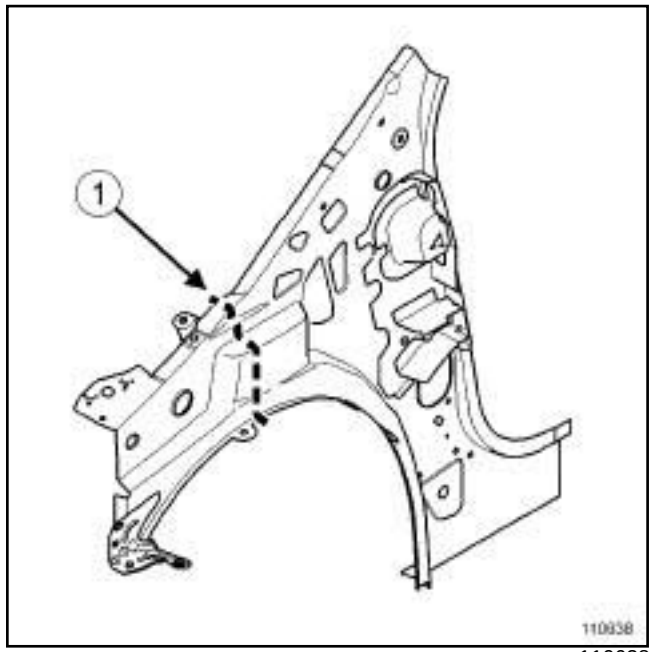
112703

The special feature of this part it that it concurrently serves two functions:

- scuttle side panel,

- A-pillar lining.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110638

Cutting line (**1**) shows the area in which it is possible to make a cut.

This operation allows you to access the inside of the hollow section.

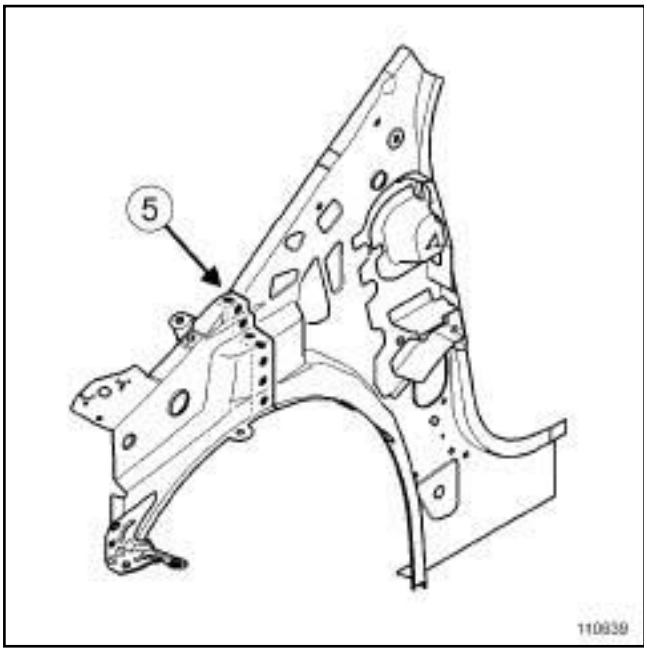
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

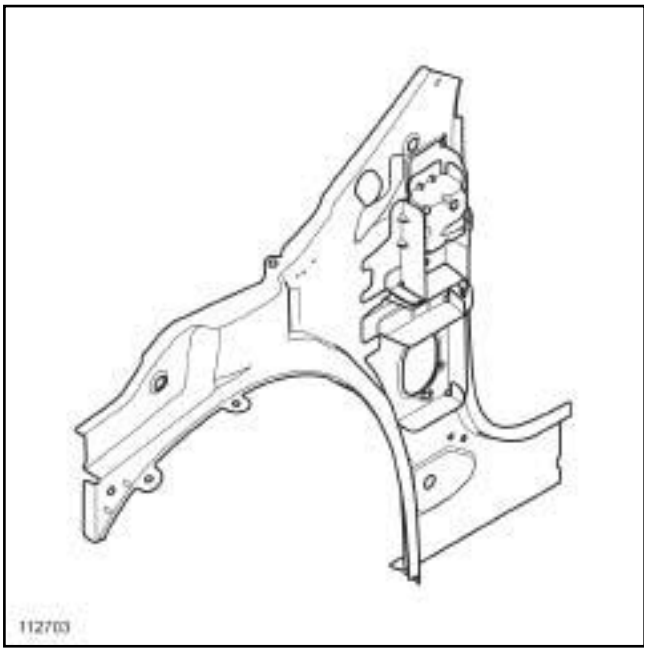
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110639

Line (**5**) on the diagram shows partial replacement and a weld by joggling with plug welds at regular intervals.

Depending on the exact position of the cut, EGW butt welding may also be used.

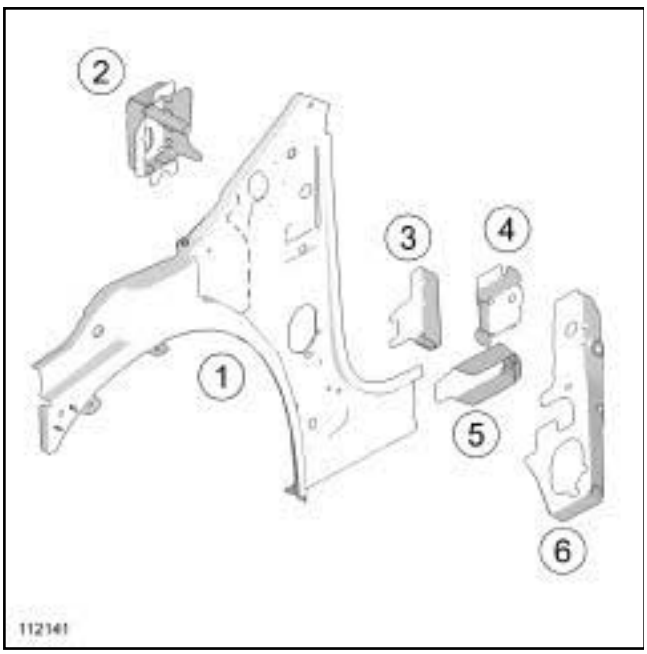


112703

The options for replacing this part are as follows:

- partial replacement of front end section,
- partial replacement of the front section,
- complete replacement.

I - COMPOSITION OF THE SPARE PART

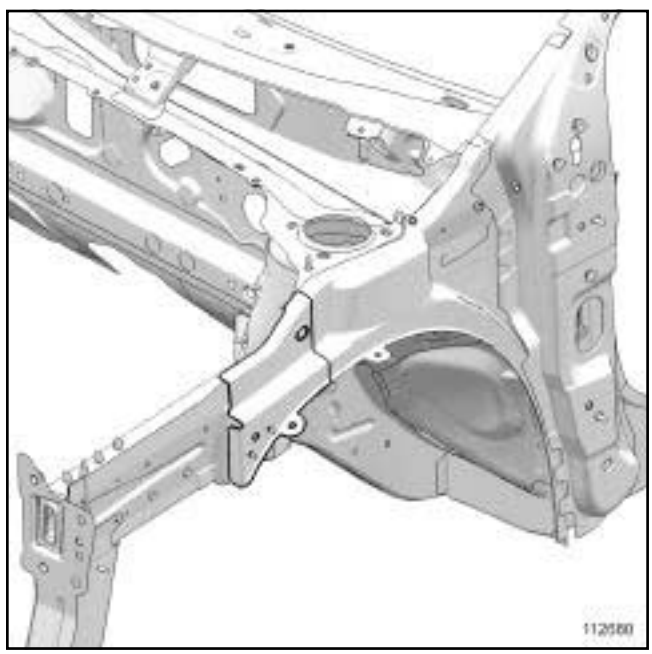


112141

No.	Description	Type	Thickness (mm)
(**1**)	A-pillar lining	HLE	**0.85**
(**2**)	Dashboard cross member mounting unit	HLE	**2**
(**3**)	A-pillar lining connecting bracket	Very high yield strength	**2**
(**4**)	A-pillar upper reinforcement	HLE	**2**
(**5**)	A-pillar lower reinforcement	Very high yield strength	**2.5**
(**6**)	A-pillar lining reinforcement	HLE	**1.5**

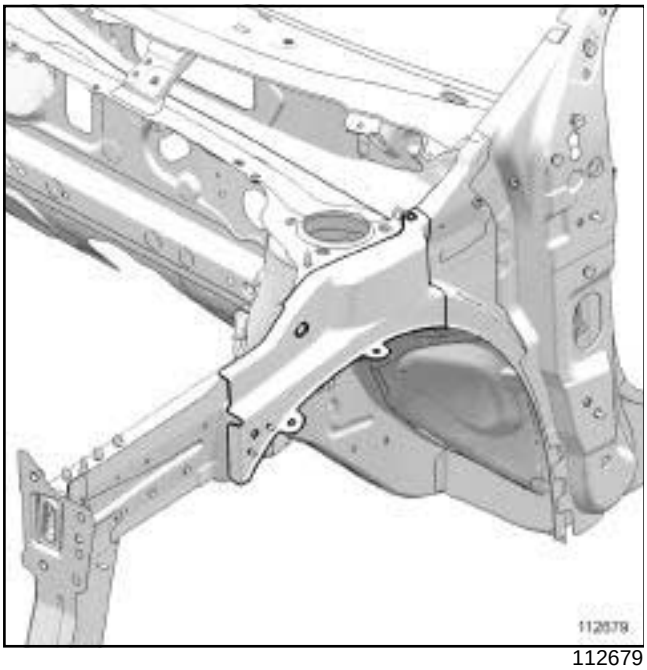
II - PART FITTED

1 - Partial replacement of the front end section



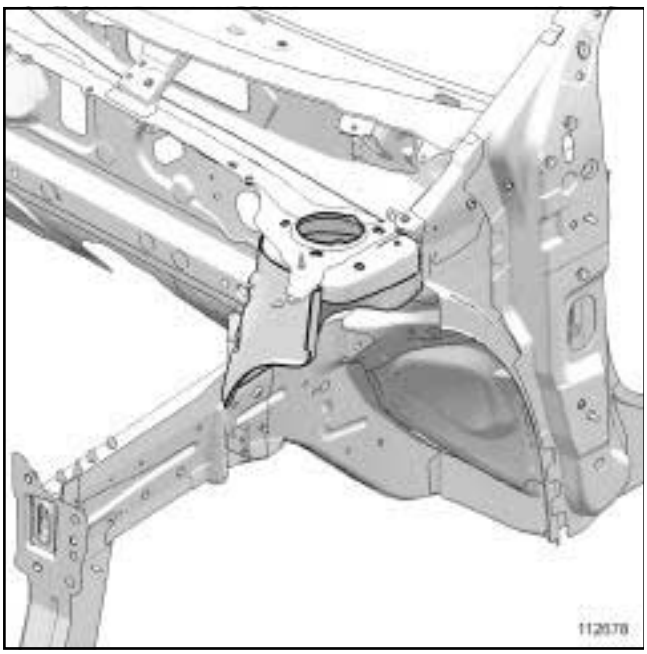
112680

2 - Partial replacement of the front section



112679

This cut gives access to the front wheel arch.



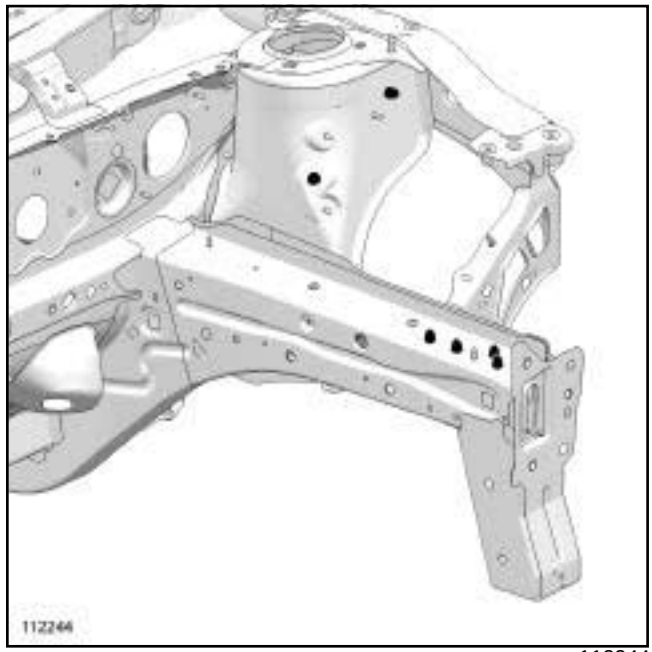
112678

3 - Complete replacement

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

III - POSITIONING OF LOCAL ELECTRICAL EARTHS



112244

IMPORTANT

To avoid damaging the vehicles electric and electronic components, the battery and the earths of any wiring harness near the weld area must be disconnected.

The earth of the welding machine must be placed as close as possible to the weld area.

WARNING

If the spot welds cannot be made as they were originally using an electric spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Note:

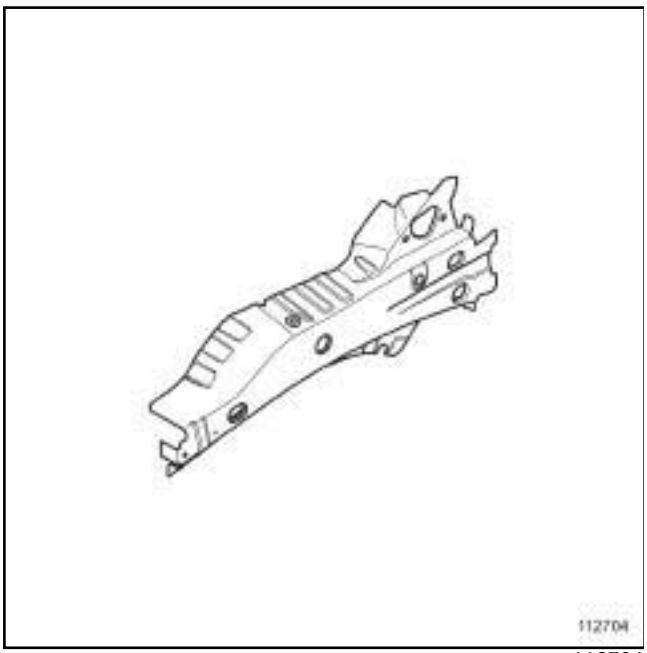
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

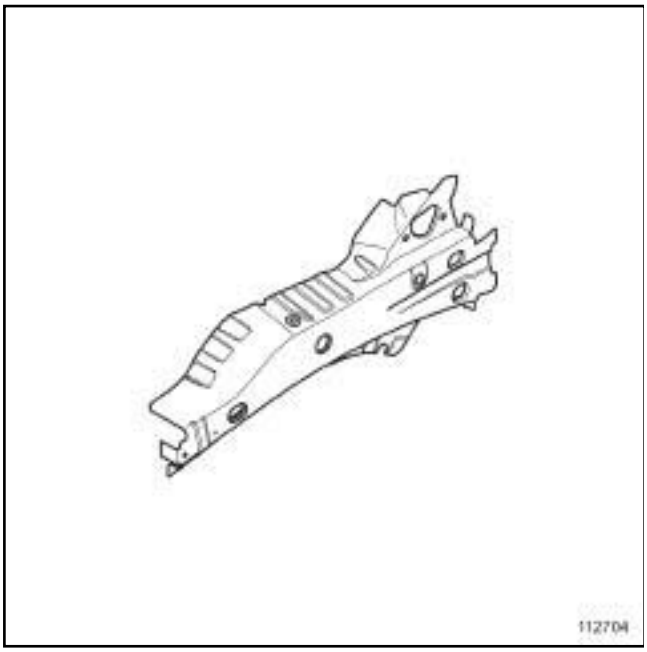
For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



112704

This type of part secures the front panel and the front wing upper mounting support.



112704

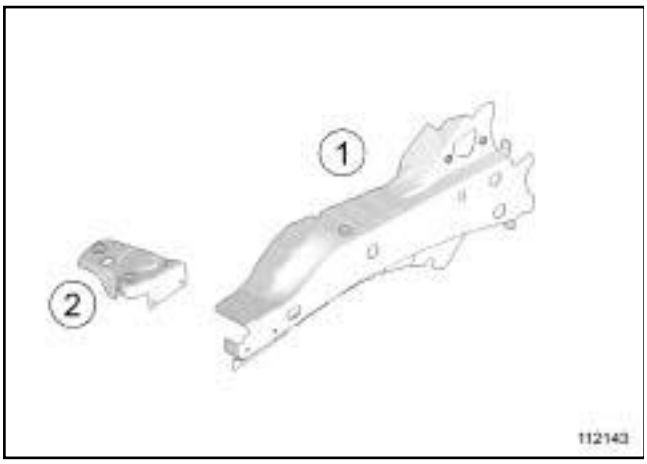
There is only one way of replacing this part:

- complete replacement.

WARNING

If the spot welds cannot be made as they were originally using an electric spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

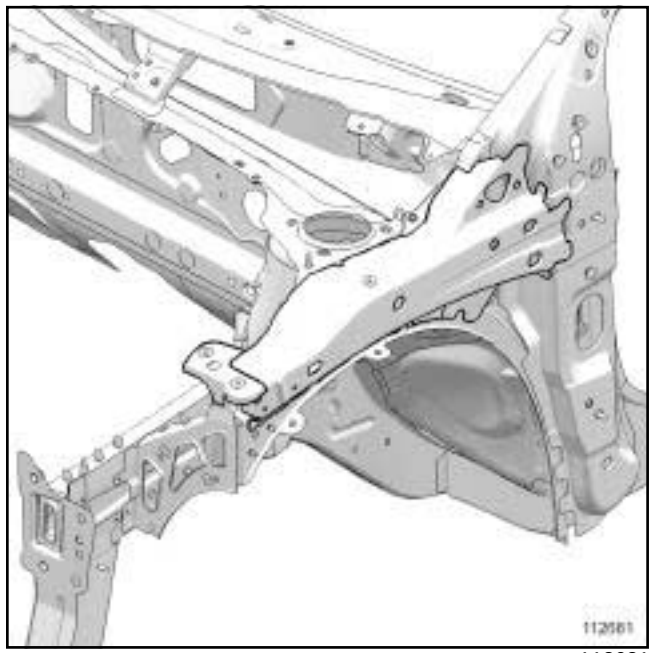
I - COMPOSITION OF THE SPARE PART



112143

No.	Description	Type	Thickness (mm)
(**1**)	Scuttle side panel reinforcement	-	**1**
(**2**)	Front end panel mounting reinforcement	HLE	**1.4**

II - PART FITTED

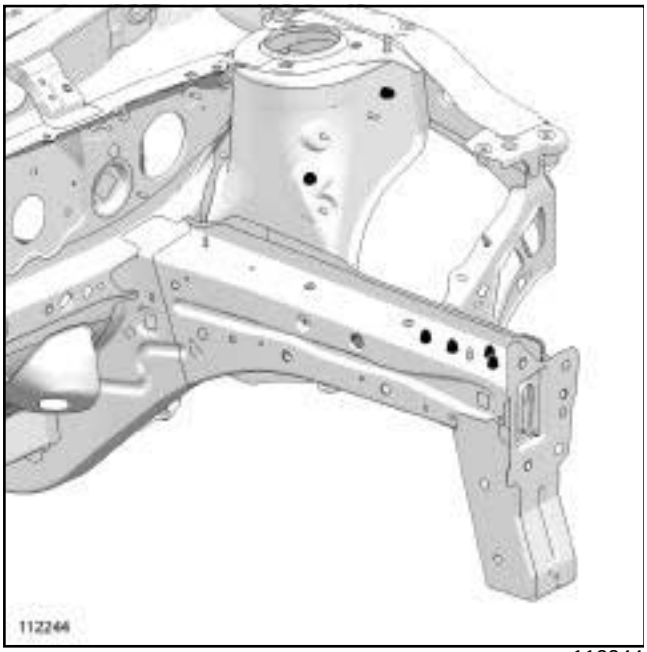


112681

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

III - POSITIONING OF LOCAL ELECTRICAL EARTHS



112244

IMPORTANT

To avoid damaging the vehicles electric and electronic components, the earths of any wiring harness near the weld area must be disconnected.

The earth of the welding machine must be placed as close as possible to the weld area.

IMPORTANT
Use a repair bench to ensure the positioning of the points and the geometry of the axle assemblies.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

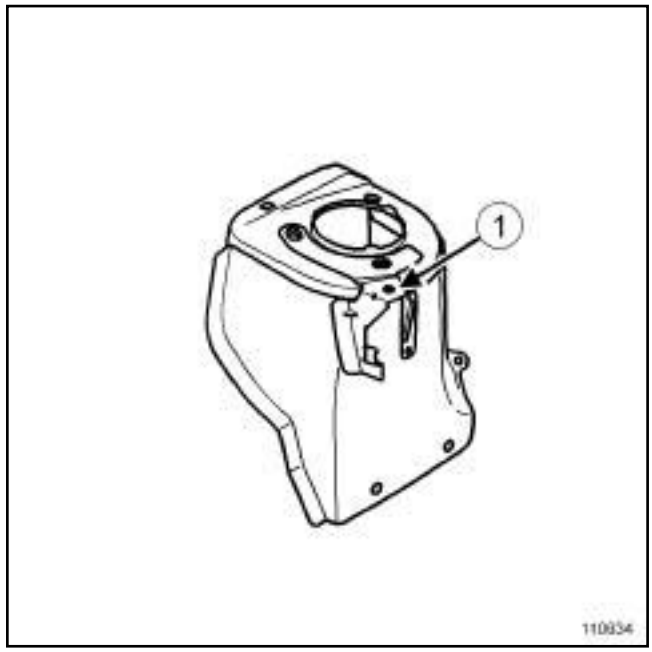
DESIGN OF THE STRUCTURAL COMPONENT

Left side

110635

This is a basic part; it serves only as the front wheel arch.

Right-hand side

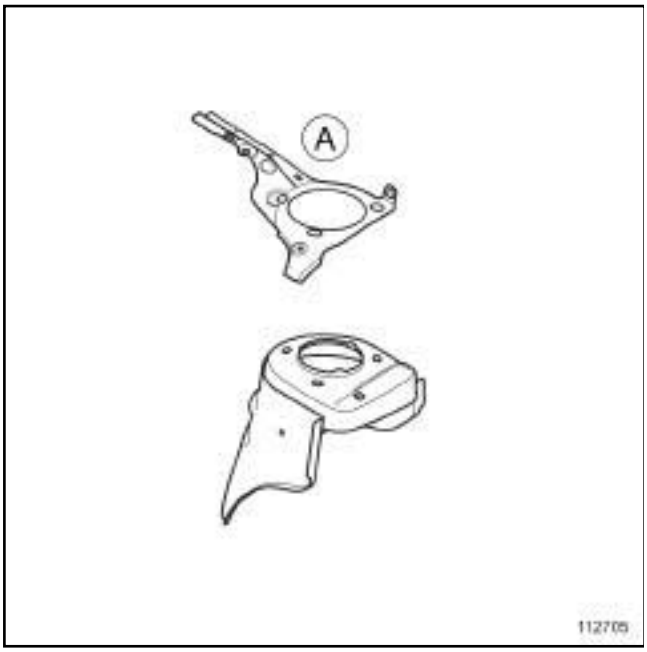


110634

Two wheel arches are available, depending on the vehicle engine type:

- with windscreen wiper mechanism mounting (**1**) ,
- with engine tie-rod attachment.

Front left-hand wheel arch



112705

Front right-hand wheel arch

112706

There is only one way of replacing this part:

- complete replacement.

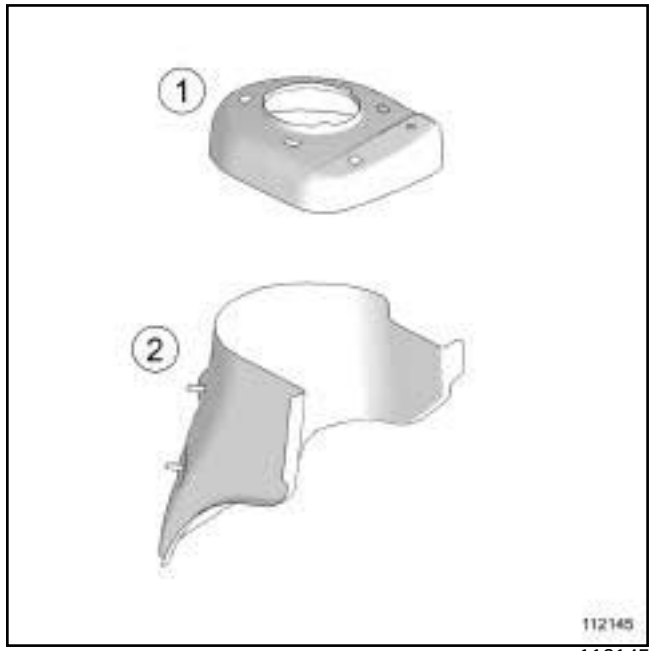
When replacing this part, also order:

- the heater bulkhead reinforcement (**A**) .

IMPORTANT
The straightening bench must be used.

I - COMPOSITION OF THE SPARE PART

Front left-hand wheel arch



112145

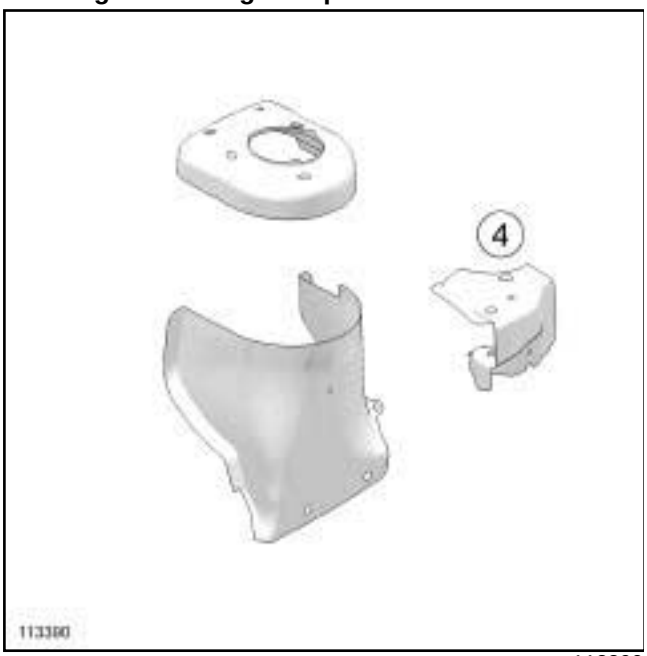
No.	Description	Type	Thickness (mm)
(**1**)	Shock absorber cup	HLE	**2**
(**2**)	Cup height adjuster	-	**1.2**

Front right-hand low torque wheel arch

112144

No.	Description	Type	Thickness (mm)
(**3**)	Windscreen wiper mounting	HLE	**2**

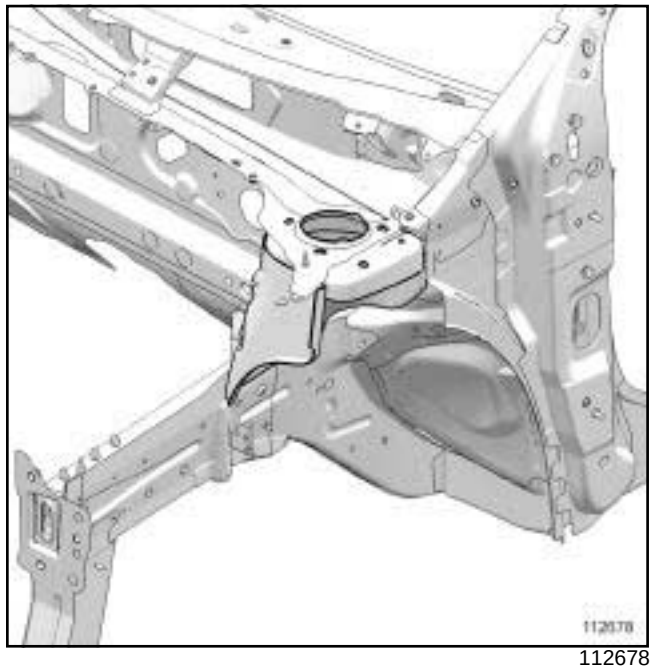
Front right-hand high torque wheel arch



113390

No.	Description	Type	Thickness (mm)
(**4**)	Engine tie-rod attachment	HLE	**2**

II - PART FITTED

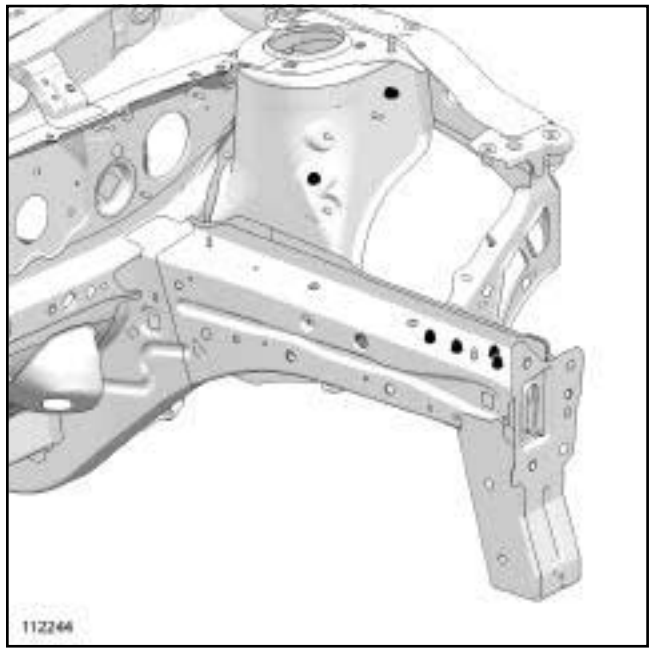


112678

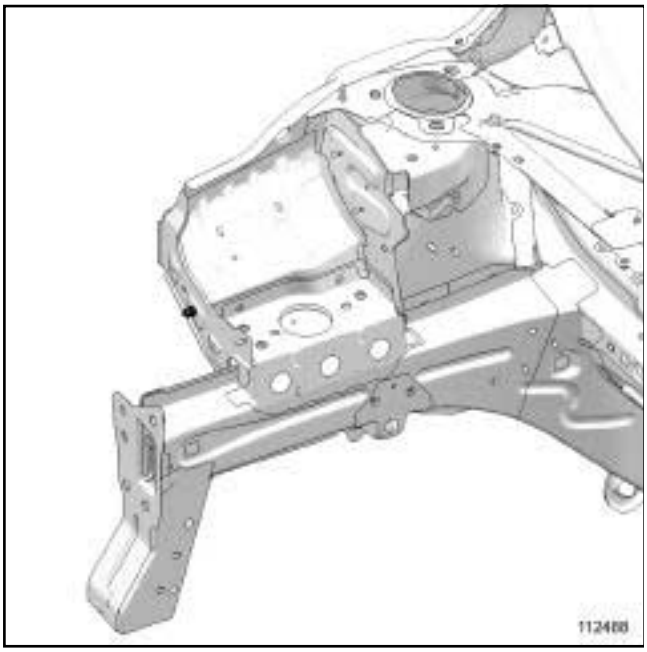
WARNING

If the spot welds cannot be made as they were originally using an electric spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

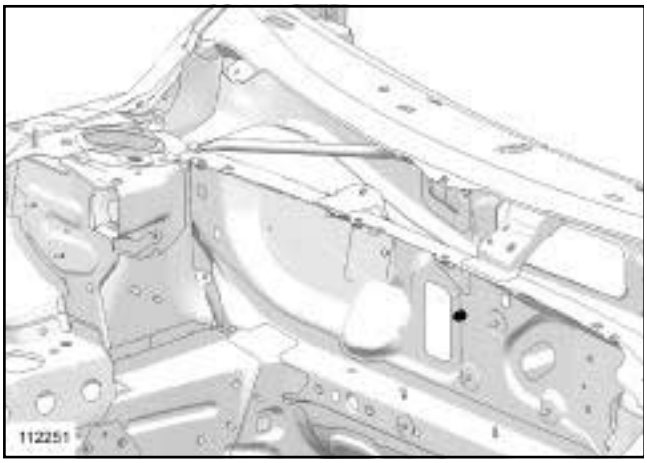
III - POSITIONING OF LOCAL ELECTRICAL EARTHS



112244



112488



112251

IMPORTANT

To avoid damaging the vehicles electric and electronic components, the earths of any wiring harness near the weld area must be disconnected.

The welding machine earth must be placed as close as possible to the weld zone.

Special tooling required	
Car. 1765	Bolt for repositioning the play compensation bushes of the dashboard cross member

Tightening torques ▽	
centring device (8)	**8 Nm**
side mounting bolt (6)	**21 Nm**
mounting bolts (7)	**21 Nm**
mounting bolts (4)	**8 Nm**
mounting bolts (2)	**21 Nm**

Note:

In the event of a front impact with triggering of air-bags, check the area of connection between both diameters of the beam. If there is any damage visible to the naked eye, this part must be replaced.

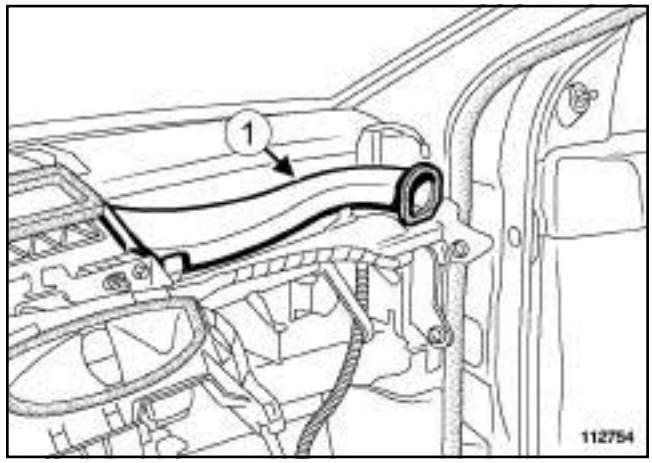
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the front doors (see **47A**, **Side opening elements**, **Front side door: Removal - Refitting**, page **47A-1**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering column (see **Steering column: Removal - Refitting**) , partially (MR 392, 36A, Steering assembly).

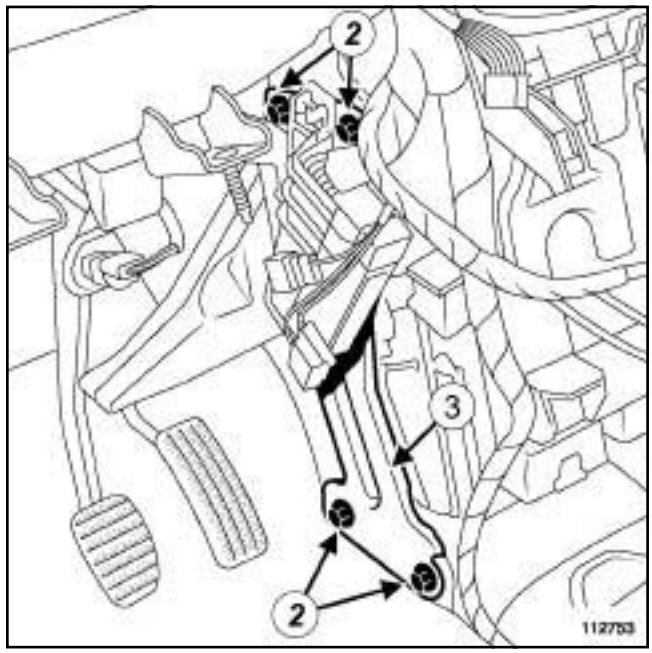
II - OPERATION FOR REMOVAL OF PART CONCERNED



112754

❏ Unclip:

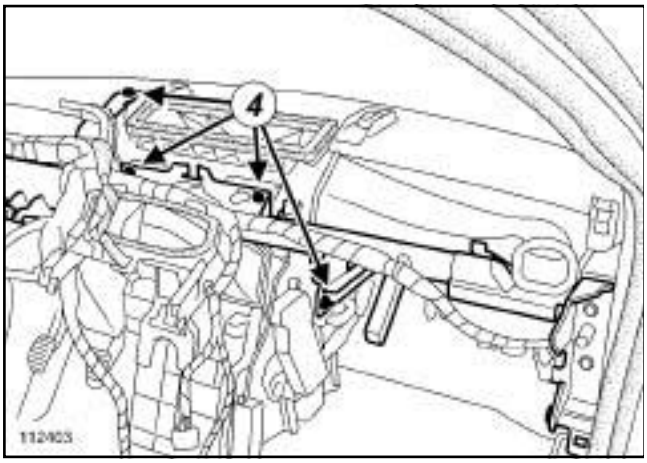
- the wiring harness,
- the air ducts (**1**) from both sides of the vehicle.



112753

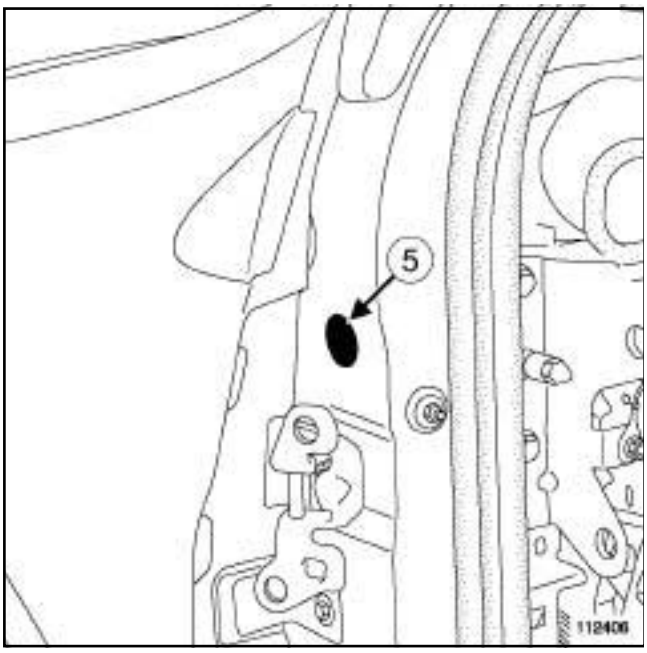
❏ Remove:

- the reinforcement mounting bolts (**2**) ,
- the reinforcement (**3**) .



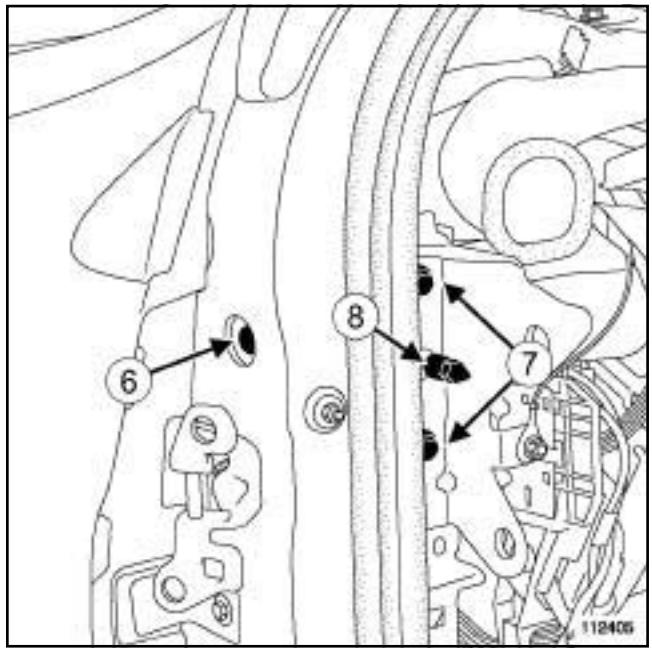
112403

❏ Remove the dashboard cross member mounting bolts (**4**) .



112406

❏ Remove the blanking cover (**5**) .

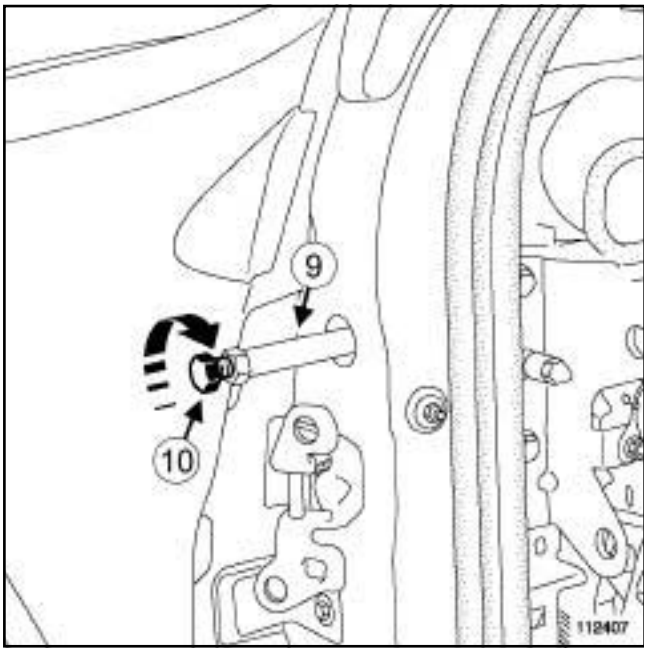


112405

❏ Remove:

- the side mounting bolt (**6**) ,
- the mounting bolts (**7**) .

❏ Loosen the centring device (**8**) in order to align the holes in the A-pillar lining with the dashboard cross member lock nuts.

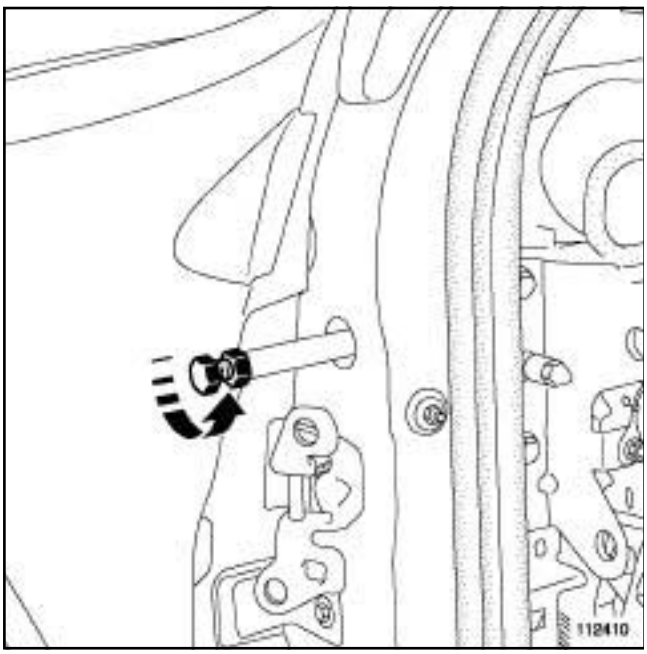


112407

❏ Fit the **(Car. 1765)** as far as the stop (**9**) .

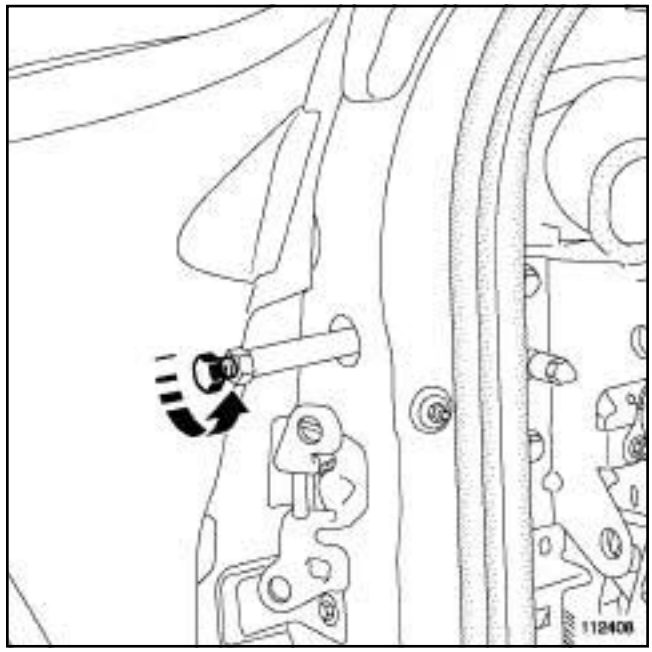
❏ Screw the rod (**10**) onto the tool body (**9**) as far as the stop.

❏ Firmly lock tool body in the same way as a lock nut against the dashboard cross member nut while holding the hexagon bolt.



112410

❏ Unscrew the whole tool as far as the stop and tighten it gently (during this operation, the beam nut, which has a left-hand thread, screws into the beam and disengages it from the A-pillar).



112408

❏ Hold the tool body ***(9)*** and unlock the rod ***(10)*** .

❏ Unscrew dashboard cross member rod to remove the tool.

❏ Remove:

- the mounting bolt ***(6)*** from the other side of the vehicle,
- the dashboard cross member.

Note:

To maintain the adjustment of the dashboard cross member and therefore make refitting easier, only loosen the lock nut on one side.

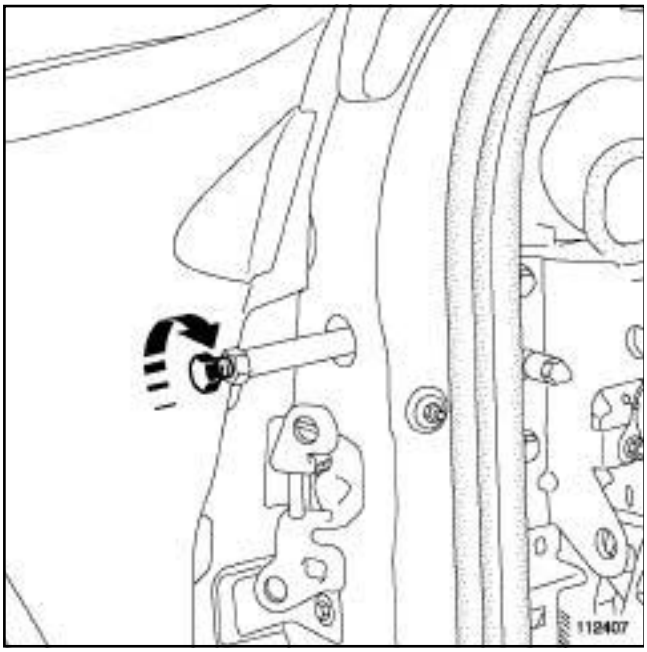
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fully tighten the locking nut (left-hand thread) in the beam.

❏ Refit:

- the dashboard cross member,
- the mounting bolts ***(7)*** to position the cross member,
- the side mounting bolt ***(6)*** on the side where the lock nut has not been adjusted.

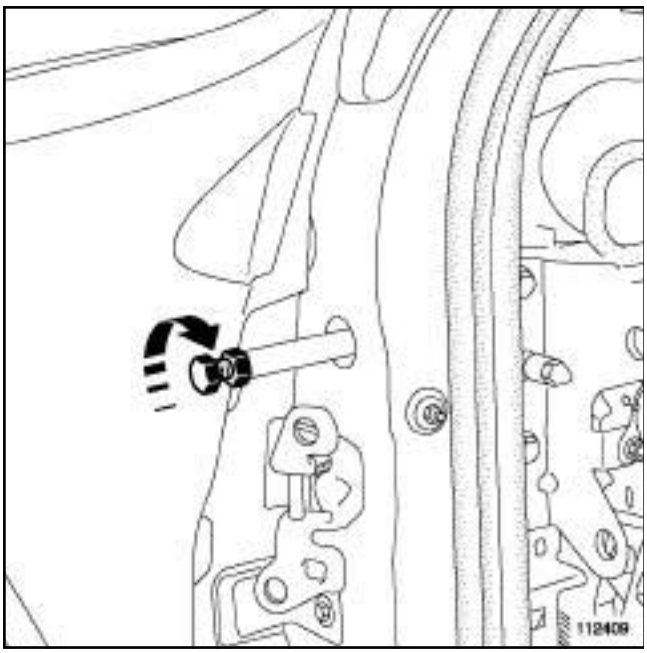


112407

❏ Fit the **(Car. 1765)** as far as the stop.

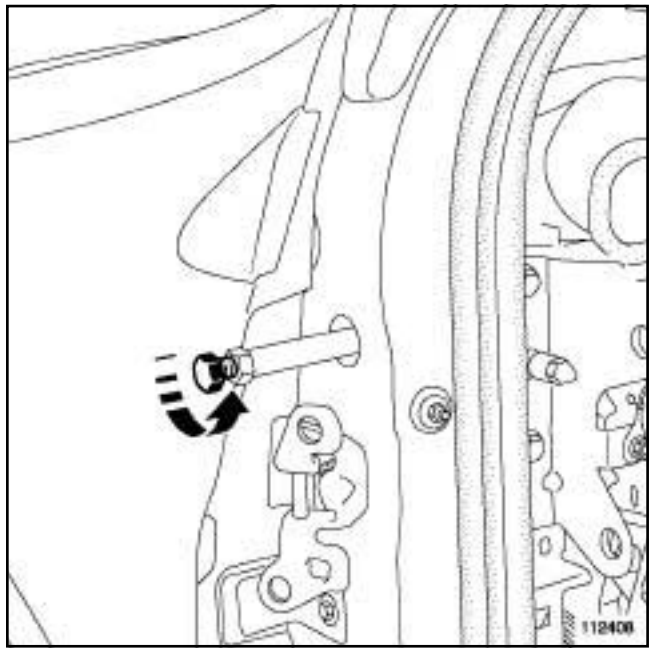
❏ Screw the rod ***(10)*** onto the body ***(9)*** as far as the stop.

❏ Firmly lock tool body in the same way as a lock nut against the dashboard cross member nut while holding the hexagon bolt.



112409

❏ Screw the entire tool as far as the stop and then tighten gently.



112408

❏ Hold the tool body ***(9)*** and unlock the rod ***(10)*** .

❏ Unscrew dashboard cross member rod to remove the tool.

❏ Torque tighten the **centring device (8) (8 Nm)**.

❏ Refit:

- the side mounting bolt ***(6)*** ,
- the mounting bolts ***(4)*** .

❏ Torque tighten:

- the **side mounting bolt (6) (21 Nm)**,
- the **mounting bolts (7) (21 Nm)**,
- the **mounting bolts (4) (8 Nm)**.

❏ Refit:

- the reinforcement ***(3)*** ,
- the mounting bolts ***(2)*** .

❏ Torque tighten the **mounting bolts (2) (21 Nm)**.

❏ Clip on:

- the air duct ***(1)*** on both sides of the vehicle,
- the wiring harness.

II - FINAL OPERATION

❏ Refit:

- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36A, Steering assembly),
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),

- the front doors (see **47A**, **Side opening elements**, **Front side door: Removal - Refitting**, page **47A-1**) .

WARNING

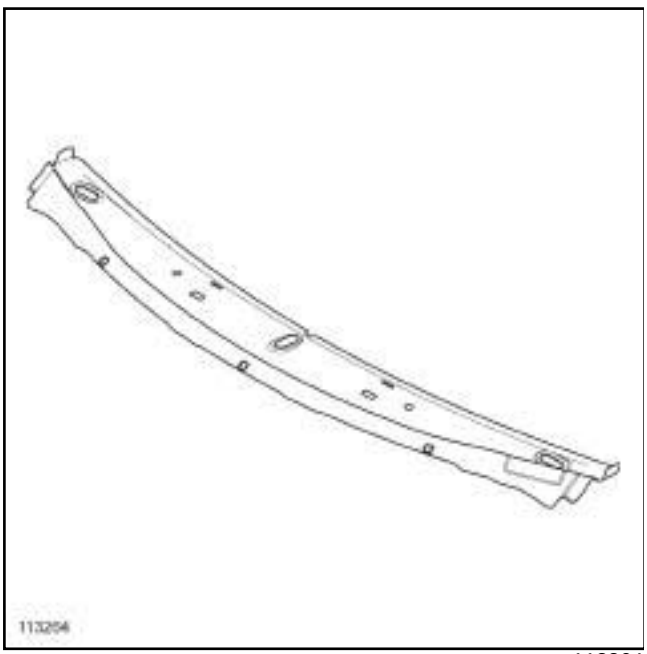
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



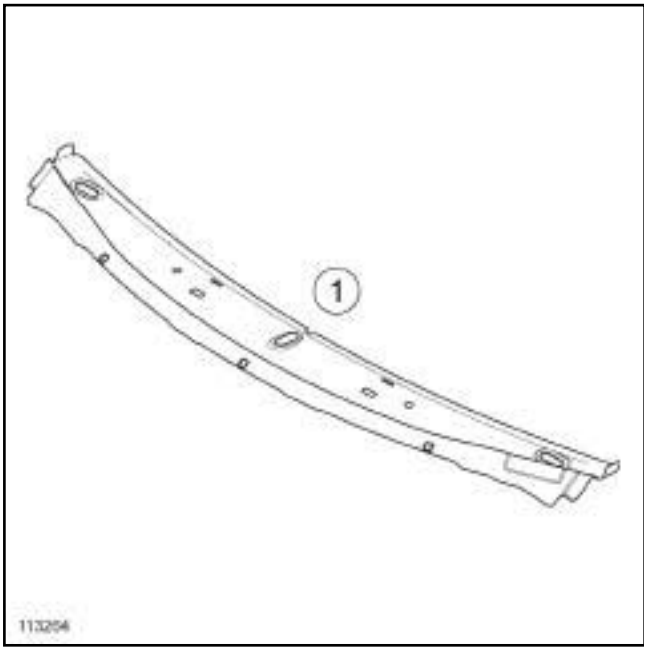
113264

This is a basic part; it only fulfils the function of the windscreen aperture lower cross member closure panel.

There is only one way of replacing this part:

- partial replacement.

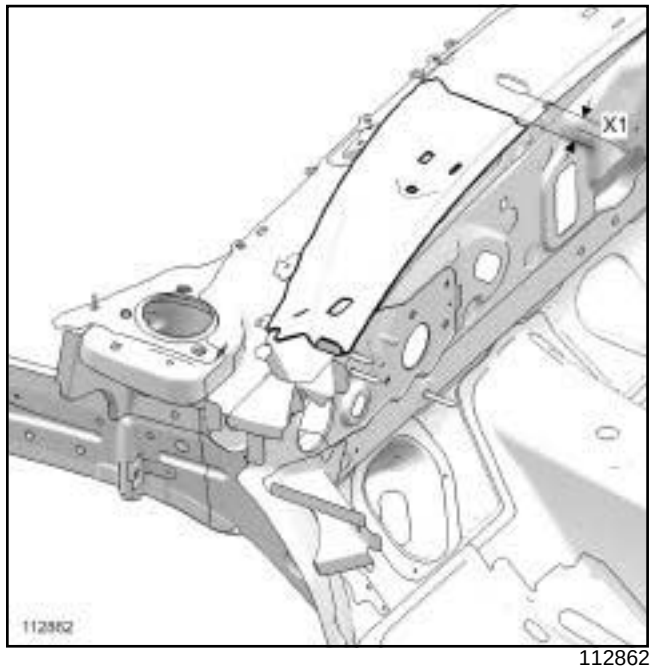
I - COMPOSITION OF THE SPARE PART



113264

No.	Description	Type	Thickness (mm)
(**1**)	Windscreen aperture lower cross member closure panel	-	**0.7**

II - PART IN POSITION



112862

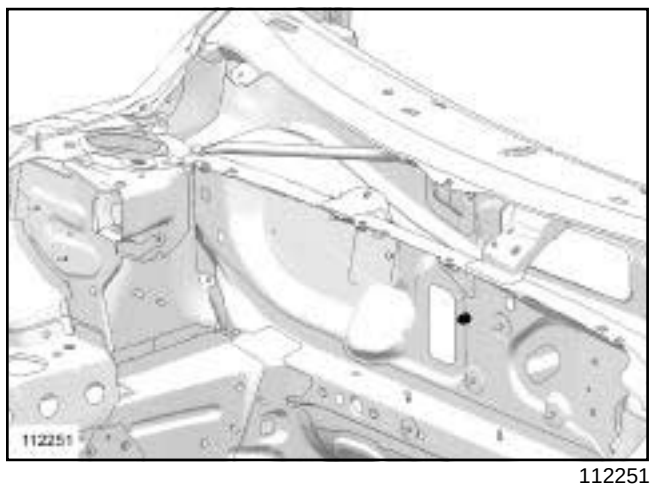
(**X1**) = **50 mm**

Preserve the windscreen aperture lower cross member when the cut is made.

WARNING

If the spot welds cannot be made as they were originally using an electric spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

III - POSITIONING OF LOCAL ELECTRICAL EARTHS



112251

IMPORTANT

To avoid damaging the vehicles electric and electronic components, the earths of any wiring harness near the weld area must be disconnected.

The welding machine earth must be placed as close as possible to the weld zone.

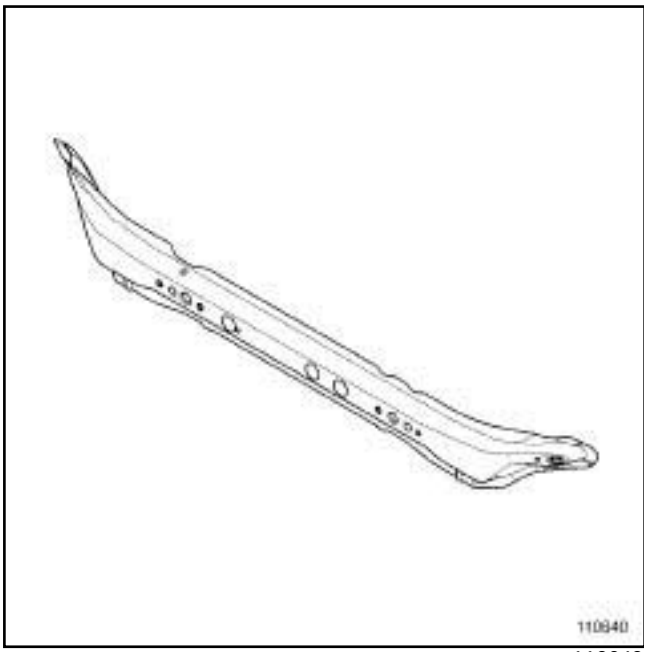
WARNING

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



110640

This is a basic part; it simply fulfils the function of a bulkhead cross member.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

WARNING

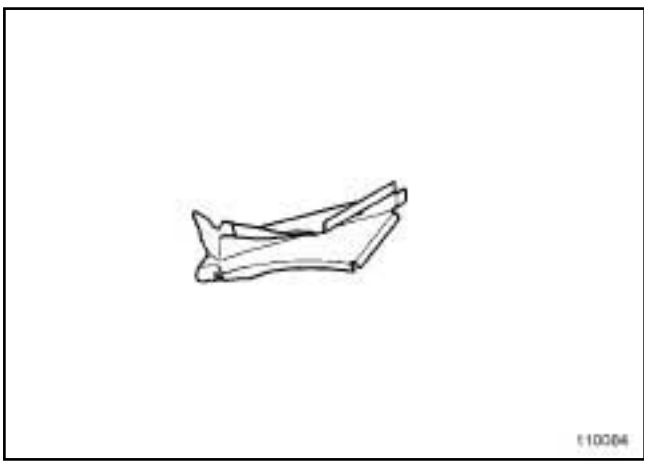
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT



110084

This is a basic part, it simply fulfils the function of bulkhead side reinforcement.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General Information**).

WARNING

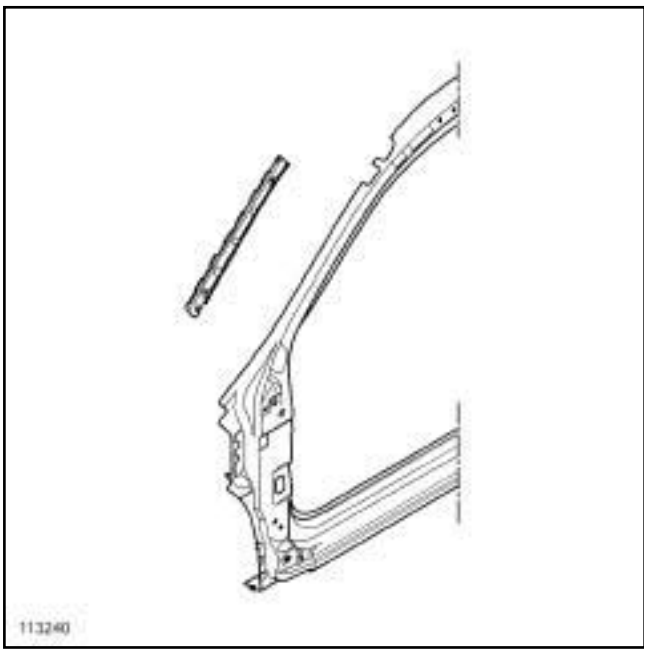
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.



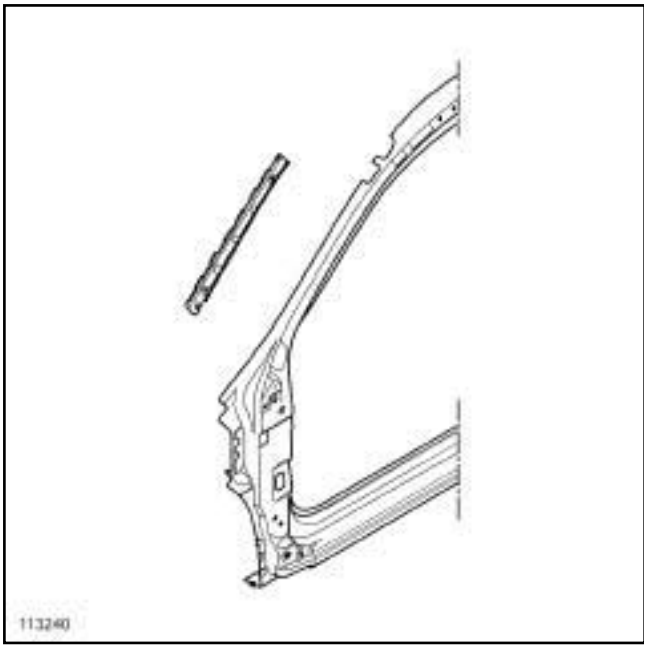
113240

This is a basic part, its only function is that of an A-pillar.

WARNING

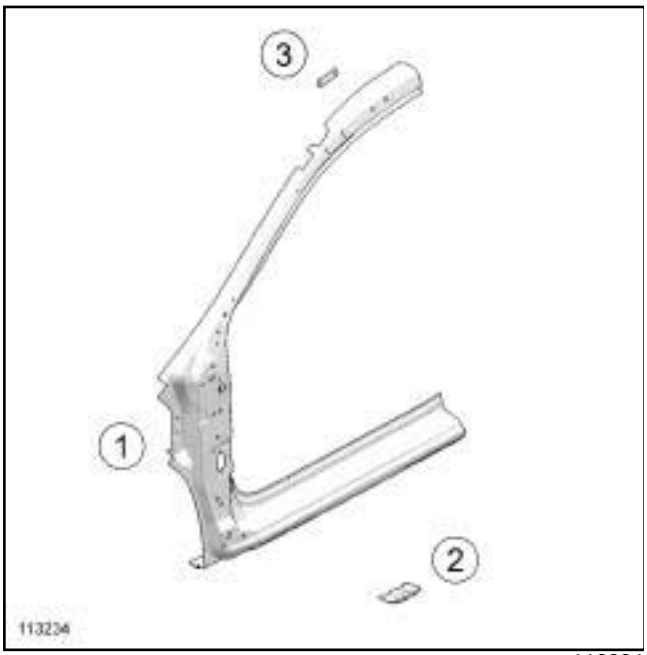
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

C85 or S85



113240

I - COMPOSITION OF THE SPARE PART



113234

No.	Description	Type	Thickness (mm)
(**1**)	Body side	-	**0.75**
(**2**)	Jacking point bridge piece	Very high yield strength	**2**
(**3**)	Roof bar mounting pad	HLE	**1.5**

IMPORTANT

For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

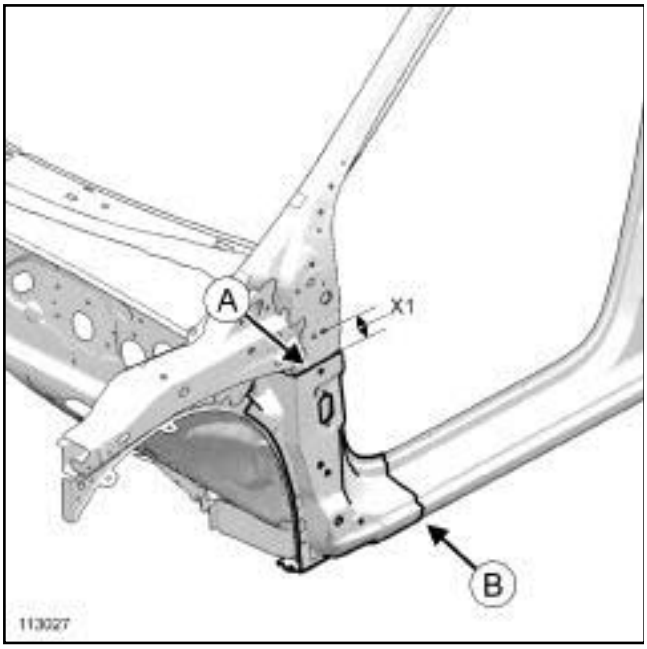
II - PART IN POSITION

1 - Replacing the lower section of the A-pillar

WARNING

The position of this cut must be observed, and is determined according to the position of the internal reinforcements or acoustic inserts cut.

C85 or S85

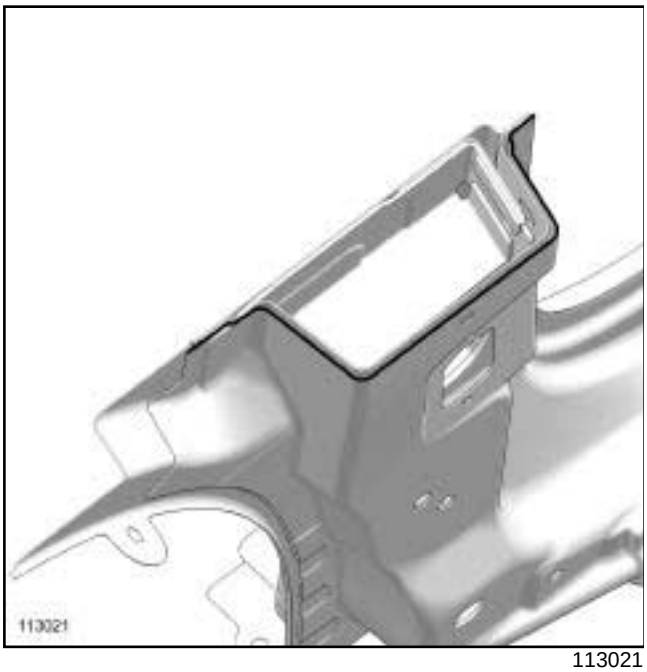


113027

(**X1**) = **70 mm**

Cut (**B**) in front of the jacking point.

Cut A

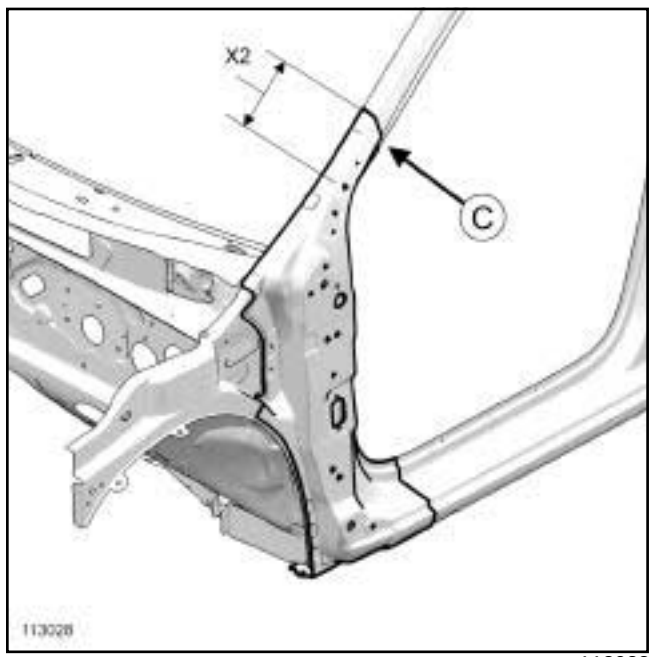


113021

Cut B

113020

2 - A-pillar replacement



113028

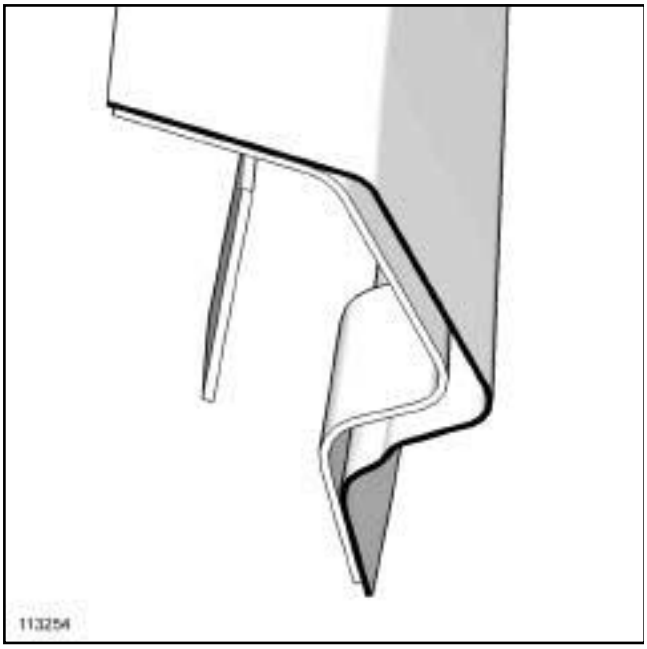
(**X2**) = **180 mm**

WARNING

The position of this cut must be observed, and is determined according to the position of the internal reinforcements or acoustic inserts cut.

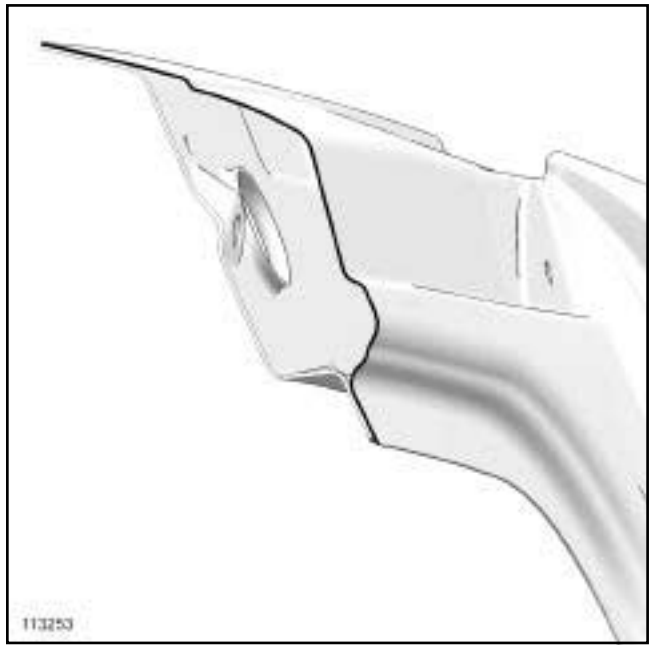
C85 or S85

Cut C



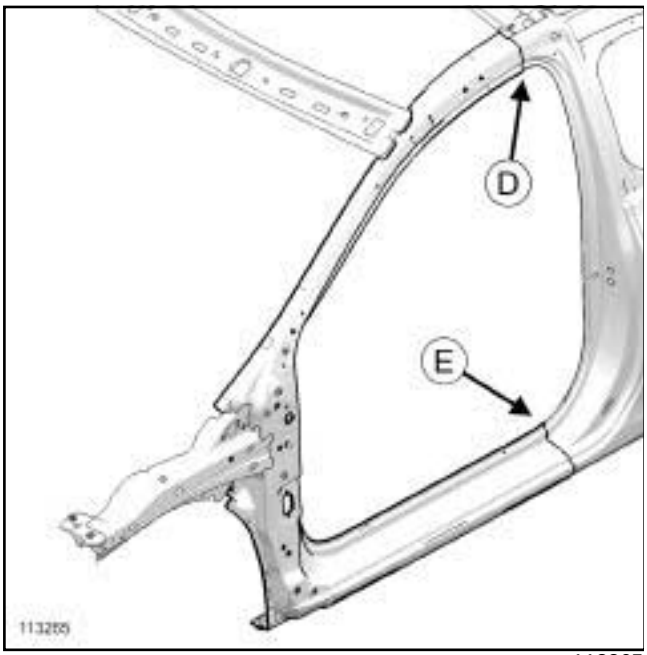
113254

Cut D



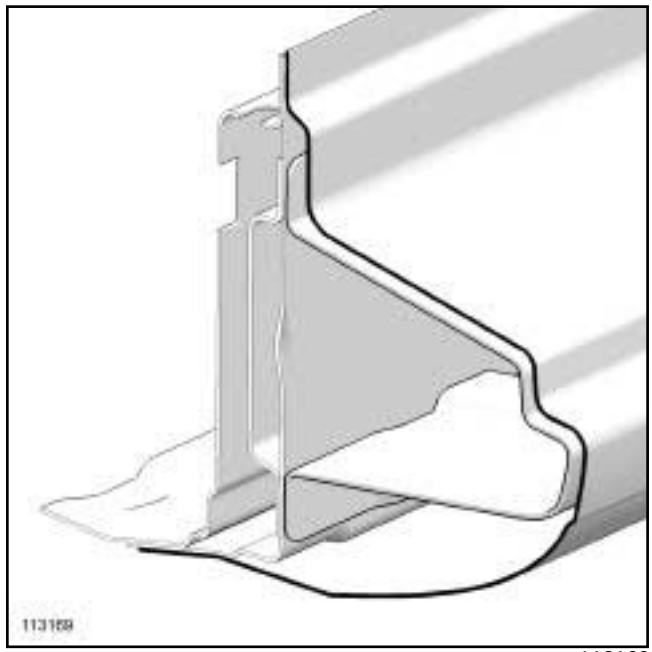
113253

3 - Complete replacement



113265

Cut E



113169

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT

112718

This is a basic part, its only function is that of an A-pillar reinforcement.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

112718

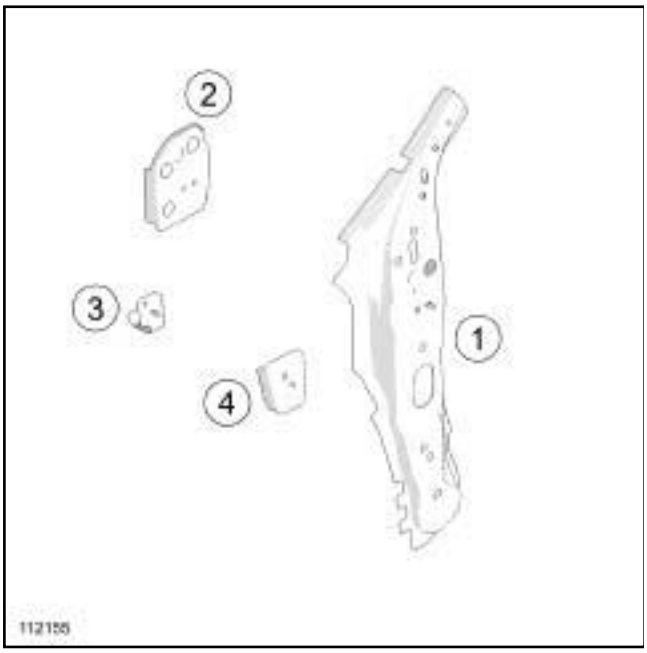
To replace this part, order the expanding insert (**A**) .

There is only one way of replacing this part:

- complete replacement.

IMPORTANT
For welded connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical properties.

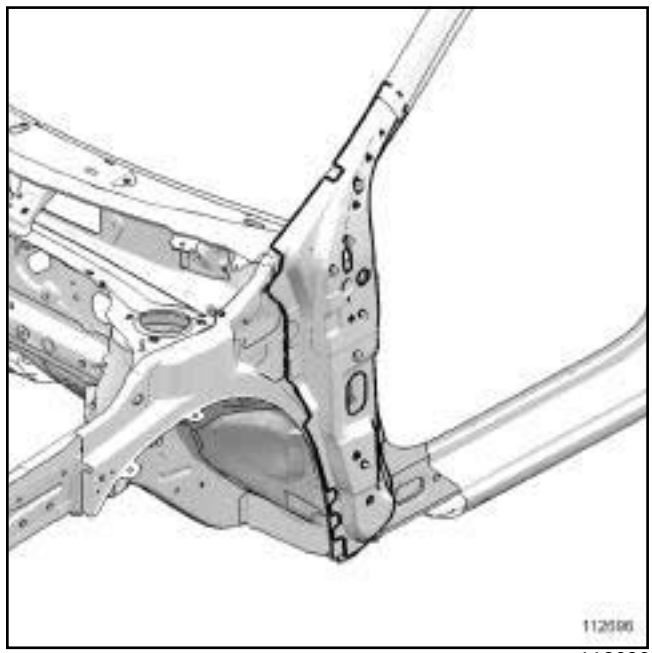
I - COMPOSITION OF THE SPARE PART



112155

No.	Description	Type	Thickness (mm)
(**1**)	A-pillar reinforcement	HLE	**1.2**
(**2**)	Upper hinge reinforcement	HLE	**2**
(**3**)	Lower hinge mounting pad	Very high yield strength	**2.5**
(**4**)	Lower hinge reinforcement	HLE	**1.5**

II - PART FITTED



112696

WARNING
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

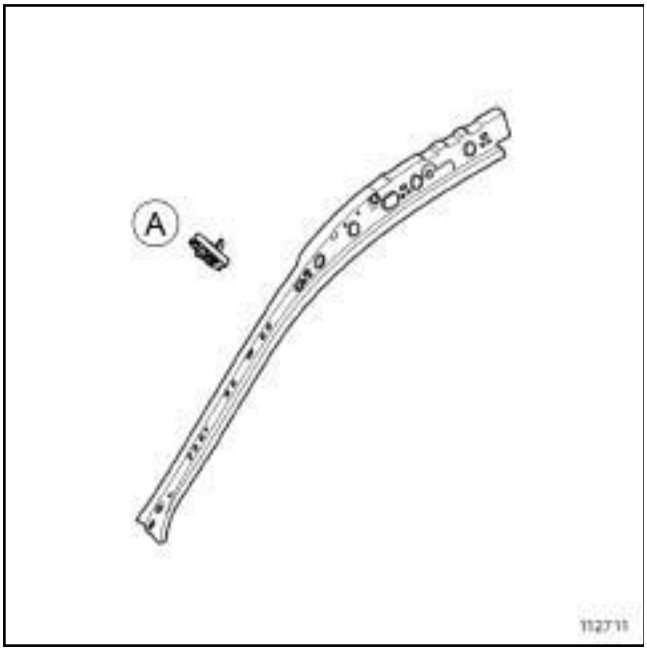
DESIGN OF THE STRUCTURAL COMPONENT

112151

This is a basic part, its only function is that of the windscreen pillar lining.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

B85 or K85



112711

To replace this part, also order the B-pillar insert (**A**) .

There is only one way of replacing this part:

- Complete replacement: this operation complements the replacement of the roof, the roof panel and the front roof drip moulding reinforcement.

C85 or S85

112719

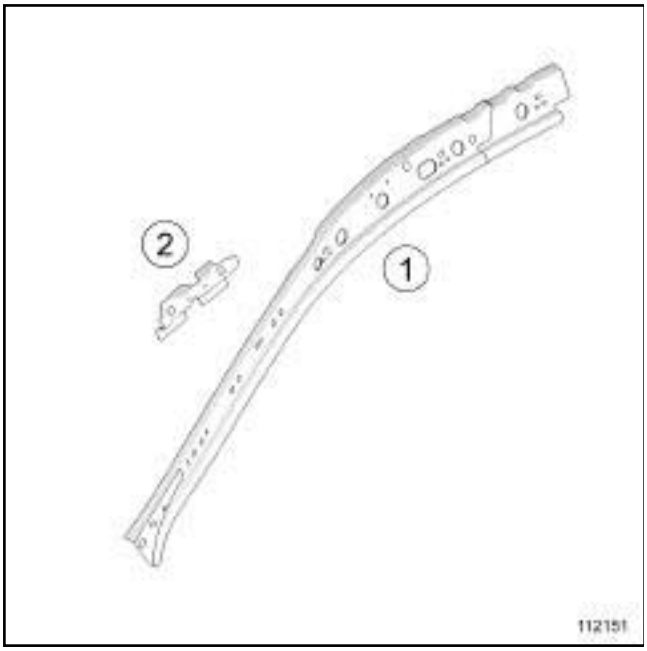
To replace this part, also order the B-pillar insert (**A**) .

The options for replacing this part are as follows:

- partial replacement: this operation is linked to the complete replacement of the B-pillar reinforcement,
- Complete replacement: this operation complements the replacement of the roof, the roof panel and the front roof drip moulding reinforcement.

I - COMPOSITION OF THE SPARE PART

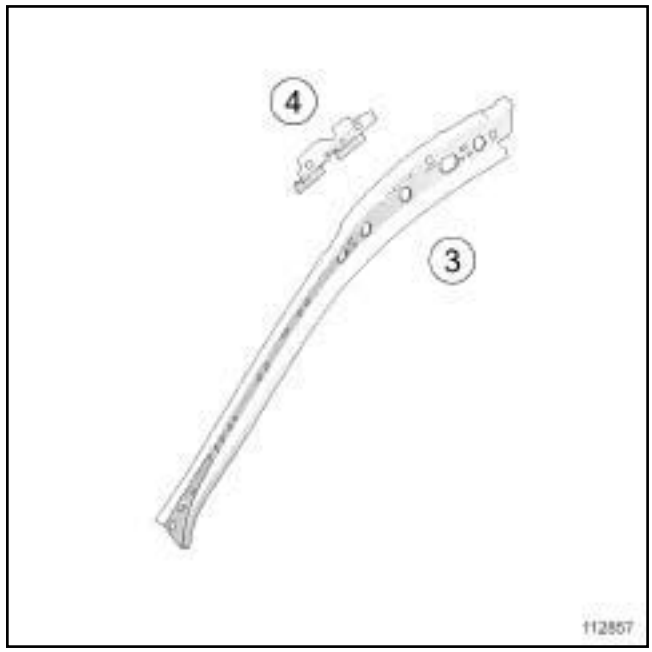
B85 or K85



112151

No.	Description	Type	Thickness (mm)
(**1**)	A-pillar lining	HLE	**1.4**
(**2**)	Airbag deflector	-	**1.2**

C85 or S85



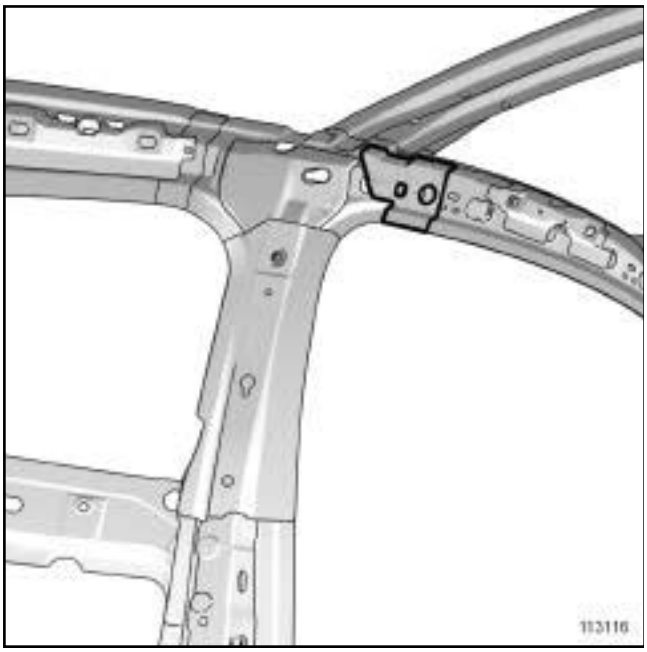
112857

No.	Description	Type	Thickness (mm)
(**3**)	A-pillar lining	HLE	**1.4**
(**4**)	Airbag deflector	-	**1.2**

II - PART FITTED

1 - Partial replacement

C85 or S85



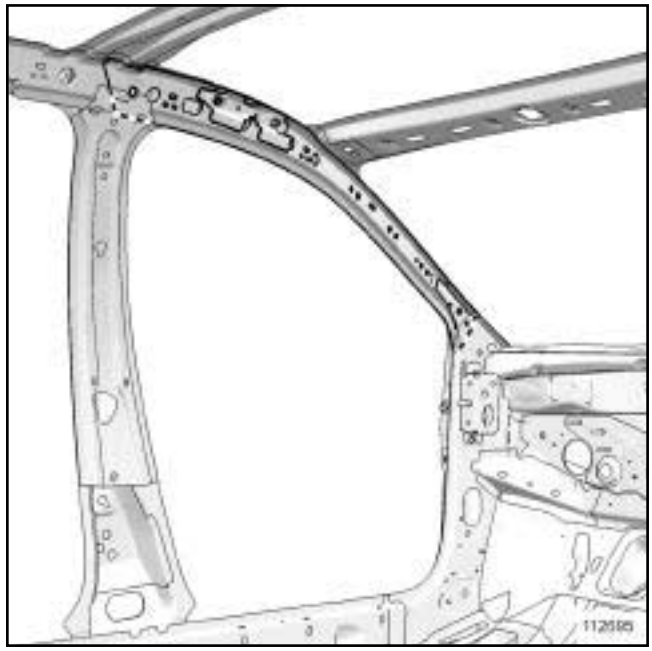
113216

Note:

The replacement operation presents no particular difficulties.

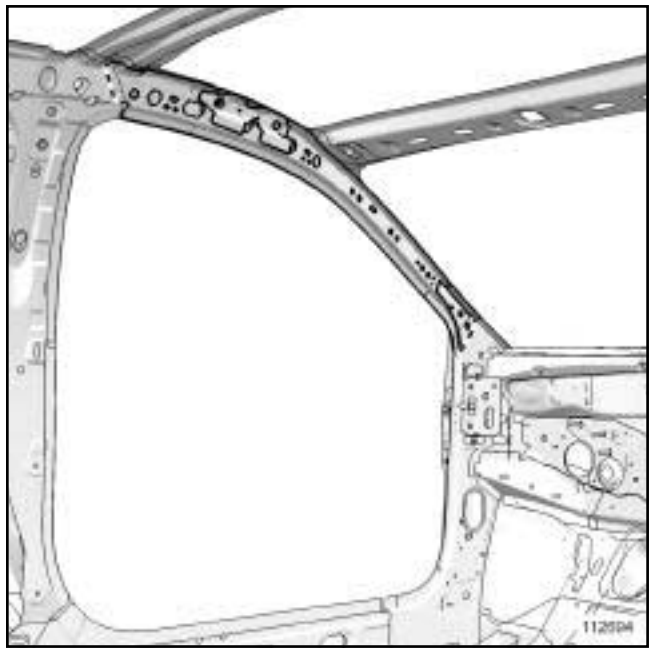
2 - Complete replacement

B85 or K85



112695

C85 or S85



112694

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

B85 or K85

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

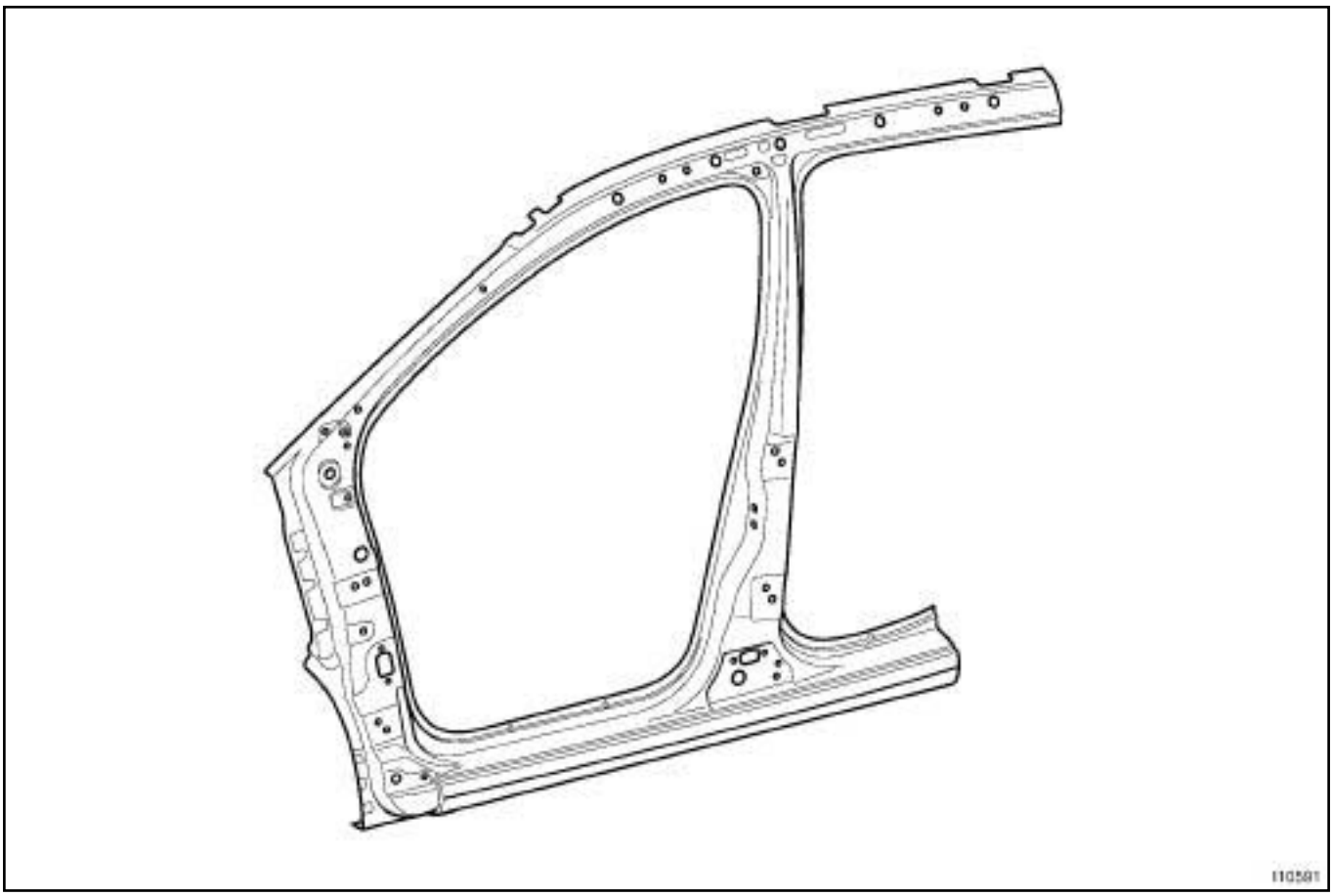
Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

IMPORTANT

Before any operation, remove the front seat belts.

I - DESIGN OF THE STRUCTURAL COMPONENT



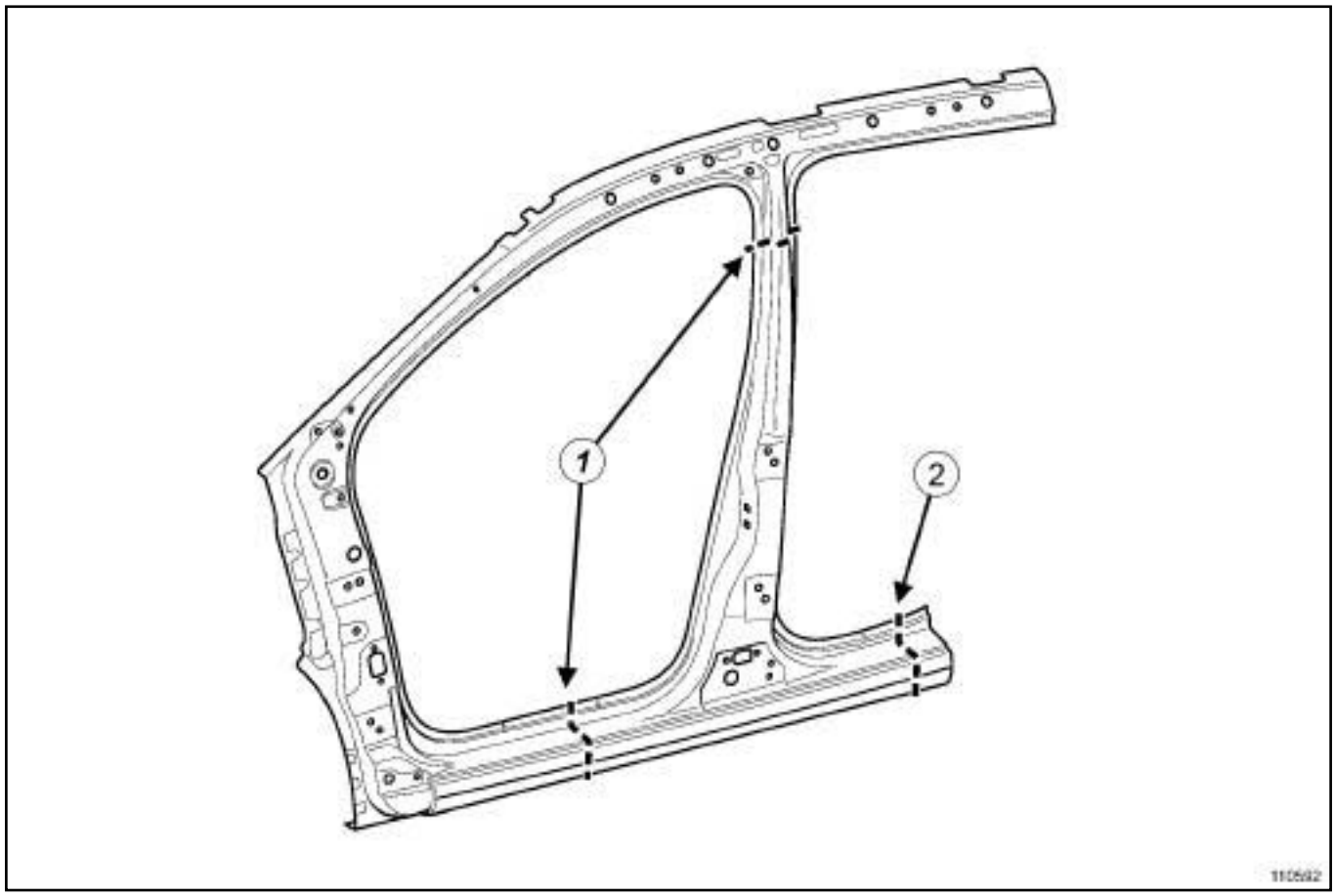
110591

110591

The B-pillar is obtained by extension from the front section body side.

B85 or K85

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110592

Cutting lines (**1**) and (**2**) show the area in which it is possible to carry out a partial replacement.

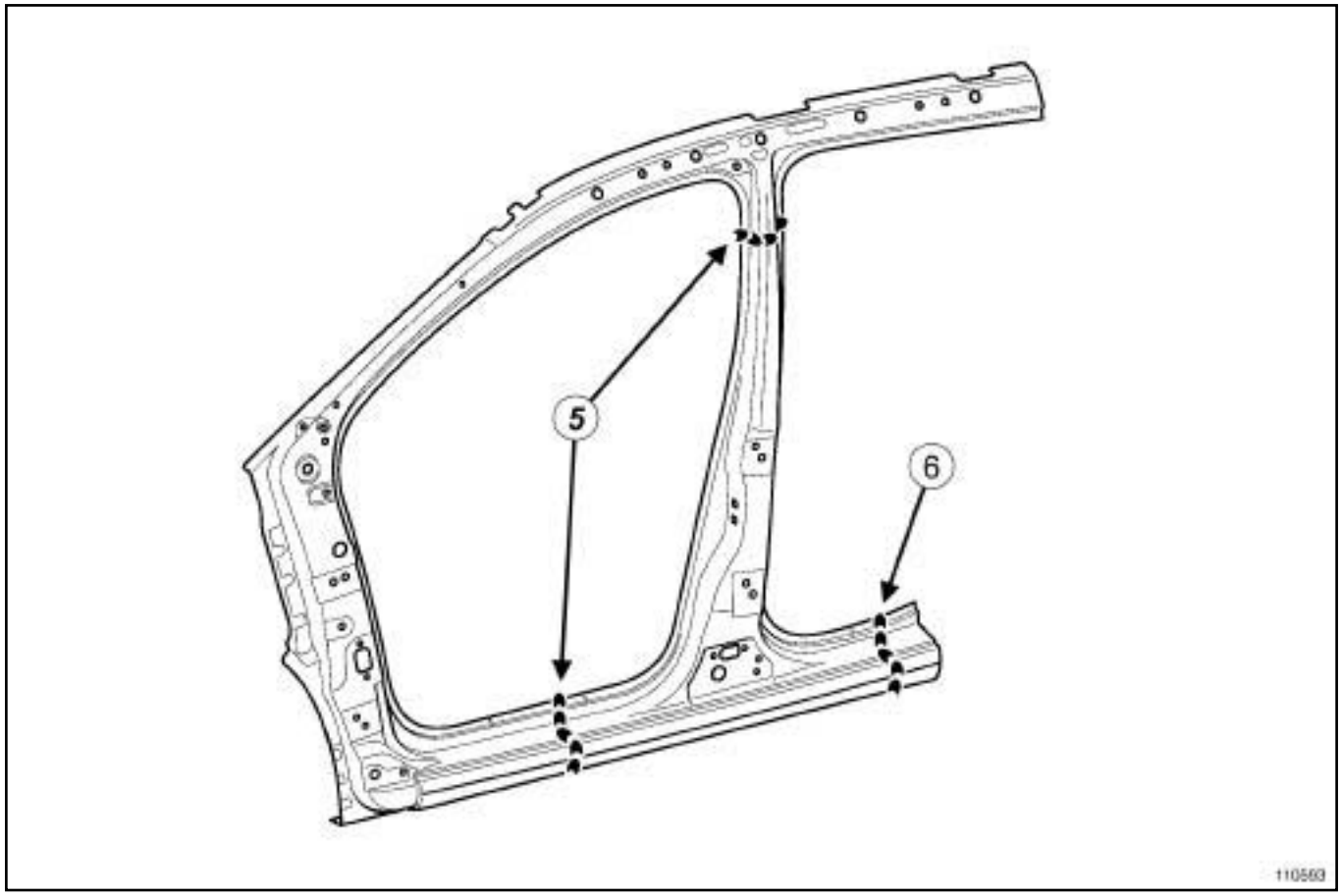
Make the cutting line (**2**) on the butt weld.

III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General Information**).

B85 or K85



110593

Lines (**5**) and (**6**) on the diagram show a butt weld by continuous EGW welding.

Weld (**6**) along the butt weld line.

WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

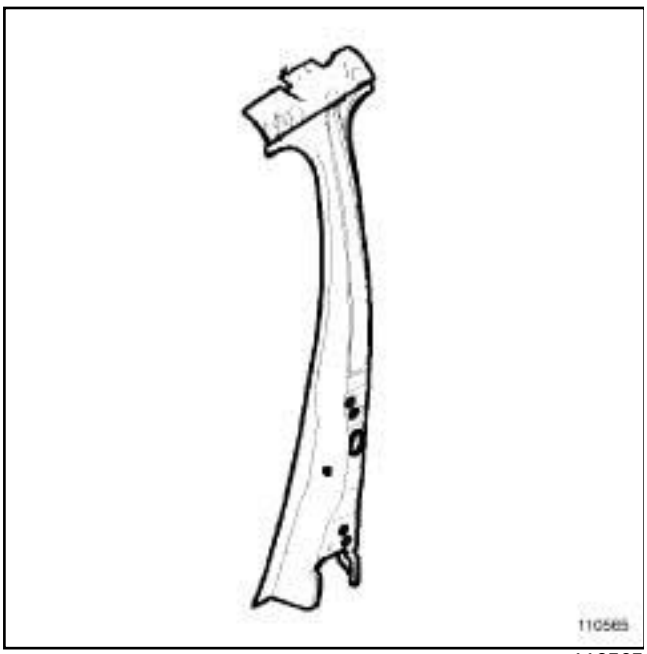
Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT

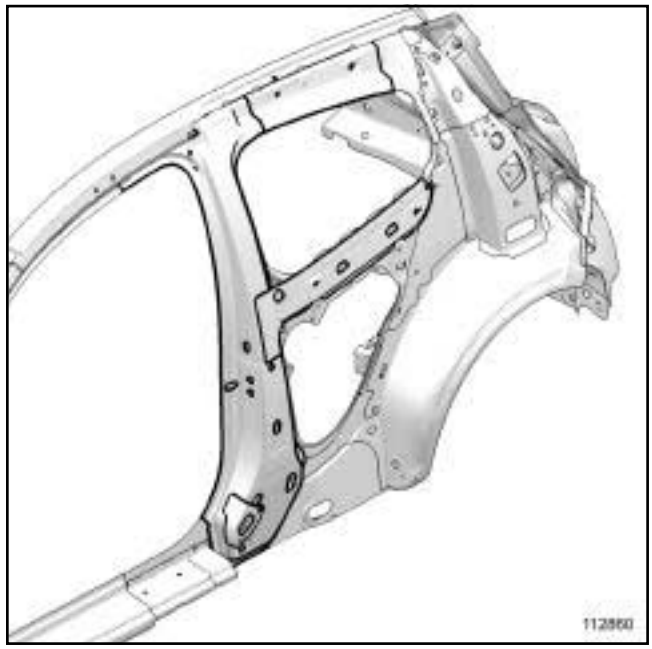
B85 or K85



110565

This is a basic part, its only function is that of a B-pillar reinforcement.

C85 or S85



112860

The distinctive feature of this part is that it combines three functions:

- B-pillar reinforcement,

- rear roof drip moulding reinforcement,

- quarter panel reinforcement.

No cut is permitted on this part.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT

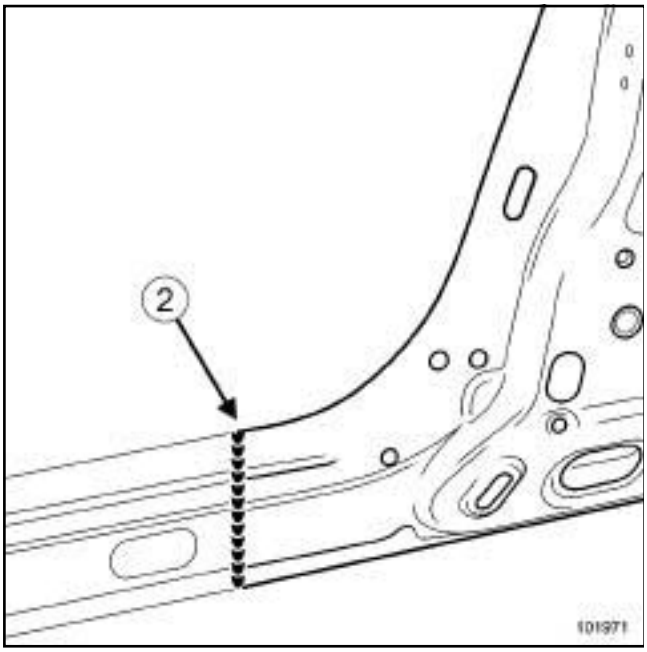
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

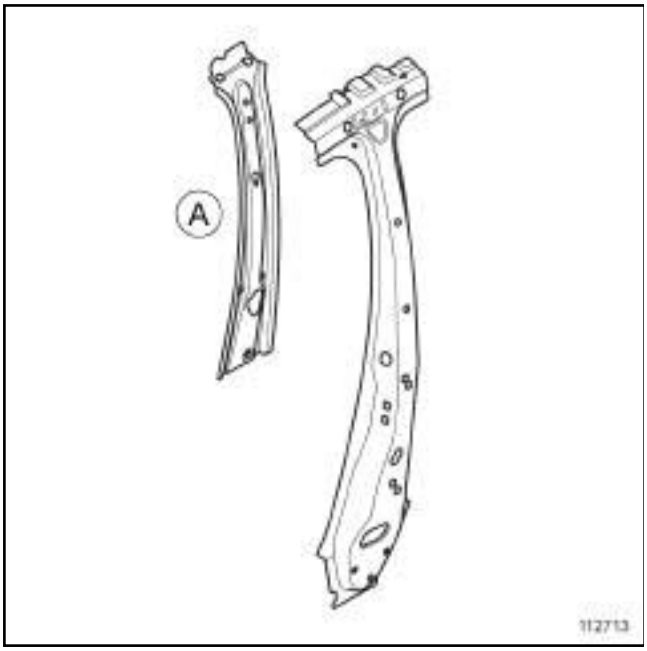
If there are other issues regarding access to mating faces, the various options are described in the basic instructions for structural bodywork repair (see **MR 400**).



101971

Line (**2**) on the drawing shows a butt weld by continuous EGW welding.

B85 or K85



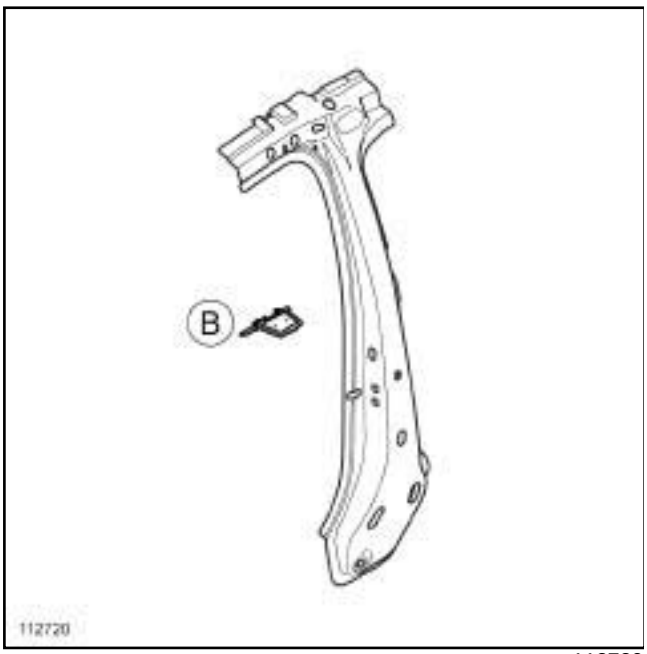
112713

To replace this part, order B-pillar lining (**A**) .

There is only one way of replacing this part:

- complete replacement.

C85 or S85



112720

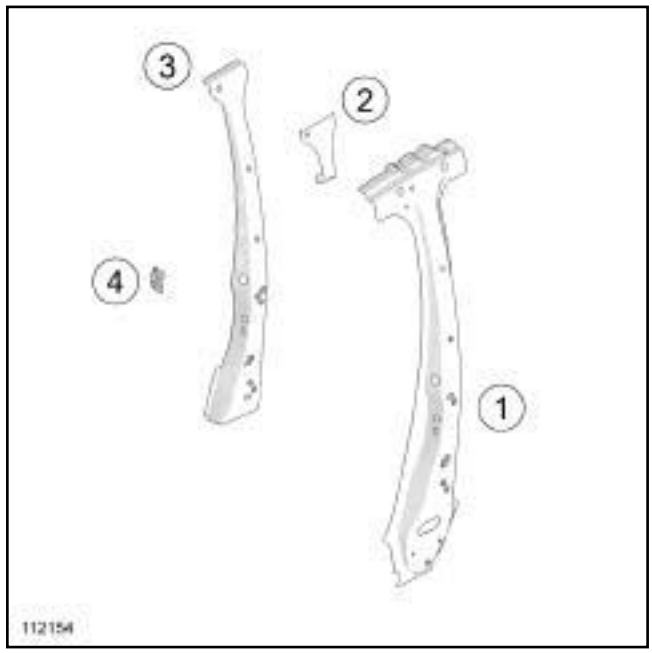
To replace this part, order the expanding insert (**B**) .

There is only one way of replacing this part:

- Complete replacement: this operation requires the partial removal of the quarter panel lining (see **Quarter panel lining: Description**) and the windscreen A-pillar lining (see **43A**, **Side upper structure**, **Windscreen pillar lining: Description**, page **43A-8**) .

I - COMPOSITION OF THE SPARE PART

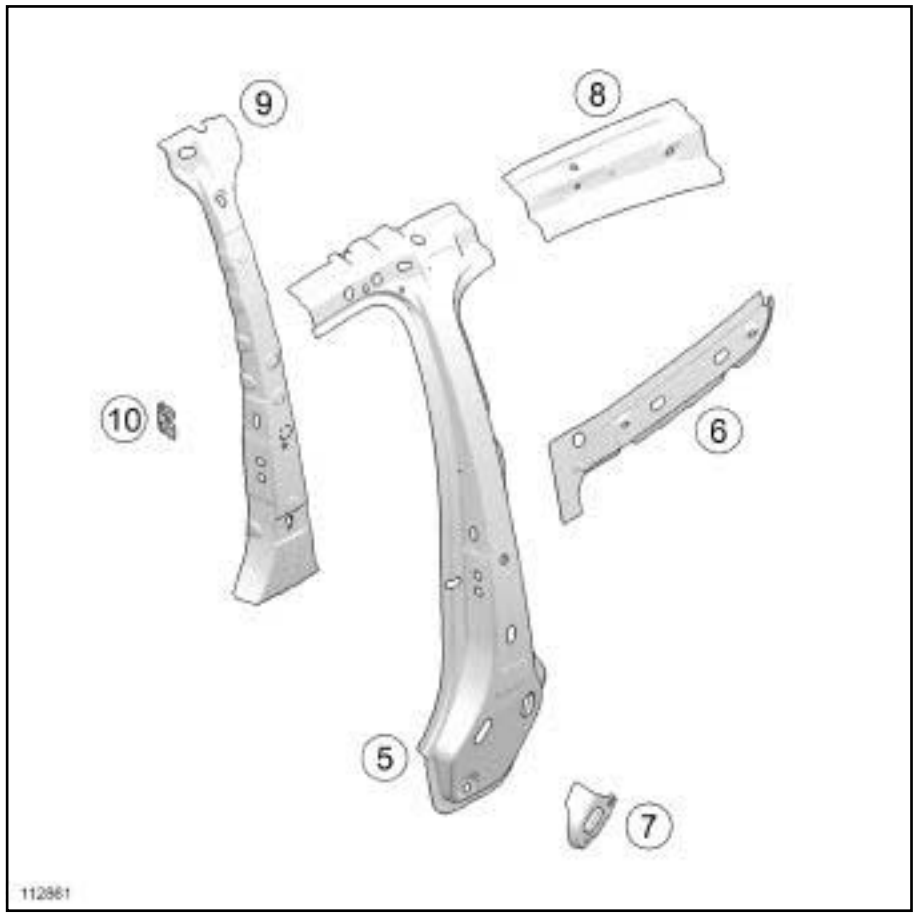
B85 or K85



112154

No.	Description	Type	Thickness (mm)
(**1**)	B-pillar reinforcement	VHEL	**1.8**
(**2**)	B-pillar upper reinforcement	VHEL	**2.8**
(**3**)	B-pillar hinge reinforcement	VHEL	**2**
(**4**)	Adjustment pad	HLE	**2.5**

C85 or S85



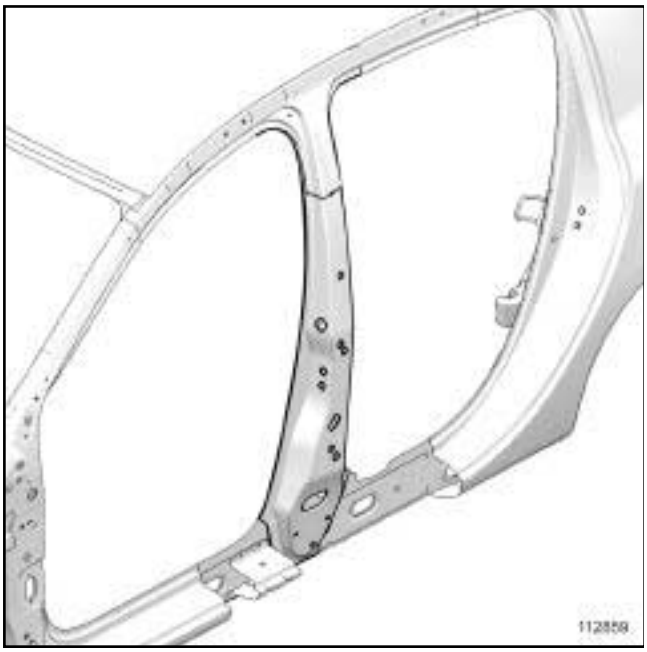
112861

No.	Description	Type	Thickness (mm)
(**5**)	B-pillar reinforcement	VHEL	**1.8**
(**6**)	Quarter panel strip reinforcement	HLE	**1.1**
(**7**)	Side impact retention bracket reinforcement	HLE	**1.8**
(**8**)	Rear roof drip moulding reinforcement	HLE	**1**
(**9**)	B-pillar impact reinforcement	VHEL	**2.1**
(**10**)	Adjustable pad	HLE	**2.5**

II - PART FITTED

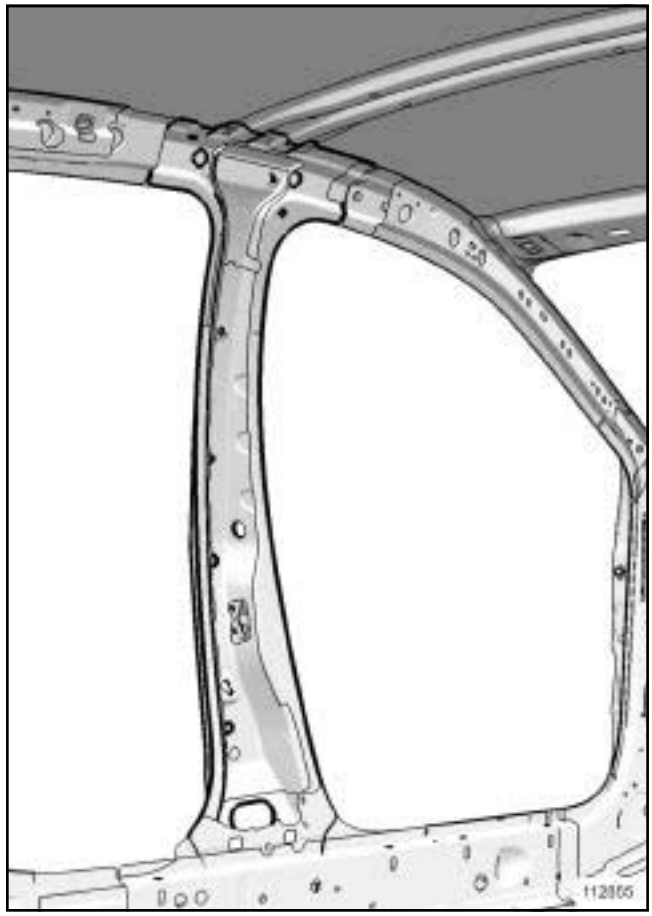
Complete replacement

B85 or K85



112859

For details of body side cuts (see **43A**, **Side upper structure**, **Body side, front section: Description**, page **43A-28**) .



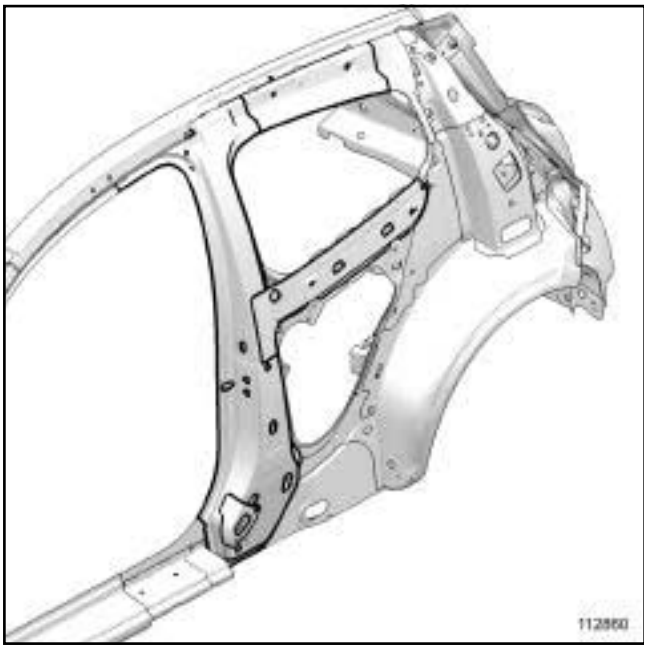
112855

Remove the B-pillar reinforcement from inside the vehicle.

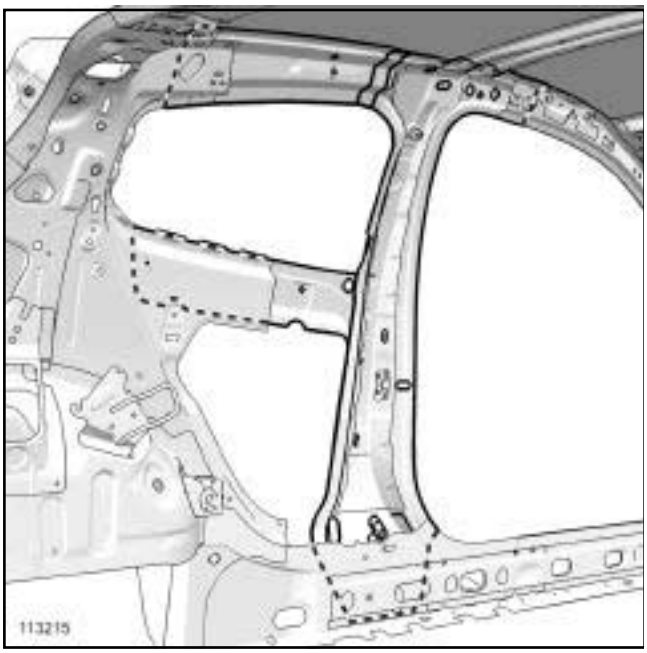
WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

C85 or S85



112860



113215

Remove the B-pillar reinforcement from inside the vehicle.

Note:

For more detailed information on welded connections with three thicknesses, see **MR 400**.

B85 or K85

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT

112157

This is a basic part, its only function is that of the B-pillar upper lining.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

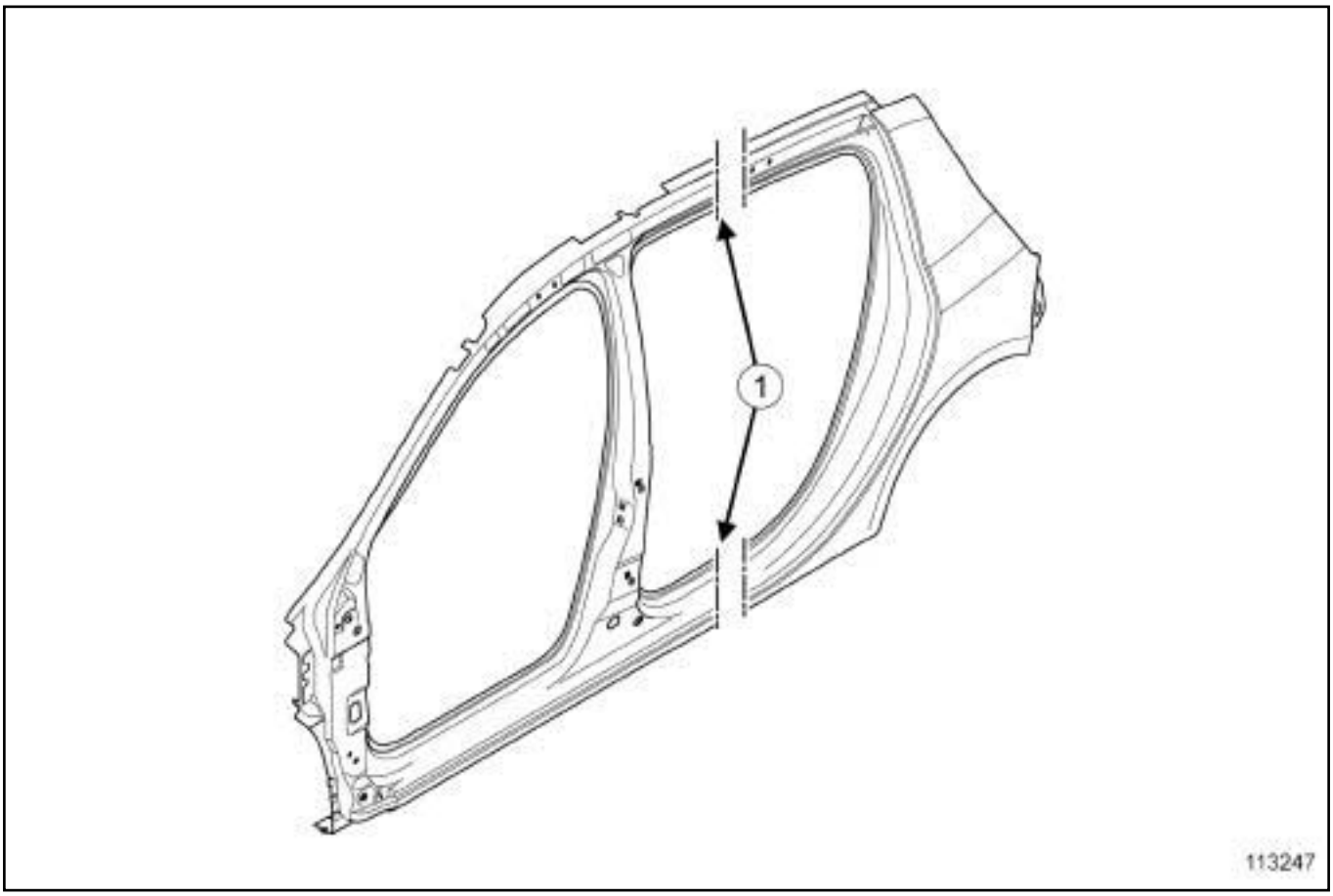
Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection (see **MR 400**).

DESIGN OF THE STRUCTURAL COMPONENT

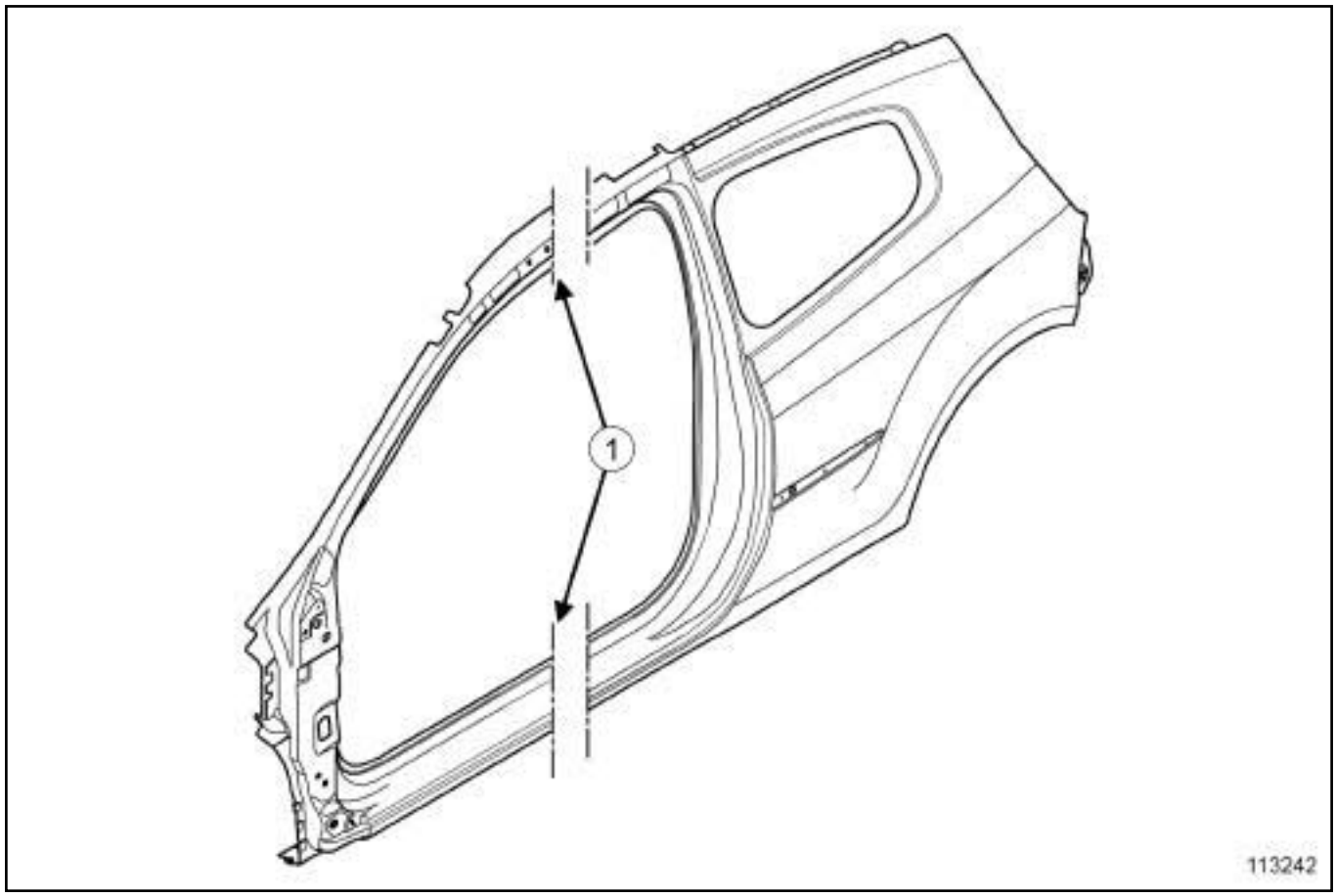
B85 or K85



113247

The two parts must be welded at the joint (**1**) and butt welded by continuous EGW welding.

C85 or S85



113242

The two parts must be welded at the joint (**1**) and butt welded by continuous EGW welding.

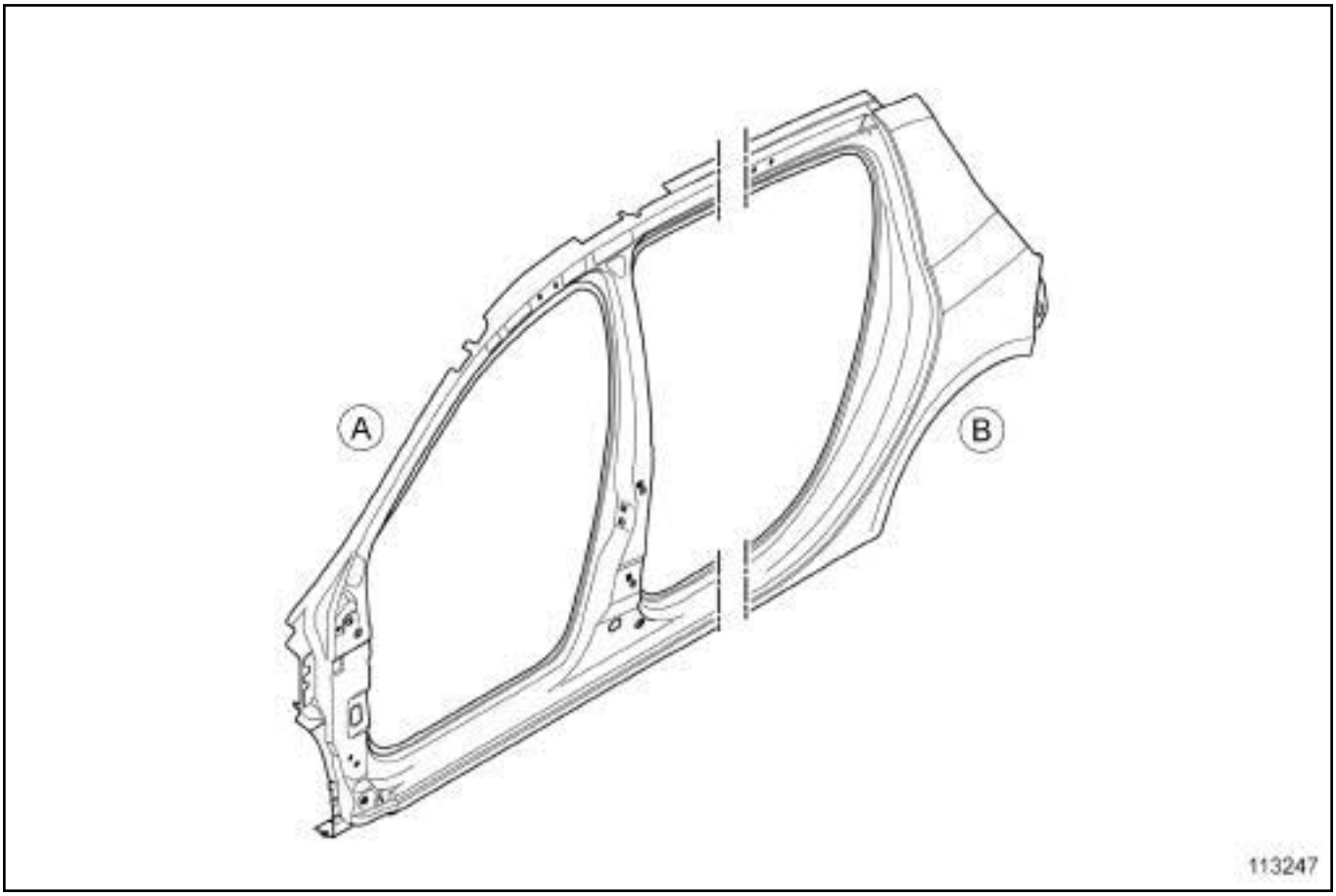
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

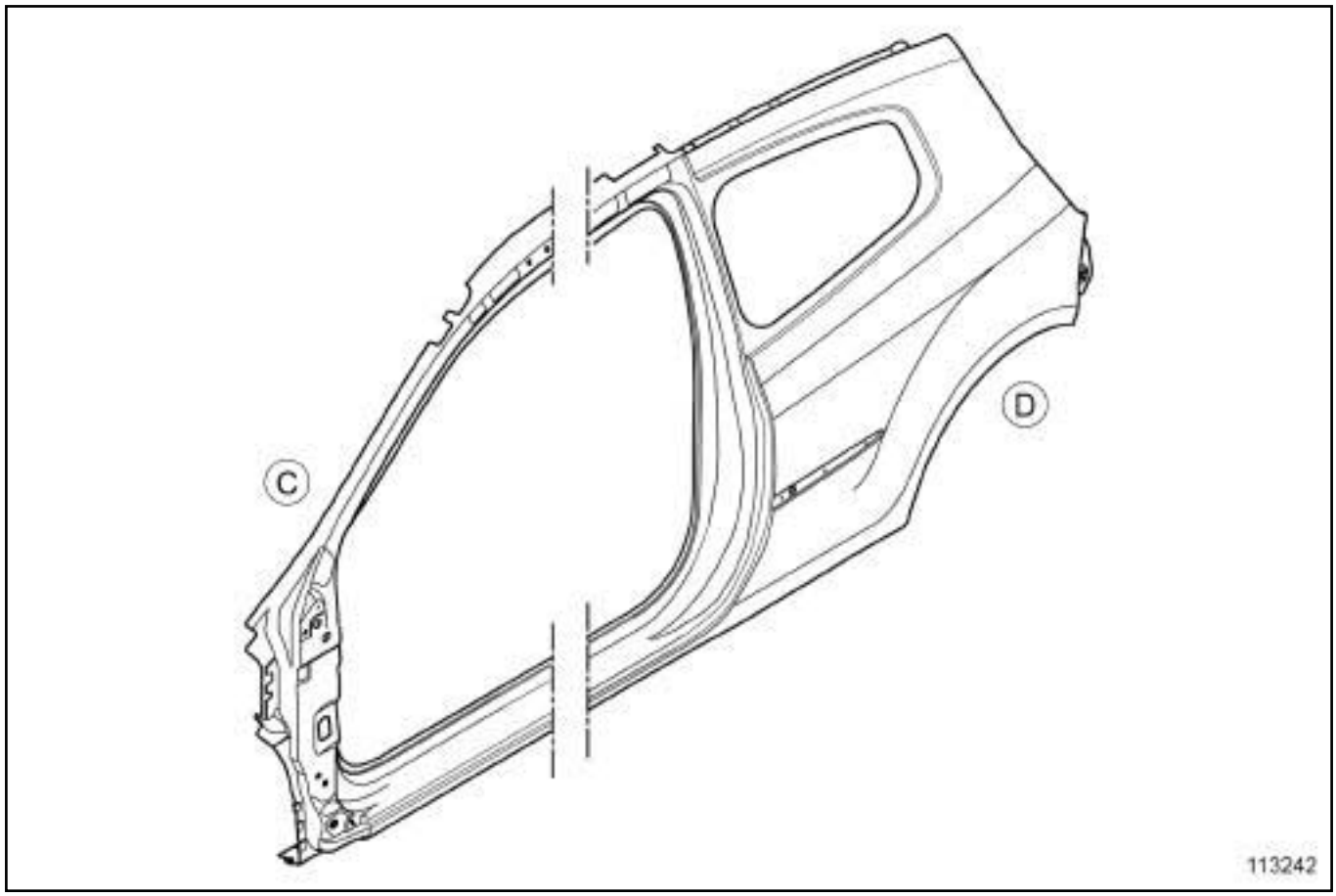
The body side is achieved by welding the rear wing and the body side front section.

B85



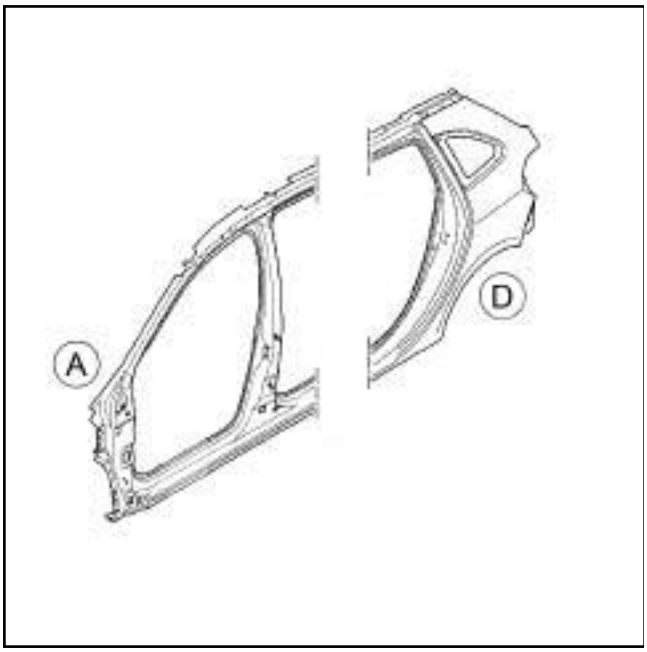
113247

C85 or S85



113242

K85



126785

To replace this part, order the body side front section ***(A)*** with the rear wing panel ***(B)*** or the A-pillar ***(C)*** with the rear wing panel ***(D)*** .

The parts supplied are long enough to cover the parts to be replaced.

Pour le détails des méthodes, (see **43A**, **Side upper structure**, **Body side, front section: Description**, page **43A-28**) et (see **44A**, **Rear upper structure**, **Rear wing panel: Description**, page **44A-3**) .

Note:

For a detailed description of a particular connection, see **MR 400**.

B85 or K85

Note:

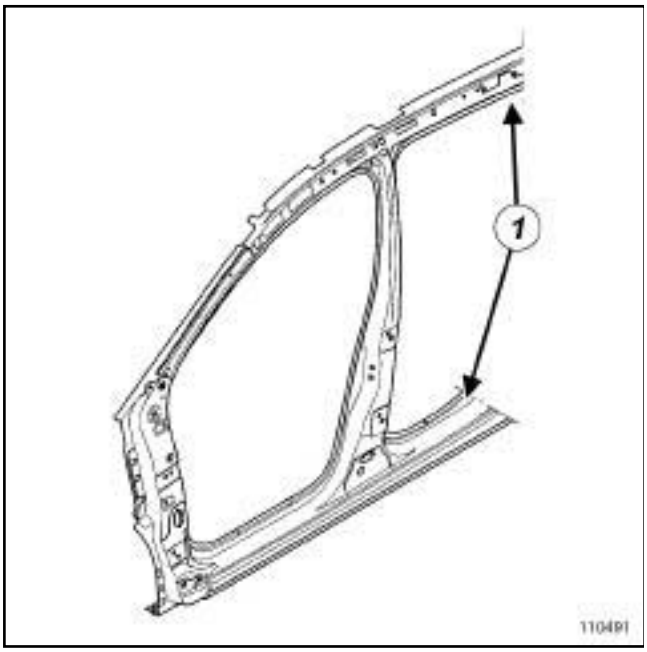
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



110491

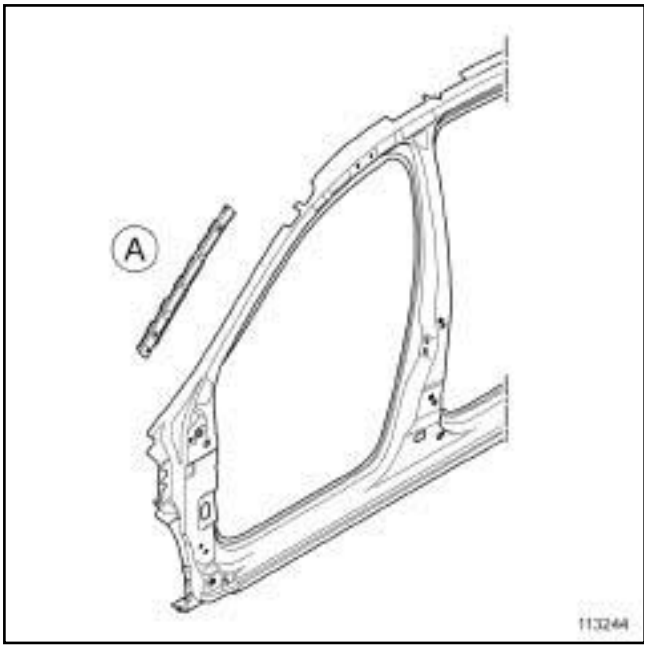
This part has two special features:

- it is welded under the roof,
- it is butt welded in part (**1**) .

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

B85 or K85



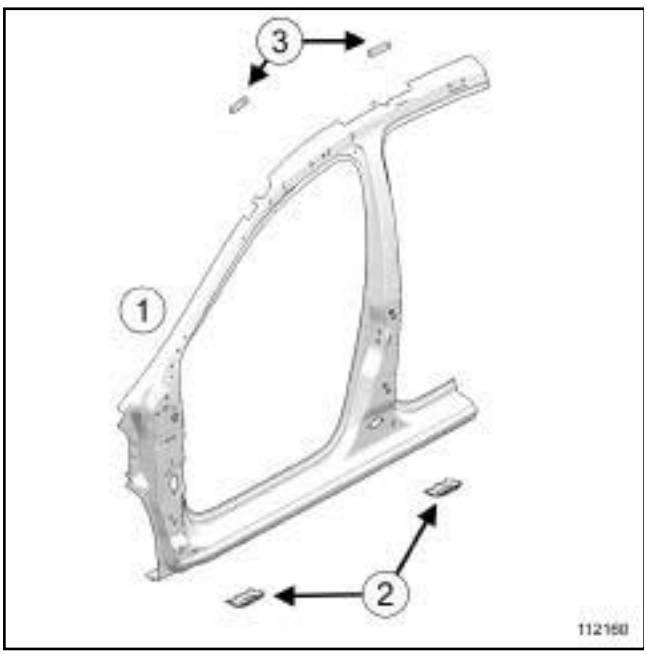
113244

To replace this part, order a double seal mounting (**A**) in the event that the A-pillar has to be replaced.

The options for replacing this part are as follows:

- replacement of the lower section of the A-pillar
- replacement of the A-pillar,
- replacement of the B-pillar,
- replacement of the entire B-pillar,
- complete replacement.

I - COMPOSITION OF THE SPARE PART



112160

No.	Description	Type	Thickness (mm)
(**1**)	Body side	-	**0.75**
(**2**)	Jacking point bridge piece	Very high yield strength	**2**
(**3**)	Roof bar mounting pad	HLE	**1.5**

IMPORTANT
For weld connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical specifications.

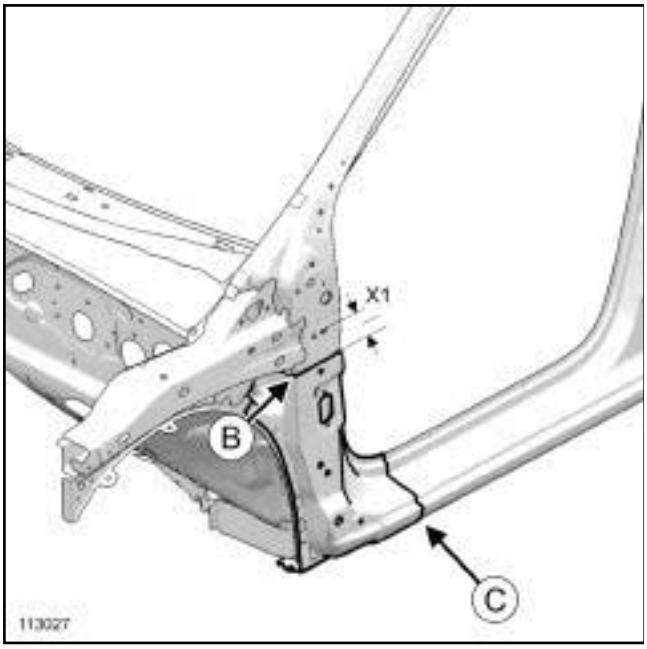
WARNING
If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

II - PART IN POSITION

1 - Replacing the lower section of the A-pillar

WARNING
The position of this cut must be observed, and is determined according to the position of the internal reinforcements or acoustic inserts cut.

B85 or K85

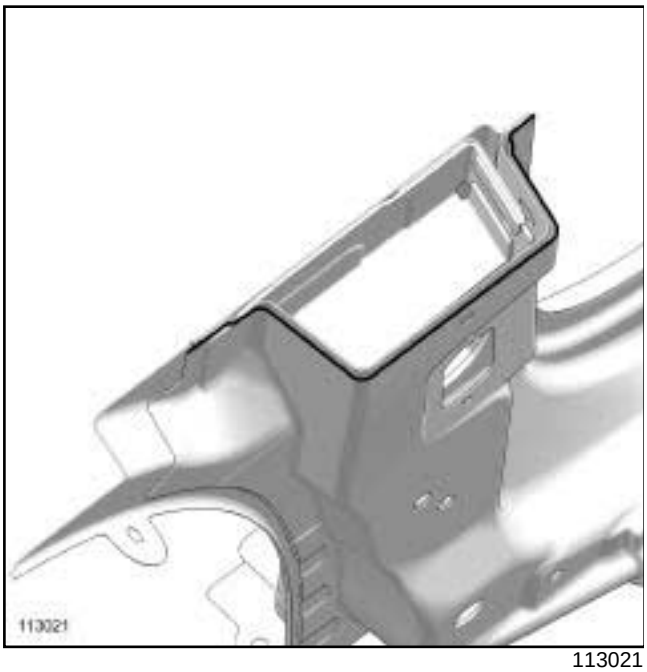


113027

(**X1**) = **70 mm**.

Cut (**C**) in front of the jacking point.

Cut B

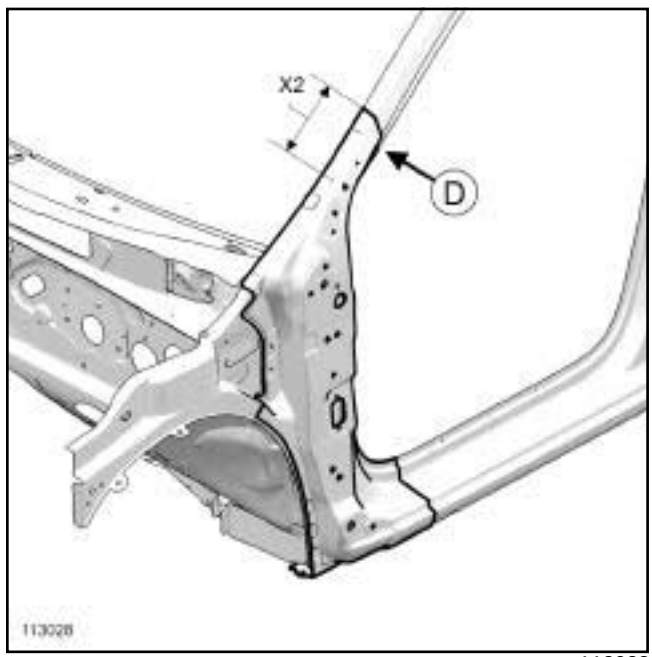


113021

Cut C

113020

2 - A-pillar replacement



113028

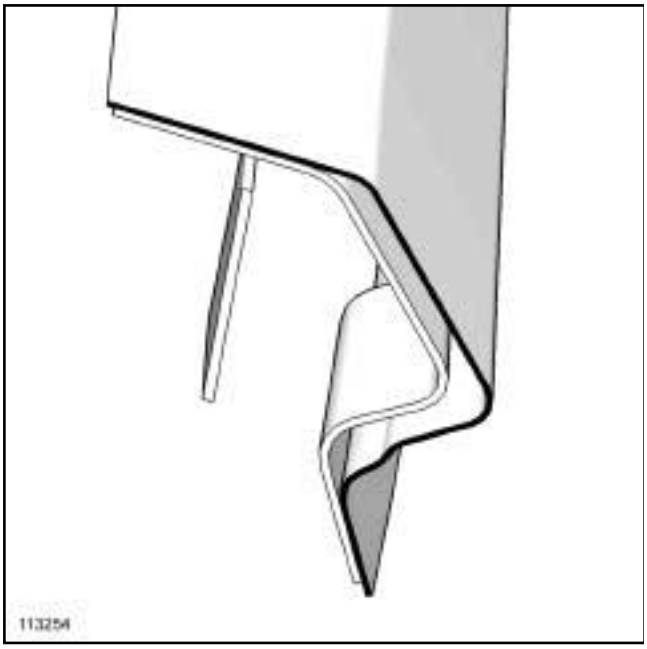
(**X2**) = **180 mm**.

WARNING

When the cuts are made, keep the inner reinforcement in close proximity to the part to be cut.

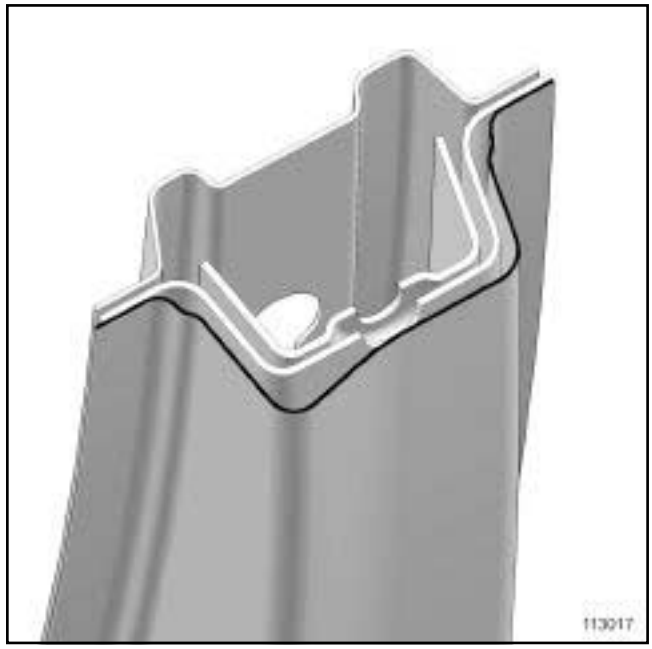
B85 or K85

Cut D



113254

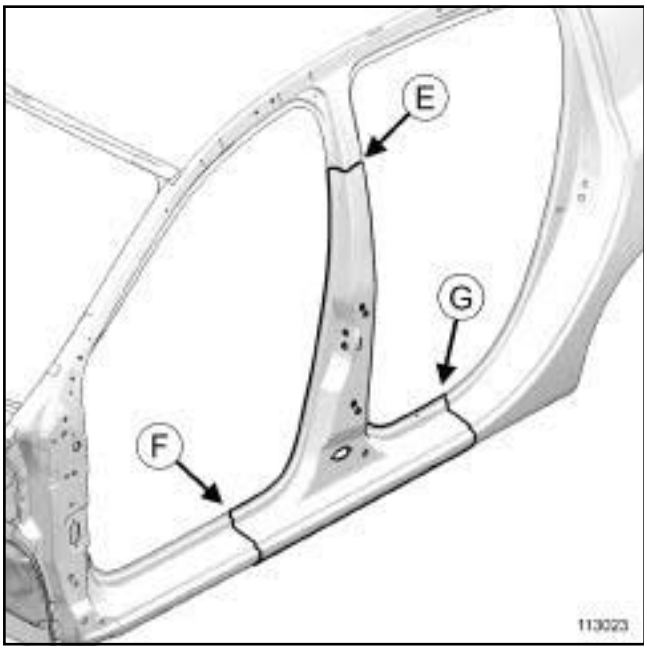
Cut E



113017

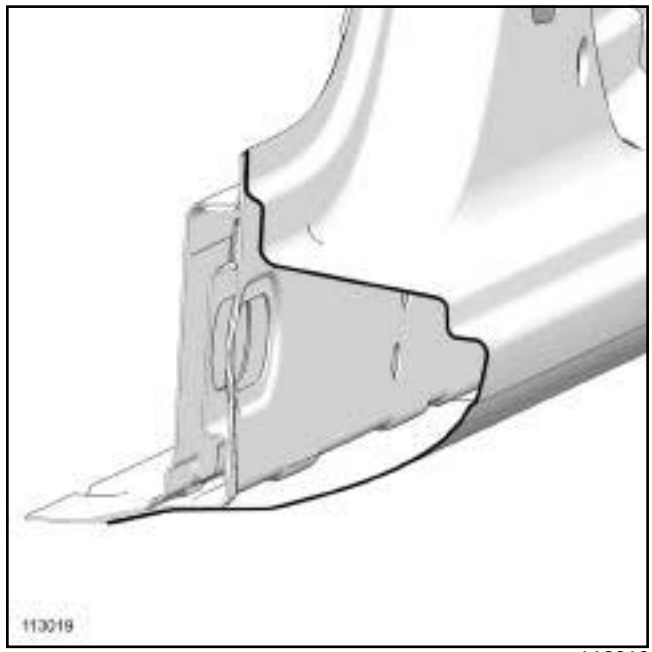
3 - Replacing the B-pillar

This method of replacement involves replacing the B-pillar reinforcement without removing the roof.



113023

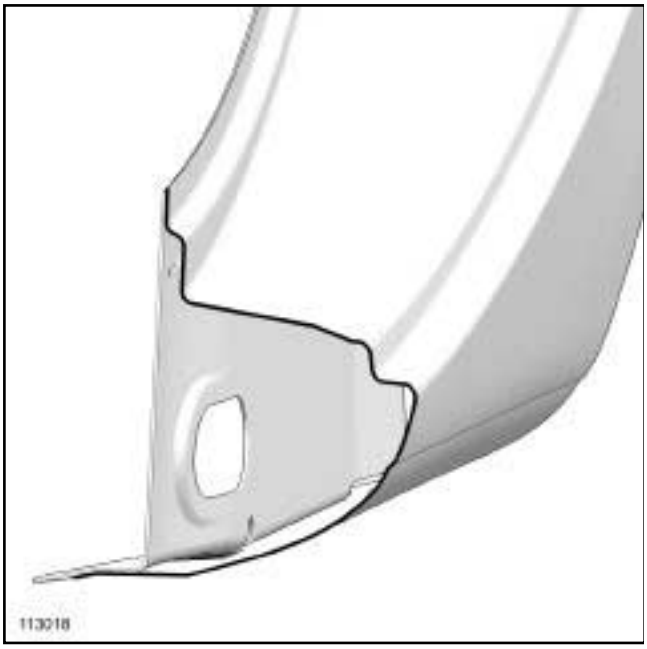
Cut F



113019

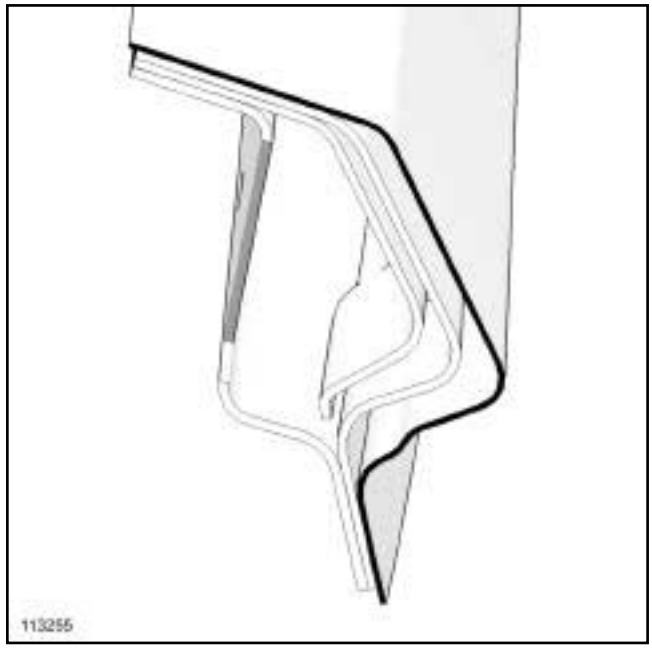
B85 or K85

Cut G



113018

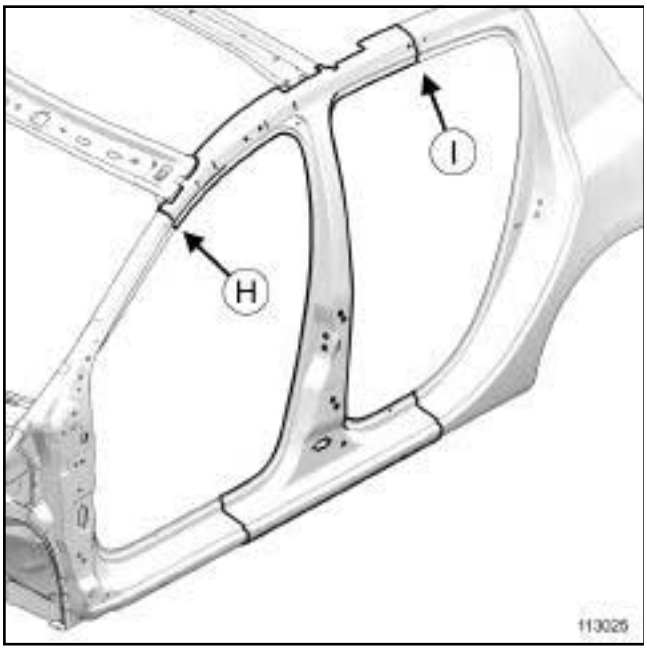
Cut H



113255

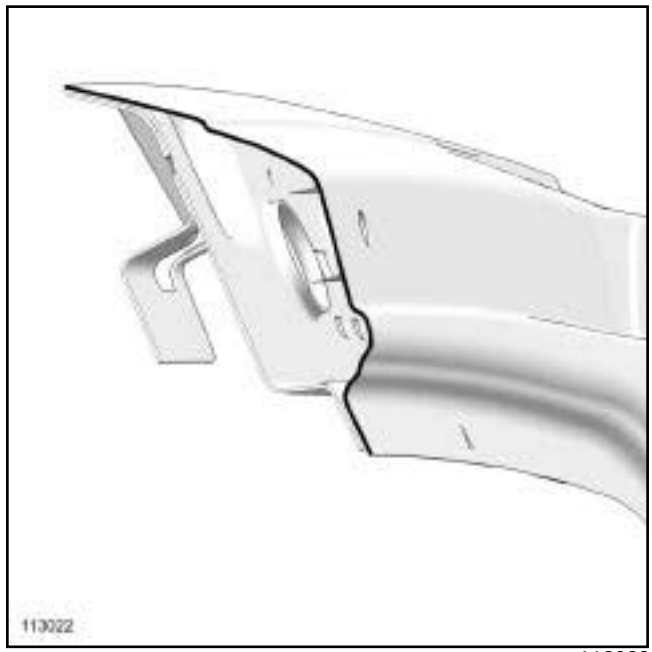
4 - Replacing the complete B-pillar

This method of replacement involves completely replacing the B-pillar reinforcement.



113025

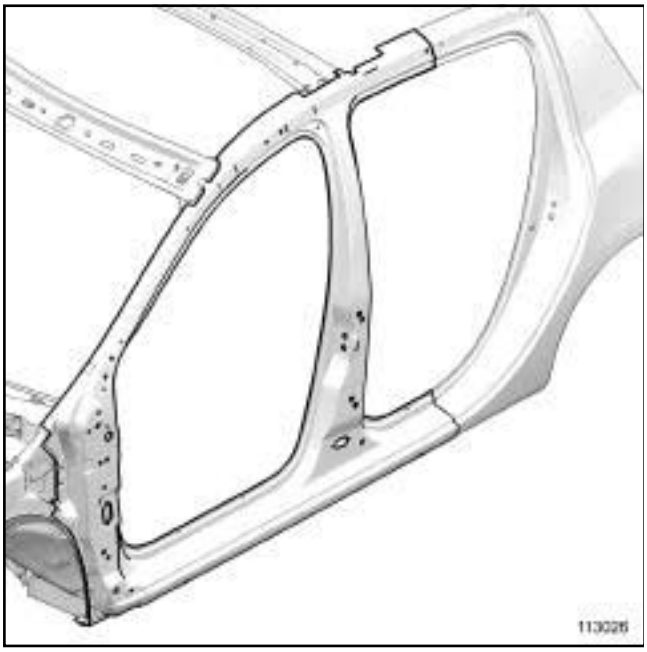
Cut I



113022

B85 or K85

5 - Complete replacement



113026

Note:

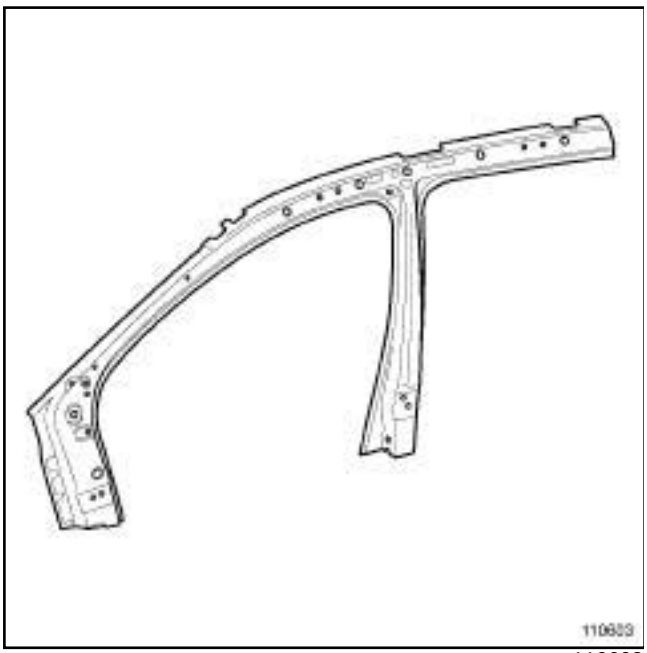
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

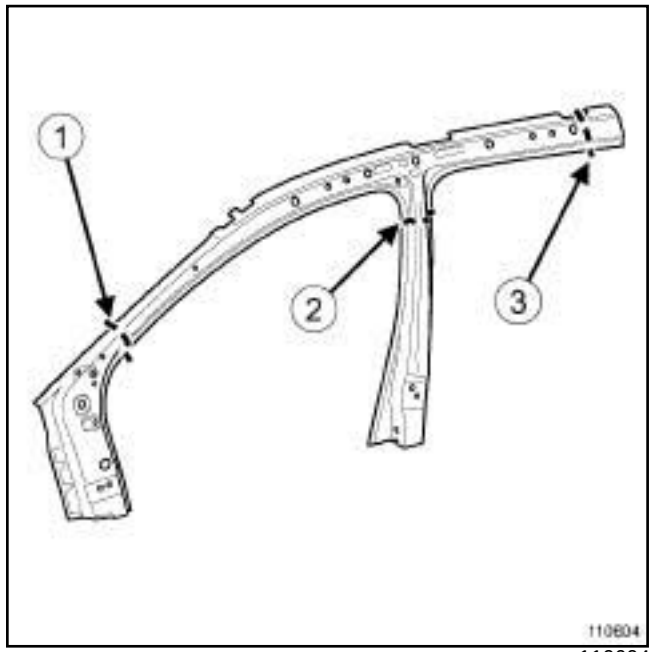
I - DESIGN OF THE STRUCTURAL COMPONENT



110603

This is a basic part; its only function is that of an upper body.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110604

Lines (**1**) , (**2**) and (**3**) in the drawing show the area in which partial replacement may be carried out.

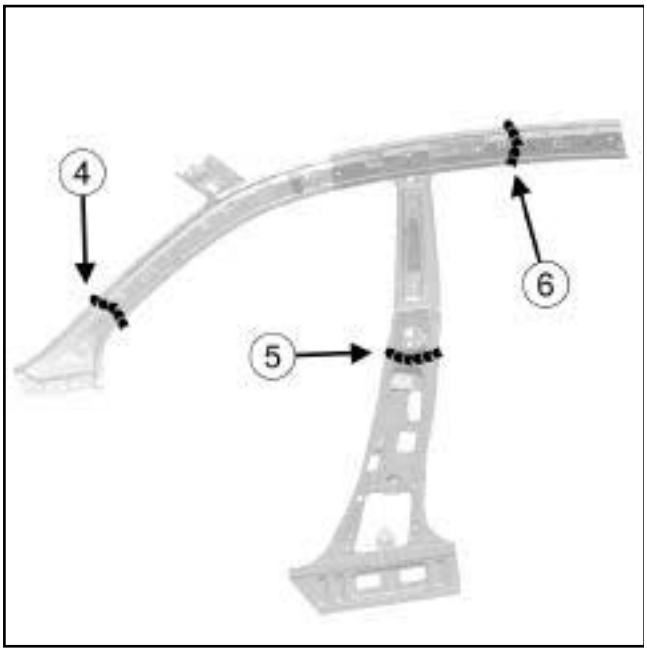
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

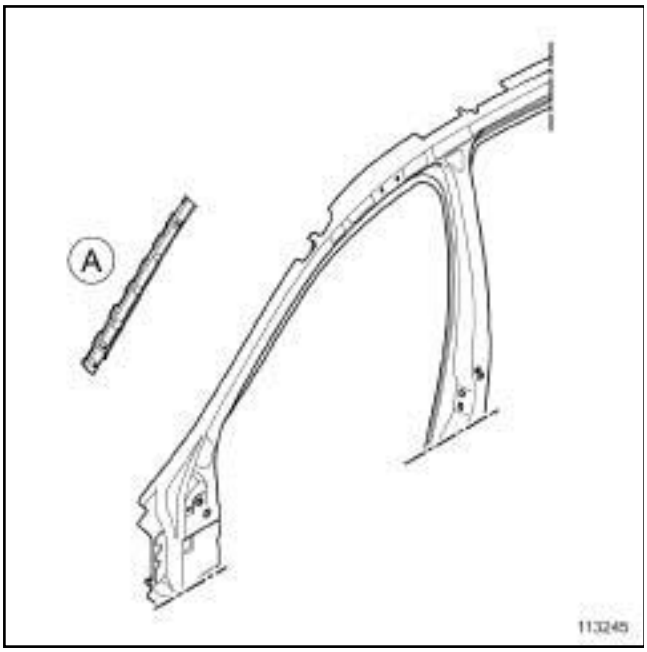


132023

Lines (**4**) , (**5**) and (**6**) on the drawing show a butt weld by continuous EGW welding.

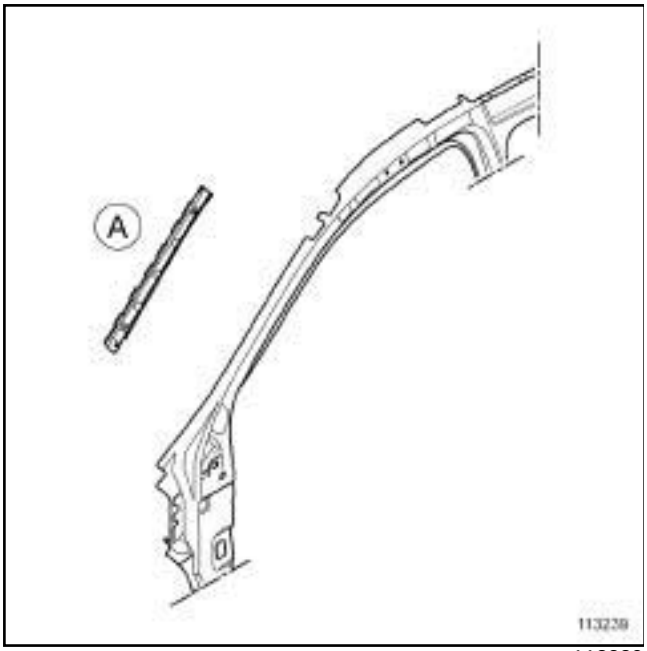
Weld (**6**) along the butt weld line.

B85 or K85



113245

C85 or S85



113239

To replace this part, order the double seal mounting as well ***(A)*** .

There is only one way of replacing this part:

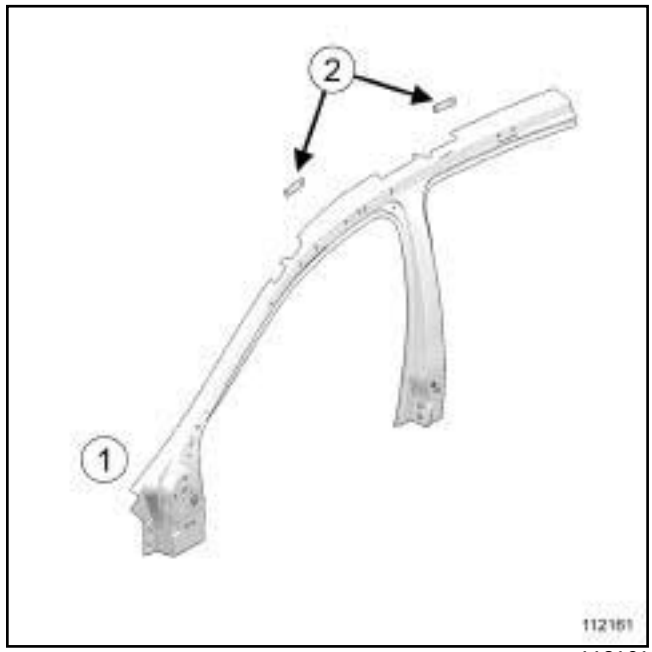
- complete replacement.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - COMPOSITION OF THE SPARE PART

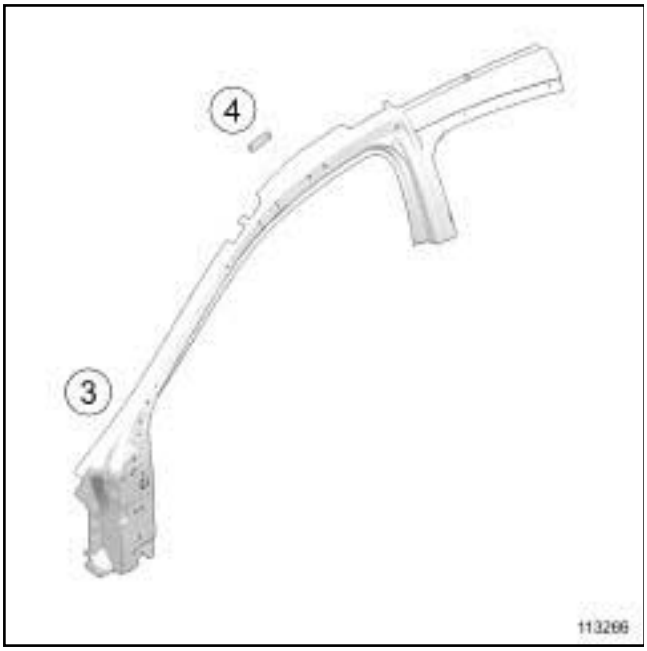
B85 or K85



112161

No.	Description	Type	Thickness (mm)
(**1**)	Upper body	-	**0.75**
(**2**)	Roof bar mounting pad	HLE	**1.5**

C85 or S85



113266

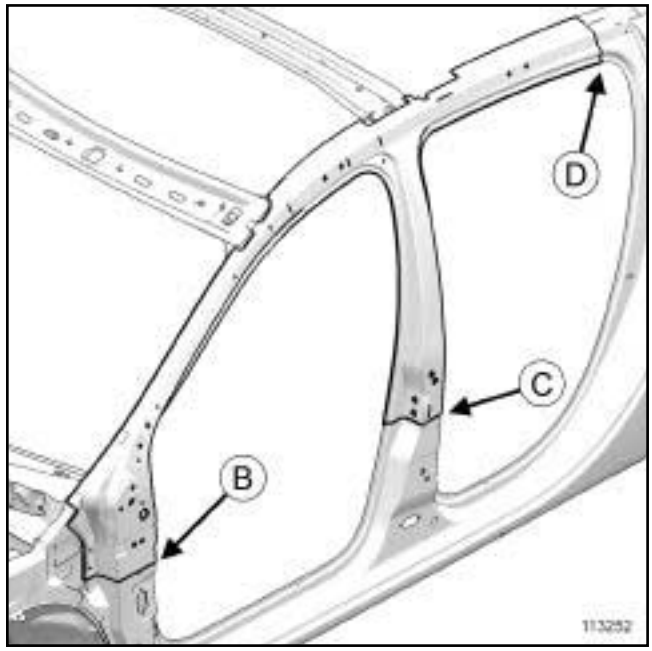
No.	Description	Type	Thickness (mm)
(**3**)	Upper body	-	**0.75**
(**4**)	Roof bar mounting pad	HLE	**1.5**

Note:

For more detailed information on welded connections with three thicknesses, see **MR 400**.

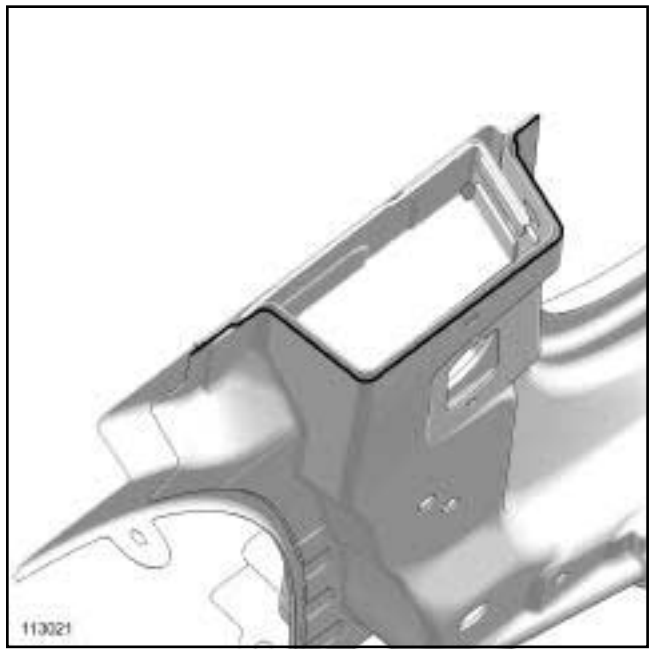
II - PART FITTED

B85 or K85



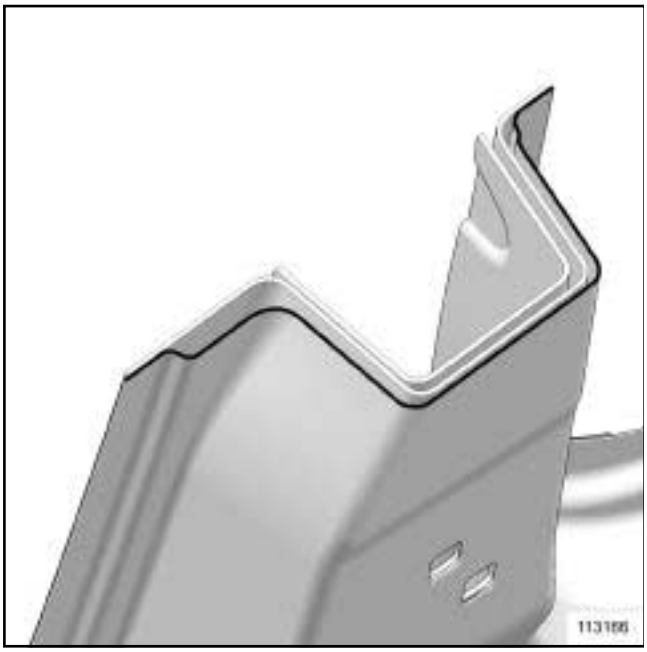
113252

Cut B



113021

Cut C

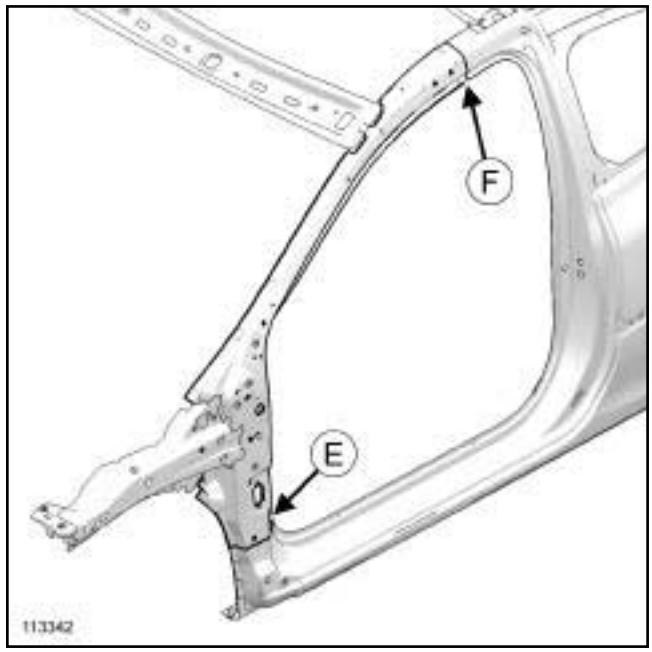


113166

Cut D

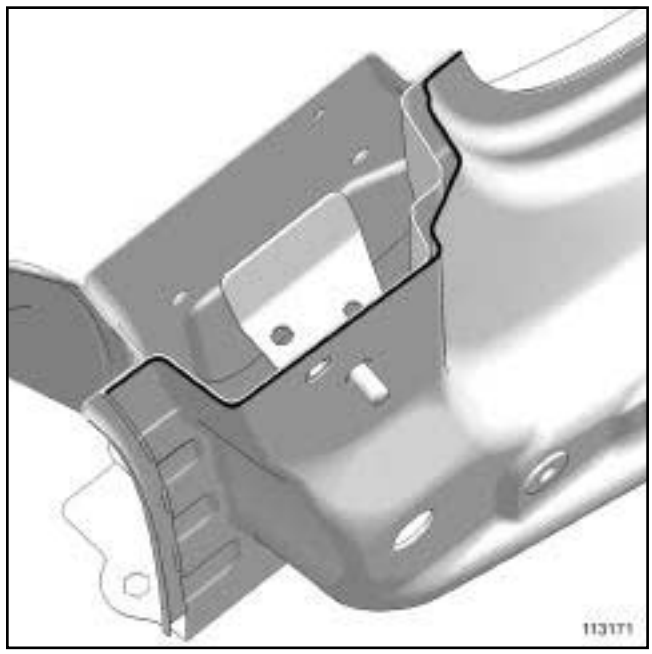
113253

C85 or S85



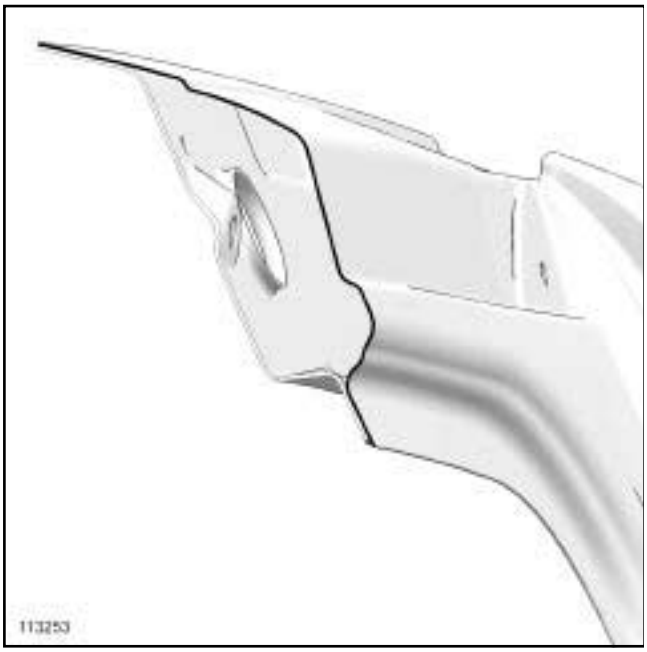
113342

Cut E



113171

Cut F



113253

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

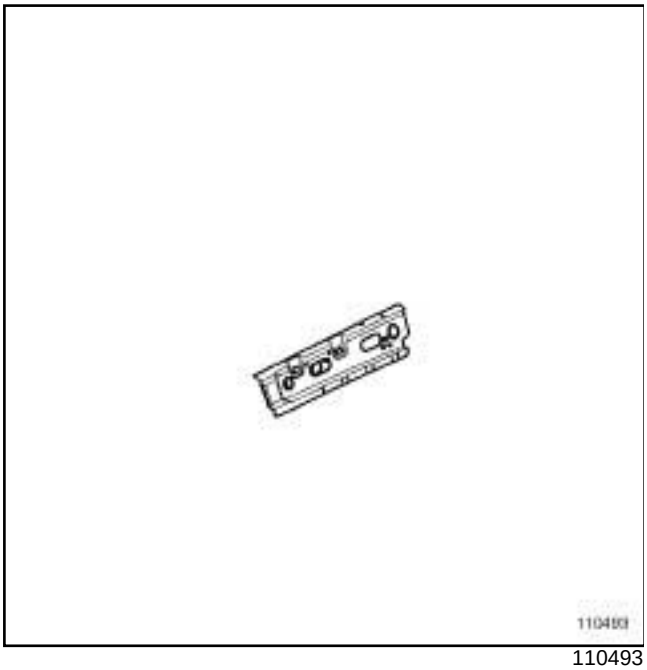
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT

Note:

For a detailed description of a particular connection, see **MR 400**.



110493

This is a basic part, its only function is that of the B-pillar lining.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

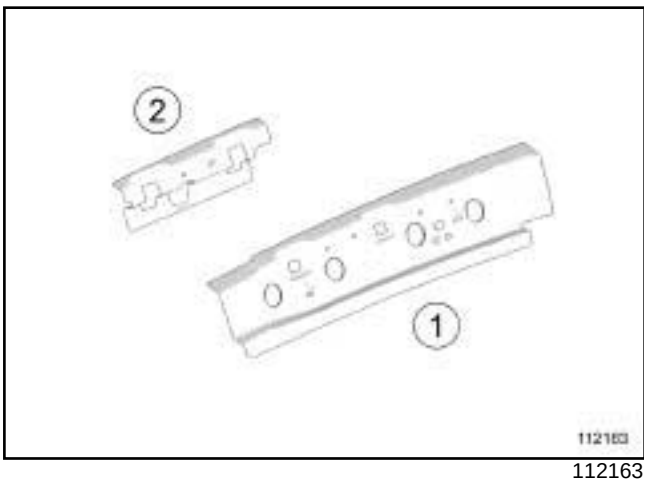
B85 or K85

112715

There is only one way of replacing this part:

- Complete replacement: this operation requires the replacement of the roof and the rear wing panel.

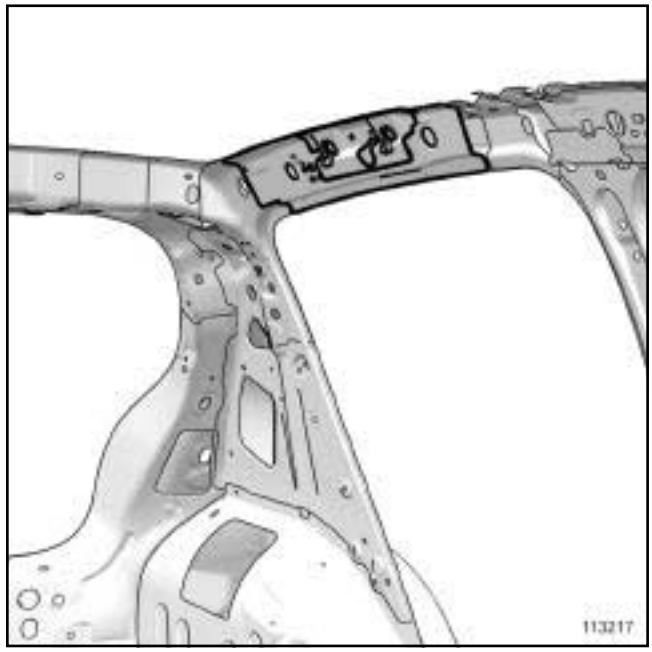
I - COMPOSITION OF THE SPARE PART



112163

No.	Description	Type	Thickness (mm)
(**1**)	Rear roof drip moulding lining	-	**0.95**
(**2**)	Rear airbag deflector	-	**0.95**

II - PART IN POSITION



113217

IMPORTANT

For weld connections in three thicknesses, the spot welds on the part replaced should be made in the same place as for the original joint to retain its mechanical specifications.

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading this general information, check that there are no special notes associated with this vehicle. These special notes will be specified if applicable in other parts of this subsection dealing with the part.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

DESIGN OF THE STRUCTURAL COMPONENT

102619

The special feature of this part is that it combines the functions of front and rear jacking point.

Note:

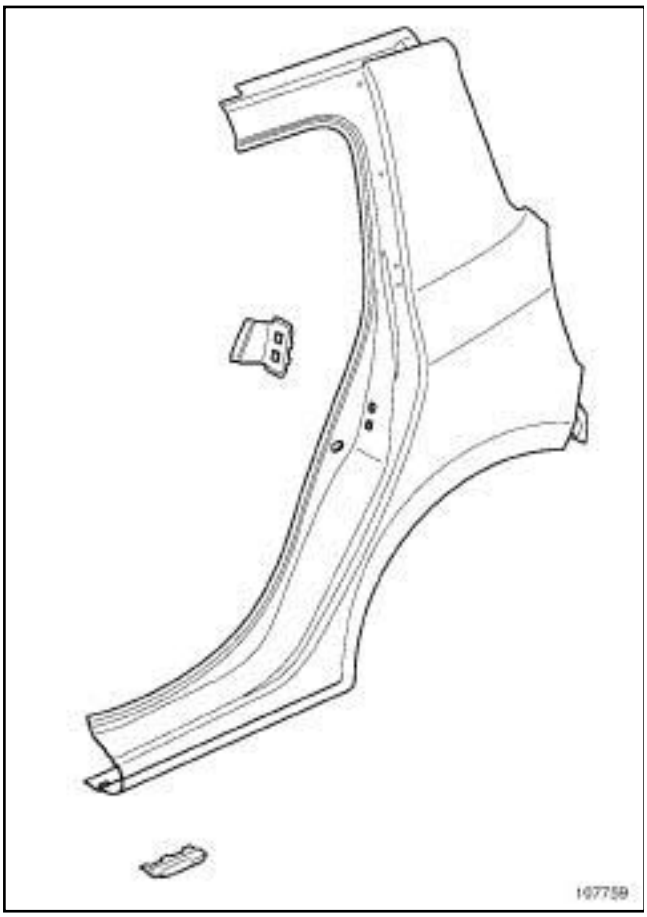
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - DESIGN OF THE STRUCTURAL COMPONENT



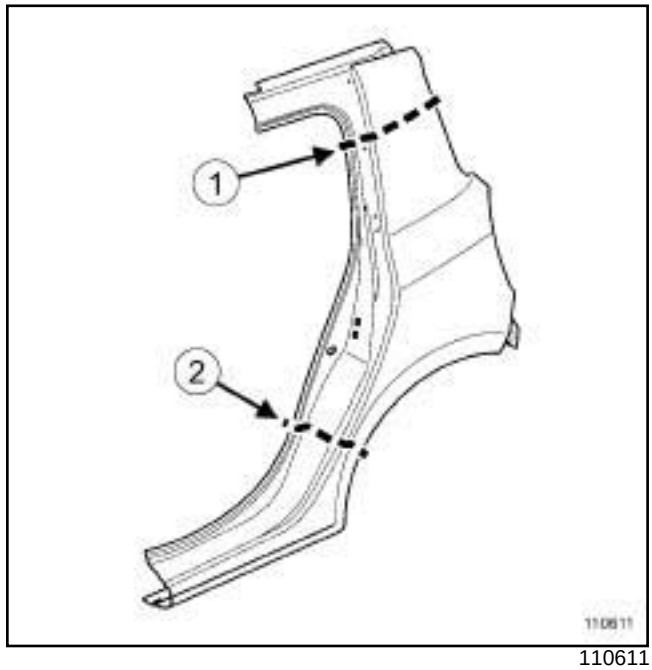
107759

This part has three special features:

- it is welded under the roof,
- it is butt welded on the body side front section.
- it is supplementary to the body side front section for a complete body side replacement.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT

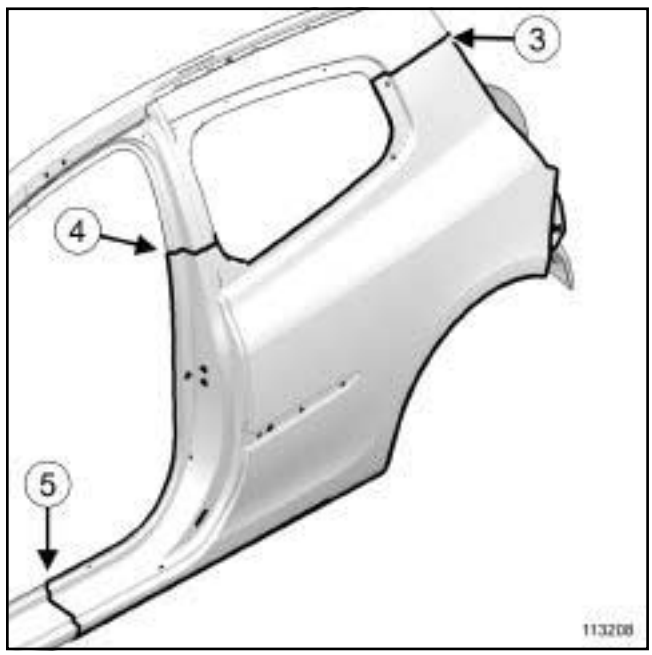
B85



110611

Lines (**1**) and (**2**) in the drawing show the areas in which it is possible to carry out a partial replacement.

C85



113208

Lines (**3**) , (**4**) and (**5**) in the drawing show the areas in which it is possible to carry out a partial replacement.

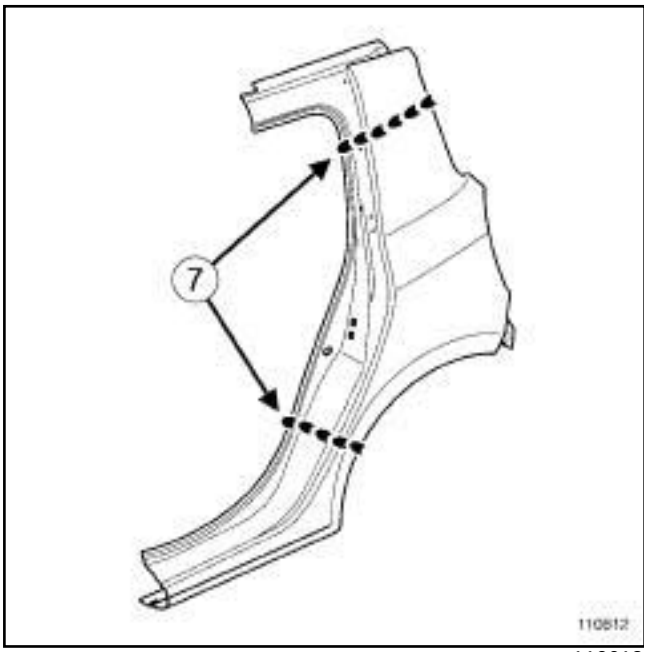
III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

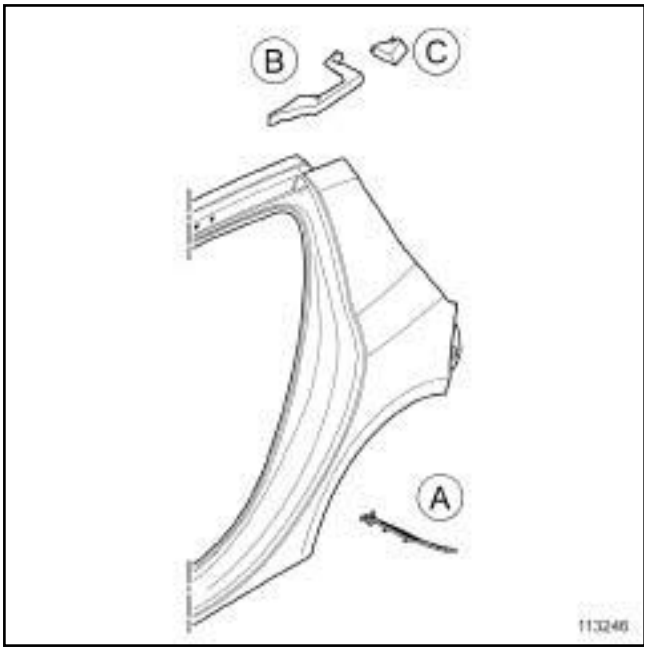
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



110612

Lines (**7**) in the diagram show butt welding by continuous EGW welding.

B85



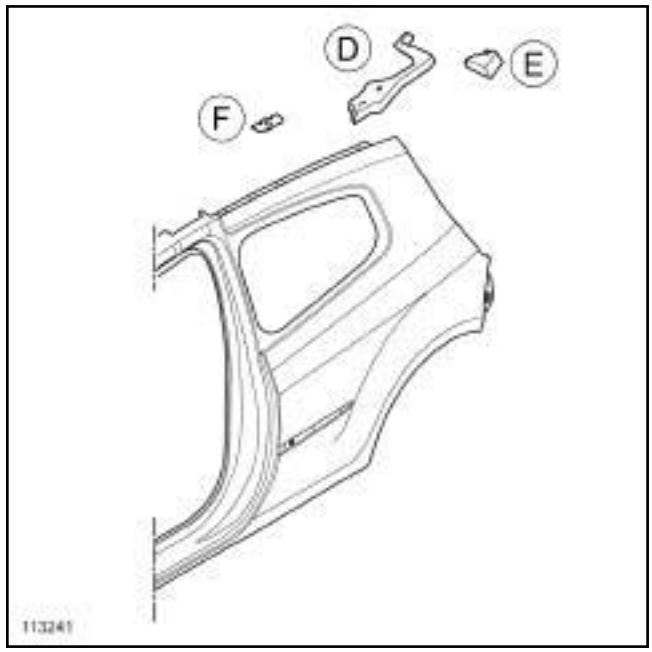
113246

To replace this part, order expanding inserts (**A**) , (**B**) and (**C**) .

The options for replacing this part are as follows:

- partial replacement: this operation will allow you to retain the sill panel anti-gravel protection,
- Complete replacement: this operation requires the removal of the roof.

C85 or S85



113241

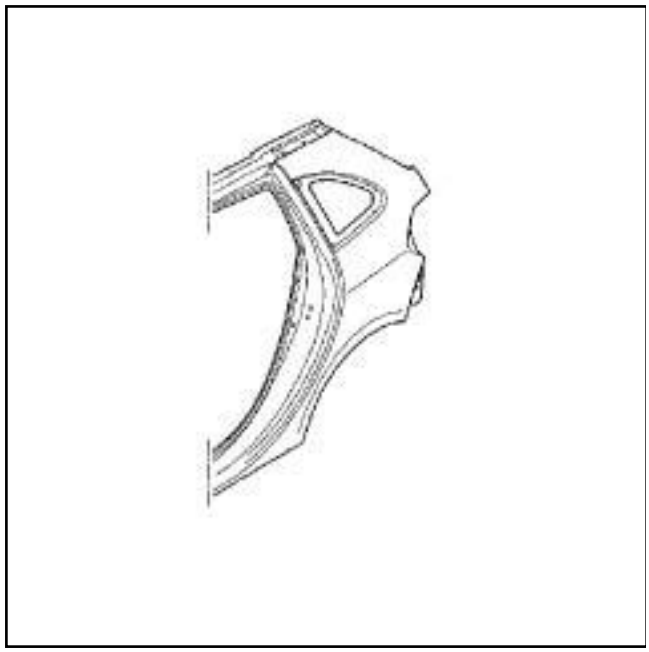
To replace this part, order:

- expanding inserts (**D**) and (**E**) ,
- a roof bar mounting pad (**F**) .

The options for replacing this part are as follows:

- partial replacement,
- Complete replacement: this operation requires the removal of the roof.

K85



126784

Pour effectuer le remplacement de cette pièce, commander en supplément l'insert de custode avant, l'insert de custode arrière et l'insert de custode intérieur (see **40A**, **General information**, **Hollow section inserts: List and location of components**, page **40A-16**) .

The options for replacing this part are as follows:

- partial replacement,

- complete replacement.

Note:

For a detailed description of a particular connection, see **MR 400**.

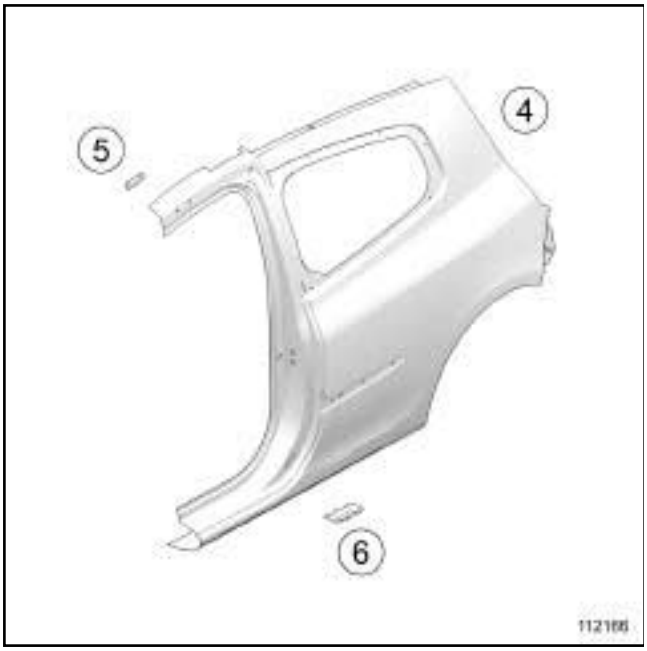
I - COMPOSITION OF THE SPARE PART

B85

112165

No.	Description	Type	Thickness (mm)
(**1**)	Rear wing panel	-	**0.75**
(**2**)	Rear door striker plate reinforcement	-	**1.5**
(**3**)	Adjustable pad	HLE	**2.5**

C85 or S85



112166

No.	Description	Type	Thick-ness (mm)
(**4**)	Rear wing panel	-	**0.75**
(**5**)	Roof bar mount-ing pad	HLE	**1.5**
(**6**)	Jacking point bridge piece	VHEL	**2**

K85

126714

No.	Description	Type	Thick-ness (mm)
(**7**)	Rear wing panel	Mild steel	**0.75**
(**8**)	Renfort gache de porte	Mild steel	**1.5**
(**9**)	Adjustable pad	HLE	**2.5**

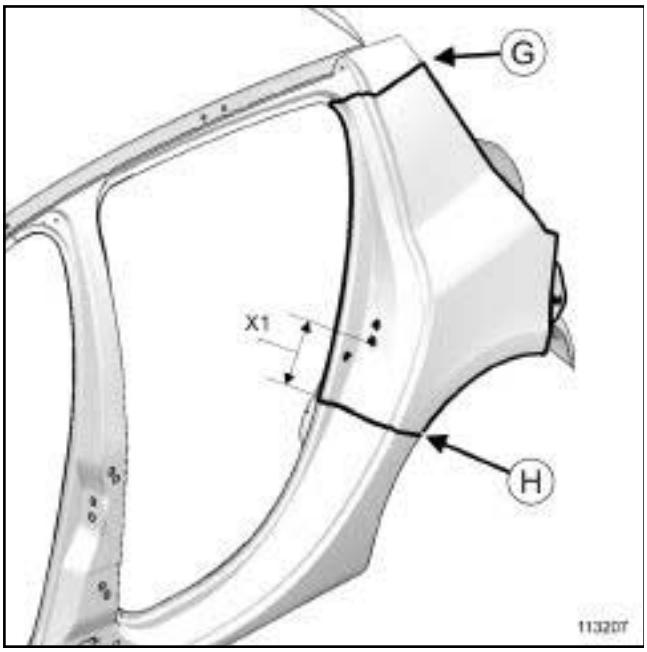
WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

II - PART IN POSITION

1 - Partial replacement

B85



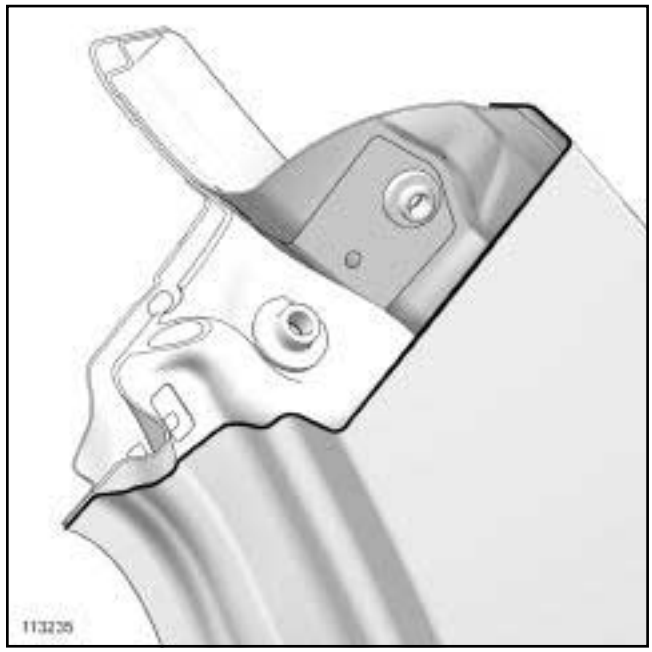
113207

(**X1**) = **200 mm**

Note:

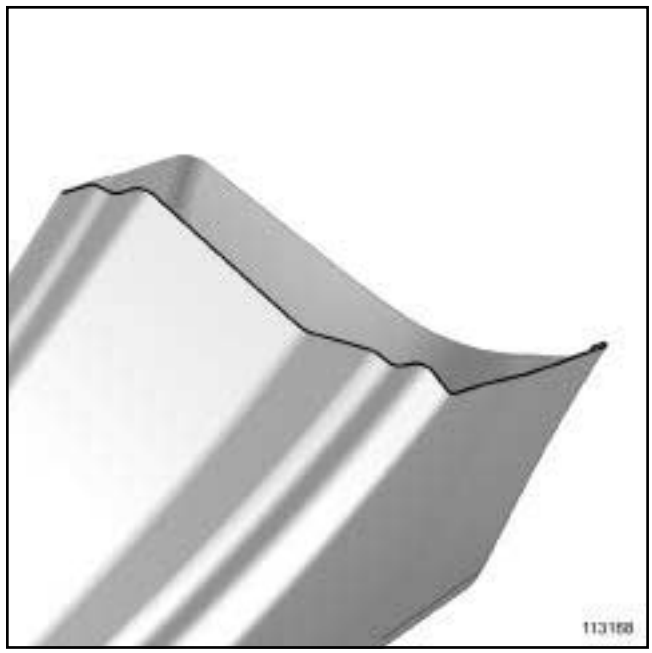
the position of the cut must be observed (**H**) ; it makes it possible to prevent damage to expanding insert ***(A)*** when the rear wing panel is refitted.

Section G



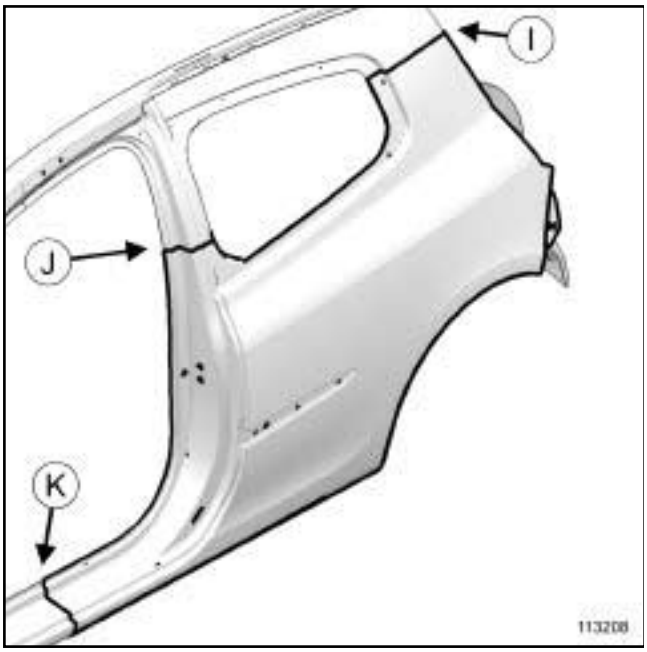
113235

Section H



113168

C85 or S85



113208

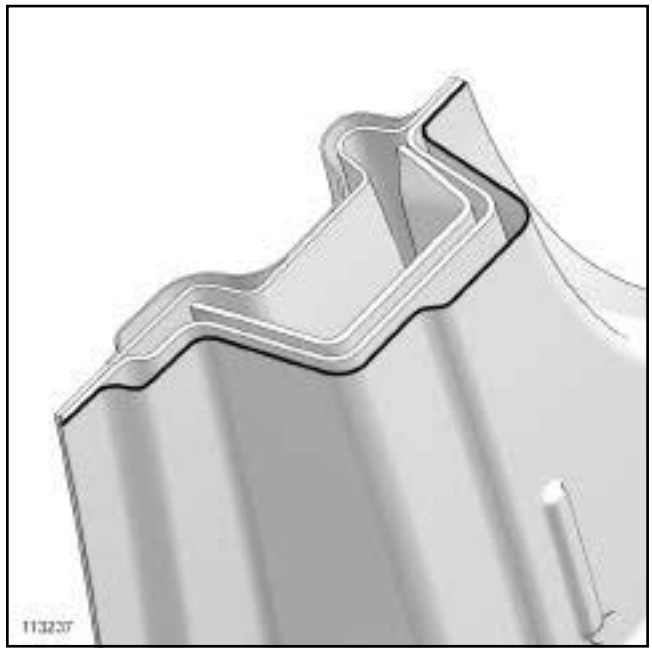
Note:

avant le remplacement de l'aile arrière, coller une **PLAQUE INSONORISANTE** sur le panneau d'aile arrière.

Section I

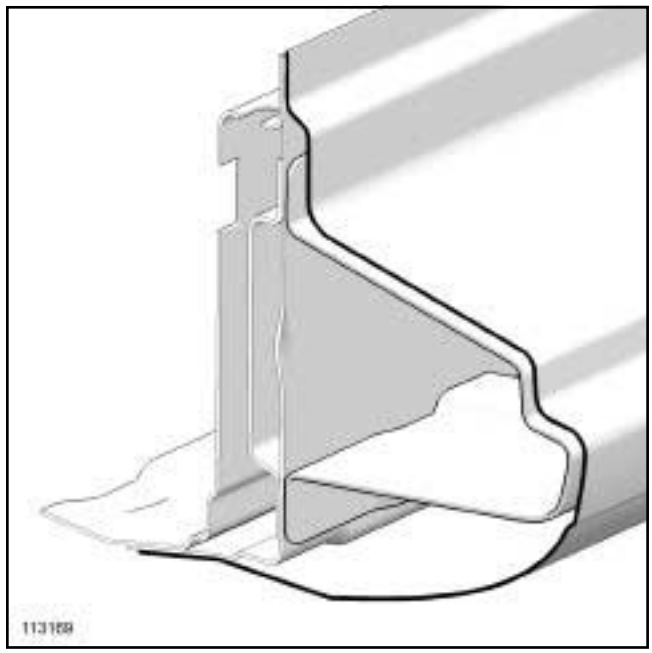
113236

Section J



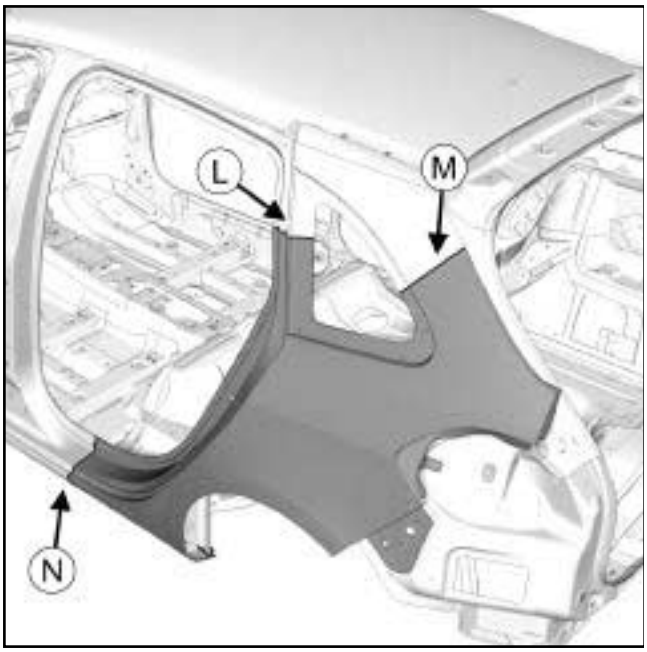
113237

Section K



113169

K85

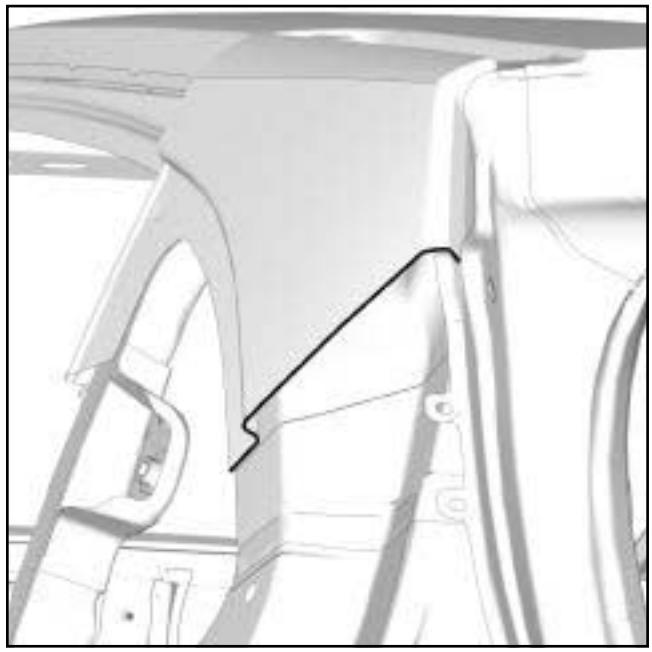


126716

Section L

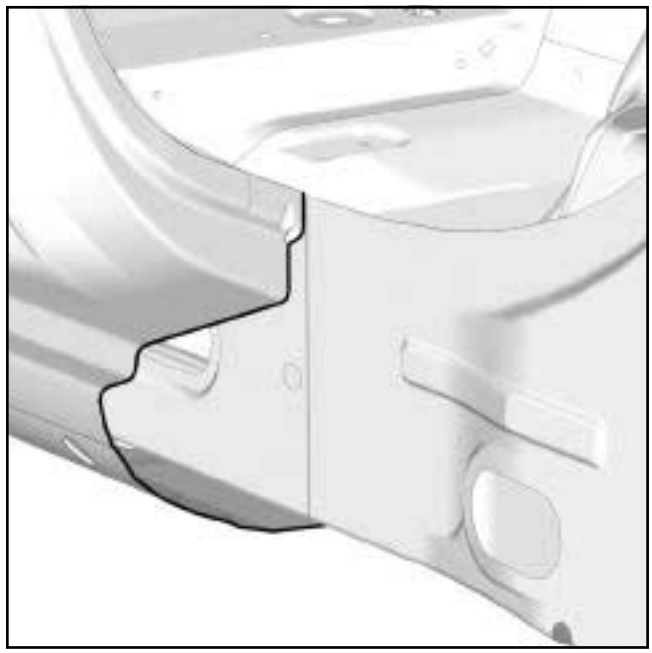
126718

Section M



126717

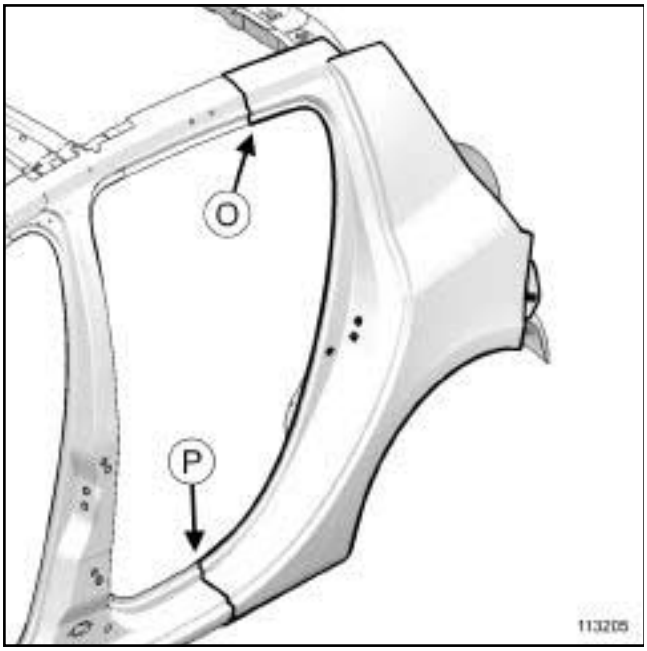
Section N



126720

2 - Complete replacement

B85

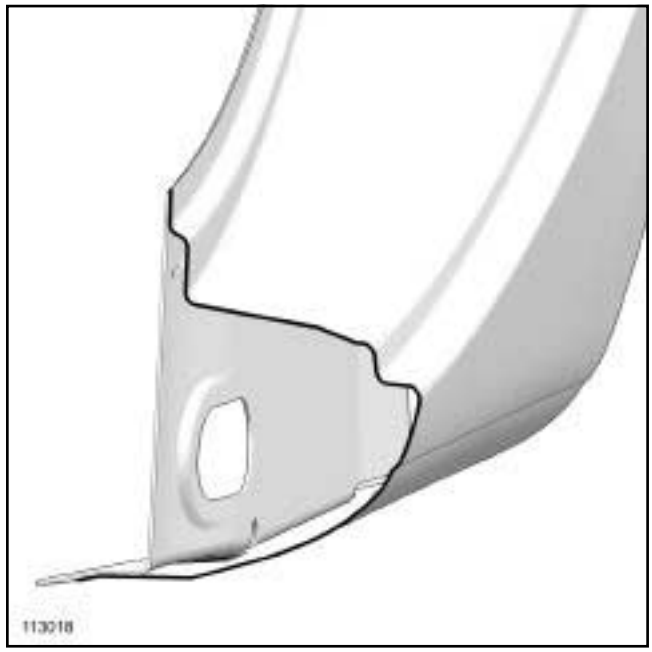


113205

Section O

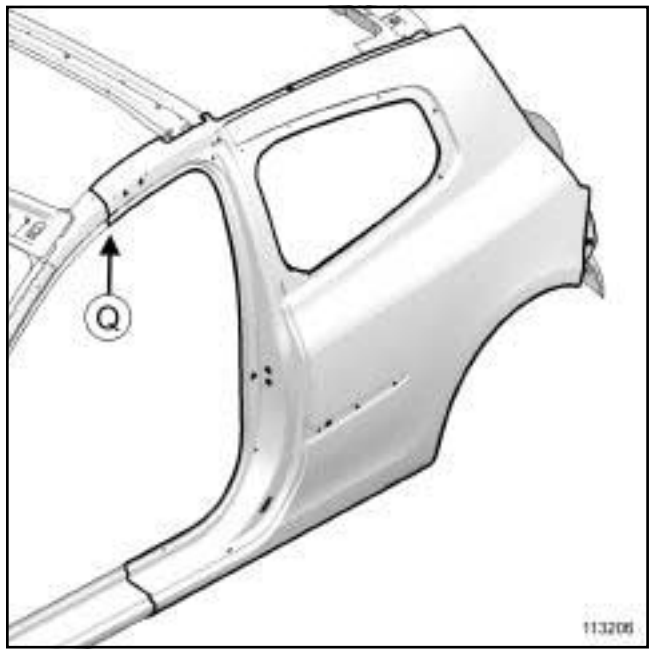
113253

Section P



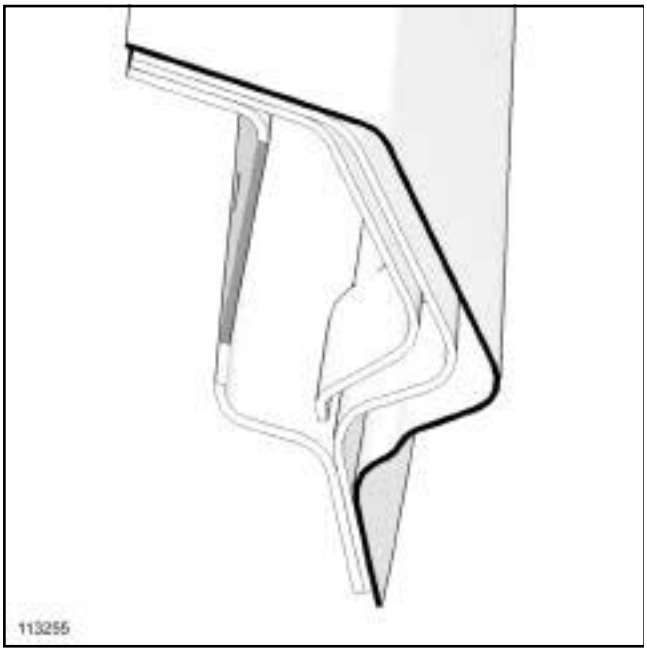
113018

C85 or S85



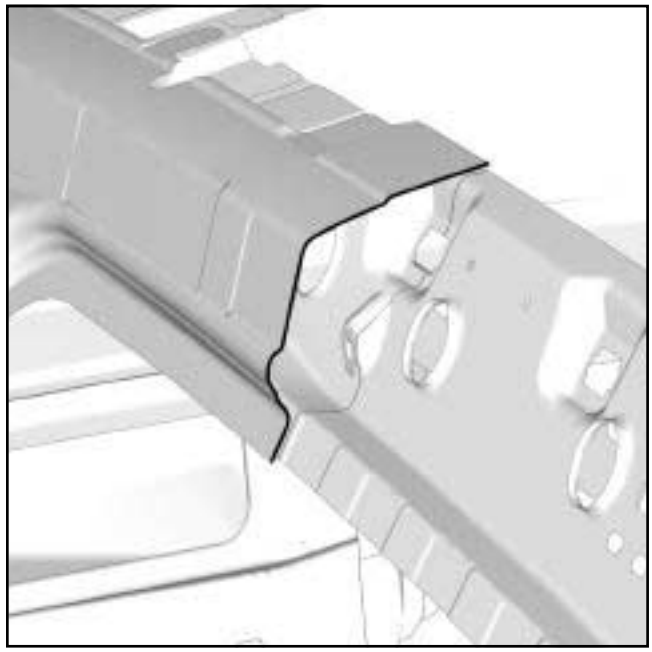
113206

Section Q



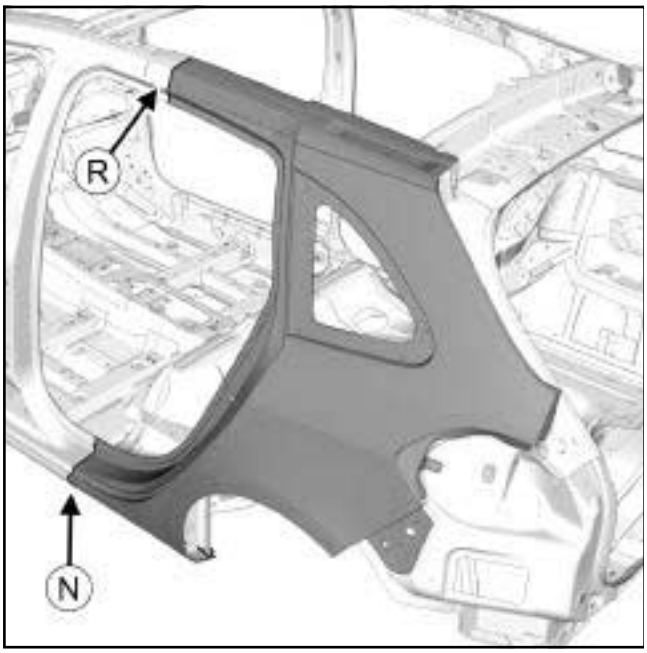
113255

Section R



126719

K85



126715

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

For a detailed description of the welded connections, see **MR 400**.

Note:

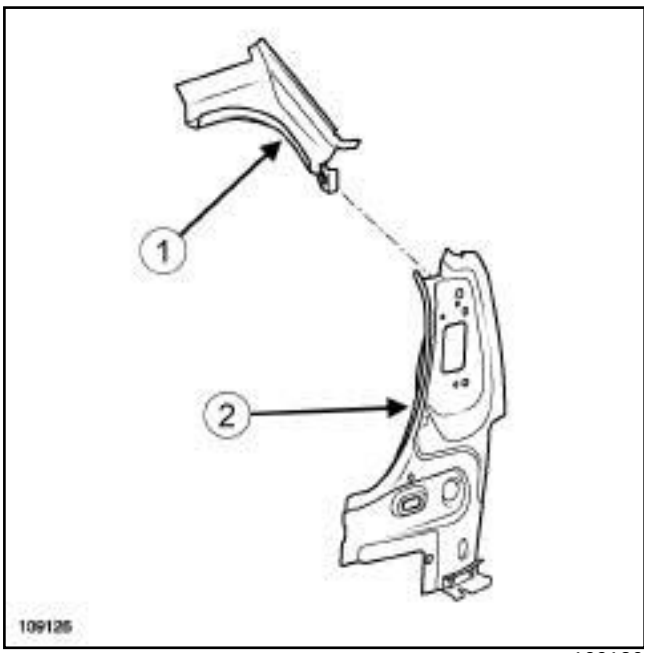
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT



109126

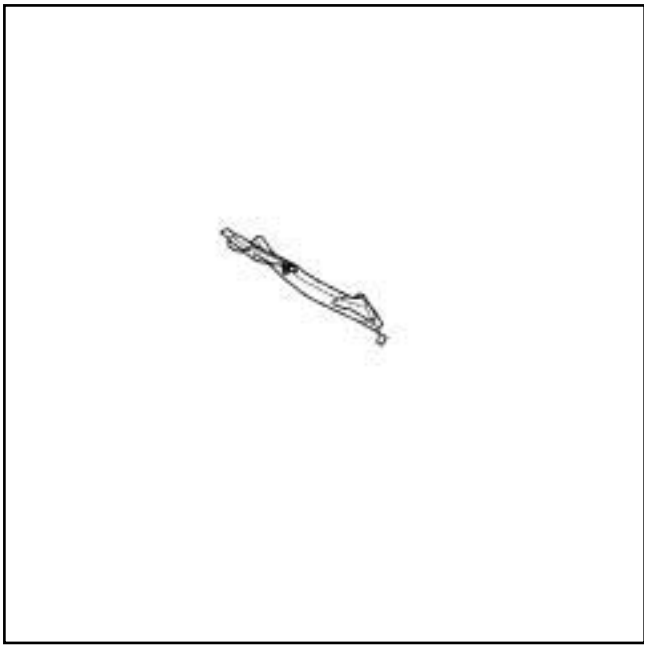
The special feature of this part is that it is made up of two components:

- the rear wing panel rain channel (**1**) ,

- the rear lights support (**2**) .

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

K85

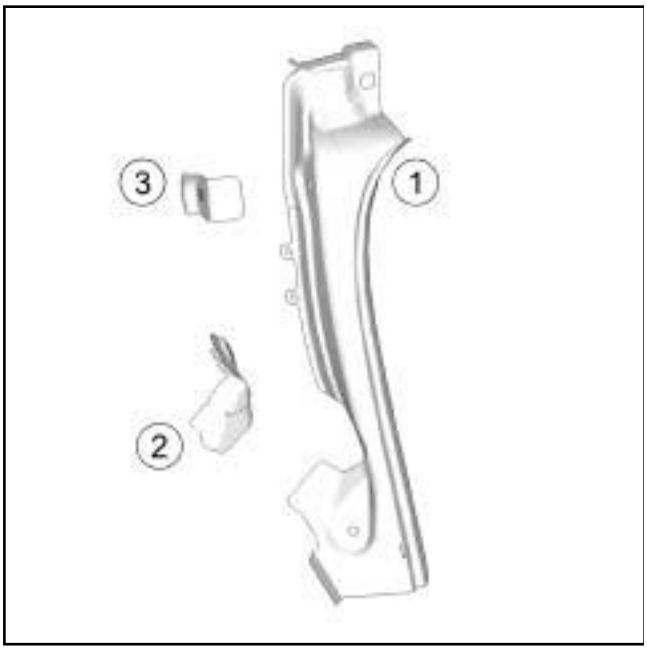


126789

The options for replacing this part are as follows:

- complete replacement.

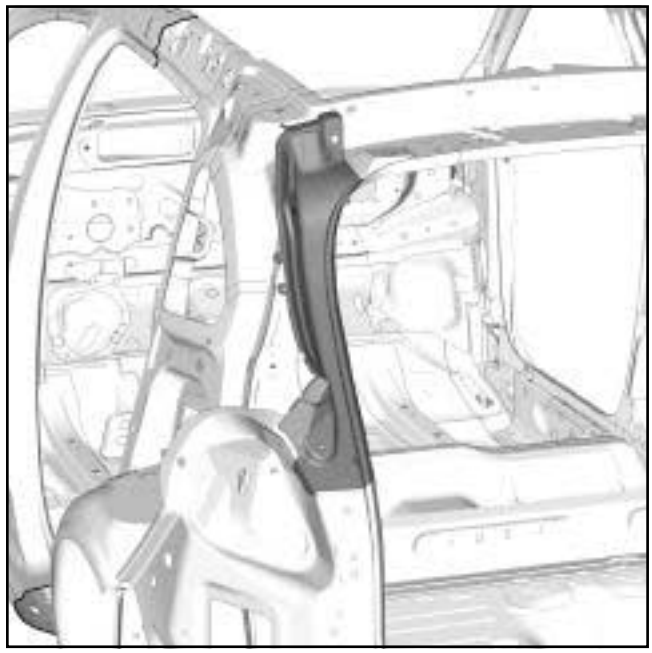
I - COMPOSITION OF THE SPARE PART



126721

No.	Description	Type	Thick-ness (mm)
(**1**)	Gouttière latérale supérieure arrière	Mild steel	**0.95**
(**2**)	Upper side height adjuster closure panel	Mild steel	**0.95**
(**3**)	Strut mounting reinforcement	Mild steel	**2**

II - PART IN POSITION



126722

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

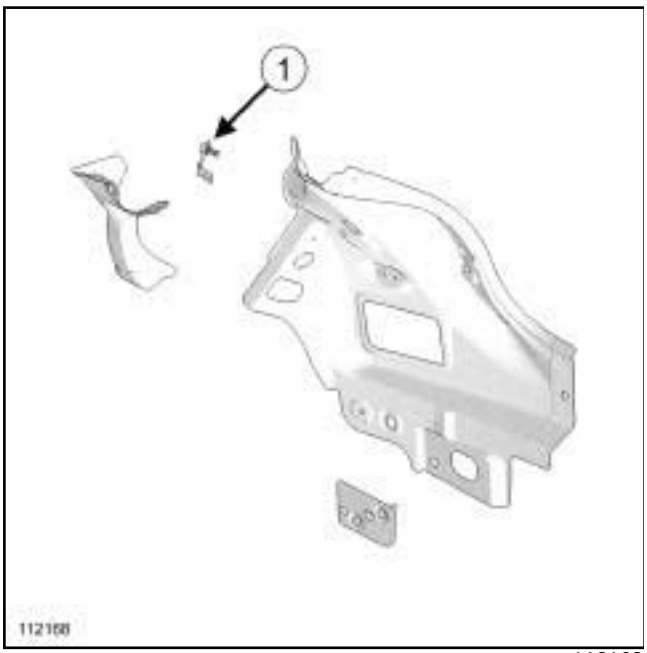
Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For detailed information about a specific connecting piece see:

(**MR 400, 40A, General information**).

DESIGN OF THE STRUCTURAL COMPONENT



112168

The balancer ball joint (**1**) is distinctive in that it is sold welded onto the light mounting.

WARNING

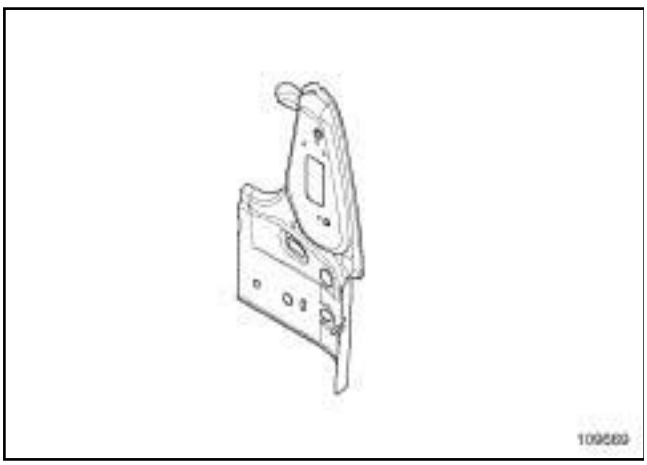
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400, 40A, General Information**.

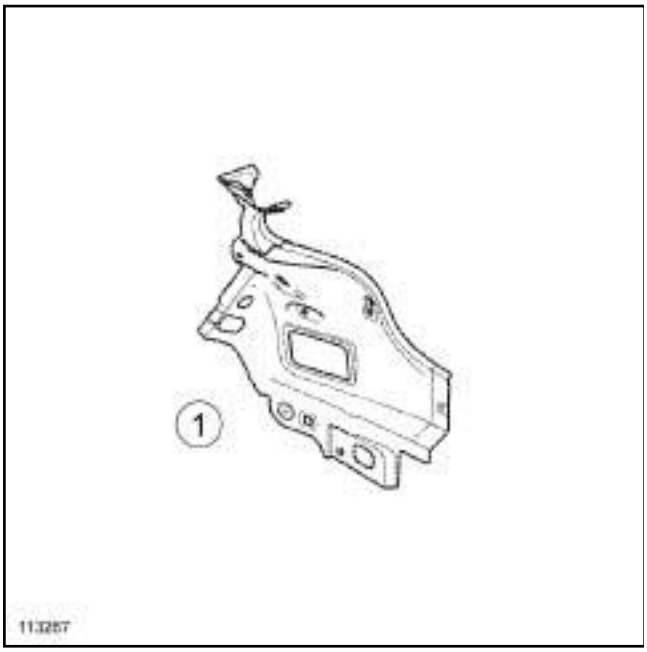
DESIGN OF THE STRUCTURAL COMPONENT



109669

This is a basic part; its only function is that of a rear lights mounting.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General Information**).



113267

B85 or C85 or S85

The options for replacing this part are as follows:

- partial replacement at natural connections this operation requires the replacement of the rear end panel,
- Complete replacement: this operation requires the replacement of the rear wing panel.

K85

There is only one way of replacing this part:

- Complete replacement: this operation requires the replacement of the rear wing panel.

I - COMPOSITION OF THE SPARE PART

B85 or C85 or S85

112168

No.	Description	Type	Thickness (mm)
(**2**)	Rear light mounting	-	**0.85**
(**3**)	Upper side rain channel	-	**0.95**
(**4**)	Absorber support plate	VHEL	**2**
(**5**)	Strut mounting reinforcement	-	**2**

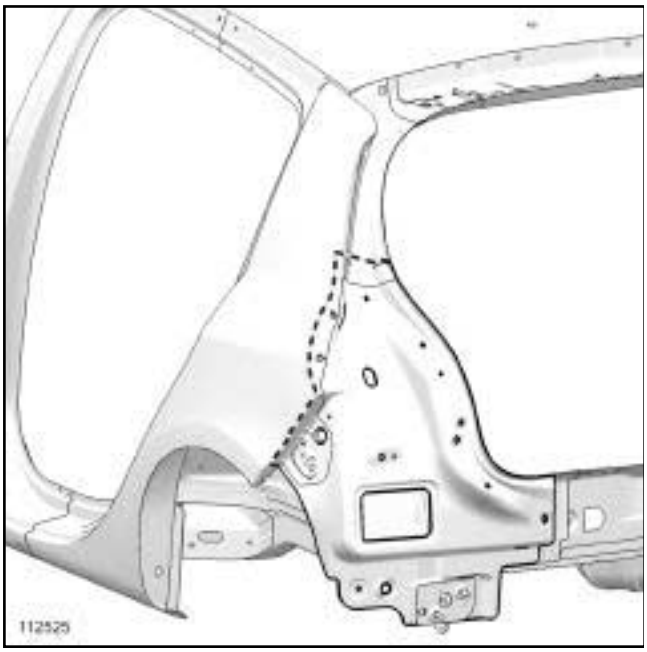
K85

No.	Description	Type	Thickness (mm)
(1)	Rear light mounting	Mild steel	**0.85**

II - PART IN POSITION

1 - Partial replacement at natural connections

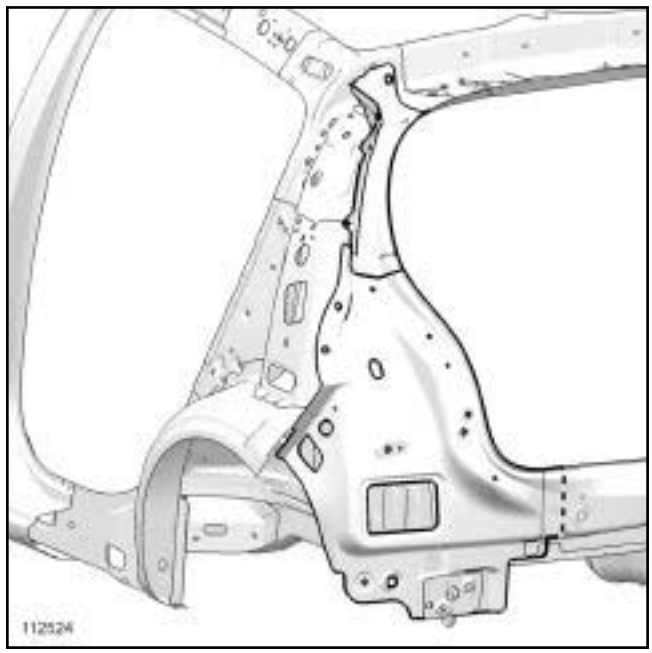
B85 or C85 or S85



112525

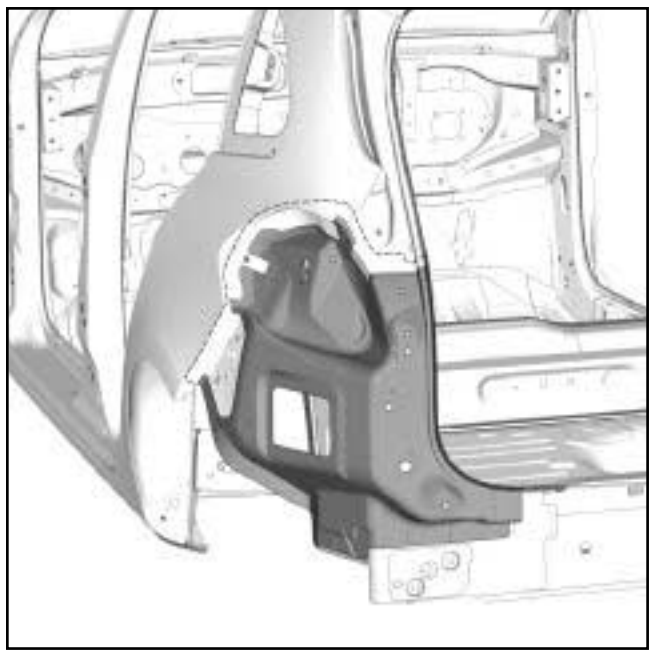
2 - Complete replacement

B85 or C85 or S85



112524

K85

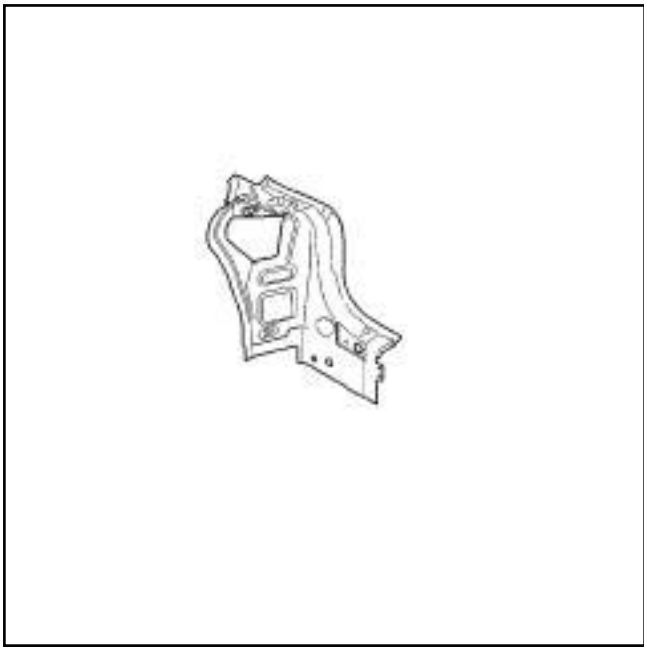


126723

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

B85 or C85 or S85

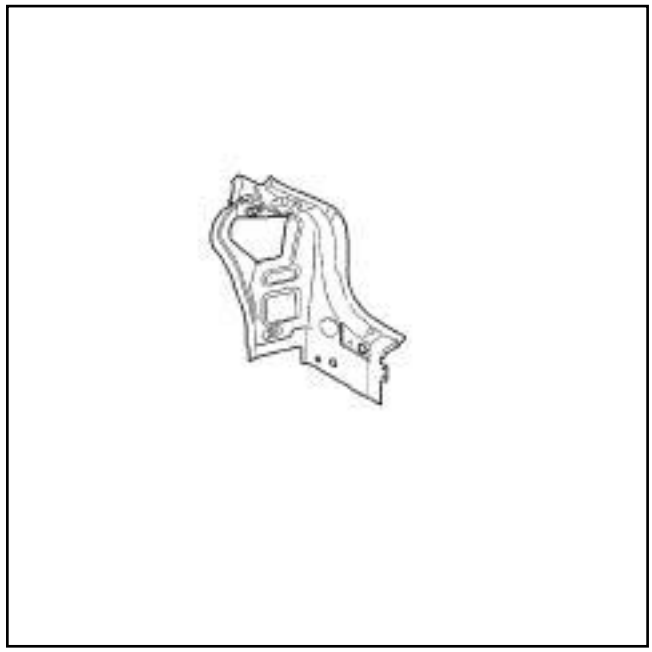


126787

The options for replacing this part are as follows:

- partial replacement: this operation requires the replacement of the rear end panel,
- Complete replacement: this operation requires the replacement of the rear wing panel.

K85



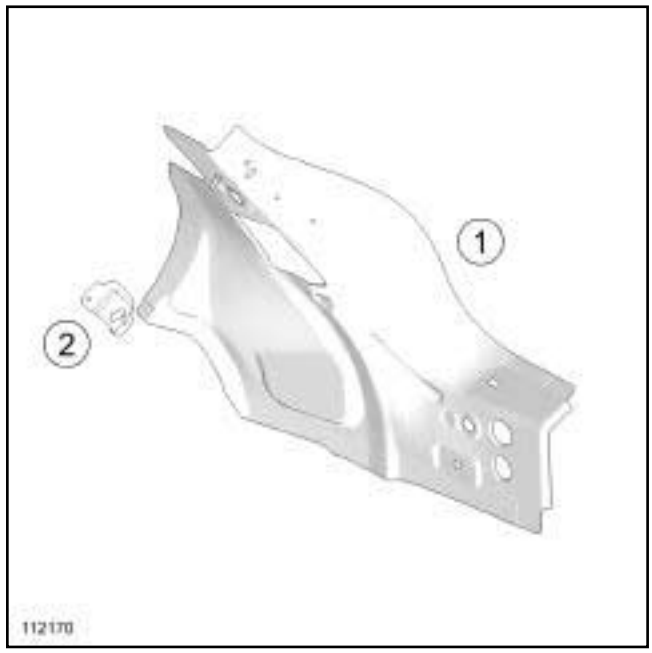
126787

There is only one way of replacing this part:

- Complete replacement: this operation requires the replacement of the rear wing panel.

I - COMPOSITION OF THE SPARE PART

B85 or C85 or S85



112170

No.	Description	Type	Thick-ness (in mm)
(**1**)	Lights support lining	-	**0.85**
(**2**)	Rear parcel shelf mounting bridge piece	-	**1**

K85

126724

No.	Description	Type	Thick-ness (mm)
(**3**)	Lights support lining	Mild steel	**0.85**
(**4**)	Absorber sup-port plate	UHLE	**2**

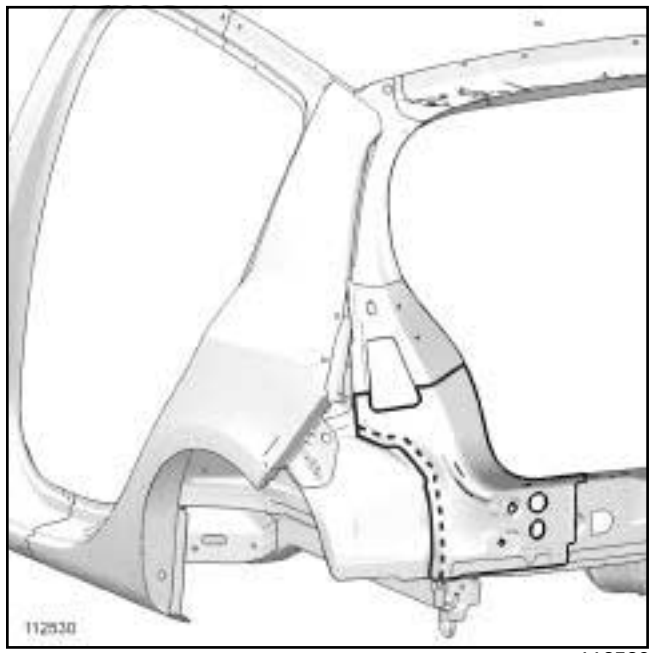
WARNING
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

II - PART IN POSITION

1 - Partial replacement

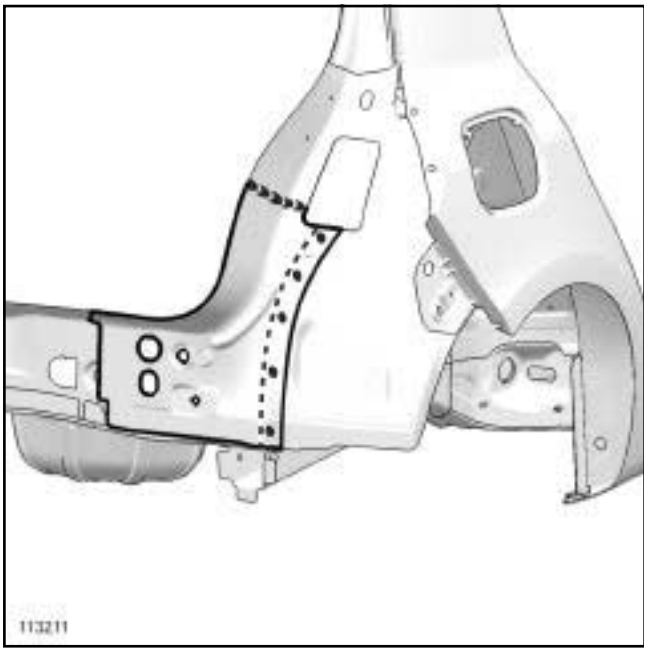
B85 or C85 or S85

Left side



112530

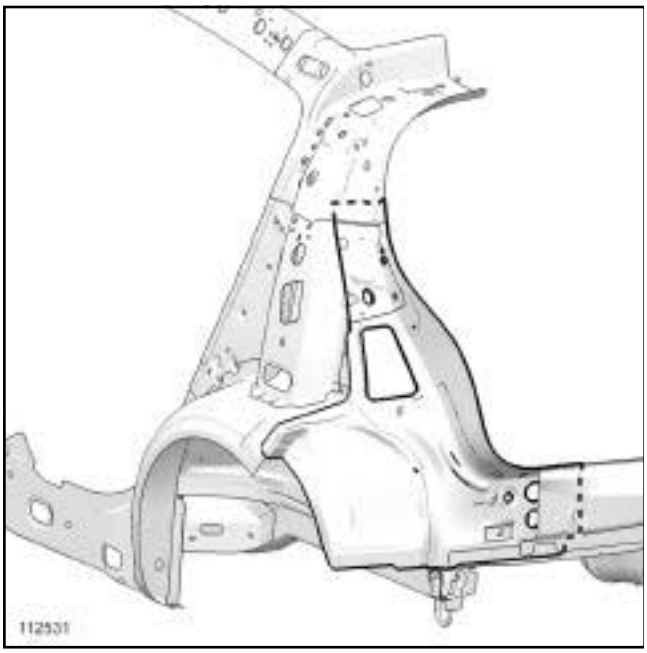
Right-hand side



113211

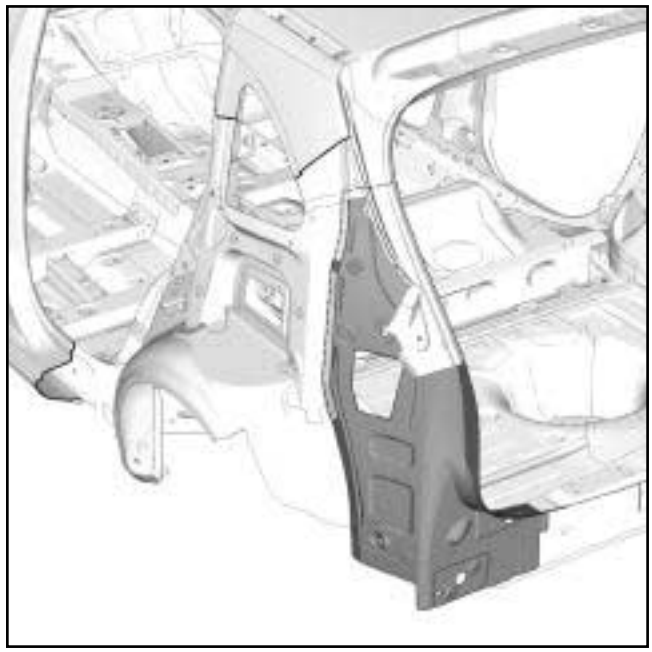
2 - Complete replacement

B85 or C85 or S85



112531

K85

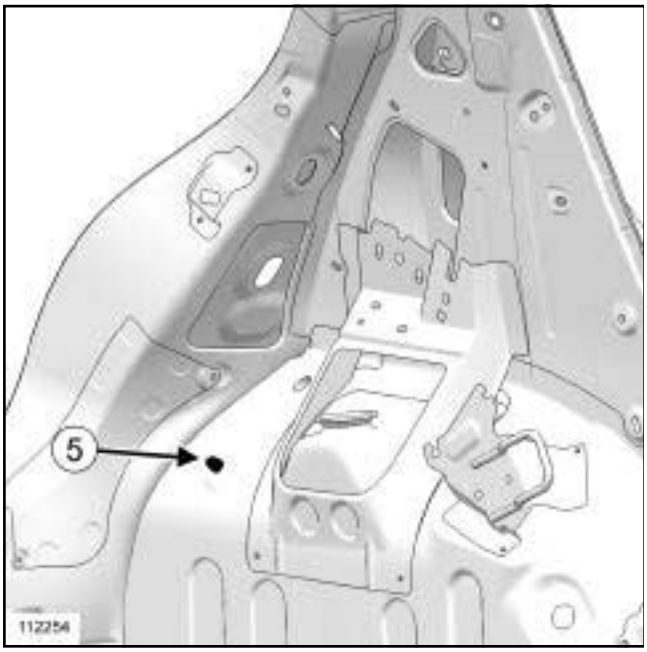


126725

126726

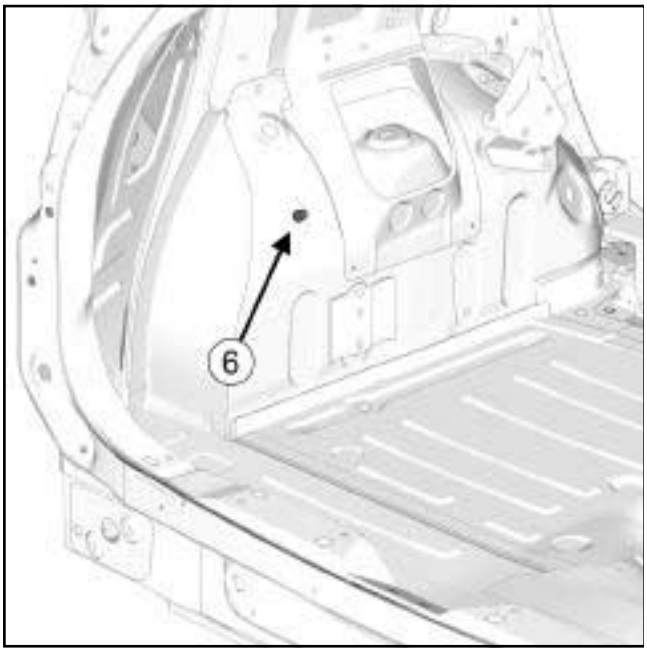
III - POSITIONING OF LOCAL ELECTRICAL EARTHS

B85 or C85 or S85



112254

K85



126698

WARNING

To avoid damaging the vehicle's electrical and electronic components, disconnect the earths of any wiring near the weld area.

Position the welding machine earth as close as possible to the weld zone (see **MR 400**).

B85 or C85

Note:

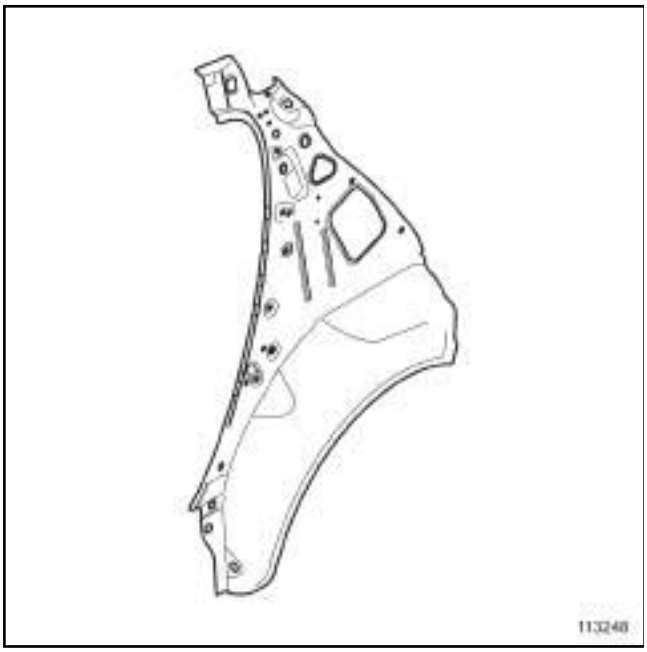
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

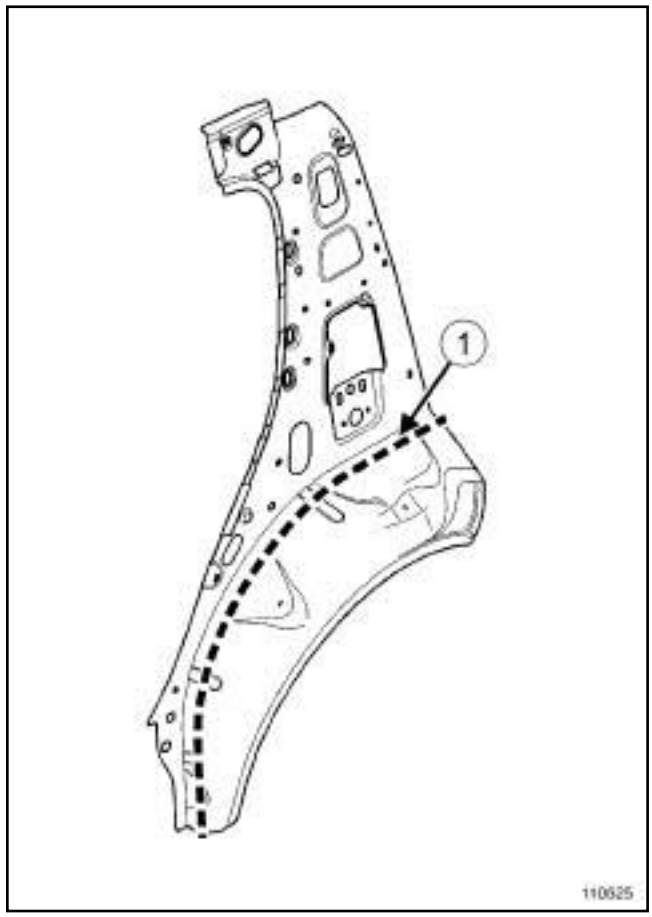
I - DESIGN OF THE STRUCTURAL COMPONENT



113248

The special feature of this part is its extension from the quarter panel lining to create the external rear wheel arch.

II - AREA TO BE CUT FOR PARTIAL REPLACEMENT



110625

The line (**1**) in the drawing shows the area in which it is possible to carry out a partial replacement.

III - ASSEMBLY METHOD FOR A PARTIAL REPLACEMENT

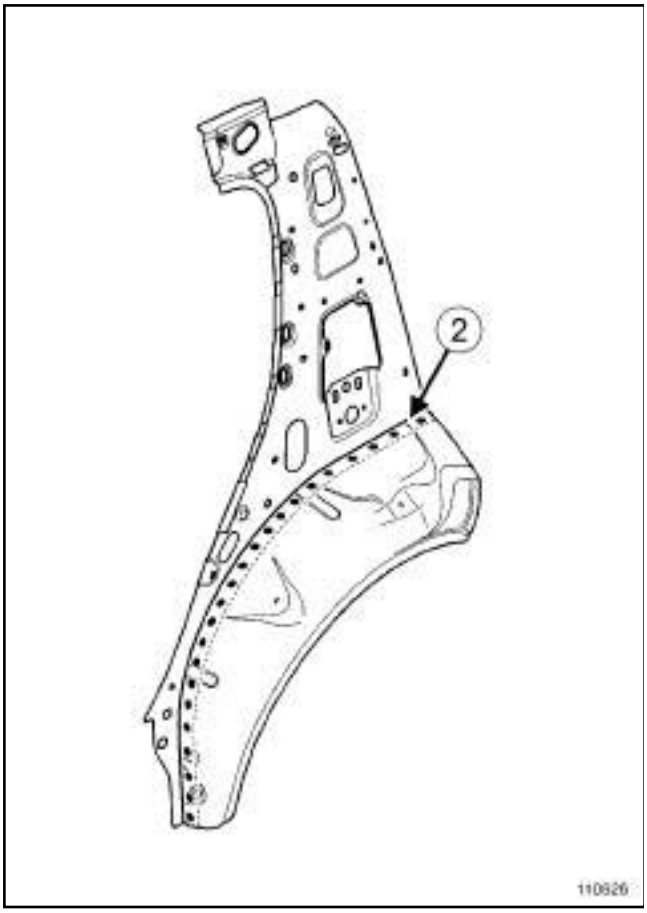
Only the connections which are specific to the partial replacement by cutting are indicated.

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

B85 or C85

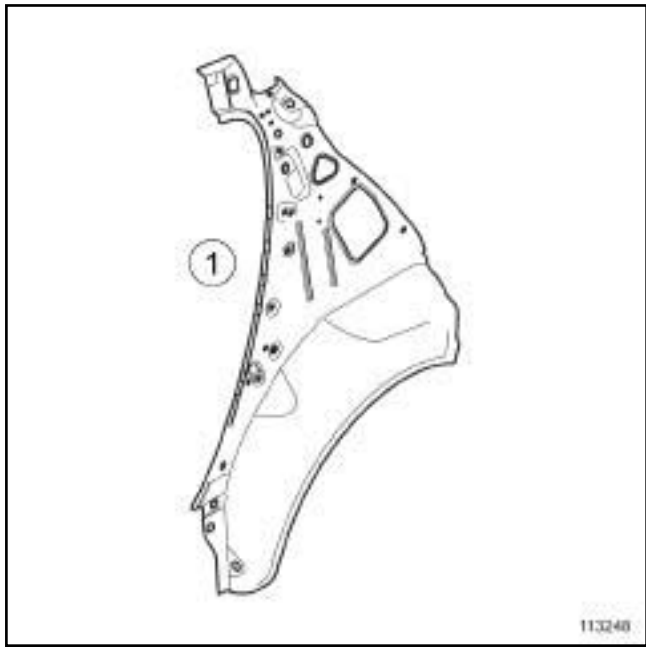


110626

Line (**2**) on the diagram shows partial replacement and a weld by joggling with plug welds at regular intervals.

B85 or C85 or K85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

B85

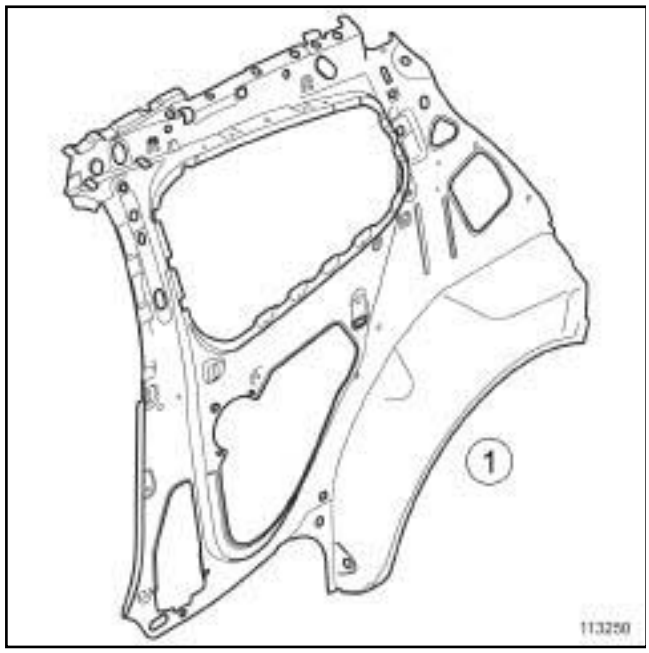


113248

There is only one way of replacing this part:

- partial replacement.

C85 or S85

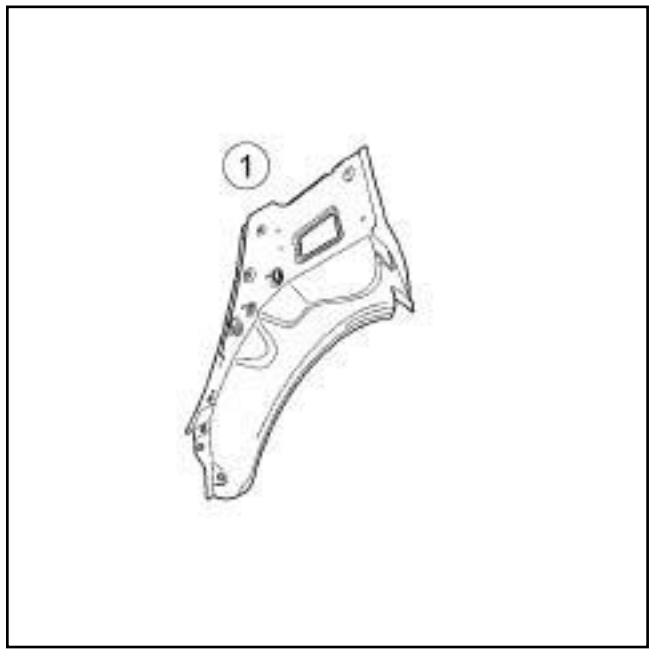


113250

There is only one way of replacing this part:

- partial replacement.

K85



126788

The options for replacing this part are as follows:

- partial replacement,
- complete replacement.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - COMPOSITION OF THE SPARE PART

No.	Description	Type	Thickness (mm)
(1)	Quarter panel lining	Mild steel	**0.65**

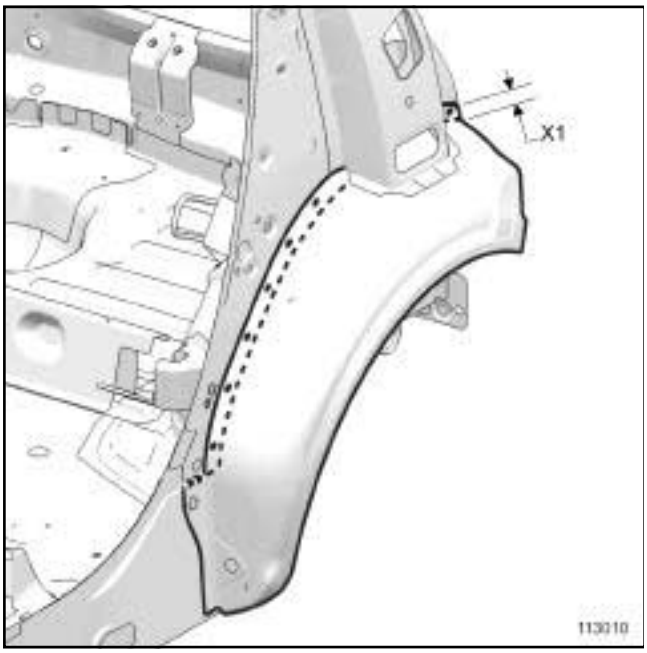
B85 or C85 or K85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

II - PART IN POSITION

WARNING
If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

1 - Partial replacement

B85

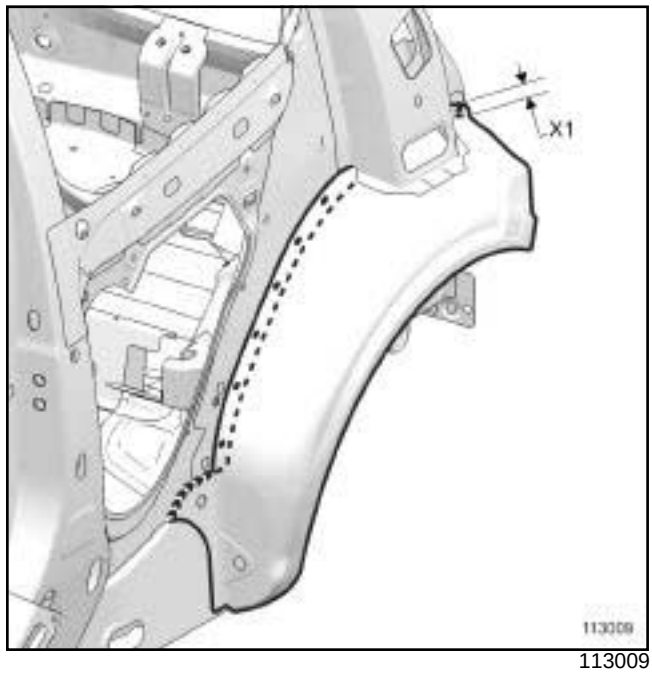


113010

(X1) = **15 mm**

Make the cut from inside the wheel arch so as not to damage the reinforcement nearby.

C85 or S85

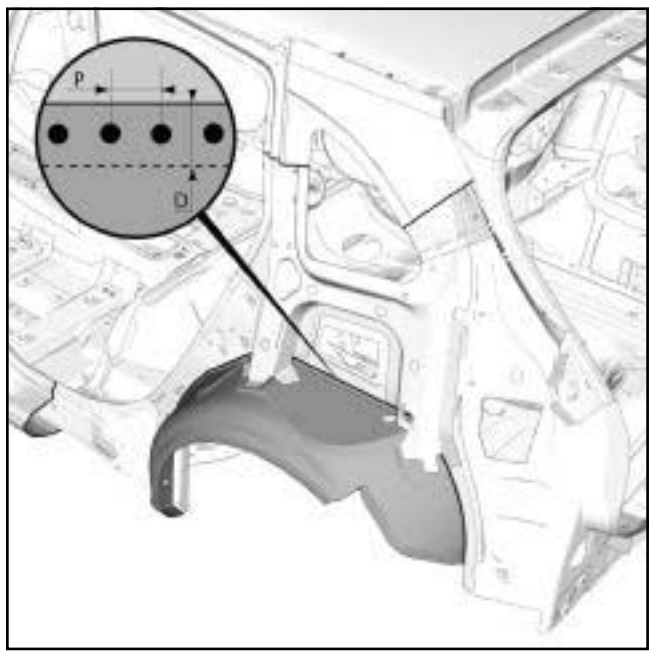


113009

(X1) = **15 mm**

Make the cut from inside the wheel arch so as not to damage the reinforcement nearby.

K85



126728

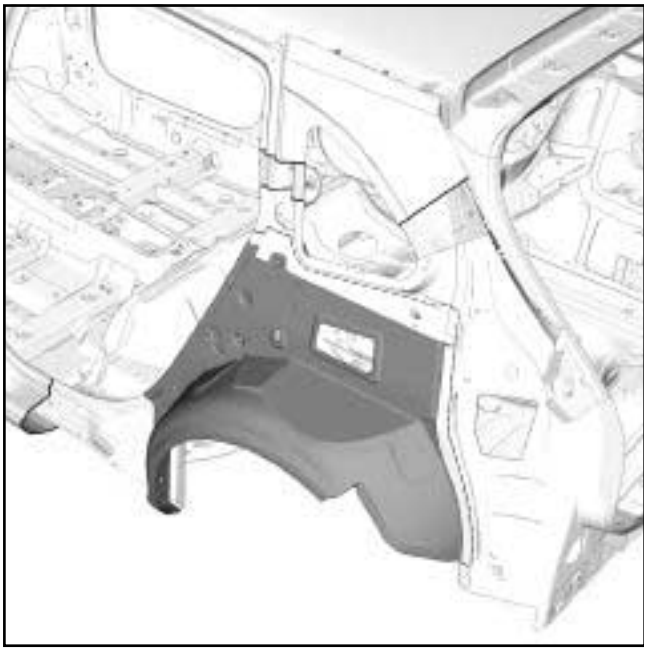
B85 or C85 or K85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

P = pitch

D = distance covered

2 - Complete replacement

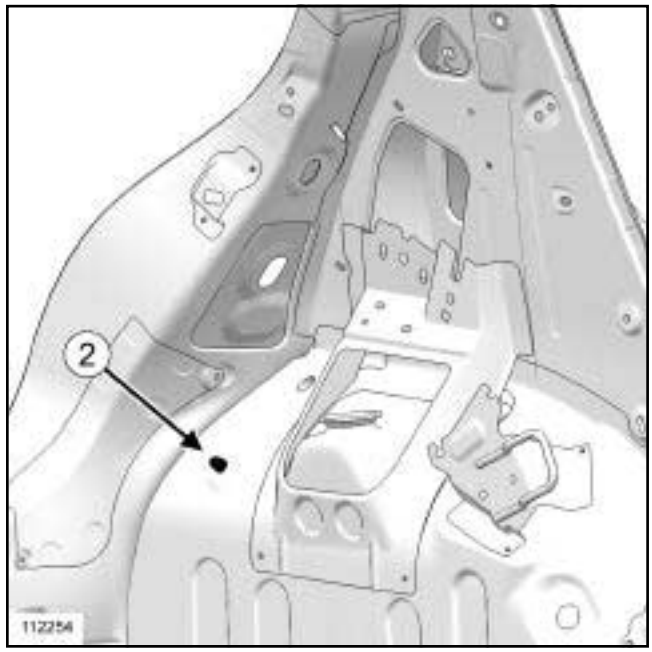
K85



126727

III - POSITIONING OF LOCAL ELECTRICAL EARTHS

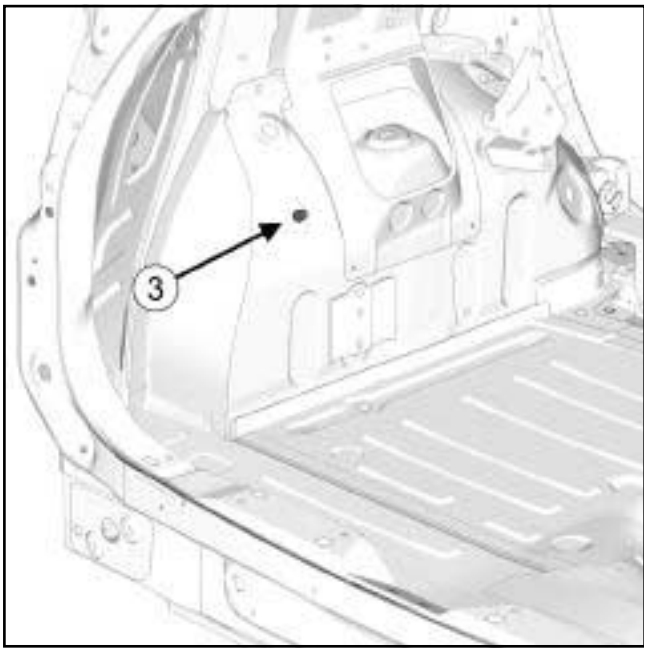
B85 or C85 or S85



112254

B85 or C85 or K85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG

K85



126698

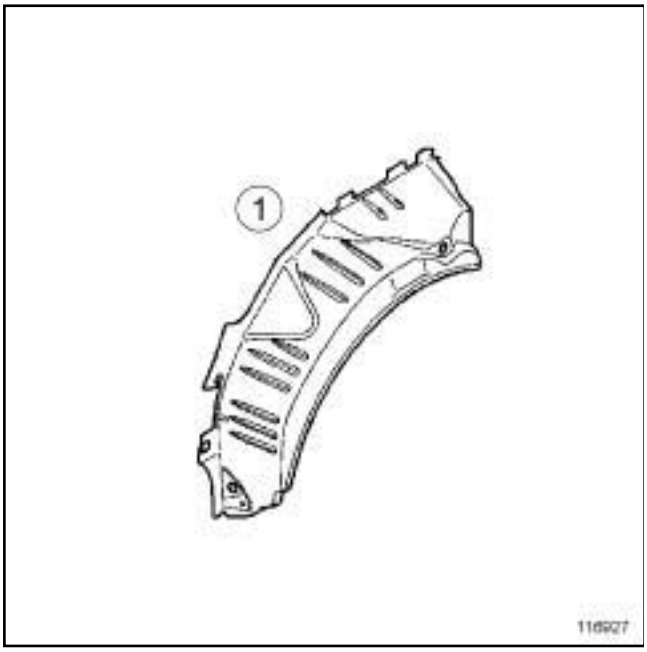
WARNING

To avoid damaging the vehicle's electrical and electronic components, disconnect the earths of any wiring near the weld area.

Position the welding machine earth as close as possible to the weld zone (see **MR 400**).

C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

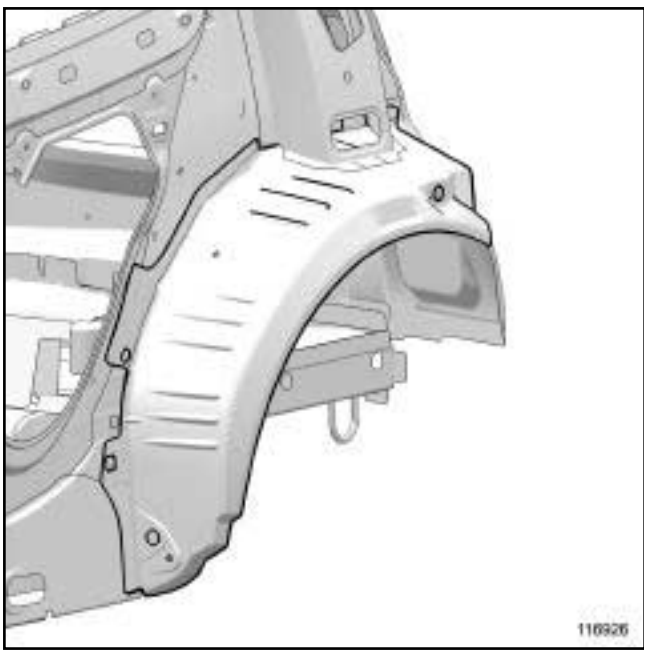
I - COMPOSITION OF THE SPARE PART



116927

No.	Description	Type	Thickness (mm)
(**1**)	Outer rear wheel arch	Mild steel	**0.65**

II - PART FITTED



116926

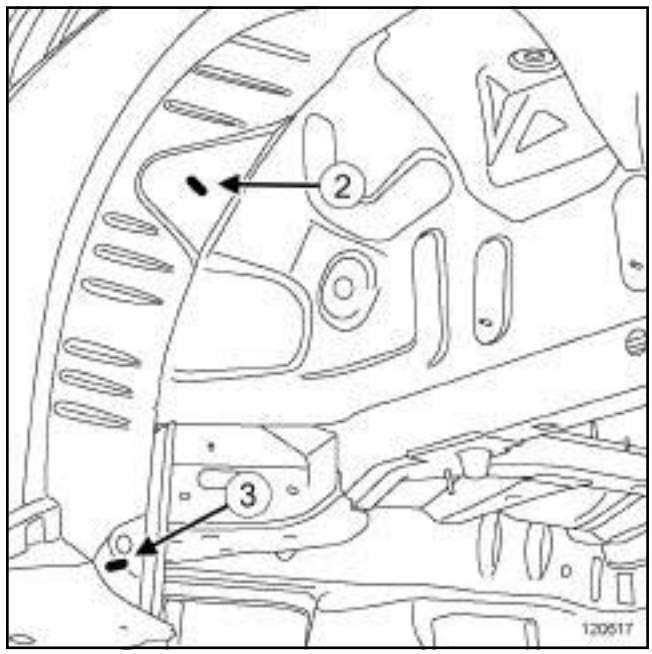
WARNING

If the spot welds cannot be made as they were originally using an electrical spot welding machine, they should be replaced with plug welds after holes have been drilled in the first panel.

Special notes on the outer rear wheel arch

When replacing this component, the **Spare Parts Department** only supplies the outer rear wheel arch liners without studs for mounting the rear wheel arch liners.

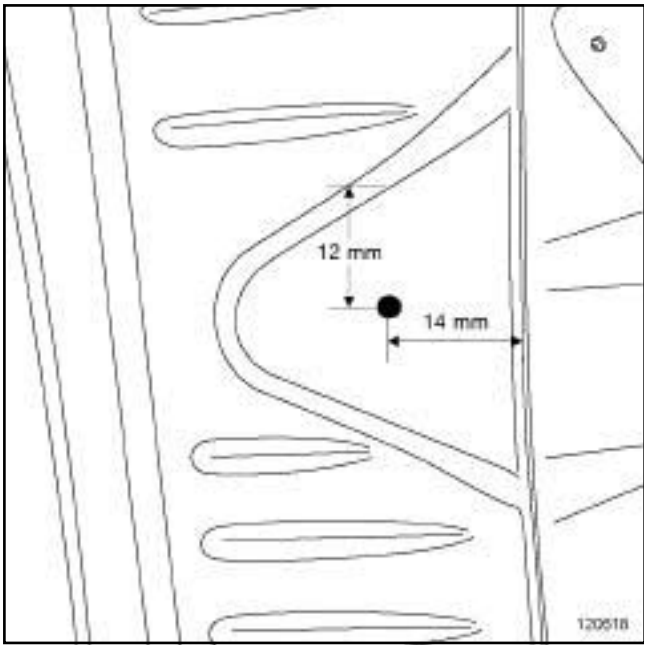
It is essential to fit studs onto the spare part (see **MR 400, Bodywork structure repair basics, 40A, General information, Screwed connection with welded stud: Repair**) or (see **MR 400, Bodywork structure repair basics, 40A, General information, Screwed connection with crimped mounting:** Fitting).



120617

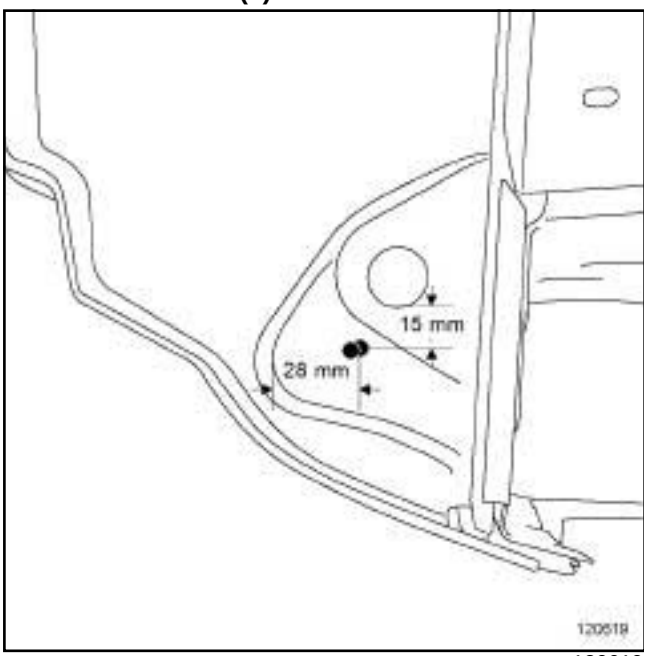
C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Details of the stud (2)



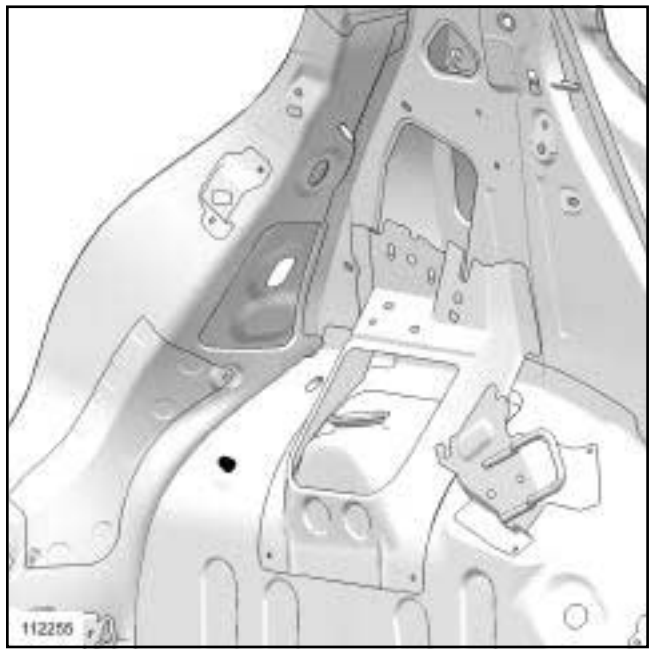
120618

Details of the stud (3)



120619

III - POSITIONING OF LOCAL ELECTRICAL EARTHS



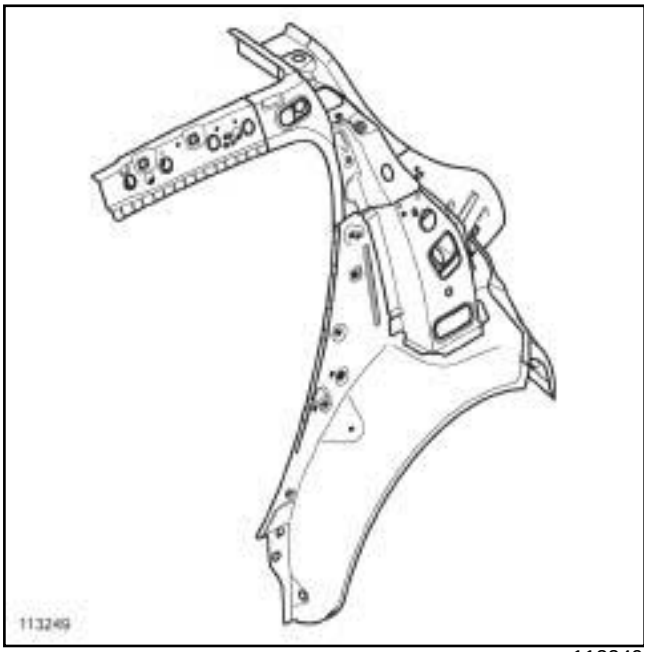
112255

IMPORTANT

To avoid damaging the vehicle's electric and electronic components, the battery and the earths of any wiring harness near the weld area must be disconnected.

The earth of the welding machine must be placed as close as possible to the weld area.

B85

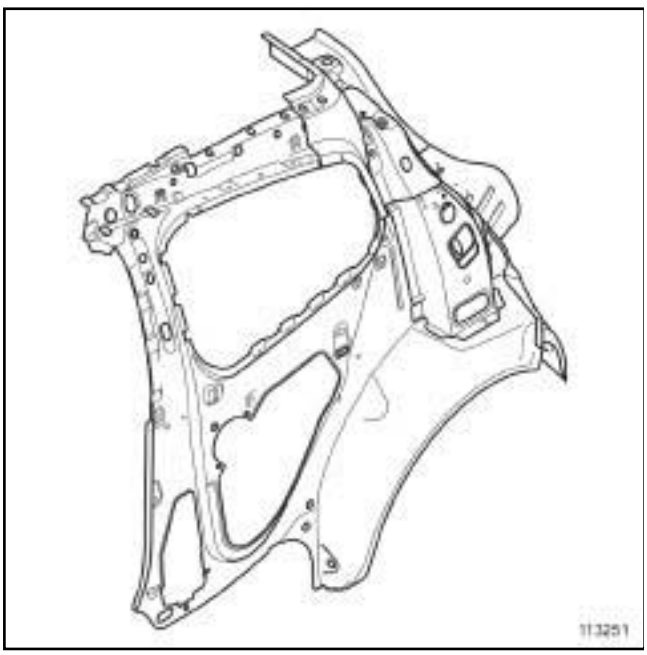


113249

There is only one way of replacing this part:

- complete replacement.

C85 or S85



113251

The options for replacing this part are as follows:

- partial replacement: this operation complements the replacement of the B-pillar reinforcement,
- complete replacement.

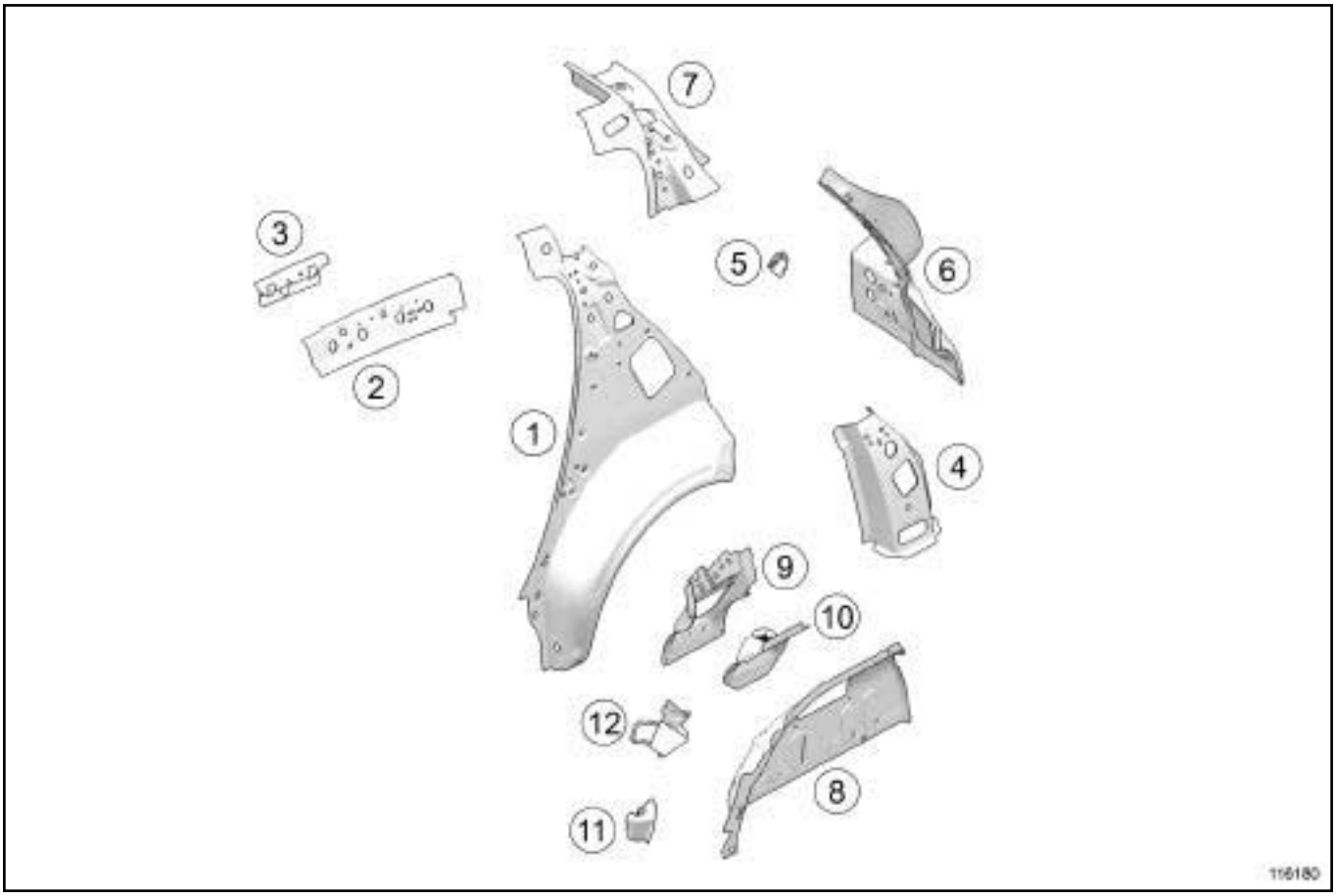
K85

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

B85

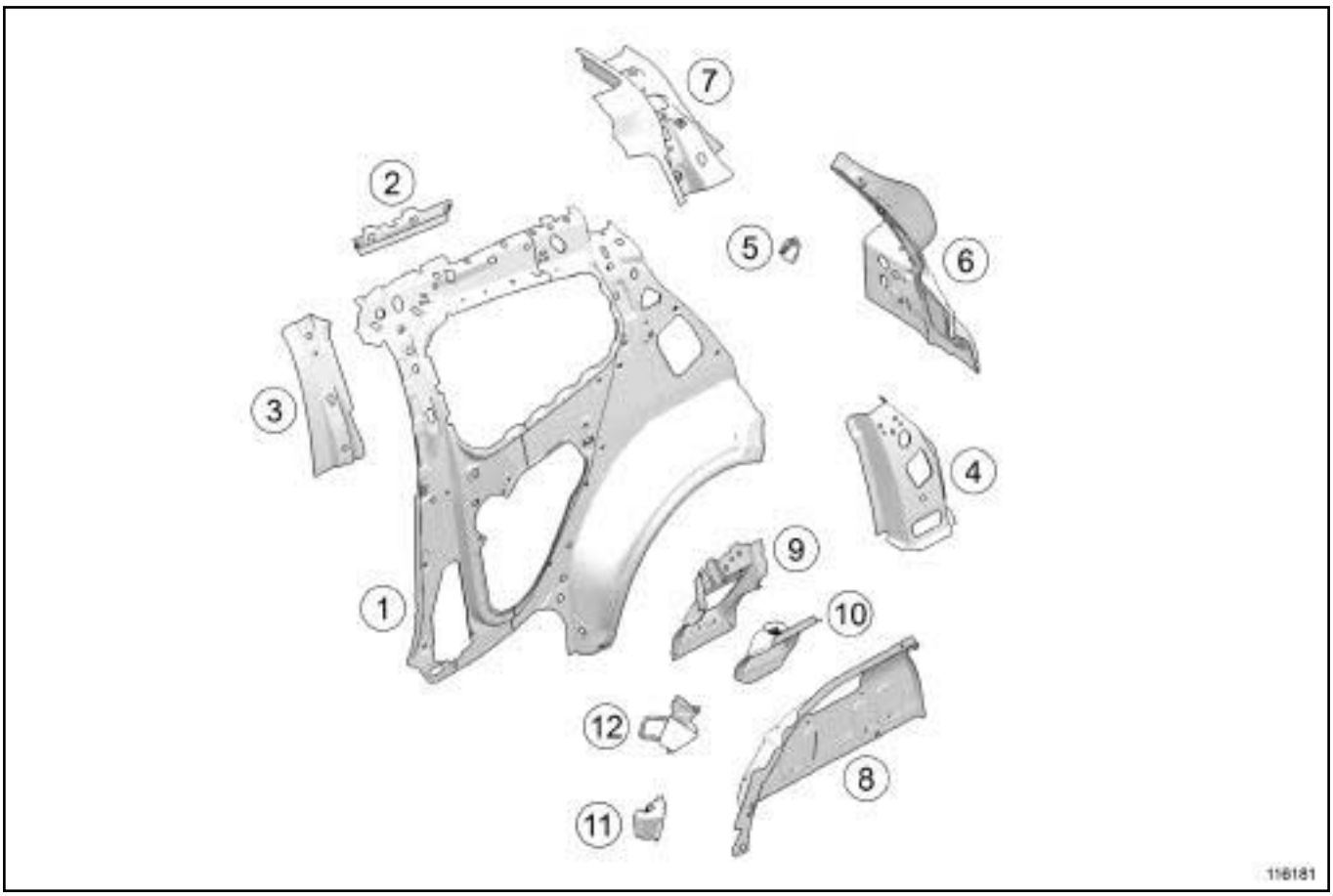


116180

No.	Description	Type	Thickness (mm)
(**1**)	Quarter panel lining	Mild steel	**0.65**
(**2**)	Side roof rail rear lining	Mild steel	**0.95**
(**3**)	Rear airbag deflector	Mild steel	**0.95**
(**4**)	Quarter panel reinforcement	Mild steel	**0.7**
(**5**)	Rear parcel shelf mounting bridge piece	Mild steel	**1**
(**6**)	Lights support lining	Mild steel	**0.85**

No.	Description	Type	Thickness (mm)
(**7**)	Quarter panel upper section rear reinforcement	Mild steel	**1.2**
(**8**)	Inner rear wheel arch	HLE	**0.75**
(**9**)	Shock absorber connecting bracket	HLE	**1.2**
(**10**)	Shock absorber cup mounting	HLE	**2**
(**11**)	Rear seatback hinge mounting	HLE	**1.2**
(**12**)	Rear seatback mounting reinforcement	Mild steel	**2**

C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



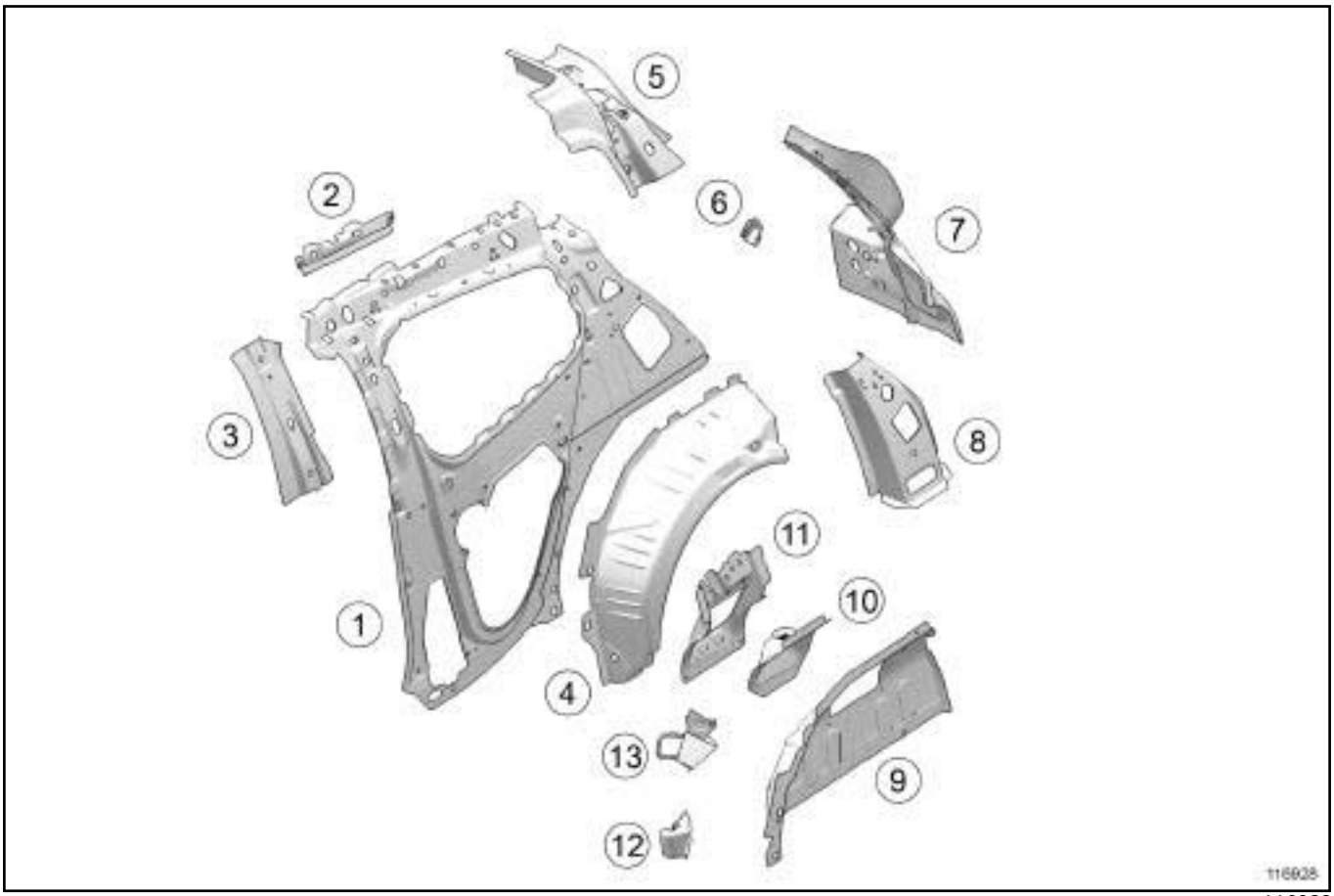
116181

No.	Description	Type	Thickness (mm)
(**1**)	Quarter panel lining	Mild steel	**0.65**
(**2**)	Rear airbag deflector	Mild steel	**0.95**
(**3**)	Shoulder harness reinforcement	HLE	**1.4**
(**4**)	Quarter panel reinforcement	Mild steel	**0.7**
(**5**)	Rear parcel shelf mounting bridge piece	Mild steel	**1**

No.	Description	Type	Thickness (mm)
(**6**)	Lights support lining	Mild steel	**0.85**
(**7**)	Quarter panel upper section rear reinforcement	Mild steel	**1.2**
(**8**)	Inner rear wheel arch	HLE	**0.75**
(**9**)	Shock absorber connecting bracket	HLE	**1.2**
(**10**)	Shock absorber cup mounting	HLE	**2**

No.	Description	Type	Thickness (mm)
(**11**)	Rear seatback hinge mounting	HLE	**1.2**
(**12**)	Rear seatback mounting reinforcement	Mild steel	**2**

C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



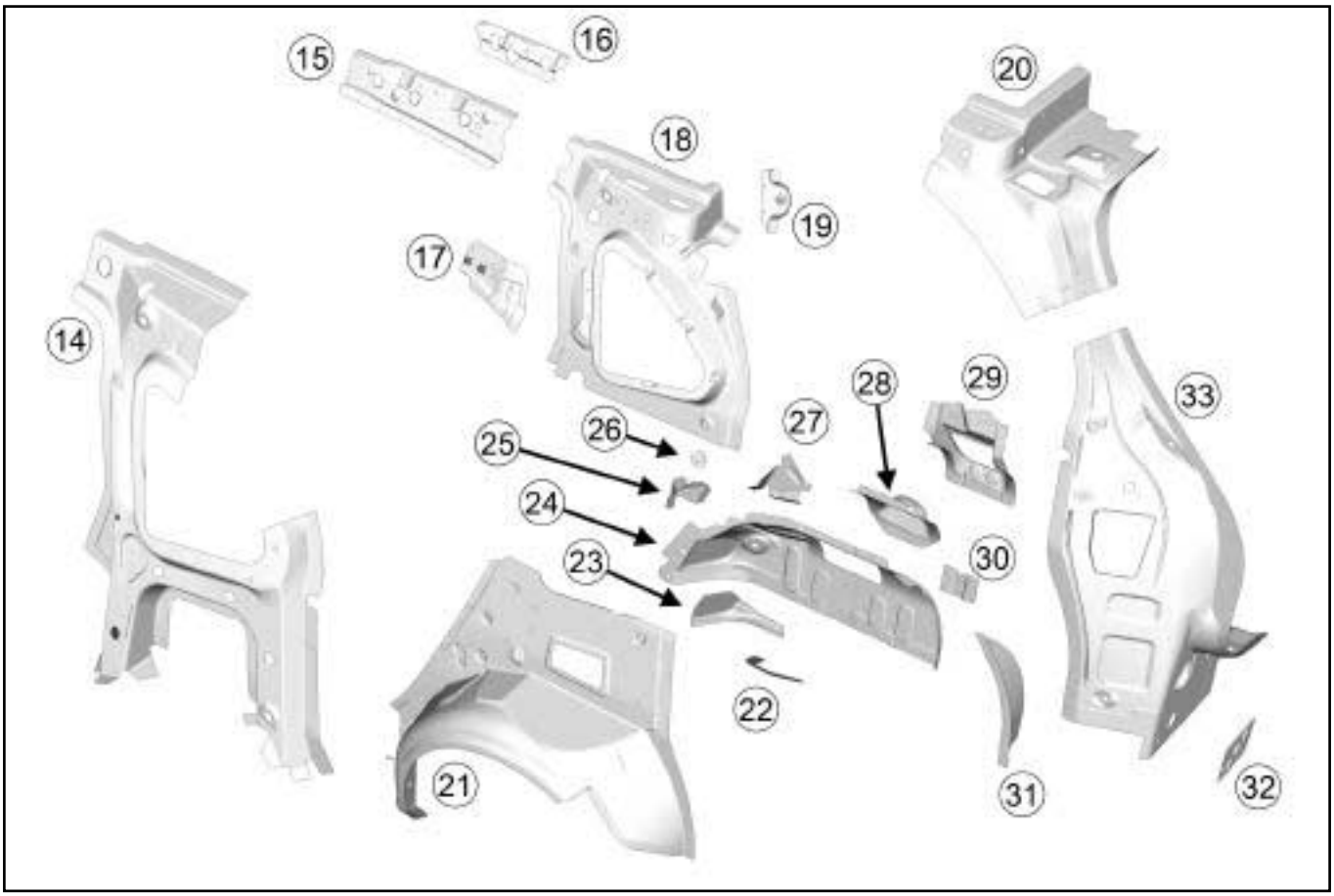
116928

No.	Description	Type	Thickness (mm)
(**1**)	Quarter panel lining	Mild steel	**0.65**
(**2**)	Rear airbag deflector	Mild steel	**0.95**
(**3**)	Shoulder harness reinforcement	HLE	**1.4**
(**4**)	Outer wheel arch	Mild steel	**0.65**

No.	Description	Type	Thickness (mm)
(**5**)	Quarter panel upper section rear reinforcement	Mild steel	**1.2**
(**6**)	Rear parcel shelf mounting bridge piece	Mild steel	**1**
(**7**)	Lights support lining	Mild steel	**0.85**
(**8**)	Quarter panel reinforcement	Mild steel	**0.7**

No.	Description	Type	Thickness (mm)
(**9**)	Inner rear wheel arch	HLE	**0.75**
(**10**)	Shock absorber cup mounting	HLE	**2**
(**11**)	Shock absorber connecting bracket	HLE	**1.2**
(**12**)	Rear seatback hinge mounting	HLE	**1.2**
(**13**)	Rear seatback mounting reinforcement	Mild steel	**2**

K85



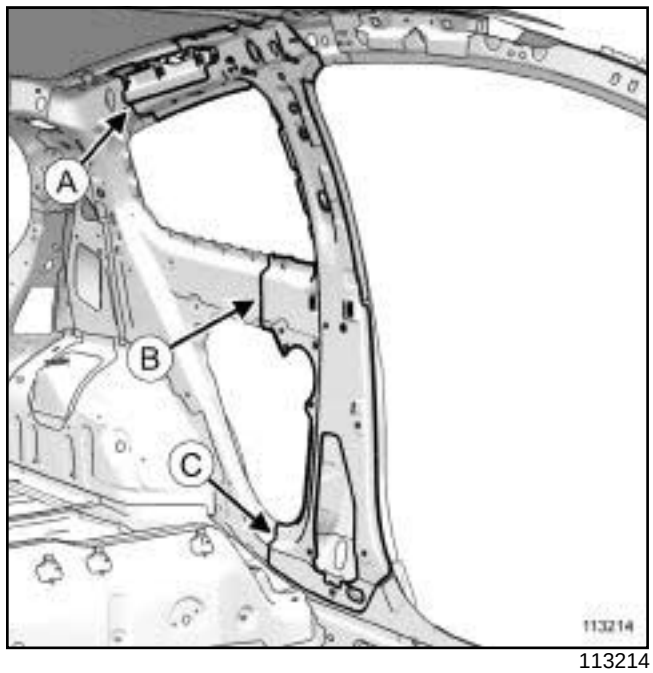
126730

No.	Type	Description	Thickness (mm)
(**14**)	Left-hand C-pillar reinforcement	Mild steel	**1.2**
(**15**)	Roof drip moulding lining	Mild steel	**0.95**
(**16**)	Airbag deflector	Mild steel	**0.95**
(**17**)	Luggage retainer mounting	Mild steel	**1.2**
(**18**)	Quarter panel lining	Mild steel	**0.6**
(**19**)	Seat belt inertia reel anchorage reinforcement	HLE	**1.5**
(**20**)	Quarter panel rear upper reinforcement		
(**21**)	Outer wheel arch	Mild steel	**0.67**
(**22**)	Seatback mounting reinforcement plate		
(**23**)	Outer wheel arch reinforcement	Mild steel	**1**
(**24**)	Inner wheel arch	HLE	**0.75**
(**25**)	Left-hand seatback hinge mounting	HLE	**1.5**
(**26**)	Seatback retaining hook	THLE	**3**
(**27**)	Seatback mounting reinforcement	Mild steel	**2**
(**28**)	Shock absorber turret mounting	HLE	**2**
(**29**)	Shock absorber connecting bracket	HLE	**1.2**
(**30**)	Removable floor reinforcement	Mild steel	**1**
(**31**)	Wheel arch closure panel component	Mild steel	**1**
(**32**)	Absorber support plate	UHLE	**2**
(**33**)	Lights support lining	Mild steel	**0.85**

II - PART FITTED

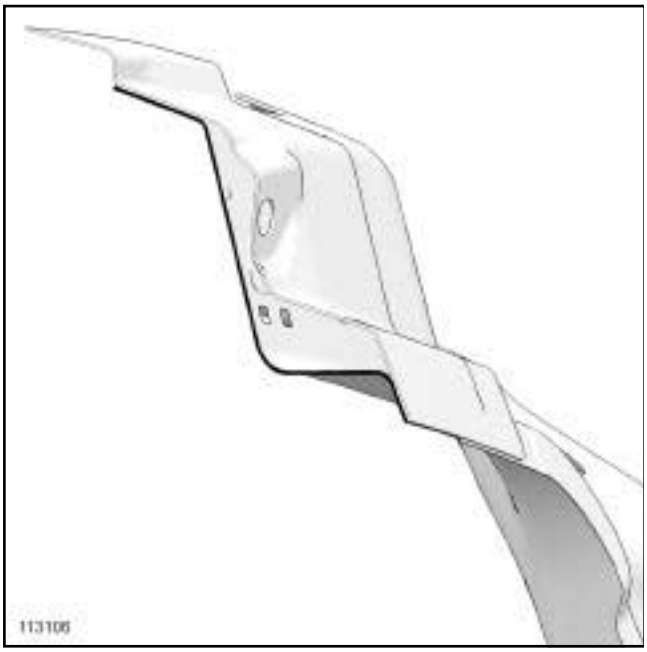
1 - Partial replacement

C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



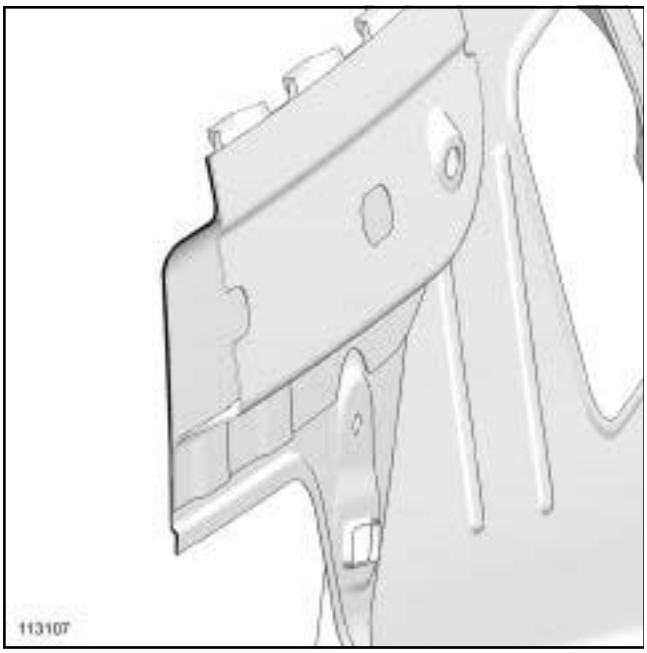
113214

Section A



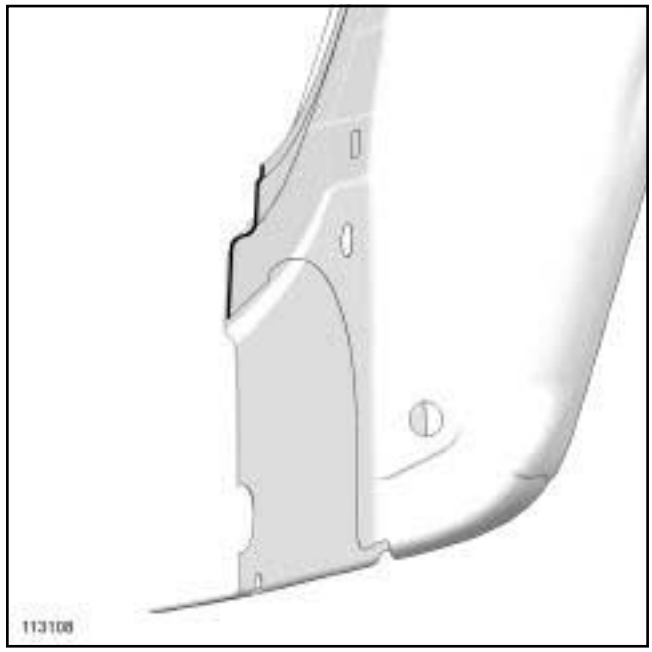
113106

Section B



113107

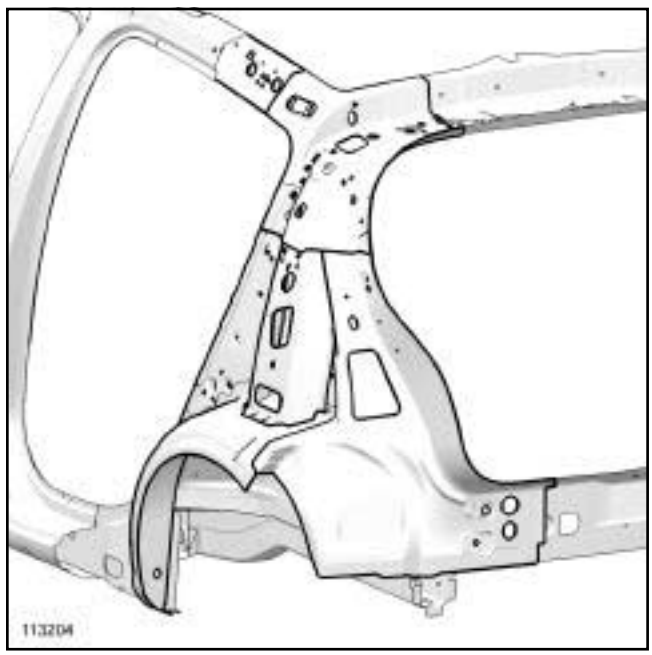
Section C



113108

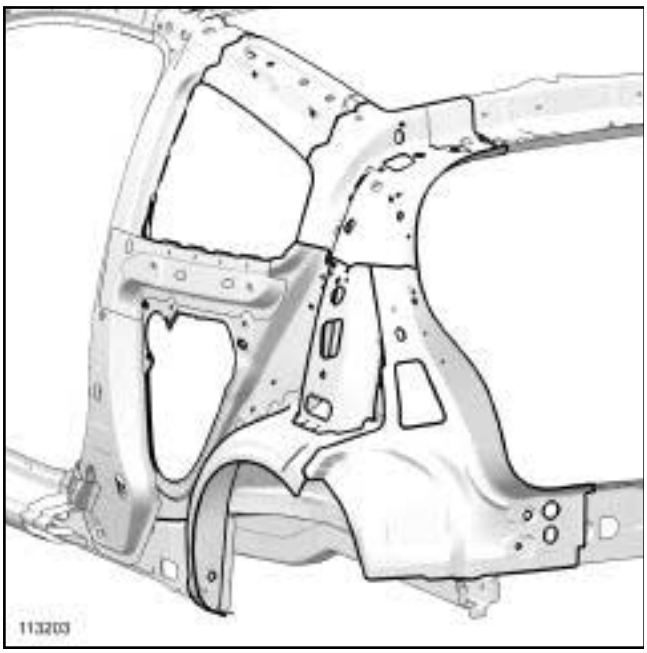
2 - Complete replacement

B85



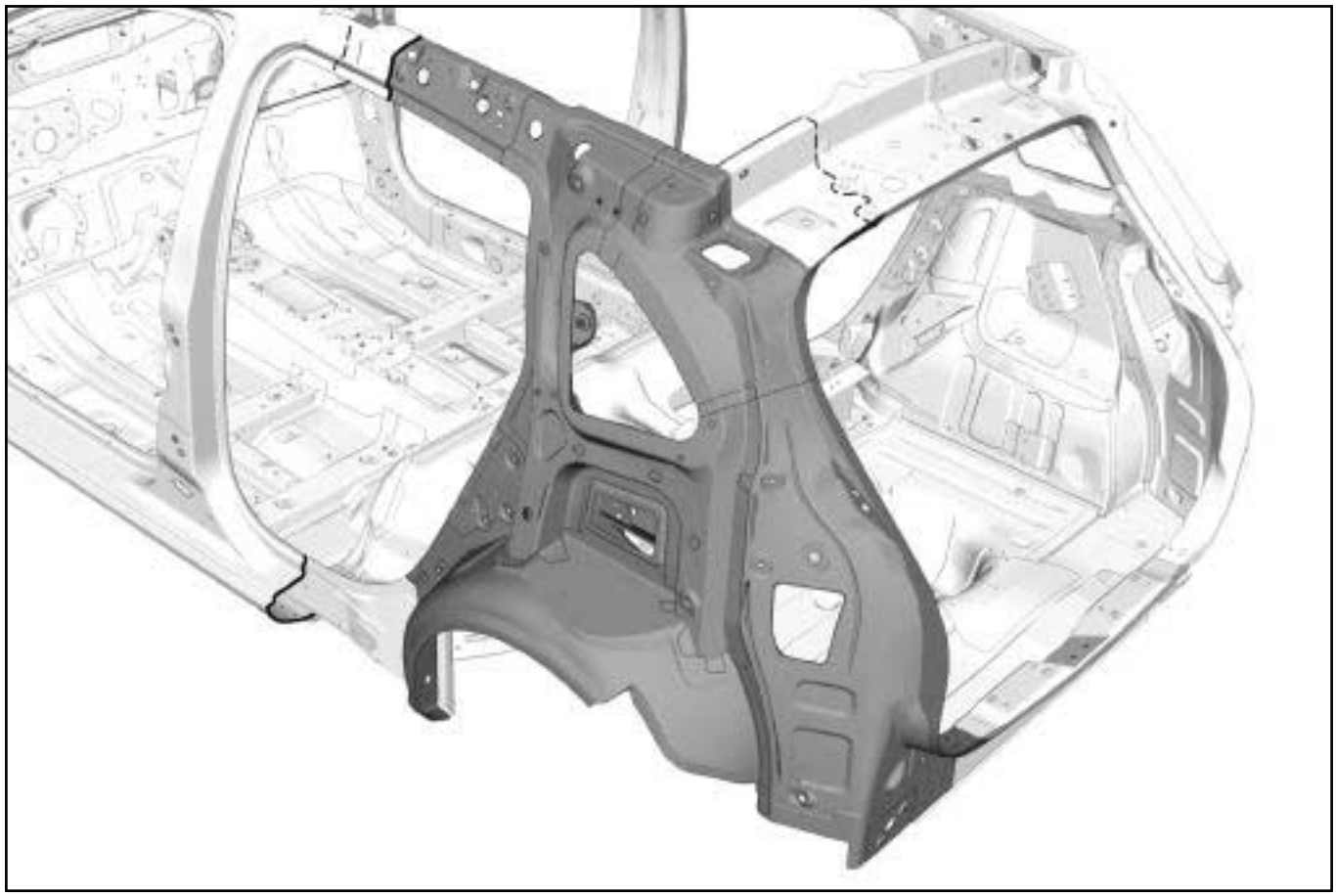
113204

C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG



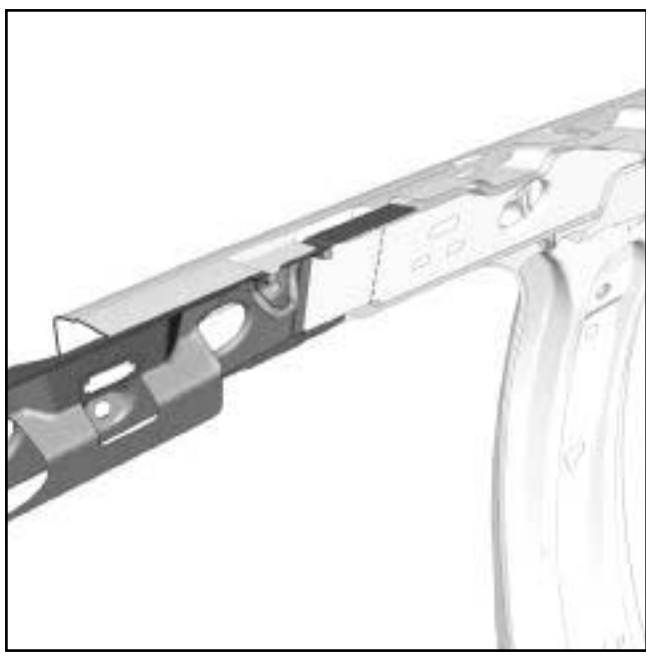
113203

K85



126731

Detailed view



126732

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

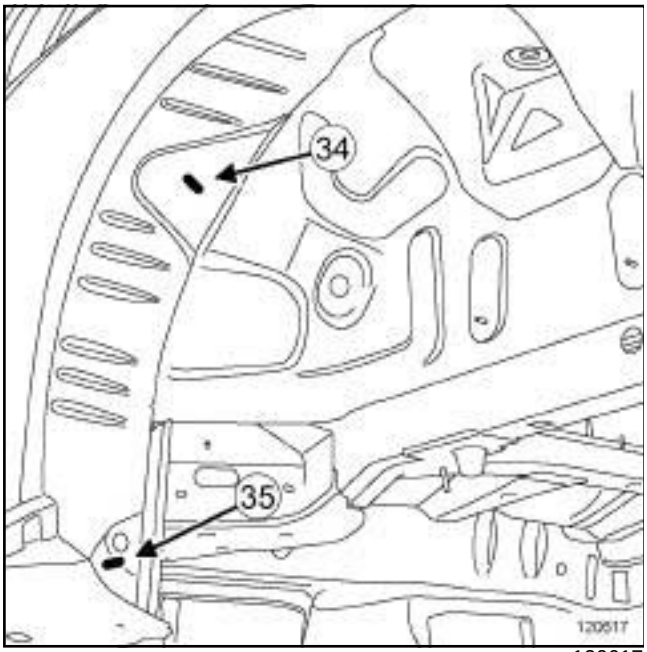
For more detailed information on welded connections with three thicknesses, see **MR 400**.

3 - Special features of the body side rear lining

C85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

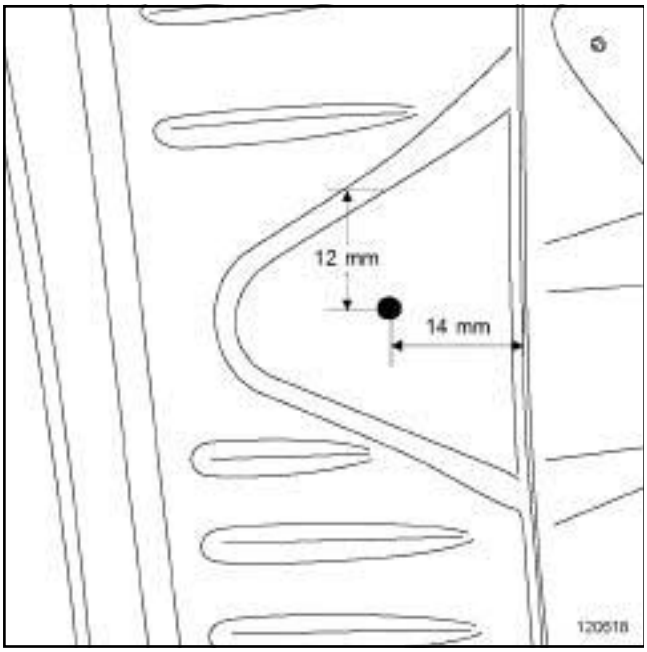
When replacing this component, the **Parts Department** only supplies the body side rear lining without studs for mounting the rear wheel arch liners.

It is essential to fit studs onto the spare part (see **MR 400**).



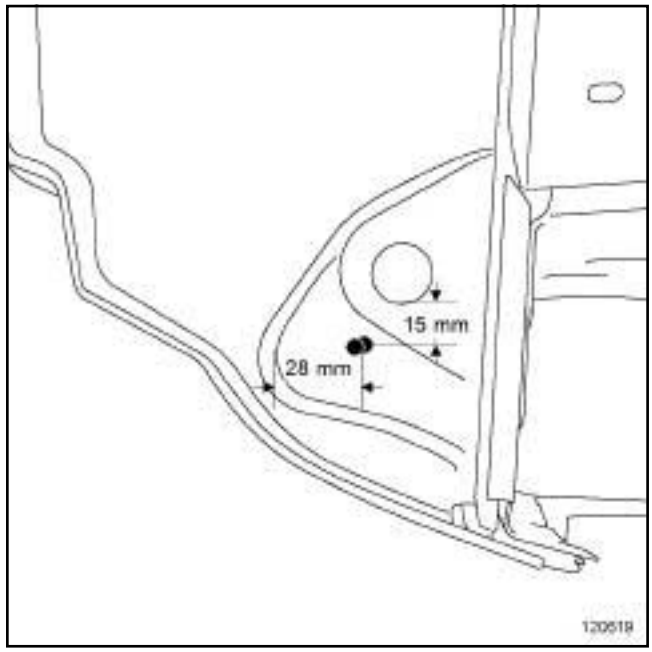
120617

Details of the stud (14)



120618

Details of the stud (15)



120619

Note:

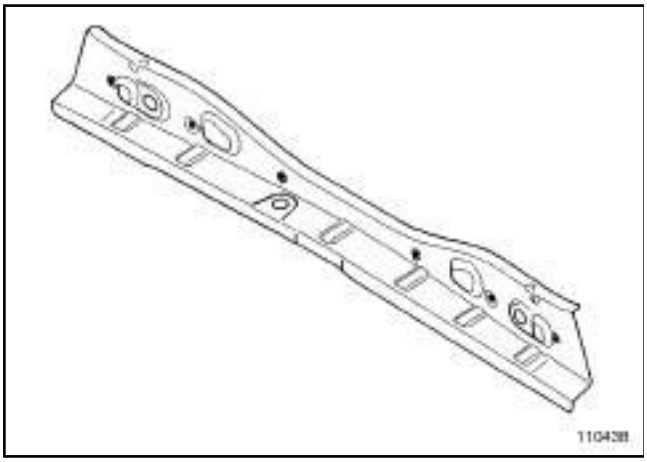
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

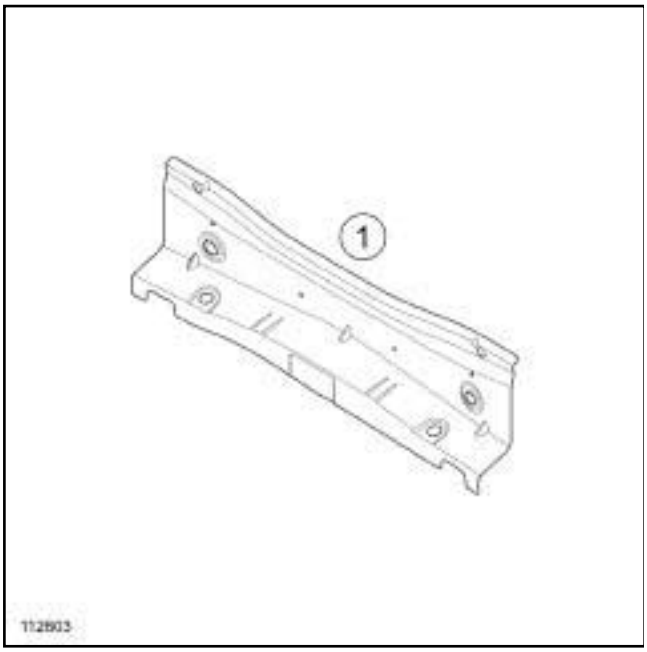
DESIGN OF THE STRUCTURAL COMPONENT



110438

This part is of an elementary type, and serves only as the rear end panel.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).



112603

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

B85 or C85 or S85

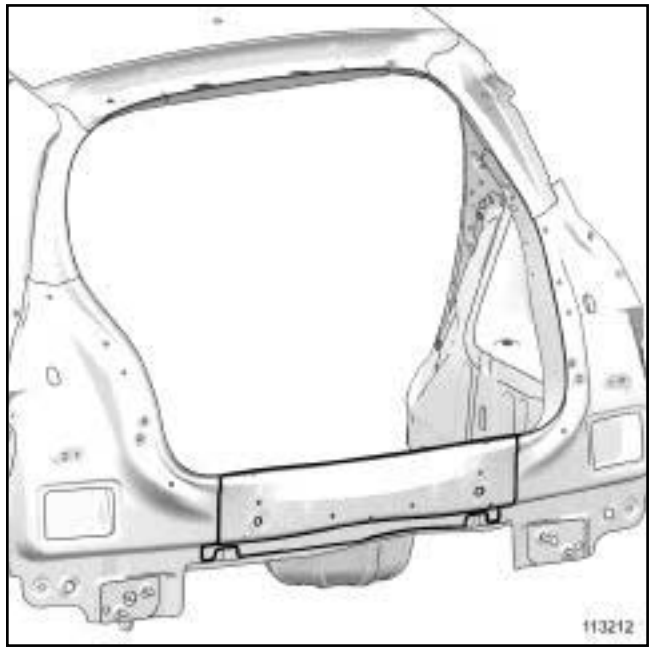
No.	Description	Type	Thick-ness (mm)
(**1**)	Rear end panel	HLE	**0.85**

K85

No.	Description	Type	Thick-ness (mm)
(**1**)	Rear end panel	HLE	**0.95**

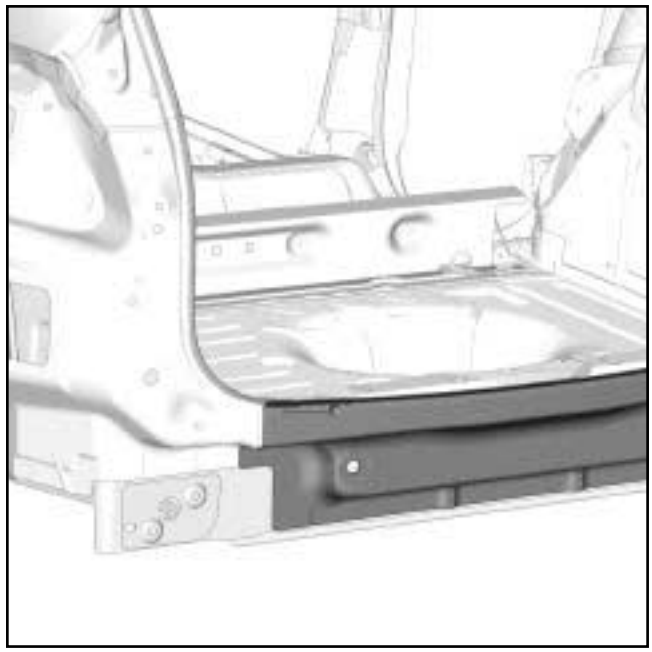
II - PART FITTED

B85 or C85 or S85



113212

K85



126735

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

WARNING

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

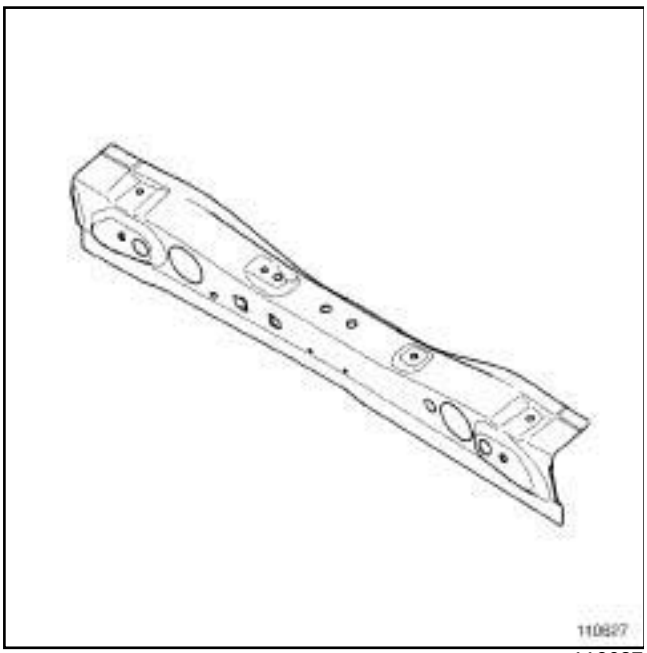
Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For detailed information about a specific connecting piece see:

(**MR 400, 40A, General information**).

DESIGN OF THE STRUCTURAL COMPONENT

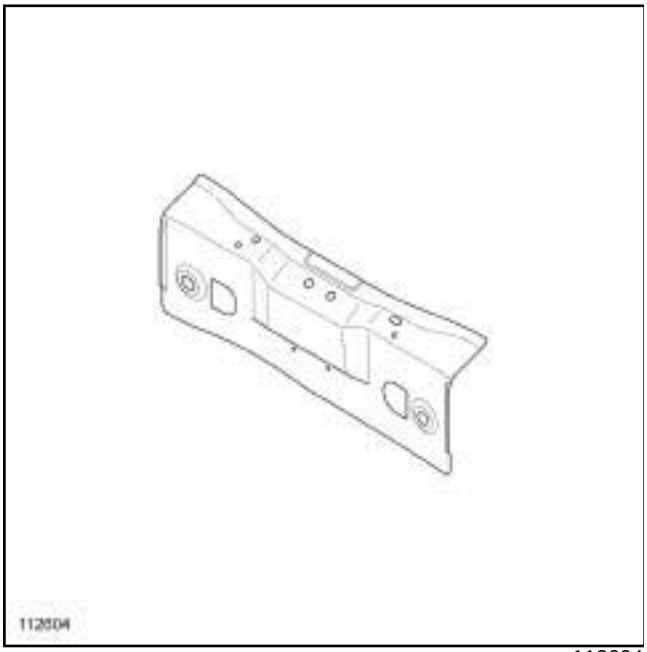


110627

The special feature of this part is that it combines the functions of rear end panel lining and rear end panel closure.

If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400, 40A, General Information**).

B85 or C85 or S85

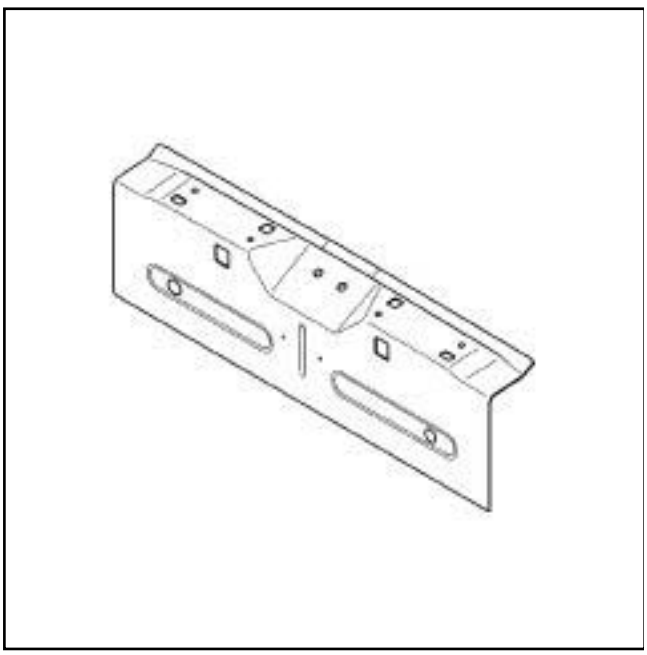


112604

There is only one way of replacing this part:

- complete replacement.

K85



126772

There is only one way of replacing this part:

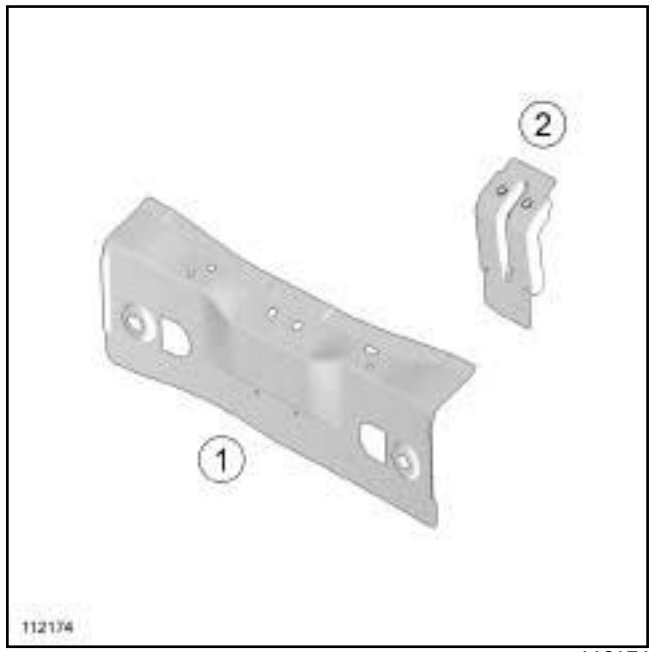
- complete replacement.

Note:

For a detailed description of a particular connection, see **MR 400**.

I - COMPOSITION OF THE SPARE PART

B85 or C85 or S85



112174

No.	Description	Type	Thickness (mm)
(**1**)	Rear end panel lining	-	**0.85**
(**2**)	Tailgate striker plate stiffener	HLE	**1.2**

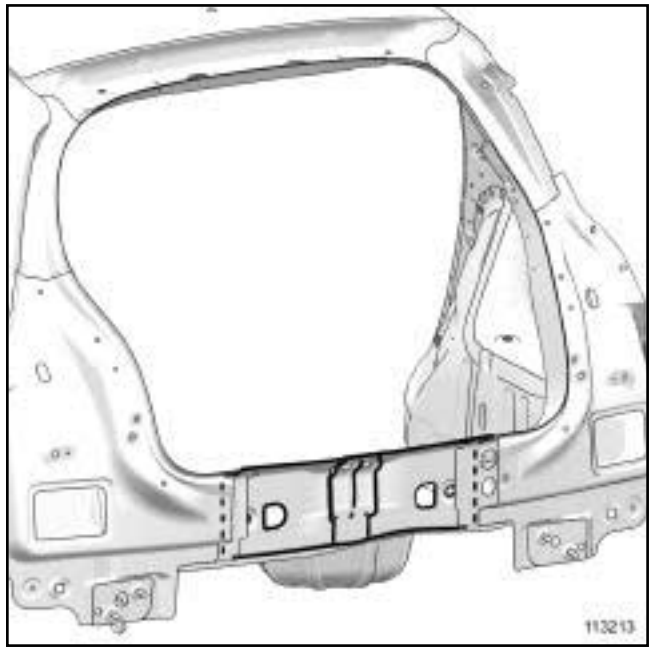
K85

126736

No.	Description	Type	Thickness (mm)
(**3**)	Rear end panel lining	Mild steel	**0.85**
(**4**)	Tailgate striker plate stiffener	HLE	**1.2**

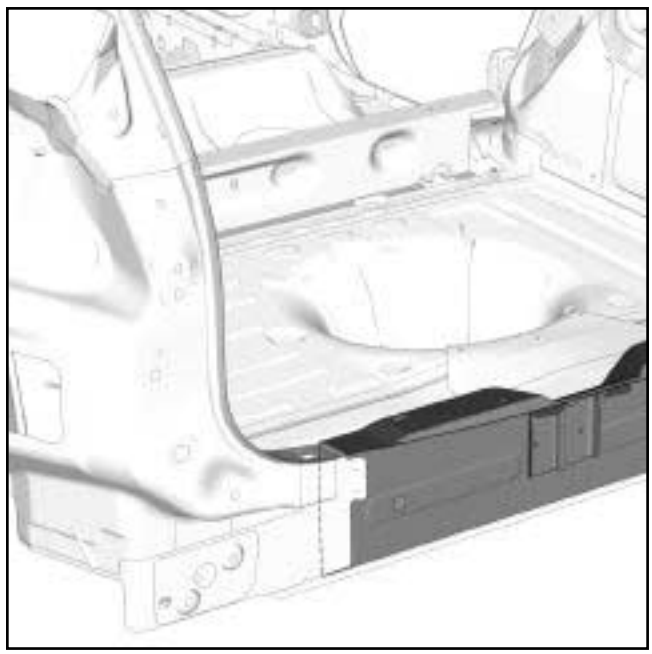
II - PART FITTED

B85 or C85 or S85



113213

K85



126737

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

DESIGN OF THE STRUCTURAL COMPONENT

112147

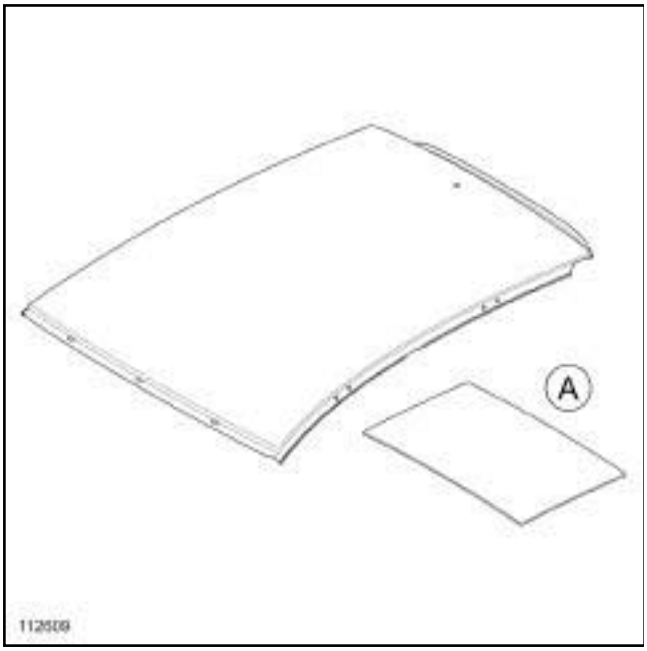
This is a basic part; its only function is that of a roof.

The roof is welded onto the body sides.

There are also models with a space for a sunroof.

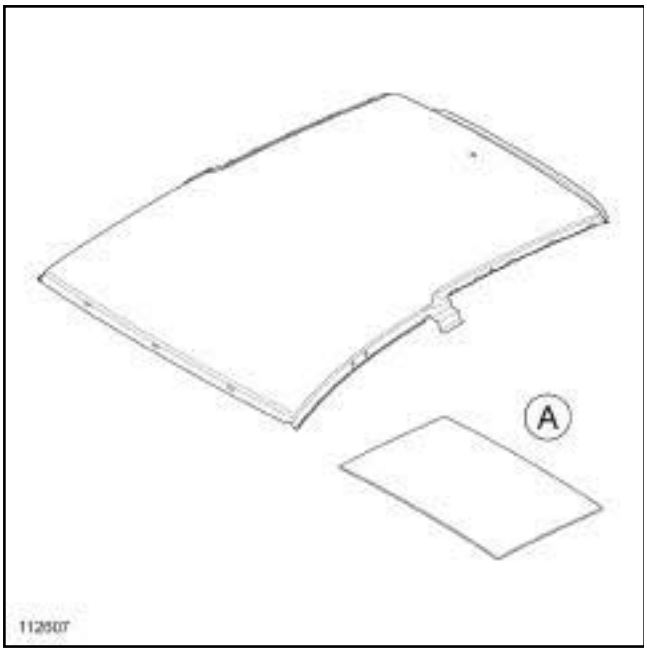
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

B85, and NORMAL ROOF



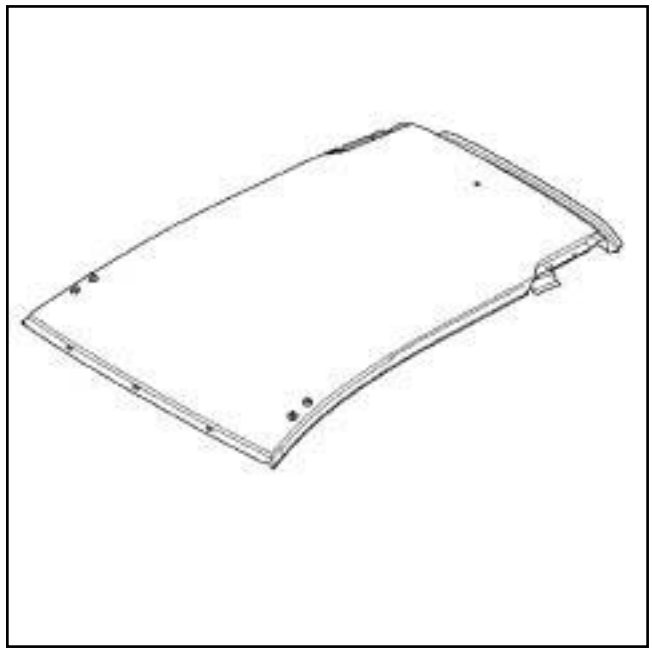
112609

C85 or S85, and NORMAL ROOF



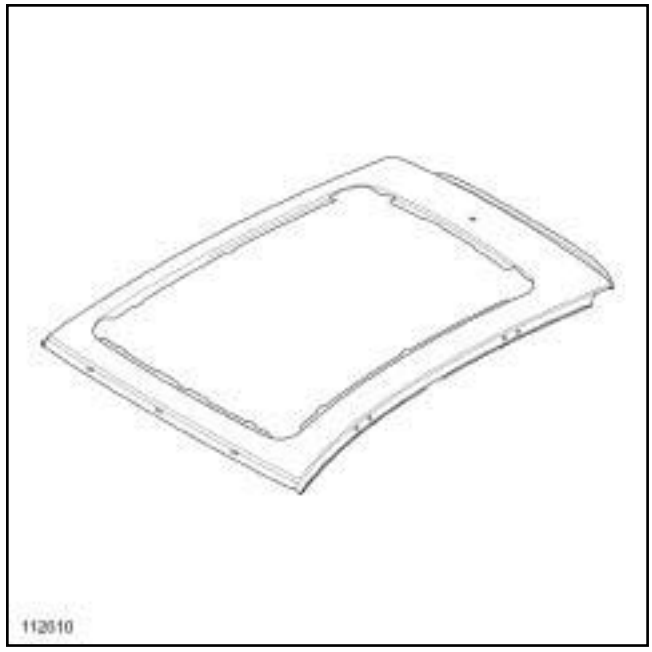
112607

K85, and NORMAL ROOF



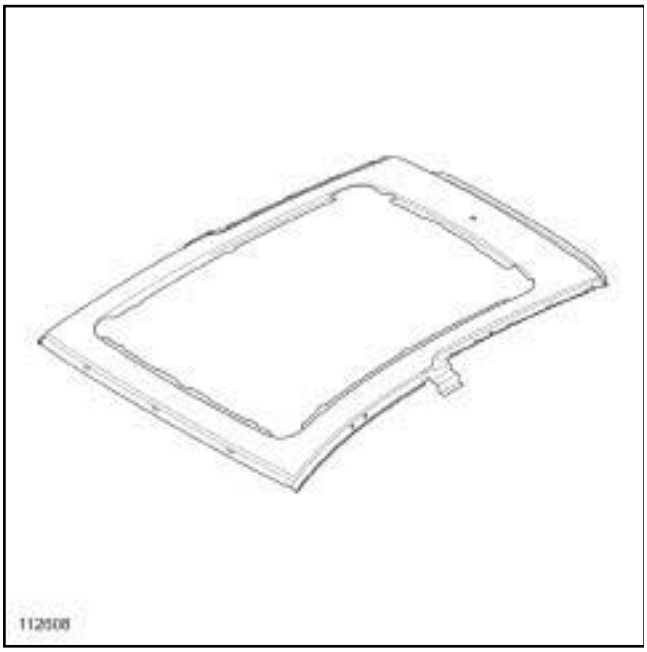
126790

B85, and PANORAMIC SUNROOF



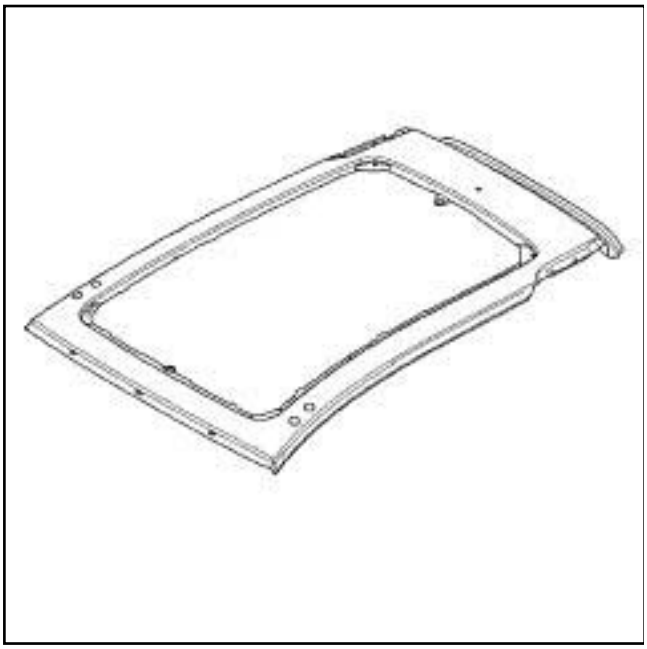
112610

C85 or S85, and PANORAMIC SUNROOF



112608

K85, and PANORAMIC SUNROOF



126791

The normal roof is sold separately.

To replace this part, also order the stiffener material ***(A)*** (see **Parts Department**).

There is only one way of replacing this part:

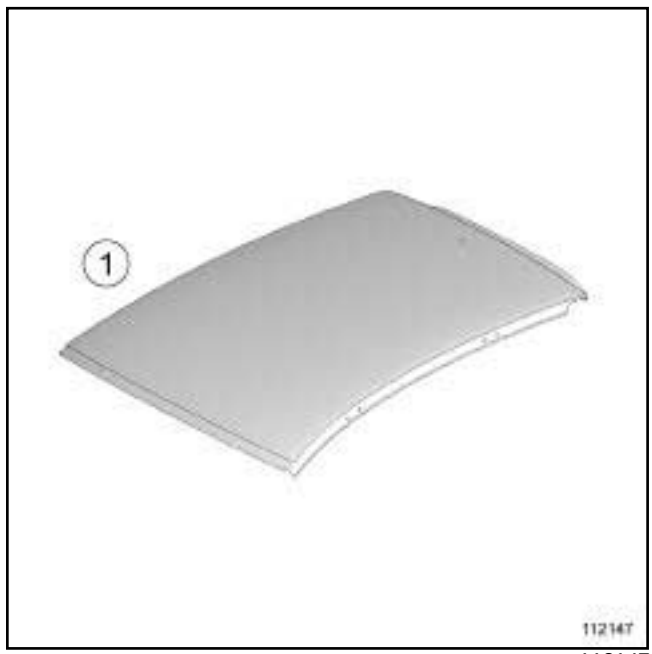
- complete replacement.

Note:

For the bonded sections, use **STRUCTURAL ADHESIVE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

I - COMPOSITION OF THE SPARE PART

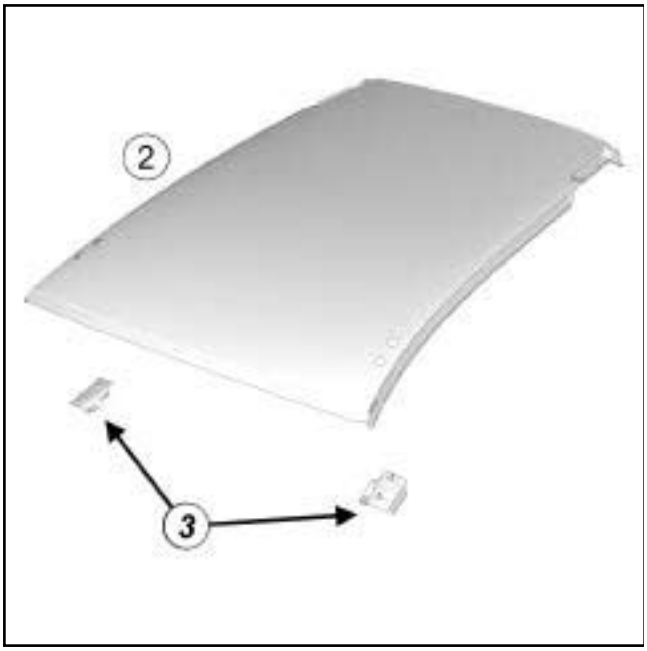
B85 or C85 or S85, and NORMAL ROOF



112147

No.	Description	Type	Thickness (mm)
(**1**)	Normal roof	-	**0.7**

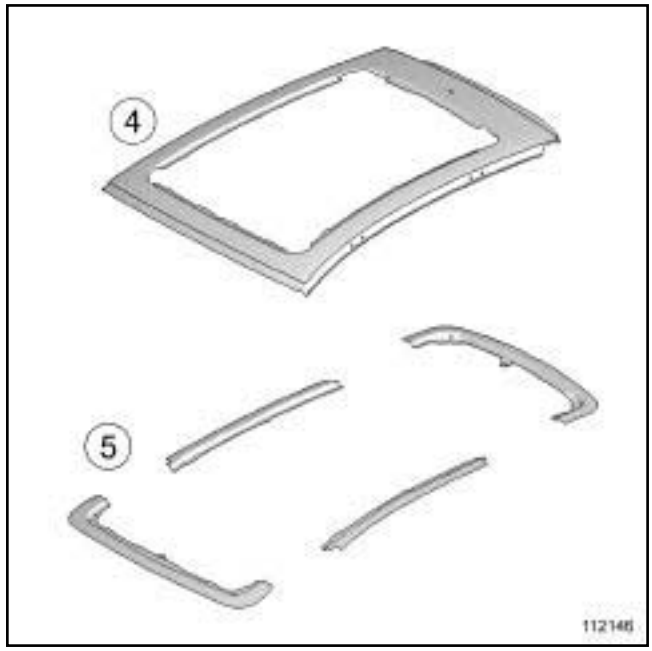
K85, and NORMAL ROOF



126739

No.	Description	Type	Thick-ness (mm)
(**2**)	Normal roof	Mild steel	**0.75**
(**3**)	Roof bar mount-ing reinforcement	HLE	**1.5**

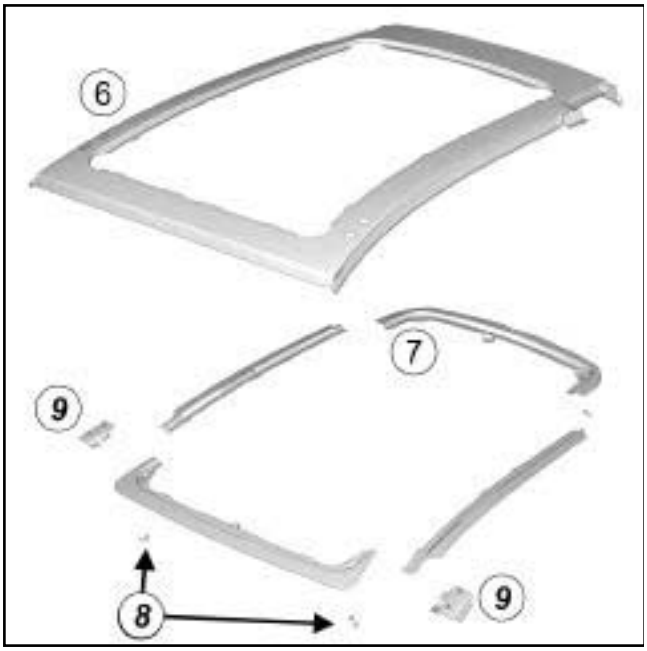
B85 or C85 or S85, and PANORAMIC SUNROOF



112146

No.	Description	Type	Thick-ness (mm)
(**4**)	Roof with sunroof	-	**0.7**
(**5**)	Sunroof rein-forcement rails	-	**1**

K85, and PANORAMIC SUNROOF

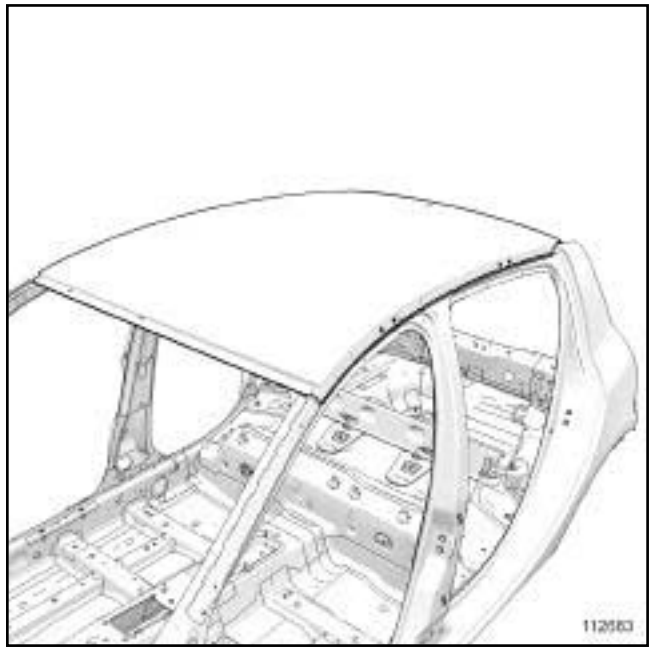


126741

No.	Description	Type	Thick-ness (mm)
(**6**)	Roof with sunroof	Mild steel	**0.75**
(**7**)	Roof reinforce-ment rail	Mild steel	**1**
(**8**)	Water drain pipe	Mild steel	**1**
(**9**)	Roof bar mount-ing reinforcement	HLE	**1.5**

II - PART FITTED

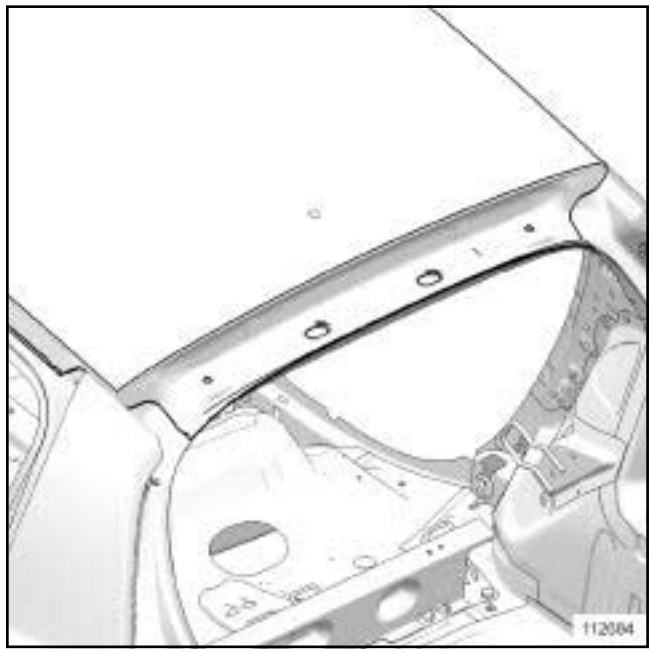
B85, and NORMAL ROOF



112683

112683

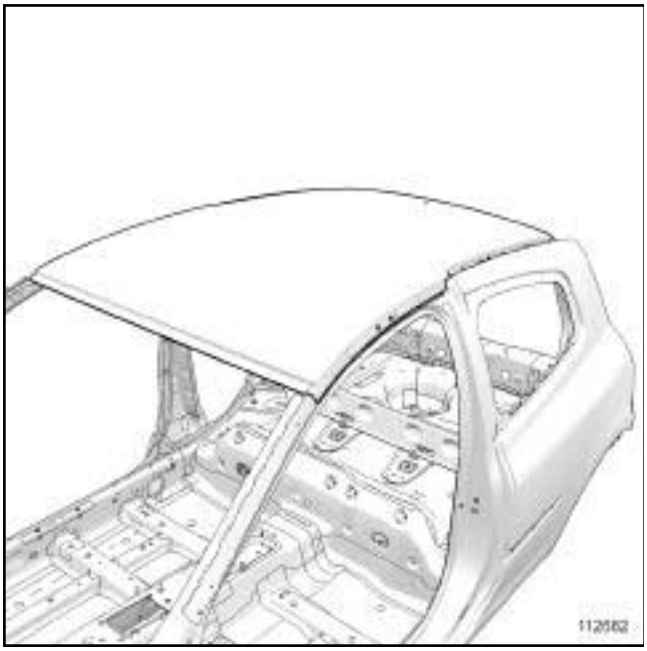
Rear section



112684

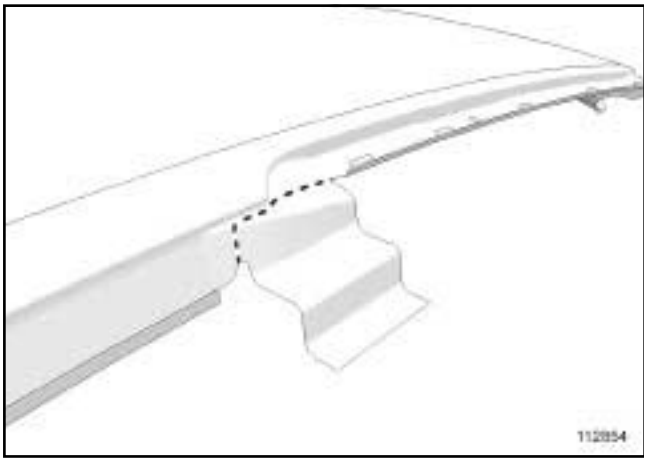
112684

C85 or S85, and NORMAL ROOF



112682

Cutting the roof tab



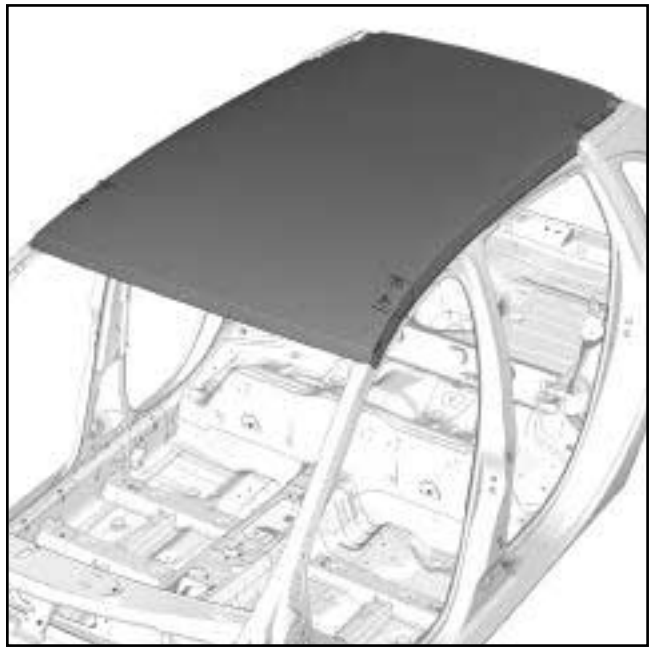
112854

Note:

The roof is sold with a tab on each side to prevent it from bending during transportation.

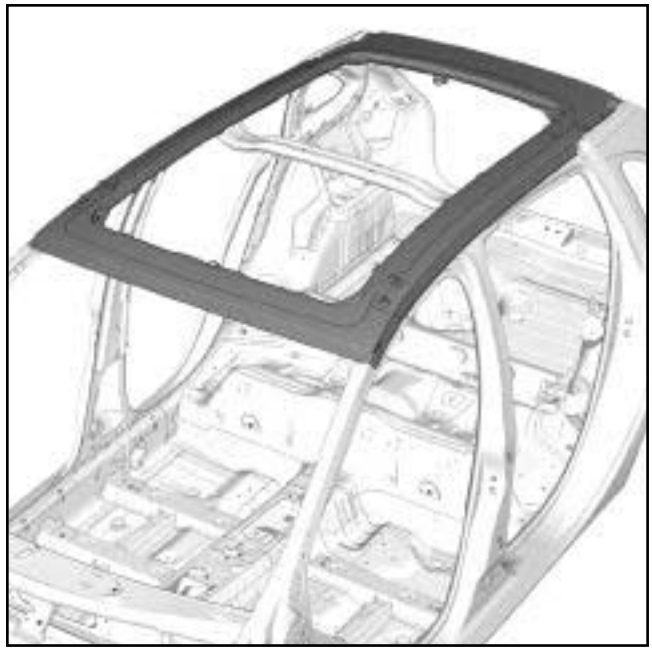
Cut this away before fitting the roof in position

K85, and NORMAL ROOF

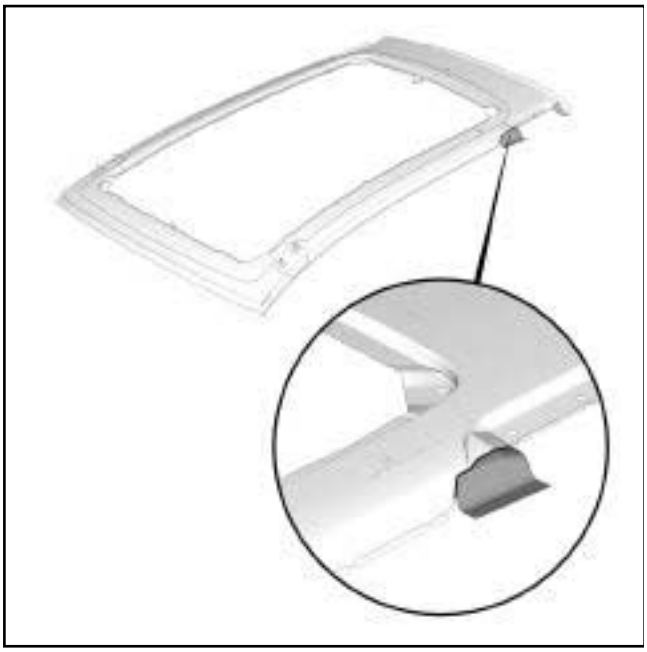


126738

K85, and PANORAMIC SUNROOF



126740



126742

Note:

The roof is sold with a tab on each side to prevent it from bending during transportation.

Cut this away before fitting the roof in position

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

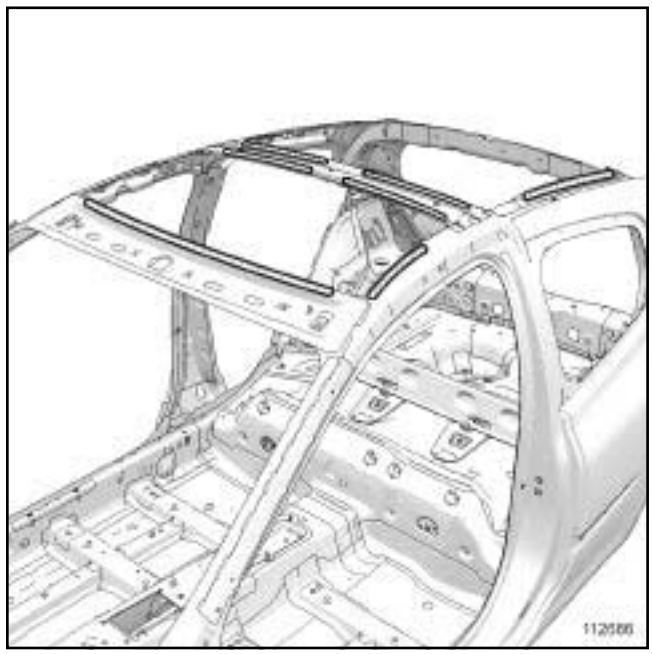
Note:

The procedure presents no difficulties.

Roof bonding area

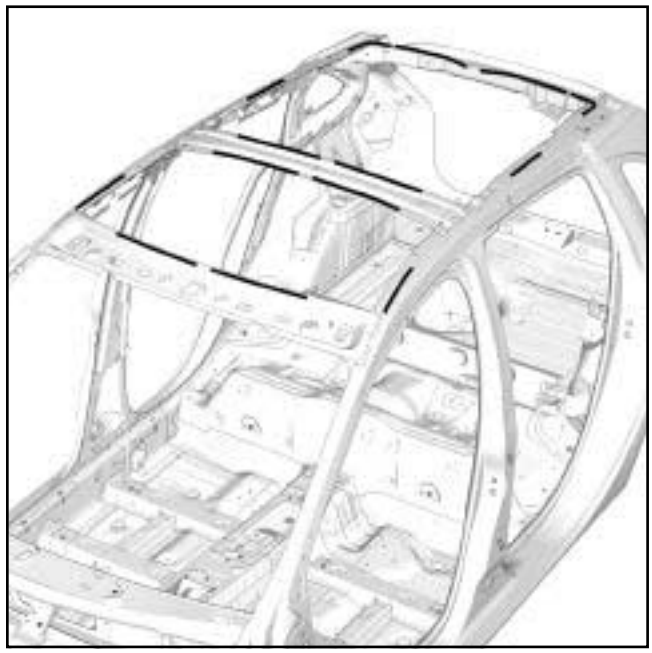
B85 or C85 or S85, and NORMAL ROOF

Front side section



112686

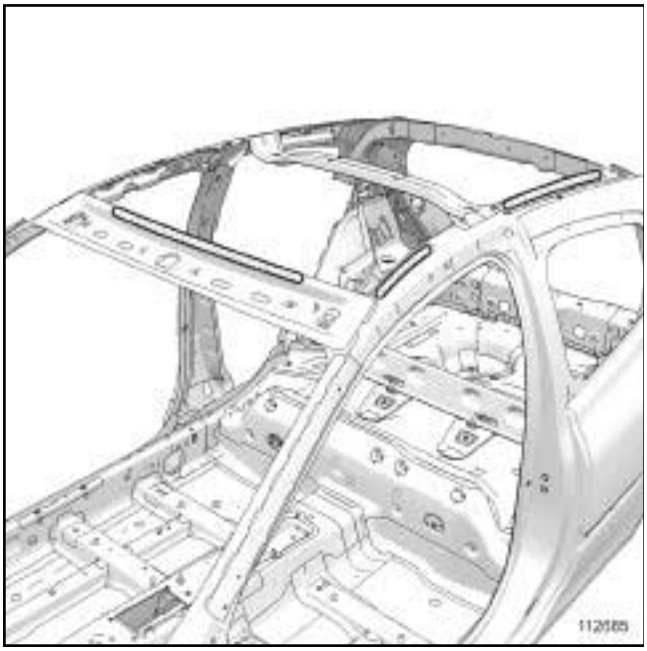
K85, and NORMAL ROOF



126743

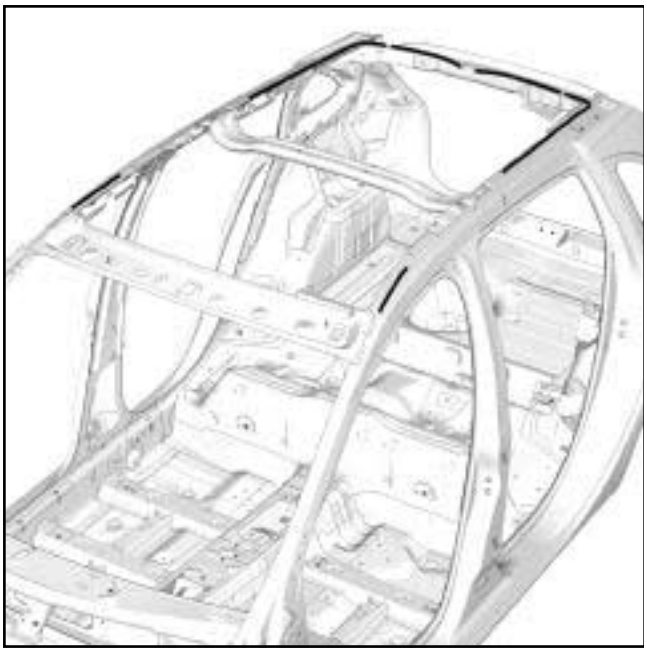
B85 or C85 or S85, and PANORAMIC SUNROOF

Front side section



112685

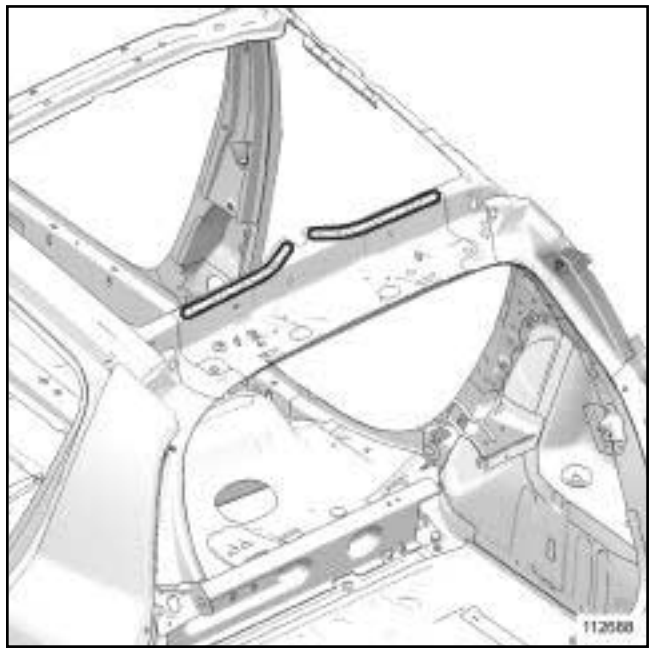
K85, and PANORAMIC SUNROOF



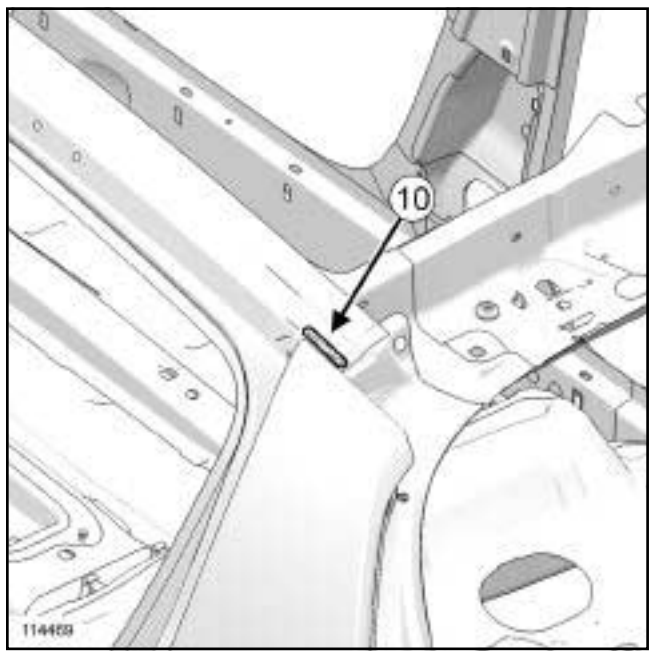
126745

B85 or C85 or S85

Rear section



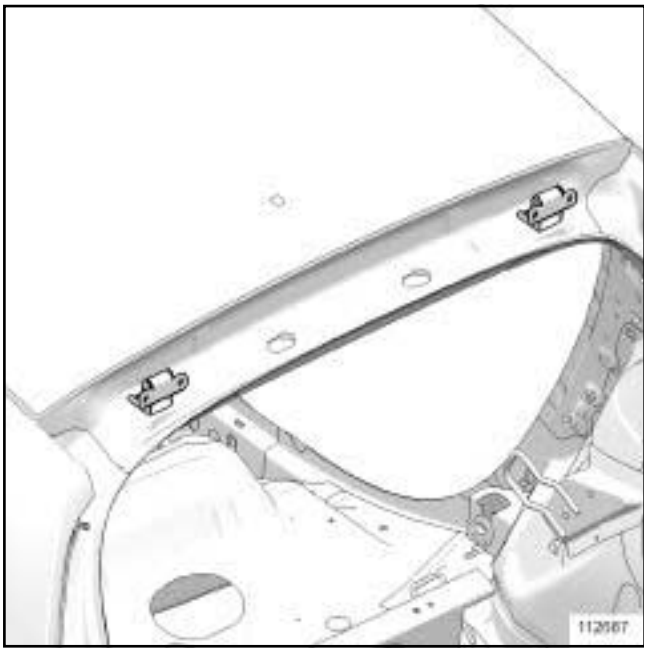
112688



114469

Note:

Apply a bead (**10**) of **STRUCTURAL ADHESIVE** to each side of the vehicle before refitting the roof (see) (04B, Consumables - Products).



112687

After applying the adhesive to the vehicle, fit the roof, then fit the tailgate hinges to keep the roof in place.

Note:

For a detailed description of a particular connection, see **MR 400**.

Note:

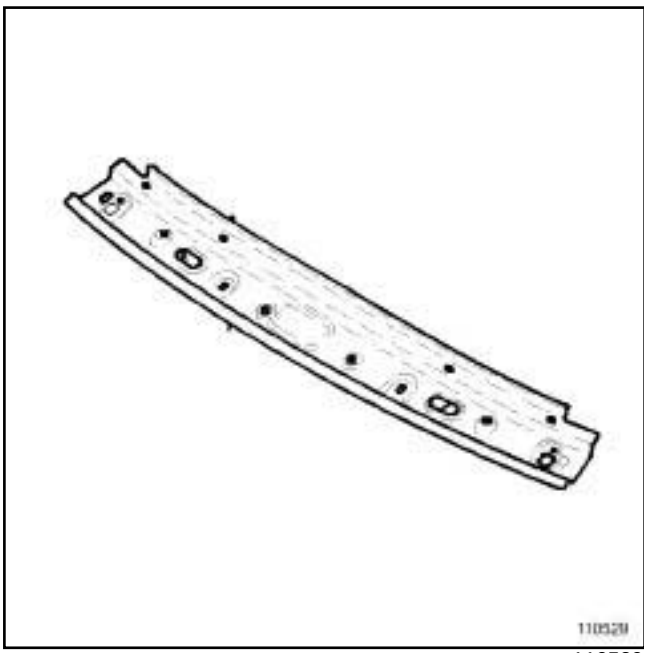
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

DESIGN OF THE STRUCTURAL COMPONENT

Note:

For a detailed description of a particular connection, see **MR 400**.



110529

This is a basic part; its only function is that of a roof front cross member and roof stiffener by means of a cemented connection.

For other issues regarding access to mating faces, the various replacement possibilities are described in the basic instructions for structural bodywork repair (see **MR 400**).

Note:

The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

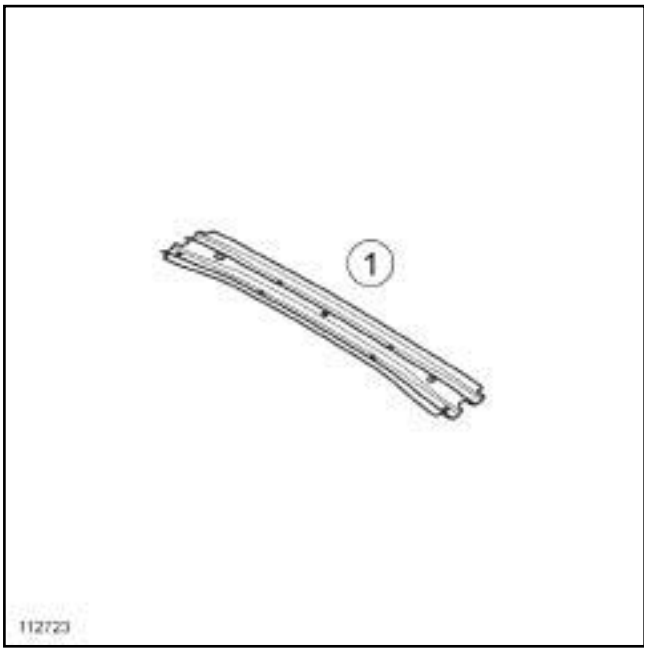
DESIGN OF THE STRUCTURAL COMPONENT

122769

This is a basic part, it only fulfils the function of a roof middle cross member.

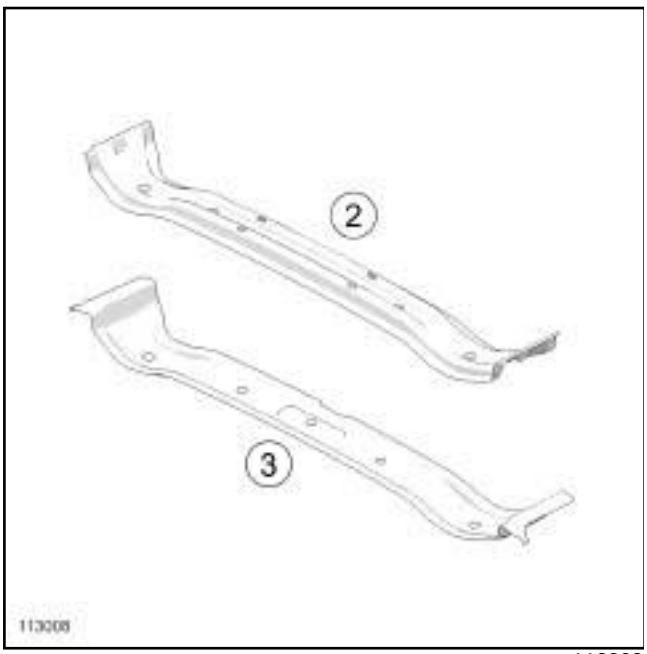
If there are other issues regarding access to mating faces, the various replacement options are described in the basic instructions for structural bodywork repair (see **MR 400**).

NORMAL ROOF



112723

PANORAMIC SUNROOF



113008

There is only one way of replacing this part:

- complete replacement.

I - COMPOSITION OF THE SPARE PART

NORMAL ROOF

No.	Description	Type	Thick-ness (mm)
(1)	Normal roof centre cross member	VHEL	**1.8**

PANORAMIC SUNROOF

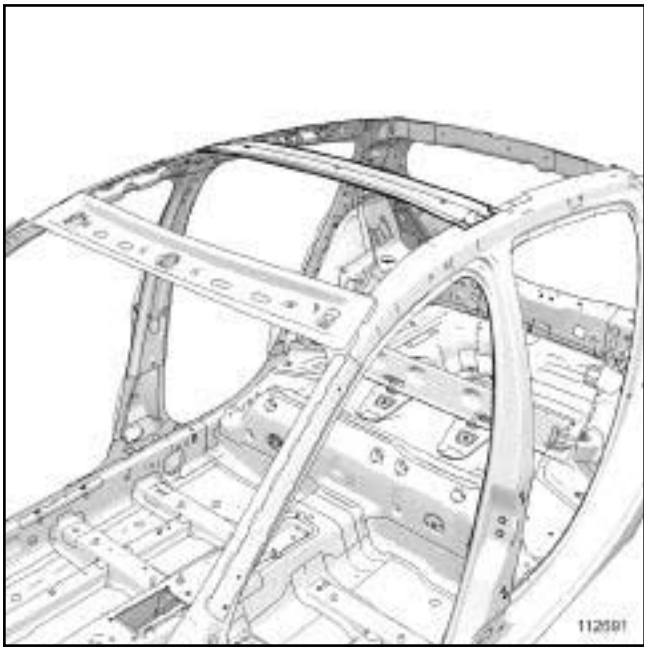
No.	Description	Type	Thick-ness (mm)
(**2**)	Roof centre cross member closure panel	HLE	**1.5**
(**3**)	Roof centre cross member (with sunroof)	HLE	**1**

Note:

There is no specific method for this replacement; all the joints are made in the same way as originally.

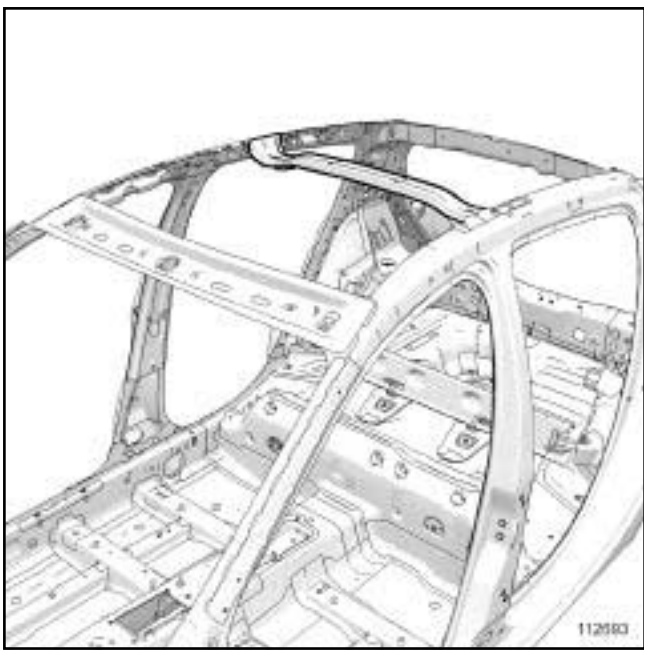
II - PART IN POSITION

NORMAL ROOF



112691

PANORAMIC SUNROOF



112693

WARNING

If the mating faces of the parts to be welded are not accessible, make EGW plug welds to replace the original resistance welds (see **MR 400**).

Note:

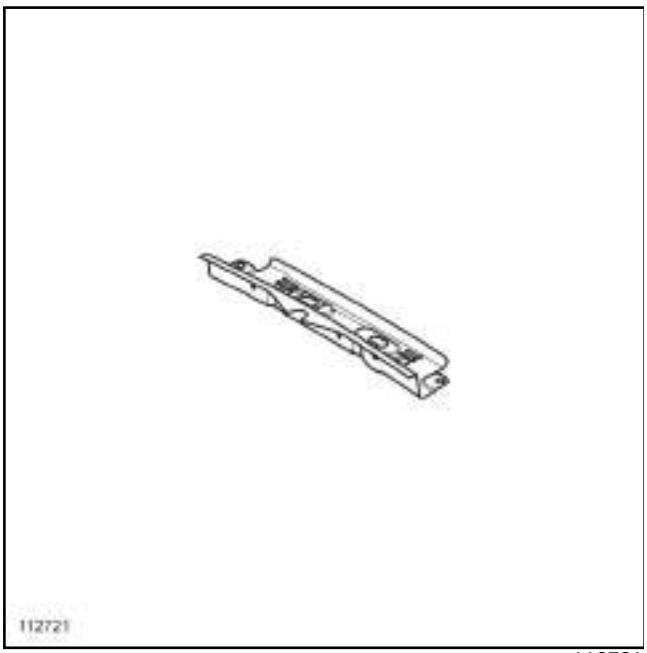
The information contained in the following describes the general repair procedure for all vehicles having the same design for this part.

Before reading the following general information, make sure that there are no special notes associated with the vehicle. These special notes are specified if necessary in other parts of the sub-section dealing with the component.

Note:

For a detailed description of a particular connection, see **MR 400**.

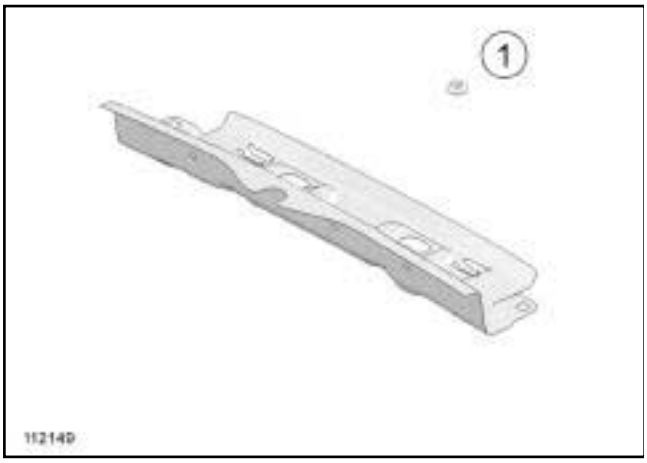
DESIGN OF THE STRUCTURAL COMPONENT



112721

This is a basic part; its only function is that of roof rear cross member as well as roof stiffener by means of a cemented connection.

For other issues regarding access to mating faces, the various replacement possibilities are described in the basic instructions for structural bodywork repair (see **MR 400**).



112149

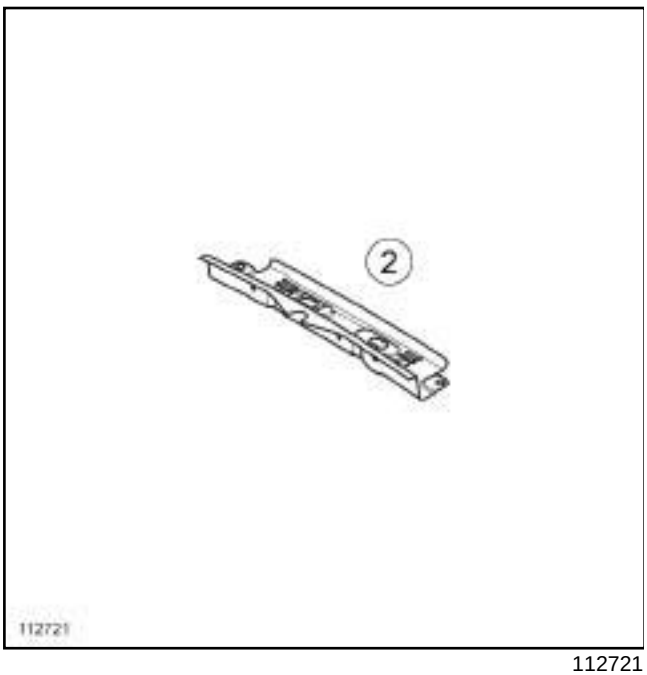
There is only one way of replacing this part:

- complete replacement.

Note:

To replace this part, crimp a nut (**1**) available from the **Parts Department.**

I - COMPOSITION OF THE SPARE PART

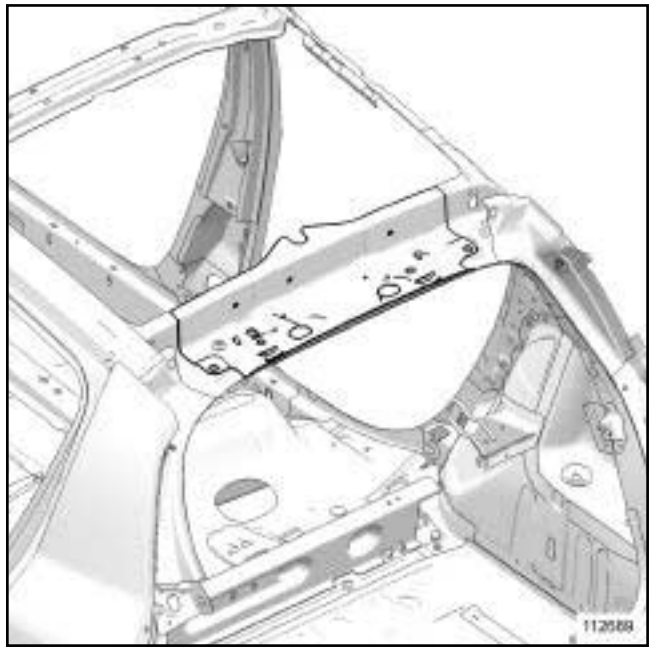


112721

No.	Description	Type	Thick-ness (mm)
(**2**)	Roof rear cross member	HLE	**0.95**

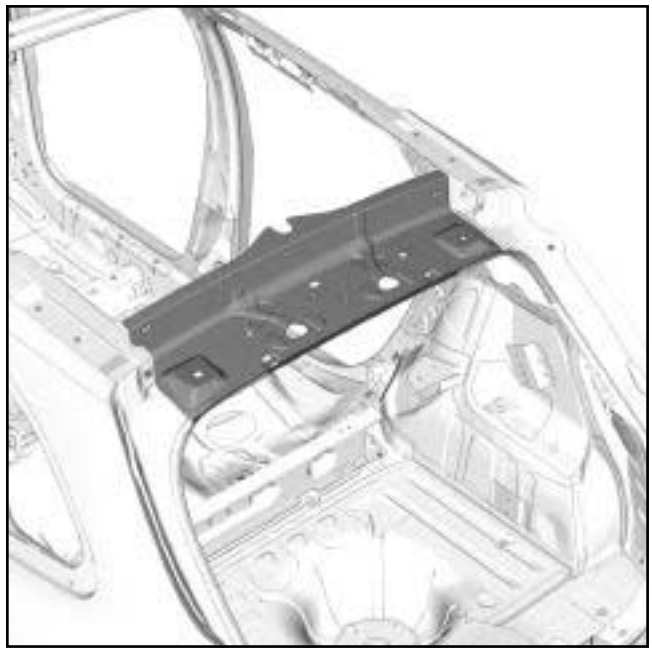
II - PART IN POSITION

B85 or C85 or S85



112689

K85



126747

Note:

For detailed information on welded connections with three thicknesses, see **MR 400**.

Note:

There is no specific method for this replacement; all the joints are made in the same way as originally.

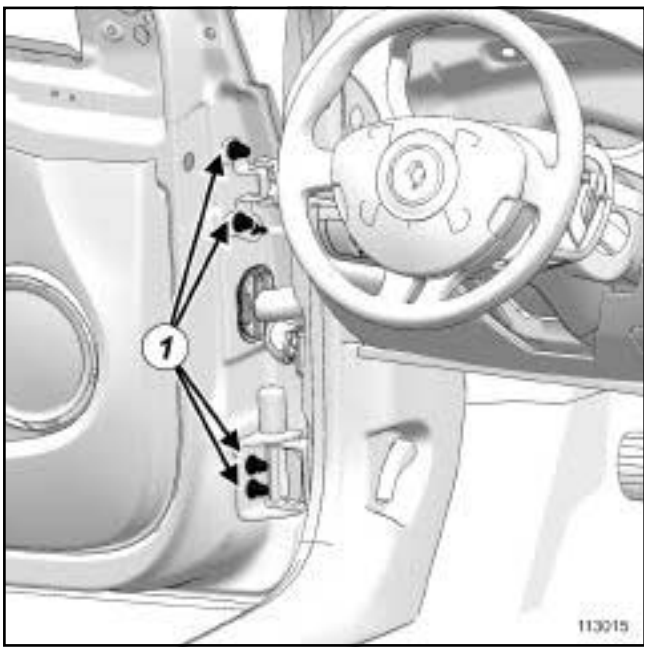
Tightening torques ▽	
door mounting nuts	**21 Nm**
hinge mounting bolts	**21 Nm**

I - REMOVAL WITHOUT HINGES

1 - REMOVAL PREPARATION OPERATION

❏ Disconnect the door wiring harness supply connector.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



113015

❏ Remove:

- the door mounting nuts (**1**) ,
- the door.

II - REFITTING WITHOUT HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the door,
- the door mounting nuts ***(1)*** .

❏ Adjust the door clearances and shut lines (see **47A**, **Side opening elements**, **Front side door: Adjustment**, page **47A-3**) .

❏ Torque tighten the **door mounting nuts (21 Nm)**.

2 - FINAL OPERATION

❏ Connect the wiring harness supply connector.

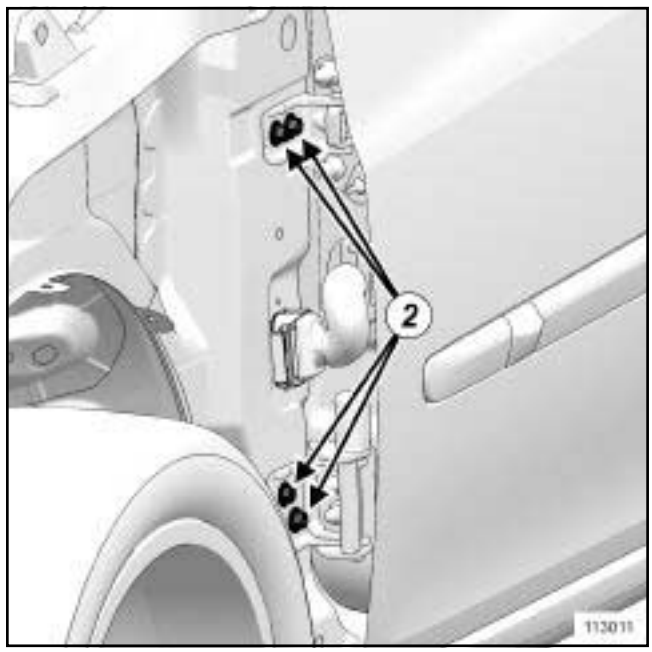
III - REMOVAL WITH HINGES

1 - REMOVAL PREPARATION OPERATION

❏ Remove the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

❏ Disconnect the door wiring harness supply connector.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



113011

❏ Remove:

- the hinge mounting bolts (**2**) ,
- the door.

IV - REFITTING WITH HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the door,
- the hinge mounting bolts ***(2)*** .

❏ Adjust the door clearances and shut lines (see **47A**, **Side opening elements**, **Front side door: Adjustment**, page **47A-3**) .

❏ Torque tighten the **hinge mounting bolts (21 Nm)**.

2 - FINAL OPERATION

❏ Connect the wiring harness supply connector.

❏ Refit the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

Tightening torques ▽	
guide pins on the door box section	**13 Nm**
indexing bolt on the door box section	**13 Nm**
door box section nuts	**21 Nm**
hinge bolts on the A-pillar	**21 Nm**

ADJUSTMENT VALUES

❑ For information on the front side door adjustment values (see **Vehicle panel gaps: Adjustment value**) (01C, Vehicle bodywork specifications).

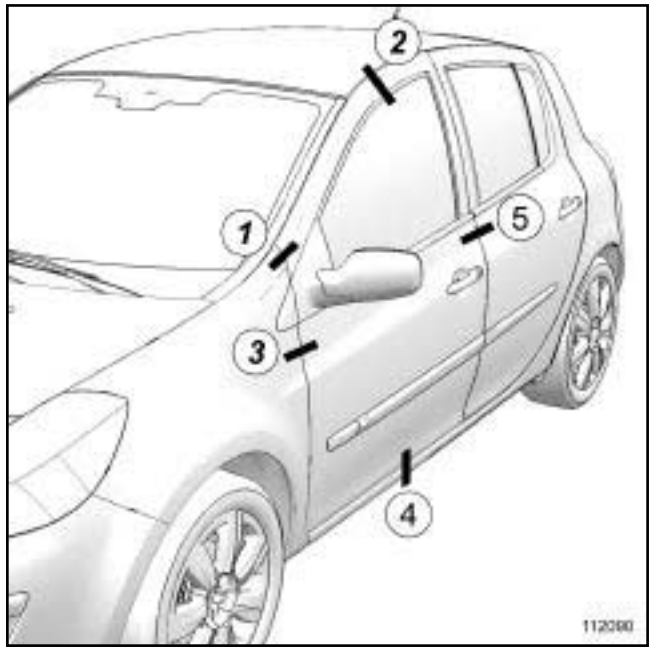
ADJUSTMENT

❑ There are two options for adjusting the door:

- by means of the mountings on the door box section (opening clearance adjustment),
- by means of the mountings on the A-pillar (shut line adjustment): the front wing needs to be removed for this operation.

B85 or K85

5-door version

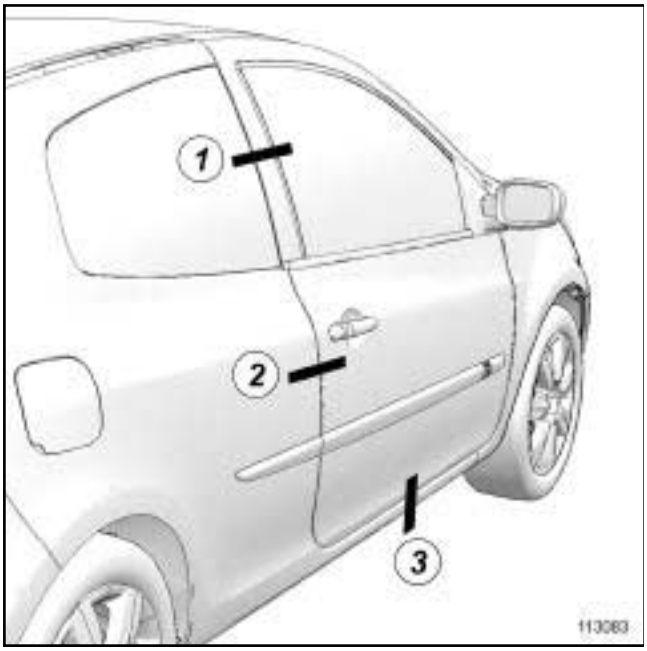


112090

❑ Observe the adjustment sequence.

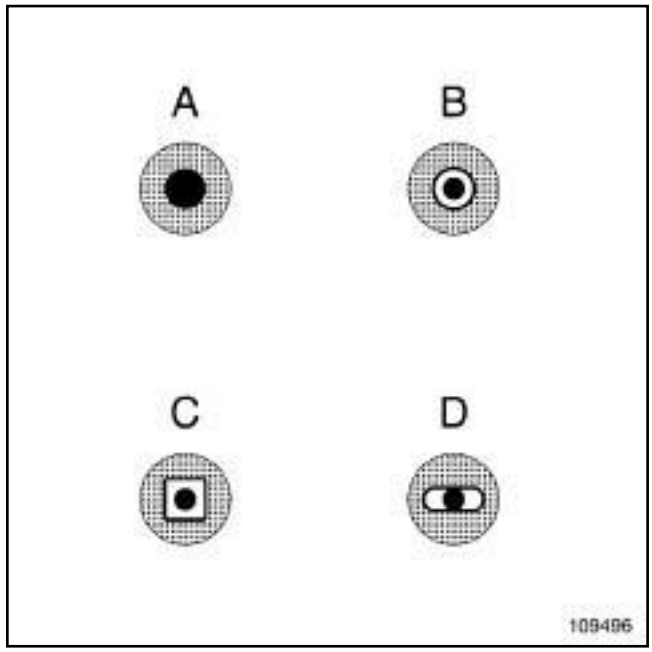
C85 or S85

3-door version



113083

❑ Observe the adjustment sequence.



109496

❑

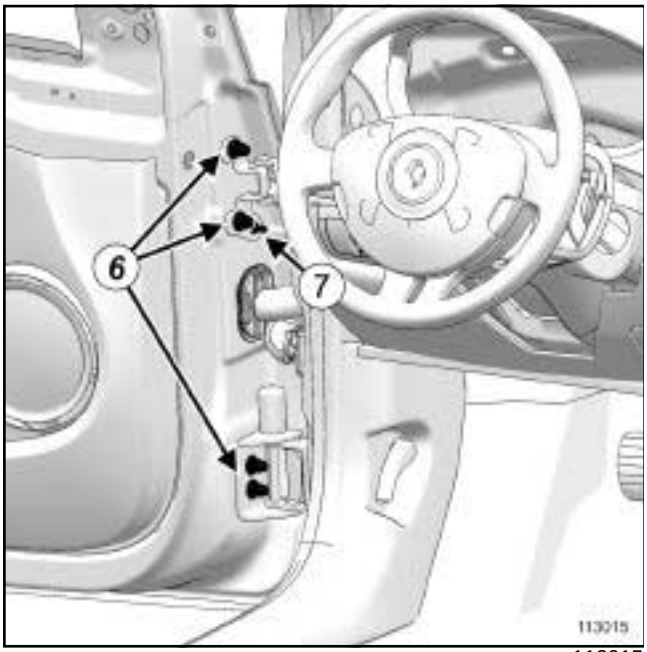
Symbols A, B, C and D show the adjustment options.

The black dot in the centre represents the body of the bolt.

The grey section represents the component to be adjusted.

The white section represents the adjustment area.

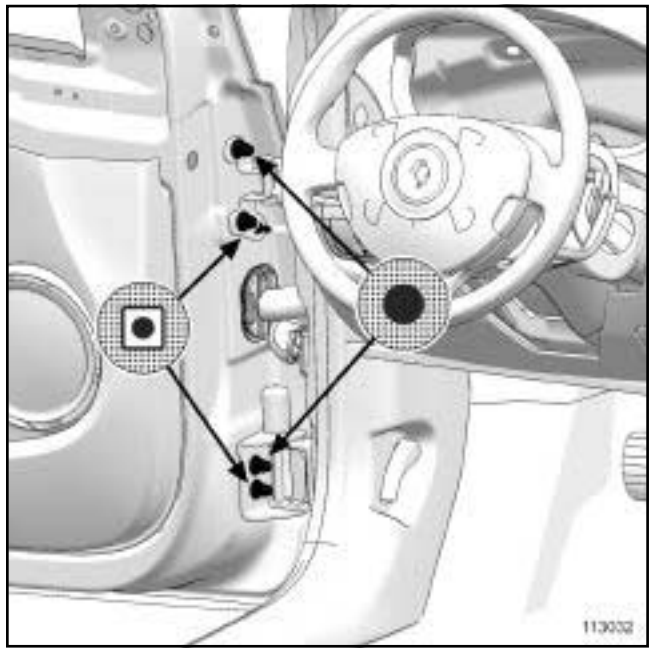
I - ADJUSTMENT OF OPENING CLEARANCES WITH THE FRONT WING AND THE REAR DOOR



113015

❏ Remove the door box section nuts (**6**) .

❏ Undo the guide pins and the indexing bolt (**7**) .



113032

❏ Adjust the opening clearance with the front wing and the rear door.

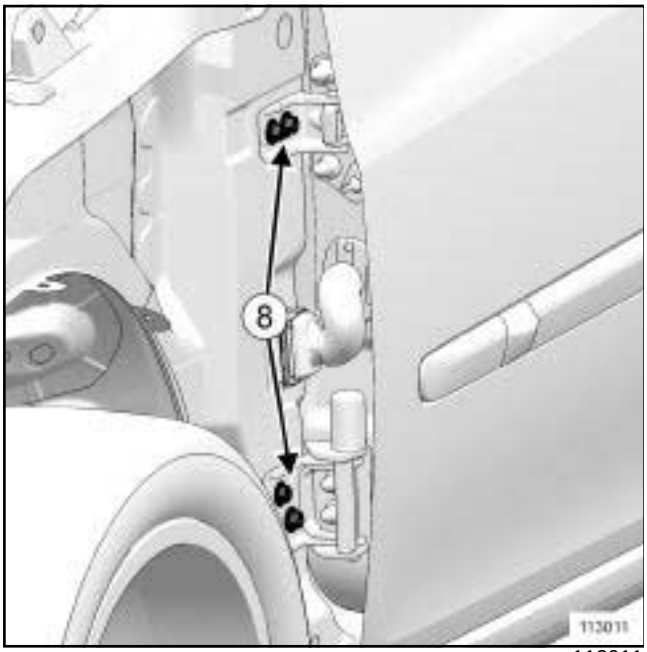
❏ Tighten to torque:

- the **guide pins on the door box section (13 Nm)**,
- the **indexing bolt on the door box section (13 Nm)**.

❏ Refit the door box section nuts ***(6)*** .

❏ Torque tighten the **door box section nuts (21 Nm)**.

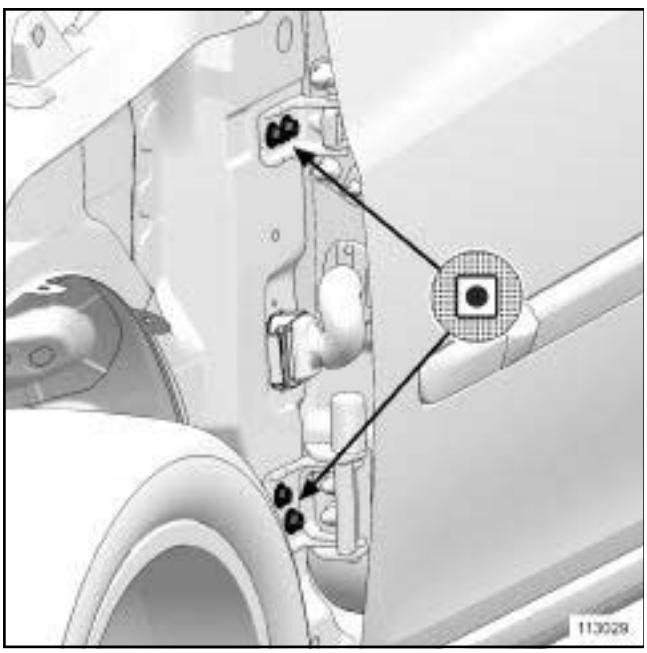
II - REAR DOOR SHUT LINE ADJUSTMENT



113011

❏ Remove the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

❏ Undo the door hinge bolts (**8**) on the A-pillar.



113029

❏ Adjust the panel gaps with the rear door.

❏ Torque tighten the **hinge bolts on the A-pillar (21 Nm)**.

❏ Refit the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) .

The order of the operations described below applies specifically to replacing the door.

Note:

It is possible to carry out the stripping operations on the vehicle before removing the door.

STRIPPING

❑ Remove:

- the door trim (see **Front side door trim: Removal - Refitting**) ,
- (see **Door sealing film: Removal - Refitting**) ,
- the door mirror (see **Door mirror: Removal - Refitting**) ,
- the glass run channel (see **Front side door window run channel: Removal - Refitting**) ,
- the sliding window (see **Front side door sliding window: Removal - Refitting**) ,
- the window lift mechanism (see **Front side door electric window mechanism: Removal - Refitting**) or (see **Rear side door manual window winder mechanism: Removal - Refitting**) ,
- the exterior handle (see **Exterior door handle: Removal - Refitting**) ,
- the door lock (see **Front side door lock: Removal - Refitting**) .
- the wiring harness,
- the door exterior protection strip (see **Front side door protective strip: Removal - Refitting**) ,
- the front door impact padding (see) .

REBUILDING

❑ Fit the decorative side strip (see **Side decorative strips: Removal - Refitting**) .

❑ Refit:

- the front door impact padding (see) ,
- the wiring harness,
- the door lock (see **Front side door lock: Removal - Refitting**) .
- the exterior handle (see **Exterior door handle: Removal - Refitting**) ,
- the window lift mechanism (see **Front side door electric window mechanism: Removal - Refitting**) or (see **Rear side door manual window winder mechanism: Removal - Refitting**) ,
- the sliding window (see **Front side door sliding window: Removal - Refitting**) ,
- the glass run channel (see **Front side door window run channel: Removal - Refitting**) ,
- the door mirror (see **Door mirror: Removal - Refitting**) ,
- the sealing film (see **Door sealing film: Removal - Refitting**) ,
- the door trim (see **Front side door trim: Removal - Refitting**) ,
- the door exterior protection strip (see **Front side door protective strip: Removal - Refitting**) .

B85 or K85

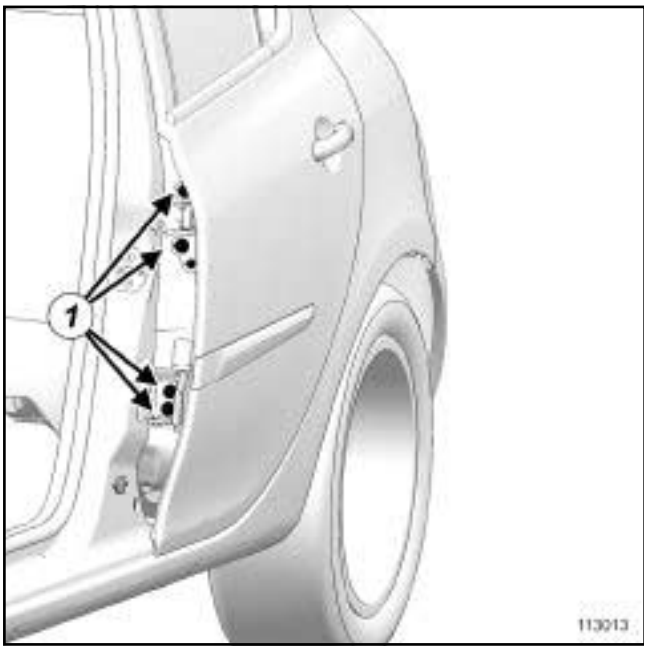
Tightening torques ▽	
door nuts	**21 Nm**
hinge nuts	**21 Nm**

I - REMOVAL WITHOUT HINGES

1 - REMOVAL PREPARATION OPERATION

❏ Disconnect the front side door connector.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



113013

❏ Remove:

- the door nuts (**1**) ,
- the door.

II - REFITTING WITHOUT HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the door,
- the door nuts ***(1)*** .

❏ Adjust the door clearances and flush fittings (see **Vehicle panel gaps: Adjustment value**) (01C, Vehicle bodywork specifications).

❏ Torque tighten the **door nuts (21 Nm)**.

2 - FINAL OPERATION

❏ Connect the front side door connector.

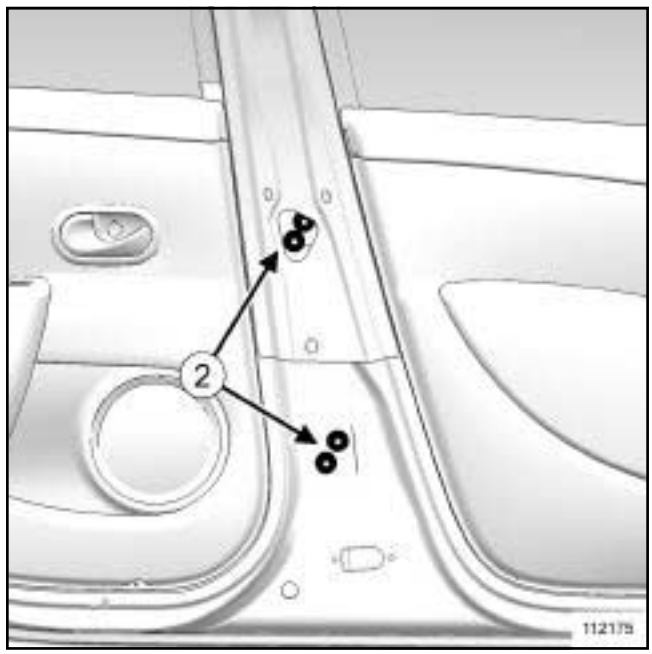
III - REMOVAL WITH HINGES

1 - REMOVAL PREPARATION OPERATION

❏ Remove the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

❏ Disconnect the front side door connector.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112175

❏ Remove:

- the hinge nuts (**2**) ,
- the door.

IV - REFITTING WITH HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the door,
- the hinge nuts ***(2)*** .

❏ Adjust the door clearances and flush fittings (see **Vehicle panel gaps: Adjustment value**) (01C, Vehicle bodywork specifications).

B85 or K85

❑ Torque tighten the **hinge nuts (21 Nm)**.

2 - FINAL OPERATION

❑ Connect the front side door connector.

❑ Refit the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

B85 or K85

Tightening torques ▽	
guide pins on the door box section	**13 Nm**
indexing bolt on the door box section	**13 Nm**
hinge nuts on the door box section	**21 N.m**
hinge nuts on the B-pillar	**21 Nm**

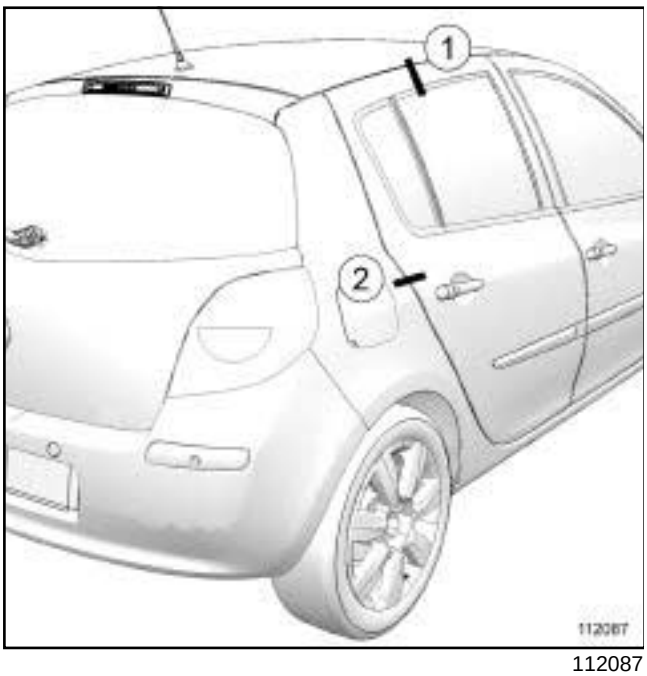
ADJUSTMENT VALUES

❑ For information on the rear side door adjustment values (see **Vehicle panel gaps: Adjustment value**) (01C, Vehicle bodywork specifications).

ADJUSTMENT

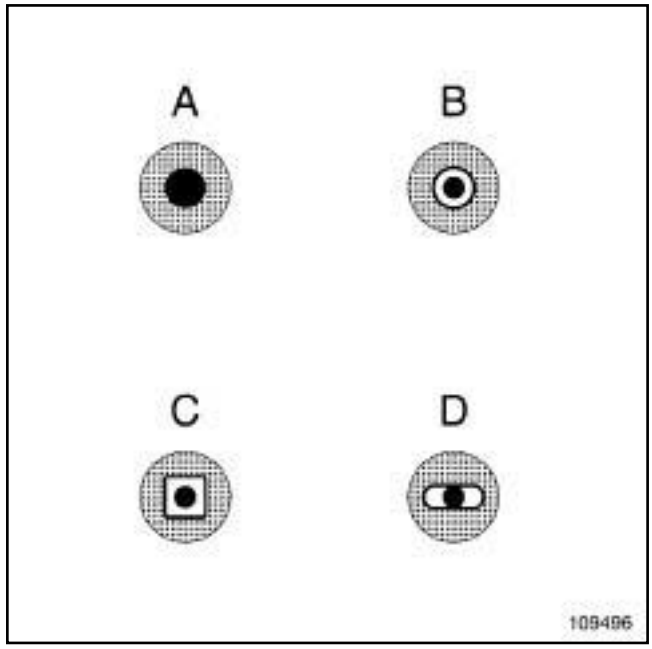
❑ There are two options for adjusting the door:

- by means of the mountings on the door box section (opening clearance adjustment),
- by means of the mountings on the B-pillar (shut line adjustment): this operation requires the removal of the B-pillar interior trim.



112087

❑ Observe the adjustment sequence.



109496

❑

Symbols A, B, C and D show the adjustment options.

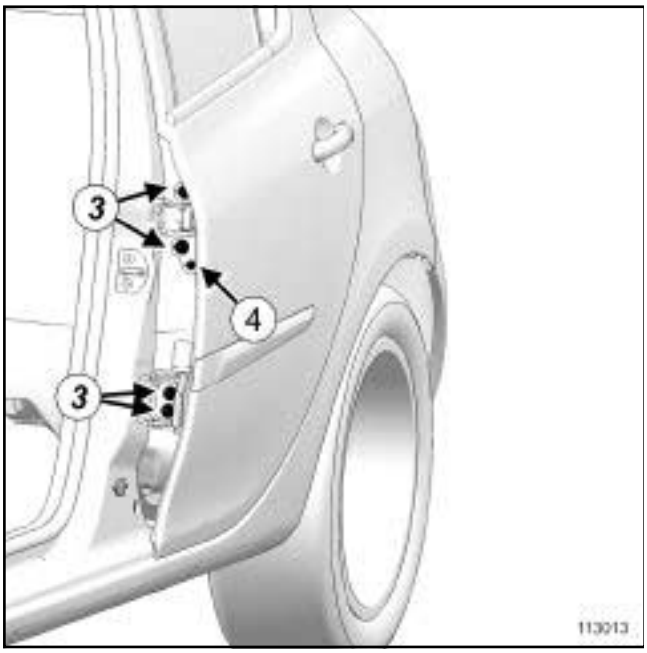
The black dot in the centre represents the body of the bolt.

The grey section represents the component to be adjusted.

The white section represents the adjustment area.

B85 or K85

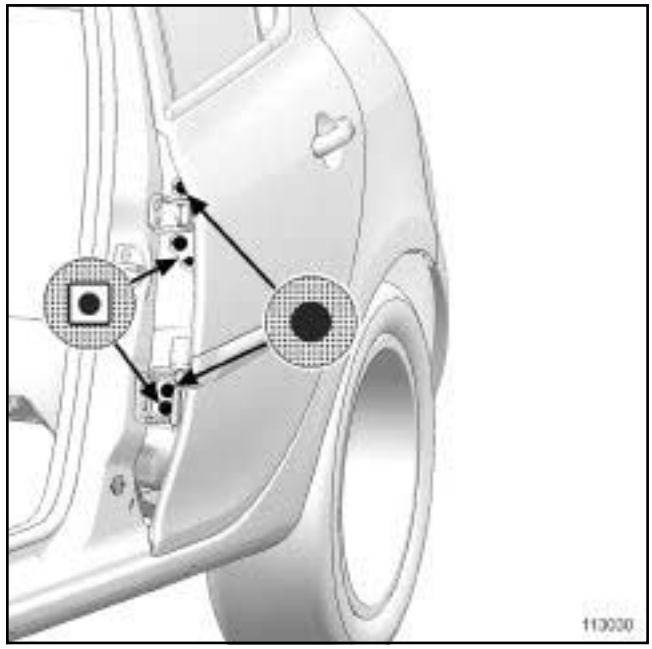
I - ADJUSTMENT OF OPENING CLEARANCE WITH THE FRONT DOOR AND THE REAR WING



113013

❏ Remove the door box section nuts (**3**) .

❏ Undo the guide pins and the indexing bolt (**4**) .



113030

❏ Adjust the door shut lines.

❏ Tighten to torque:

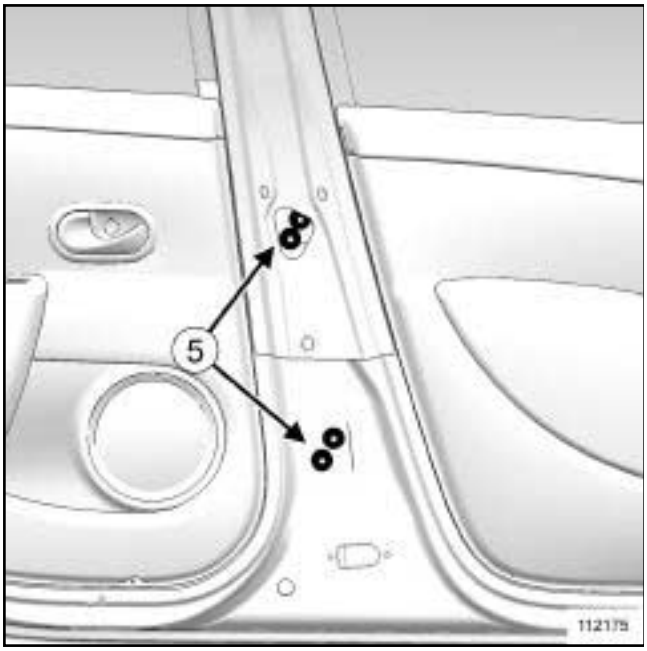
- the **guide pins on the door box section (13 Nm)**,
- the **indexing bolt on the door box section (13 Nm)**.

❏ Refit the door box section nuts ***(3)*** .

❏ Torque tighten the **hinge nuts on the door box section (21 N.m)**.

B85 or K85

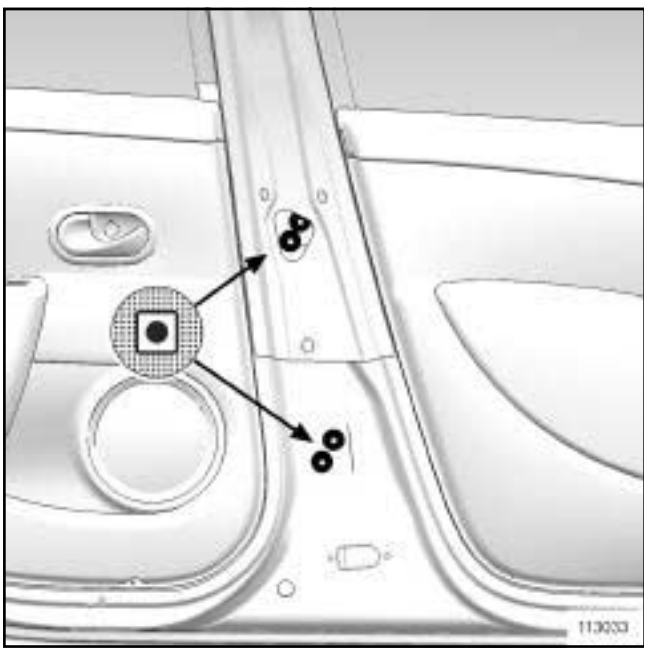
II - ADJUSTMENT OF SHUT LINES WITH THE FRONT DOOR AND THE REAR WING



112175

❏ Remove the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

❏ Undo the hinge nuts (**5**) on the B-pillar.



113033

❏ Adjust the door shut lines.

❏ Torque tighten the **hinge nuts on the B-pillar (21 Nm)**.

❏ Refit the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

B85 or K85

The order of the operations described below applies specifically to replacing the door.

Note:

It is possible to carry out the stripping operations on the vehicle before removing the door.

STRIPPING

❑ Remove:

- the door trim (see **Rear side door trim: Removal - Refitting**) ,
- (see **Rear speakers: Removal - Refitting**) ,
- the sealing film (see **Door sealing film: Removal - Refitting**) ,
- the glass run channel (see **Rear side door window run channel: Removal - Refitting**) ,
- the sliding window (see **Rear side door sliding window: Removal - Refitting**) ,
- the window lift mechanism (see **Rear side door electric window mechanism: Removal - Refitting**) or (see **Rear side door manual window winder mechanism: Removal - Refitting**) ,
- the rear door fixed window (see **Rear side door fixed window: Removal - Refitting**) ,
- the exterior handle (see **Exterior door handle: Removal - Refitting**) ,
- the door lock (see **Rear side door lock: Removal - Refitting**) ,
- the wiring harness,
- the door strip (see **Rear side door protective strip: Removal - Refitting**) .

REBUILDING

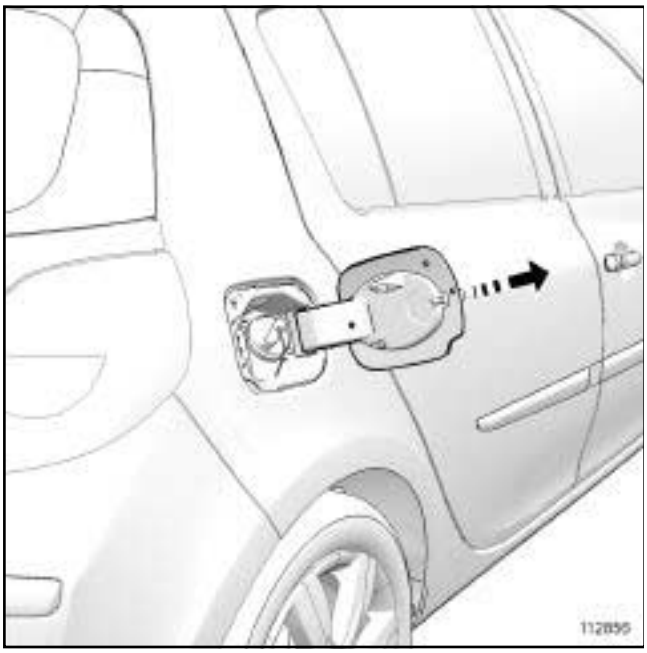
❑ Fit the decorative side strip (see **Side decorative strips: Removal - Refitting**) .

❑ Refit:

- the wiring harness,
- the door lock (see **Rear side door lock: Removal - Refitting**) ,
- the exterior handle (see **Exterior door handle: Removal - Refitting**) ,
- the rear door fixed window (see **Rear side door fixed window: Removal - Refitting**) ,
- the window lift mechanism (see **Rear side door electric window mechanism: Removal - Refitting**) or (see **Rear side door manual window winder mechanism: Removal - Refitting**) ,
- the sliding window (see **Rear side door sliding window: Removal - Refitting**) ,
- the glass run channel (see **Rear side door window run channel: Removal - Refitting**) ,
- the sealing film (see **Door sealing film: Removal - Refitting**) ,
- the speaker (see **Rear speakers: Removal - Refitting**) ,
- the door trim (see **Rear side door trim: Removal - Refitting**) ,
- the door strip (see **Rear side door protective strip: Removal - Refitting**) .

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

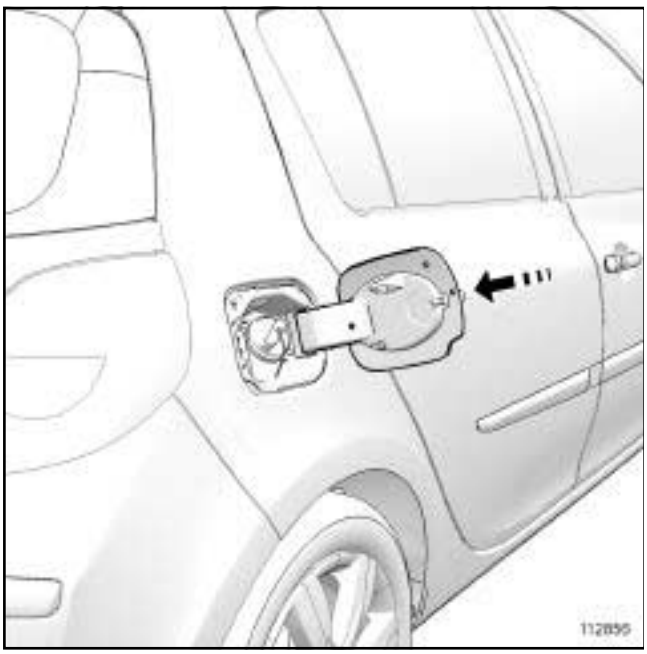


112856

❑ Unclip the fuel filler flap from its mounting.

REFITTING

REFITTING OPERATION FOR PART CONCERNED



112856

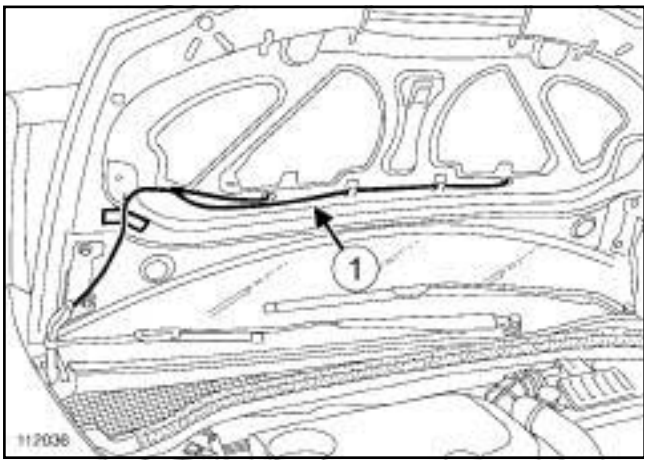
❑ Clip the fuel filler flap cover onto its mounting.

Tightening torques ▽	
bonnet mounting bolts	**8 Nm**
bonnet hinge mounting bolts	**8 Nm**

I - REMOVAL BY MEANS OF THE BONNET BOLTS

1 - REMOVAL PREPARATION OPERATION

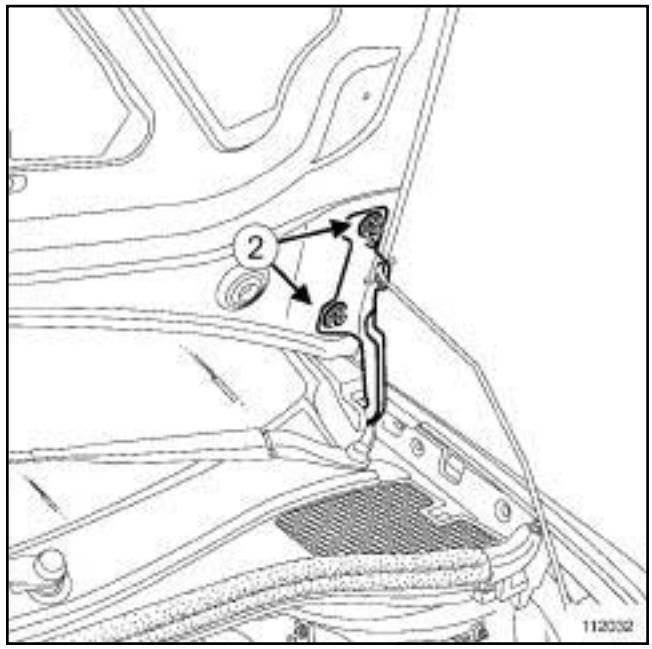
❏ Remove the bonnet soundproofing (see **Bonnet soundproofing: Removal - Refitting**) .



112036

❏ Remove the bonnet jet supply pipe (**1**) .

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112032

❏ Remove:

- the bonnet mounting bolts (**2**) ,
- the bonnet.

II - REFITTING BY MEANS OF THE BONNET BOLTS

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the bonnet,
- the bonnet mounting bolts ***(2)*** .

❏ Adjust the opening clearances and flush fitting (see **48A**, **Non-side opening elements**, **Bonnet: Adjustment**, page **48A-3**) .

❏ Torque tighten the **bonnet mounting bolts (8 Nm)**.

2 - FINAL OPERATION

❏ Refit:

- the bonnet jet supply pipe ***(1)*** ,
- the bonnet soundproofing (see **Bonnet soundproofing: Removal - Refitting**) .

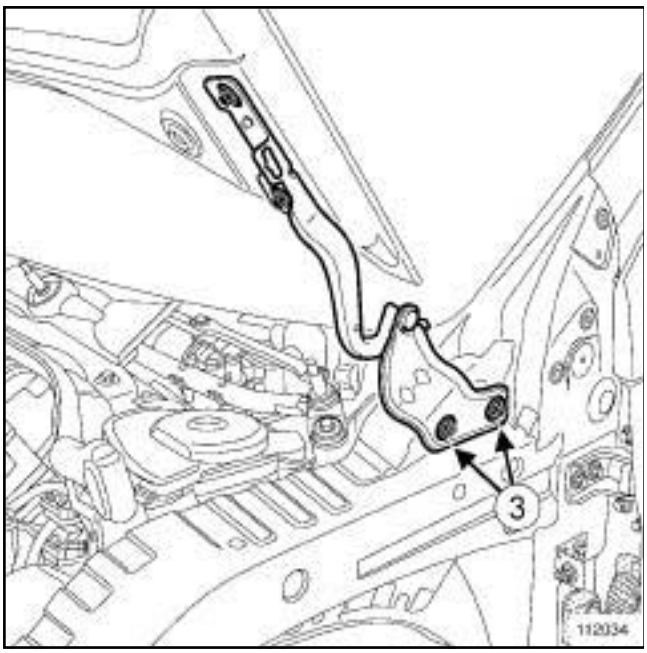
III - REMOVAL BY MEANS OF THE BONNET HINGE BOLTS

1 - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the headlight (see) ,
- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,
- the front wing upper mounting bracket (see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**) ,
- the bonnet soundproofing (see **Bonnet soundproofing: Removal - Refitting**) ,
- the bonnet jet supply pipe ***(1)*** .

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112034

❑ Remove:

- the bonnet hinge mounting bolts (**3**) ,
- the bonnet.

IV - REFITTING BY MEANS OF THE BONNET HINGE BOLTS

1 - OPERATION FOR REFITTING PART CONCERNED

❑ Refit:

- the bonnet,
- the bonnet hinge mounting bolts ***(3)*** .

❑ Adjust the opening clearances and flush fitting (see **48A**, **Non-side opening elements**, **Bonnet: Adjustment**, page **48A-3**) .

❑ Torque tighten the **bonnet hinge mounting bolts (8 Nm)**.

2 - FINAL OPERATION

❑ Refit:

- the bonnet jet supply pipe ***(1)*** ,
- the bonnet soundproofing (see **Bonnet soundproofing: Removal - Refitting**) ,
- the front wing upper mounting bracket (see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**) ,
- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,
- the headlight (see) ,
- the front bumper (see **Front bumper: Removal - Refitting**) ,
- the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) .

Tightening torques ▽	
bonnet mounting bolts	**8 Nm**
bonnet hinge mounting bolts	**8 Nm**
bonnet striker mounting bolts	**8 Nm**

ADJUSTMENT VALUES

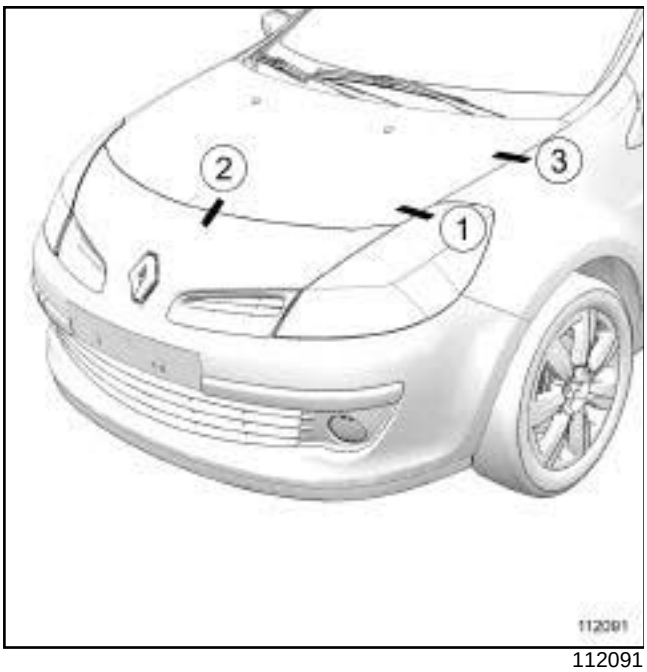
❏ For all information about bonnet adjustment values (see **Vehicle panel gaps: Adjustment value**) .

ADJUSTMENT

❏ There are two options for adjusting the bonnet:

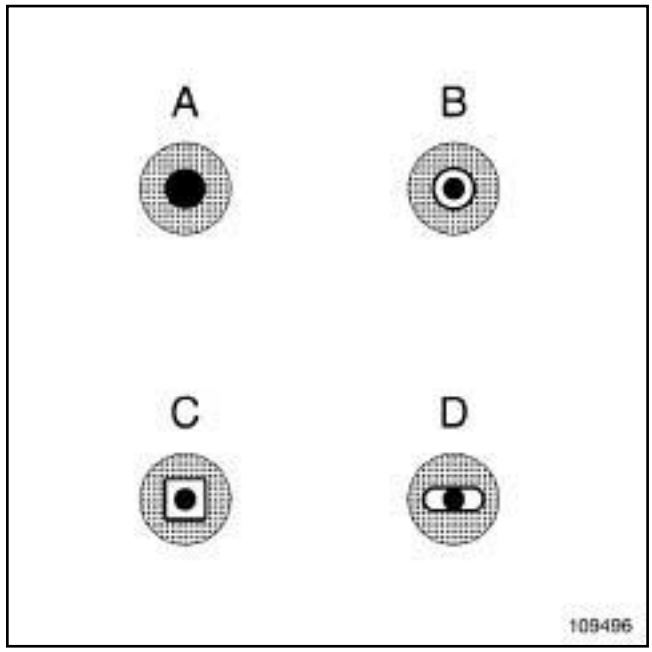
- by means of the bonnet mounting bolts,
- by means of the bonnet hinge mounting bolts: this operation requires the removal of the front wing and the front wing upper mounting bracket.

The bonnet striker must be adjusted in addition to the bonnet adjustment.



112091

❏ Observe the adjustment sequence.



109496

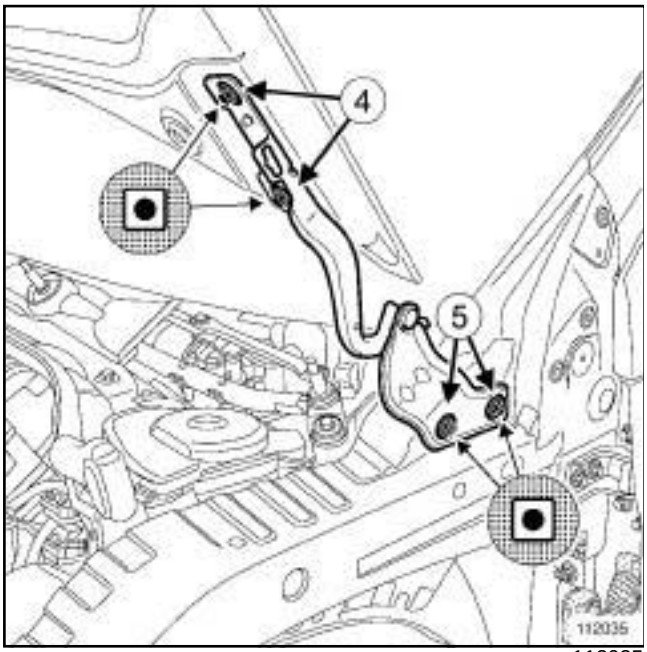
❏ Symbols A, B, C and D show the adjustment options.

The black dot in the centre represents the body of the bolt.

The grey section represents the component to be adjusted.

The white section represents the adjustment area.

I - ADJUSTMENT BY MEANS OF THE BONNET MOUNTING BOLTS



112035

❏ Undo the bonnet mounting bolts (**4**) .

❏ Adjust the bonnet panel gaps.

❏ Torque tighten the **bonnet mounting bolts (8 Nm)**.

II - ADJUSTMENT BY MEANS OF THE BONNET HINGE MOUNTING BOLTS

❏ Remove:

- the front wing (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,
- the front wing upper mounting support (see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**) ,

❏ Undo the bonnet hinge mounting bolts ***(5)*** .

❏ Refit:

- the front wing upper mounting support,
- the front wing.

❏ Adjust the bonnet panel gaps.

❏ Remove:

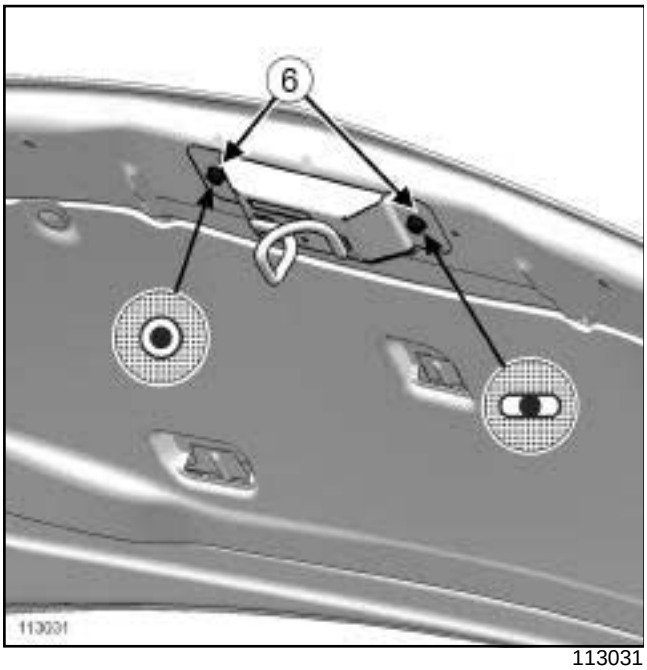
- the front wing,
- the front wing mounting bracket.

❏ Torque tighten the **bonnet hinge mounting bolts (8 Nm)**.

❏ Refit:

- the front wing upper mounting bracket (see **42A**, **Front upper structure**, **Front wing: Removal - Refitting**, page **42A-3**) ,
- the front wing (see **42A**, **Front upper structure**, **Front wing upper mounting support: Removal - Refitting**, page **42A-14**) .

III - BONNET STRIKER ADJUSTMENT



113031

❑

> Note:
>
> When adjusting the bonnet striker, it is imperative to remove the striker plate and fill in the paintwork to protect the bonnet from corrosion.

❑ Remove:

- the bonnet striker mounting bolts (**6**) ,
- the bonnet striker.

❑ Fill in the paintwork.

❑ Refit the striker and the mounting bolts (**6**) .

❑ Adjust the bonnet striker with the bonnet lock.

❑ Torque tighten the **bonnet striker mounting bolts (8 Nm)**.

Tightening torques ▽	
tailgate mounting bolts	**10 Nm**
hinge mounting nuts	**21 Nm**

I - REMOVAL WITHOUT THE HINGES

1 - REMOVAL PREPARATION OPERATION

❏ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) .

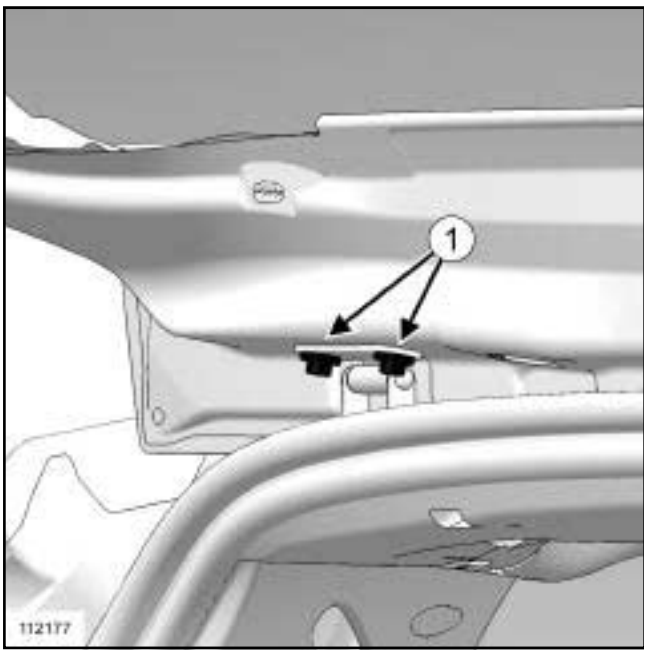
❏ Disconnect the electrical connectors from:

- the rear screen wiper motor,
- the tailgate lock,
- the heated rear screen.

❏ Remove:

- the tailgate electrical supply harness,
- the tailgate washer jet tube,
- the tailgate gas struts.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112177

❏ Remove:

- the tailgate mounting bolts (**1**) ,
- the tailgate.

II - REFITTING WITHOUT HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❏ Refit:

- the tailgate,
- the tailgate mounting bolts ***(1)*** .

❏ Torque tighten the **tailgate mounting bolts (10 Nm)**.

2 - FINAL OPERATION

❏ Refit:

- the tailgate gas struts,
- the tailgate washer jet tube,
- the tailgate electrical supply harness,

❏ Connect the electrical connectors to:

- the heated rear screen,
- the tailgate lock,
- the rear screen wiper motor,

❏ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) .

III - REMOVAL WITH HINGES

1 - REMOVAL PREPARATION OPERATION

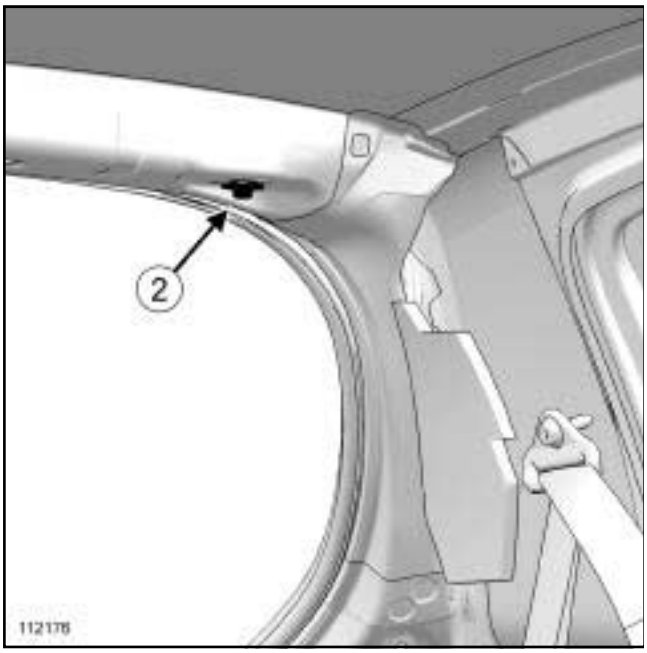
❏ Remove the headlining (see **Headlining: Removal - Refitting**) .

❏ Disconnect the tailgate electrical supply harness.

❏ Remove:

- the tailgate washer jet tube,
- the tailgate gas struts.

2 - OPERATION FOR REMOVAL OF PART CONCERNED



112176

❑ Remove:

- the hinge mounting nut (**2**) on each side of the vehicle,
- the tailgate.

IV - REFITTING WITH HINGES

1 - OPERATION FOR REFITTING PART CONCERNED

❑ Refit:

- the tailgate,
- the hinge mounting nut ***(2)*** on each side of the vehicle.

❑ Torque tighten the **hinge mounting nuts (21 Nm)**.

2 - FINAL OPERATION

❑ Refit:

- the tailgate gas struts,
- the tailgate washer jet tube.

❑ Connect the tailgate electrical feed harness.

❑ Refit the headlining (see **Headlining: Removal - Refitting**) .

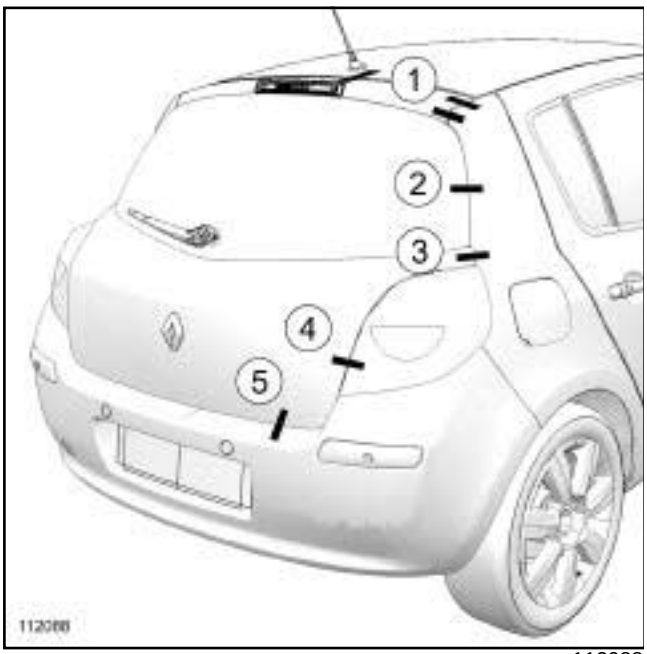
ADJUSTMENT VALUES

❑ For information on the adjustment values for the tailgate (see **Vehicle panel gaps: Adjustment value**) (01C, Vehicle bodywork specifications).

ADJUSTMENT

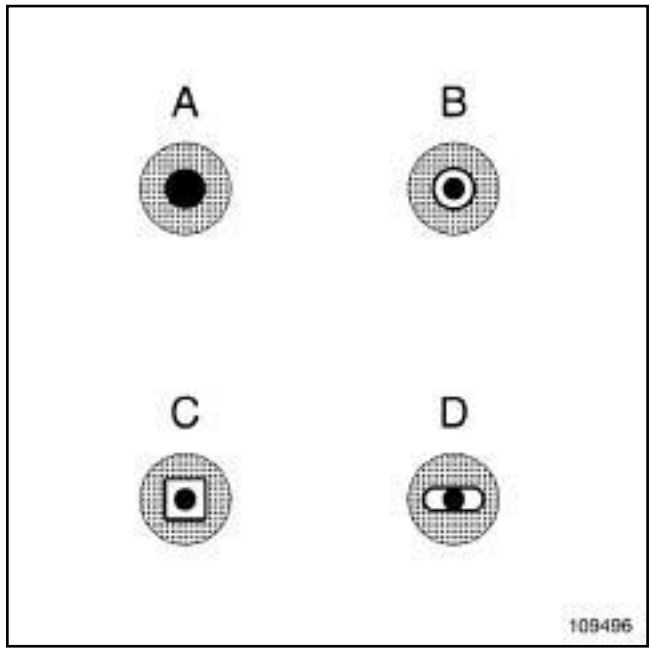
❑ There are two options for adjusting the tailgate:

- using the tailgate bolts,
- using the tailgate hinge nuts: operation in addition to the removal of the headlining.



112088

❑ Observe the adjustment sequence.



109496

❑ Symbols A, B, C and D show the adjustment options.

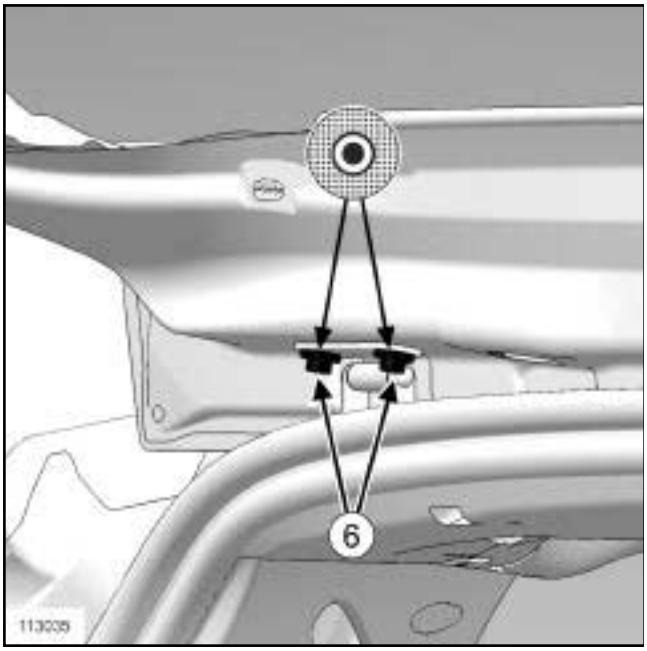
The black dot in the centre represents the body of the bolt.

The grey section represents the component to be adjusted.

The white section represents the adjustment area.

I - ADJUSTMENT BY MEANS OF THE TAILGATE MOUNTING BOLTS

B85 or C85 or S85



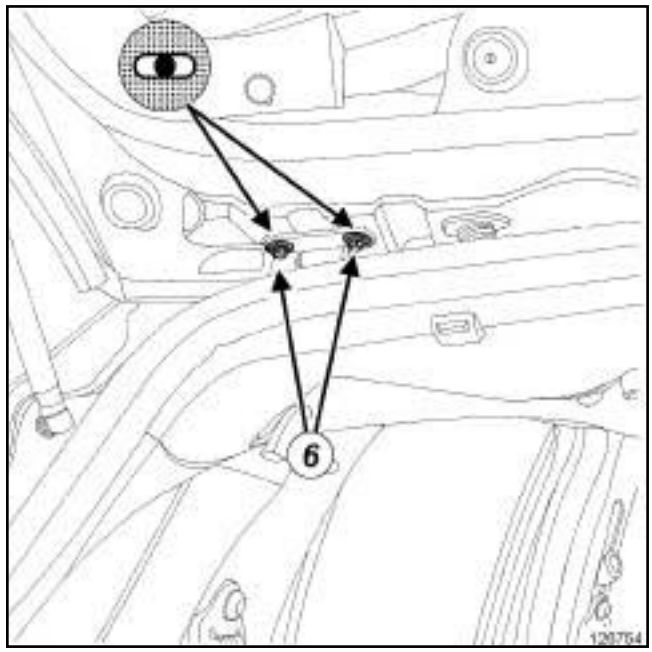
113035

❏ Undo the bolts (**6**) on each side of the vehicle.

❏ Adjust the tailgate panel gaps.

❏ Tighten the bolts (**6**) .

K85



126754

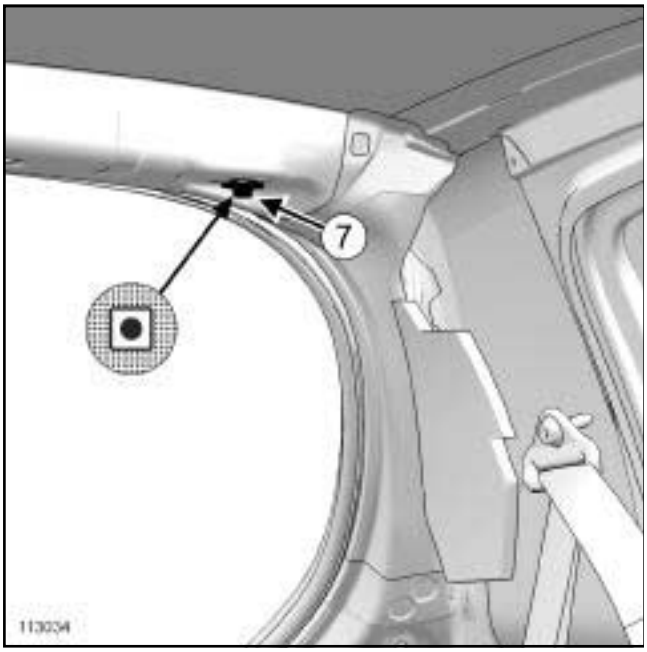
❏ Undo the bolts (**6**) on each side of the vehicle.

❏ Adjust the tailgate panel gaps.

❏ Tighten the bolts (**6**) .

II - ADJUSTMENT BY MEANS OF THE HINGE MOUNTING NUTS

❏ Remove the headlining (see **Headlining: Removal - Refitting**) (71A, Body internal trim).



113034

- ❏ Undo the nut (**7**) on each side of the vehicle.
- ❏ Adjust the tailgate panel gaps.
- ❏ Tighten the bolts (**7**) .
- ❏ Refit the headlining (see **Headlining: Removal - Refitting**) (71A, Body internal trim).

Described below is a special sequence of operations for tailgate replacement.

Note:

It is possible to carry out the trim removal operations on the vehicle before removing the tailgate.

STRIPPING

❏ Remove:

- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim),
- the rear screen wiper arm (see **Rear screen wiper arm: Removal - Refitting**) (85A, Washing - Wiping),
- the rear screen wiper motor (see **Rear screen wiper motor: Removal - Refitting**) (85A, Washing - Wiping),
- the tailgate lock (see **Tailgate lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the tailgate exterior opening control (see) (52A, Non-side opening element mechanisms).

B85 or C85 or S85

❏ Remove the high level brake light (see **3rd brake light: Removal - Refitting**) (81A, Rear lighting).

K85

❏ Remove:

- the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) (56A, Exterior equipment),
- the tailgate strip (see **Tailgate strip: Removal - Refitting**) (55A, Exterior protection).

❏ Remove:

- the rear screen (see **Rear screen: Removal - Refitting**) (54A, Windows),
- the tailgate wiring.

REBUILDING

❏ Refit:

- the tailgate wiring,
- the rear screen (see **Rear screen: Removal - Refitting**) (54A, Windows).

K85

❏ Refit:

- the tailgate strip (see **Tailgate strip: Removal - Refitting**) (55A, Exterior protection),
- the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) (56A, Exterior equipment).

B85 or C85 or S85

❏ Refit the high level brake light (see **3rd brake light: Removal - Refitting**) (81A, Rear lighting).

❏ Refit:

- the tailgate exterior opening control (see) (52A, Non-side opening element mechanisms),
- the tailgate lock (see **Tailgate lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the rear screen wiper motor (see **Rear screen wiper motor: Removal - Refitting**) (85A, Washing - Wiping),
- the rear screen wiper arm (see **Rear screen wiper arm: Removal - Refitting**) (85A, Washing - Wiping),
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim).

RENAULT

5 Mechanisms and accessories

51A SIDE OPENING ELEMENT MECHANISMS

52A NON-SIDE OPENING ELEMENT MECHANISMS

54A WINDOWS

55A EXTERIOR PROTECTION

56A EXTERIOR EQUIPMENT

57A INTERIOR EQUIPMENT

59A SAFETY ACCESSORIES

X85

JULY 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Section 5

Contents

Pages

51A SIDE OPENING ELEMENT MECHANISMS

Front side door lock: Removal - Refitting 51A-1

Front side door lock barrel: Removal - Refitting 51A-4

Exterior door handle: Removal - Refitting 51A-5

Front side door electric window mechanism: Removal - Refitting 51A-7

Front side door manual window winder mechanism: Removal - Refitting 51A-9

Rear side door lock: Removal - Refitting 51A-11

Rear side door manual window winder mechanism: Removal - Refitting 51A-14

Rear side door electric window mechanism: Removal - Refitting 51A-16

52A NON-SIDE OPENING ELEMENT MECHANISMS

Bonnet release control: Removal - Refitting 52A-1

Bonnet lock: Removal - Refitting 52A-5

Tailgate lock: Removal - Refitting 52A-6

52A NON-SIDE OPENING ELEMENT MECHANISMS

Tailgate strut: Removal - Refitting 52A-7

Tailgate opening switch: Removal - Refitting 52A-8

Sunroof opening control: Removal - Refitting 52A-9

Sunroof operating mechanism: Removal - Refitting 52A-10

Sunroof mobile panel: Removal - Refitting 52A-13

Sunroof deflector: Removal - Refitting 52A-15

Sunroof sun visors: Removal - Refitting 52A-18

Sunroof water drain pipe: Removal - Refitting 52A-20

54A WINDOWS

Windscreen: Removal - Refitting 54A-1

Windscreen trim: Removal - Refitting 54A-3

Front side door sliding window: Removal - Refitting 54A-4

Rear side door sliding window: Removal - Refitting 54A-6

Contents

54A WINDOWS

Rear quarter panel window: Removal - Refitting 54A-8

Rear side door fixed window: Removal - Refitting 54A-11

Rear screen: Removal - Refitting 54A-13

Sunroof side trim: Removal - Refitting 54A-15

Sunroof fixed window: Removal - Refitting 54A-16

55A EXTERIOR PROTECTION

Front bumper: Removal - Refitting 55A-1

Front bumper: Conversion 55A-4

Front bumper: Stripping - Rebuilding 55A-5

Rear bumper: Removal - Refitting 55A-26

Rear bumper: Conversion 55A-33

Aerodynamic diffuser: Removal - Refitting 55A-34

Tailgate strip: Removal - Refitting 55A-36

Front side door protective strip: Removal - Refitting 55A-37

Rear side door protective strip: Removal - Refitting 55A-38

Rear wing protective strip: Removal - Refitting 55A-39

Roof protection strip: Removal - Refitting 55A-40

Front wheel arch liner: Removal - Refitting 55A-41

Rear wheel arch liner: Removal - Refitting 55A-43

Rear bumper: Stripping - Rebuilding 55A-45

56A EXTERIOR EQUIPMENT

Scuttle panel grille: Removal - Refitting 56A-1

Tailgate spoiler: Removal - Refitting 56A-3

Scoop under the scuttle panel grille: Removal - Refitting 56A-8

Door mirror: Removal - Refitting 56A-10

Door mirror casing: Removal - Refitting 56A-13

Door mirror glass: Removal - Refitting 56A-16

Side decorative strips: Removal - Refitting 56A-17

Rear badges: Removal - Refitting 56A-20

Roof bar: Removal - Refitting 56A-22

Front wing air extraction grille: Removal - Refitting 56A-23

Sill panel extension: Removal - Refitting 56A-24

57A INTERIOR EQUIPMENT

Dashboard: Removal - Refitting 57A-1

Dashboard: Stripping - Rebuilding 57A-10

Dashboard: Conversion 57A-11

Dashboard air vent: Removal - Refitting 57A-12

Centre console: Removal - Refitting 57A-14

Glovebox: Removal - Refitting 57A-16

Centre front panel: Removal - Refitting 57A-19

Contents

57A INTERIOR EQUIPMENT

Interior rear-view mirror: Removal - Refitting 57A-21

Sun visor: Removal - Refitting 57A-22

Grab handle: Removal - Refitting 57A-24

Rear parcel shelf sun visor: Removal - Refitting 57A-25

Dashboard cover gaiter: Removal - Refitting 57A-26

Separation components: Removal - Refitting 57A-31

59A SAFETY ACCESSORIES

Front seat belt: Removal - Refitting 59A-1

Rear side seat belt: Removal - Refitting 59A-6

Rear centre seat belt: Removal - Refitting 59A-8

Front seat belt buckle: Removal - Refitting 59A-11

Rear seat belt buckle: Removal - Refitting 59A-12

Seat height adjustment system: Removal - Refitting 59A-13

Door airbag module: Removal - Refitting 59A-15

Tightening torques ▽	
lock bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

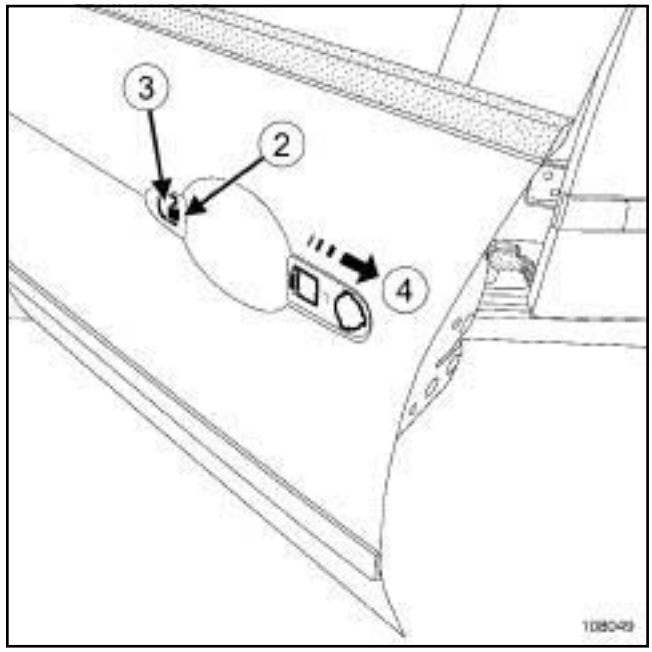
❏ Remove:

- the door trim (see **Front side door trim: Removal - Refitting**) (MR 393,72A, Side door trim),
- the door lock barrel (see **51A**, **Side opening element mechanisms**, **Front side door lock barrel: Removal - Refitting**, page **51A-4**) .

111933

❏ Open the lock assembly access flap (**1**) following the marking on the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❏ Remove the exterior handle (see **51A**, **Side opening element mechanisms**, **Exterior door handle: Removal - Refitting**, page **51A-5**) .



108049

❏ Drill out the rivet (**2**) .

WARNING

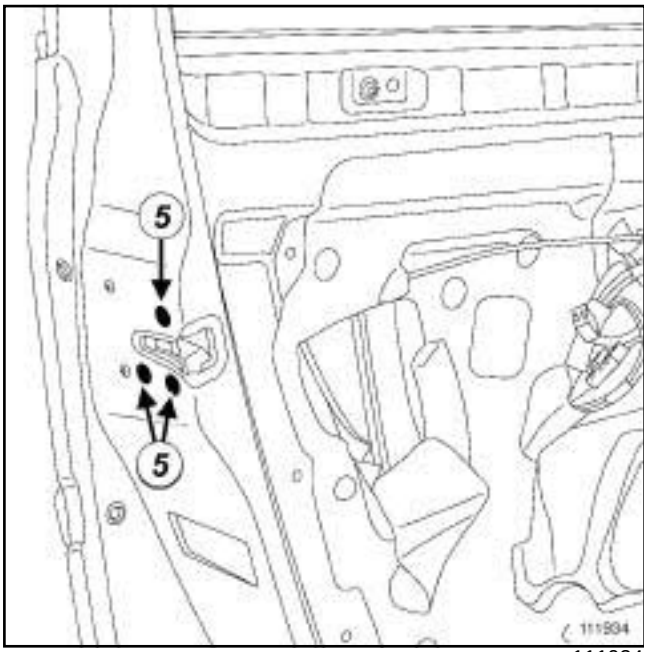
Each time a panel is stripped in the workshop (e.g. when drilling), degrease and wipe the area and then use a fine paintbrush to apply out the following anti-corrosion protection materials:

- a pre-treatment primer,
- a two-part primer,
- paint in the vehicle body colour.

❏ Unclip the handle unit (**3**) .

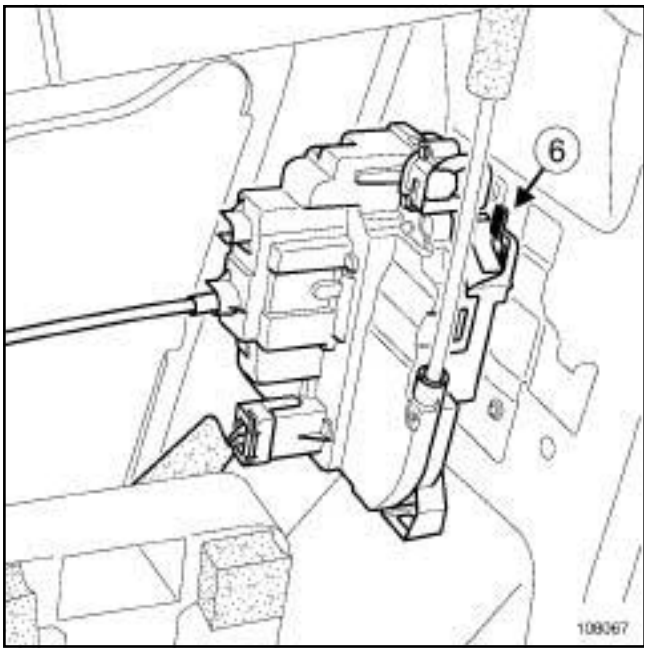
❏ Remove the door panel exterior handle module (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



111934

❏ Remove the bolts (**5**) .



108067

❏ Gently lift the lock to extract the retaining hook. (**6**)

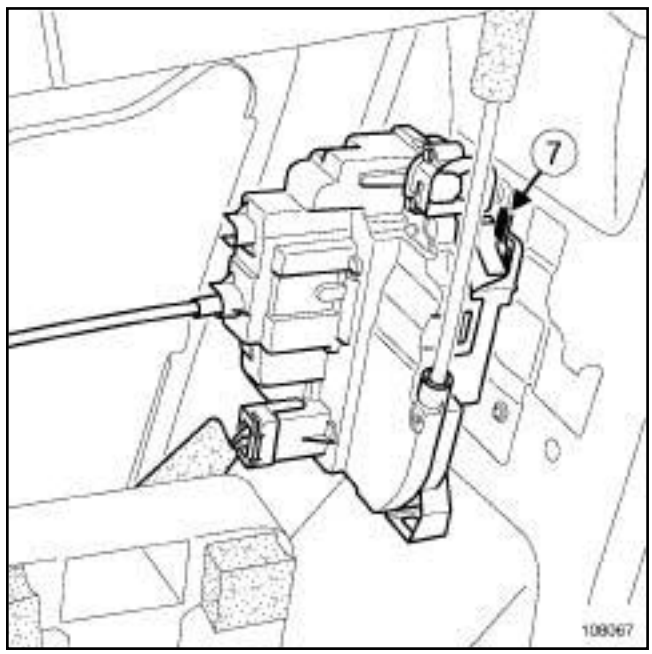
❏ Remove the exterior handle lock module from the door box section.

❏ Disconnect the connectors.

❏ Unclip the exterior handle lock module cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



108067

❏ Clip the lock cable to the handle module.

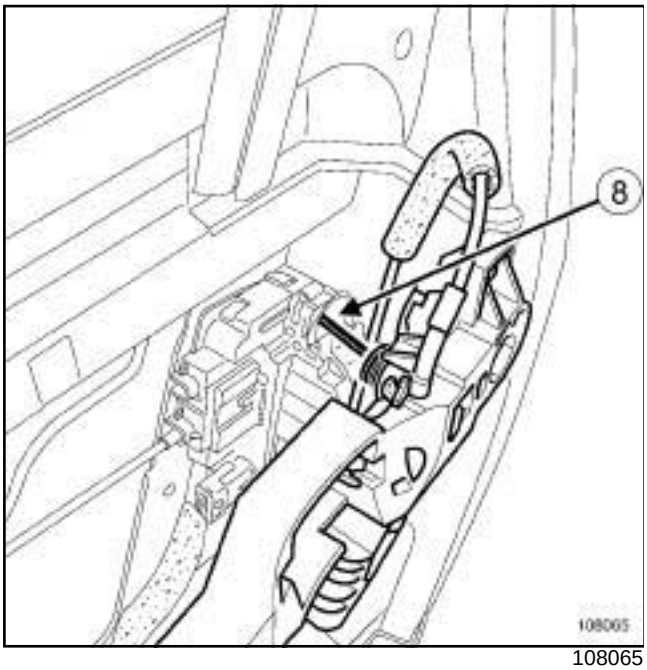
❏ Fit the lock - module assembly into the door box section.

❏ Position the lock on the door box section retaining hook (**7**) .

❏ Connect the connectors.

❏ Torque tighten the **lock bolts (8 Nm)**.

II - FINAL OPERATION.



108065

❏ Clip the module on the door panel.

> Note:
>
> When refitting the exterior handle module, check that the universal joint (**8**) is correctly positioned in the lock.

❏ Refit:

- the door lock barrel (see **51A**, **Side opening element mechanisms**, **Front side door lock barrel: Removal - Refitting**, page **51A-4**) ,
- the rivet ***(2)*** (part no.: **77 03 072 051**),
- the exterior handle (see **51A**, **Side opening element mechanisms**, **Exterior door handle: Removal - Refitting**, page **51A-5**) .

❏ Carry out a function test.

❏ Close the access flap (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❏ Refit the door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

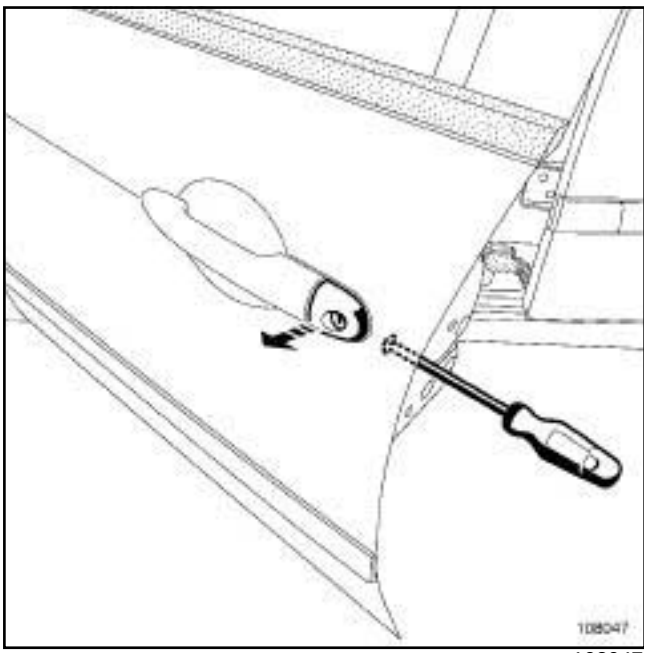
Tightening torques ▽	
lock barrel bolt	**2 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Unclip the lock barrel unlocking blanking piece.

II - OPERATION FOR REMOVAL OF PART CONCERNED



108047

❏ Unscrew the locking bolt completely (clockwise or anticlockwise) without removing it.

❏ Remove the lock barrel.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the lock barrel.

❏ Torque tighten (clockwise or anticlockwise) the **lock barrel bolt (2 Nm)**.

II - FINAL OPERATION.

❏ Clip in the blanking piece (replace it if necessary).

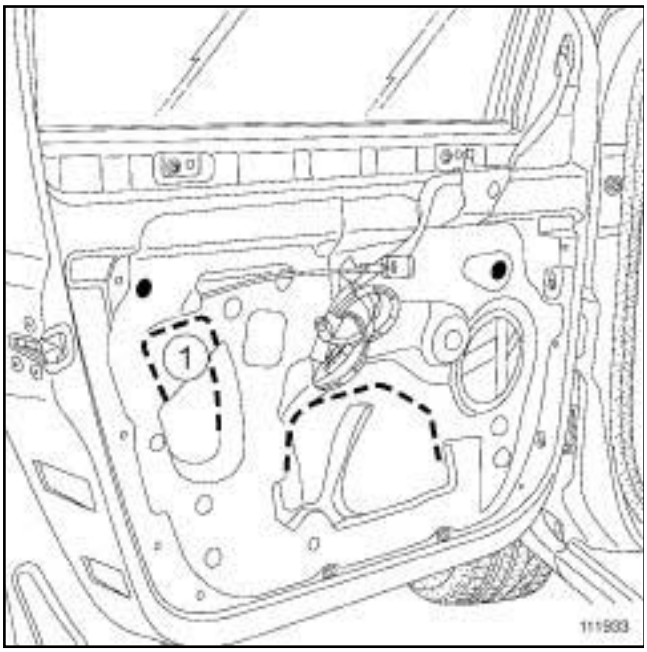
❏ Carry out an operational test on the lock barrel.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the door trim (see **Front side door trim: Removal - Refitting**) (MR 393,72A, Side opening element trim),
- the door lock barrel (see **51A**, **Side opening element mechanisms**, **Front side door lock barrel: Removal - Refitting**, page **51A-4**) .

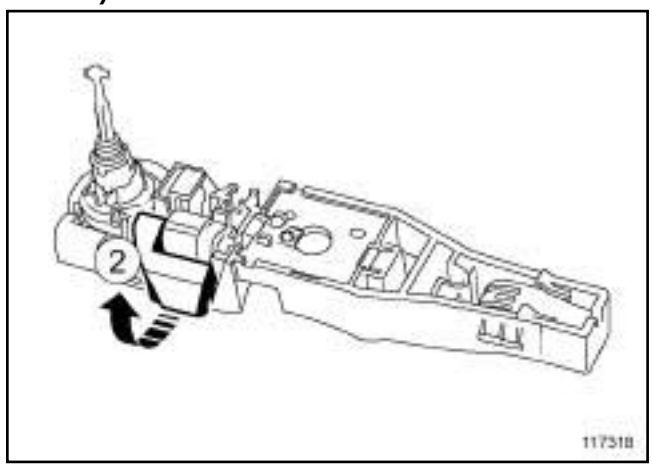


111933

❑ Open the access flap (**1**) for the exterior handle module following the marking on the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

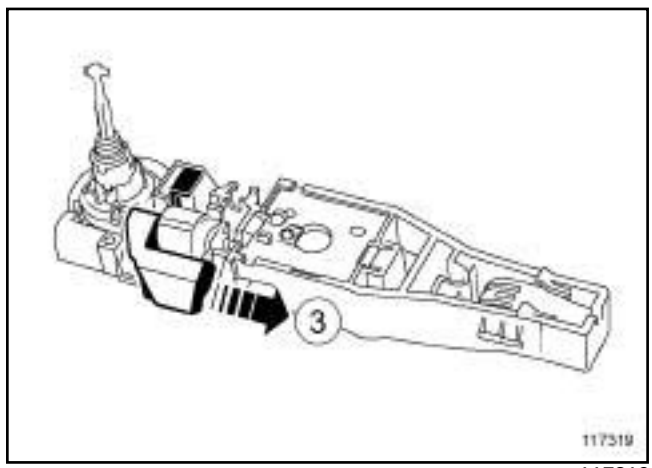
II - OPERATION FOR REMOVAL OF PART CONCERNED

Exterior handle module (view from inside door box section).



117318

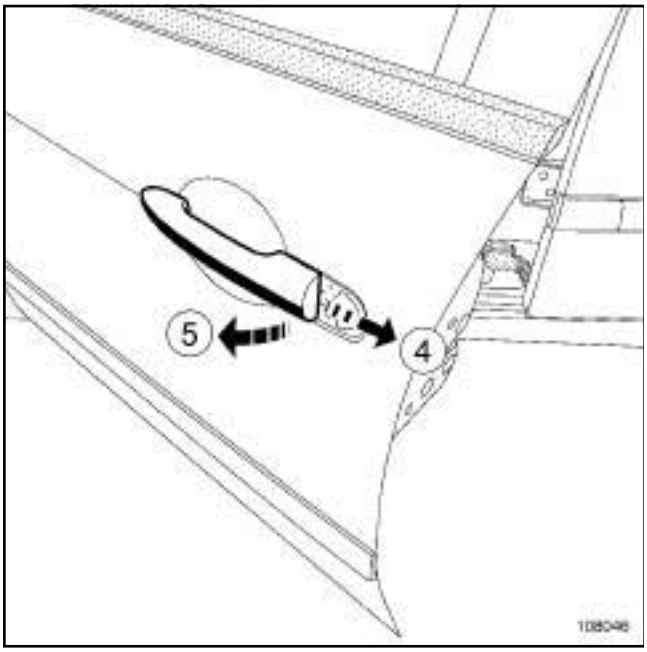
❑ Lift up the panel manually (**2**) .



117319

❑ Keep it in that position.

❑ Slide the lever (**3**) as far as possible.



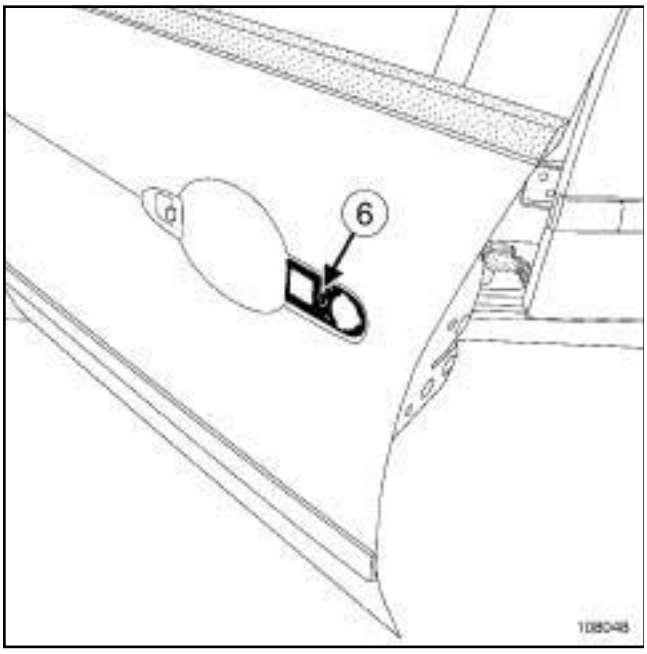
108046

❑ Remove the exterior handle (**5**) and (**4**) .

❑ Disconnect the connector (depending on equipment level).

REFITTING

I - REFITTING PREPARATIONS OPERATION



108048

❑ Check the presence and condition of seal (**6**) .

II - OPERATION FOR REFITTING PART CONCERNED

❑ Connect the connector (according to the equipment level)

❑ Insert the front section and rear section of the external door handle.

❑ Push the exterior handle towards the front of the vehicle.

❑ Refit the lock barrel (see **51A**, **Side opening element mechanisms**, **Front side door lock barrel: Removal - Refitting**, page **51A-4**) .

❑ Carry out a function test.

III - FINAL OPERATION.

❑ Close the access flap (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

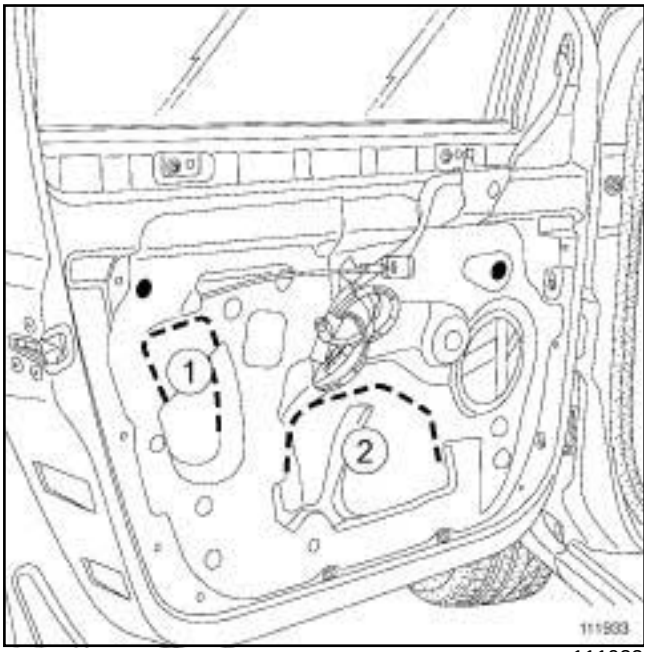
❑ Refit the door trim (see **Front side door trim: Removal - Refitting**) (MR 393,72A, Side opening element trim).

Tightening torques ▽	
window winder mechanism bolts	6.5 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening elements trim).

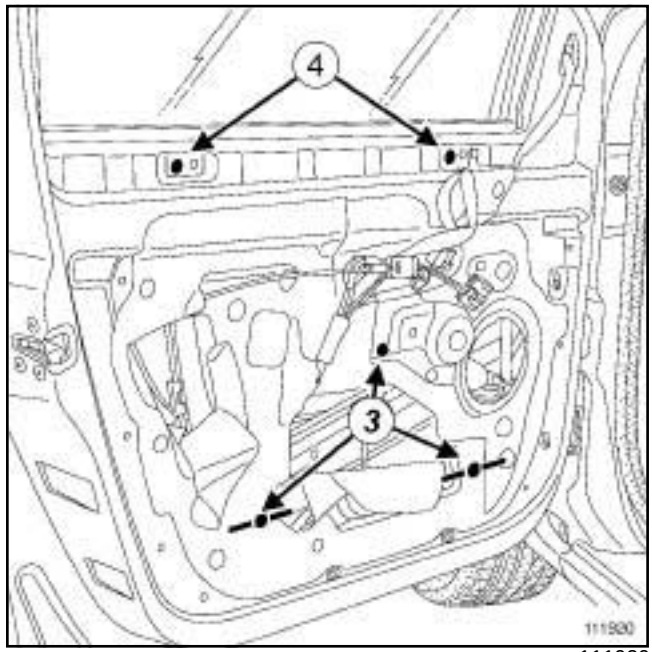


111933

❏ Open the access flaps (**1**) and (**2**) of the window winder mechanism following the marking on the door sealing film (see **Door sealing film: Removal - Refitting**) (65A, Opening element sealing).

❏ Remove the front side door sliding window (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) or keep it in the raised position with masking tape.

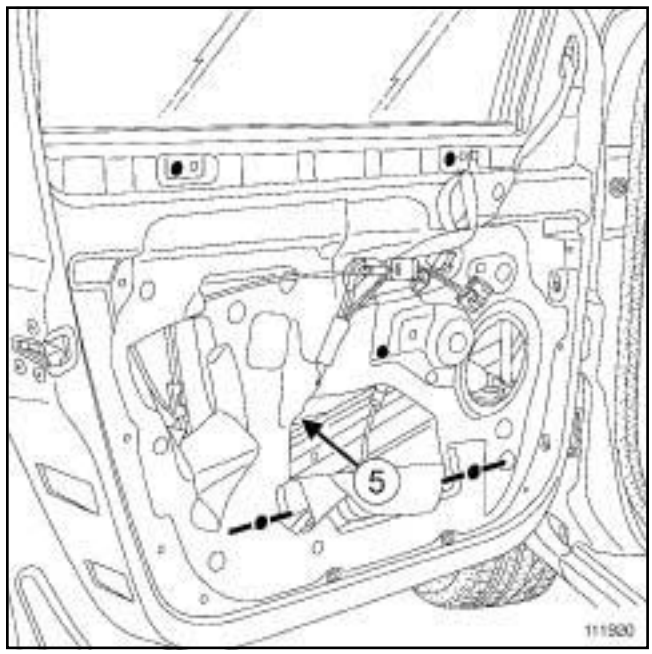
II - OPERATION FOR REMOVAL OF PART CONCERNED



111920

❏ Make cuts in the sealing film to access the window winder mechanism bolts (**3**) .

C85



111920

❏ Unclip the window winder mechanism cable (**5**) .

❏ Remove bolts (**3**) and (**4**) .

❏ Disconnect the electric window mechanism supply connector.

❏ Remove the window winder mechanism.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏

Note:

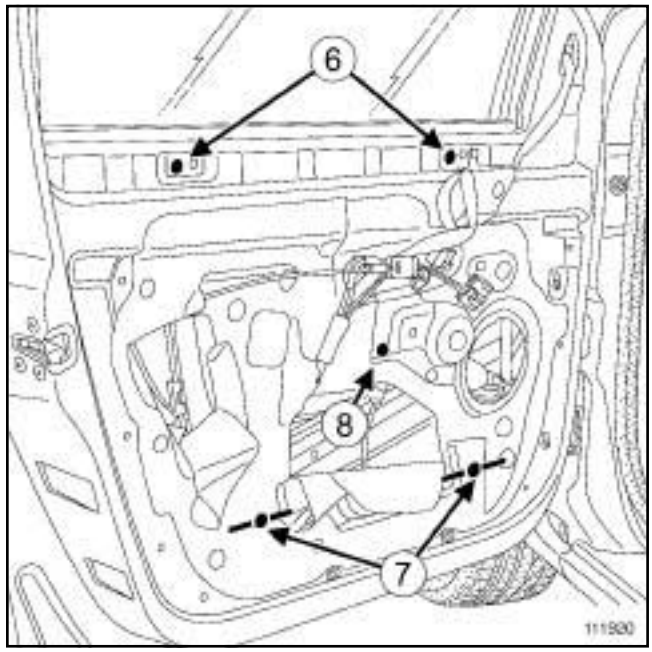
Check for the presence of washers on the bolts ***(6)*** , the bolts ***(7)*** and the bolts ***(8)*** when refitting the window winder mechanism.

The presence of washers ensures correct tightening.

❏ Refit the window winder mechanism in the door box section.

❏ Connect the window winder mechanism supply connector.

❏ Refit the front side door sliding window glass (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) .



111920

❏

Note:

When refitting the window winder mechanism, respect the tightening order.

The tightening order ensures the correct alignment of the window winder mechanism and that the window is correctly positioned with the clip.

❏ Torque tighten the **window winder mechanism bolts (6.5 N.m)** following the tightening order: bolts (**6**) , bolts (**7**) and bolts (**8**) .

C85

❏ Clip on the window winder mechanism cable ***(5)*** .

❏ Carry out a function test.

II - FINAL OPERATION

❏ Close the access flaps and the cuts in the door sealing film (see **Door sealing film: Removal - Refitting**) (65A, Opening element sealing).

❏ Refit the front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening elements trim).

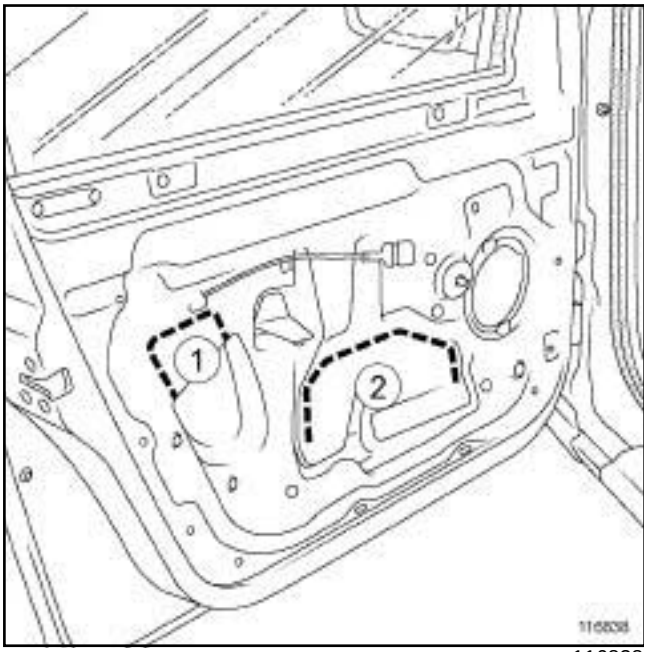
❏ Initialise the window winder motor (depending on equipment level) (see **Electric windows: Initialisation)** (87D, Electric windows - Sunroof).

Tightening torques ▽	
window winder mechanism bolts	6.5 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening elements trim).

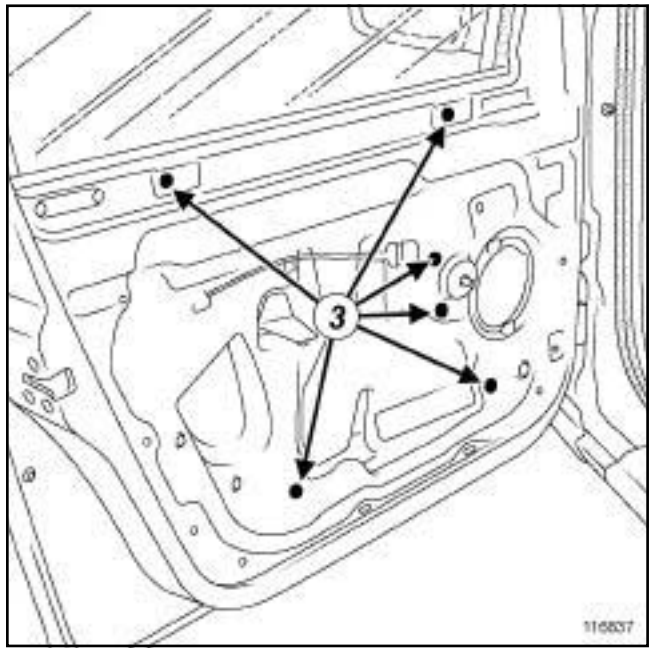


116838

❏ Open the access flaps (**1**) and (**2**) of the window winder mechanism following the marking on the sealing film (see **Door sealing film: Removal - Refitting**) (65A, Opening element sealing).

❏ Remove the sliding window (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) or secure it in the raised position using masking tape.

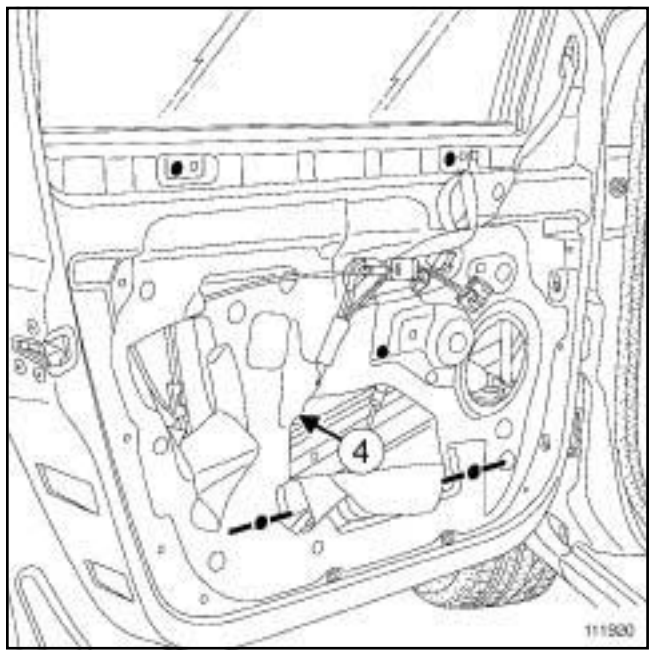
II - OPERATION FOR REMOVAL OF PART CONCERNED



116837

❏ Make cuts in the sealing film to access the window winder mechanism bolt (**3**) .

C85



111920

❏ Unclip the window winder mechanism cable (**4**) .

❏ Remove:

- the bolts ***(3)*** ,

- the window winder mechanism.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑

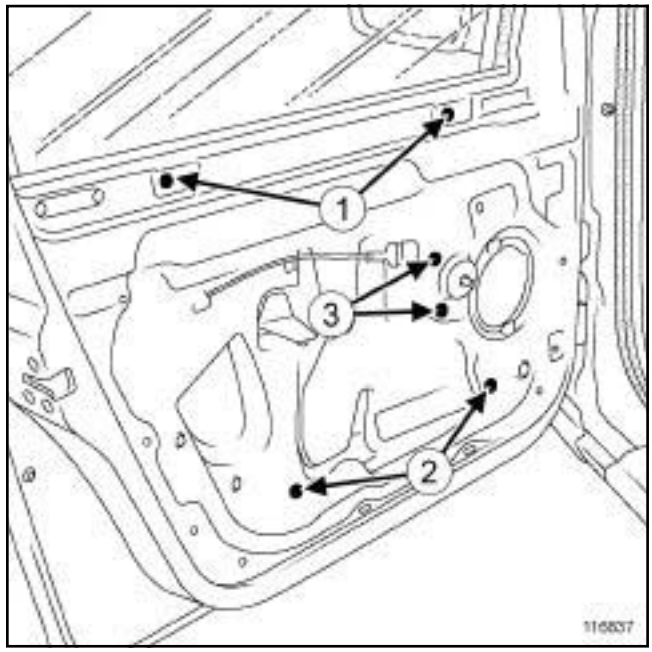
Note:

Check for the presence of washers on the bolts ***(1)*** , the bolts ***(2)*** and the bolts ***(3)*** when refitting the window winder mechanism.

The presence of washers ensures correct tightening.

❑ Refit:

- the window winder mechanism in the door box section,
- the sliding window (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) .



116837

❑

Note:

When refitting the window winder mechanism, respect the tightening order.

The tightening order ensures the correct alignment of the window winder mechanism and that the window is correctly positioned with the clip.

❑ Torque tighten the **window winder mechanism bolts (6.5 N.m)** following the tightening order: bolts (**1**) , bolts (**2**) and bolts (**3**) .

C85

❑ Clip on the window winder mechanism cable.

❑ Carry out a function test.

II - FINAL OPERATION

❑ Close the access flaps and the cuts in the sealing film (see **Door sealing film: Removal - Refitting**) (65A, Opening element sealing).

❑ Refit the door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening elements trim).

B85 or K85

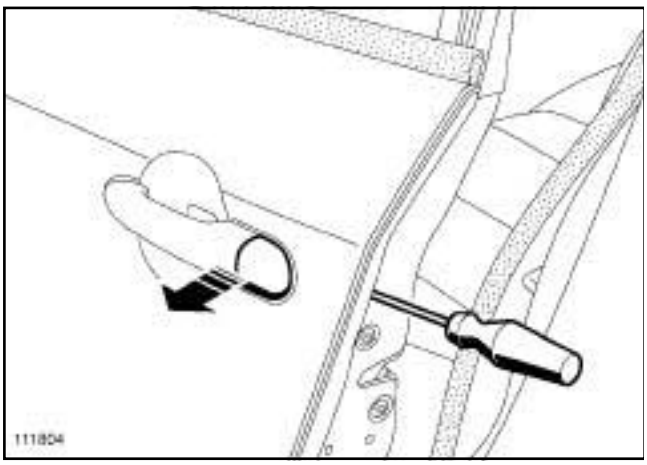
Tightening torques ▽	
lock bolts	**8 Nm**
dummy lock locking bolt	**2 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

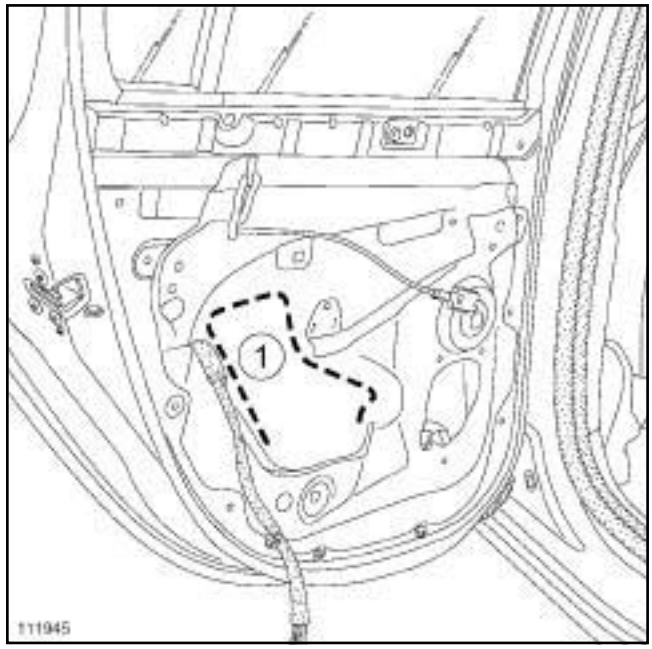
❏ Unclip the access blanking cover at the locking bolt of the dummy lock.



111804

❏ Loosen the locking bolt completely without removing it.

❏ Remove the dummy lock.



111945

❏ Open the access flap (**1**) for the lock assembly following the marking on the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

Note:

Removal of the rear door exterior handle is the same as removing the front door exterior handle

❏ Remove the exterior rear door handle (see **51A**, **Side opening element mechanisms**, **Exterior door handle: Removal - Refitting**, page **51A-5**) .

❏ Drill the module's rivet on the door panel.

WARNING

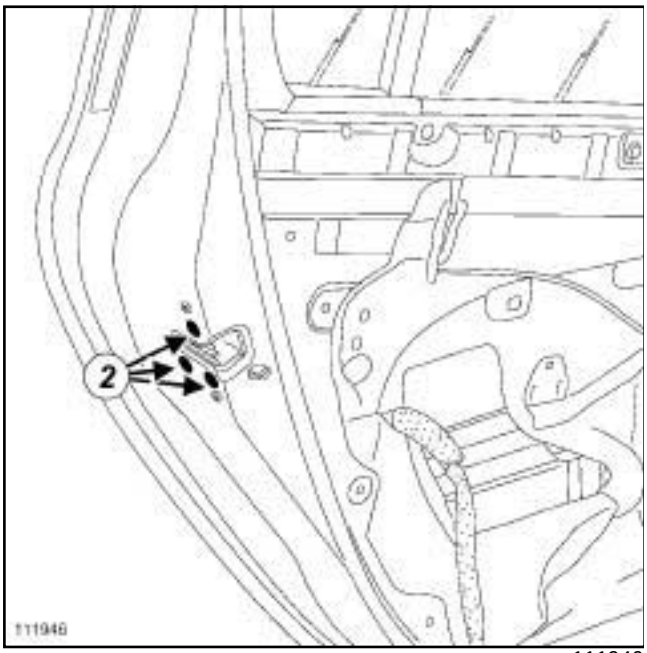
Each time a panel is stripped in the workshop (e.g. when drilling), degrease and wipe the area and then use a fine paintbrush to apply the following:

- a pre-treatment primer,
- a two-part primer,
- paint in the vehicle body colour.

❏ Unclip the exterior handle module.

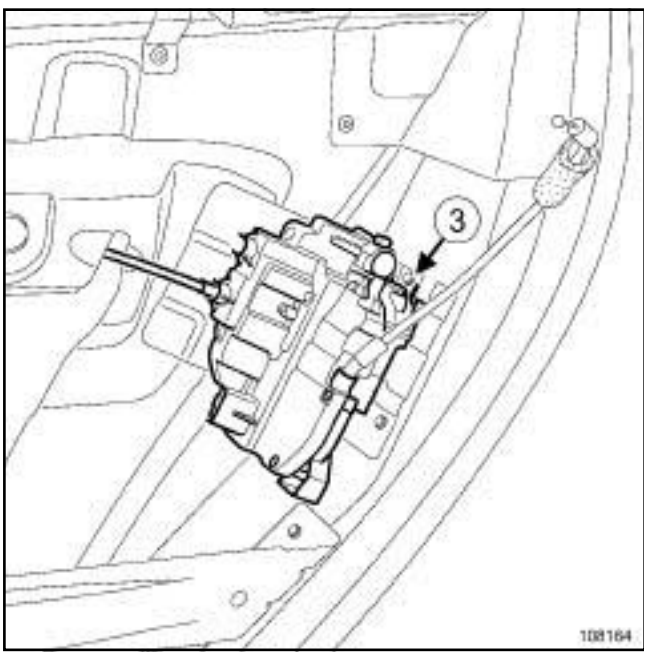
B85 or K85

II - OPERATION FOR REMOVAL OF PART CONCERNED



111946

❏ Remove the bolts (**2**) .



108164

❏ Gently lift the lock to extract the retaining hook. (**3**)

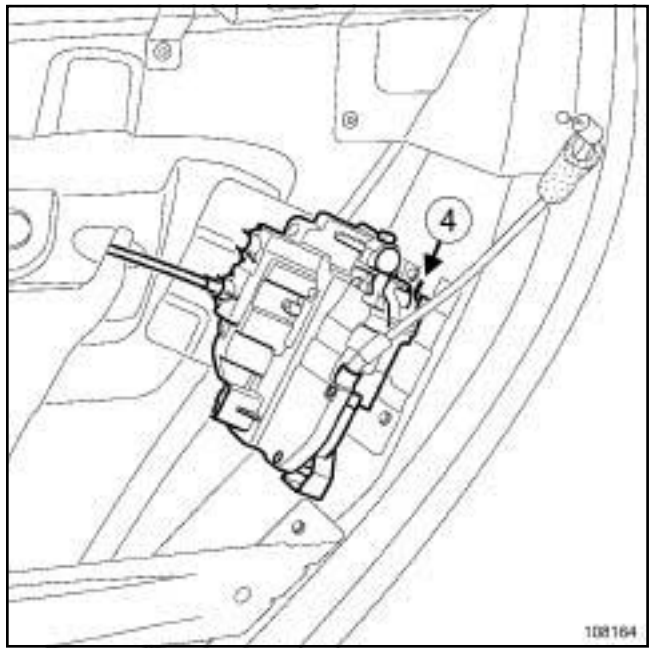
❏ Remove the « exterior handle module - lock » assembly from the door box section.

❏ Disconnect the connectors (depending on equipment level).

❏ Unclip the exterior handle lock module cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



108164

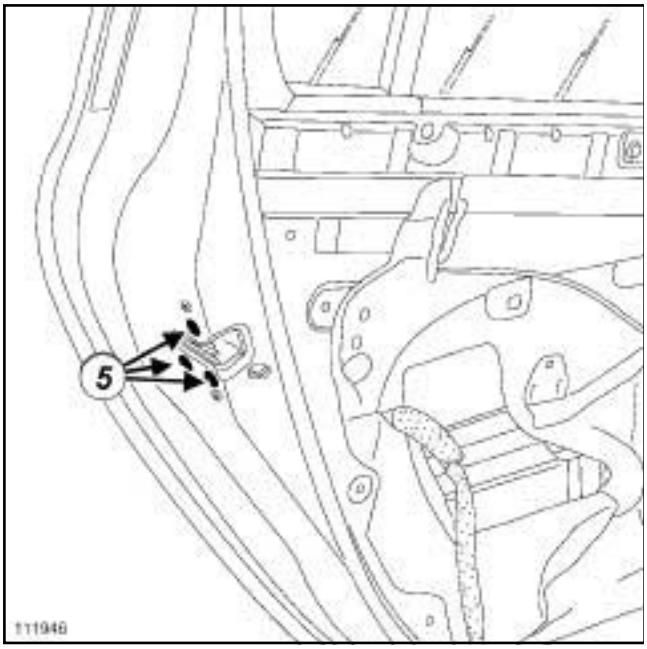
❏ Clip the lock cable to the exterior handle module.

❏ Fit the « exterior handle module - lock » assembly into the door box section.

❏ Position the lock on the door box section retaining hook (**4**) .

❏ Connect the connectors (depending on equipment level).

B85 or K85



111946

❏ Torque tighten the **lock bolts (8 Nm)** (**5**) .

II - FINAL OPERATION.

❏ Clip the module on the door panel.

❏ Fit the dummy lock.

❏ Torque tighten the **dummy lock locking bolt (2 Nm)**.

❏ Fit the access blanking cover to the locking bolt of the dummy lock.

❏ Rivet the exterior handle module (rivet part no.: **77 03 072 051**).

❏ Refit the door exterior handle (see **51A**, **Side opening element mechanisms**, **Exterior door handle: Removal - Refitting**, page **51A-5**) .

❏ Carry out a function test.

❏ Close the access flap (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❏ Refit the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

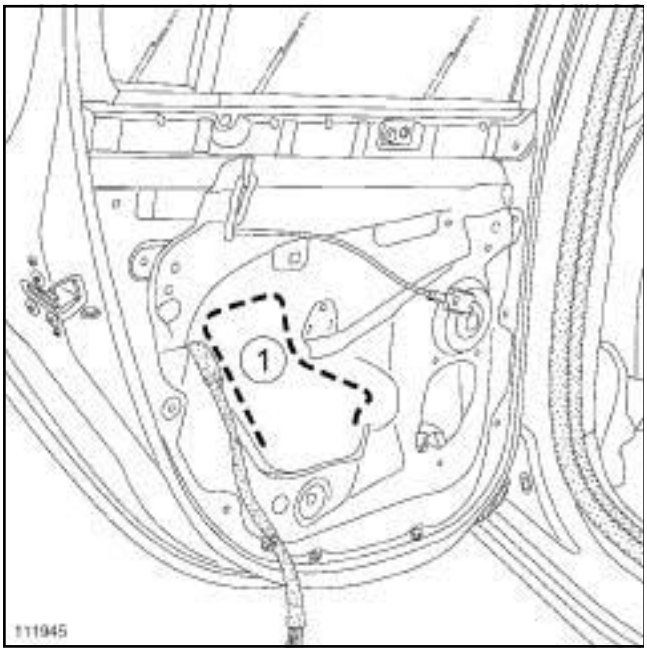
B85 or K85

Tightening torques ▽	
window winder mechanism bolts	**6.5 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).



111945

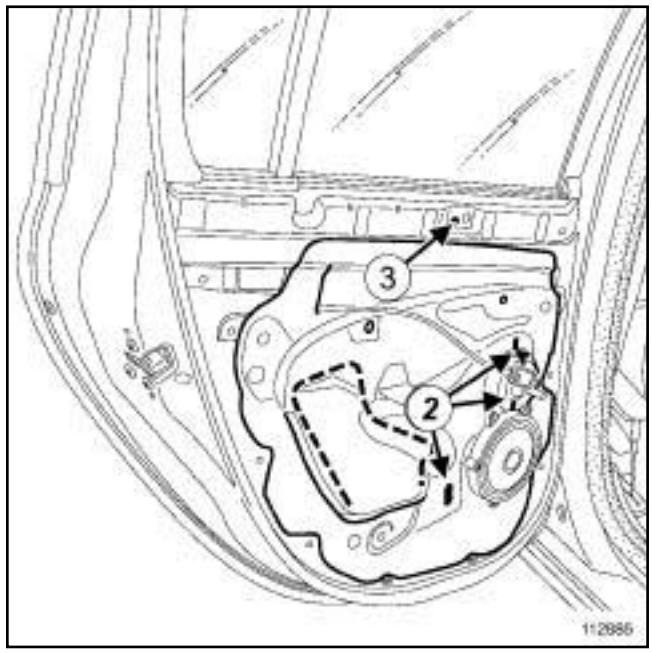
❏ Open the flap (**1**) to gain access to the window lift mechanism as indicated by the marking on the sealing film.

❏ Lower the sliding window to allow access to the window clip.

❏ Remove the window clip.

❏ Secure the window in the raised position using masking tape.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112886

❏ Make cuts in the seal to access the window winder mechanism bolts (**2**) .

❏ Remove the bolts (**2**) and (**3**) .

❏ Remove the window lift mechanism.

REFITTING

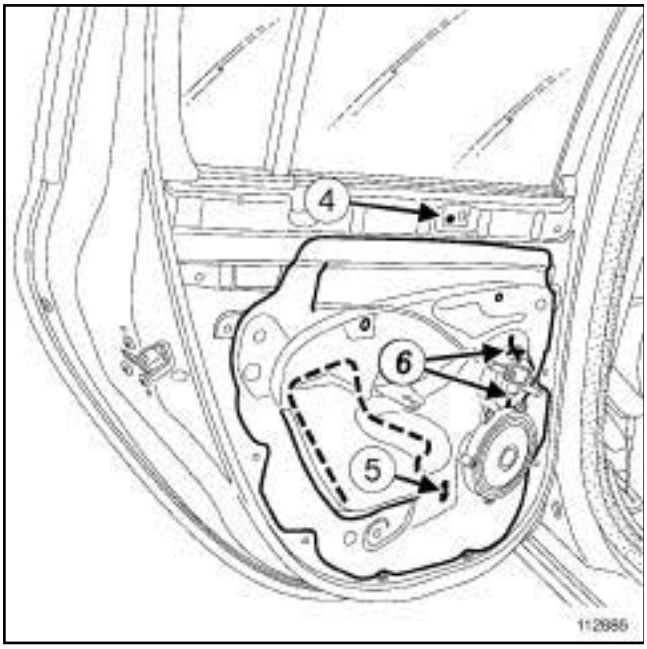
I - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Refit the window lift mechanism in the door box section.

❏ Position the sliding window.

❏ Refit the sliding window clip.

B85 or K85



112886

❑

Note:

When refitting the window lift mechanism, follow the tightening order.

The tightening order ensures the correct alignment of the window lift mechanism and that the window is correctly positioned with the clip.

❑ Torque tighten the **window winder mechanism bolts (6.5 Nm)** following the tightening order: bolt (**4**) , bolt (**5**) and bolts (**6**) .

❑ Carry out a function test.

II - FINAL OPERATION.

❑ Close the access flap and the cuts in the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❑ Refit the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

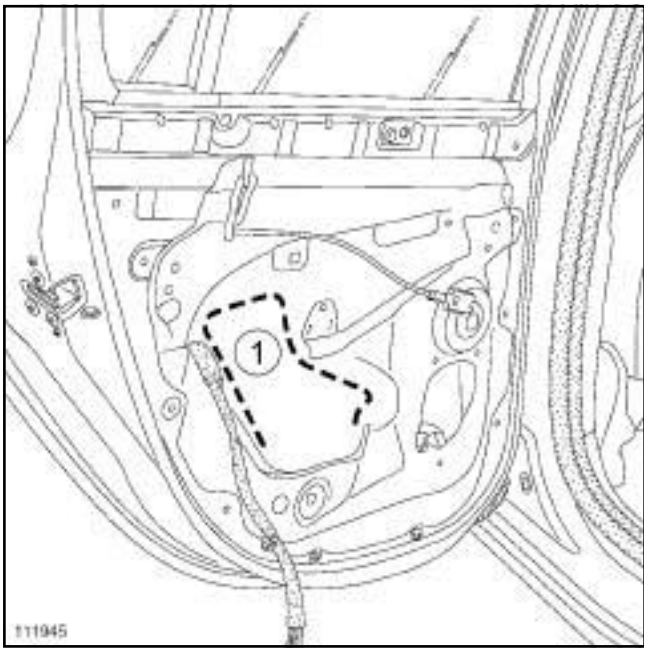
B85 or K85

Tightening torques ▽	
window winder mechanism mounting bolts	**6.5 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).



111945

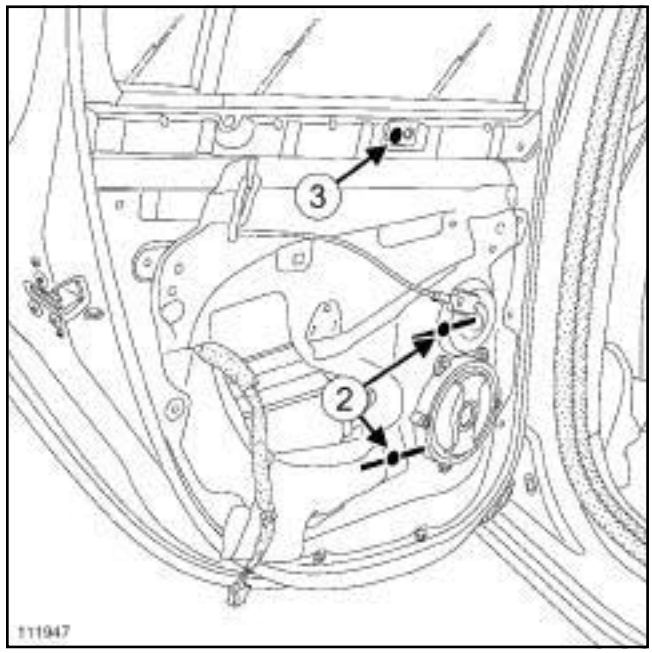
❏ Open the access flap (**1**) of the window winder mechanism following the marking on the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❏ Lower the window to allow access to the window mounting clip.

❏ Unfasten the clip

❏ Secure the window in the raised position using masking tape.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111947

❏ Make cuts in the sealing film to access the window winder mechanism mounting bolts (**2**) .

❏ Remove the bolts (**2**) and (**3**) .

❏ Disconnect the window winder mechanism supply connector.

❏ Remove the window lift mechanism.

REFITTING

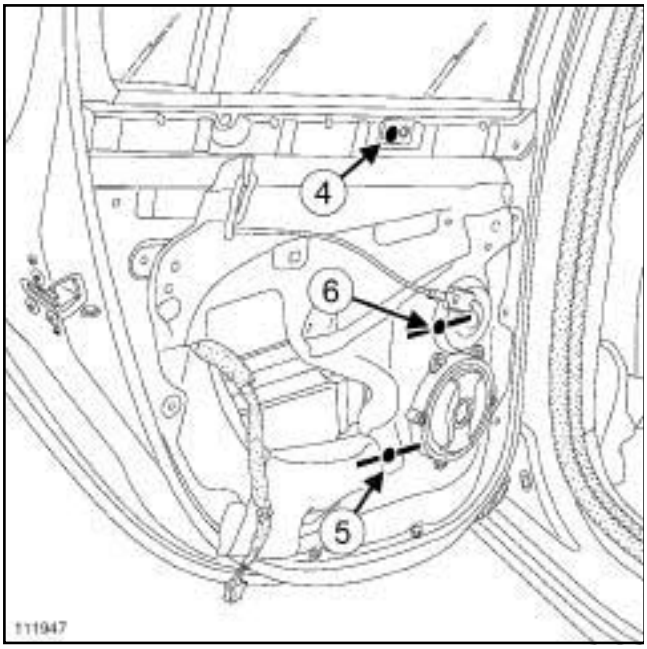
I - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Fit the window winder mechanism in the door box section.

❏ Connect the window winder mechanism supply connector.

❏ Reposition the door window.

B85 or K85



111947

❑

Note:

When refitting the window winder mechanism, tighten the bolts in the order shown.

The tightening order ensures the correct alignment of the window lift mechanism and that the window is correctly positioned with the clip.

❑ Torque tighten the **window winder mechanism mounting bolts (6.5 Nm)** following the tightening order: bolt (**4**) , bolt (**5**) and bolt (**6**) .

❑ Carry out a function test.

II - FINAL OPERATION

❑ Close the access flap and the cuts in the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❑ Refit the door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

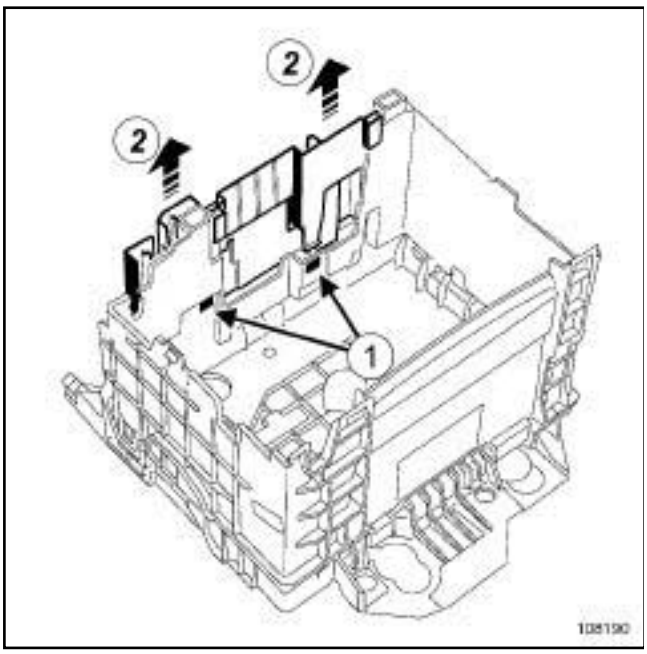
Tightening torques ▽	
rear mounting bolts of the battery mounting	**21 Nm**
front mounting bolt of the battery mounting	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

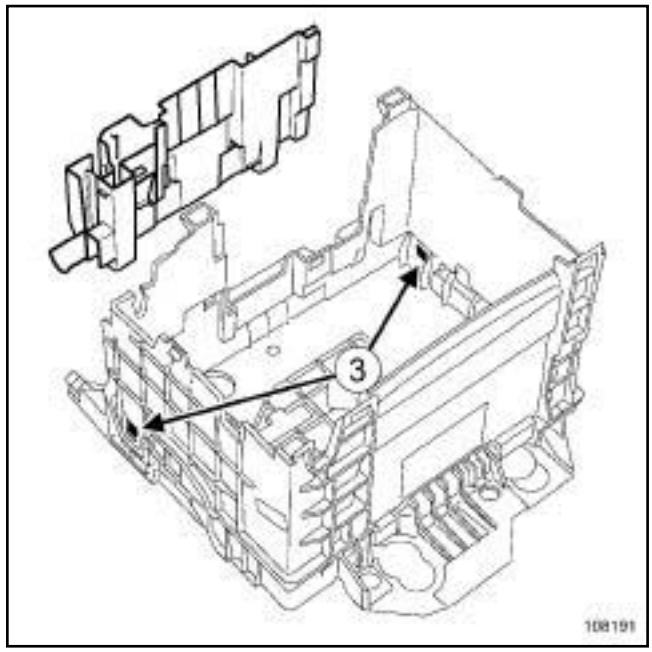
- the wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) ,
- the bonnet catch (see **52A**, **Non-side opening element mechanisms**, **Bonnet lock: Removal - Refitting**, page **52A-5**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



108190

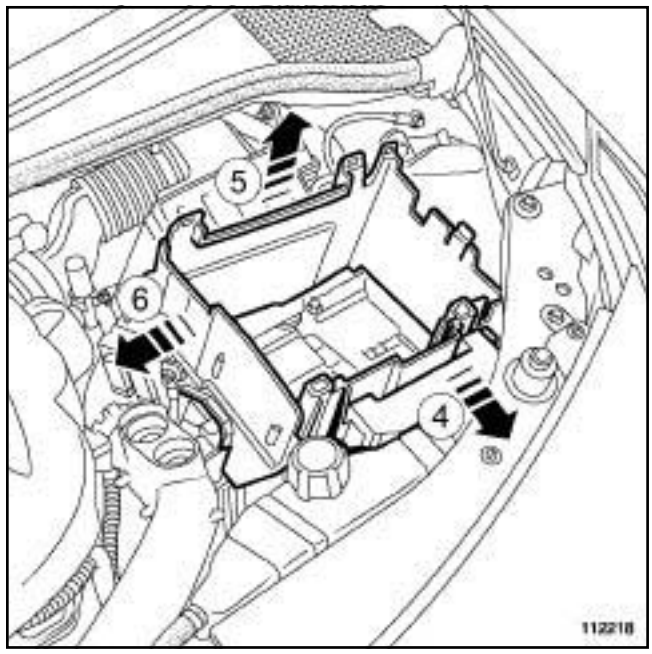
❑ Unclip the power supply fuse support plate at (**1**) .

❑ Pull out the fuse board support (**2**) .



108191

❑ Unclip the thermal protection shield at (**3**) .

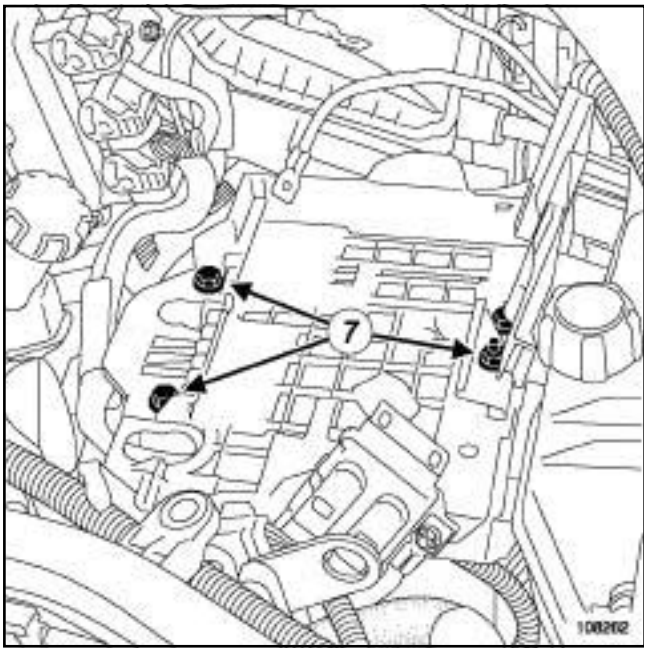


112218

❑ Keep the fuse board support held away (**4**) .

❑ Remove the heat protection shield (**5**) and (**6**) .

❑ Remove the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

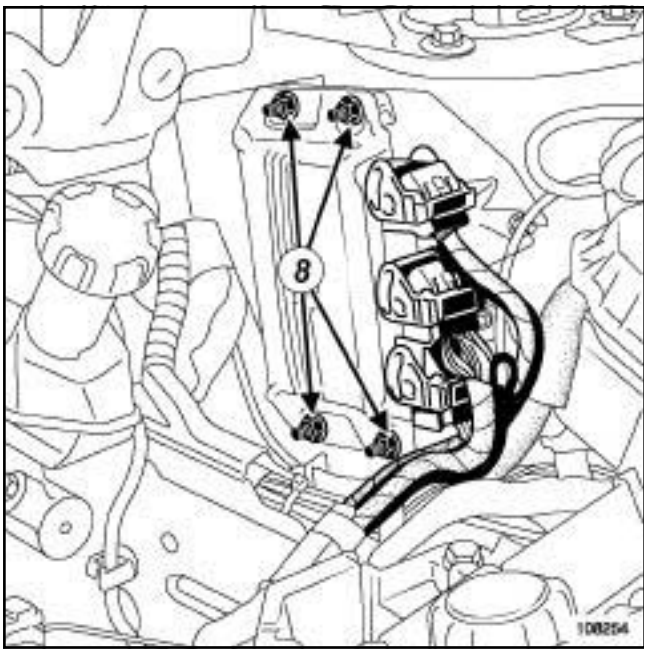


108262

❏ Remove the bolts (**7**) .

❏ Unclip the various wiring harnesses.

❏ Remove the battery support.

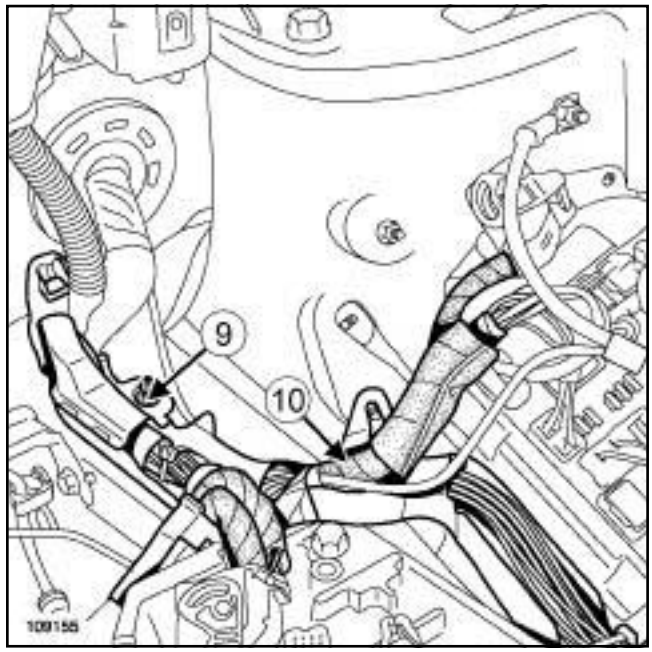


108254

❏ Remove nuts (**8**) .

❏ Remove the fuel injection computer without disconnecting it.

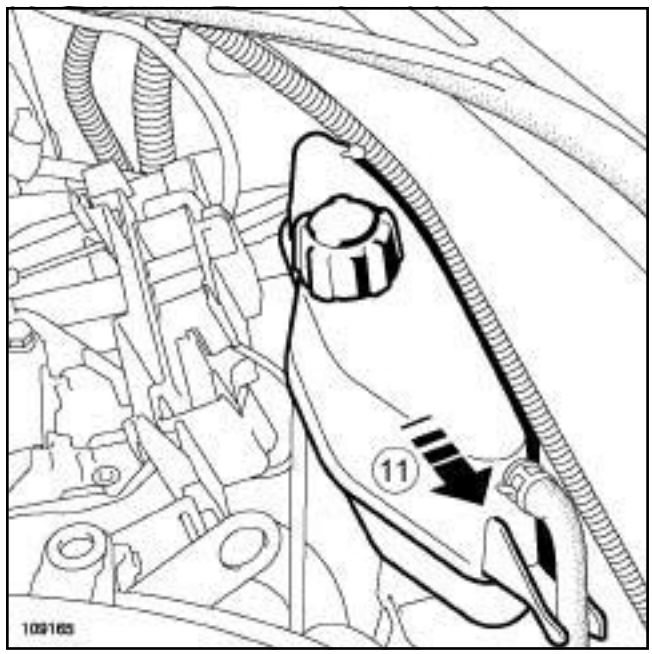
❏ Remove the injection computer support (three nuts).



109155

❏ Remove the nut (**9**) .

❏ Remove the wiring harness support (**10**) .



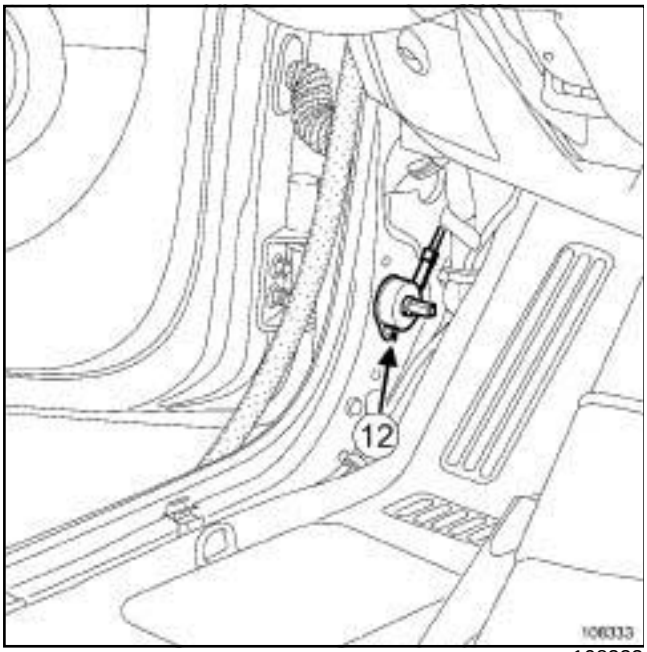
109165

❏ Unclip the expansion bottle (**11**)

❏ Position the expansion bottle so that it does not hamper removal of the bonnet release cable.

❏ Remove the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



108333

❏ Remove the bolt (**12**) .

❏ Unclip the bonnet release control.

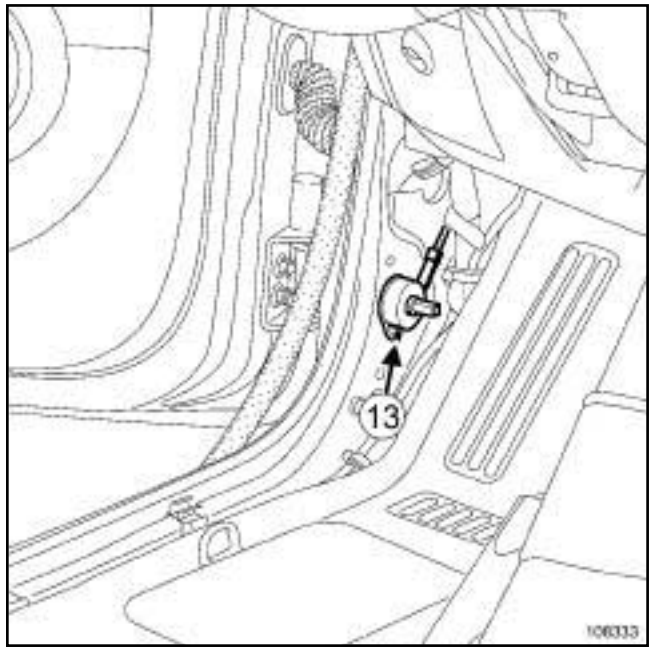
❏ Note the route of the bonnet release cable.

❏ Remove the bulkhead cable routing blanking piece.

❏ Remove the bonnet release cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



108333

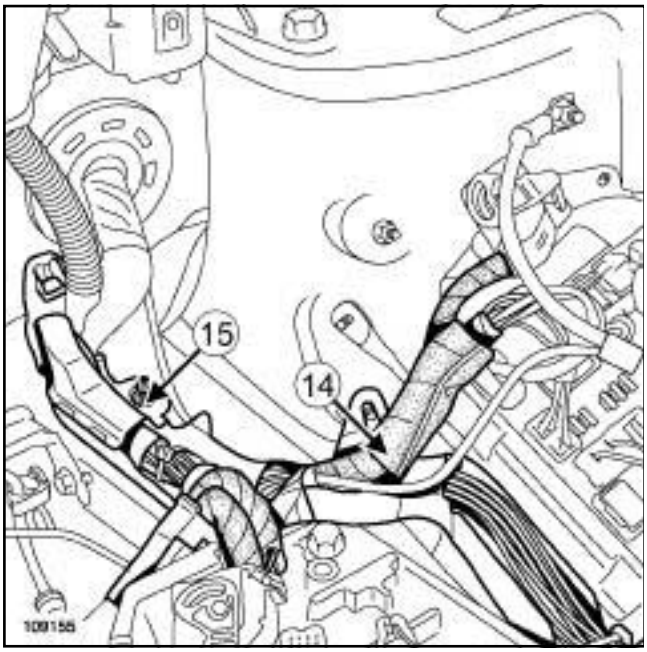
❏ Refit:

- the bonnet release cable,
- the cable routing blanking piece,
- the bonnet release control,
- the bolt (**13**) .

II - FINAL OPERATION.

❏ Refit:

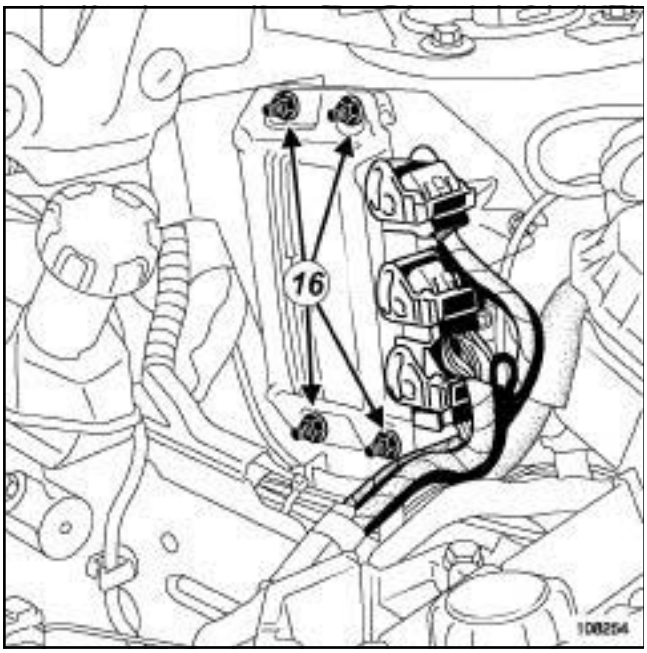
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the expansion bottle,



109155

❑ Refit:

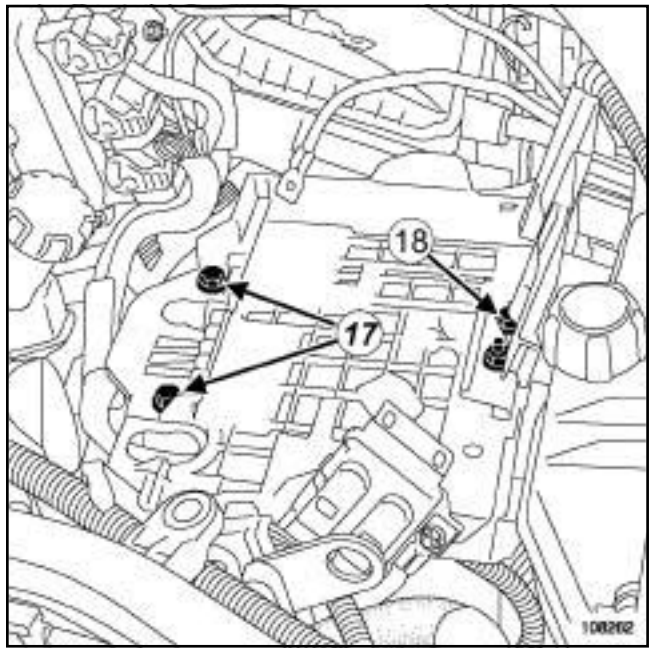
- the wiring harness guide (**14**) ,
- the nut (**15**) .



108254

❑ Refit:

- the fuel injection computer support (three nuts).
- the computer,
- the nuts (**16**) .



108262

❑ Refit:

- the battery mounting,
- the various cable harnesses,
- the **rear mounting bolts of the battery mounting (21 Nm)**, (**17**) ,
- the **front mounting bolt of the battery mounting (8 Nm)**, (**18**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the heat shield,
- the power supply fuse board support.
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the bonnet catch (see **52A**, **Non-side opening element mechanisms**, **Bonnet lock: Removal - Refitting**, page **52A-5**) ,
- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) ,
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

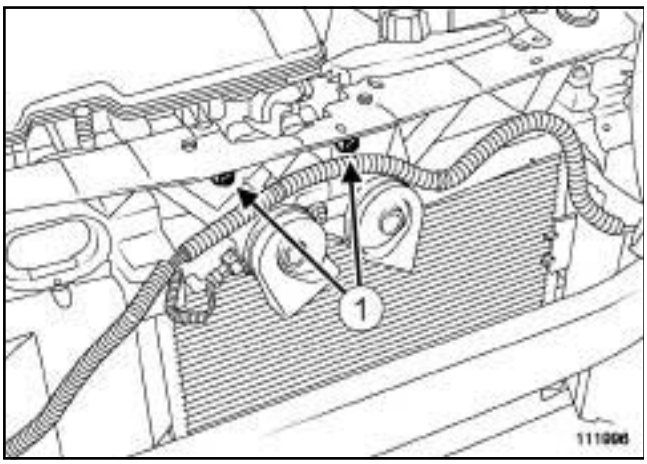
Tightening torques ▽	
bonnet catch bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

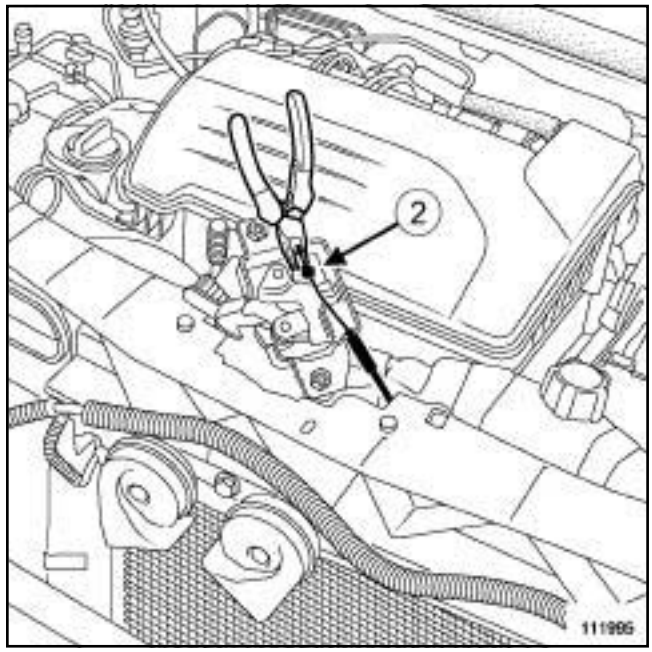
❑ Remove the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



111996

❑ Remove the bonnet catch bolts (**1**) .



111995

❑ Remove the clip (**2**) using offset adjusting pliers.

❑ Unclip the sheath stop from the bonnet opening cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip on:

- the clip ***(2)*** ,
- the bonnet opening cable.

❑ Pretighten the bonnet catch bolts.

❑ Adjust the flush fittings and shut lines on the bonnet.

❑ Tighten to torque the **bonnet catch bolts (21 Nm)**.

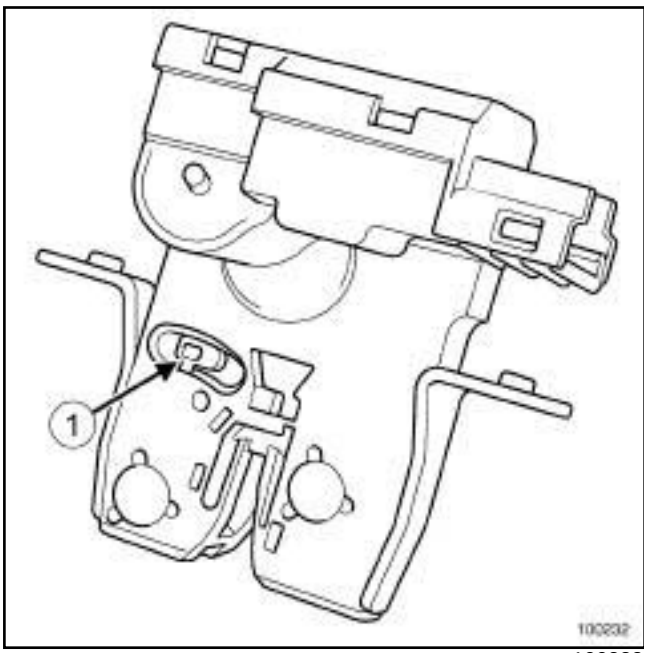
II - FINAL OPERATION

❑ Refit the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

Tightening torques ▽	
tailgate lock bolts	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION



100232

❑

Note:

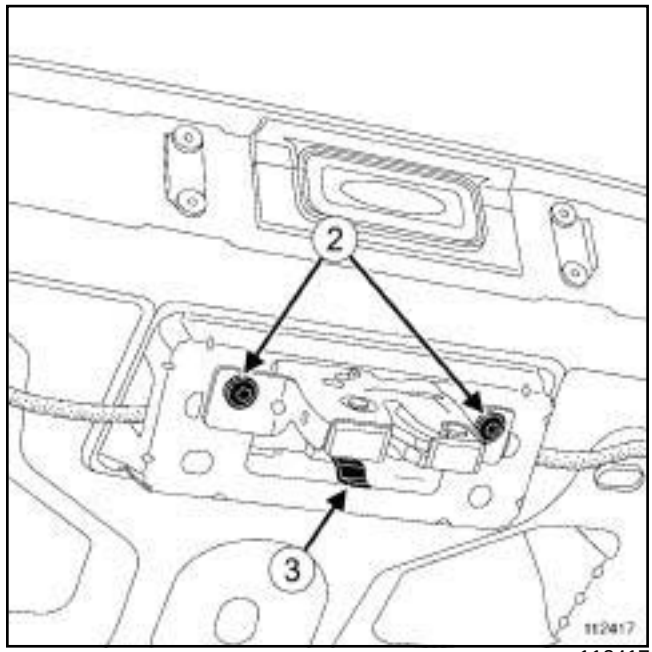
If there is an electrical fault it is possible to open the tailgate manually.

Carry out this operation from inside the vehicle.

❑ Unlock the tailgate lock by pushing lug (**1**) with a screwdriver.

❑ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112417

❑ Remove the tailgate lock bolts (**2**) .

❑ Partially remove the tailgate lock by pressing on the pre-retaining clip (**3**) .

❑ Disconnect the tailgate lock connector.

❑ Remove the tailgate lock.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the tailgate lock connector.

❑ Position the tailgate lock using the pre-retaining clip.

❑ Torque tighten the **tailgate lock bolts (8 N.m)**.

II - FINAL OPERATION

❑ Carry out a function test.

❑ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim).

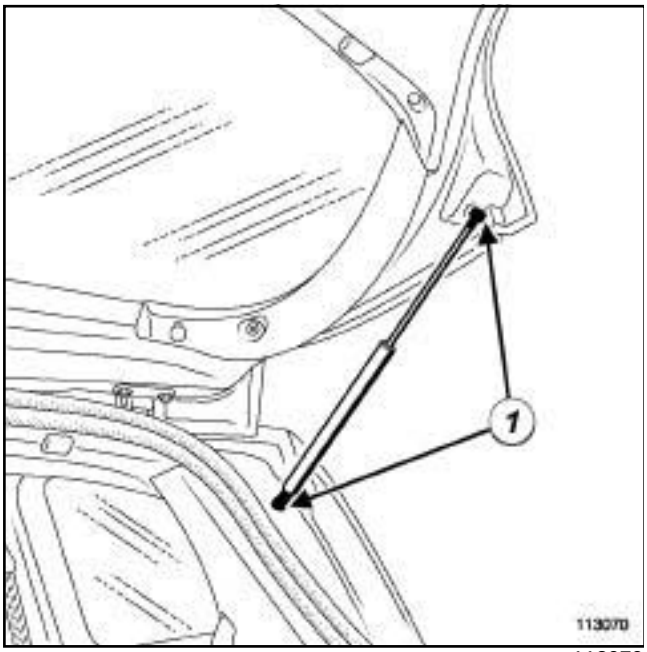
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

> **WARNING**
> Note the direction in which the tailgate struts are fitted before removal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113070

❑ Extract the clips (**1**) without removing them

❑ Remove the struts whilst holding the tailgate.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Position the clips on the struts.

II - REFITTING OPERATION FOR PART CONCERNED

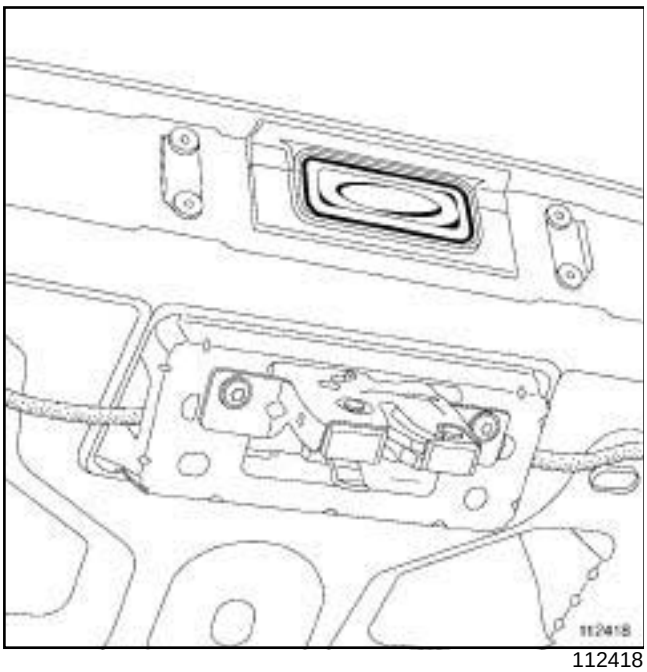
❑ Offer up and clip in the struts.

REMOVAL

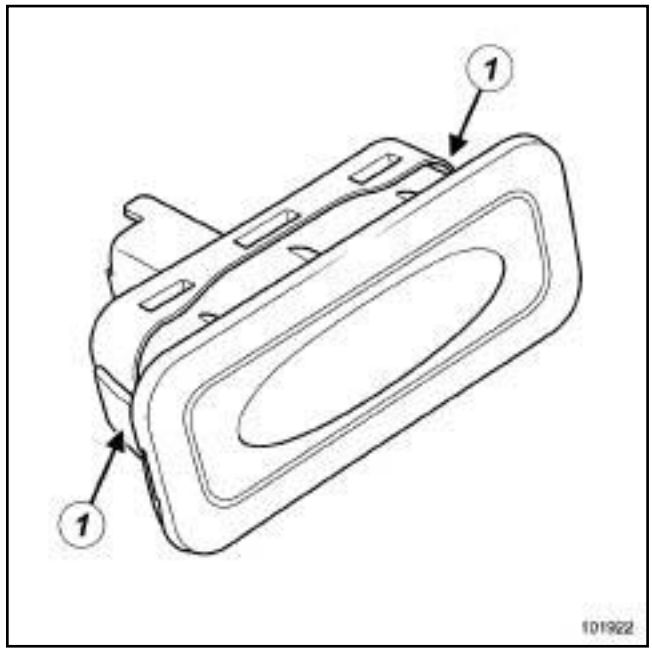
I - REMOVAL PREPARATION OPERATION

❑ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED


112418

❑ Access the control via the tailgate interior.



101922

❑ Squeeze the clips (**1**) .

❑ Take out the control.

❑ Disconnect the connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the connector.

❑ Clip on the tailgate opening control.

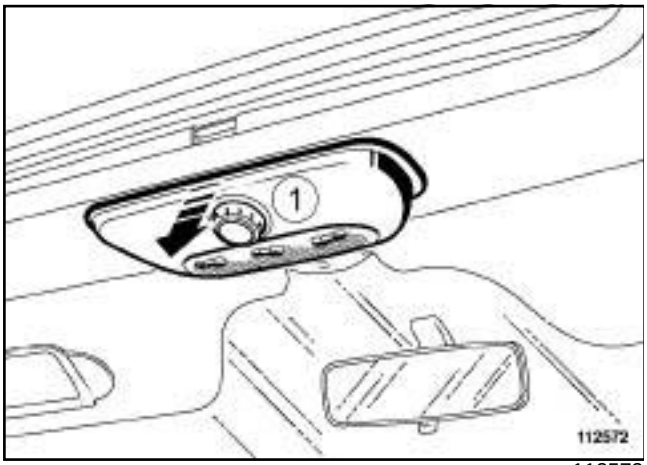
II - FINAL OPERATION.

❑ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

PANORAMIC SUNROOF

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112572

❏ Unclip the roof opening control using a flat-blade screwdriver (**1**) .

❏ Disconnect the connectors.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

❏ Clip the sunroof opening control.

PANORAMIC SUNROOF

Equipment required
Diagnostic tool

❑

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

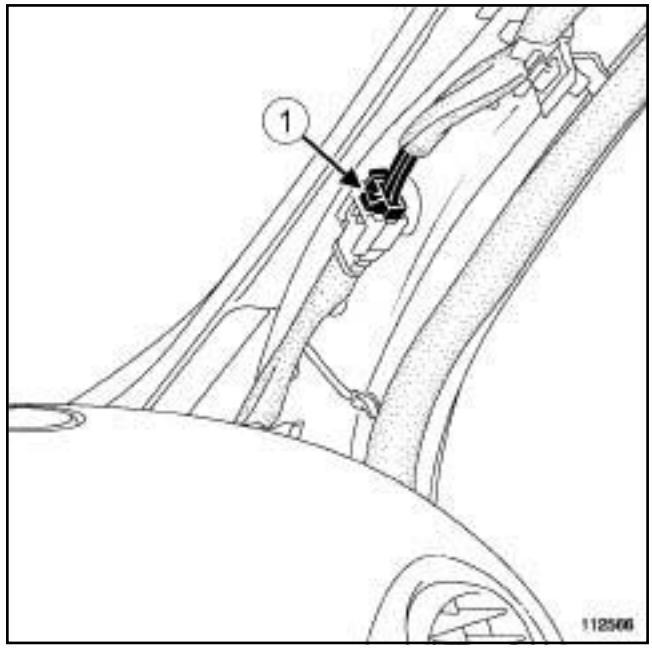
I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioner).

❑ Remove the sunroof's mobile panel (see **52A**, **Non-side opening element mechanisms**, **Sunroof mobile panel: Removal - Refitting**, page **52A-13**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).



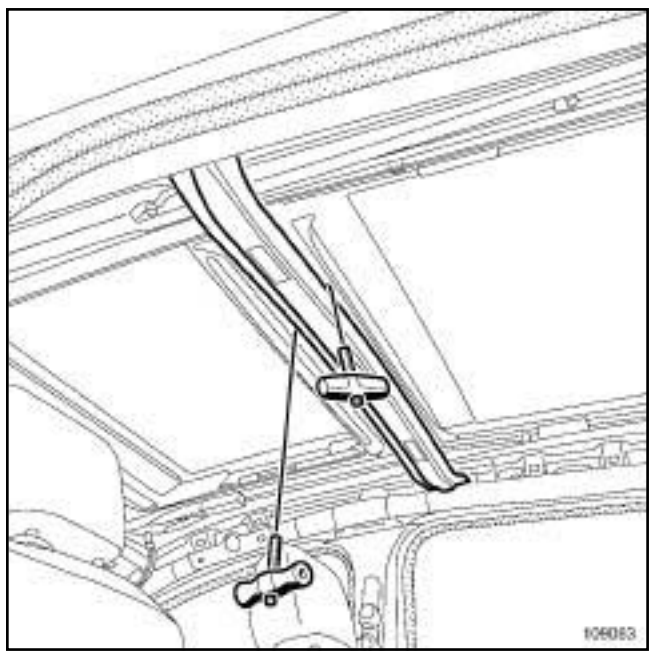
112566

❑ Disconnect the supply connector (**1**) from the sunroof motor.

❑ Unclip the wiring harness from the clips.

❑ Protect the vehicle interior.

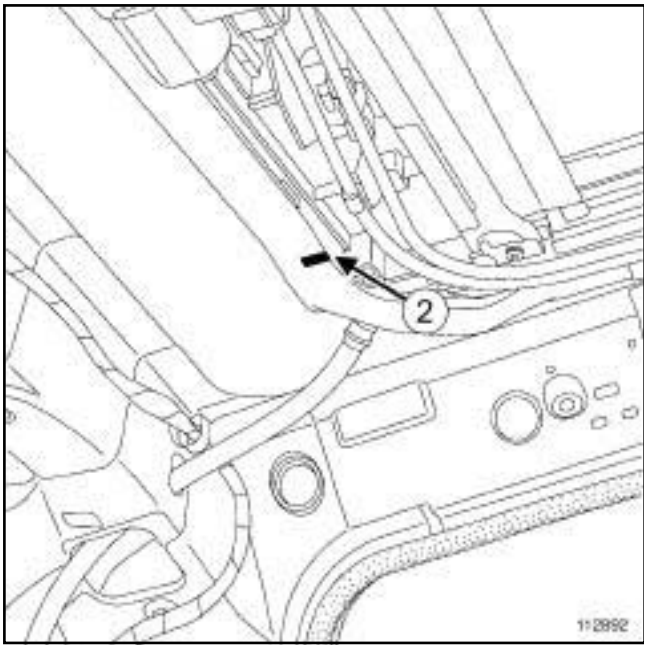
II - OPERATION FOR REMOVAL OF PART CONCERNED


109063

❑ Protect the sunroof frame using masking tape.

❑ Cut the cement bead located on the cross member using a cutting wire with two handles (this operation requires two people).

PANORAMIC SUNROOF

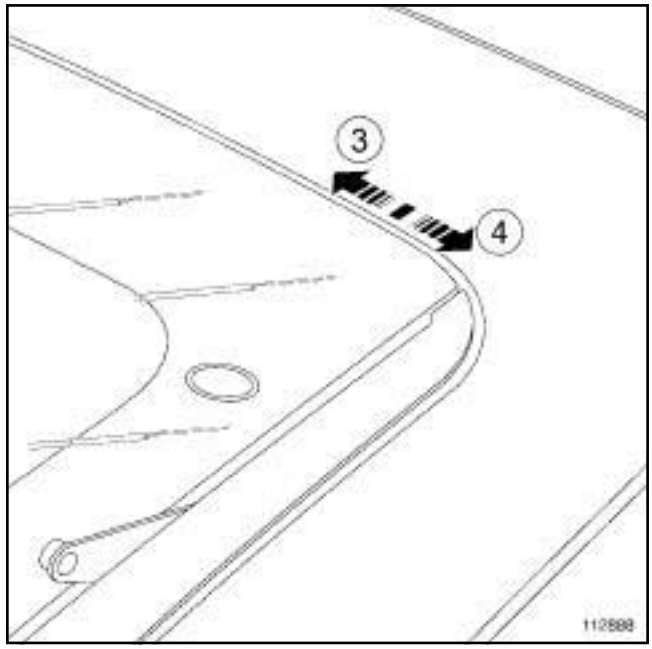


112892

❑ Begin cutting the cement bead at the rear from one side of the vehicle (**2**) .

WARNING

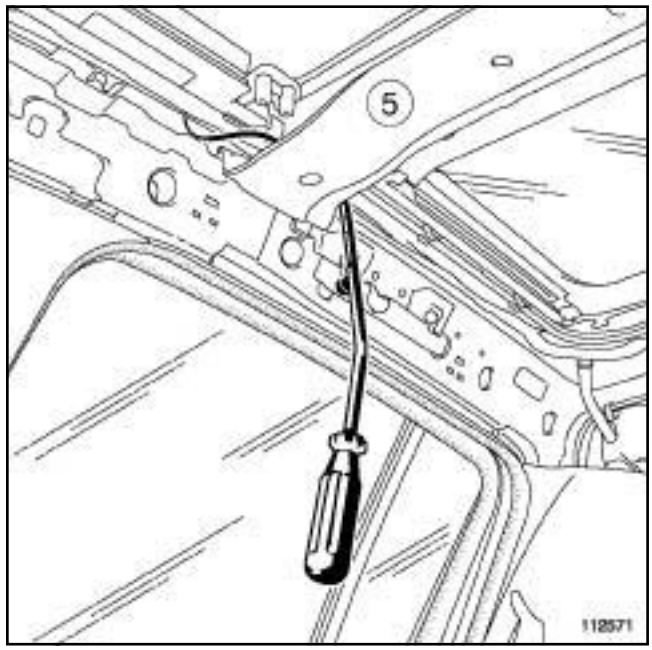
When cutting the cement bead, make sure that the wire passes between the panel and the positioning shims on the edge of the sunroof operating mechanism.



112888

❑ Cut the cement bead (**3**) at the rear of the vehicle up to the level of the aerial mounting.

❑ Repeat this operation on the other side before continuing to cut (**4**) the cement bead.



112571

❑

Note:

On reaching the cross member (**5**) pass the wire between the cross member and the sunroof operating mechanism.

PANORAMIC SUNROOF

❑ Remove the sunroof operating mechanism using specific tools:

- Support: **PARV 202**,
- Set of arch supports: **APARV 200 ESP**.

REFITTING

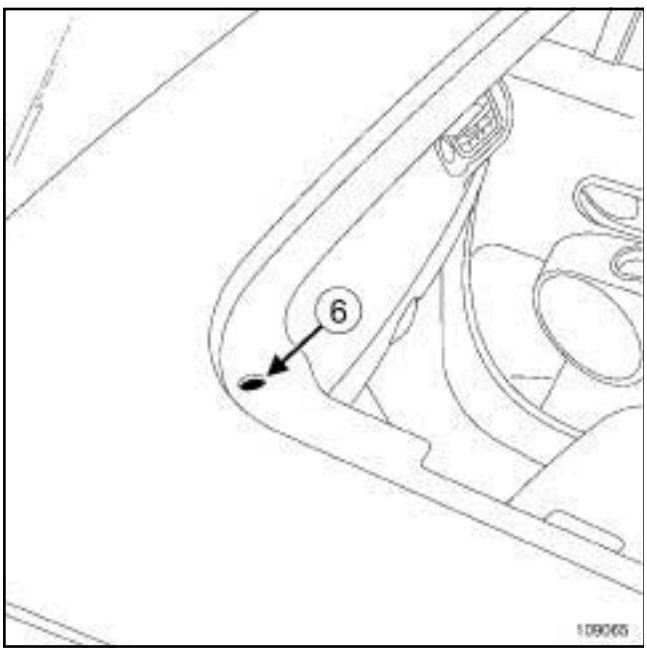
I - REFITTING PREPARATIONS OPERATION

❑ For preparation and bonding (see **Technical Note 560A, General procedure for bonding windows and sunroof**).

❑ Position:

- the two centring guides on the sunroof operating mechanism,
- the positioning shims on the sunroof operating mechanism.

II - REFITTING OPERATION FOR PART CONCERNED



109065

❑ Position the cement bead at the interior roof panel surround or on the sunroof cassette.

WARNING
When fitting the sunroof, take care not to block the water drainage holes (**6**) .

❑ Bond the sunroof operating mechanism using the special tools.

❑ Connect the sunroof motor supply connector.

❑ Equal out the clearances and shut lines.

❑ Check that the sunroof operating mechanism positioning shims make contact with the roof.

❑ Remove the two indexing guides **30 minutes** after bonding the sunroof operating mechanism.

III - FINAL OPERATION.

❑ Refit:

- the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the sunroof's mobile panel (see **52A**, **Non-side opening element mechanisms**, **Sunroof mobile panel: Removal - Refitting**, page **52A-13**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

❑ Initialise the sunroof motor (see **Electric sunroof: Initialisation**)(MR 394, 87D, Electric windows - Sunroof).

PANORAMIC SUNROOF

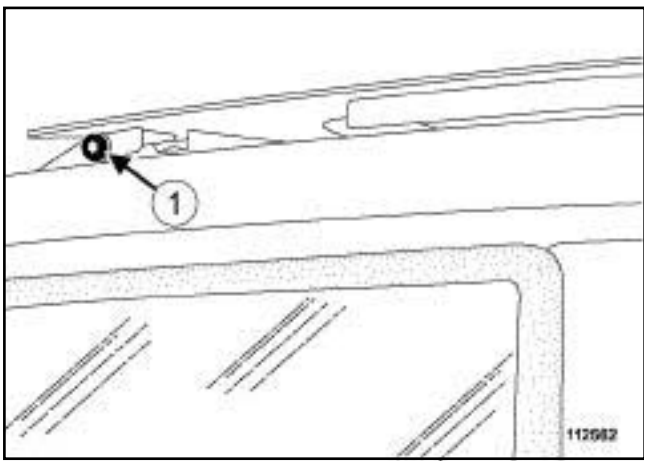
Tightening torques ▽	
mobile panel front bolts	**5.6 N.m**
mobile panel rear bolts	**5.6 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

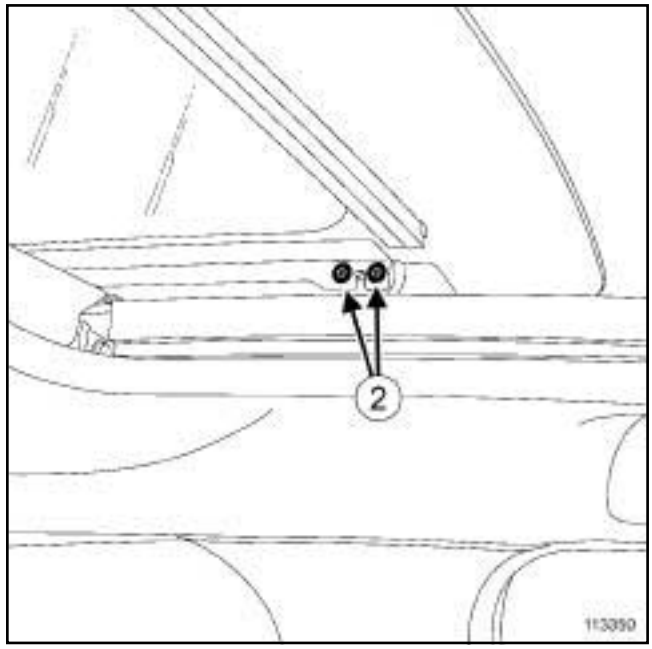
❏ Open the moving panel.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112562

❏ Remove the rear bolts (**1**) from the mobile panel.



113350

❏ Remove:

- the mobile panel front bolts (**2**) ,
- the mobile panel (this operation requires two people).

REFITTING

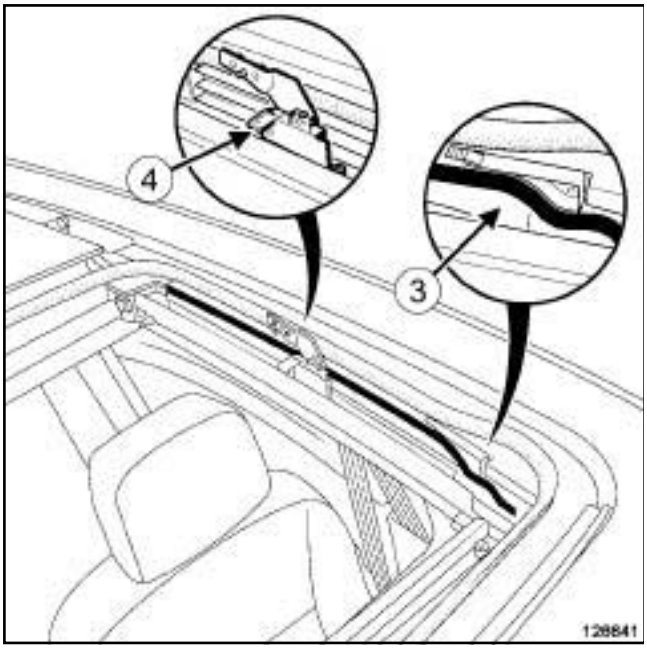
I - REFITTING PREPARATION OPERATION

❏

Note:

When removing and refitting the mobile panel, apply some **HIGH-RESISTANCE THREADLOCK** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the bolts.

When replacing a mobile panel, replace the bolts with the bolts supplied with the mobile panel.



126641

❏ Using a **LINT-FREE CLOTH** soaked in **HEPTANE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products), clean:

- the upper guide runner (**3**) ,
- the operating mechanism (**4**) .

❏ Wipe areas (**3**) and (**4**) with a clean, dry **LINT-FREE CLOTH**.

❏ Using a fine brush, lightly grease internal areas (**3**) and (**4**) only with **OPENING ELEMENT GREASE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the mobile panel (this operation requires two people).

❏ Tighten to torque:

- the **mobile panel front bolts (5.6 N.m)**,
- the **mobile panel rear bolts (5.6 N.m)**.

❏ Initialise the sunroof motor (see **Electric sunroof: Initialisation**)(87D, Electric windows - Sunroof).

PANORAMIC SUNROOF

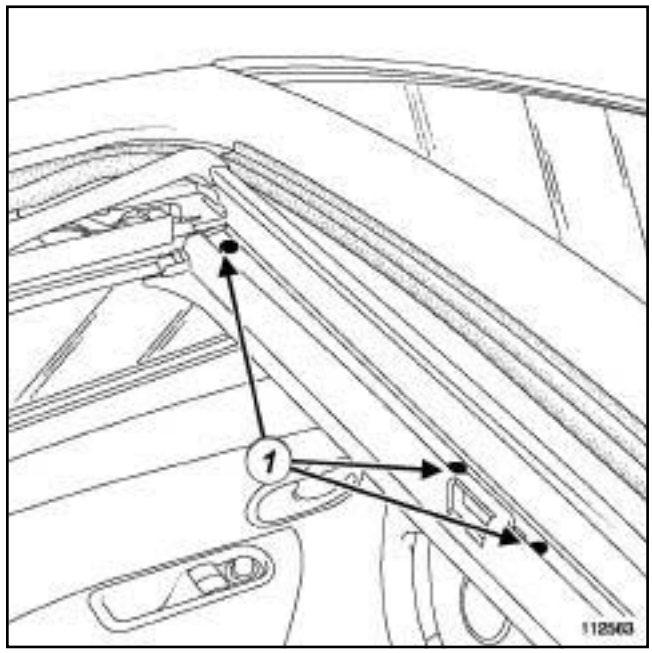
Tightening torques ▽	
deflector rear bolts	**3 Nm**
deflector front bolts	**3 Nm**

REMOVAL

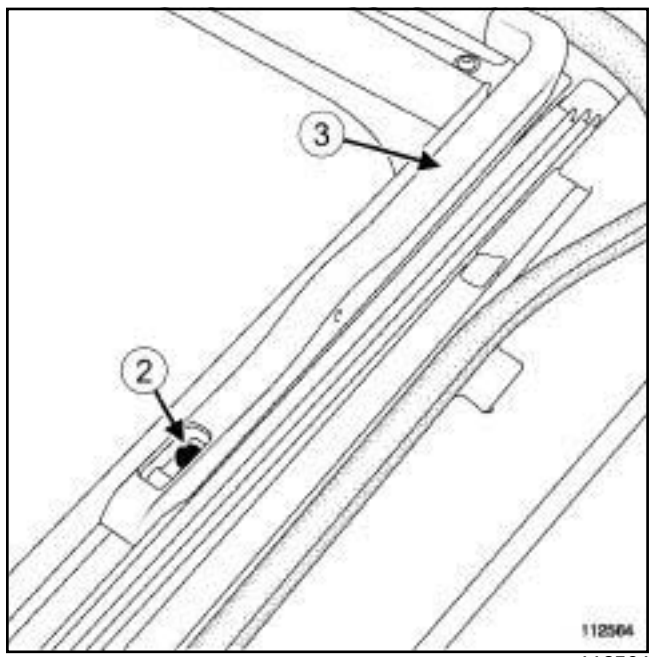
I - REMOVAL PREPARATION OPERATION

❑ Open the sunroof mobile panel.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112563



112564

❑ Remove:

- bolts (**1**) and (**2**) whilst maintaining the deflector at (**3**) ,
- the sunroof deflector.

PANORAMIC SUNROOF

REFITTING

I - REFITTING PREPARATIONS OPERATION

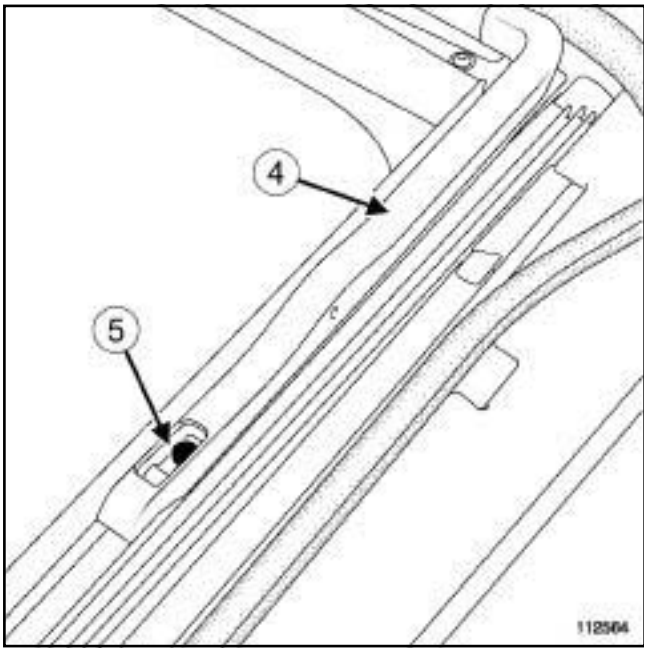
❑

Note:

When removing and refitting the sunroof deflector, apply some high resistance threadlock to the bolts.

When replacing the sunroof deflector, replace the bolts with those supplied with the mobile panel.

II - REFITTING OPERATION FOR PART CONCERNED

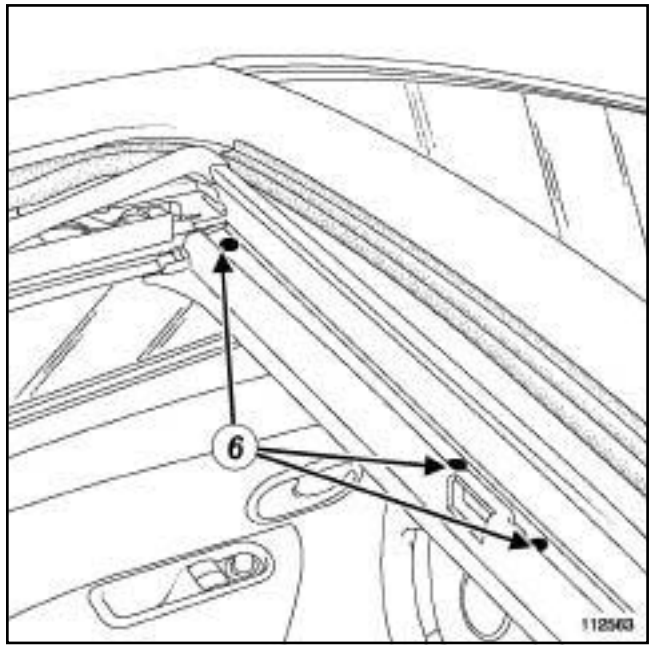


112564

❑ Position the deflector return spring.

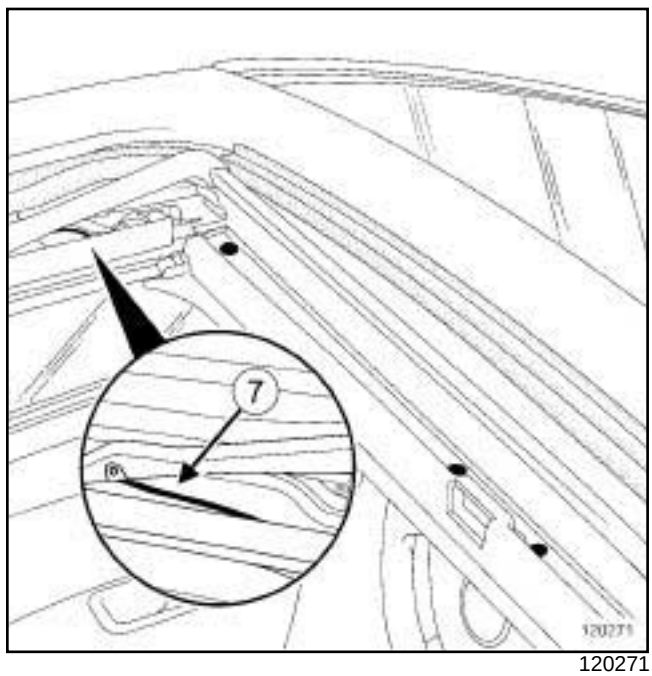
❑ Keep applying pressure to the deflector at (**4**) .

❑ Torque tighten the **deflector rear bolts (3 Nm)**, (**5**) .



112563

❑ Torque tighten the **deflector front bolts (3 Nm)**, (**6**) .



120271

❑ Clean the areas (**7**) with a lint-free cloth soaked with heptane.

❑ Wipe the areas (**7**) with a clean dry, lint-free cloth.

❑ Lightly lubricate the internal areas (**7**) only, using a fine brush with grease for opening element mechanisms (part no.: **77 11 419 865**).

PANORAMIC SUNROOF

III - FINAL OPERATION.

❑ Initialise the sunroof motor (see **Electric sunroof: Initialisation**)(MR 394, 87D, Electric windows - Sunroof).

PANORAMIC SUNROOF

Equipment required
Diagnostic tool

Tightening torques ▽	
screen mounting bolts	**25 Nm**

❑

IMPORTANT

Before working on or near a safety system component; make sure that the airbag computer is locked using the **Diagnostic tool**. When this function is activated, all the triggering lines are inhibited and the airbag warning light on the instrument panel is continuously lit (ignition on).

IMPORTANT

Handling the pyrotechnic systems (airbags or pretensioners) near to a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

REMOVAL

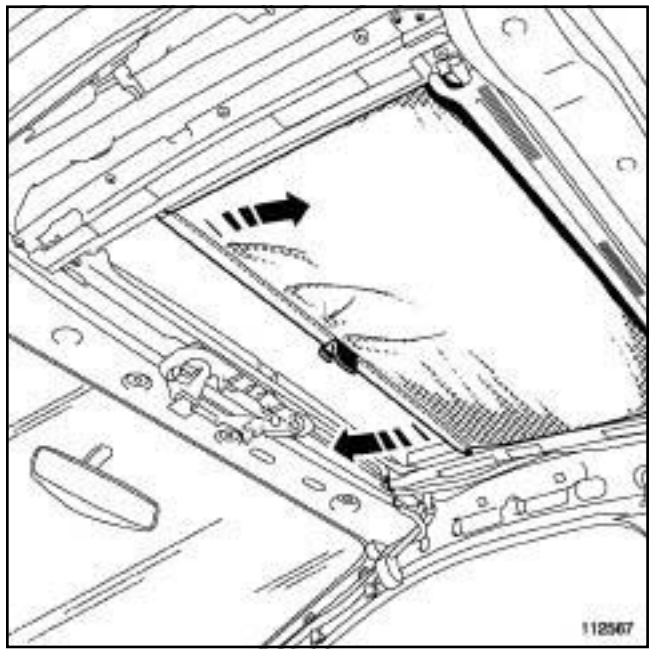
I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioner).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

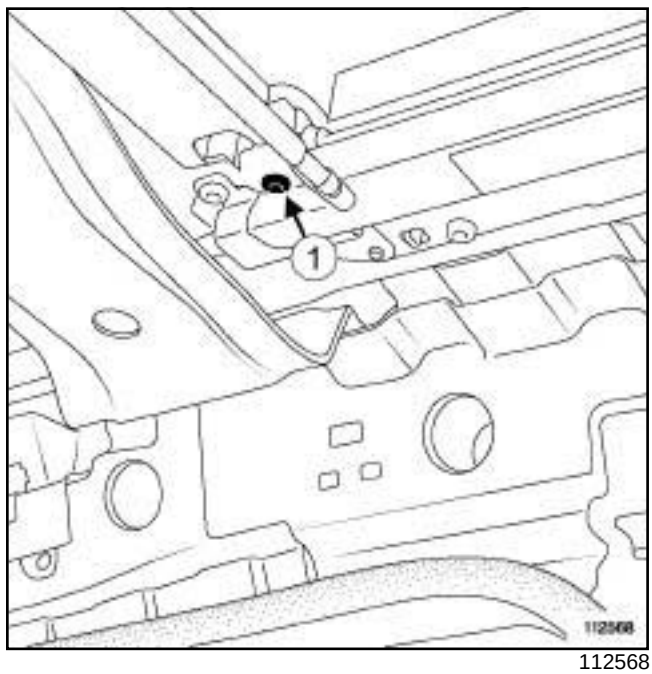
❑ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112567

❑ Remove the sunroof screen from the runners with a rotating movement.



112568

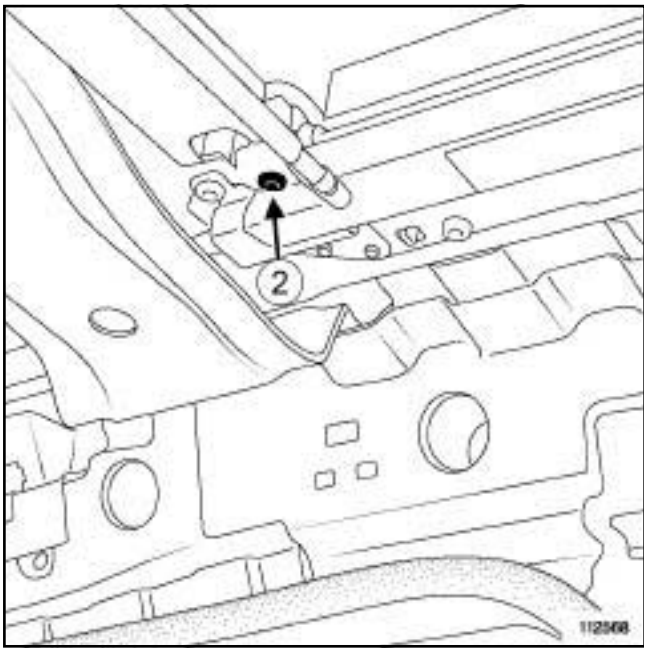
❑ Remove:

- the bolts (**1**) ,
- the sunroof screen.

PANORAMIC SUNROOF

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112568

- ❏ Position the screen.
- ❏ Torque tighten the **screen mounting bolts (25 Nm)** (**2**) .
- ❏ Refit the screen in the runners.

II - FINAL OPERATION.

- ❏ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).
- ❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

Equipment required
Diagnostic tool

❑

IMPORTANT
Before working on or near a safety system component; make sure that the airbag computer is locked using the **Diagnostic tool**. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
Handling the pyrotechnic systems (airbags or pretensioners) near to a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

1 - Special features for preparing to remove the front drain pipes

❑ Remove:

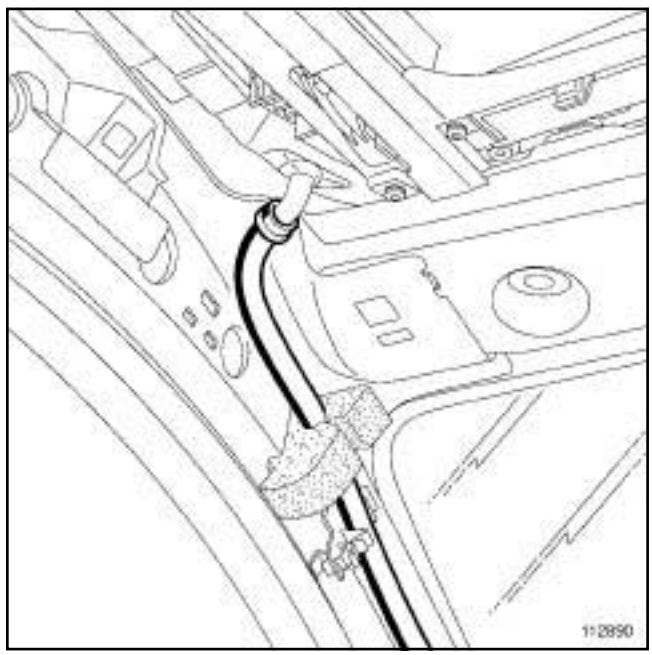
- the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) ,
- the dashboard (see **57A**, **Interior equipment**, **Dashboard: Removal - Refitting**, page **57A-1**) ,
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

2 - Special features for preparing to remove the rear drain pipes

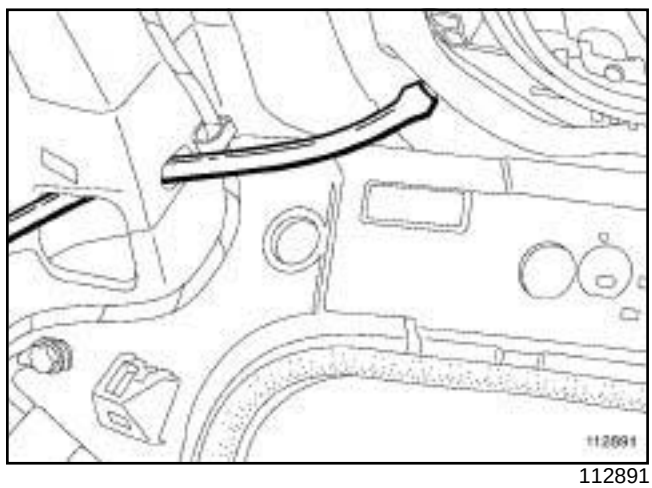
❑ Remove:

- the rear end panel trim (see **Rear end panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear wheel arch trim (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear wheel arch liner (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112890



112891

❑ Retrieve the anti-return valve.

❑ Remove the water drain pipe from inside the vehicle.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Turn:

- the drain pipe correctly in position.
- the anti-return valve on the drain pipe.

II - FINAL OPERATION.

1 - Special features of the final operation for the rear drain pipes

❑ Refit:

- the rear wheel arch liner (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wheel arch trim (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear end panel trim (see **Rear end panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

2 - Special features for the final operation on the front drain pipes

❑ Refit:

- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the dashboard (see **57A**, **Interior equipment**, **Dashboard: Removal - Refitting**, page **57A-1**) ,
- the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) .

❑ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

Special tooling required	
Car. 1764	Instrument panel protector

❑

WARNING
Leave the rain sensor in place on the old windscreen during the replacement operation.

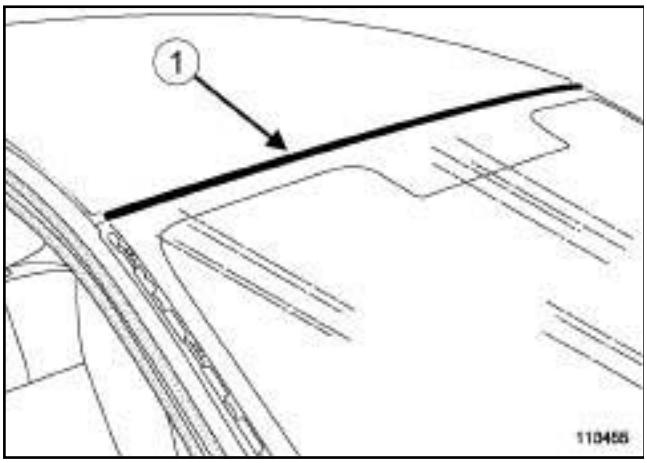
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) ,
- the windscreen trims (see **54A**, **Windows**, **Windscreen trim: Removal - Refitting**, page **54A-3**) ,
- the interior rear-view mirror (see **57A**, **Interior equipment**, **Interior rear-view mirror: Removal - Refitting**, page **57A-21**) ,
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),

II - OPERATION FOR REMOVAL OF PART CONCERNED

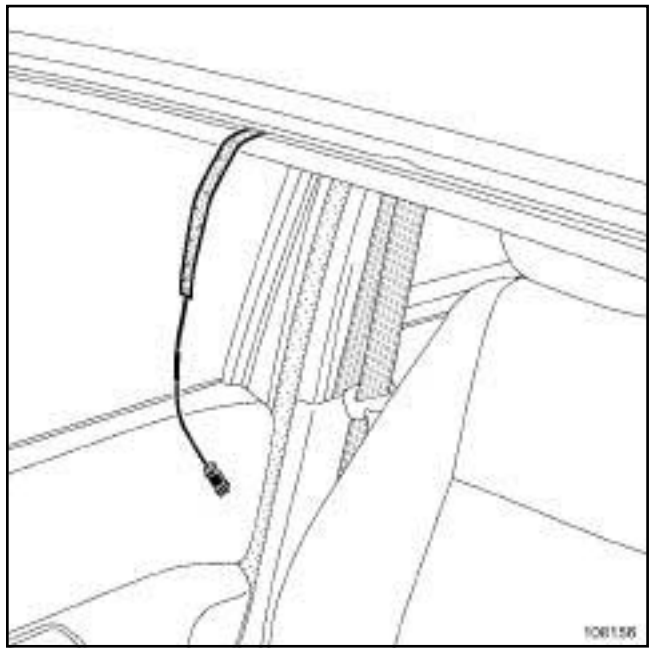


113455

❑ Remove the windscreen upper seal (**1**) .

❑ Protect the windscreen surround using masking tape.

❑ Position the dashboard protector **(Car. 1764)**.



108156

❑

WARNING
When cutting the cement bead, take care not to cut the wiring harness.

❑ Cut the cement bead.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Position the retaining shims and stops.

❑ Position the upper seal on the windscreen.

❑ For preparation and bonding (see **Technical Note 560A, General procedure for bonding windows and sunroof**).

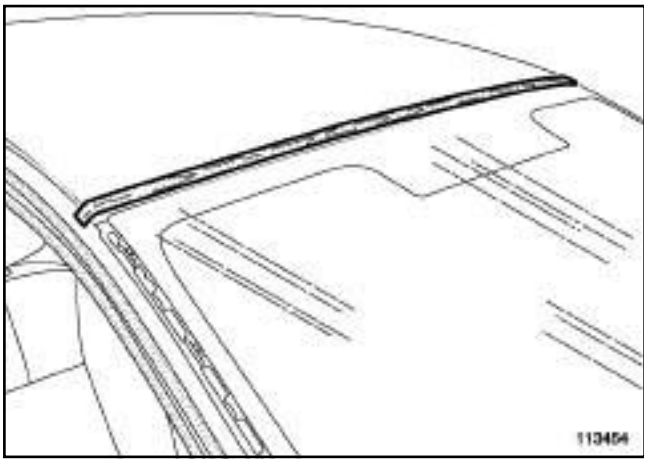
II - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING
Use high modulus adhesive when bonding the windscreen.

❑ Bond the windscreen.

❑ This operation requires two people.



113454

❏ Respect the following clearances and flush fitting:

- « windscreen - roof panel » ,
- « windscreen - windscreen aperture pillar » .

III - FINAL OPERATION

❏ Replace the adhesive base of the rain and light sensor (see **Rain and light sensor: Removal - Refitting**) (MR 392, 85A, Wiping - Washing).

❏ Refit:

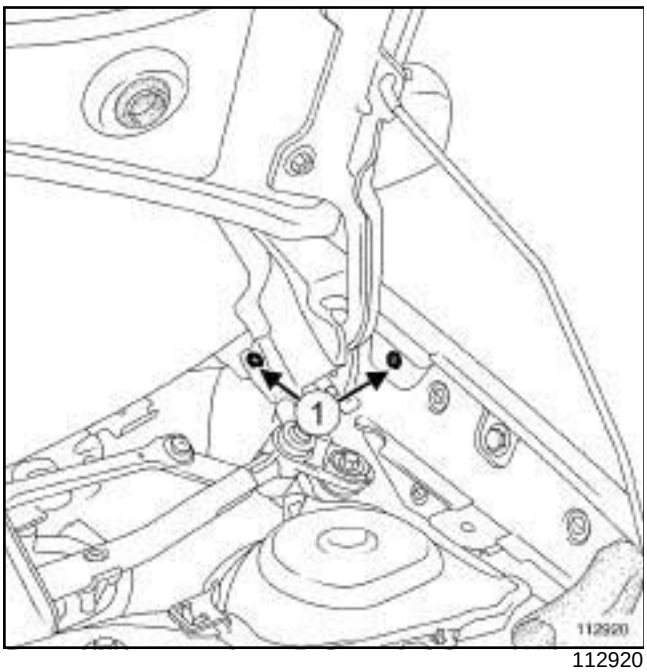
- the interior rear-view mirror (see **57A**, **Interior equipment**, **Interior rear-view mirror: Removal - Refitting**, page **57A-21**) ,
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the windscreen trims (see **54A**, **Windows**, **Windscreen trim: Removal - Refitting**, page **54A-3**) ,
- the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

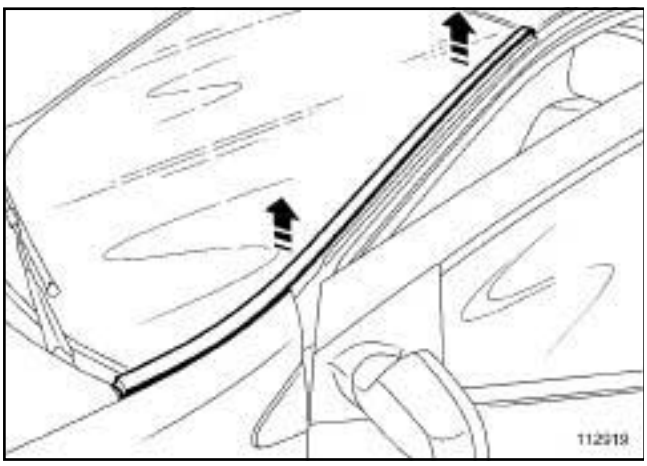
❑ Remove the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112920

❑ Remove the clips (**1**) .

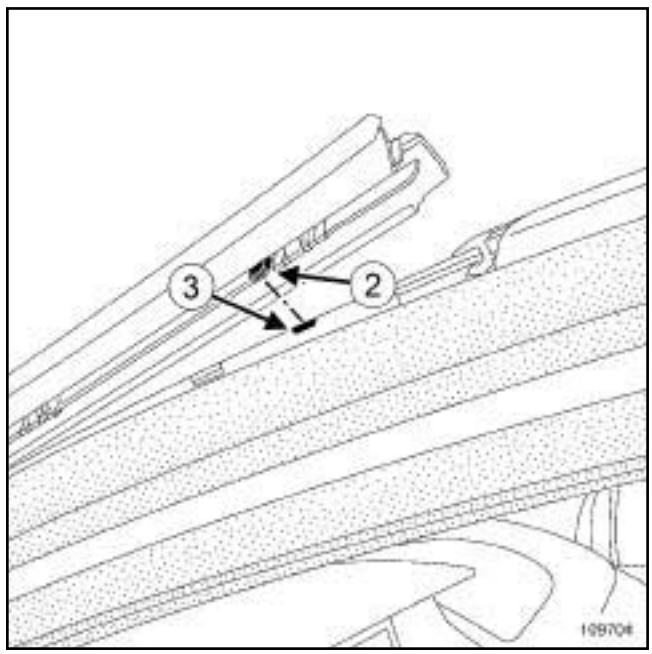


112919

❑ Carefully unclip the windscreen trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



109704

❑ Check the condition of the fixing clips and replace them if necessary.

❑ Align the pin (**2**) on the indent (**3**) to position the trim piece.

❑ Unclip the windscreen trim piece.

❑ Refit the clips ***(1)*** .

II - FINAL OPERATION.

❑ Refit the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) .

Note:

If the window is broken, replace the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

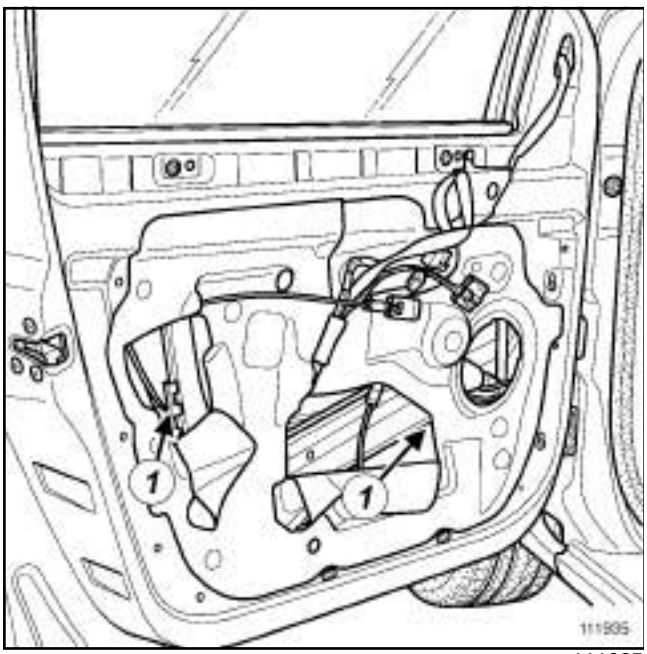
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the door trim (see **Front side door trim: Removal - Refitting**) (MR 393,72A, Side opening element trim),
- the interior weatherstrip.

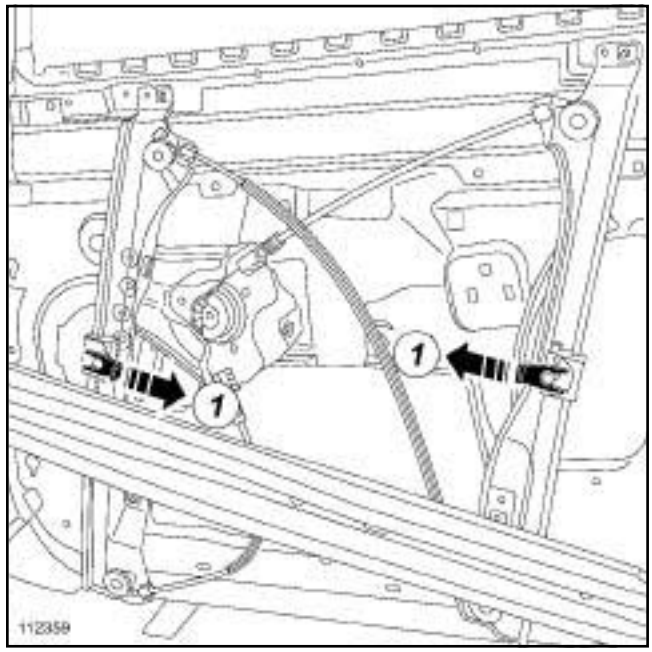
II - OPERATION FOR REMOVAL OF PART CONCERNED



111935

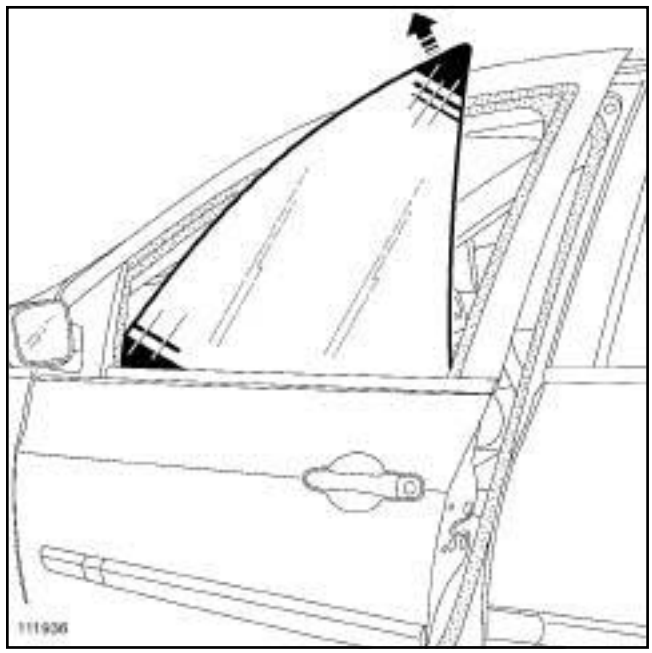
❑ Open the window lift mechanism access according to the marking on the sealing film.

❑ Lower the window in order to access the clips (**1**) on the sliding window.



112359

❑ Remove the clips from the sliding window (**1**) .



111936

❑ Remove the front side sliding door window.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sliding window,
- the sliding window clips.

❑ Carry out a function test.

II - FINAL OPERATION.

❏ Close the access flaps or replace (if the window is broken) the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❏ Refit:

- the interior weatherstrip,
- the door trim (see **Front side door trim: Removal - Refitting**) (MR 393,72A, Side opening element trim).

B85 or K85

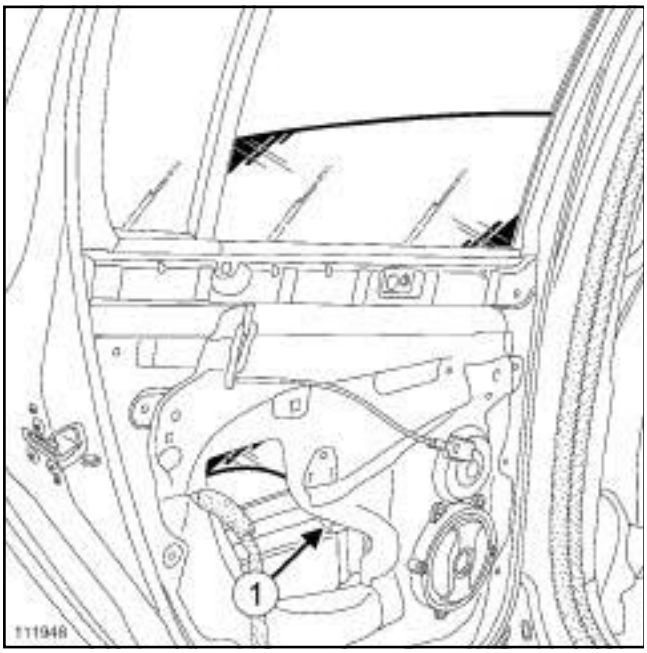
Note:

If the window is broken, replace the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

REMOVAL

I - REMOVAL PREPARATION OPERATION

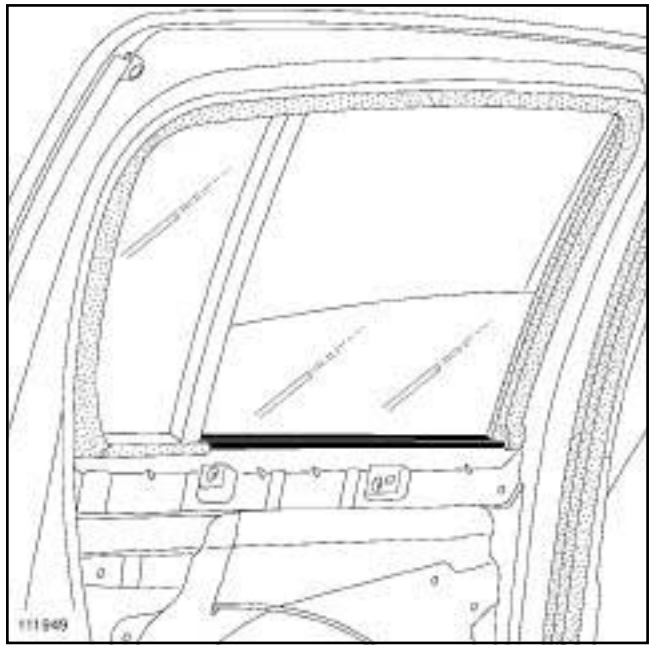
❑ Remove the rear door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).



111948

❑ Open the access flap at the window lift mechanism according to the marking on the sealing film.

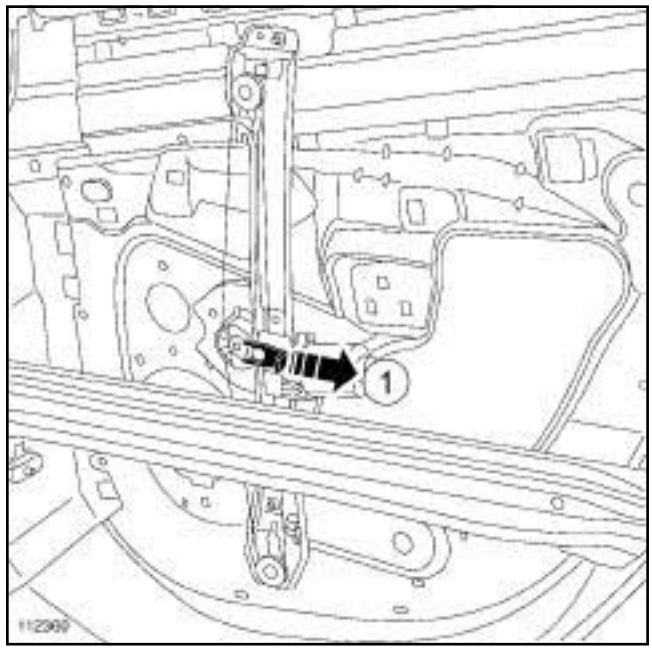
❑ Lower the window to access the sliding window clip (**1**) .



111949

❑ Remove the interior weatherstrip.

II - OPERATION FOR REMOVAL OF PART CONCERNED

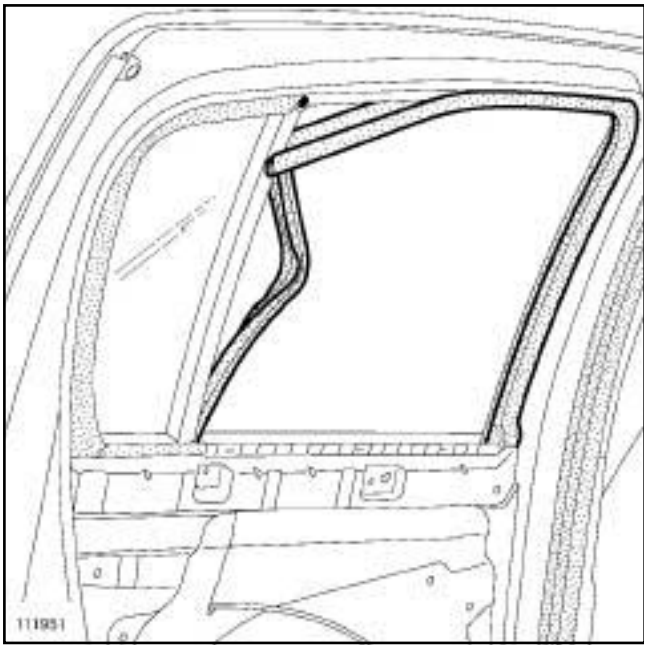


112360

❑ Remove the sliding window clip (**1**) .

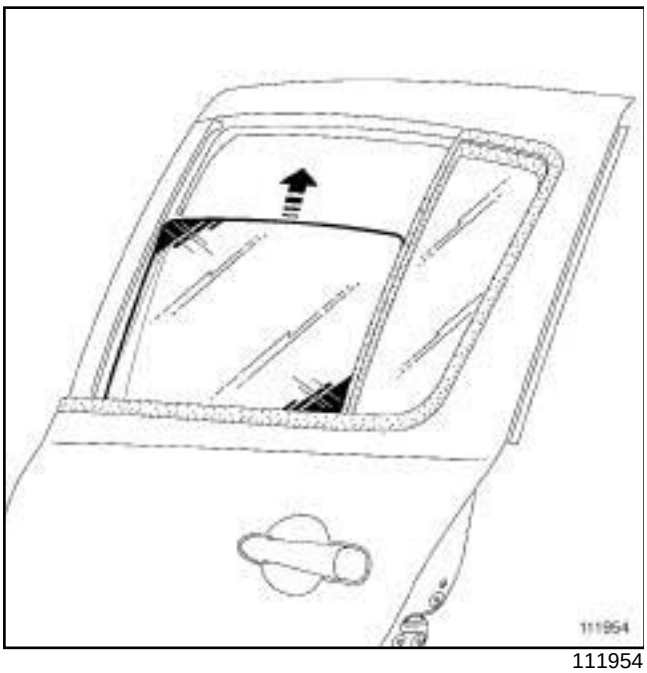
❑ Fit the window at the bottom of the door box section.

B85 or K85



111951

❑ Remove the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (MR 393, 66A, Window sealing).



111954

❑ Remove the rear side door's sliding window.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit:

- the rear side door's sliding window at the bottom of the door box section,
- the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (MR 393, 66A, Window sealing), take care not to damage the outer weatherstrip,
- the sliding window on the window winder mechanism.
- the sliding window clip.

❑ Carry out a function test.

II - FINAL OPERATION.

❑ Close the access flaps or replace (if the window is broken) the sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Door sealing).

❑ Refit:

- the interior weatherstrip,
- the rear door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

C85 or K85 or S85

REMOVAL

I - REMOVAL PREPARATION OPERATION

C85 or S85

❑ Remove:

- the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (71A, Body internal trim),
- the rear roof drip moulding trim (see **Side roof rail rear trim: Removal - Refitting**) (71A, Body internal trim),
- the upper trim of the C-pillar (see **C-pillar upper trim: Removal - Refitting**) (71A, Body internal trim).

K85

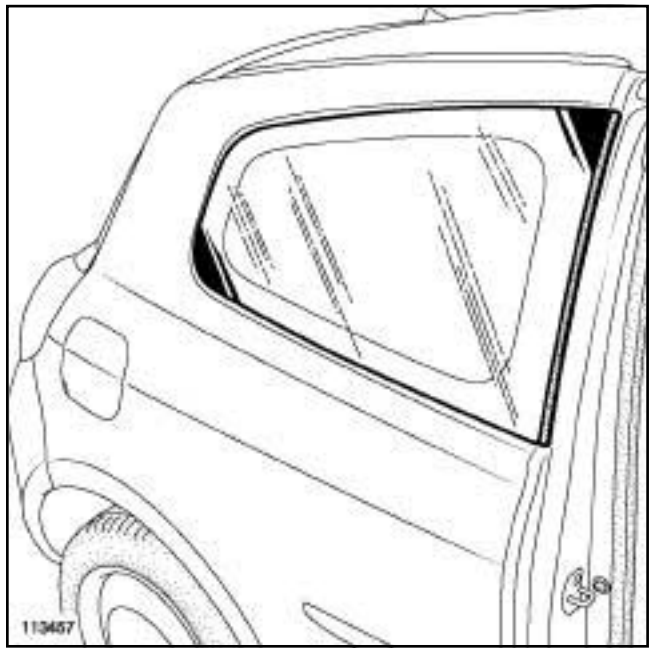
❑ Remove:

- the rear inner sill upper trim (see **Rear inner sill upper trim: Removal - Refitting**) (71A, Body internal trim),
- the rear parcel shelf side trim (see **Rear parcel shelf side trim: Removal - Refitting**) (71A, Body internal trim).

❑ Remove the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

C85 or S85



113457

❑

C85 or K85 or S85

K85

126642

❑

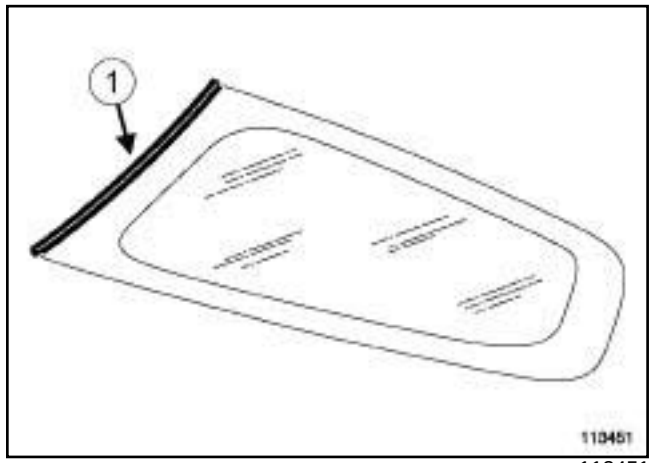
❑ Protect the edges of the quarter panel window using masking tape.

❑ Cut the cement bead (see **Technical Note 560A**).

REFITTING

I - REFITTING PREPARATION OPERATION

C85 or S85



113451

❑ Replace the seal (**1**) if necessary (if fitted to the vehicle).

❑ Always replace the stops.

❑ For preparation and bonding (see **Technical Note 560A**).

II - OPERATION FOR REFITTING PART CONCERNED

❑ Bond the rear quarter panel window.

❑ Equal out the clearances and shut lines.

❑ Remove the tabs from the stops when the adhesive has dried.

III - FINAL OPERATION.

❑ Refit the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (71A, Body internal trim).

C85 or S85

❑ Refit:

- the upper trim of the C-pillar (see **C-pillar upper trim: Removal - Refitting**) (71A, Body internal trim).
- the rear roof drip moulding trim (see **Side roof rail rear trim: Removal - Refitting**) (71A, Body internal trim),

C85 or K85 or S85

- the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (71A, Body internal trim).

K85

❑ Remove:

- the rear parcel shelf side trim (see **Rear parcel shelf side trim: Removal - Refitting**) (71A, Body internal trim),
- the rear inner sill upper trim (see **Rear inner sill upper trim: Removal - Refitting**) (71A, Body internal trim).

Rear side door fixed window: Removal - Refitting

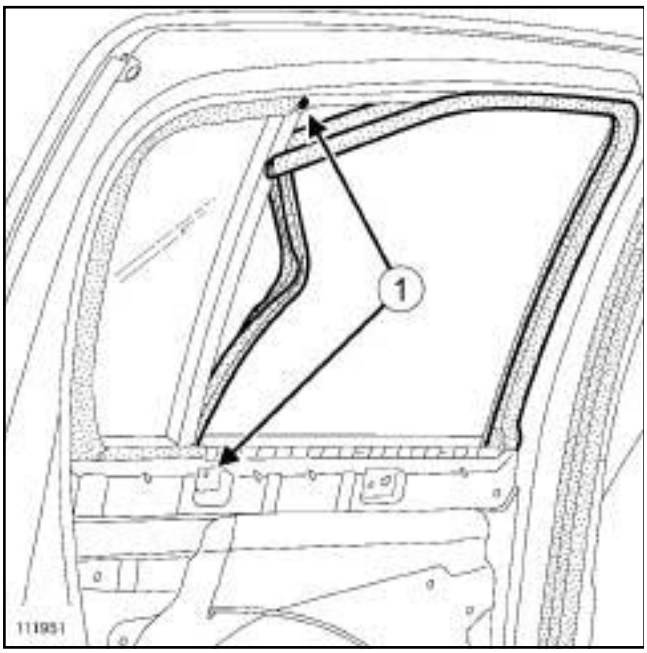
B85 or K85

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove

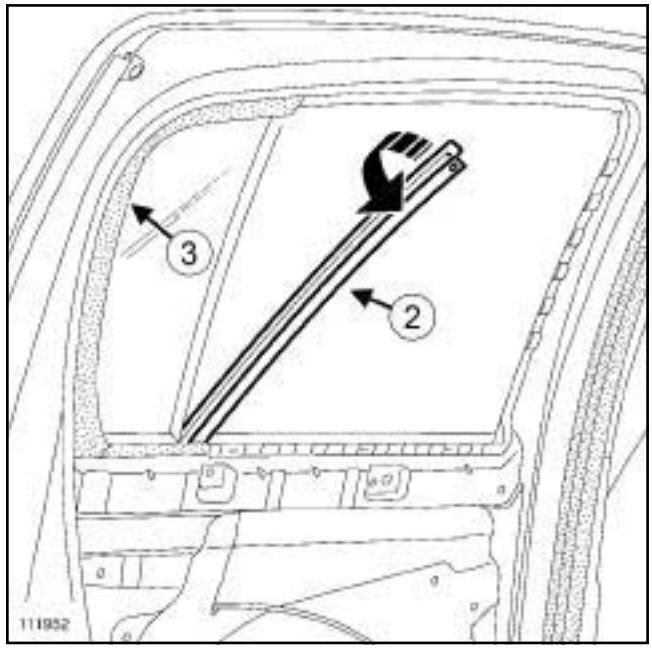
- Remove the rear door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),
- Remove the sliding window from the rear side door. (see **54A**, **Windows**, **Rear side door sliding window: Removal - Refitting**, page **54A-6**) .



111951

❑ Remove the rivets (**1**) using a 5 mm diameter drill bit.

❑ Retrieve any rivets that may have fallen into the door box section.



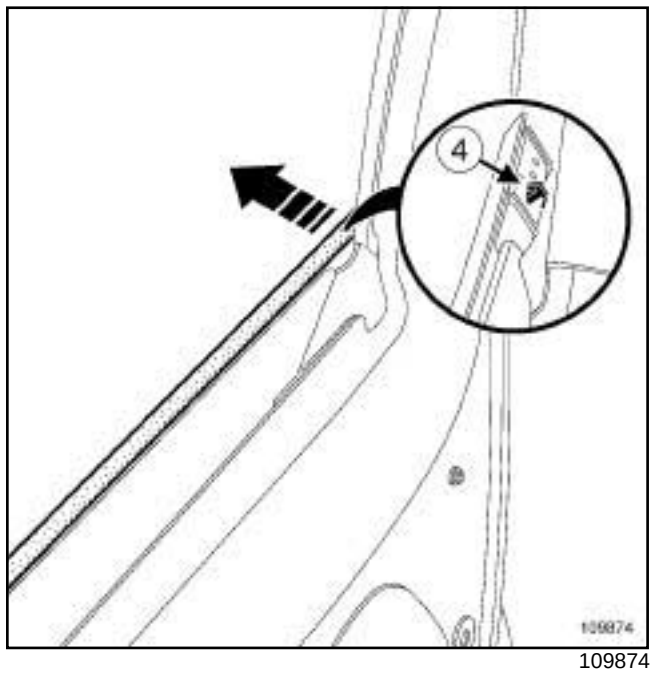
111952

❑ Remove the fixed upright channel (**2**) .

Note:

In the case of right-hand drive vehicles, unclip the fixed window clip underneath the seal at (**3**) .

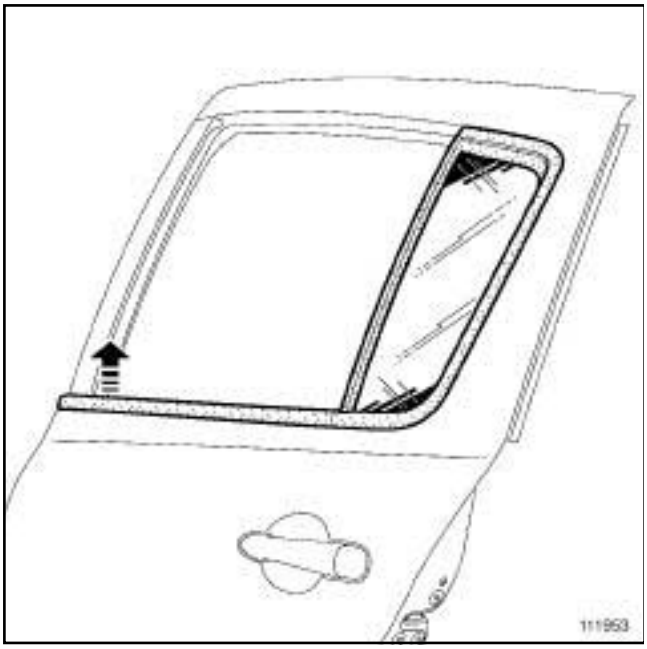
II - OPERATION FOR REMOVAL OF PART CONCERNED



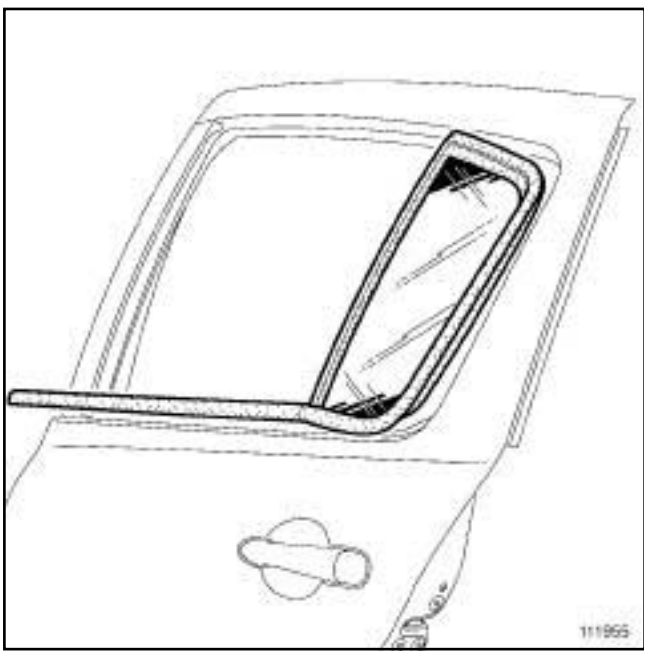
109874

❑ Unclip the clips (**4**) using a scratch awl or a small flat-blade screwdriver.

B85 or K85



111953



111955

❑ Remove the exterior weatherstrip - rear side door fixed window assembly.

❑ Release the fixed window from the frame seal.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the fixed window in the frame seal,
- the exterior weatherstrip - rear side door fixed window assembly.

II - FINAL OPERATION.

❑ Fit:

- the fixed upright channel,
- the rivets.

❑ Clip the exterior weatherstrip on to the door.

❑ Refit the sliding window in the rear side door (see **54A**, **Windows**, **Rear side door sliding window: Removal - Refitting**, page **54A-6**) .

❑ Refit the rear side door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim),
- the rear screen wiper arm (see **Rear screen wiper arm: Removal - Refitting**) (85A, Washing - Wiping),
- the rear screen wiper motor (see **Rear screen wiper motor: Removal - Refitting**) (85A, Washing - Wiping).

B85 or C85 or S85

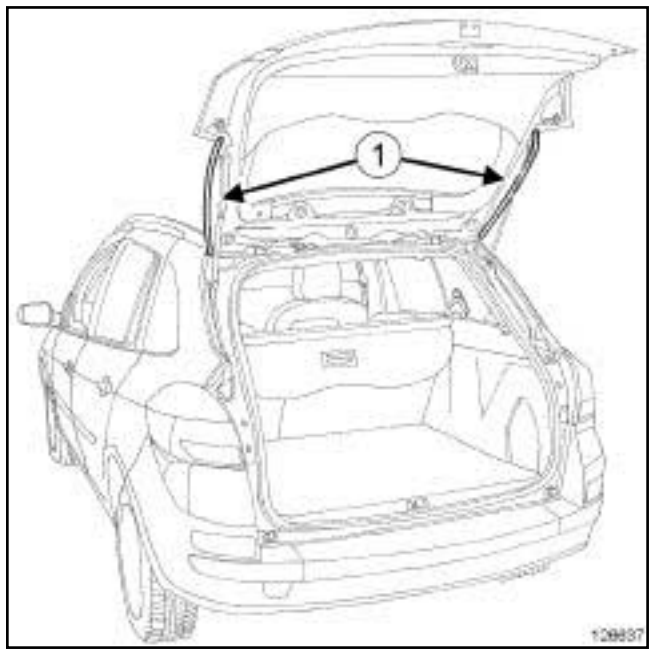
❑ Remove the high level brake light (see **3rd brake light: Removal - Refitting**) (81A, Rear lighting).

❑ Disconnect the de-icing connectors.

REAR SPOILER

❑ Remove the tailgate spoiler (see **56A**, **Exterior equipment**, **Tailgate spoiler: Removal - Refitting**, page **56A-3**) .

K85

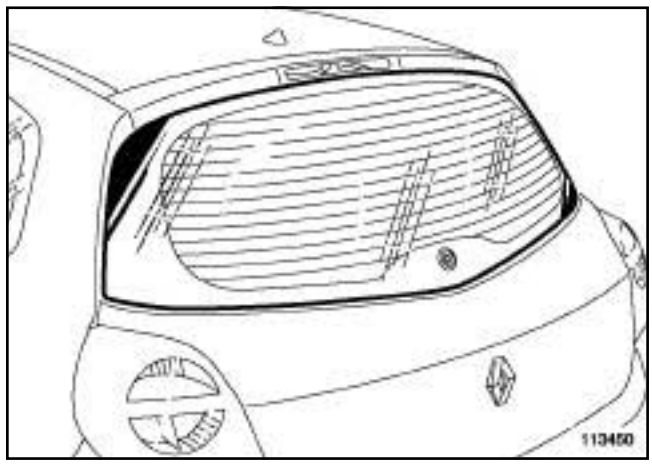


126637

❑ Remove the side seals (**1**) .

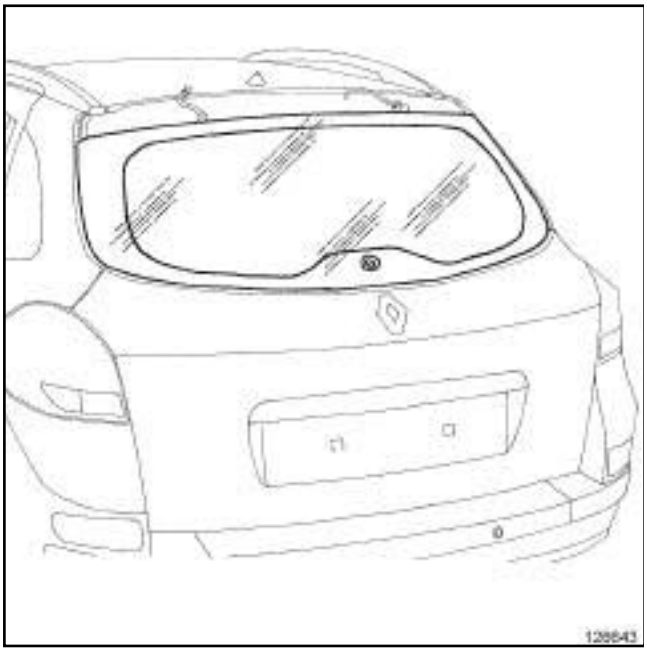
II - OPERATION FOR REMOVAL OF PART CONCERNED

B85 or C85 or S85


113450

❑

K85


126643

❑

❑ Protect the edges of the rear screen using masking tape.

❑ Cut the cement bead (see **Technical Note 560A**).

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Rear screen adjusting shim (50,04,12,03)**.

❑ Refit the rear screen wiper motor (see **Rear screen wiper motor: Removal - Refitting**) (85A, Wiping - Washing).

❑ For preparation and bonding (see **Technical Note 560A**).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Bond the rear screen (this operation requires two people).

❑ Equal out the clearances and shut lines.

❑ Remove the tabs from the stops once the adhesive has dried.

III - FINAL OPERATION

K85

❑ Refit the side seals (**1**) .

REAR SPOILER

❑ Refit the tailgate spoiler (see **56A**, **Exterior equipment**, **Tailgate spoiler: Removal - Refitting**, page **56A-3**) .

B85 or C85 or S85

❑ the high level brake light (see **3rd brake light: Removal - Refitting**) (81A, Rear lighting).

❑ Connect the de-icing connectors.

❑ Refit the rear screen wiper arm (see **Rear screen wiper arm: Removal - Refitting**) (85A, Wiping - Washing).

❑ Carry out a function test.

❑ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Protect the edges of the trim with masking tape.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

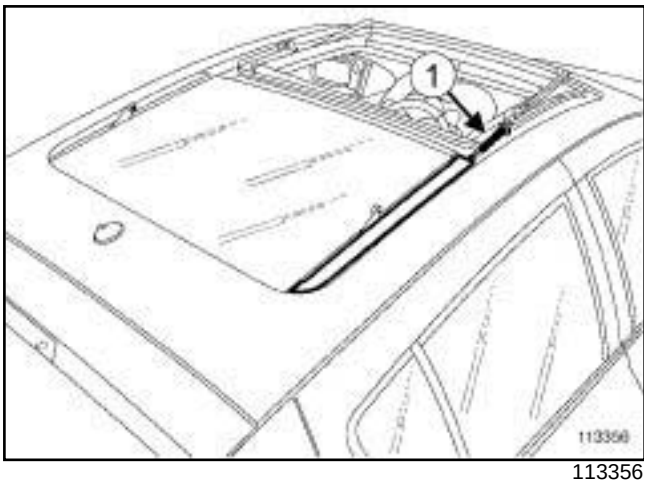
Note:

Fixed side trims may be removed in one of two ways, depending on the bonding method used (OE trim or replacement trim).

To know which method to use, perform a test, using the OE trim removal method, if cutting is too difficult, use the replacement trim removal method.

1 - Removing the side trim from the sunroof (OE component)

❑ Remove the sunroof's mobile panel (see **52A**, **Non-side opening element mechanisms**, **Sunroof mobile panel: Removal - Refitting**, page **52A-13**) .



113356

❑ Cut the cement bead using a flat chisel (**1**) slid between the sunroof operating mechanism and the trim.

2 - Removing the side trim from the sunroof (replacement component)

❑ Cut the cement bead using a cutting wire with two handles.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For preparation and bonding (see **Technical Note 560A, General window bonding procedure, Windows**).

II - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING

It is essential to use « high Modulus » adhesive for bonding the sunroof's side trim.

❑ Bond the trim.

❑ Respect the clearances and shut lines.

III - FINAL OPERATION

final operation in refitting the sunroof side trim (OE component)

❑ Refit the mobile panel to the sunroof (see **52A**, **Non-side opening element mechanisms**, **Sunroof mobile panel: Removal - Refitting**, page **52A-13**) .

❑ Initialise the sunroof motor (see **MR 394 Fault finding, 87D, Electric window - sunroof, Electric sunroof: Initialisation**).

Equipment required
Diagnostic tool

❑

IMPORTANT
Before carrying out any work on or near a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
It is forbidden to work on pyrotechnic systems (pretensioner or airbag) near a source of heat or a naked flame: there is a risk of the airbags or pretensioners being triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

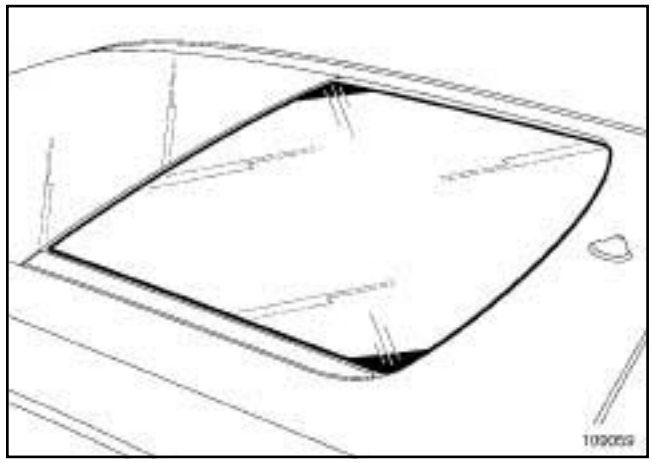
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Protect:

- the sunroof's fixed window surround and the rear section of the roof using masking tape,
- the inside of the vehicle.

II - OPERATION FOR REMOVAL OF PART CONCERNED


109059

❑ Begin cutting the cement bead.

❑ This operation requires two people.

❑ Remove the fixed window from the sunroof.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For preparation and bonding (see **Technical Note 560A, General procedure for bonding windows and sunroof**).

❑ Position the new positioning shims on the sunroof operating mechanism.

II - REFITTING OPERATION FOR PART CONCERNED

❑

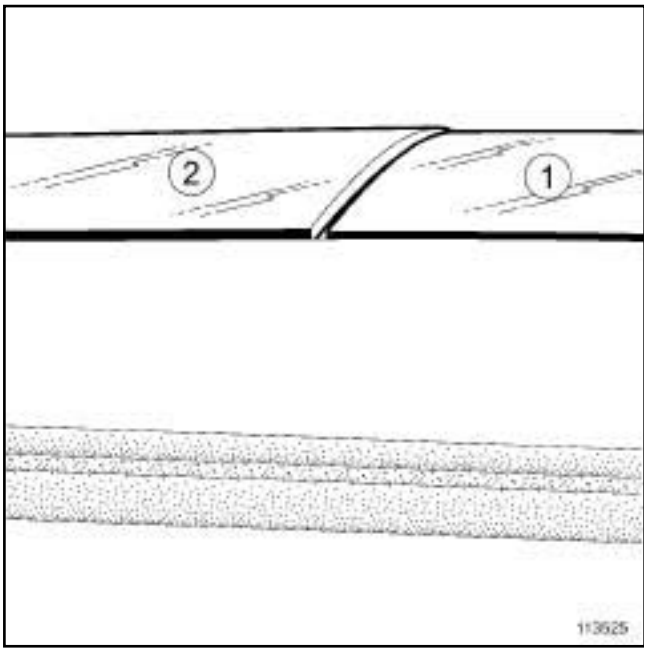
WARNING
It is essential to use high modulus adhesive for bonding the sunroof's fixed window.

❑ Bond the sunroof's fixed window using special tools:

- Support: **PARV 202**,
- Set of arch supports: **APARV ESP**.

❑ This operation requires two people.

Respect the clearances and shut lines



113525

- ❏ Observe the clearance between the sunroof's fixed window (**1**) and mobile panel (**2**) , (**8 mm**).
- ❏ The sunroof's fixed window (**1**) should be slightly lower than its mobile panel (**2**) .
- ❏ Arrange the lateral clearances so that they are equal.

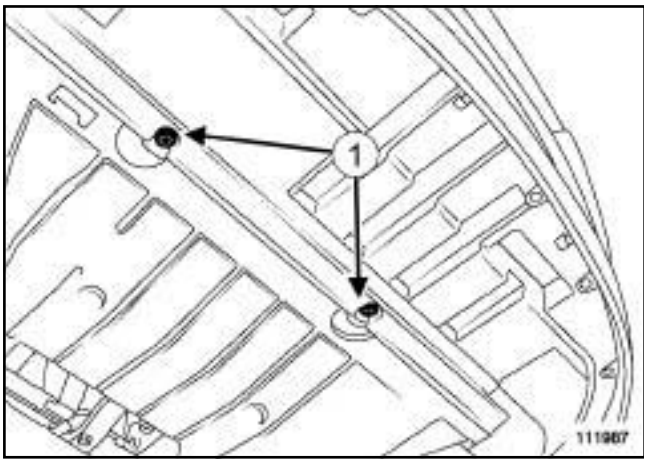
III - FINAL OPERATION.

- ❏ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).
- ❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

REMOVAL

I - REMOVAL PREPARATION OPERATION

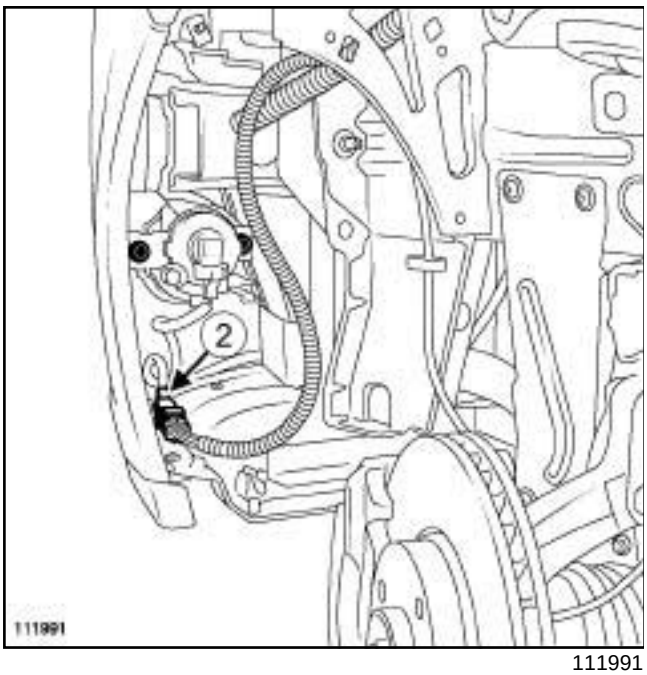
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR392, 02, Lifting equipment).



111987

❏ Remove:

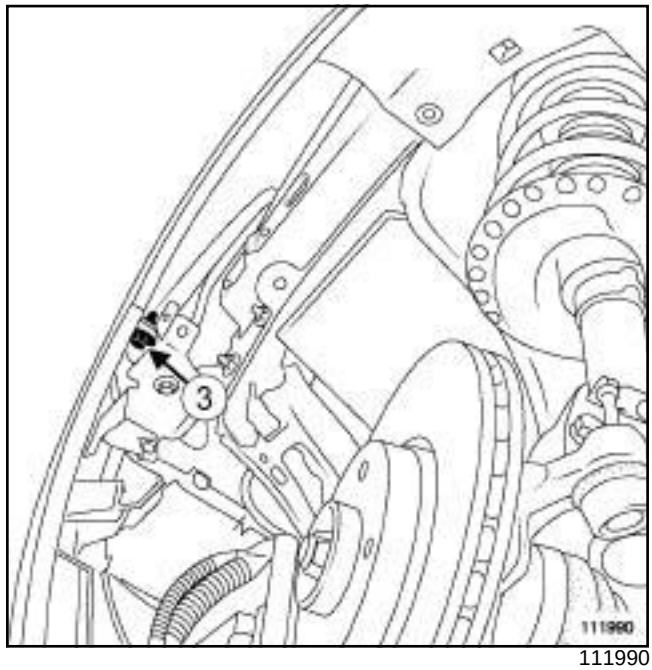
- the lower bolts (**1**) .
- the front parts of the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .



111991

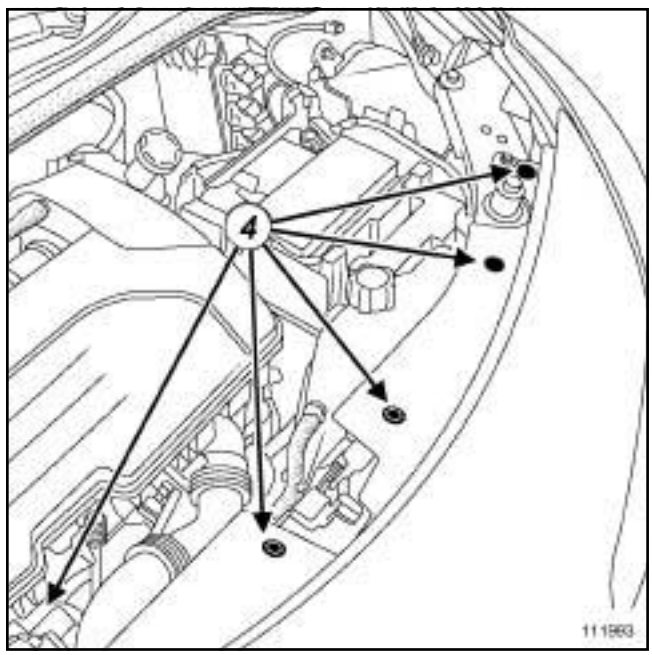
❏ Disconnect the connector (**2**) (depending on equipment level).

II - OPERATION FOR REMOVAL OF PART CONCERNED



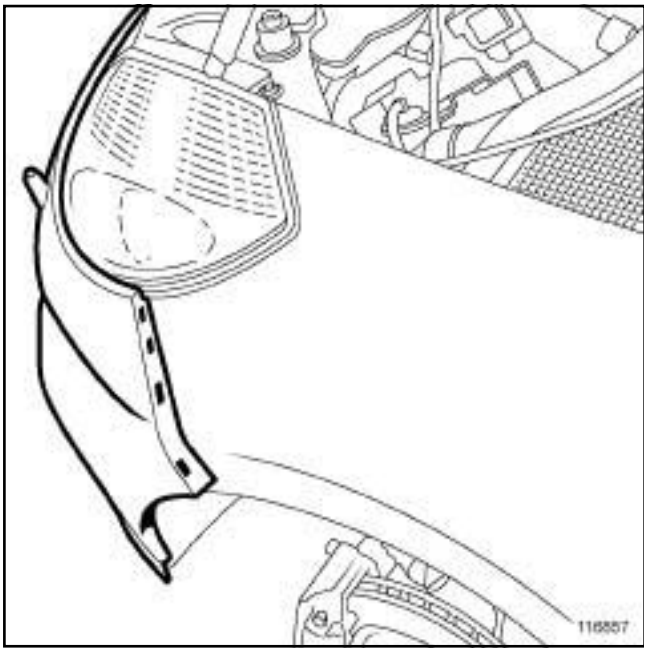
111990

❏ Remove the bolts (**3**) .



111993

❏ Remove the bolts and clips (**4**) .



116857

❏ Unclip the side sections of the front bumper.

❏ Remove the front bumper unit (this operation requires two people).

❏ Disconnect the headlight washer jet supply (depending on equipment level).

REFITTING

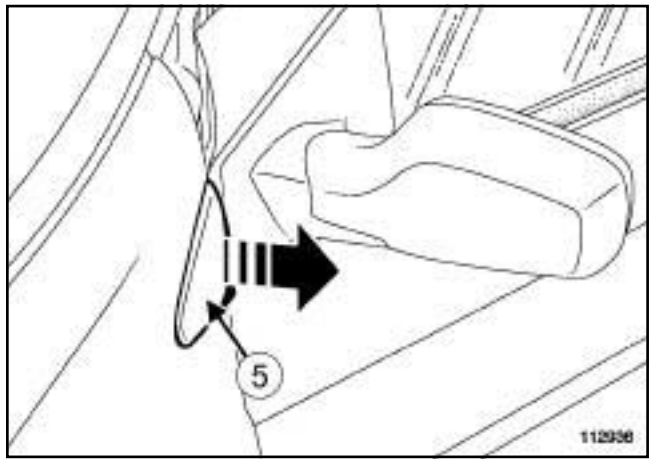
I - REFITTING PREPARATION OPERATION

❏

Note:

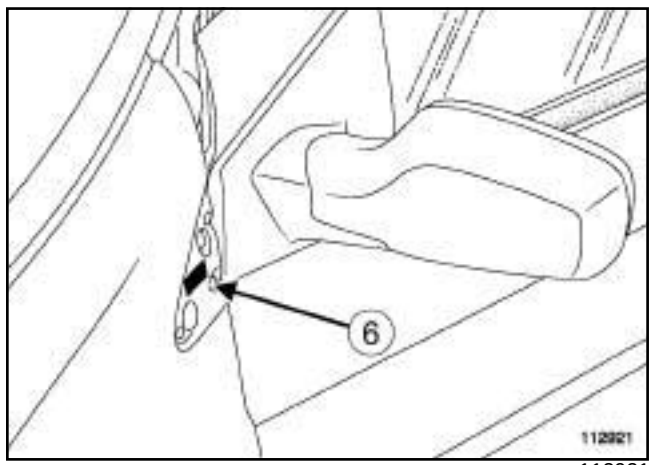
During a replacement operation, order the front bumper according to the mark ***(6)*** on the front wing of the vehicle:

- tyre size smaller than or equal to **185** = mark on front wing ***(6)*** which reads **185**,
- tyre size **195** = mark on front wing ***(6)*** which reads **195**.



112936

❏ Unclip the trim (**5**) .



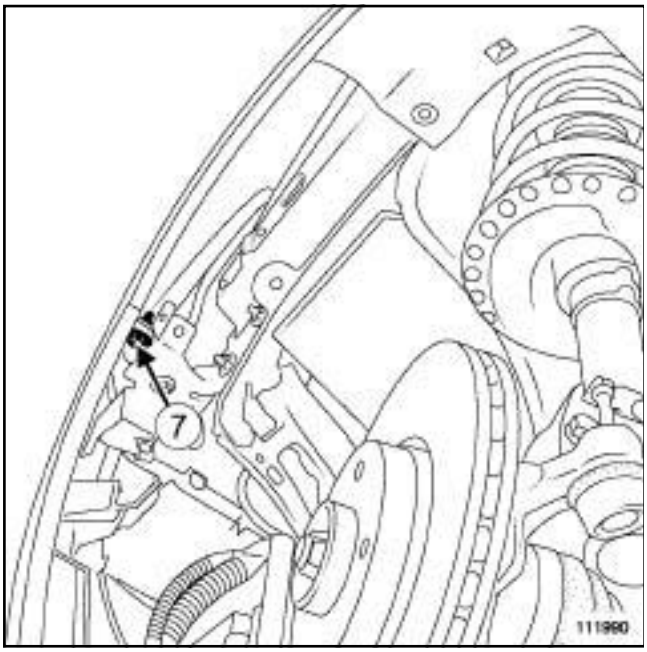
112921

❏ Check the tyre size (**6**) .

II - REFITTING OPERATION FOR PART CONCERNED

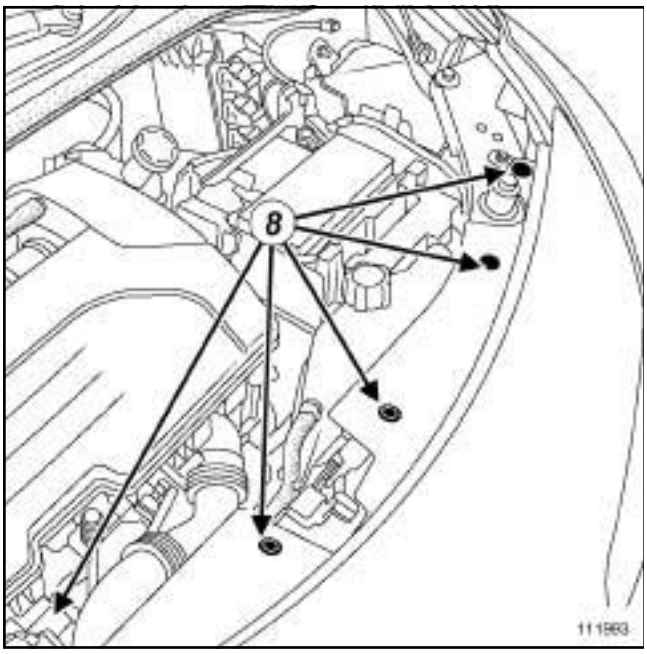
❏ Reconnect the headlight washer jet supply (depending on equipment level).

❏ Refit the front bumper unit (this operation requires two people).



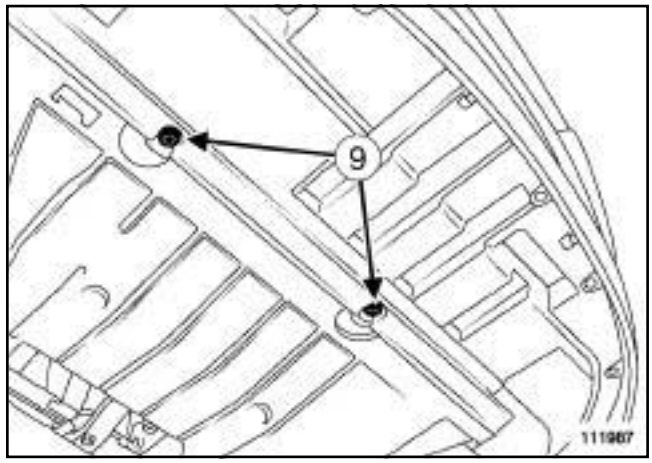
111990

❏ Refit the bolts (**7**) .



111993

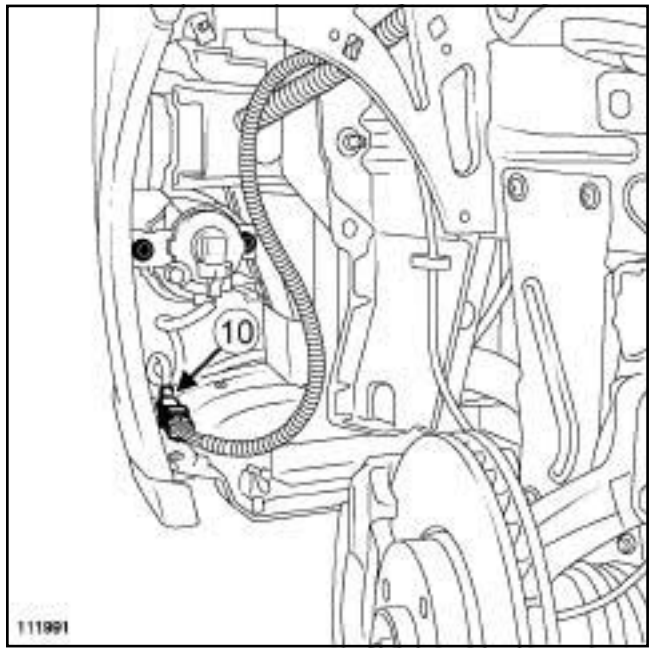
❏ Refit the bolts and clips (**8**) .



111987

❏ Refit the bolts (**9**) .

III - FINAL OPERATION.



111991

❏ Reconnect the connector (**10**) (depending on equipment level).

❏ Test all of the functions with a function test (depending on equipment level).

❏ Refit the front parts of the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

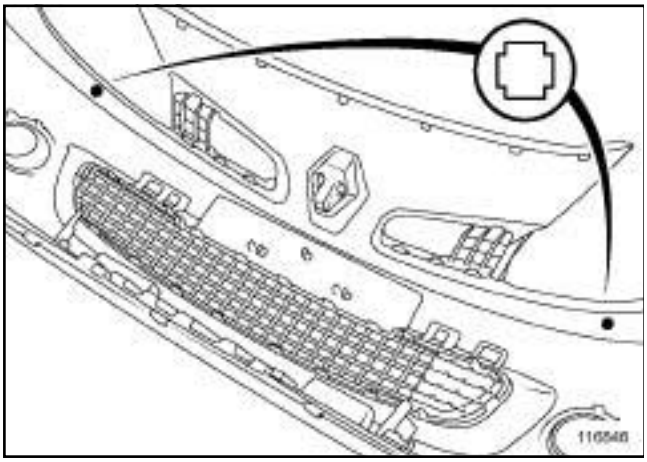
HEADLIGHT WASHERS WITH BLADE

ADAPTATION

❑

Note:

When a front bumper is replaced, the replacement part needs to be modified before it is painted so that the headlight washer jets can be fitted.



116846

❑ Make the conversion using the special tool (part no: **77 11 419 232**).

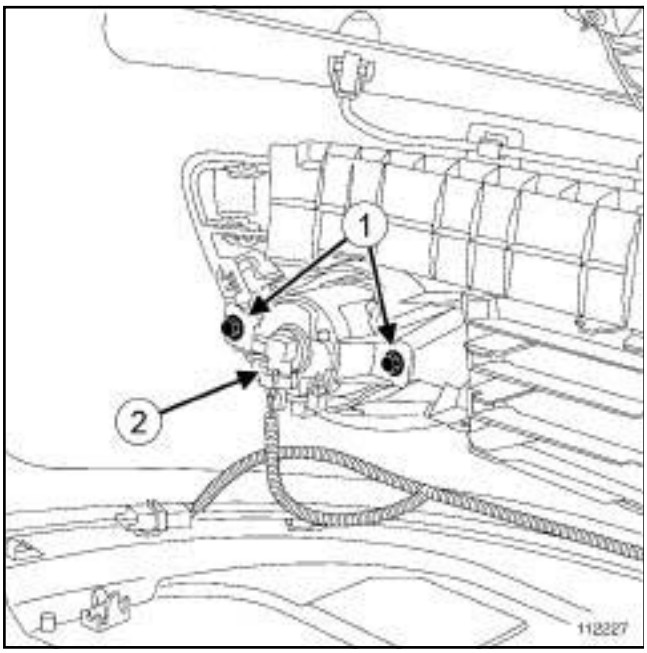
EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1

STRIPPING

I - STRIPPING PREPARATION OPERATION

❏ Remove the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED



112227

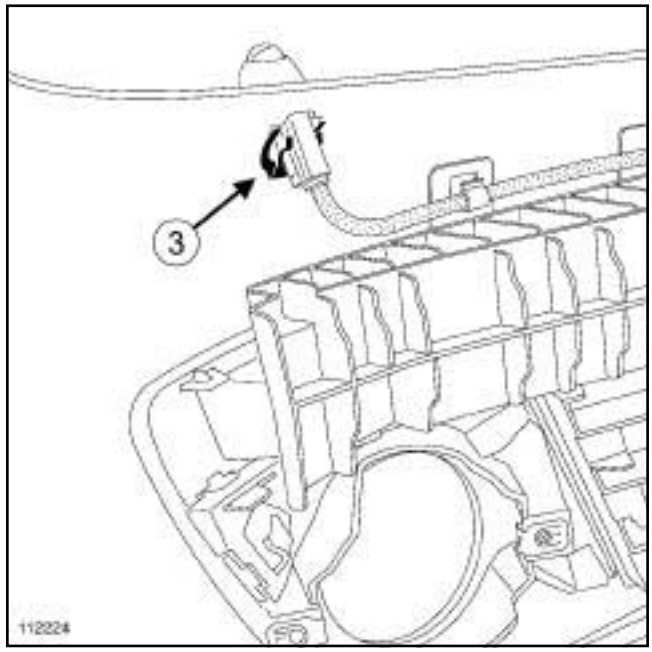
❏ Remove the bolts (**1**) .

❏ Disconnect the connectors (**2**) .

❏ Remove the fog lights.

❏ Note the wiring harness position.

❏ Remove the wiring harness.

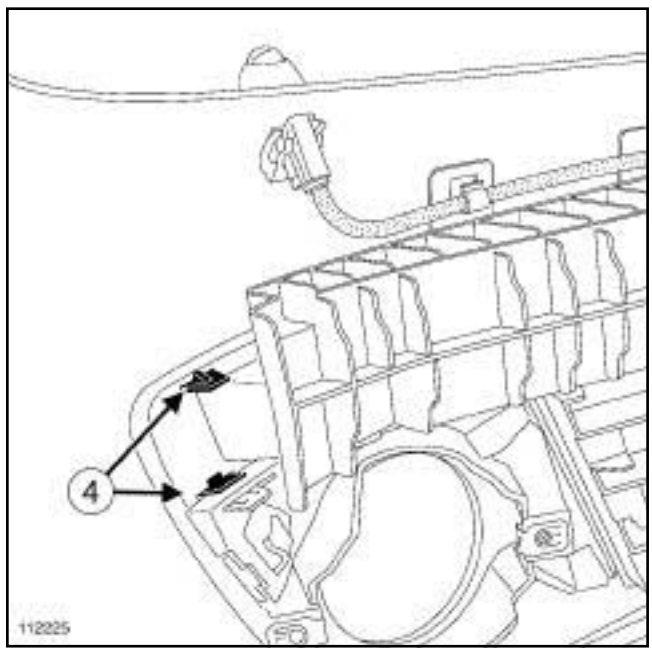


112224

❏ Unclip the clips (**3**) .

❏ Remove the headlight washer jets (depending on the equipment level).

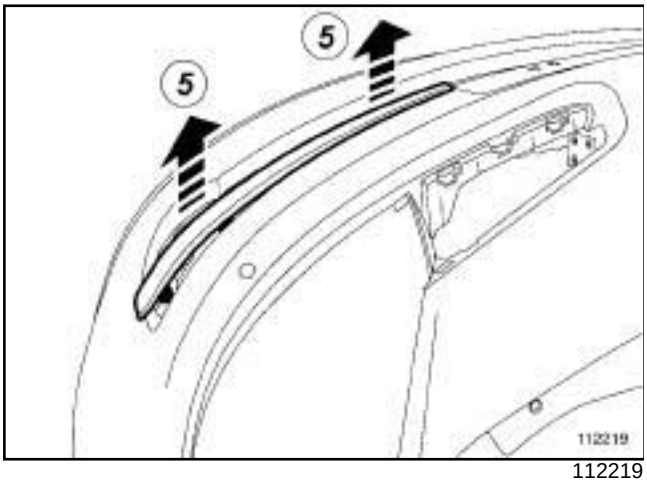
❏ Note the position of the headlight washer jet pipes (depending on equipment level).



112225

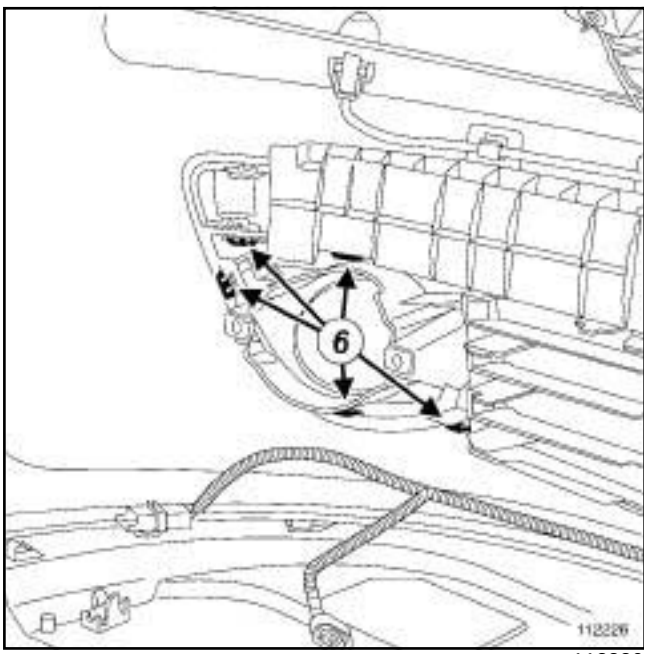
❏ Unclip the clips (**4**) .

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1



112219

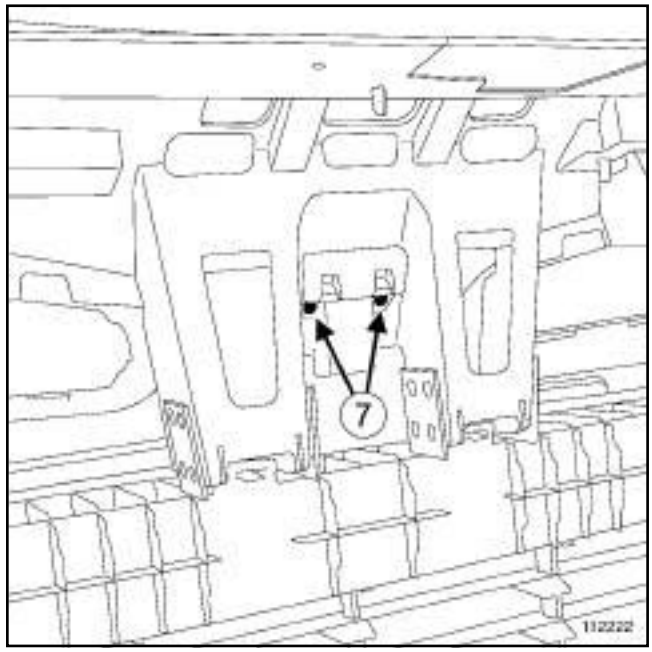
❏ Unclip the impact strips (**5**) .



112226

❏ Unclip:

- the clips (**6**) ,
- the fog light supports.

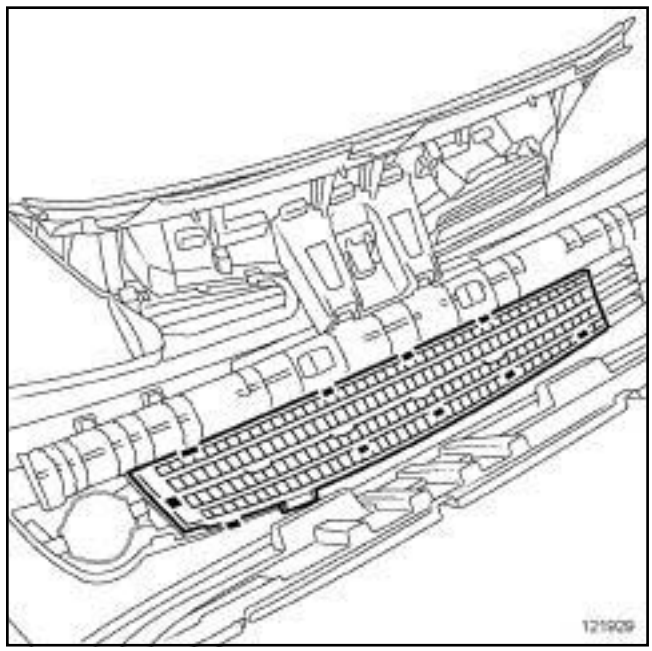


112222

❏ Remove:

- the bolts (**7**) ,
- the front badge.

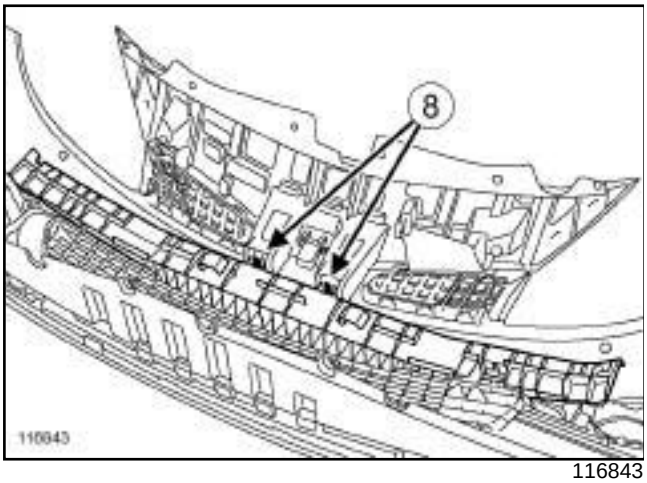
hot climate vehicle



121929

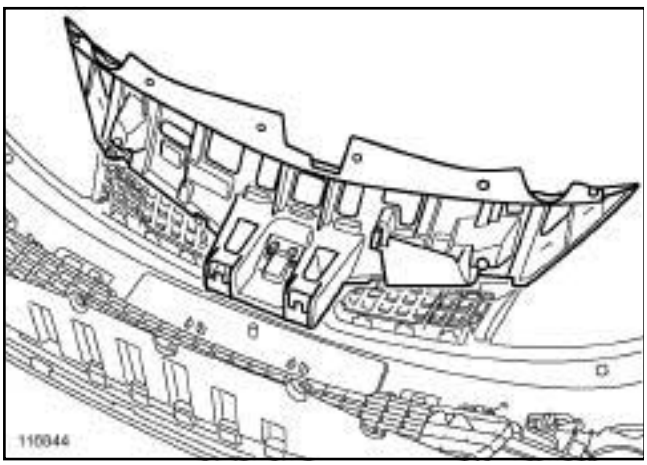
❏ Unclip the stone guard grille.

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1



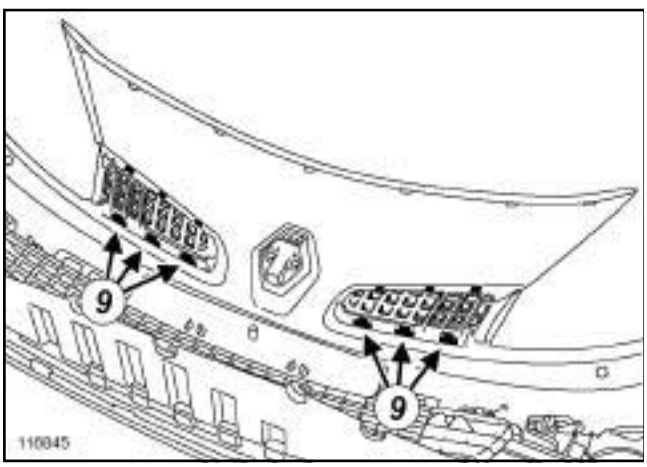
116843

❏ Unclip the absorber (**8**) .



116844

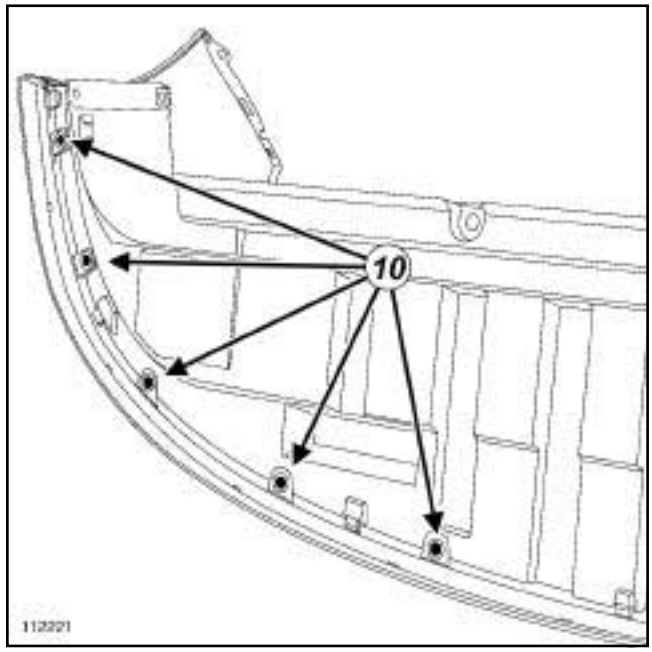
❏ Unclip the stiffener.



116845

❏ Unclip the radiator half-grilles (**9**) .

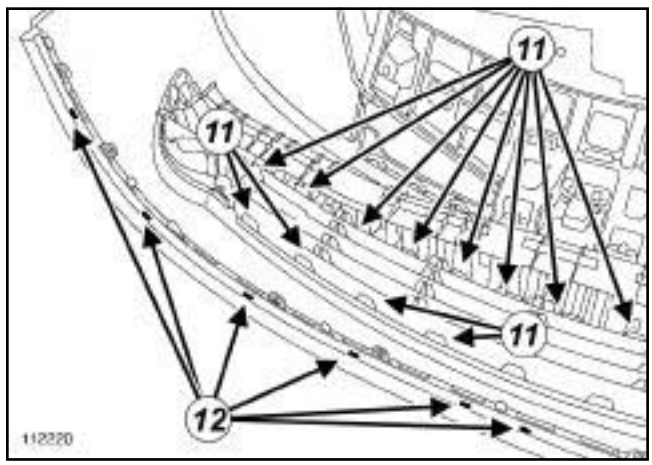
❏ Remove the radiator half-grilles.



112221

❏ Drill out rivets (**10**) .

❏ Remove the sump.



112220

❏ Unclip the clips (**11**) .

❏ Remove the front bumper bottom grille.

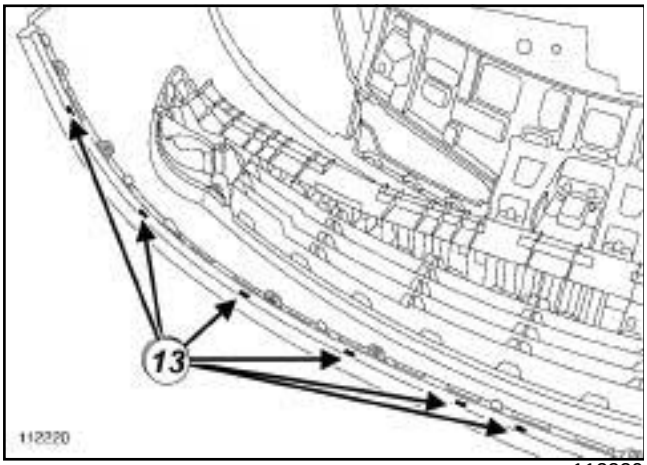
❏ Unclip the clips (**12**) .

❏ Remove the lower trim.

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED



112220

❏ Position the lower trim strip.

❏ Drill a hole at the position (**13**) of each of the clips using a **4.5 mm** drill bit.

❏ Rivet the lower trim.

❏ Refit the lower cover.

❏ Insert rivets into the lower cover.

❏ Clip in the lower grille.

❏ Refit the fog light supports.

❏ Clip on:

- the clips ***(6)*** ,
- the impact strips,
- the radiator half-grilles,
- the stiffener,
- the absorber,
- the stone guard grille (hot climate vehicle).

❏ Refit:

- the front badge,
- the bolts ***(7)*** ,
- the headlight washer jets (depending on the equipment level),
- the clips ***(3)*** (depending on the equipment level),
- the headlight washer jet pipes (depending on the equipment level),
- the fog light wiring harness (depending on the equipment level),
- the fog lights (depending on the equipment level),
- the bolts ***(1)*** .

❏ Connect the connectors.

II - FINAL OPERATION.

❏ Refit the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

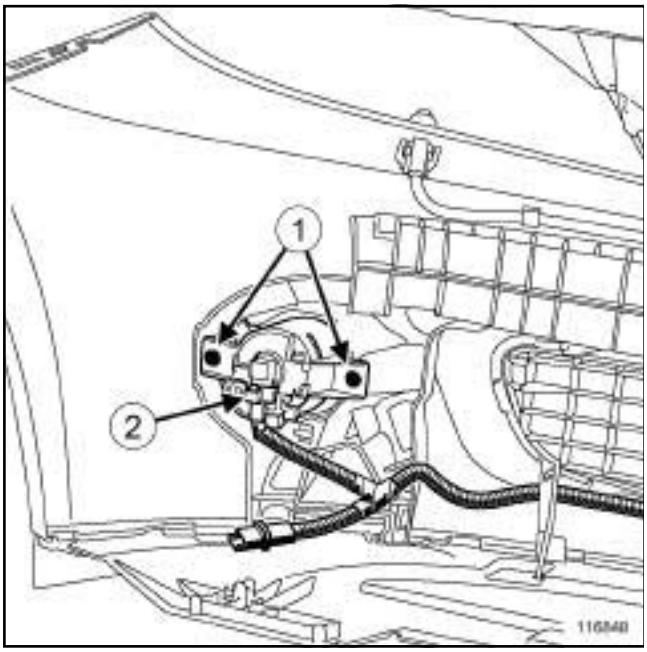
EQUIPMENT LEVEL SPORT, and DOCUMENTATION PHASE 1

STRIPPING

I - STRIPPING PREPARATION OPERATION

❑ Remove the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED



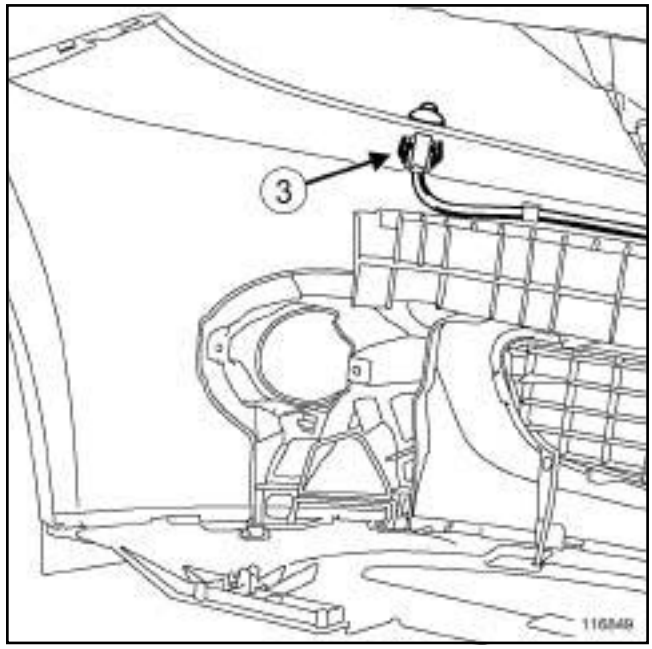
❑ Remove the bolts (**1**) .

❑ Disconnect the connectors (**2**) .

❑ Remove the fog lights.

❑ Note the wiring harness position.

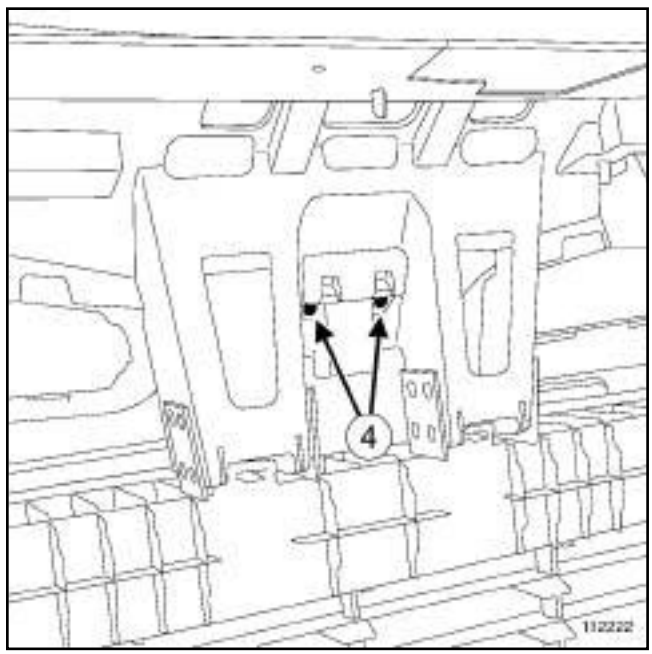
❑ Remove the wiring harness.



❑ Unclip the clips (**3**) .

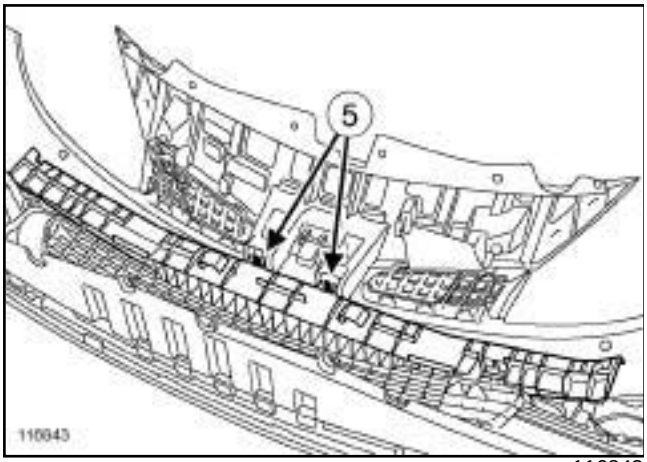
❑ Remove the headlight washer jets.

❑ Store the position of the headlight washer pipes.



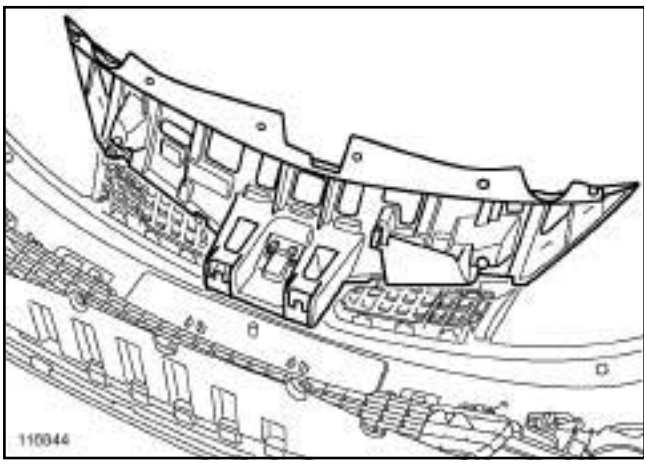
❑ Remove the bolts (**4**) .

❑ Remove the front badge.



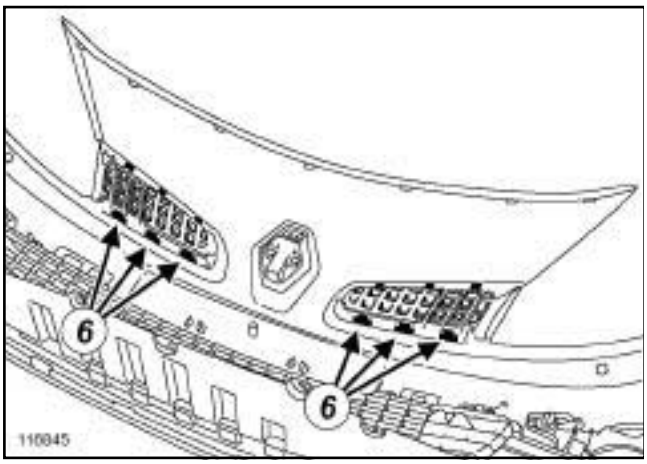
116843

❏ Unclip the absorber (**5**) .



116844

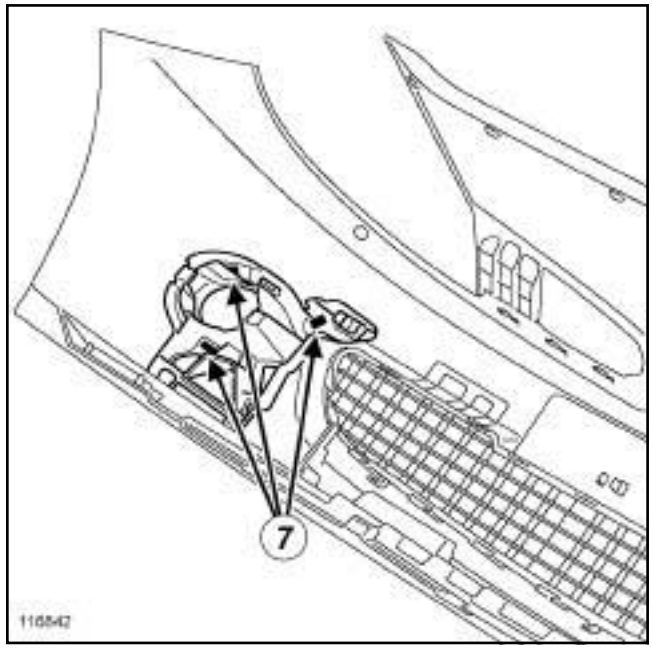
❏ Unclip the stiffener.



116845

❏ Unclip the radiator half-grilles (**6**) .

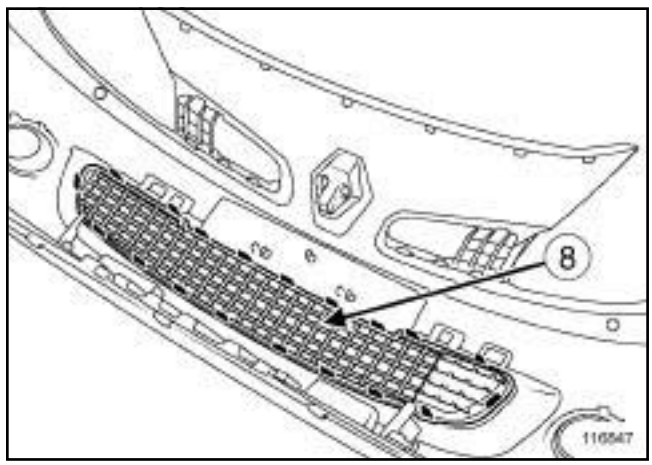
❏ Remove the radiator half-grilles.



116842

❏ Unclip:

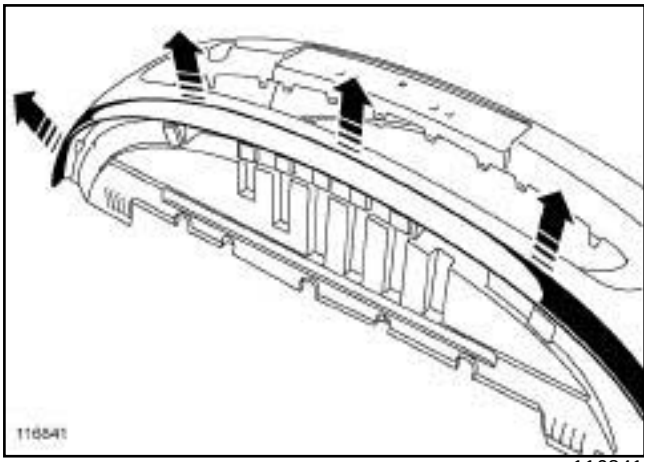
- the clips (**7**) ,
- the fog light supports.



116847

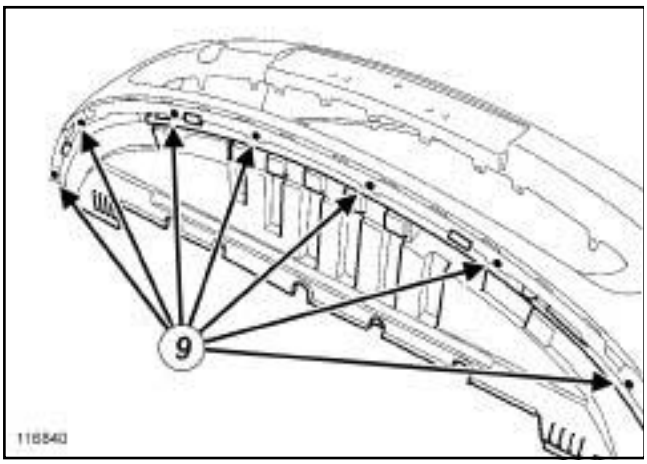
❏ Unclip the clips.

❏ Remove the lower grille (**8**) .



116841

❏ Unclip the lower trim piece.



116840

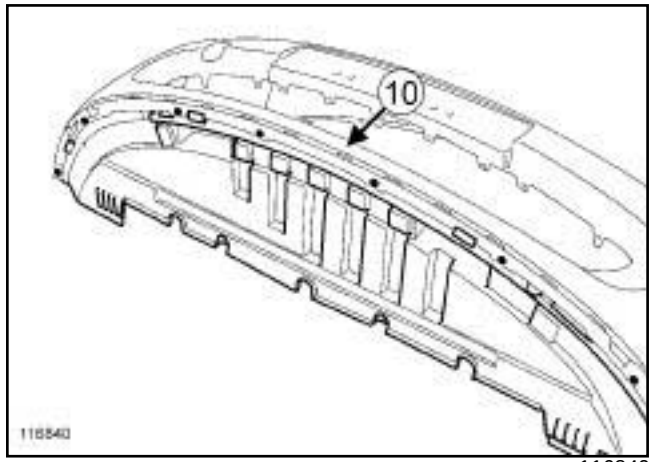
❏ Drill out the rivets (**9**) .

❏ Remove the sump.

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❏ Refit and rivet the lower cover.



116840

❏ Clip:

- the lower trim strip starting with the centre of the part (**10**) ,
- the lower grille.

❏ Refit the fog light supports.

❏ Clip:

- the clips ***(7)*** ,
- the radiator half-grilles,
- the stiffener,
- the absorber.

❏ Refit:

- the front badge,
- the bolts ***(4)*** ,
- the headlight washer jets,
- the clips ***(3)*** ,
- the fog light wiring harness,
- the fog lights,
- the bolts ***(1)*** .

❏ Connect the connectors.

II - FINAL OPERATION

❏ Refit the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

EQUIPMENT LEVEL EAG

Equipment required
rivet gun

STRIPPING

I - STRIPPING PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED

❏ Remove:

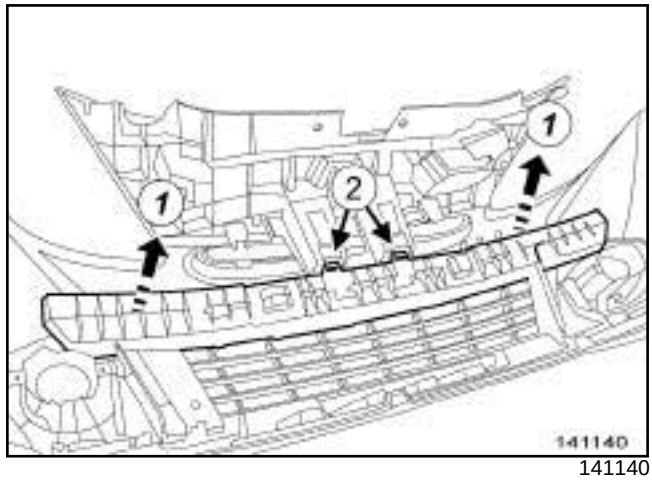
- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring),
- the front fog lights (see **Front fog light: Removal - Refitting**) (80B, Headlights).

HEADLIGHT WASHERS WITH BLADE

❏ Remove the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (85A, Wiping - Washing).

❏ Mark the position of the headlight washer jet pipe on the front bumper.

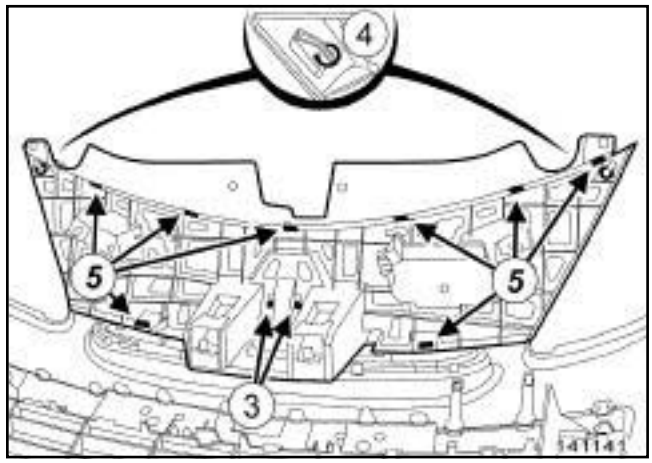
❏ Remove the headlight washer jet pipe from the front bumper.



141140

❏ Unclip the absorber at (**1**) by pressing the clips (**2**) .

❏ Remove the absorber.



141141

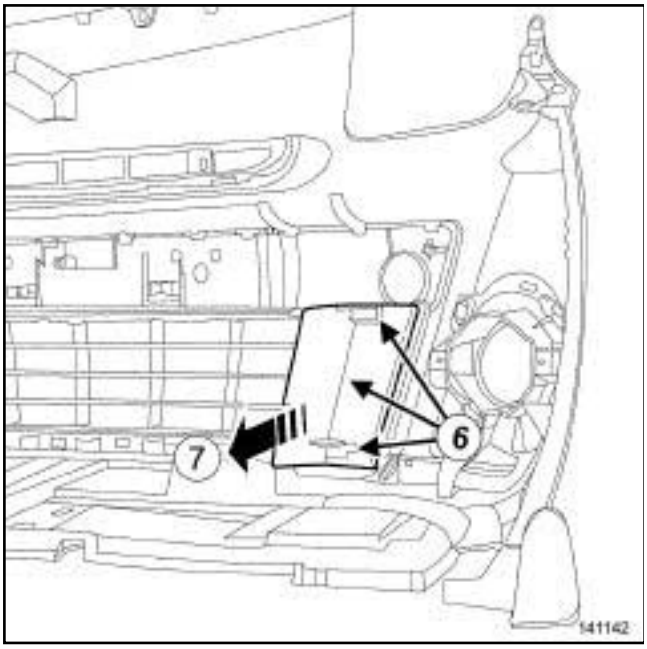
❏ Remove the front badge bolts (**3**) .

❏ Cut the front bumper clips (**4**) .

❏ Unclip:

- the front badge,
- the stiffener by pressing the clips (**5**) .

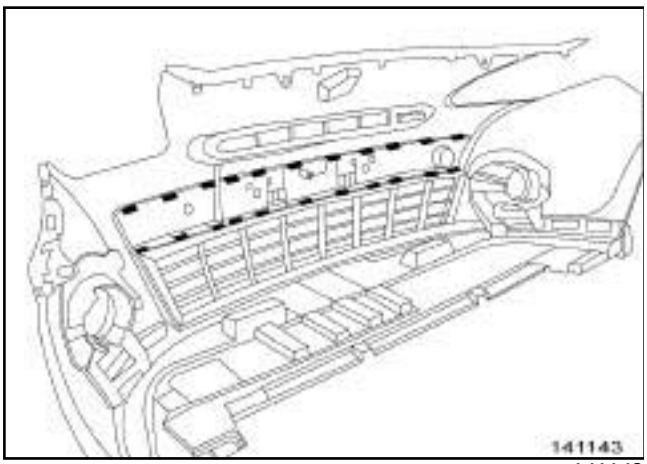
EQUIPMENT LEVEL EAG



141142

❏ Unclip the blanking covers by pressing the clips (**6**) .

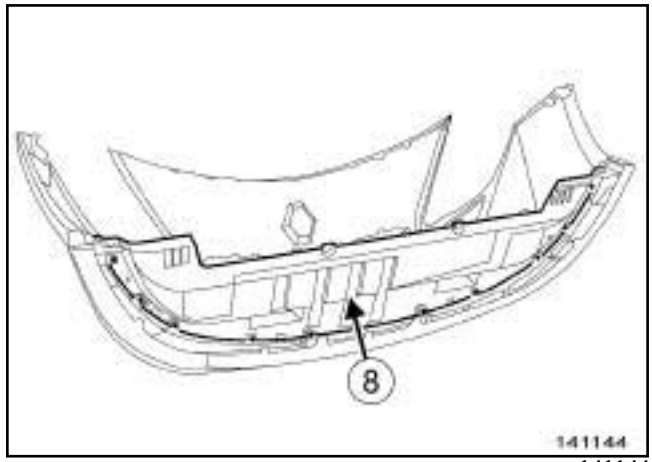
❏ Remove the blanking covers at (**7**) .



141143

❏ Unclip the impact strips by pressing the clips.

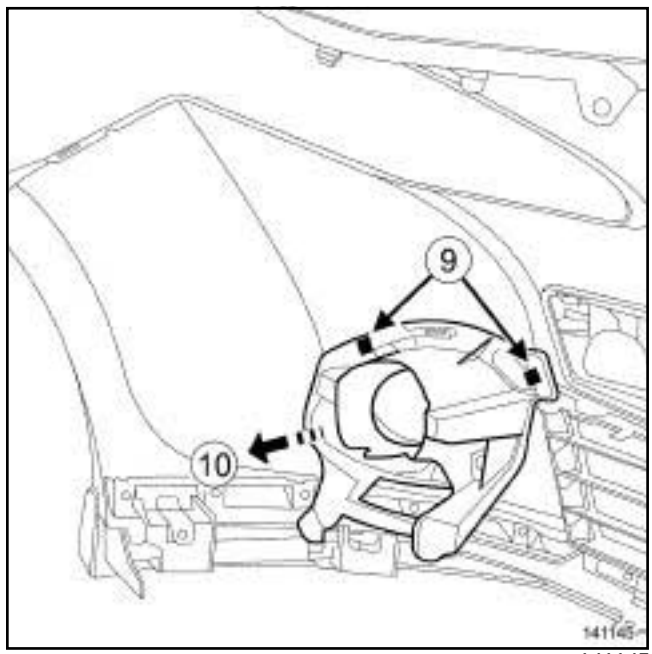
❏ Remove the impact strips from the front of the front bumper, starting with the side impact strips.



141144

❏ Drill the rivets out.

❏ Remove the diffuser (**8**) .

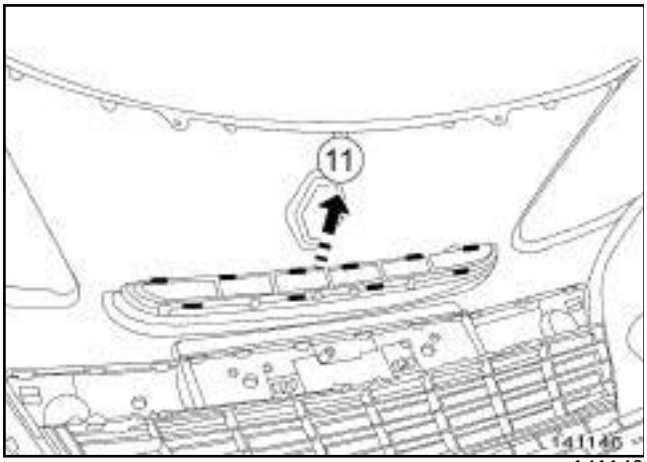


141145

❏ Remove:

- the front fog light mounting clips (**9**) ,
- the front fog light mountings at (**10**) .

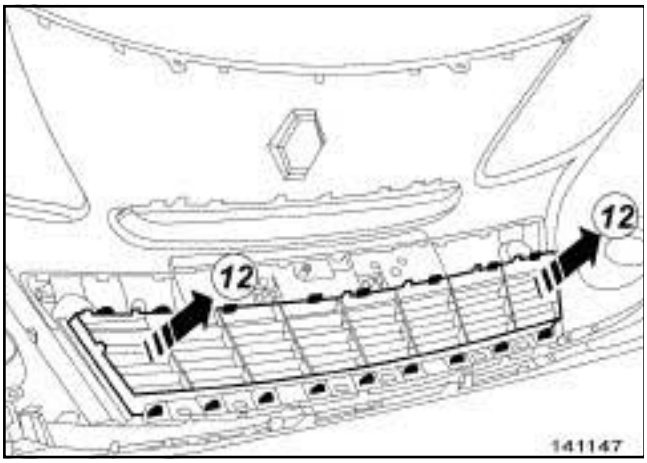
EQUIPMENT LEVEL EAG



141146

❏ Unclip the upper radiator grille by pressing the clips.

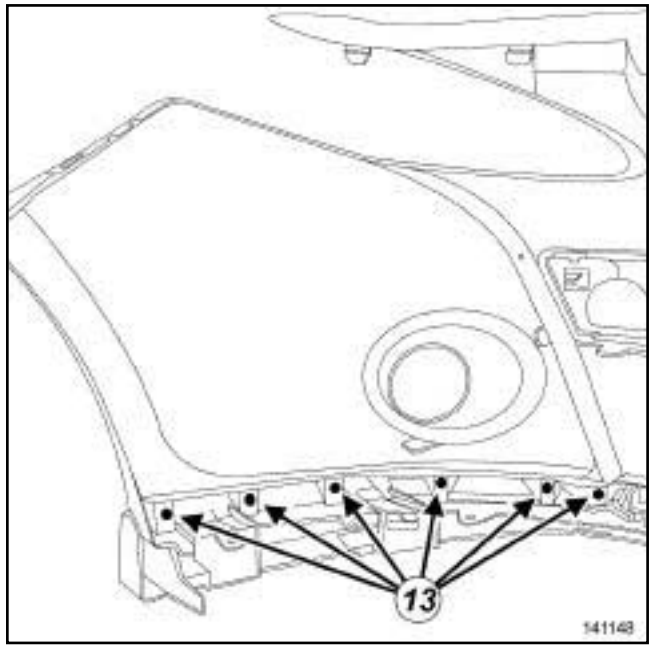
❏ Remove the upper radiator grille at (**11**) .



141147

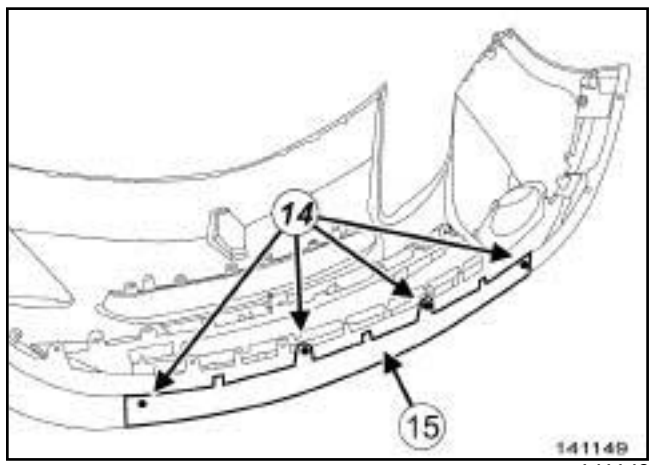
❏ Unclip the lower radiator grille by pressing the clips.

❏ Remove the lower radiator grille at (**12**) .



141148

❏ Remove the bolts (**13**) from the side spoilers.

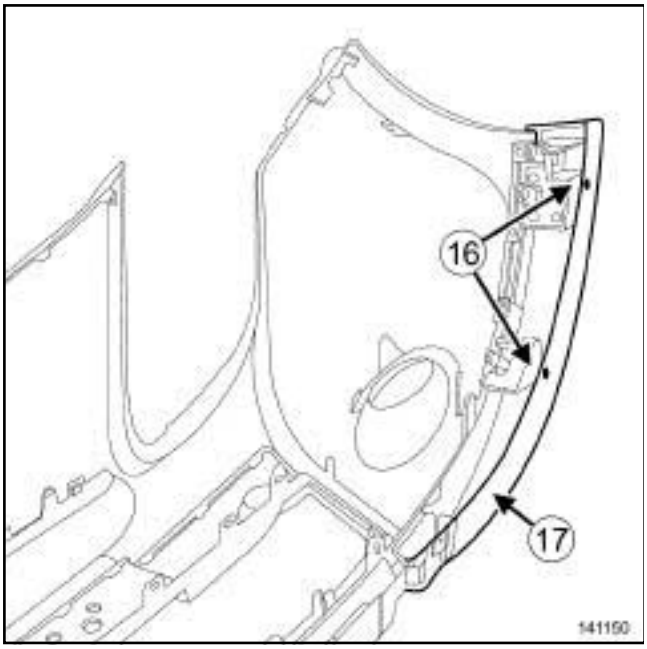


141149

❏ Drill out the rivets (**14**) .

❏ Remove the centre spoiler (**15**) .

EQUIPMENT LEVEL EAG

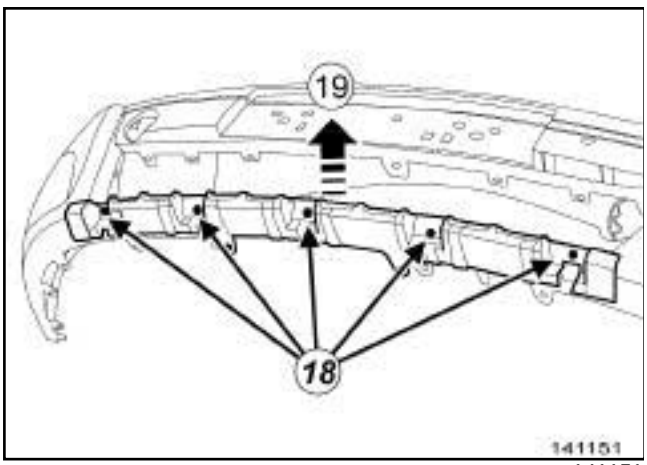


141150

❏ Drill out the rivets of the side spoilers (**16**) .

❏ Remove:

- the side spoilers (**17**) ,
- the side spoiler mountings.



141151

❏ Drill out the rivets (**18**) .

❏ Remove the centre spoiler mounting at (**19**) .

REBUILDING

I - REBUILDING PREPARATION OPERATION

❏ **parts always to be replaced: front bumper rivet (50,05,02,18)**.

❏ **parts always to be replaced: Front bumper clip (50,05,02,17)**.

❏ Check the clips of the front fog light mountings, and replace them if necessary.

II - REBUILDING OPERATION FOR PART CONCERNED

❏ Refit and rivet the centre spoiler mounting using the **rivet gun**.

❏ Refit the side spoiler mountings.

❏ Refit and rivet using the **rivet gun** :

- the side spoilers,
- the centre spoiler.

❏ Clip:

- the lower radiator grille,
- the upper radiator grille.

❏ Refit the front fog light mountings.

❏ Refit and rivet the diffuser using the **rivet gun**.

❏ Clip:

- the impact strips on the front bumper,
- the blanking covers,
- the stiffener,
- the front badge.

❏ Attach the stiffener using new front bumper clips.

❏ Refit the front badge bolts.

❏ Clip the absorber into place.

HEADLIGHT WASHERS WITH BLADE

❏ Refit:

- the headlight washer jet pipe on the bumper as marked before removal,
- the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (85A, Wiping - Washing).

❏ Refit:

- the front fog lights (see **Front fog light: Removal - Refitting**) (80B, Headlights),
- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring).

EQUIPMENT LEVEL EAG

III - FINAL OPERATION

❑ Refit:

- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) ,
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2

STRIPPING

I - STRIPPING PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED

FOG LIGHTS

❏ Remove:

- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring),
- the front fog lights (see **Front fog light: Removal - Refitting**) (85A, Wiping - Washing).

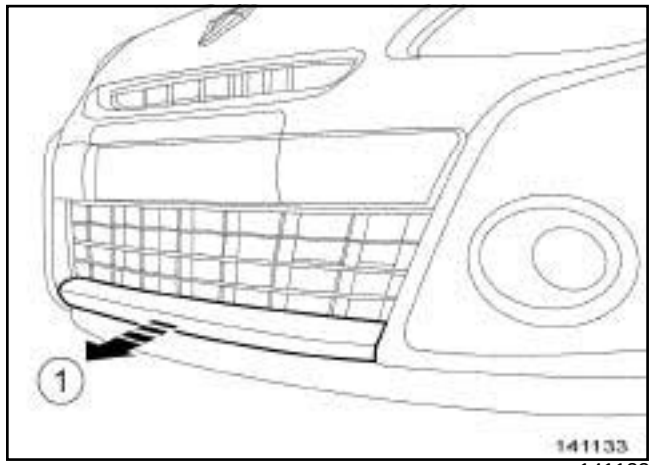
FOG LIGHTS, and HEADLIGHT WASHERS WITH BLADE

❏ Remove the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (80B, Headlights).

❏ Mark the position of the headlight washer jet pipe on the front bumper.

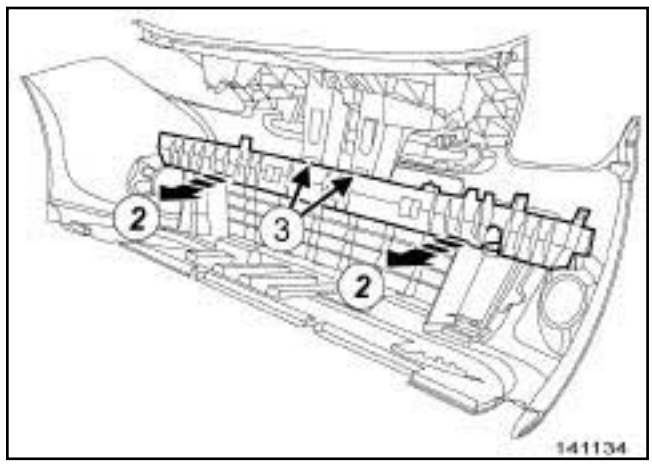
❏ Remove the headlight washer jet pipe from the front bumper.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5



141133

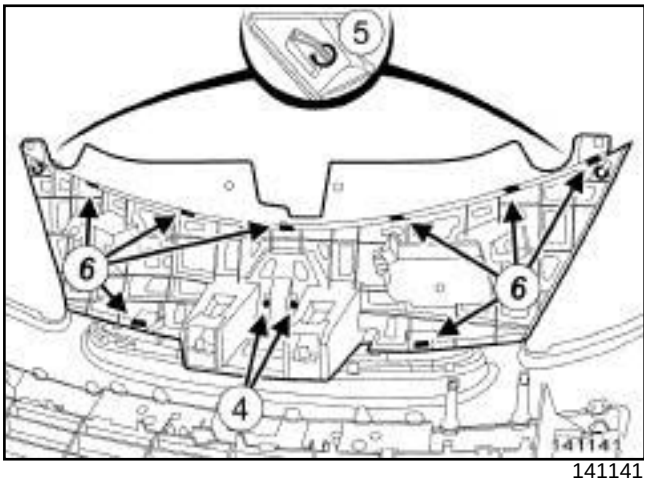
❏ Detach the lower centre trim piece from the front bumper at (**1**) .



141134

❏ Unclip (**2**) the absorber by pressing the clips (**3**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2



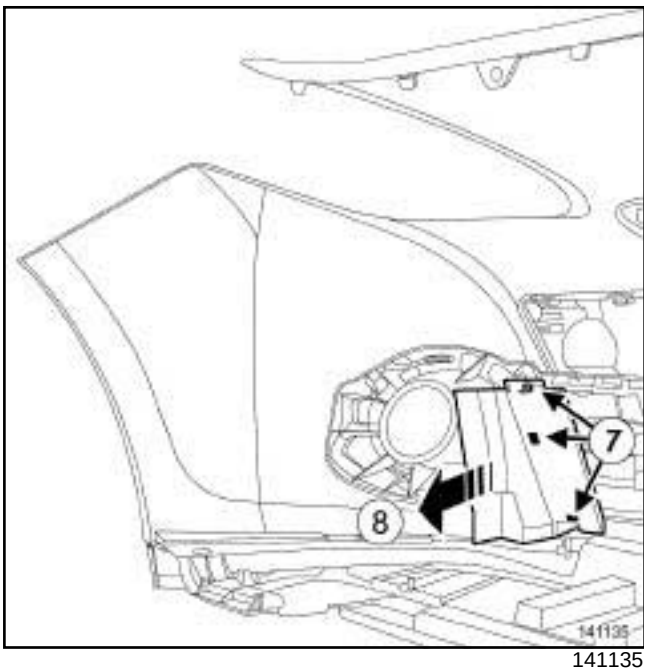
141141

❏ Remove the bolts (**4**) .

❏ Cut the front bumper clips (**5**) .

❏ Unclip:

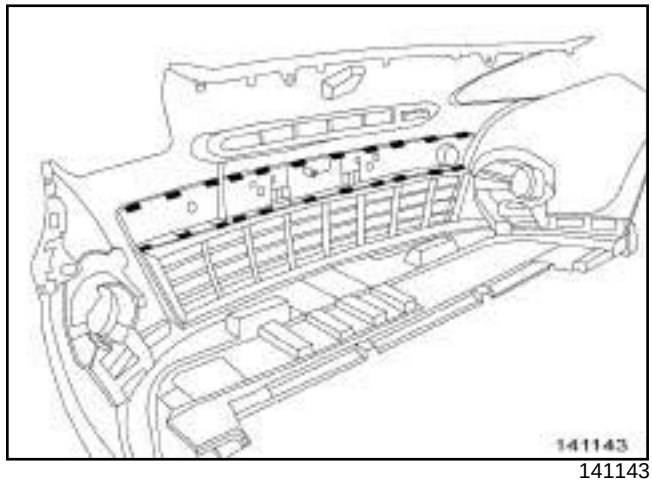
- the front badge,
- the stiffener by pressing the clips (**6**) .



141135

❏ Unclip the blanking covers by pressing the clips (**7**) .

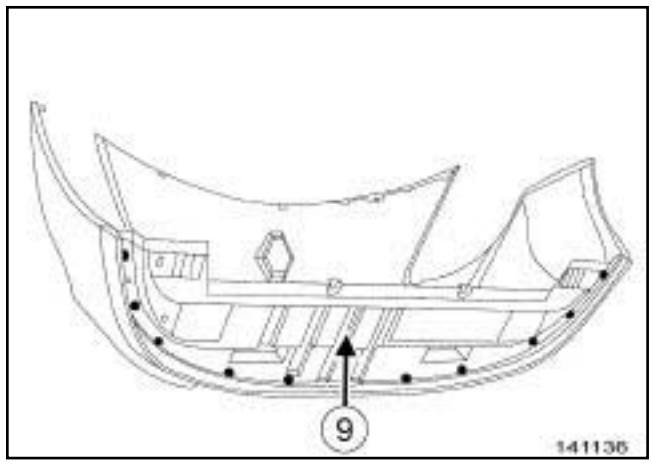
❏ Remove the blanking covers at (**8**) .



141143

❏ Unclip the impact strips by pressing the clips.

❏ Remove the impact strips from the front of the front bumper, starting with the side impact strips.

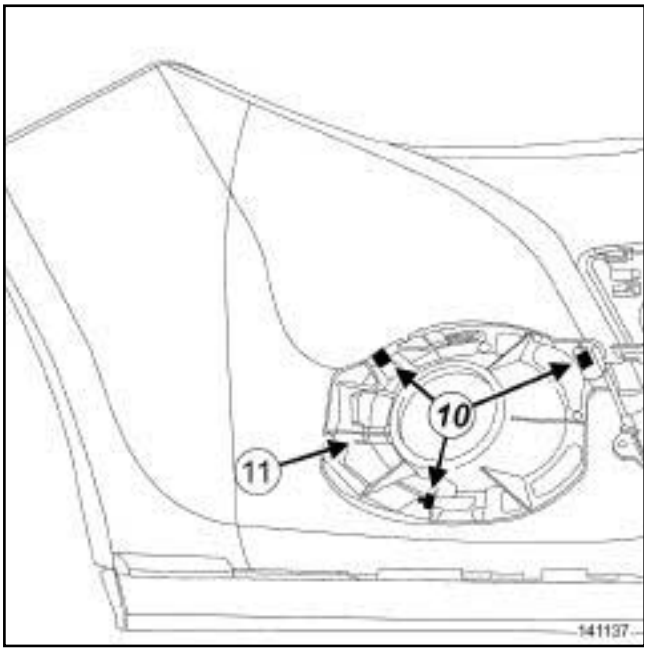


141136

❏ Drill the rivets out.

❏ Remove the diffuser (**9**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2

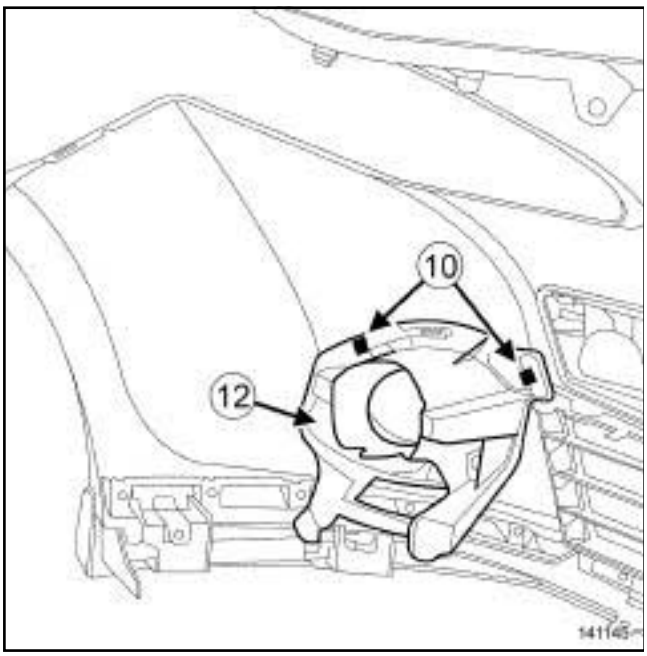


141137

❏ Remove:

- the clips (**10**) ,
- the front fog light trims (**11**) .

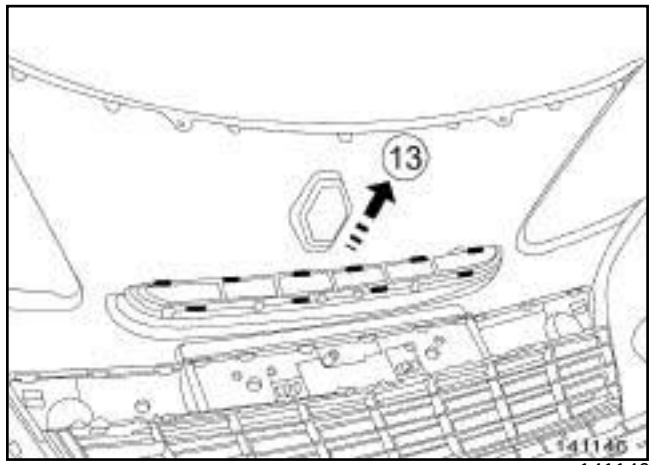
FOG LIGHTS



141145

❏ Remove:

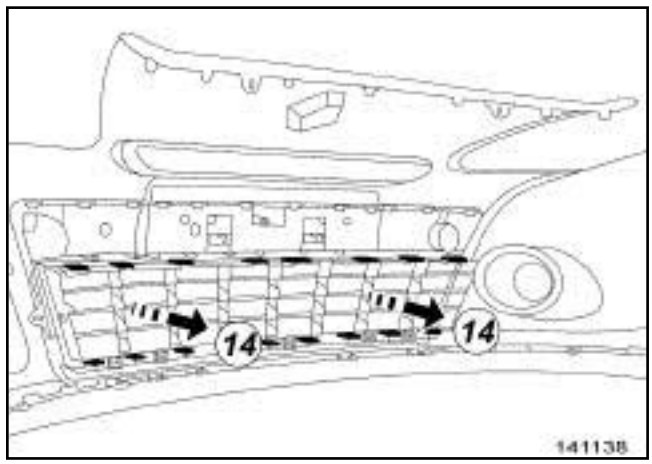
- the clips (**10**) ,
- the front fog light mountings (**12**) .



141146

❏ Unclip the upper grille by pressing the clips.

❏ Remove the upper grille at (**13**) .

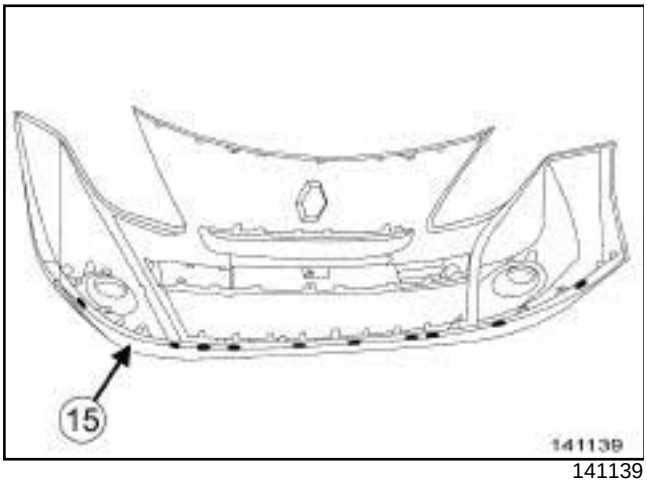


141138

❏ Unclip the centre grille by pressing the clips.

❏ Remove the centre grille at (**14**) .

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2



141139

❑ Remove:

- the spoiler clips,
- the spoiler (**15**) .

REBUILDING

I - REBUILDING PREPARATION OPERATION

❑ **parts always to be replaced: front bumper rivet (50,05,02,18)**.

❑ **parts always to be replaced: Front bumper clip (50,05,02,17)**.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5

❑ **parts always to be replaced: Front bumper trim (50,05,02,08)**.

❑ Use a **LINT-FREE CLOTH** with **HEPTANE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean the part of the front bumper in contact with the lower centre trim piece.

❑ Use a clean and dry **LINT-FREE CLOTH** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to wipe the part of the front bumper in contact with the lower centre trim piece.

❑ Check the clips of the front fog light trims, and replace them if necessary.

FOG LIGHTS

❑ Check the clips of the front fog light mountings, and replace them if necessary.

II - REBUILDING THE PART CONCERNED

❑ Position the spoiler.

❑ Drill a hole at the position of each clip using a **4.5 mm** drill bit.

❑ Rivet the spoiler.

❑ Clip:

- the lower radiator grille,
- the upper radiator grille.

FOG LIGHTS

❑ Refit the front fog light mountings.

❑ Refit the front fog light trims.

❑ Refit and rivet the diffuser.

❑ Clip:

- the impact strips,
- the blanking covers,
- the stiffener,
- the front badge.

❑ Attach the stiffener using new front bumper clips.

❑ Refit the front badge bolts.

❑ Clip the absorber into place.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5

❑ Bond a new lower centre trim piece on the front bumper.

EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2

FOG LIGHTS, and HEADLIGHT WASHERS WITH BLADE

❑ Refit:

- the headlight washer jet pipe on the front bumper as marked during removal,
- the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (85A, Wiping - Washing).

FOG LIGHTS

❑ Refit:

- the front fog lights (see **Front fog light: Removal - Refitting**) (80B, Headlights).
- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring).

III - FINAL OPERATION

❑ Refit:

- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) ,
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DOCUMENTATION PHASE 2

Equipment required
rivet gun

STRIPPING

I - STRIPPING PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED

FOG LIGHTS

❏ Remove:

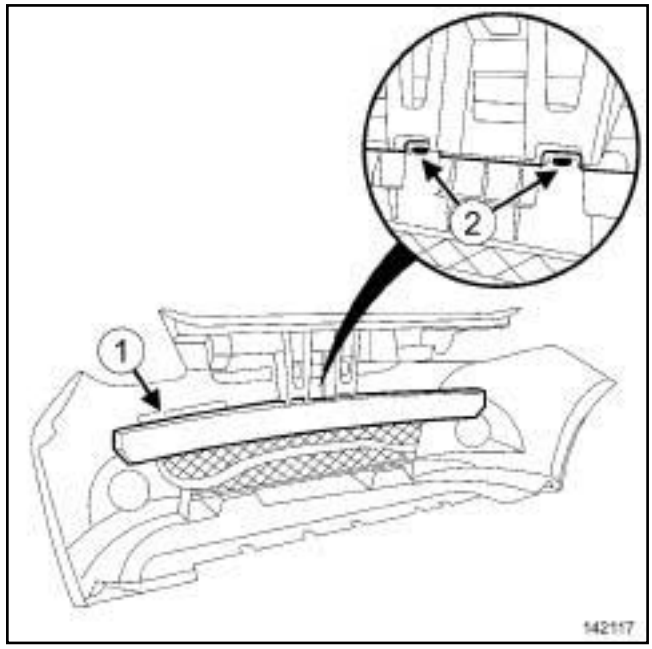
- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring),
- the front fog lights (see **Front fog light: Removal - Refitting**) (80B, Headlights).

HEADLIGHT WASHERS WITH BLADE

❏ Remove the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (85A, Wiping - Washing).

❏ Mark the position of the headlight washer jet pipe on the front bumper.

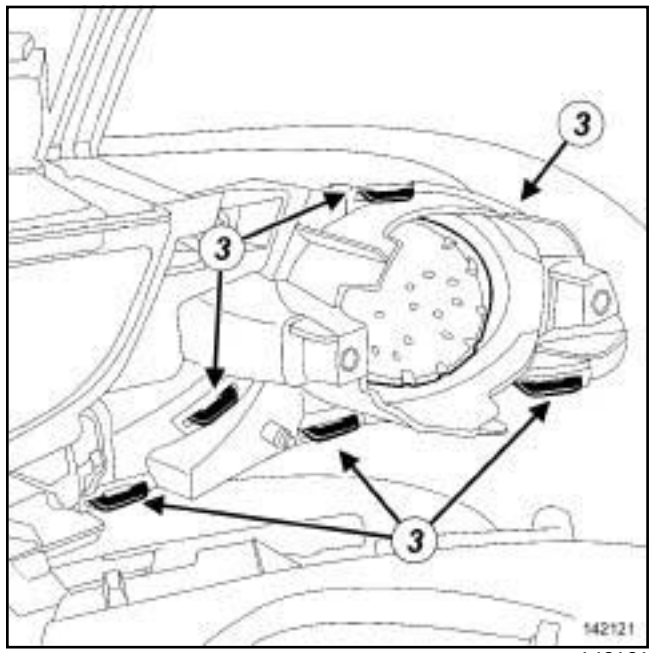
❏ Remove the headlight washer jet pipe from the front bumper.



142117

❏ Unclip the absorber (**1**) by pressing on the clips (**2**) .

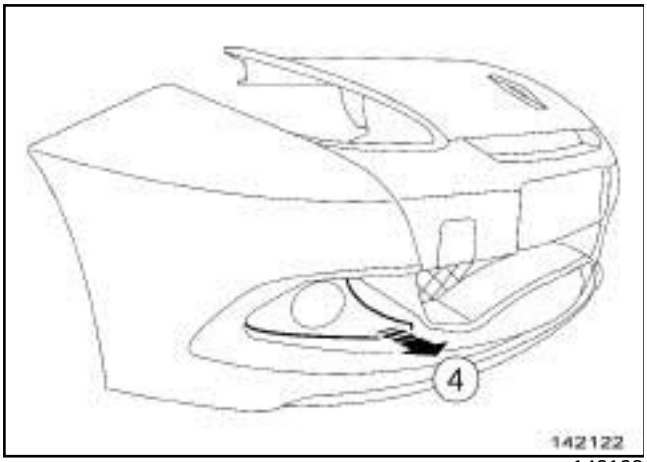
WITHOUT ADDITIONAL HEADLIGHTS



142121

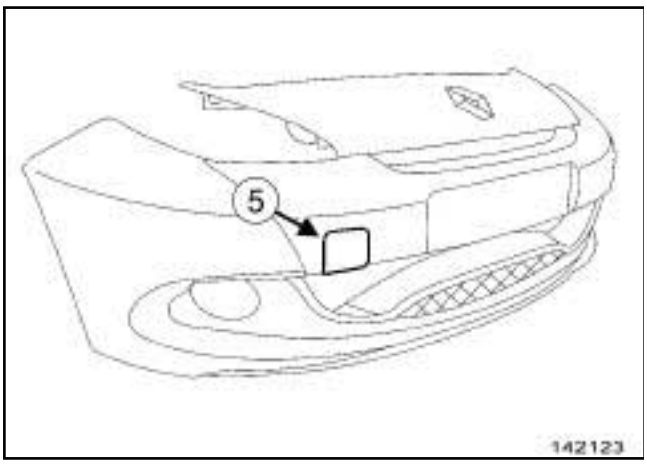
❏ Unclip the front fog light trims by pressing on the clips (**3**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DOCUMENTATION PHASE 2



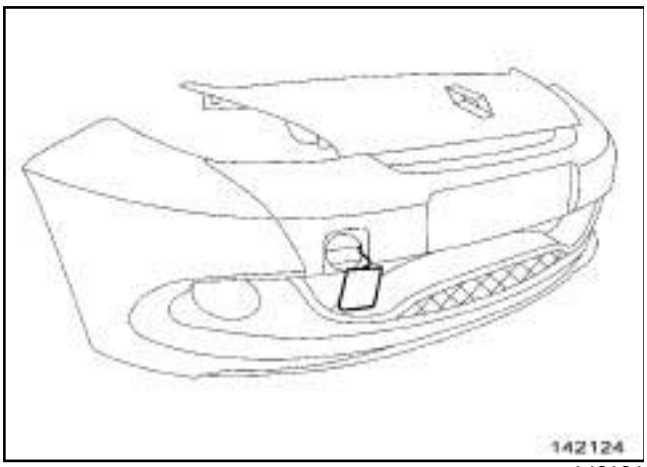
142122

❏ Remove the front fog light trims at (**4**) .



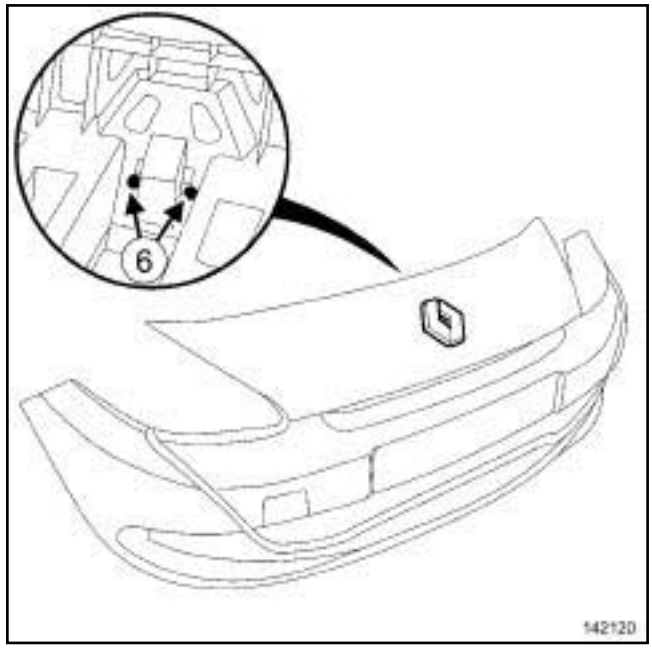
142123

❏ Unclip the tow eye flap (**5**) .



142124

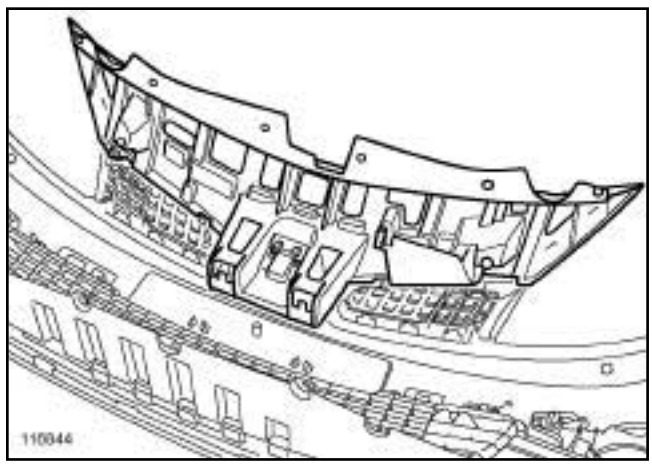
❏ Remove the tow eye flap.



142120

❏ Remove:

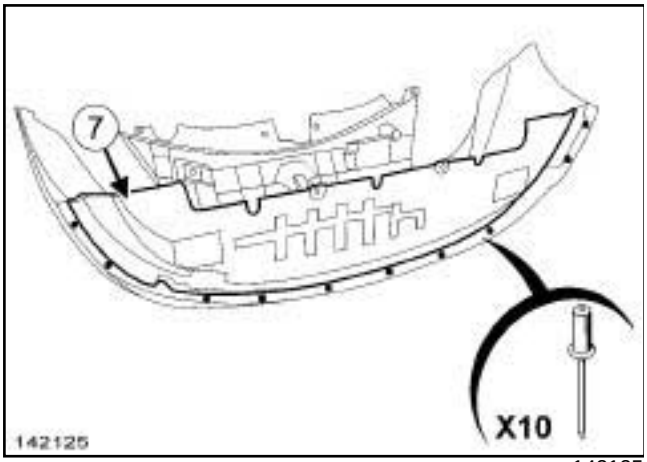
- the bolts (**6**) ,
- the front badge.



116844

❏ Unclip the stiffener.

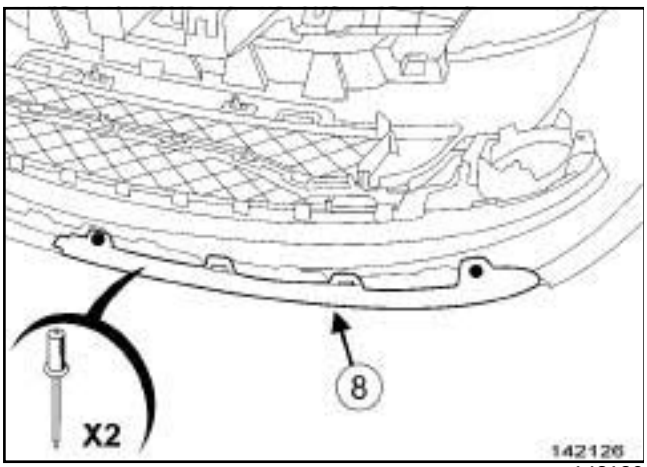
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DOCUMENTATION PHASE 2



142125

❏ Drill the rivets out.

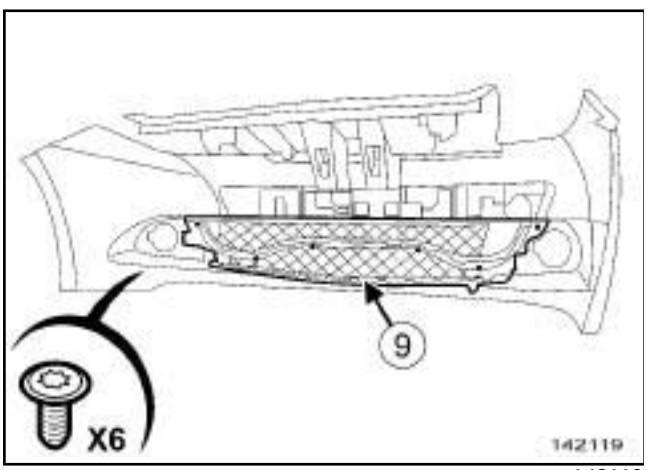
❏ Remove the diffuser (**7**) .



142126

❏ Drill the rivets out.

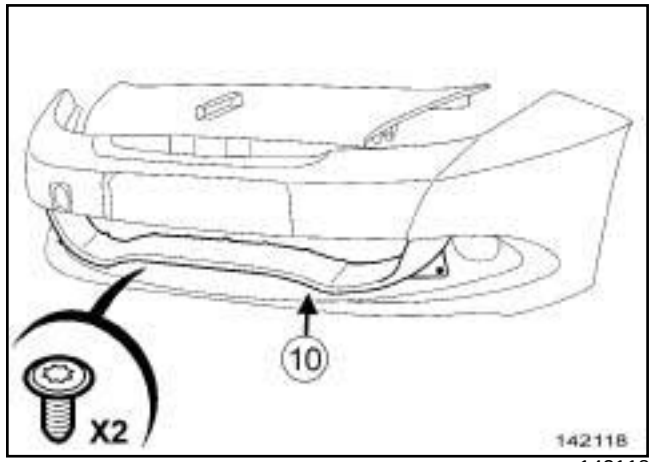
❏ Remove the aerodynamic fins (**8**) .



142119

❏ Remove the bolts.

❏ Unclip the centre grille (**9**) .

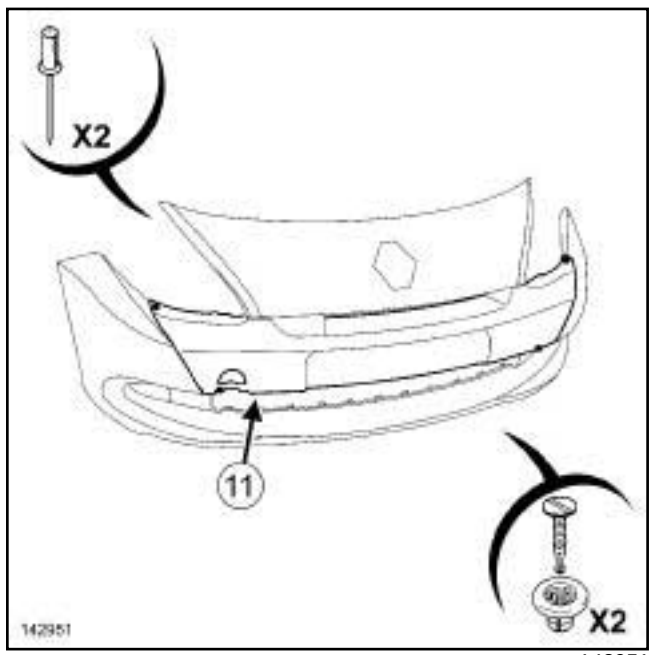


142118

❏ Remove:

- the bolts,

- the centre trim of the front bumper (**10**) .



142951

❏ Drill the rivets out.

❏ Remove:

- the pins,

- the upper trim of the front bumper (**11**) .

REBUILDING

I - REBUILDING PREPARATION OPERATION

❏ **parts always to be replaced: front bumper rivet (50,05,02,18)**.

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT, and DOCUMENTATION PHASE 2

II - REBUILDING OPERATION FOR PART CONCERNED

❏ Refit and rivet the upper trim of the front bumper using a **rivet gun**.

❏ Refit the front bumper centre trim.

❏ Clip on the centre grille.

❏ Refit and rivet using a **rivet gun** :

- the aerodynamic fins,
- the diffuser.

❏ Clip on the stiffener.

❏ Refit:

- the front badge,
- the tow eye flap.

WITHOUT ADDITIONAL HEADLIGHTS

❏ Refit the fog light trims ***(4)*** .

❏ Refit the absorber ***(1)*** .

HEADLIGHT WASHERS WITH BLADE

❏ Refit:

- the headlight washer jet pipe on the front bumper,
- the headlight washer jets (see **Headlight washer jet: Removal - Refitting**) (85A, Wiping - Washing).

FOG LIGHTS

❏ Refit:

- the front fog lights (see **Front fog light: Removal - Refitting**) (80B, Headlights),
- the front bumper wiring (see **Front bumper wiring: Removal - Refitting**) (88A, Wiring).

III - FINAL OPERATION

❏ Refit:

- the front bumper (see **55A**, **Exterior protection**, **Front bumper: Removal - Refitting**, page **55A-1**) ,
- the front wheel arch liners (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting).

126633

❏ Disconnect the rear bumper wiring connector (**1**) .

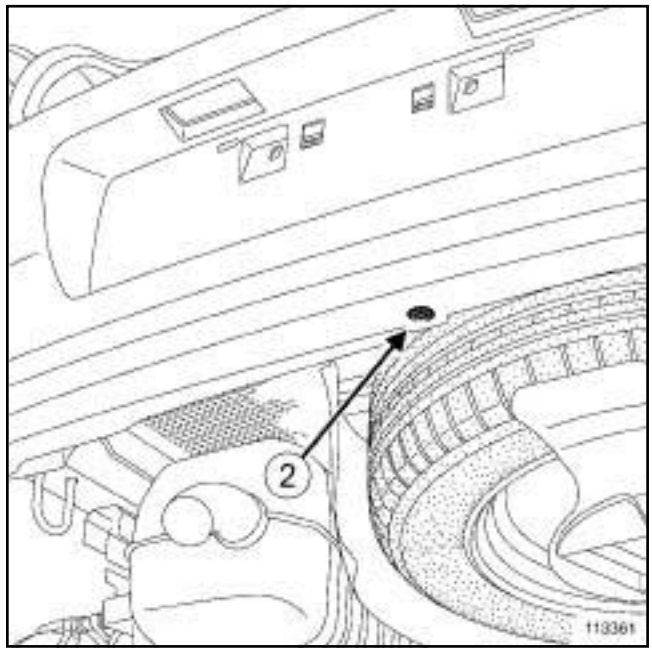
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2

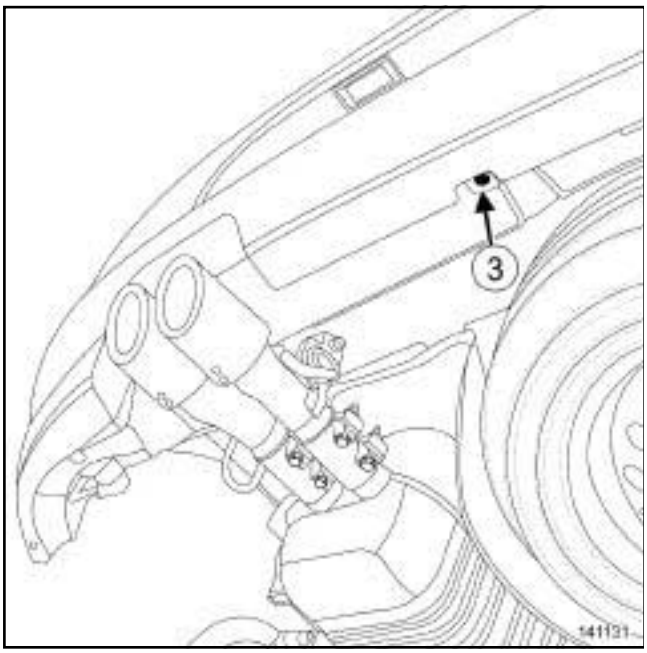


113361

❏ Remove the bolt (**2**) .

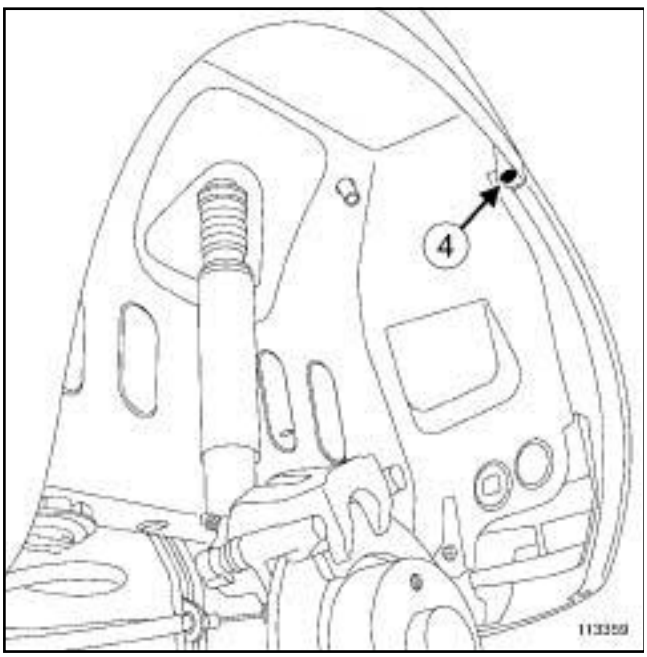
EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2

EQUIPMENT LEVEL EAG



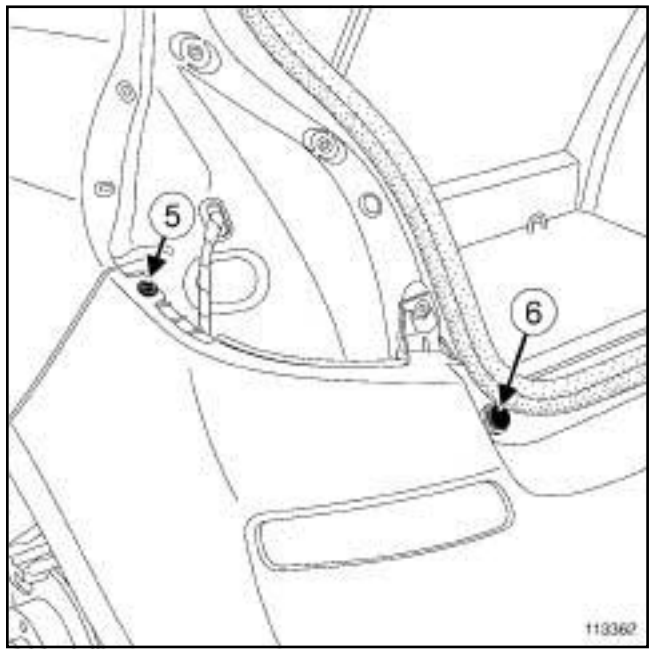
141131

❏ Remove the bolt (**3**) .



113359

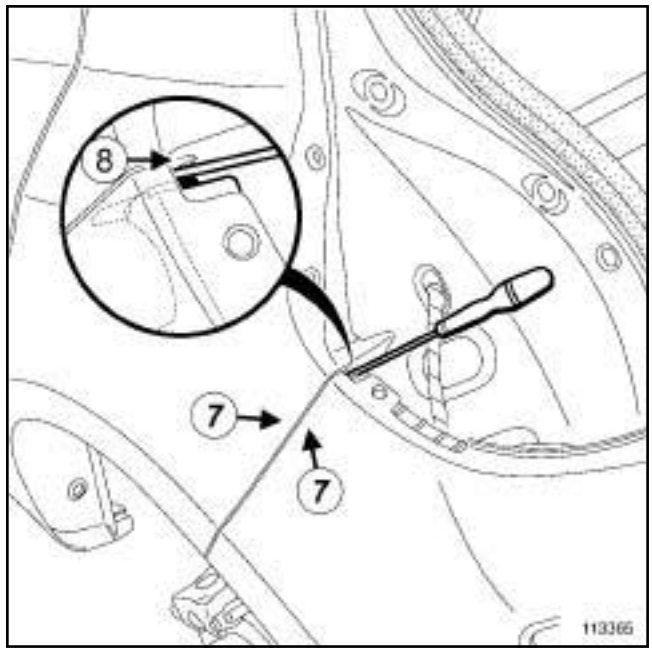
❏ Remove the bolts (**4**) .



113362

❏ Remove:

- the clips (**5**)
- the stops (**6**) .

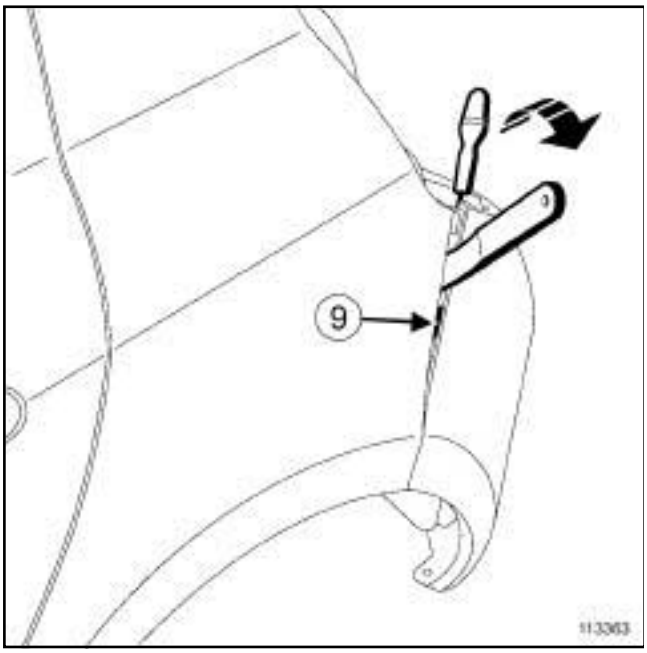


113365

❏ Protect the bumper and rear wing using masking tape at (**7**) .

❏ Unclip the rear bumper from the side pressure pieces at the top (**8**) using a flat-blade screwdriver.

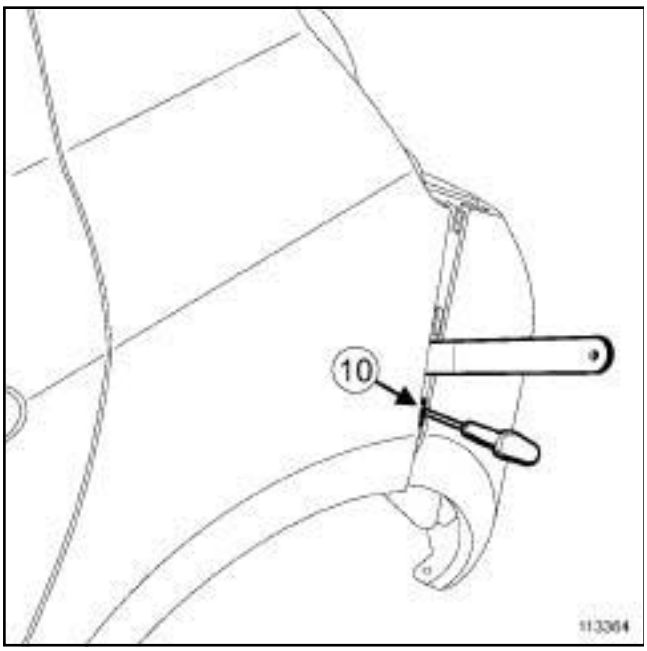
EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2



113363

❏ Keep the rear bumper away using the tool **(Car. 1363)**.

❏ Unclip the rear bumper at (**9**) .

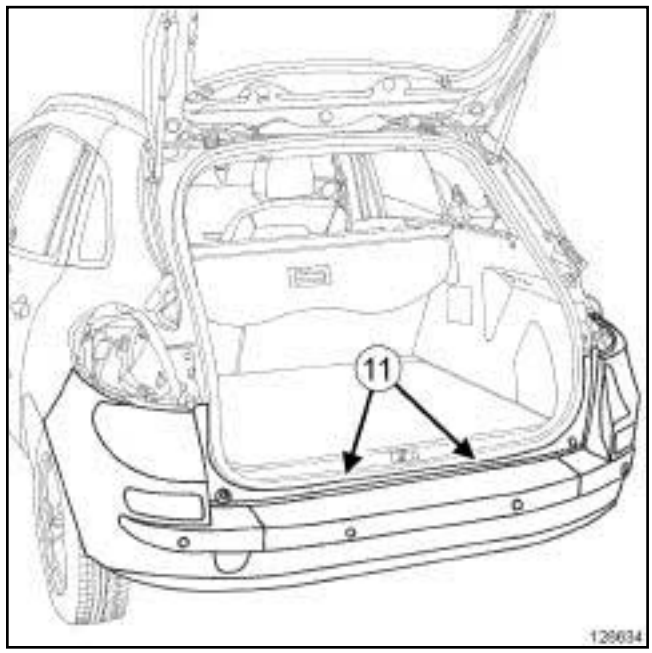


113364

❏ Keep the rear bumper away using the tool **(Car. 1363)**.

❏ Unclip the rear bumper at (**10**) .

K85



126634

❏ Unclip the rear bumper at (**11**) .

❏ Remove the rear bumper(this operation requires two people).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rear bumper (this operation requires two people).

K85

❏ Clip on the rear bumper at ***(11)*** .

❏ Clip on the side sections of the rear bumper.

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1 – EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 2

❏ Refit the bolt ***(2)*** .

EQUIPMENT LEVEL EAG

❏ Refit the bolt ***(3)*** .

❏ Refit:

- the bolts ***(4)***
- the clips ***(5)*** ,
- the stops ***(6)*** .

II - FINAL OPERATION

❏ Connect the rear bumper wiring connector (**1**) .

❏ Refit the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting).

❏ Test all of the functions with a function test (depending on equipment level).

❏ Refit:

- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

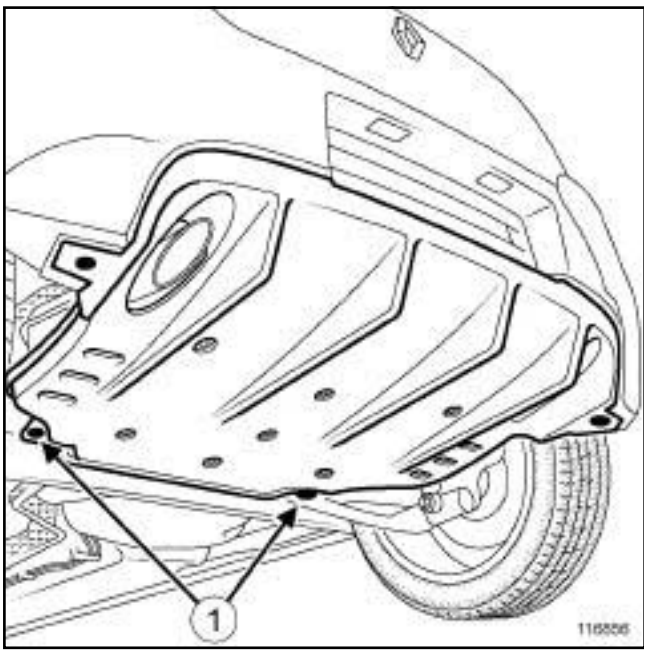
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

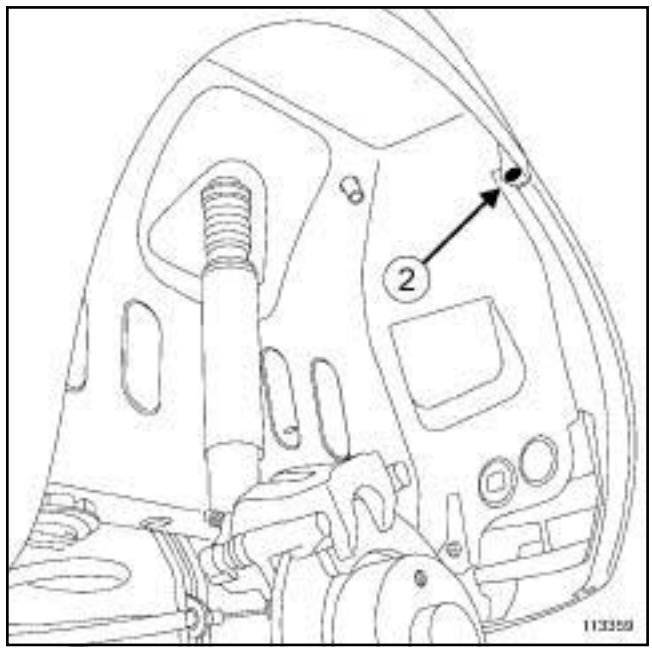
- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting).

II - OPERATION FOR REMOVAL OF PART CONCERNED



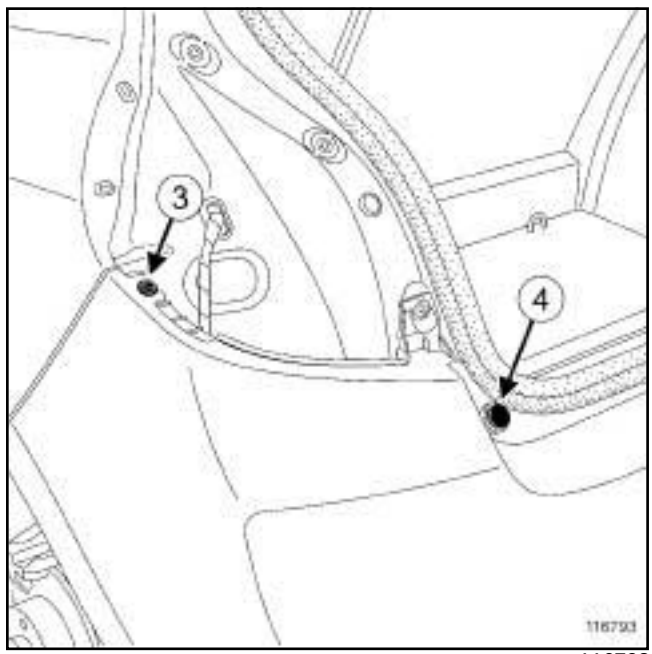
116856

❏ Remove the nuts (**1**) .



113359

❏ Remove the bolt (**2**) .

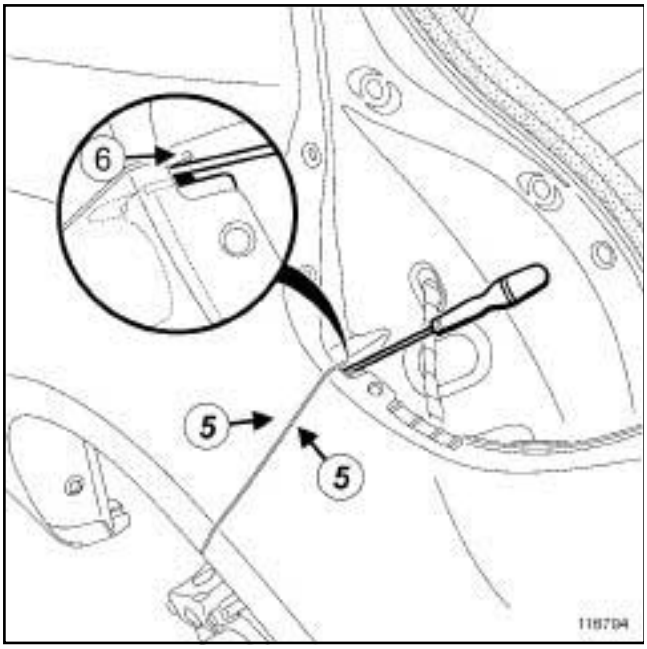


116793

❏ Remove the clips (**3**) .

❏ Remove the stops (**4**) .

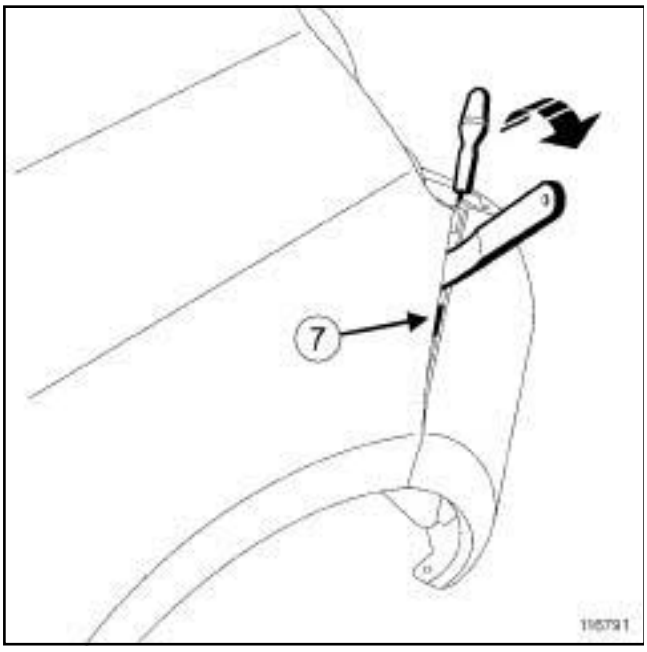
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



116794

❏ Protect the bumper and rear wing using masking tape at (**5**) .

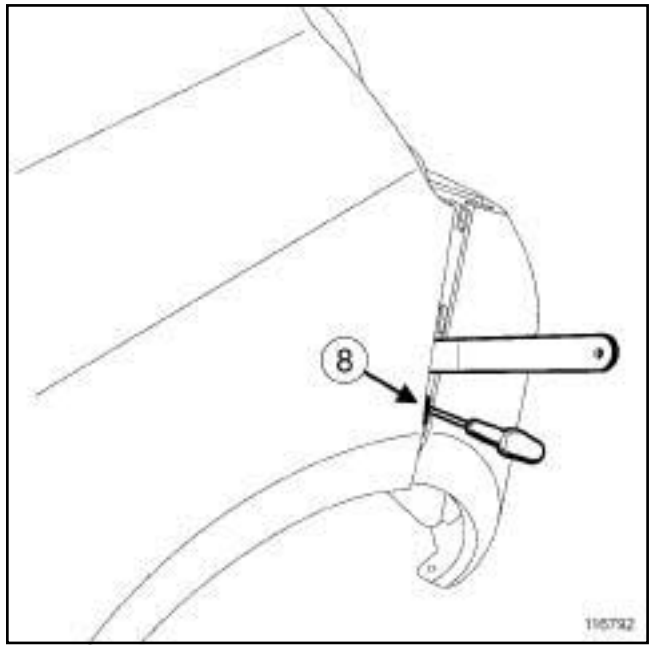
❏ Unclip the bumper from the side pressure pieces at the top (**6**) using a flat-blade screwdriver.



116791

❏ Keep the bumper away using **(Car. 1363)**.

❏ Unclip bumper (**7**) .



116792

❏ Keep the bumper away using **(Car. 1363)**.

❏ Unclip bumper (**8**) .

❏ Perform the same operation on both sides of the vehicle.

❏ Remove the bumper (this operation requires two people).

❏ Disconnect the connectors.

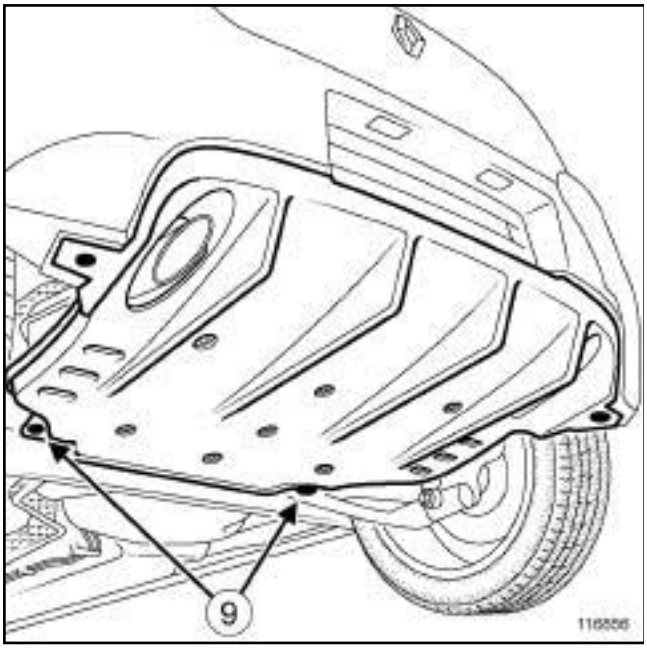
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

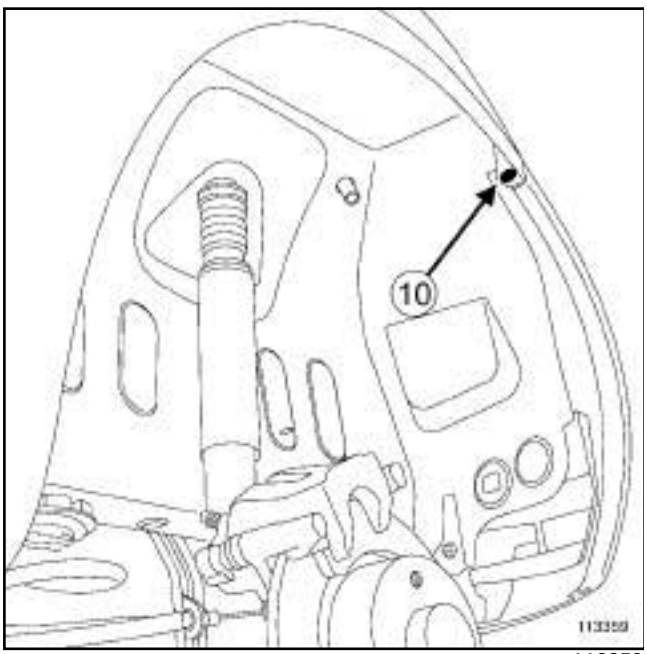
❏ Refit the rear bumper (this operation requires two people).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



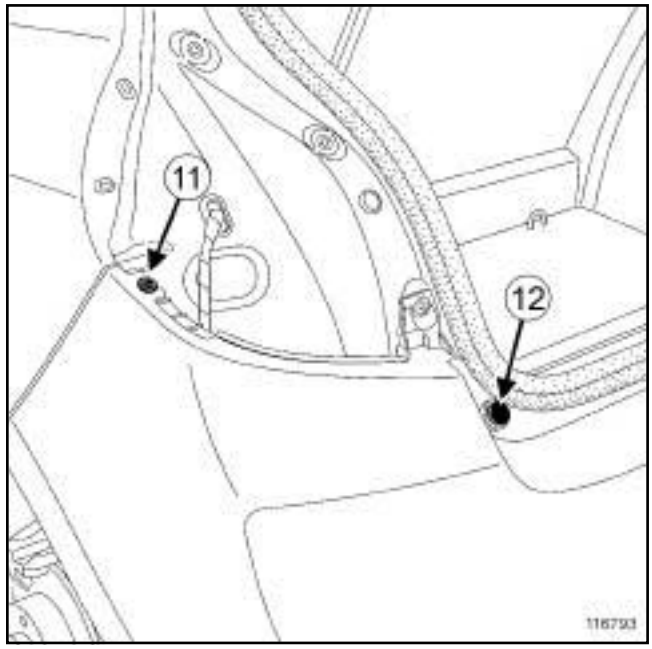
116856

❏ Refit the nuts (**9**) .



113359

❏ Refit the bolts (**10**) .



116793

❏ Refit:

- the clips (**11**) ,
- the stops (**12**) .

II - FINAL OPERATION

❏ Refit:

- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting),
- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) .

❏ Test all of the functions with a function test (depending on equipment level).

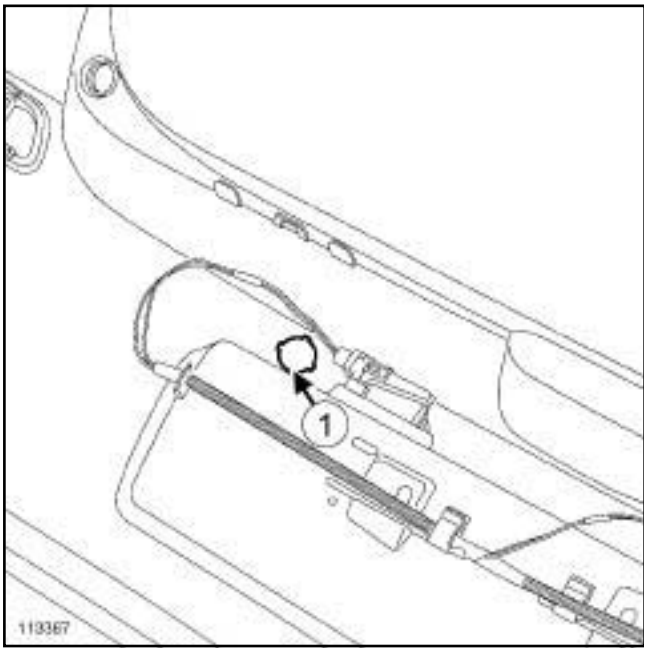
B85 or C85 or S85, and EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1

ADAPTATION

❑

Note:

When a rear bumper is replaced, the replacement part needs to be modified before it is painted so that the proximity sensors can be fitted.



113367

❑ Drill the rear bumper around the marking (**1**) using an angular cutter or using the special tool (part no.: **77 11 419 232**).

❑ Finish off using a small file.

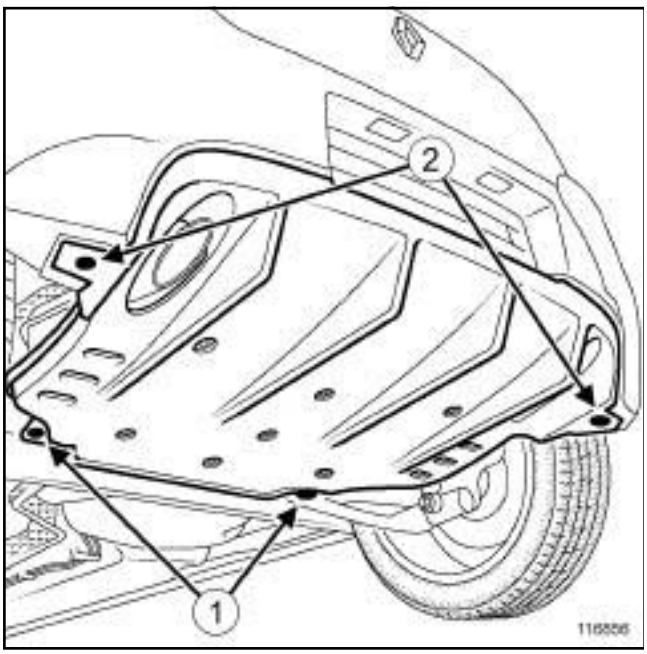
EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

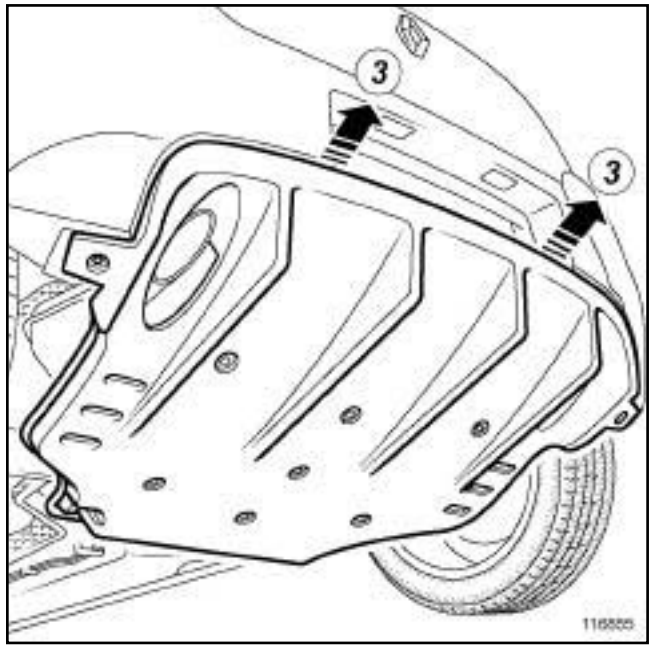
II - OPERATION FOR REMOVAL OF PART CONCERNED



116856

❑ Remove:

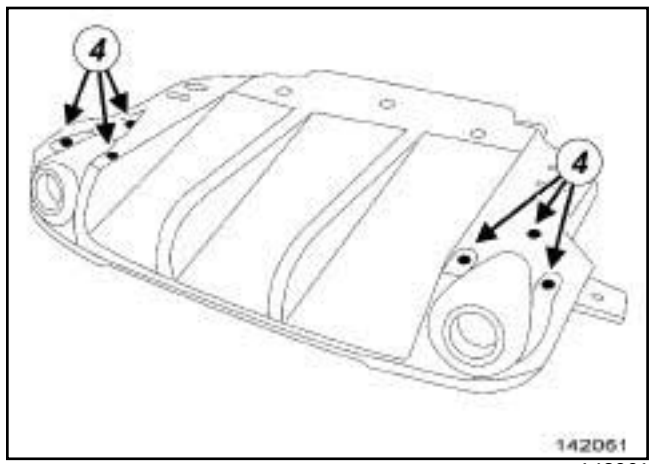
- the nuts (**1**) ,
- the bolts (**2**) .



116855

❑ Unclip the aerodynamic diffuser (**3**) (this operation requires two people).

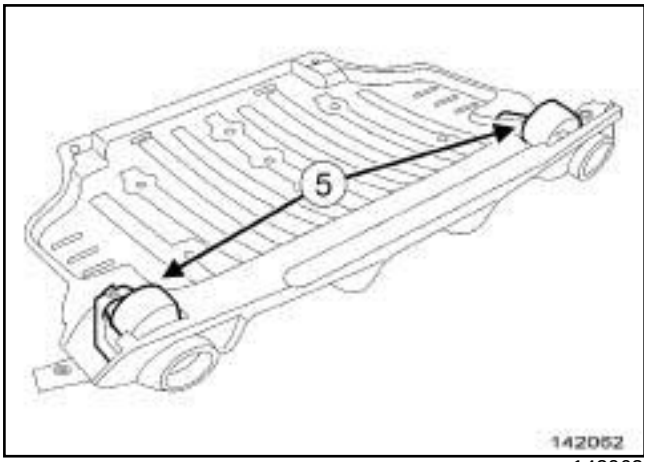
DOCUMENTATION PHASE 2



142061

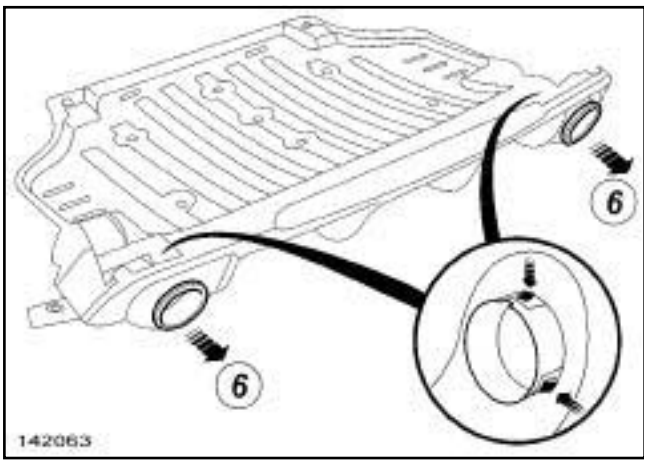
❑ Remove the bolts (**4**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT



142062

❏ Remove the exhaust gas flow guides (**5**) .



142063

❏ Press the lugs of the tailpipes.

❏ Remove the tailpipes (**6**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

DOCUMENTATION PHASE 2

❏ Refit:

- the tailpipes,
- the exhaust gas flow guides ***(5)*** ,
- the bolts ***(4)*** .

❏ Clip on the aerodynamic diffuser (this operation requires two people).

❏ Refit:

- the nuts ***(1)*** ,
- the bolts ***(2)*** .

K85

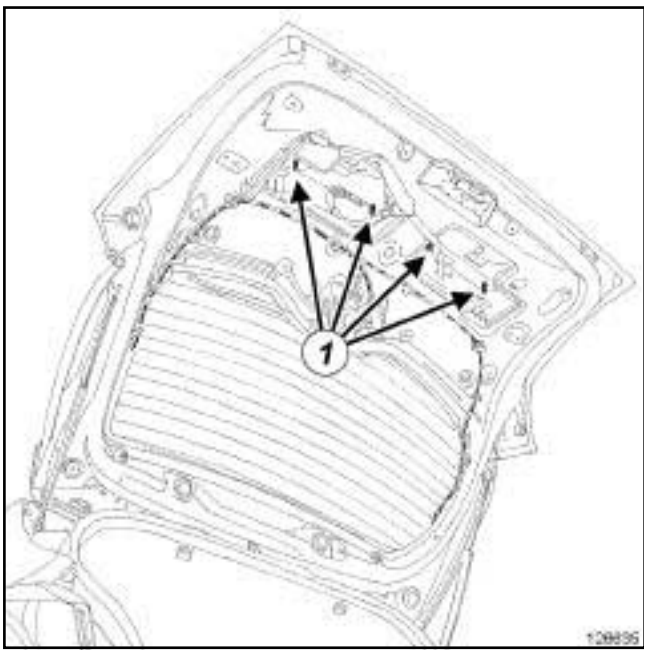
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim),
- the tailgate opening switch (see **52A**, **Non-side opening element mechanisms**, **Tailgate opening switch: Removal - Refitting**, page **52A-8**) (87C, Opening element management).

II - OPERATION FOR REMOVAL OF PART CONCERNED



126635

❏ Remove:

- the nuts (**1**) ,
- the tailgate strip.

❏ Disconnect the license plate light connectors.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the sealing foam.

❏ Clean the adhesive surface of the sealing foam using a **LINT-FREE CLOTH** soaked in **HEPTANE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❏ Wipe the adhesive surface of the sealing foam with a clean, dry **LINT-FREE CLOTH**.

❏ Check the cleanliness of the tailgate and the tailgate strip before refitting the tailgate strip.

❏ Connect the number plate light connectors.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the tailgate strip,
- the nuts (**1**) .

III - FINAL OPERATION.

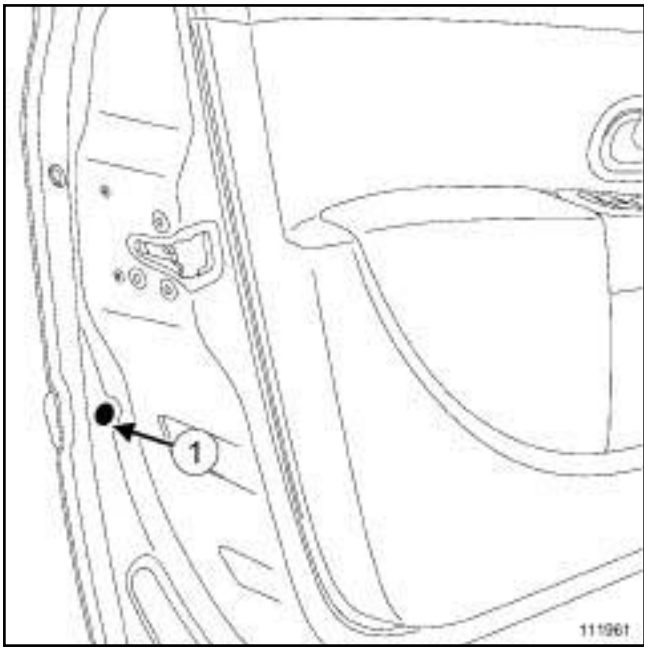
❏ Refit the tailgate opening switch (see **52A**, **Non-side opening element mechanisms**, **Tailgate opening switch: Removal - Refitting**, page **52A-8**) (87C, Opening element management).

❏ Carry out a function test on all functions.

❏ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (73A, Non-side opening elements trim).

REMOVAL

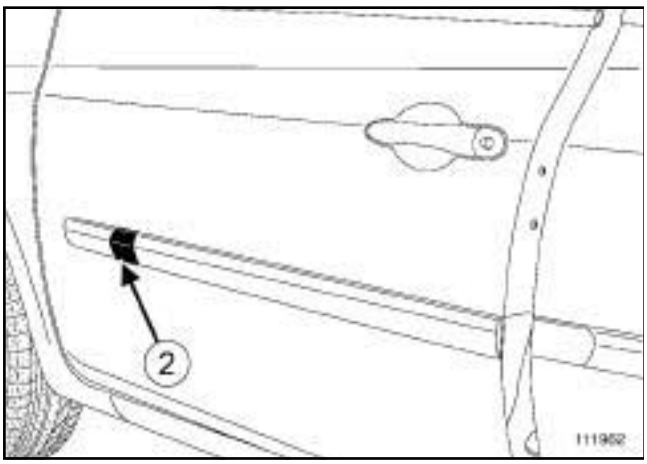
I - REMOVAL PREPARATION OPERATION



111961

❏ Unclip the blanking cover (**1**) .

❏ Remove the bolt.

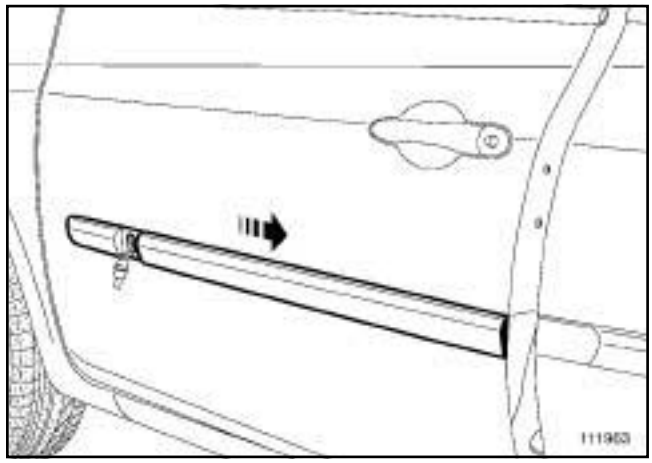


111962

❏ Remove the side mounted indicator (**2**) using a small flat screwdriver.

❏ Disconnect the power supply connector.

II - REMOVAL OPERATION FOR PART CONCERNED



111963

❏ Slide the door rubbing strip towards the rear of the vehicle.

III - REFITTING OPERATION FOR PART CONCERNED

❏ Slide the door moulding towards the front of the vehicle.

IV - FINAL OPERATION.

❏ Refit:

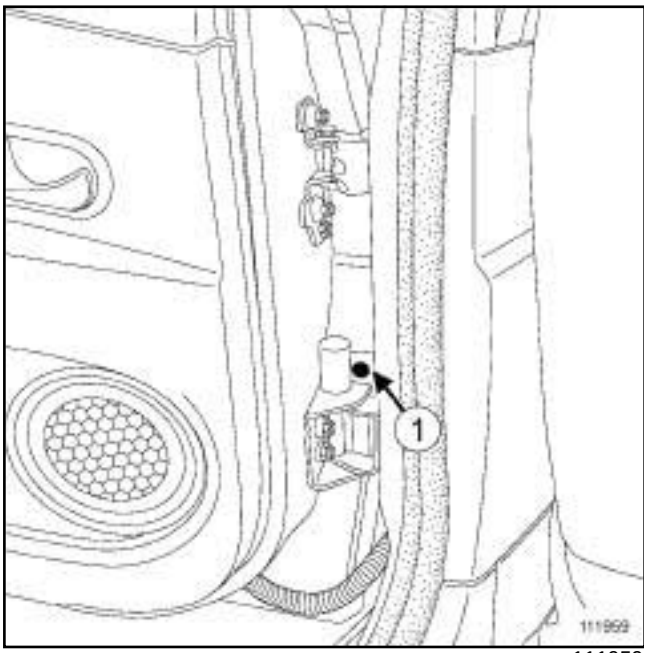
- the protective strip mounting bolt,
- the blanking cover,
- the mounted indicator.

Rear side door protective strip: Removal - Refitting

B85 or K85

REMOVAL

I - REMOVAL PREPARATION OPERATION

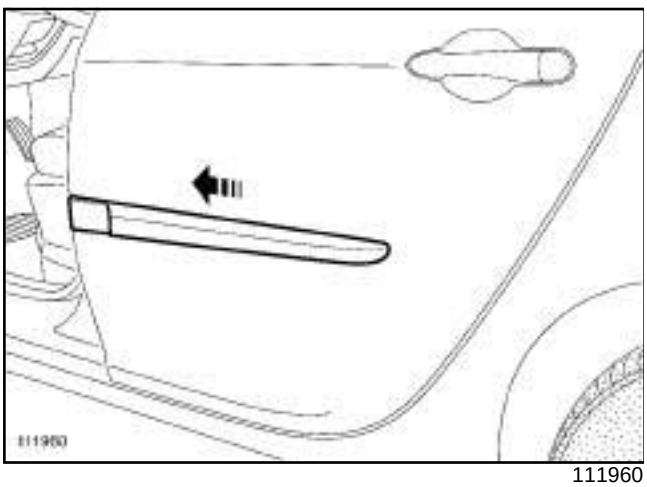


111959

❑ Strip off the adhesive (**1**) .

❑ Remove the bolt.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111960

❑ Slide the door moulding towards the front of the vehicle.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Slide the door moulding towards rear of the vehicle.

II - FINAL OPERATION.

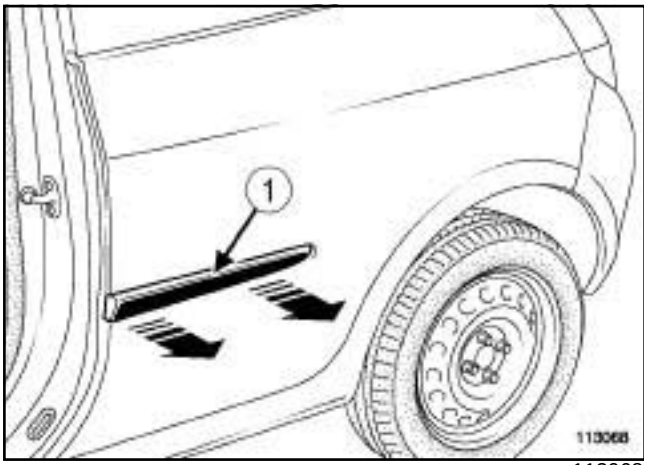
❑ Refit:

- the protective strip mounting bolt,
- the adhesives (Part no: **77 01 465 890**).

C85 or S85

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113068

❑ Unclip the rear wing protective strip (**1**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the clips and replace them if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clip on the rear wing protective strip.

C85 or S85

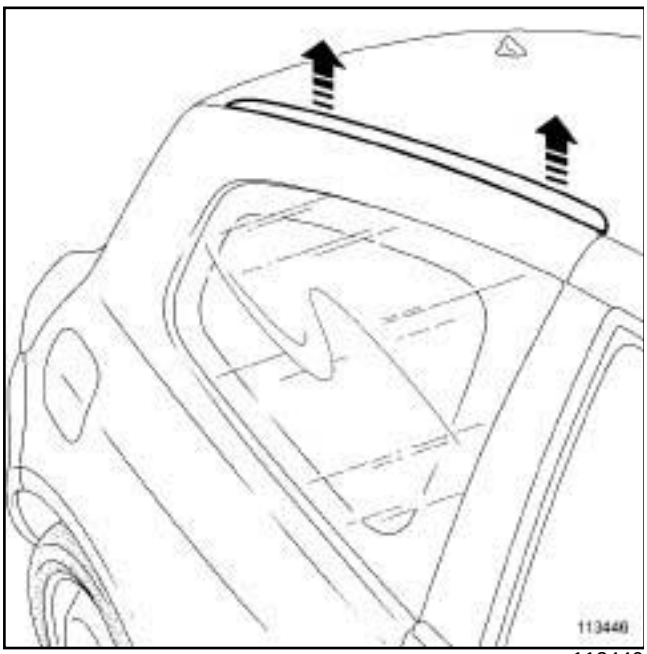
REMOVAL

❑

Note:

It is possible to replace the access flap for mounting the roof rack bars.

OPERATION FOR REMOVAL OF PART CONCERNED

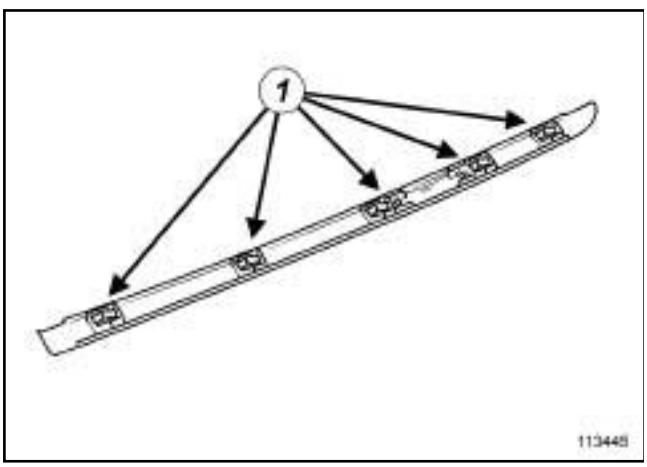


113446

❑ Carefully unclip the roof protection strip.

REFITTING

I - REMOVAL PREPARATION OPERATION



113445

❑ Check the condition of the clips (**1**) and replace if necessary.

II - FINAL OPERATION.

❑ Clip the roof protection strip in position.

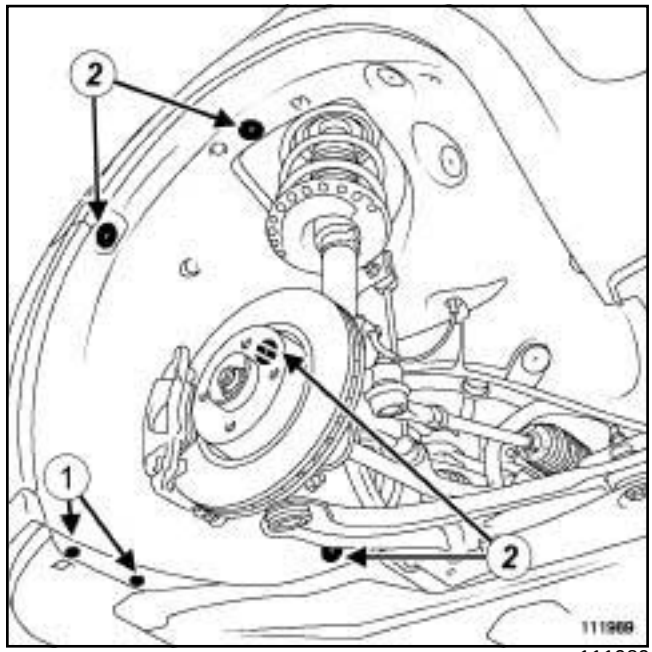
REMOVAL

I - REMOVAL PREPARATION OPERATION

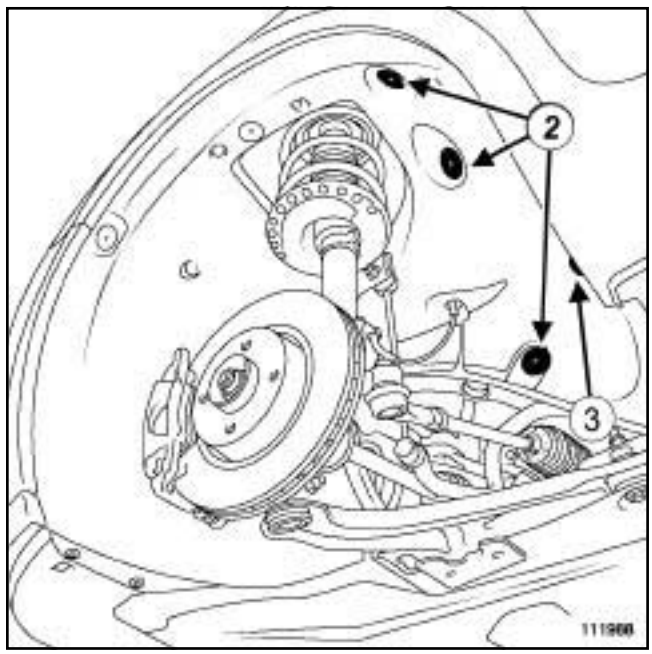
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove the front wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

II - OPERATION FOR REMOVAL OF PART CONCERNED



111989



111988

❑ Remove the bolts (**1**) .

❑ Remove the clips (**2**) .

❑ Remove:

- the bolt (**3**) ,
- the front wheel arch liner starting at the front section.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the clips and replace them if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front wheel arch liner starting at the rear section,
- the clips,
- the bolts.

III - FINAL OPERATION.

❑ Refit the front wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

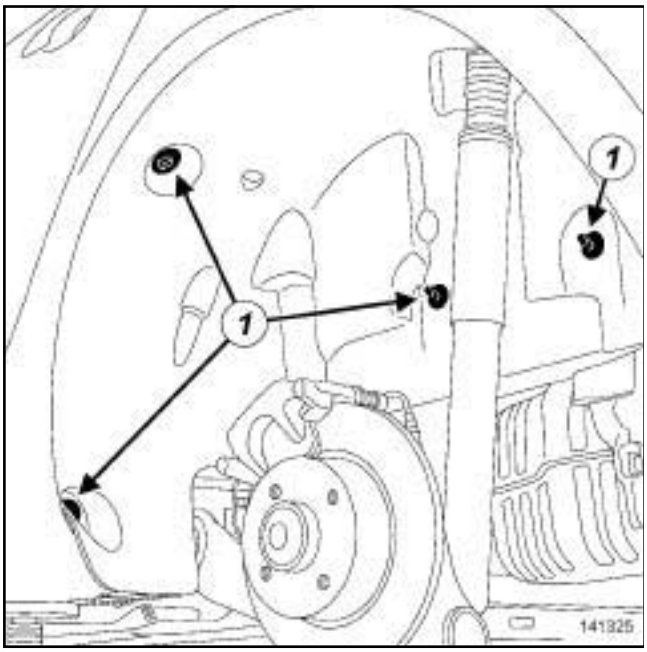
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove the rear wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

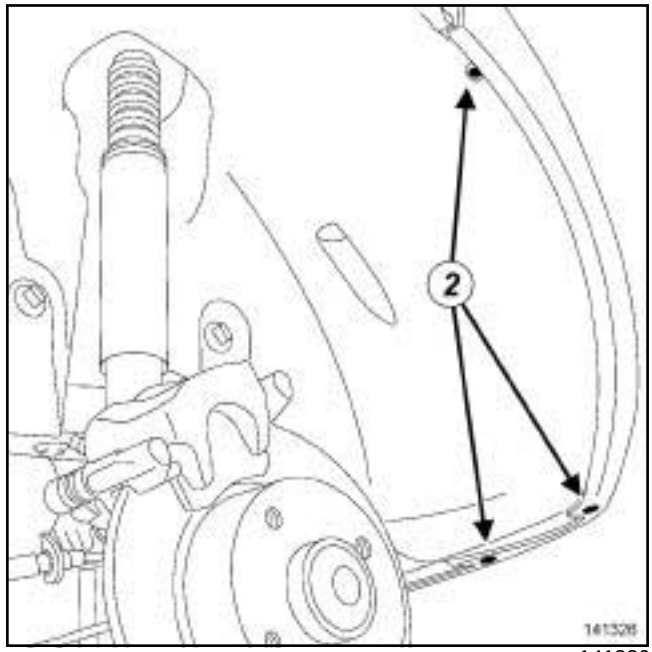
II - OPERATION FOR REMOVAL OF PART CONCERNED



141325

❏ Remove the clips (**1**) .

B85 or C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

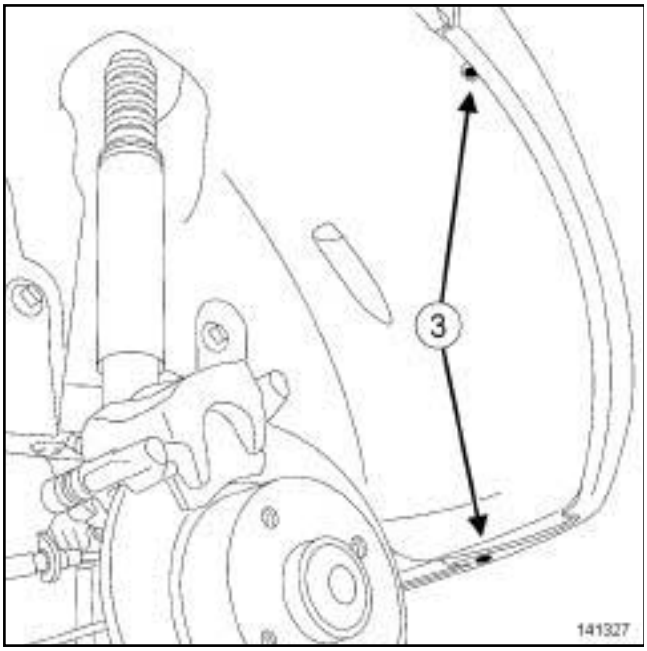


141326

❏ Remove:

- the bolts (**2**) ,
- the rear wheel arch liner.

K85, and EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

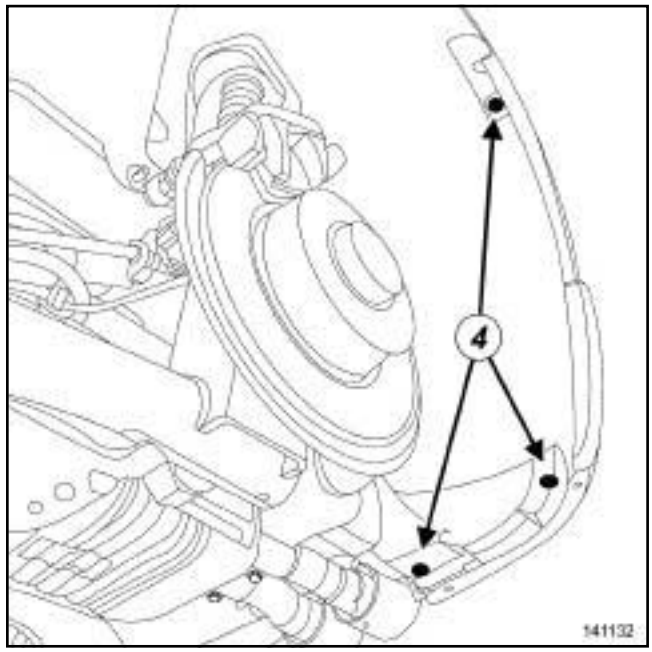


141327

❑ Remove:

- the bolts (**3**) ,
- the rear wheel arch liner.

EQUIPMENT LEVEL EAG



141132

❑ Remove:

- the bolts (**4**) ,
- the rear wheel arch liner.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the clipsand replace them if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the rear wheel arch liner,
- the bolts,
- the clips.

III - FINAL OPERATION

❑ Refit the rear wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

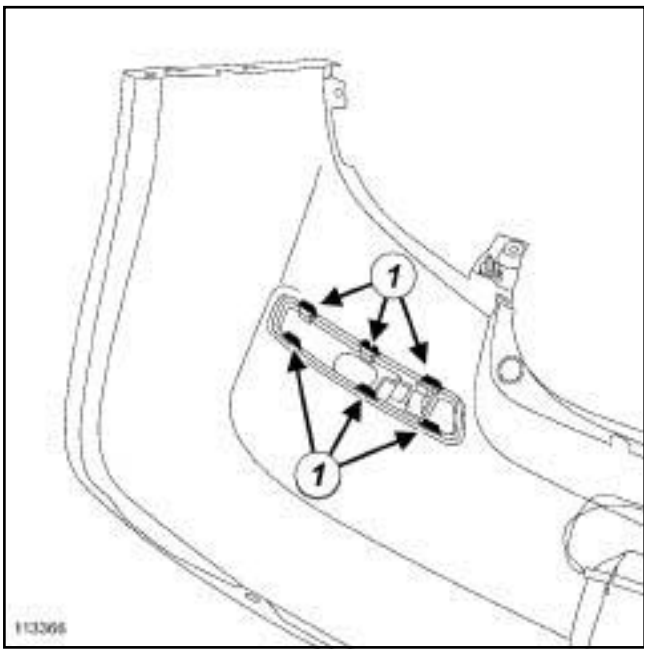
B85 or C85 or S85, and EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5, and DOCUMENTATION PHASE 1

STRIPPING

I - STRIPPING PREPARATION OPERATION

❏ Remove the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

II - STRIPPING OPERATION FOR PART CONCERNED



113366

❏ Unclip (**1**) the rear bumper impact strips.

❏ Remove:

- the proximity radars (see **Proximity radar: Removal - Refitting**) (MR 392, 87F, Parking distance control),
- the number plate lights (see **Number plate light: Removal - Refitting**) (MR 392, 81A, Rear lighting),
- the wiring harness.

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❏ Clip on the impact strips.

❏ Refit:

- the wiring harness,
- the proximity radars (see **Proximity radar: Removal - Refitting**) (MR 392, 87F, Parking distance control).
- the number plate lights (see **Number plate light: Removal - Refitting**) (MR 392, 81A, Rear lighting).

II - FINAL OPERATION.

❏ Refit the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

STRIPPING

I - STRIPPING PREPARATION OPERATION

❑ Remove the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

II - STRIPPING OPERATION FOR PART CONCERNED

❑ Remove:

- the number plate lights (see **Number plate light: Removal - Refitting**) (MR 392, 81A, Rear lighting),
- the wiring harness.

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❑ Refit:

- the wiring harness,
- the number plate lights (see **Number plate light: Removal - Refitting**) (MR 392, 81A, Rear lighting).

II - FINAL OPERATION.

❑ Refit the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

K85

STRIPPING

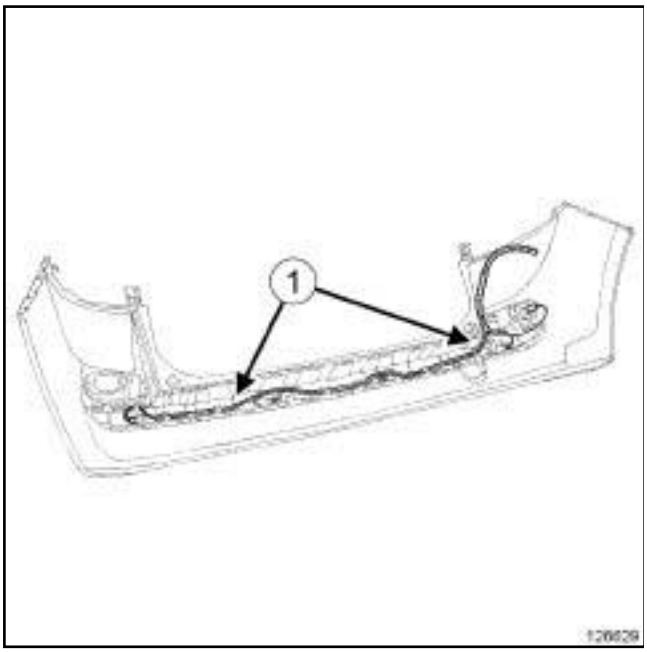
I - STRIPPING PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting),
- the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

II - STRIPPING OPERATION FOR PART CONCERNED



126629

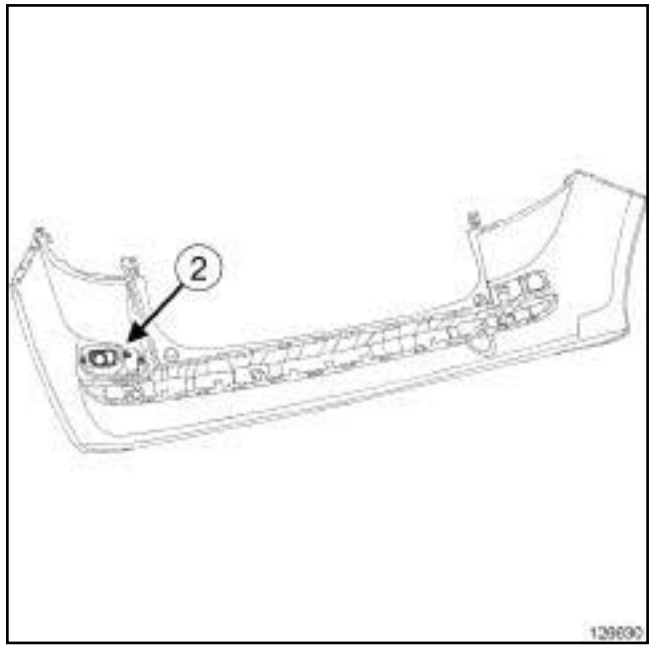
❑ Disconnect the various connectors (according to the equipment level).

❑ Remove the rear bumper wiring (**1**) .

PROXIMITY RADAR

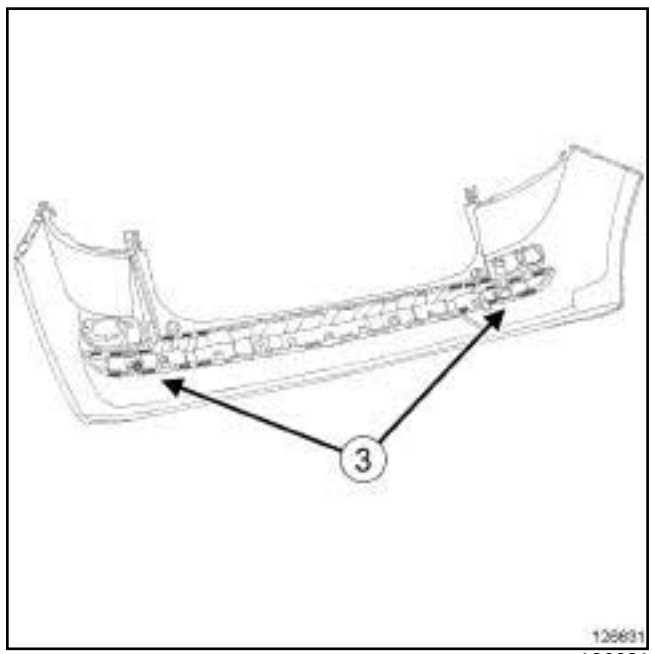
❑ Remove the proximity radars (see **Proximity radar: Removal - Refitting**) (87F, Parking distance control).

❑ Remove the rear fog light (see **Rear fog lights: Removal - Refitting**) (81A, Rear lighting).



126630

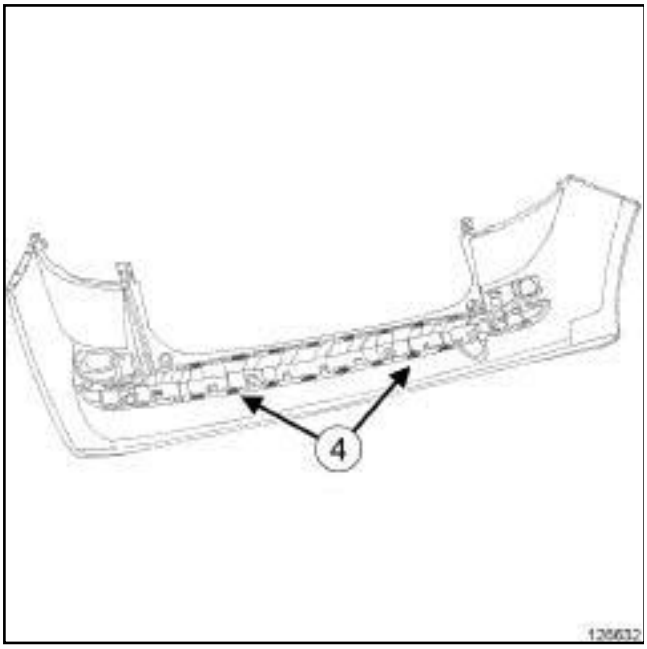
❑ Remove the reflector (**2**) .



126631

❑ Unclip the side trims (**3**) .

K85



126632

❏ Unclip the centre impact strip (**4**) .

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❏ Clip:

- the centre impact strip ***(4)*** ,
- the side trims ***(3)*** .

❏ Refit:

- the rear fog light (see **Rear fog lights: Removal - Refitting**) (81A, Rear lighting),
- the reflector ***(2)*** .

PROXIMITY RADAR

❏ Refit the proximity radars (see **Proximity radar: Removal - Refitting**) (87F, Parking distance control).

❏ Refit the rear bumper wiring ***(1)*** .

❏ Connect the various connectors (depending on equipment level).

II - STRIPPING PREPARATION OPERATION

❏ Refit:

- the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) ,
- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting).

❏ Test all of the functions with a function test (depending on the equipment level).

❏ Refit the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) .

B85 or C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2

STRIPPING

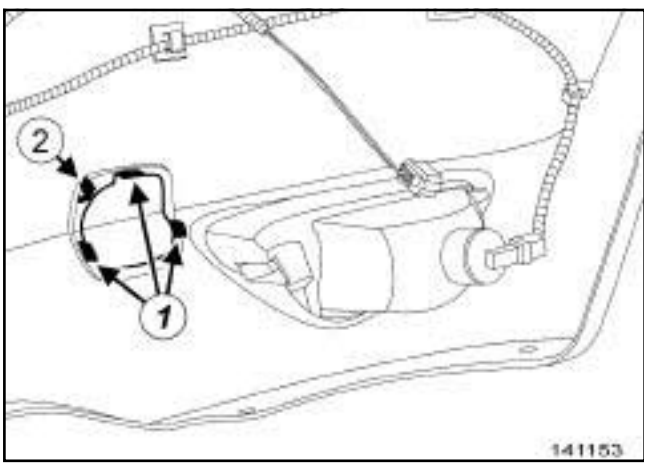
I - STRIPPING PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting),
- the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) .

II - STRIPPING OPERATION FOR PART CONCERNED



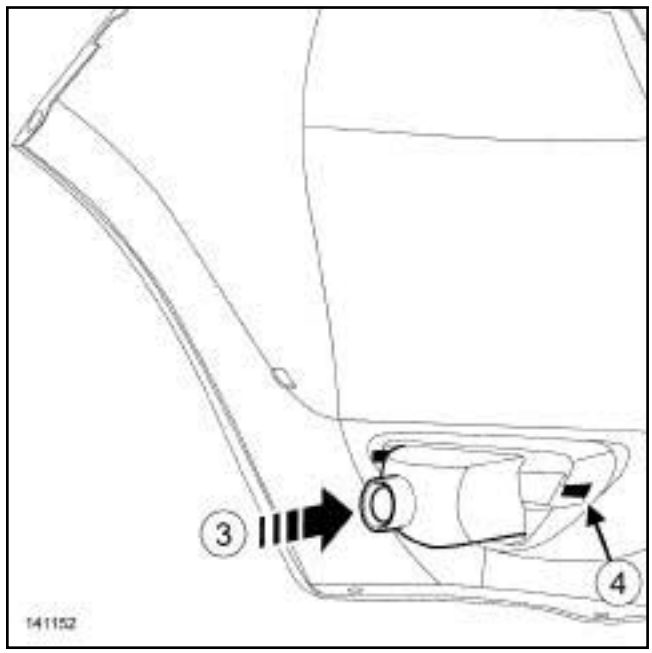
141153

❏ Remove:

- the trim for accessing the tow eye by pressing the clips (**1**) then (**2**) ,
- the rear bumper wiring (see **Rear bumper wiring: Removal - Refitting**) (88A, Wiring),
- the rear fog light (see **Rear fog lights: Removal - Refitting**) (81A, Rear lighting),
- the number plate lights (see **Number plate light: Removal - Refitting**) (81A, Rear lighting).

REAR PROXIMITY RADAR

❏ Remove the proximity radars (see **Proximity radar: Removal - Refitting**) (87F, Parking distance control).



141152

❏ Remove the reflector towards (**3**) while pressing the clip (**4**) .

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❏ Clip on the reflector.

REAR PROXIMITY RADAR

❏ Refit the proximity radars (see **Proximity radar: Removal - Refitting**) (87F, Parking distance control).

❏ Refit:

- the trim for accessing the tow eye,
- the number plate lights (see **Number plate light: Removal - Refitting**) (81A, Rear lighting),

B85 or C85 or S85, and EQUIPMENT LEVEL E3 LEISURE or EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA5 or EQUIPMENT LEVEL EAG, and DOCUMENTATION PHASE 2

- the rear fog light (see **Rear fog lights: Removal - Refitting**) (81A, Rear lighting),
- the rear bumper wiring (see **Rear bumper wiring: Removal - Refitting**) (88A, Wiring).

II - FINAL OPERATION

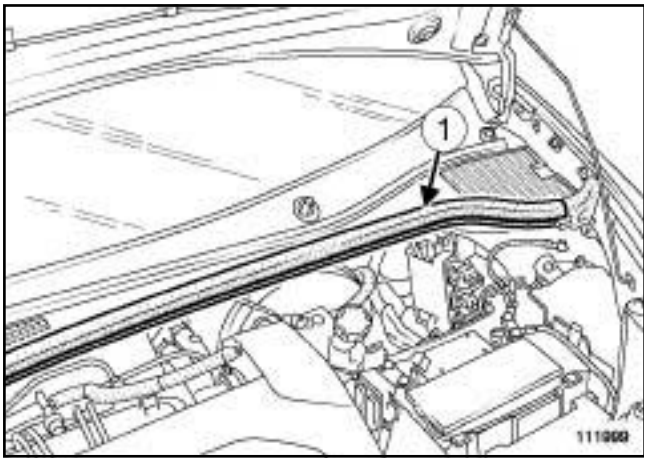
❑ Refit:

- the rear bumper (see **55A**, **Exterior protection**, **Rear bumper: Removal - Refitting**, page **55A-26**) ,
- the rear wing lights (see **Rear wing light: Removal - Refitting**) (81A, Rear lighting),
- the rear wheel arch liners (see **55A**, **Exterior protection**, **Rear wheel arch liner: Removal - Refitting**, page **55A-43**) ,
- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

REMOVAL

I - REMOVAL PREPARATION OPERATION

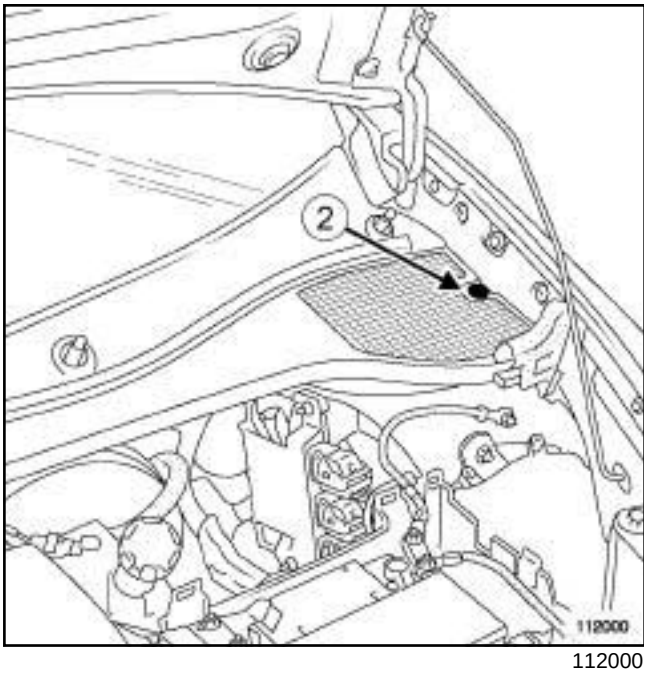
❑ Remove the wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, Mechanical systems, 85A, Washing - Wiping).



111999

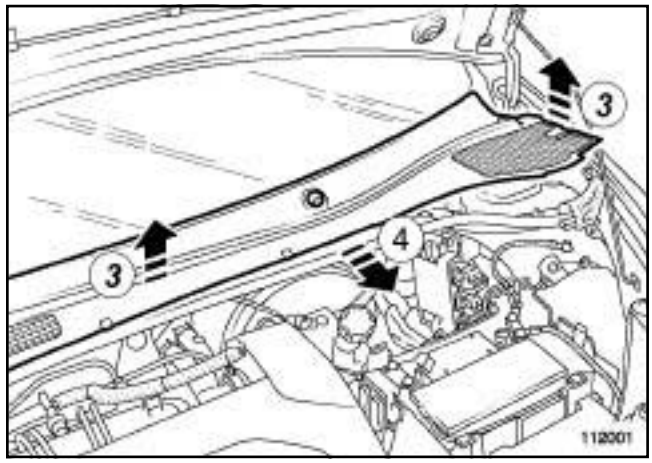
❑ Remove the seal (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112000

❑ Remove clips (**2**) .



112001

❑ Remove the scuttle panel grille (**3**) and (**4**) .

REFITTING

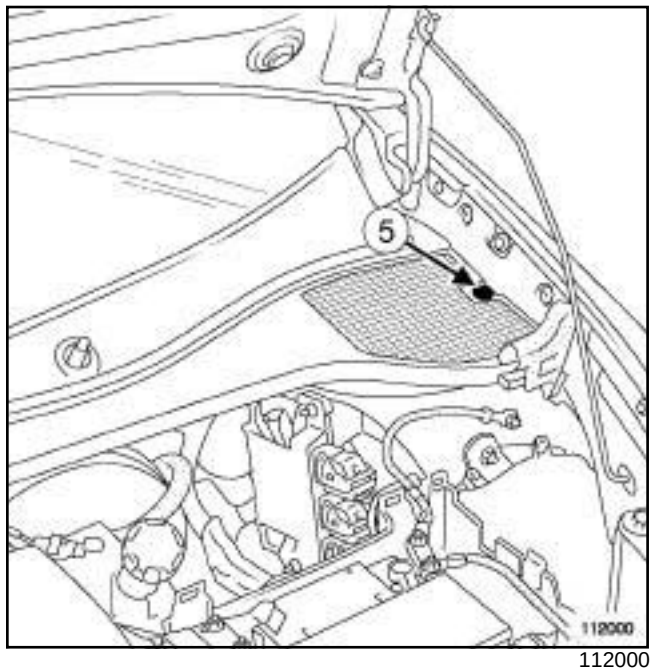
I - REFITTING PREPARATION OPERATION

❑

Note:

Check that the windscreen and the scuttle panel grille are clean before refitting.

II - REFITTING OPERATION FOR PART CONCERNED

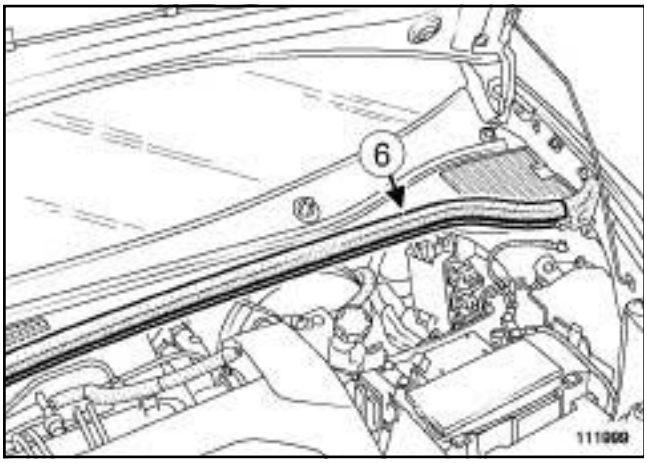


112000

❑ Refit:

- the scuttle panel grille,
- the clips (**5**) .

III - FINAL OPERATION.



111999

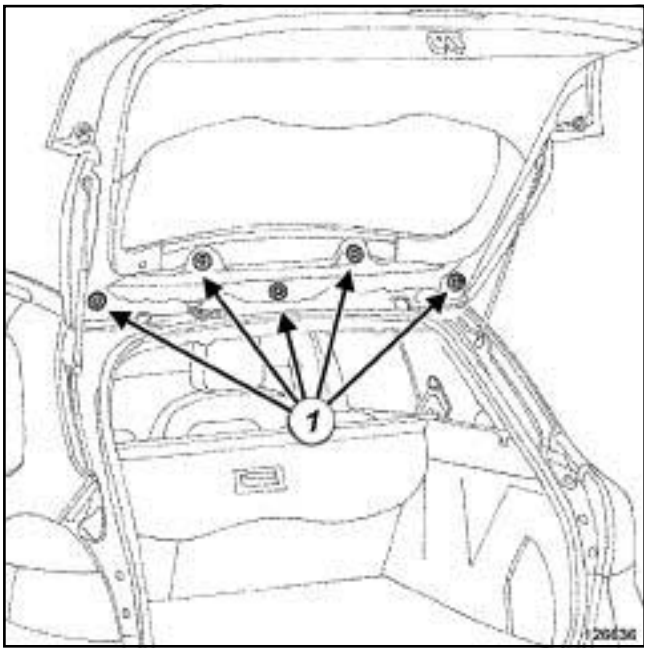
❑ Refit:

- the seal (**6**) ,
- the wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, Mechanical systems, 85A, Washing - Wiping).

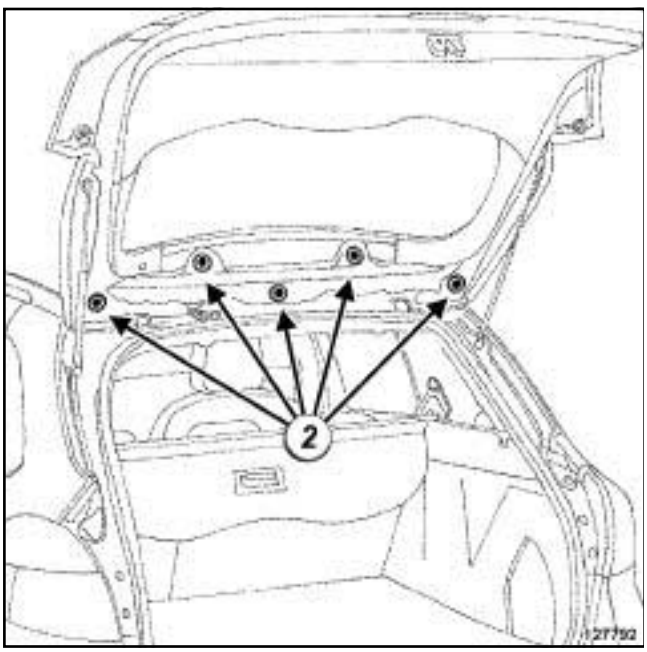
K85

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



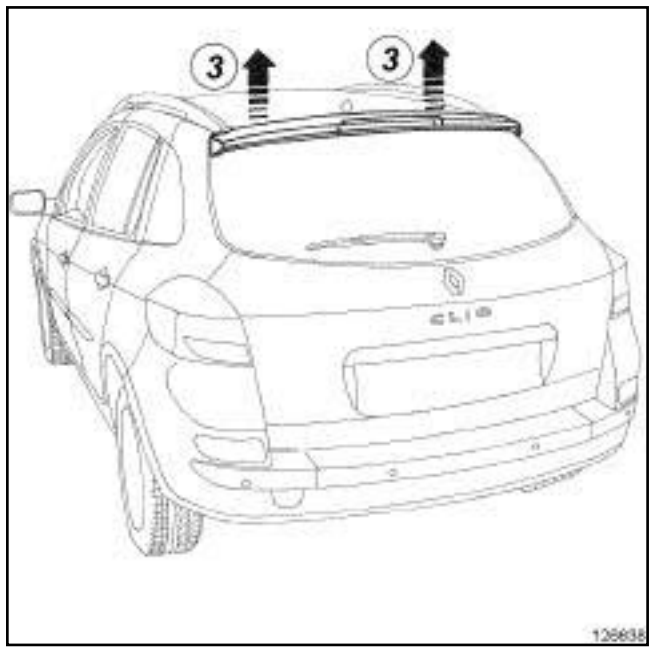
126636



127792

❑ Remove:

- the blanking covers (**1**) ,
- the nuts (**2**) .



126638

❑ Unclip the tailgate spoiler at (**3**) .

❑ Disconnect:

- the high level brake light connector,
- the rear screen washer jet pipe.

❑ Remove the tailgate spoiler.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check:

- the clips and replace if necessary,
- the cleanliness of the tailgate spoiler and the tailgate before refitting the tailgate spoiler.

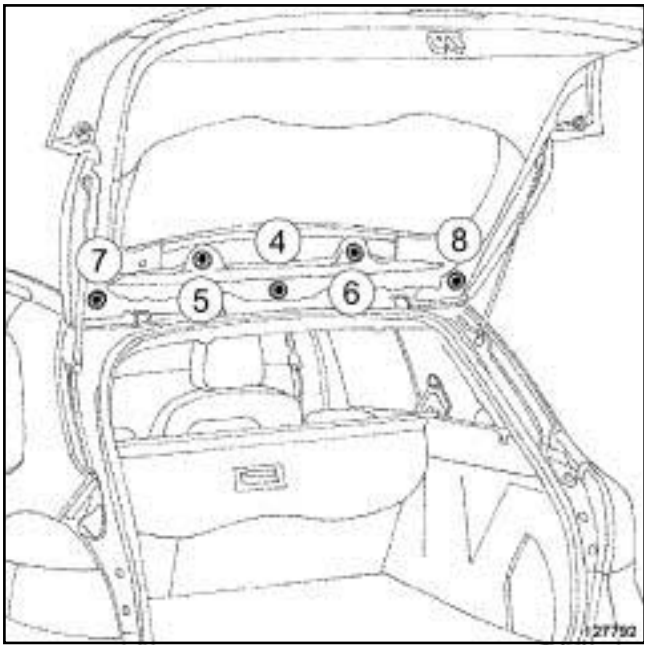
❑ Connect:

- the high level brake light connector,
- the rear screen washer jet pipe.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Clip on the tailgate spoiler.

K85



127792

❑ Refit:

- the nuts ***(2)*** in order: (**4**) , (**5**) , (**6**) , (**7**) and (**8**) ,
- the blanking covers ***(1)*** .

III - FINAL OPERATION.

❑ Carry out a function test on all functions.

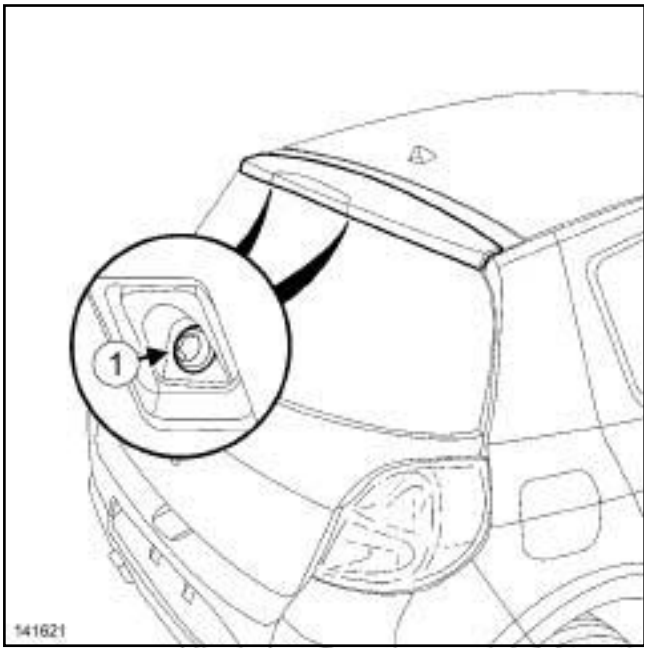
REAR SPOILER

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

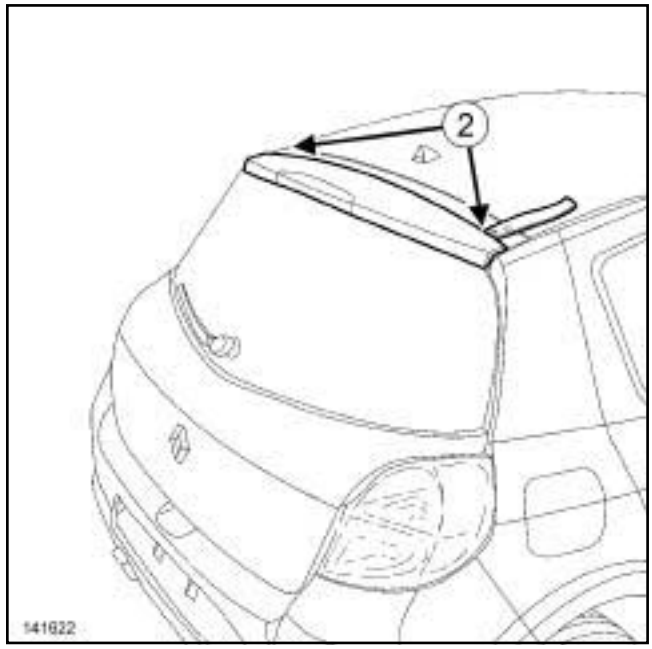
OPERATION FOR REMOVAL OF PART CONCERNED

1 - Tailgate spoiler cover



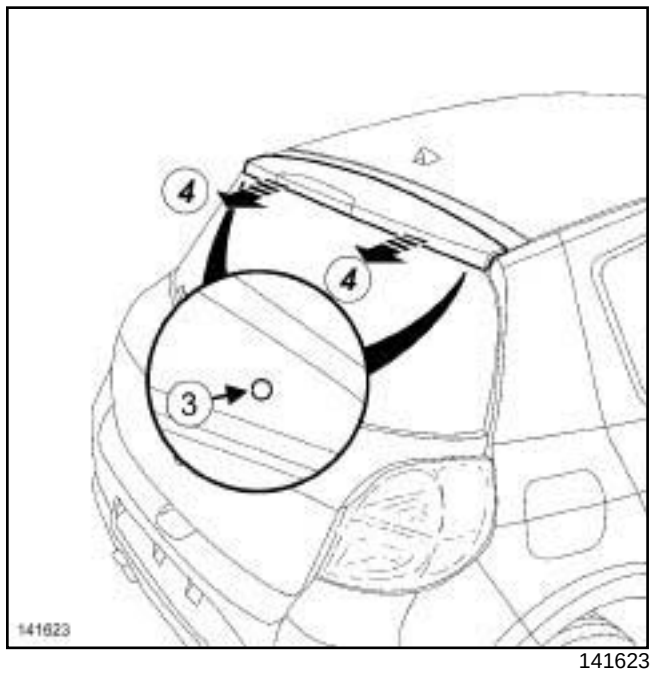
141621

❑ Remove the bolts (**1**) .



141622

❑ Detach the **DOUBLE-SIDED ADHESIVE TAPE** of the tailgate spoiler cover at (**2**) using the **(Car. 1363)**.

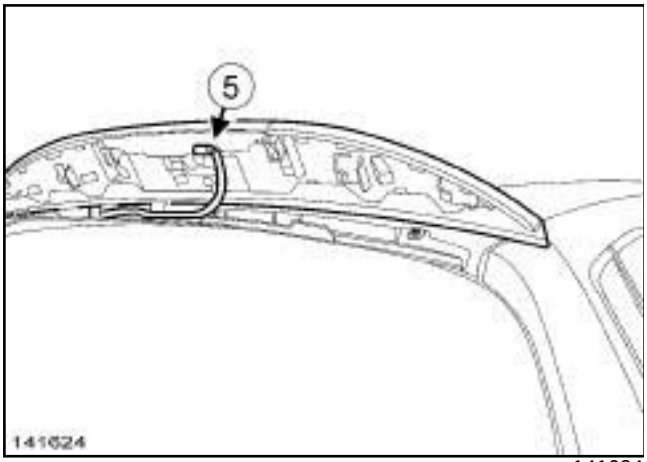


141623

❑ Place a **2.5 mm** offset wrench in the holes (**3**) .

❑ Unclip the tailgate spoiler cover at (**4**) .

REAR SPOILER

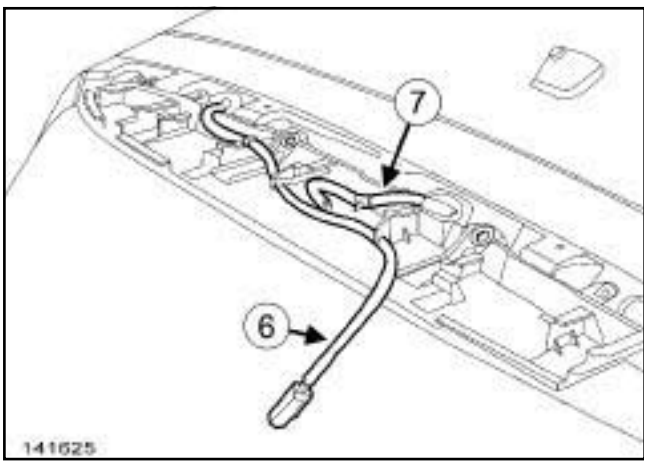


141624

❏ Disconnect the high-level brake light connector (**5**) .

❏ Remove the tailgate spoiler cover.

2 - Tailgate spoiler mounting

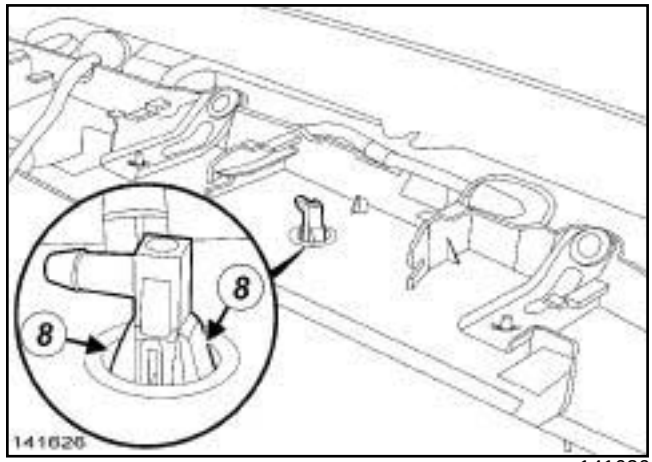


141625

❏ Partially remove the wiring of the high-level brake light connector (**6**) .

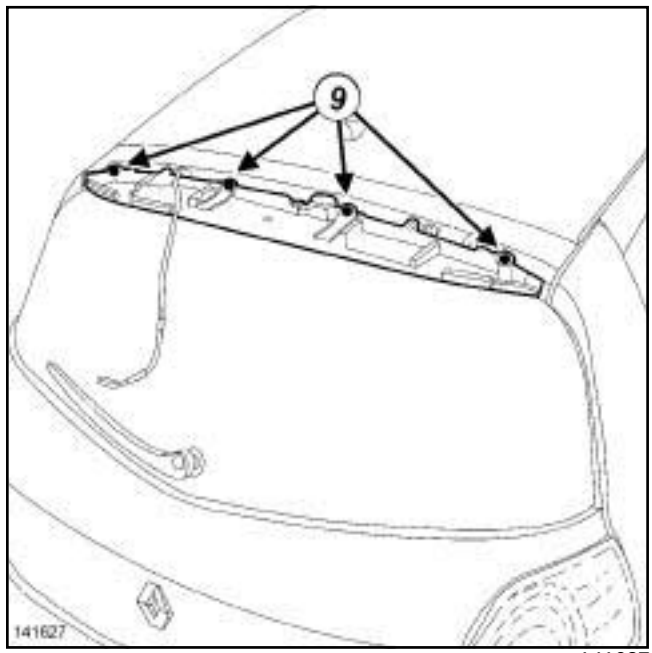
❏ Disconnect the rear screen washer jet pipe (**7**) .

❏ Partially remove the rear screen washer jet pipe (**7**) .



141626

❏ Unclip the rear screen washer jet at (**8**) .



141627

❏ Remove:

- the bolts (**9**) ,
- the tailgate spoiler mounting.

REAR SPOILER

REFITTING

I - REFITTING PREPARATION OPERATION

❑

Note:

Clean the felt of the tailgate spoiler cover before refitting.

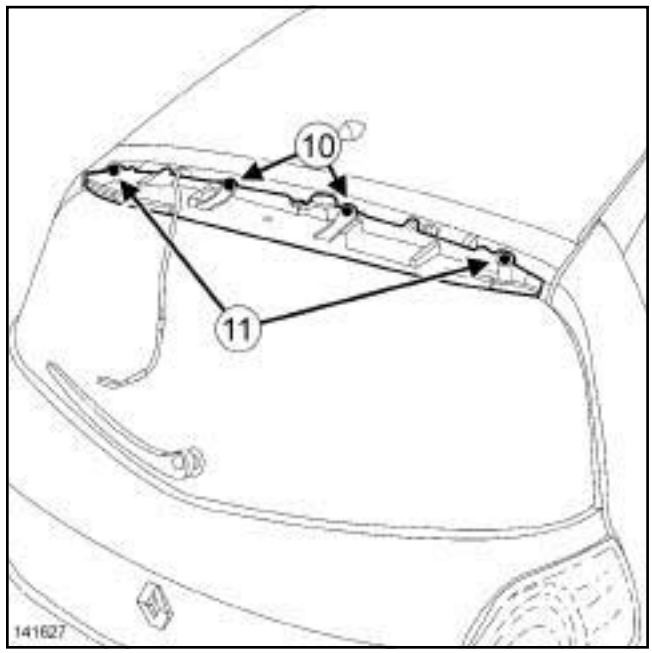
❑ Remove any adhesive residue on the tailgate using a **LINT-FREE CLOTH** soaked in **HEPTANE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Wipe the upper section of the tailgate using a clean, dry **LINT-FREE CLOTH** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Replace the **DOUBLE-SIDED ADHESIVE TAPE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the tailgate spoiler cover.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Tailgate spoiler mounting



141627

❑ Refit:

- the tailgate spoiler mounting,

- the bolts ***(9)*** in the order (**10**) then (**11**) .

❑ Clip on the rear screen washer jet.

❑ Refit the rear screen washer jet pipe ***(7)*** .

❑ Connect the rear screen washer jet pipe ***(7)*** .

❑ Refit the wiring of the high-level brake light connector ***(6)*** .

2 - Tailgate spoiler cover

❑ Connect the high-level brake light connector ***(5)*** .

❑ Carry out a function test.

❑ Remove the protective backing from the **DOUBLE-SIDED ADHESIVE TAPE**.

❑ Refit the tailgate spoiler cover.

❑ Clip on the tailgate spoiler cover.

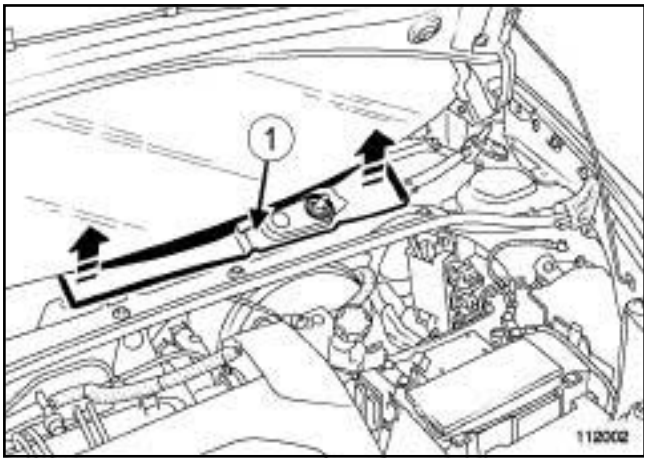
❑ Refit the bolts ***(1)*** .

❑ Press the side sections to bond the tailgate spoiler cover.

REMOVAL

I - REMOVAL PREPARATION OPERATION

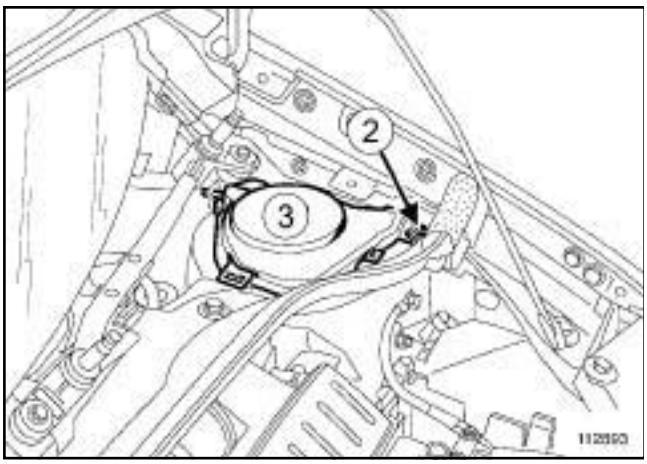
❑ Remove the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) .



112002

❑ Remove the trim under the scuttle panel grille (**1**) .

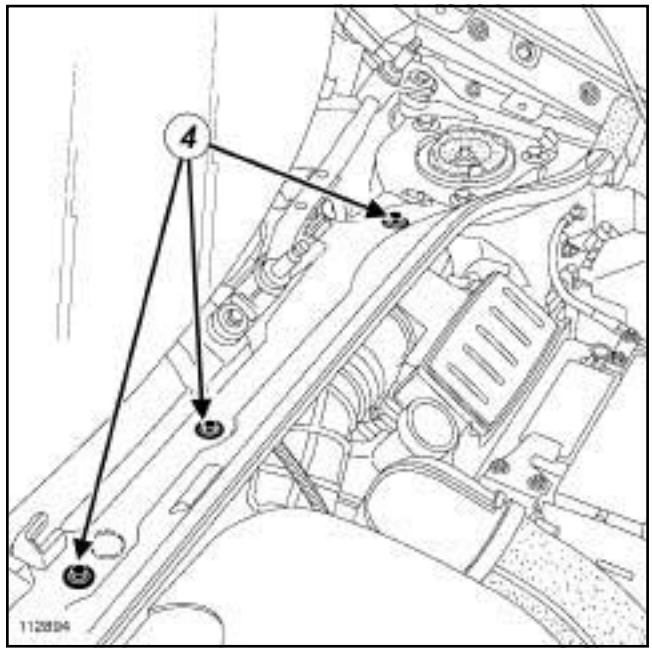
II - OPERATION FOR REMOVAL OF PART CONCERNED



112893

❑ Remove:

- the bolts (**2**) ,
- the blanking covers (**3**) .



112894

❑ Remove the bolts (**4**) .

❑ Extract the scoop under the scuttle panel grille.

REFITTING

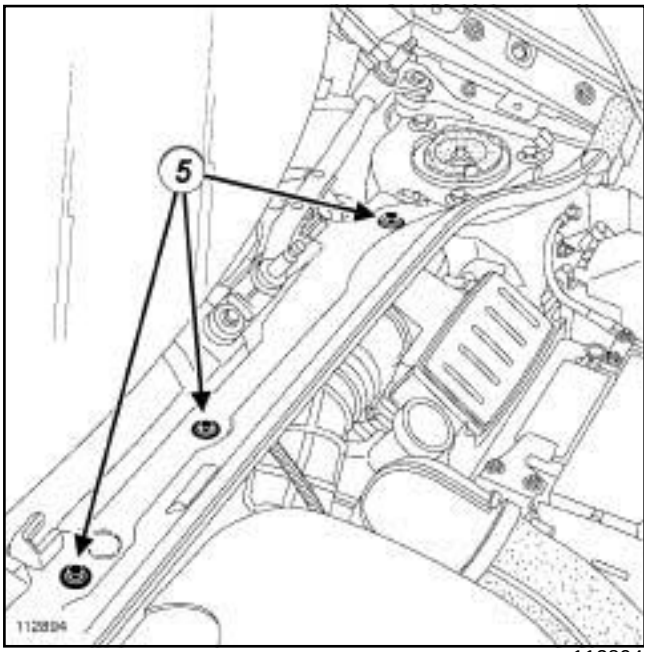
I - REFITTING PREPARATION OPERATION

❑

WARNING

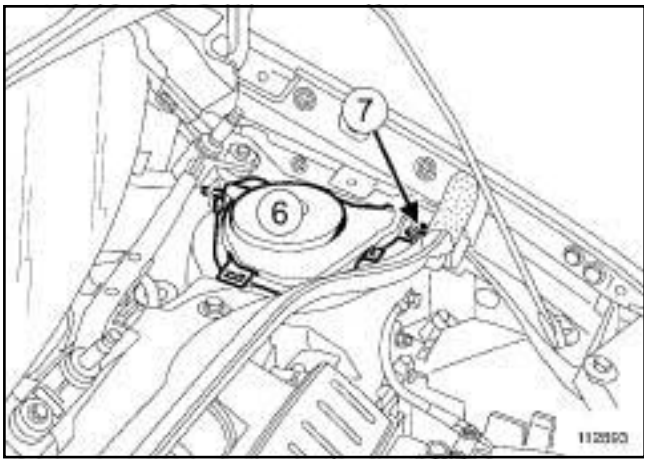
It is essential to replace the foam strips which seal the scoop under the scuttle panel grille. The foam strips are available from the Parts Department.

II - REFITTING OPERATION FOR PART CONCERNED



112894

❏ Refit the bolts (**5**) .



112893

❏ Refit:

- the blanking covers (**6**) ,
- the bolts (**7**) .

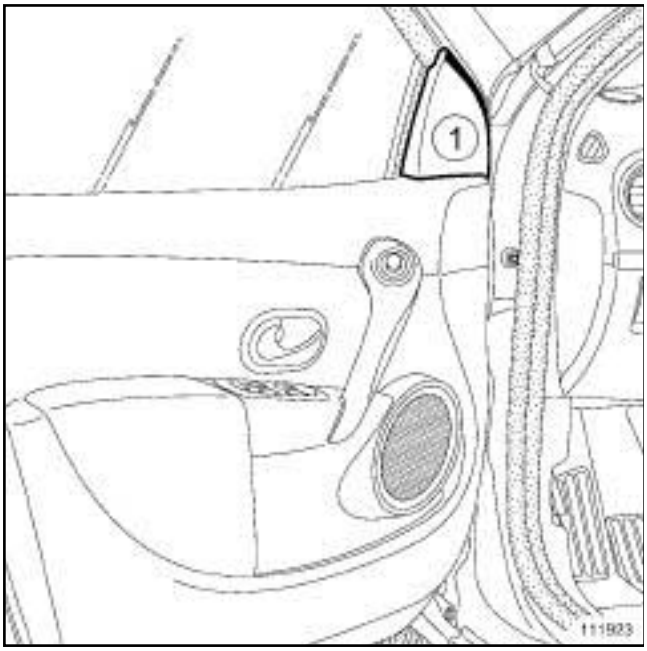
III - FINAL OPERATION

❏ Reclip the trim under the scuttle panel grille.

❏ Refit the scuttle panel grille (see **56A**, **Exterior equipment**, **Scuttle panel grille: Removal - Refitting**, page **56A-1**) .

REMOVAL

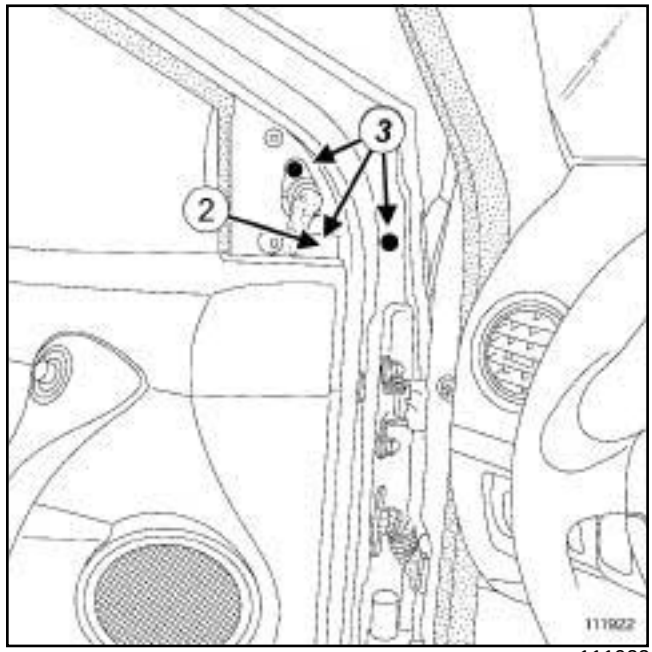
I - REMOVAL PREPARATION OPERATION



111923

❑ Unclip the trim (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



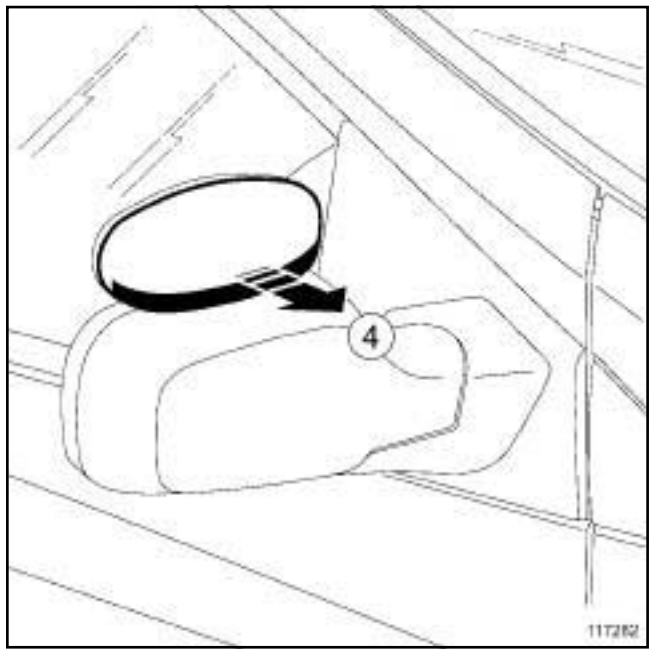
111922

❑ Remove:

- the sealing foam (**2**) ,
- the bolts (**3**)
- the door mirror.

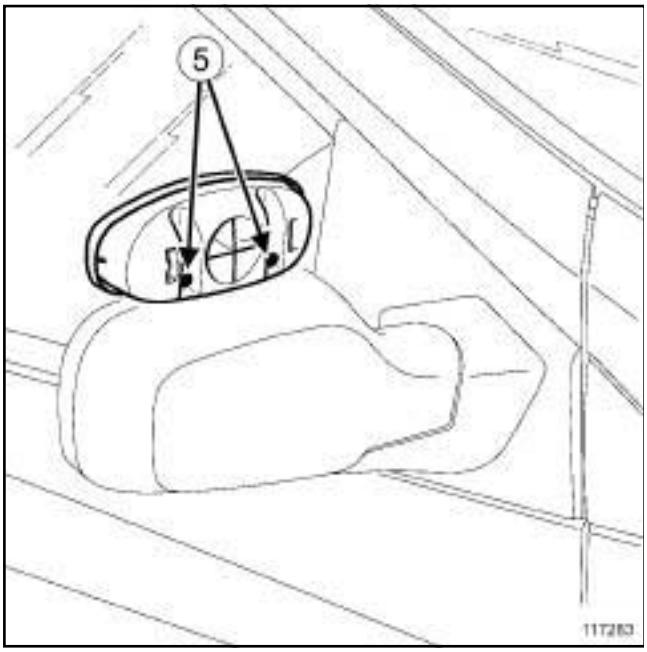
❑ Disconnect the supply connectors (depending on equipment level).

SCHOOL VEHICLE



117282

❑ Unclip the casing (**4**) .



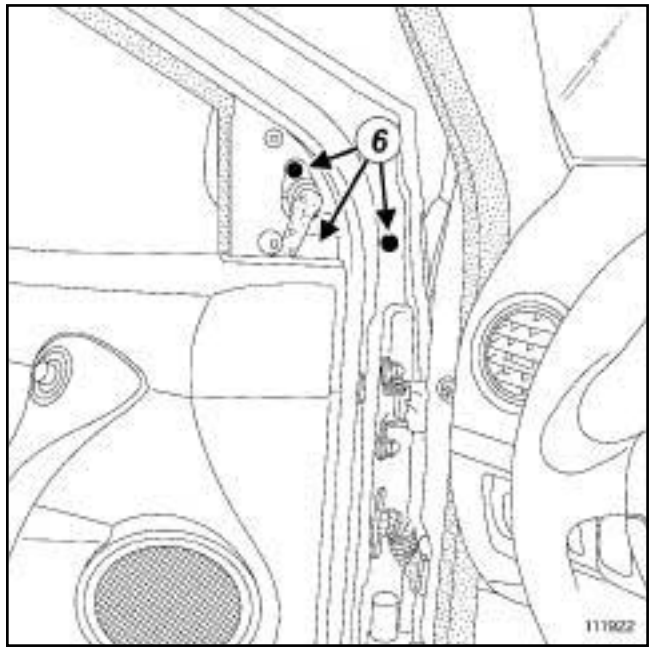
117283

❏ Remove the bolts (**5**) .

❏ Remove the door mirror.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



111922

❏ Connect the supply connector (depending on equipment level).

❏ Refit:

- the door mirror,
- the bolts (**6**) ,
- the sealing foam.

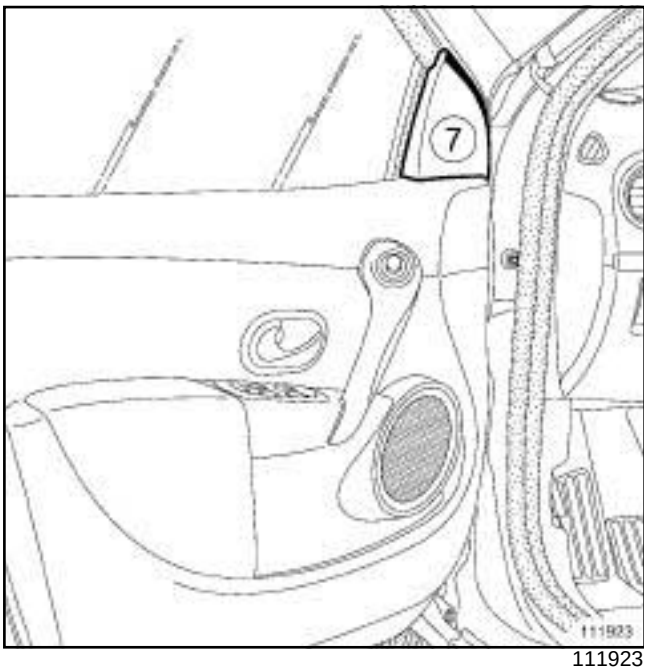
SCHOOL VEHICLE

❏ Position the door mirror.

❏ Refit the door mirror bolts.

❏ Clip the casing in place.

II - FINAL OPERATION



111923

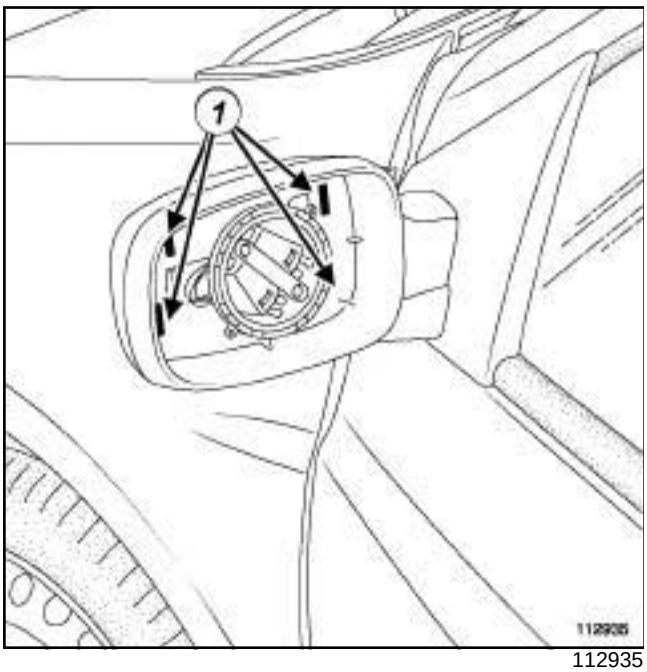
❑ Clip the trim piece in place (**7**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the door mirror glass (see **56A**, **Exterior equipment**, **Door mirror glass: Removal - Refitting**, page **56A-16**) .

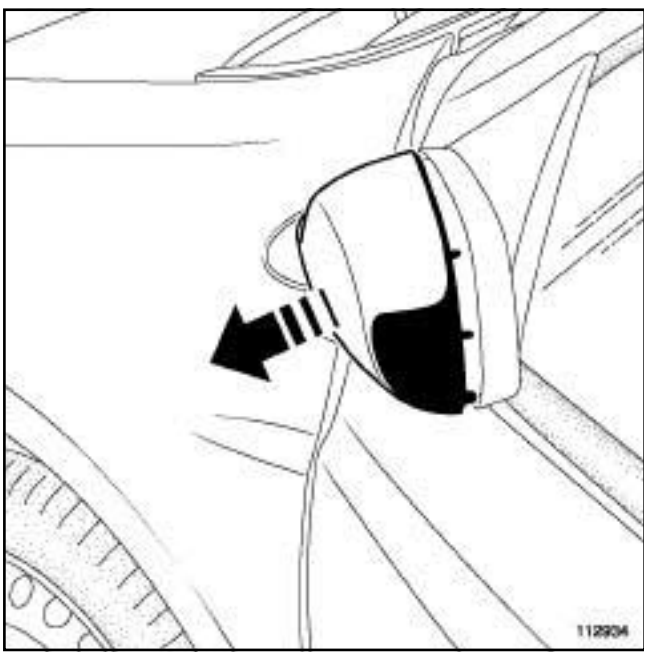
II - REMOVAL OPERATION FOR PART CONCERNED



112935

❑ Unclip the clips (**1**) .

❑ Fold in the door mirror.



112934

❑ Unclip the door mirror casing.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Reclip the door mirror casing in position.

II - FINAL OPERATION

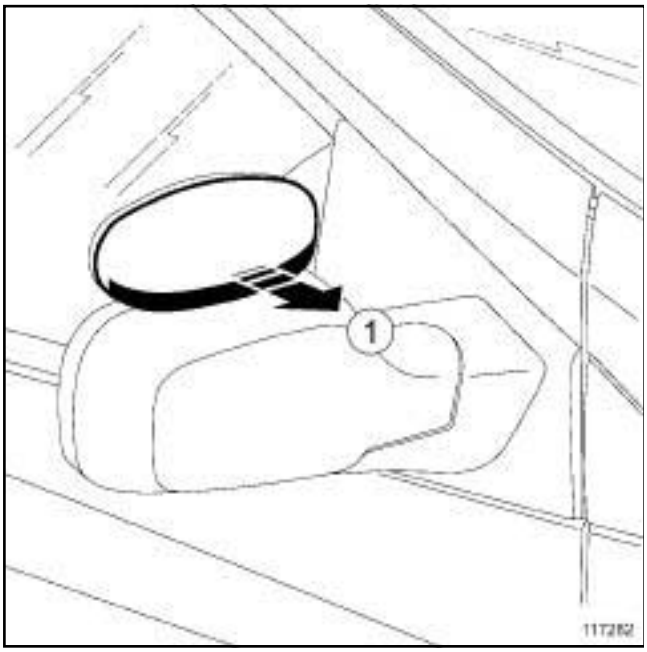
❑ Refit the door mirror glass (see **56A**, **Exterior equipment**, **Door mirror glass: Removal - Refitting**, page **56A-16**) .

SCHOOL VEHICLE

REMOVAL

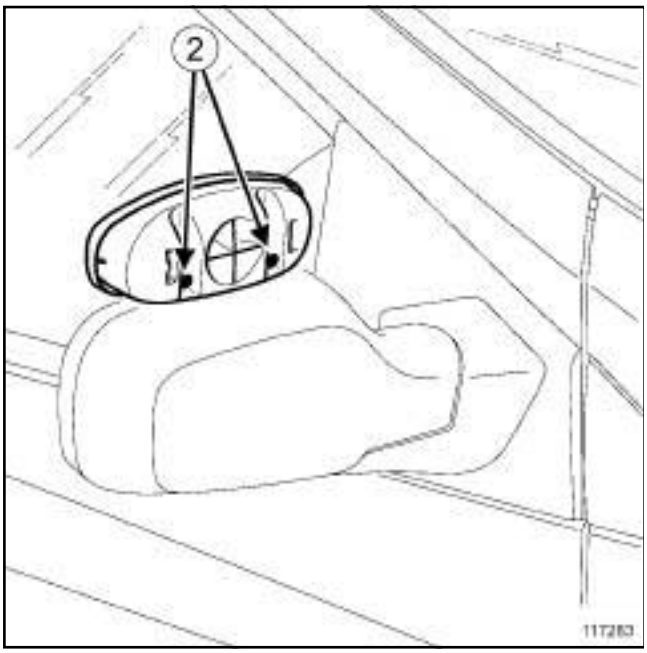
I - REMOVAL PREPARATION OPERATION

❑ Remove the door mirror glass (see **56A**, **Exterior equipment**, **Door mirror glass: Removal - Refitting**, page **56A-16**) .



117282

❑ Unclip the casing (**1**) .

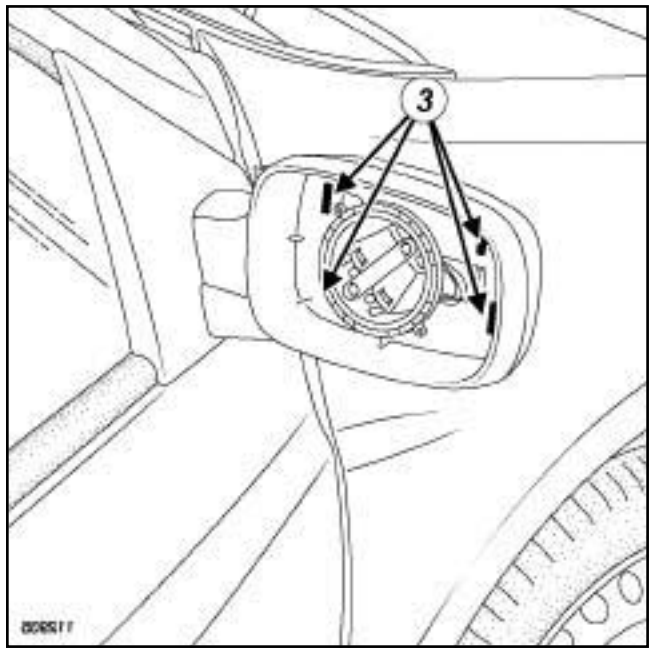


117283

❑ Remove the bolts (**2**) .

❑ Remove the door mirror.

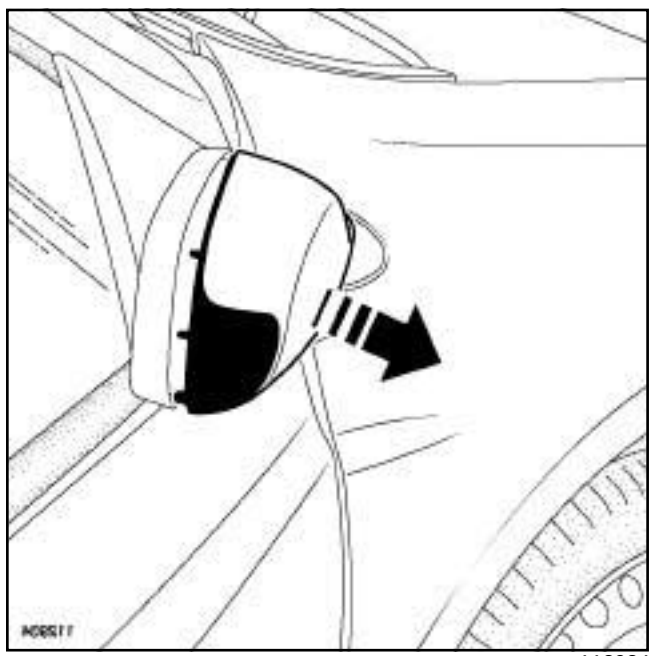
II - OPERATION FOR REMOVAL OF PART CONCERNED



112935

❑ Unclip clips (**3**) .

❑ Fold in the door mirror.



112934

❑ Unclip the door mirror casing.

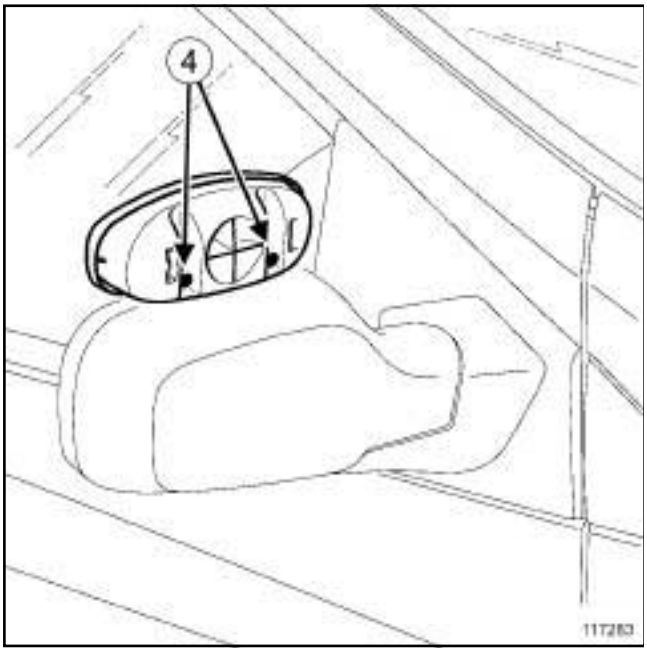
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip on the door mirror casing.

SCHOOL VEHICLE

II - FINAL OPERATION



117283

❏ Offer up the door mirror.

❏ Refit the bolts (**4**) .

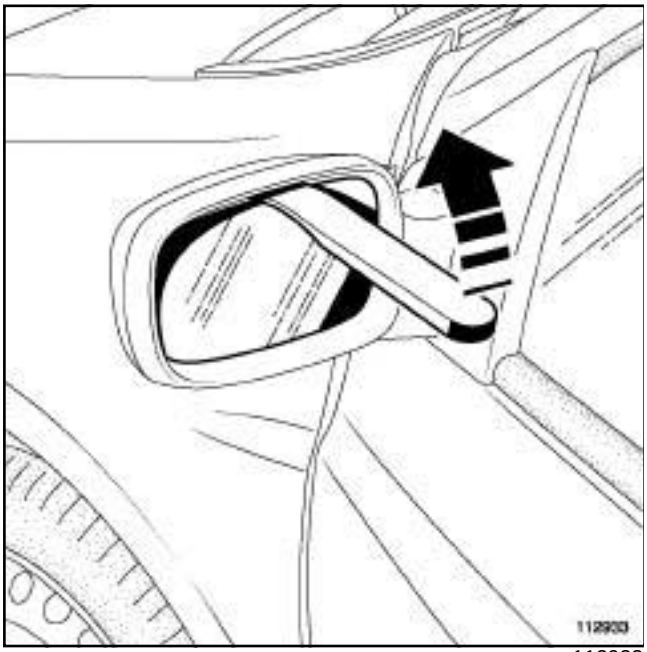
❏ Clip on the casing

❏ Refit the door mirror glass (see **56A**, **Exterior equipment**, **Door mirror glass: Removal - Refitting**, page **56A-16**) .

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112933

❏ Unclip the door mirror glass using the **(Car. 1363)**.

❏ Disconnect the supply connectors (depending on the equipment level).

REFITTING

REFITTING PREPARATION OPERATION

❏ Connect the supply connectors (depending on the equipment level).

❏ Clip the door mirror glass in position.

❑

Note:

Once removed, the side decorative strips cannot be refitted and must be replaced each time.

REMOVAL

I - REMOVAL PREPARATION OPERATION

1 - Front side door

❑ Remove:

- the front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim),
- the door mirror (see **56A**, **Exterior equipment**, **Door mirror: Removal - Refitting**, page **56A-10**) ,
- the front side door sliding window (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) ,
- the front side door glass run channel (see **Front side door window run channel: Removal - Refitting**) (66A, Window sealing),
- the front side door exterior weatherstrip (see **Front side door exterior weatherstrip: Removal - Refitting**) (66A, Window sealing).

2 - Rear side door

B85 or K85

❑ Remove:

- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (72A, Side opening element trim),
- the rear side door sliding window, without removing it from the door box section (see **54A**, **Windows**, **Rear side door sliding window: Removal - Refitting**, page **54A-6**) .

B85

❑ Remove:

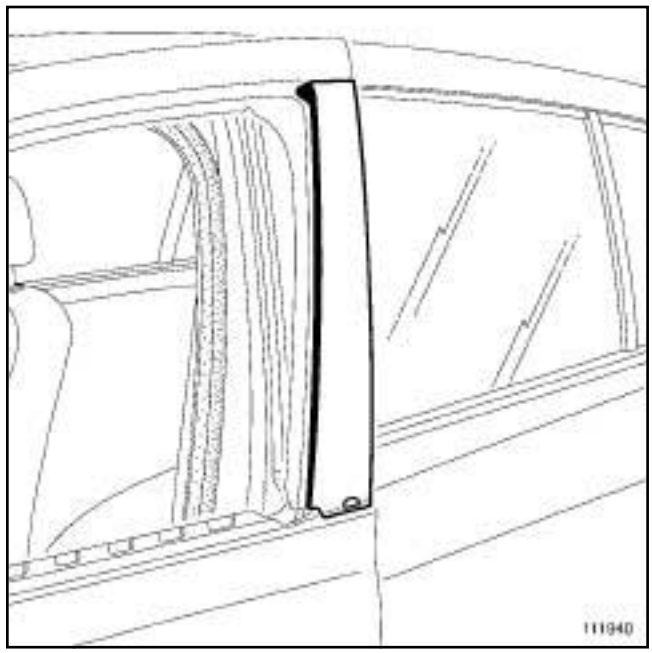
- (partially) the front section of the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (66A, Window sealing),
- (partially) the front section of the rear side door exterior weatherstrip (see **Rear side door exterior weatherstrip: Removal - Refitting**) (66A, Window sealing).

K85

❑ Remove:

- the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (66A, Window sealing),
- the fixed rear side door window (see **54A**, **Windows**, **Rear side door fixed window: Removal - Refitting**, page **54A-11**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



111940

❑ Strip off the side decorative strip using a hot air gun.

Note:

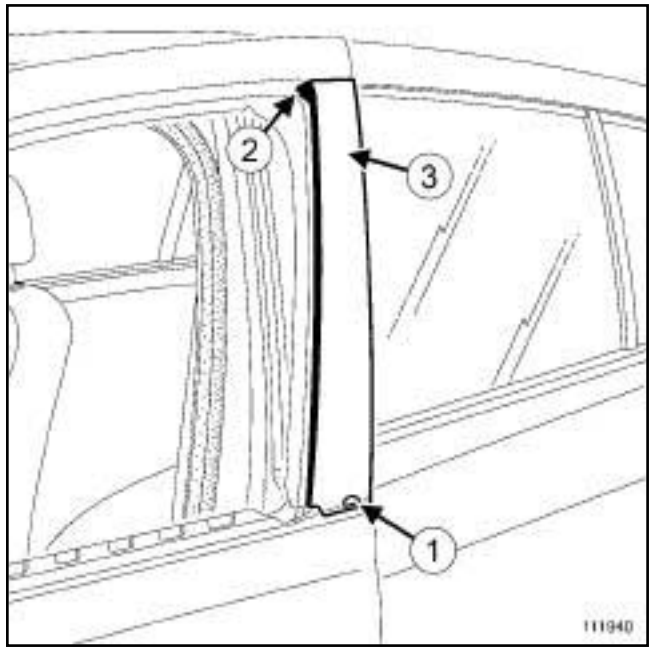
The removal operation is identical for the rear side decorative strip.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the adhesive surface of the film with **HEPTANE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) and wipe with a **LINT-FREE CLOTH**.

II - REFITTING OPERATION FOR PART CONCERNED



111940

❑ Offer up the decorative strip to be bonded to the door pillar and centre it visually over hole (**1**) and on the upper section of the upright (**2**) .

❑ Hold the lower section of the decorative strip in place with masking tape.

❑ Turn back the top of the decorative strip and pull away the protective paper to mark (**3**) .

❑ Stick the decorative strip down taking care to keep it properly aligned.

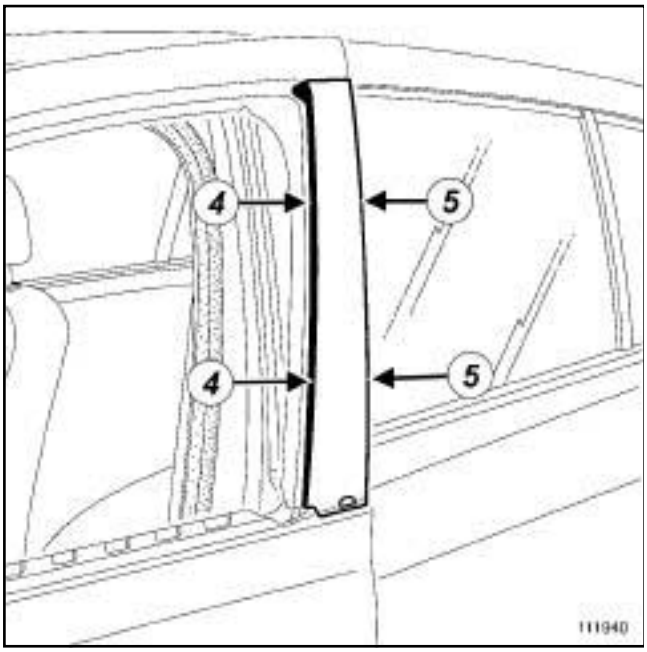
❑ Pull away the protective paper from the upper section of the decorative strip.

❑ Stick down the upper section smoothing it with a plastic spatula from bottom to top in a continuous movement.

❑ Pull away the masking tape from the lower section of the decorative strip.

❑ Smooth from top to bottom with the plastic spatula in a continuous movement, gradually pulling away the protective paper following the progression of the bonding taking care to ensure that it stays aligned.

> Note:
>
> Do not press too heavily on the plastic spatula otherwise you may stretch and deform the decorative side strip.



111940

❏ Stick down the decorative strip to the two edges (**4**) and (**5**) using the plastic spatula.

❏ Smooth edge (**4**) with a movement from the rear to the front ensuring that the decorative strip is properly bonded on the run channel side.

❏ Fold back edge (**5**) gradually over its entire length with the plastic spatula and finish the application with your thumb along the interior of the upright.

Note:

The procedure for fitting the decorative strip on the rear side door is identical.

III - FINAL OPERATION.

1 - Front side door

❏ Refit:

- the front door glass run channel (see **Front side door window run channel: Removal - Refitting**) (66A, Window sealing),
- the front door exterior weatherstrip (see **Front side door exterior weatherstrip: Removal - Refitting**) (66A, Window sealing),
- the front sliding door window (see **54A**, **Windows**, **Front side door sliding window: Removal - Refitting**, page **54A-4**) ,
- the door mirror (see **56A**, **Exterior equipment**, **Door mirror: Removal - Refitting**, page **56A-10**) ,
- the front door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

2 - Rear side door

B85

❏ Refit:

- the rear side door exterior weatherstrip (see **Rear side door exterior weatherstrip: Removal - Refitting**) (66A, Window sealing),
- the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (66A, Window sealing).

K85

❏ Refit:

- the fixed rear side door window (see **54A**, **Windows**, **Rear side door fixed window: Removal - Refitting**, page **54A-11**) ,
- the rear side door glass run channel (see **Rear side door window run channel: Removal - Refitting**) (66A, Window sealing).

B85 or K85

❏ Refit:

- the rear side door sliding window (see **54A**, **Windows**, **Rear side door sliding window: Removal - Refitting**, page **54A-6**) ,
- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (72A, Side opening element trim).

I - CONSTRUCTOR'S BADGE

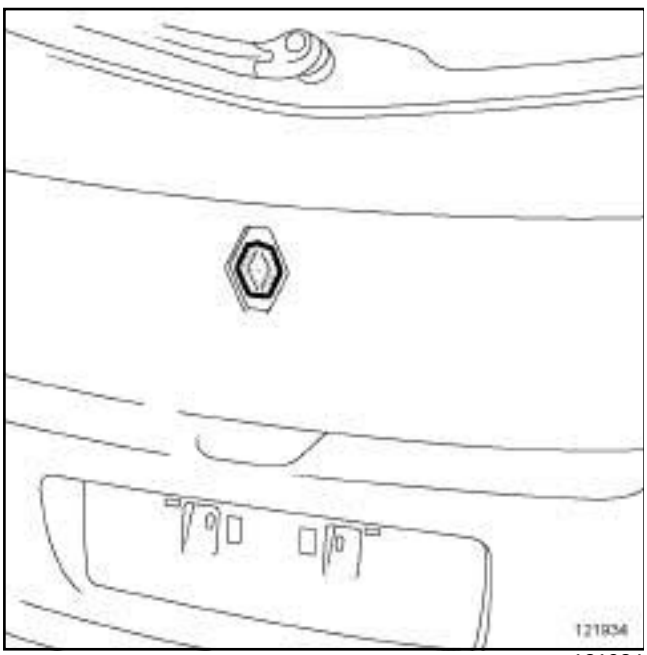
1 - REMOVAL PREPARATION OPERATION

❏ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

2 - OPERATION FOR REMOVAL OF PART CONCERNED

121933

❏ Unclip the constructor's badge.



121934

❏ Unclip the constructor's badge mounting, via the inside of the tailgate box.

3 - REFITTING OPERATION FOR PART CONCERNED

❏ Clip on:

- the badge mounting,
- the constructor's badge.

4 - FINAL OPERATION

❏ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

II - VEHICLE BADGE

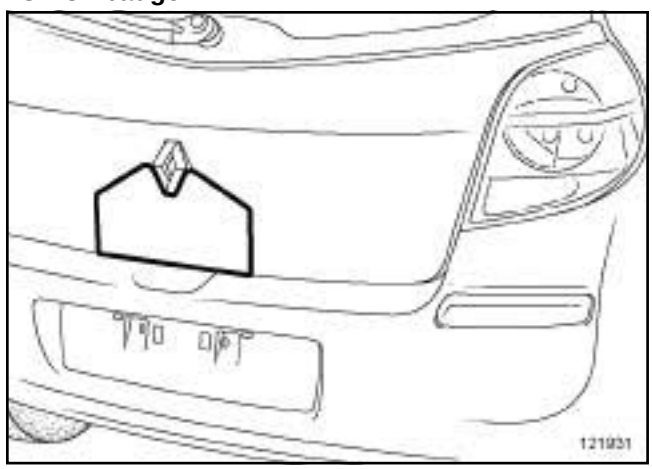
1 - FITTING PREPARATION OPERATION

❏ Clean the adhesive surface of the vehicle badge with a lint-free cloth soaked in heptane.

❏ Wipe the adhesive surface of the vehicle badge with a clean, dry cloth soaked in heptane.

2 - FITTING

"CLIO" badge



121931

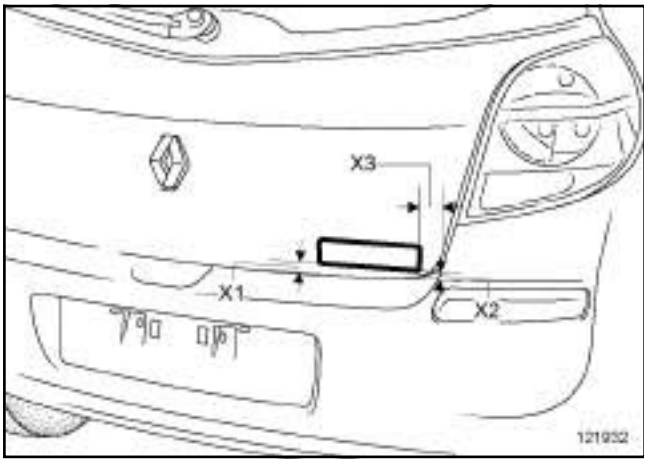
❏ Remove the protective paper from the back of the vehicle badge.

❏ Position the template/badge assembly.

❏ Stick on the vehicle badge.

❏ Remove the template.

"RENAULT" badge



121932

❏ Remove the protective paper from the back of the vehicle badge.

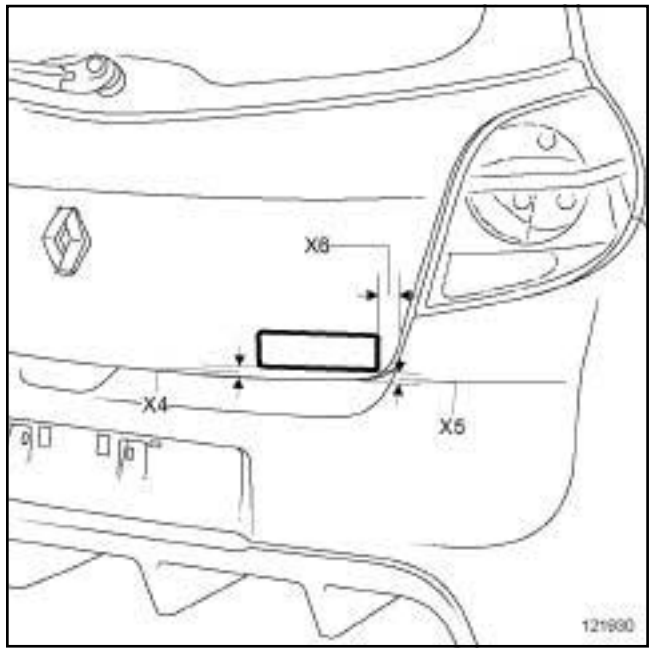
❏ Position the template/badge assembly:

- (**X1**) : **15 mm**,
- (**X2**) : **7 mm**,
- (**X3**) : **32 mm**.

❏ Stick on the vehicle badge.

❏ Remove the template.

"RENAULT SPORT" badge



121930

❏ Remove the protective paper from the back of the vehicle badge.

❏ Position the template/badge assembly:

- (**X4**) : **12 mm**,
- (**X5**) : **6 mm**,
- (**X6**) : **20 mm**.

❏ Stick on the vehicle badge.

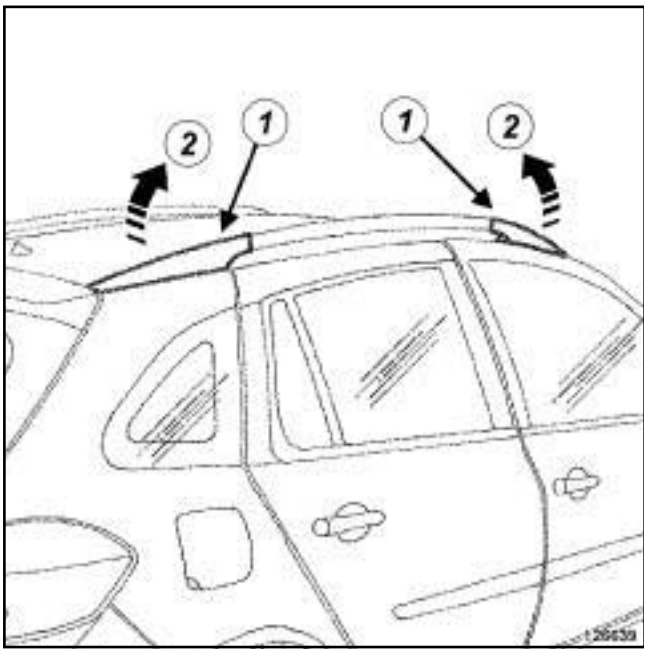
❏ Remove the template.

K85

Tightening torques ▽	
roof bar bolts	**8 N.m**
roof bar nuts	**8 N.m**

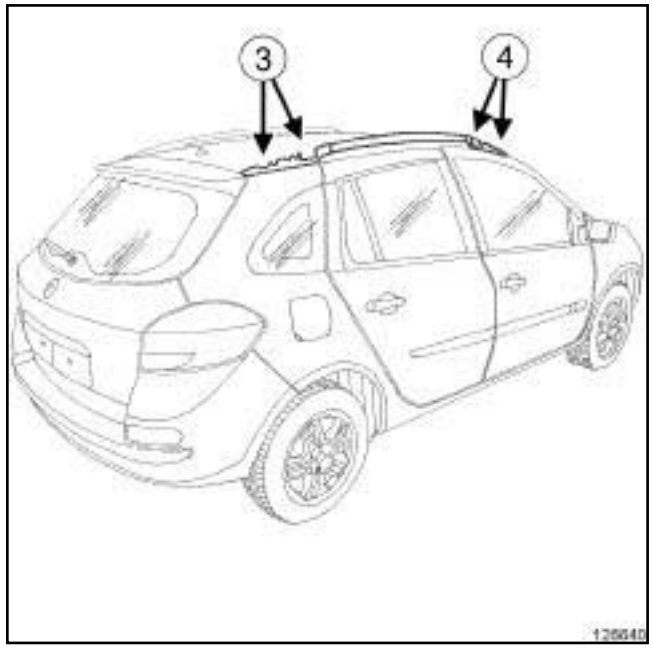
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



126639

❑ Remove the trims (**1**) from the roof bar at (**2**) .



126640

❑ Remove:

- the roof bar bolts (**3**) ,
- the roof bar nuts (**4**) ,
- the roof bar.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition and cleanliness of:

- the roof bar,
- the roof,
- the roof bar support plates (replace if necessary).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the roof bar.

❑ Torque tighten:

- the **roof bar bolts (8 N.m)** ***(3)*** ,
- the **roof bar nuts (8 N.m)** ***(4)*** .

❑ Refit the roof bar trims.

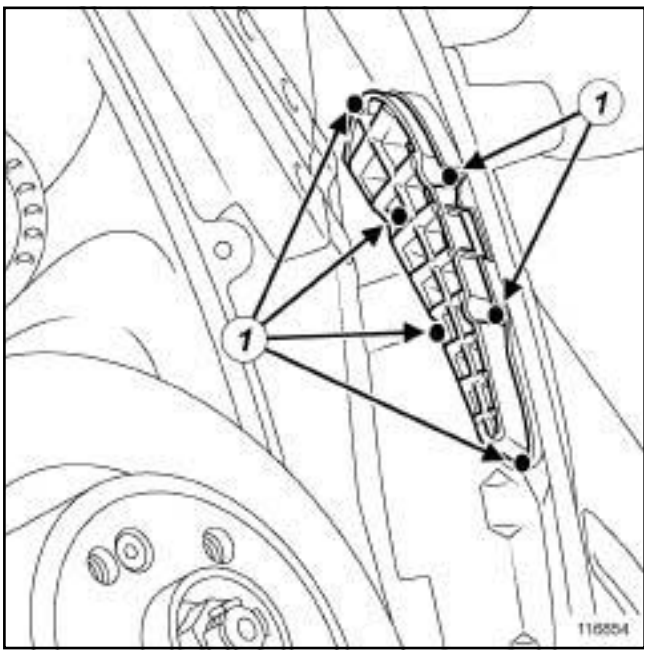
C85, and EQUIPMENT LEVEL SPORT

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the wheel arch liner from the side in question (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116854

❏ Remove:

- the washers (**1**) ,
- the front wing air extraction grille.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check the condition of the washers ***(1)*** ; replace them if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the front wing air extraction grille,
- the washers ***(1)*** .

III - FINAL OPERATION

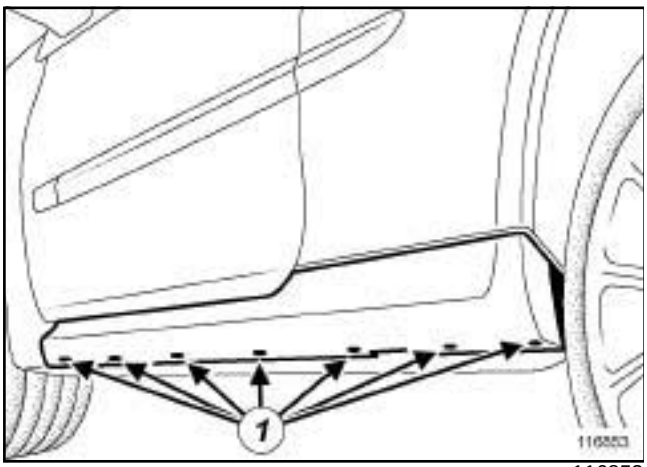
❏ Refit the wheel arch liner (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

Special tooling required	
Car. 1363	Set of trim removal levers.

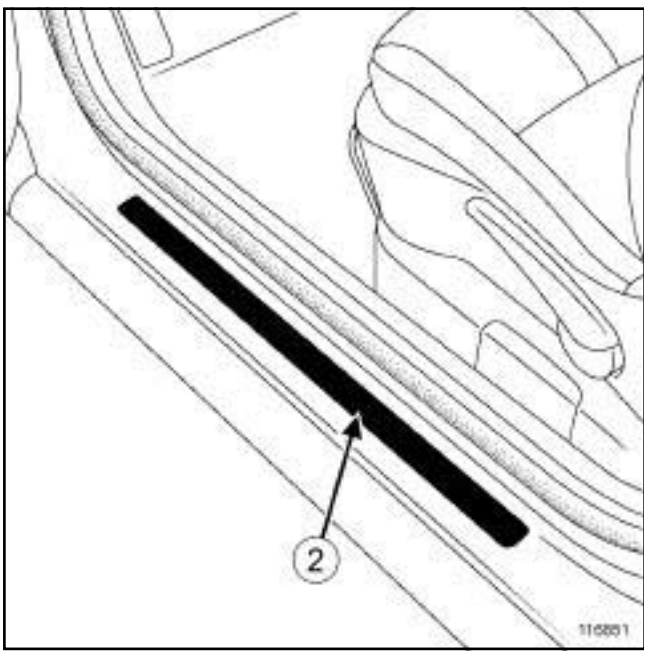
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



116853

❑ Remove the bolts (**1**) .

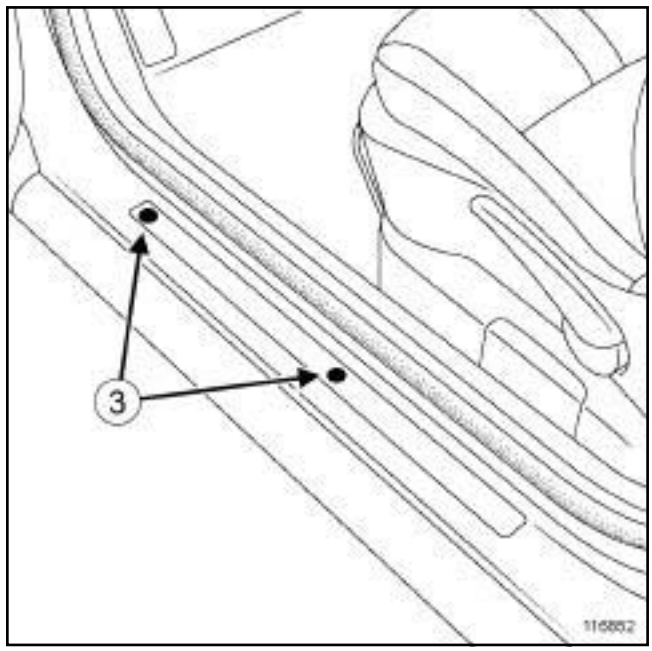


116851

❑ Detach the decorative strip (**2**) .

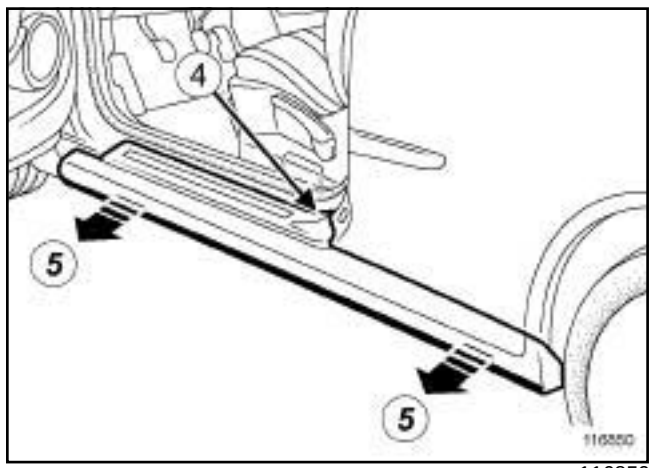
Note:

Replace the decorative strip (**2**) every time it is removed.



116852

❑ Remove the bolts (**3**) .



116850

❑ Detach the double-sided tape (**4**) using the **(Car. 1363)**.

❑ Unclip the sill panel extender (**5**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the clips, replace them if necessary.

❑ Position the sill panel extender clips.

❑ Clean the bonding zone of the decorative strip and double-sided tape with **HEPTANE** using a **LINT-FREE CLOTH** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

EQUIPMENT LEVEL EAC or EQUIPMENT LEVEL SPORT

❑ Bond the double-sided tape in place.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the sill panel extender,
- the bolts ***(3)*** and ***(1)*** .

❑ Attach a new decorative strip.

EQUIPMENT LEVEL EAG

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

1 - Sill panel extender

❏ Protect the wing using masking tape.

2 - Sill panel extender mounting

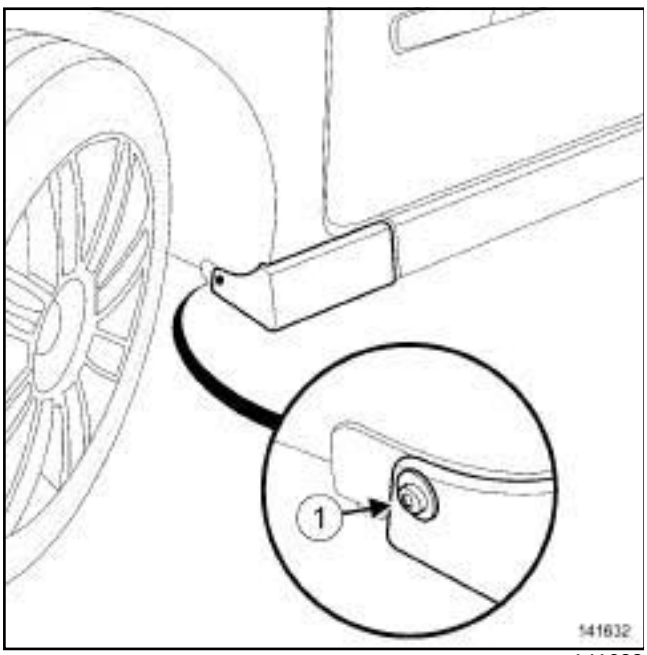
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liner (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) .

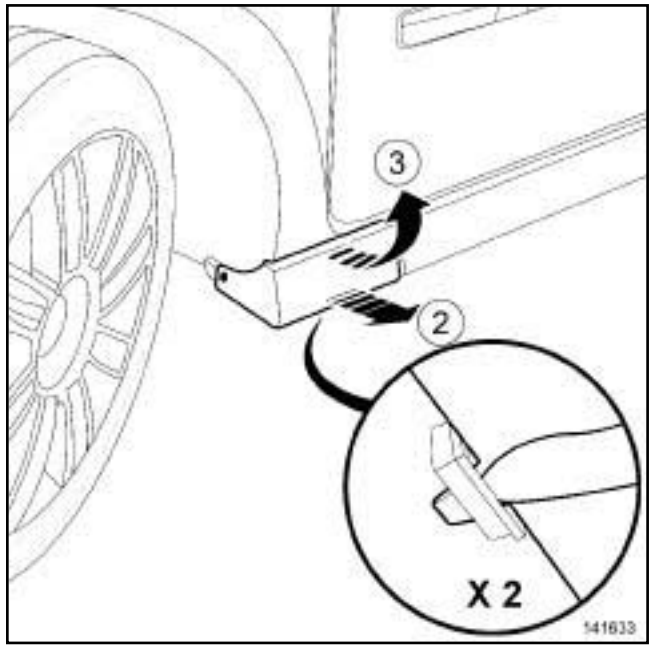
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Sill panel extender



141632

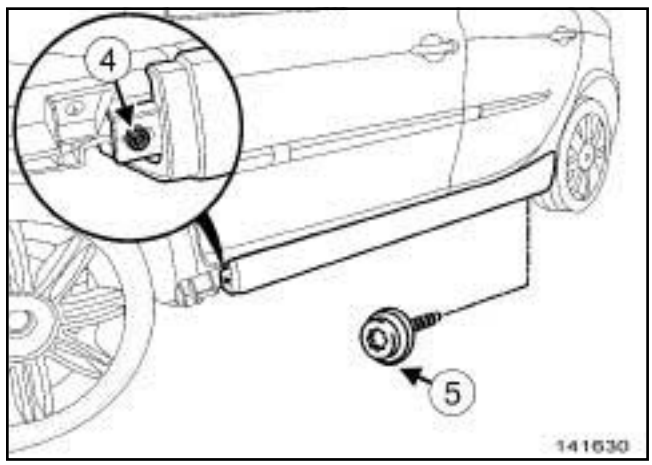
❏ Remove the bolt (**1**) .



141633

❏ Unclip the sill panel extender front section at (**2**) using the **(Car. 1363)**.

❏ Remove the sill panel extender front section (**3**) .

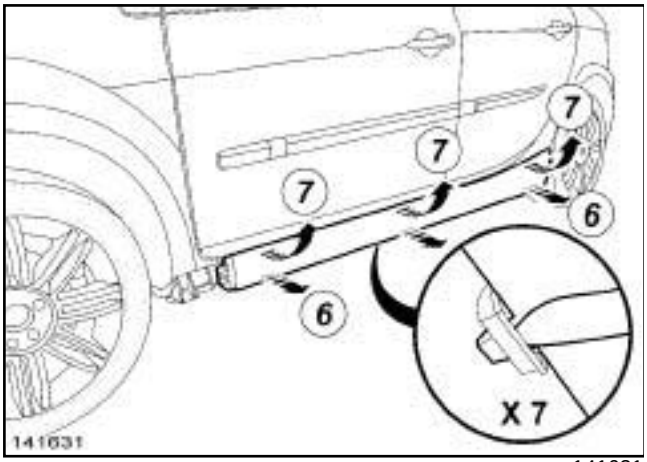


141630

❏ Remove:

- the plastic rivet (**4**) ,
- the bolt (**5**) .

EQUIPMENT LEVEL EAG

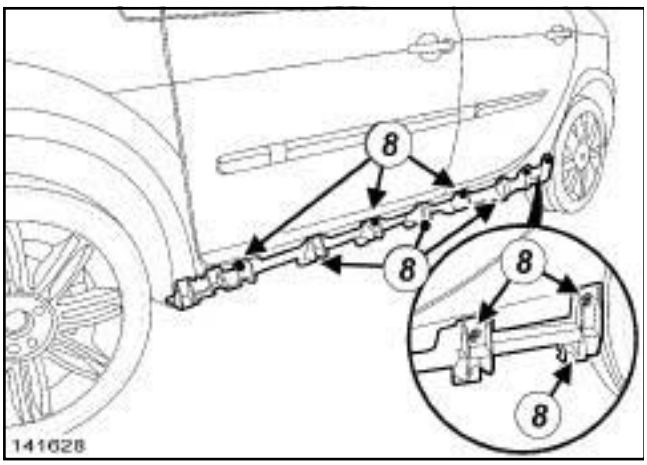


141631

❏ Unclip the sill panel extender at (**6**) using the tool **(Car. 1363)**.

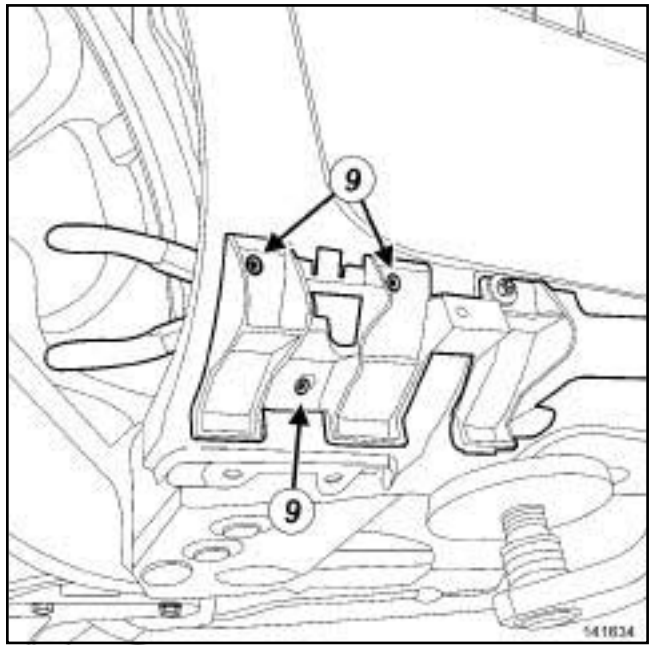
❏ Remove the sill panel extender (**7**) .

2 - Sill panel extender mounting



141628

❏ Remove nuts (**8**) .



141634

❏ Drill out the rivets (**9**) .

Note:

Hold the rivet shanks using pliers, in order to avoid any deformation of the holes in the front wing.

❏ Remove the sill panel extender mounting.

❏ Retrieve the rivet shanks.

REFITTING

I - REFITTING PREPARATION OPERATION

Sill panel extender mounting

❏ Always replace the rivets of the sill panel extender mounting.

II - REFITTING OPERATION FOR PART CONCERNED

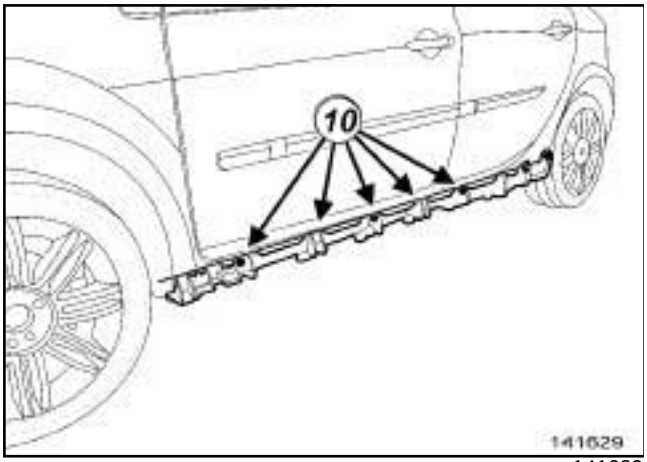
1 - Sill panel extender mounting

❏ Refit the sill panel extender mounting.

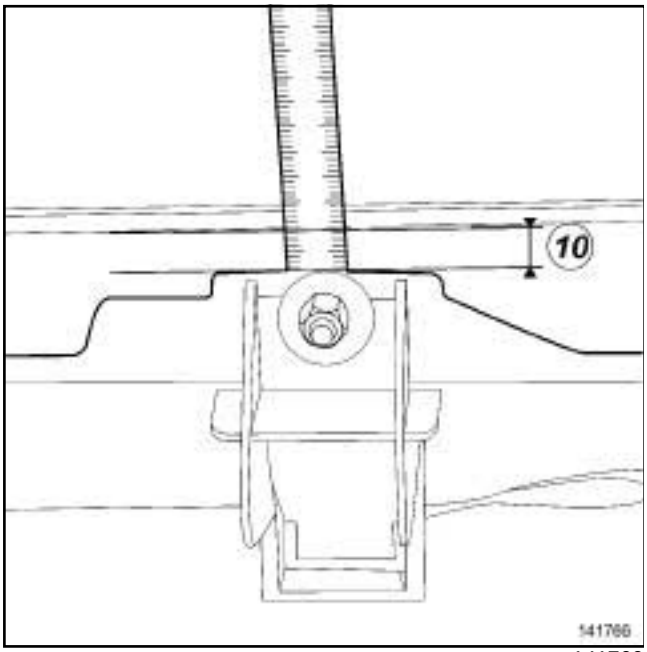
❏ Centre the sill panel extender mounting on the studs.

❏ Refit the nuts ***(8)*** , without tightening them.

EQUIPMENT LEVEL EAG



141629



141766

❏ Check the dimension (**10**) = **9.5 mm** between the defined line and the upper edge of the sill panel extender mounting at (**10**) .

❏ Tighten the nuts ***(8)*** .

❏ Fit new rivets.

2 - Sill panel extender

❏ Refit the sill panel extender.

❏ Clip the sill panel extender.

❏ Refit:

- the bolt ***(5)*** ,
- the plastic rivet ***(4)*** ,
- the sill panel extender front section.

❏ Clip on the sill panel extender front section.

❏ Refit the bolt ***(1)*** .

III - FINAL OPERATION

1 - Sill panel extender mounting

❏ Refit:

- the front wheel arch liner (see **55A**, **Exterior protection**, **Front wheel arch liner: Removal - Refitting**, page **55A-41**) ,
- the front wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

2 - Sill panel extender

❏ Remove the masking tape from the front wing.

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

Tightening torques ▽	
passenger front airbag bolts on the dashboard cross member	**8 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners),
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

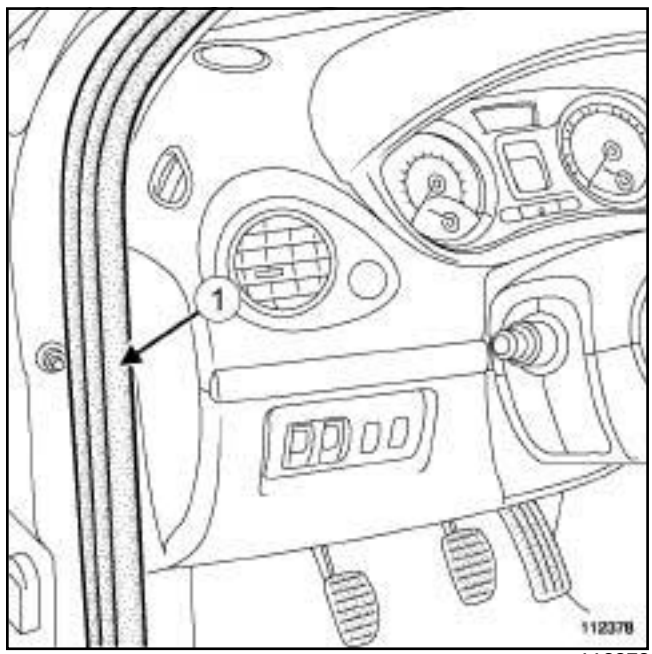
❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Position the steering column in the low position.

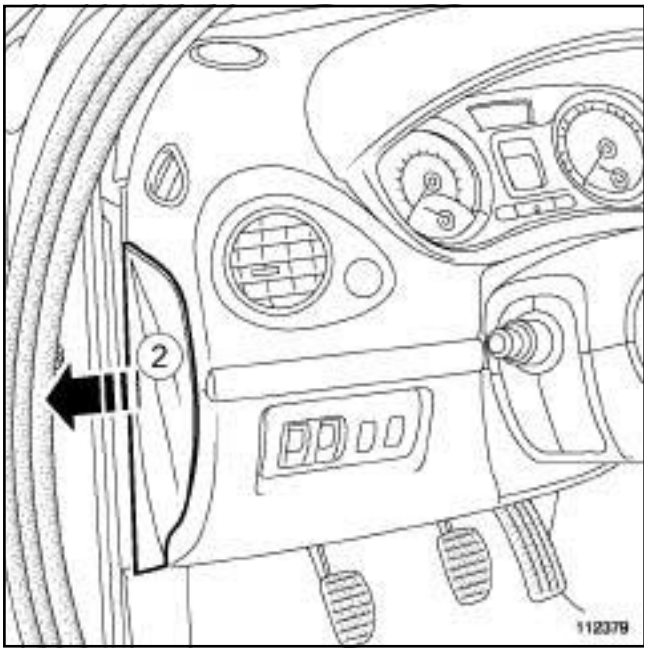
❑ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (36A, Steering assembly).



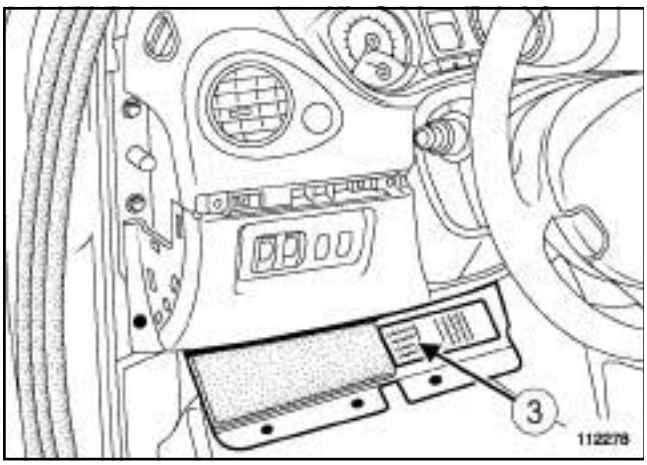
112378

❑ Partially remove the seal (**1**) .



112379

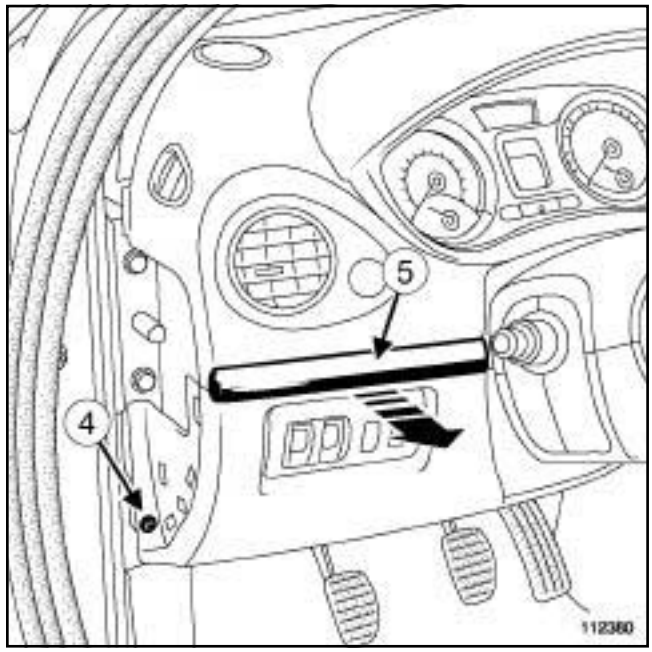
❏ Remove the side panel (**2**) using the tool **(Car. 1363)**.



112278

❏ Unclip the soundproofing material (**3**) .

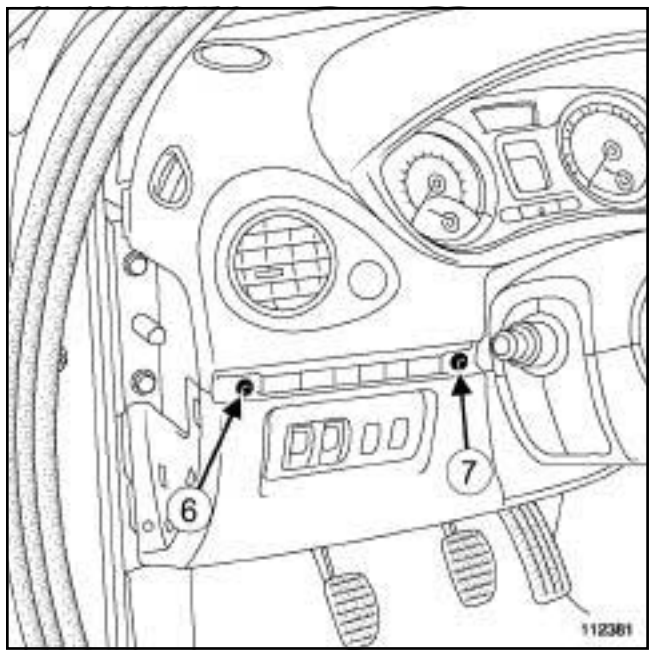
❏ Remove the soundproofing material.



112380

❏ Remove the bolt (**4**) .

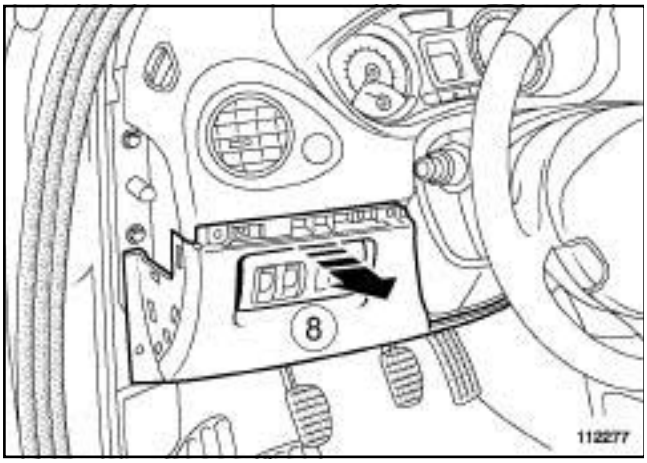
❏ Unclip the trim (**5**) using the tool **(Car. 1363)**.



112381

❏ Remove:

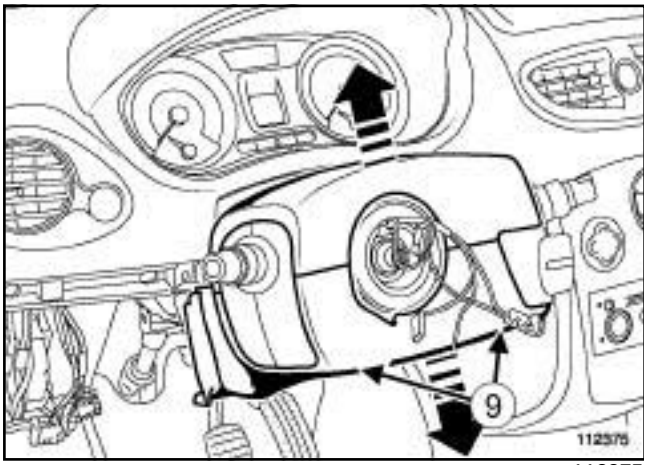
- the dashboard lower trim bolt (**6**) ,
- the plastic rivet (**7**) of the dashboard lower trim.



112277

❏ Remove the dashboard lower trim (**8**) .

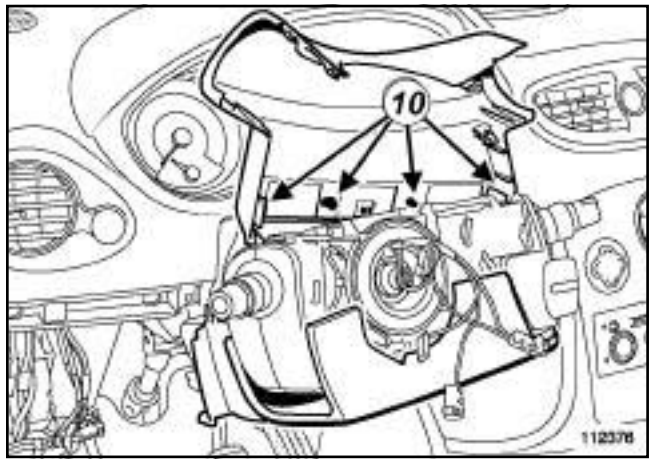
❏ Disconnect the switch plate connectors (depending on equipment level).



112375

❏ Remove the bolts (**9**) from the shells under the steering wheel.

❏ Unclip the cowlings under the steering wheel.

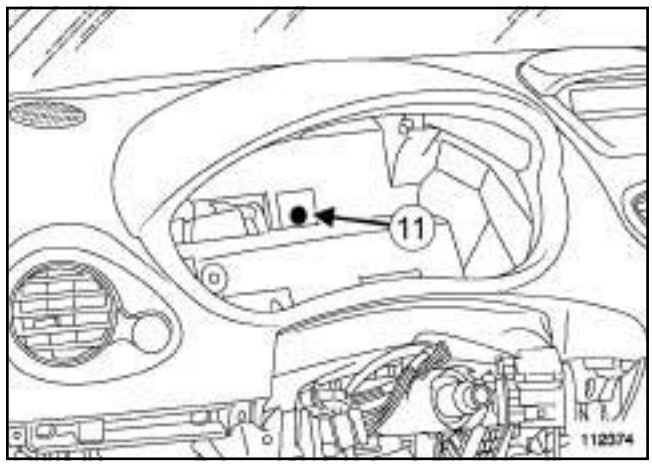


112376

❏ Unclip the upper cowling (**10**) from the dashboard gaiter.

❏ Remove:

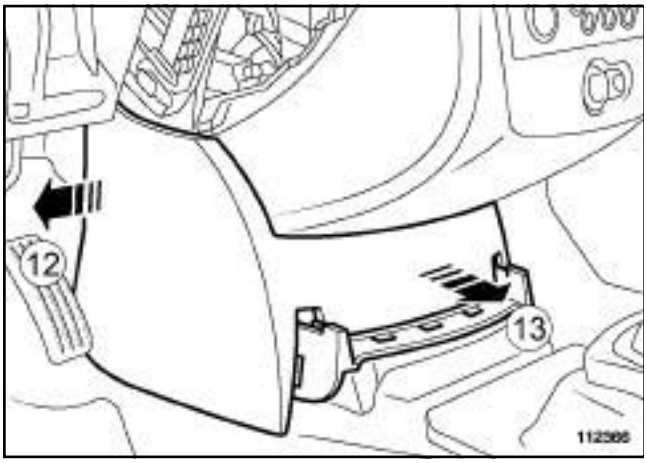
- the cowlings under the steering wheel,
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (84A, Control - Signals),
- the instrument panel (see **Instrument panel: Removal - Refitting**) (83A, Instrument panel).



112374

❏ Remove:

- the bolt (**11**) ,
- the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) .



112366

❑ Unclip the lower centre trim at (**12**) and (**13**) .

RADIO NO. 08, and DOCUMENTATION PHASE 2

❑ Disconnect the offset multimedia socket connectors.

RADIO NO. 07, and DOCUMENTATION PHASE 2

❑ Disconnect the offset audio socket connector.

NAVIGATION AID 1 LEVEL or NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (83C, On-board telematics system).

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06 or RADIO NO. 07 or RADIO NO. 08

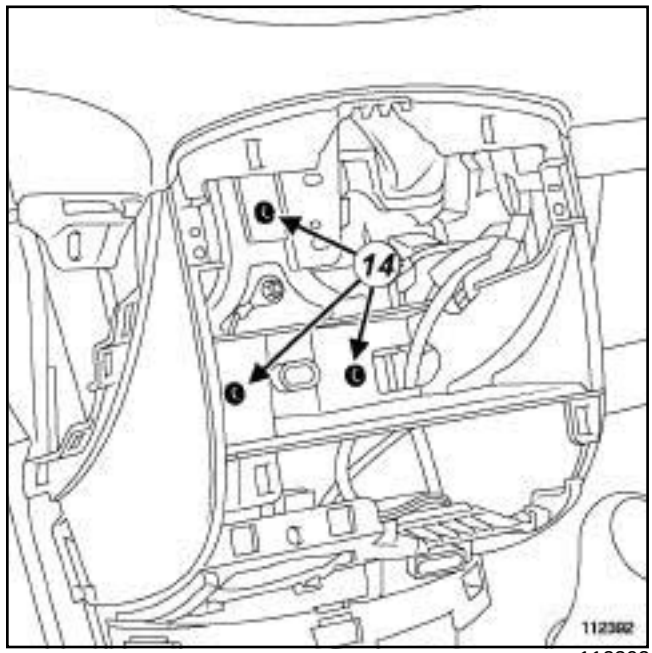
❑ Remove the radio (see **Radio: Removal - Refitting**) (86A, Radio).

❑ Remove:

- the centre front panel (see **57A**, **Interior equipment**, **Centre front panel: Removal - Refitting**, page **57A-19**) ,
- the control panel (see **Control panel: Removal - Refitting**) (61A, Heating).

RADIO NO. 08, and DOCUMENTATION PHASE 2

❑ Remove the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) (86A, Radio).



112392

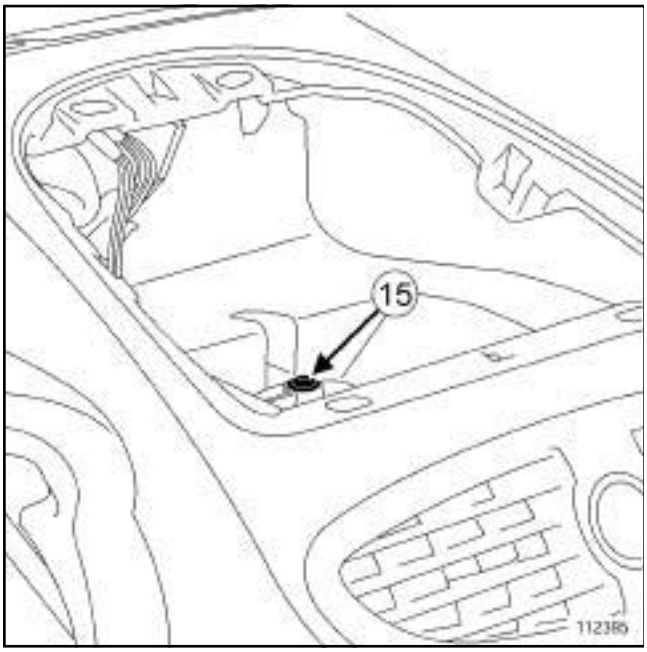
❑ Remove the bolts (**14**) .

VEHICLE WITH CARD

❑ Remove:

- the card reader (see **Card reader: Removal - Refitting**) (82A, Immobiliser),
- the dashboard starter aerial (see **Starting aerial: Removal - Refitting**) (82A, Immobiliser).

❑ Remove the display (see **Display: Removal - Refitting**) (86A, Radio).



❏ Remove the bolt (**15**) .

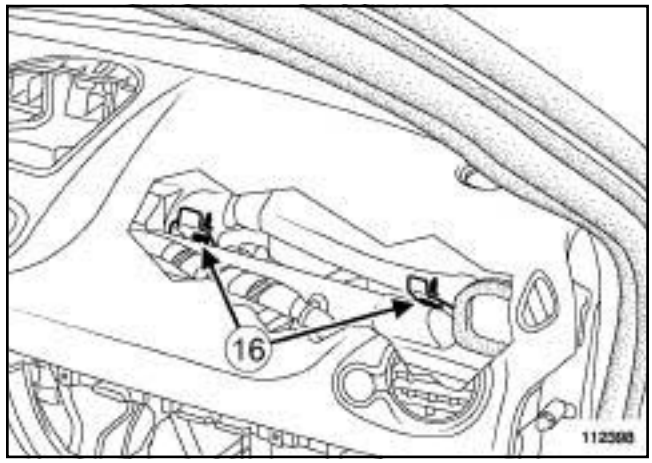
CLIMATE CONTROL

❏ Remove the solar radiation sensor (see **Solar radiation sensor: Removal - Refitting**) (61A, Heating system).

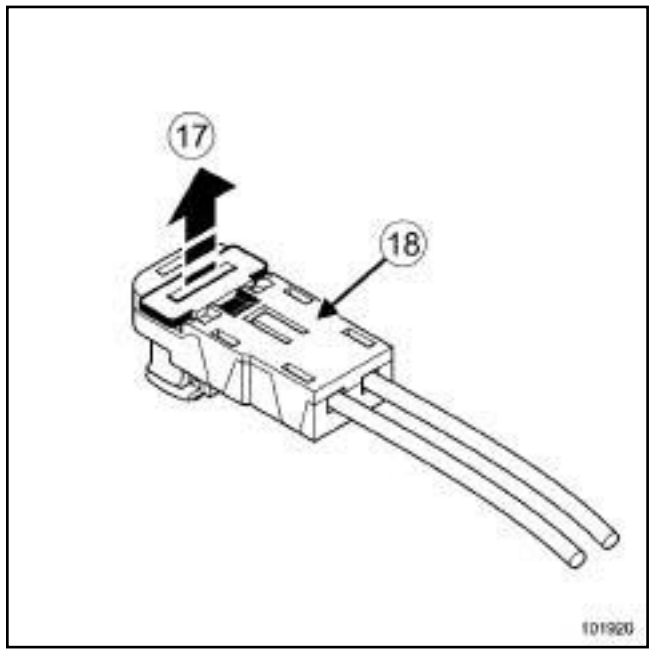
❏ Remove:

- the tweeters (see **Tweeter: Removal - Refitting**) (86A, Radio),
- the windscreen pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (71A, Body internal trim),
- the inhibitor switch (see **Inhibitor switch: Removal - Refitting**) (88C, Airbag and pretensioners),
- the glovebox (see **57A**, **Interior equipment**, **Glovebox: Removal - Refitting**, page **57A-16**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

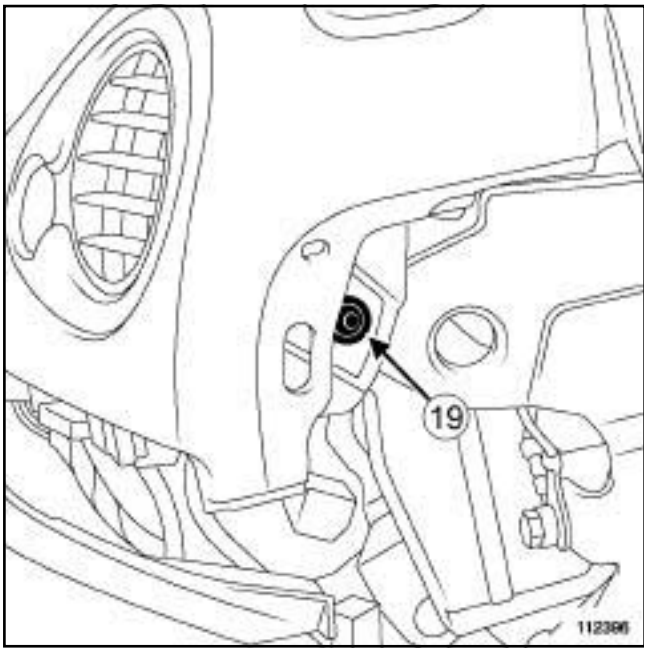


❏ Remove the passenger front airbag bolts (**16**) from the dashboard cross member (under the dashboard).



❏ Unlock the passenger front airbag connectors at (**17**) .

❏ Disconnect the passenger front airbag connectors (**18**) .

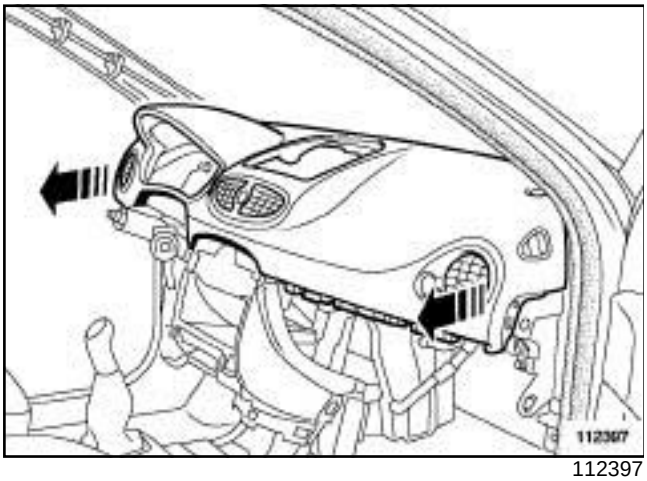


112396

❏ Remove the bolts (**19**) from each side of the vehicle.

❏ Mark the wiring routing.

WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.


112397

❏ Take out the dashboard.

Note:
This operation requires two people.

❏ Remove the dashboard.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Ensure that the wiring is in good condition.

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

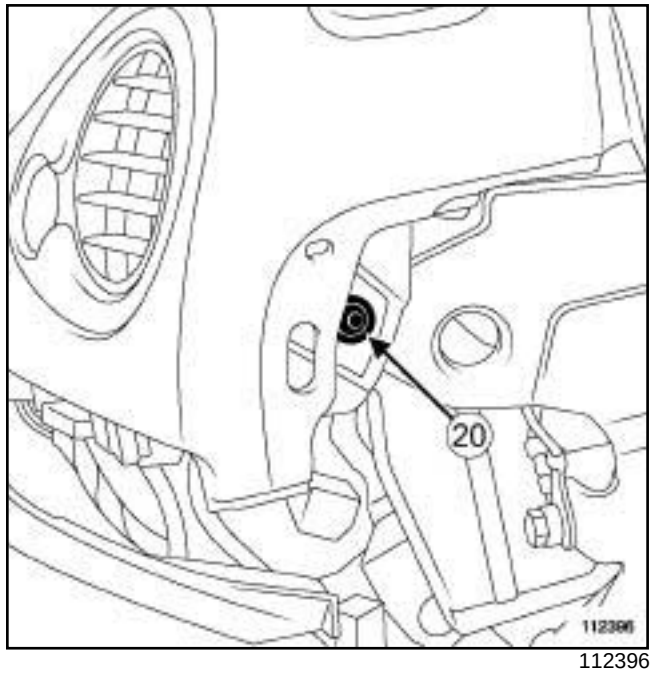
WARNING
To guarantee a good electrical connection, make sure that the wiring does not place any stress on the connectors or the surrounding components.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the dashboard.

Note:
This operation requires two people.

❏ Position the wiring in place before fully refitting the dashboard.

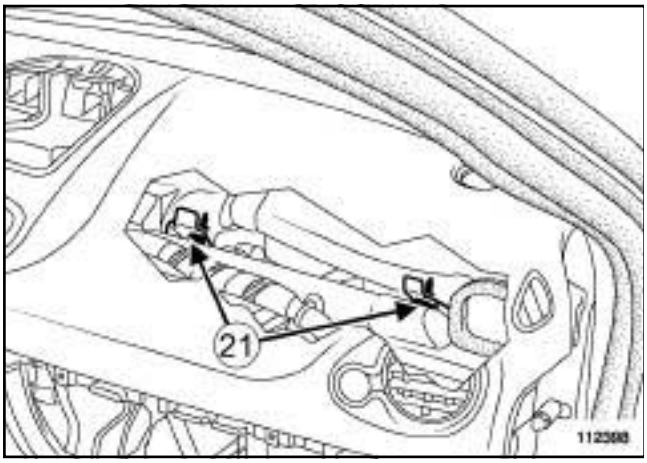


112396

❏ Refit the bolts (**20**) on each side of the vehicle.

❏ Connect the passenger front airbag connectors.

❏ Lock the passenger's front airbag connectors.



112398

❏ Torque tighten the **passenger front airbag bolts on the dashboard cross member (8 N.m)**, (**21**) .

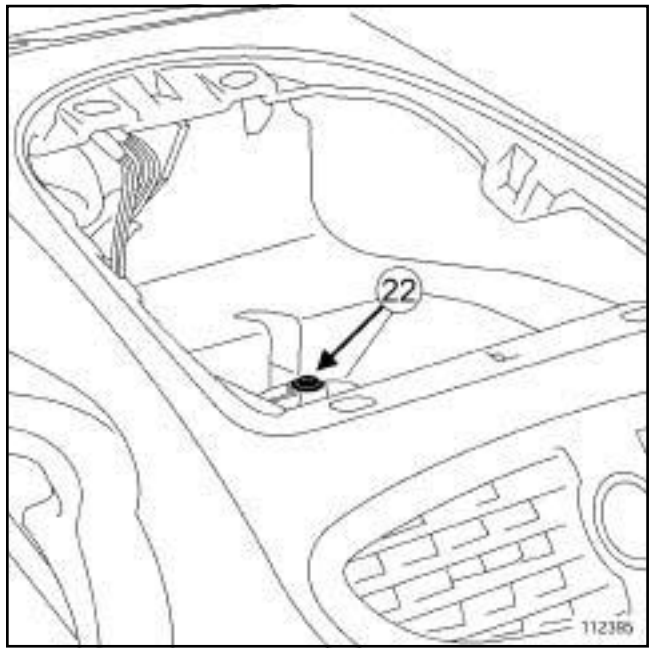
III - FINAL OPERATION

❏ Refit:

- the glovebox (see **57A**, **Interior equipment**, **Glovebox: Removal - Refitting**, page **57A-16**) ,
- the inhibitor switch (see **Inhibitor switch: Removal - Refitting**) (88C, Airbag and pretensioners),
- the windscreen pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (71A, Body internal trim),
- the tweeters (see **Tweeter: Removal - Refitting**) (86A, Radio).

CLIMATE CONTROL

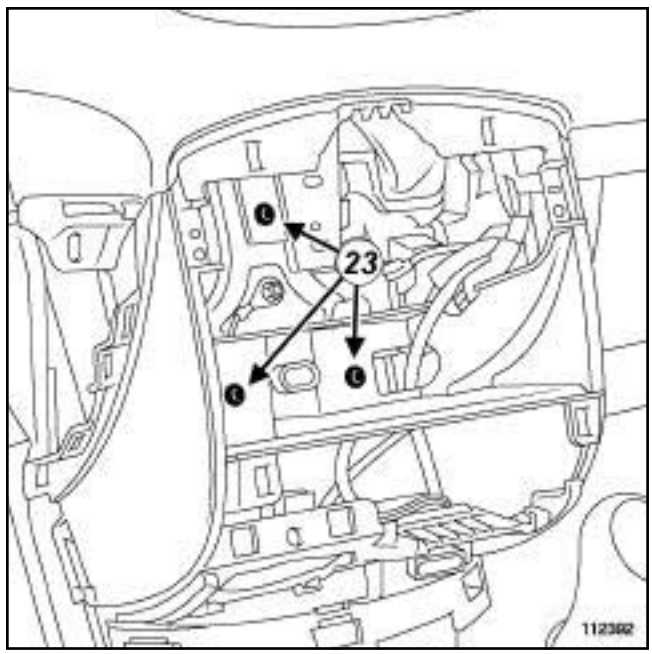
❏ Refit the solar radiation sensor (see **Solar radiation sensor: Removal - Refitting**) (61A, Heating system).



112395

❏ Refit:

- the bolt (**22**) ,
- the display (see **Display: Removal - Refitting**) (86A, Radio).



112392

❏ Refit the bolts (**23**) .

RADIO NO. 08, and DOCUMENTATION PHASE 2

❑ Refit the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) (86A, Radio).

❑ Refit the control panel (see **Control panel: Removal - Refitting**) (61A, Heating).

VEHICLE WITH CARD

❑ Refit:

- the dashboard starter aerial (see **Starting aerial: Removal - Refitting**) (82A, Immobiliser),
- the card reader (see **Card reader: Removal - Refitting**) (82A, Immobiliser).

❑ Refit the centre front panel (see **57A**, **Interior equipment**, **Centre front panel: Removal - Refitting**, page **57A-19**) .

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06 or RADIO NO. 07 or RADIO NO. 08

❑ Refit the radio (see **Radio: Removal - Refitting**) (86A, Radio).

NAVIGATION AID 1 LEVEL or NAVIGATION AID 1

❑ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (83C, On board telematics system).

❑ Fit the lower centre trim.

RADIO NO. 08, and DOCUMENTATION PHASE 2

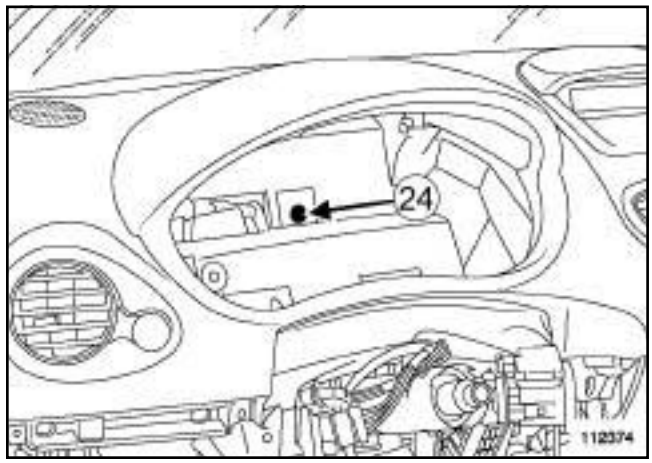
❑ Connect the offset multimedia socket connectors.

RADIO NO. 07, and DOCUMENTATION PHASE 2

❑ Connect the connector of the offset audio socket.

❑ Clip on the lower centre trim.

❑ Refit the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) .



112374

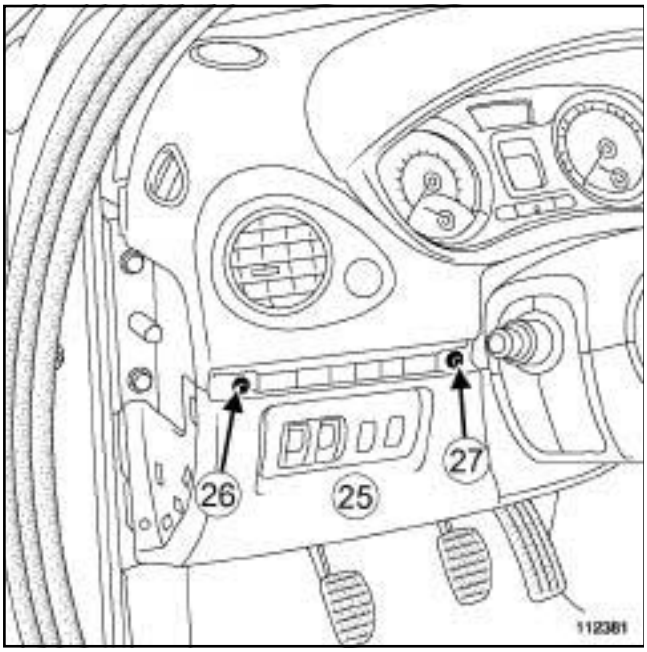
❑ Refit:

- the bolt (**24**) ,
- the instrument panel (see **Instrument panel: Removal - Refitting**) (83A, Instrument panel),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (84A, Control - Signals).

❑ Clip:

- the dashboard gaiter on the upper cowling,
- the cowlings under the steering wheel.

❑ Refit the bolts to the shells under the steering wheel.



112381

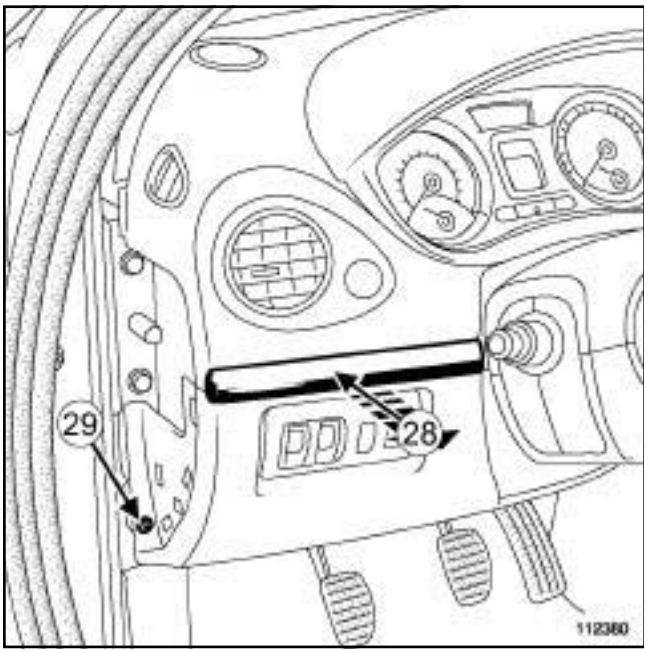
❏ Fit the dashboard lower trim (**25**) .

❏ Connect the switch plate connectors (depending on equipment level).

❏ Clip on the dashboard lower trim.

❏ Refit:

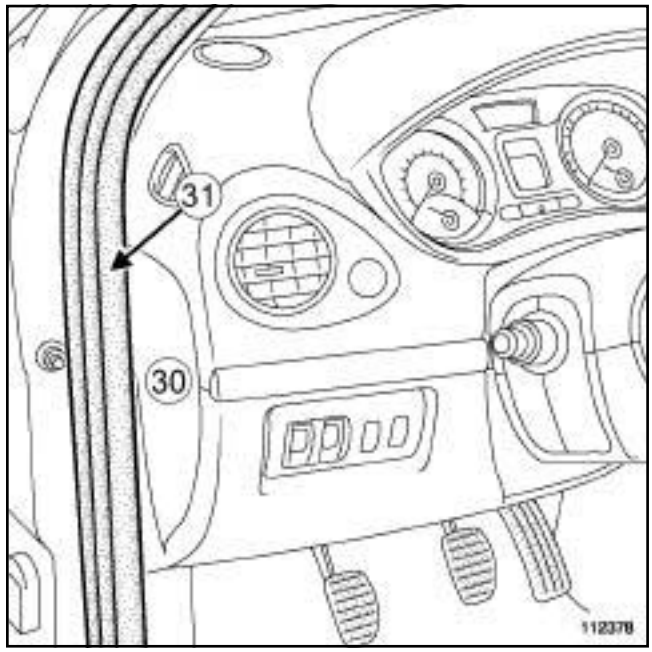
- the dashboard lower trim bolt (**26**) ,
- the plastic rivet (**27**) of the dashboard lower trim.



112380

❏ Clip the trim piece in place (**28**) .

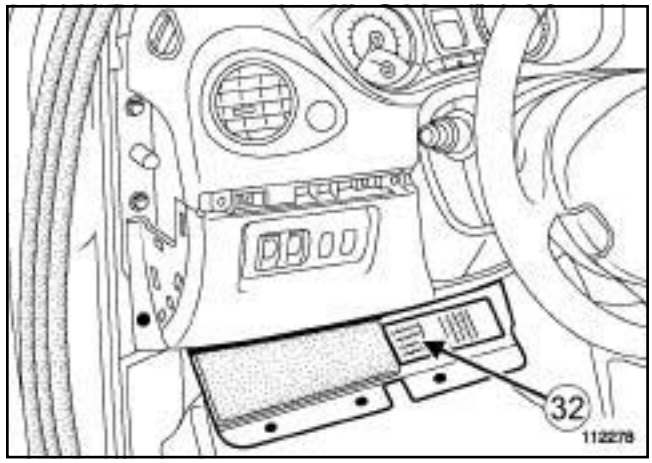
❏ Refit the bolt (**29**) .



112378

❏ Clip on the side panel (**30**) .

❏ Refit the seal (**31**)



112278

❏ Refit:

- the soundproofing (**32**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) (36A, Steering assembly),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (88C, Airbags and pretensioners).

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(88C, Airbag and pretensioners).

❏ Carry out a function test on all functions.

Equipment required
Diagnostic tool

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners),
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

STRIPPING

I - STRIPPING PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove the dashboard (see **57A**, **Interior equipment**, **Dashboard: Removal - Refitting**, page **57A-1**) .

II - STRIPPING OPERATION FOR PART CONCERNED

❑ Remove:

- the dashboard air vents (see **57A**, **Interior equipment**, **Dashboard air vent: Removal - Refitting**, page **57A-12**) ,
- the passenger front airbag of the dashboard (see **Passenger's frontal airbag: Removal - Refitting**) (88C, Airbag and pretensioners).

REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❑ Refit:

- the passenger front airbag of the dashboard (see **Passenger's frontal airbag: Removal - Refitting**) (88C, Airbag and pretensioners),
- the dashboard air vents (see **57A**, **Interior equipment**, **Dashboard air vent: Removal - Refitting**, page **57A-12**) .

II - FINAL OPERATION

❑ Refit the dashboard (see **57A**, **Interior equipment**, **Dashboard: Removal - Refitting**, page **57A-1**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

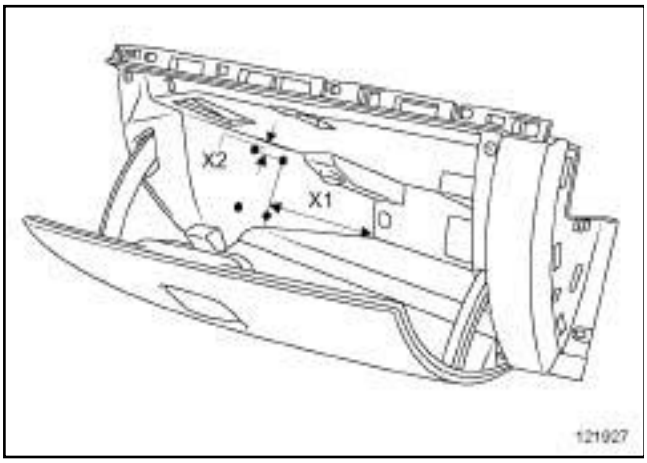
❏ Conversion to dashboard required to fit an offset audio socket.

I - CONVERSION PREPARATION OPERATION

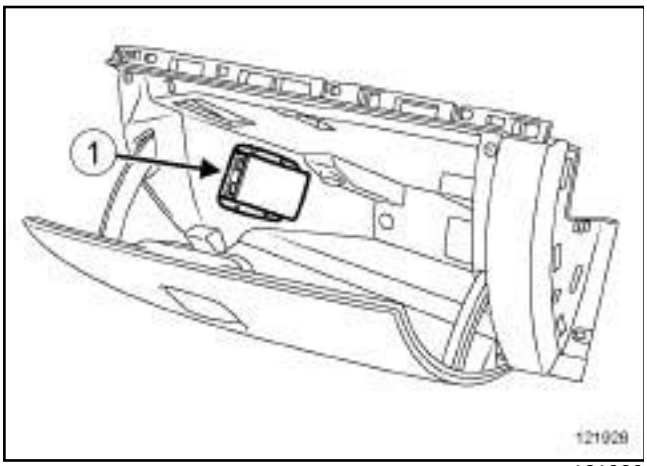
❏ Remove the glovebox (see **57A**, **Interior equipment**, **Glovebox: Removal - Refitting**, page **57A-16**) .

II - CONVERSION

1 - Mounting holes for the offset audio socket unit



121927



121926

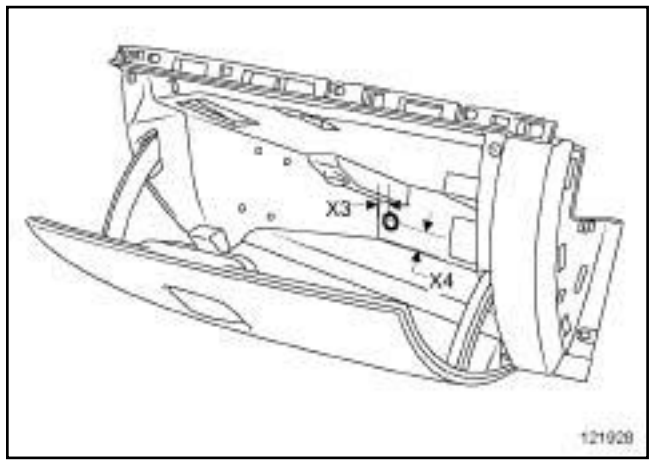
❏ For positioning the holes, use the offset audio socket unit (**1**) .

❏ (**X1**) = **210 mm**

(**X2**) = **15 mm**

❏ Drill the holes using a drill bit (∅ **3 mm**).

2 - Hole for offset audio socket unit harness run



121928

❏ Make the conversion using a conical cutter or special tool (part no: **77 11 419 232**).

❏ (**X3**) = **15 mm**

(**X4**) = **30 mm**

❏ Drill hole diameter **20 mm**.

III - FINAL OPERATION.

❏ Refit the glovebox (see **57A**, **Interior equipment**, **Glovebox: Removal - Refitting**, page **57A-16**) .

Special tooling required	
Car. 1597	Trim removal lever.

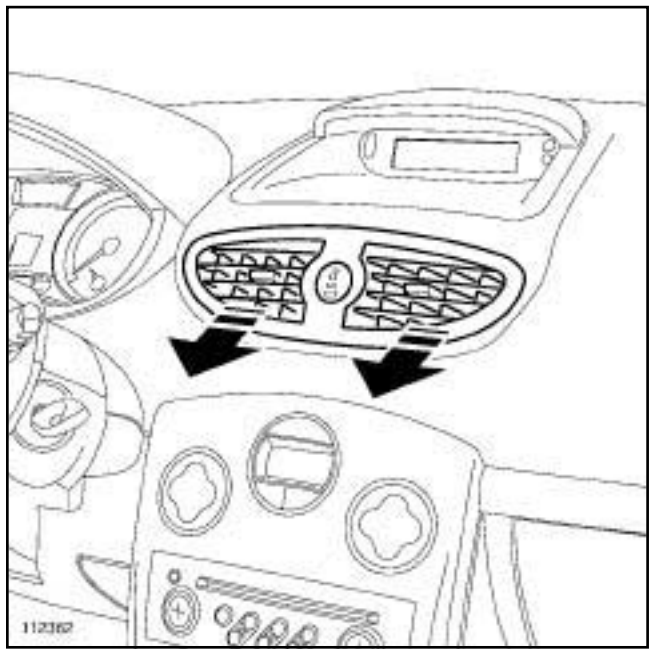
REMOVAL

I - REMOVAL PREPARATION OPERATION

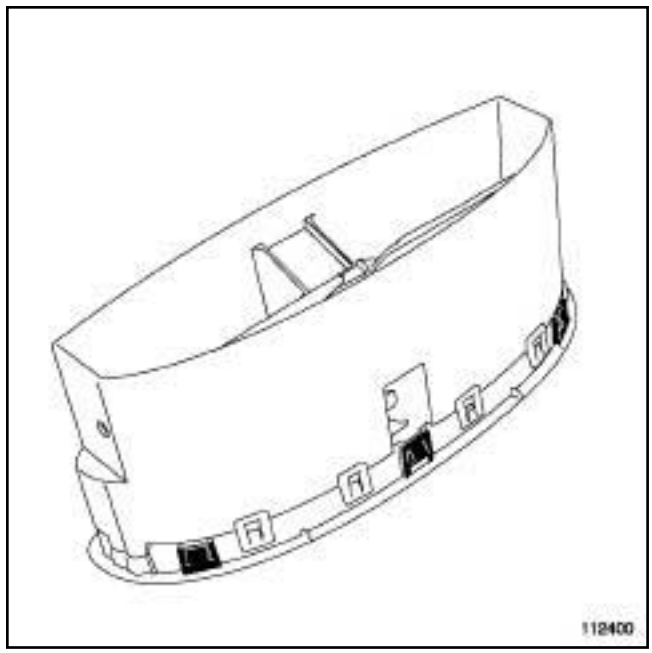
❑ Protect the dashboard around the air vents using masking tape.

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Dashboard centre air vent



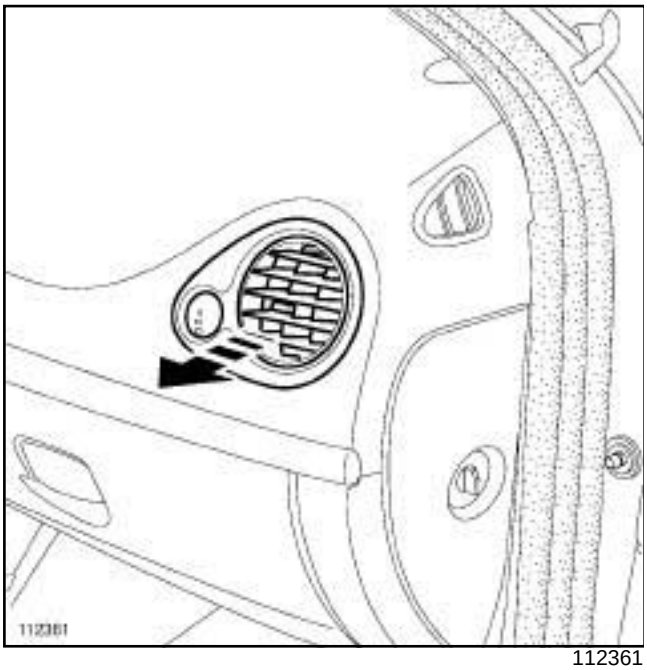
112362



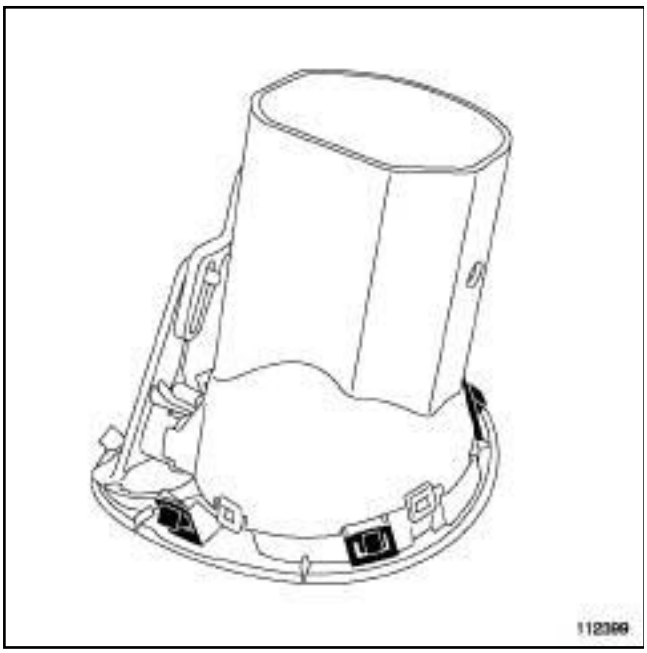
112400

❑ Unclip the air vent using tool **(Car. 1597)**.

2 - Dashboard side air vent



112361



112399

❑ Unclip the air vent using tool **(Car. 1597)**.

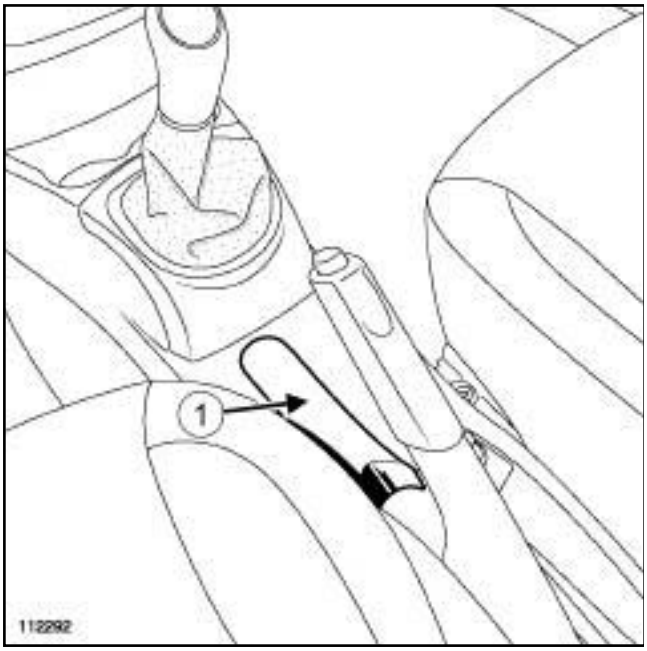
REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Clip on the air vents in the correct position

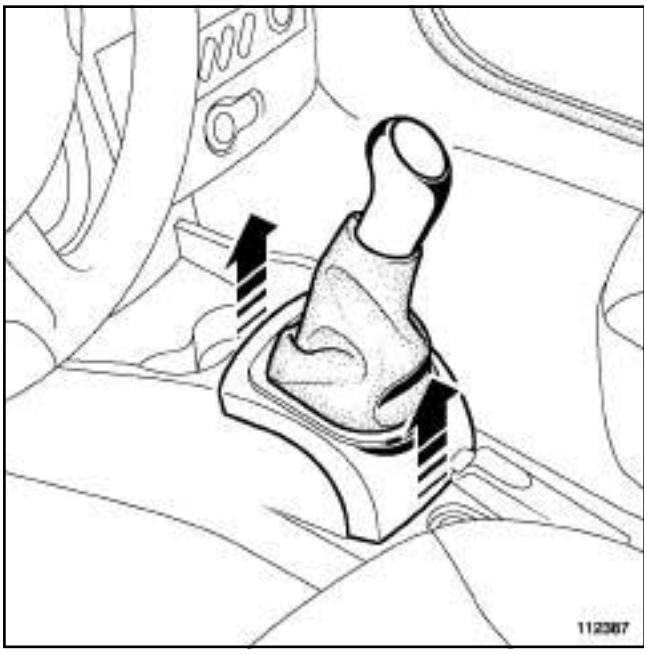
REMOVAL

I - REMOVAL PREPARATION OPERATION



112292

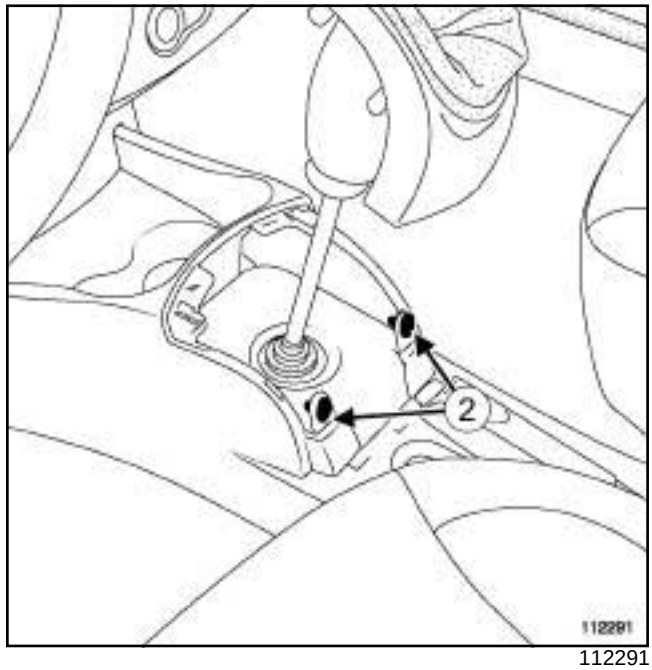
❏ Remove the trim (**1**) .



112387

❏ Unclip the gear lever trim.

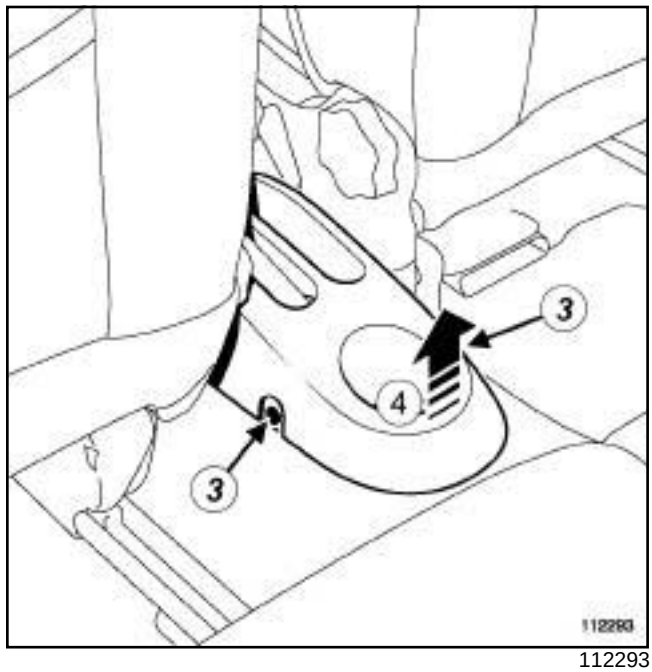
II - OPERATION FOR REMOVAL OF PART CONCERNED



112291

❏ Remove the bolts (**2**) .

❏ Push the seats forward as far as possible.



112293

❏ Remove the bolts (**3**) .

❏ Take out the centre console (**4**) .

III - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the centre console,

- the bolts ***(3)*** and ***(2)*** .

IV - FINAL OPERATION.

❑ Clip on

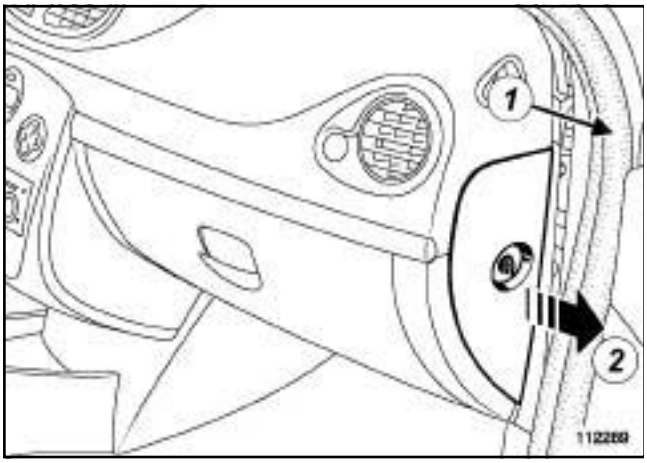
- the gear lever trim,
- the trim ***(1)*** .

REMOVAL

I - REMOVAL PREPARATION OPERATION

SCHOOL VEHICLE

❑ Remove the driving school electric control unit (see **Driving school repeater electrical control unit: Removal - Refitting**) (MR 392, 84A, Control - Signals).

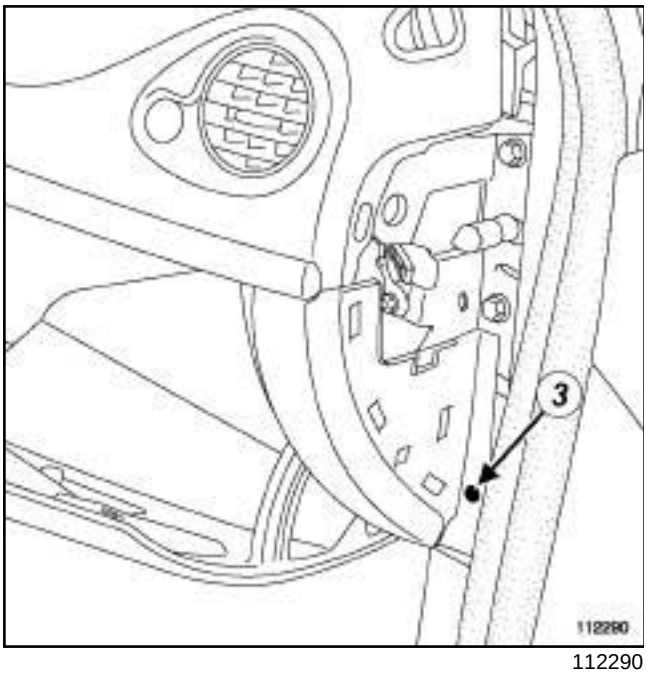


112289

❑ Partially remove seal (**1**) .

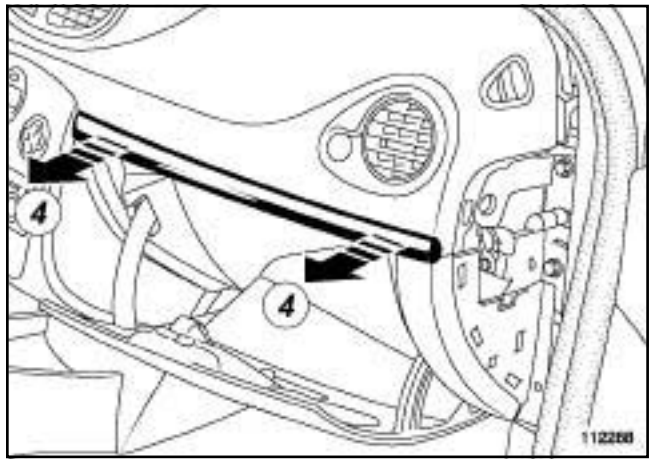
❑ Unclip the side panel (**2**) .

❑ Disconnect the connector.



112290

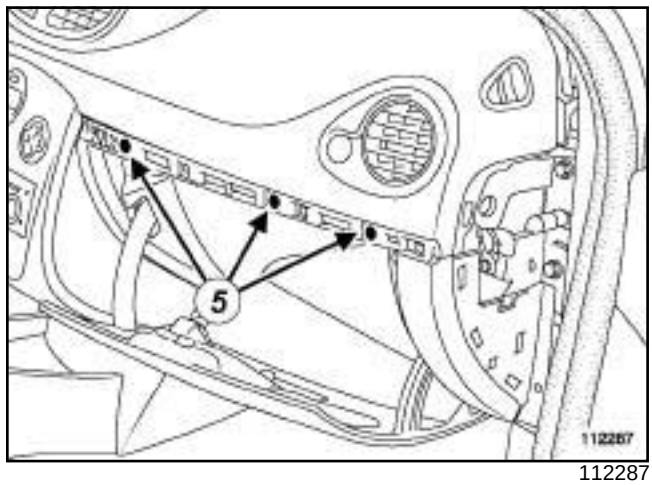
❑ Remove the bolt (**3**) .



112288

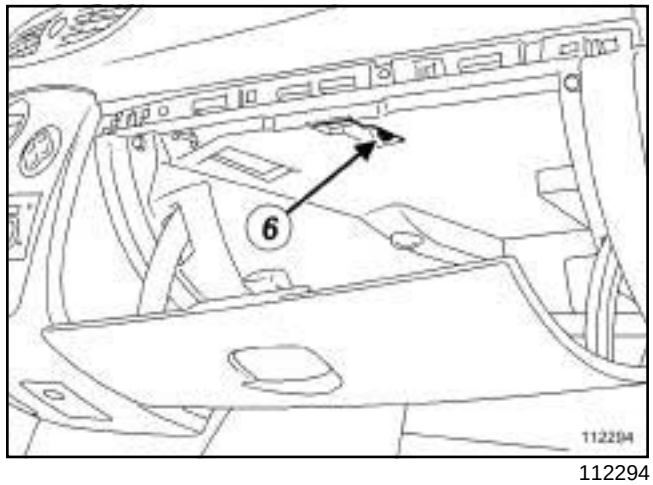
❑ Unclip the trim (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



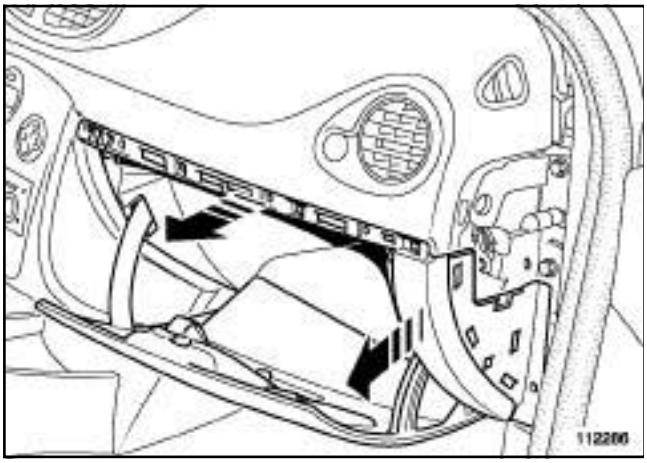
112287

❑ Remove the bolts (**5**) .



112294

❑ Remove the bolt (**6**) .



112286

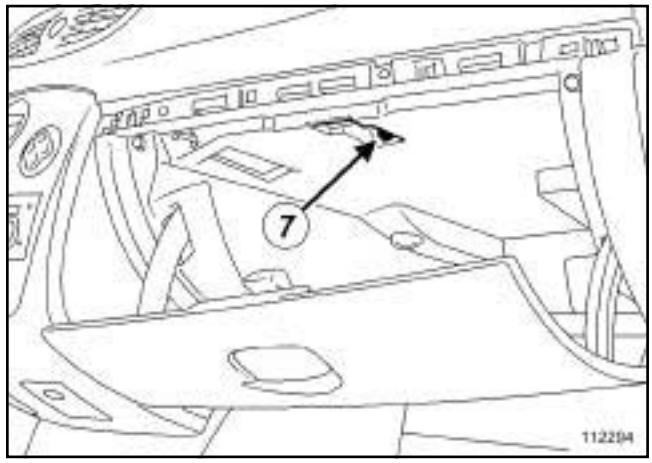
❏ Take out the glovebox.

❏ Disconnect the connector.

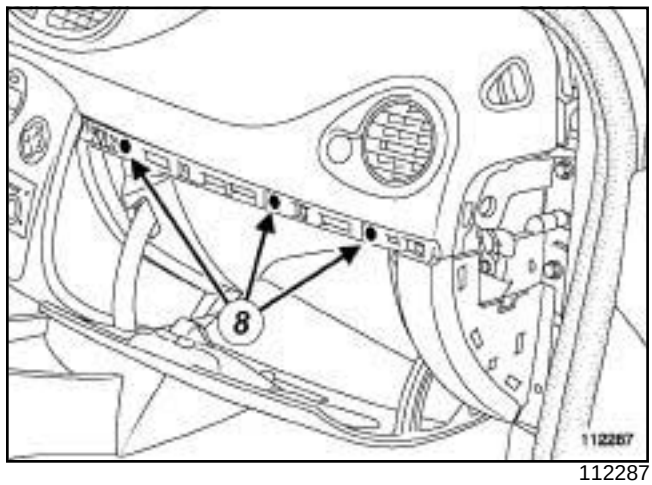
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the glovebox.



112294

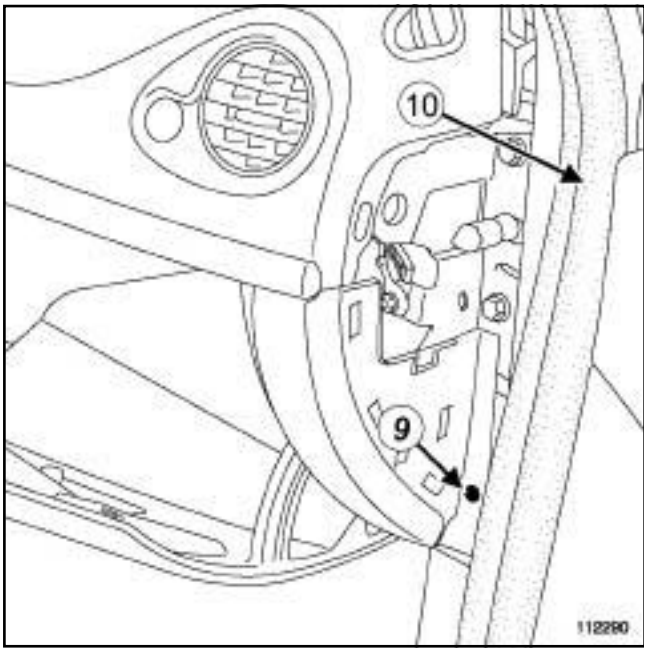


112287

❏ Refit the bolts (**7**) and (**8**) .

II - FINAL OPERATION.

❏ Clip the trim piece in place.



112290

❑ Refit:

- the bolt (**9**) ,
- the side panel,
- the seal (**10**) .

SCHOOL VEHICLE

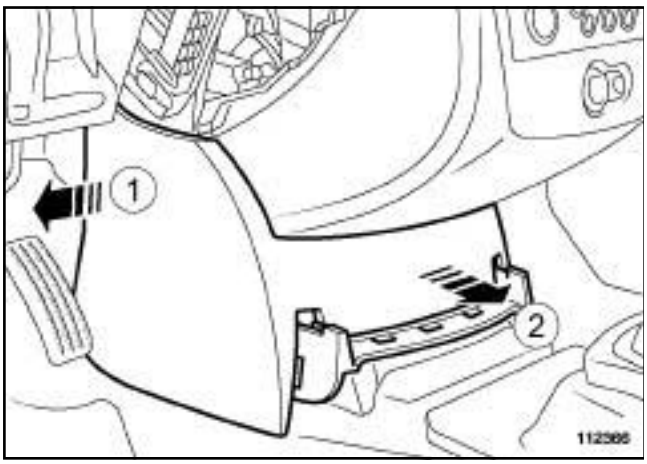
❑ Refit the driving school electric control unit (see **Driving school repeater electrical control unit: Removal - Refitting**) (MR 392, 84A, Control - Signals).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

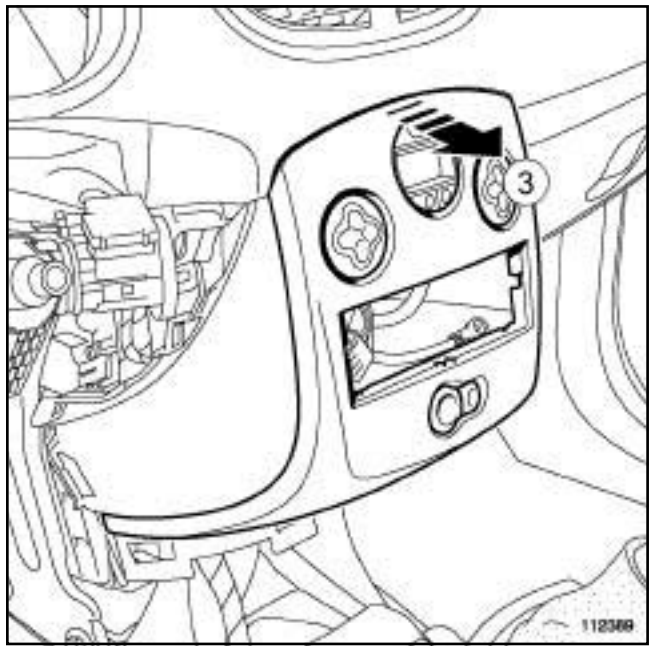
- the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) ,
- the radio and/or the navigation system (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio) or (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-Board Telematics System).



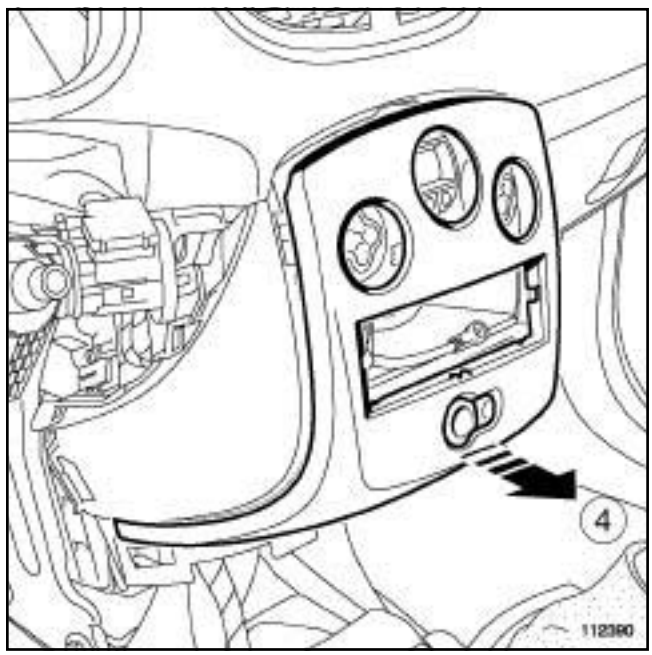
112366

❏ Unclip the lower trim (**1**) and (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112389



112390

❏ Unclip the centre front panel (**3**) and (**4**) .

❏ Disconnect the connectors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

❏ Clip in the centre front panel.

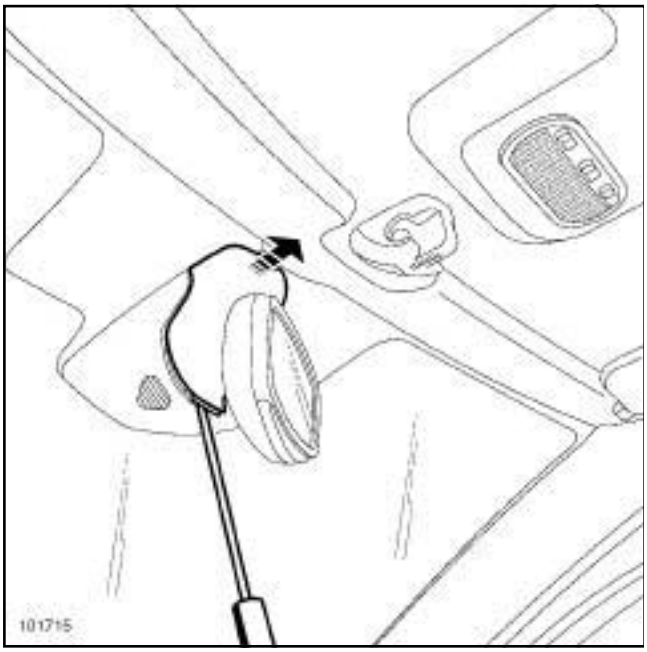
II - FINAL OPERATION.

❑ Refit:

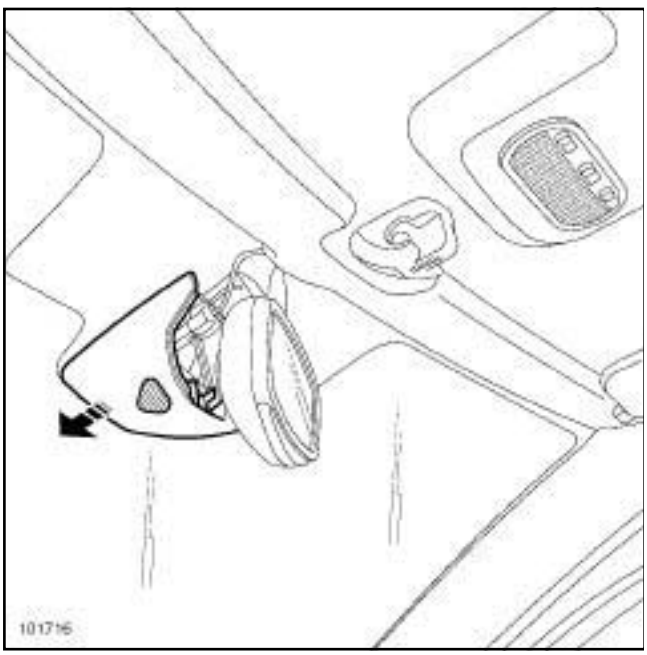
- the lower trim,
- the radio and/or the navigation system (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio) or (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-Board Telematics System),
- the centre console (see **57A**, **Interior equipment**, **Centre console: Removal - Refitting**, page **57A-14**) .

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



101715



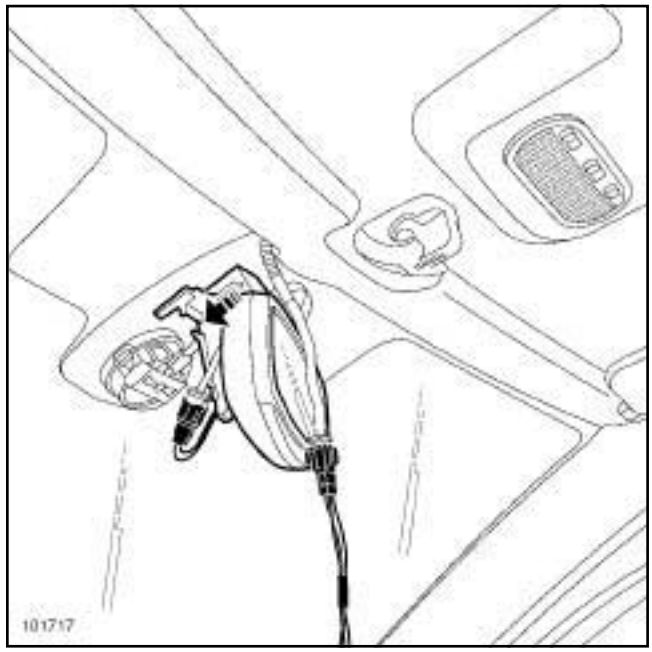
101716

❑ Unclip:

- the upper cover,
- the lower cover.

Note:

When removing the rear view mirror, be careful not to damage the rain sensor nearby.



101717

❑ Disconnect the connectors.

❑ Remove the rear view mirror.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear view mirror.

❑ Connect the connectors.

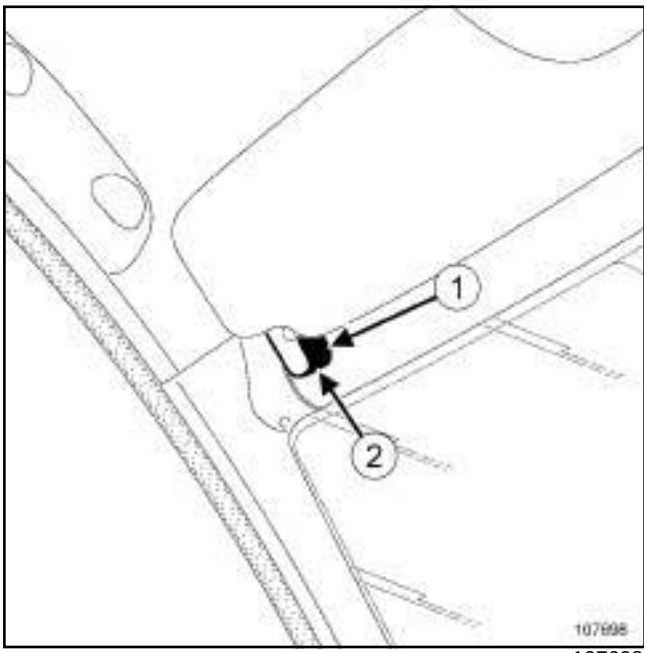
❑ Clip:

- the lower cover,
- the upper cover.

Special tooling required	
Car. 1597	Trim removal lever.

REMOVAL

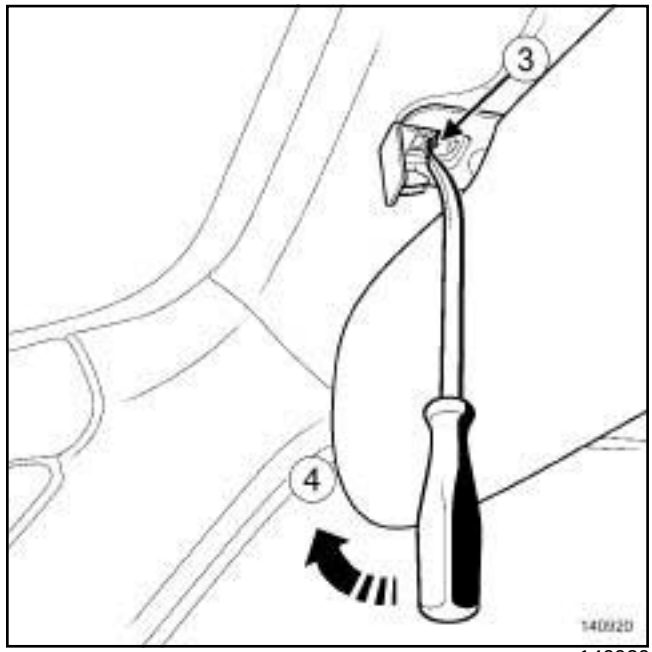
I - REMOVAL PREPARATION OPERATION



107698

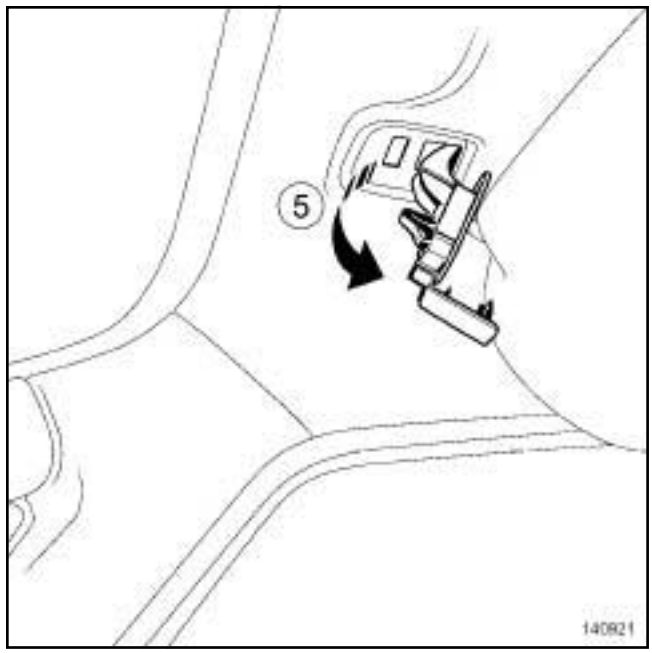
❏ Unclip the cover (**1**) in the slit at (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



140920

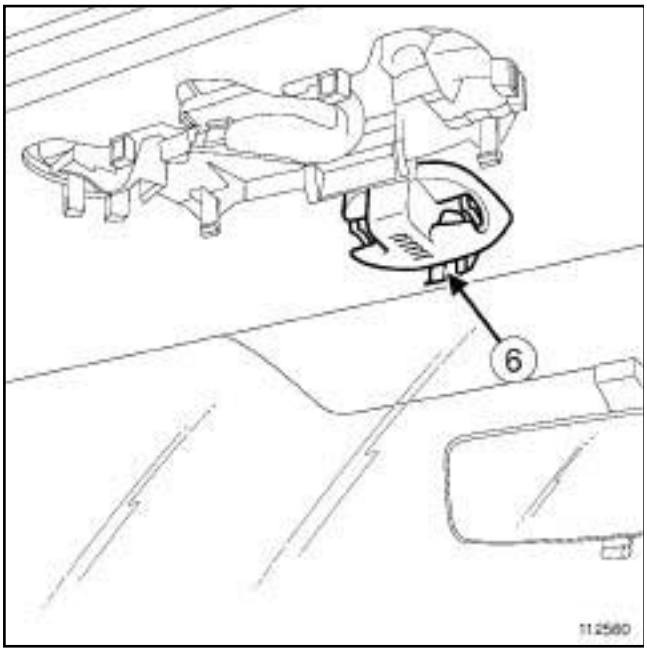
❏ Press on the clip (**3**) using the tool **(Car. 1597)** at (**4**) to unlock the sun visor.



140921

❏ Tilt the sun visor at (**5**) .

❏ Remove the sun visor.



112560

❏ Unclip the cover of the sun visor central support by pressing the tab (**6**) .

❏ Remove the sun visor central support using the **(Car. 1597)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip:

- the central sun visor support.
- the cover of the sun visor central support,
- the sun visor.

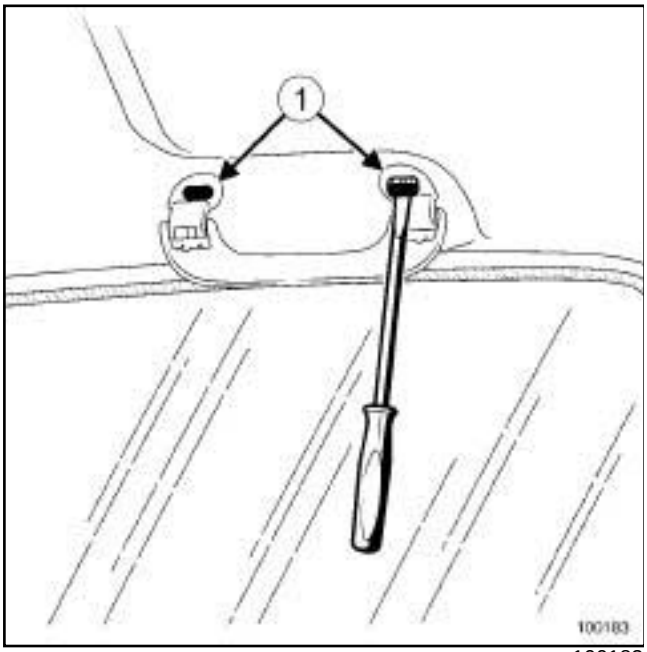
II - FINAL OPERATION

❏ Clip the cover on.

Special tooling required	
Car. 1597	Trim removal lever.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



100183

❏ Unclip the pins (**1**) without removing them, using the **(Car. 1597)**.

❏ Remove the grab handle or the glasses holder.

REFITTING

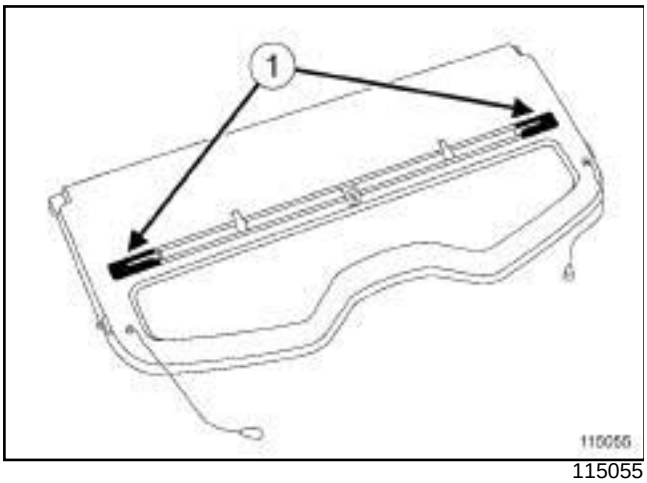
REFITTING OPERATION FOR PART CONCERNED

❏ Refit the grab handle.

❏ Clip on the pins ***(1)*** .

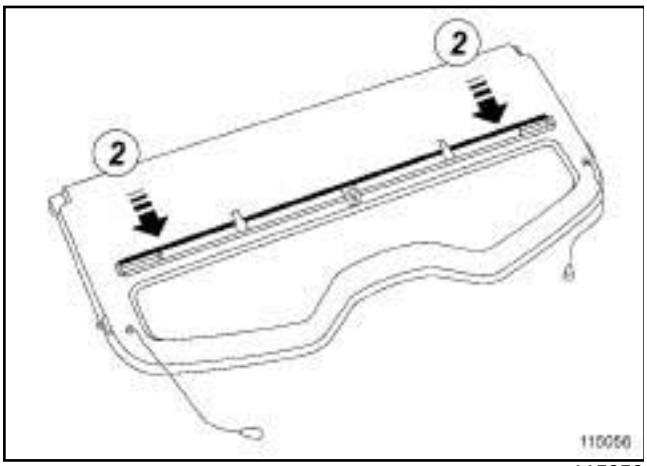
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

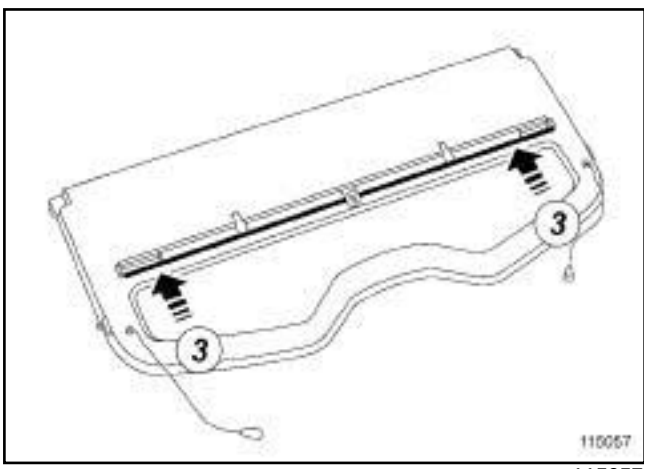


115055

❑ Unclip the side trims (**1**) .



115056



115057

❑ Unclip the rear parcel shelf sun blind (**2**) and (**3**) .

❑ Remove the rear parcel shelf sun blind.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Position the rear parcel shelf sun blind.

❑ Clip the rear parcel shelf blind into place.

❑ Refit the side trim pieces ***(1)*** .

II - FINAL OPERATION

❑ Carry out a function test.

Equipment required
Diagnostic tool

Tightening torques ▽	
steering column mounting bolts	21 Nm

❑

IMPORTANT
Before carrying out any work on or near a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is lit when the ignition is switched on.

IMPORTANT
Handling the pyrotechnic systems (airbags and pretensioners) near to a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

REMOVAL

I - REMOVAL PREPARATION OPERATION

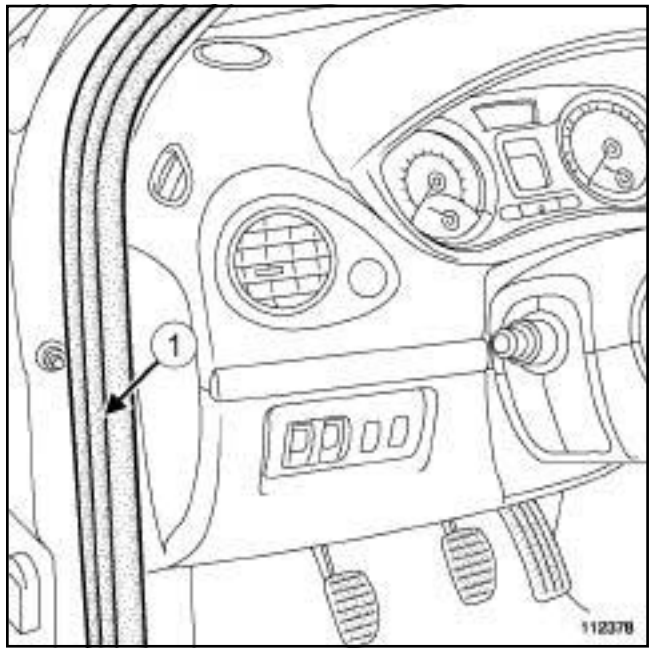
❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioner).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Lock the steering column in the low position.

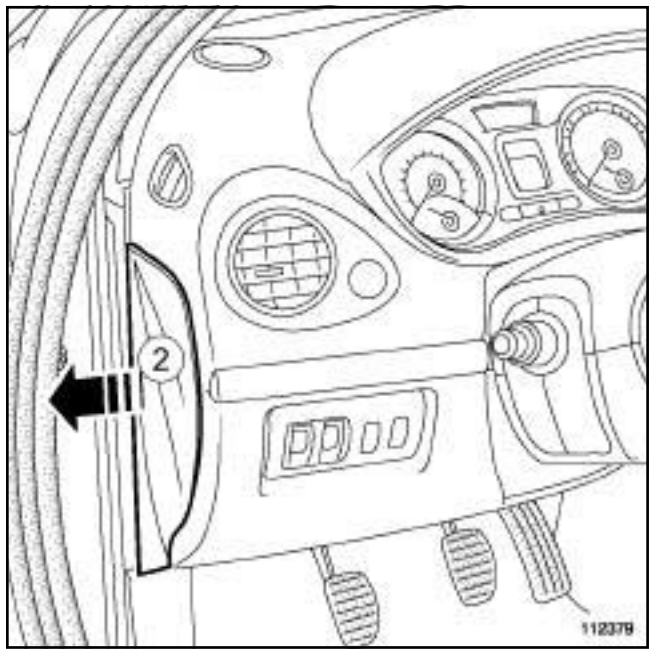
❑ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Power-assisted steering).



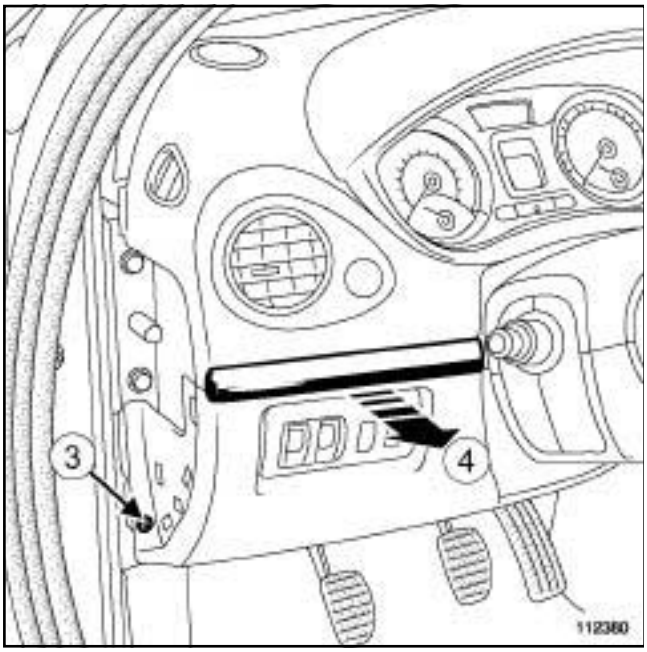
112378

❑ Partially remove seal (**1**) .



112379

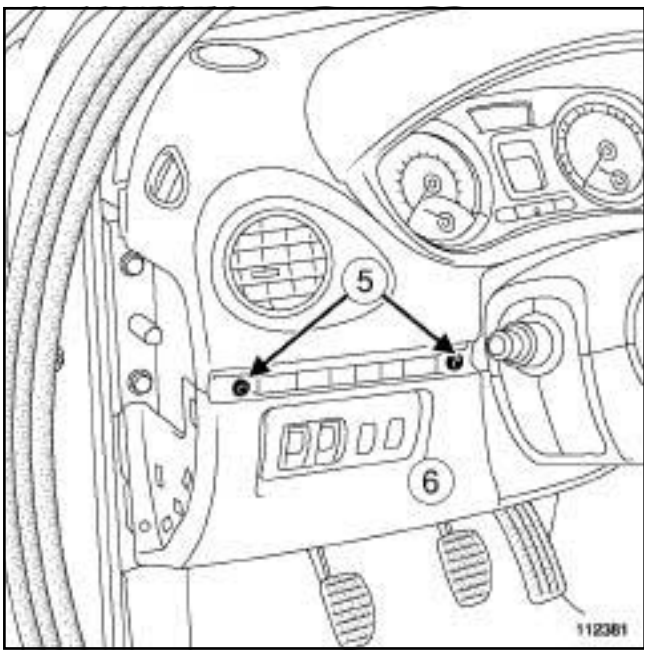
❑ Remove the side panel (**2**) .



112380

❏ Remove the bolt (**3**) .

❏ Unclip the trim (**4**) .

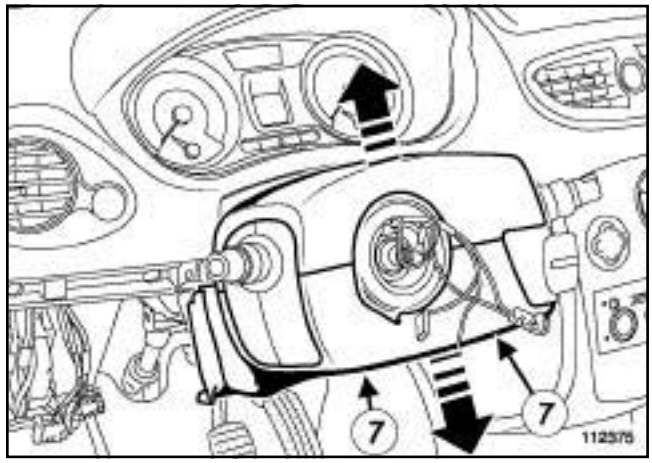


112381

❏ Remove the bolts (**5**) .

❏ Remove the lower cover (**6**) .

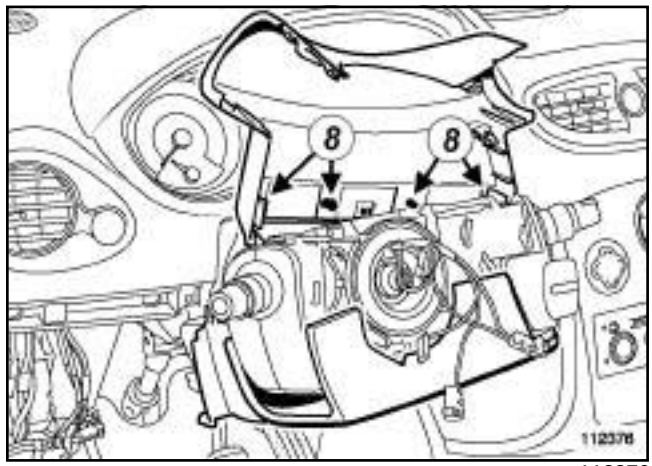
❏ Disconnect the connector (depending on equipment level).



112375

❏ Remove the bolts (**7**) under the lower half-cover.

❏ Unclip the lower and upper covers.

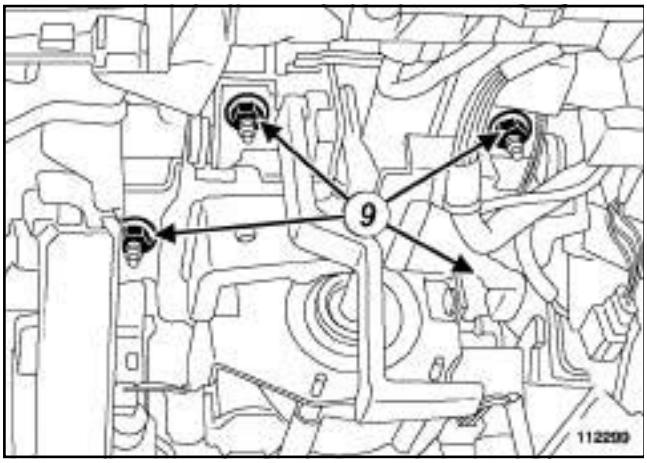


112376

❏ Unclip the upper cover (**8**) .

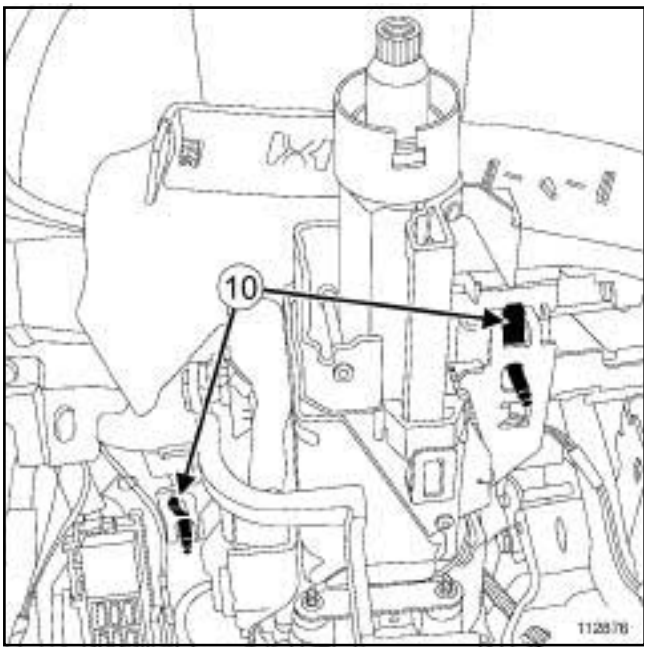
❏ Remove the covers.

❏ Remove the steering column assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).



112299

❏ Remove the steering column mounting bolts (**9**) on the cross member.



112876

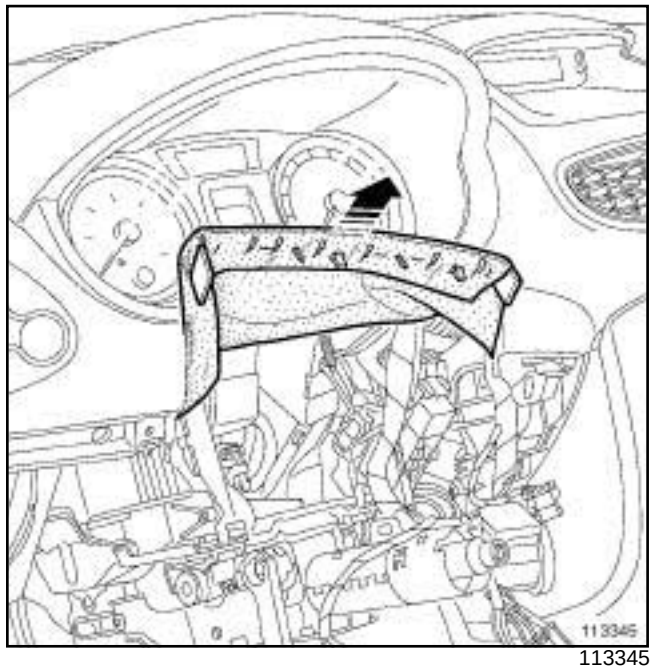
❏

Note:

Place a block of approximately **20** cm on the floor beneath the column to support it.

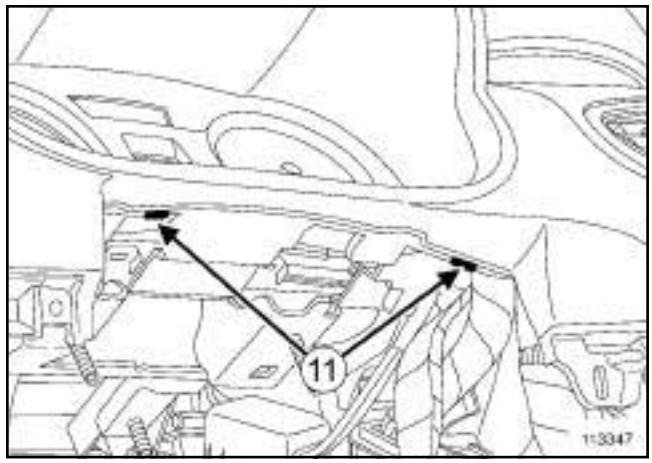
❏ Remove the steering column from the pre-supports (**10**) to set it down on the shim.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113345

❏ Remove the cover gaiter.



113347

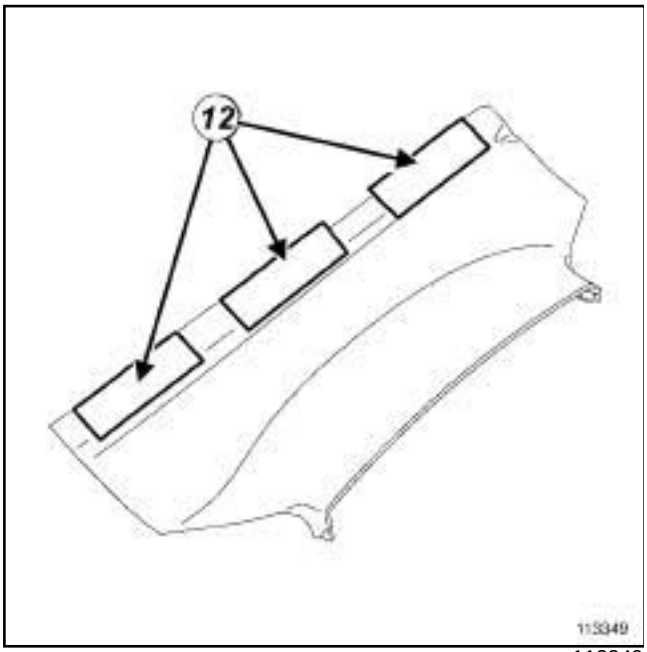
❏ Grind off brazing residues (**11**) .

REFITTING

I - REFITTING PREPARATION OPERATION

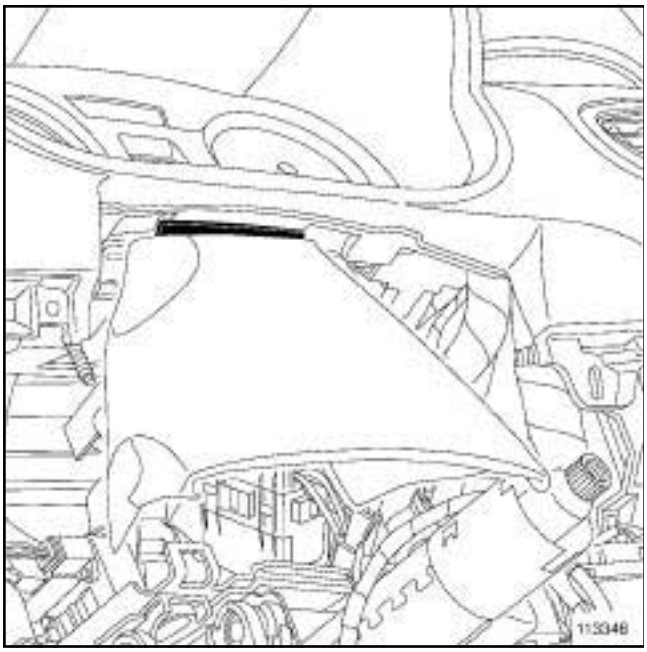
❏ Remove grease from the mating surface with heptane and a lint-free cloth.

II - REFITTING OPERATION FOR PART CONCERNED



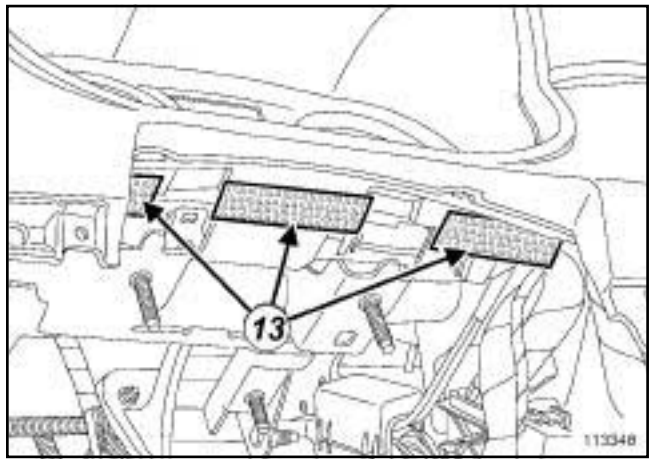
113349

❏ Take off the Velcro strip protection (**12**) .



113346

❏ Attach the gaiter, starting in the middle.

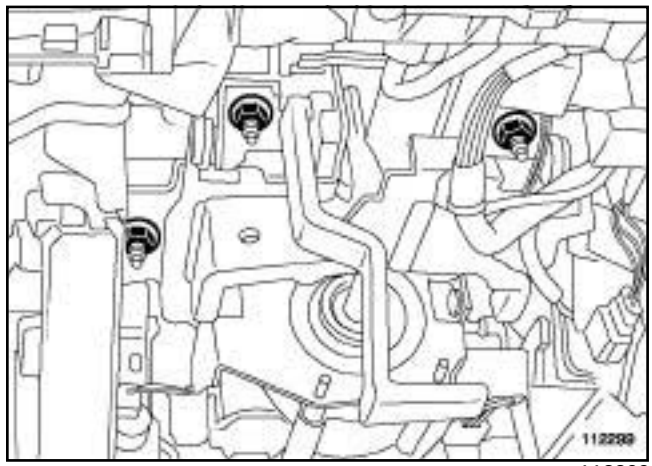


113348

❏ Check that there is a good bond and that the Velcro strips are in the correct position (**13**) .

III - FINAL OPERATION.

❏ Refit the steering column in the retainers.

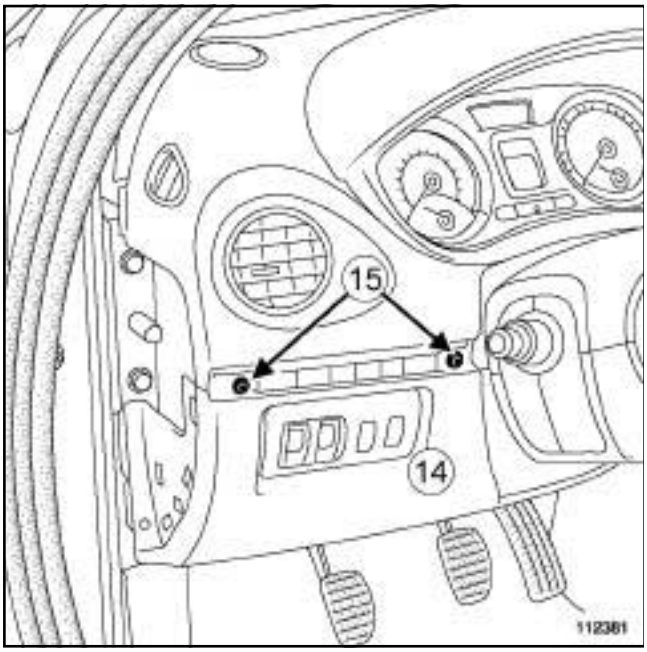


112299

❏ Torque tighten the **steering column mounting bolts (21 Nm)**.

❏ Refit the steering column assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).

❏ Clip on the lower and upper covers.

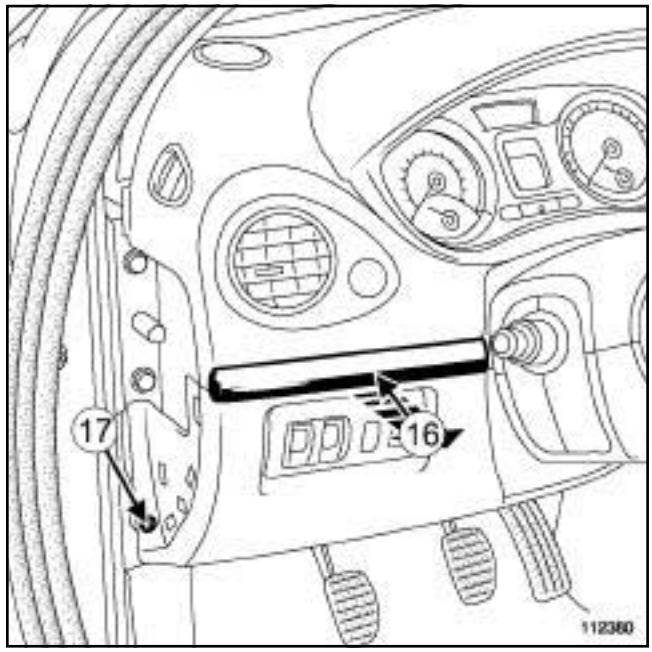


112381

❏ Connect the connectors.

❏ Refit:

- the lower cover (**14**) ,
- the bolts (**15**) .



112380

❏ Clip the trim piece in place (**16**) .

❏ Refit the bolt (**17**) .

❏ Clip on the side panel.

❏ Refit the seal.

❏ Refit:

- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbags and seat belt pretensioners).

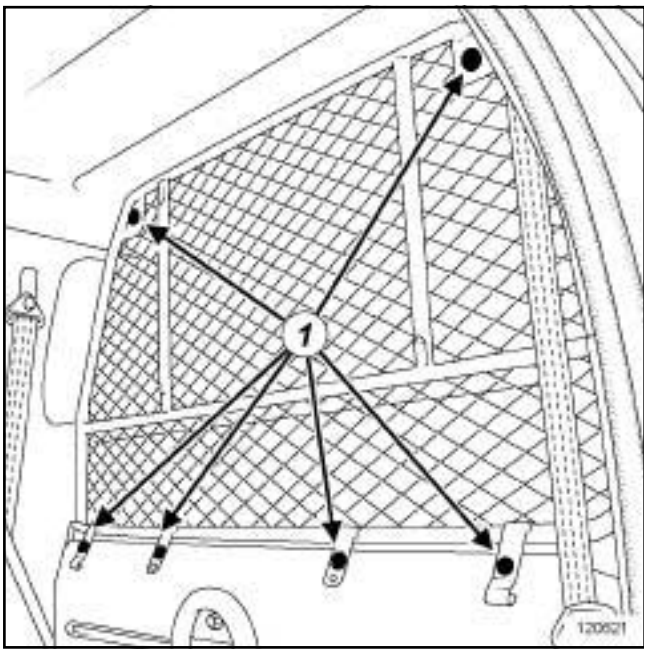
❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

Tightening torques ▽	
separation component bolts	**8 Nm**

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



120621

❑ Remove:

- the bolts (**1**) ,
- the separation component.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the separation component,
- the bolts ***(1)*** .

❑ Torque tighten the **separation component bolts (8 Nm)**.

Equipment required
Diagnostic tool

Tightening torques ▽	
seat belt bolt	**23 Nm**
seat belt mounting bolts	**23 Nm**

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

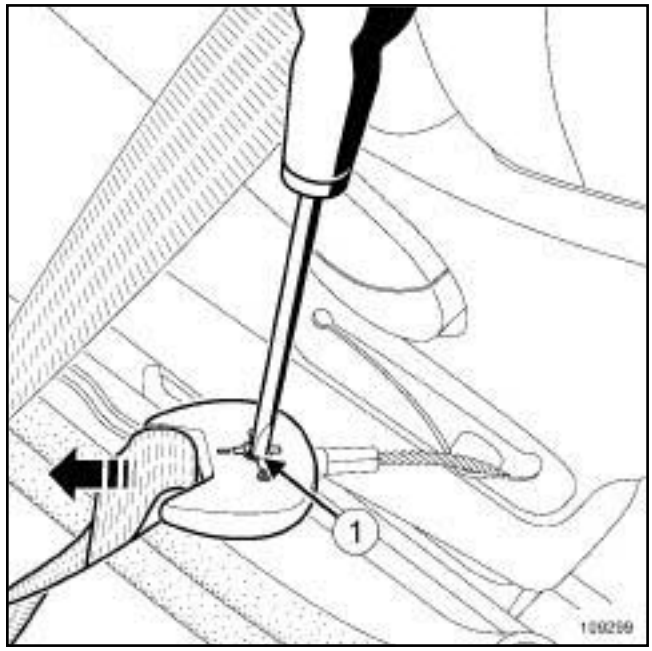
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

B85



109299

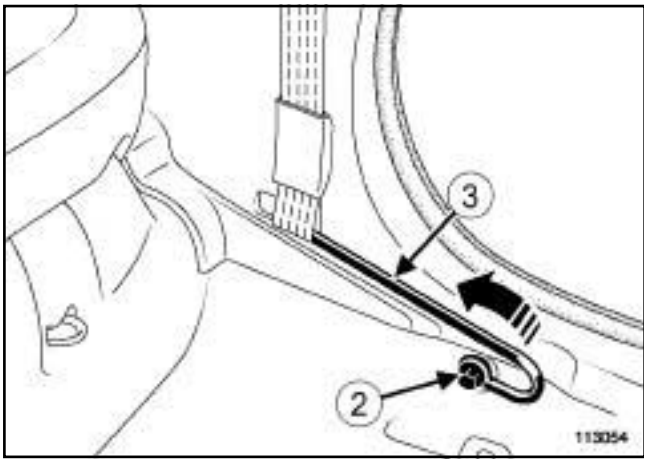
❑ Detach the seat belt by undoing bolt (**1**) .

❑ Remove the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85

❑ Remove the complete rear bench seat (depending on the version):

- (see **Single unit rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).



113054

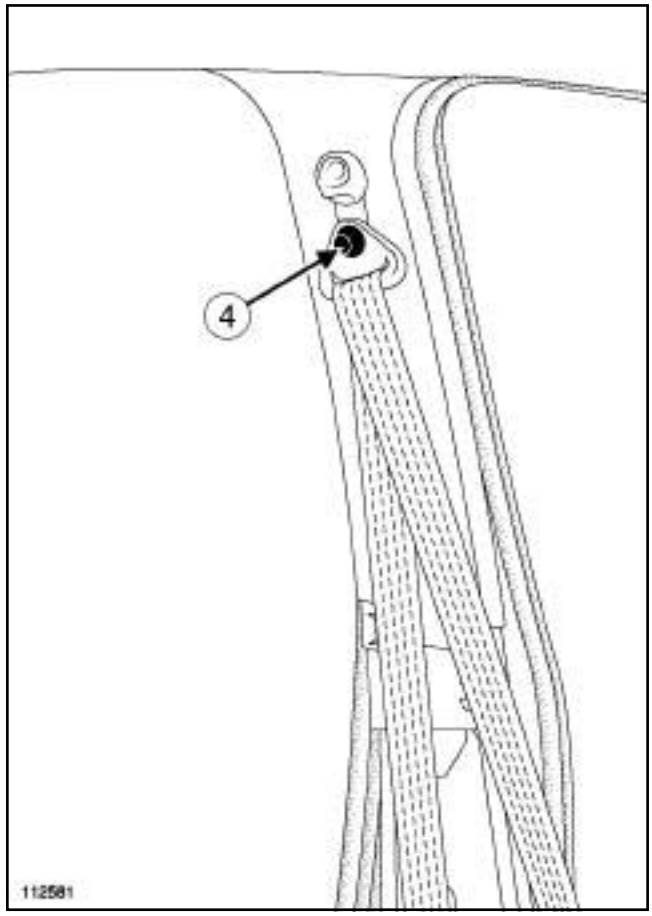
❏ Remove the bolt (**2**) from the seat belt mounting.

❏ Remove the seat belt mounting (**3**) .

❏ Remove the rear panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

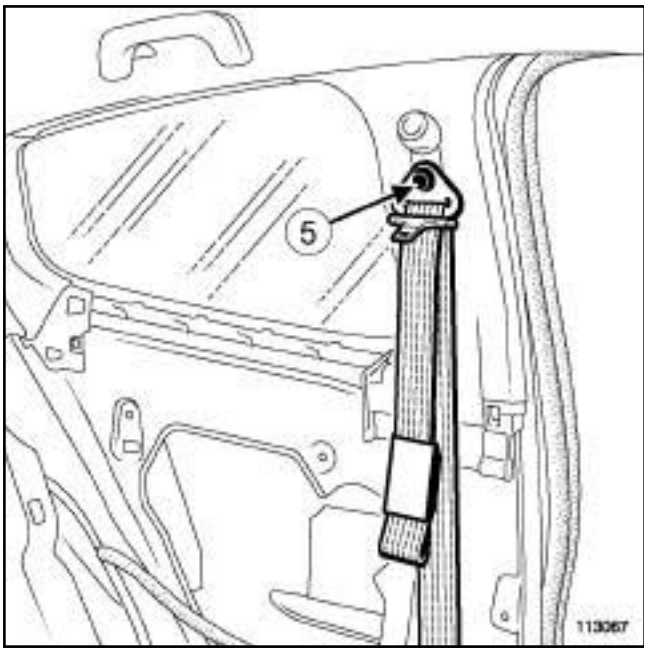
B85



112581

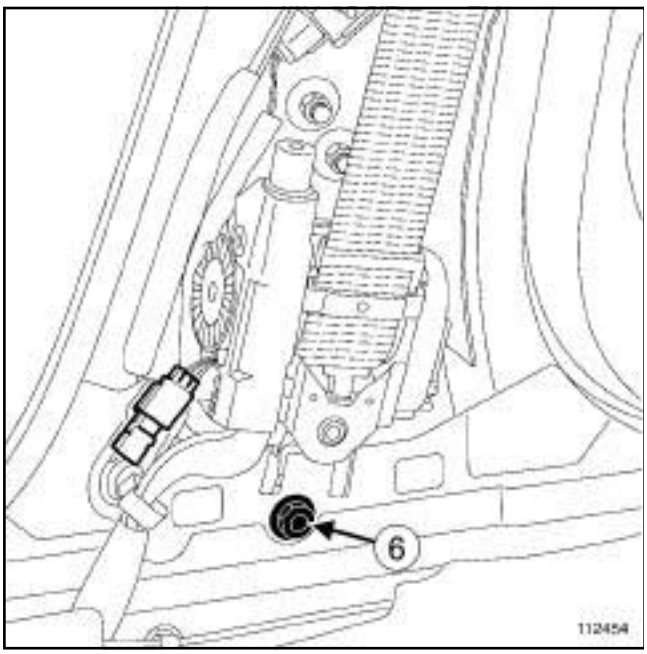
❏ Remove the cover and bolt (**4**) .

C85



113067

❏ Remove the cover and bolt (**5**) .



112454

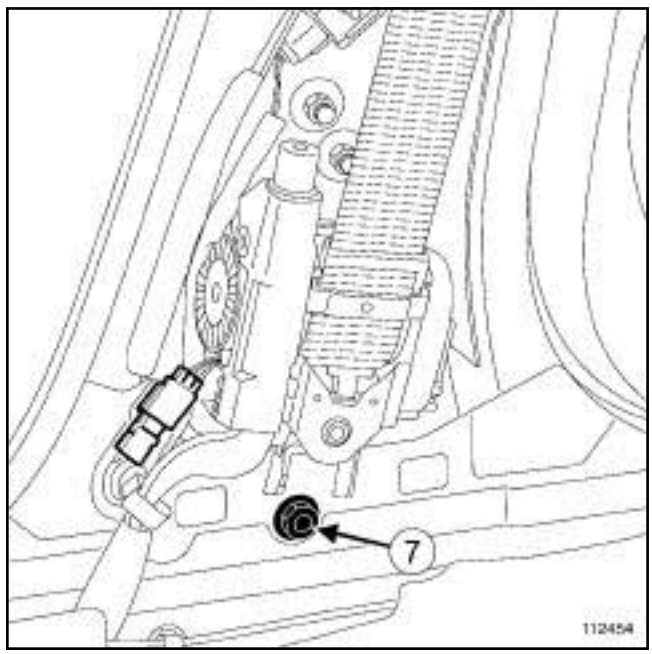
❏ Disconnect the connector.

❏ Remove the bolt (**6**) .

❏ Remove the belt.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



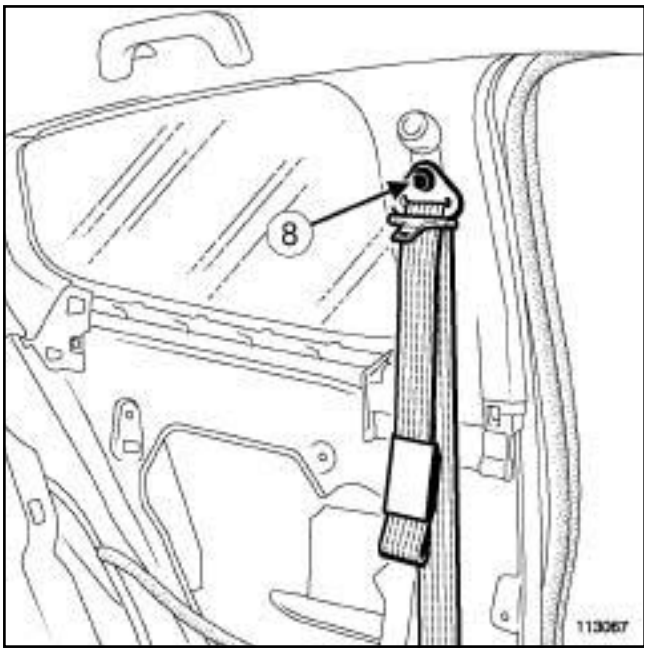
112454

❏ Refit the seat belt (**3**) .

❏ Torque tighten the **seat belt bolt (23 Nm)** (**7**) .

❏ Connect the connectors.

C85

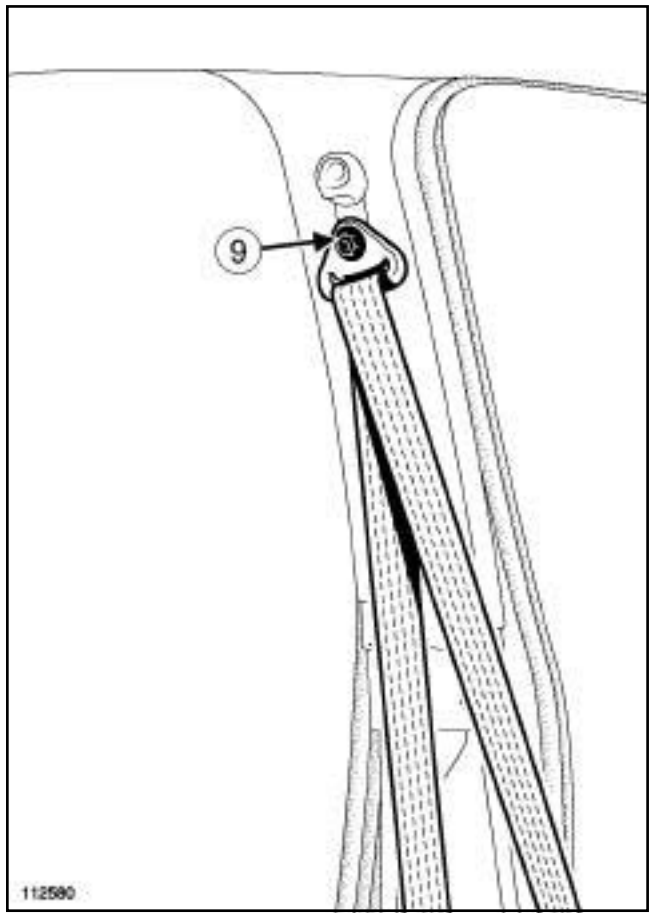


113067

❏ Torque tighten the **seat belt bolt (23 Nm)** (**8**) .

❏ Refit the cover.

B85



112580

❏ Torque tighten the **seat belt bolt (23 Nm)** (**9**) .

❏ Refit the cover.

II - FINAL OPERATION.

C85

❑ Refit:

- the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the seat belt mounting ***(3)*** .

❑ Refit the complete rear bench seat (depending on the version):

- (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **Single unit rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

❑ Torque tighten the **seat belt mounting bolts (23 Nm)** ***(3)*** .

B85

❑ Clip on the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Fix the seat belt ***(1)*** back onto the seat.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

Equipment required
Diagnostic tool

Tightening torques ▽	
seat belt inertia reel mounting bolt	**21 Nm**
seat belt return mechanism mounting bolt	**21 Nm**
seat belt lower mounting bolt	**21 Nm**

❑

IMPORTANT
Before doing any work on a safety system component, always lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit (with the ignition on).

IMPORTANT
Handling the pyrotechnic systems (airbags and pretensioners) near to a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

IMPORTANT
For replacing safety components following an impact (see **Airbag and pretensioners: Precautions for the repair**) (MR 392, 88C, Airbag and pretensioners).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

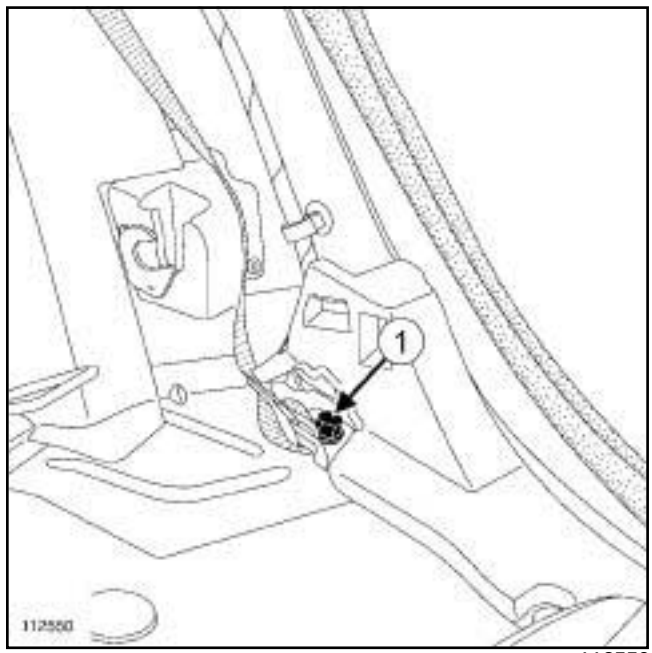
C85

❑ Unclip the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

B85

❑ Remove the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

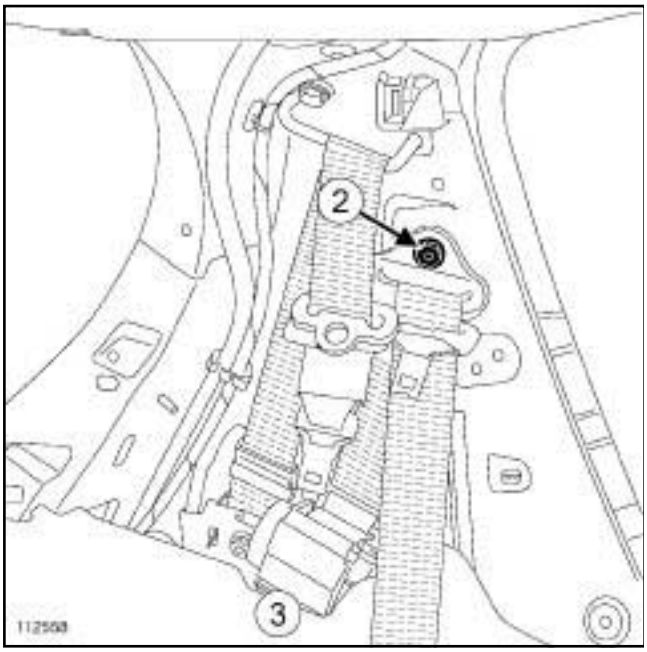
II - OPERATION FOR REMOVAL OF PART CONCERNED



112550

❑ Remove:

- the seat belt lower mounting bolt (**1**) ,
- the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).



112558

❑ Remove the seat belt return mechanism mounting bolt (**2**) .

❑ Pull the inner trim away from the rear wheel arch.

❑ Remove seat belt inertia reel unit mounting bolt (**3**) .

❑ Disconnect the connector.

❑ Remove the inertia reel.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the seat belt inertia reel.

❑ Reconnect the connector.

❑ Torque tighten the **seat belt inertia reel mounting bolt (21 Nm)**.

❑ Refit the upper seat belt return mechanism.

❑ Torque tighten the **seat belt return mechanism mounting bolt (21 Nm)**.

❑ Refit the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Torque tighten the **seat belt lower mounting bolt (21 Nm)**.

II - FINAL OPERATION.

B85

❑ Refit the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85

❑ Reattach the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Refit the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

Equipment required
Diagnostic tool

Tightening torques ▽	
seat belt inertia reel mounting bolt	**21 Nm**
seat belt return mechanism mounting bolt	**21 Nm**
seat belt upper mounting bolt	**21 Nm**

❑

IMPORTANT
Before doing any work on a safety system component, always lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit (with the ignition on).

IMPORTANT
Handling the pyrotechnic systems (airbags and pretensioners) near to a heat source or flame is prohibited: there is a risk of triggering the airbags or pretensioners.

IMPORTANT
For replacing safety components following an impact (see **Airbag and pretensioners: Precautions for the repair**) (MR 392, 88C, Airbag and pretensioners).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

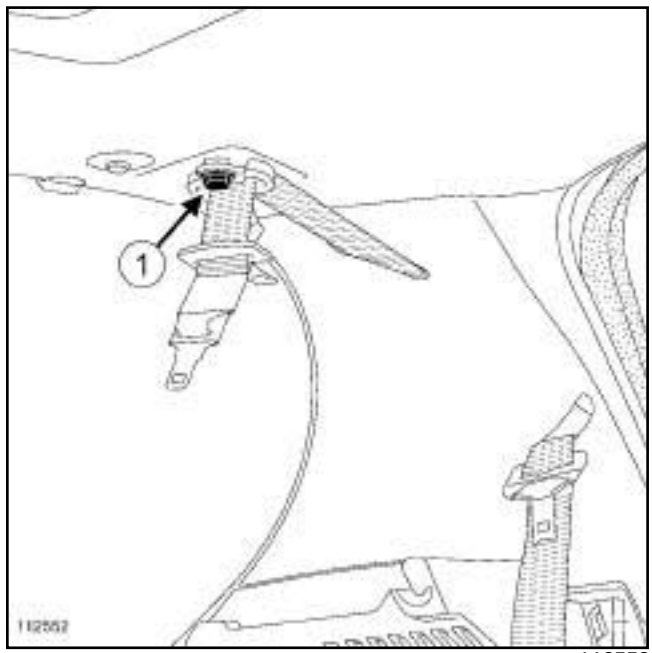
C85

❑ Unclip the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

B85

❑ Remove the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

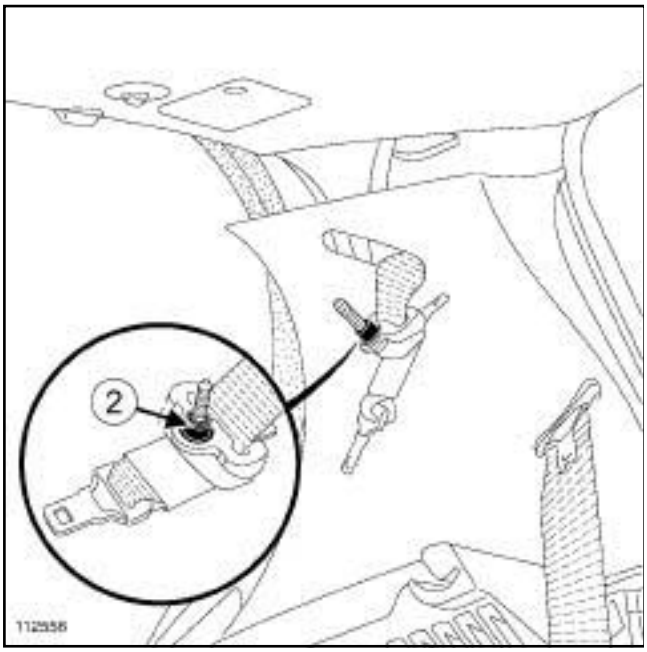
II - OPERATION FOR REMOVAL OF PART CONCERNED



112552

❑ Remove central seat belt upper mounting bolt (**1**)

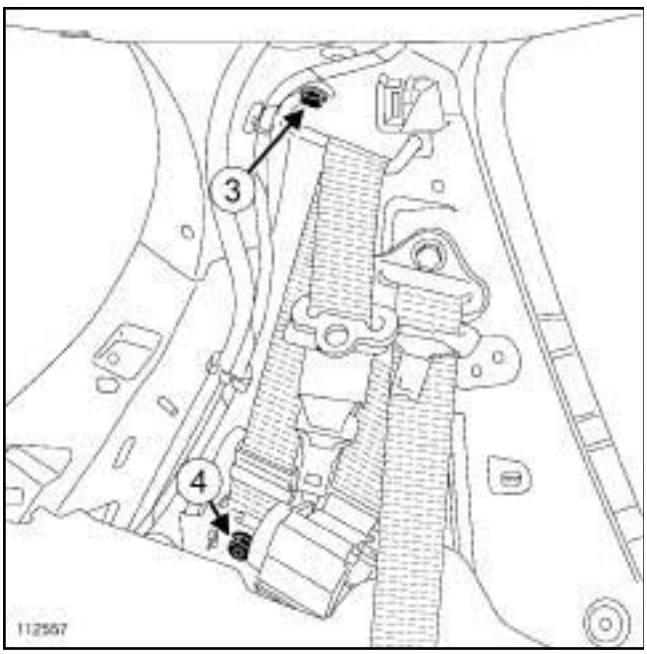
❑ Unclip the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).



112556

❑ Remove the plug (**2**) .

❑ Remove the central seat belt upper mounting bolt



112557

❑ Remove the seat belt return mechanism mounting bolt (**3**) .

❑ Remove the upper seat belt return mechanism.

❑ Remove seat belt inertia reel unit mounting bolt (**4**) .

❑ Remove the inertia reel.

REFITTING

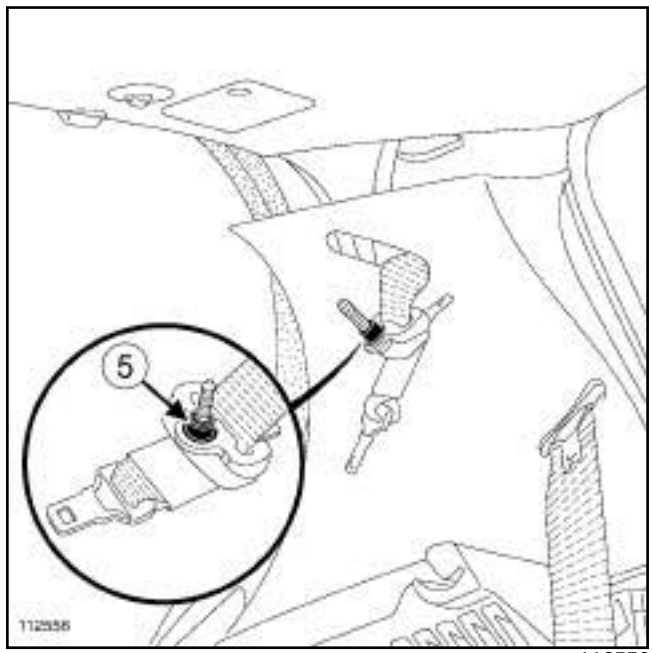
I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the seat belt inertia reel.

❑ Torque tighten the **seat belt inertia reel mounting bolt (21 Nm)**.

❑ Refit the upper seat belt return mechanism.

❑ Torque tighten the **seat belt return mechanism mounting bolt (21 Nm)**.



112556

❑ Refit:

- the plug (**5**) ,
- the centre seat belt upper mounting bolt,
- the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Torque tighten the **seat belt upper mounting bolt (21 Nm)**.

II - FINAL OPERATION.

B85

❑ Refit the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85

❑ Reattach the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Refit the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

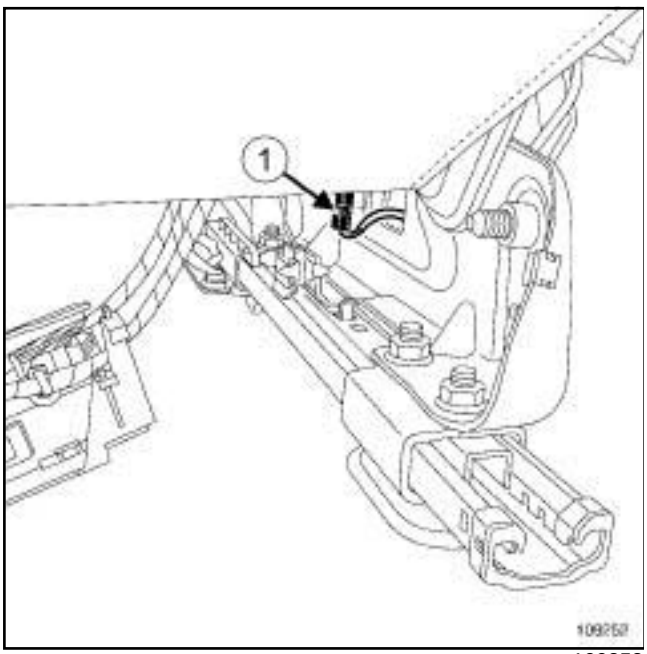
Tightening torques ▽	
flexible stalk mounting bolts	**35 Nm**

❑

> Note:
>
> You do not need to remove the seat in order to remove the front flexible stalk.

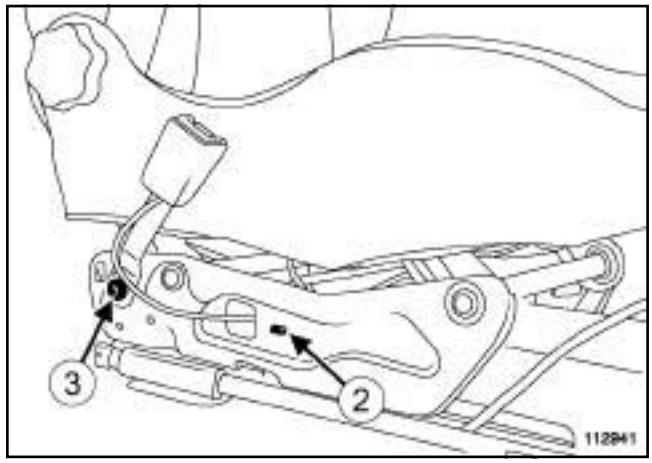
REMOVAL

REMOVAL STAGE OF PART IN QUESTION



109252

❑ Disconnect the connector (**1**) .



112941

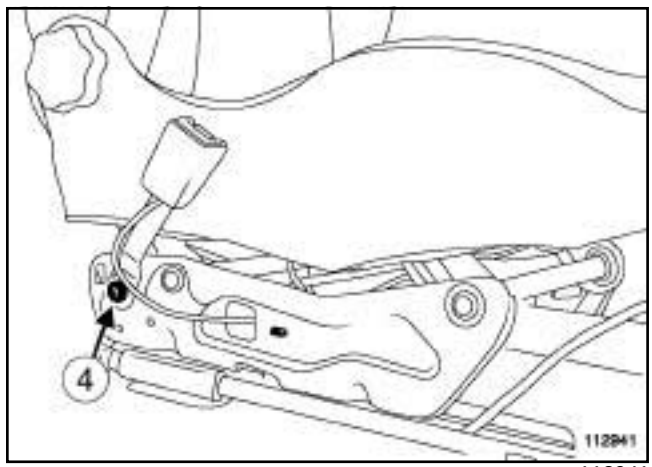
❑ Unclip the wiring at (**2**) .

❑ Remove bolt (**3**) .

❑ Remove the flexible stalk.

REFITTING

REFITTING STAGE OF PART IN QUESTION



112941

❑ Refit the flexible stalk.

❑ Tighten to torque the **flexible stalk mounting bolts (35 Nm)**, (**4**) .

❑ Attach the wiring.

❑ Connect the connector.

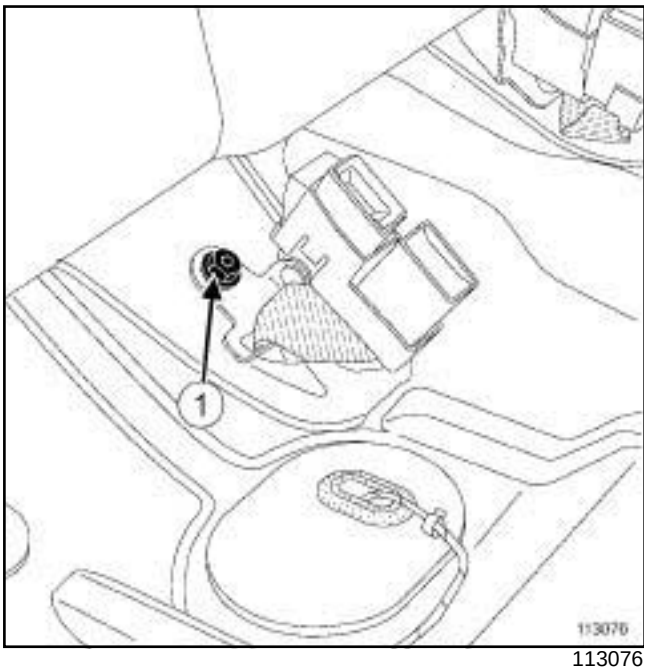
Tightening torques ▽	
flexible stalk mounting bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION STAGE

❏ Lift off the rear bench seat seat base.

II - REMOVAL STAGE OF PART IN QUESTION



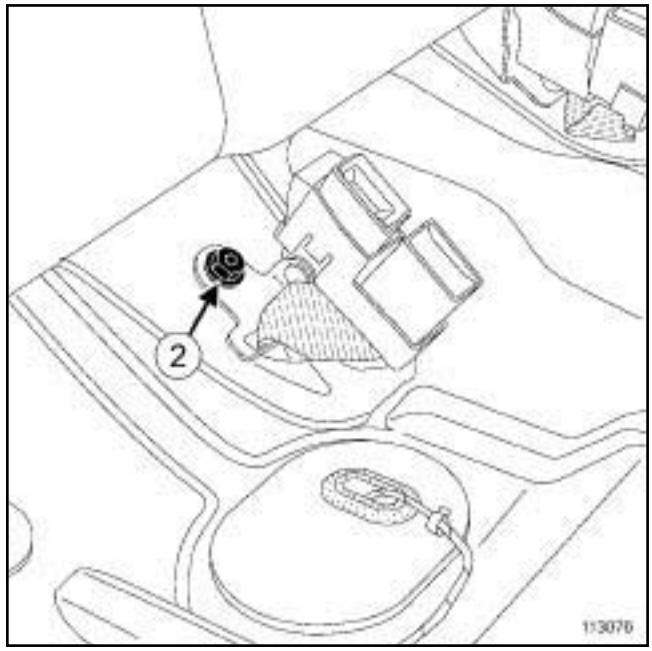
113076

❏ Remove bolt (**1**) .

❏ Remove the flexible stalks.

REFITTING

I - REFITTING STAGE OF PART IN QUESTION



113076

❏ Refit the flexible stalks.

❏ Tighten to torque the **flexible stalk mounting bolts (21 Nm)**, (**2**) .

II - FINAL STAGE

❏ Reposition the seat base correctly.

Tightening torques ▽	
adjusting device mounting bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION STAGE

B85

❑ Remove:

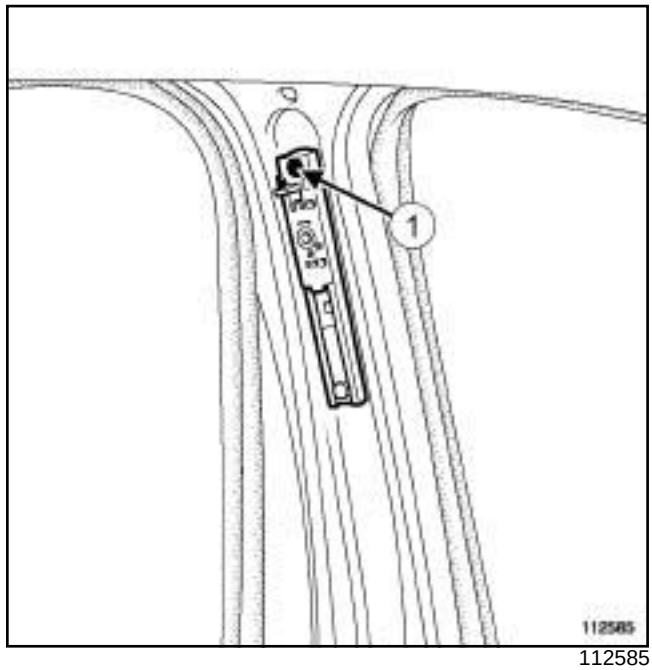
- the front seat belt (see **59A**, **Safety accessories**, **Front seat belt: Removal - Refitting**, page **59A-1**) partially,
- the B-pillar lining (see **B-pillar trim: Removal - Refitting**) .

C85

❑ Remove:

- the rear wing panel lining (see **Rear panel lining: Removal - Refitting**) ,
- the front seat belt (see **59A**, **Safety accessories**, **Front seat belt: Removal - Refitting**, page **59A-1**) partially,
- the B-pillar upper lining (see **B-pillar upper trim: Removal - Refitting**) .

II - REMOVAL STAGE OF PART IN QUESTION



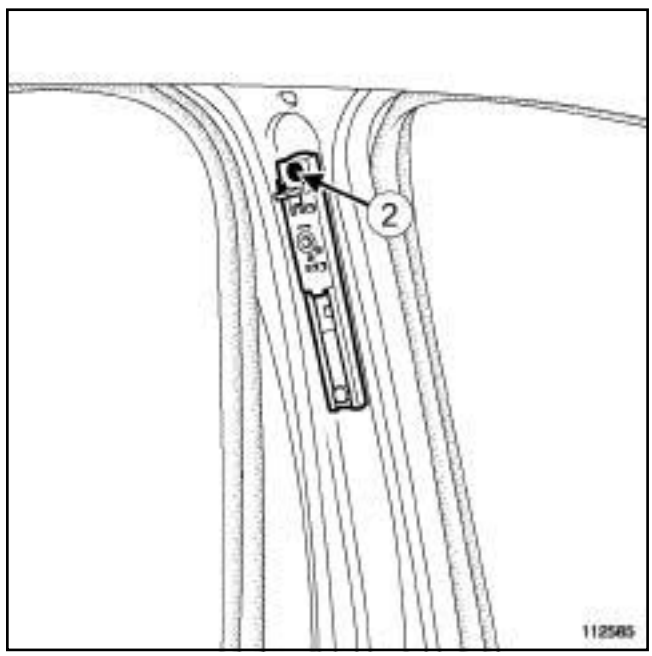
112585

❑ Remove bolt (**1**) .

❑ Remove the adjusting device.

REFITTING

I - REFITTING STAGE OF PART IN QUESTION



112585

❑ Refit the adjusting device.

❑ Tighten to torque the **adjusting device mounting bolts (21 Nm)**, (**2**) .

II - FINAL STAGE

B85

❑ Refit:

- the B-pillar lining (see **B-pillar trim: Removal - Refitting**) ,
- the front seat belt (see **59A**, **Safety accessories**, **Front seat belt: Removal - Refitting**, page **59A-1**) .

C85

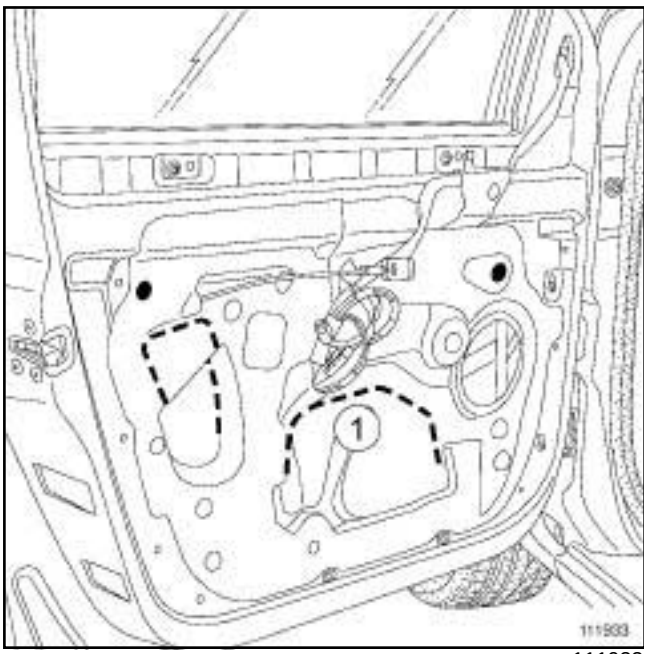
❑ Refit:

- the B-pillar upper lining (see **B-pillar upper trim: Removal - Refitting**) ,
- the rear wing panel lining (see **Rear panel lining: Removal - Refitting**) ,
- the front seat belt (see **59A**, **Safety accessories**, **Front seat belt: Removal - Refitting**, page **59A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

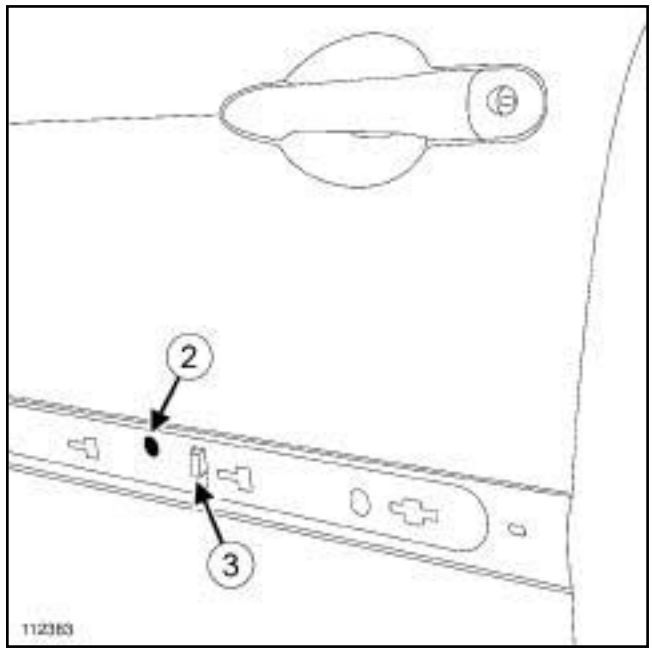


111933

❑ Open the access flap (**1**) according to the marking on the sealing film.

❑ Remove the front door rubbing strip (see **55A**, **Exterior protection**, **Front side door protective strip: Removal - Refitting**, page **55A-37**) .

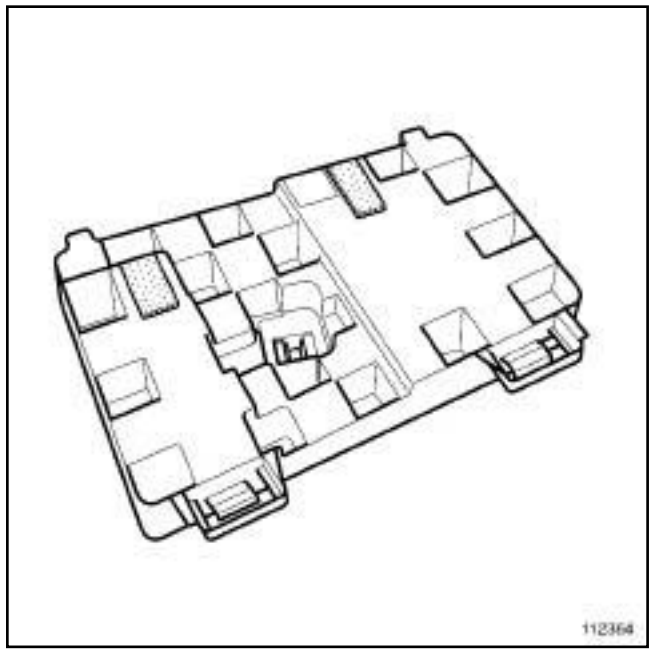
II - OPERATION FOR REMOVAL OF PART CONCERNED



112363

❑ Remove the bolt (**2**) .

❑ Unfasten clip (**3**) .



112364

❑ Remove the door airbag module.

REFITTING

❑ Refit:

- the door airbag module correctly,
- the bolt ***(2)*** .

FINAL OPERATION.

- ❏ Refit the rubbing strip (see **55A**, **Exterior protection**, **Front side door protective strip: Removal - Refitting**, page **55A-37**) .
- ❏ Close the door seal film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening elements sealing).
- ❏ Refit the door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

RENAULT

6 Air conditioning

61A HEATING

62A AIR CONDITIONING

X85

JULY 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Section 6

Contents

Pages

61A HEATING

Heating: List and location of components 61A-1

Cabin filter: Removal - Refitting 61A-17

Rear air distribution duct: Removal - Refitting 61A-19

Recirculation control cable: Removal - Refitting 61A-22

Air distribution cable: Removal - Refitting 61A-31

Air mixing cable: Removal - Refitting 61A-41

Distribution unit: Removal - Refitting 61A-50

Heater matrix: Removal - Refitting 61A-66

Fan assembly: Removal - Refitting 61A-73

Heating resistor relays: Removal - Refitting 61A-87

Heating resistors: Removal - Refitting 61A-90

Passenger compartment fan assembly control unit: Removal - Refitting 61A-91

Control panel: Removal - Refitting 61A-98

Front side air distribution duct: Removal - Refitting 61A-101

61A HEATING

Front centre air distribution duct: Removal - Refitting 61A-104

Front footwell air distribution duct: Removal - Refitting 61A-106

Recirculation motor: Removal - Refitting 61A-116

Mixing motor: Removal - Refitting 61A-120

Distribution motor: Removal - Refitting 61A-126

Passenger compartment temperature sensor: Removal - Refitting 61A-131

Exterior air temperature sensor: Removal - Refitting 61A-133

Solar radiation sensor: Removal - Refitting 61A-134

62A AIR CONDITIONING

Air conditioning: Precautions for the repair 62A-1

Air conditioning: Parts and consumables for the repair 62A-2

Air conditioning: List and location of components 62A-3

Air conditioning: Check 62A-6

Refrigerant circuit: Check 62A-9

Contents

62A AIR CONDITIONING

Refrigerant circuit: Draining - Filling 62A-10

Condenser: Removal - Refitting 62A-13

Dehydrator reservoir: Removal - Refitting 62A-17

Compressor: Removal - Refitting 62A-21

Expansion valve: Removal - Refitting 62A-26

Evaporator: Removal - Refitting 62A-30

Evaporator: Cleaning 62A-31

Expansion valve - intermediate pipe connecting pipe at the expansion valve outlet: Removal - Refitting 62A-32

Dehydrator reservoir - expansion valve connecting pipe: Removal - Refitting 62A-36

Expansion valve - compressor connecting pipe: Removal - Refitting 62A-41

Pressure sensor: Removal - Refitting 62A-46

Compressor - condenser connecting pipe: Removal - Refitting 62A-47

Compressor - intermediate pipe connecting pipe: Removal - Refitting 62A-51

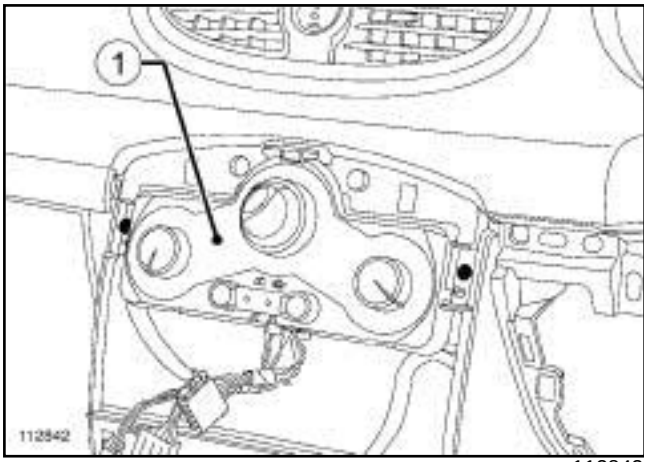
LEFT-HAND DRIVE

No.	Description
(1)	Control panel
(2)	Cabin filter
(3)	Rear air distribution duct
(4)	Recirculation control cable
(5)	Air distribution cable
(6)	Air mixing cable
(7)	Air distribution unit
(8)	Heater matrix
(9)	Fan assembly
(10)	Heating resistor relay
(11)	Heating resistors:
(12)	Blower control unit.
(13)	Front side air distribution duct
(14)	Front central air distribution duct
(15)	A-pillar air distribution duct
(16)	External temperature sensor

CLIMATE CONTROL

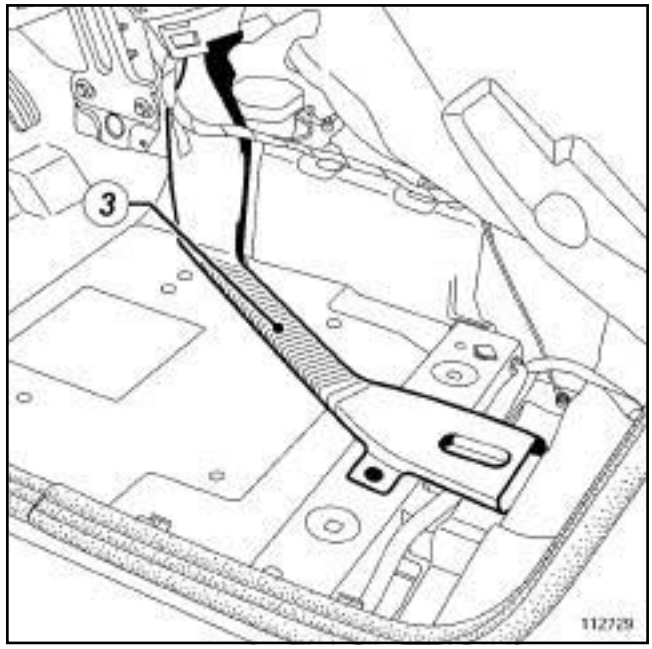
No.	Description
(17)	Passenger compartment temperature sensor
(18)	Solar radiation sensor

LEFT-HAND DRIVE

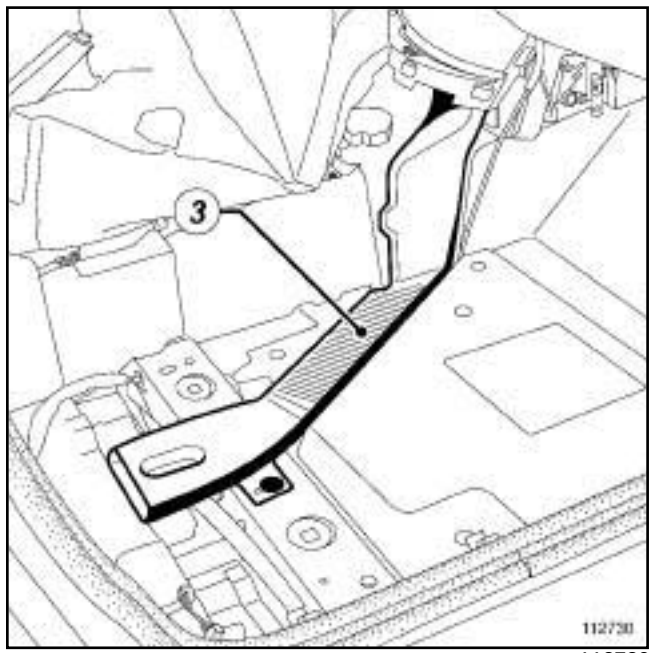


112842

112763

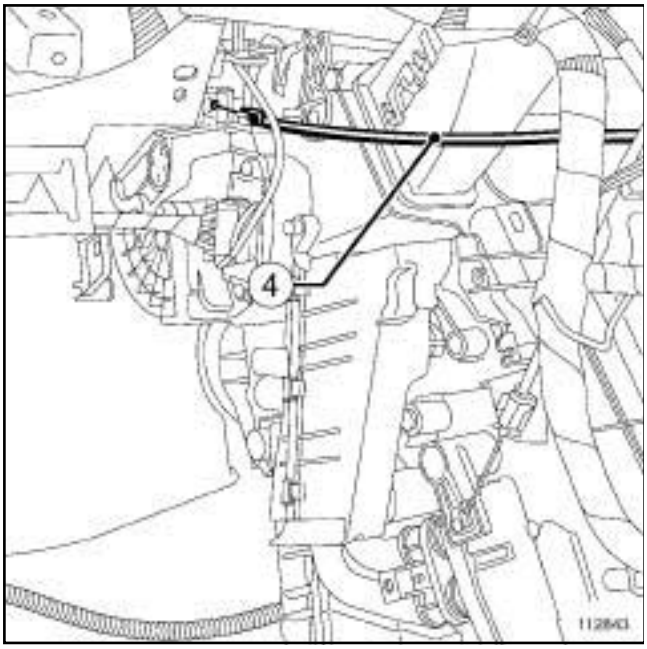


112729

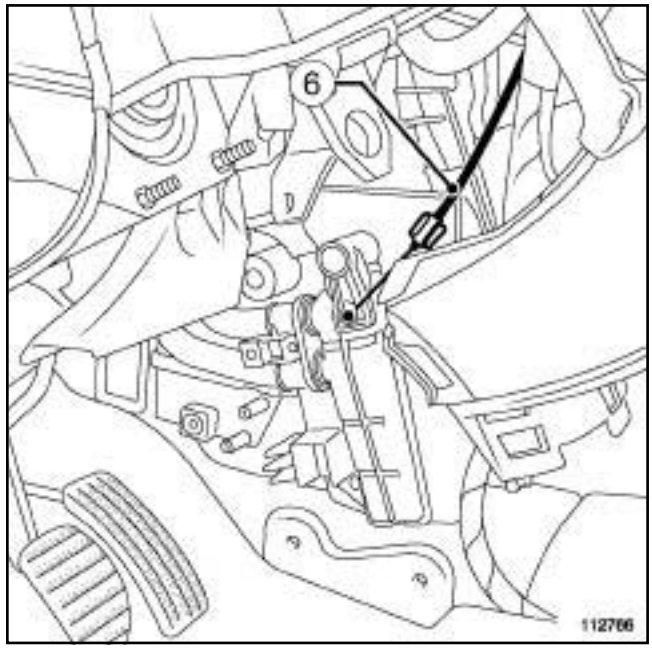


112730

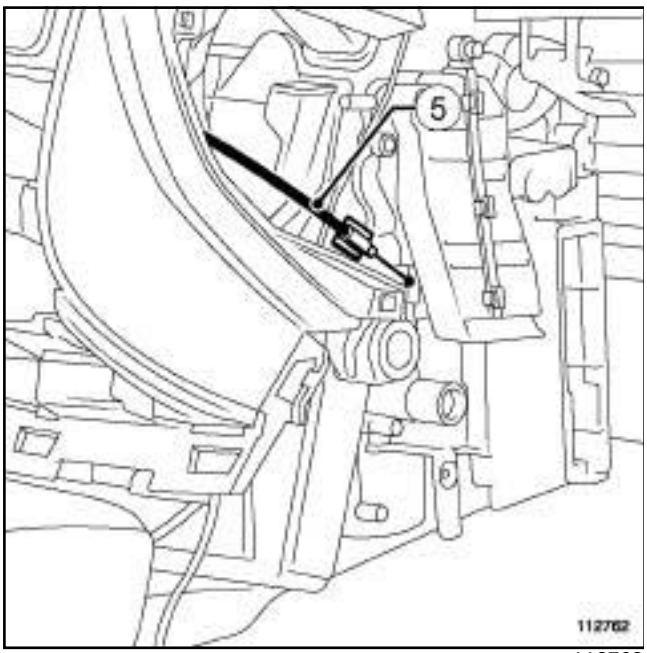
LEFT-HAND DRIVE



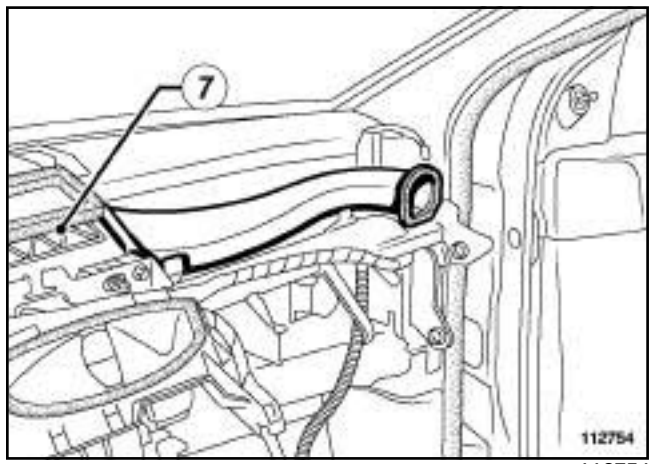
112843



112766

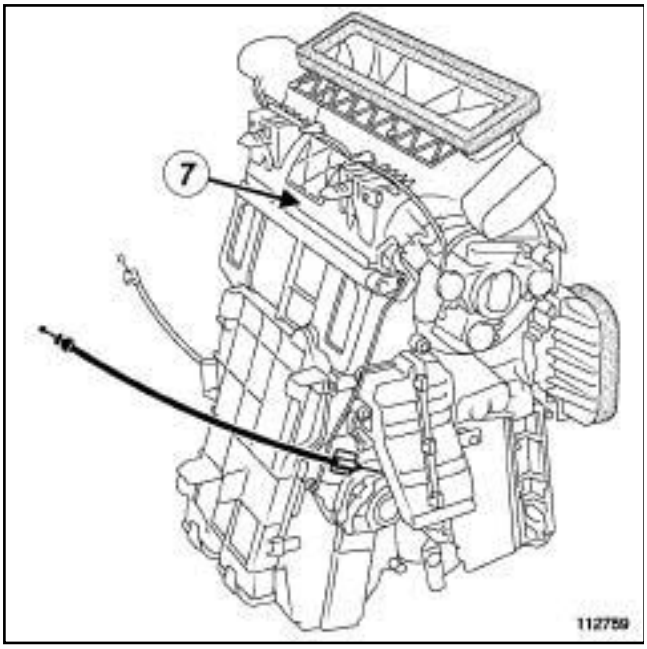


112762



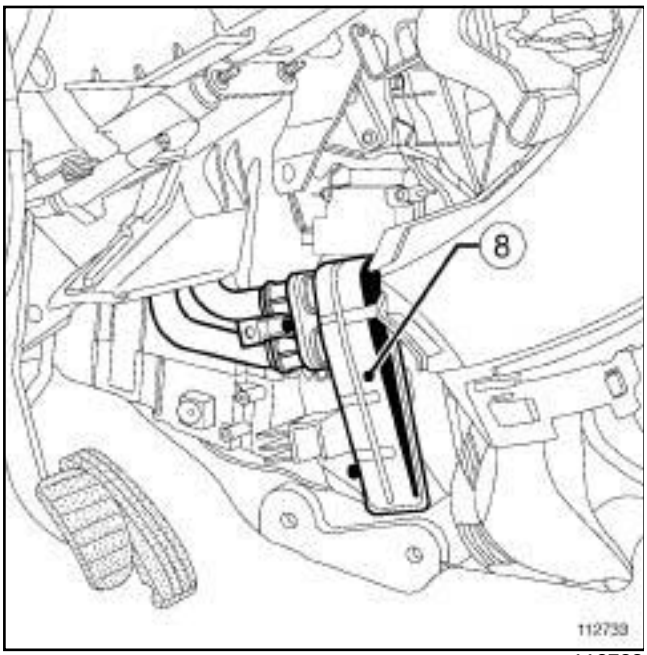
112754

LEFT-HAND DRIVE

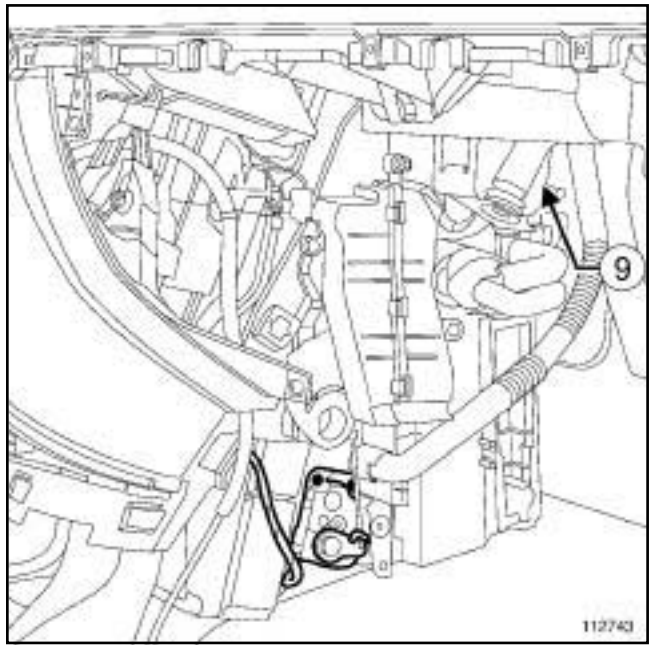


112759

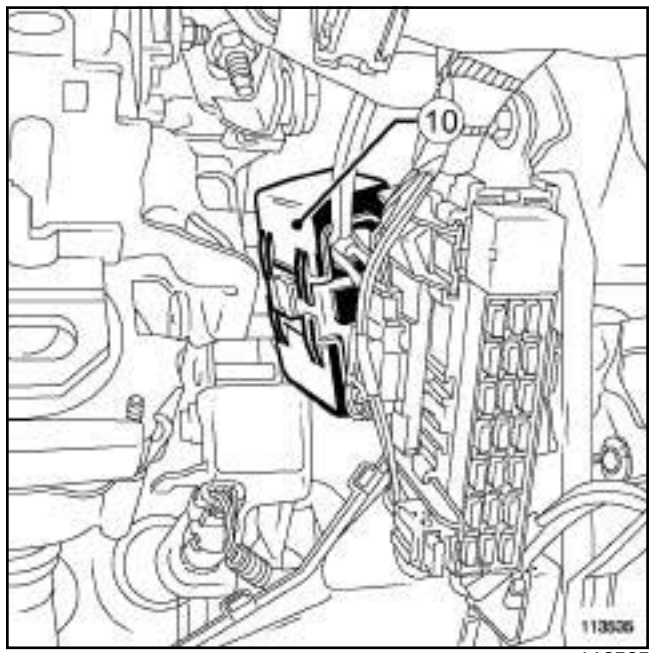
The evaporator is supplied already assembled in the distribution unit. (**7**)



112733

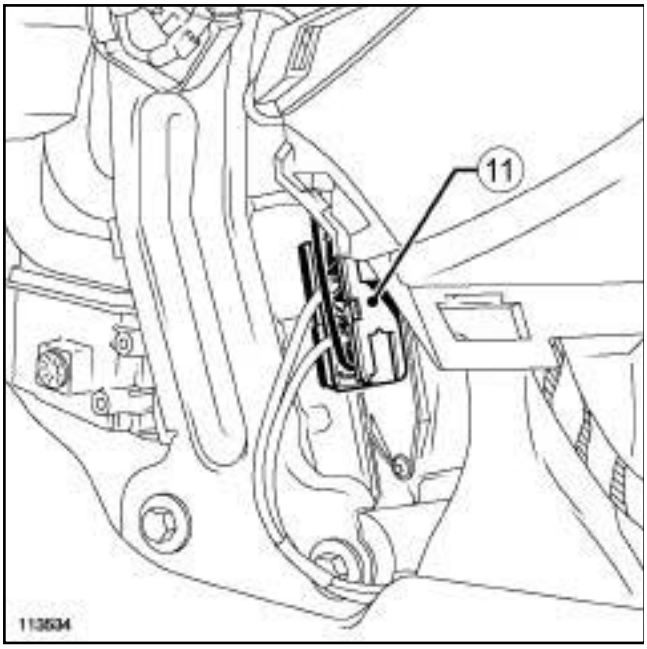


112743

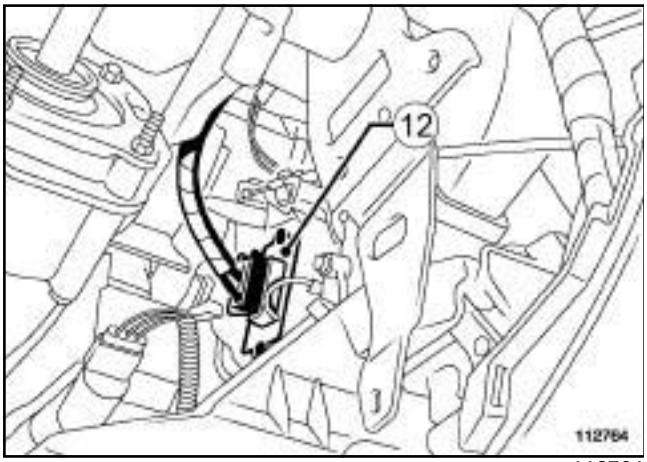


113535

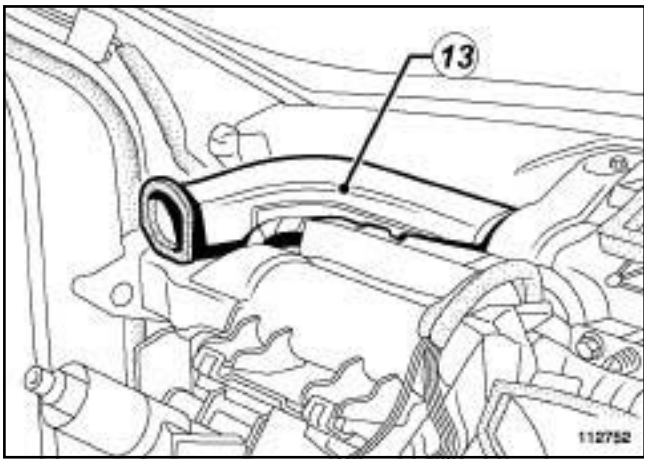
LEFT-HAND DRIVE



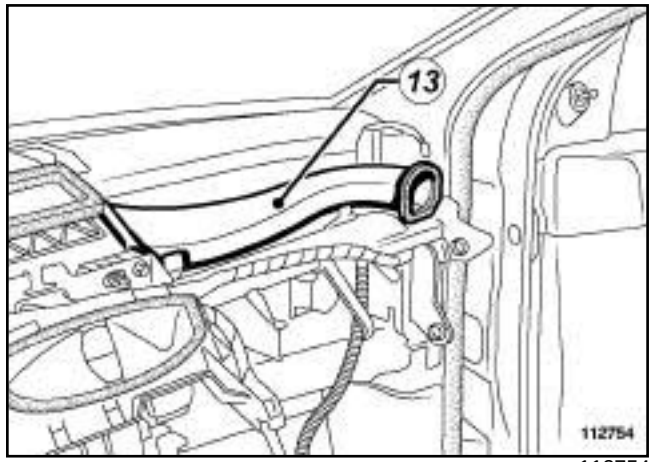
113534



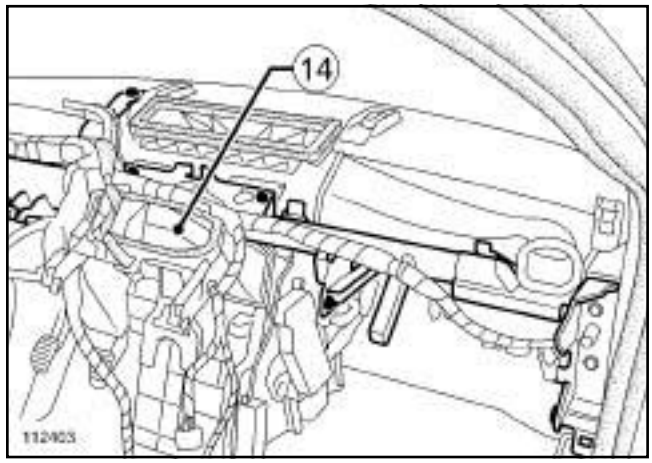
112764



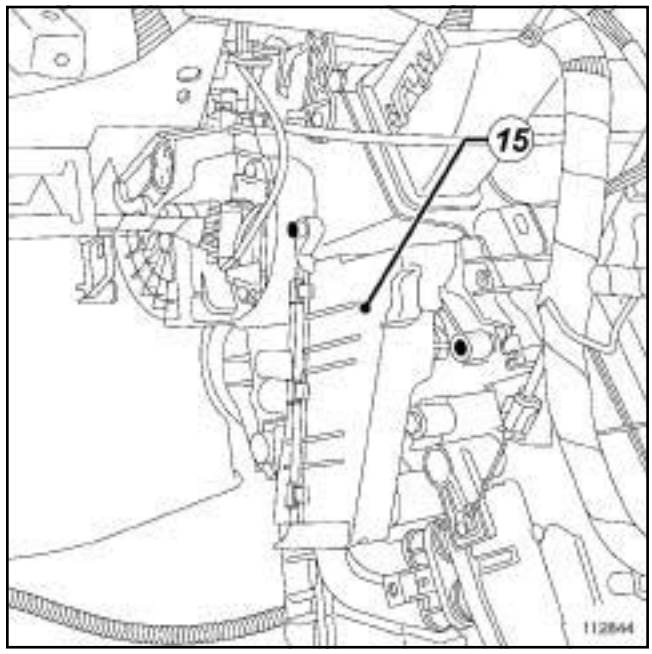
112752



112754

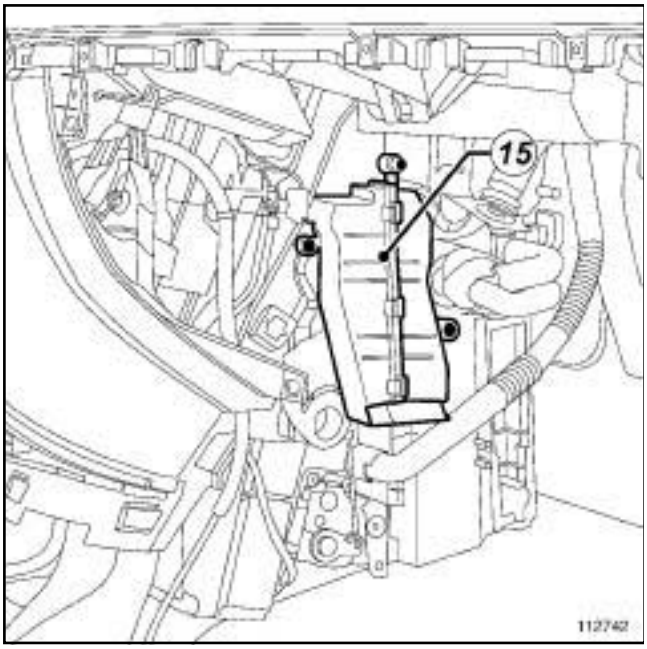


112403

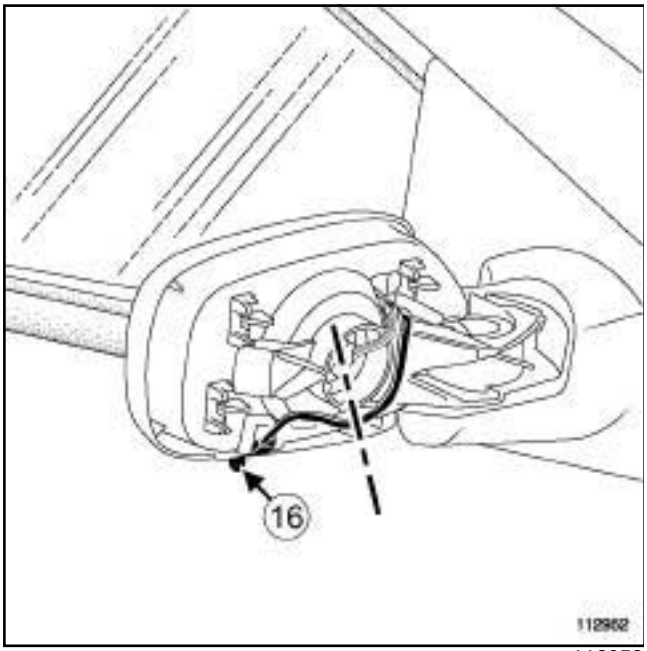


112844

LEFT-HAND DRIVE

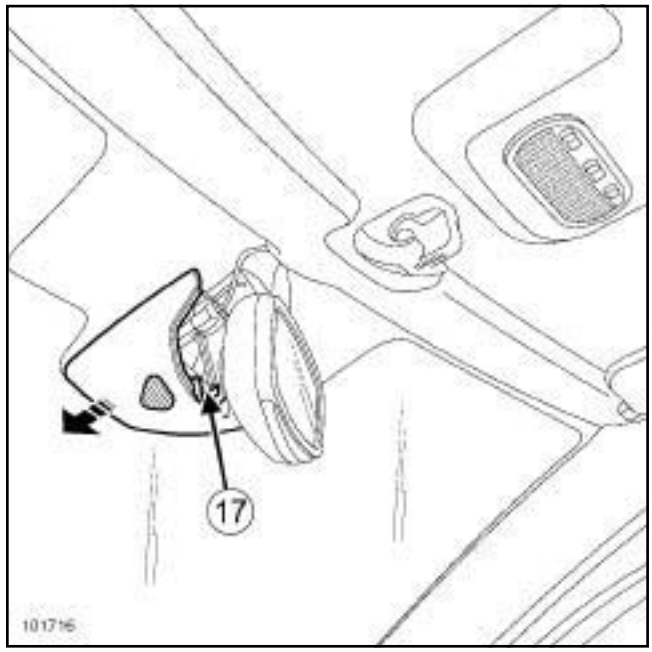


112742

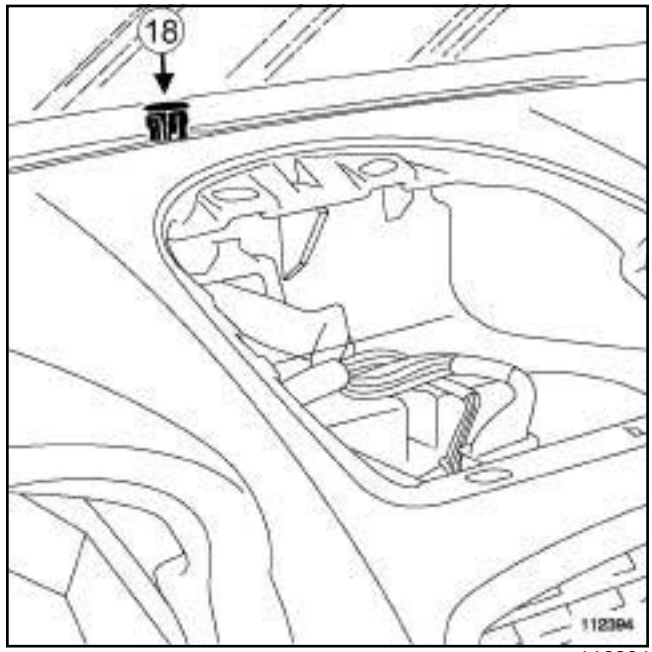


112952

CLIMATE CONTROL



101716



112394

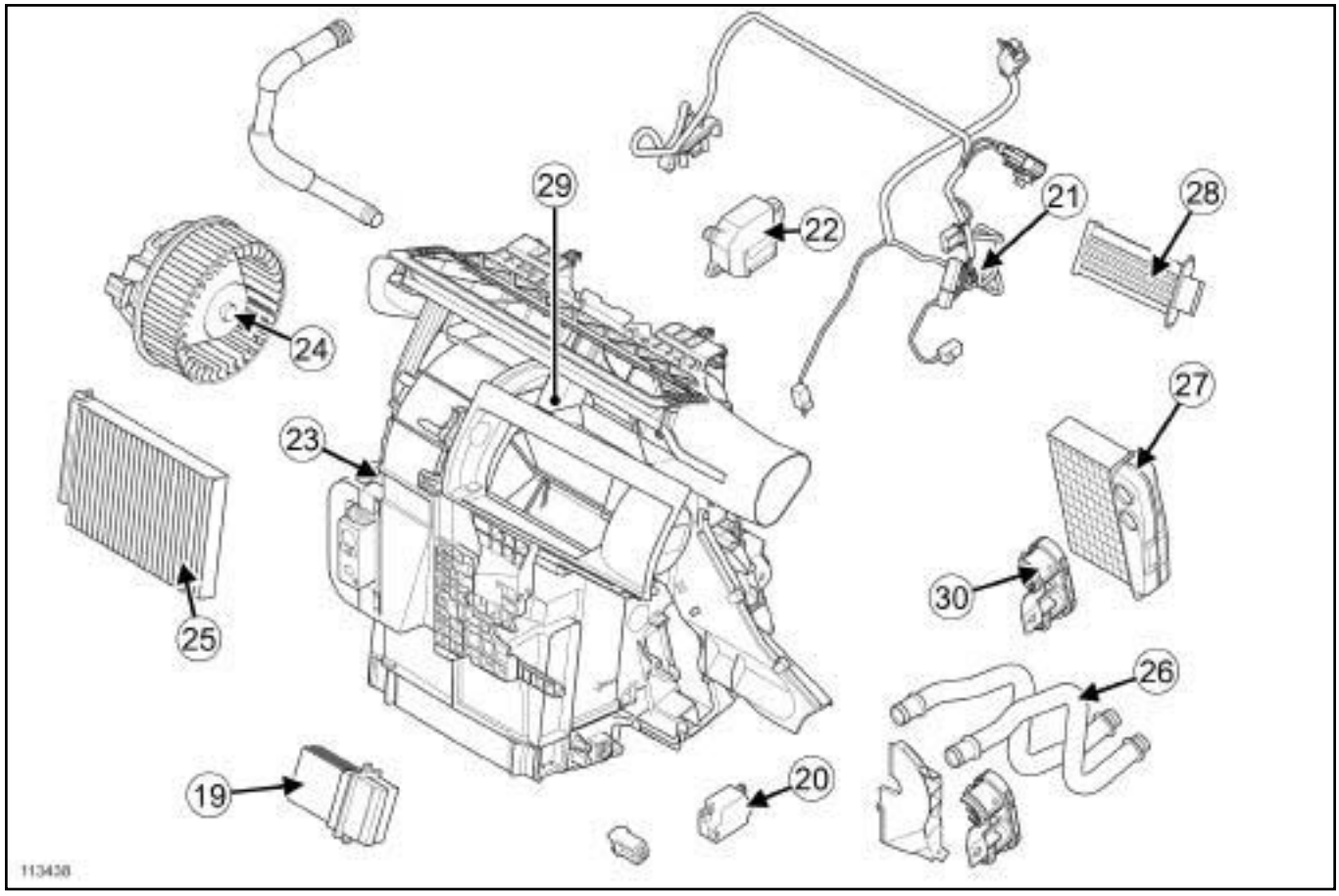
LEFT-HAND DRIVE

CLIMATE CONTROL

CLIMATE CONTROL

No.	Description
(19)	Motor-driven fan assembly control unit
(20)	Mixing motor
(21)	Wiring harnesses
(22)	Recirculation motor
(23)	Distribution motor
(24)	Fan assembly
(25)	Cabin filter
(26)	Heater matrix pipes
(27)	Heater matrix
(28)	Heater resistance
(29)	Air distribution unit
(30)	Heater matrix pipe mounting bracket

LEFT-HAND DRIVE



113438

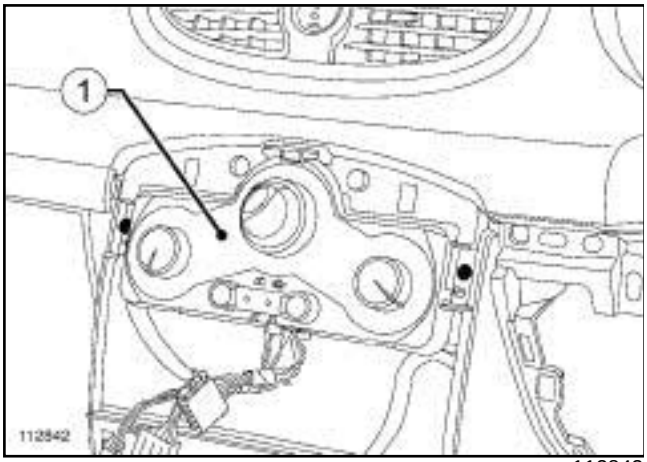
RIGHT-HAND DRIVE

No.	Description
(1)	Control panel
(2)	Cabin filter
(3)	Rear air distribution duct
(4)	Recirculation control cable
(5)	Air distribution cable
(6)	Air mixing cable
(7)	Air distribution unit
(8)	Heater matrix
(9)	Fan assembly
(10)	Heating resistor relay
(11)	Heating resistors:
(12)	Blower control unit.
(13)	Front side air distribution duct
(14)	Front central air distribution duct
(15)	A-pillar air distribution duct
(16)	External temperature sensor

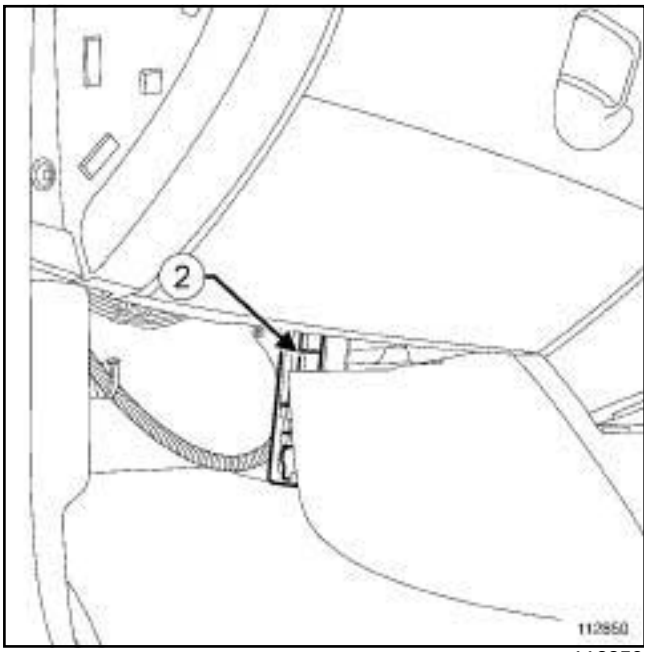
CLIMATE CONTROL

No.	Description
(17)	Passenger compartment temperature sensor
(18)	Solar radiation sensor

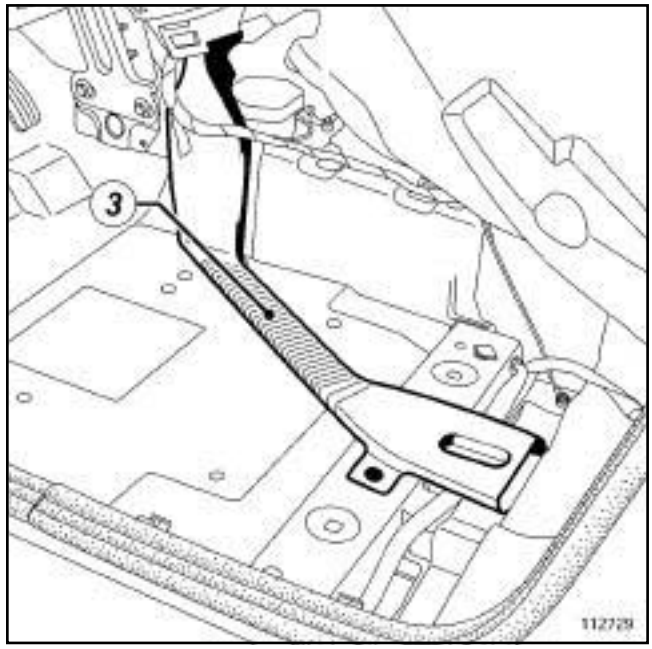
RIGHT-HAND DRIVE



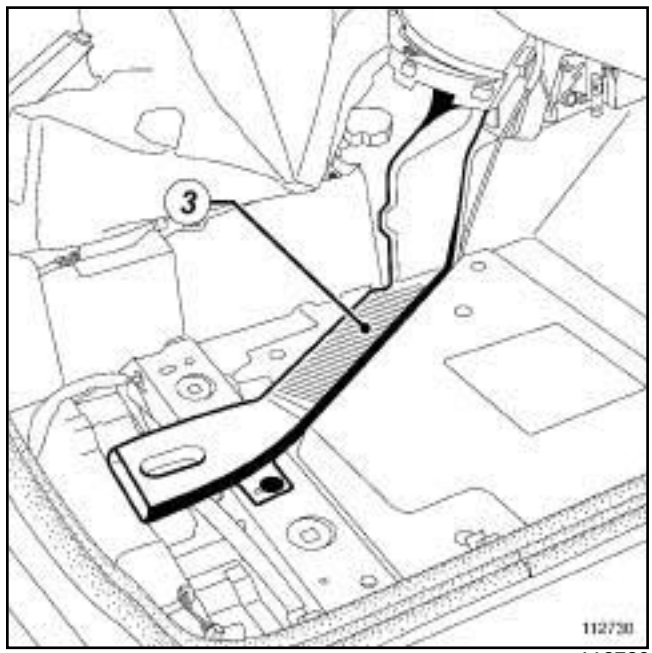
112842



112850

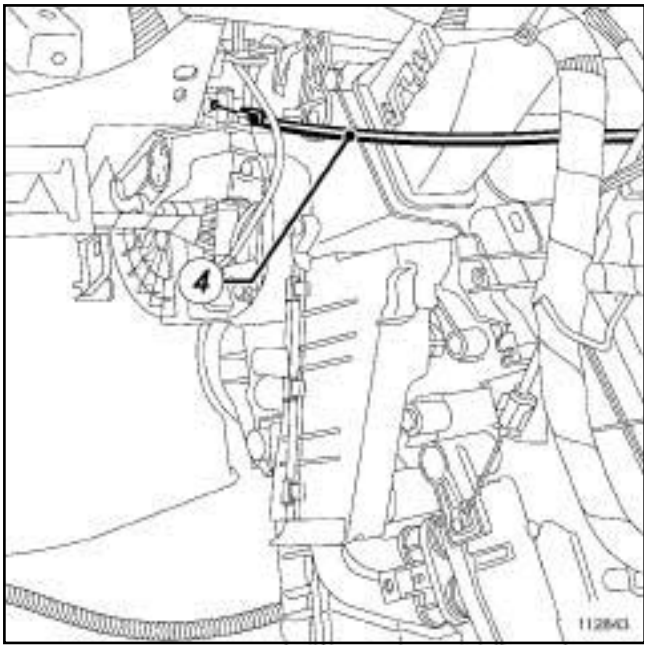


112729

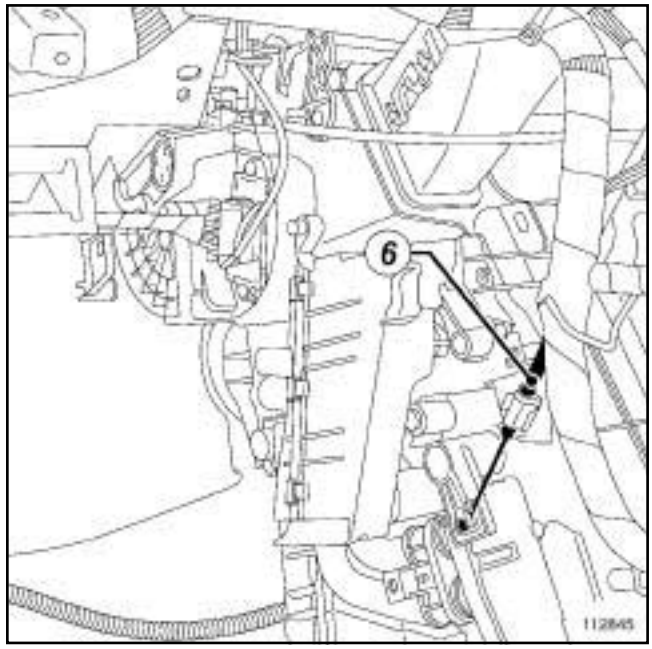


112730

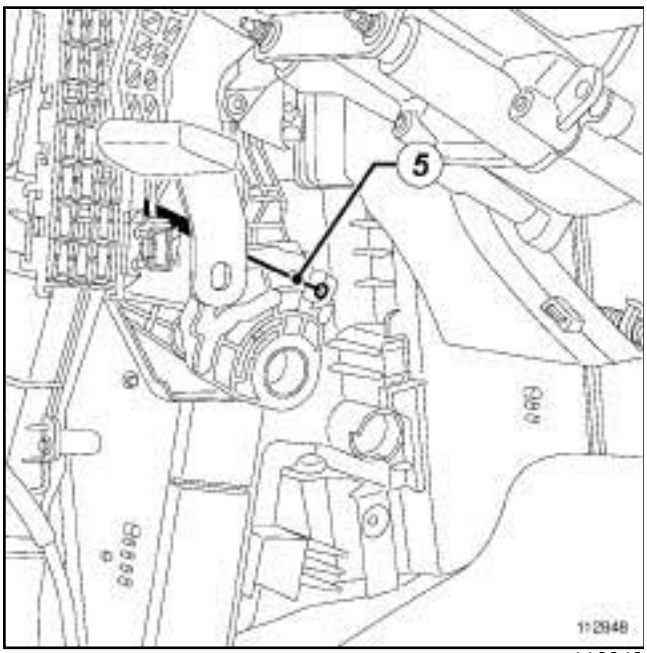
RIGHT-HAND DRIVE



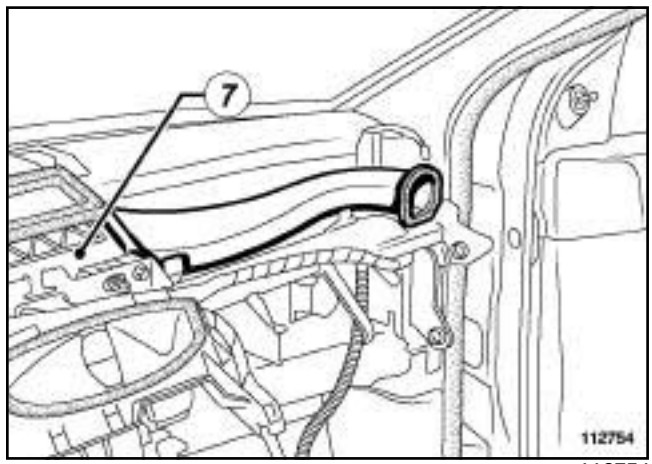
112843



112845

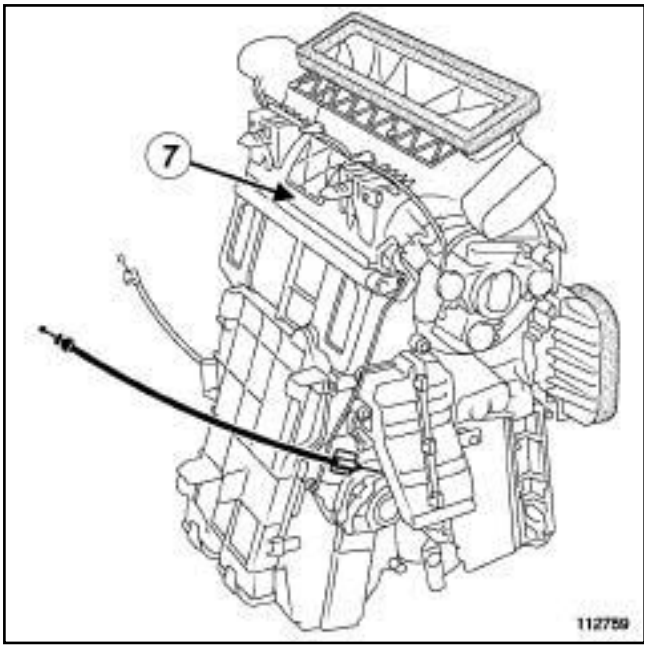


112848



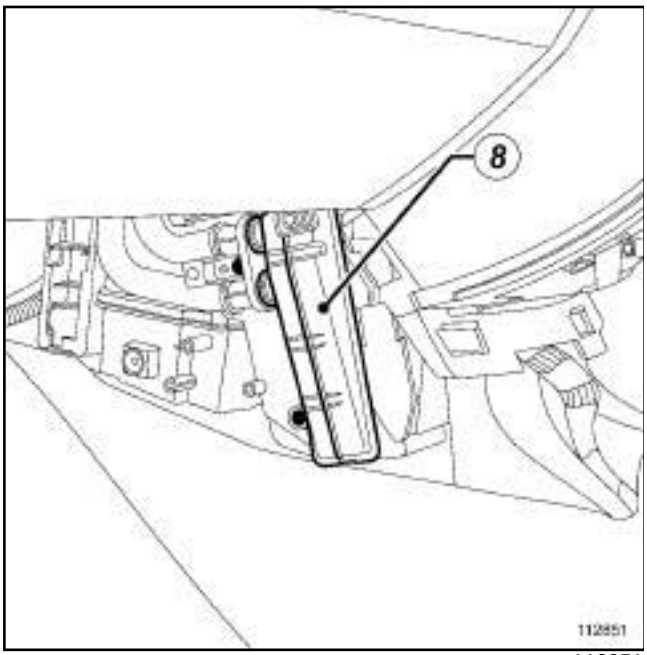
112754

RIGHT-HAND DRIVE

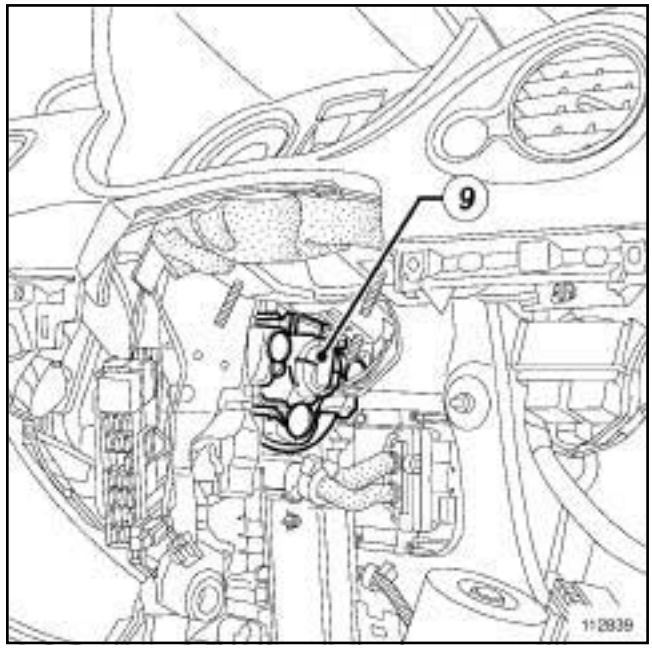


112759

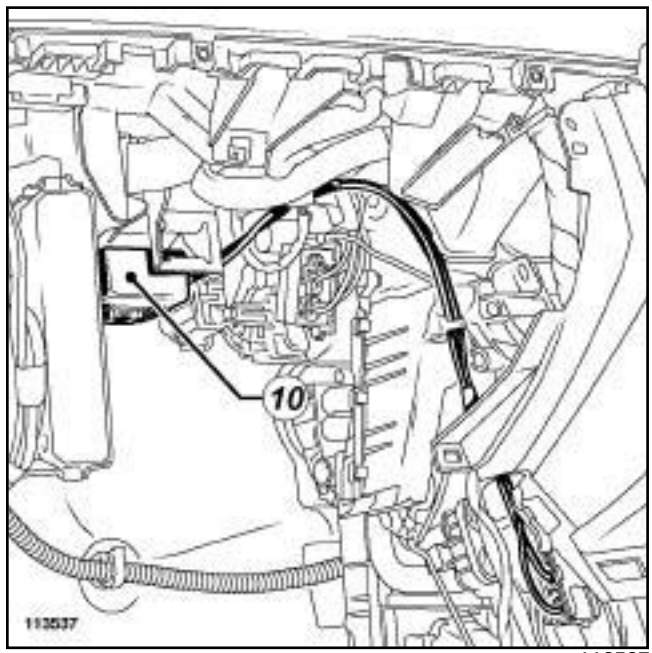
The evaporator is supplied already assembled in the distribution unit. (**7**)



112851

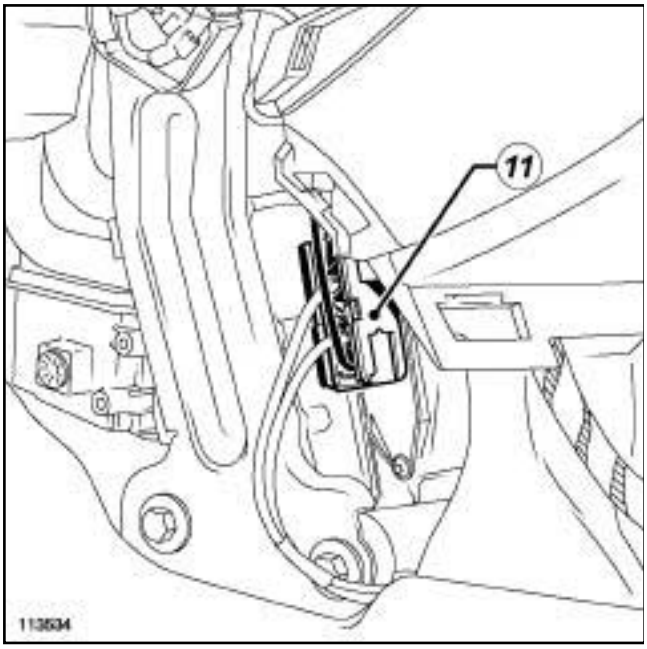


112839

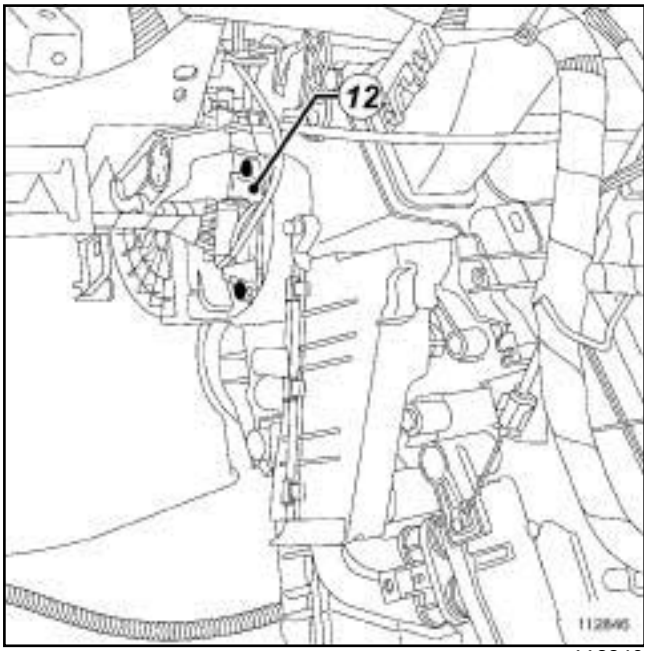


113537

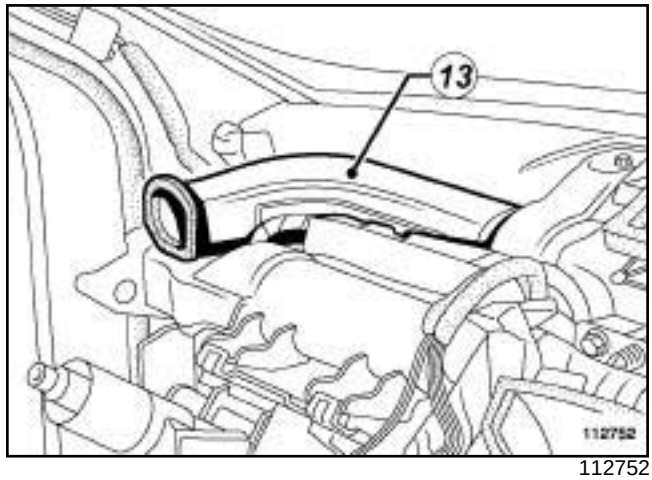
RIGHT-HAND DRIVE



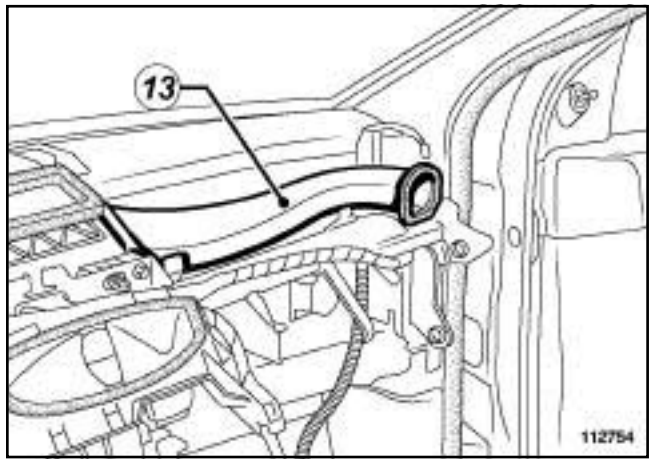
113534



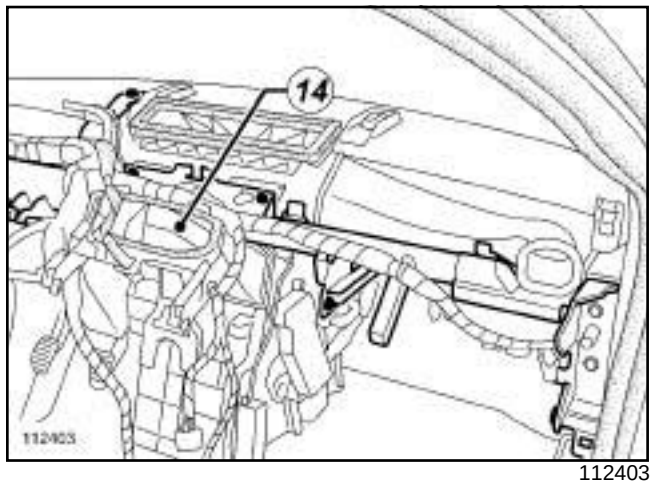
112846



112752

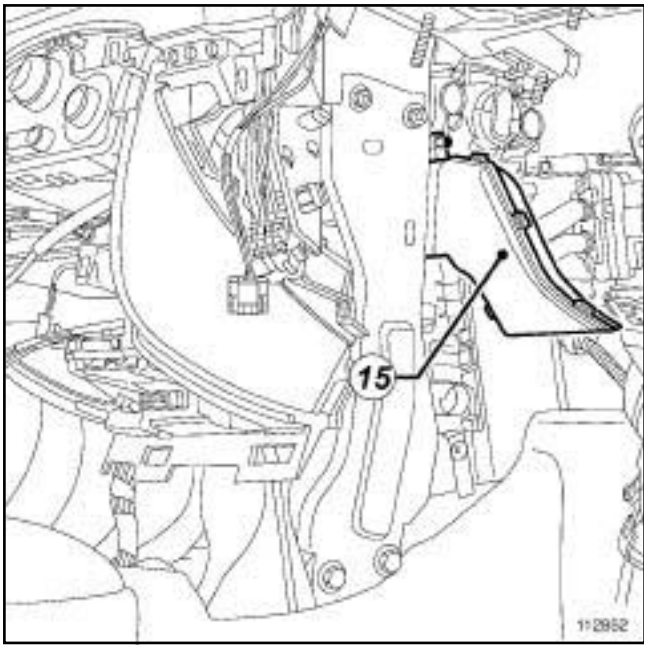


112754

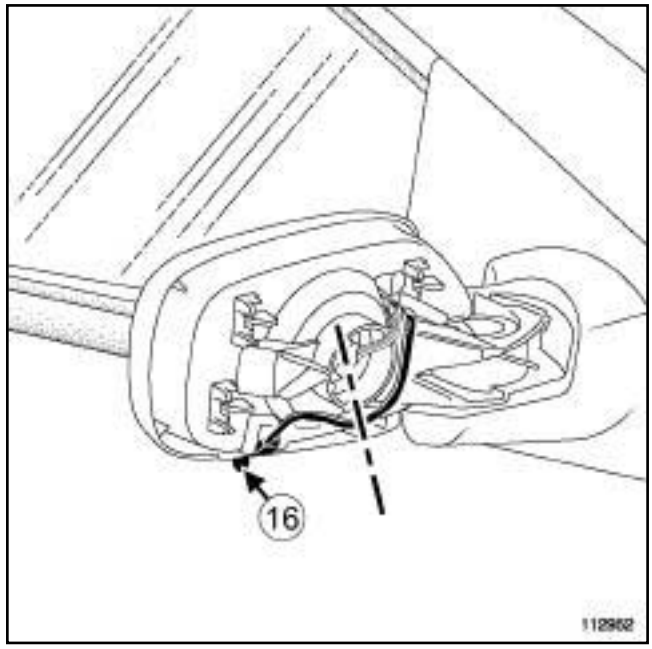


112403

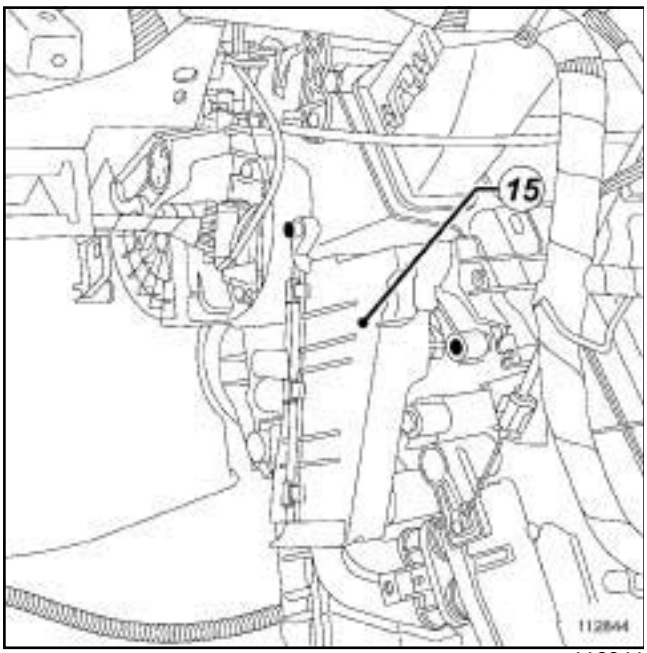
RIGHT-HAND DRIVE



112852

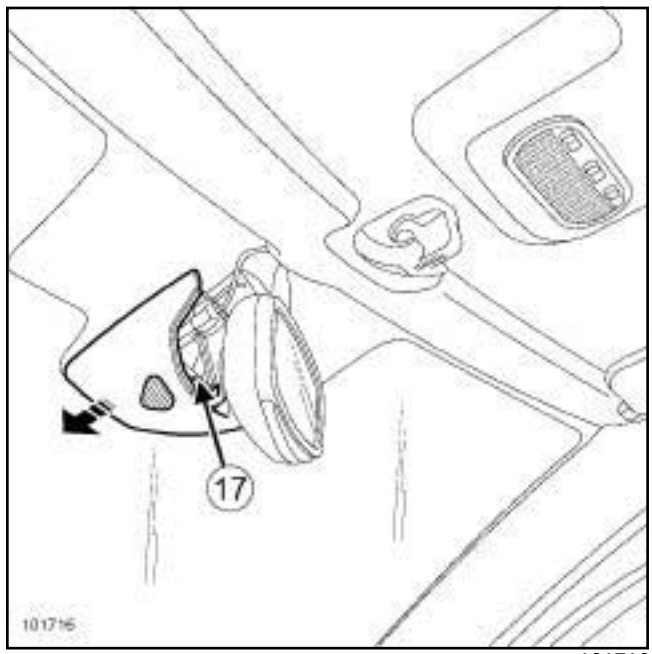


112952



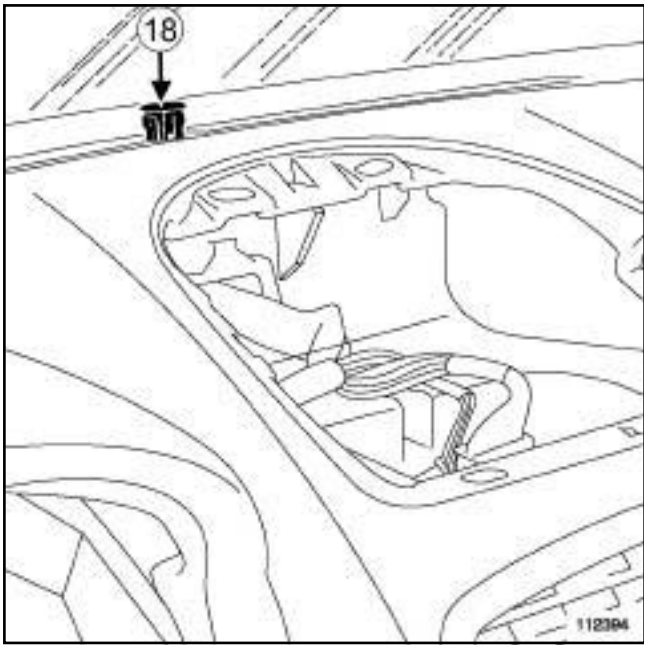
112844

CLIMATE CONTROL



101716

RIGHT-HAND DRIVE



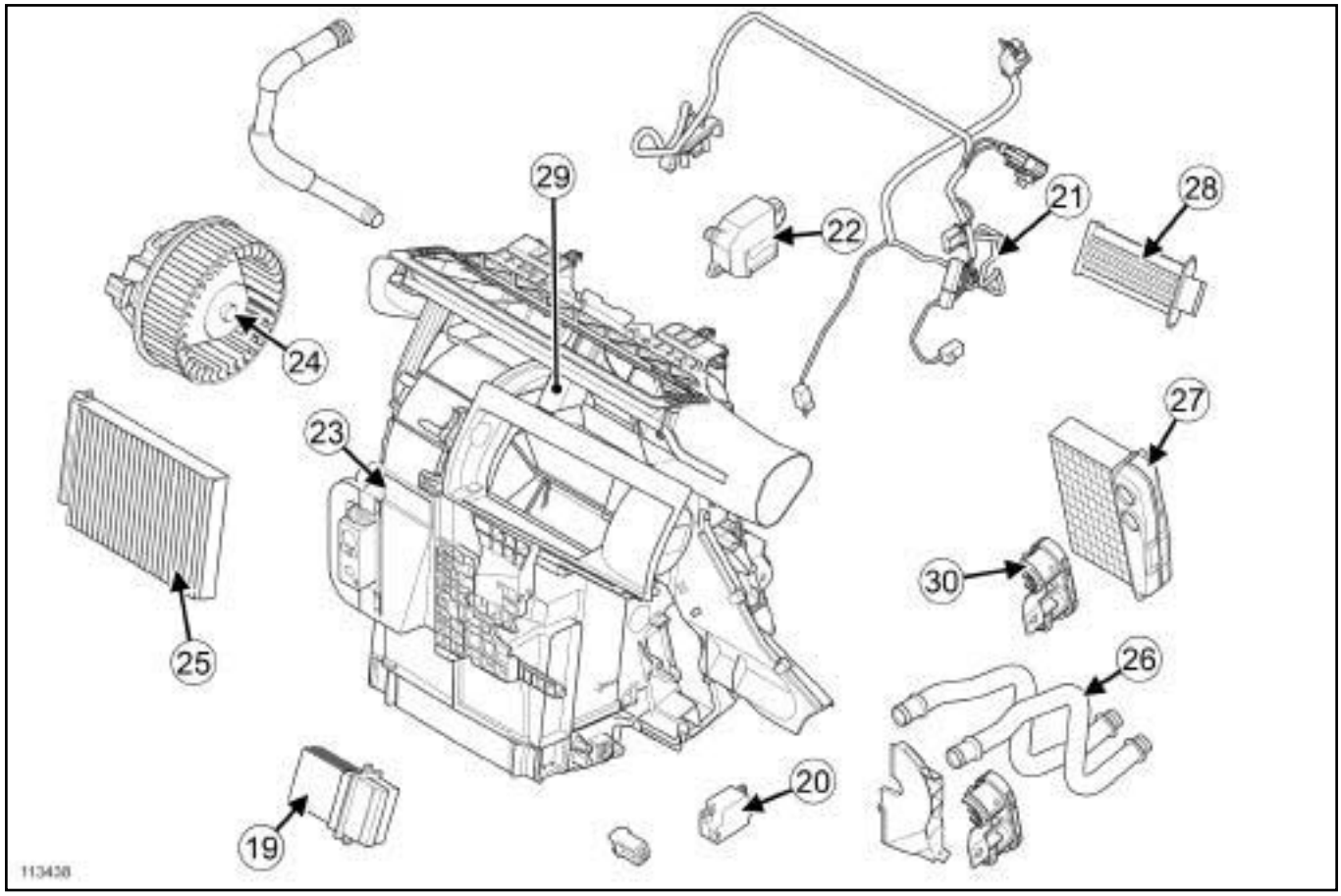
112394

CLIMATE CONTROL

CLIMATE CONTROL

No.	Description
(19)	Motor-driven fan assembly control unit
(20)	Mixing motor
(21)	Wiring harnesses
(22)	Recirculation motor
(23)	Distribution motor
(24)	Fan assembly
(25)	Cabin filter
(26)	Heater matrix pipes
(27)	Heater matrix
(28)	Heating resistors:
(29)	Air distribution unit
(30)	Heater matrix pipe mounting bracket

RIGHT-HAND DRIVE



113438

LEFT-HAND DRIVE

Note:

The cabin filter is located in the passenger side A-pillar.

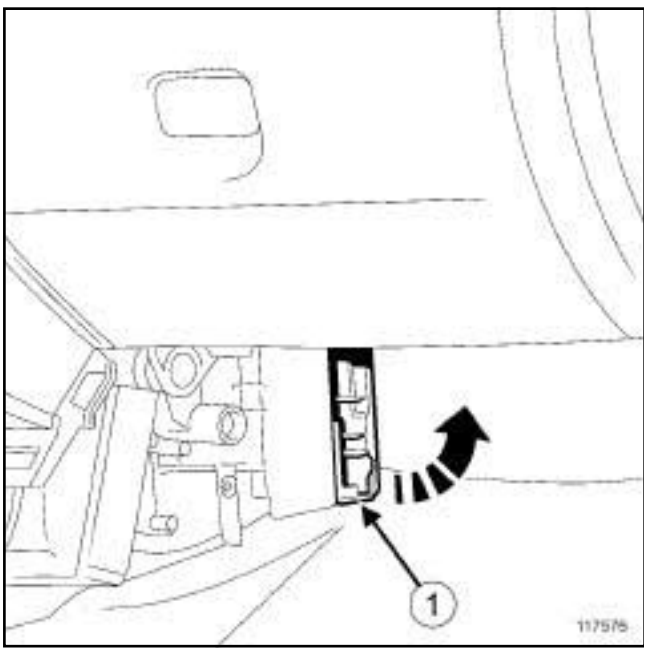
REMOVAL

I - REMOVAL PREPARATION OPERATION

SCHOOL VEHICLE

❑ Remove the clutch pedal (see **Clutch pedal: Removal - Refitting**) (MR392, 37A, Mechanical component controls).

II - OPERATION FOR REMOVAL OF PART CONCERNED



117576

❑ Unclip the passenger compartment filter at (**1**) .

❑ Remove the cabin filter.

Note:

Foreign bodies (leaves, insects etc.) are likely to accumulate in the cabin filter. Remove the cabin filter with care so as to prevent foreign bodies getting into the evaporator.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check for foreign bodies in the passenger compartment filter housing, and clean thoroughly if necessary.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Engage the upper section of the base of the filter into the distribution unit.

❑ Clip the lower section of the filter base onto the distribution unit.

III - FINAL OPERATION

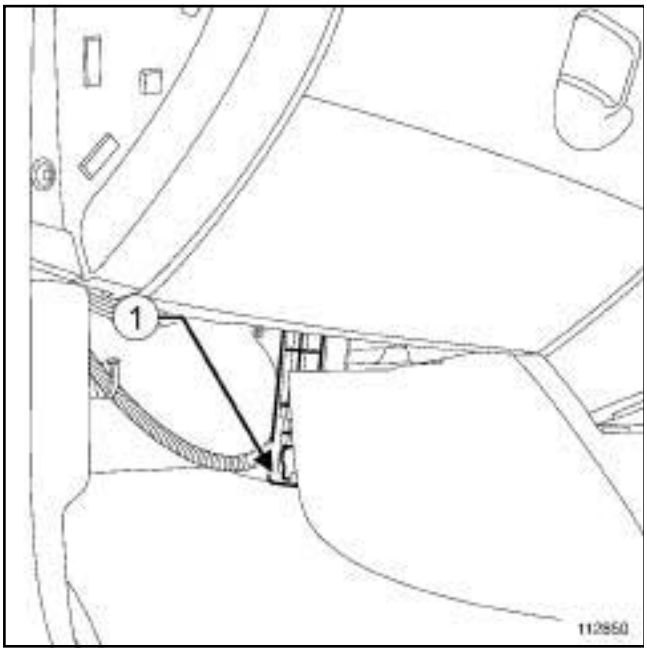
SCHOOL VEHICLE

❑ Refit the clutch pedal (see **Clutch pedal: Removal - Refitting**) (MR 392, 37A, Mechanical component controls).

RIGHT-HAND DRIVE

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112850

❑ Unclip the passenger compartment filter at (**1**) .

> Note:
>
> Foreign bodies (leaves, insects etc.) are likely to accumulate in the passenger compartment filter. Remove the filter with care so as to prevent foreign bodies getting into the evaporator.

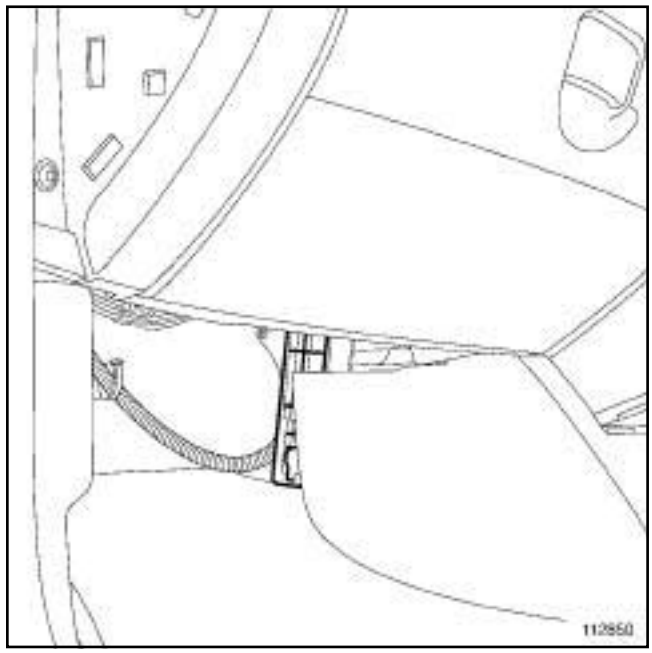
❑ Remove the passenger compartment filter.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check for foreign bodies in the cabin filter housing, and clean thoroughly if necessary.

II - REFITTING OPERATION FOR PART CONCERNED



112850

❑ Refit the cabin filter.

Equipment required
Diagnostic tool

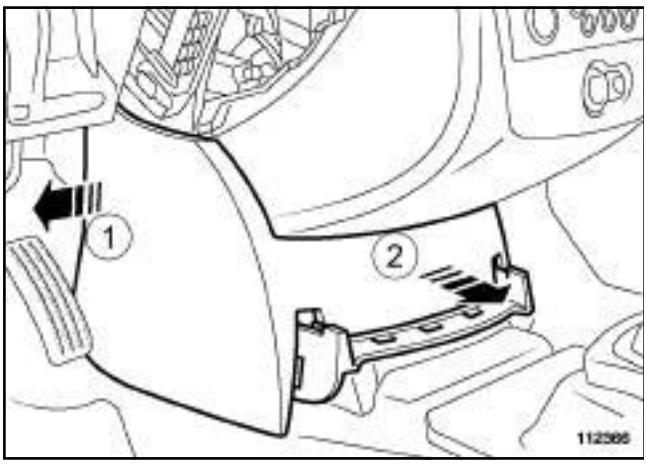
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at the base of the dashboard at (**1**) and (**2**) .

1 - Rear left-hand air distribution duct

❏ Remove the driver's seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❏ Partially pull to one side the carpet underneath the driver's seat.

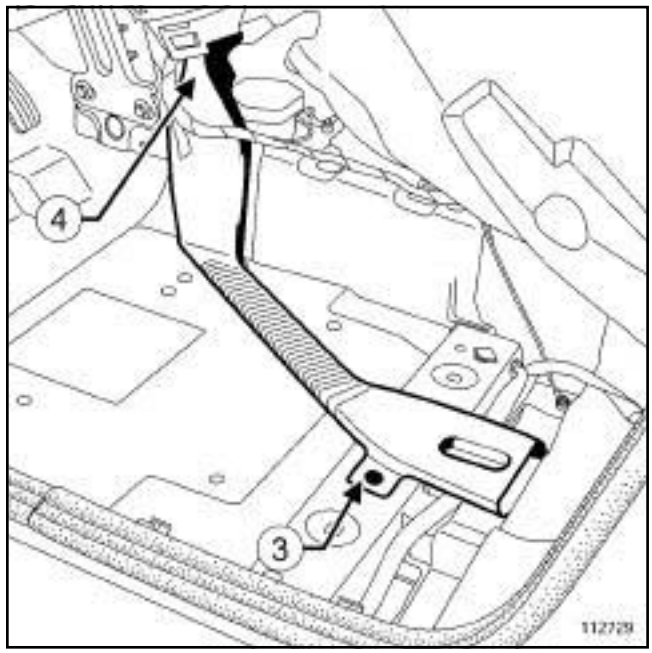
2 - Rear right-hand air distribution duct

❏ Remove the front passenger seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❏ Partially move the carpet under the front passenger seat to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Rear left-hand air distribution duct



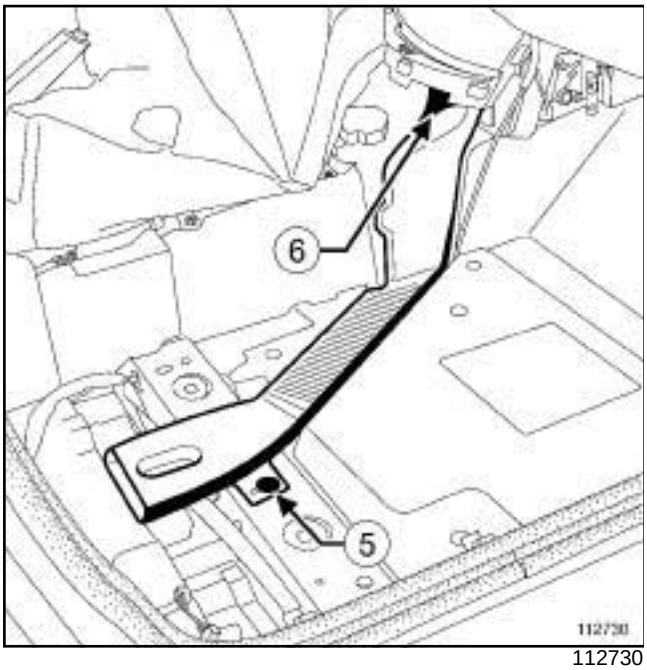
112729

❏ Remove the clip (**3**) from the rear left-hand air distribution duct.

❏ Lift away the rear left-hand air distribution duct at (**4**) .

❏ Remove the rear left-hand air distribution duct.

2 - Rear right-hand air distribution duct



112730

❏ Remove the clip (**5**) from the rear right-hand air distribution duct.

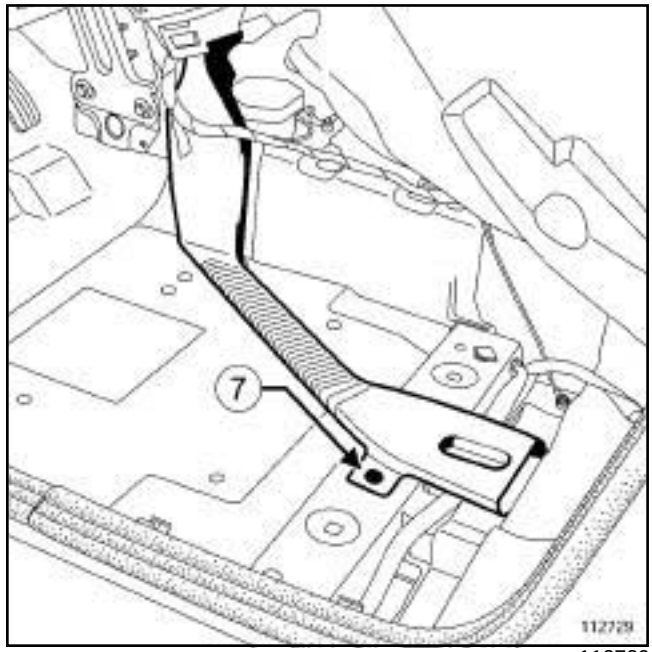
❏ Lift away the rear right-hand air distribution duct at (**6**) .

❏ Remove the rear right-hand air distribution duct.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Rear left-hand air distribution duct

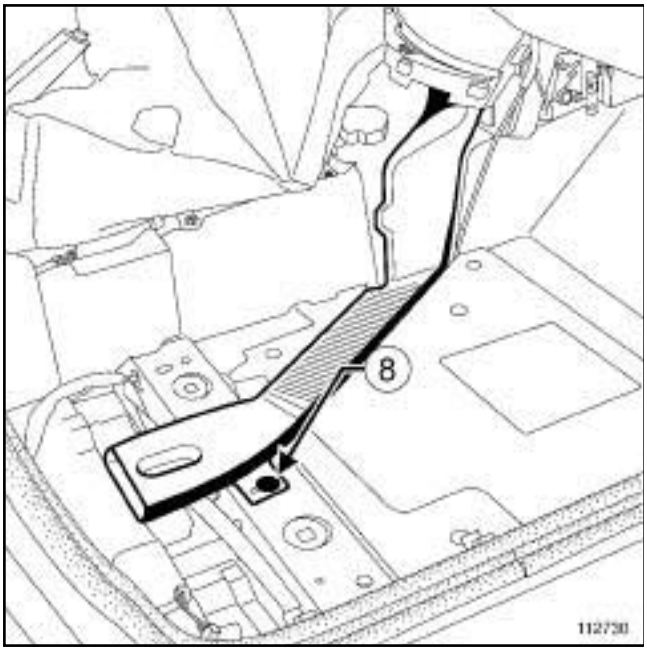


112729

❏ Refit:

- the rear left-hand air distribution duct,
- the rear left-hand air distribution duct clip (**7**) .

2 - Rear right-hand air distribution duct



112730

❑ Refit:

- the rear right-hand air distribution duct,
- the rear right-hand air distribution duct clip (**8**) .

II - FINAL OPERATION.

1 - Rear left-hand air distribution duct

❑ Position the carpet underneath the driver's seat.

❑ Refit the driver's seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

2 - Rear right-hand air distribution duct

❑ Fit the carpet under the front passenger seat.

❑ Refit the front passenger seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

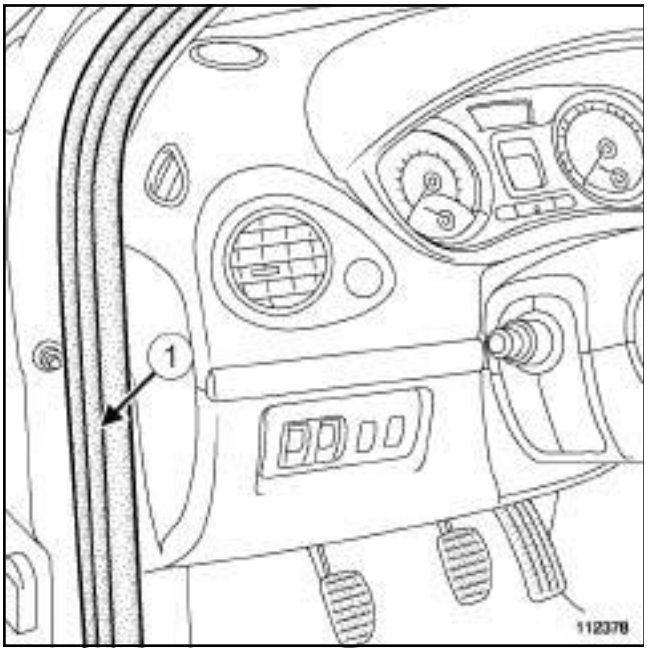
Recirculation control cable: Removal - Refitting

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

Special tooling required	
Car. 1363	Set of trim removal levers.

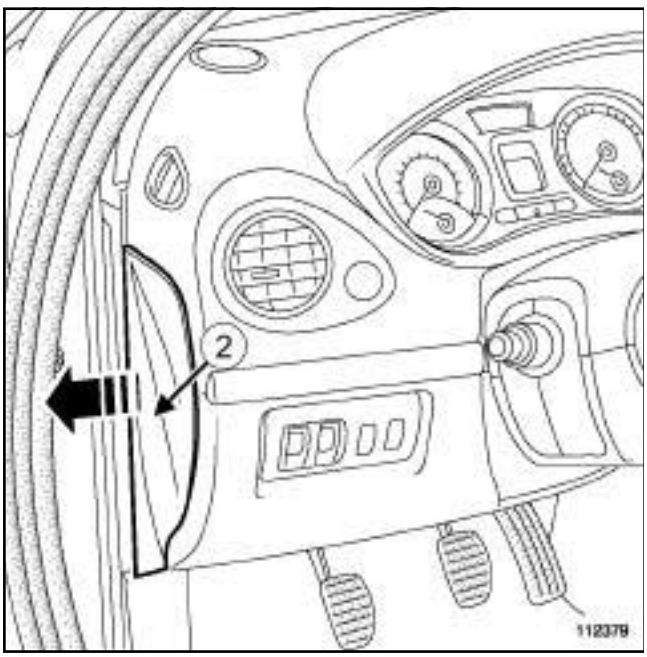
REMOVAL

I - REMOVAL PREPARATION OPERATION



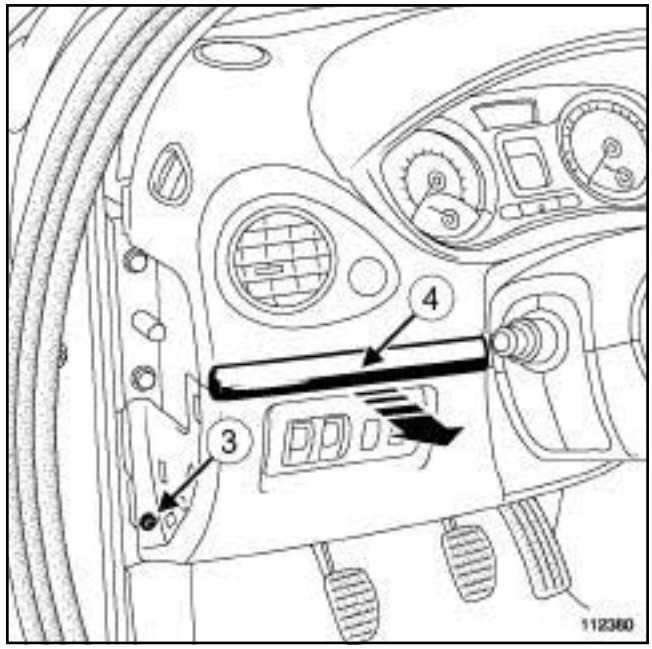
112378

❏ Partially remove seal (**1**) .



112379

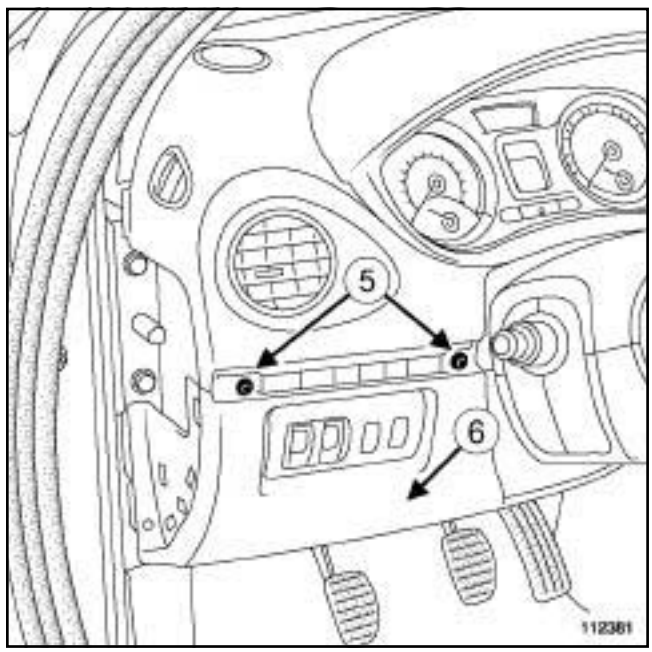
❏ Remove the side panel (**2**) .



112380

❏ Remove the bolt (**3**) from the base of the dashboard.

❏ Unclip the trim piece (**4**) from the driver's side dashboard lower cover.



112381

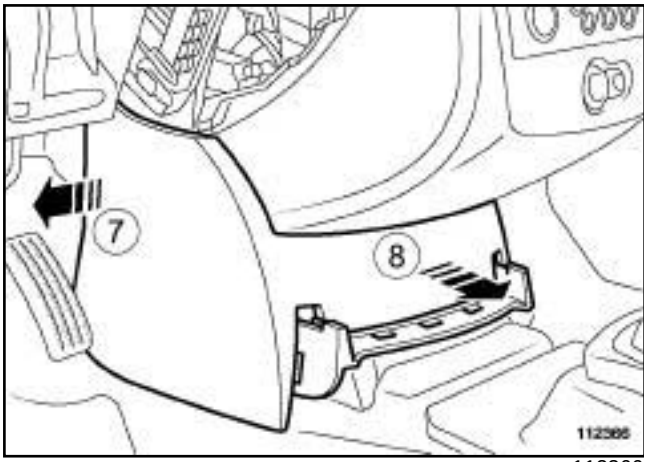
❏ Remove the bolts (**5**) from the lower cover.

❏ Remove the lower cover (**6**) .

❏ Disconnect the connectors (depending on equipment level).

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING



112366

❏ Unclip the trim at (**7**) and (**8**) at the base of the dashboard.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

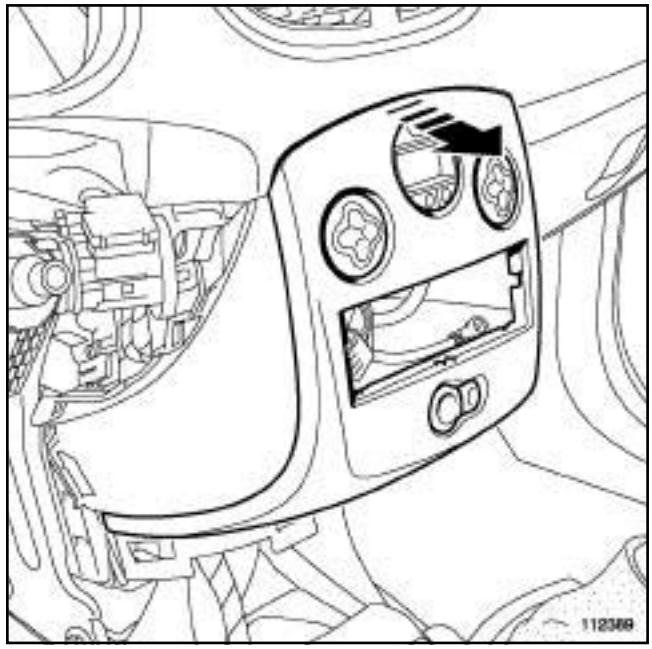
❏ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

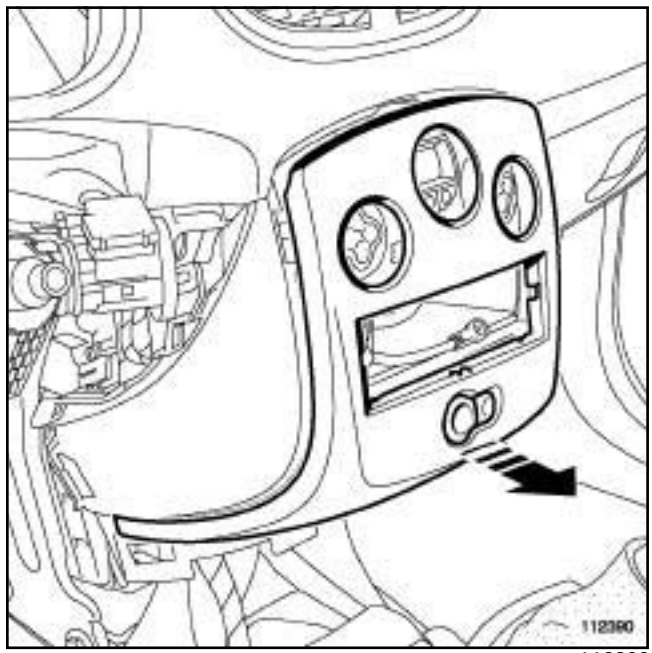
❏ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Unclip the glovebox using the **(Car. 1363)**.



112389

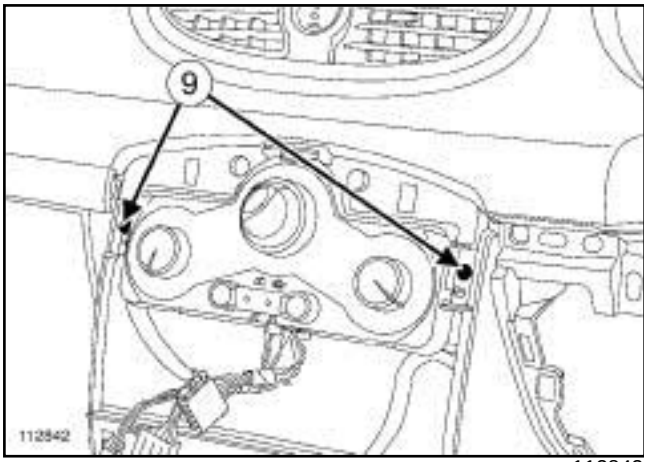


112390

❏ Unclip the centre trim piece beginning with the upper section.

❏ Disconnect the connectors.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

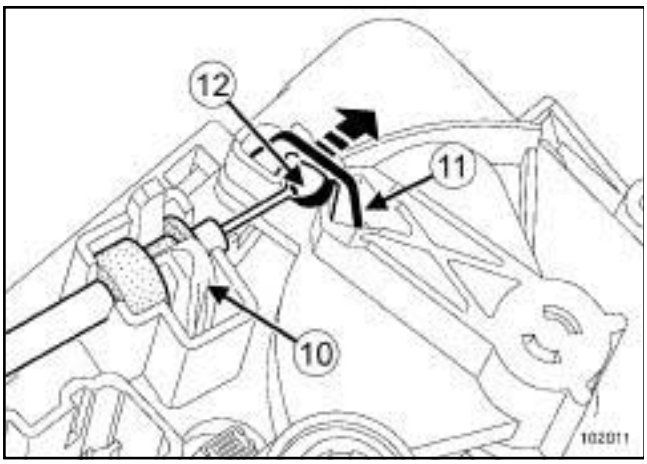


112842

❏ Remove the air conditioning control panel bolts (**9**) .

❏ Move the air conditioning control panel away from the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



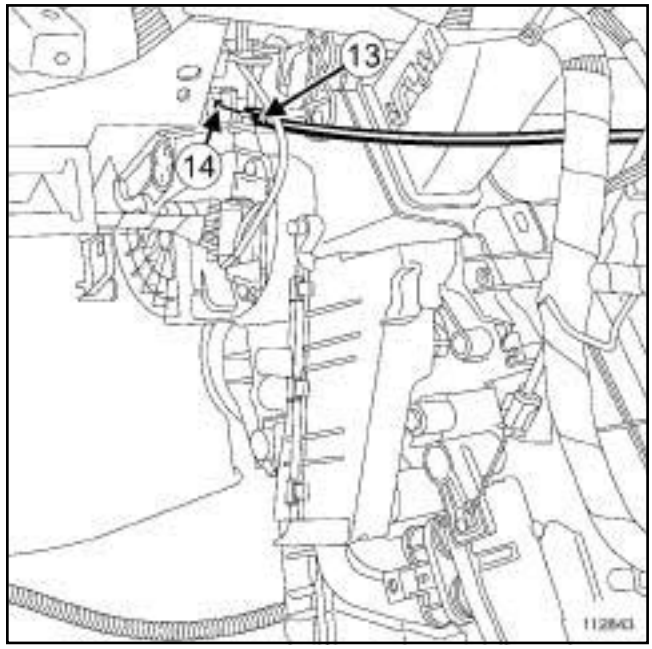
102011

❏ Remove the air recirculation control cable from the control panel.

❏ Disconnect at (**10**) .

❏ Remove the bracket (**11**) .

❏ Extract the ball joint (**12**) .



112843

❏ Unclip the cable sleeve stop (**13**) from the distribution unit.

❏ Remove:

- the ball joint on the air recirculation flap (**14**) ,
- the air recirculation control cable.

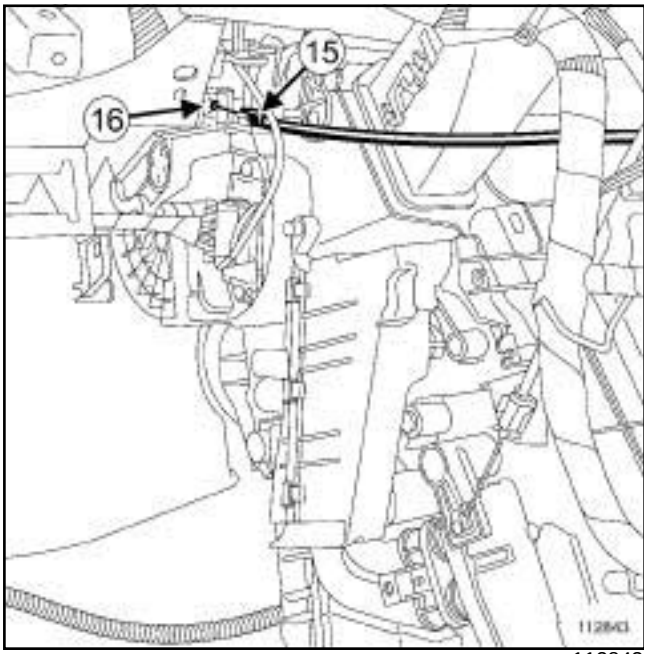
Note:

Note the route of the air recirculation control cable.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

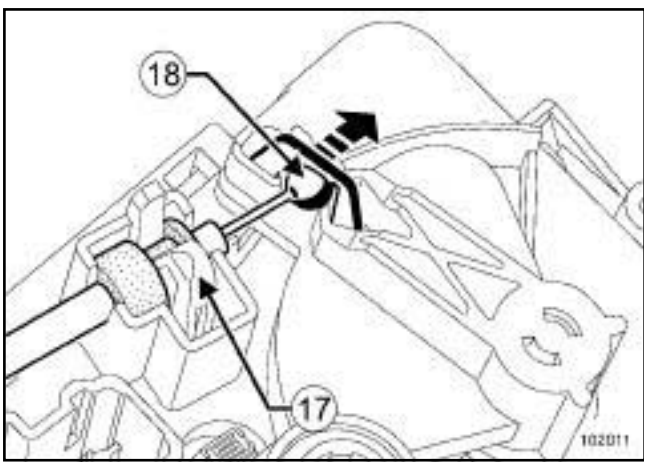


112843

❏ Refit the air recirculation control cable.

❏ Refit the ball joint on the air recirculation flap (**16**) .

❏ Clip the cable sleeve stop (**15**) onto the distribution unit.



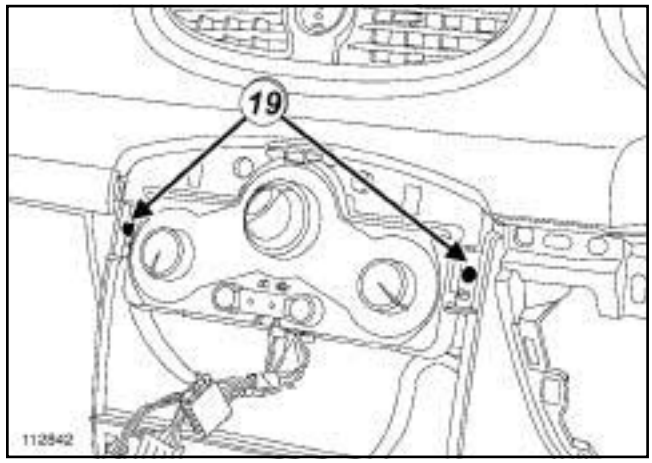
102011

❏ Refit the air recirculation control cable on the control panel.

❏ Clip the sleeve stop at (**17**) .

❏ Refit the ball joint (**18**) .

II - FINAL OPERATION.



112842

❏ Position the air conditioning control panel on the dashboard.

❏ Refit the air conditioning control panel bolts (**19**) .

❏ Connect the central trim connectors.

❏ Clip in the centre trim piece beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip on the glovebox.

❏ Clip on the dashboard lower trim.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

Recirculation control cable: Removal - Refitting

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

❏ Refit:

- the lower cover,
- the lower cover bolts,
- the bolts to the base of the dashboard.

❏ Clip on the driver's side dashboard lower cover trim piece.

❏ Refit:

- the side panel,
- the seal.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

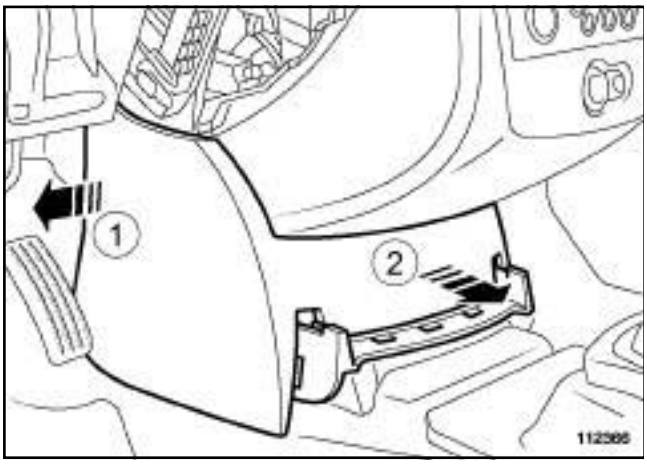
Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

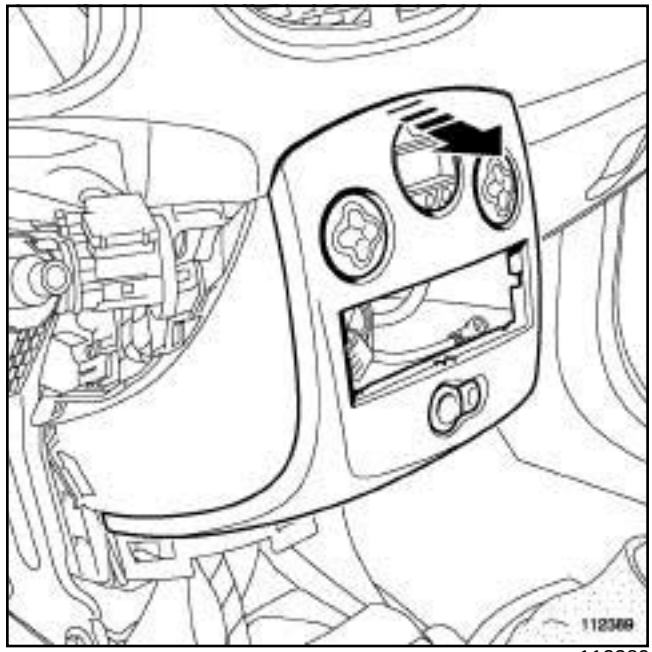
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

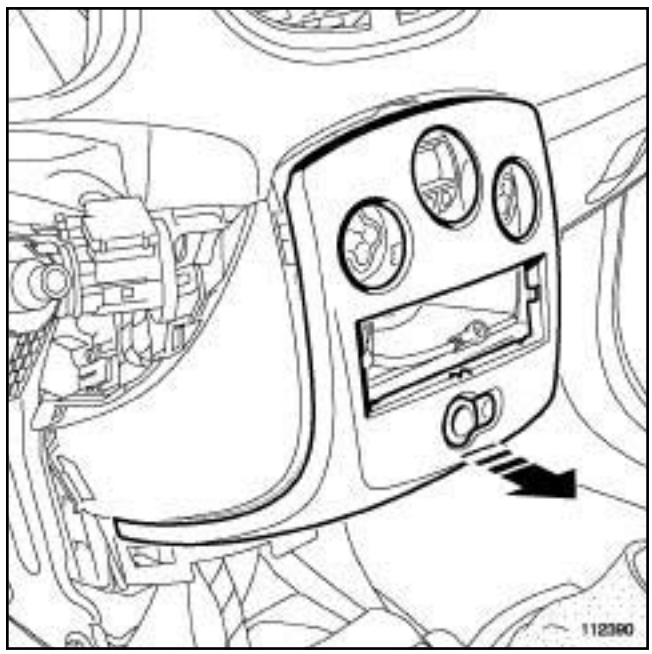
❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

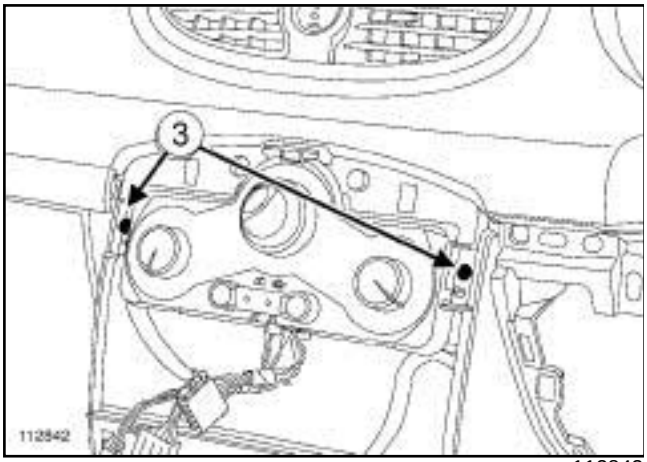


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

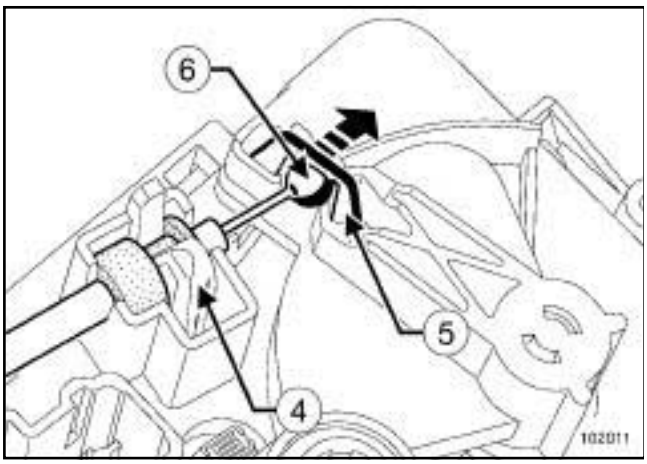


112842

❏ Remove the air conditioning control panel bolts (**3**) .

❏ Move the air conditioning control panel away from the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



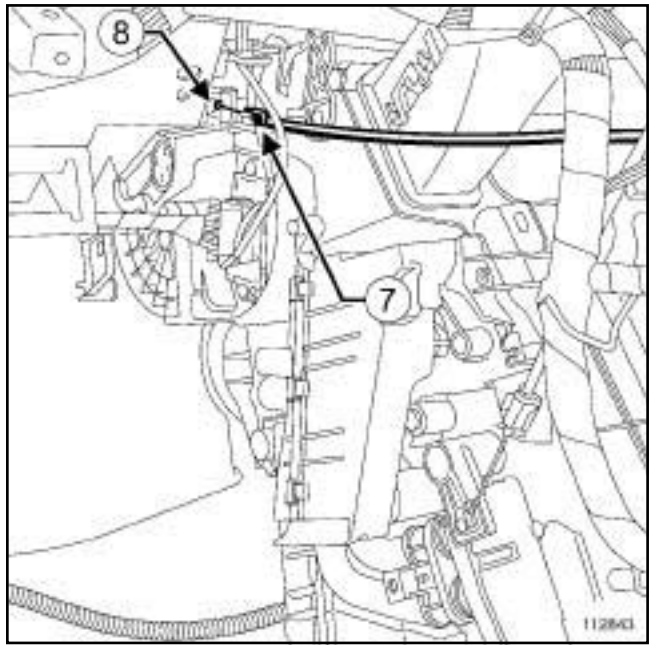
102011

❏ Remove the air recirculation control cable from the control panel.

❏ Disconnect at (**4**) .

❏ Remove the bracket (**5**) .

❏ Extract the ball joint (**6**) .



112843

❏ Unclip the cable sleeve stop (**7**) from the distribution unit.

❏ Remove:

- the ball joint on the air recirculation flap (**8**) ,
- the air recirculation control cable.

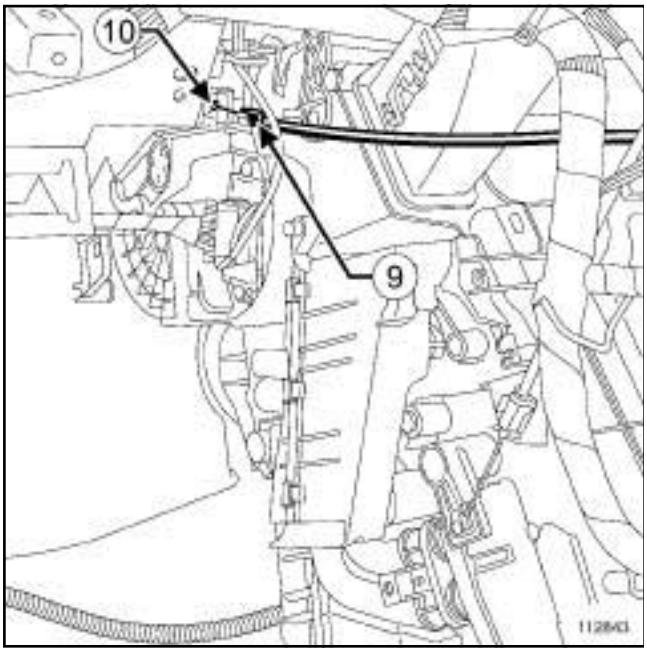
Note:

Note the route of the air recirculation control cable.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

REFITTING

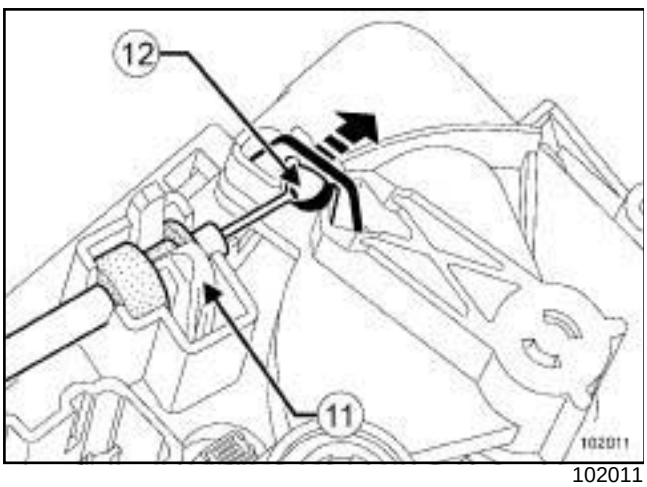
I - REFITTING OPERATION FOR PART CONCERNED



112843

❏ Refit the ball joint on the air recirculation flap (**10**) .

❏ Clip the cable sleeve stop (**9**) onto the distribution unit.



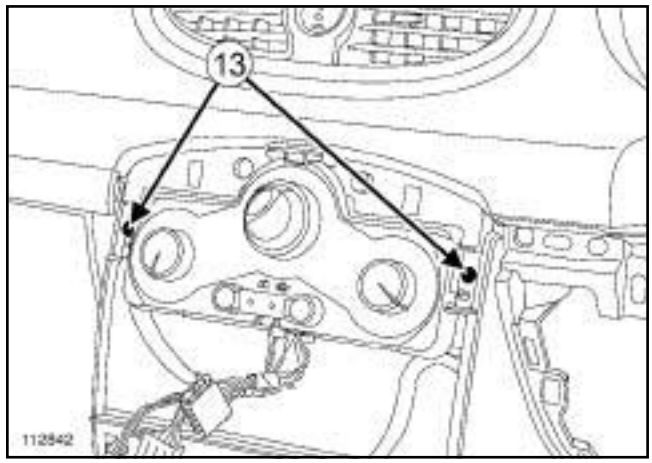
102011

❏ Refit the air recirculation control cable for the control panel.

❏ Refit the ball joint (**12**) .

❏ Clip the sleeve stop at (**11**) .

II - FINAL OPERATION.



112842

❏ Position the air conditioning control panel on the dashboard.

❏ Refit the air conditioning control panel bolts (**13**) .

❏ Connect the central trim connectors.

❏ Clip in the centre trim piece beginning with the lower section.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Clip on the dashboard lower trim.

❏ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

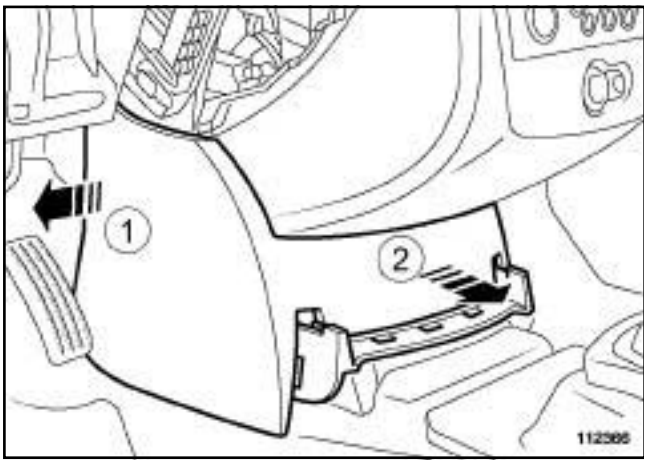
Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

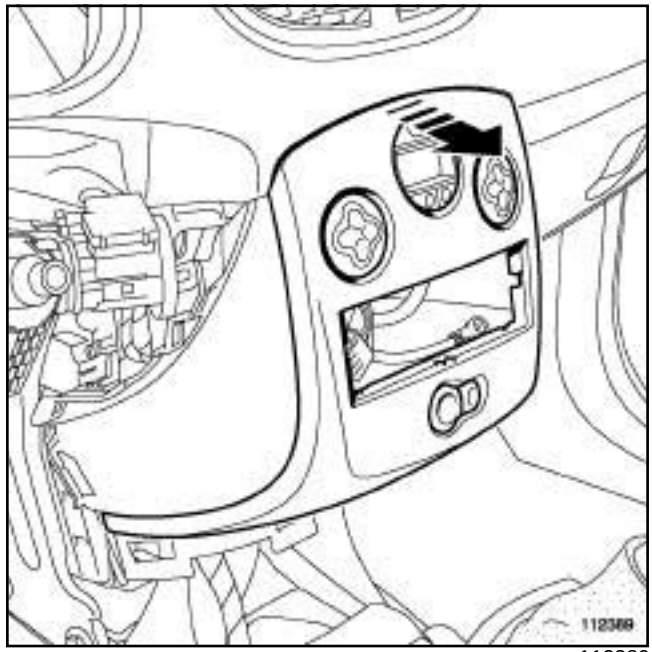
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

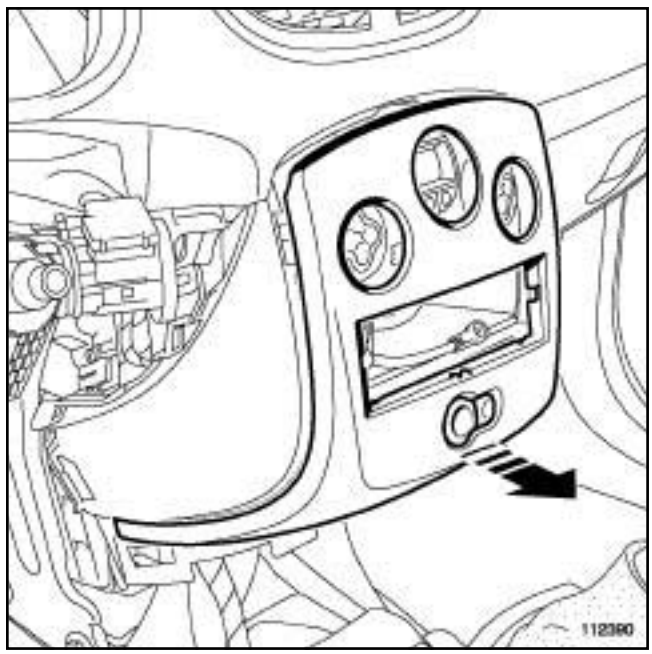
❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

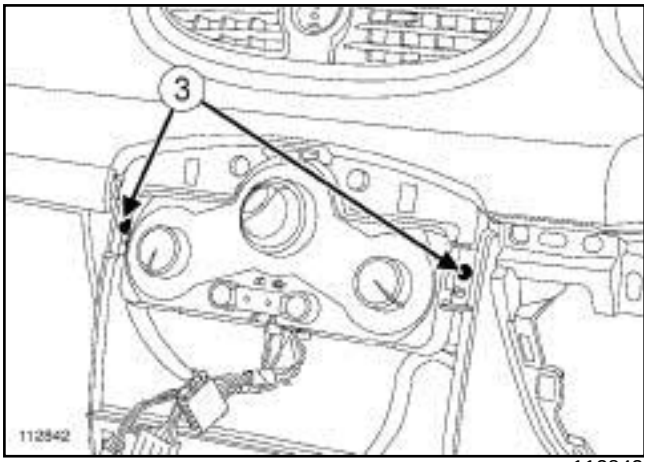


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

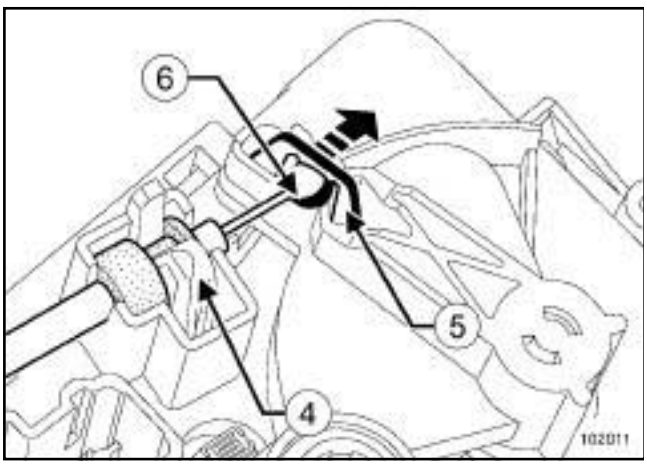


112842

❏ Remove the air conditioning control panel bolts (**3**) .

❏ Move the air conditioning control panel to one side.

II - OPERATION FOR REMOVAL OF PART CONCERNED



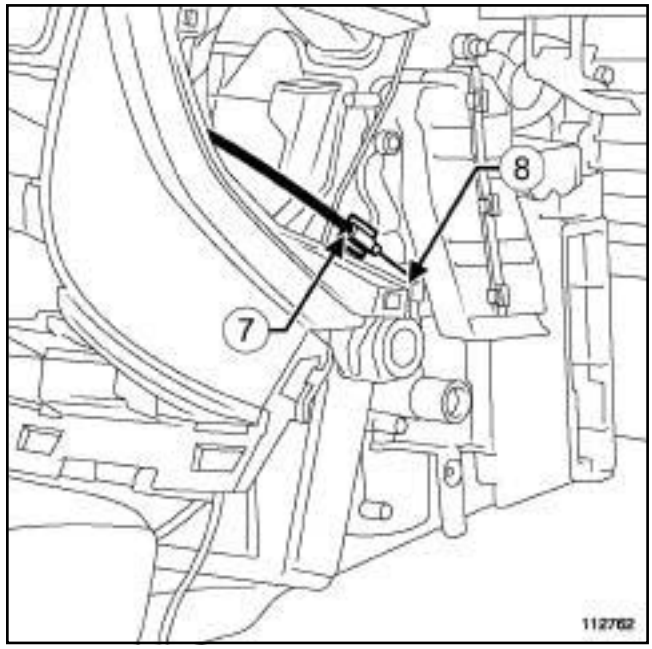
102011

❏ Remove the air conditioning control panel air distribution control cable.

❏ Detach at (**4**) .

❏ Move the bracket (**5**) to one side.

❏ Extract the ball joint (**6**) .



112762

❏ Unclip the cable sleeve stop (**7**) from the distribution unit.

❏ Remove:

- the ball joint (**8**) on the distribution flap,
- the air distribution control cable.

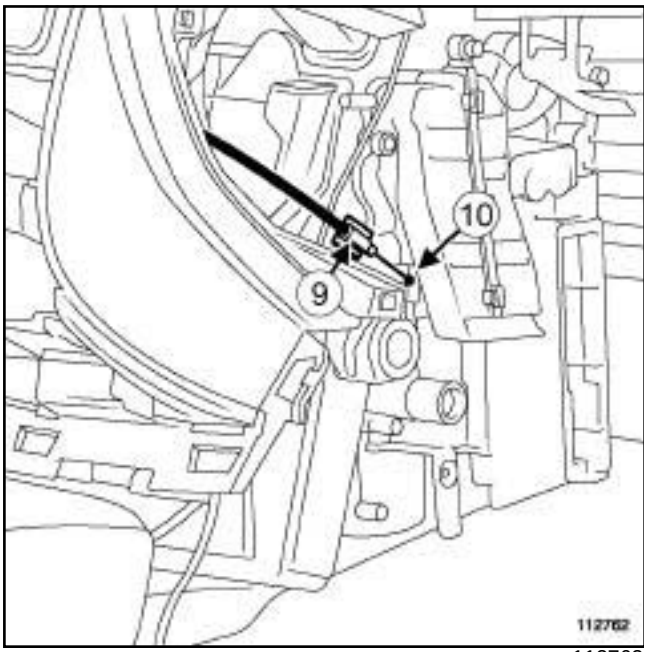
Note:

Note the route of the air distribution control cable.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

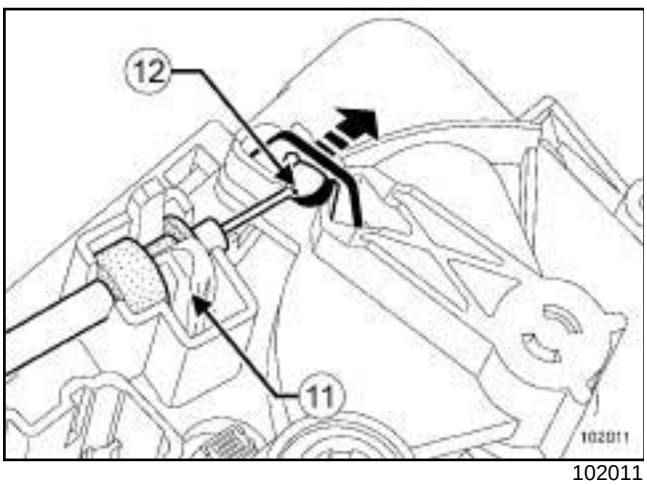


112762

❏ Refit:

- the air distribution control cable.
- the ball joint (**10**) on the distribution flap.

❏ Clip the sleeve stop (**9**) onto the distribution unit.



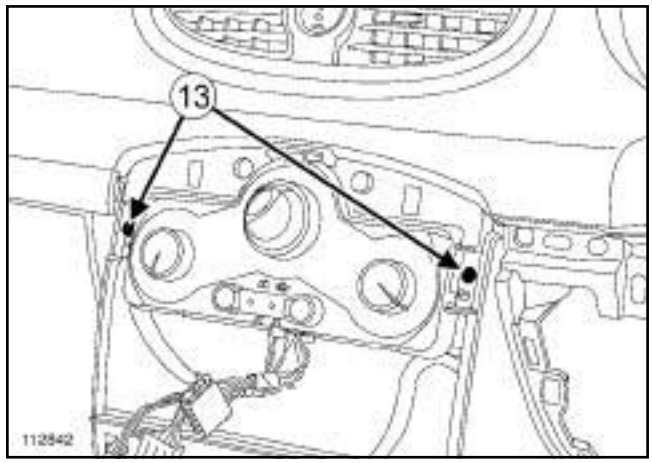
102011

❏ Refit the air conditioning control panel air distribution control cable.

❏ Refit the ball joint (**12**) .

❏ Clip the sleeve stop at (**11**) .

II - FINAL OPERATION.



112842

❏ Position the air conditioning control panel.

❏ Refit the bolts (**13**) for the air conditioning control panel onto the dashboard.

❏ Connect the central trim connectors.

❏ Clip in the centre trim piece beginning with the lower section.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Clip on the dashboard lower trim.

❏ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),

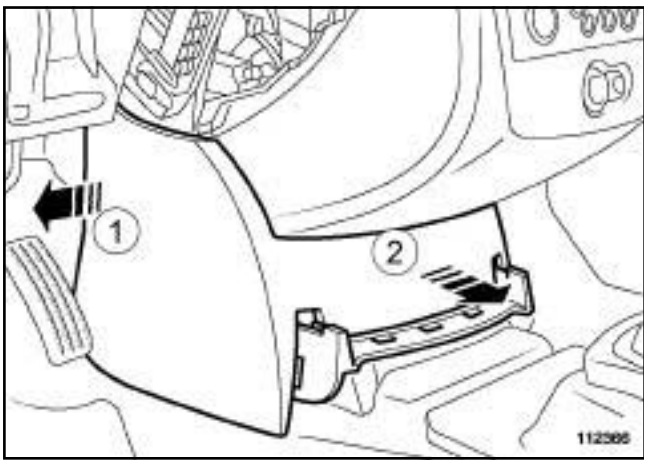
RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

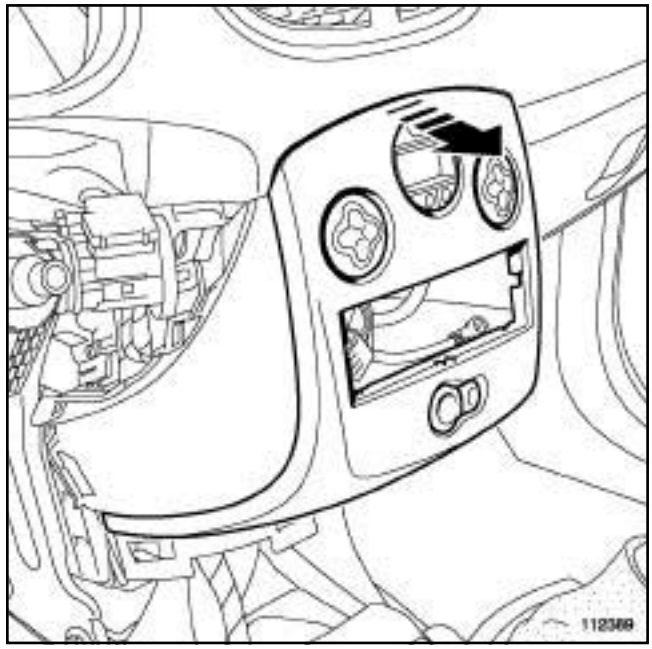
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

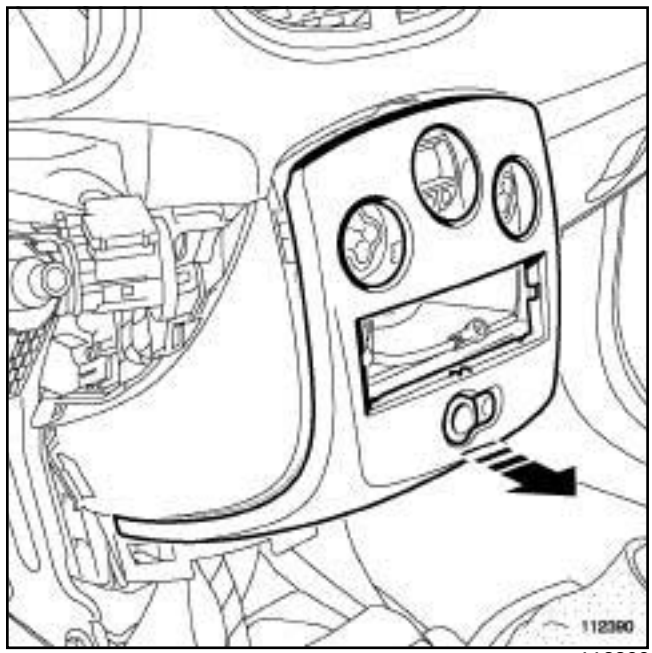
❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

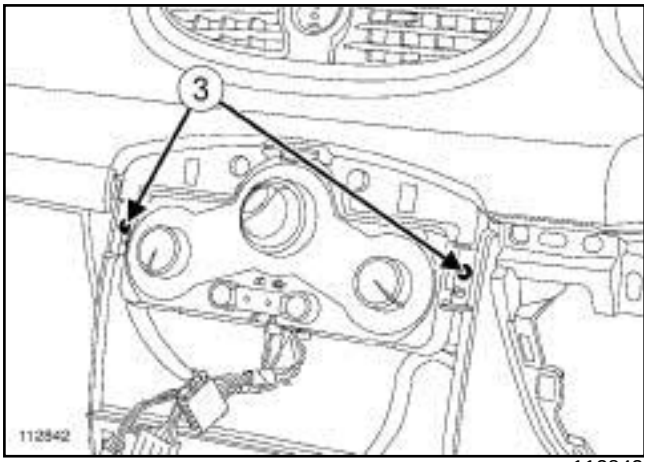


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

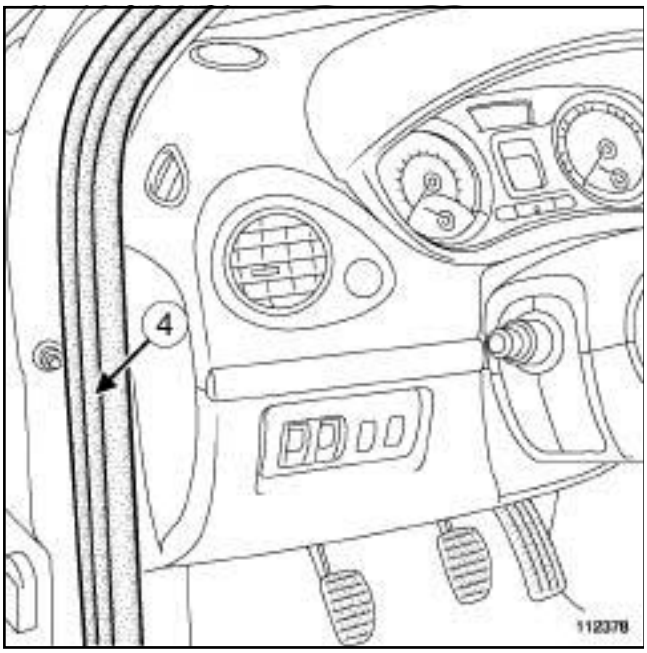
RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING



112842

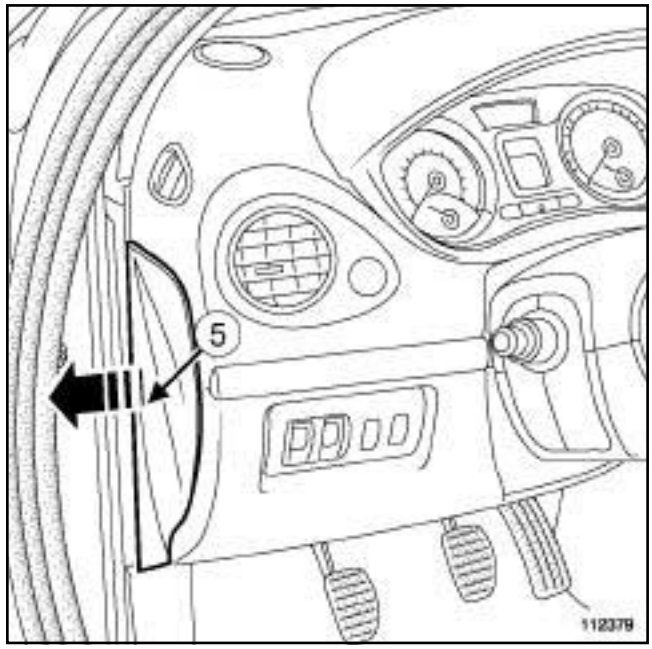
❏ Remove the air conditioning control panel bolts (**3**) .

❏ Move the air conditioning control panel away from the dashboard.



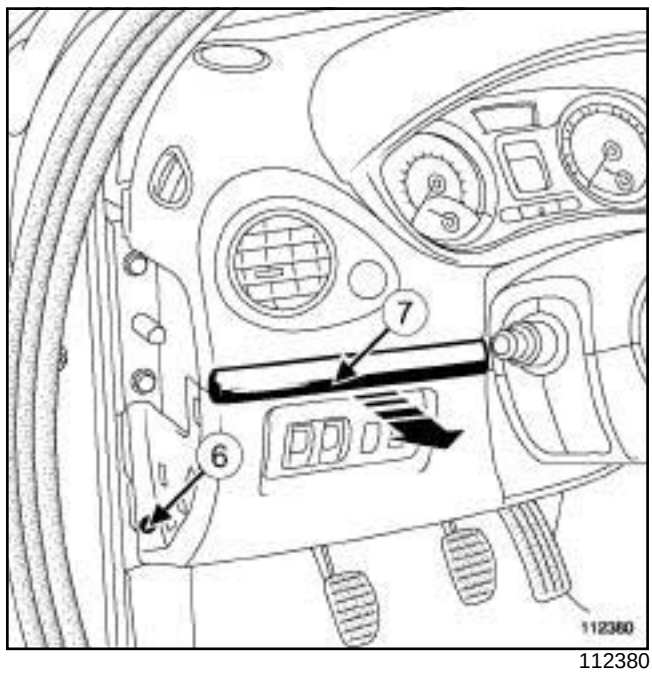
112378

❏ Partially remove the seal (**4**)



112379

❏ Remove the side panel (**5**)

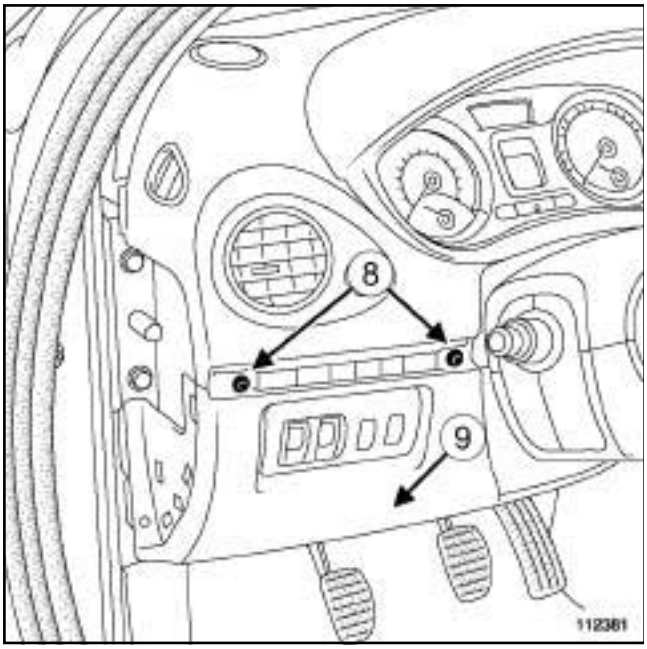


112380

❏ Remove the bolt (**6**) from the base of the dashboard.

❏ Unclip the trim piece (**7**) from the driver's side dashboard lower cover.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING



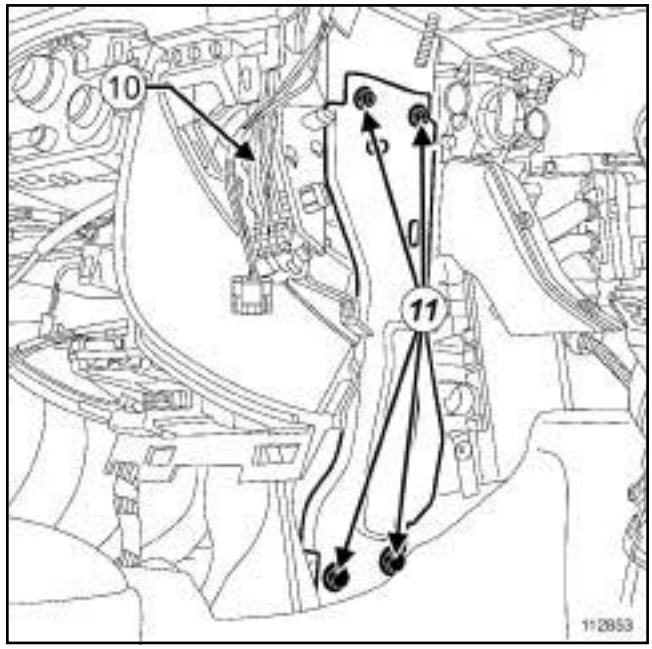
112381

❏ Remove the bolts (**8**) from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**9**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

❏ Lift the carpet to access the stiffener bolts.



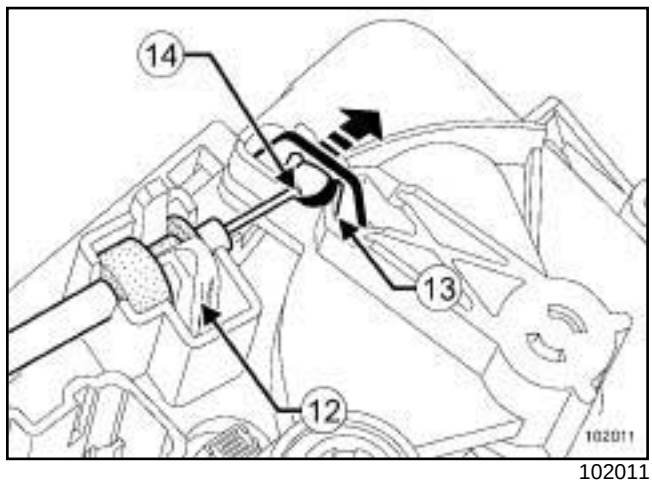
112853

❏ Unclip the fuse box (**10**) from the dashboard beam stiffener plate.

❏ Remove:

- the bolts (**11**) from the dashboard beam stiffener plate,
- the dashboard beam stiffener plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED



102011

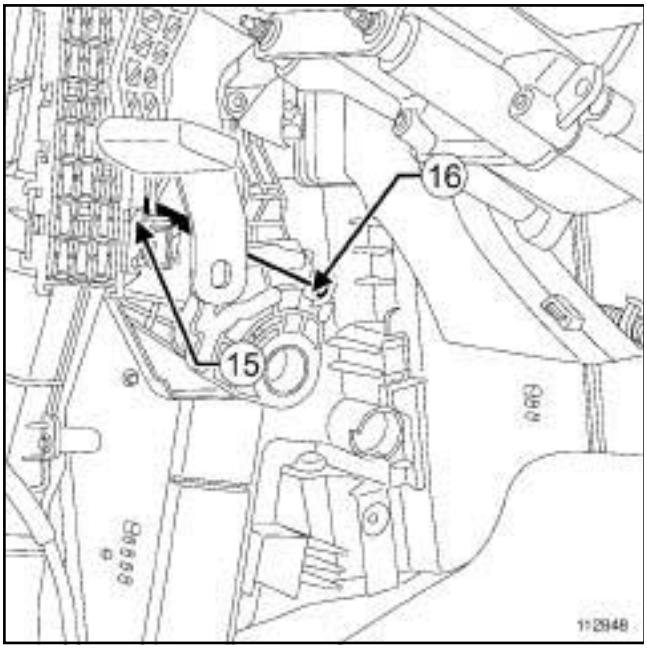
❏ Remove the air conditioning control panel distribution control cable.

❏ Disconnect at (**12**) .

❏ Remove the bracket (**13**) .

❏ Extract the ball joint (**14**) .

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING



112848

❑ Unclip the cable sleeve stop (**15**) from the distribution unit.

❑ Remove:

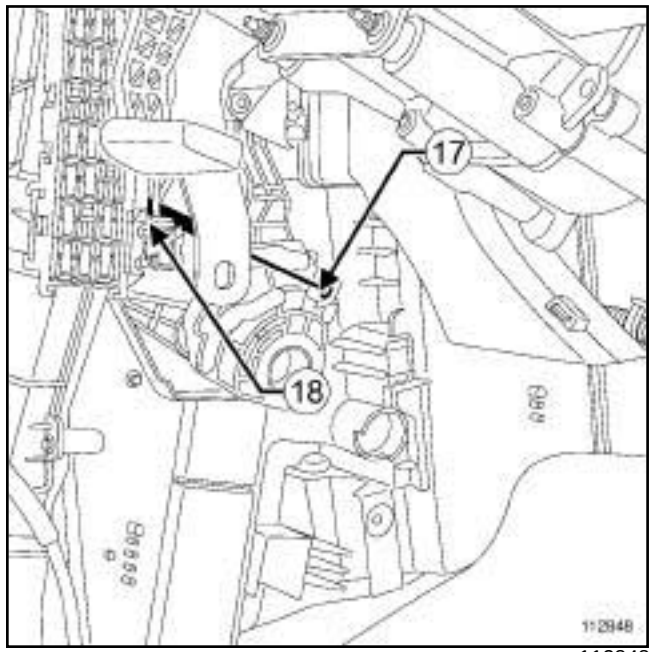
- the ball joint (**16**) on the air distribution flap,
- the air distribution control cable.

Note:

Note the route of the air distribution control cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

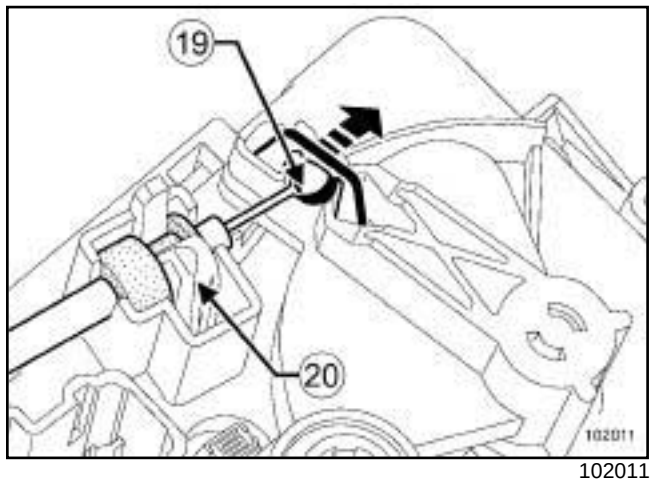


112848

❑ Refit:

- the air distribution control cable.
- the ball joint (**18**) on the air distribution flap.

❑ Clip the sleeve stop (**17**) onto the distribution unit.



102011

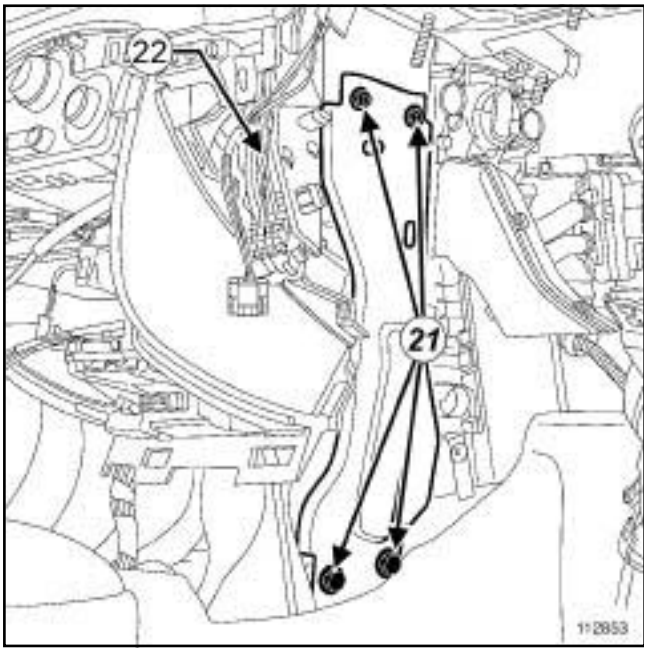
❑ Refit the air conditioning control panel air distribution control cable.

❑ Refit the ball joint (**19**) .

❑ Clip the sleeve stop at (**20**) .

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

II - FINAL OPERATION.



112853

❏ Refit:

- the dashboard beam stiffener plate.
- the bolts (**21**) from the dashboard beam stiffener plate.

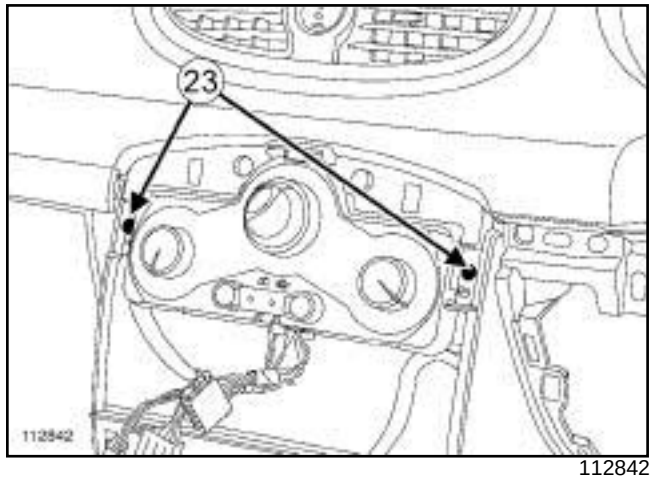
❏ Torque tighten the **dashboard beam stiffener plate bolts (21 Nm)**.

❏ Clip the fuse box (**22**) onto the dashboard beam stiffener plate.

❏ Refit the floor carpet.

Note:

Check that the floor carpet reaches under the accelerator pedal end-stop.



112842

❏ Position the air conditioning control panel on the dashboard.

❏ Refit the air conditioning control panel bolts (**23**) .

❏ Connect the central trim connectors.

❏ Clip in the centre trim piece beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, Onboard telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Clip on the dashboard lower trim.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

❏ Connect the connectors to the driver's side dashboard lower cover (depending on the equipment level).

❏ Refit:

- the driver's side dashboard lower cover,
- the bolts from the driver's side dashboard cover.

❏ Clip on the driver's side dashboard lower cover trim piece.

❏ Refit:

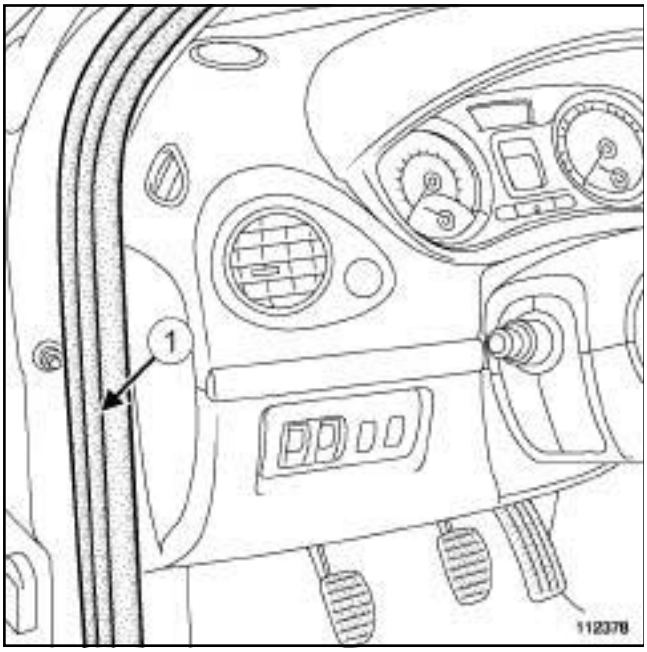
- the bolts to the base of the dashboard,
- the side panel,
- the seal.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

Special tooling required	
Car. 1363	Set of trim removal levers.

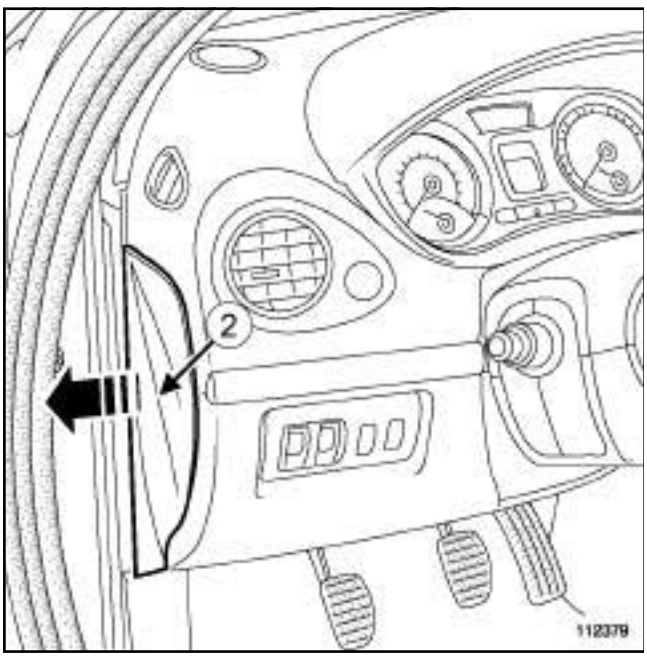
REMOVAL

I - REMOVAL PREPARATION OPERATION



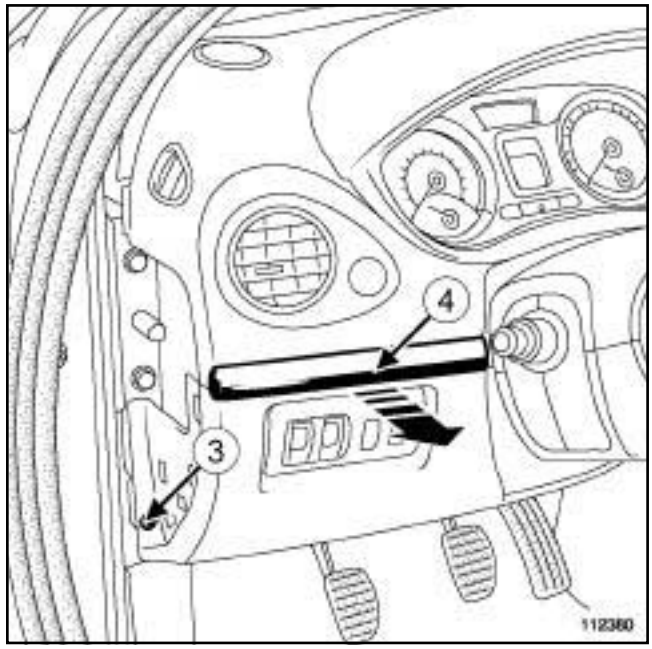
112378

❏ Partially remove seal (**1**) .



112379

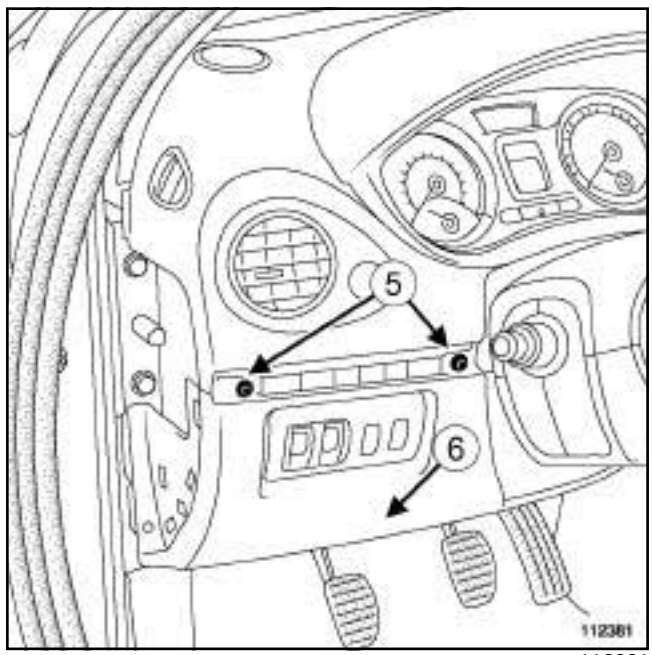
❏ Remove the side panel (**2**) .



112380

❏ Remove the bolt (**3**) from the base of the dashboard.

❏ Unclip the trim piece (**4**) from the driver's side dashboard lower cover.



112381

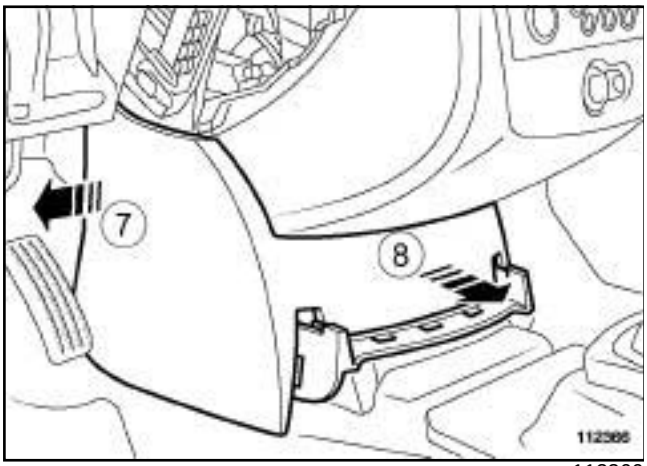
❏ Remove the bolts (**5**) from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**6**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ unclip the trim at (**7**) and (**8**) at the base of the dashboard.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

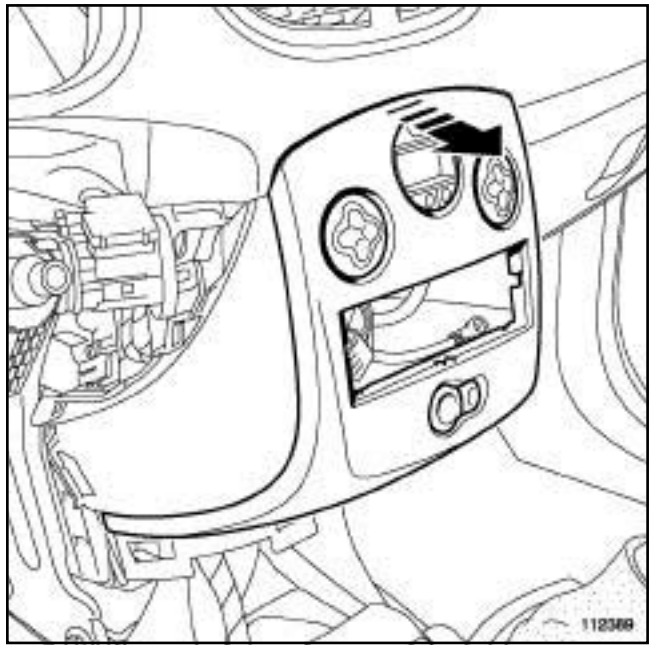
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

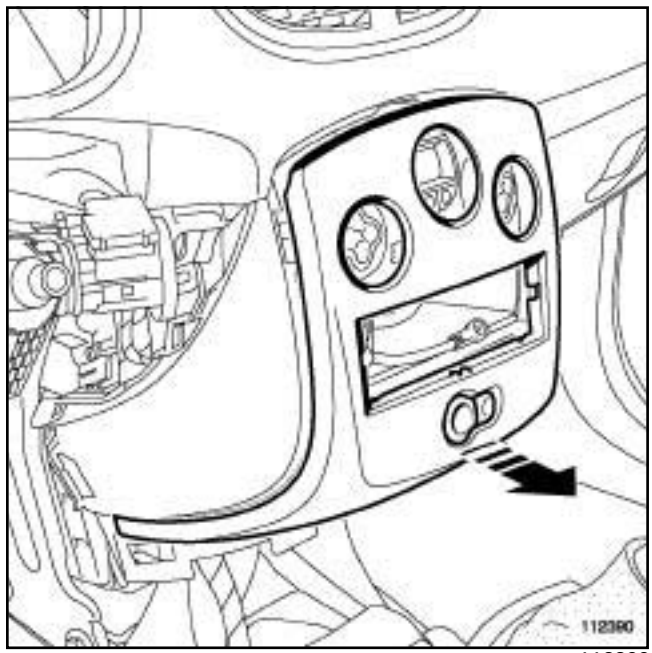
NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.

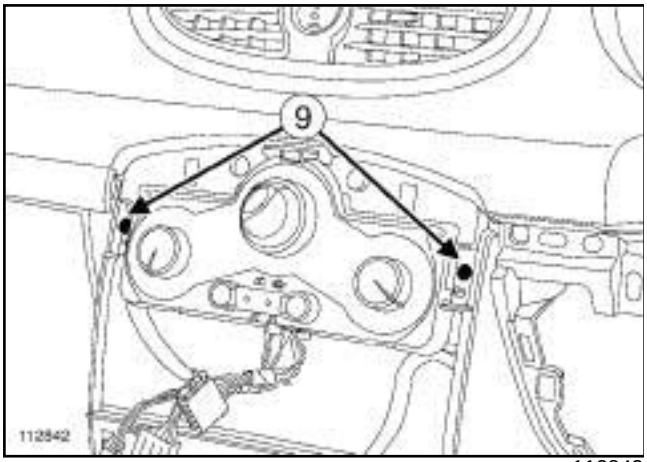

112389


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

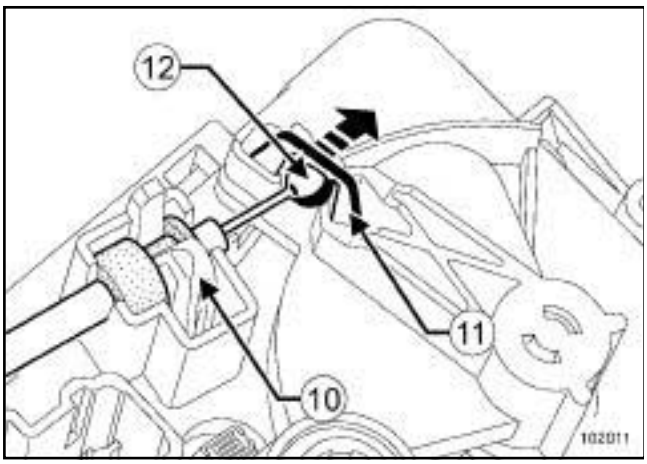


112842

❏ Remove the air conditioning control panel bolts (**9**) .

❏ Move the air conditioning control panel away from the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



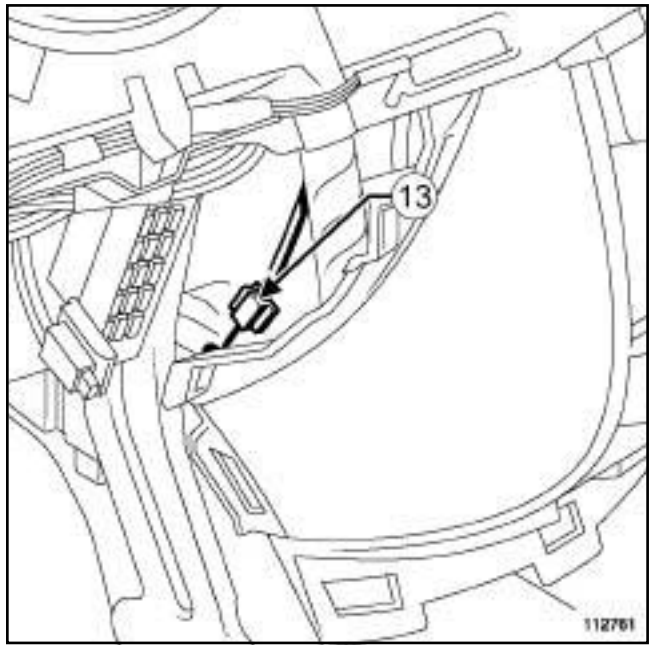
102011

❏ Remove the air conditioning control panel air mixing control cable.

❏ Disconnect at (**10**) .

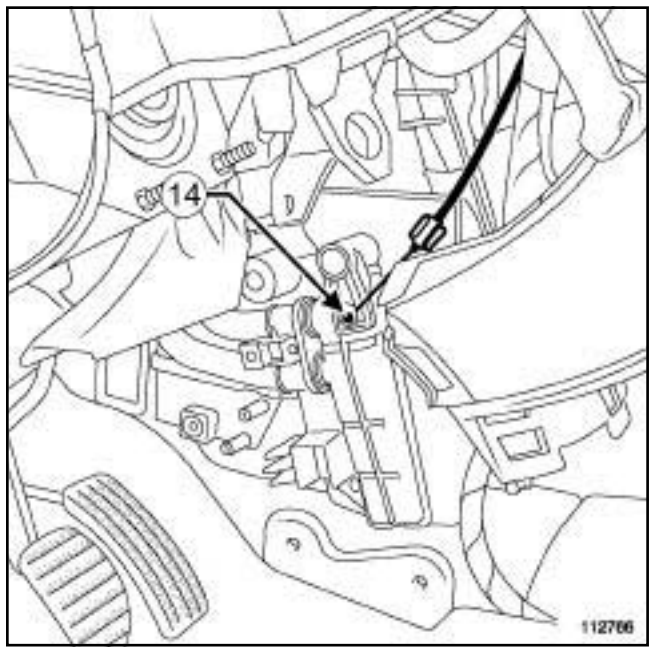
❏ Remove the bracket (**11**) .

❏ Extract the ball joint (**12**) .



112761

❏ Unclip the cable sleeve stop (**13**) from the distribution unit.



112766

❏ Remove:

- the ball joint (**14**) on the air mixing flap,

- the air mixing control cable.

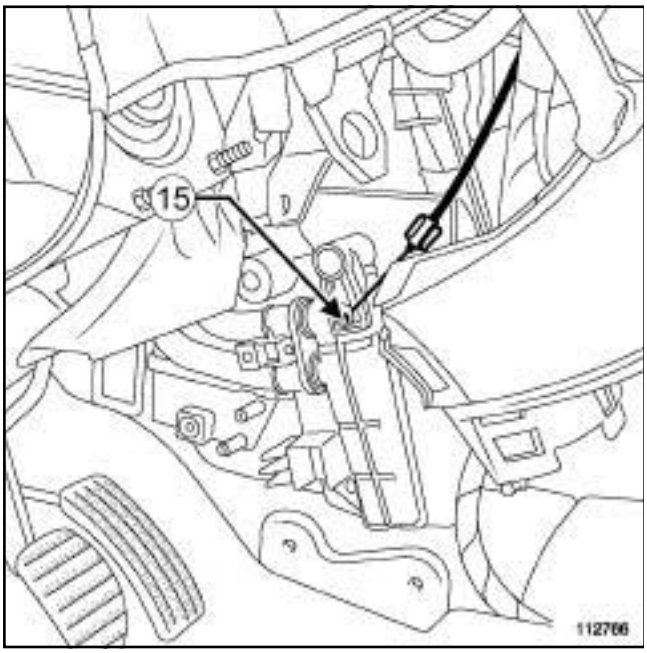
Note:

Note the route of the air mixing control cable.

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

REFITTING

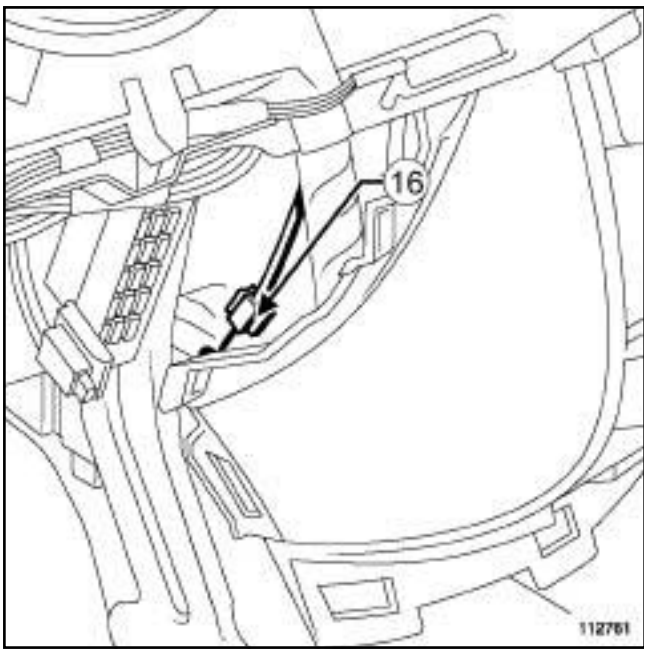
I - REFITTING OPERATION FOR PART CONCERNED



112766

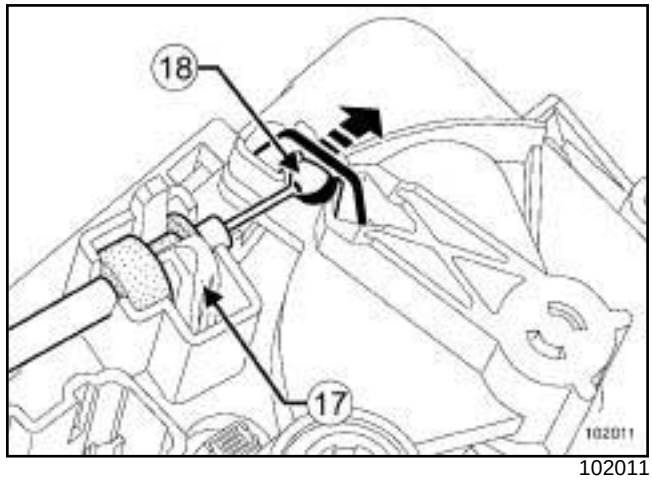
❏ Refit:

- the air mixing control cable.
- the ball joint (**15**) on the air mixing flap.



112761

❏ Clip the cable sleeve stop (**16**) onto the distribution unit.



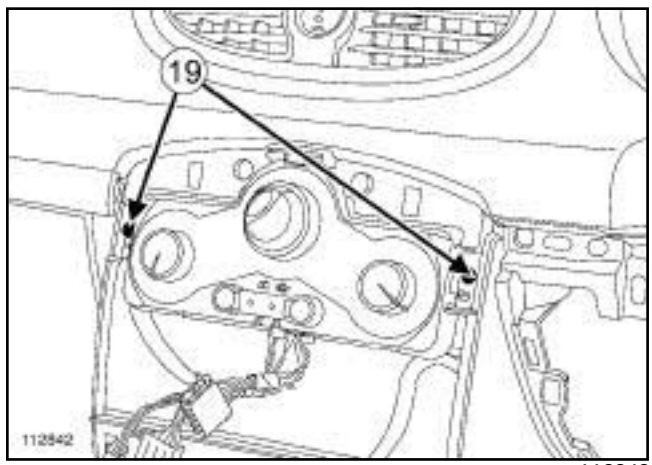
102011

❏ Refit the air conditioning control panel air mixing control cable.

❏ Refit the ball joint (**18**) .

❏ Clip the sleeve stop at (**17**) .

II - FINAL OPERATION.



112842

❏ Position the air conditioning control panel on the dashboard.

❏ Refit the air conditioning control panel bolts (**19**) .

❏ Connect the central trim connectors.

❏ Clip on the centre trim starting at the top.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

LEFT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, Onboard telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Clip on the dashboard lower trim.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❏ connect the connectors to the driver's side dashboard lower cover (depending on the equipment level).

❏ Refit:

- the driver's side dashboard lower cover,
- the bolts from the driver's side dashboard lower cover.

❏ Clip on the driver's side dashboard lower cover trim piece.

❏ Refit:

- the bolts to the base of the dashboard,
- the side panel,
- the seal.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

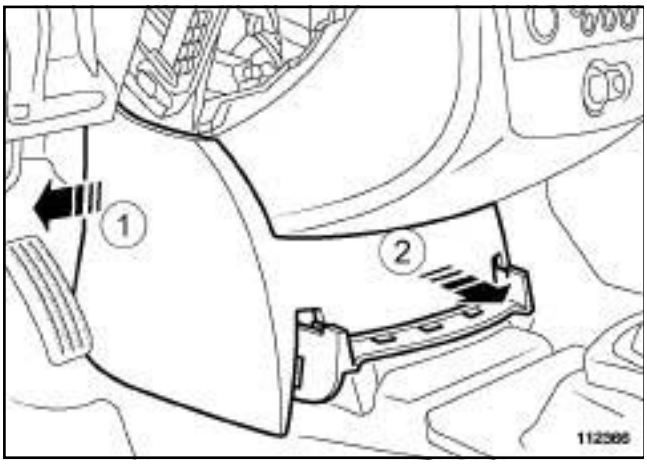
Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

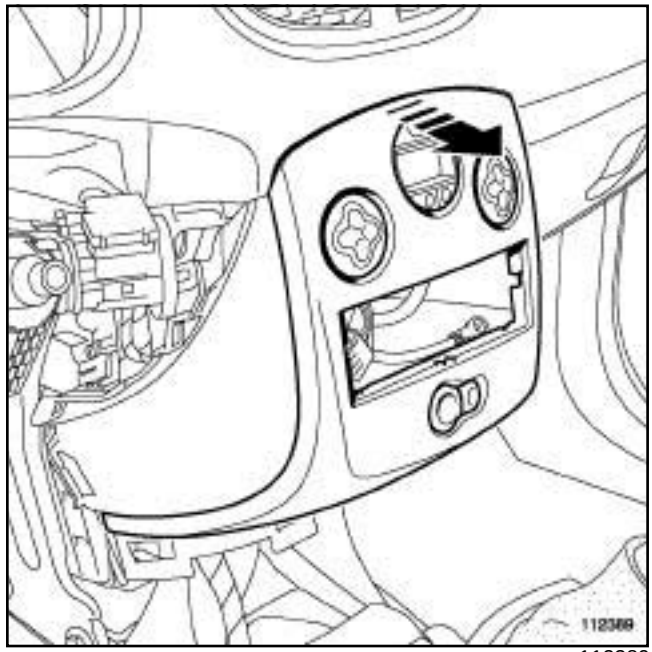
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

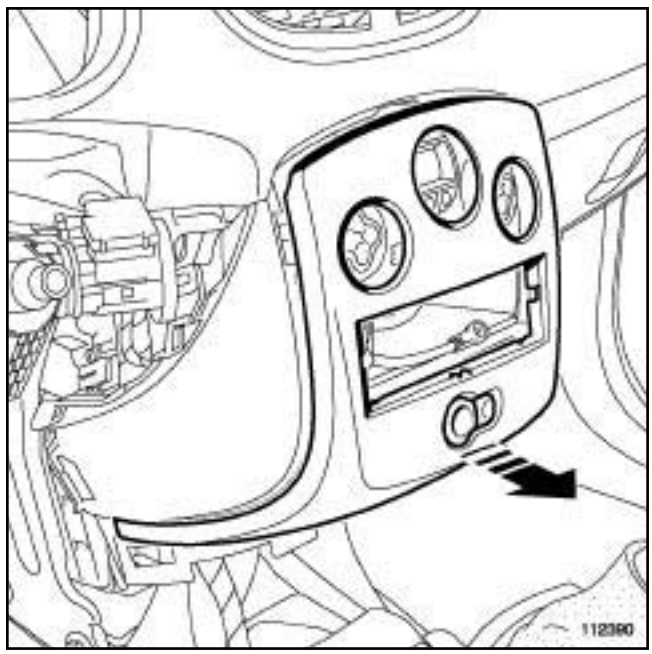
NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.

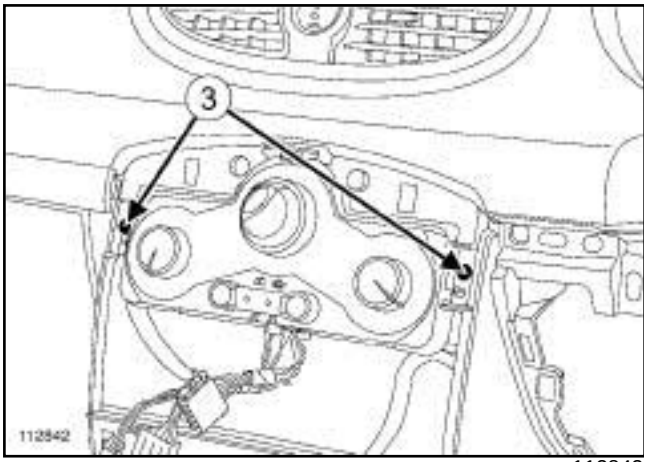

112389


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

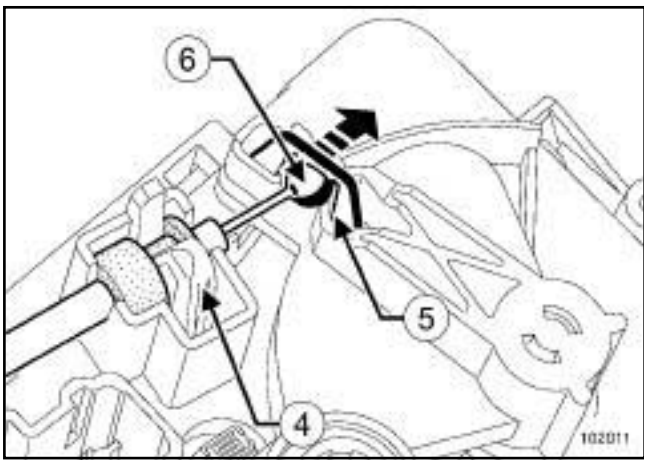


112842

❏ Remove the air conditioning control panel bolts (**3**) .

❏ Move the air conditioning control panel away from the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



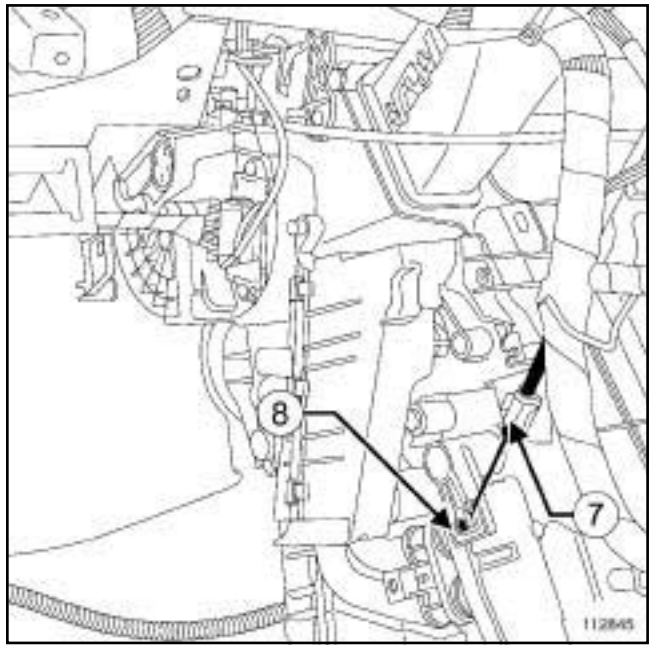
102011

❏ Remove the air conditioning control panel air mixing control cable.

❏ Disconnect at (**4**) .

❏ Remove the bracket (**5**) .

❏ Extract the ball joint (**6**) .



112845

❏ Unclip the cable sleeve stop (**7**) from the distribution unit.

❏ Remove:

- the ball joint (**8**) on the air mixing flap,
- the air mixing control cable.

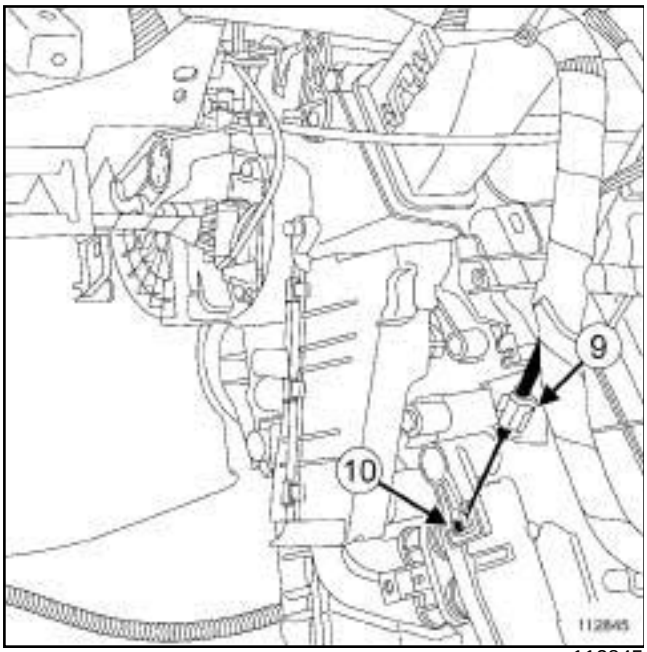
Note:

Note the route of the air mixing control cable.

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

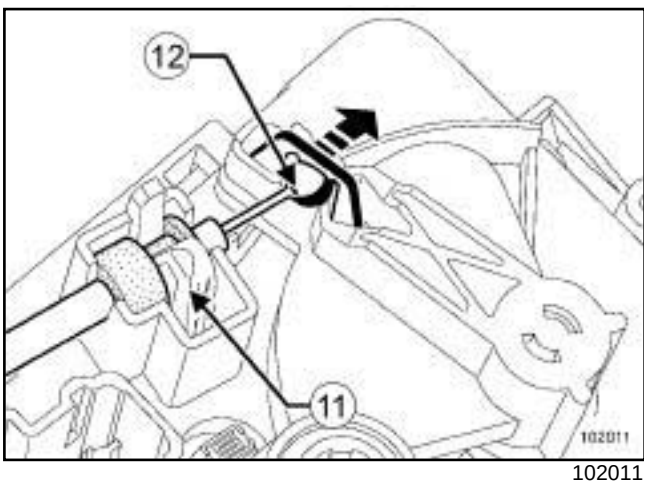


112845

❏ Refit:

- the air mixing control cable.
- the ball joint (**10**) on the air mixing flap.

❏ Clip the sleeve stop (**9**) onto the distribution unit.



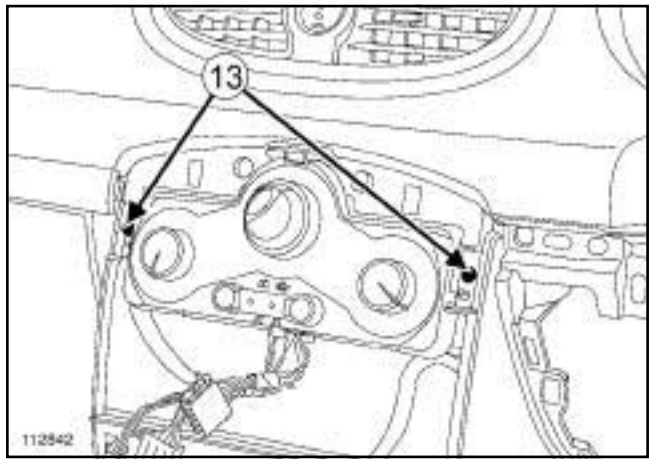
102011

❏ Refit the air conditioning control panel air mixing control cable.

❏ Refit the ball joint (**12**) .

❏ Clip the sleeve stop at (**11**) .

II - FINAL OPERATION.



112842

❏ Position the air conditioning control panel on the dashboard.

❏ Refit the air conditioning control panel bolts (**13**) .

❏ Connect the central trim connectors.

❏ Clip on the centre trim starting at the top.

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Clip on the dashboard lower trim.

❏ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),

RIGHT-HAND DRIVE, and AIR CONDITIONING or STANDARD HEATING

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

Special tooling required	
Ms. 583	Pipe clamps.
Car. 1363	Set of trim removal levers.

Equipment required
refrigerant charging station
Diagnostic tool

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

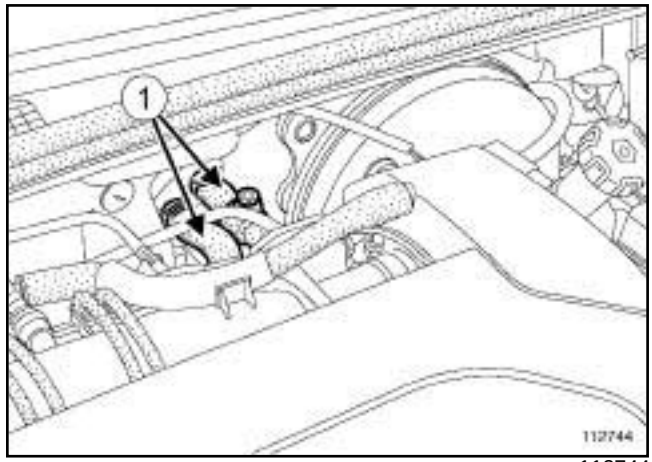
❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



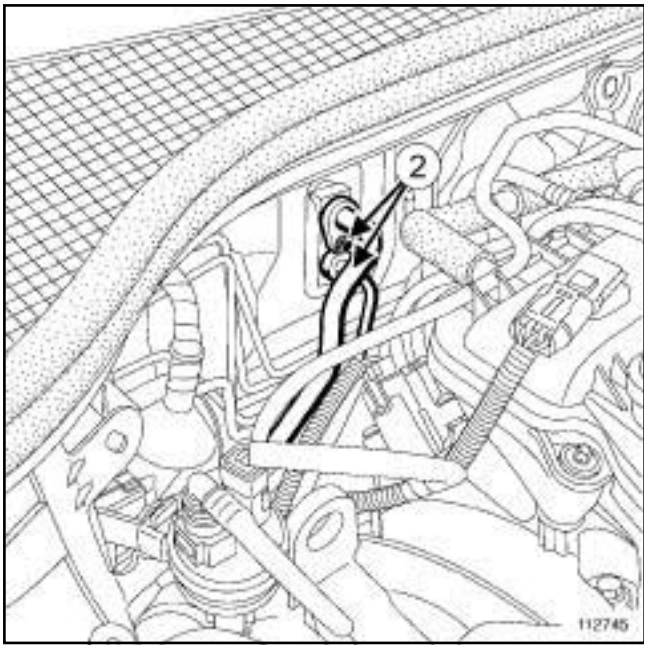
112744

❑ Fit hose clamps **(Ms. 583)** to the heater matrix hoses at (**1**) .

❑ Remove:

- the heater matrix hose clips,
- the heater matrix hoses.

AIR CONDITIONING



112745

❑ Remove the mountings from the bulkhead soundproofing.

❑ Lift away the bulkhead soundproofing.

❑ Remove the bolts (**2**) from the pipe unions on the expansion valve.

❑ Separate the pipe unions from the expansion valve.

WARNING
In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❑ Fit plugs into the openings.

WARNING
To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

❑ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.

❑ Remove:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),

- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure).

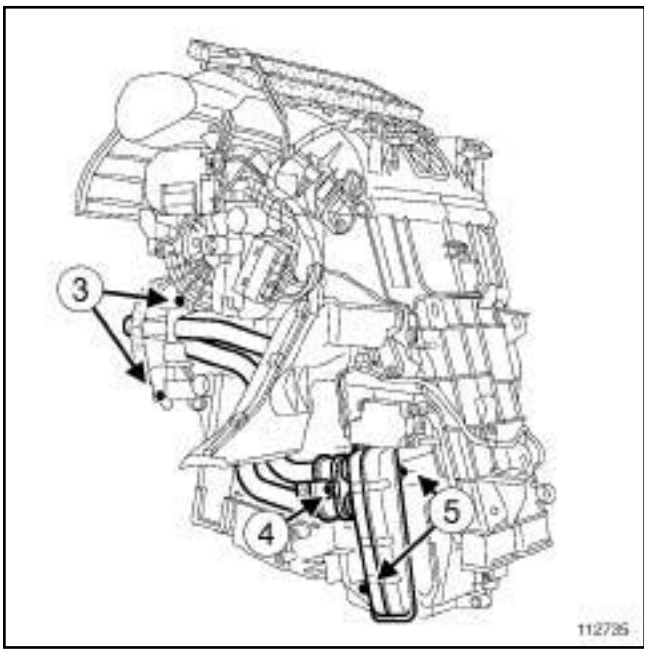
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Separate the C-pillar air distribution ducts from the distribution unit.

❏ Disconnect:

- the heating resistor connector,
- the blower assembly control unit connector.

❏ Remove the distribution unit.



112735

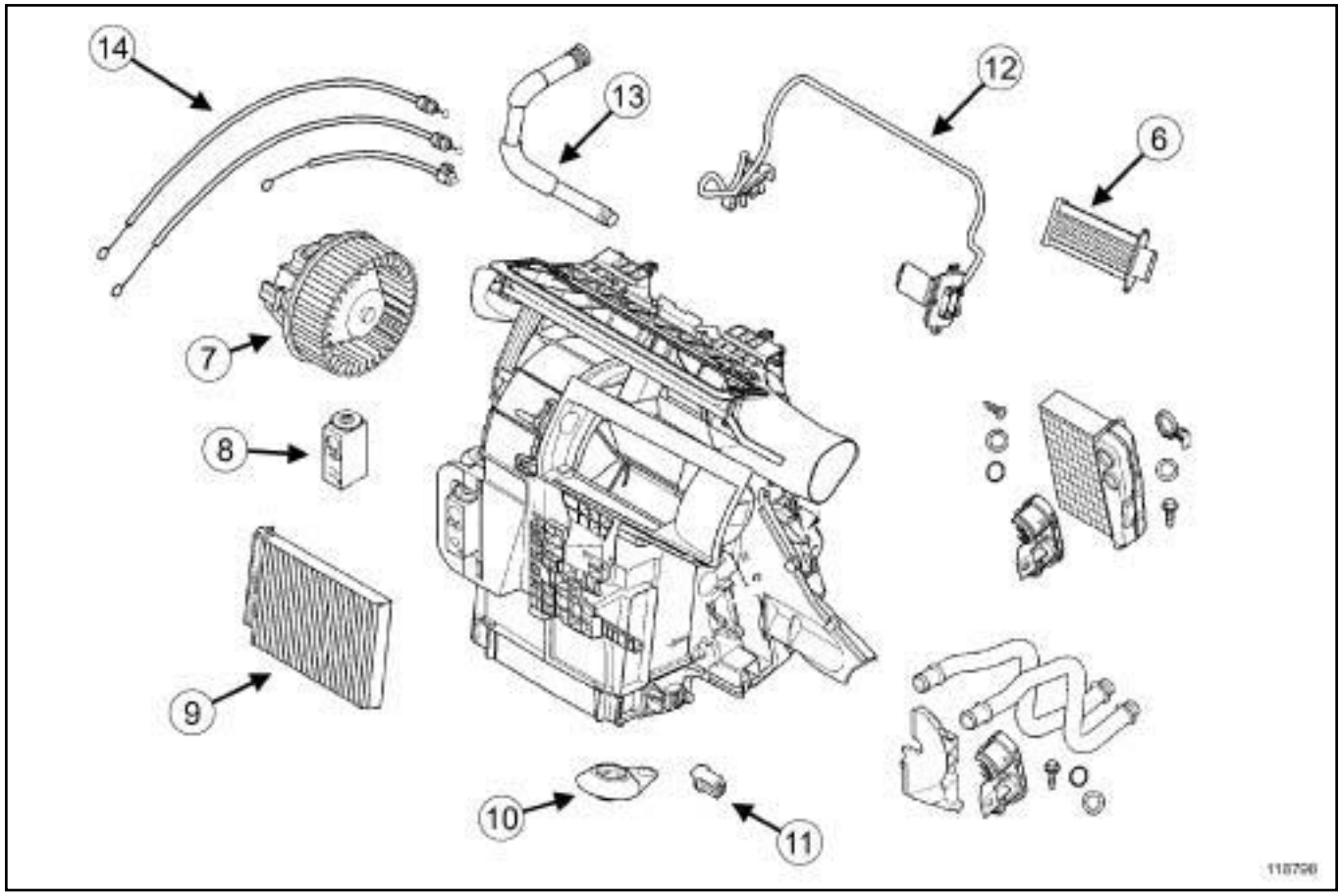
❏ Remove:

- the bolts (**3**) from the heater matrix pipe bracket on the distribution unit,
- the bolt (**4**) from the heater matrix pipe bracket.

❏ Unclip the heater matrix pipe bracket.

❏ Remove:

- the heater matrix pipe bracket on the distribution unit,
- the heater matrix pipes,
- the bolts (**5**) from the heater matrix,
- the heater matrix.



118798

❏ Remove:

- the heating resistor bolts,
- the heating resistor (**6**) .

❏ Disconnect the blower assembly connector.

❏ Press on the blower assembly tab.

❏ Turn the blower assembly towards the right.

❏ Remove:

- the blower assembly (**7**) ,
- the expansion valve (**8**) ,
- the cabin filter (**9**) ,
- the evacuation ring (**10**) ,
- the anti-rotation pad (**11**) ,
- the fan assembly control unit (**12**) ,
- the glovebox air distribution duct (**13**) ,
- the control cables (**14**) .

AIR CONDITIONING

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the parts are in good condition and replace any defective parts, if necessary.

❏ Refit:

- the cabin filter,
- the anti-rotation pad,
- the evacuation ring,
- the glovebox air distribution duct,
- the blower assembly,
- the expansion valve,
- the fan assembly control unit,
- the heating resistor,
- the heater matrix,
- the heater matrix pipes.

❏ Clip the heater matrix pipe bracket onto the heater matrix.

❏ Refit:

- the heater matrix pipe bracket bolt on the heater matrix,
- the heater matrix pipe bracket on the distribution unit,
- the bolts for the heater matrix pipe retaining bracket on the distribution unit.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the C-pillar air distribution ducts onto the distribution unit.

❏ Refit the distribution unit.

❏ Connect:

- the heating resistor connector,
- the blower assembly control unit connector.

III - FINAL OPERATION

❏ Refit:

- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the storage compartment in position.

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

❑ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the heater matrix hoses,
- the heater matrix hose clips.

❑ Remove the hose clamps **(Ms. 583)** from the heater matrix hoses.

❑

WARNING
To avoid any leaks, check that the pipe surface is sound before positioning the new seal. The surface must be clean and scratch free.

❑ Replace the seals.

❑ Lubricate the seals using recommended air conditioning oil to make fitting easier.

❑ Fit the pipe unions to the expansion valve.

❑ Refit the bolts to the pipe unions on the expansion valve.

❑ Tighten the pipe union bolts.

❑ Fit the bulkhead soundproofing.

❑ Refit:

- the bulkhead soundproofing mountings,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Perform the following operations:

- top up the coolant (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❑ Check the cooling system (see **Engine cooling system: Check**) (MR 392, 19A, Cooling).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:
A summary table gives the quantity of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

STANDARD HEATING

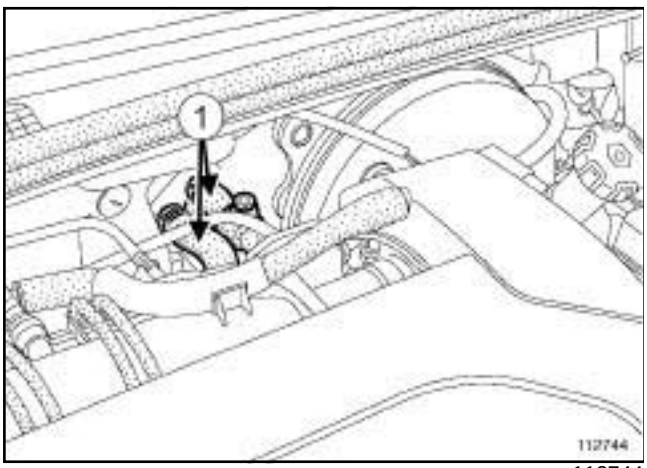
Special tooling required	
Ms. 583	Pipe clamps.
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).



112744

❑ Place hose clamps **(Ms. 583)** on the heater matrix hoses at (**1**) .

❑ Remove:

- the heater matrix hose clips,
- the heater matrix hoses.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITH-OUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.

❑ Remove:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),

- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure).

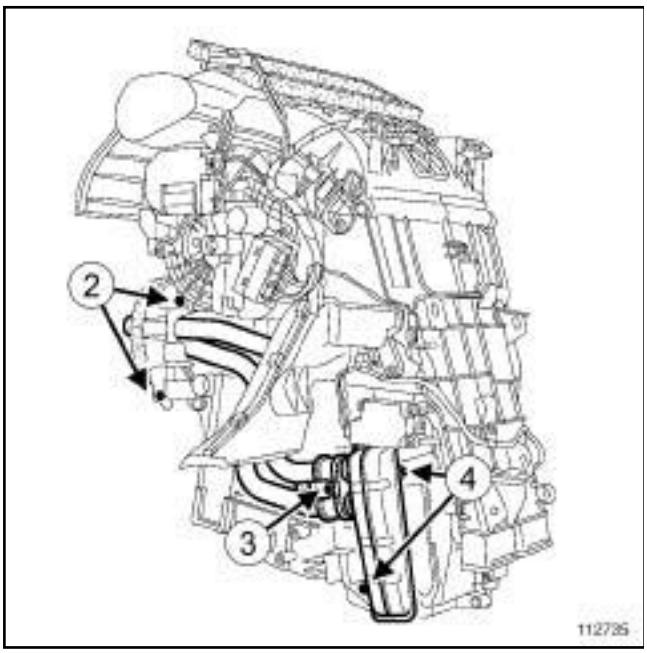
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Separate the C-pillar air distribution ducts from the distribution unit.

❏ Disconnect:

- the heating resistor connector,
- the blower assembly control unit connector.

❏ Remove the distribution unit.



112735

❏ Remove:

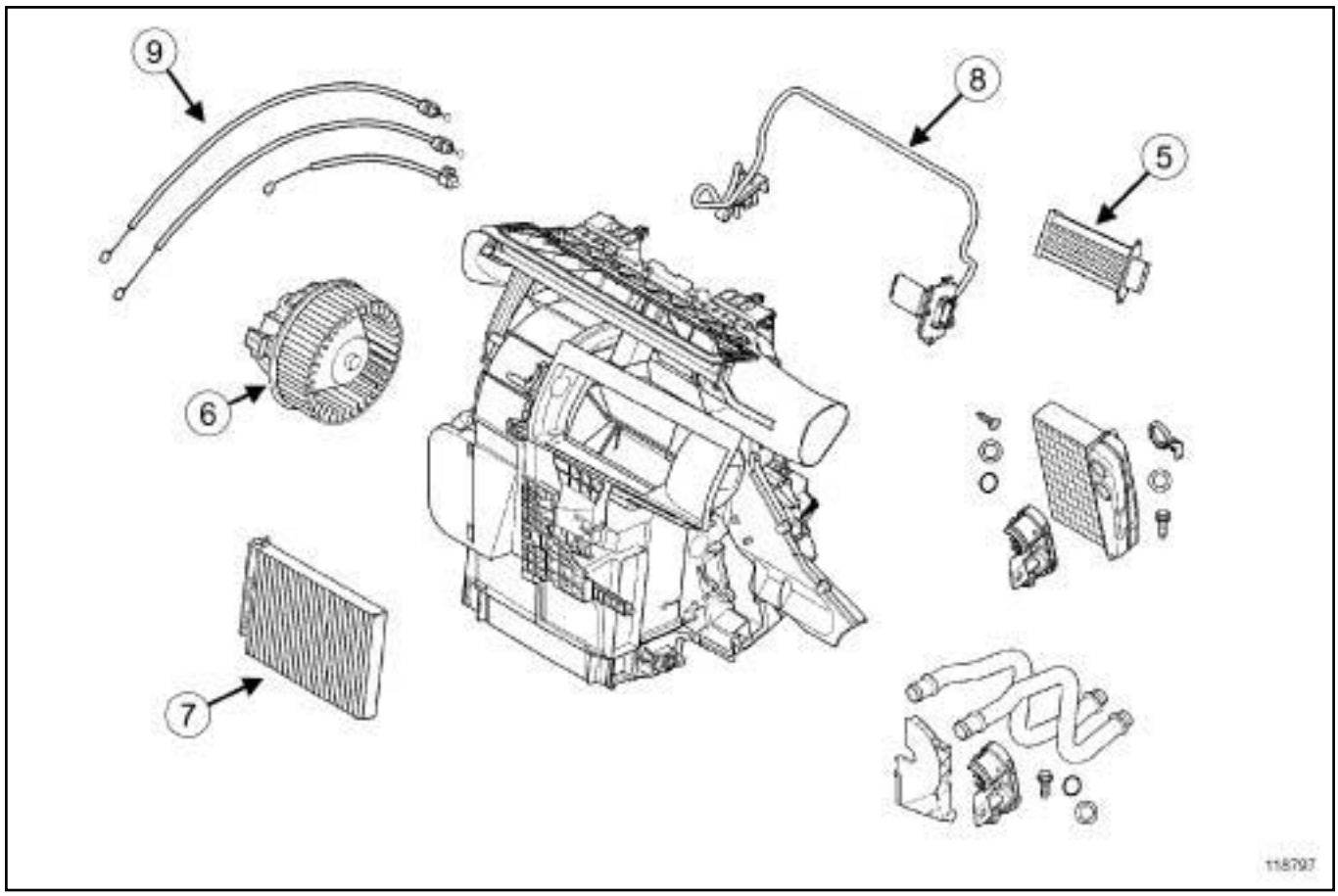
- the bolts (**2**) from the heater matrix pipe bracket on the distribution unit,
- the bolt (**3**) from the heater matrix pipe bracket.

❏ Unclip the heater matrix pipe bracket.

❏ Remove:

- the heater matrix pipe bracket on the distribution unit,
- the heater matrix pipes,
- the bolts (**4**) from the heater matrix,
- the heater matrix.

STANDARD HEATING



118797

❏ Remove the heating resistor (**5**) .

❏ Disconnect the blower assembly connector.

❏ Press on the blower assembly tab.

❏ Turn the blower assembly towards the right.

❏ Remove:

- the blower assembly (**6**) ,
- the cabin filter (**7**) ,
- the fan assembly control unit (**8**) ,
- the control cables (**9**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the parts are in good condition and replace any defective parts, if necessary.

❏ Refit:

- the cabin filter,
- the blower assembly,
- the fan assembly control unit,
- the control cables,
- the heating resistor,
- the heater matrix,
- the heater matrix pipes.

❏ Clip the heater matrix pipe bracket onto the heater matrix.

❏ Refit:

- the heater matrix pipe bracket bolt on the heater matrix,
- the heater matrix pipe bracket on the distribution unit,
- the bolts from the heater matrix pipe bracket on the distribution unit.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the C-pillar air distribution ducts to the distribution unit.

❏ Refit the distribution unit.

❏ Connect:

- the heating resistor connector,

STANDARD HEATING

- the blower assembly control unit connector.

III - FINAL OPERATION

❑ Refit:

- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the storage compartment in position.

❑ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the heater matrix hoses,
- the heater matrix hose clips.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove the hose clamps **(Ms. 583)**.

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Perform the following operations:

- top up the coolant (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❑ Check the cooling system (see **Engine cooling system: Check**) (MR 392, 19A, Cooling).

Special tooling required	
Ms. 583	Pipe clamps.
Car. 1363	Set of trim removal levers.

Equipment required
refrigerant charging station
Diagnostic tool

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

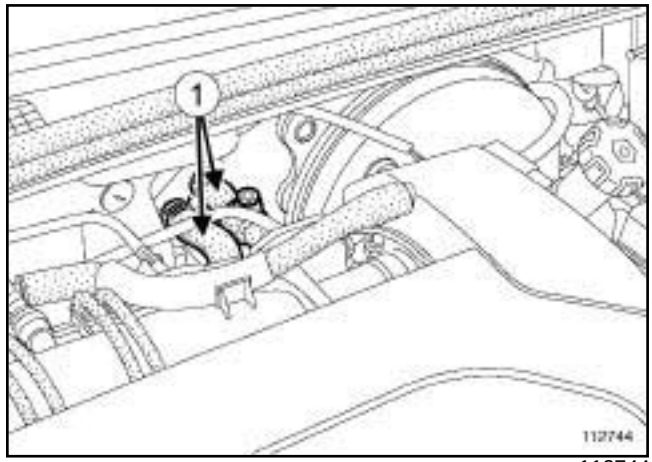
❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Remove:

- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).



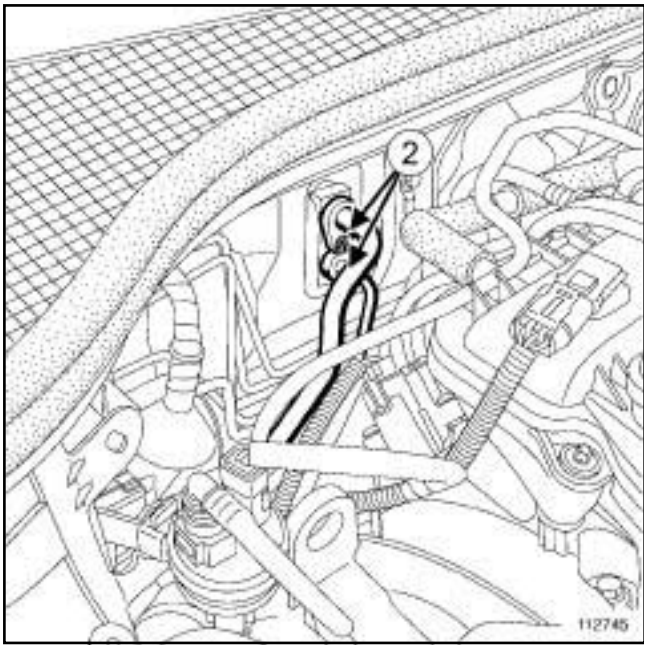
112744

❑ Fit hose clamps **(Ms. 583)** to the heater matrix hoses at (**1**) .

❑ Remove:

- the heater matrix hose clips,
- the heater matrix hoses.

CLIMATE CONTROL



112745

❑ Remove the mountings from the bulkhead soundproofing.

❑ Lift away the bulkhead soundproofing.

❑ Remove the bolts (**2**) from the pipe unions on the expansion valve.

❑ Separate the pipe unions from the expansion valve.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❑ Fit plugs into the openings.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

❑ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.

❑ Remove:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,

- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure).

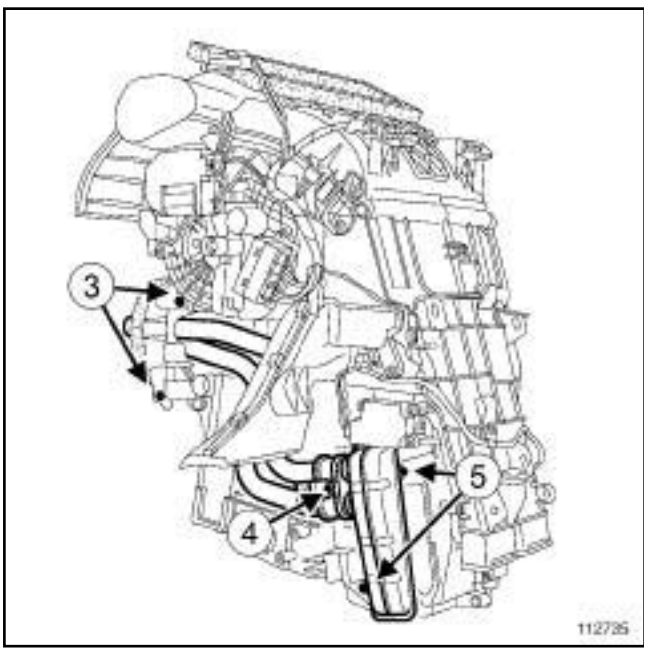
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Separate the C-pillar air distribution ducts from the distribution unit.

❏ Disconnect:

- the heating resistor connector,
- the motors and blower assembly control unit feed wiring connector.

❏ Remove the distribution unit.



112735

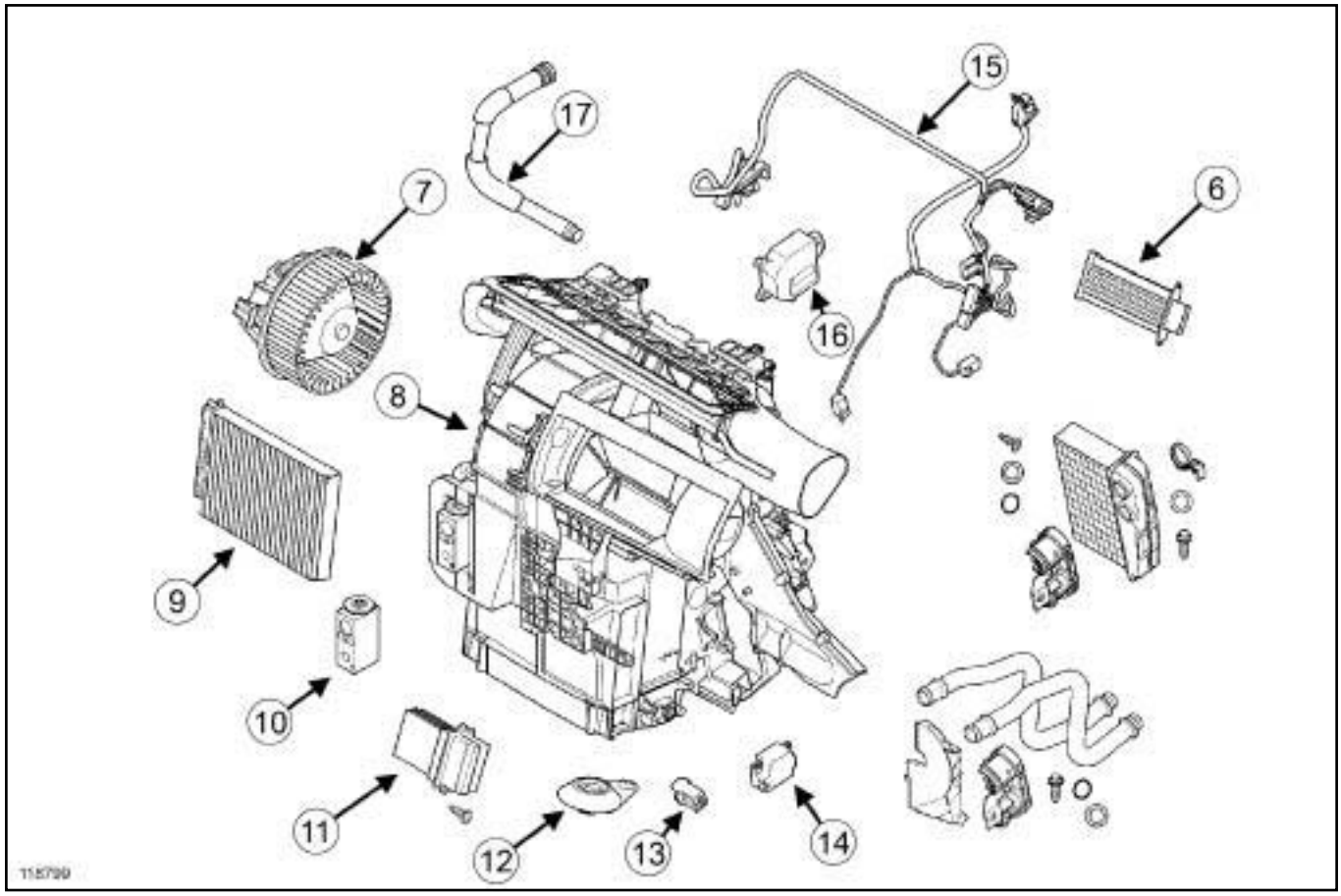
❏ Remove:

- the bolts (**3**) from the heater matrix pipe bracket on the distribution unit,
- the bolts (**4**) from the heater matrix pipe bracket.

❏ Unclip the heater matrix pipe bracket.

❏ Remove:

- the heater matrix pipe bracket on the distribution unit,
- the heater matrix pipes,
- the bolts (**5**) from the heater matrix,
- the heater matrix.



118799

❏ Remove:

- the heating resistor bolts,
- the heating resistor (**6**) .

❏ Disconnect the blower assembly connector.

❏ Press on the blower assembly tab.

❏ Turn the blower assembly towards the right.

❏ Remove:

- the blower assembly (**7**) ,
- the distribution motor (**8**) ,
- the cabin filter (**9**) ,
- the expansion valve (**10**) ,
- the fan assembly control unit (**11**) ,
- the evacuation ring (**12**) ,
- the anti-rotation pad (**13**) ,
- the air mixing motor (**14**) ,
- the wiring (**15**) ,
- the recirculation motor (**16**) ,
- the glovebox air distribution duct (**17**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check that the parts are in good condition and replace any defective parts, if necessary.

❏ Refit:

- the blower assembly,
- the cabin filter,
- the anti-rotation pad,
- the evacuation ring,
- the expansion valve,
- the fan assembly control unit,
- the glovebox air distribution duct,
- the recirculation motor,
- the air mixing motor,
- the distribution motor,
- the wiring,
- the heating resistor,
- the heater matrix,

CLIMATE CONTROL

- the heater matrix pipes.

❑ Clip the heater matrix pipe bracket onto the heater matrix.

❑ Refit:

- the heater matrix pipe bracket bolt on the heater matrix,
- the heater matrix pipe bracket on the distribution unit,
- the bolts from the heater matrix pipe bracket on the distribution unit.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the C-pillar air distribution ducts onto the distribution unit.

❑ Refit the distribution unit.

❑ Connect:

- the heating resistor connector,
- the motors and blower assembly control unit feed wiring connector.

III - FINAL OPERATION

❑ Refit:

- the dashboard cross member (see **Dashboard cross member: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front doors (see **Front side door: Removal - Refitting**) (MR 393, 47A, Side doors),
- the front wings (see **Front wing: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the front centre air distribution duct (see **61A**, **Heating**, **Front centre air distribution duct: Removal - Refitting**, page **61A-104**) ,
- the front side air distribution ducts (see **61A**, **Heating**, **Front side air distribution duct: Removal - Refitting**, page **61A-101**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the offset multimedia socket computer (see **Offset multimedia socket computer: Removal - Refitting**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the storage compartment in position.

NAVIGATION AID 1

❑ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

❑ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - Signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the heater matrix hoses,
- the heater matrix hose clips.

❑ Remove the hose clamps **(Ms. 583)** from the heater matrix hoses.

CLIMATE CONTROL

❑

WARNING
To avoid any leaks, check that the pipe surface is sound before positioning the new seal. The surface must be clean and scratch free.

❑ Replace the seals.

❑ Lubricate the seals using recommended air conditioning oil to make fitting easier.

❑ Fit the pipe unions to the expansion valve.

❑ Refit the bolts to the pipe unions on the expansion valve.

❑ Tighten the pipe union bolts.

❑ Fit the bulkhead soundproofing.

❑ Refit:

- the bulkhead soundproofing mountings,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (MR 392, 85A, Wiping - Washing),
- the engine cover.

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Perform the following operations:

- top up the coolant (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❑ Check the cooling system (see **Engine cooling system: Check**) (MR 392, 19A, Cooling).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantity of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

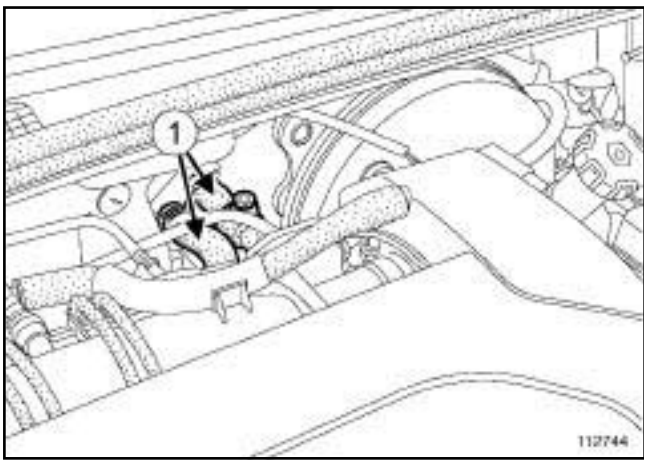
LEFT-HAND DRIVE

Special tooling required	
Ms. 583	Pipe clamps.

Tightening torques ▽	
dashboard cross member reinforcement bolts	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

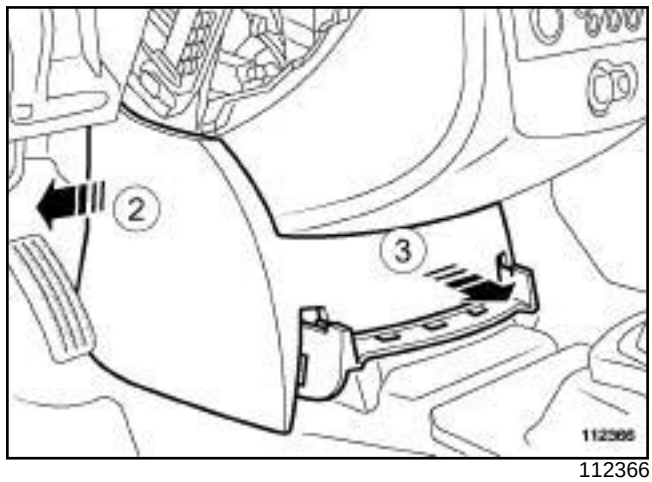


112744

❏ Place hose clamps **(Ms. 583)** on the heater matrix hoses at (**1**) .

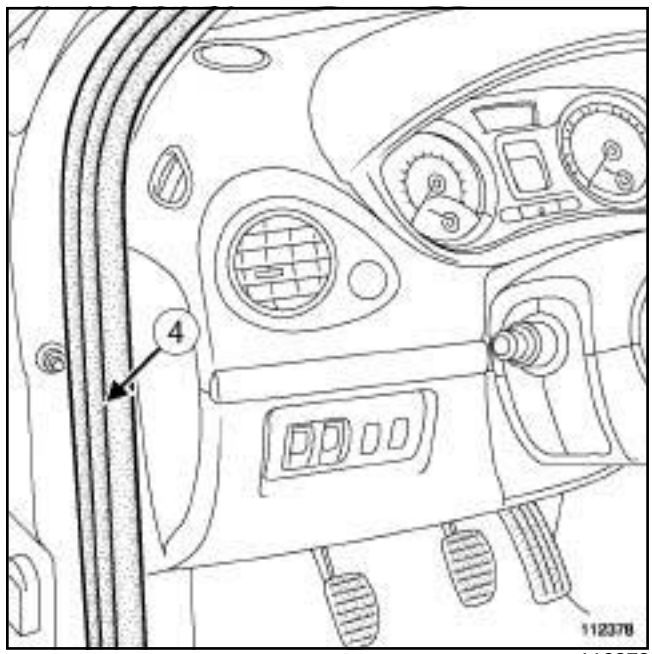
❏ Remove:

- the heater matrix hose clips,
- the heater matrix hoses,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

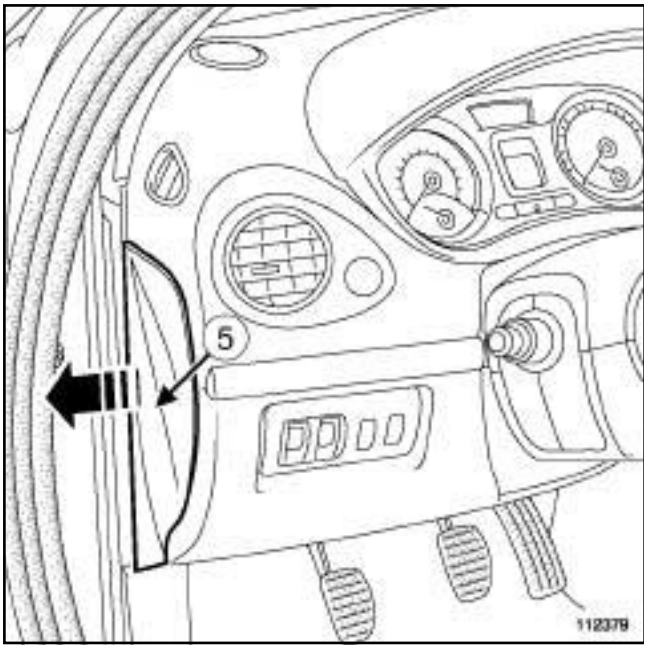
❏ Unclip the trim at the base of the dashboard at (**2**) and (**3**) .



112378

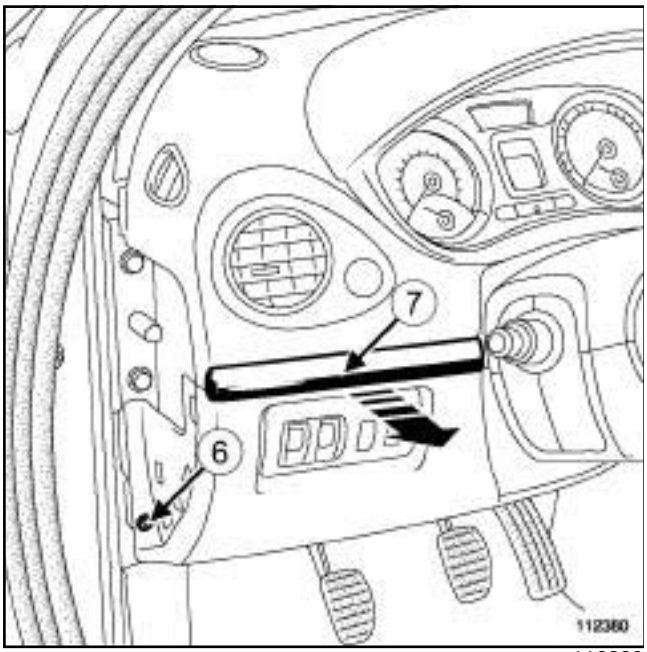
❏ Partially remove the door seal. (**4**)

LEFT-HAND DRIVE



112379

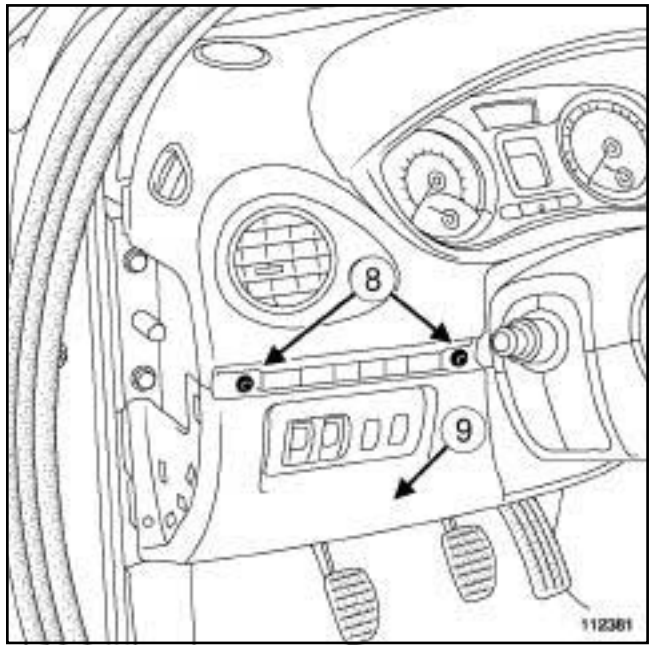
❏ Remove the side panel (**5**) .



112380

❏ Remove the bolt (**6**) from the lower trim on the base of the dashboard on the driver's side.

❏ Unclip the trim (**7**) .

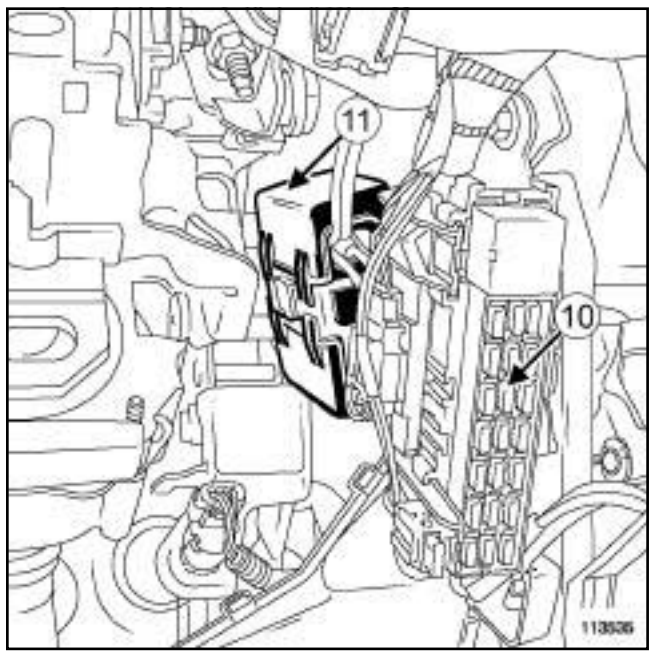


112381

❏ Remove the bolts (**8**) from the dashboard lower trim on the driver's side.

❏ Remove the dashboard lower trim on the driver's side (**9**) .

❏ Disconnect the connectors (depending on equipment level).



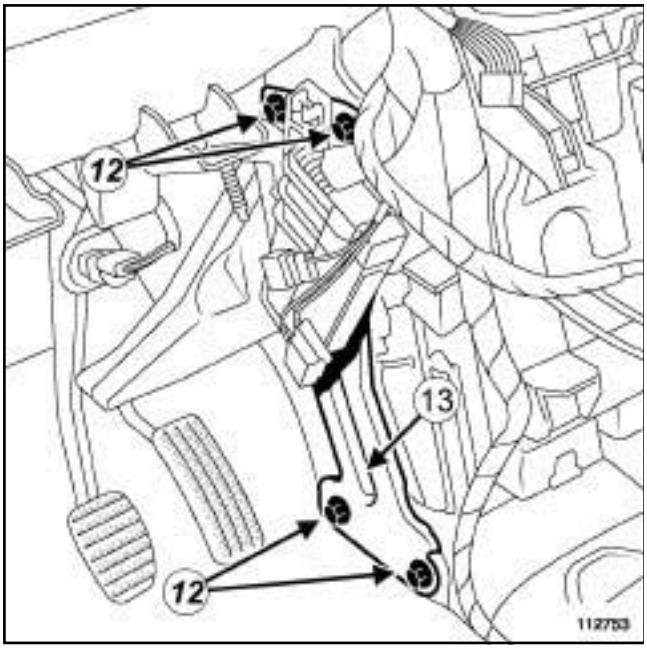
113535

❏ Unclip:

- the fuse and relay box (**10**) ,
- the heating resistor relays (**11**) .

❏ Lift the carpet to access the dashboard cross member reinforcement bolts.

LEFT-HAND DRIVE



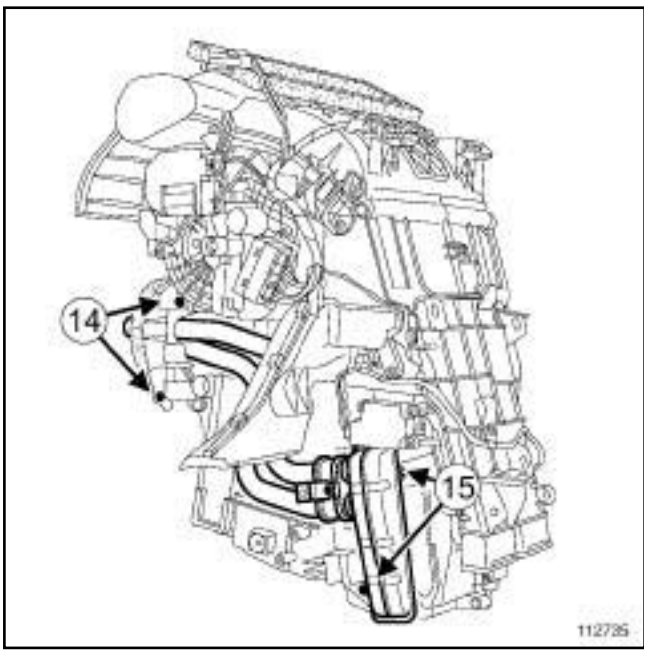
112753

❏ Remove:

- the dashboard cross member reinforcement bolts (**12**) ,
- the dashboard cross member reinforcement (**13**) .

❏ Put a protective cover on the carpet.

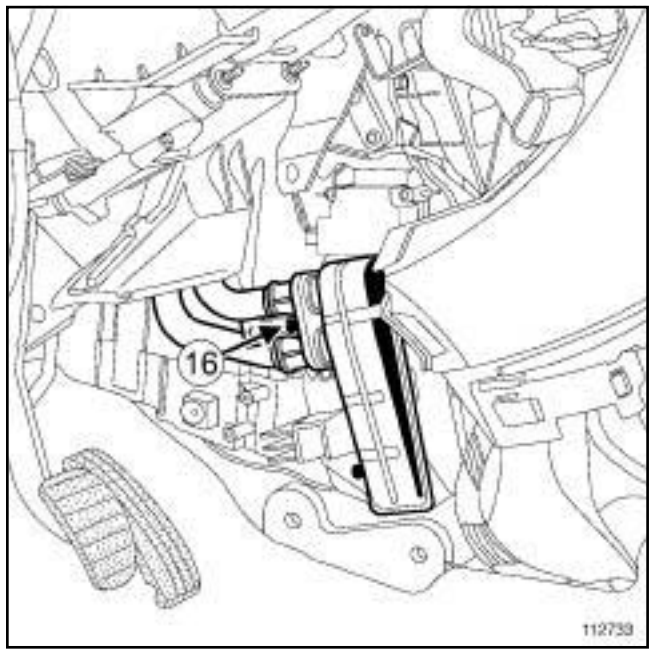
II - OPERATION FOR REMOVAL OF PART CONCERNED



112735

❏ Remove:

- the bolts (**14**) from the heater matrix pipe bracket on the distribution unit,
- the heater matrix pipe bracket on the distribution unit.
- the heater matrix bolts (**15**) .

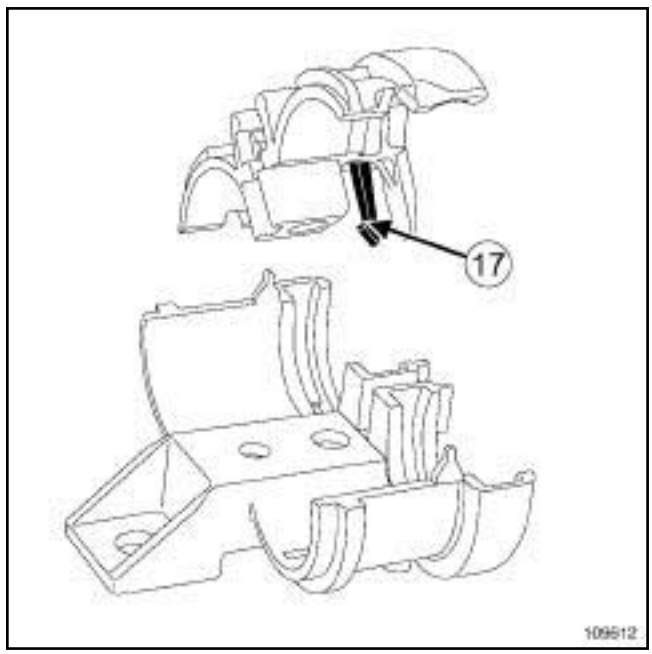


112733

❏ Remove the bolt (**16**) from the heater matrix pipe bracket.

❏ Put a container in place to recover the coolant.

❏ Move the heater matrix and its piping to one side.



109612

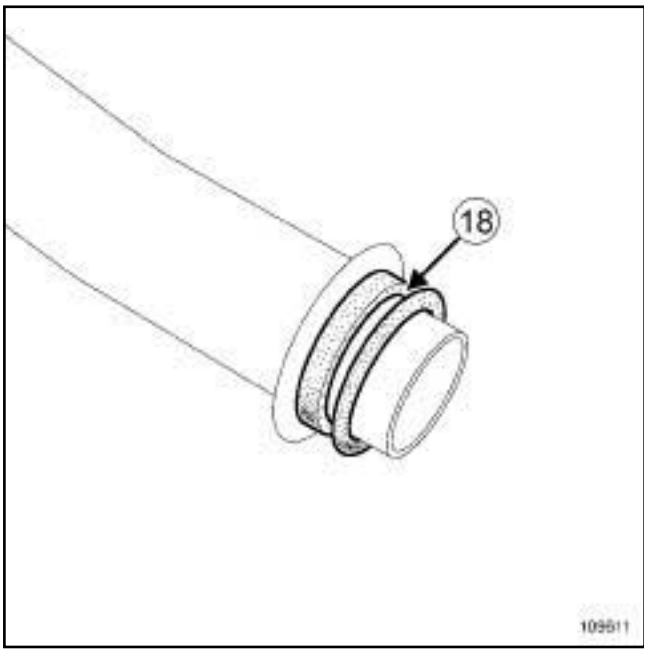
❏ Unclip the heater matrix pipe bracket (**17**) on the heater matrix.

❏ Remove the heater matrix.

LEFT-HAND DRIVE

REFITTING

I - REFITTING PREPARATION OPERATION



109611

❏ Replace the seals (**18**) between the pipes and the heater matrix.

> **WARNING**
> To avoid any leaks, check that the pipe surface is sound before positioning the new seal. The surface must be clean and scratch free.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the heater matrix,
- the heater matrix pipes,
- the heater matrix bolts.

❏ Clip the heater matrix pipe bracket onto the heater matrix.

❏ Refit:

- the heater matrix pipe bracket on the distribution unit,
- the bolts from the heater matrix pipe bracket on the distribution unit,
- the bolt from the heater matrix pipe bracket.

III - FINAL OPERATION

❏ Refit:

- the dashboard cross member reinforcement,
- the bolts from the dashboard cross member reinforcement.

❏ Torque tighten the **dashboard cross member reinforcement bolts (21 N.m)**.

❏ Refit the floor carpet.

> Note:
> Check that the floor carpet reaches under the accelerator pedal end-stop.

❏ Clip on:

- heater resistor relays,
- the fuse and relay box.

❏ Connect the dashboard lower trim connectors on the driver's side.

❏ Fit the dashboard lower trim on the driver's side.

❏ Refit:

- the dashboard lower trim bolts on the driver's side,
- the dashboard lower trim bolt.

❏ Clip on the driver's side dashboard lower cover trim piece.

❏ Refit:

- the side panel,
- the door seal.

❏ Clip on the dashboard lower trim.

❏ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the heater matrix hoses,
- the heater matrix hose clips.

❏ Remove the hose clamps **(Ms. 583)**.

❏ Perform the following operations:

- top up the coolant (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

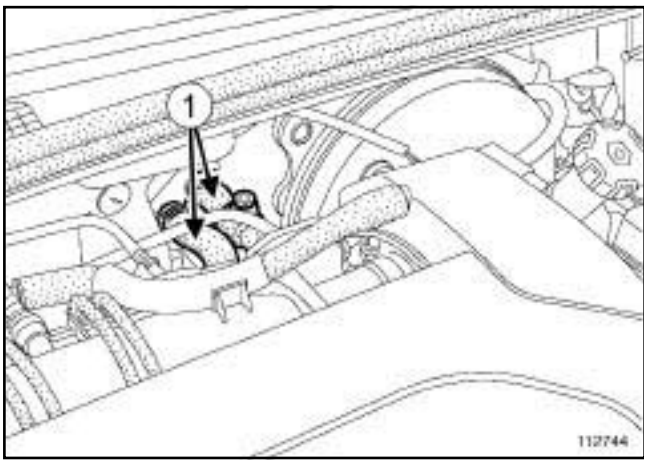
❏ Check the cooling system (see **Engine cooling system: Check**) (MR 392, 19A, Cooling).

RIGHT-HAND DRIVE

Special tooling required	
Ms. 583	Pipe clamps.

REMOVAL

I - REMOVAL PREPARATION OPERATION

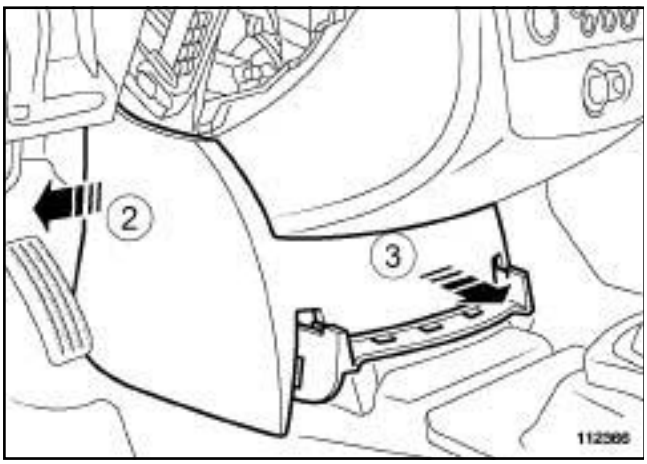


112744

❏ Place hose clamps **(Ms. 583)** on the heater matrix hoses at (**1**) .

❏ Remove:

- the heater matrix hose clips,
- the heater matrix hoses,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



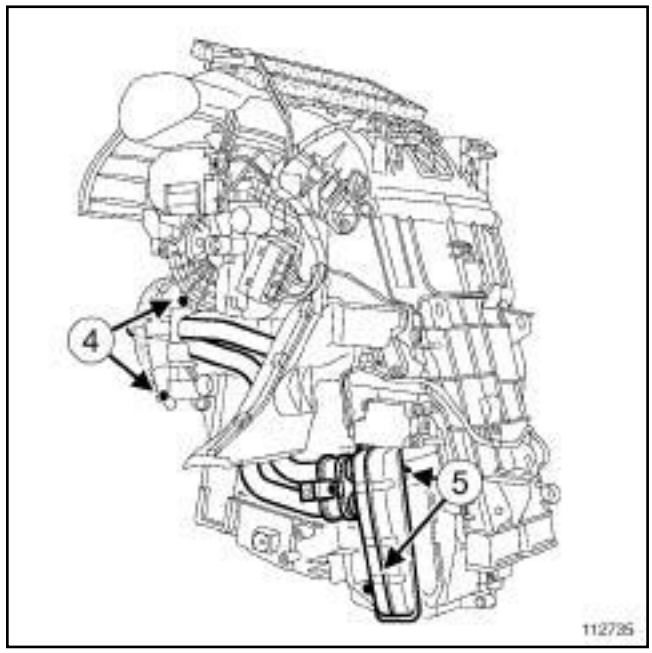
112366

❏ Unclip the trim at the base of the dashboard at (**2**) and (**3**) .

❏ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❏ Put a protective cover on the carpet.

II - OPERATION FOR REMOVAL OF PART CONCERNED

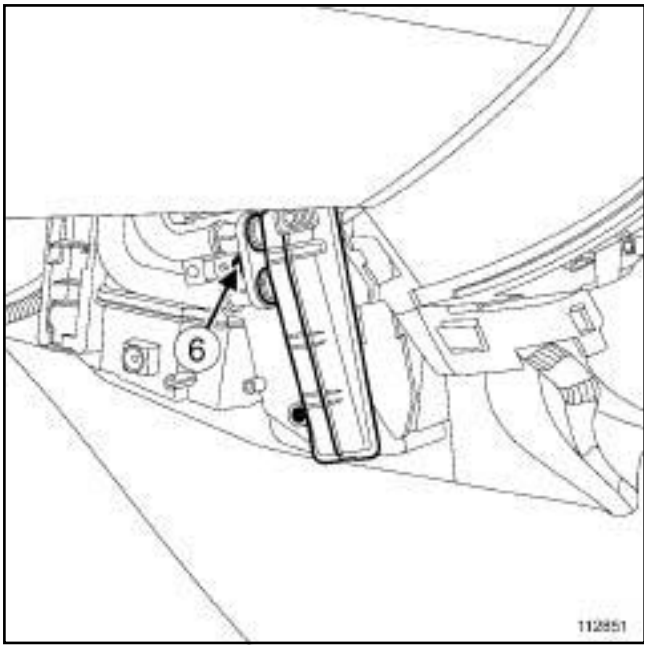


112735

❏ Remove:

- the bolts (**4**) from the heater matrix pipe bracket on the heater matrix,
- the heater matrix pipe bracket on the distribution unit,
- the heater matrix bolts (**5**) .

RIGHT-HAND DRIVE

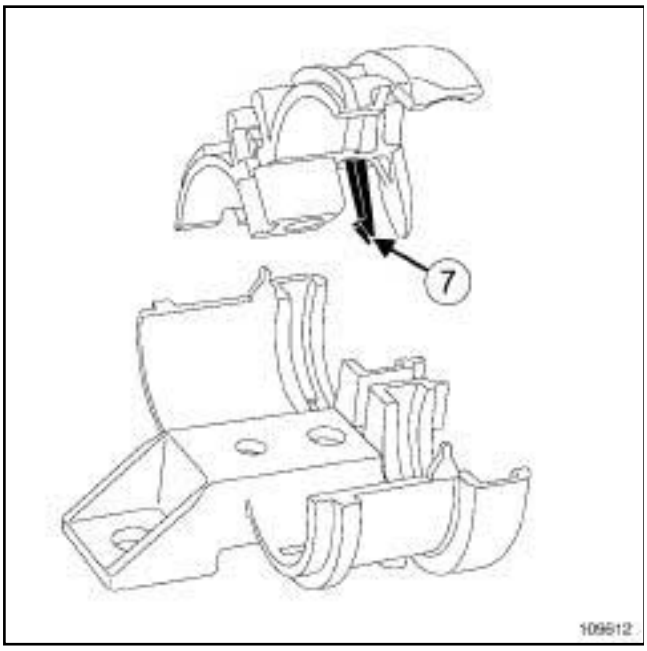


112851

❏ Remove the bolt (**6**) from the heater matrix pipe bracket.

❏ Put a container in place to recover the coolant.

❏ Move the heater matrix and its piping to one side.



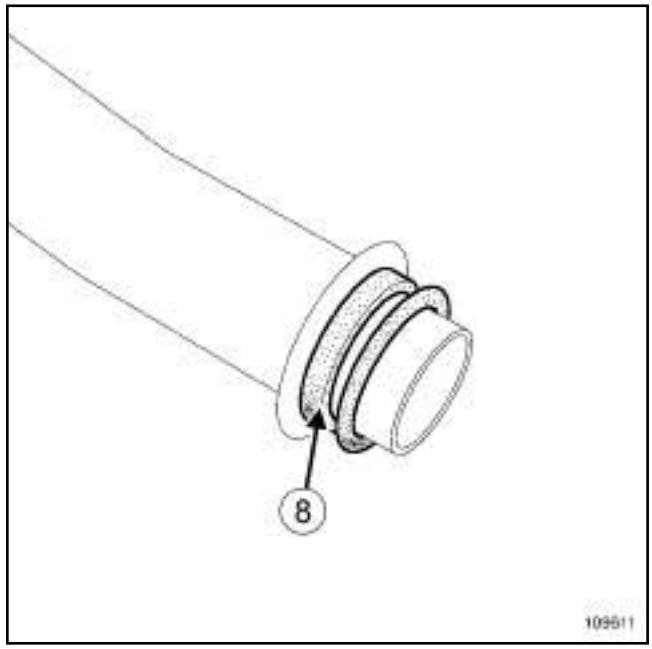
109612

❏ Unclip the heater matrix pipe bracket (**7**) on the heater matrix.

❏ Remove the heater matrix.

REFITTING

I - REFITTING PREPARATION OPERATION



109611

❏ Replace the seals (**8**) between the pipes and the heater matrix.

WARNING
To avoid any leaks, check that the pipe surface is sound before positioning the new seal. The surface must be clean and scratch free.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the heater matrix.

❏ Clip the heater matrix pipe bracket onto the heater matrix.

❏ Refit:

- the heater matrix pipe bracket on the distribution unit,
- the bolts from the heater matrix pipe bracket on the distribution unit,
- the bolt from the heater matrix pipe bracket.

III - FINAL OPERATION

❏ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❏ Clip on the dashboard lower trim.

RIGHT-HAND DRIVE

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Refit:

- the heater matrix,
- the heater matrix pipes,
- the heater matrix bolts,
- the heater matrix hoses,
- the heater matrix hose clips.

❑ Remove the hose clamps **(Ms. 583)**.

❑ Perform the following operations:

- top up the coolant (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling),
- bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 392, 19A, Cooling).

❑ Check the cooling system (see **Engine cooling system: Check**) (MR 392, 19A, Cooling).

LEFT-HAND DRIVE

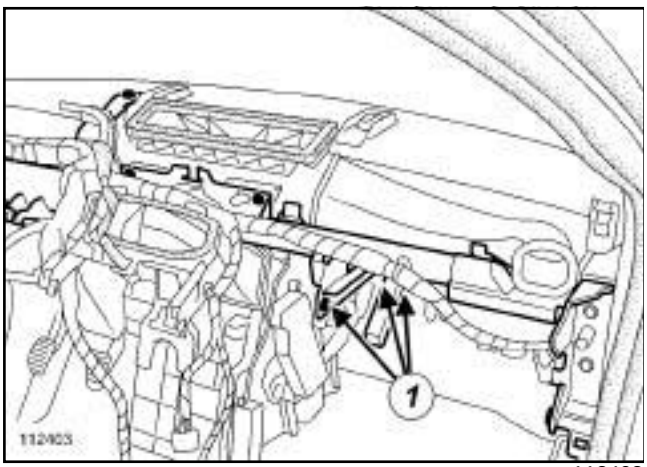
Tightening torques ▽	
the dashboard cross member reinforcement bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front right-hand A-pillar air distribution duct (see **61A**, **Heating**, **Front footwell air distribution duct: Removal - Refitting**, page **61A-106**) .

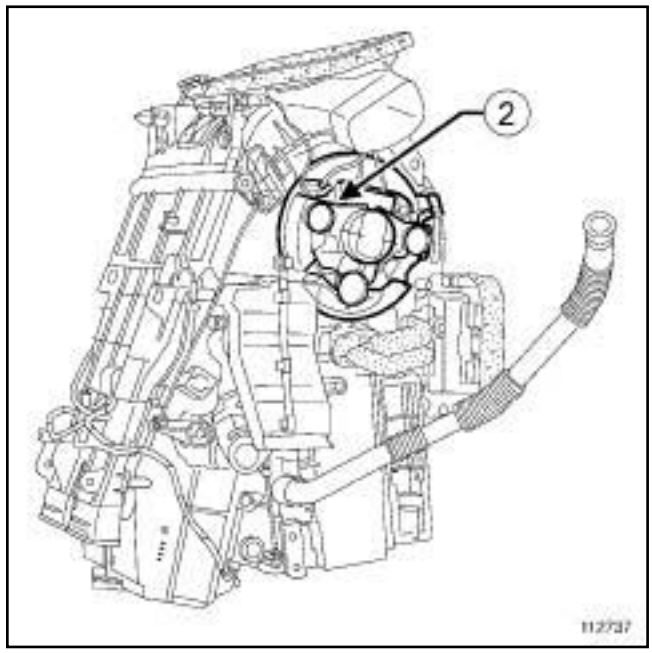


112403

❑ Remove:

- the dashboard cross member reinforcement bolts (**1**) ,
- the dashboard cross member reinforcement tie-rod.

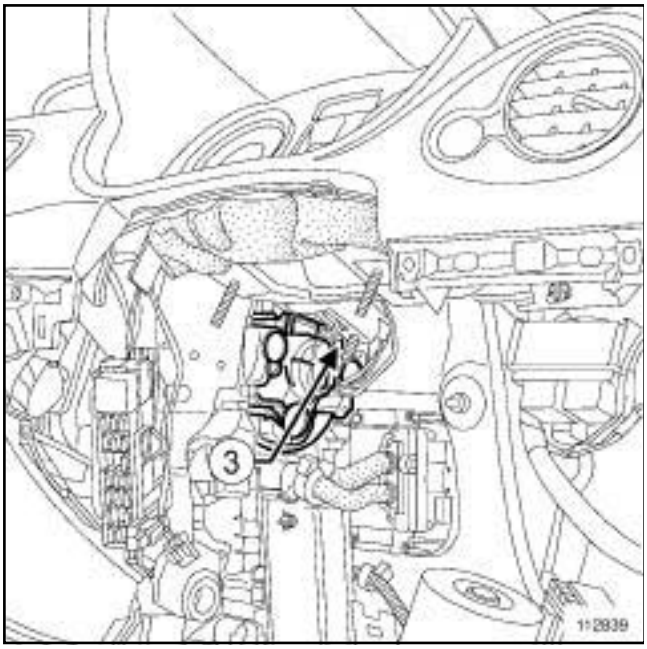
II - OPERATION FOR REMOVAL OF PART CONCERNED



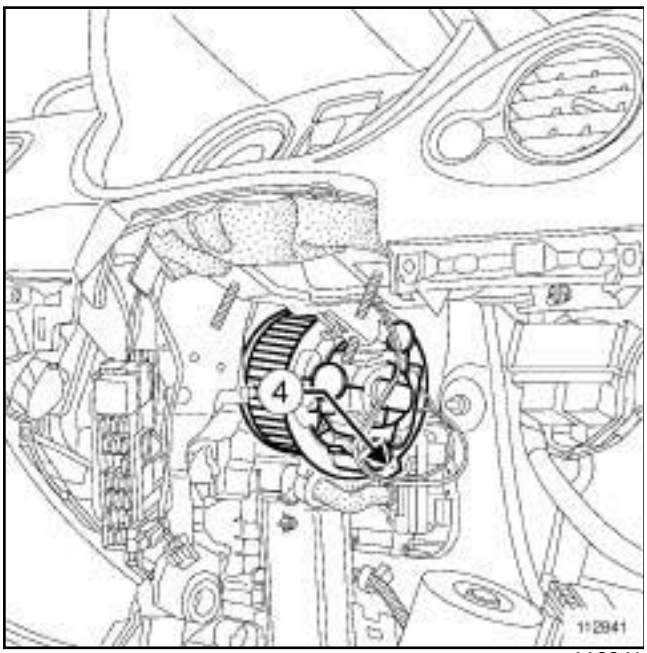
112737

❑ Disconnect the blower assembly connector (**2**) .

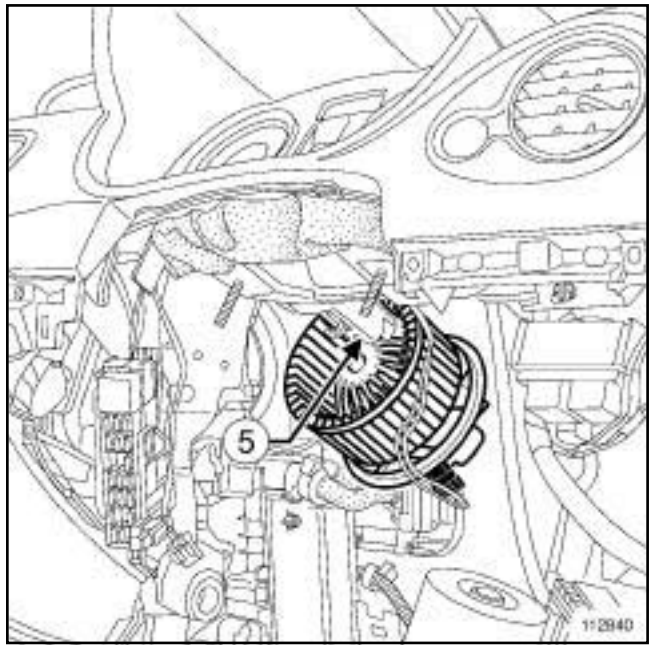
LEFT-HAND DRIVE



112839



112841



112840

❑ Press on the tab at (**3**) .

❑ Gently lift away the blower assembly.

❑ Turn the blower assembly until the tab is facing downwards (**4**) .

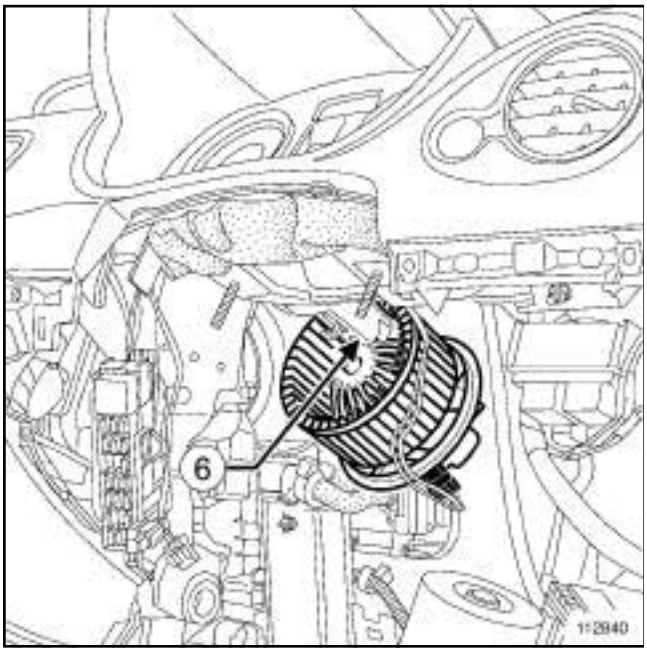
❑ Pivot the blower assembly around the cross member at (**5**) .

❑ Remove the blower assembly.

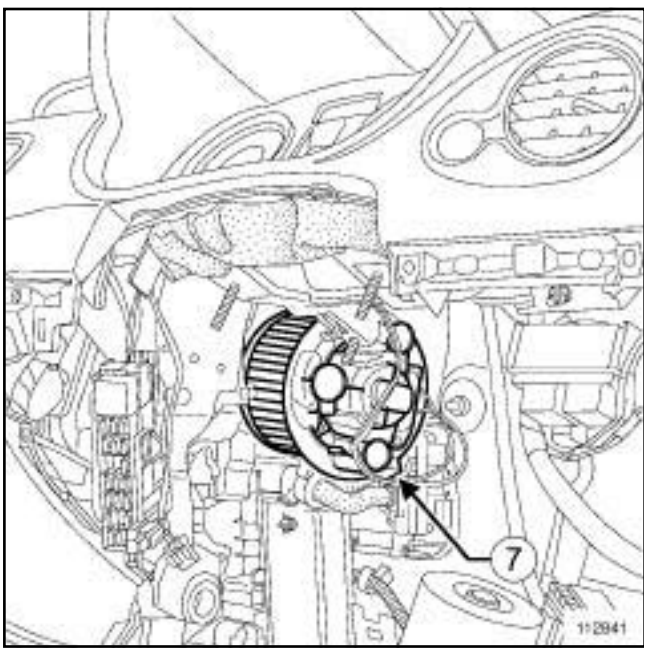
LEFT-HAND DRIVE

REFITTING

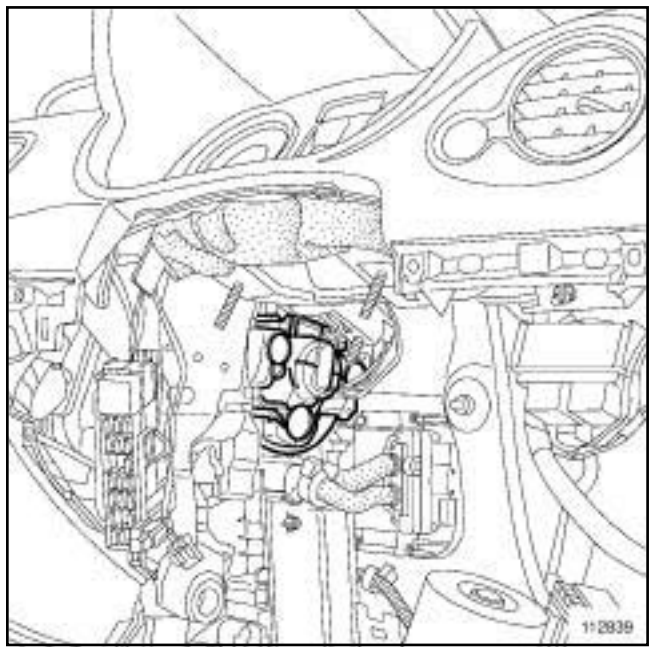
I - REFITTING OPERATION FOR PART CONCERNED



112840



112841



112839

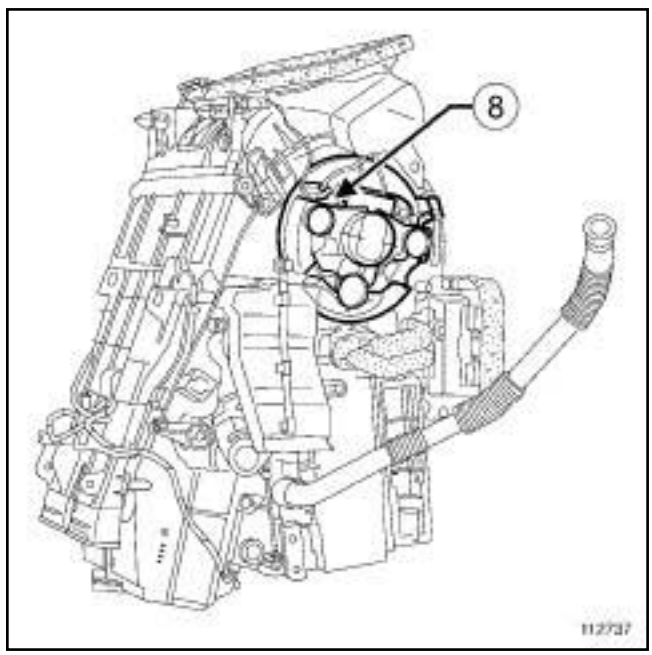
❑ Pivot the blower assembly around the cross member at (**6**) .

❑ Turn the blower assembly until the tab is facing downwards (**7**) .

❑ Refit the blower.

Note:

When the blower assembly is replaced, it clicks when it is locked in position.



112737

❑ Connect the blower assembly connector (**8**) .

LEFT-HAND DRIVE

II - FINAL OPERATION.

❑ Refit:

- the dashboard cross member tie-rod,
- **the dashboard cross member reinforcement bolts (8 Nm)**.

❑ Refit:

- the front right-hand A-pillar air distribution duct (see **61A**, **Heating**, **Front footwell air distribution duct: Removal - Refitting**, page **61A-106**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE

Equipment required
Diagnostic tool

REMOVAL

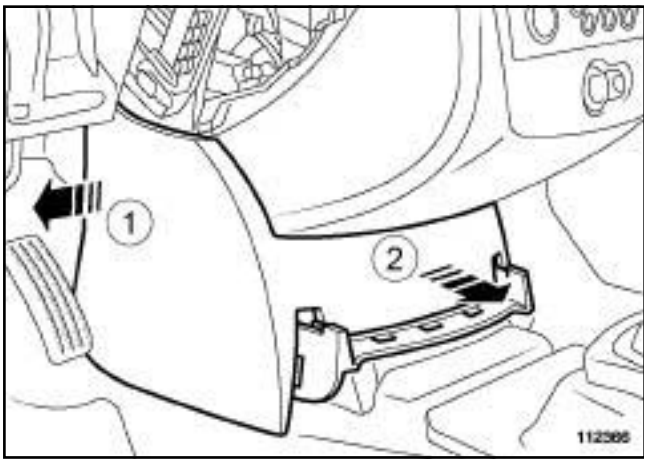
I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

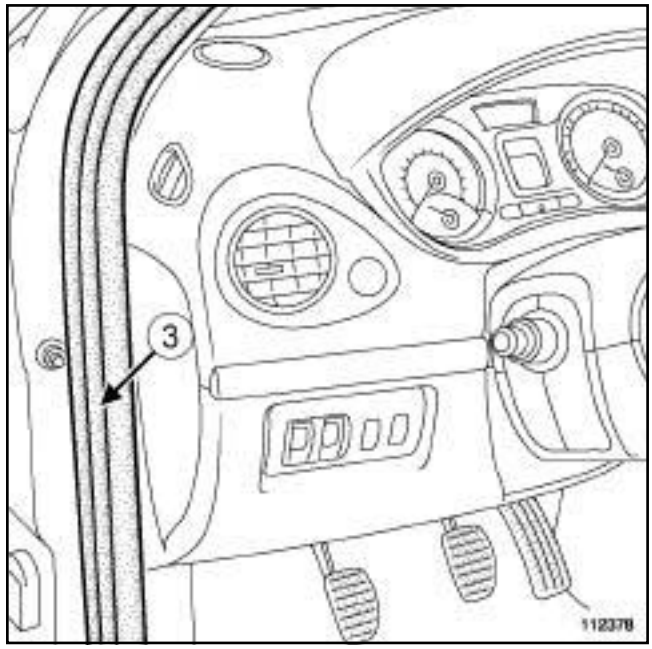
❏ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),



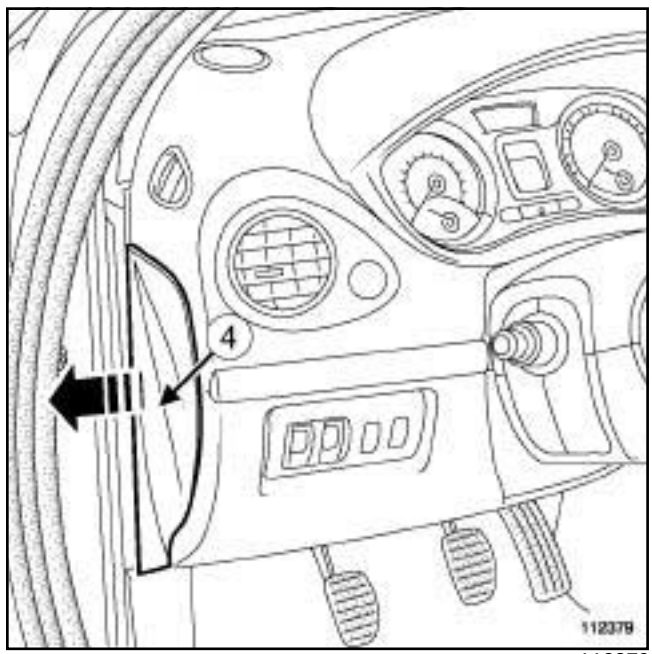
112366

❏ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.



112378

❏ Partially remove seal (**3**) .

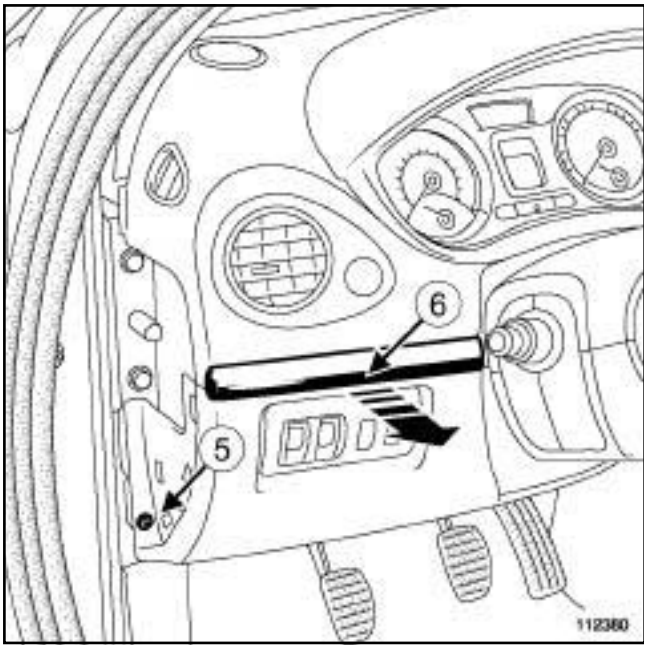


112379

❏ Remove the side panel (**4**) .

❏ Disconnect the inhibitor switch.

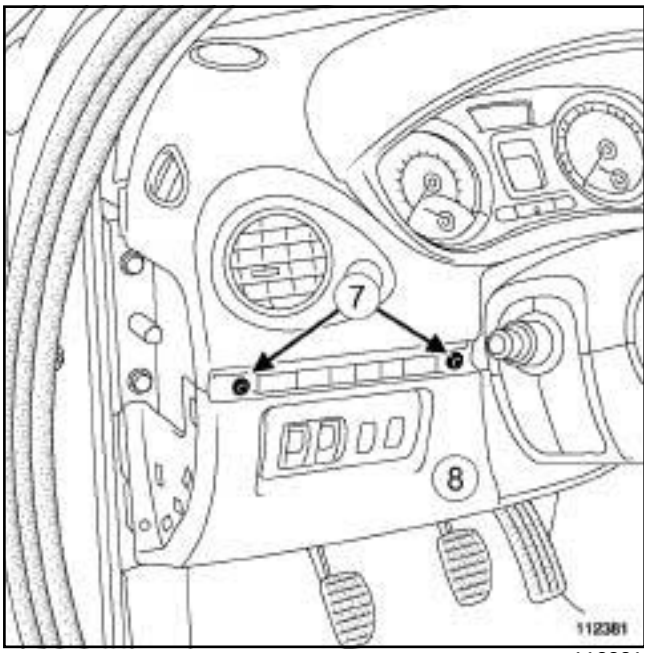
RIGHT-HAND DRIVE



112380

❏ Remove the bolt (**5**) from the base of the dashboard.

❏ Unclip the trim piece (**6**) from the driver's side dashboard lower cover.



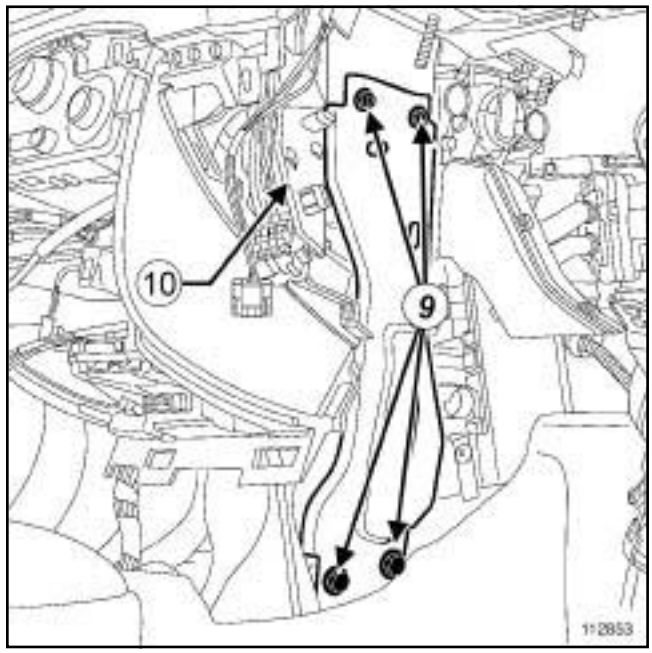
112381

❏ Remove the bolts (**7**) from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**8**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

❏ Remove the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering).



112853

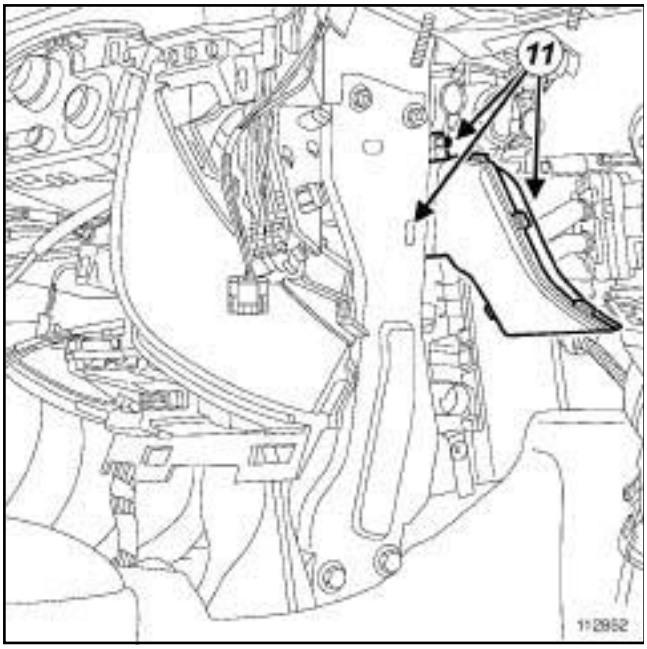
❏ Unclip the fuse box (**10**) from the dashboard cross member stiffener.

❏ Lift the floor carpet.

❏ Remove:

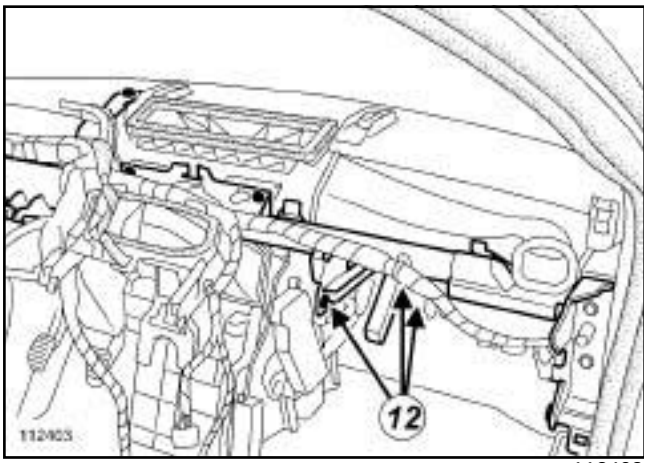
- the bolts (**9**) for the dashboard cross member stiffener,
- the dashboard cross member stiffener.

RIGHT-HAND DRIVE



❏ Remove:

- the bolts (**11**) from the driver's side front footwell air distribution duct,
- the driver's side front footwell air distribution duct.

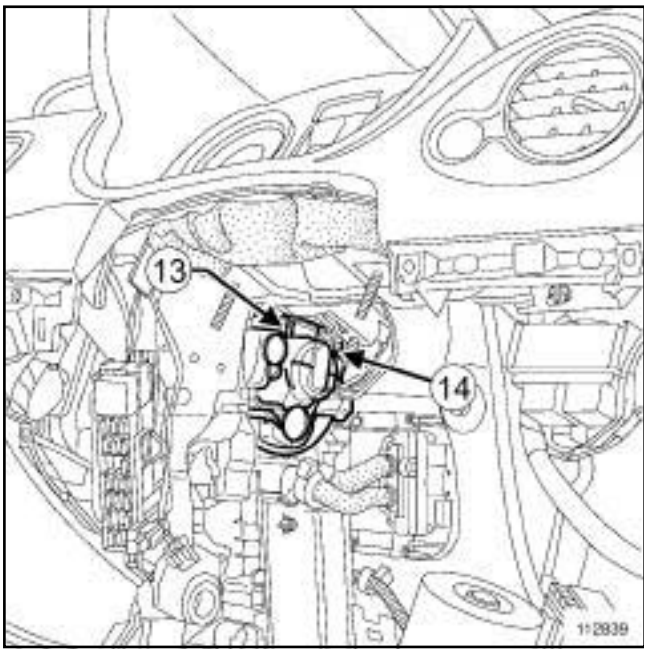


❏ Remove:

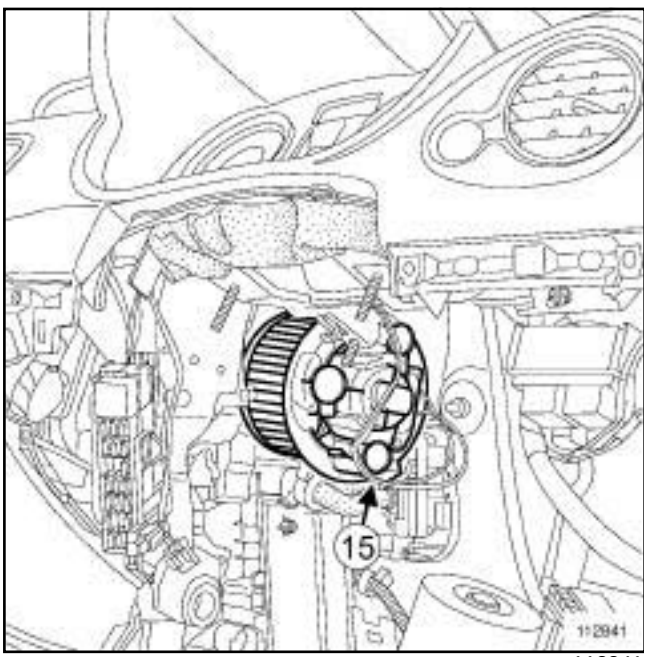
- the bolts (**12**) for the dashboard cross member connection piece,
- the dashboard cross member connection piece.

RIGHT-HAND DRIVE

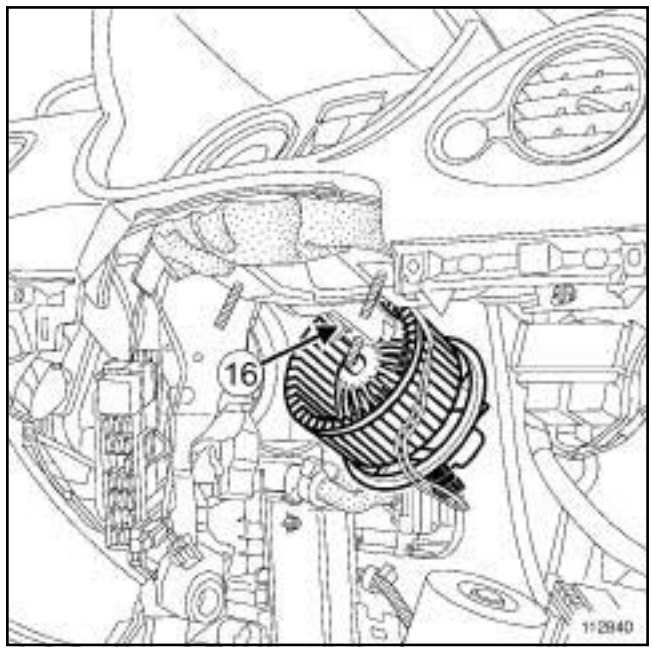
II - OPERATION FOR REMOVAL OF PART CONCERNED



112839



112841



112840

❑ Disconnect the motor-driven fan assembly connector (**13**) .

❑ Press on the tab (**14**) .

❑ Gently lift away the blower assembly.

❑ Turn the blower assembly until the tab is facing downwards (**15**) .

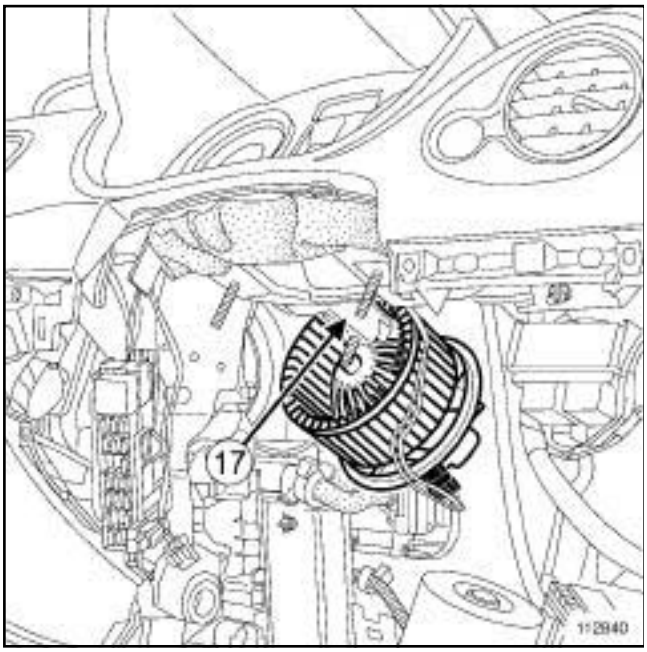
❑ Pivot the blower assembly around the cross member (**16**) .

❑ Remove the blower assembly.

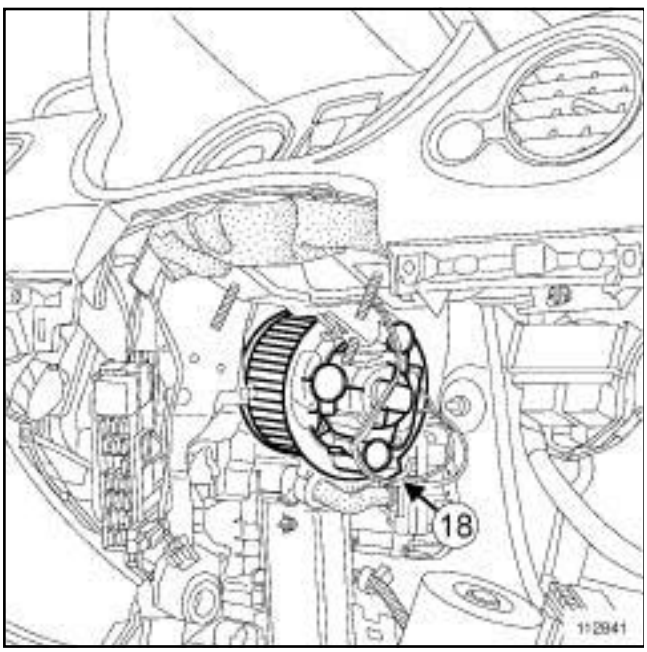
RIGHT-HAND DRIVE

REFITTING

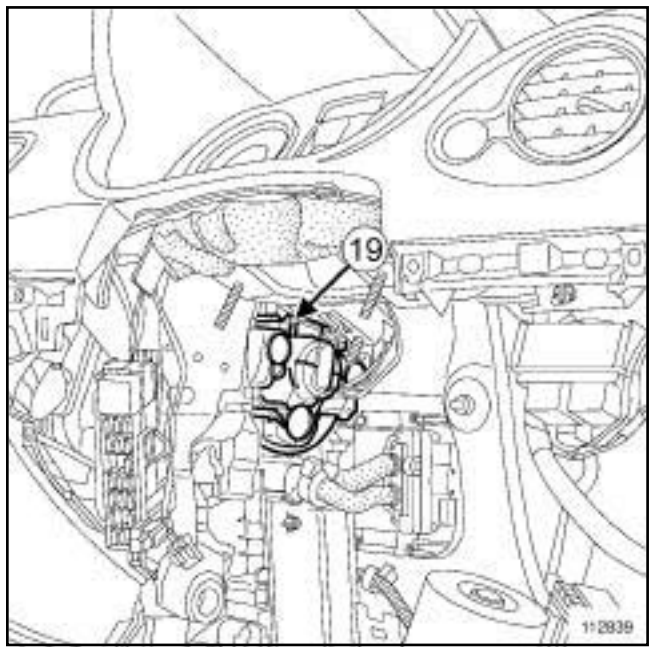
I - REFITTING OPERATION FOR PART CONCERNED



112840



112841



112839

❑ Pivot the blower assembly around the cross member (**17**) .

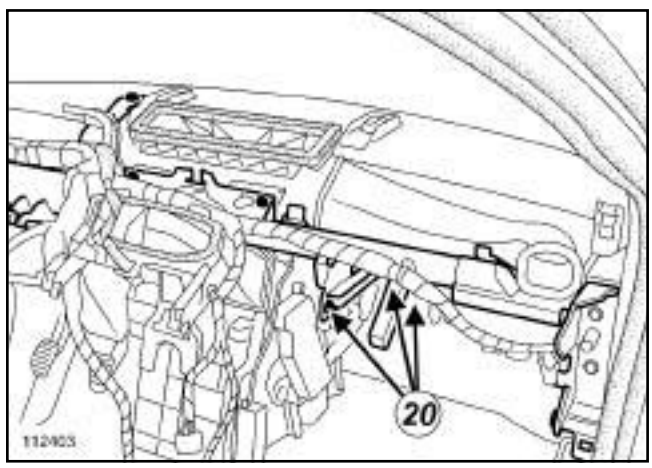
❑ Turn the blower assembly until the tab is facing downwards (**18**) .

❑ Refit the blower.

> Note:
>
> When the blower assembly is replaced, it clicks when it is locked in position.

❑ Connect the blower assembly connector (**19**) .

II - FINAL OPERATION.



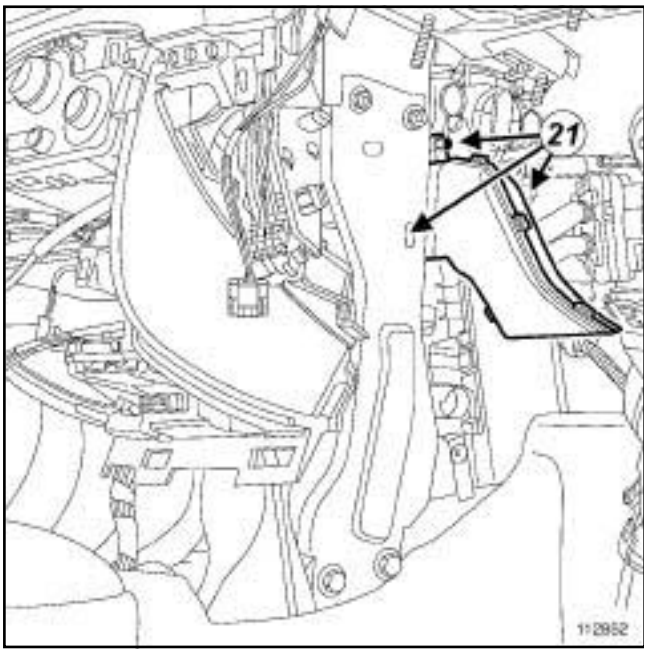
112403

❑ Refit:

- the dashboard cross member connection piece,

RIGHT-HAND DRIVE

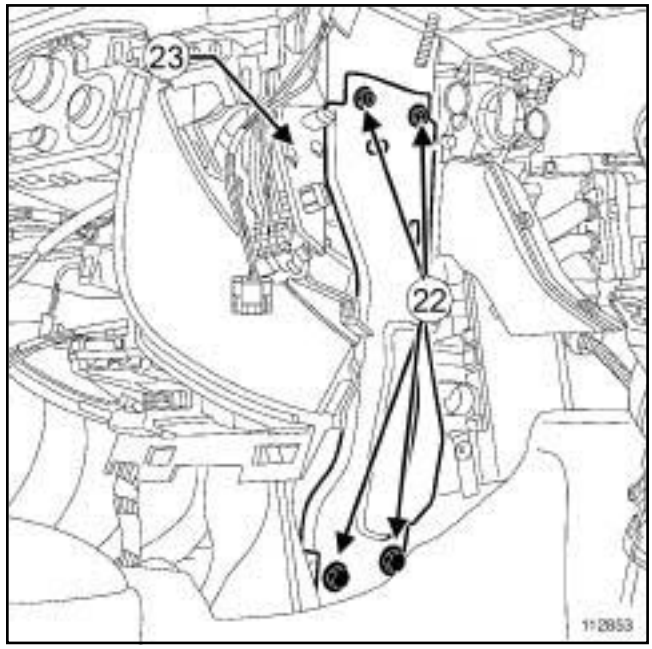
- the bolts (**20**) for the dashboard cross member connection piece.



112852

❑ Refit:

- the driver's side front footwell air distribution duct.
- the bolts (**21**) from the driver's side front footwell air distribution duct



112853

❑ Refit:

- the dashboard cross member stiffener,
- the bolts (**22**) for the dashboard cross member stiffener plate,

❑ Clip the fuse box (**23**) onto the dashboard cross member stiffener.

❑ Refit the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering).

❑ Refit the floor carpet.

Note:

Check that the floor carpet reaches under the accelerator pedal end-stop.

❑ Connect the connectors to the driver's side dashboard lower cover (depending on the equipment level).

❑ Position the driver's side dashboard lower cover.

❑ Refit:

- the bolts from the driver's side dashboard lower cover,
- the bolts to the base of the dashboard.

❑ Clip on the driver's side dashboard lower cover trim piece.

❑ Connect the inhibitor switch.

❑ Refit:

- the side panel,

RIGHT-HAND DRIVE

- the seal.

❏ Clip on the dashboard lower trim.

❏ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

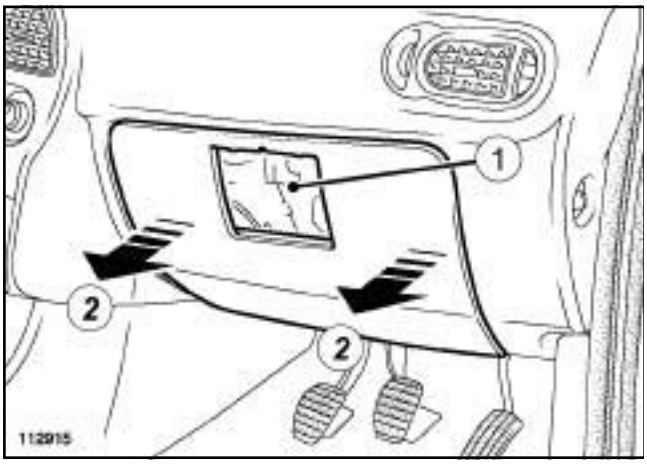
LEFT-HAND DRIVE, and SCHOOL VEHICLE

Tightening torques ▽	
pedal assembly nuts	**21 Nm**
brake and clutch pedal shaft	**35 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

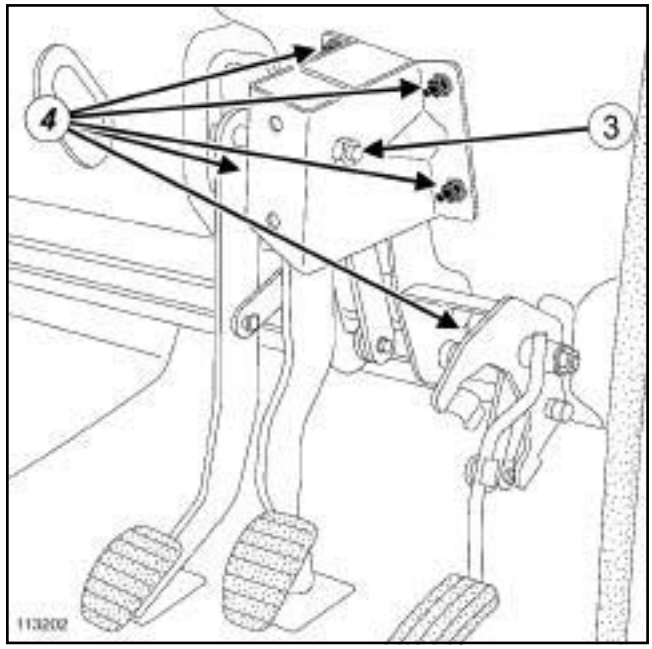
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



112915

❏ Remove:

- the driving school electric control unit (see **Driving school repeater electrical control unit: Removal - Refitting**) (MR 392, 84A, Control - Signals),
- the interior cover (**1**) behind the Driving school electric control unit,
- the glovebox (**2**) (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front right-hand A-pillar air distribution duct (see **61A**, **Heating**, **Front footwell air distribution duct: Removal - Refitting**, page **61A-106**) .

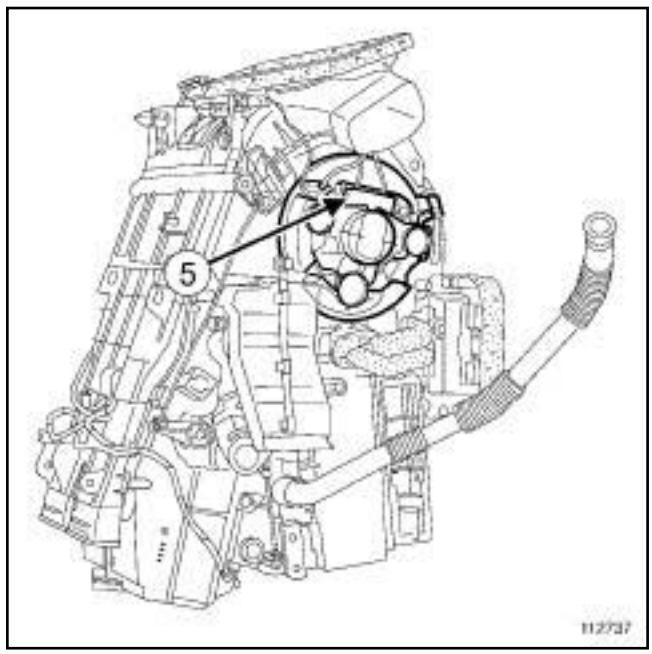


113202

❏ From the instructor's side, remove:

- the brake and clutch pedal shaft (**3**) ,
- the nuts (**4**) from the pedal assembly.

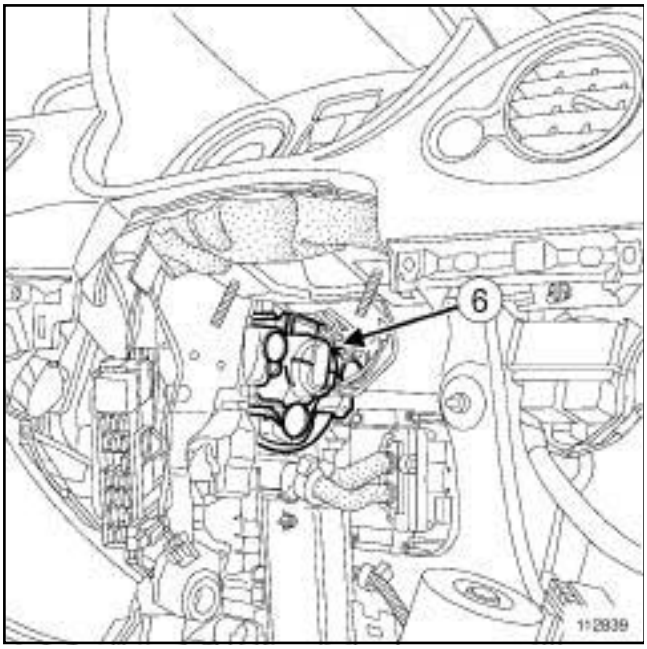
II - OPERATION FOR REMOVAL OF PART CONCERNED



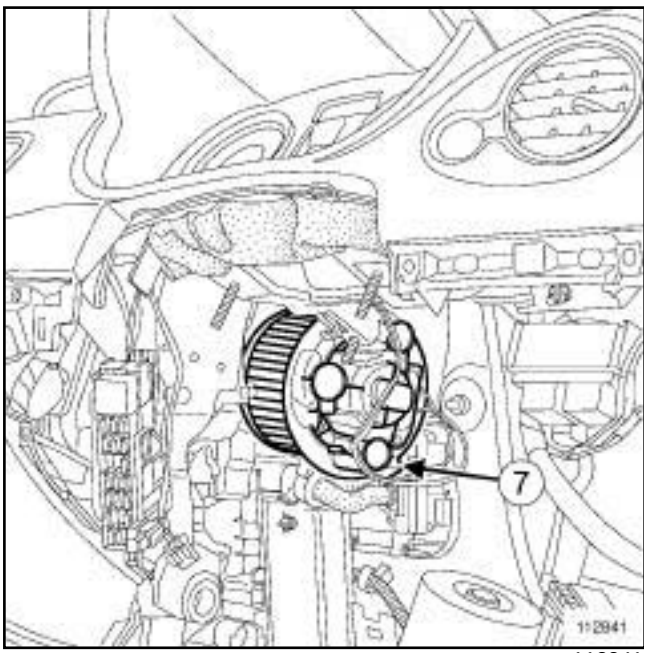
112737

❏ Disconnect the motor-driven fan assembly connector (**5**) .

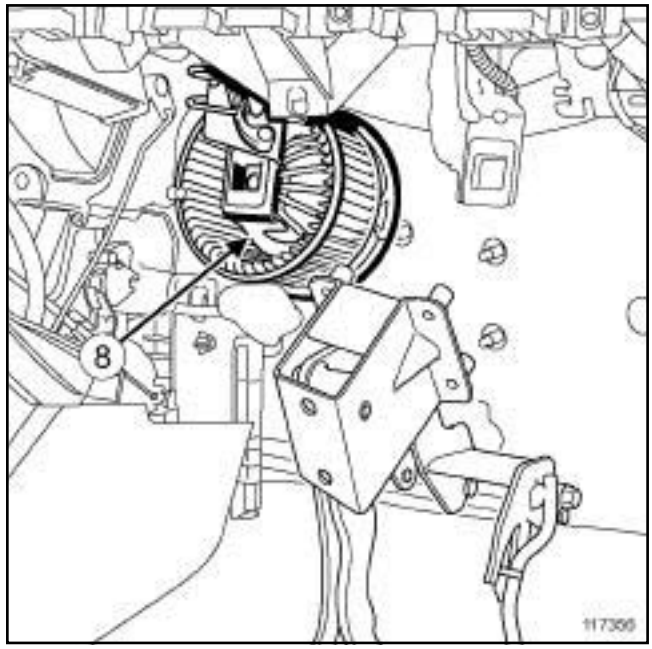
LEFT-HAND DRIVE, and SCHOOL VEHICLE



112839



112841



117356

❑ Press on the tab at (**6**) .

❑ Gently lift away the blower assembly.

❑ Turn the blower assembly until the tab is facing downwards (**7**) .

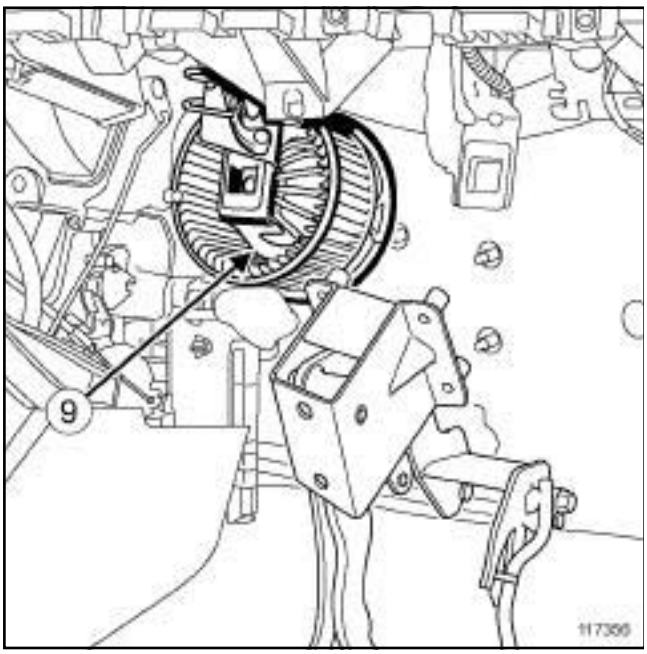
❑ Pivot the blower assembly around the cross member at (**8**) .

❑ Remove the blower assembly.

LEFT-HAND DRIVE, and SCHOOL VEHICLE

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



117356

❑ Refit the blower.

❑ Pivot the blower assembly around the cross member at (**9**) .

❑ Position the blower assembly in its housing with the tab downwards.

> Note:
>
> When the blower assembly is replaced, it clicks when it is locked in position.

❑ Turn the blower assembly until the tab ***(6)*** is facing upwards.

❑ Connect the blower assembly connector ***(5)*** .

II - FINAL OPERATION.

❑ To the instructor's side, refit:

- the pedal assembly nuts,
- the brake and clutch pedal shaft.

❑ Torque tighten:

- the **pedal assembly nuts (21 Nm)**,
- the **brake and clutch pedal shaft (35 Nm)**.

❑ Refit:

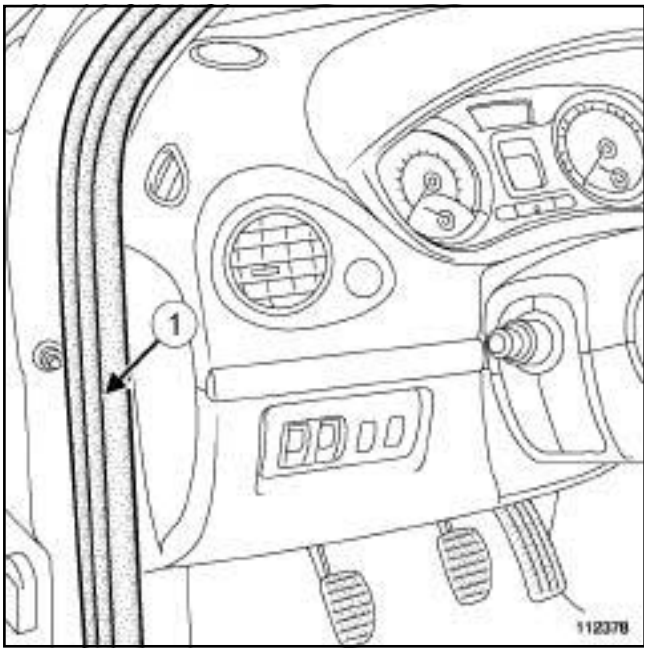
- the front right-hand A-pillar air distribution duct (see **61A**, **Heating**, **Front footwell air distribution duct: Removal - Refitting**, page **61A-106**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the interior cover behind the driving school electric control unit,
- the driving school electric control unit (see **Driving school repeater electrical control unit: Removal - Refitting**) (MR 392, 84A, Control - Signals),

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

LEFT-HAND DRIVE

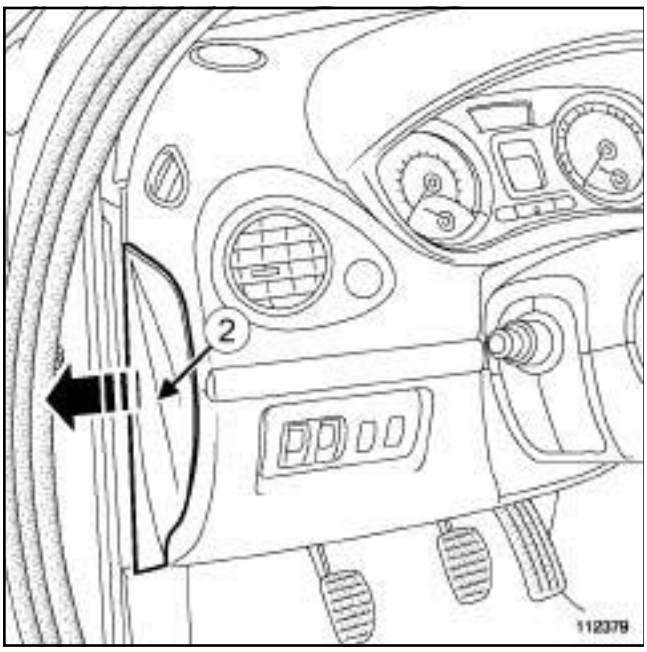
REMOVAL

I - REMOVAL PREPARATION OPERATION



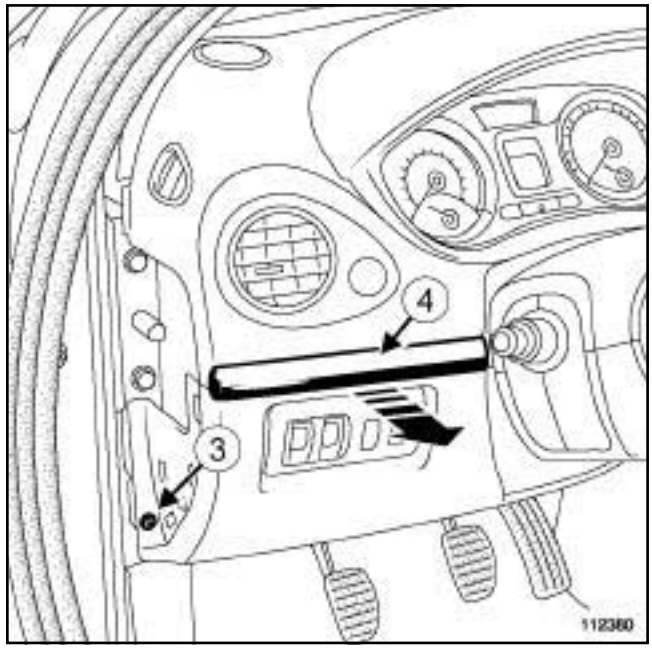
112378

❏ Partially remove seal (**1**) .



112379

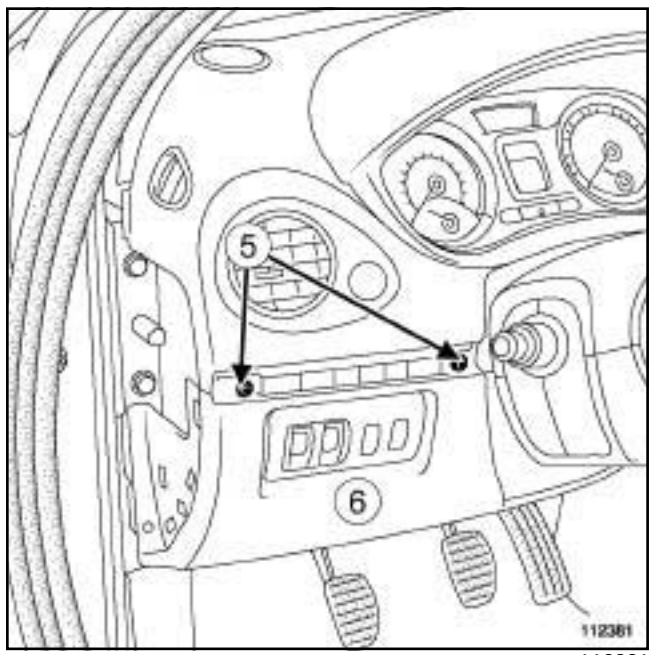
❏ Remove the side panel (**2**) .



112380

❏ Remove the bolt (**3**) from the base of the dashboard.

❏ Unclip the trim piece (**4**) from the driver's side dashboard lower cover.



112381

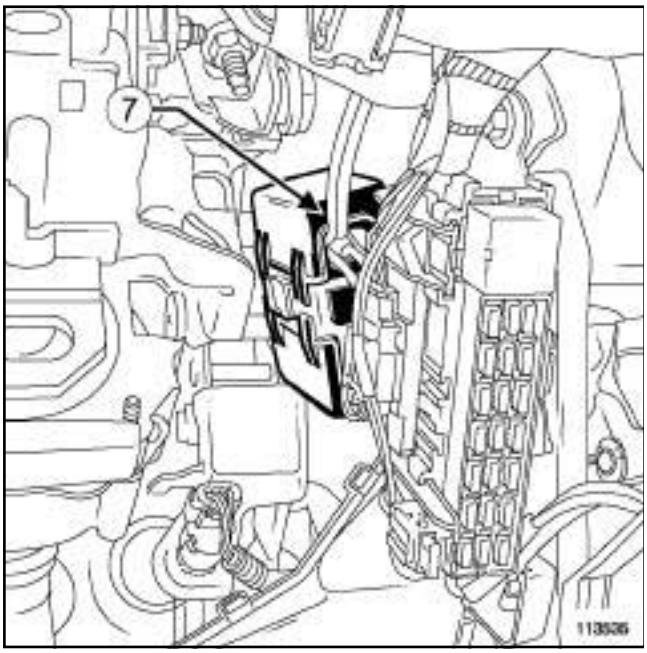
❏ Remove the bolts (**5**) from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**6**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED



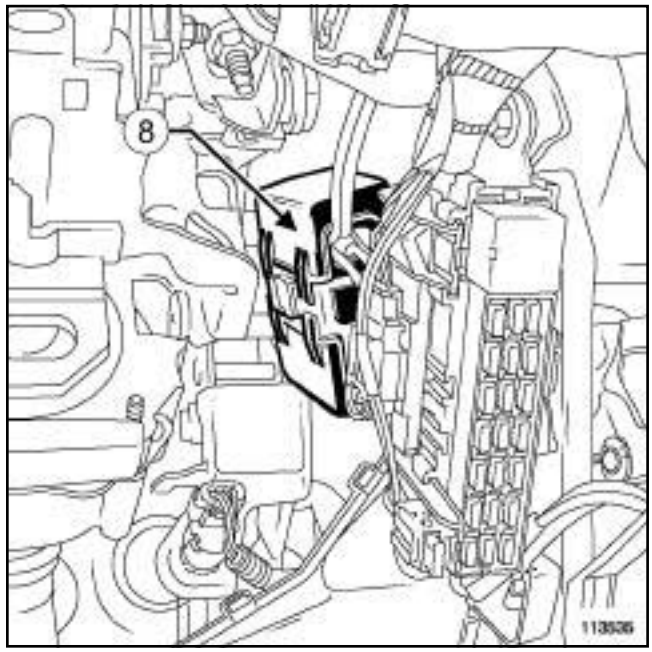
113535

❑ Remove:

- the heating resistor relay box cover (**7**) ,
- the heater resistor relays.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113535

❑ Refit:

- heater resistor relays,
- the heating resistor relay box cover (**8**) .

II - FINAL OPERATION

❑ Connect the connectors to the driver's side dashboard lower cover.

❑ Position the driver's side dashboard lower cover.

❑ Refit:

- the bolts from the driver's side dashboard lower cover,
- the bolts to the base of the dashboard.

❑ Clip the trim piece onto the driver's side dashboard lower cover.

❑ Refit:

- the side panel,
- the seal.

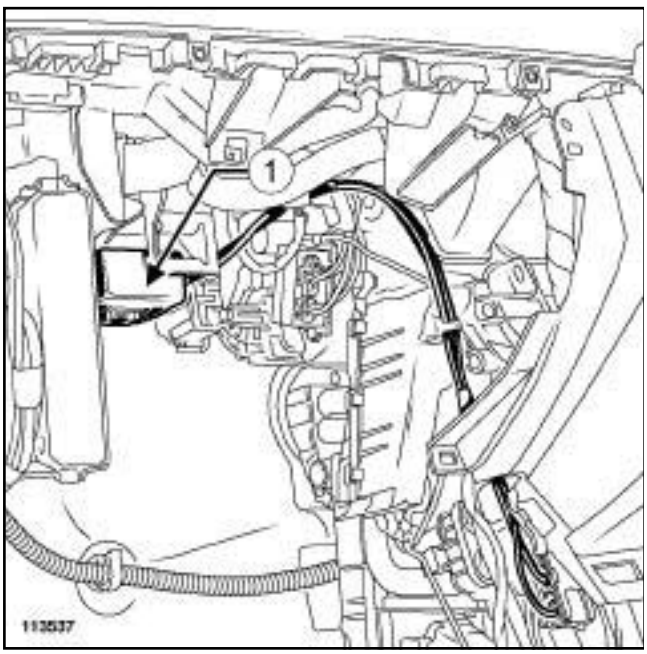
RIGHT-HAND DRIVE

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113537

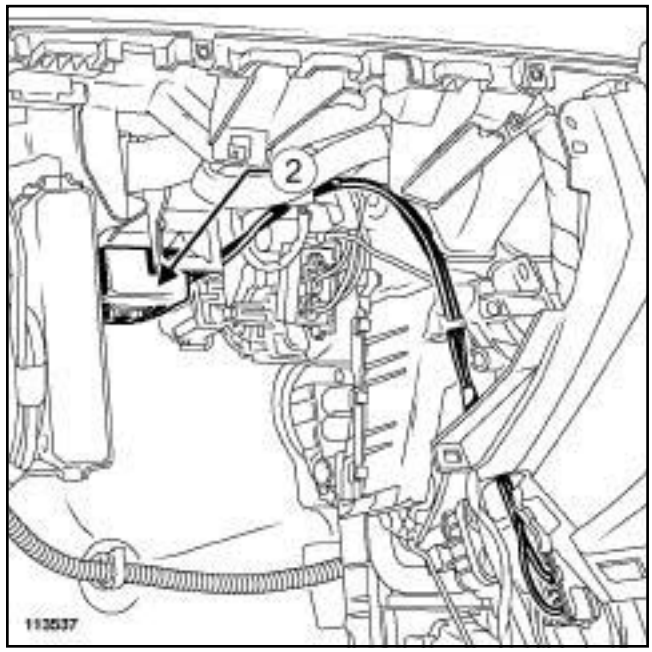
❑ Unclip the heater resistor relay box from the dashboard cross member

❑ Remove:

- the heating resistor relay box cover (**1**) ,
- the heater resistor relays.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113537

❑ Refit:

- heater resistor relays,
- the heating resistor relay box cover (**2**) .

❑ Clip the heater resistor relay box on the dashboard cross member

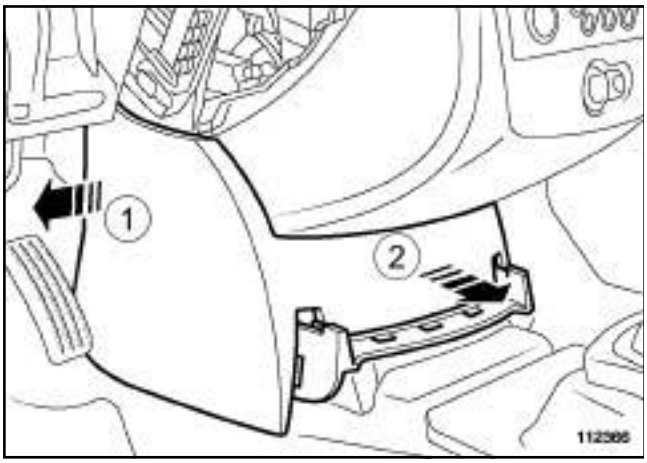
II - FINAL OPERATION.

❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

REMOVAL

I - REMOVAL PREPARATION OPERATION

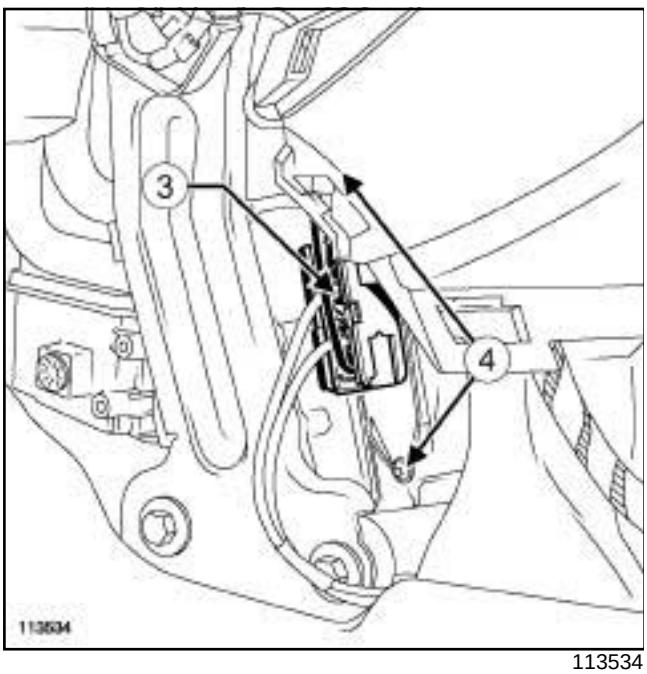
❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113534

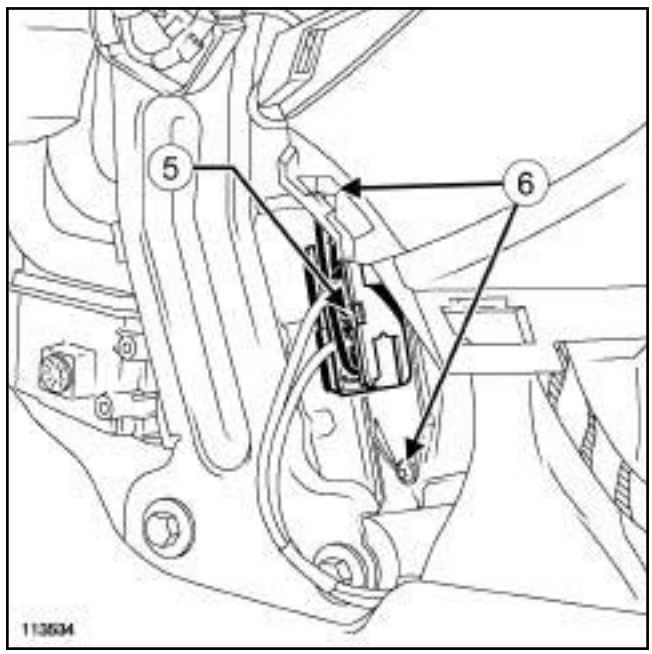
❏ Disconnect the connector (**3**) from the heating resistors.

❏ Remove:

- the bolts (**4**) from the heater resistors,
- the heater resistors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113534

❏ Refit:

- the heater resistors.
- the bolts (**6**) from the heater resistors.

❏ Connect the connector (**5**) to the heating resistors.

II - FINAL OPERATION.

❏ Clip on the dashboard lower trim.

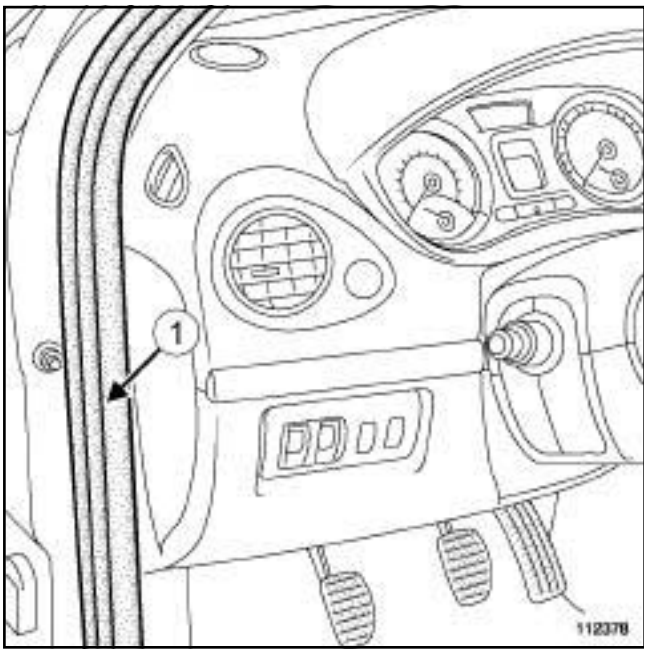
❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

LEFT-HAND DRIVE

REMOVAL

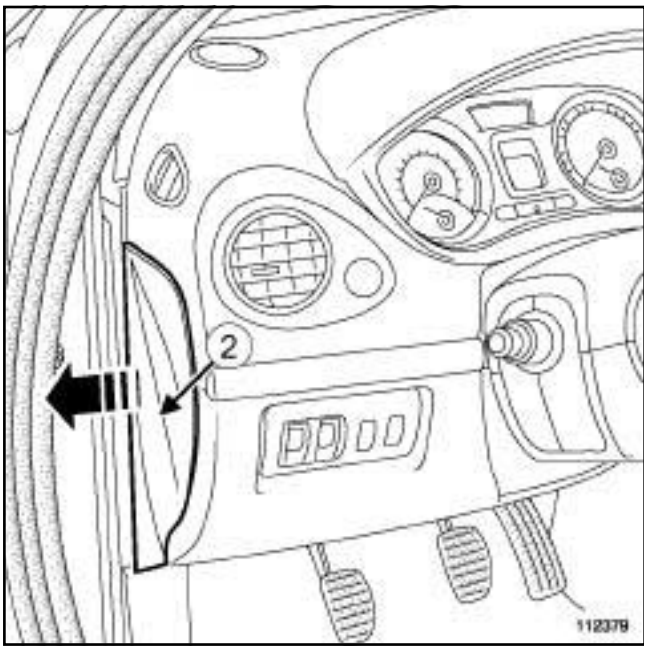
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



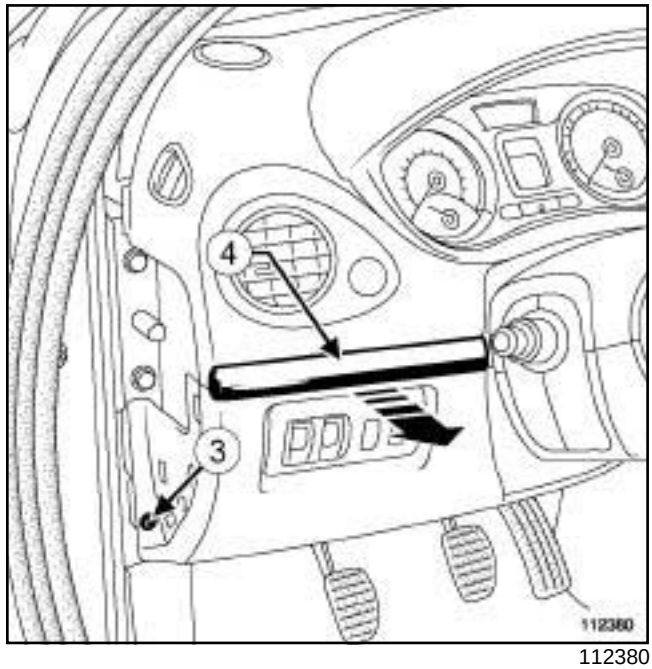
112378

❏ Partially remove the seal (**1**) .



112379

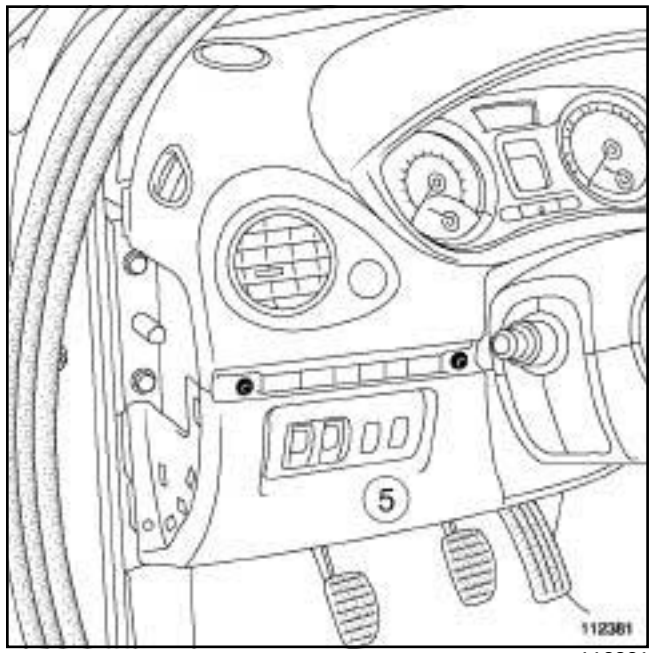
❏ Remove the side panel (**2**) .



112380

❏ Remove the bolt (**3**) from the base of the dashboard.

❏ Unclip the trim piece (**4**) from the driver's side dashboard lower cover



112381

❏ Remove the bolts from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**5**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

LEFT-HAND DRIVE

CLIMATE CONTROL

❑

Note:

For vehicles equipped with climate control, there are two types of fitting for the passenger compartment fan assembly control unit:

- the first type of fitting has two connectors on the passenger compartment fan assembly control unit,
- the second type of fitting has only one connector on the passenger compartment fan assembly control unit.

Second type of fitting

❑ Remove the bolts from the lower half cover.

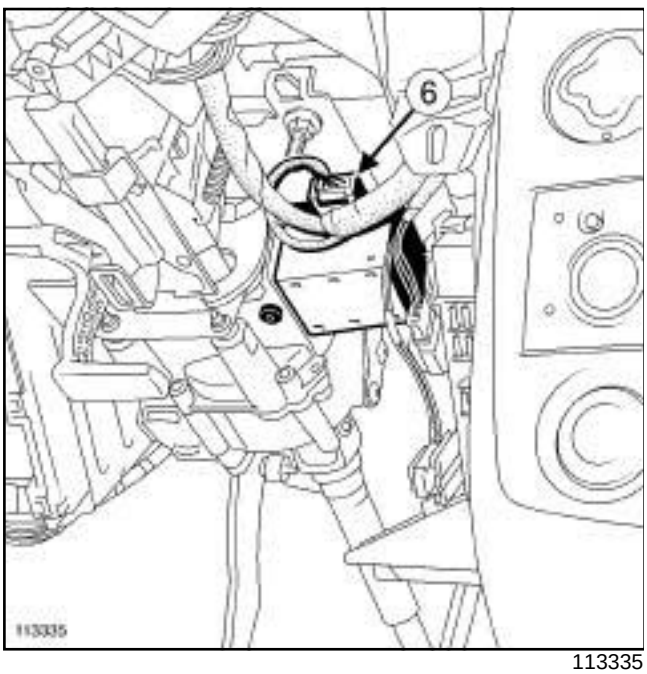
❑ Unclip the half covers.

❑ Pull the lower half cowling out from the steering column adjustment handle.

❑ Disconnect:

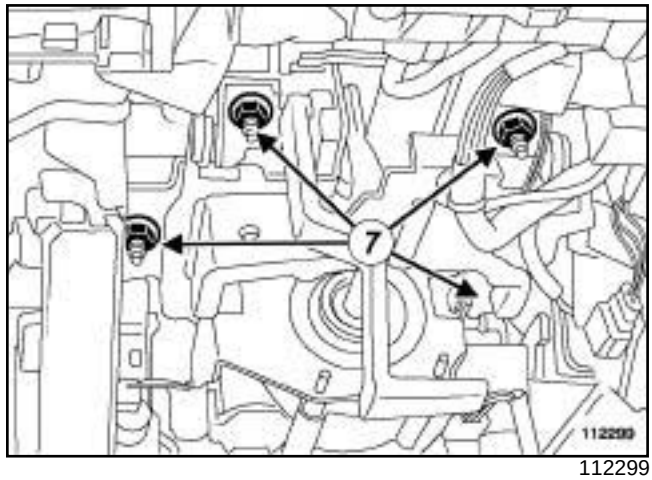
- the connectors of the steering column switch assembly,
- the starter switch connector,

❑ Unclip the connector wiring from the steering column switch assembly.



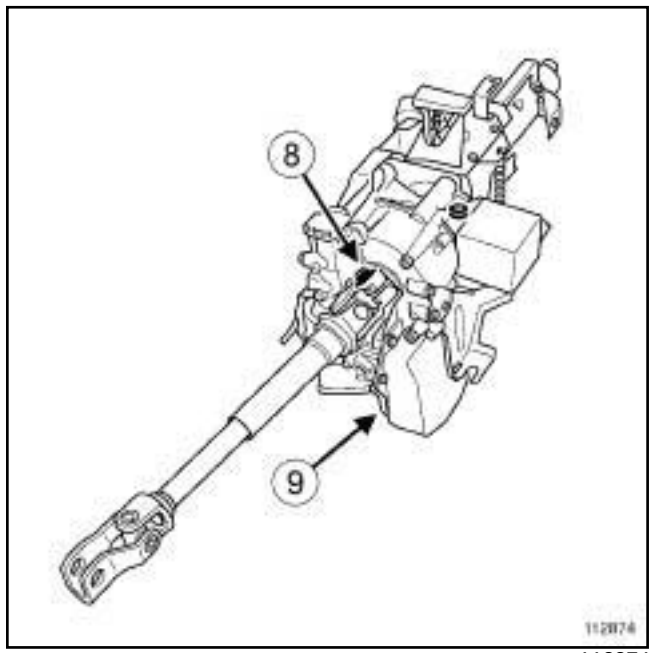
113335

❑ Disconnect the connector (**6**) from the electric steering column lock.



112299

❑ Remove the steering column bolts (**7**) .



112874

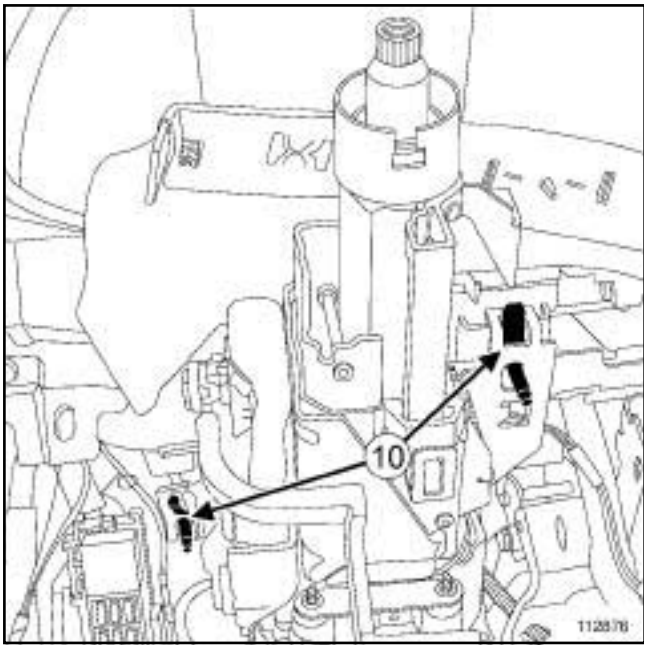
❑

Note:

The column cannot be set down directly on the floor since the wiring of the steering column connectors is not long enough.

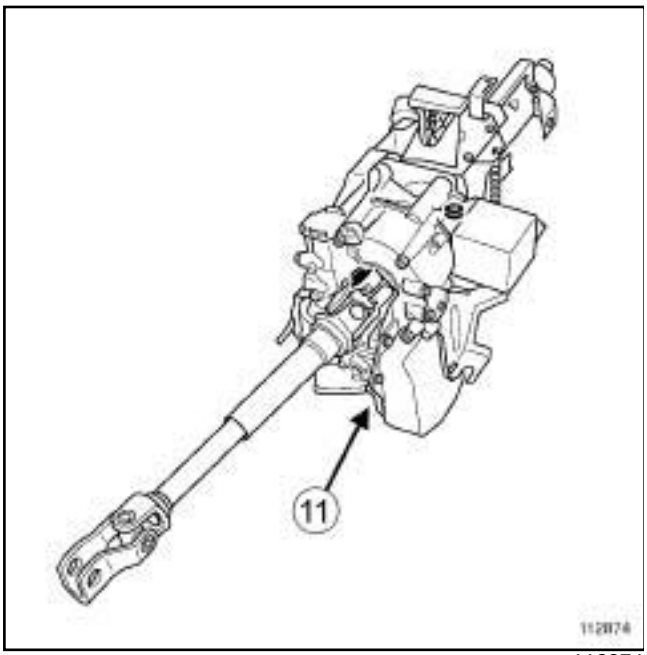
❑ Fit a block of approximately **20 cm** on the floor under the bolt of the intermediate shaft (**8**) in order to disconnect the steering column connections (**9**) .

LEFT-HAND DRIVE



112876

❏ Remove the steering column from the pre-supports (**10**) to set it down on the block.



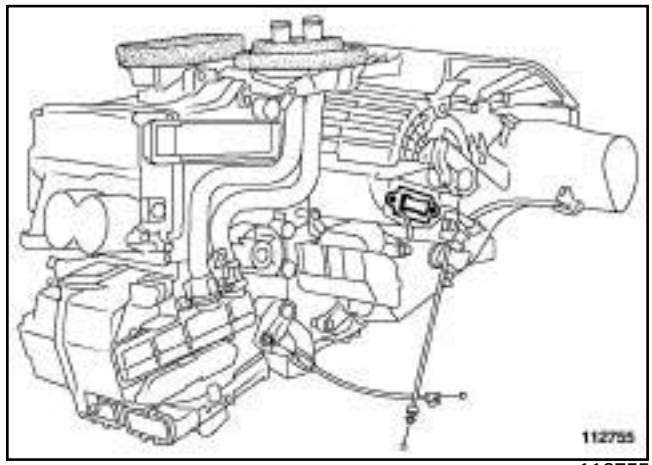
112874

❏ Disconnect the three connectors (**11**) while holding the steering column on the block.

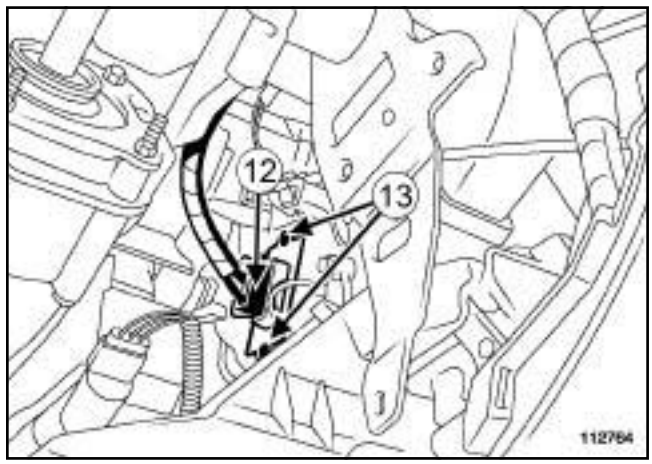
❏ Remove the steering column in the footwell.

II - OPERATION FOR REMOVAL OF PART CONCERNED

AIR CONDITIONING or STANDARD HEATING



112755



112764

❏ Disconnect the connector (**12**) from the fan assembly control unit.

❏ Remove:

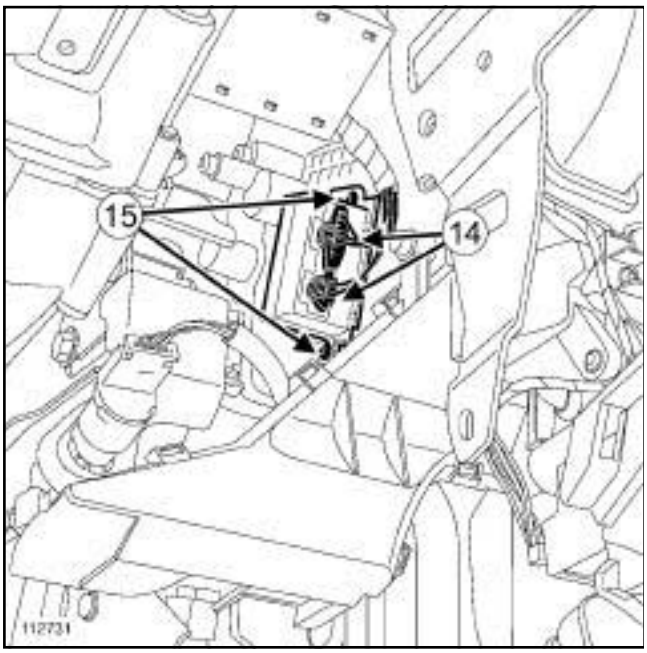
- the fan assembly control unit bolts (**13**) ,
- the fan assembly control unit.

❏ Replace the control unit of the passenger compartment fan assembly (see **Technical Note 6015A, Repairing electrical wiring**).

LEFT-HAND DRIVE

CLIMATE CONTROL

1 - First type of fitting



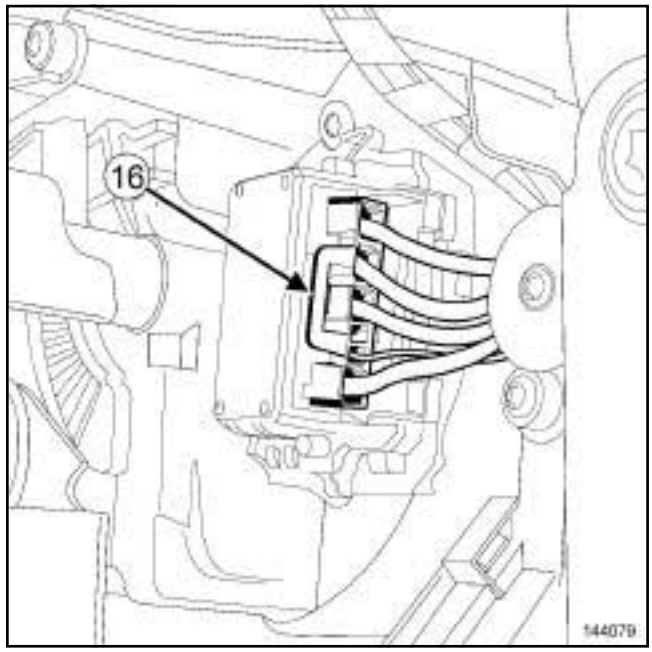
112731

❏ Disconnect the connectors (**14**) from the fan assembly control unit.

❏ Remove:

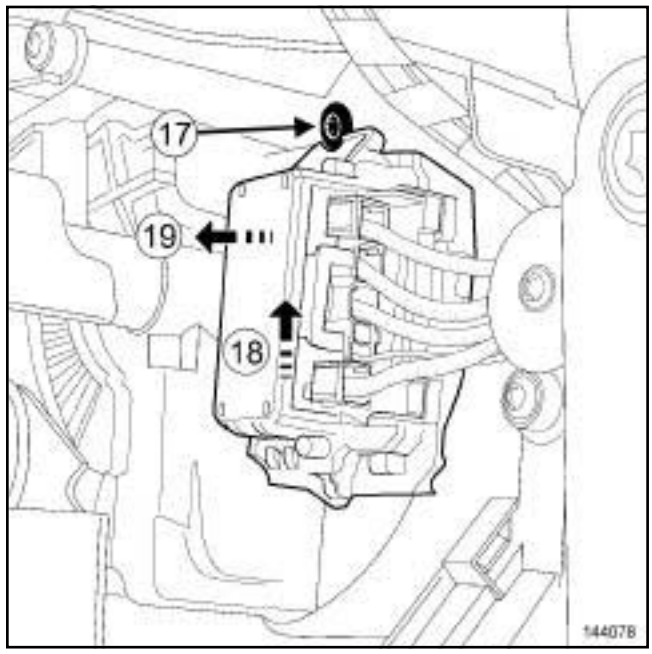
- the fan assembly control unit bolts (**15**) ,
- the fan assembly control unit.

2 - Second type of fitting



144079

❏ Disconnect the connector (**16**) from the fan assembly control unit.



144078

❏ Remove:

- the bolt (**17**) from the fan assembly control unit,
- the fan assembly control unit in the direction of the arrows (**18**) and (**19**) .

LEFT-HAND DRIVE

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

AIR CONDITIONING or STANDARD HEATING

❏ Refit:

- the fan assembly control unit,
- the bolts of the fan assembly control unit.

❏ Connect the fan assembly control unit connector.

CLIMATE CONTROL

1 - First type of fitting

❏ Connect the fan assembly control unit connector.

❏ Refit:

- the fan assembly control unit,
- the fan assembly control unit bolts.

2 - Second type of fitting

❏ Connect the fan assembly control unit connector.

❏ Refit:

- the fan assembly control unit,
- the fan assembly control unit bolt.

II - FINAL OPERATION

CLIMATE CONTROL

Second type of fitting

❏ Fit the steering column on a block of approximately **20 cm** on the floor under the intermediate shaft bolt.

❏ Connect the three steering column connectors, holding the steering column on the block.

❏ Position the steering column in its pre-supports.

❏ Refit the steering column bolts.

❏ Connect the electric steering column lock connector.

❏ Connect:

- the connectors of the steering column switch assembly,
- the starter switch connector,

❏ Clip on the connector wiring for the steering column switch assembly.

❏ Fit the lower half cover.

❏ Clip on the half covers.

❏ Refit the bolts to the lower half cover.

❏ Connect the connectors to the driver's side dashboard lower cover.

❏ Position the driver's side dashboard lower cover.

❏ Refit:

- the bolts from the driver's side dashboard lower cover,
- the bolts to the base of the dashboard.

❏ Clip on the driver's side dashboard lower cover trim piece.

❏ Refit:

- the side panel,
- the seal.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

RIGHT-HAND DRIVE

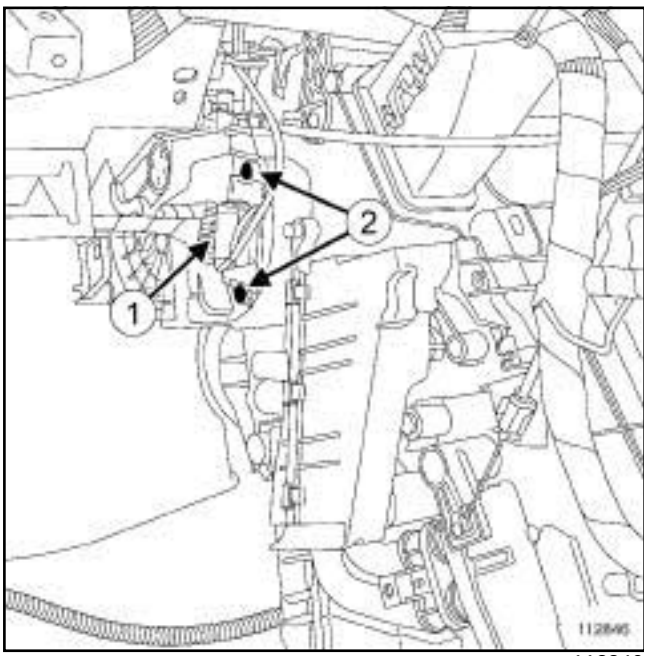
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the glovebox (see **Glovebox: Removal - Refitting**) (57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

AIR CONDITIONING or STANDARD HEATING



112846

❑ Disconnect the connector (**1**) from the fan assembly control unit.

❑ Remove:

- the fan assembly control unit bolts (**2**) ,
- the fan assembly control unit.

❑ Replace the control unit of the passenger compartment fan assembly (see **Technical Note 6015A, Repairing electrical wiring**).

Note:

When repairing the wiring, ensure the wiring is cut **10 cm** from the fan assembly control unit.

CLIMATE CONTROL

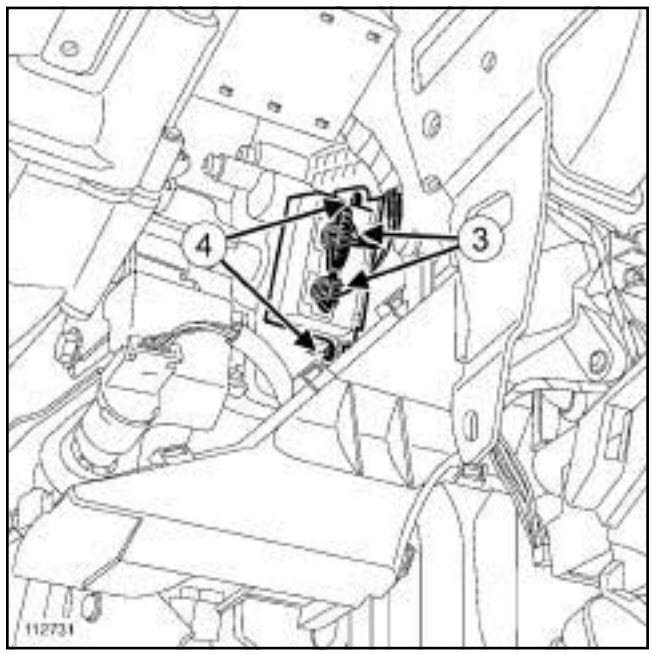
❑

Note:

For vehicles equipped with climate control, there are two types of fitting for the passenger compartment fan assembly control unit:

- the first type of fitting has two connectors on the passenger compartment fan assembly control unit,
- the second type of fitting has only one connector on the passenger compartment fan assembly control unit.

1 - First type of fitting



112731

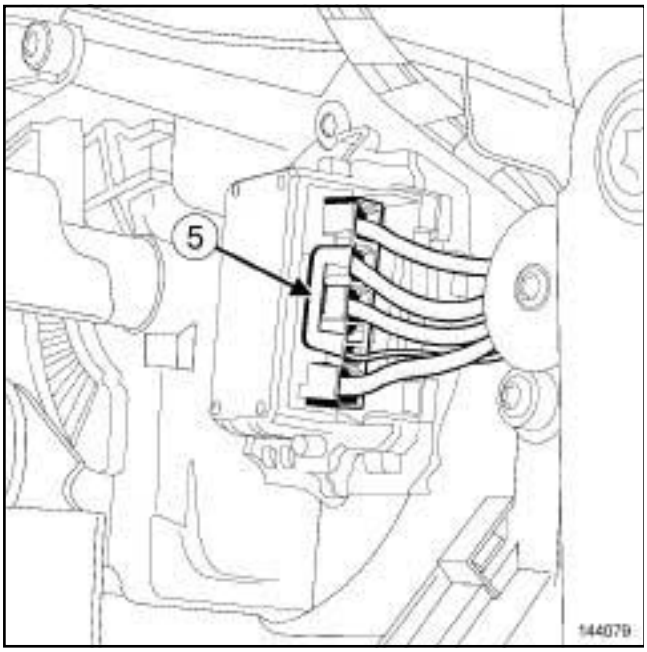
❑ Disconnect the connectors (**3**) from the fan assembly control unit.

❑ Remove:

- the fan assembly control unit bolts (**4**) ,
- the fan assembly control unit.

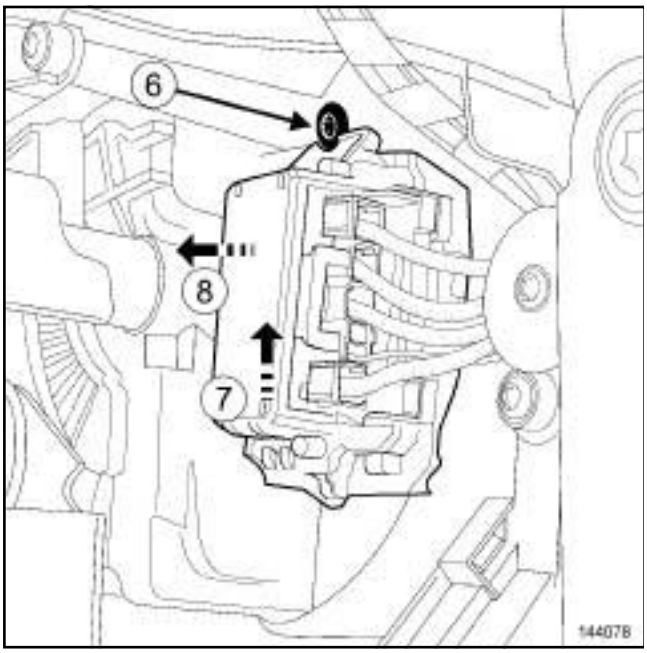
RIGHT-HAND DRIVE

2 - Second type of fitting



144079

❑ Disconnect the connector (**5**) from the fan assembly control unit.



144078

❑ Remove:

- the bolt (**6**) from the fan assembly control unit,
- the fan assembly control unit in the direction of the arrows (**7**) and (**8**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

AIR CONDITIONING or STANDARD HEATING

❑ Refit:

- the fan assembly control unit,
- the fan assembly control unit bolts.

❑ Connect the fan assembly control unit connector.

CLIMATE CONTROL

1 - First type of fitting

❑ Connect the fan assembly control unit connectors.

❑ Refit:

- the fan assembly control unit,
- the fan assembly control unit bolts.

2 - Second type of fitting

❑ Connect the fan assembly control unit connector.

❑ Refit:

- the fan assembly control unit,
- the fan assembly control unit bolt.

II - FINAL OPERATION

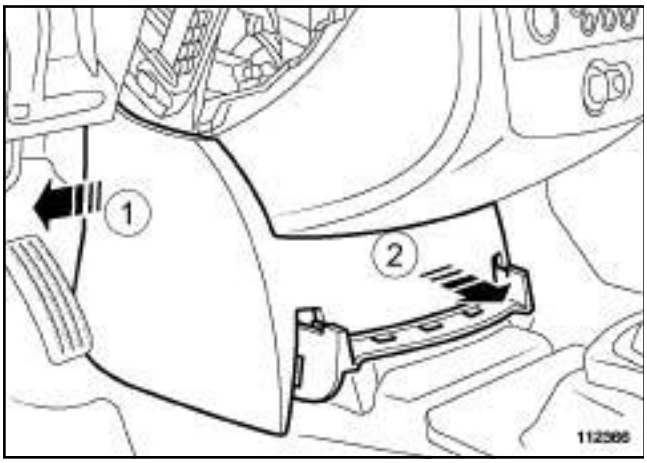
❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (57A, Interior equipment).

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

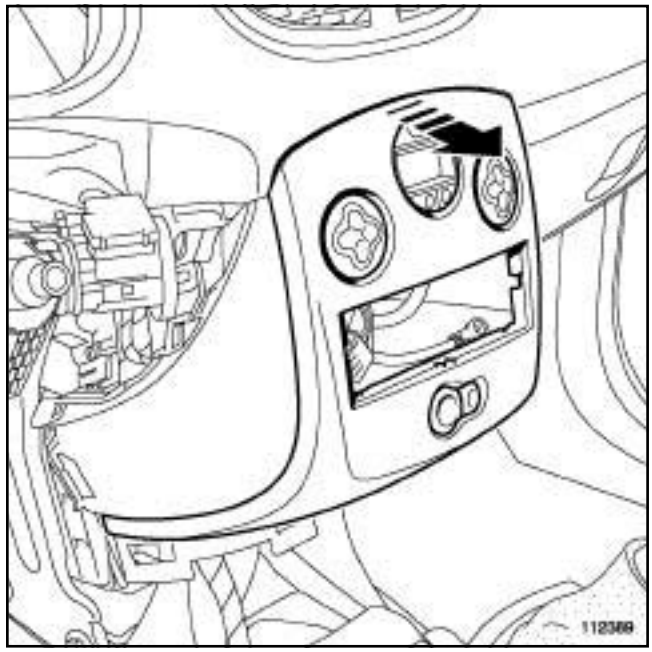
❑ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

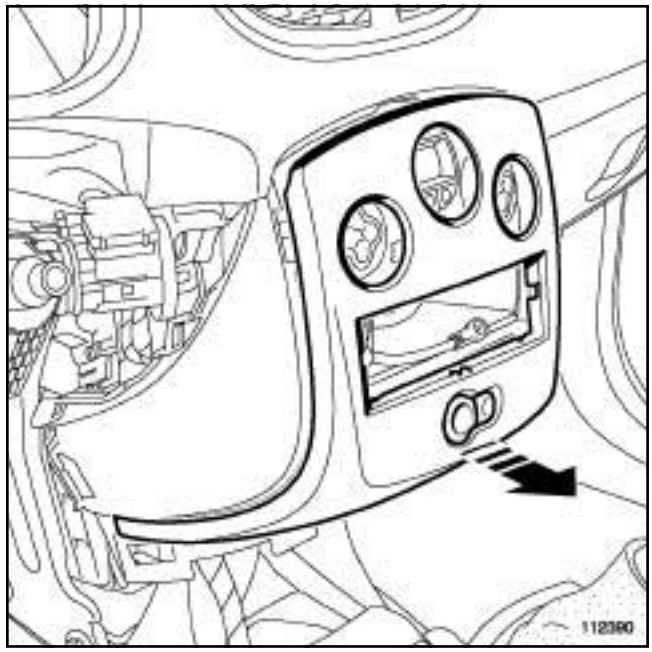
❑ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

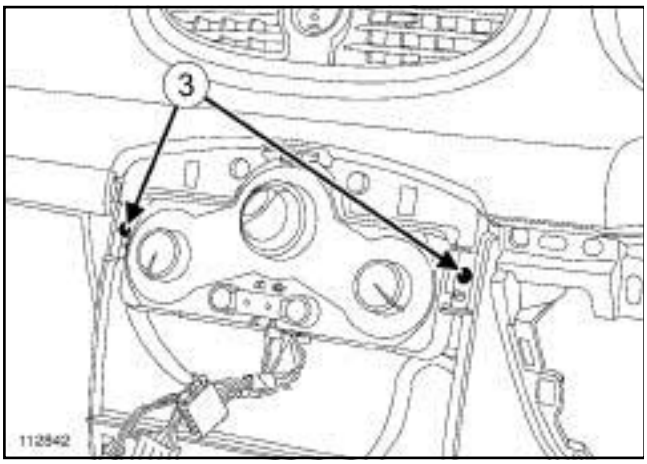


112390

❑ Unclip the centre trim piece beginning with the upper section.

❑ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112842

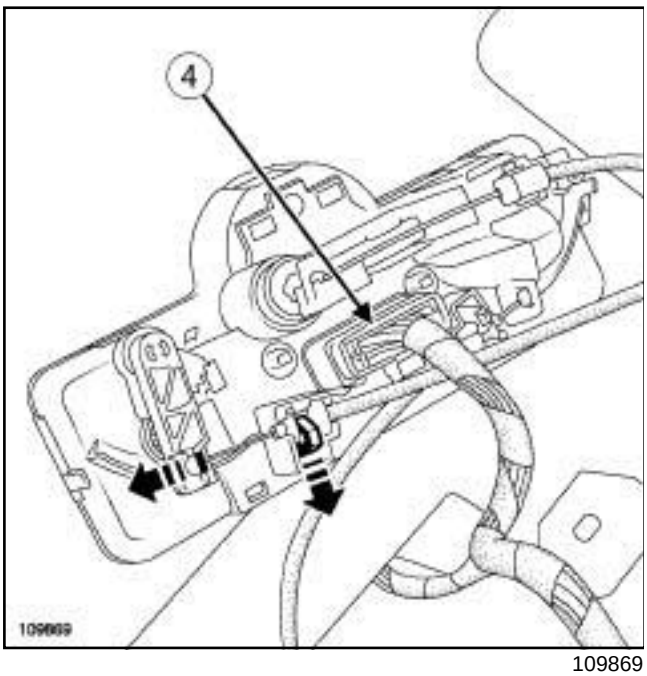
❏ Remove the mounting bolts (**3**) from the air conditioning control panel.

❏ Move the air conditioning control panel to one side.

CLIMATE CONTROL

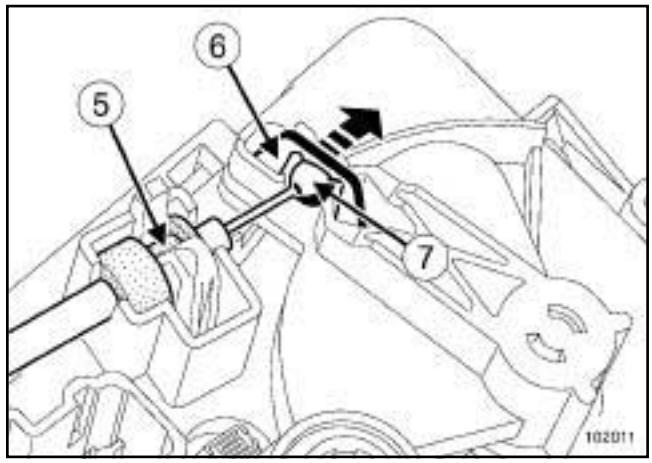
❏ Disconnect the air conditioning control panel connectors.

AIR CONDITIONING or STANDARD HEATING



109869

❏ Disconnect the connector (**4**) from the air conditioning control panel.



102011

❏ Remove the control panel control cables.

❏ Disconnect at (**5**) .

❏ Pull back lug (**6**) .

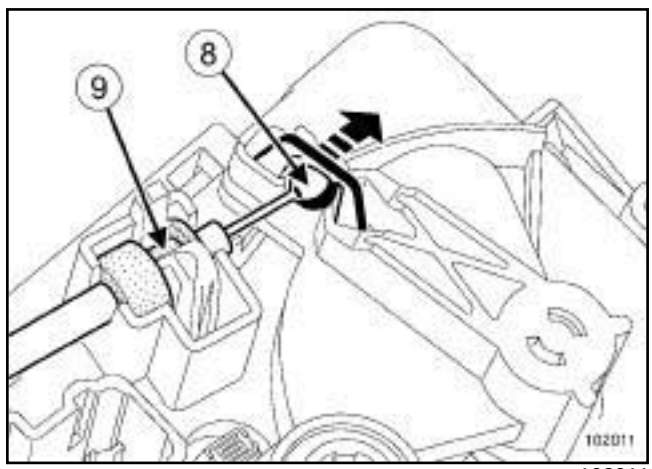
❏ Extract the ball joint (**7**) .

❏ Remove the air conditioning control panel.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

AIR CONDITIONING or STANDARD HEATING

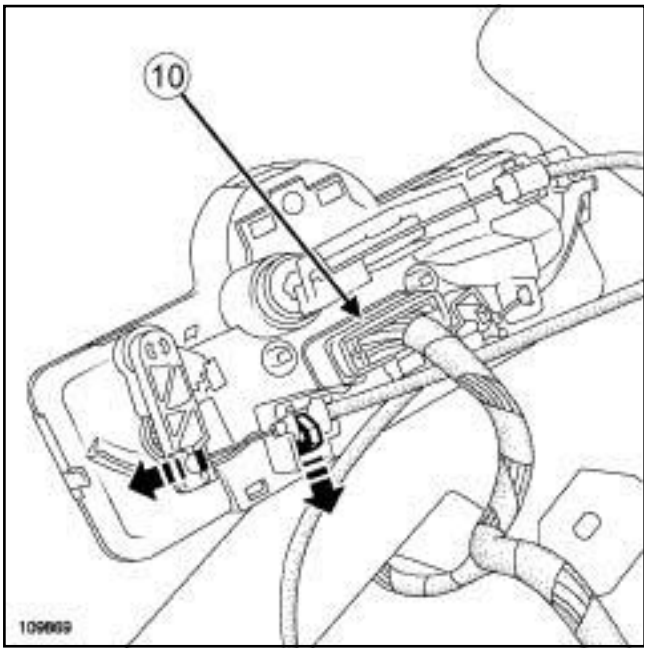


102011

❏ Refit the control panel control cables.

❏ Insert the ball joint at (**8**) .

❏ Clip the sleeve stop at (**9**) .



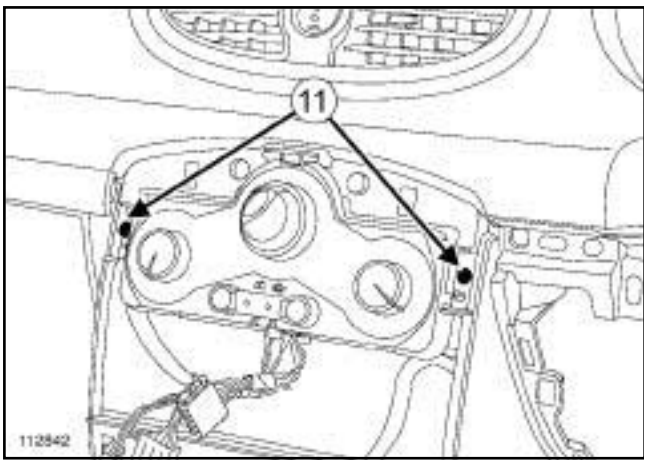
109869

❑ Connect the air conditioning control panel connector (**10**) .

CLIMATE CONTROL

❑ Connect the air conditioning control panel connectors.

❑ Refit the air conditioning control panel.



112842

❑ Refit the air conditioning control panel bolts (**11**) .

II - FINAL OPERATION.

❑ Connect the connectors.

❑ Clip on the centre trim starting at the top.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On-board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the glovebox in position.

❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

Front side air distribution duct: Removal - Refitting

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - signals).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

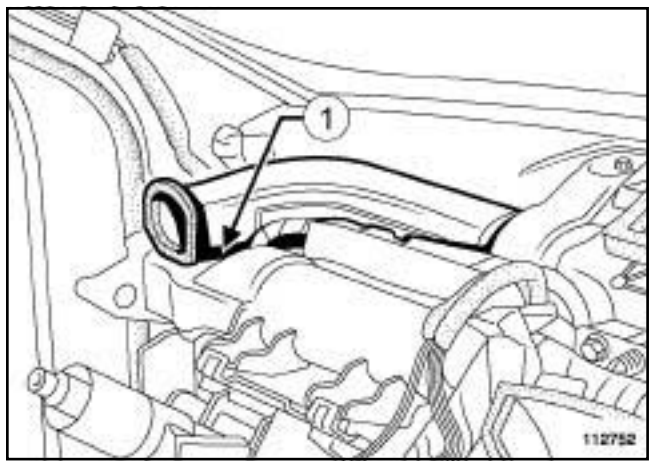
❏ Unclip the glovebox using the **(Car. 1363)**.

❏ Remove:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Front left-hand side air distribution duct:

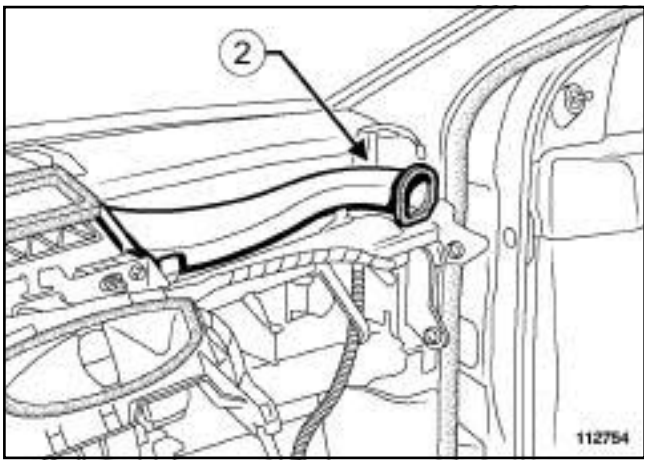


112752

❏ Remove:

- the clip (**1**) ,
- Remove the front left-hand side air distribution duct.

2 - Front right-hand side air distribution duct:



112754

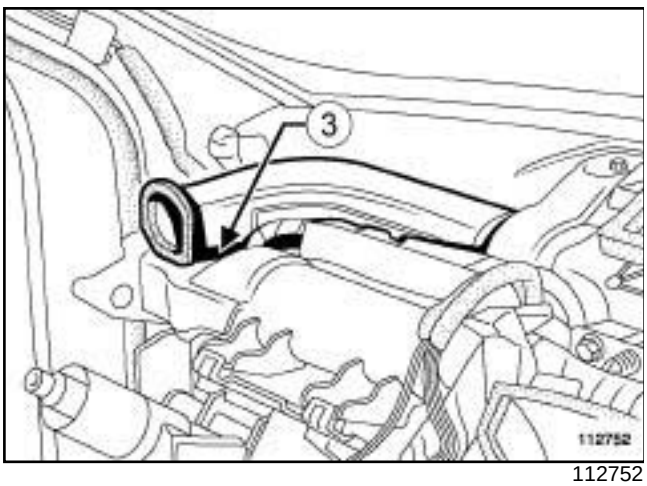
❏ Remove:

- the clip (**2**) ,
- the front right-hand side air distribution duct.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Front left-hand side air distribution duct:

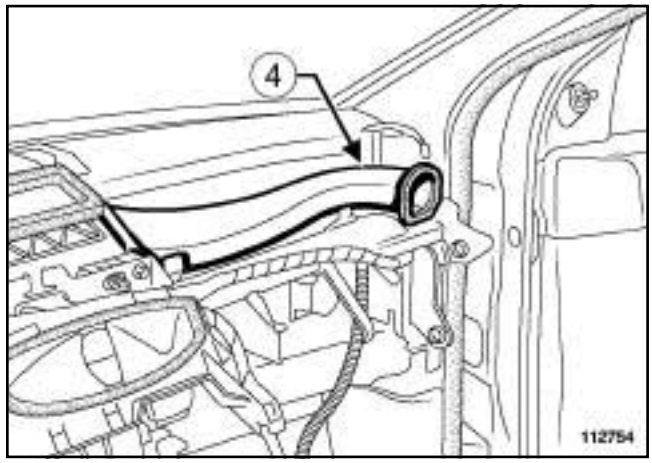


112752

❏ Refit:

- the front left-hand side air distribution duct.
- the clip (**3**) .

2 - Front right-hand side air distribution duct:



112754

❏ Refit:

- the front right-hand side air distribution duct.
- the clip (**4**) .

II - FINAL OPERATION.

❏ Refit:

- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Clip the glovebox in position.

❏ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C Airbag and pretensioners).

❏ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components** (MR 394, 88C, Airbags and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - signals).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Remove the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❏ Remove the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

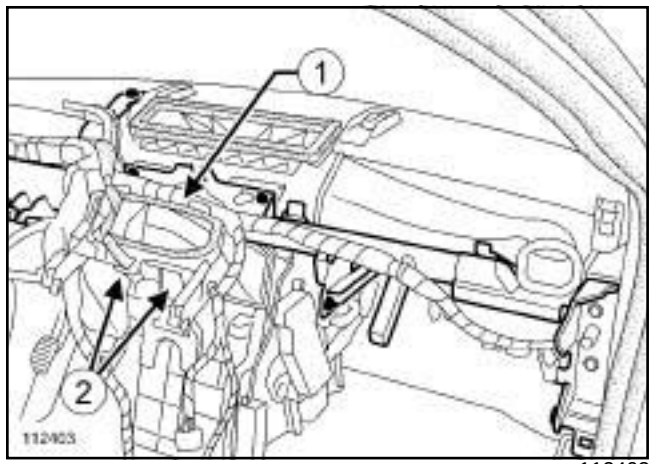
WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Unclip the glovebox using the **(Car. 1363)**.

❏ Remove:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112403

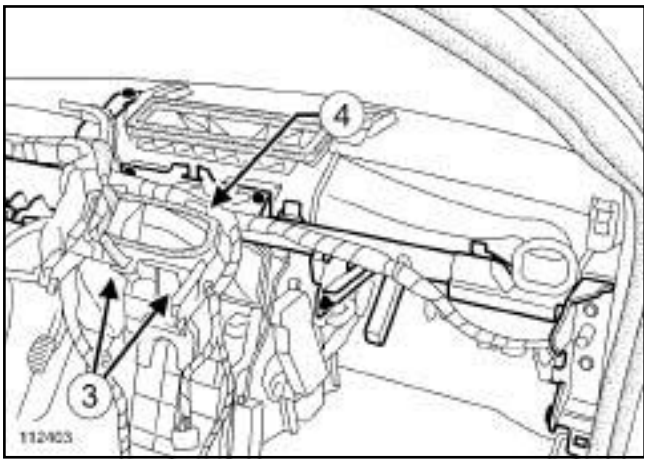
❏ Move the front centre air distribution duct wiring harness (**1**) to one side.

❏ Remove:

- the bolts (**2**) from the front centre air distribution duct,
- the front centre air distribution duct.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112403

❑ Refit:

- the front centre air distribution duct.
- the front centre air distribution duct bolts (**3**) .

❑ Position the front centre air distribution duct wiring harness (**4**) .

II - FINAL OPERATION.

❑ Refit:

- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeter speakers (see **Tweeter: Removal - Refitting**) (MR 392, 86A, Radio),
- the solar radiation detector (see **61A**, **Heating**, **Solar radiation sensor: Removal - Refitting**, page **61A-134**) ,
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the control panel (see **61A**, **Heating**, **Control panel: Removal - Refitting**, page **61A-98**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **Radio: Removal - Refitting**) (MR 392, 86A, Radio).

NAVIGATION AID 1

❑ Refit the radio navigation system (see **Radio navigation: Removal - Refitting**) (MR 392, 83C, On board telematics system).

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the glovebox in position.

❑ Refit:

- the steering column switch assembly (see **Steering column switch assembly: Removal - Refitting**) (MR 392, 84A, Control - signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C Airbag and pretensioners).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components** (MR 394, 88C, Airbags and pretensioners).

LEFT-HAND DRIVE

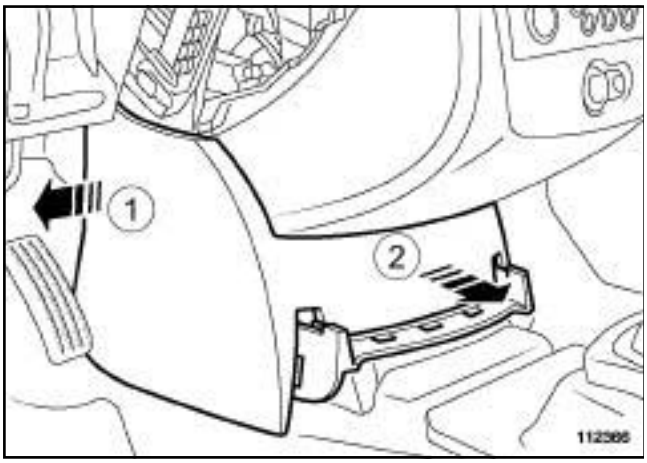
Tightening torques ▽	
dashboard cross member reinforcement bolts	21 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

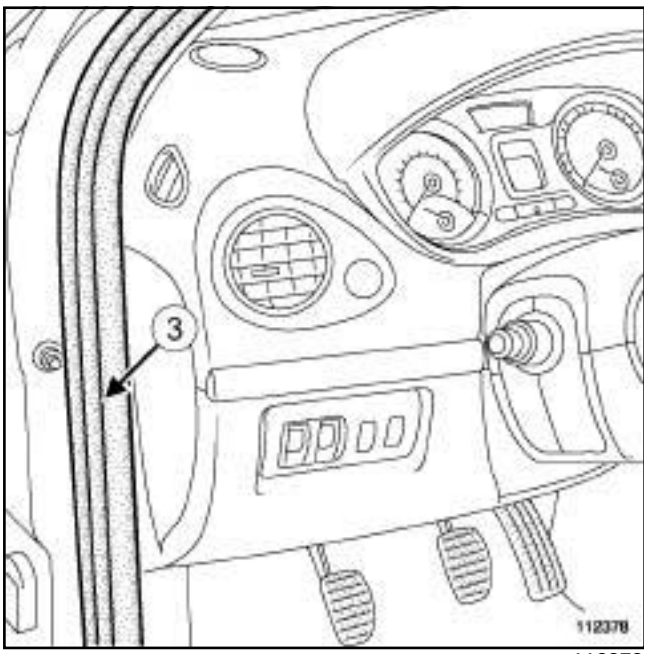
1 - Driver's side

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



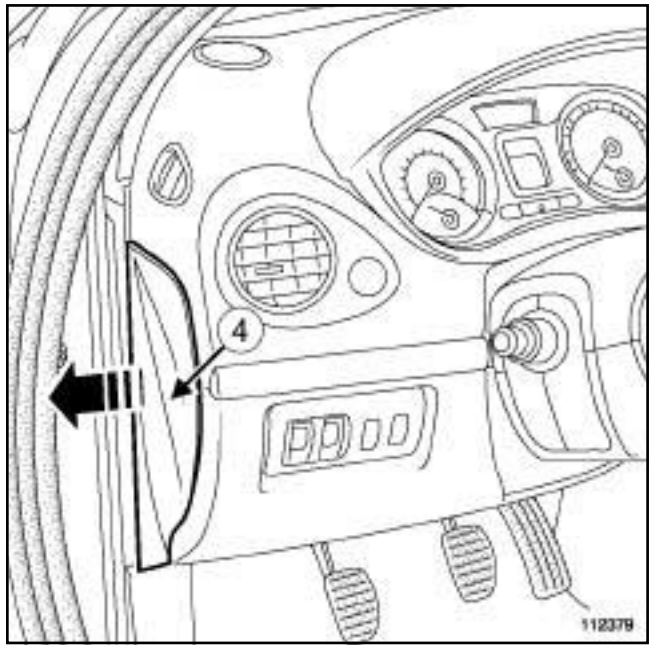
112366

❑ Unclip the dashboard lower trim at (**1**) and (**2**) .



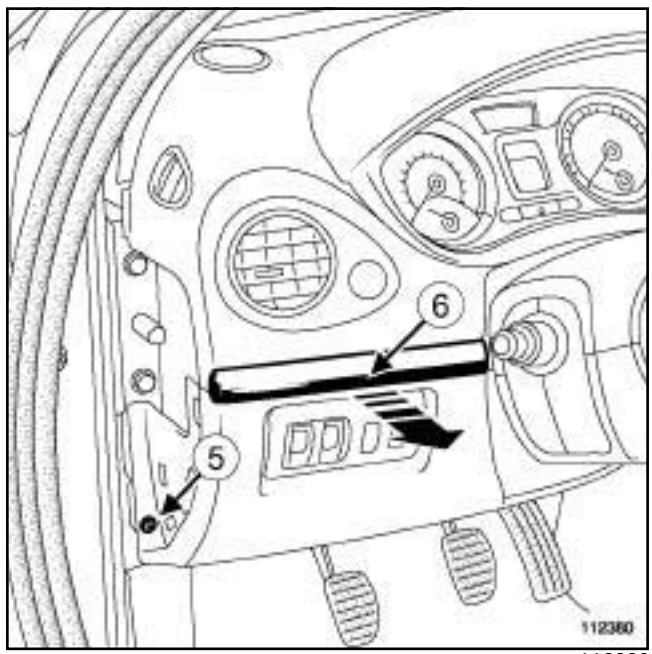
112378

❑ Partially remove the door seal. (**3**)



112379

❑ Remove the side panel (**4**) .

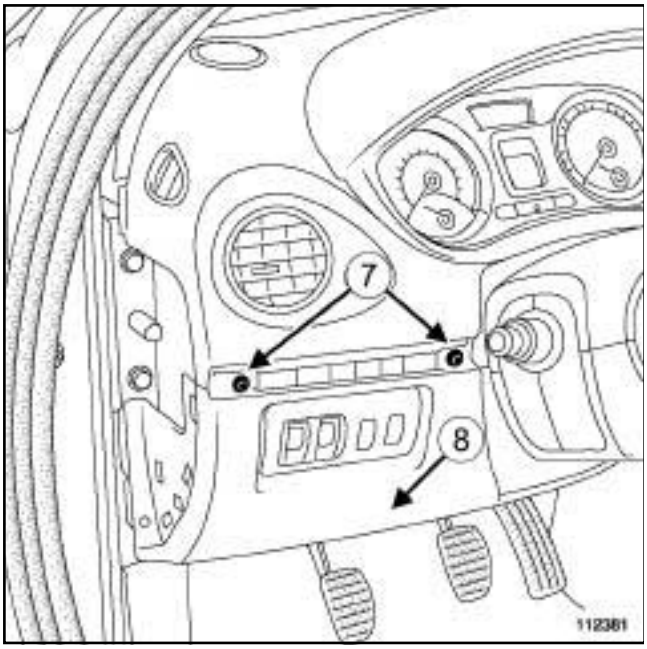


112380

❑ Remove the bolt (**5**) from the dashboard lower trim on the driver's side.

❑ Unclip the trim (**6**) .

LEFT-HAND DRIVE

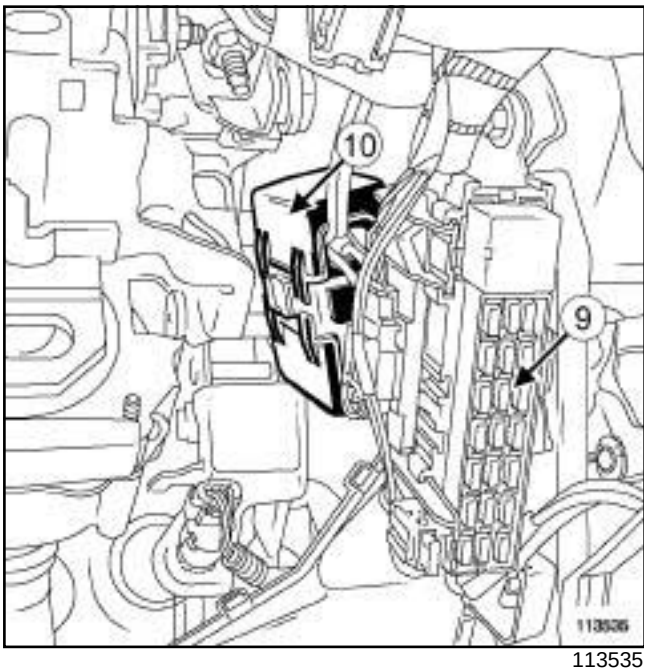


112381

❏ Remove the bolts (**7**) from the dashboard lower trim on the driver's side.

❏ Remove the dashboard lower trim (**8**) on the driver's side.

❏ Disconnect the connectors (depending on equipment level).

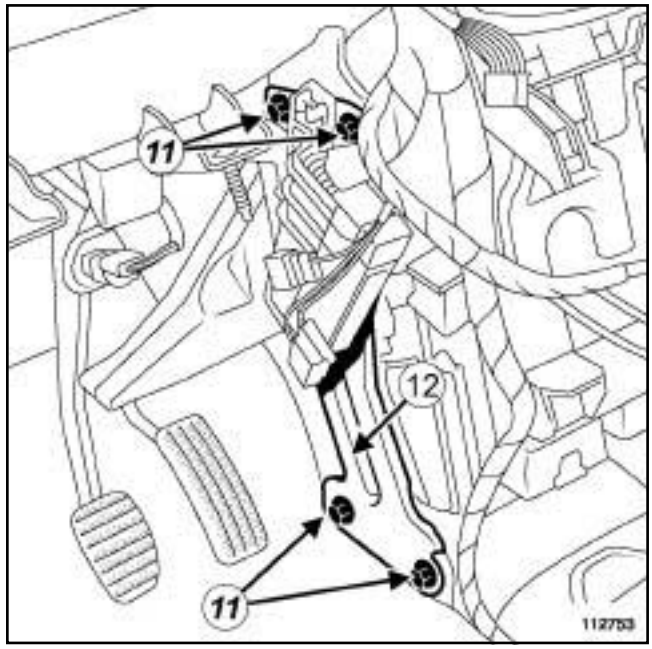


113535

❏ Unclip:

- the fuse and relay box (**9**) ,
- the heating resistor relays (**10**) .

❏ Lift the carpet to access the stiffener bolts.



112753

❏ Remove:

- the dashboard cross member reinforcement bolts (**11**) ,
- the dashboard cross member reinforcement (**12**) .

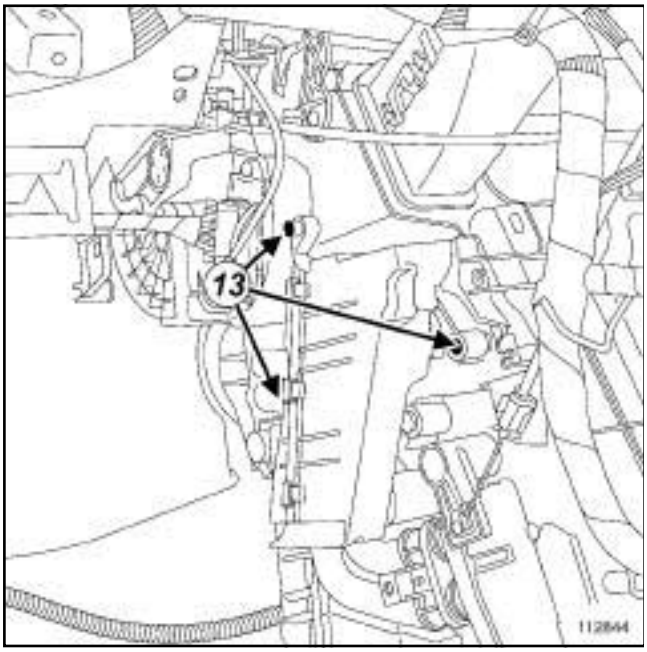
2 - Passenger side

❏ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

LEFT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Driver's side

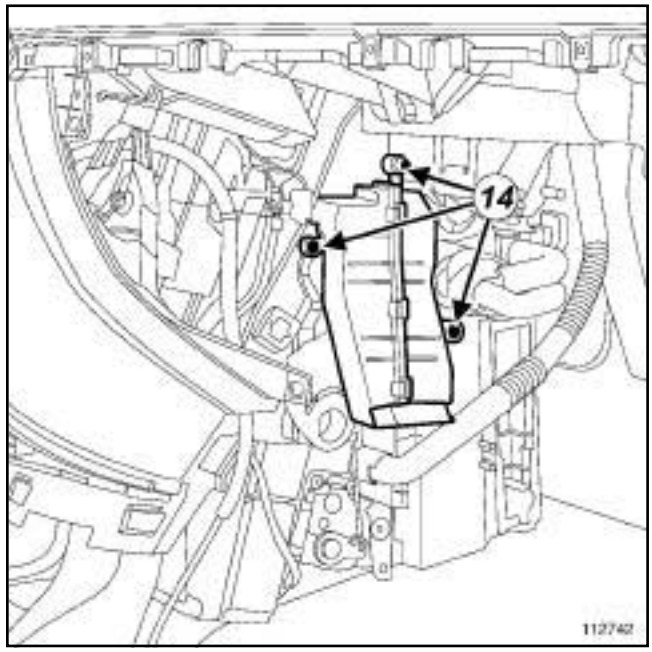


112844

❏ Remove:

- the bolts (**13**) from the front footwell air distribution duct on the driver's side,
- the driver's side front footwell air distribution duct.

2 - Passenger side



112742

❏ Remove:

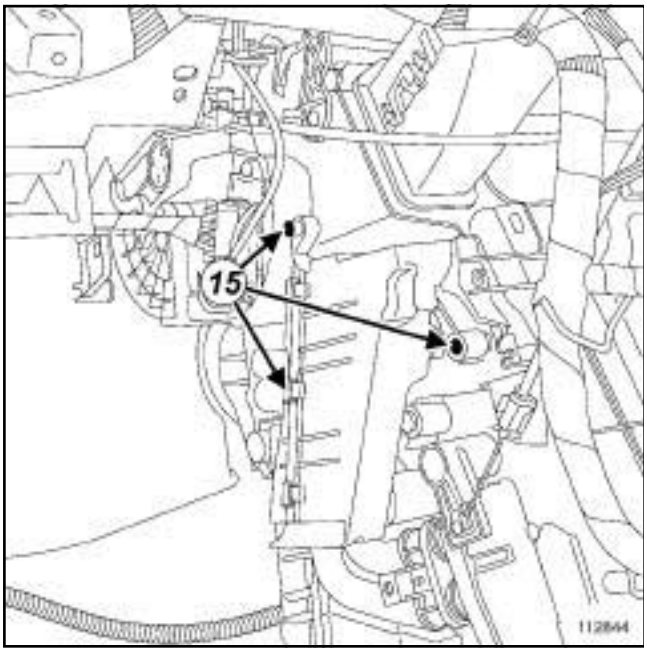
- the bolts (**14**) from the front footwell air distribution duct on the passenger side,
- the passenger side front footwell air distribution duct.

LEFT-HAND DRIVE

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Driver's side

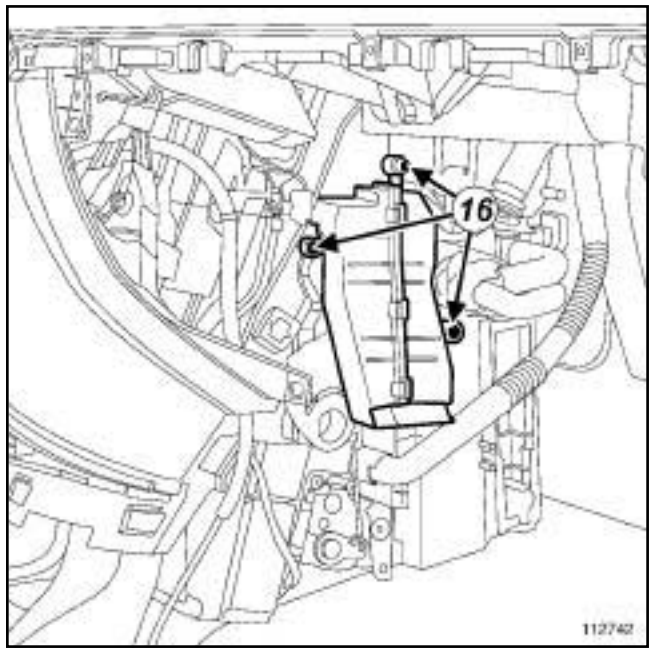


112844

❑ Refit:

- the driver's side front footwell air distribution duct.
- the front footwell air distribution duct bolts (**15**) on the driver's side.

2 - Passenger side



112742

❑ Refit:

- the passenger side front footwell air distribution duct.
- the front footwell air distribution duct bolts (**16**) on the passenger side.

II - FINAL OPERATION.

1 - Driver's side

❑ Refit:

- the dashboard cross member stiffener,
- the dashboard reinforcement bolts.

❑ Torque tighten the **dashboard cross member reinforcement bolts (21 Nm)**.

❑ Refit the floor carpet.

> Note:
>
> Check that the floor carpet reaches under the accelerator pedal end-stop.

❑ Clip on:

- heater resistor relays,
- the fuse and relay box.

❑ Connect the dashboard lower trim connectors on the driver's side.

❑ Fit the dashboard lower trim on the driver's side.

LEFT-HAND DRIVE

❑ Refit:

- the dashboard lower trim bolts on the driver's side,
- the dashboard lower trim bolt on the driver's side.

❑ Fit the dashboard lower trim piece on the driver's side.

❑ Refit:

- the side panel,
- the door seal.

❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

2 - Passenger side

❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE

Equipment required
Diagnostic tool

Tightening torques ▽	
dashboard cross member reinforcement bolts	**21 Nm**

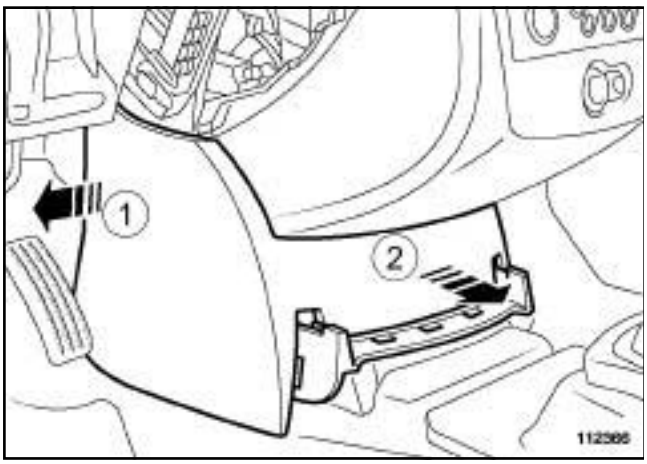
REMOVAL

I - REMOVAL PREPARATION OPERATION

1 - Driver's side

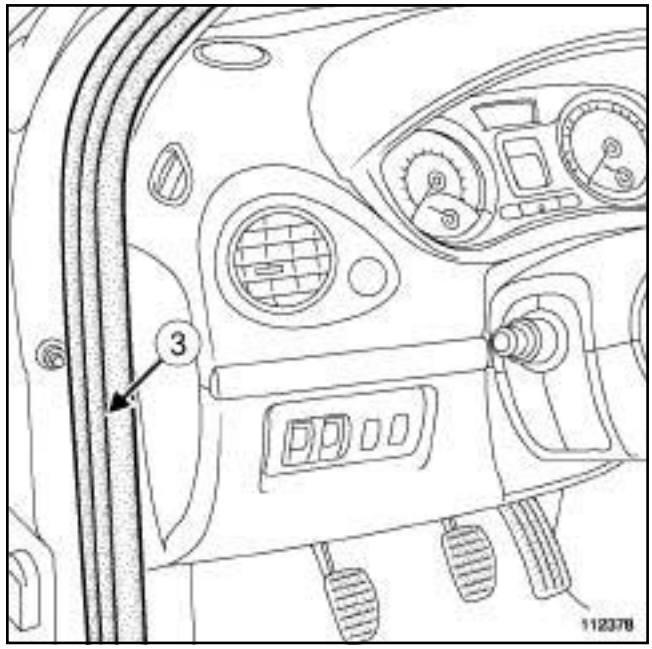
❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and pretensioners).

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



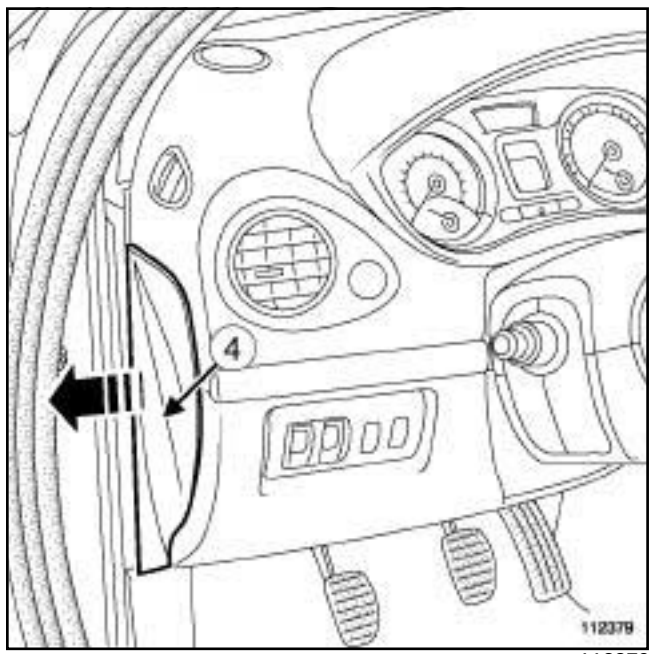
112366

❏ Unclip the dashboard lower trim at (**1**) and (**2**) .



112378

❏ Partially remove the door seal. (**3**)



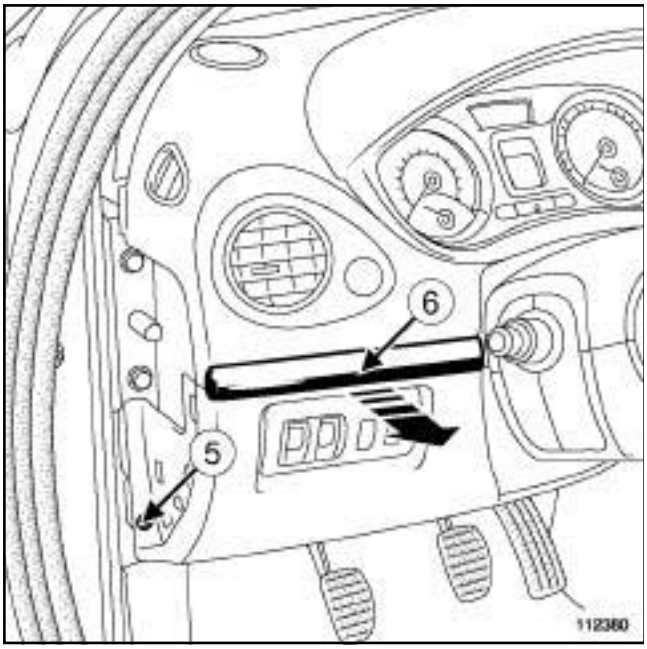
112379

❏ Move the side panel to one side.

❏ Disconnect the inhibitor switch.

❏ Remove the side panel (**4**) .

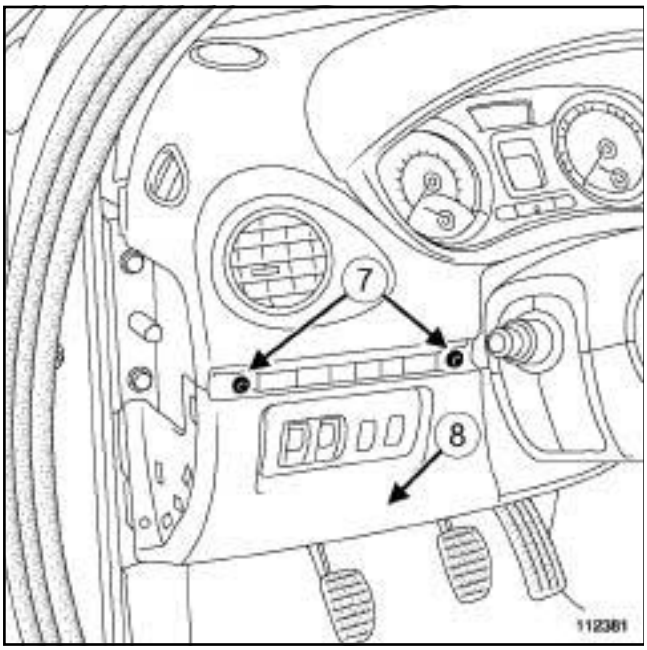
RIGHT-HAND DRIVE



112380

❏ Remove the dashboard lower trim bolt (**5**) .

❏ Undo the dashboard lower trim piece (**6**) on the driver's side.



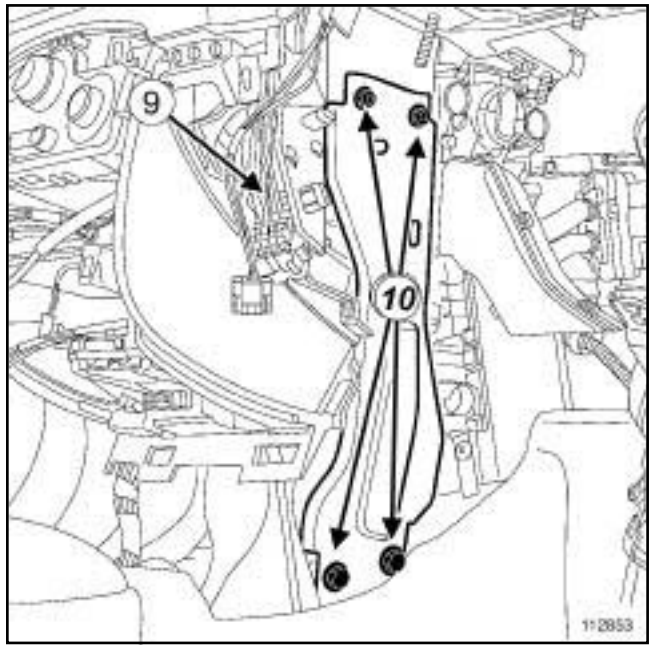
112381

❏ Remove the bolts (**7**) from the dashboard lower trim on the driver's side.

❏ Remove the dashboard lower trim (**8**) on the driver's side.

❏ Disconnect the connectors (depending on equipment level).

❏ Lift the carpet to access the stiffener bolts.



112853

❏ Unclip the fuse holder unit (**9**) .

❏ Remove:

- the dashboard cross member reinforcement bolts (**10**) ,
- the dashboard cross member reinforcement.

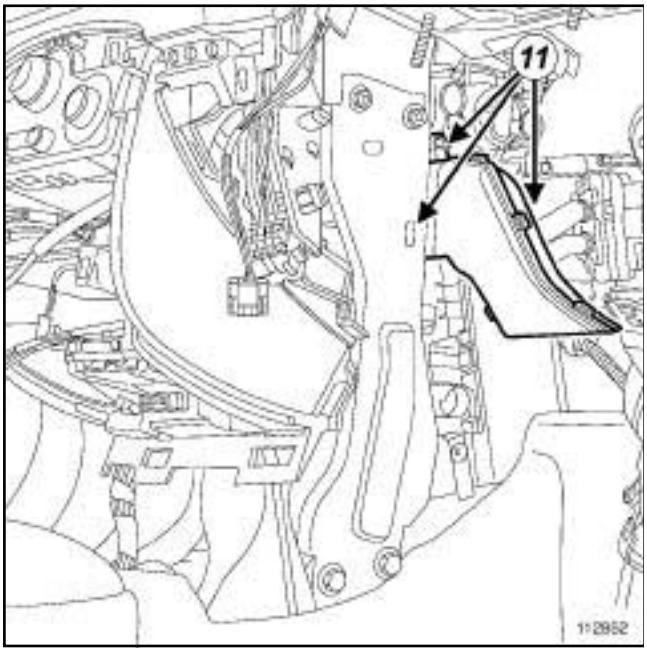
2 - Passenger side

❏ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Driver's side

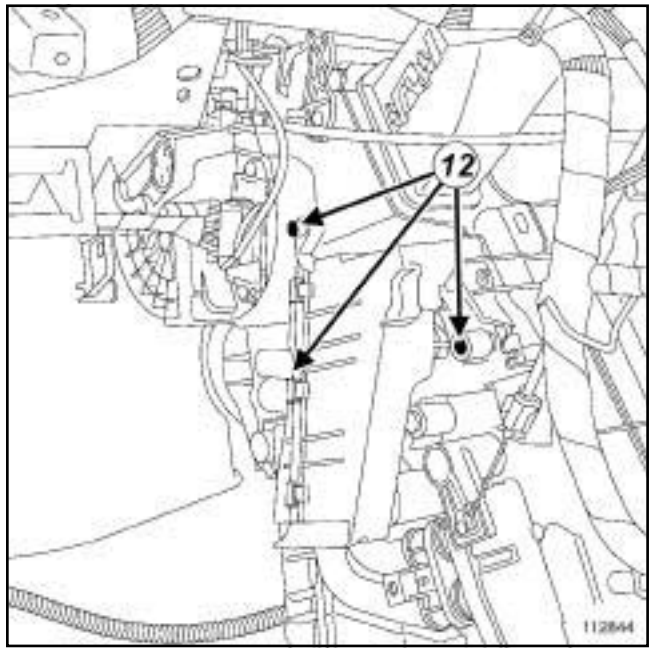


112852

❑ Remove:

- the bolts (**11**) from the front footwell air distribution duct on the driver's side,
- the driver's side front footwell air distribution duct.

2 - Passenger side



112844

❑ Remove:

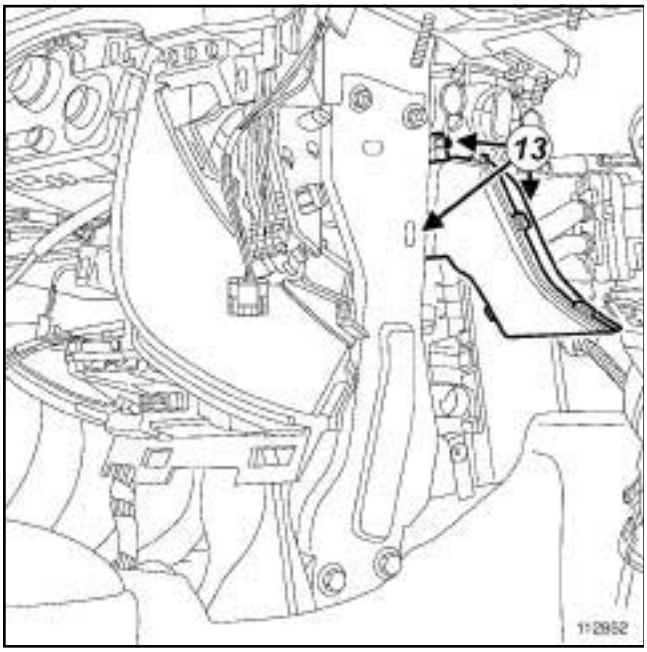
- the bolts (**12**) from the front footwell air distribution duct on the passenger side,
- the passenger side front footwell air distribution duct.

RIGHT-HAND DRIVE

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Driver's side

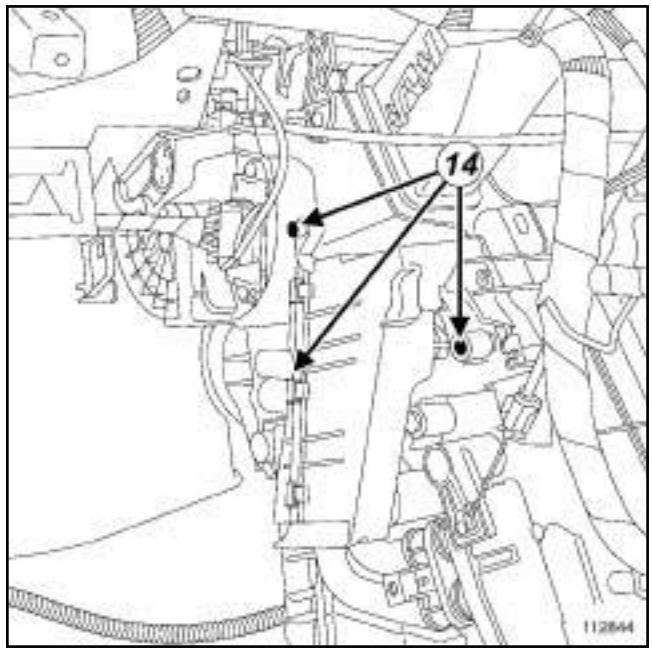


112852

❑ Refit:

- the driver's side front footwell air distribution duct.
- the front footwell air distribution duct bolts (**13**) on the driver's side.

2 - Passenger side



112844

❑ Refit:

- the passenger side front footwell air distribution duct.
- the front footwell air distribution duct bolts (**14**) on the passenger side.

II - FINAL OPERATION.

1 - Driver's side

❑ Refit:

- the dashboard cross member stiffener,
- the dashboard reinforcement bolts.

❑ Torque tighten the **dashboard cross member reinforcement bolts (21 Nm)**.

❑ Clip the fuse and relay box into place.

❑ Refit the floor carpet.

> Note:
>
> Check that the floor carpet reaches under the accelerator pedal end-stop.

❑ Connect the dashboard lower trim connectors on the driver's side.

❑ Fit the dashboard lower trim on the driver's side.

❑ Refit:

- the dashboard lower trim bolts on the driver's side,

RIGHT-HAND DRIVE

- the dashboard lower trim bolt.

❑ Fit the dashboard lower trim piece on the driver's side.

❑ Connect the inhibitor switch.

❑ Refit:

- the side panel,
- the door seal.

❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and pretensioners).

2 - Passenger side

❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

LEFT-HAND DRIVE, and CLIMATE CONTROL

Equipment required
Diagnostic tool

REMOVAL

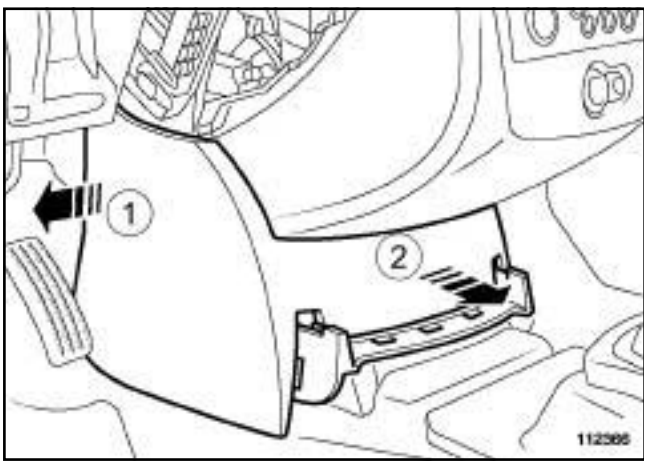
I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbag and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❏ Remove:

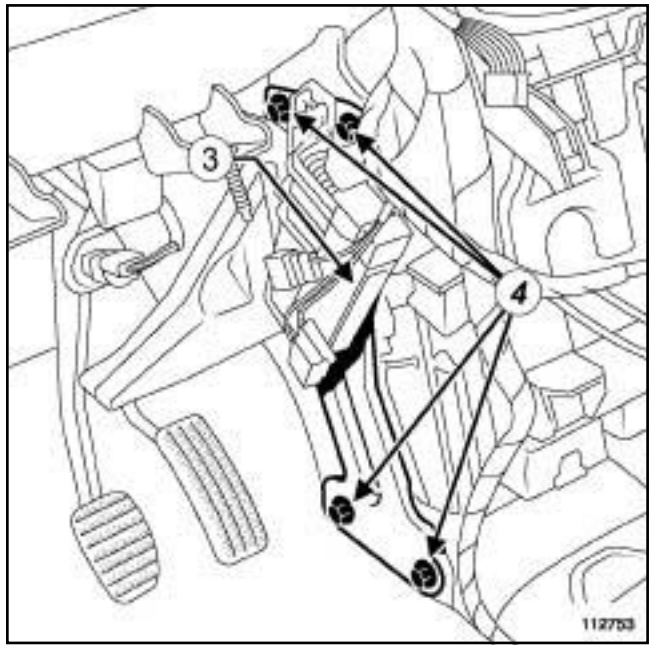
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch (see **Steering column switch assembly: Removal - Refitting**) assembly (MR 392, 84A, Controls-Signals),
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

❏ Lift the carpet to access the stiffener bolts.



112753

❏ Unclip the fuse holder (**3**) .

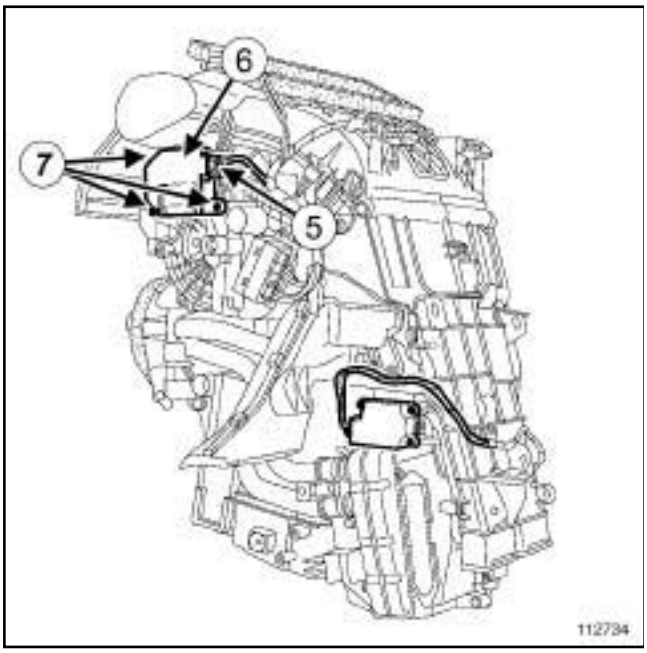
❏ Move the fuse holder to one side.

❏ Remove:

- the dashboard cross member reinforcement bolts (**4**) ,
- the dashboard cross member reinforcement.

LEFT-HAND DRIVE, and CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112734

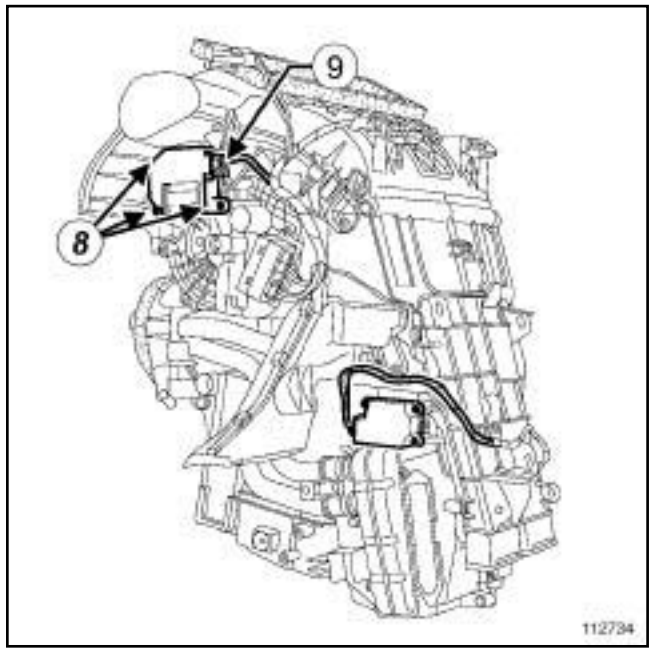
❏ Disconnect the connector (**5**) from the recirculation motor (**6**) .

❏ Remove:

- the bolts (**7**) from the recirculation motor,
- the recirculation motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112734

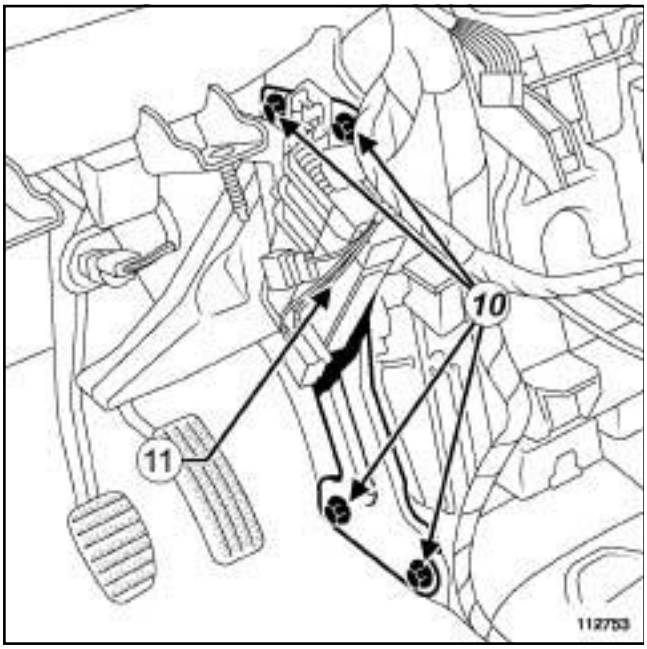
❏ Refit:

- the recirculation motor,
- the recirculation motor bolts (**8**) ,

❏ Connect the connector (**9**) to the recirculation motor.

LEFT-HAND DRIVE, and CLIMATE CONTROL

II - FINAL OPERATION.



112753

❑ Refit:

- the dashboard cross member reinforcement,
- the dashboard cross member reinforcement bolts (**10**) .

❑ Clip on the fuse holder (**11**) .

❑ Refit the floor carpet.

❑ Clip on the dashboard lower trim.

❑ Refit:

- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering column (see **Steering column: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the steering column switch (see **Steering column switch assembly: Removal - Refitting**) assembly (MR 392, 84A, Controls-Signals),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **Driver's frontal airbag: Removal - Refitting**) (MR 392, 88C, Airbag and pretensioners).

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbag and pretensioners).

Note:

Check that the floor carpet reaches under the accelerator pedal end-stop.

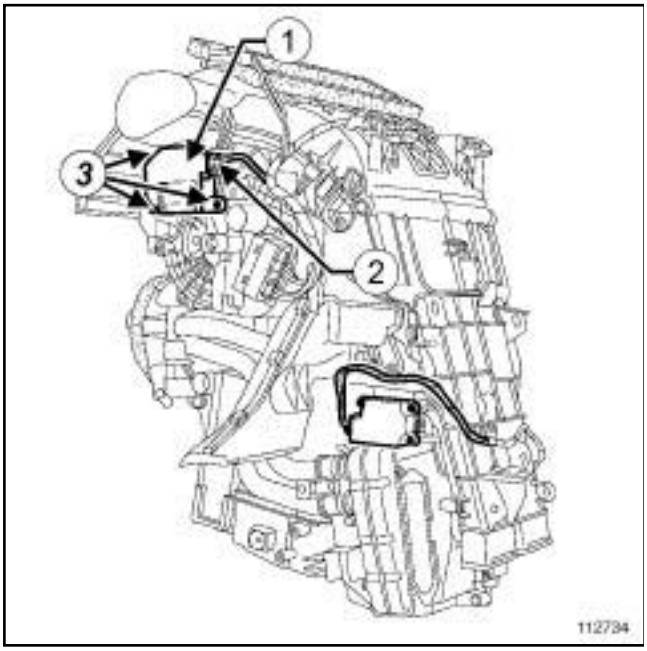
RIGHT-HAND DRIVE

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112734

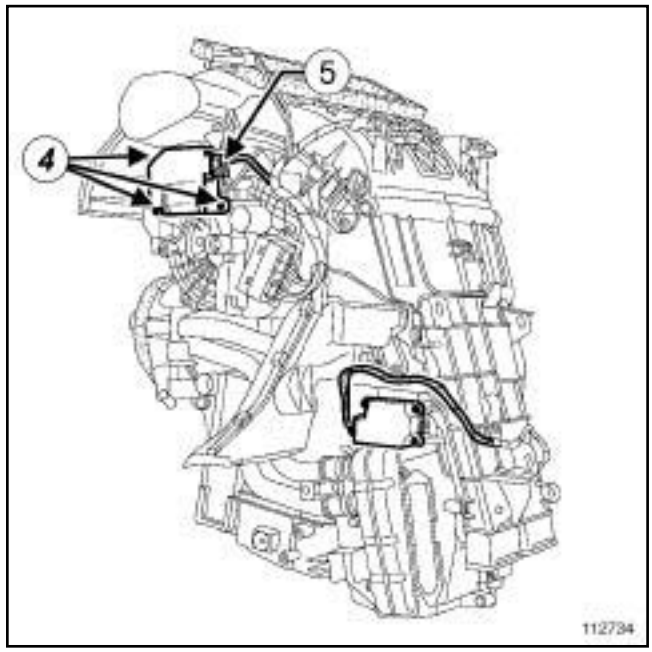
❑ Disconnect the connector (**2**) from the recirculation motor (**1**) .

❑ Remove:

- the recirculation motor bolts (**3**) ,
- the recirculation motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112734

❑ Refit:

- the recirculation motor,
- the recirculation motor bolts (**4**) ,

❑ Connect the connector (**5**) to the recirculation motor.

II - FINAL OPERATION.

❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

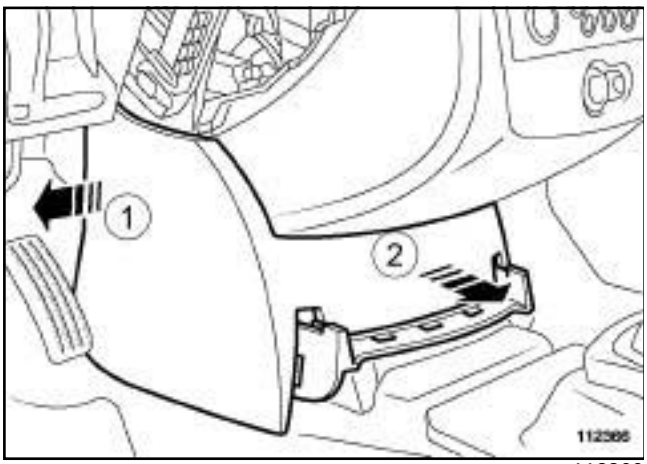
LEFT-HAND DRIVE, and CLIMATE CONTROL

Tightening torques ▽	
dashboard cross member reinforcement bolt	21 Nm

REMOVAL

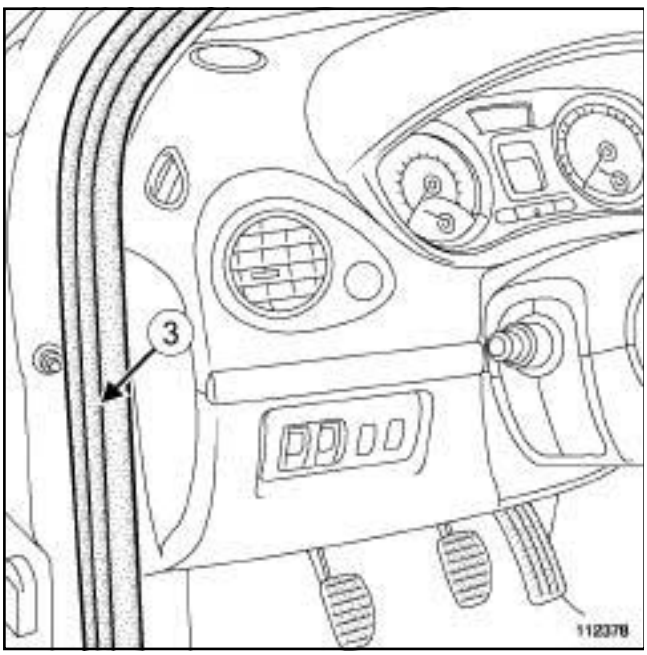
I - REMOVAL PREPARATION OPERATION

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



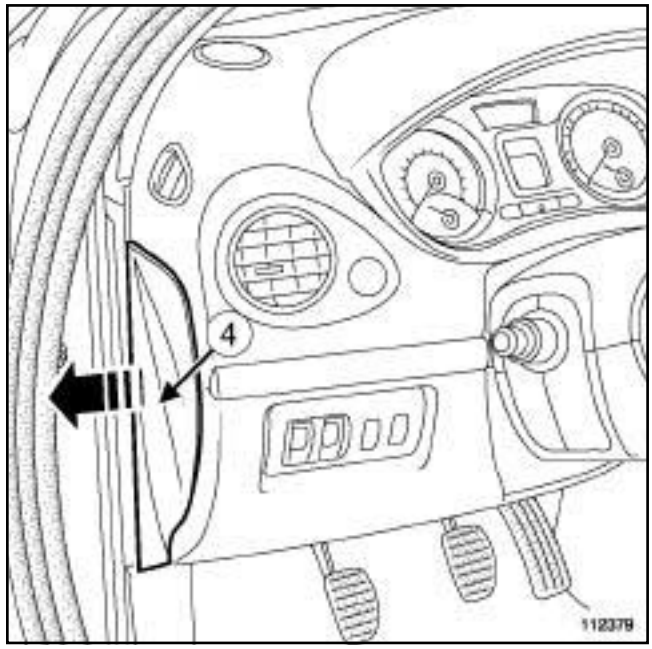
112366

❏ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.



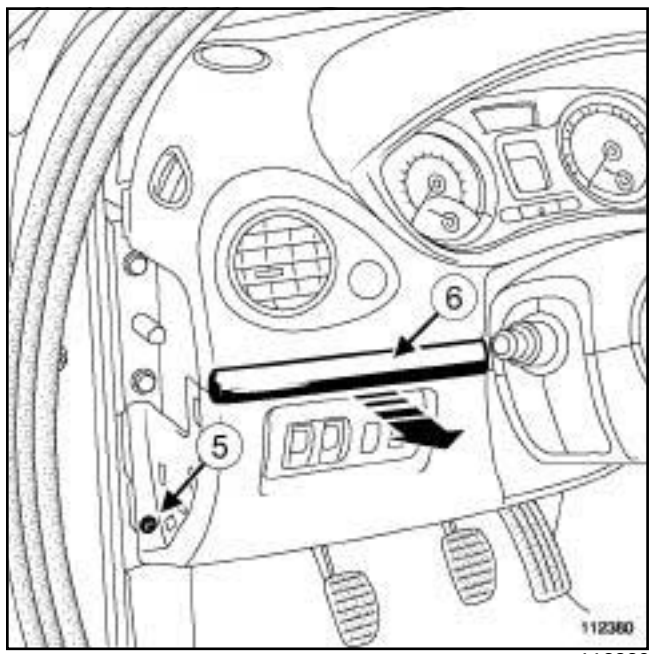
112378

❏ Partially remove seal (**3**) .



112379

❏ Remove the side panel (**4**) .

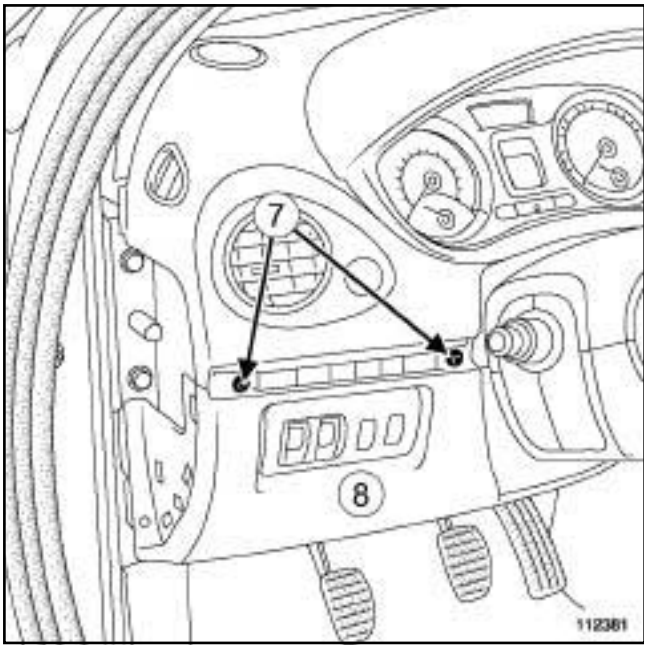


112380

❏ Remove the bolt (**5**) from the base of the dashboard.

❏ Unclip the trim piece (**6**) from the driver's side dashboard lower cover.

LEFT-HAND DRIVE, and CLIMATE CONTROL



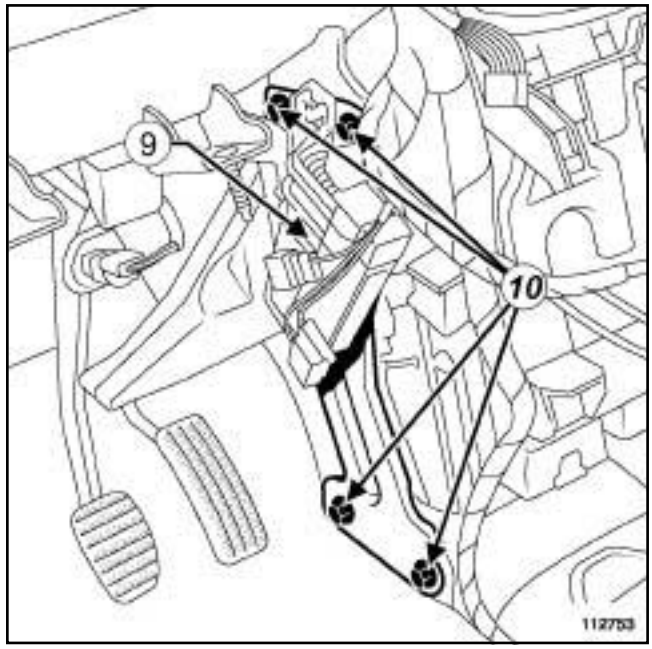
112381

❏ Remove the bolts (**7**) from the driver's side dashboard lower cover.

❏ Take out the driver's side dashboard lower cover (**8**) .

❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).

❏ Lift the carpet to access the stiffener bolts.



112753

❏ Unclip the fuse holder unit (**9**) .

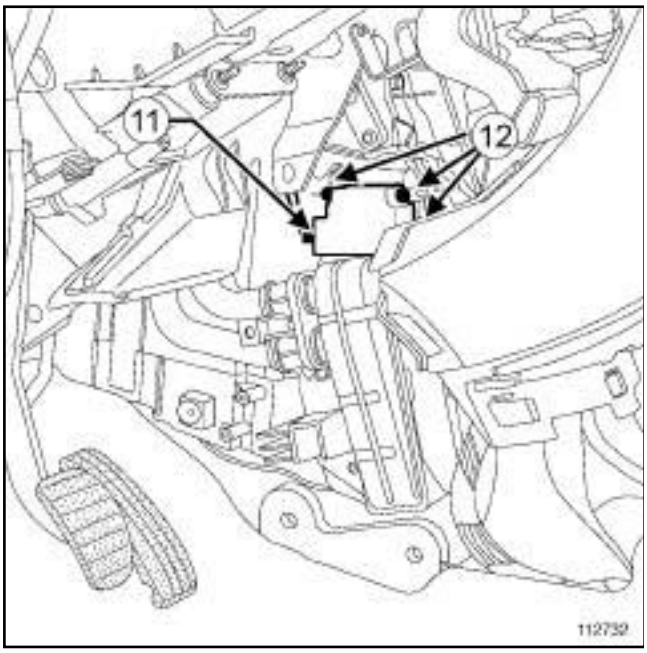
❏ Move the fuse holder to one side.

❏ Remove:

- the dashboard cross member reinforcement bolts (**10**) ,
- the dashboard cross member reinforcement.

LEFT-HAND DRIVE, and CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112732

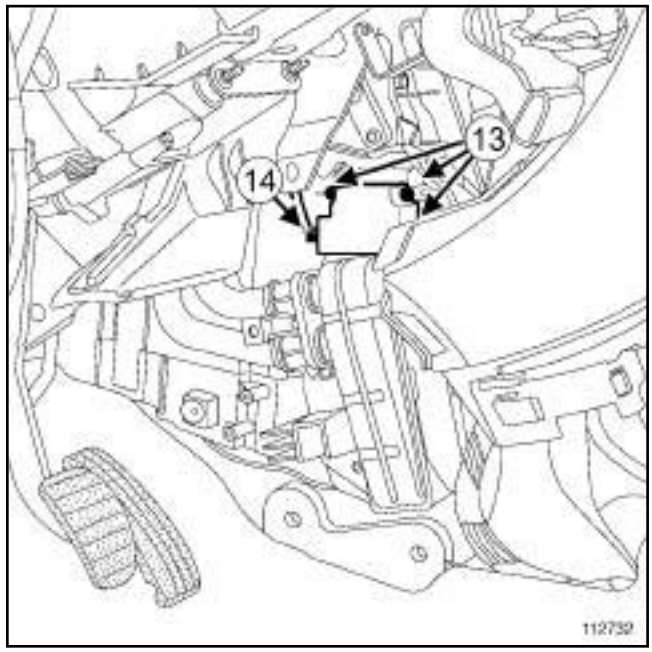
❏ Disconnect the connector (**11**) from the mixer motor.

❏ Remove:

- the bolts (**12**) from the air mixing motor,
- the air mixing motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112732

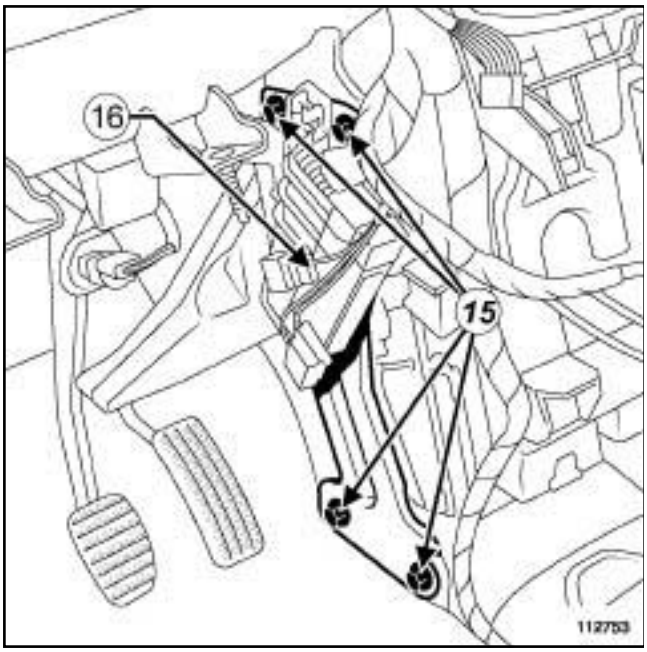
❏ Refit:

- the air mixing motor,
- the air mixing motor bolts (**13**) .

❏ Connect the connector (**14**) to the mixer motor.

LEFT-HAND DRIVE, and CLIMATE CONTROL

II - FINAL OPERATION.



112753

❑ Refit:

- the dashboard cross member stiffener,
- the bolts (**15**) from the dashboard cross member stiffener.

Note:

Check the presence of the rubber filter block on the dashboard cross member reinforcement plate before refitting.

❑ Torque tighten the **dashboard cross member reinforcement bolt (21 Nm)**.

❑ Clip in the fuse holder unit (**16**) .

❑ Refit the floor carpet.

Note:

Check that the floor carpet reaches under the accelerator pedal end-stop.

❑ Connect the connectors to the driver's side dashboard lower cover.

❑ Position the driver's side dashboard lower cover.

❑ Refit:

- the driver's side dashboard lower cover bolts,
- the bolts to the base of the dashboard.

❑ Clip on the driver's side dashboard lower cover trim piece.

❑ Refit:

- the side panel,
- the seal.

❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

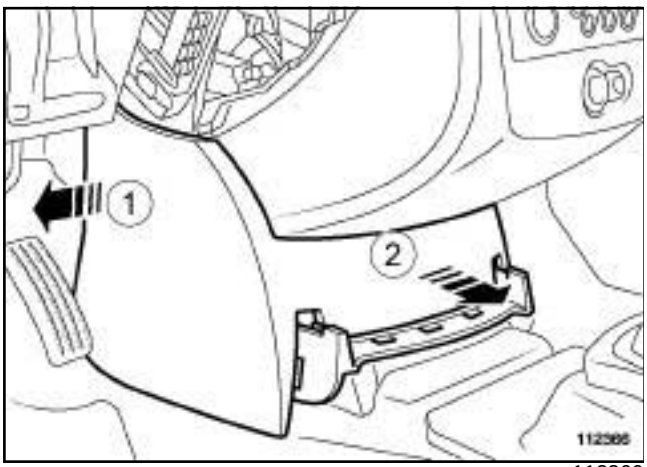
RIGHT-HAND DRIVE, and CLIMATE CONTROL

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

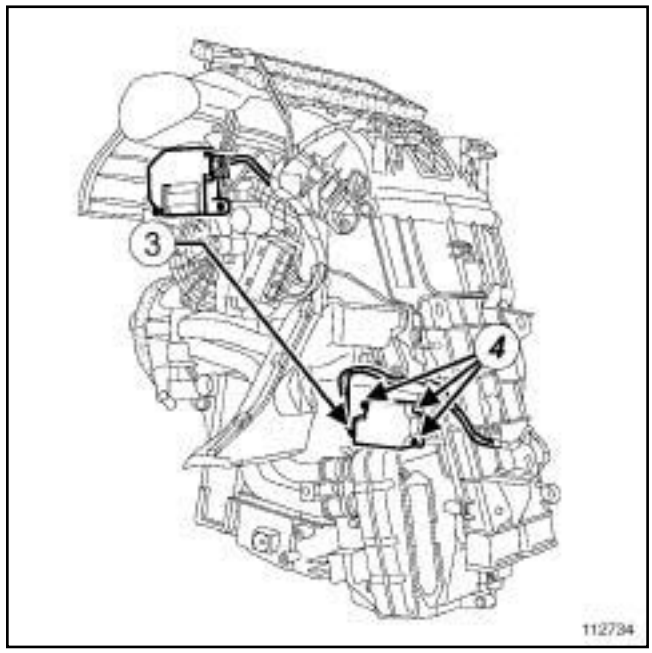
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112734

❑ Disconnect the connector (**3**) from the mixer motor.

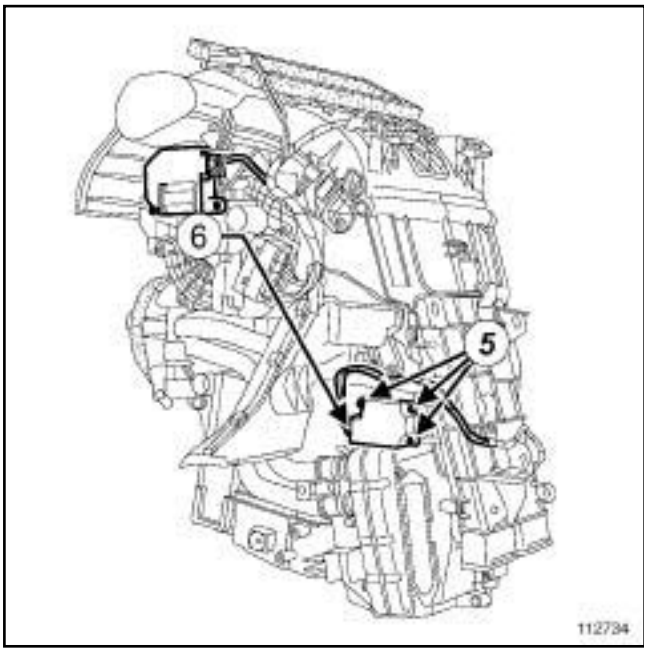
❑ Remove:

- the bolts (**4**) from the air mixing motor,
- the air mixing motor.

RIGHT-HAND DRIVE, and CLIMATE CONTROL

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112734

❑ Refit:

- the air mixing motor,
- the air mixing motor bolts (**5**) .

❑ Connect the connector (**6**) to the mixer motor.

II - FINAL OPERATION.

❑ Clip on the dashboard lower trim.

❑ Refit:

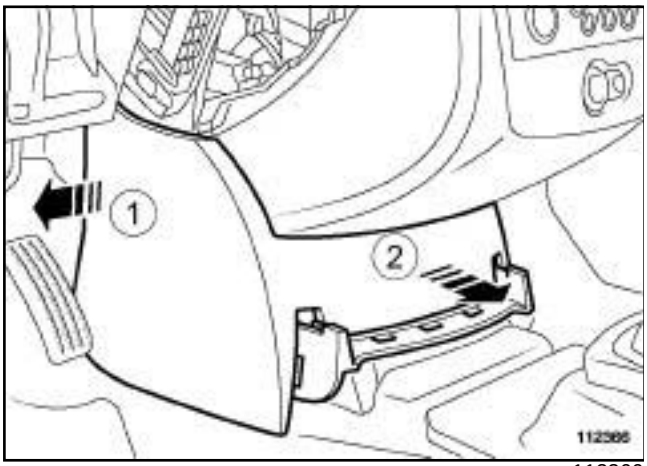
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment)).

LEFT-HAND DRIVE, and CLIMATE CONTROL

REMOVAL

I - REMOVAL PREPARATION OPERATION

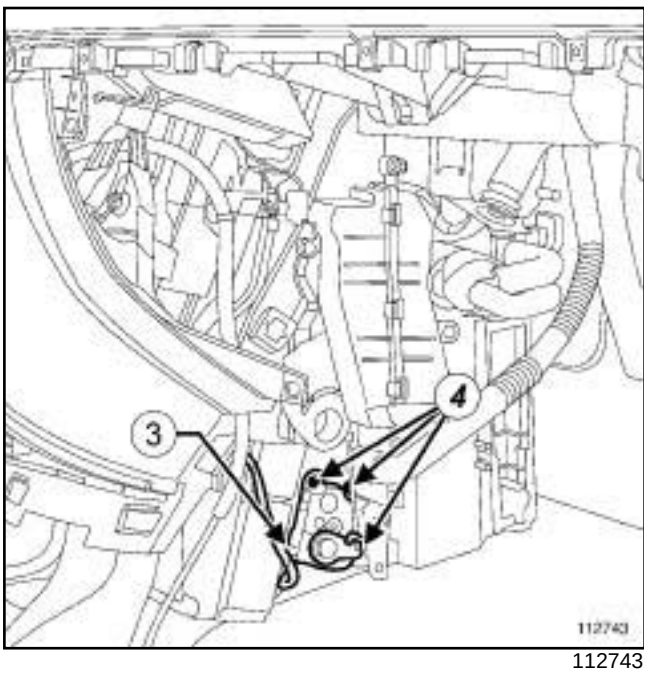
❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at (**1**) and (**2**) at the base of the dashboard.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112743

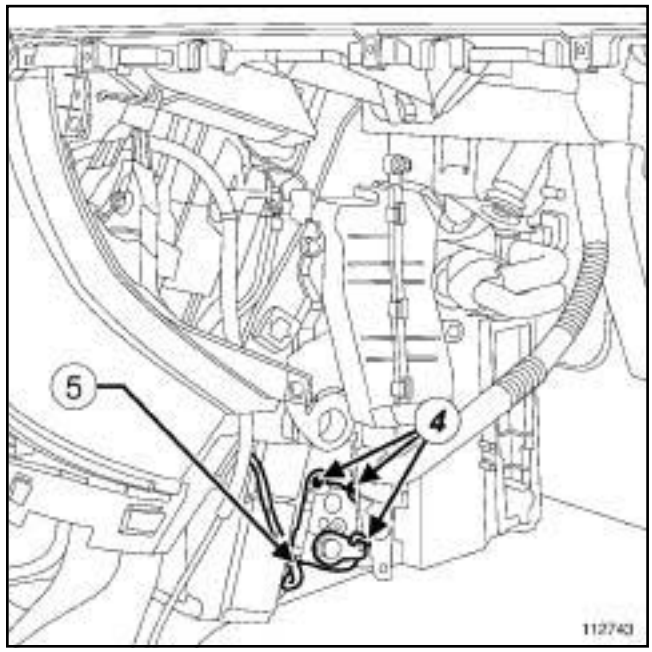
❏ Disconnect the connector (**3**) from the distribution motor.

❏ Remove:

- the bolts (**4**) from the distribution motor,
- the distribution motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112743

❏ Refit:

- the distribution motor,
- the bolts (**4**) from the distribution motor,

❏ Connect the connector (**5**) to the distribution motor.

II - FINAL OPERATION.

❏ Clip on the dashboard lower trim.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

RIGHT-HAND DRIVE, and CLIMATE CONTROL

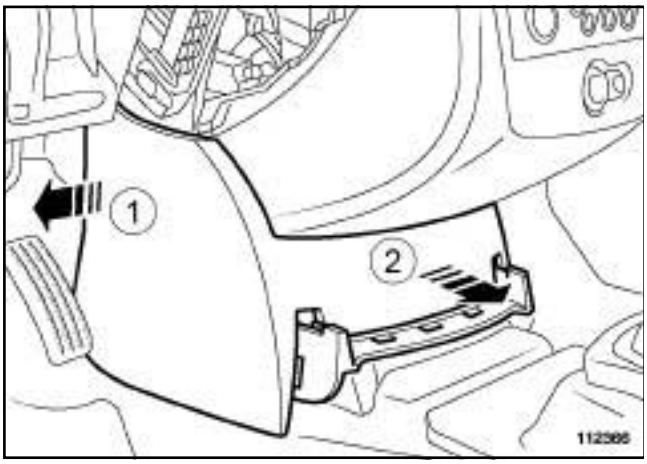
Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

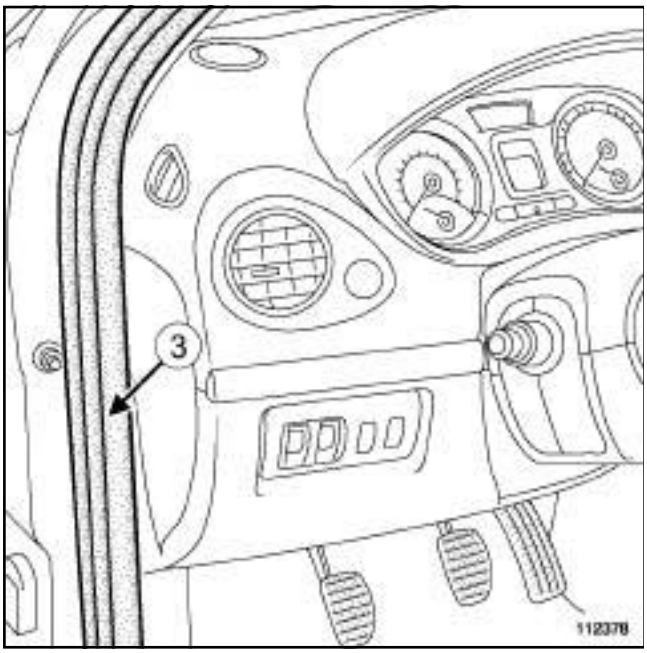
❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and seat belt pretensioners).

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



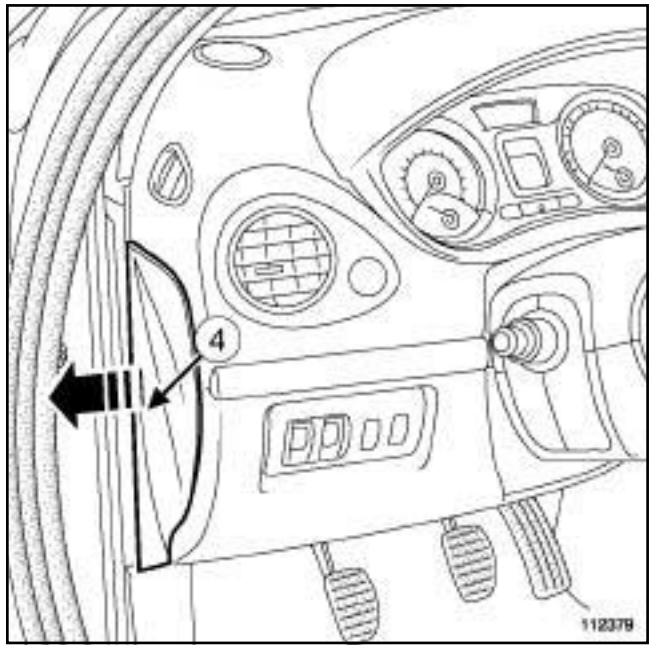
112366

❑ Unclip the dashboard lower trim at (**1**) and (**2**) .



112378

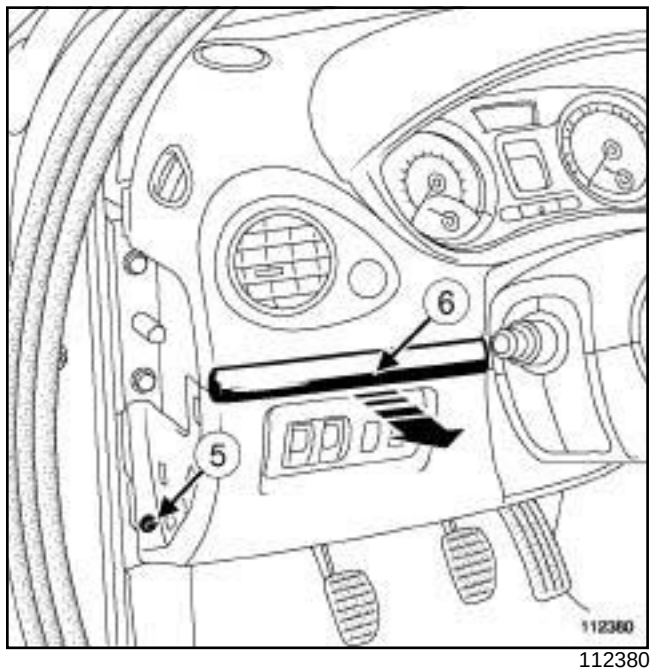
❑ Partially remove seal (**3**) .



112379

❑ Remove the side panel (**4**) .

❑ Disconnect the inhibitor switch.

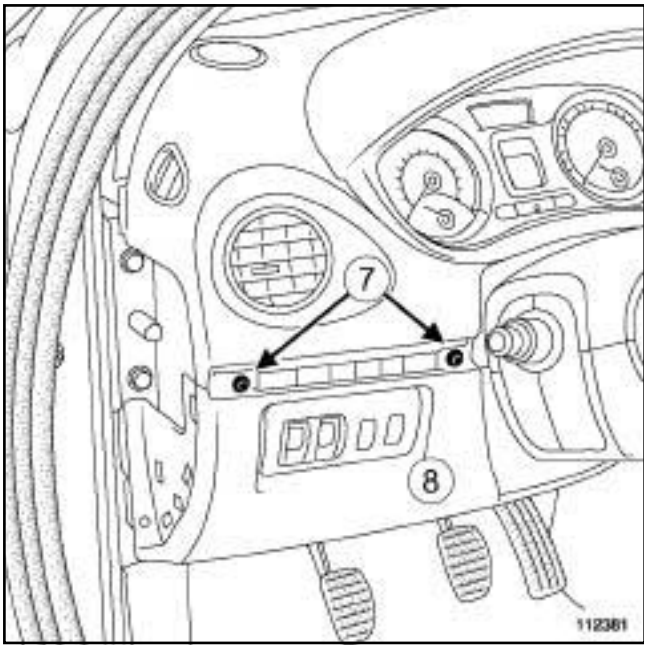


112380

❑ Remove the bolt (**5**) from the base of the dashboard.

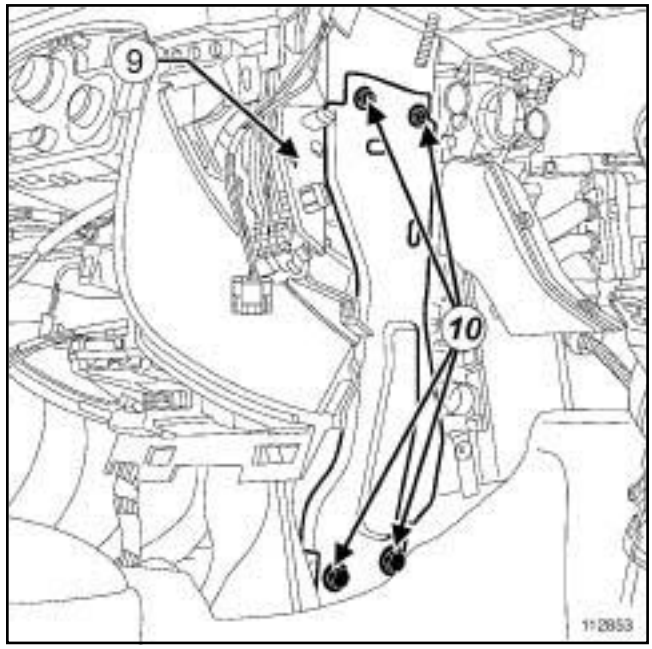
❑ Unclip the trim piece (**6**) from the driver's side dashboard lower cover.

RIGHT-HAND DRIVE, and CLIMATE CONTROL



112381

- ❏ Remove the bolts (**7**) of the driver's side dashboard lower cover.
- ❏ Take out the driver's side dashboard lower cover (**8**) .
- ❏ Disconnect the connectors from the driver's side dashboard lower cover (depending on the equipment level).
- ❏ Remove the dashboard lower cover on the driver's side (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment).
- ❏ Lift the carpet to access the stiffener bolts.

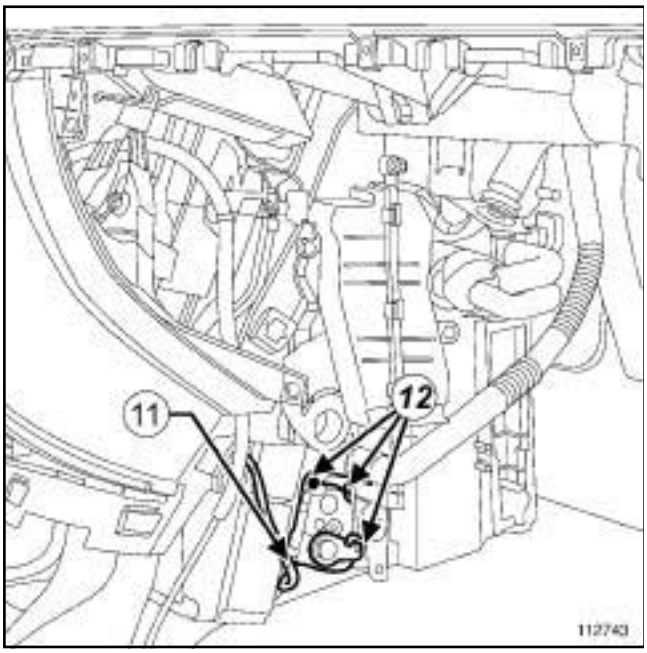


112853

- ❏ Unclip the fuse holder (**9**) .
- ❏ Move the fuse holder to one side.
- ❏ Remove:
  - the dashboard cross member reinforcement bolts (**10**) ,
  - the dashboard cross member reinforcement.

RIGHT-HAND DRIVE, and CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112743

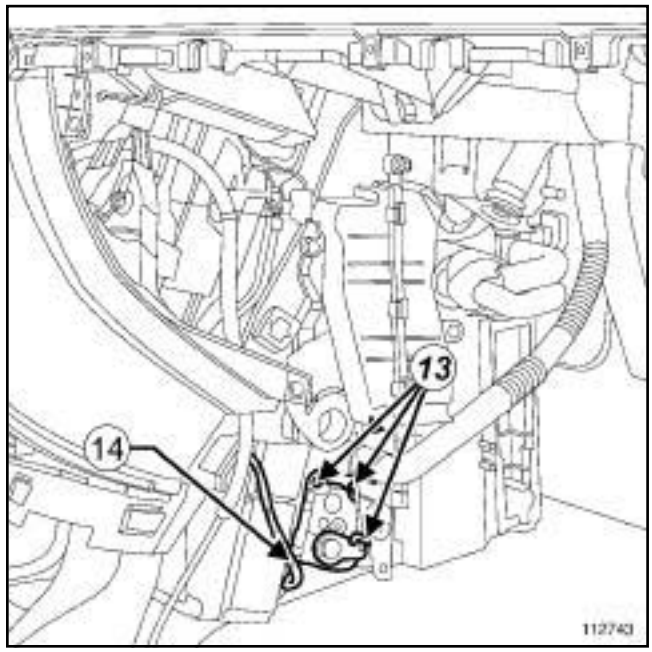
❑ Disconnect the connector (**11**) from the distribution motor.

❑ Remove:

- the bolts (**12**) from the distribution motor,
- the distribution motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112743

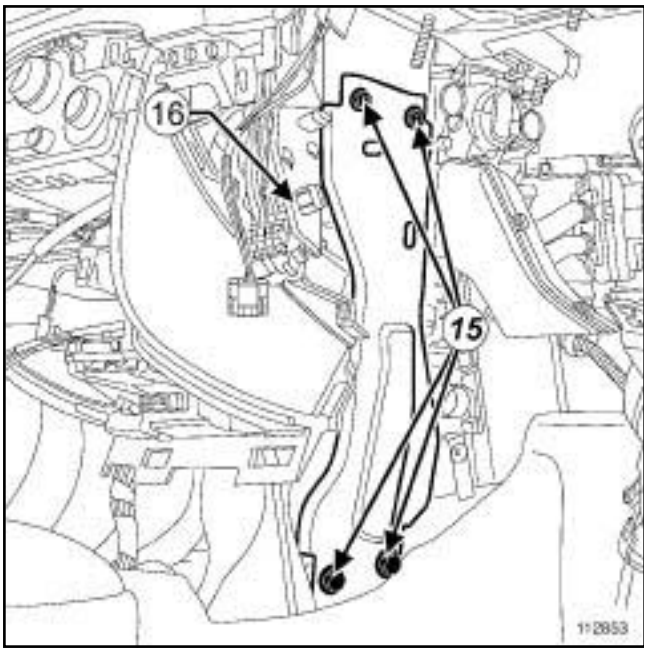
❑ Refit:

- the distribution motor,
- the bolts (**13**) from the distribution motor,

❑ Connect the connector (**14**) to the distribution motor.

RIGHT-HAND DRIVE, and CLIMATE CONTROL

II - FINAL OPERATION.



112853

❑ Refit:

- the dashboard cross member reinforcement,
- the bolts (**15**) from the dashboard cross member stiffener.

Note:

Check the presence of the rubber filter block on the dashboard cross member reinforcement plate before refitting

❑ Clip on the fuse holder (**16**) .

❑ Refit the floor carpet.

Note:

Check that the floor carpet reaches under the accelerator pedal end-stop.

❑ Connect the connectors to the driver's side dashboard lower cover.

❑ Position the driver's side dashboard lower cover.

❑ Refit:

- the bolts from the driver's side dashboard lower cover,
- the bolts to the base of the dashboard.

❑ Clip on the driver's side dashboard lower cover trim piece.

❑ Connect the inhibitor switch.

❑ Refit:

- the side panel,
- the seal.

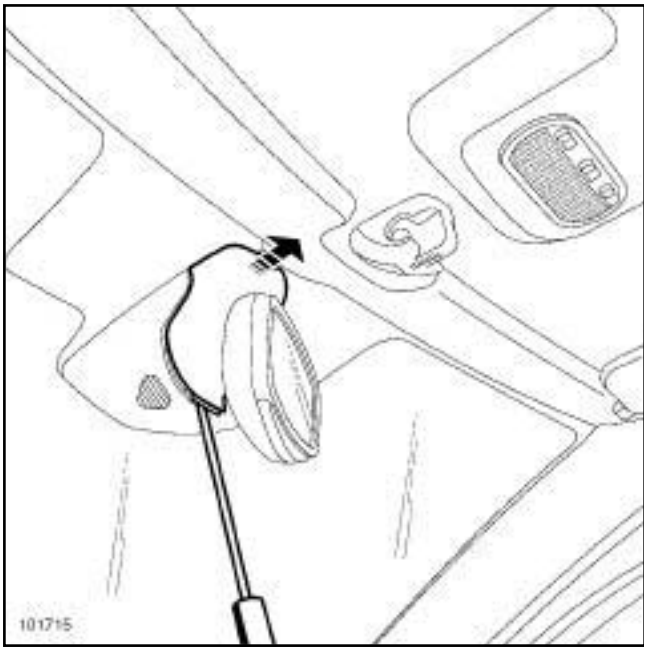
❑ Clip on the dashboard lower trim.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and seat belt pretensioners).

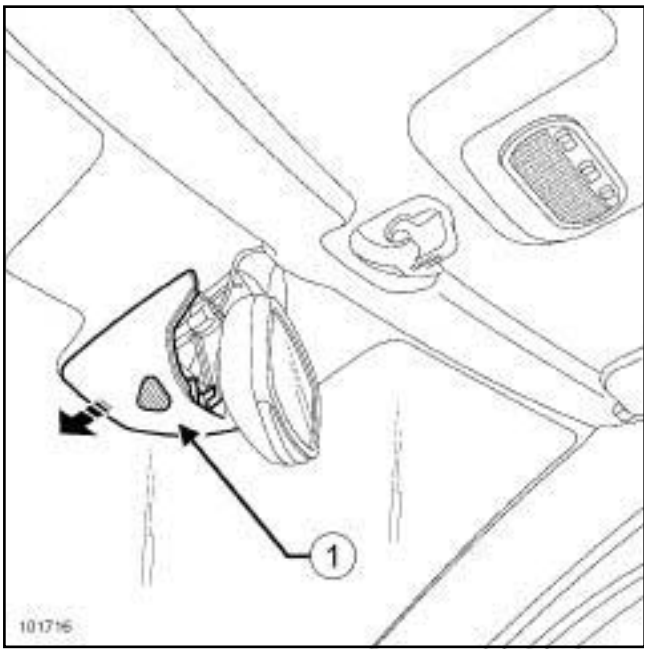
REMOVAL

I - REMOVAL PREPARATION OPERATION



101715

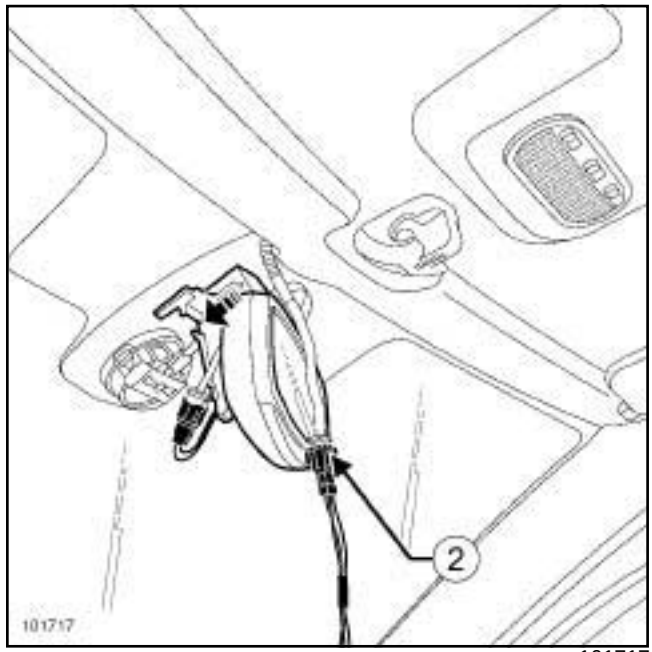
❏ Unclip the upper casing.



101716

❏ Unclip the lower casing (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101717

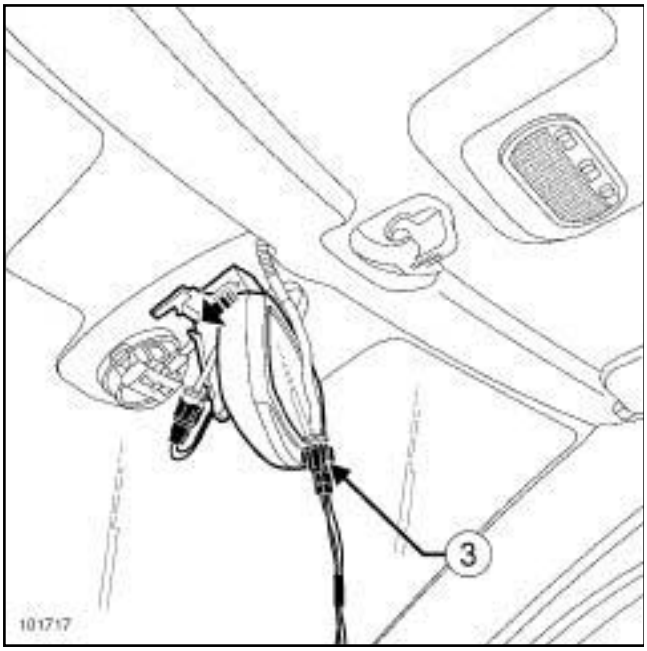
❏ Disconnect the passenger compartment temperature sensor connector (**2**) .

❏ Remove:

- the passenger compartment temperature sensor bolts located inside the lower cover,
- the passenger compartment temperature sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



101717

❑ Refit:

- the passenger compartment temperature sensor,
- the passenger compartment temperature sensor bolts located inside the lower cover.

❑ Connect the passenger compartment temperature sensor connector (**3**) .

II - FINAL OPERATION.

❑ Clip on:

- the lower cowling
- the upper cover.

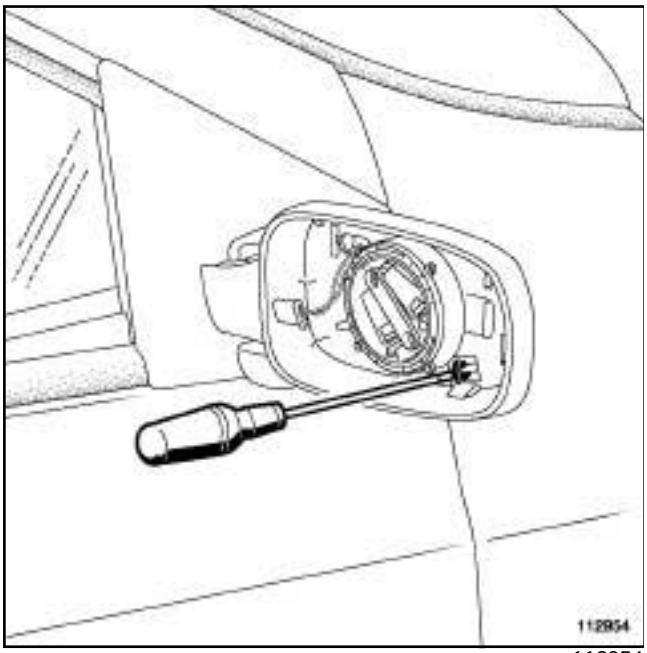
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the door mirror glass (see **Door mirror glass: Removal - Refitting**) ,
- the door mirror casing (see **Door mirror casing: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112954

❑ Unclip the exterior temperature sensor using a flat-blade screwdriver.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Replace the exterior temperature sensor (see **Technical Note 6015A, Electrical wiring repair, 88A, Wiring**).

❑ Clip on the exterior temperature sensor.

II - FINAL OPERATION.

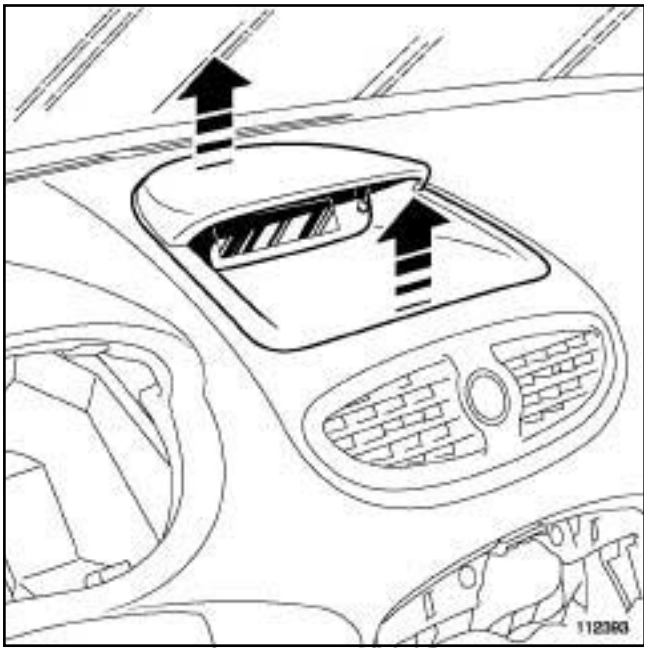
❑ Refit:

- the door mirror glass (see **Door mirror glass: Removal - Refitting**) ,
- the door mirror casing (see **Door mirror casing: Removal - Refitting**) .

Special tooling required	
Car. 1597	Trim removal lever.

REMOVAL

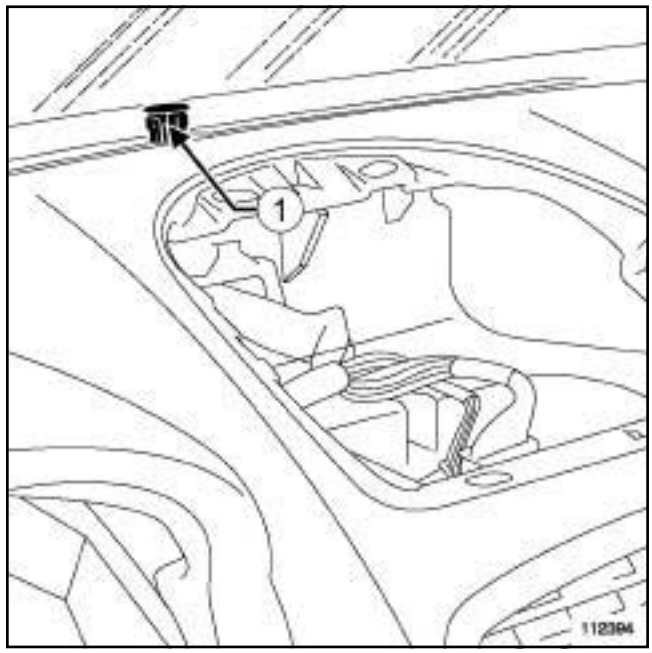
I - REMOVAL PREPARATION OPERATION



112393

❏ Unclip the display mounting using tool **(Car. 1597)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112394

❏ Remove the solar radiation sensor (**1**) from underneath the dashboard.

❏ Disconnect the solar radiation sensor.

❏ Remove the solar radiation sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

112394

❏ Connect the solar radiation sensor.

❏ Refit the solar radiation sensor (**2**) .

II - FINAL OPERATION.

❏ Clip on the display mounting.

AIR CONDITIONING or CLIMATE CONTROL

I - SAFETY

IMPORTANT

The following must be worn when handling refrigerant:

- gloves,

- protective goggles (with side shields if possible).

In the event of refrigerant fluid coming into contact with the eyes, rinse well with clean water continuously for **15 minutes**. If possible, have an eye rinse unit available.

If refrigerant comes into contact with your eyes, consult a doctor immediately. Inform the doctor that the burns were caused by **R134A** refrigerant.

In the event of contact with other unprotected parts of the body (event though the safety advice has been observed), rinse well with clean water continuously for **15 minutes**.

IMPORTANT

Work requiring the use of refrigerant must be carried out in a well-ventilated area.

The refrigerant must not be stored in a shaft, a pit, a hermetically sealed room, etc.

Refrigerants are colourless and odourless fluids.

Refrigerant is heavier than air. As a result there is a risk of asphyxia for those working close to the ground and less than **5 m** away from the working area (pit, well, air vents, etc.).

Switch on gas extraction systems.

At temperatures above **100˚C**, the refrigerant will decompose and produce a highly irritant gas.

IMPORTANT

It is forbidden to smoke close to an open refrigerant circuit.

II - GENERAL RECOMMENDATIONS

It is possible to place components in the drying oven after painting or to carry out work near the system if the temperature does not exceed **80˚C**.

IMPORTANT

To prevent refrigerant from leaking, never repair a faulty air conditioning circuit component.

Replace all faulty components.

It is essential to follow the routing of the connecting pipes.

Ensure that the refrigerant connecting pipes are correctly fitted so that they will not come into contact with metal parts in the engine compartment.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

WARNING

To avoid damaging the surface of the air conditioning pipes when removing the seals, do not use a tool with a metallic end piece.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

WARNING

To prevent any leaks, check that the seal and surface of the pipe are in good condition. The seal and the surface must be clean and free from scratches.

WARNING

Lubricants are not mutually compatible: always observe the type and quantity of oil recommended for each compressor even when topping up as this could damage the cold loop components.

Always close the oil cans again after use to keep moisture out and never use oil contained in a can that has been open for a long time (viscous appearance).

AIR CONDITIONING or CLIMATE CONTROL

To find out the oil part numbers (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products).

Table of vehicle refrigerant capacities according to their engines and various features.

Engine	Refrigerant capacity (g)	Type of compressor	Type of oil	Quantity of oil (ml)
D4F	**510 ± 35**	**SANDEN SD6V12**	**PAG SP10**	**135 ± 10**
K4M				
K4J				
K9K				
M4R		**DELPHY 5CVC**	**PLANETELF PAG 488**	**150 ± 10**
F4R				

Table of quantities of oil to add when replacing components:

Operation on the air conditioning circuit	Quantity of oil (ml or cc)
Circuit oil change	Measure the volume recovered and add the same quantity of new oil
Split hose or other rapid leak	**100**
Replacing a hose	Quantity recovered + **10**
Replacement of a condenser	Quantity recovered + **30**
Replacement of an evaporator	Quantity recovered + **30**
Replacement of the dehydrator canister	Quantity recovered + **15**
Removing and refitting a compressor	Quantity recovered
Replacing a compressor	None added
Standard replacement of a compressor	Top up as necessary
Replacement of a compressor and one or more components of the heating and air conditioning system	None added
Standard replacement of a compressor and replacement of one or more heating and air conditioning circuit components	Top up as necessary

AIR CONDITIONING or CLIMATE CONTROL

No.	Description
(1)	Dehydrator reservoir
(2)	Compressor
(3)	Pressure sensor
(4)	Condenser
(5)	Condenser/compressor connecting pipe
(6)	Dehydration canister/pressure relief valve connecting pipe

D4F or K4J or K4M

No.	Description
(7)	Pressure relief valve/compressor connecting pipe

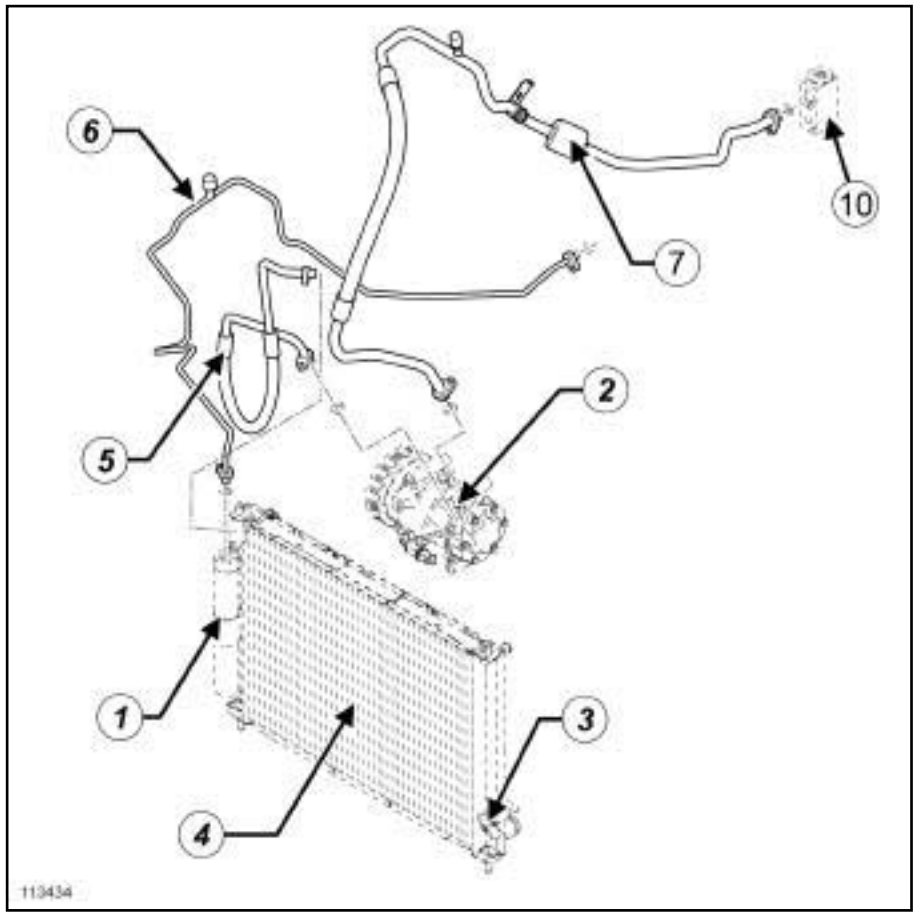
F4R or K9K or M4R

No.	Description
(8)	Expansion valve/intermediate pipe connecting pipe
(9)	Compressor - intermediate pipe connecting pipe

No.	Description
(10)	Expansion valve

AIR CONDITIONING or CLIMATE CONTROL

D4F or K4J or K4M

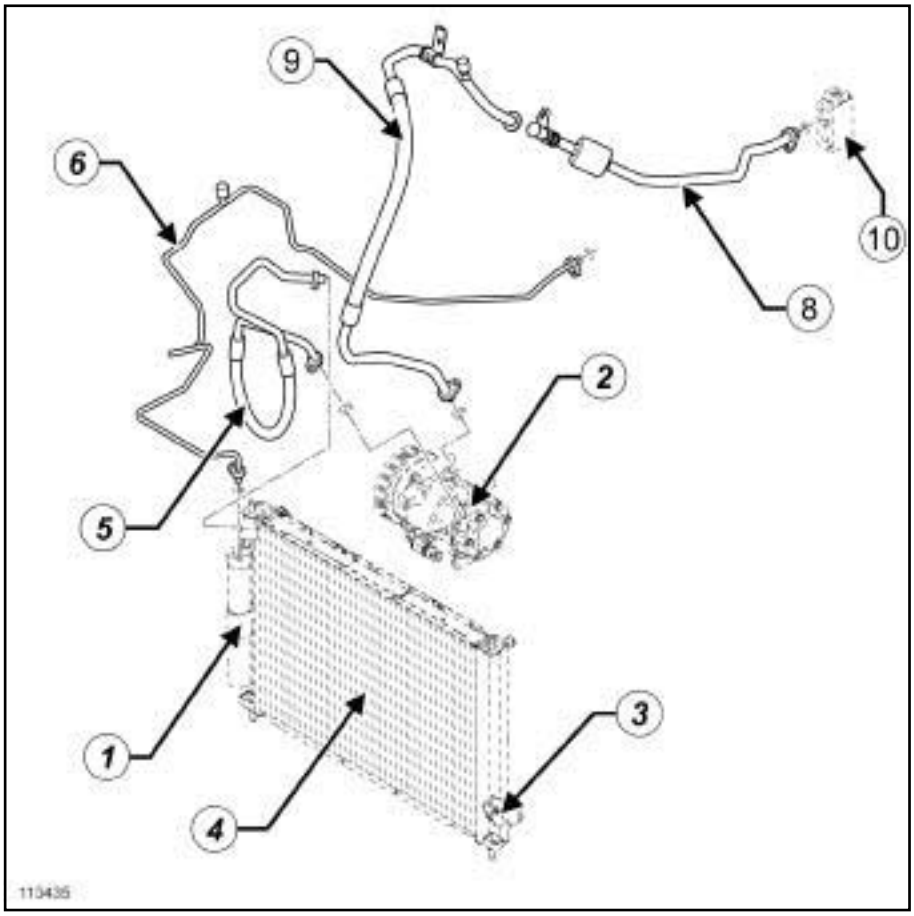


113434

All the components shown in the diagram are located in the engine compartment.

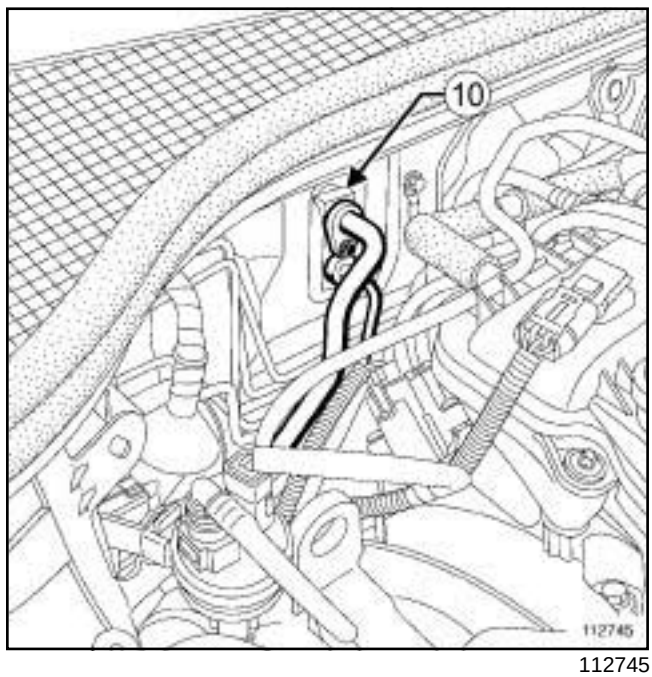
AIR CONDITIONING or CLIMATE CONTROL

F4R or K9K or M4R



113435

All the components shown in the diagram are located in the engine compartment.



112745

Remove the pipe unions to access the expansion valve (**10**) .

Equipment required
Dual-sensor temperature measuring device

Note:

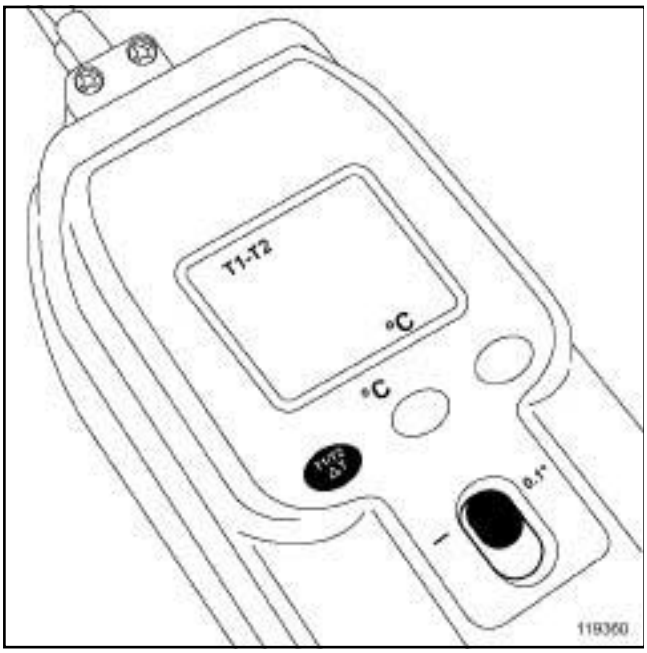
When performing RENAULT maintenance, check the air conditioning system at the end of the vehicle's maintenance program so that the engine will be cold.

I - PREPARATION OPERATION FOR THE MEASUREMENT DEVICE

❏ Check that the measurement device functions properly (see the device's instruction manual).

❏ Set units to **˚C**.

❏ Set the device's sensitivity to **0.1˚C**.



119360

❏ Set the reading mode to (ΔT) = (T1 - T2)

119358

❏ Check the two sensors T1 and T2 in order to calculate the correction (Δ) to be applied to the measurement (T1 - T2). the two sensors must indicate the same measurement under the same conditions. Check the sensors by:

- bringing the ends of the 2 sensors together until they touch,
- placing the sensors in the air flow of an air vent,
- setting the passenger compartment fan assembly to top speed.
- waiting for the value to become stable.
- recording the correction value (Δ).

Note:

It is not necessary to start the vehicle. The device display is in mode (ΔT) = (T1 - T2).

WARNING

Note the difference and sign as soon as the temperature becomes stable.

Calculate the correction (Δ) = - (T1 - T2) to be applied to the measurement (ΔT).

Examples:

If (T1 - T2) = - 0.3˚C, correct the measurement (ΔT) by (Δ) = + 0.3˚C

If (T1 - T2) = + 0.3˚C, correct the measurement (ΔT) by (Δ) = - 0.3˚C

AIR CONDITIONING or CLIMATE CONTROL

II - VEHICLE PREPARATION OPERATION

❑ Put the vehicle in the shade, where the temperature is greater than or equal to **15°C** minimum.

❑ Close the bonnet.

❑ Open the front windows.

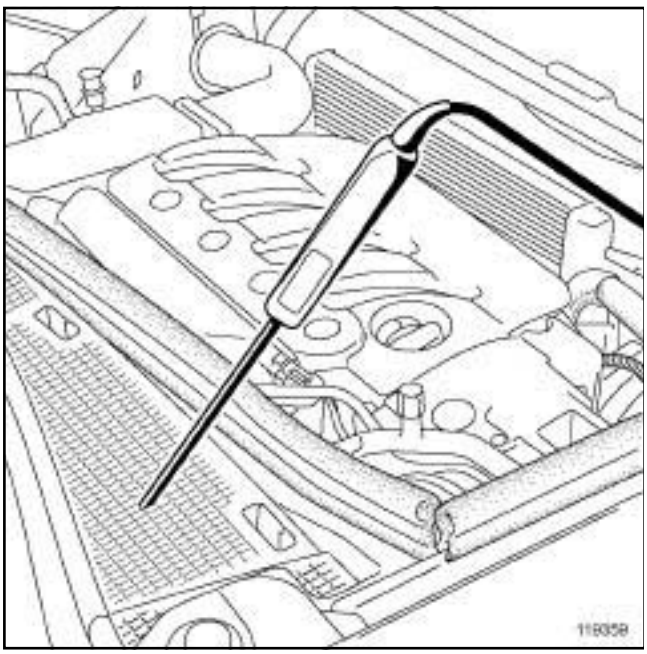
❑ Start the engine and let it idle.

❑ Set the air conditioning controls with:

- recirculation mode in the external position,
- the ventilation distribution in "face" mode,
- the temperature control to coldest temperature setting in front (and at the back, if it exists),
- the speed of the passenger compartment fan assembly set to maximum (switch off the rear control if it exists),
- the front side and centre air vents open with the vanes in a neutral position,
- the air conditioning system must be turned on (indicator light illuminated).

❑ **Wait 5 minutes with the engine idling before taking any measurements.**

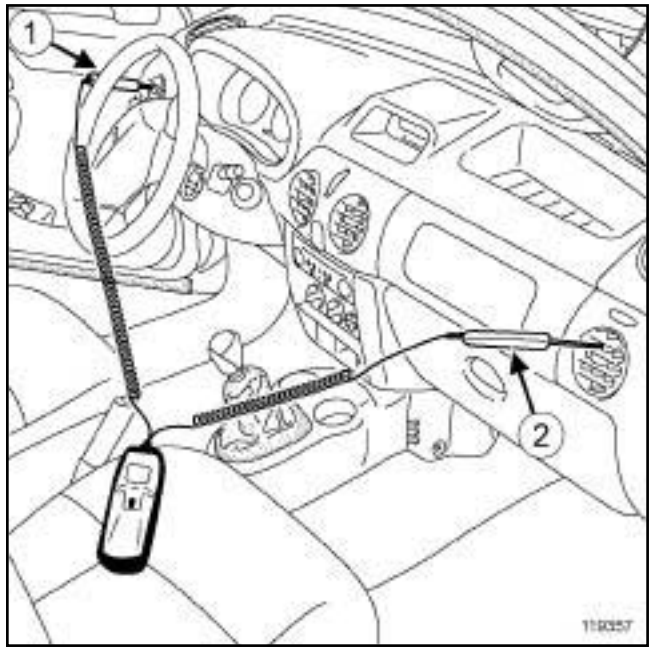
III - MEASUREMENTS



119359

❑ Record the air temperature at the scuttle panel grille (T3).

- open the bonnet, depending on the vehicle, to access the scuttle panel grille.
- place the sensor where air is drawn through the scuttle panel grille.
- wait for the value to become stable.
- record the T3 temperature value.
- close the bonnet if it was opened.



119357

❑ Record the air temperature at the left air vent (T1), and at the right air vent (T2).

- fit sensor T1 in the left air vent (**1**) .
- fit sensor T2 in the right air vent (**2**) .

❑ Record the differences in temperature once the (ΔT) value has stabilised:

- between T3 and the higher of values T1 or T2, (T3 - highest value).
- record this difference in temperature.
- between T1 and T2 (read the (ΔT) value (T1-T2) display mode).
- record the difference in temperature (ΔT) according to the correction (Δ) to be applied to the measurement.

❑ If the (ΔT)=(T1-T2) measurement is unstable, follow the procedure below:

Note:

Depending on the vehicle's air conditioning system programming, this check method may not be applicable because the engine cooling fan assembly has been activated. Its operation renders the (ΔT) value between T1 and T2 unstable. To eliminate this error, the fan assembly must be activated for the entire period over which temperature T1 and T2 measurements are recorded.

AIR CONDITIONING or CLIMATE CONTROL

❑ Activate the engine cooling fan assembly operation by modifying the engine speed.

- stabilise the engine speed at **2000 rpm** while T1 and T2 temperature measurements are being recorded.
- check that the engine cooling fan assembly operating.
- record the temperatures by following the instructions given in the paragraph MEASUREMENTS.

IV - FAULT FINDING PROCEDURE

❑ The following two following conditions must be met:

- the difference between T3 and the higher of the two values T1 or T2, must be greater than or equal to **5°C**,
- the difference between T1 and T2 must be less than or equal to **2°C**.

Note:

If one of these two conditions is not met, then the air conditioning system is not working properly. Should this be the case, refer to the fault finding procedure for the air conditioning system for the vehicle concerned.

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
Diagnostic tool

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) .

Note:

After any work on air conditioning circuit leaks on the Laguna II, Vel Satis and Espace IV, check that filling fault **DF033 Refrigerant** is not present, using the **Diagnostic tool**. If it is present, clear it. The compressor cannot operate until the fault is cleared.

There are several types of detector:

- electronic detectors,

- trace detectors.

Note:

To carry out an after repair check, use the procedure for the electronic detector **(1)**. To carry out a more thorough check for leaks, use a trace detector **(2)**.

Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

REFRIGERANT CIRCUIT SEALING CHECKING OPERATION

1 - Electronic detectors:

❑

WARNING
Consult the device's operating manual to avoid incorrect use.

❑ Switch on the electronic detector.

❑ Start the engine.

❑ Let the air conditioning system run for **15 minutes**.

❑ Switch off the engine.

❑ Check the sealing of the refrigerant circuit using the electronic trace detector (follow the trace of the circuit as closely as possible, to limit variations due to other gases).

Note:

If replacing a defective part (see **62A, Air conditioning**).

2 - Trace detectors

❑

WARNING
Consult the device's operating manual to avoid incorrect use.

WARNING
To avoid damaging the cold loop components (corrosions, etc.), do not use dye if the traces reveal that some product has already been injected.

❑ Check for dye on the cold loop components with the **ultraviolet light**.

❑ Inject the dye.

❑ Start the engine.

❑ Let the air conditioning system run for **15 minutes**.

❑ Switch off the engine.

❑ Check the refrigerant circuit sealing by scanning the circuit with the **ultraviolet light**.

Note:

If replacing a defective part (see **62A, Air conditioning**).

❑ Affix a label (supplied with the dye capsule), to indicate that dye has been used (as close as possible to the filler valves).

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) .

WARNING

Consult the device's operating manual to avoid incorrect use.

WARNING

To avoid damaging the cold loop components (corrosions, etc.), do not use dye if the traces reveal that some product has already been injected.

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

AIR CONDITIONING or CLIMATE CONTROL

I - RECOVERING REFRIGERANT FLUID

❑

Note:

- If the air conditioning circuit is fitted with a single filler valve, some filling equipment only requires the use of the high pressure pipe (refer to the filling station instructions).
- Depending on the situation, run the system for a few minutes before recovering the coolant to improve drainage.

Note:

It is essential to follow these procedures to prevent:

- gas escaping when the circuit is opened,
- pollution of the environment through the release of gas into the atmosphere when the circuit is opened or when a vacuum is created.

When draining or checking the refrigerant fill load, three scenarios are to be taken into account:

- the engine is running and the air conditioning is in operation (A),
- the engine is running but the air conditioning is not in operation (B),
- the engine is not running nor is the air conditioning in operation (C).

❑ Scenario A:

- Operate the air conditioning until the cooling fan assembly is triggered twice,
- Switch off the engine,
- drain for the first time (note down the original value),
- wait **15 minutes**,
- check that the relative pressure is no more than **0 bar**,
- repeat the cycles until the relative pressure is equal to or less than **0 bar**,
- add together the values of the various draining operations; the fill is confirmed as being correct if the volume of refrigerant fluid is the specified fill **+35g** or **-100g**.

Scenario B:

- run the engine until the cooling fan is triggered twice,
- Switch off the engine,
- drain for the first time (note down the value),
- wait **15 minutes**,
- run the engine until the cooling fan is triggered twice,
- Switch off the engine,
- drain for the second time (note down the value),
- repeat the cycles until the relative pressure is equal to or less than **0 bar**,
- add together the values of the various draining operations; the fill is confirmed as being correct if the volume of refrigerant fluid is the specified fill **+35g** or **-100g**.

Scenario C:

- drain for the first time (note down the value),
- wait **2 hours**,
- repeat the cycles until the relative pressure is equal to or less than **0 bar**,
- add together the values of the various draining operations; the fill is confirmed as being correct if the volume of refrigerant fluid is the specified fill **+35g** or **-100g**.

II - CREATING A VACUUM

❑ It is essential to carry out vacuum extraction correctly before loading, otherwise the air conditioning will not work properly.

There are two scenarios to consider:

- vacuum created immediately after discharge (scenario A),
- vacuum created after an interval of several hours or days (scenario B).

Scenario A:

- creation of a vacuum takes **20 minutes**.

Scenario B:

- creation of a vacuum takes **45 minutes** to eliminate any trace of moisture.

❑ Test the seal once the vacuum has been created (some stations do this automatically).

III - FILLING

❑ Fill up the refrigerant circuit using the **refrigerant charging station**.

AIR CONDITIONING or CLIMATE CONTROL

- ❏ Top up the oil with the recommended type and volume of oil and refrigerant, depending on the work carried out (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .
- ❏ Check there are no leaks using **the electronic detector** (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

WARNING

After injecting dye into the refrigerant, be sure to indicate this on a label (supplied with the dye capsule), and the date of the operation.

Position the label so it is visible near to the cold loop filler valve.

- ❏ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

Note:

Before removal, use **DIALOGYS** to check how the condenser is fitted and arranged.

There are 2 possibilities:

- the condenser and cooling radiator cannot be separated,
- the condenser and cooling radiator can be separated.

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

WITHOUT DISCHARGE LAMPS

❑ Remove the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights).

DISCHARGE LAMPS

❑ Remove the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs).

❑ Remove the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

K9K – D4F, and 784

❑ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Remove air deflectors.

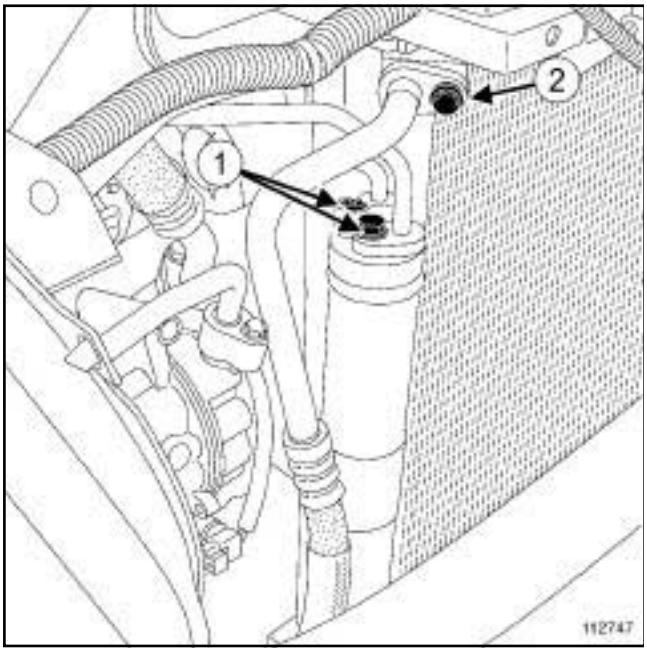
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - The condenser and the cooling radiator cannot be separated

❑ Remove the « cooling radiator - condenser » assembly (see **Cooling radiator: Removal - Refitting**) (19A, Cooling).

AIR CONDITIONING or CLIMATE CONTROL

2 - The condenser and the cooling radiator can be separated



112747

❑ Remove:

- the bolts (**1**) from the connecting pipes on the dehydrator reservoir,
- the connecting pipe bolt (**2**) from the condenser.

❑ Remove:

- the connecting pipes on the dehydrator reservoir,
- the connecting pipe on the condenser.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

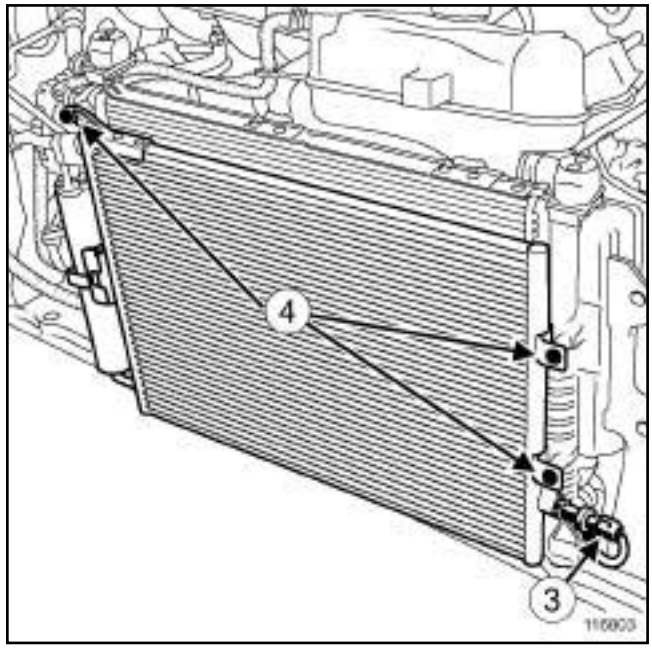
❑ Fit plugs into the openings.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuit with part no. **77 01 208 228 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.



116803

❑ Disconnect the pressure sensor connector (**3**) .

❑ Remove:

- the bolts (**4**) from the condenser,
- the condenser.

REFITTING

I - REFITTING PREPARATION OPERATION

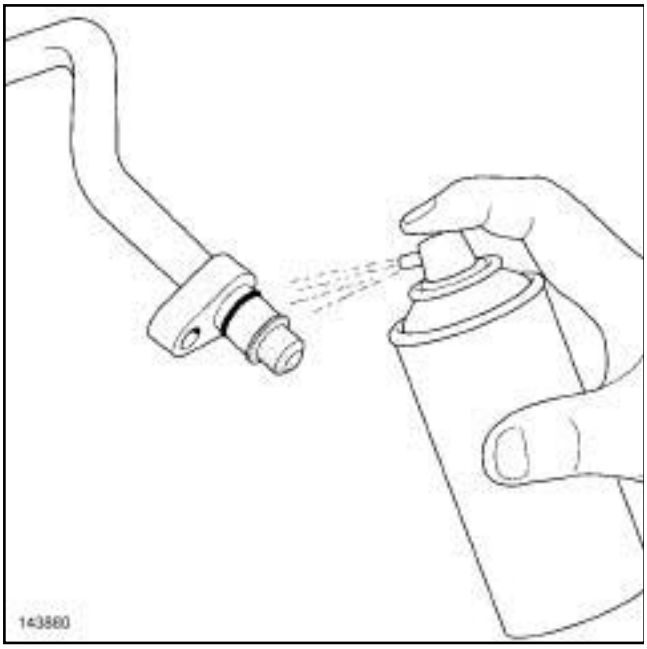
❑

WARNING

Do not remove the blanking plugs from each component until the last moment.

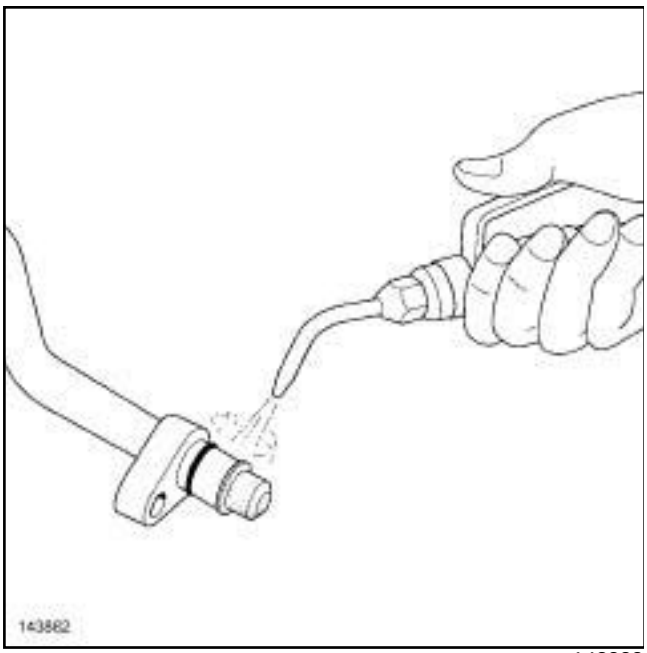
Also, do not remove the components from their packaging until they are to be fitted to the vehicle.

AIR CONDITIONING or CLIMATE CONTROL



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



143882

❑ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❑ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED

1 - The condenser and the cooling radiator cannot be separated

❑ Refit the « cooling radiator - condenser » assembly (see **Cooling radiator: Removal - Refitting**) (19A, Cooling).

2 - The condenser and cooling radiator can be separated

❑ Refit:

- the condenser,
- the condenser bolts.

❑ Connect the pressure sensor connector.

❑ Fit:

- the connecting pipes on the dehydrator reservoir,
- the connecting pipe on the condenser.

❑ Refit:

- the dehydrator reservoir connecting pipe bolts,
- the connecting pipe bolt on the condenser.

❑ Tighten:

- the dehydrator reservoir connecting pipe bolts,
- the connecting pipe bolt on the condenser.

III - FINAL OPERATION

❑ Refit the air deflectors.

K9K – D4F, and 784

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Remove the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

WITHOUT DISCHARGE LAMPS

❑ Refit the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights).

DISCHARGE LAMPS

❑ Refit the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

Dehydrator reservoir: Removal - Refitting

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

K9K – D4F, and 784

❏ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

F4R or M4R, and WITHOUT DISCHARGE LAMPS

❏ Remove:

- the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

F4R or M4R, and DISCHARGE LAMPS

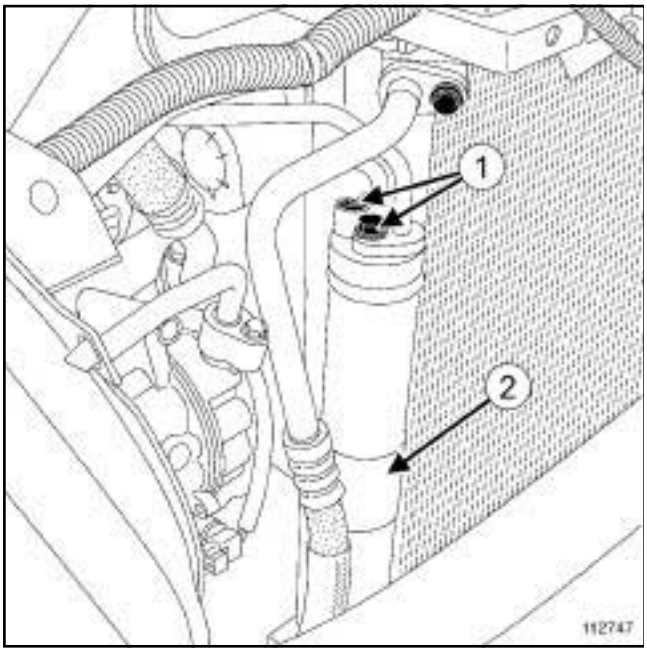
❏ Remove:

- the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

❏ Remove the air deflector.

AIR CONDITIONING or CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112747

❑ Remove the dehydrator reservoir connecting pipe bolts (**1**) .

❑ Move aside the connecting pipes.

WARNING
In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❑ Plug the openings on the connecting pipes and dehydrator reservoir.

WARNING
Plugs must be fitted on the hoses to prevent moisture from entering the system.

Note:
Use blanking plugs for the fuel circuit with part no. **77 01 208 228 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

❑ Remove:

- the dehydrator reservoir retaining clip bolts (**2**) ,
- the dehydrator reservoir.

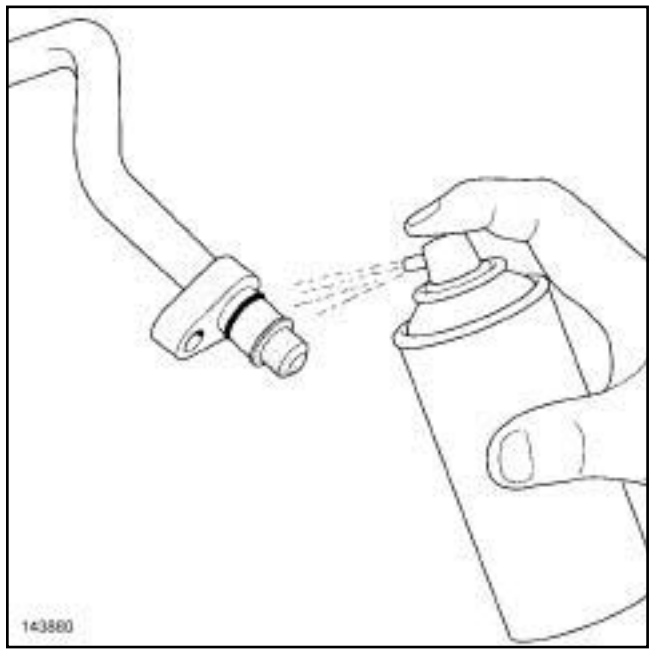
REFITTING

I - REFITTING PREPARATION OPERATION

❑

WARNING
Do not remove the blanking plugs from each component until the last moment.

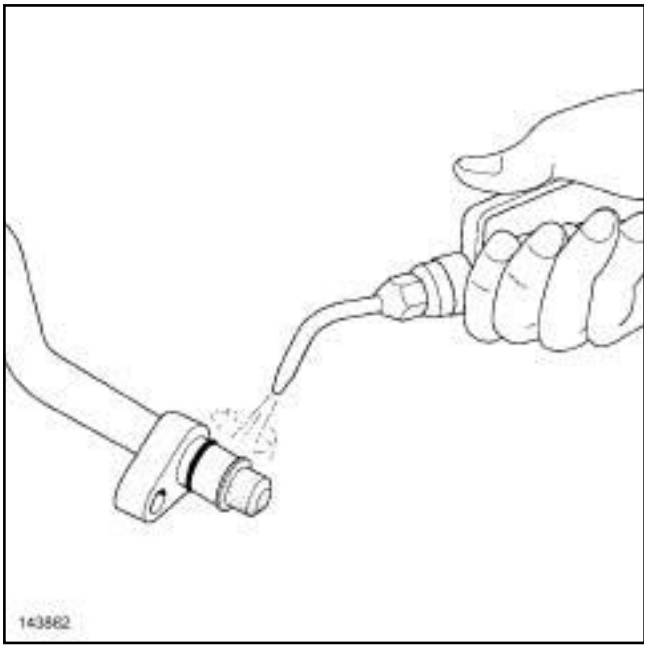
Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

AIR CONDITIONING or CLIMATE CONTROL



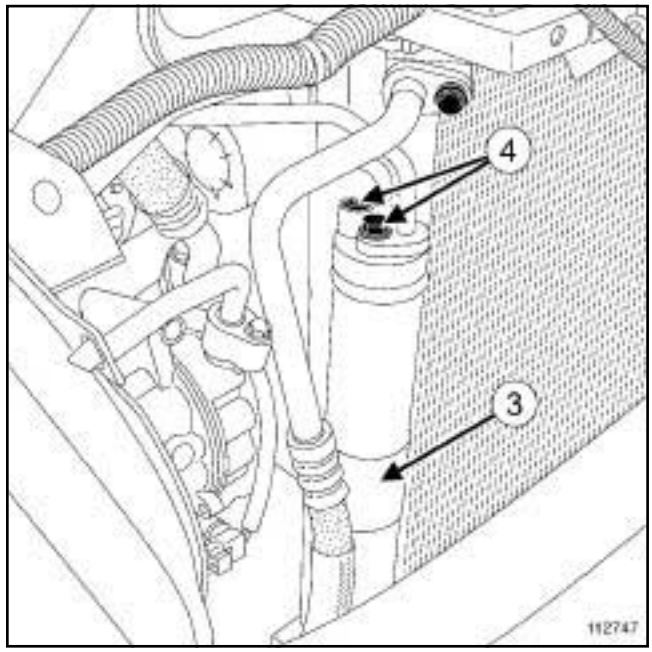
143882

❏ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❏ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED



112747

❏ Refit:

- the dehydrator reservoir,

- the dehydrator reservoir retaining clip (**3**) bolts.

❏ Tighten the dehydrator reservoir retaining clip bolts.

❏ Fit the connecting pipes to the dehydrator reservoir.

❏ Refit the dehydrator reservoir connecting pipe bolts (**4**) .

❏ Tighten the connecting pipe bolts.

III - FINAL OPERATION

❏ Refit the air deflector.

F4R or M4R, and WITHOUT DISCHARGE LAMPS

❏ Refit:

- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

- the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights),

AIR CONDITIONING or CLIMATE CONTROL

F4R or M4R, and DISCHARGE LAMPS

❑ Refit:

- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

- the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),

K9K – D4F, and 784

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the engine cover,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).
- the accessories belt (see **Accessories belt: Removal - Refitting**) (11A, Top and front of engine).

K9K – D4F, and 784

❑ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

F4R or M4R, and WITHOUT DISCHARGE LAMPS

❑ Remove the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights).

F4R or M4R, and DISCHARGE LAMPS

❑ Remove the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs).

F4R or M4R

❑ Remove the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

❑ Remove the air deflector.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

WARNING

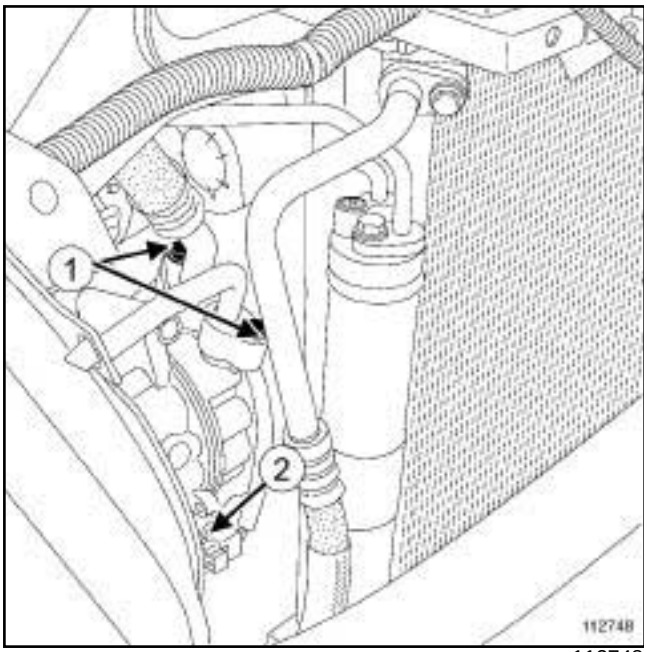
To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air; They must be clean. Do not use any which have already been used to plug a fuel circuit.

AIR CONDITIONING or CLIMATE CONTROL

D4F or K4J or K4M or K9K

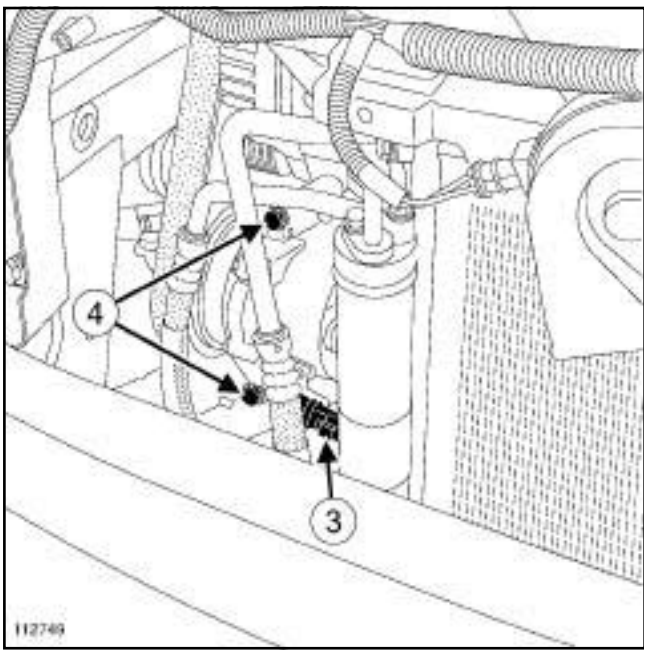


112748

❏ Remove the bolts (**1**) from the connecting pipes on the compressor.

❏ Move aside the connecting pipes.

❏ Plug the openings on the connecting pipes and compressor.



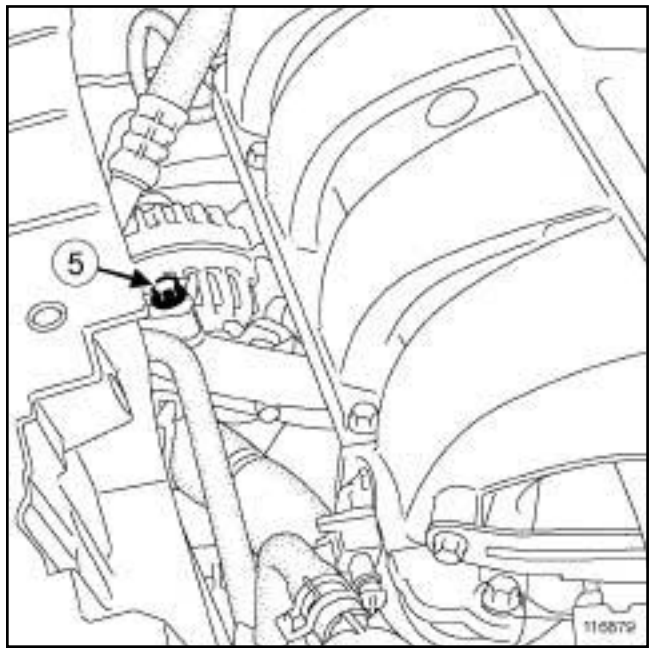
112749

❏ Disconnect the compressor connector (**3**) .

❏ Remove:

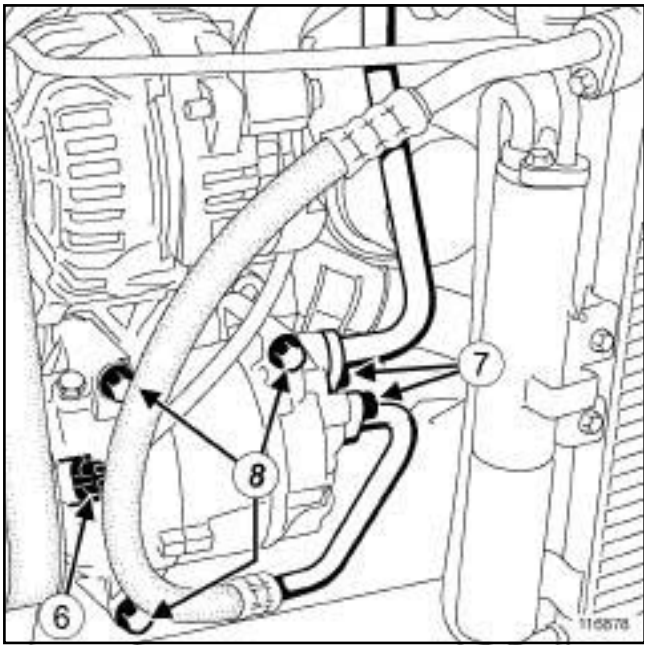
- bolts ***(2)*** and (**4**) from the compressor,
- the compressor.

F4R or M4R



116879

❏ Remove the bolt (**5**) from the expansion valve - compressor connecting pipe.



116878

- ❏ Disconnect the compressor connector (**6**) .
- ❏ Remove the bolts (**7**) from the connecting pipes on the compressor.
- ❏ Move aside the connecting pipes.
- ❏ Plug the openings on the connecting pipes and compressor.
- ❏ Remove:
  - the compressor bolts (**8**) ,
  - the compressor.

REFITTING

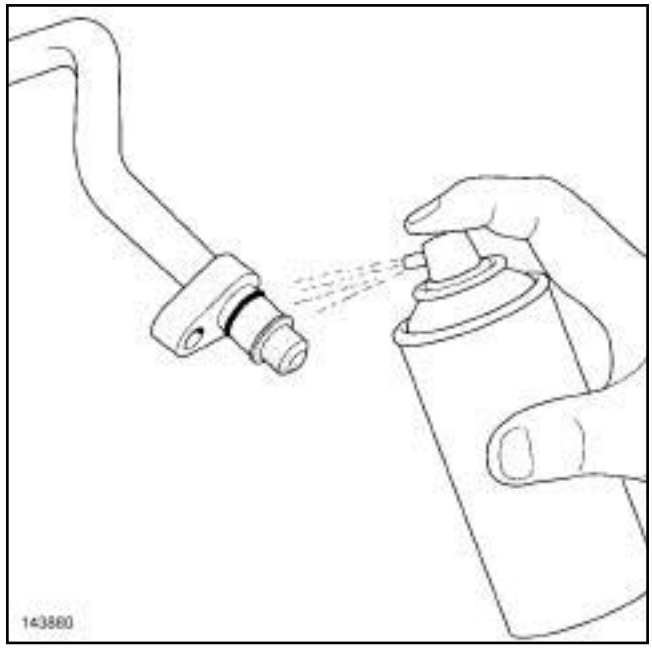
I - REFITTING PREPARATION OPERATION

❏

WARNING

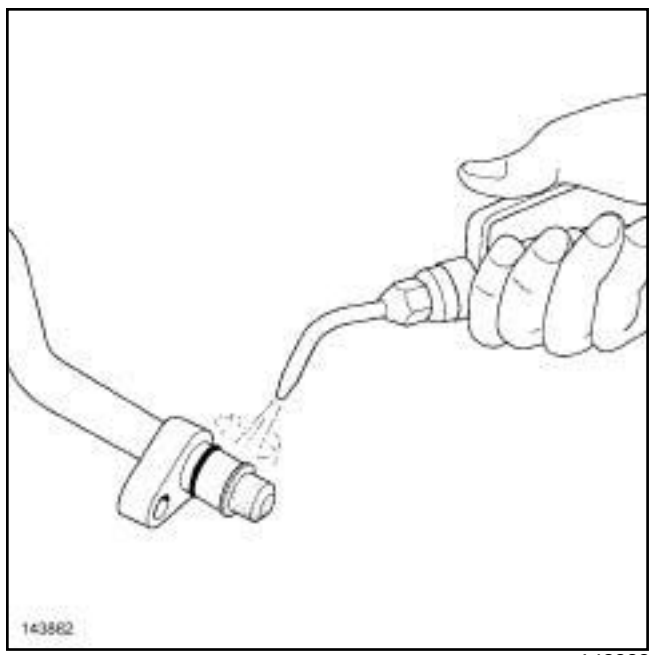
Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

- ❏ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



143882

- ❏ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.
- ❏ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .
- ❏ Remove the blanking plugs.

AIR CONDITIONING or CLIMATE CONTROL

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the compressor,
- the compressor bolts.

❑ Tighten the compressor bolts.

F4R or M4R

❑ Refit the expansion valve - compressor connecting pipe bolt.

❑ Connect the connector to the compressor.

❑ Position the compressor connecting pipes.

❑ Refit the compressor connecting pipe bolts.

❑ Tighten the connecting pipe bolts.

III - FINAL OPERATION

❑ Refit the air deflector.

F4R or M4R

❑ Remove the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

F4R or M4R, and DISCHARGE LAMPS

❑ Refit the headlights (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs).

F4R or M4R, and WITHOUT DISCHARGE LAMPS

❑ Refit the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights).

K9K – D4F, and 784

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Refit the accessories belt (see **Accessories belt: Removal - Refitting**) (11A, Top and front of engine).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑

Note:

A summary table gives the quantity of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**)

Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ In the event of replacement, apply the after repair procedure:

- Switch on the ignition,
- Check that the air conditioning is off,
- Switch the ventilation to speed 2,
- Put the temperature setting at minimum,
- Select the air recirculation position,
- Start the engine.
- Run the air conditioning in manual mode (in the case of climate control do not press auto),
- Run the engine at idle speed for 3 minutes with air conditioning,
- Switch off the engine.

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

AIR CONDITIONING or CLIMATE CONTROL

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine cover.

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

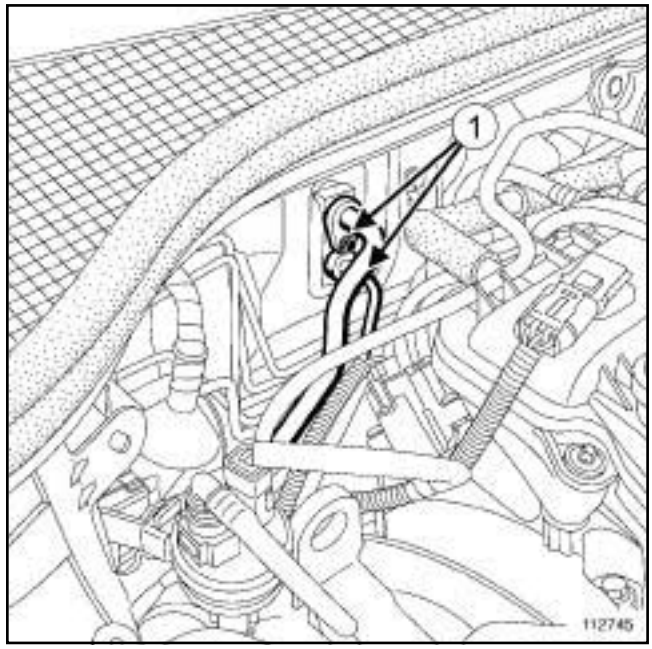
I - REMOVAL PREPARATION OPERATION

❏ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).



112745

❏ Remove the mountings from the bulkhead soundproofing.

❏ Lift away the bulkhead soundproofing.

❏ Remove the bolts (**1**) from the expansion valve connecting pipes.

❏ Remove the connecting pipes from the expansion valve.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❏ Plug the openings of the connecting pipes and expansion valve.

WARNING

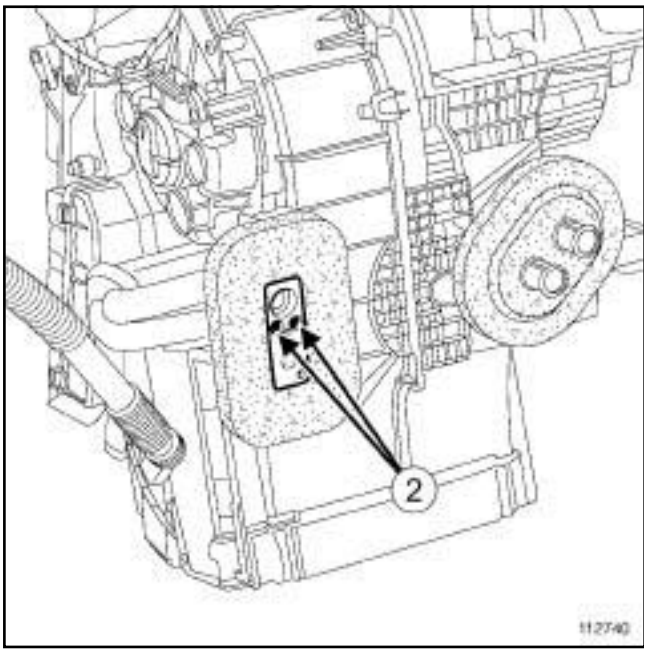
To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

AIR CONDITIONING or CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112740

❑ Remove:

- the bolts (**2**) from the expansion valve,
- the expansion valve.

WARNING

Do not lose the bolt when removing it: if the bolt falls into the engine compartment, it will generate a noise which will be heard by the customer. The engine will need to be removed in order to recover the bolt.

REFITTING

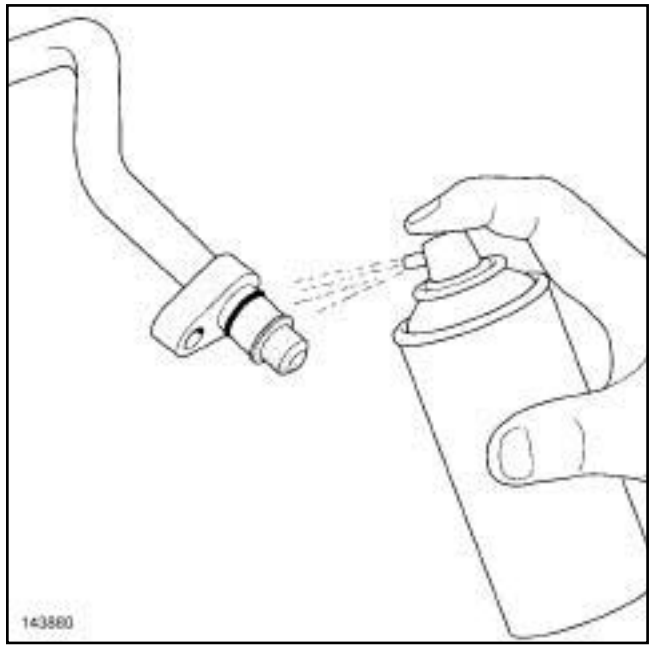
I - REFITTING PREPARATION OPERATION

❑

WARNING

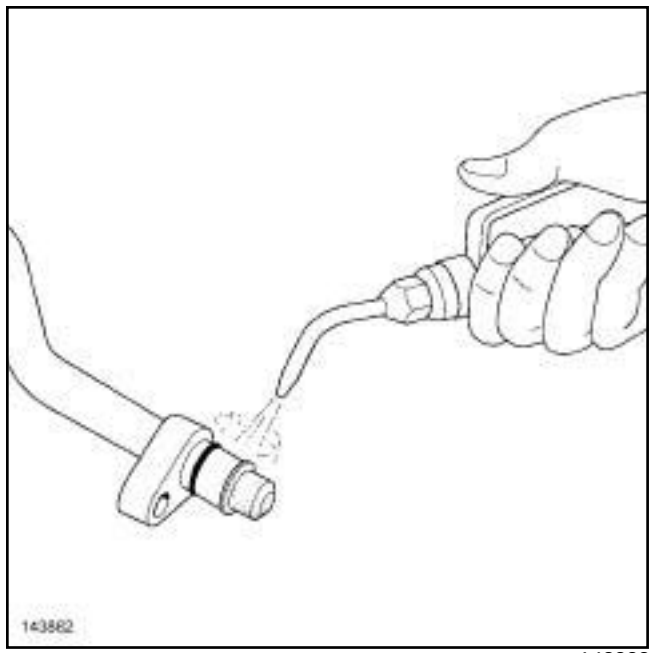
Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



143882

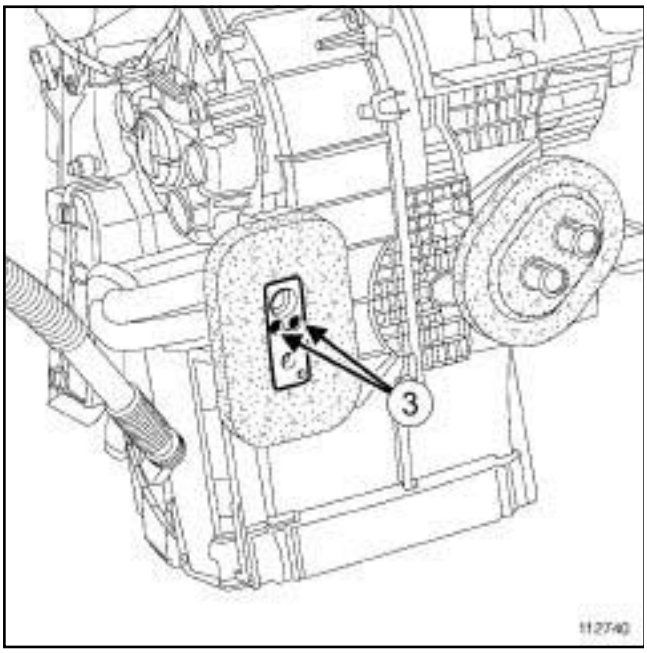
❑ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❑ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Remove the blanking plugs.

AIR CONDITIONING or CLIMATE CONTROL

II - REFITTING OPERATION FOR PART CONCERNED



112740

❑ Refit:

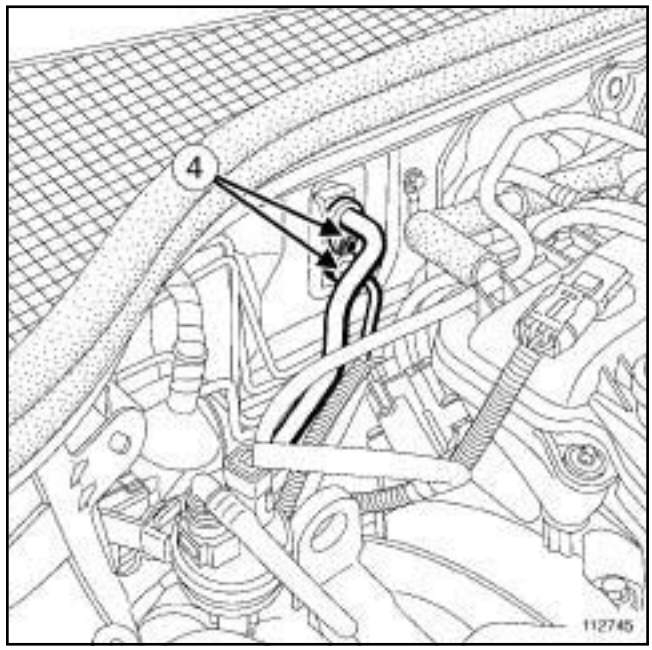
- the expansion valve,
- the expansion valve bolts (**3**) on the distribution unit.

Note:

Gradually retighten the expansion valve mounting bolts so that the expansion valve is uniformly positioned on the air conditioning pipes.

❑ Tighten the expansion valve bolts.

III - FINAL OPERATION



112745

❑ Fit the expansion valve connecting pipes.

❑ Refit the expansion valve connecting pipe bolts (**4**) .

❑ Tighten the connecting pipe bolts.

❑ Fit the bulkhead soundproofing.

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

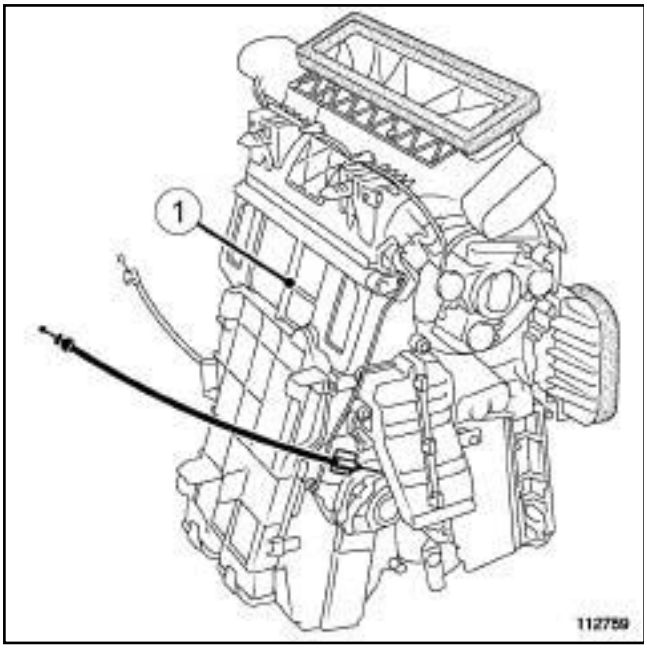
❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the bulkhead soundproofing mountings,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),

AIR CONDITIONING or CLIMATE CONTROL

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.



112759

Note:

The evaporator is supplied already assembled in the distribution unit. (**1**)

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the distribution unit (see **61A**, **Heating**, **Distribution unit: Removal - Refitting**, page **61A-50**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the distribution unit (see **61A**, **Heating**, **Distribution unit: Removal - Refitting**, page **61A-50**) .

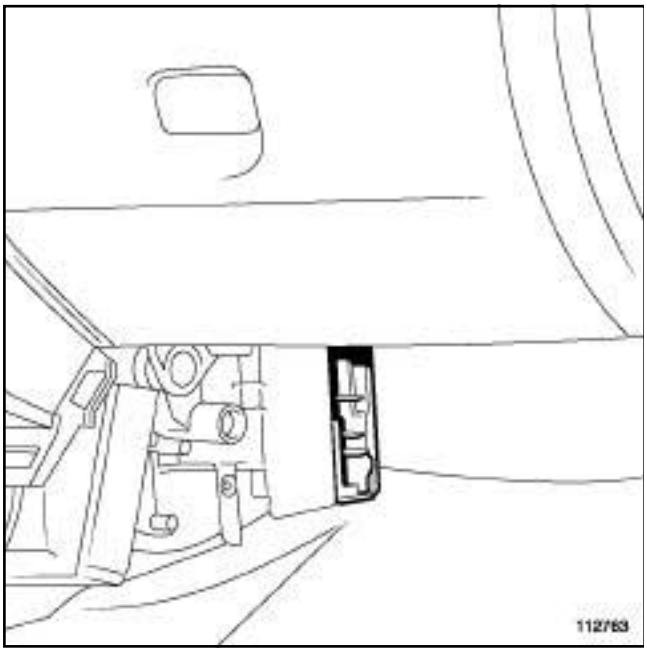
AIR CONDITIONING or CLIMATE CONTROL

❑

WARNING
Do not spray the cleaner via the air inlet, as this could damage the fan assembly.

REMOVAL

LEFT-HAND DRIVE



112763

❑ Remove the cabin filter (see **61A**, **Heating**, **Cabin filter: Removal - Refitting**, page **61A-17**) .

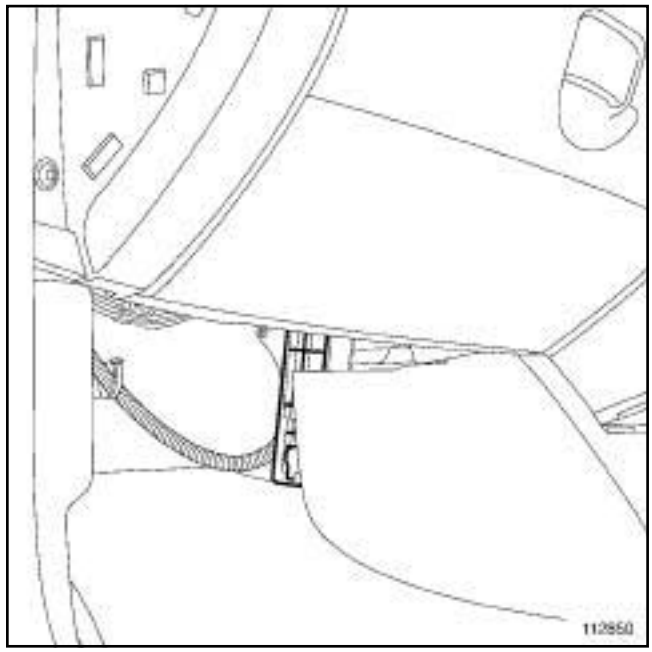
❑ Apply the air conditioning cleaner using an extension piece.

❑ Spray the entire aerosol.

❑ Leave the product to work for **15 minutes**.

❑ Run the fan assembly very slowly for **5 minutes**.

RIGHT-HAND DRIVE



112850

❑ Remove the cabin filter (see **61A**, **Heating**, **Cabin filter: Removal - Refitting**, page **61A-17**) .

❑ Apply the air conditioning cleaner.

❑ Spray the entire aerosol.

❑ Leave the product to work for **15 minutes**.

❑ Run the fan assembly slowly for **5 minutes**.

REFITTING

❑ Refit the cabin filter.

❑ Clip on the cabin filter.

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL

Special tooling required	
Mot. 1410	Set of refrigerant pipe union disconnection sockets. (dimensions in inches): 5/16, 3/8, 1/2, 5/8, 3/4, 7/8.

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❏ Remove:

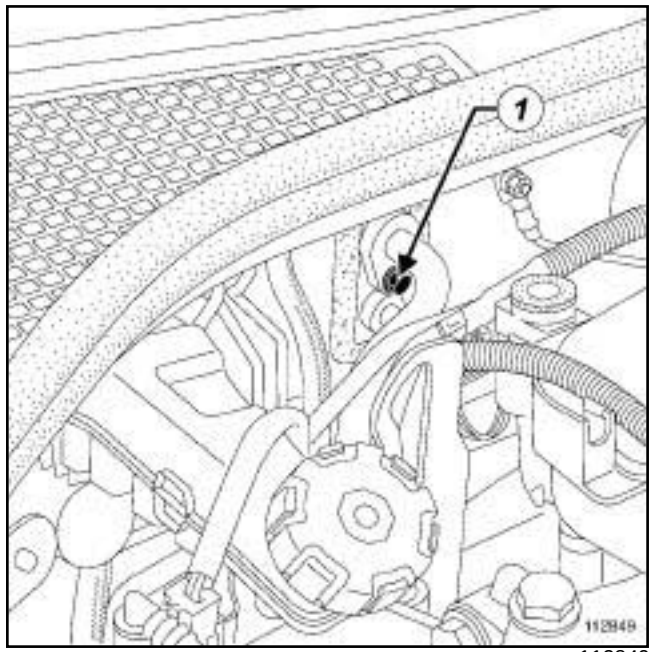
- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the bulkhead soundproofing mountings.

❏ Lift away the bulkhead soundproofing.

Note:

Be careful not to bend the soundproofing when moving away from the bulkhead.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112849

❏ Remove the connecting pipe bolt (**1**) on the expansion valve.

WARNING

Do not lose the bolt when removing it: if the bolt falls into the engine compartment, it will generate a noise which will be heard by the customer. The engine will need to be removed in order to recover the bolt.

❏ Remove the pipe from the expansion valve.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❏ Plug the openings.

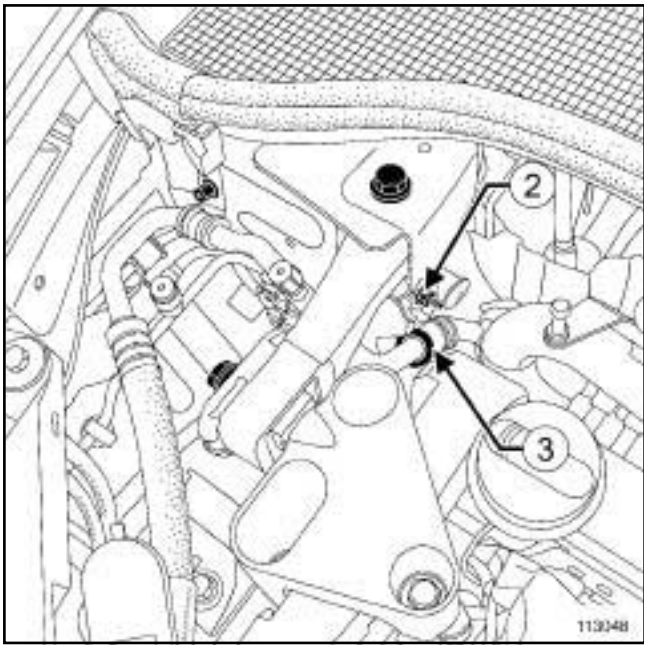
WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL



113048

❑ Remove the connecting pipe retaining clip nut (**2**) .

❑ Uncouple the expansion valve - intermediate pipe connecting pipe from the compressor - intermediate pipe connecting pipe using the **(Mot. 1410)** at (**3**) .

❑ Plug the openings.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

❑ Remove the expansion valve - intermediate pipe connecting pipe.

REFITTING

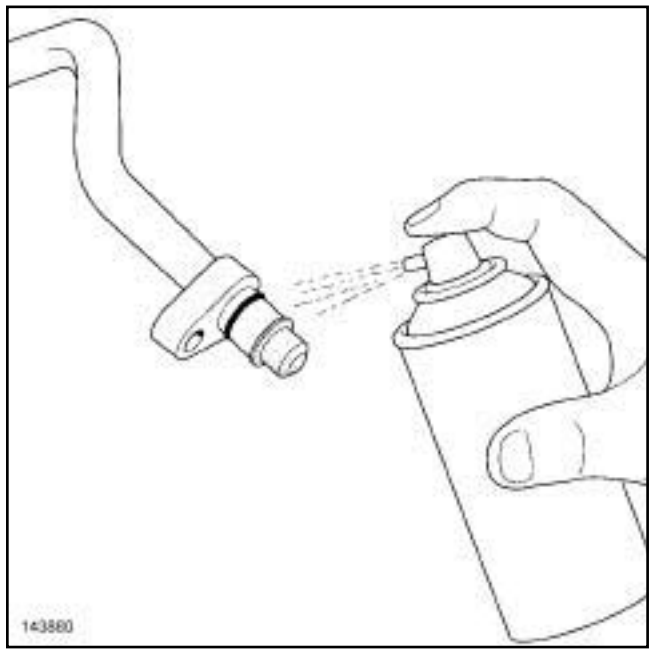
I - REFITTING PREPARATION OPERATION

❑

WARNING

Do not remove the blanking plugs from each component until the last moment.

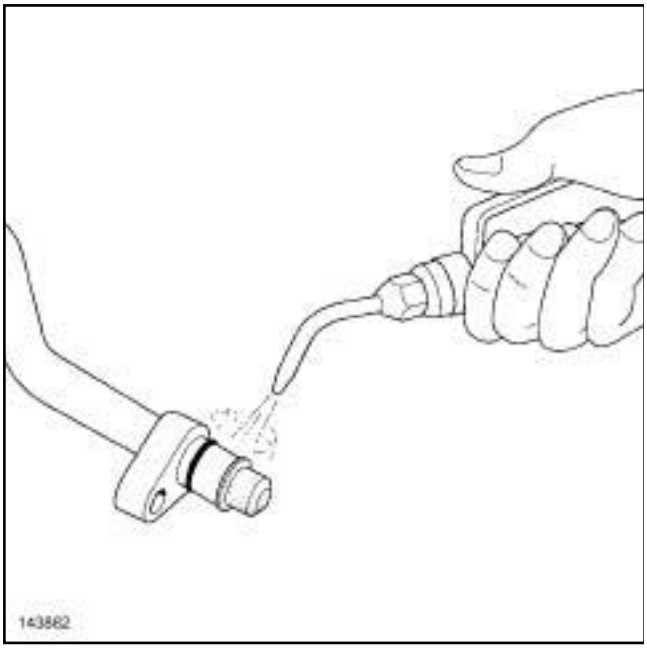
Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL



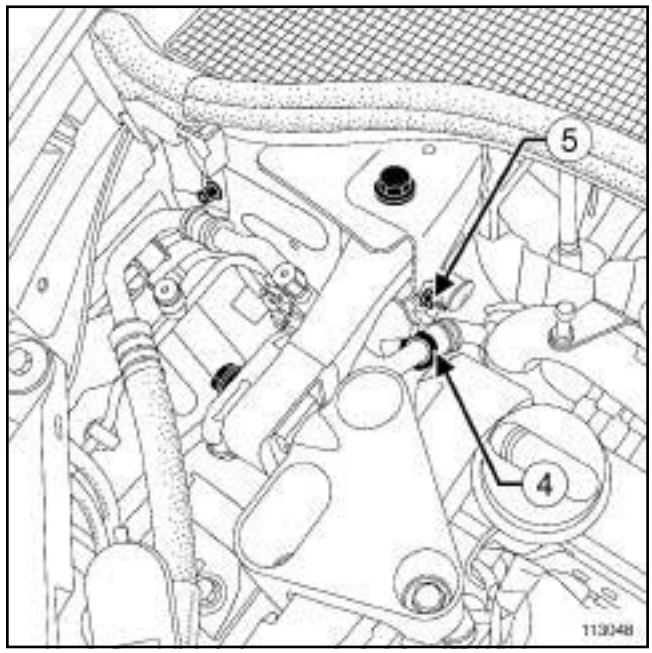
143882

❏ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❏ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED

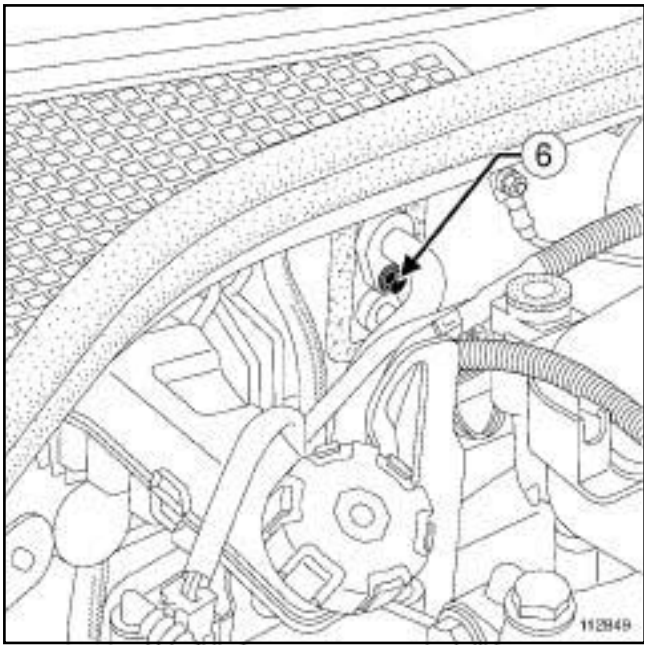


113048

❏ Refit the expansion valve - intermediate pipe connecting pipe.

❏ Couple the expansion valve - intermediate pipe connecting pipe to the compressor - intermediate pipe connecting pipe at (**4**) .

❏ Refit the pipe retaining clip nut (**5**) ,



112849

❏ Fit the connecting pipe to the expansion valve.

❏ Refit the connecting pipe bolt (**6**) on the expansion valve.

❏ Tighten the connecting pipe bolt.

III - FINAL OPERATION

❏ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❏ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❏ Refit:

- the bulkhead soundproofing,
- the bulkhead soundproofing mountings,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Remove the front engine cover.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

K9K – D4F, and 784

❑ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL

❑ Remove:

- the compressor pipe - intermediate pipe (see **62A**, **Air conditioning**, **Compressor - intermediate pipe connecting pipe: Removal - Refitting**, page **62A-51**) ,
- the expansion valve pipe - intermediate pipe (see **62A**, **Air conditioning**, **Expansion valve - intermediate pipe connecting pipe at the expansion valve outlet: Removal - Refitting**, page **62A-32**) .

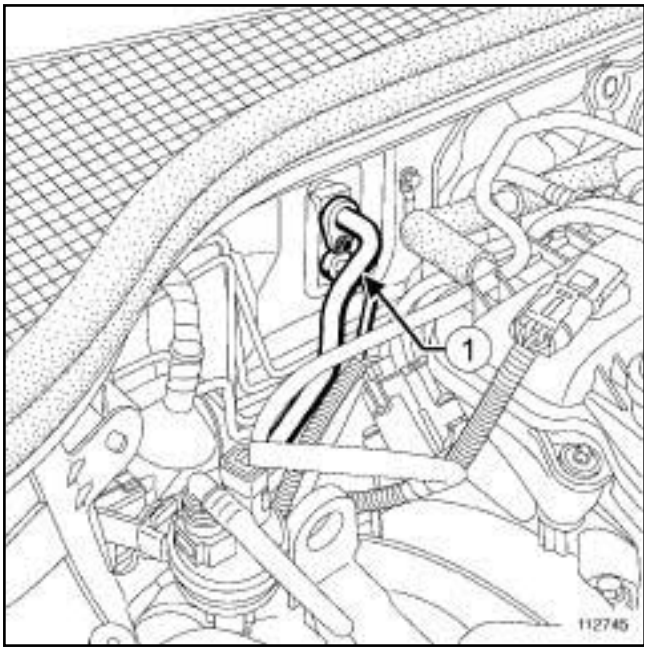
D4F or K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

❑ Remove the expansion valve - compressor pipe (see **62A**, **Air conditioning**, **Expansion valve - compressor connecting pipe: Removal - Refitting**, page **62A-41**) .

❑ Remove the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

AIR CONDITIONING or CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112745

❏ Remove the mountings from the bulkhead soundproofing.

❏ Lift away the bulkhead soundproofing.

❏ Remove the connecting pipe bolt (**1**) on the expansion valve.

❏ Remove the connecting pipe from the expansion valve.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

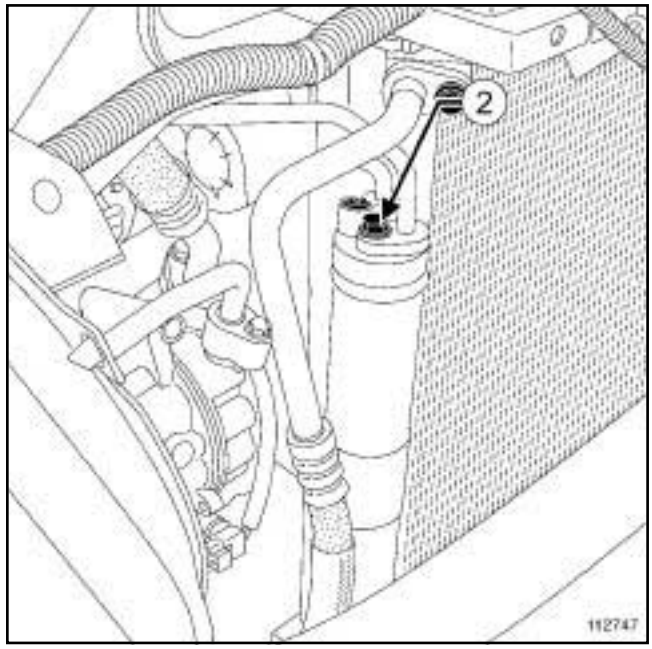
❏ Plug the openings on the connecting pipe and expansion valve.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.



112747

❏ Remove the connecting pipe bolt (**2**) on the dehydrator reservoir.

❏ Remove the connecting pipe on the dehydrator reservoir.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❏ Plug the openings on the connecting pipe and dehydrator reservoir.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

❏ Unclip the expansion valve - dehydrator reservoir connecting pipe from the body.

❏ Remove the expansion valve - dehydrator reservoir connecting pipe.

AIR CONDITIONING or CLIMATE CONTROL

REFITTING

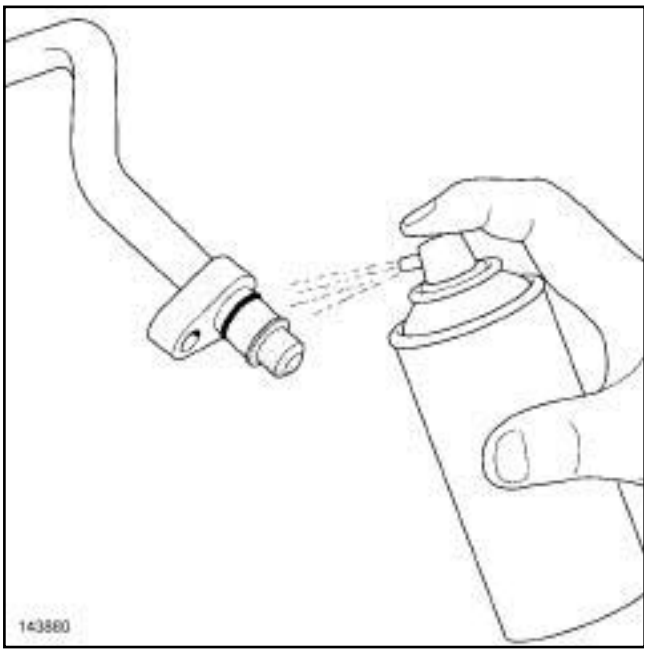
I - REFITTING PREPARATION OPERATION

❑

WARNING

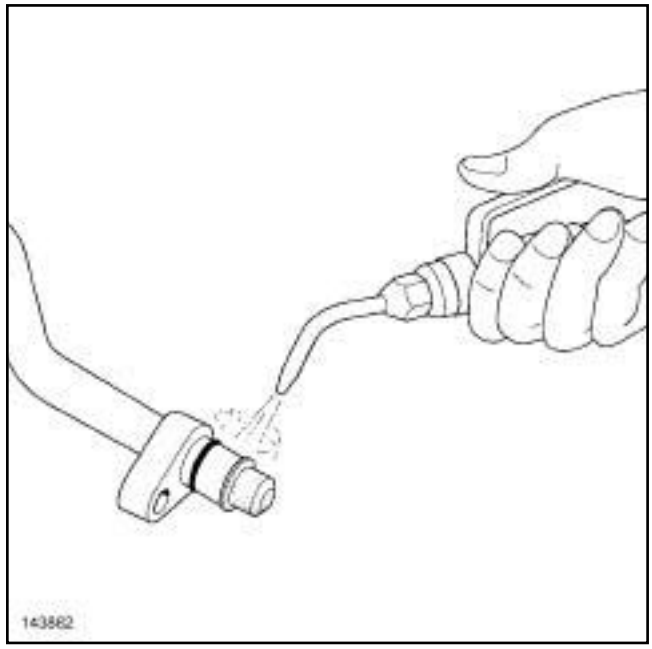
Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



143882

❑ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❑ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

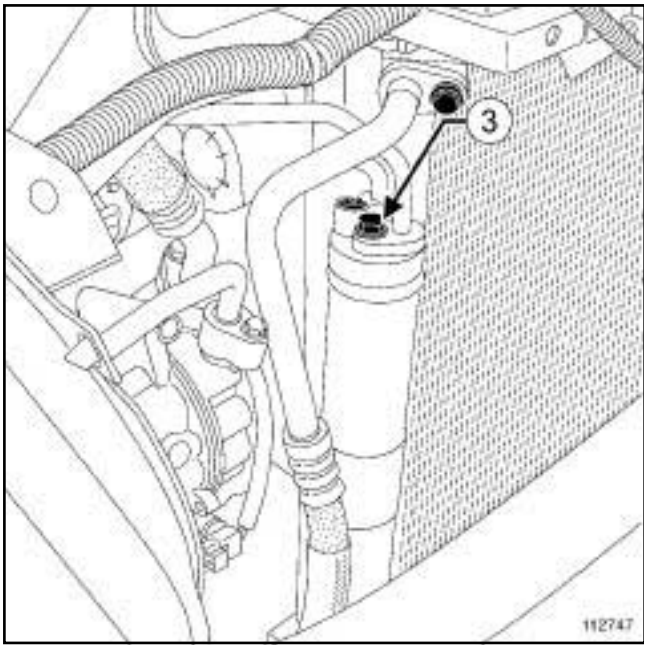
❑ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the expansion valve - dehydrator reservoir connecting pipe.

❑ Clip the expansion valve - dehydrator reservoir connecting pipe to the body.

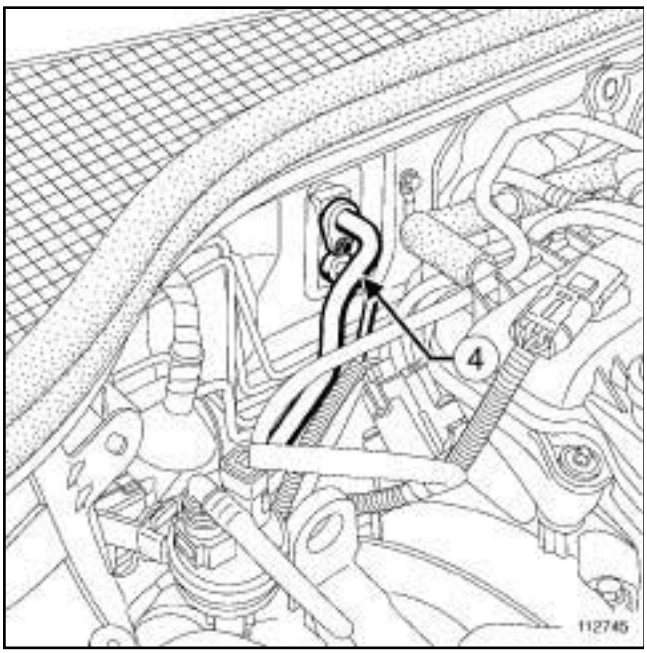
AIR CONDITIONING or CLIMATE CONTROL



112747

❑ Fit the connecting pipe to the dehydrator reservoir.

❑ Refit the connecting pipe bolt (**3**) on the dehydrator reservoir.



112745

❑ Fit the connecting pipe to the expansion valve.

❑ Refit the connecting pipe bolt (**4**) on the expansion valve.

❑ Tighten the connecting pipe bolts.

❑ Fit the bulkhead soundproofing.

❑ Refit the bulkhead soundproofing mountings.

III - FINAL OPERATION

❑ Refit the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

D4F or K4J or K4M

❑ Refit the expansion valve - compressor pipe (see **62A**, **Air conditioning**, **Expansion valve - compressor connecting pipe: Removal - Refitting**, page **62A-41**) .

F4R or K9K or M4R

❑ Refit:

- the expansion valve pipe - intermediate pipe (see **62A**, **Air conditioning**, **Expansion valve - intermediate pipe connecting pipe at the expansion valve outlet: Removal - Refitting**, page **62A-32**) ,
- the compressor pipe - intermediate pipe (see **62A**, **Air conditioning**, **Compressor - intermediate pipe connecting pipe: Removal - Refitting**, page **62A-51**) .

D4F, and 784 – K9K

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

AIR CONDITIONING or CLIMATE CONTROL

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.

D4F or K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

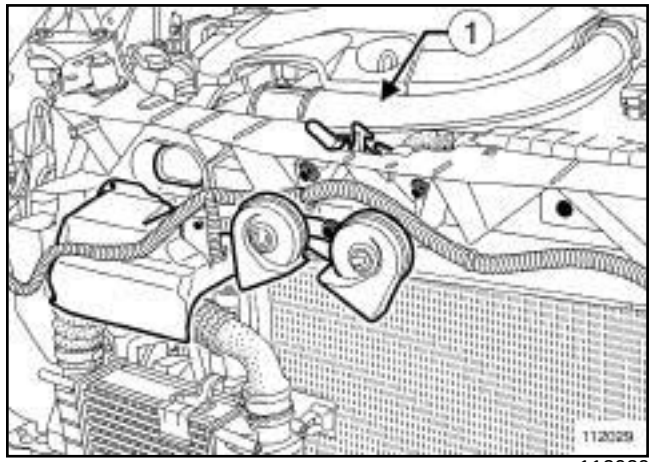
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

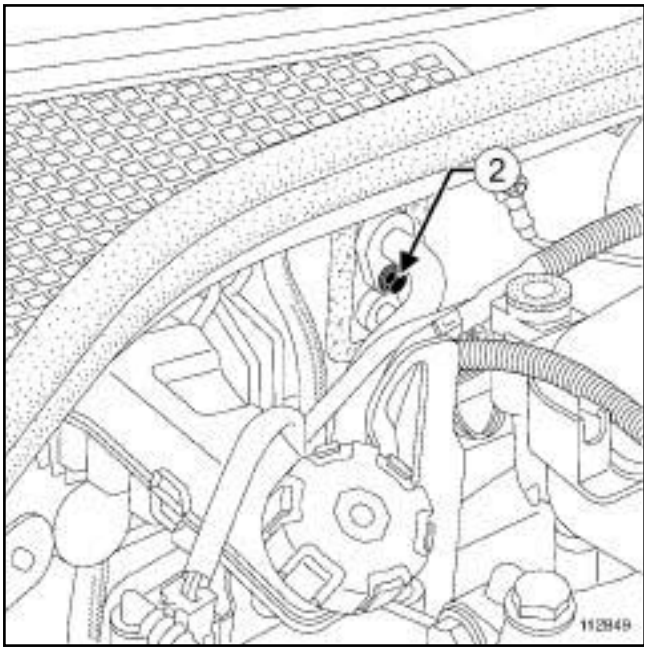
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).



❑ Move the air intake sleeve to one side (**1**) .

D4F or K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

II - OPERATION FOR REMOVAL OF PART CONCERNED



112849

❏ Remove the mountings from the bulkhead soundproofing.

❏ Lift away the bulkhead soundproofing.

❏ Remove the connecting pipe bolt (**2**) on the expansion valve.

❏ Remove the connecting pipe from the expansion valve.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

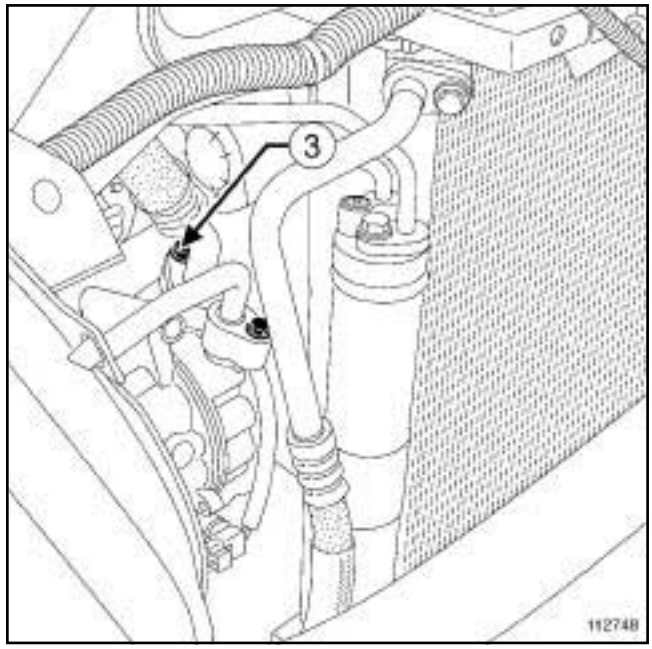
❏ Plug the openings on the connecting pipe and expansion valve.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.



112748

❏ Remove the bolt (**3**) securing the connecting pipe on the compressor.

❏ Remove the connecting pipe from the compressor.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

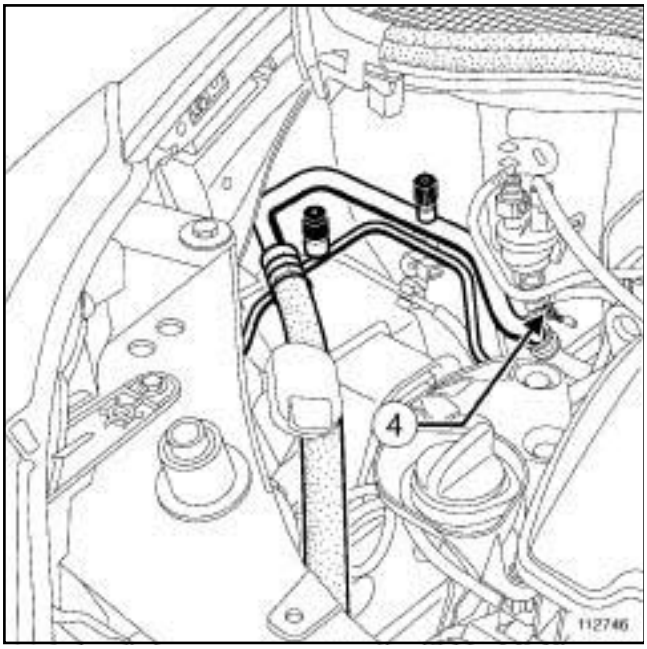
❏ Plug the openings on the connecting pipe and compressor.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.



112746

❑ Remove:

- the connecting pipe retaining clip nut (**4**) ,
- the compressor - expansion valve connecting pipe.

REFITTING

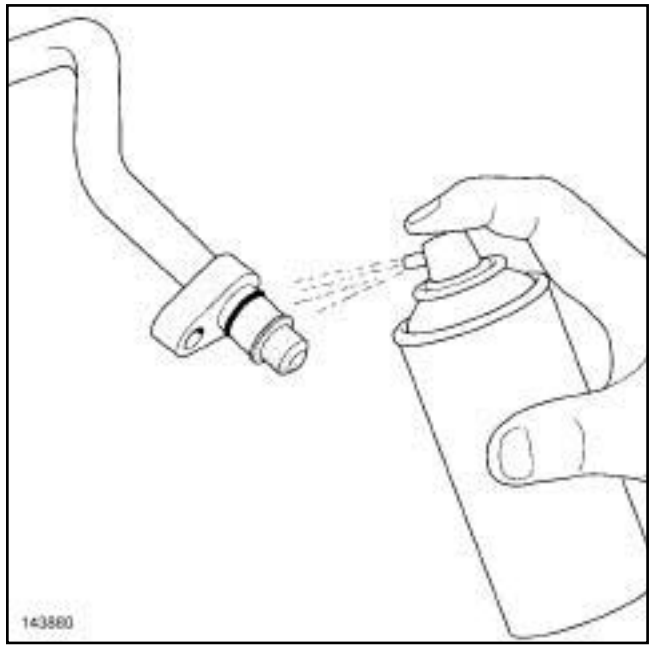
I - REFITTING PREPARATION OPERATION

❑

WARNING

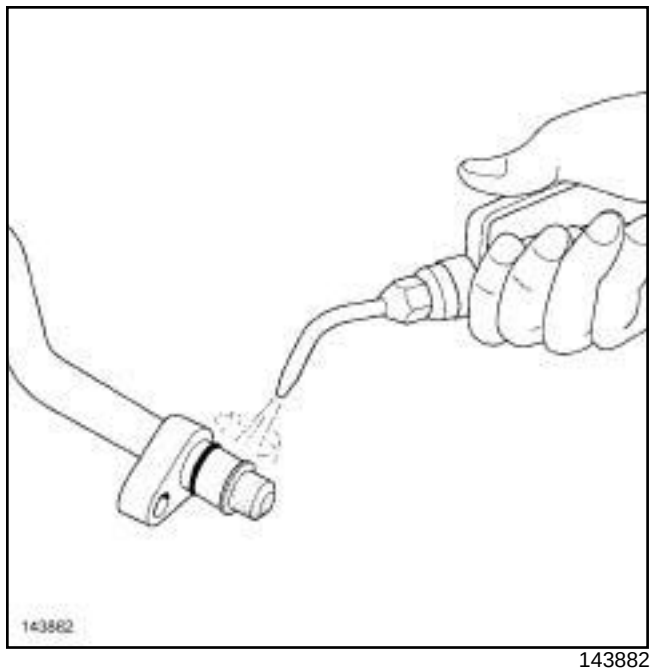
Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



143882

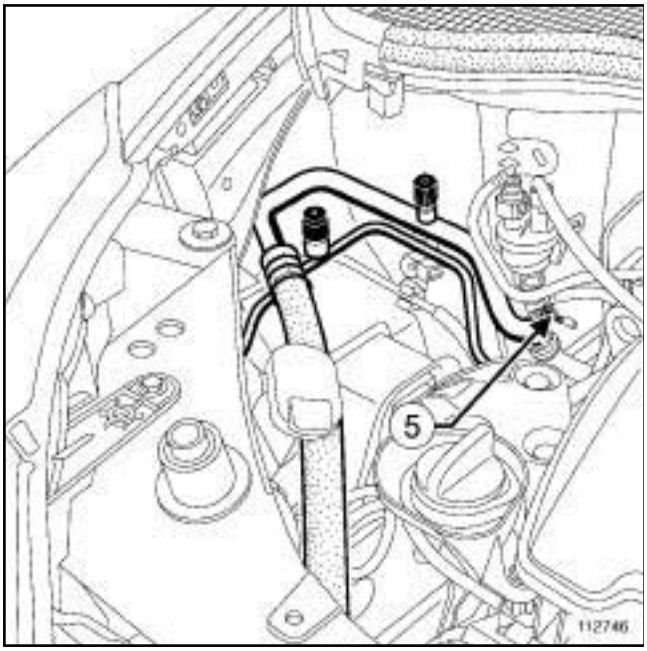
❑ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❑ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Remove the blanking plugs.

D4F or K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

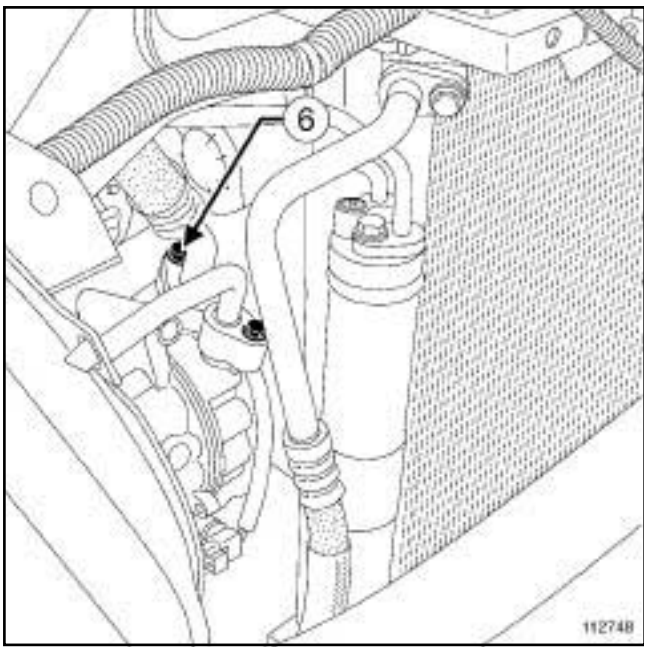
II - REFITTING OPERATION FOR PART CONCERNED



112746

❏ Refit:

- the compressor - expansion valve connecting pipe,
- the connecting pipe retaining clip nut (**5**) ,

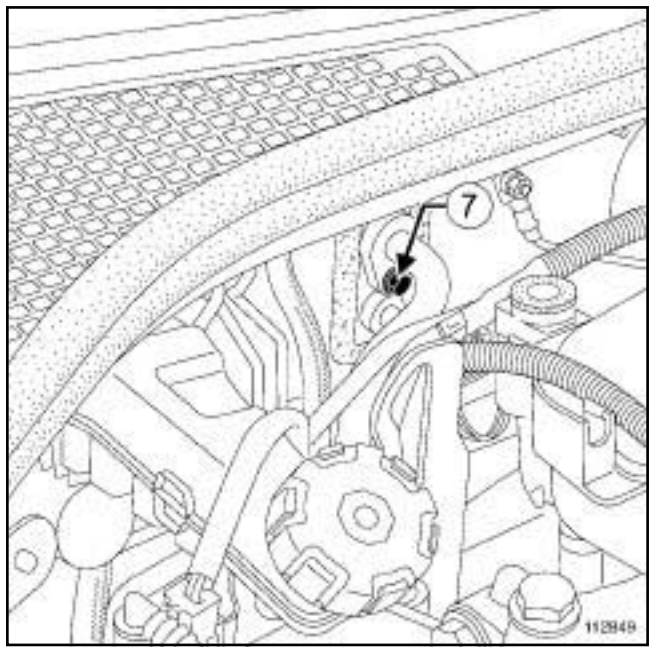


112748

❏ Fit the connecting pipe union to the compressor.

❏ Refit the bolt (**6**) securing the connecting pipe on the compressor.

❏ Tighten the compressor connecting pipe bolt.



112849

❏ Fit the connecting pipe to the expansion valve.

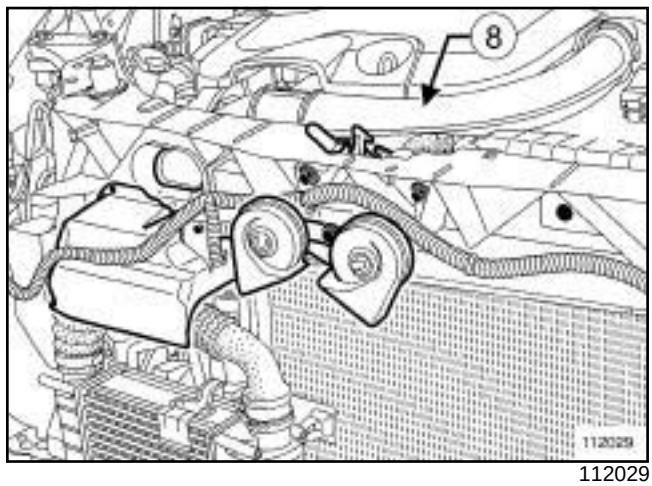
❏ Refit the connecting pipe bolt (**7**) on the expansion valve.

❏ Tighten the expansion valve connecting pipe bolt.

❏ Fit the bulkhead soundproofing.

❏ Refit the bulkhead soundproofing mountings.

III - FINAL OPERATION



112029

❏ Fit the air intake sleeve (**8**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

D4F or K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

❏ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❏ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing).

AIR CONDITIONING or CLIMATE CONTROL

REMOVAL

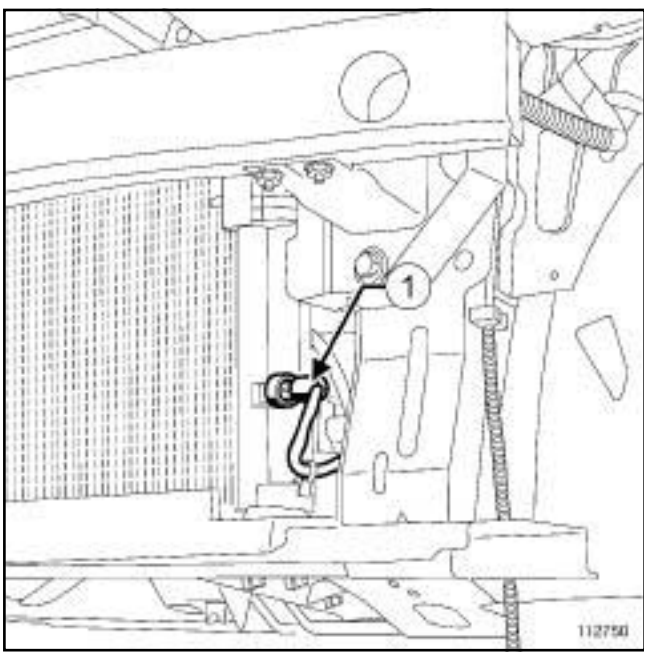
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112750

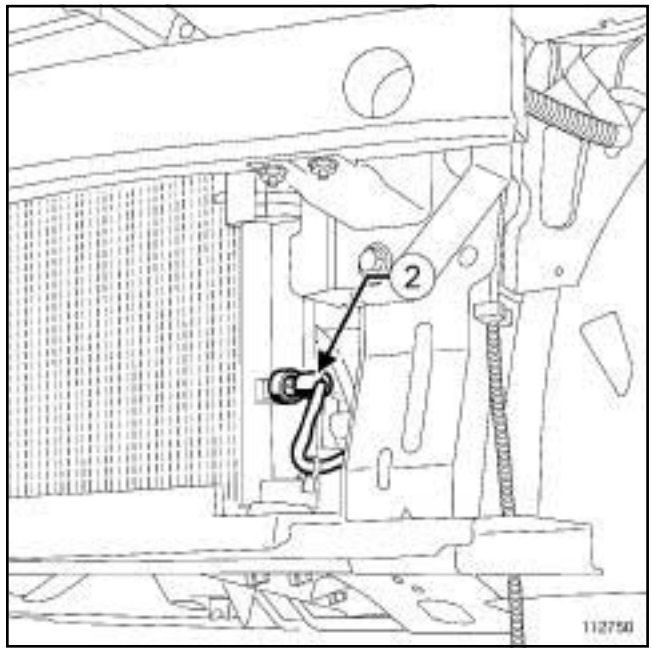
❑ Disconnect the pressure sensor connector (**1**) .

> Note:
>
> An automatic shut-off valve isolates the circuit from the outside during removal; do not drain the refrigerant from the circuit.

❑ Remove the pressure sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112750

❑ Refit the pressure sensor.

❑ Tighten the pressure sensor.

❑ Connect the pressure sensor connector (**2**) .

II - FINAL OPERATION.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

AIR CONDITIONING or CLIMATE CONTROL

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

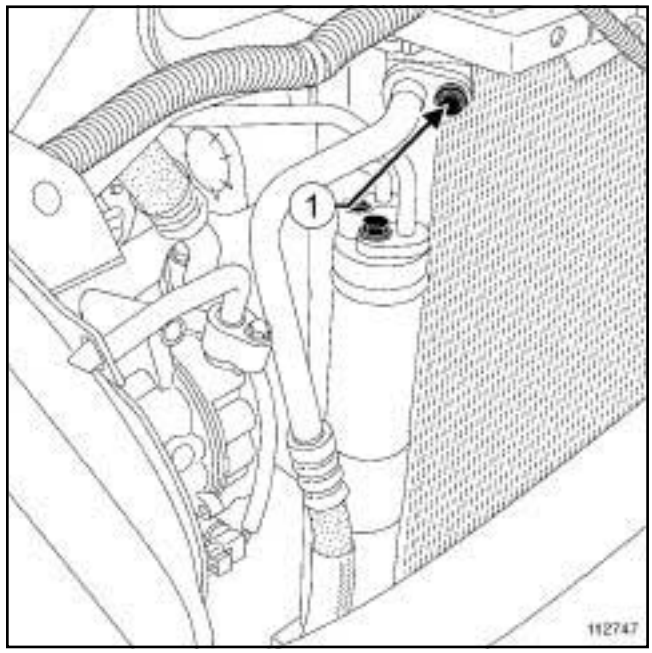
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

D4F, and 784 – K9K

❑ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Remove the air deflector.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112747

❑ Remove the connecting pipe bolt (**1**) on the condenser.

❑ Remove the connecting pipe from the condenser.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

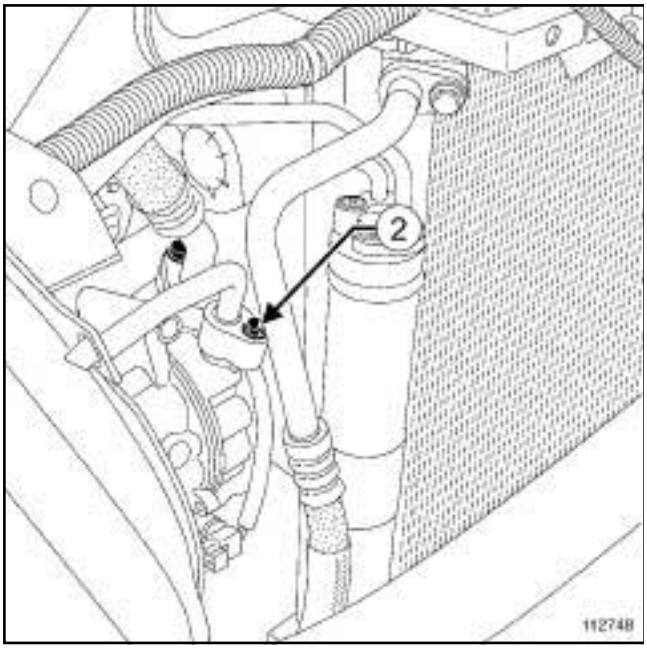
❑ Plug the openings on the connecting pipe and condenser.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.



112748

❑ Remove the bolt (**2**) securing the connecting pipe on the compressor.

❑ Remove the connecting pipe from the compressor.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❑ Plug the openings on the connecting pipe and compressor.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuits with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

❑ Remove the compressor-condenser connecting pipe.

REFITTING

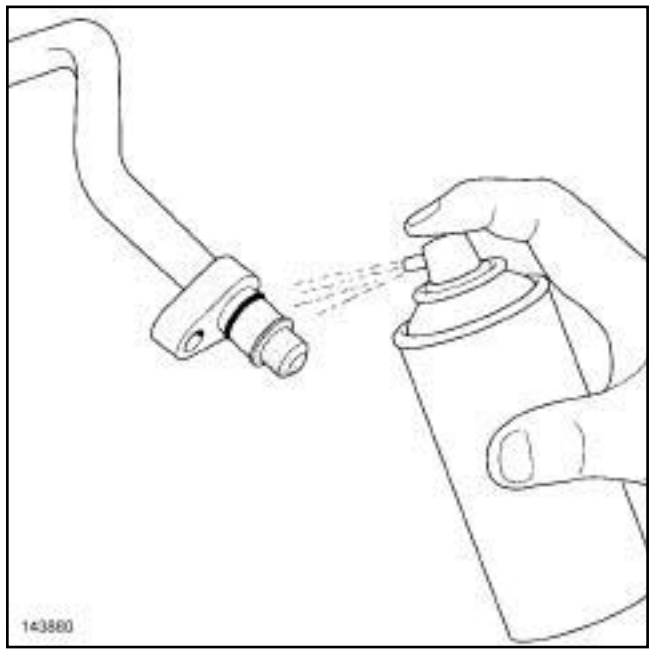
I - REFITTING PREPARATION OPERATION

❑

WARNING

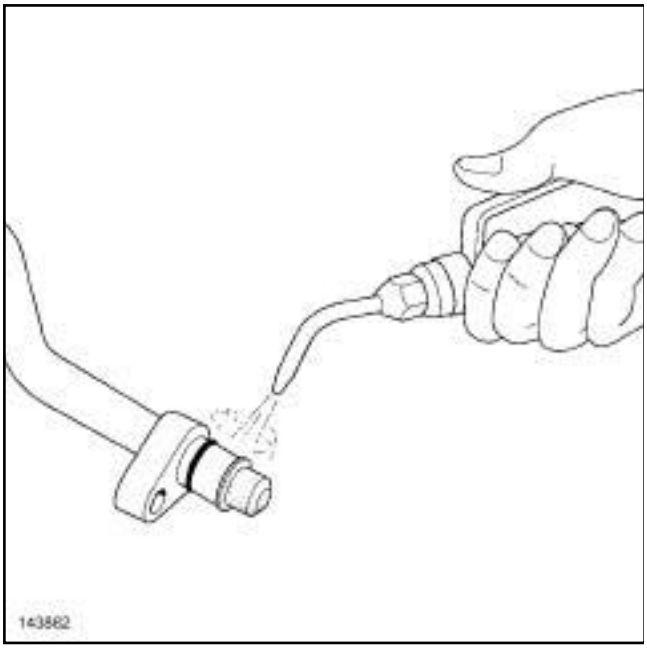
Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).



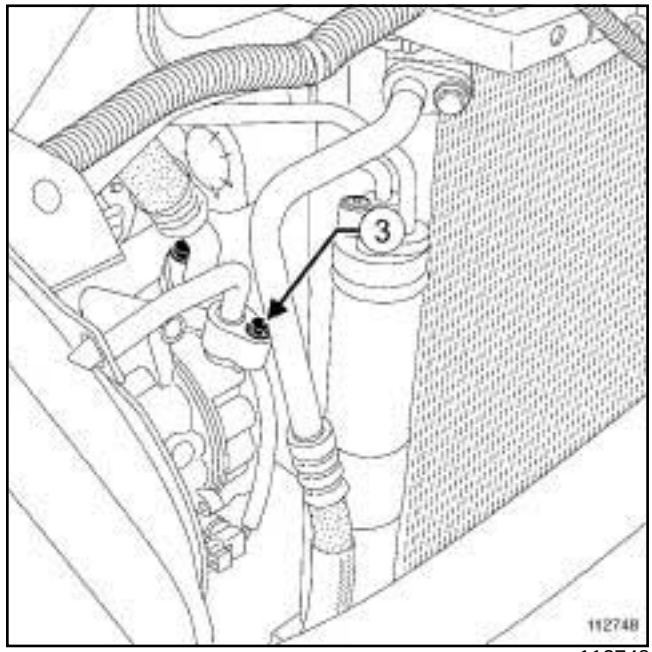
143882

❏ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❏ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED

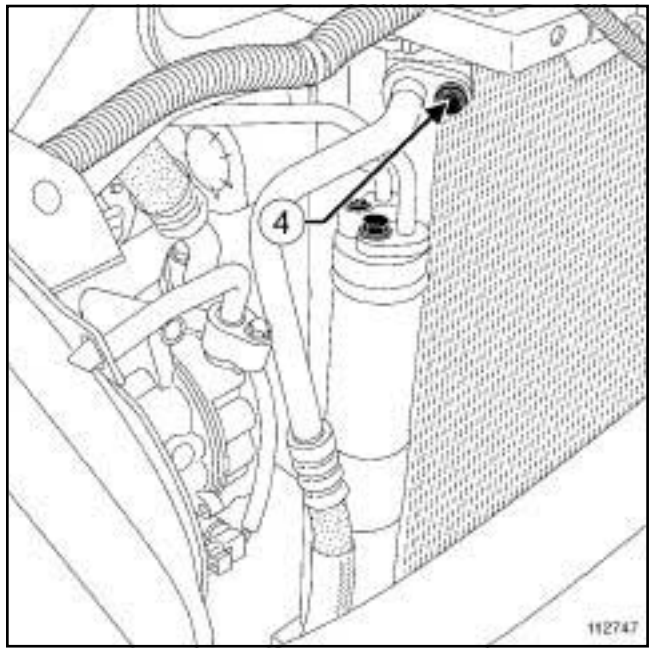


112748

❏ Fit the connecting pipe to the compressor.

❏ Refit the bolt (**3**) securing the connecting pipe on the compressor.

❏ Tighten the compressor connecting pipe bolt.



112747

❏ Fit the condenser connecting pipe.

❏ Refit the bolt (**4**) securing the connecting pipe on the condenser.

❏ Tighten the condenser connecting pipe bolt.

AIR CONDITIONING or CLIMATE CONTROL

III - FINAL OPERATION

❑ Refit the air deflector.

D4F, and 784 – K9K

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL

Special tooling required	
Mot. 1410	Set of refrigerant pipe union disconnection sockets. (dimensions in inches): 5/16, 3/8, 1/2, 5/8, 3/4, 7/8.

Equipment required
refrigerant charging station
compressed air nozzle

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **62A**, **Air conditioning**, **Air conditioning: Precautions for the repair**, page **62A-1**) ,
- (see **Vehicle: Precautions for the repair**) (01D, Mechanical introduction).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

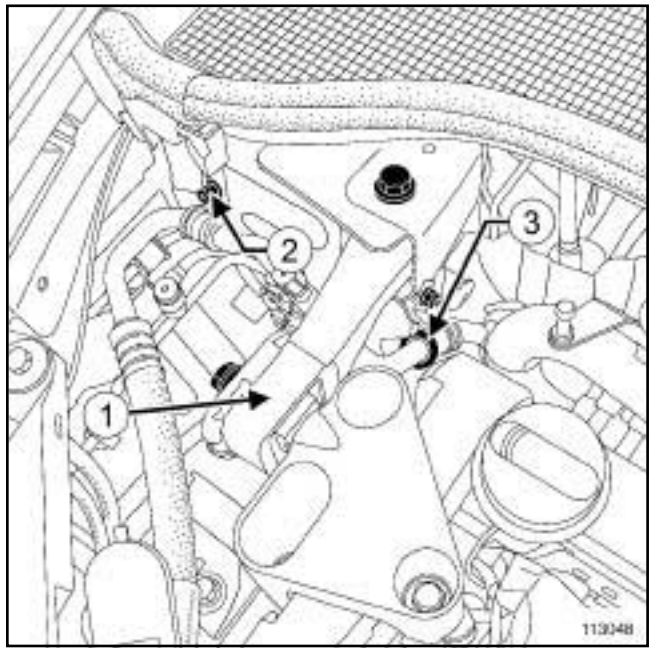
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

K9K

❑ Remove the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Remove the air deflector.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113048

❑ Remove:

- the engine tie-bar (**1**) (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the nut (**2**) from the pipe retaining clip on the body.

❑ Uncouple the expansion valve - intermediate pipe connecting pipe from the compressor - intermediate pipe connecting pipe using the **(Mot. 1410)** at (**3**) .

❑ Fit plugs into the openings.

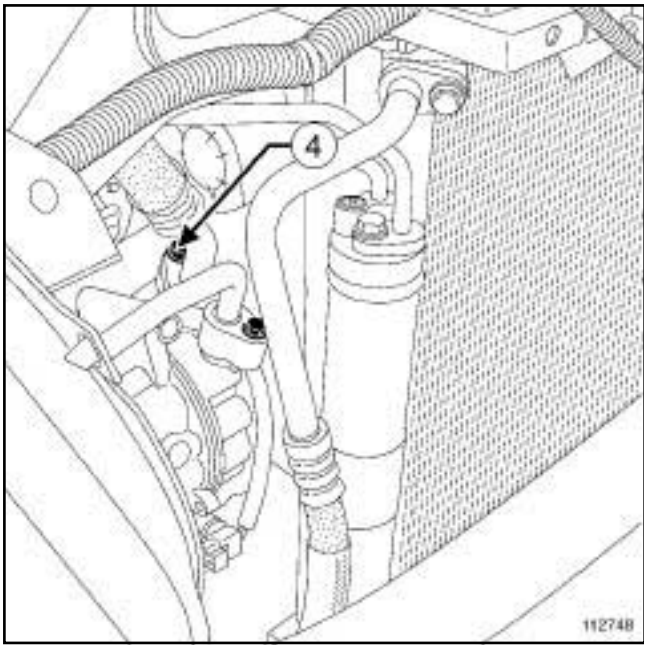
WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuit with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL



112748

❑ Remove the bolt (**4**) securing the connecting pipe on the compressor.

❑ Remove the connecting pipe from the compressor.

WARNING

In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

❑ Plug the openings on the connecting pipe and compressor.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

Note:

Use blanking plugs for the fuel circuit with part no. **77 01 208 229 or 77 01 476 857** to plug any openings exposed to the open air. They must be clean. Do not use any which have already been used to plug a fuel circuit.

❑ Remove the compressor - intermediate pipe connecting pipe.

REFITTING

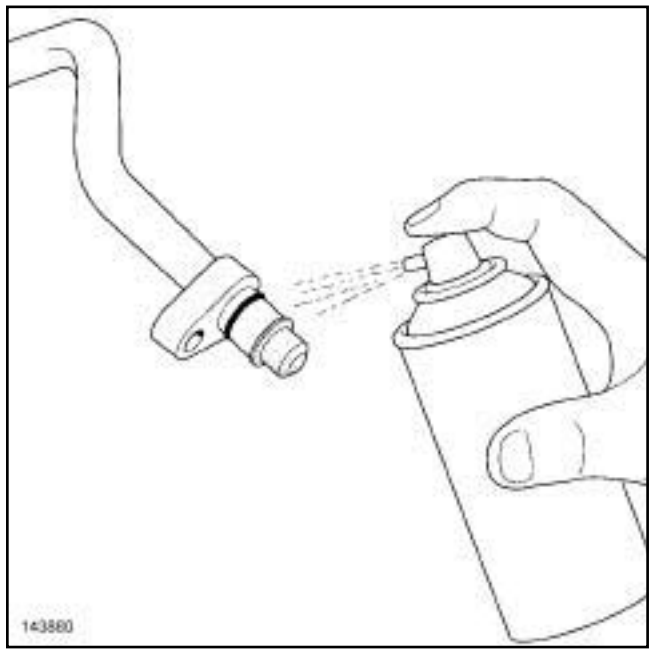
I - REFITTING PREPARATION OPERATION

❑

WARNING

Do not remove the blanking plugs from each component until the last moment.

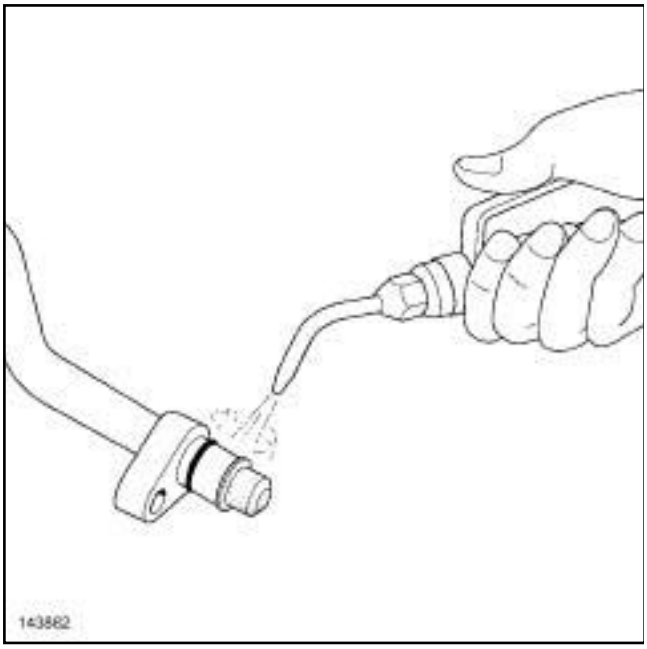
Also, do not remove the components from their packaging until they are to be fitted to the vehicle.



143880

❑ Clean the surface and seal of the pipe using **ENGINE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL



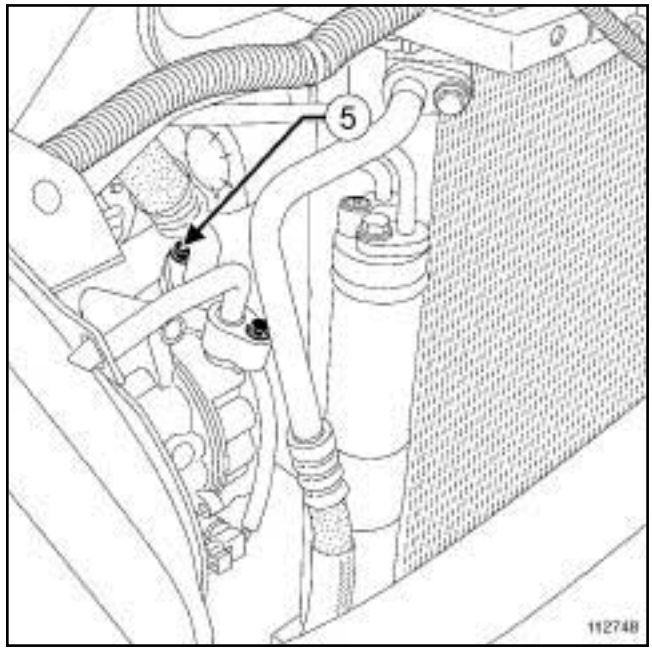
143882

❏ Use a **compressed air nozzle** to blow on the surface and the seal of the connecting pipe.

❏ Lubricate the surface of the connecting pipe and the seal with air conditioning oil (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❏ Remove the blanking plugs.

II - REFITTING OPERATION FOR PART CONCERNED

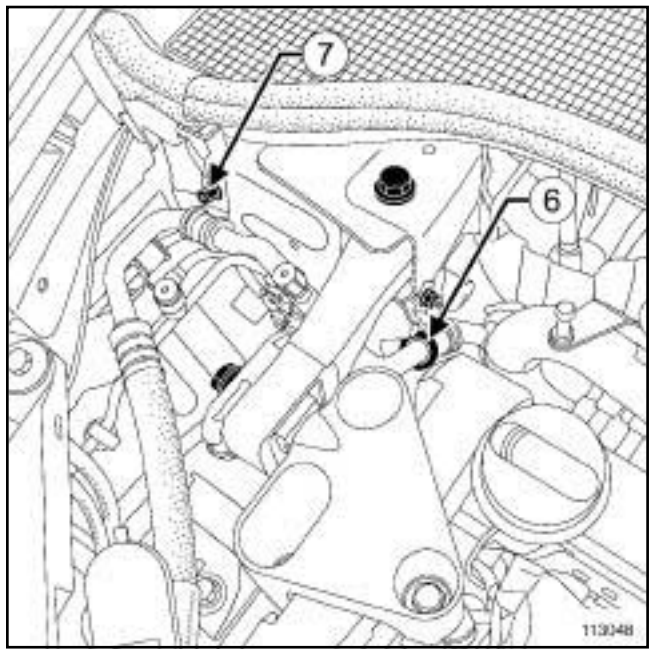


112748

❏ Fit the connecting pipe to the compressor.

❏ Refit the bolt (**5**) securing the connecting pipe on the compressor.

❏ Tighten the connecting pipe bolts.



113048

❏ Couple the expansion valve - intermediate pipe connecting pipe to the compressor - intermediate pipe connecting pipe at (**6**) .

❏ Refit the body mounted pipe retaining clip nut (**7**) .

F4R or K9K or M4R, and AIR CONDITIONING or CLIMATE CONTROL

III - FINAL OPERATION

❑ Refit the air deflector.

K9K

❑ Refit the intercooler (see **Intercooler: Removal - Refitting**) (12B, Turbocharging).

❑ Refit the engine tie-bar (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the refrigerant circuit using the **refrigerant charging station** (see **62A**, **Air conditioning**, **Refrigerant circuit: Draining - Filling**, page **62A-10**) .

Note:

A summary table gives the quantities of refrigerant in the system according to the engine type (see **62A**, **Air conditioning**, **Air conditioning: Parts and consumables for the repair**, page **62A-2**) .

❑ Check that the air conditioning system is operating correctly (see **62A**, **Air conditioning**, **Air conditioning: Check**, page **62A-6**) .

❑ Check for leaks (see **62A**, **Air conditioning**, **Refrigerant circuit: Check**, page **62A-9**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

RENAULT

7 Trim and upholstery

71A BODY INTERNAL TRIM

72A SIDE OPENING ELEMENT TRIM

73A NON-SIDE OPENING ELEMENTS TRIM

75A FRONT SEAT FRAMES AND MECHANISMS

76A REAR SEAT FRAMES AND MECHANISMS

77A FRONT SEAT TRIM

78A REAR SEAT TRIM

79A SEAT ACCESSORIES

X85

NOVEMBER 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Chapitre 7

Contents

Pages

71A BODY INTERNAL TRIM

Centre floor front carpet: Removal - Refitting 71A-1

Centre floor rear carpet: Removal - Refitting 71A-3

Floor carpet: Removal - Refitting 71A-5

Headlining: Removal - Refitting 71A-6

Front door sill lining: Removal - Refitting 71A-10

Rear door sill lining: Removal - Refitting 71A-12

Rear wheel arch trim: Removal - Refitting 71A-13

Windscreen pillar trim: Removal - Refitting 71A-15

Side roof rail rear trim: Removal - Refitting 71A-17

B-pillar upper trim: Removal - Refitting 71A-18

B-pillar trim: Removal - Refitting 71A-21

Rear inner sill upper trim: Removal - Refitting 71A-24

C-pillar upper trim: Removal - Refitting 71A-26

Quarter panel trim: Removal - Refitting 71A-27

71A BODY INTERNAL TRIM

Rear panel lining: Removal - Refitting 71A-32

Rear parcel shelf side trim: Removal - Refitting 71A-34

Rear end panel lining: Removal - Refitting 71A-37

Rear loading trim: Removal - Refitting 71A-40

72A SIDE OPENING ELEMENT TRIM

Front side door trim: Removal - Refitting 72A-1

Rear side door trim: Removal - Refitting 72A-4

73A NON-SIDE OPENING ELEMENTS TRIM

Tailgate trim: Removal - Refitting 73A-1

75A FRONT SEAT FRAMES AND MECHANISMS

Front seat base frame: Removal - Refitting 75A-1

Front seatback frame: Removal - Refitting 75A-6

Contents

75A FRONT SEAT FRAMES AND MECHANISMS

Front seat runner: Removal - Refitting 75A-13

Front seat height adjuster control: Removal - Refitting 75A-19

Front seat lumbar adjustment: Removal - Refitting 75A-20

Front seat height adjustment: Removal - Refitting 75A-24

Rear seat access mechanisms: Removal - Refitting 75A-27

Complete front seat: Removal - Refitting 75A-33

Front seat: Stripping - Rebuilding 75A-44

76A REAR SEAT FRAMES AND MECHANISMS

Single unit rear bench seatback: Removal - Refitting 76A-1

1/3 and 2/3 rear bench seatback: Removal - Refitting 76A-4

Single unit rear bench seat base: Removal - Refitting 76A-6

1/3 and 2/3 rear bench seat base: Removal - Refitting 76A-7

Rear bench seat mechanism: Removal - Refitting 76A-8

77A FRONT SEAT TRIM

Front seat base trim: Removal - Refitting 77A-1

Front seatback trim: Removal - Refitting 77A-13

Front seat lower casing: Removal - Refitting 77A-30

78A REAR SEAT TRIM

1/3 and 2/3 rear bench seat base trim: Removal - Refitting 78A-1

1/3 and 2/3 rear bench seatback trim: Removal - Refitting 78A-3

Single unit rear bench seatback trim: Removal - Refitting 78A-6

Single unit rear bench seat base trim: Removal - Refitting 78A-8

79A SEAT ACCESSORIES

Heated seat pad: Removal - Refitting 79A-1

Storage compartment under front seat: Removal - Refitting 79A-5

Front seat headrest guide: Removal - Refitting 79A-6

Centre floor front carpet: Removal - Refitting

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the complete rear bench seat (see) ,
- the front seats (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the centre console (see **Centre console: Removal - Refitting**) ,
- the front door sill trims (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) .

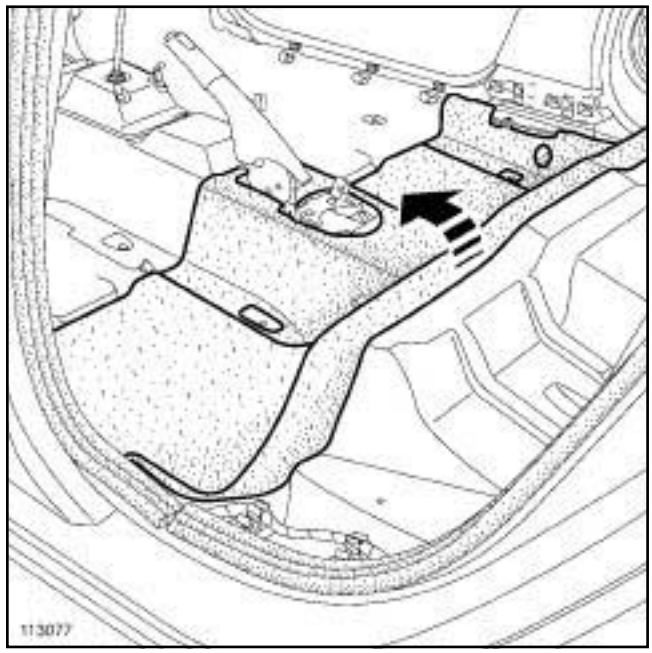
B85

❑ Unclip the rear door sill trims (see **71A**, **Body internal trim**, **Rear door sill lining: Removal - Refitting**, page **71A-12**) .

C85

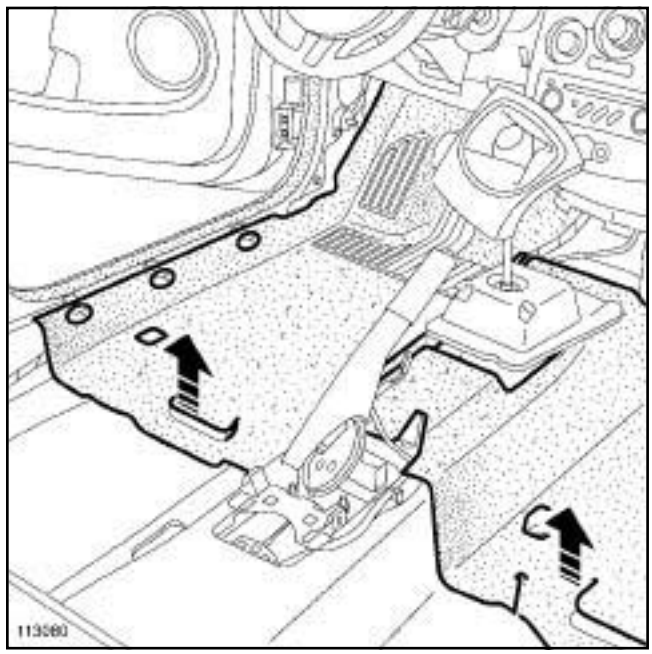
❑ Remove the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113077

❑ Pull away the rear carpet.



113080

❑ Pull away the front carpet.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front and rear carpets.

II - FINAL OPERATION

C85

❑ Refit the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85

❑ Refit the rear door sill trims (see **71A**, **Body internal trim**, **Rear door sill lining: Removal - Refitting**, page **71A-12**) .

❑ Refit:

- the front door sill trims (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) .
- the centre console (see **Centre console: Removal - Refitting**) ,
- the complete rear bench seat (see) ,
- the front seats (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the complete rear bench seat (see) ,
- the front seats (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the centre console (see **Centre console: Removal - Refitting**) ,
- the front door sill trims (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) .

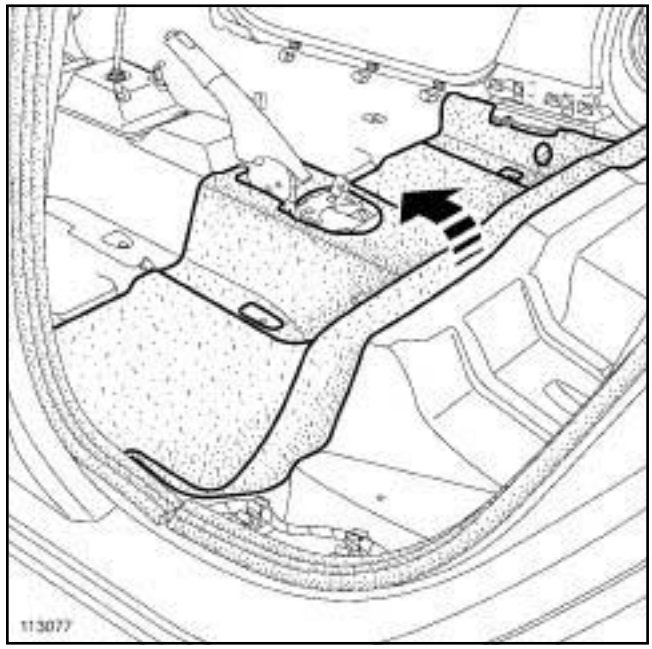
B85

❑ Unclip the rear door sill trims (see **71A**, **Body internal trim**, **Rear door sill lining: Removal - Refitting**, page **71A-12**) .

C85

❑ Remove the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113077

❑ Pull away the rear carpet.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear carpets.

II - FINAL OPERATION

C85

❑ Refit the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85

❑ Refit the rear door sill trims (see **71A**, **Body internal trim**, **Rear door sill lining: Removal - Refitting**, page **71A-12**) .

❑ Refit:

- the front door sill trims (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) .

- the centre console (see **Centre console: Removal - Refitting**) ,
- the complete rear bench seat (see) ,
- the front seats (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the rear centre floor carpet (see **71A**, **Body internal trim**, **Centre floor rear carpet: Removal - Refitting**, page **71A-3**) ,
- the front centre floor carpet (see **71A**, **Body internal trim**, **Centre floor front carpet: Removal - Refitting**, page **71A-1**) ,

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the rear centre floor carpet (see **71A**, **Body internal trim**, **Centre floor rear carpet: Removal - Refitting**, page **71A-3**) ,
- the front centre floor carpet (see **71A**, **Body internal trim**, **Centre floor front carpet: Removal - Refitting**, page **71A-1**) ,

Equipment required
Diagnostic tool

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

Note:
To remove the headlining, strip one side of the vehicle only.

❑ Remove:

- the windscreen pillar trims (see **71A**, **Body internal trim**, **Windscreen pillar trim: Removal - Refitting**, page **71A-15**) ,
- the sun visors (see **Sun visor: Removal - Refitting**) (57A, Interior equipment),
- the interior rear-view mirror (see **Interior rear-view mirror: Removal - Refitting**) (57A, Interior equipment)
- the grab handles (see **Grab handle: Removal - Refitting**) (57A, Interior equipment).

PANORAMIC SUNROOF

❑ Remove the sunroof opening control (see **Sunroof opening control: Removal - Refitting**) (52A, Non-side opening element mechanisms).

B85 or K85

❑ Remove the B-pillar trim (see **71A**, **Body internal trim**, **B-pillar trim: Removal - Refitting**, page **71A-21**) .

C85

❑ Remove:

- the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) ,
- the B-pillar upper trim (see **71A**, **Body internal trim**, **B-pillar upper trim: Removal - Refitting**, page **71A-18**) ,
- the rear roof drip moulding trim (see **71A**, **Body internal trim**, **Side roof rail rear trim: Removal - Refitting**, page **71A-17**) .

K85

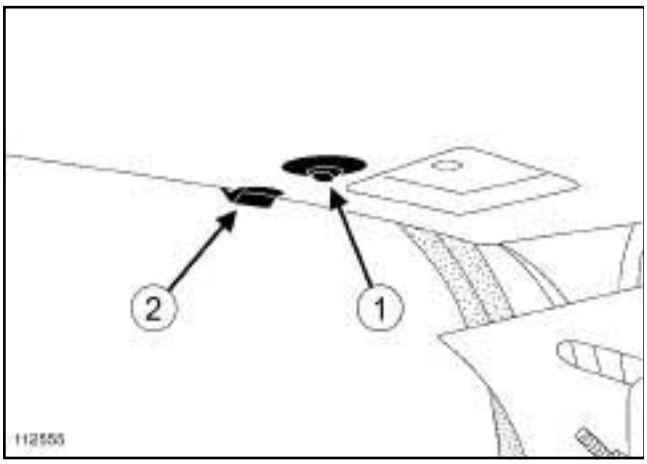
❑ Remove the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .

❑ Remove the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

C85

❑ Remove the C-pillar upper trim (see **71A**, **Body internal trim**, **C-pillar upper trim: Removal - Refitting**, page **71A-26**) .

B85 or C85

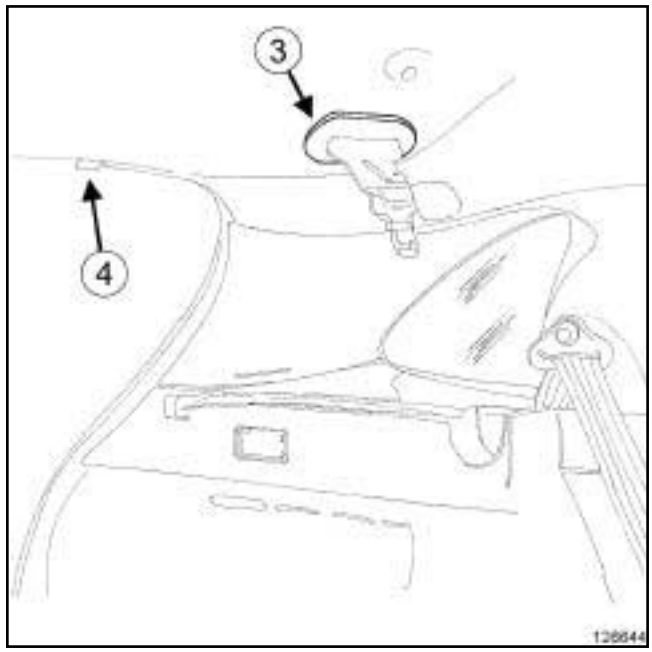


112555

❑ Unclip:

- the magnetic clip (**1**) ,
- the clips (**2**) .

K85

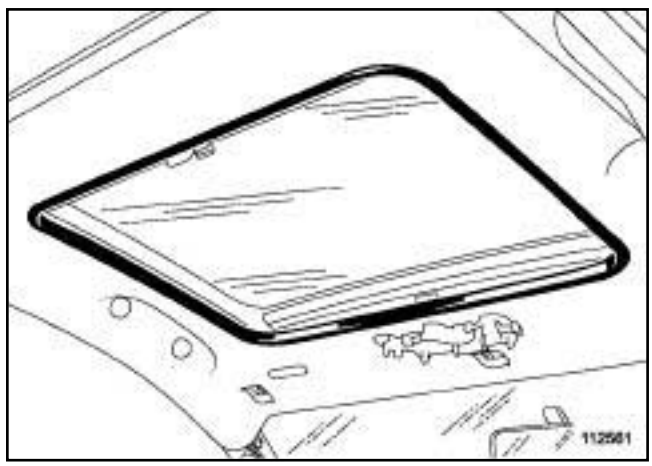


126644

❑ Remove the rear centre seat belt loop (**3**) .

❑ Unclip the clips (**4**) .

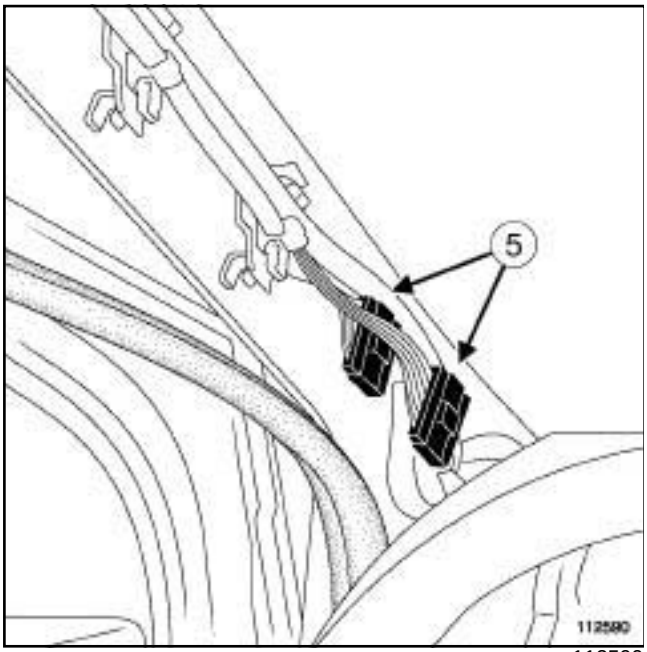
PANORAMIC SUNROOF



112561

❑ Carefully remove the sunroof seals.

II - OPERATION FOR REMOVAL OF PART CONCERNED

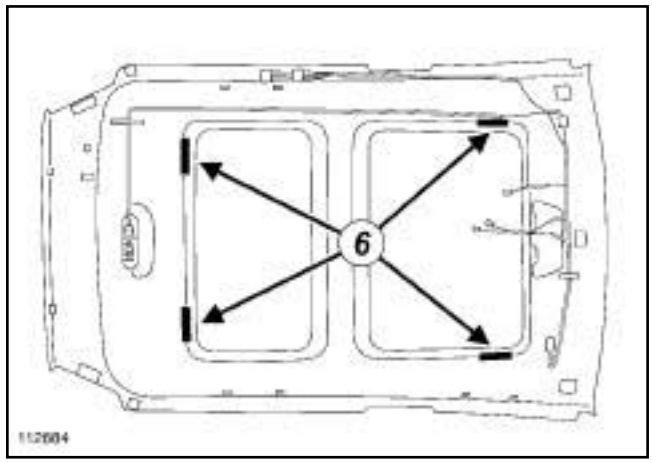


112590

❏ Disconnect the connectors (**5**) (depending on equipment level).

❏ Unclip the wiring from the clips.

PANORAMIC SUNROOF



112884

❏

WARNING

The headlining on vehicles with a sunroof is held in place using Velcro strips (**6**) . Take care not to damage these when removing the headlining.

Note:

For vehicles equipped with a sunroof, the headlining must be handled with care. The side edges are weakened by the design of the sunroof.

❏ Remove the headlining through the rear of the vehicle (this operation requires two people).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the headlining (this operation requires two people).

Note:

For vehicles equipped with a sunroof, the headlining must be handled with care. The side edges are weakened by the design of the sunroof.

II - FINAL OPERATION.

❑ Refit:

- the grab handles (see **Grab handle: Removal - Refitting**) (57A, Interior equipment).
- the sun visors (see **Sun visor: Removal - Refitting**) (**57A, Interior equipment**),
- the A-pillar wiring ***(5)*** .

❑ Connect the connectors (depending on equipment level).

❑ Refit:

- the windscreen pillar trims (see **71A**, **Body internal trim**, **Windscreen pillar trim: Removal - Refitting**, page **71A-15**) ,
- the interior rear-view mirror (see **Interior rear-view mirror: Removal - Refitting**) (57A, Interior equipment)

B85 or C85

❑ Refit:

- the magnetic clip ***(1)*** ,
- the clips ***(2)*** .

K85

❑ Refit the rear centre seat belt loop (**3**) .

❑ Attach the clips (**4**) .

PANORAMIC SUNROOF

❑ Refit the sunroof seals.

C85

❑ Refit the C-pillar upper trim (see **71A**, **Body internal trim**, **C-pillar upper trim: Removal - Refitting**, page **71A-26**) .

❑ Refit the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

K85

❑ Refit the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .

C85

❑ Refit:

- the rear roof drip moulding trim (see **71A**, **Body internal trim**, **Side roof rail rear trim: Removal - Refitting**, page **71A-17**) ,
- the B-pillar upper trim (see **71A**, **Body internal trim**, **B-pillar upper trim: Removal - Refitting**, page **71A-18**) ,
- the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85 or K85

❑ Refit the B-pillar trim (see **71A**, **Body internal trim**, **B-pillar trim: Removal - Refitting**, page **71A-21**) .

PANORAMIC SUNROOF

❑ Refit the sunroof opening control (see **Sunroof opening control: Removal - Refitting**) (52A, Non-side opening element mechanisms).

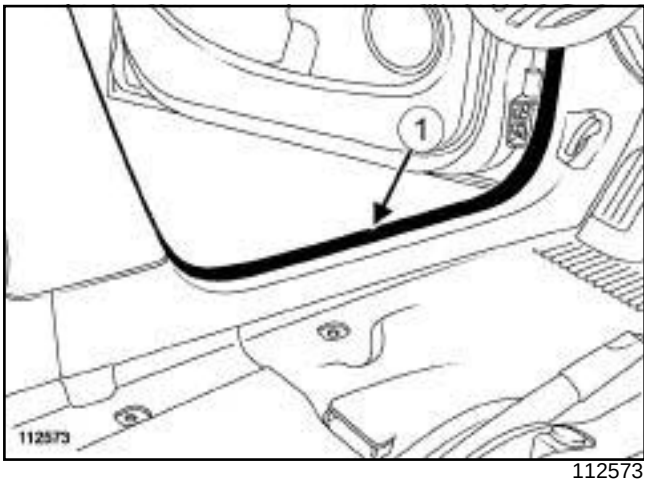
❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

B85 or C85

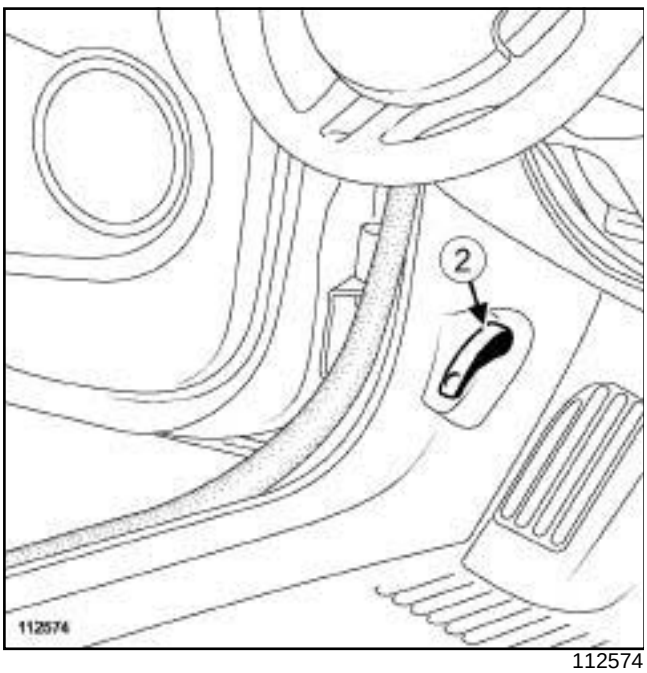
REMOVAL

I - REMOVAL PREPARATION OPERATION



112573

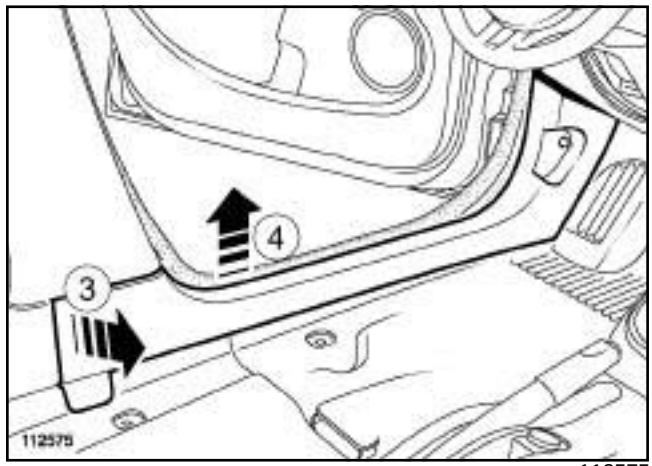
❏ Partially remove the seal (**1**) .



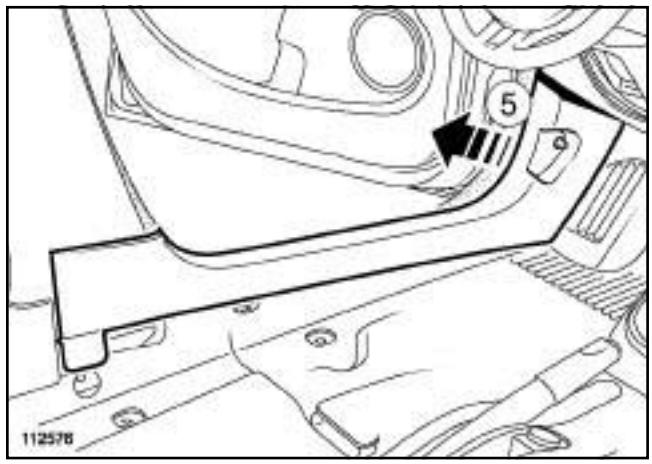
112574

❏ Using a pair of unclipping pliers, unclip the bonnet release catch (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112575



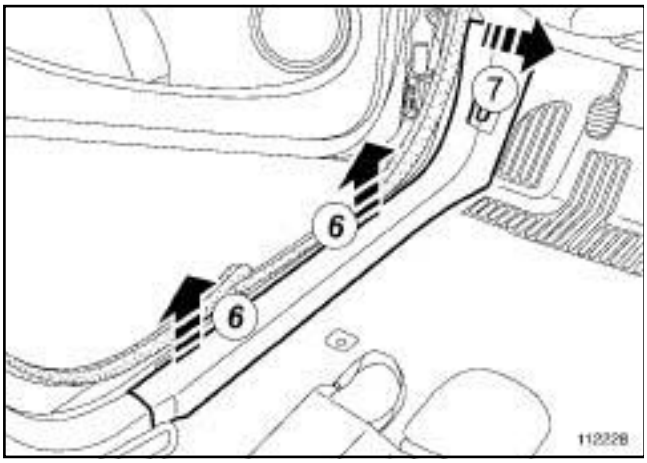
112576

❏ Unclip the trim at (**3**) and (**4**) .

❏ Remove the trim (**5**) .

B85 or C85

C85



112228

❑ Unclip the trim at (**6**) and (**7**) .

❑ Remove the front door sill linings.

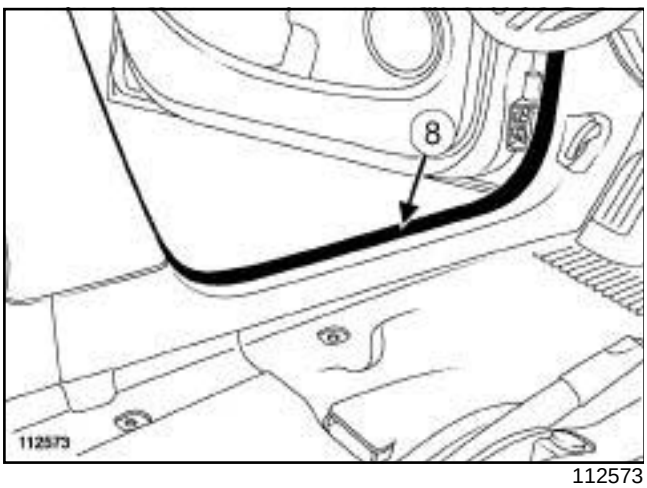
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front door sill trim.

II - FINAL OPERATION.

❑ Refit the bonnet release handle.



112573

❑ Refit the seal (**8**) .

B85

REMOVAL

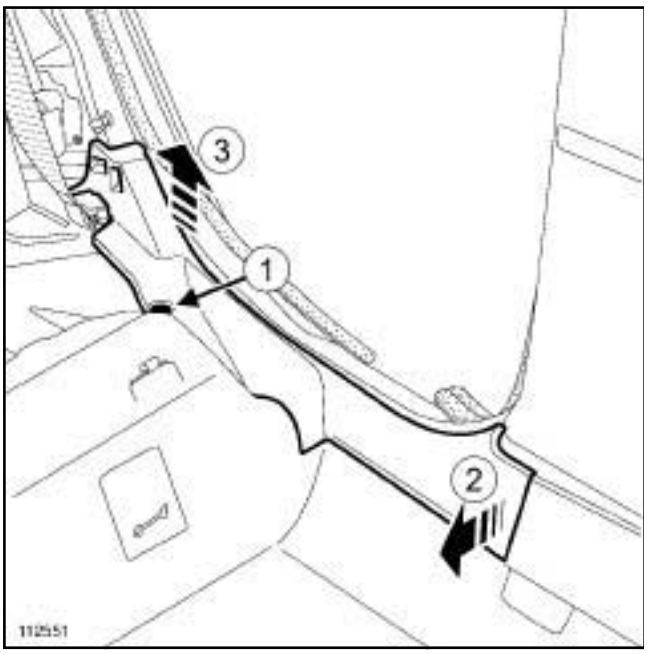
I - REMOVAL PREPARATION OPERATION

❏ Remove the complete rear bench seat (see) .

❏ Partially unclip the front door sill trim (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) .

❏ Remove the rear door sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112551

❏ Remove clip (**1**) using the unclipping pliers.

❏ Unclip the trim at (**2**) and at (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the door sill trim.

❏ Refit the mounting clip.

II - FINAL OPERATION

❏ Refit:

- the rear door sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .
- the front door sill trims (see **71A**, **Body internal trim**, **Front door sill lining: Removal - Refitting**, page **71A-10**) ,
- the complete rear bench seat (see) .

Equipment required
Diagnostic tool

B85 or C85

❑

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

B85 or C85

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the rear bench seatback (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seatback: Removal - Refitting**, page **76A-1**) or (see **76A**, **Rear seat frames and mechanisms**, **1/3 and 2/3 rear bench seatback: Removal - Refitting**, page **76A-4**) ,
- the rear end panel trim (see **71A**, **Body internal trim**, **Rear end panel lining: Removal - Refitting**, page **71A-37**) .

B85 or K85

❑ Remove the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

C85

❑ Remove the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85 or C85

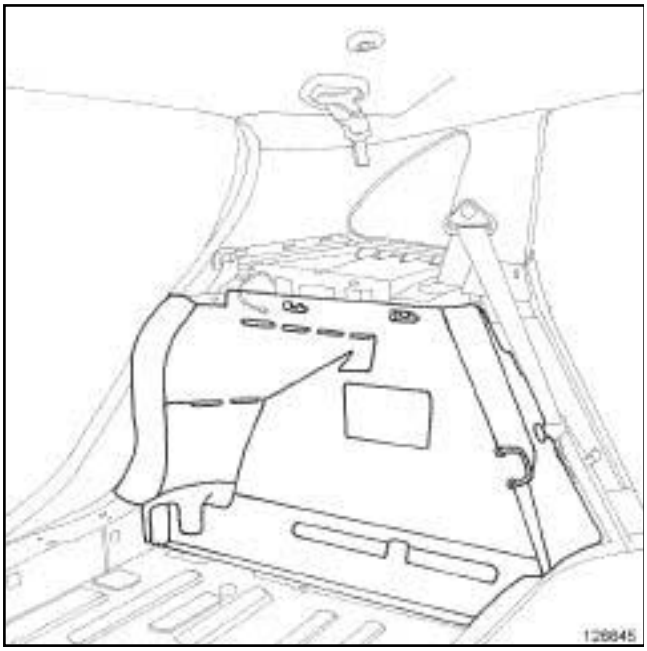
❑ Remove the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

K85

❑ Remove the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

K85


126645

126645

❑ Remove the rear wheel arch trim.

❑ Remove the rear wheel arch trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear wheel arch trim.

II - FINAL OPERATION.

K85

❑ Refit the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .

B85 or C85

❑ Refit the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

C85

❑ Refit the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85 or K85

❑ Refit the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

❑ Refit:

- the rear bench seatback (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seatback: Removal - Refitting**, page **76A-1**) or (see **76A**, **Rear seat frames and mechanisms**, **1/3 and 2/3 rear bench seatback: Removal - Refitting**, page **76A-4**) ,

- the rear end panel trim (see **71A**, **Body internal trim**, **Rear end panel lining: Removal - Refitting**, page **71A-37**) .

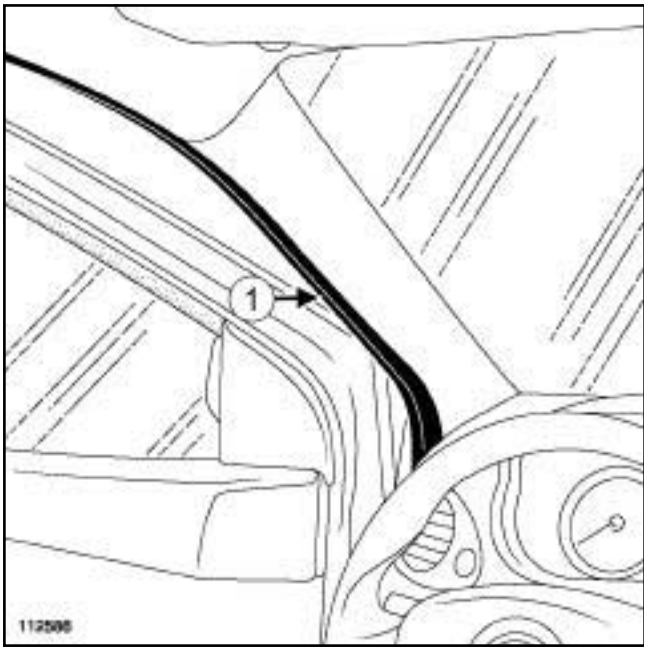
B85 or C85

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

REMOVAL

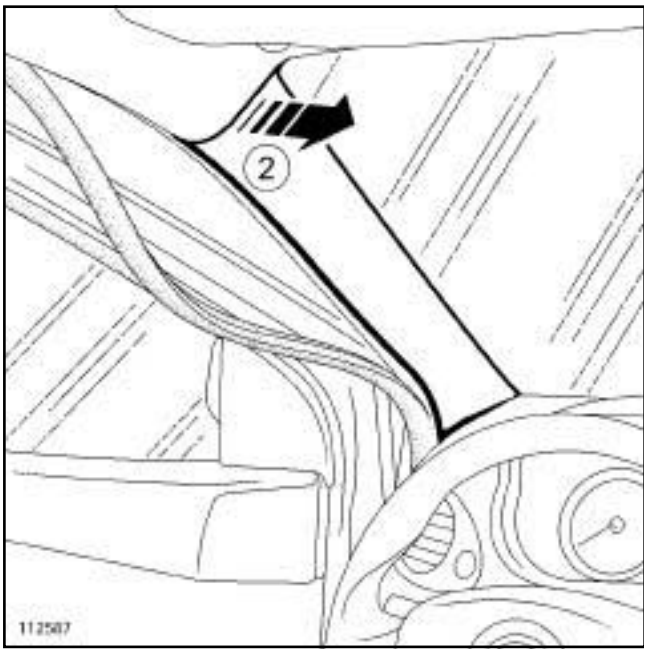
I - REMOVAL PREPARATION OPERATION



112586

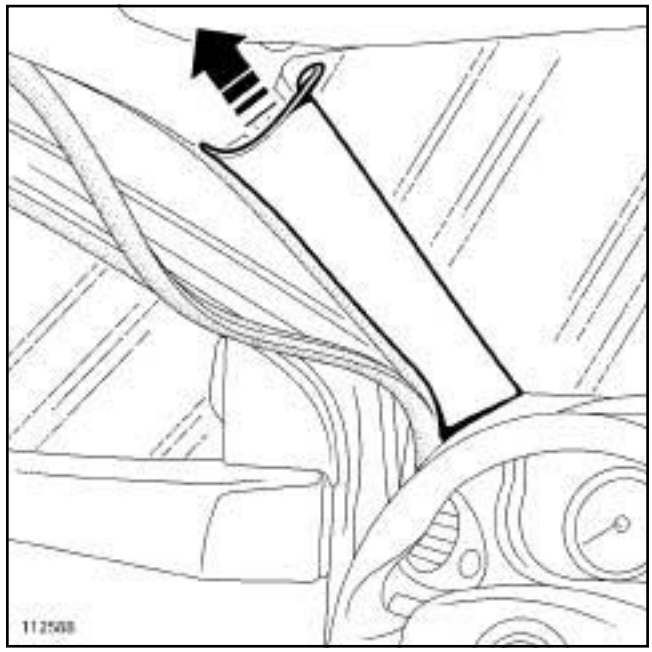
❏ Partially remove the seal (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112587

❏ Unclip the top of the pillar trim at (**2**) .

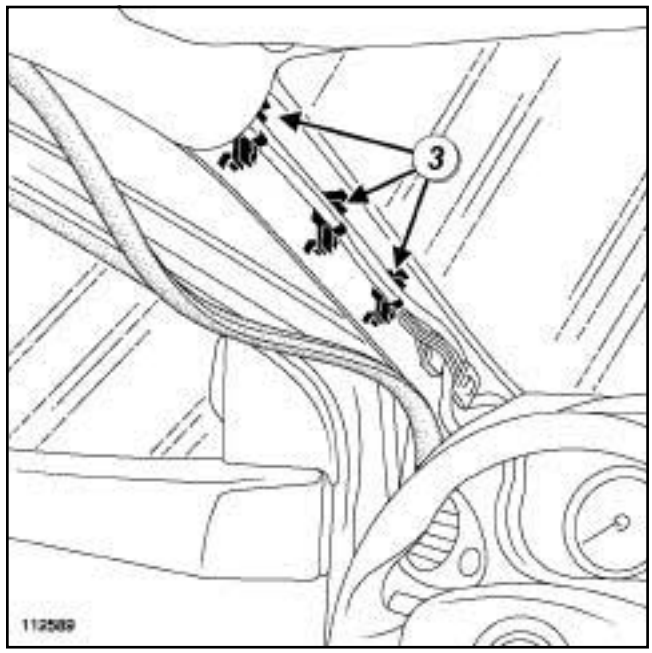


112588

❏ remove the pillar trim by pulling upwards.

REFITTING

I - REFITTING PREPARATIONS OPERATION



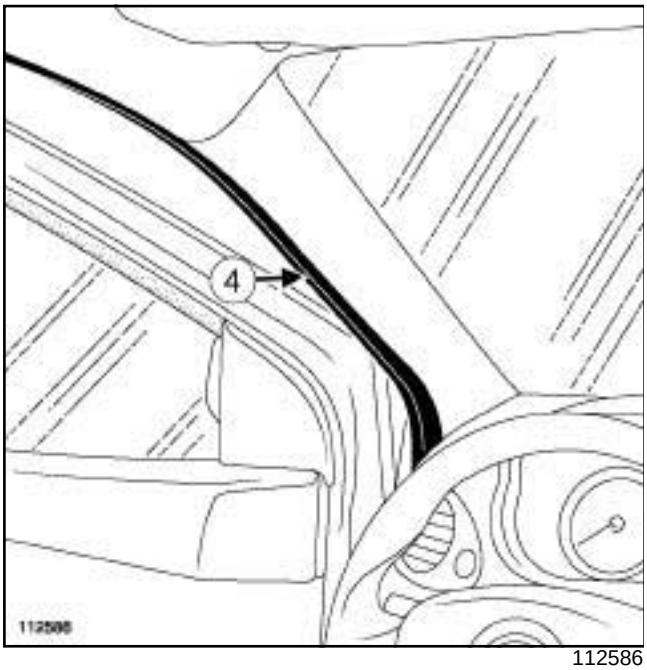
112589

❏ Check the condition of the clips (**3**) .

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the trim starting from the bottom.

III - FINAL OPERATION.

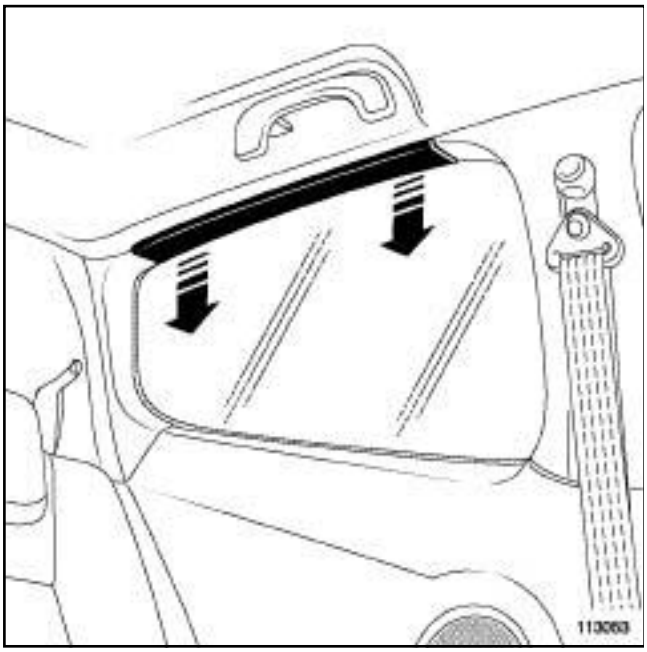


❑ Refit the seal (**4**) .

C85 or S85

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113053

❑ Unclip the rear roof drip moulding lining.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear roof drip moulding lining.

C85

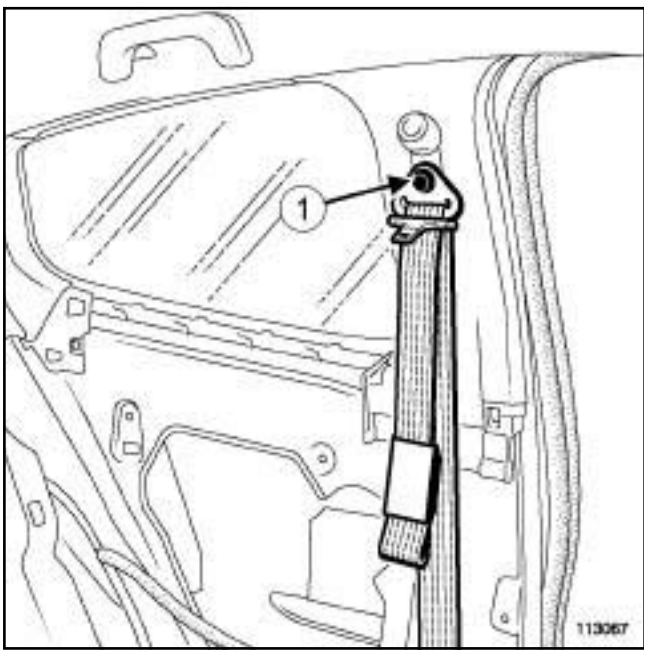
Tightening torques ▽	
seat belt mounting bolt	**21 Nm**

REMOVAL

REMOVAL PREPARATION OPERATION

❏ Remove:

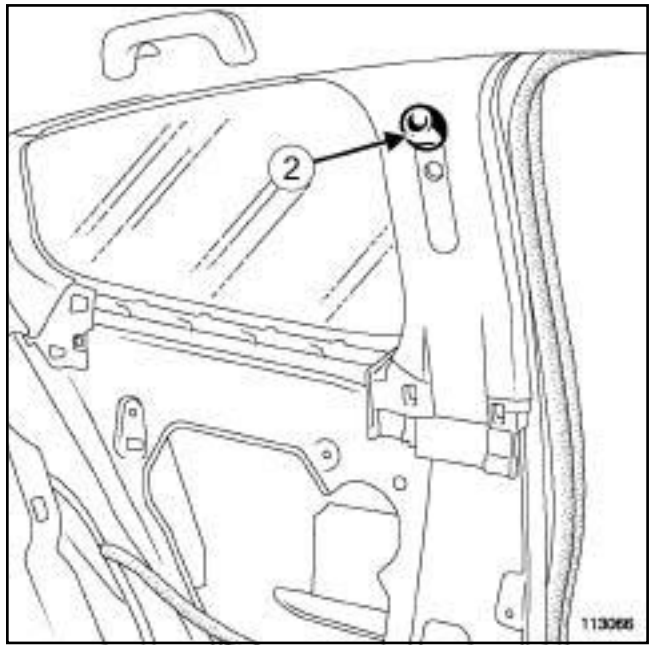
- the complete rear bench seat (see) ,
- the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .



113067

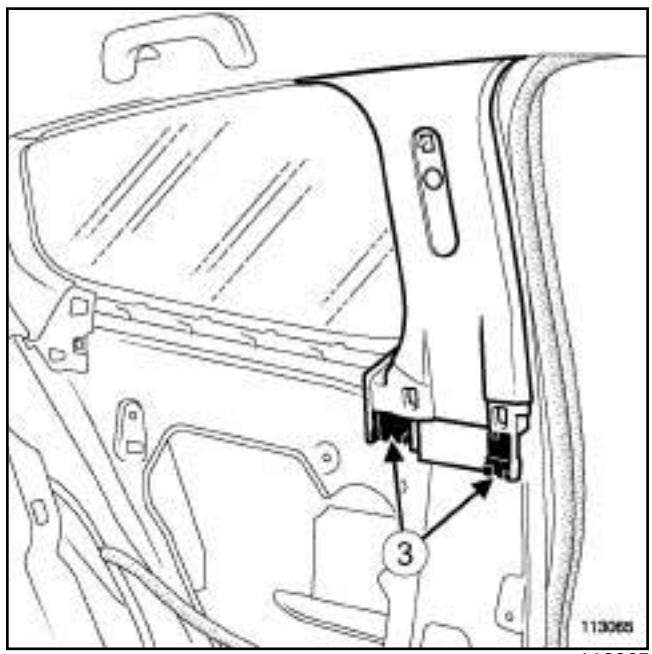
❏ Remove:

- the bolt (**1**) ,
- the seat belt.



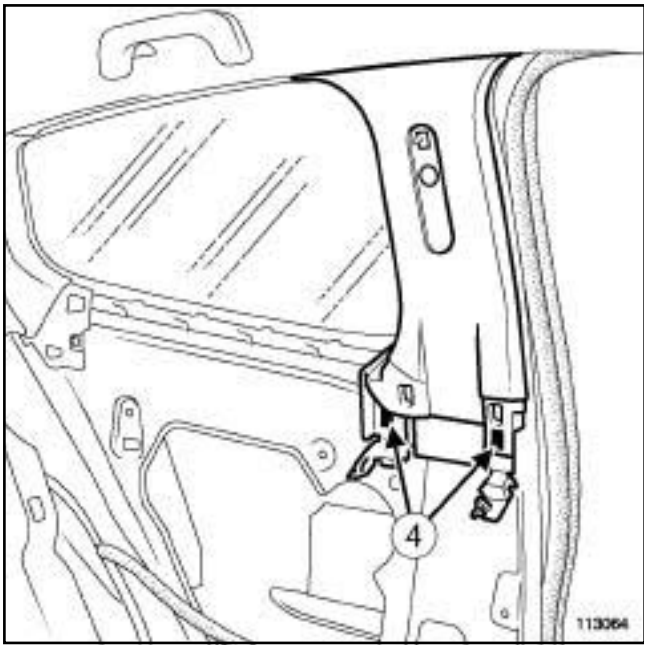
113066

❏ Unclip the height adjustment device (**2**) .



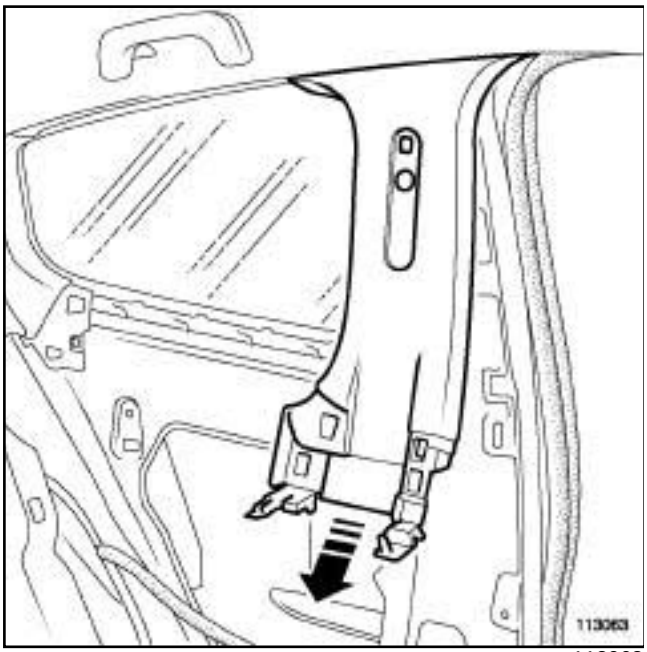
113065

❏ Remove the covers (**3**) .



113064

❏ Unclip the trim at (**4**) .



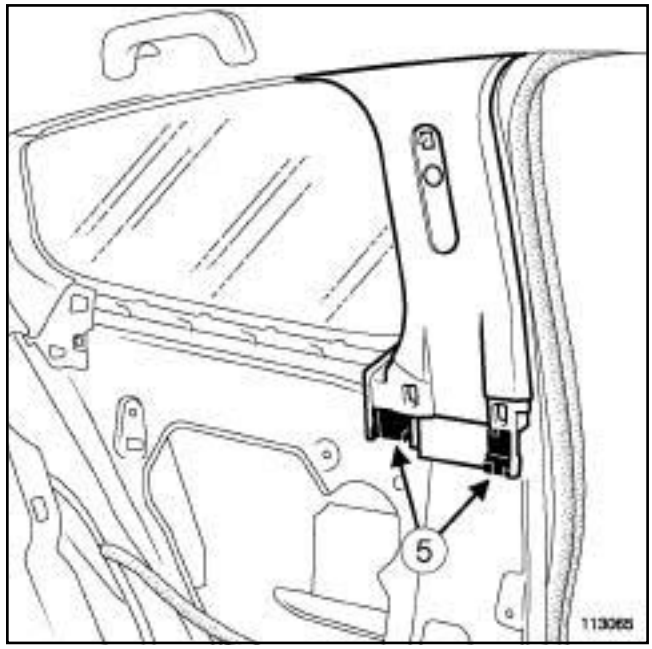
113063

❏ Remove the B-pillar upper trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

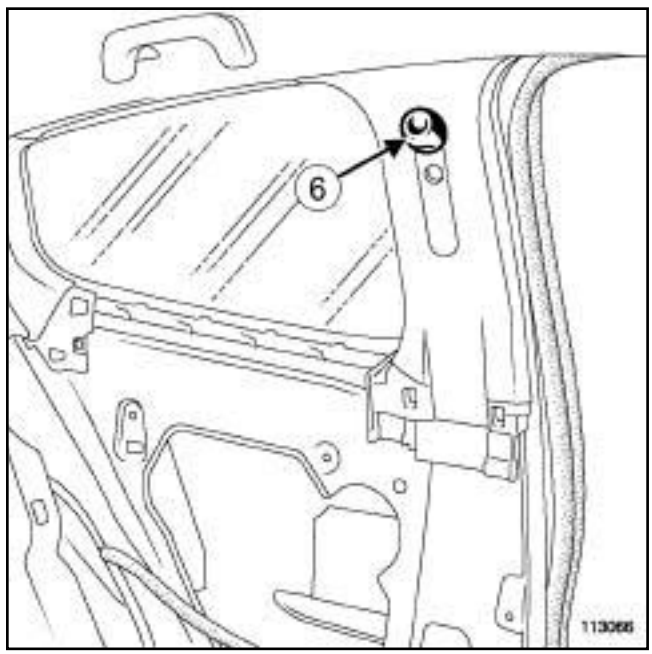
❏ Refit the B-pillar upper trim.



113065

❏ Refit the covers (**5**) .

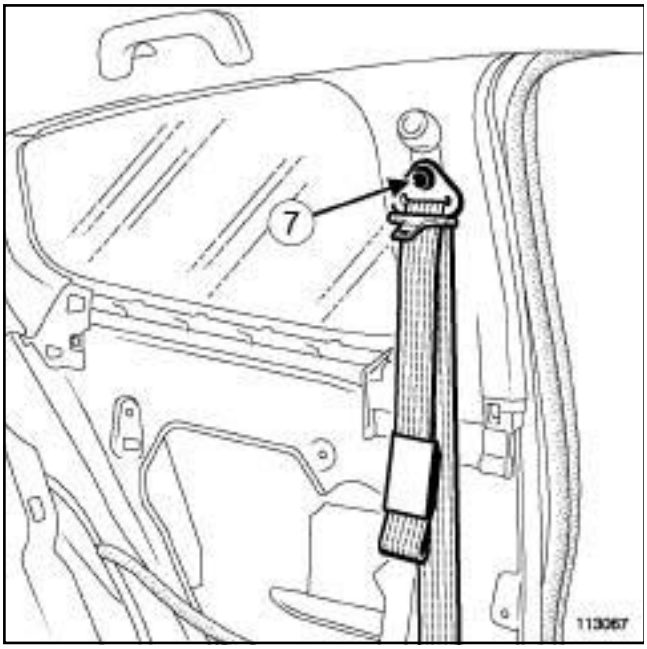
II - FINAL OPERATION



113066

❏ Refit the height adjustment device (**6**) .

C85



113067

❏ Refit the seat belt.

❏ Tighten to torque the **seat belt mounting bolt (21 Nm)**. (**7**)

❏ Refit:

- the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) ,
- the complete rear bench seat (see) .

B85

Tightening torques ▽	
seat belt bolt	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

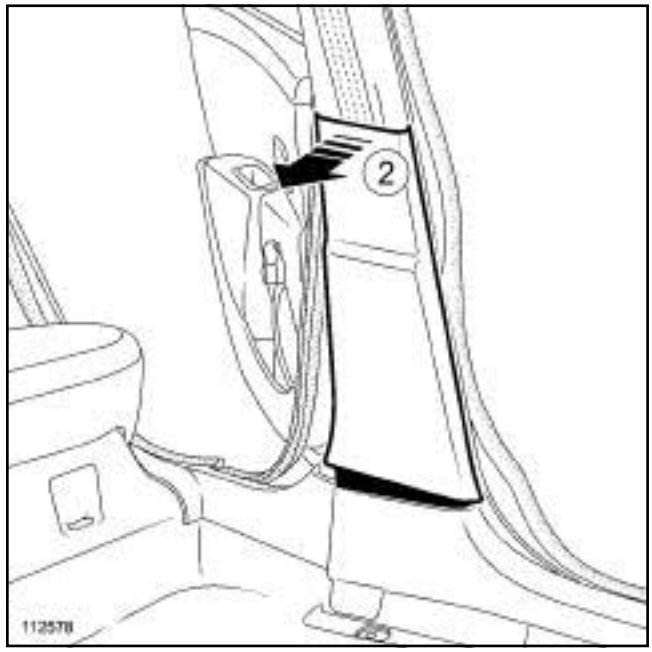
112577

❏ Move the seats fully forward.

❏ Partially remove the frame seals (**1**) .

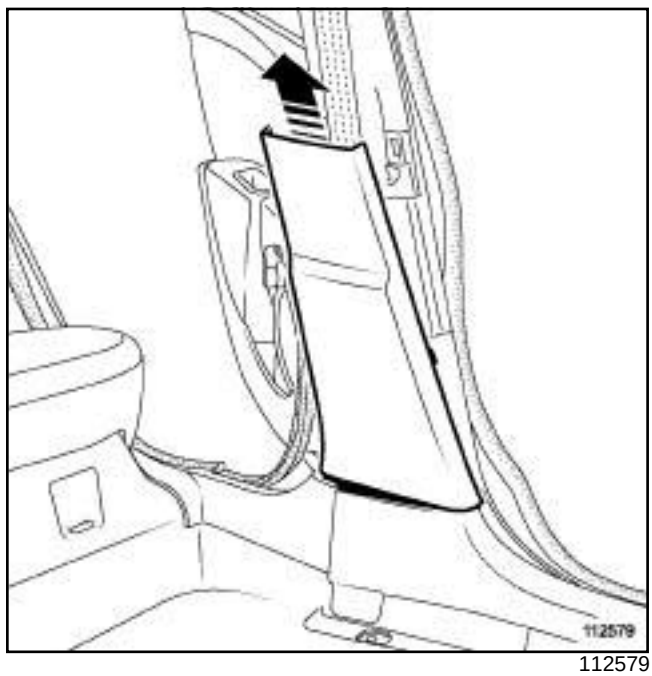
❏ Partially unclip the front and rear door sill trims.

II - REMOVAL OF PART CONCERNED



112578

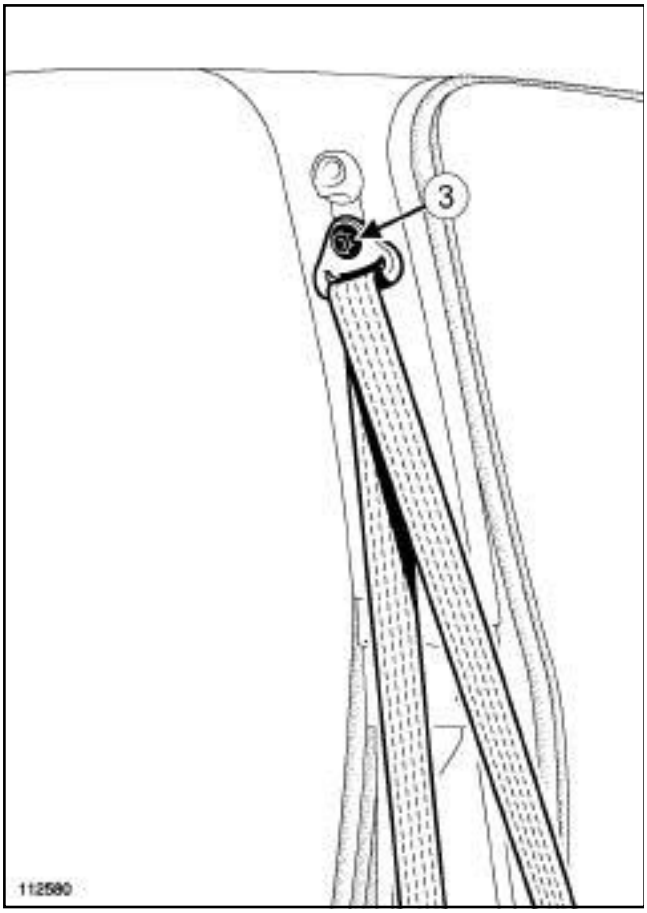
❏ Unclip the B-pillar lower trim at (**2**) .



112579

❏ Remove the B-pillar lower trim.

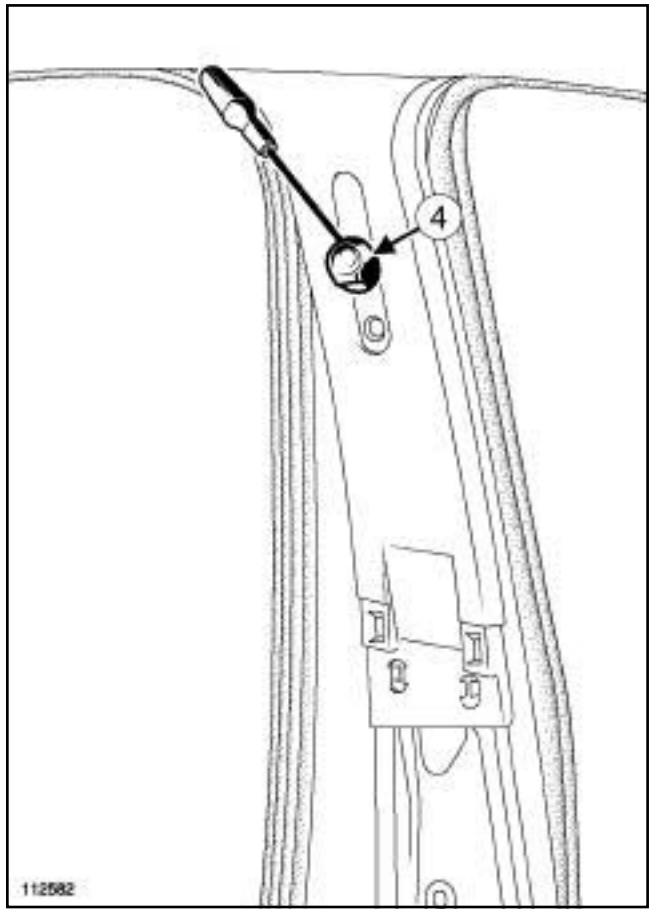
B85



112580

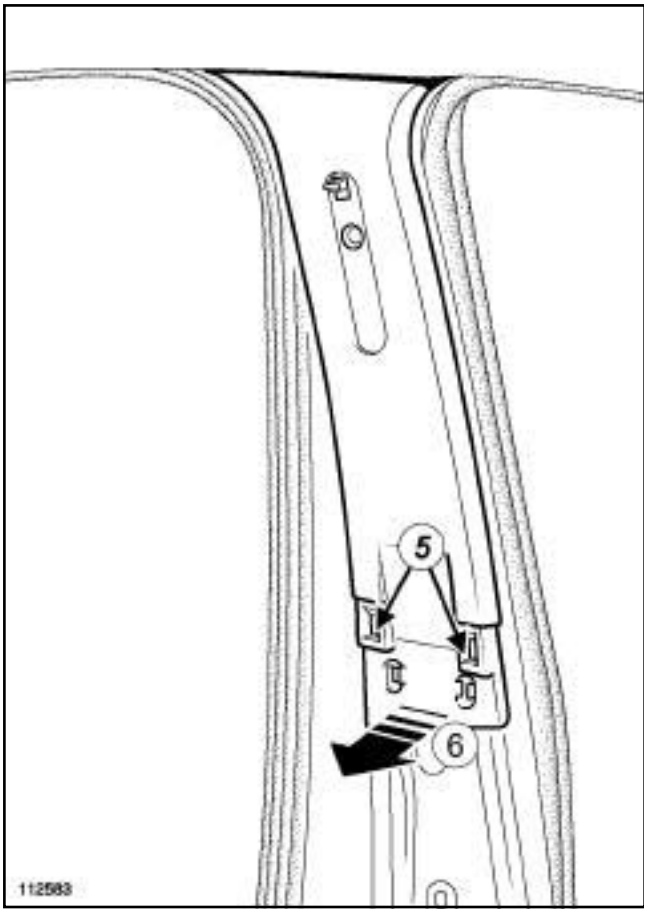
❏ Unclip bolt cover.

❏ Remove the bolt (**3**) .



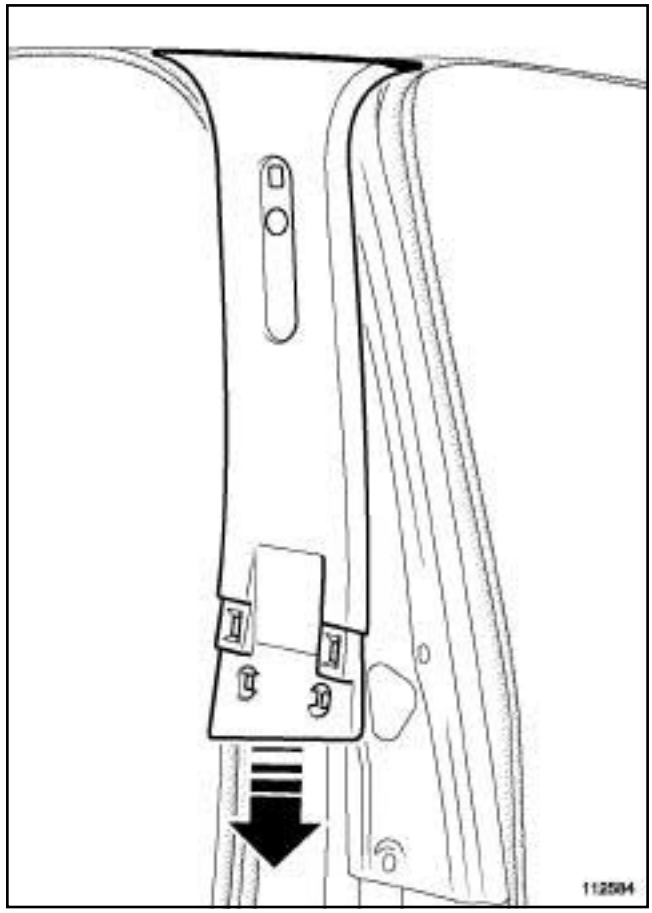
112582

❏ Use a flat-blade screwdriver to unclip the height adjustment control (**4**) .



112583

❏ Unclip (**5**) the B-pillar upper trim (**6**) .



112584

❏ Remove the upper trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Reclip:

- the B-pillar upper trim,
- the height adjustment device.

❏ Torque tighten the **seat belt bolt (21 Nm)**.

❏ Reattach the B-pillar lower trim.

II - FINAL OPERATION.

❏ Refit the front and rear door sill trims.

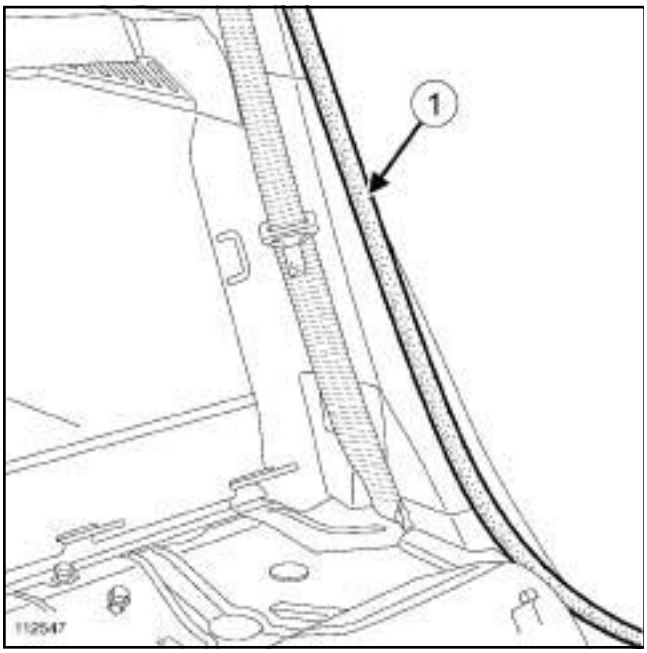
❏ Refit the frame seals.

B85

REMOVAL

I - REMOVAL PREPARATION OPERATION

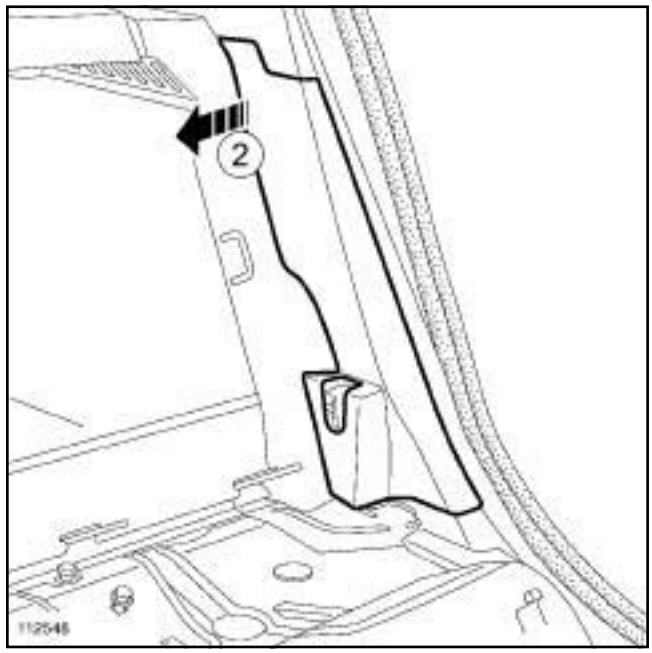
❑ Remove the complete rear bench seat (see) .



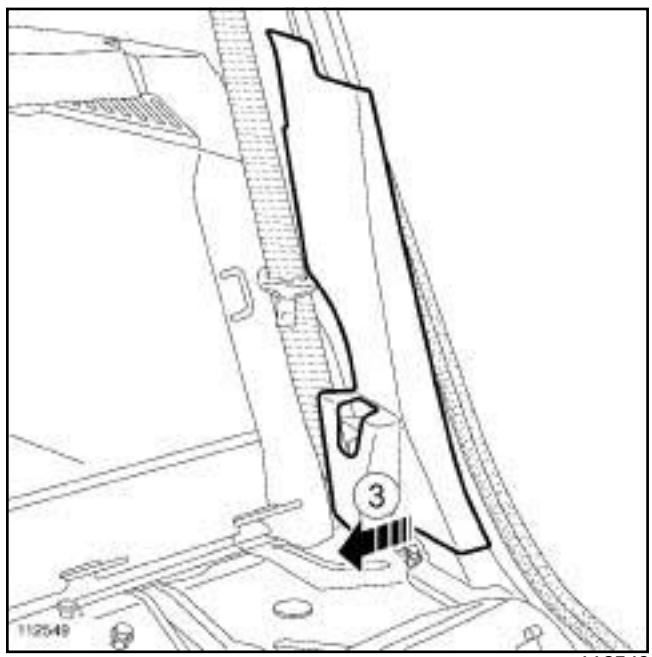
112547

❑ Partially remove seal (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112548



112549

❑ Remove the trim at (**2**) and at (**3**) .

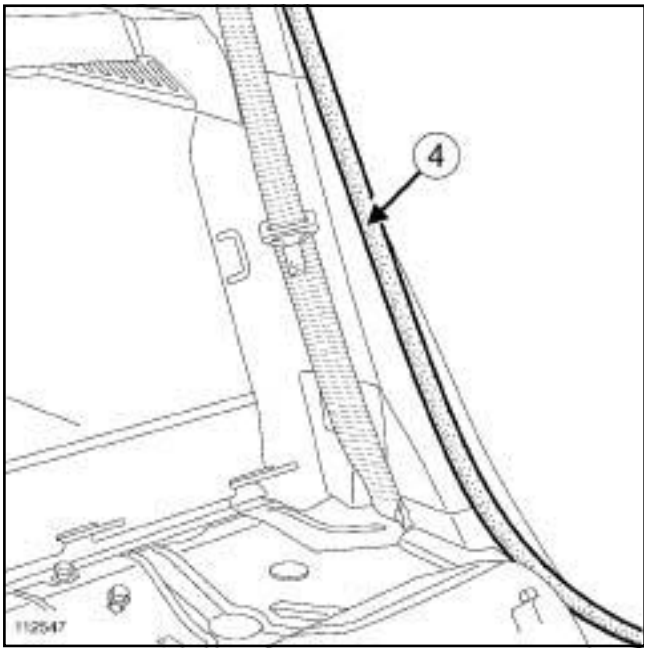
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear door sill upper trim.

B85

II - FINAL OPERATION



112547

❏ Refit the seal (**4**) .

❏ Refit the rear bench seat (see) .

C85

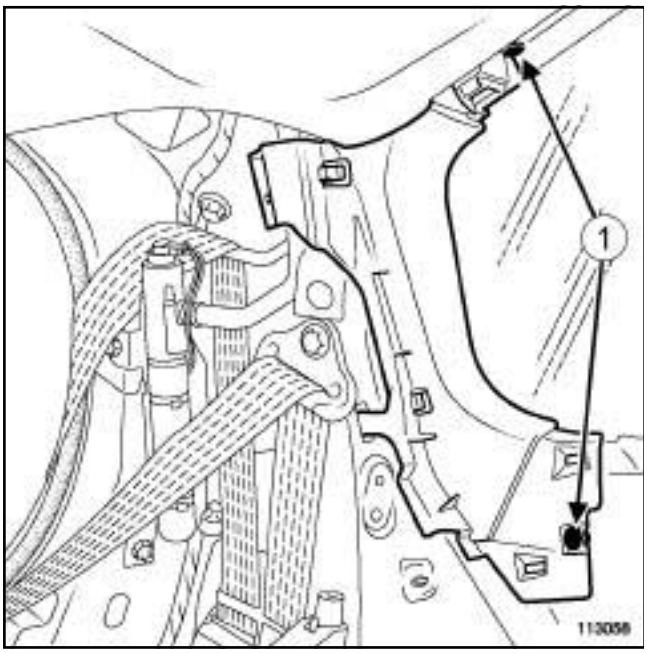
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) ,
- the rear roof drip moulding lining (see **71A**, **Body internal trim**, **Side roof rail rear trim: Removal - Refitting**, page **71A-17**) ,
- the rear quarter panel lining (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

II - REFITTING OPERATION FOR PART CONCERNED



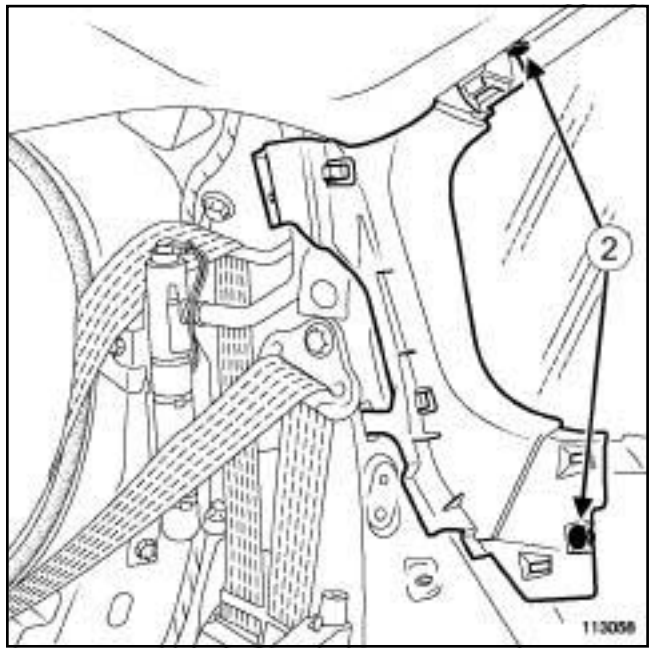
113058

❑ Remove clips (**1**) using a pair of unclipping pliers.

❑ Remove the C-pillar upper trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113058

❑ Refit:

- the C-pillar upper trim,
- clips (**2**) .

II - FINAL OPERATION

❑ Remove:

- the rear wing panel lining (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) ,
- the rear quarter panel lining (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) ,
- the rear roof drip moulding lining (see **71A**, **Body internal trim**, **Side roof rail rear trim: Removal - Refitting**, page **71A-17**) .

Equipment required
Diagnostic tool

Tightening torques ▽	
rear centre seat belt anchorage bolt	**21 Nm**
rear side seat belt lower bolt	**21 Nm**
rear side seat belt anchorage bolt	**21 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

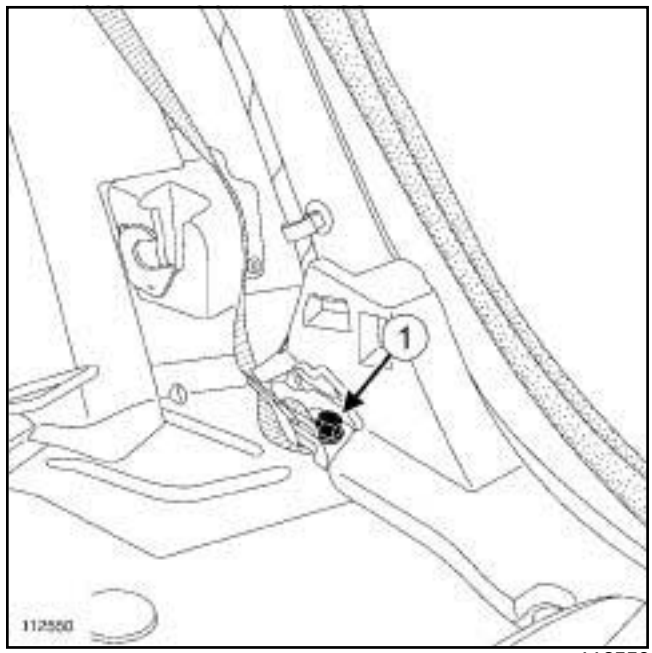
❑ Remove the rear bench seatback (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seatback: Removal - Refitting**, page **76A-1**) or (see **76A**, **Rear seat frames and mechanisms**, **1/3 and 2/3 rear bench seatback: Removal - Refitting**, page **76A-4**) .

C85

❑ Unclip the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

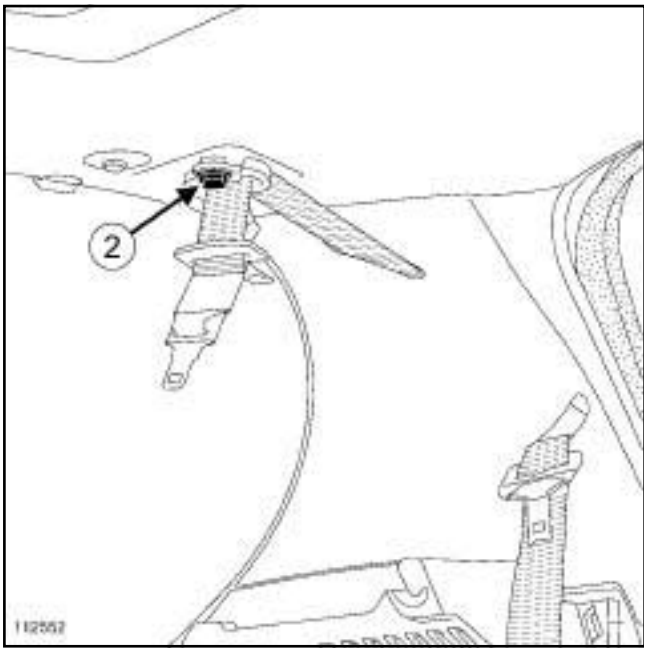
B85 or C85

❑ Remove the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .



112550

❑ Remove the lower bolt (**1**) from the rear side seat belt.

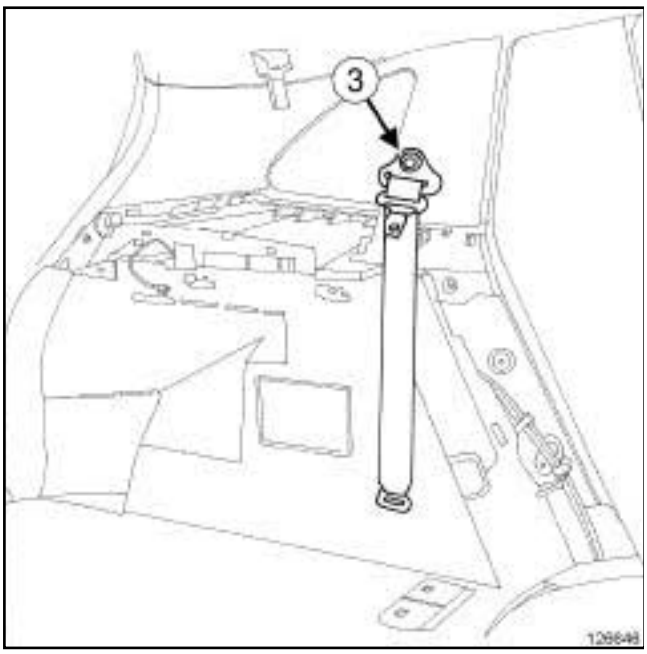


112552

❏ Remove the anchorage bolt (**2**) from the rear centre seat belt.

K85

❏ Remove the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .



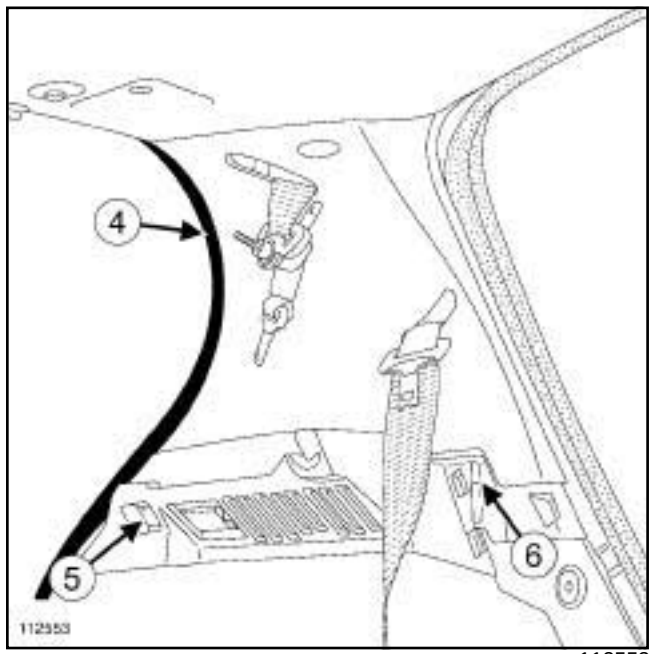
126646

❏ Remove:

- the cover (**3**) ,
- the anchorage bolt (**3**) from the rear side seat belt.

II - OPERATION FOR REMOVAL OF PART CONCERNED

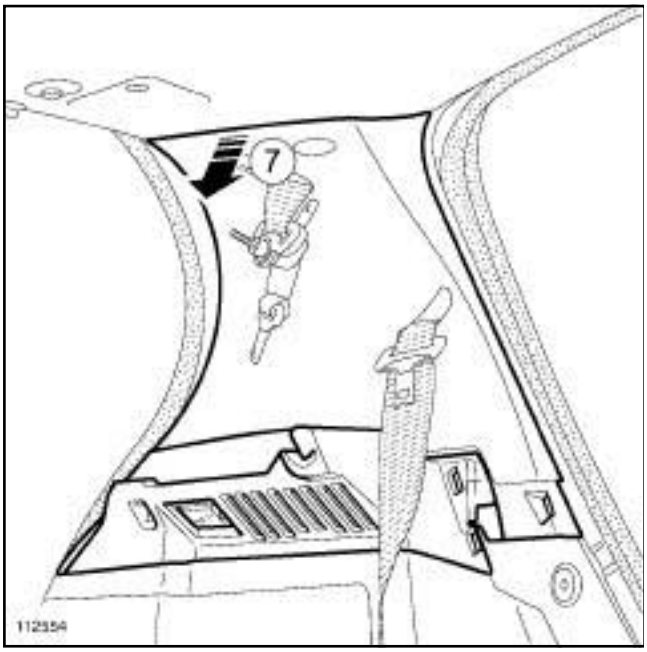
B85 or C85 or S85



112553

❏ Remove:

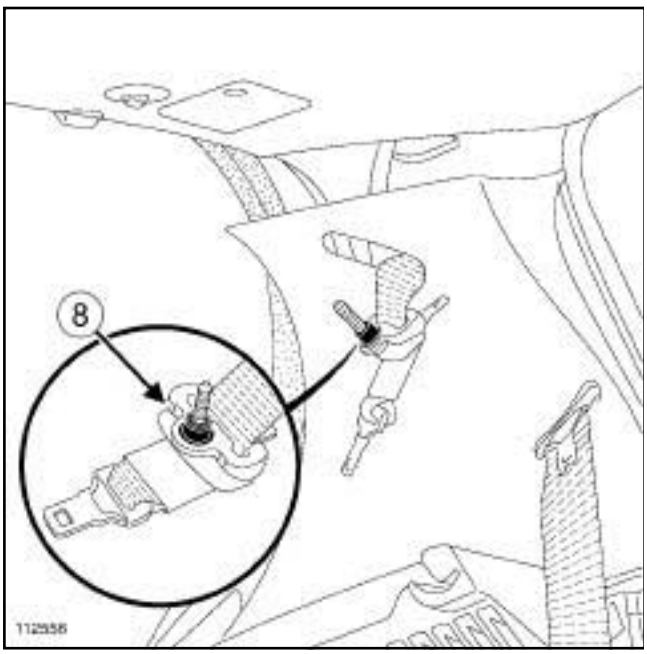
- the seal partially (**4**) ,
- clip (**5**) ,
- bolt (**6**) .



112554

❏ Unclip the rear quarter panel trim (**7**) .

B85 or C85



112556

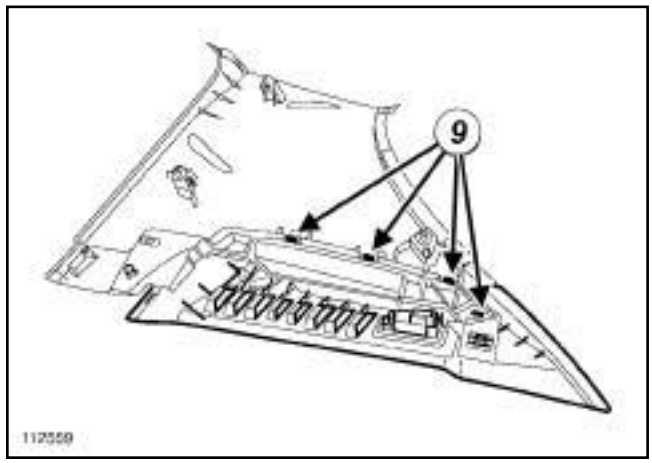
❏ Remove:

- the patch (**8**) ,
- the anchorage bolt on the rear centre seat belt.
- the rear side and centre seat belts through the openings in the rear quarter panel trim.

B85 or C85 or S85

❏ Remove:

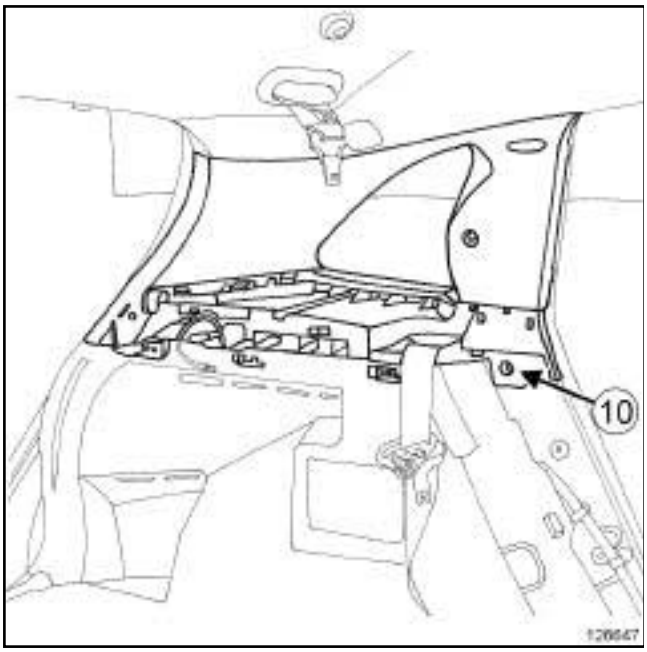
- the luggage compartment light connector,
- the rear quarter panel trim.



112559

❏ Using a flat-blade screwdriver, unclip the rear parcel shelf side trim at (**9**) .

K85



126647

❑ Remove:

- the bolt (**10**) ,
- the rear quarter panel trim.

REFITTING

I - REFITTING PREPARATION OPERATION

B85 or C85

❑ Always replace the lower bolt on the rear side seat belt.

❑ Apply **HIGH-STRENGTH THREADLOCK** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the new rear centre seat belt anchorage bolt.

K85

❑ Apply **HIGH-STRENGTH THREADLOCK** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to the new rear side seat belt anchorage bolt.

II - REFITTING OPERATION FOR PART CONCERNED

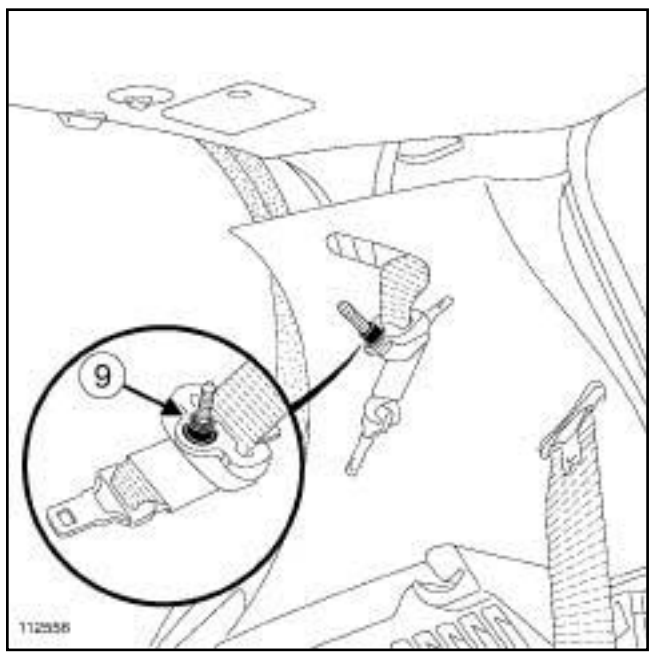
B85 or C85 or S85

❑ Clip the rear parcel shelf side trim onto the rear quarter panel trim.

B85 or C85

❑ Pass the rear side and centre seat belts through the openings in the rear quarter panel trim.

B85 or C85



112556

❑ Refit:

- the new anchorage bolt on the rear centre seat belt.
- the patch (**9**) ,
- the luggage compartment light connector,

- the rear quarter panel trim,
- clip ***(5)*** ,
- the bolt ***(6)*** ,
- the seal ***(4)*** .

K85

❑ Refit:

- the rear quarter panel trim,
- bolt (**10**) .

III - FINAL OPERATION.

B85 or C85

❑ Tighten to torque:

- the **rear centre seat belt anchorage bolt (21 Nm)**,
- the **rear side seat belt lower bolt (21 Nm)**.

B85

❑ Refit the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

C85

❑ Clip on the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

❑ Refit the rear bench seat (see) .

K85

❑ Torque tighten the **rear side seat belt anchorage bolt (21 Nm)**.

❑ Refit:

- the cover (**3**) ,
- the rear parcel shelf side trim (see **71A**, **Body internal trim**, **Rear parcel shelf side trim: Removal - Refitting**, page **71A-34**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

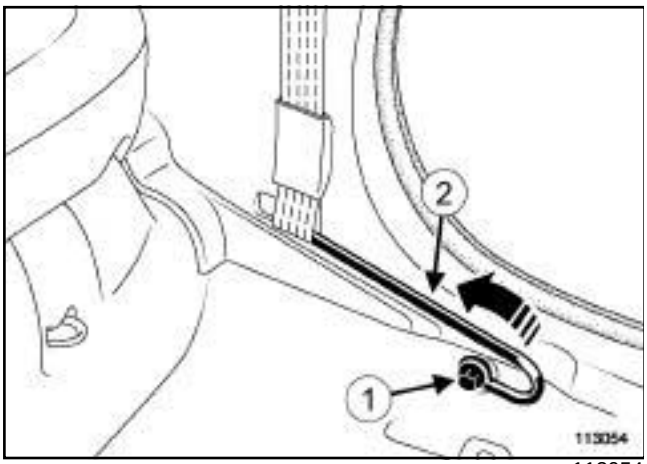
C85 or S85

Tightening torques ▽	
front seat belt support bolt	21 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

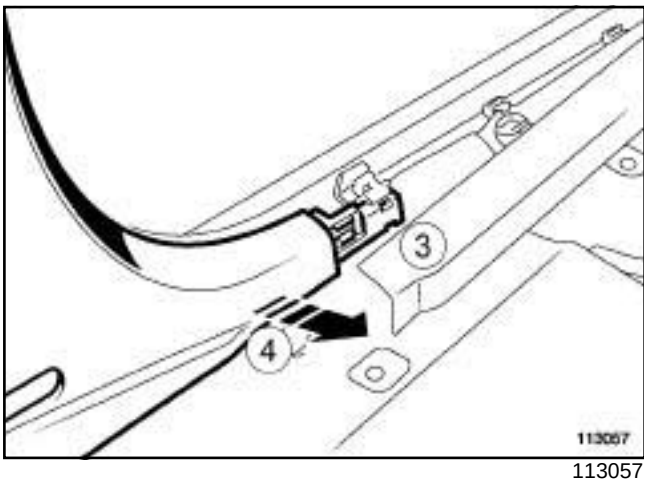
❏ Remove the complete rear bench seat (see) .



113054

❏ Remove:

- the front seat belt support bolt (**1**) .
- the front seat belt support.

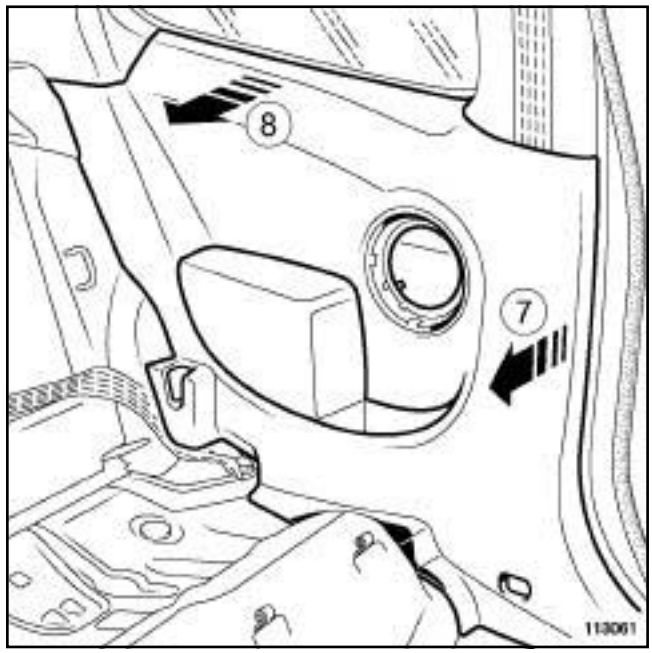


113057

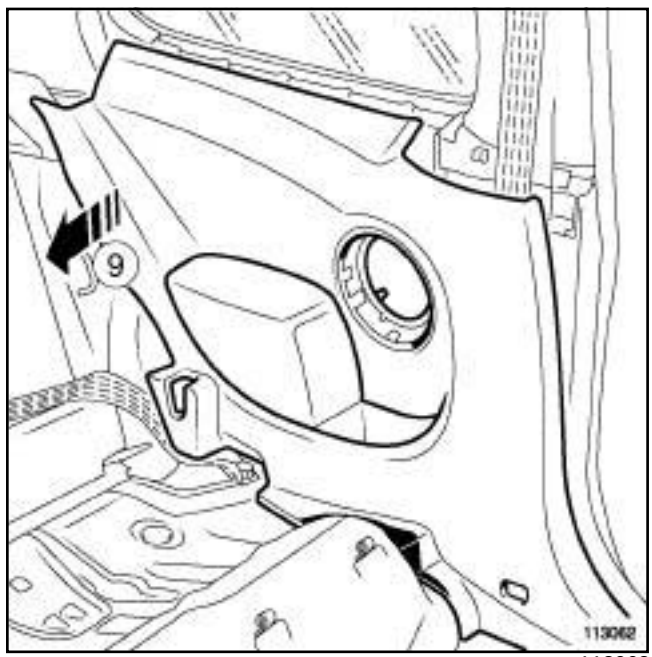
❏ Unclip:

- the rear section of the front door sill lining (**3**) ,
- the rear wing panel trim at (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113061



113062

❏ Unclip the rear wing panel trim at (**7**) , (**8**) and (**9**) .

REFITTING

I - REFITTING PREPARATION OPERATION

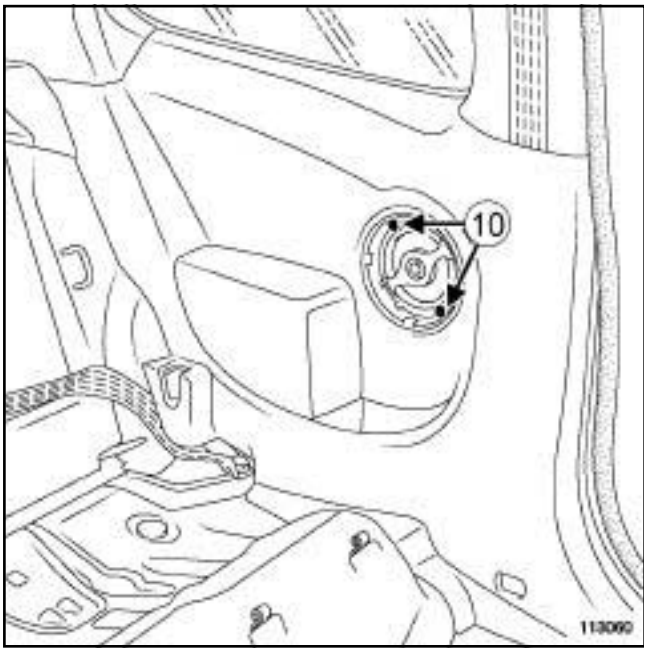
❏ Always replace the front seat belt support bolt.

C85 or S85

II - REFITTING OPERATION FOR PART CONCERNED

❏ Clip on the rear wing panel trim.

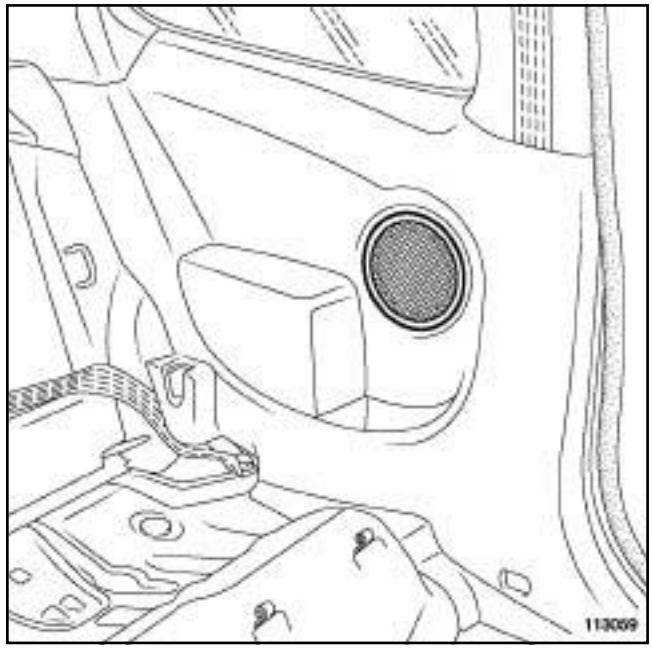
C85



113060

❏ Refit:

- the speaker,
- the bolts (**10**) .



113059

❏ Clip on the speaker grille.

III - FINAL OPERATION.

❏ Clip on the front door sill lining.

❏ Refit the front seat belt support.

❏ Torque tighten the **front seat belt support bolt (21 Nm)**.

REMOVAL

I - REMOVAL PREPARATION OPERATION

C85

❑ Remove the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

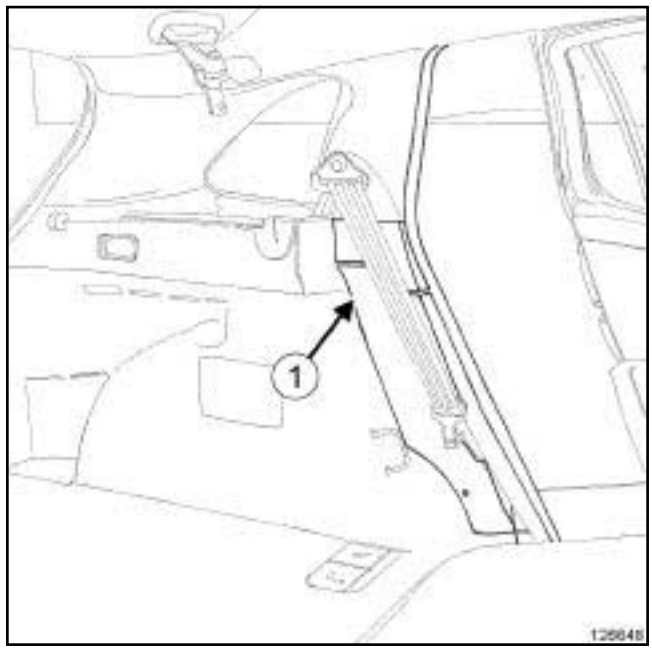
B85

❑ Unclip the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

B85 or C85

❑ Remove the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

K85



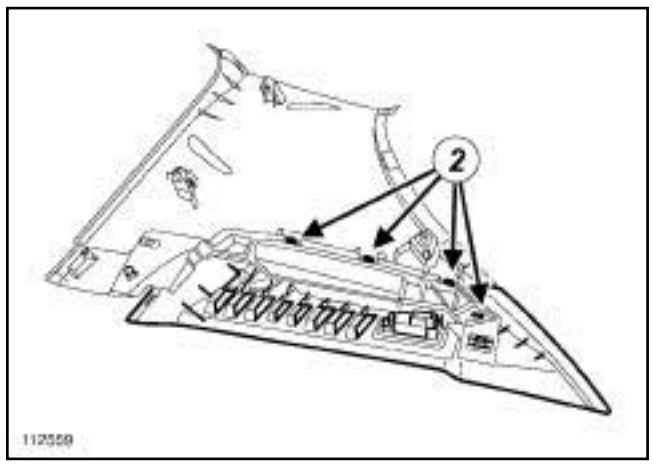
126648

❑ Partially remove the seals from the rear side door and the tailgate.

❑ Unclip the rear inner sill upper trim at (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

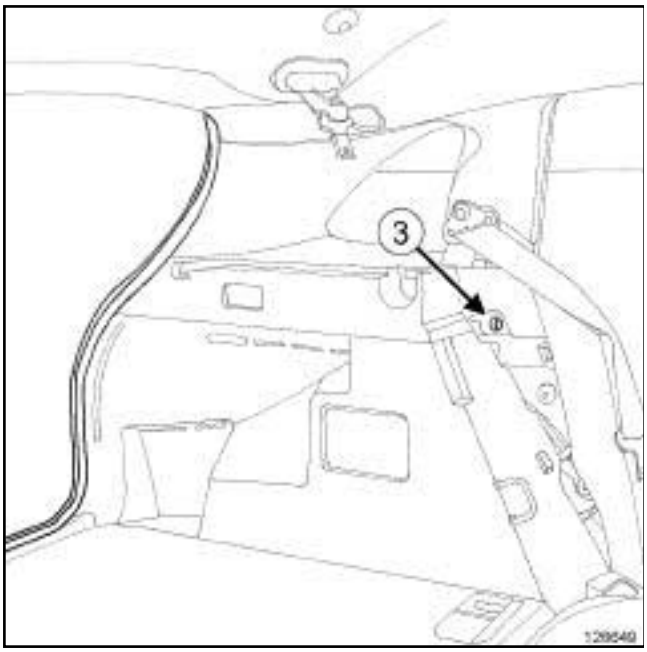
B85 or C85



112559

❑ Using a flat-blade screwdriver, unclip (**2**) the rear parcel shelf side trim.

K85



126649

❑ Remove the bolt (**3**) .

126650

❑ Unclip the rear parcel shelf side trim.

❑ Disconnect the luggage compartment light connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

B85 or C85

❑ Clip the rear parcel shelf side trim onto the rear quarter panel trim.

K85

❑ Clip on the rear parcel shelf side trim.

❑ Refit the bolt (**3**) .

II - FINAL OPERATION.

B85 or C85

❑ Refit the rear quarter panel trim (see **71A**, **Body internal trim**, **Quarter panel trim: Removal - Refitting**, page **71A-27**) .

C85

❑ Clip on the rear wing panel trim (see **71A**, **Body internal trim**, **Rear panel lining: Removal - Refitting**, page **71A-32**) .

B85

❑ Refit the rear inner sill upper trim (see **71A**, **Body internal trim**, **Rear inner sill upper trim: Removal - Refitting**, page **71A-24**) .

K85

❏ Connect the luggage compartment light connector.

❏ Clip on the rear inner sill upper trim.

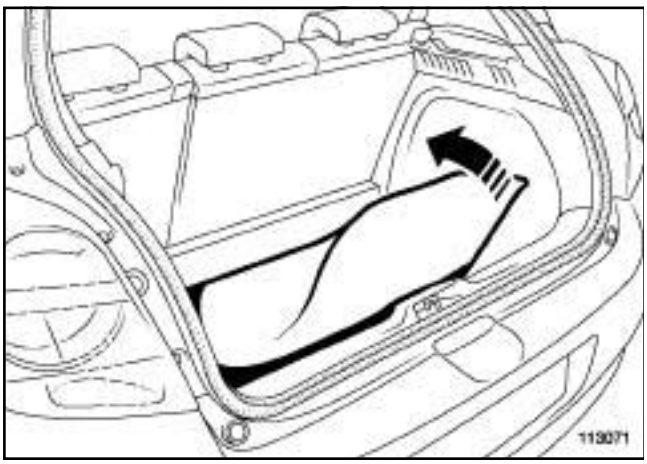
❏ Refit the seals on the rear side door and the tailgate.

Tightening torques ▽	
towing ring bolts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

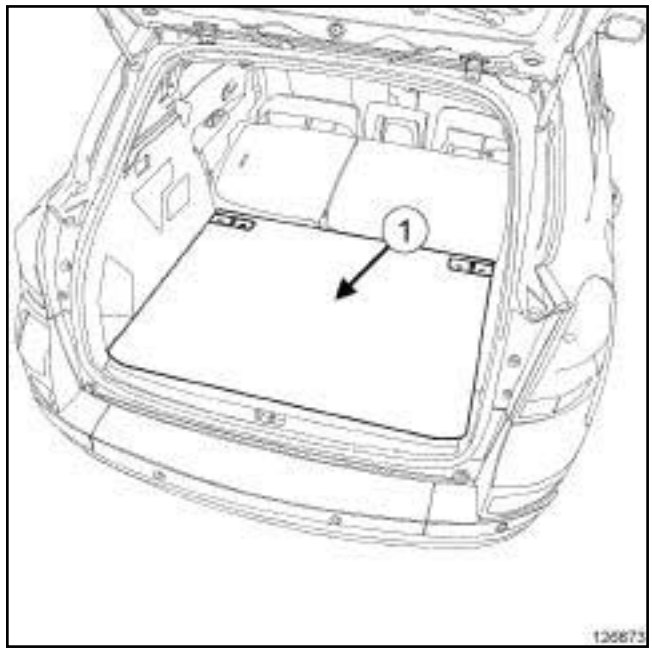
B85 or C85 or S85



113071

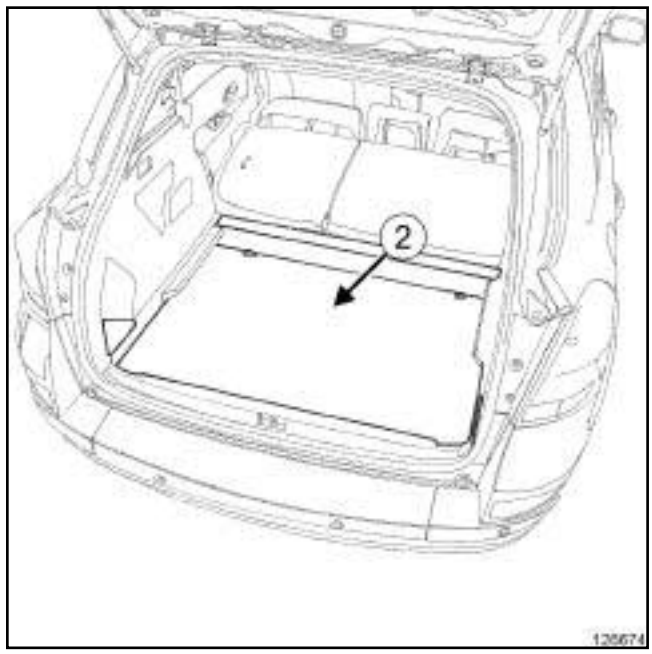
❏ Remove the luggage compartment carpet.

K85



126673

❏ Remove the luggage compartment raised floor (**1**) .



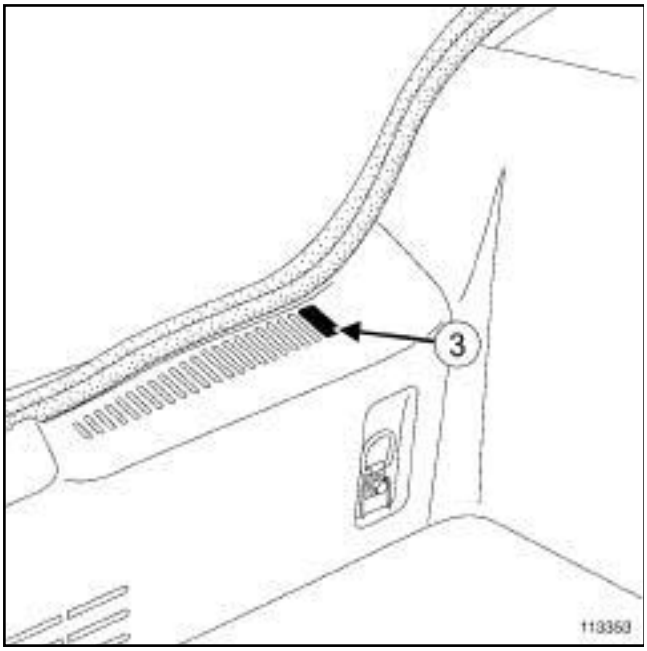
126674

❏ Remove the luggage compartment carpet (**2**) .

❏ Partially remove the luggage compartment seal.

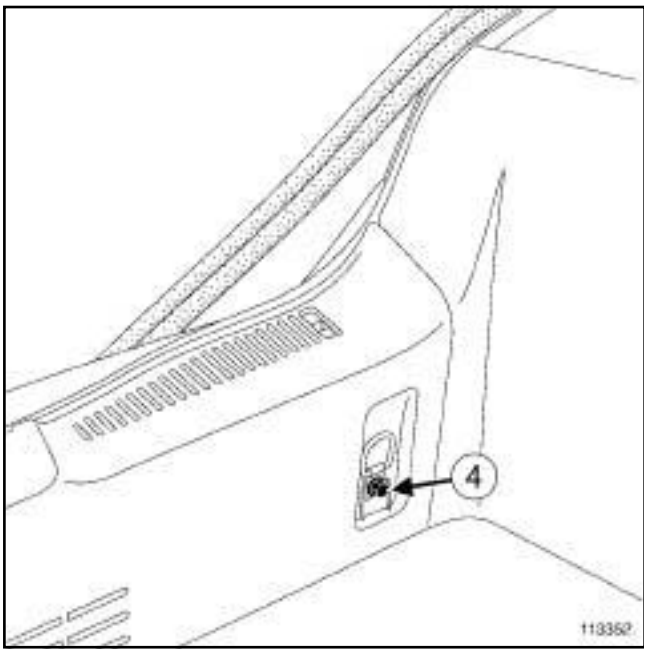
II - OPERATION FOR REMOVAL OF PART CONCERNED

B85 or C85 or S85



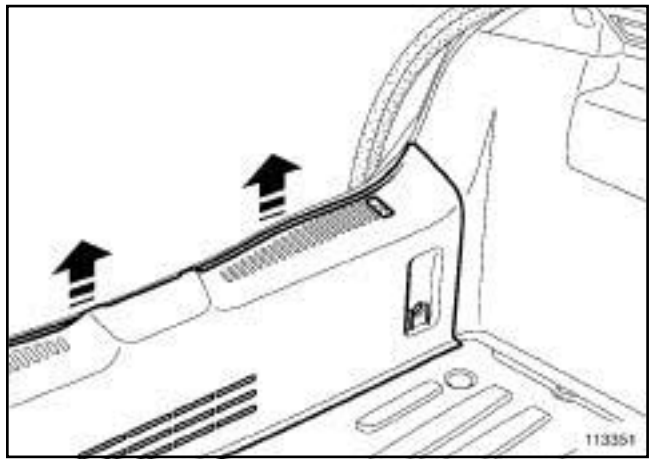
113353

❏ Remove the clips (**3**) using a flat-blade screwdriver.



113352

❏ Remove the towing ring bolts (**4**) .



113351

❏ Unclip the rear end panel trim.

REFITTING

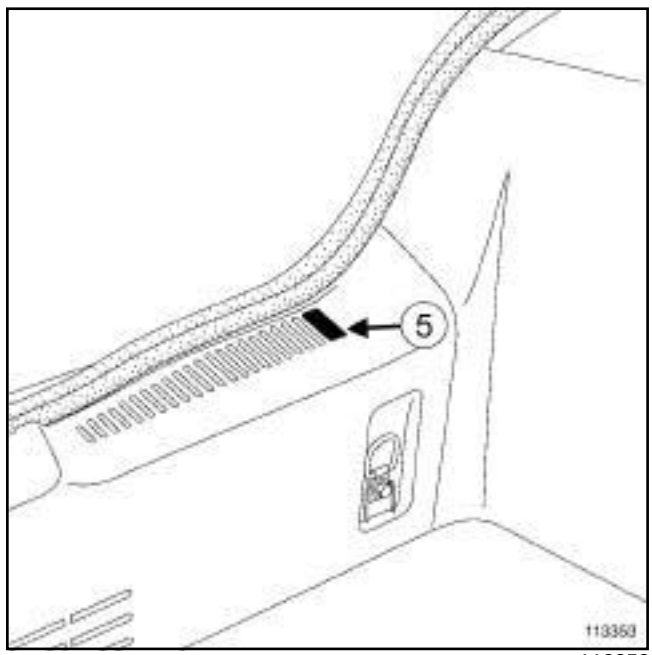
I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the rear end panel lining,
- the towing rings.

❏ Torque tighten the **towing ring bolts (21 Nm)**.

B85 or C85 or S85



113353

❏ Refit clips (**5**) .

II - FINAL OPERATION.

B85 or C85 or S85

❏ Refit the luggage compartment carpet.

K85

❏ Remove:

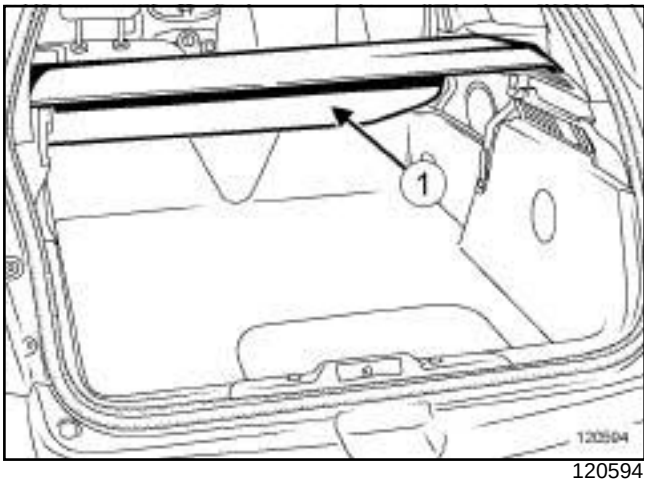
- the luggage compartment carpet ***(2)*** ,
- the luggage compartment raised floor ***(1)*** .

❏ Refit the luggage compartment seal.

S85

REMOVAL

I - REMOVAL PREPARATION OPERATION

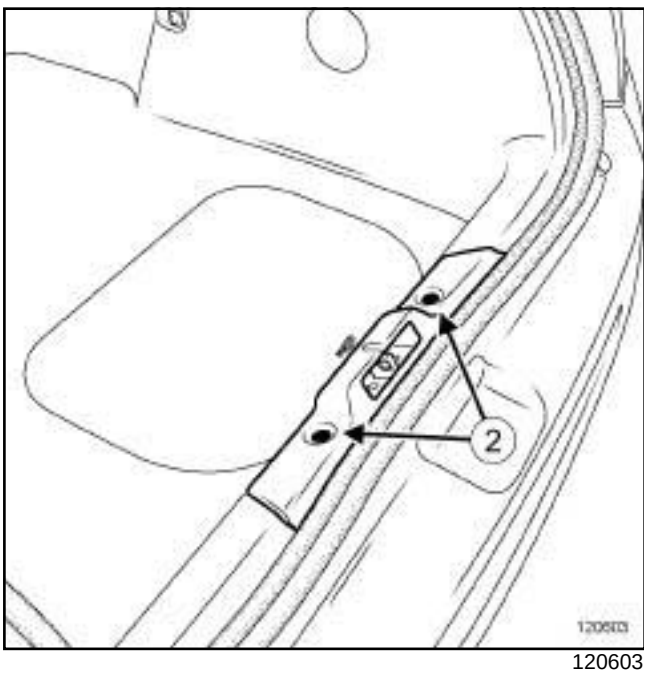


120594

❏ Remove:

- the rear parcel shelf,
- the centre rear parcel shelf (**1**) .

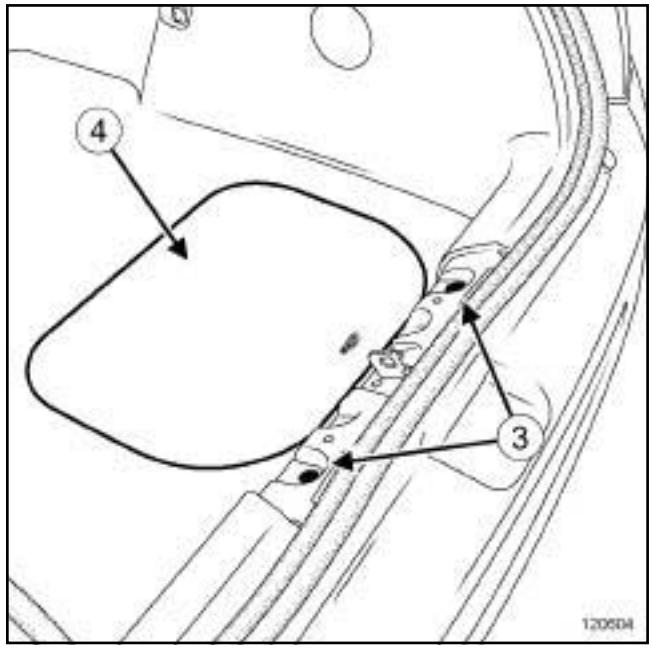
II - OPERATION FOR REMOVAL OF PART CONCERNED



120603

❏ Unclip the clips (**2**) .

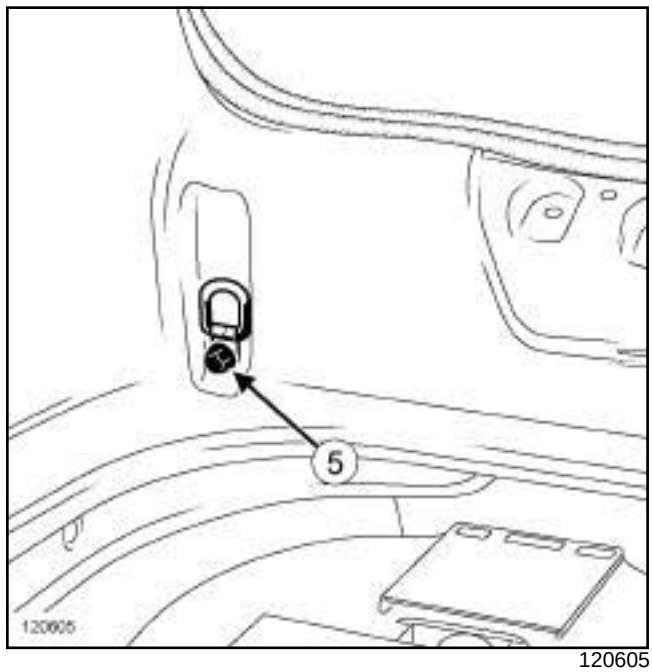
❏ Remove the rear end panel central trim assembly.



120604

❏ Unclip the clips (**3**) .

❏ Remove the emergency spare wheel flap (**4**) .

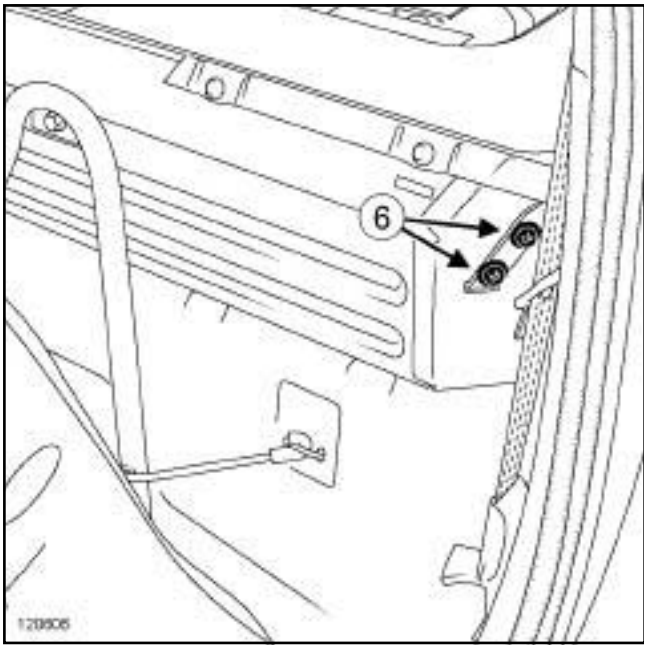


120605

❏ Remove:

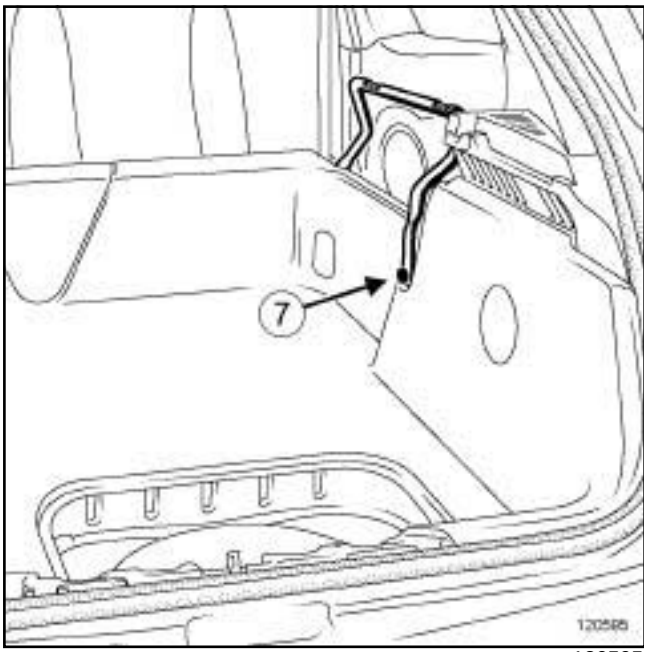
- the bolts (**5**) ,
- the retaining hooks.

S85



120606

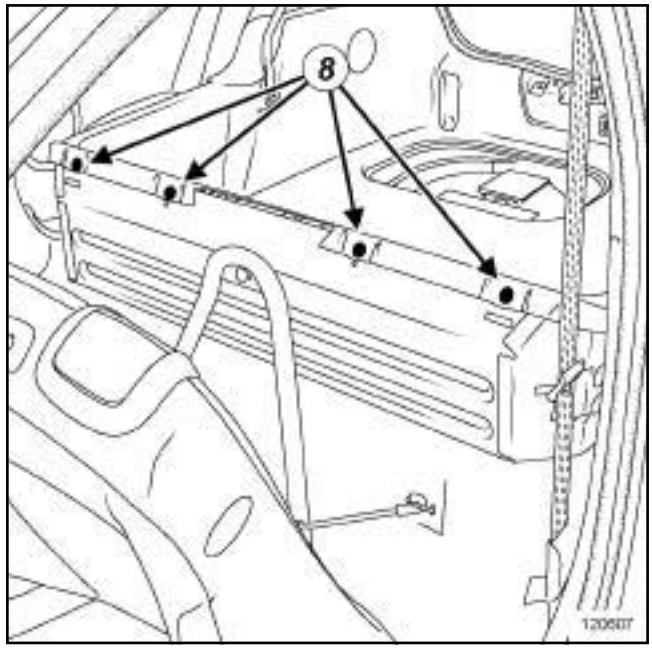
❏ Remove the bolts (**6**) .



120595

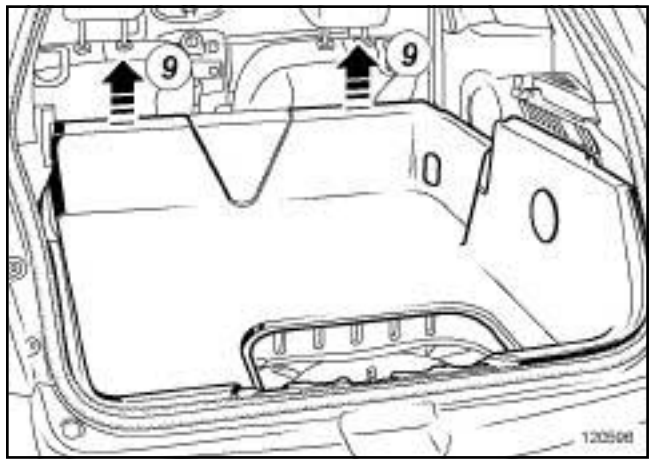
❏ Remove:

- the bolts (**7**) ,
- the centre rear parcel shelf supports.



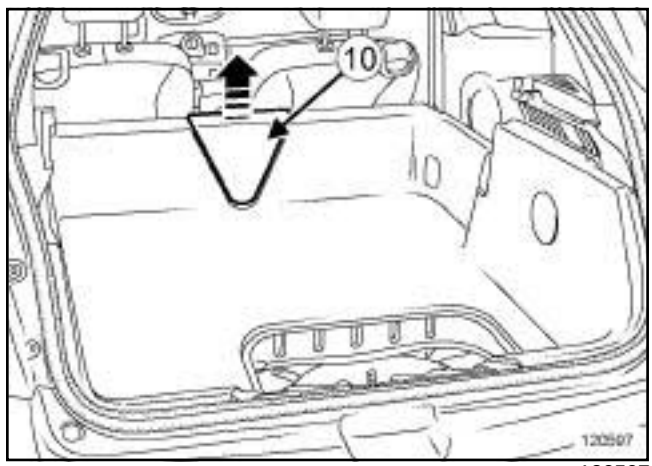
120607

❏ Remove the bolts (**8**) .



120596

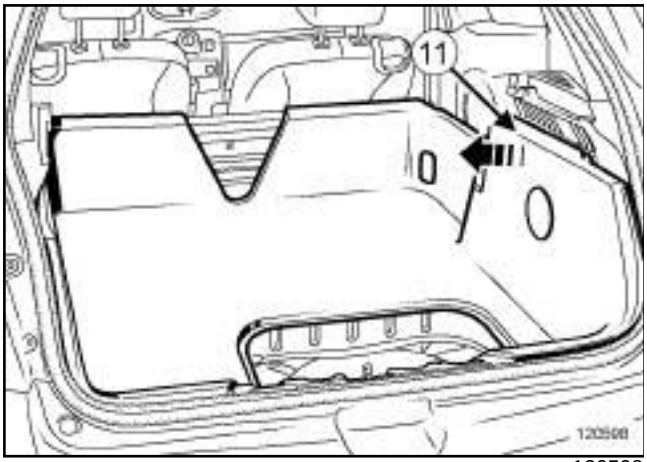
❏ Gently lift the luggage compartment tray (**9**) .



120597

❏ Remove the trim (**10**) .

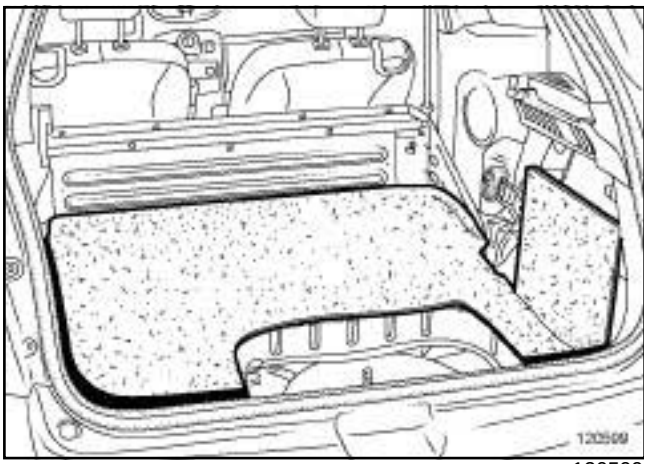
S85



120598

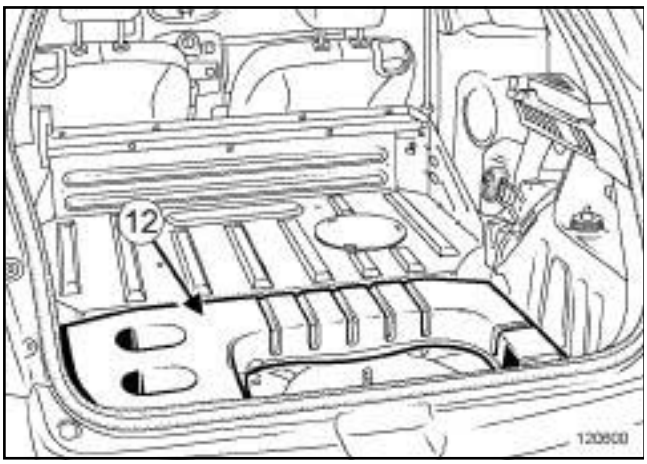
❏ Detach the rear side sections (**11**) of the luggage compartment.

❏ Remove the luggage compartment tray through the tailgate by bending it slightly (this operation requires two people).



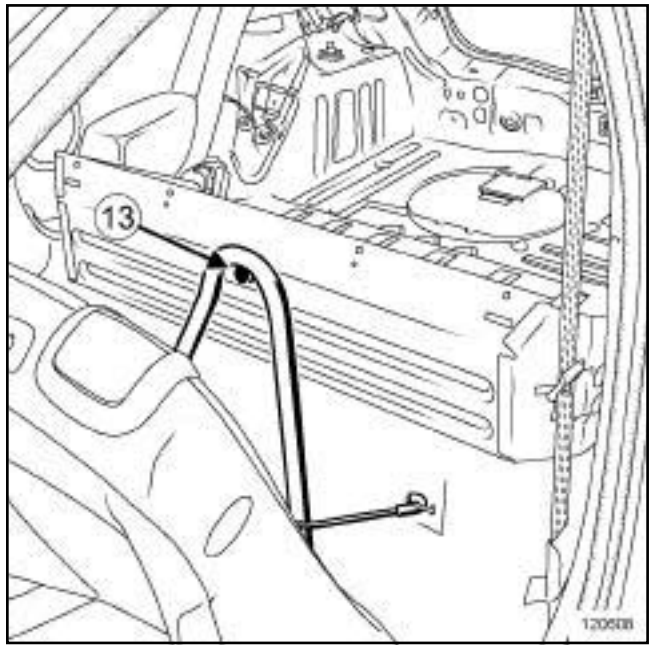
120599

❏ Remove the soundproofing.



120600

❏ Remove the luggage compartment tray mounting (**12**) .



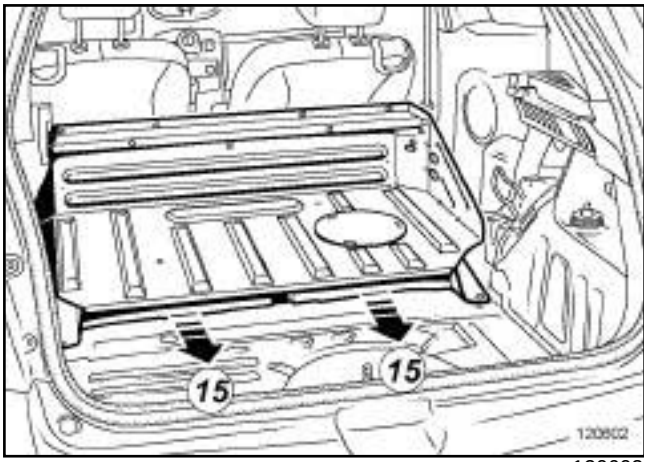
120608

❏ Remove:

- the bolt (**13**) ,
- the load stop bracket.

120601

❏ Remove the bolts (**14**) .



120602

❏ Remove the load stop floor by unclipping it towards the rear (**15**) (this operation requires two people).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the load stop floor (this operation requires two people),
- the bolts ***(14)*** ,
- the load stop bracket,
- the bolt ***(13)*** ,
- the luggage compartment tray mounting ***(12)*** ,
- the soundproofing,
- the luggage compartment tray (this operation requires two people),
- the trim ***(10)*** ,
- the bolts ***(8)*** .

❏ Attach the rear side sections ***(11)*** of the luggage compartment tray.

❏ Refit:

- the centre rear parcel shelf supports,
- the bolts ***(7)*** and ***(6)*** ,
- the retaining hooks,
- the bolts ***(5)*** ,
- the emergency spare wheel flap ***(4)*** .

❏ Attach the clips ***(3)*** .

❏ Refit the rear end panel central trim assembly.

❏ Attach the clips ***(2)*** .

II - FINAL OPERATION.

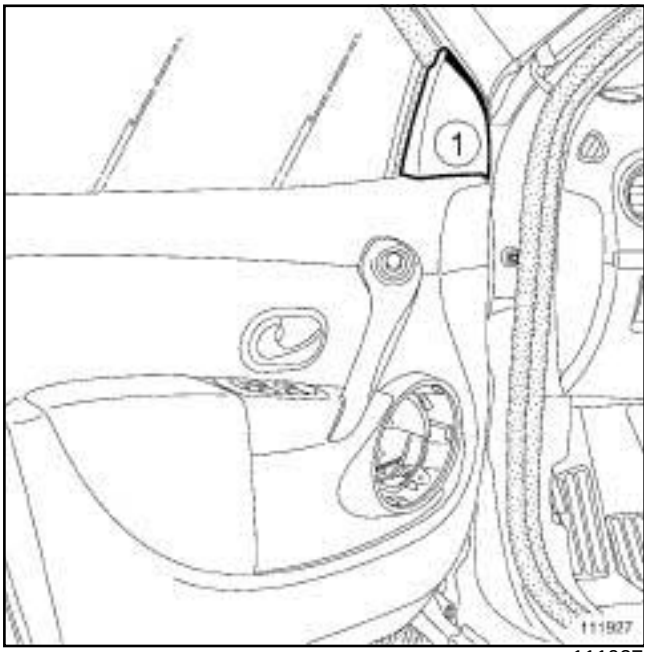
❏ Refit:

- the centre rear parcel shelf, ***(1)***
- the rear parcel shelf.

REMOVAL

I - REMOVAL PREPARATION OPERATION

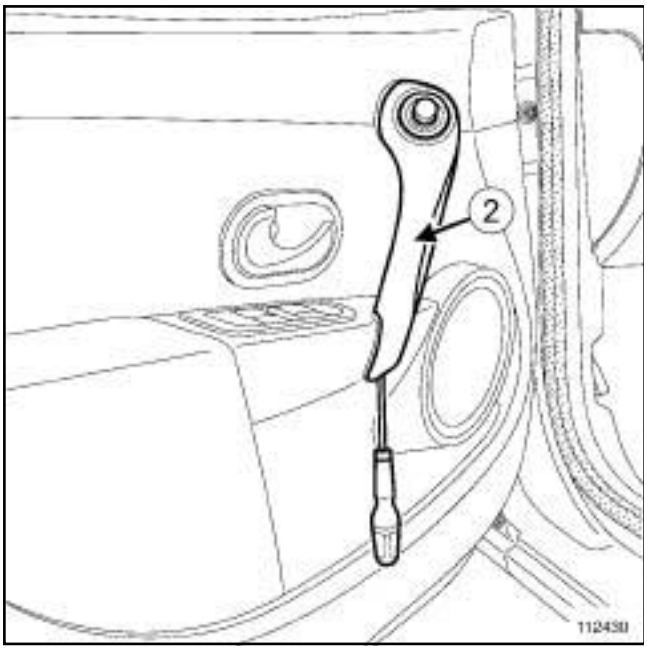
❑ Remove the front speaker (see **Front speakers: Removal - Refitting**) (MR 392, 86A, Radio).



111927

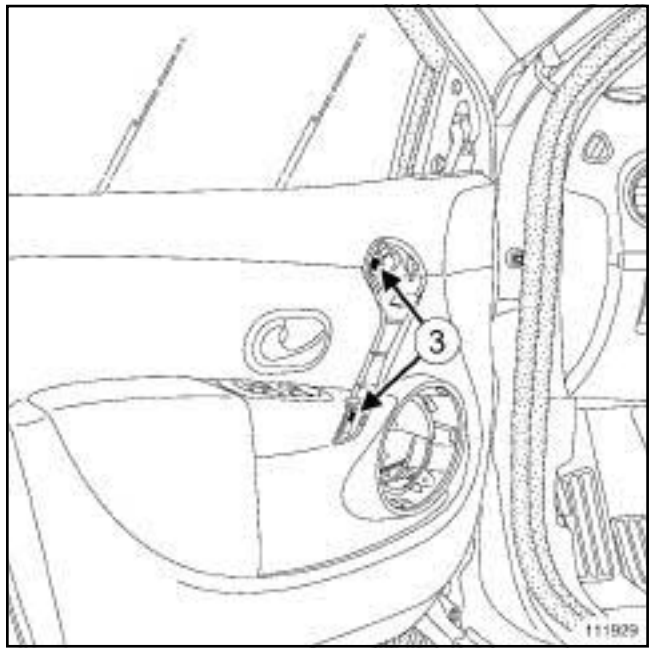
❑ Unclip the door mirror trim piece (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



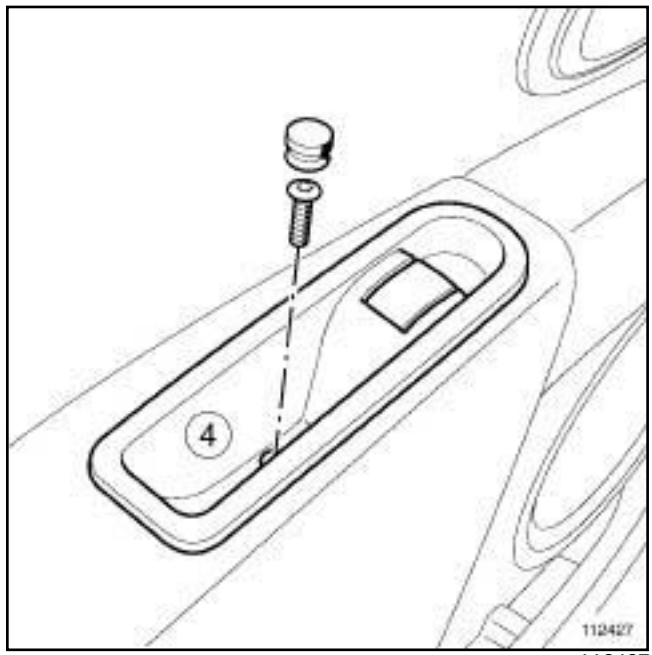
112430

❑ Use a flat-blade screwdriver to undo the trim piece (**2**) .



111929

❑ Remove the bolts (**3**) .



112427

❑ Remove trim and bolt.

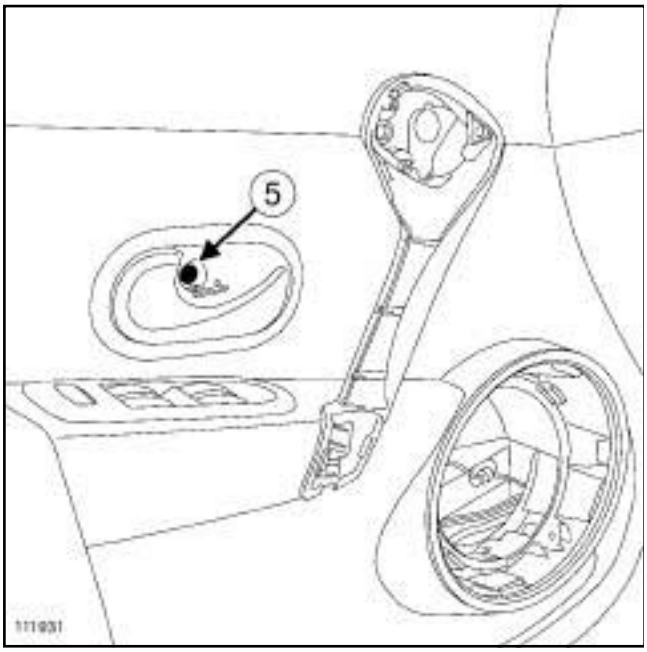
❑ Take out interior handle (**4**) (depending on equipment level).

❑ Disconnect the supply connectors.

❑

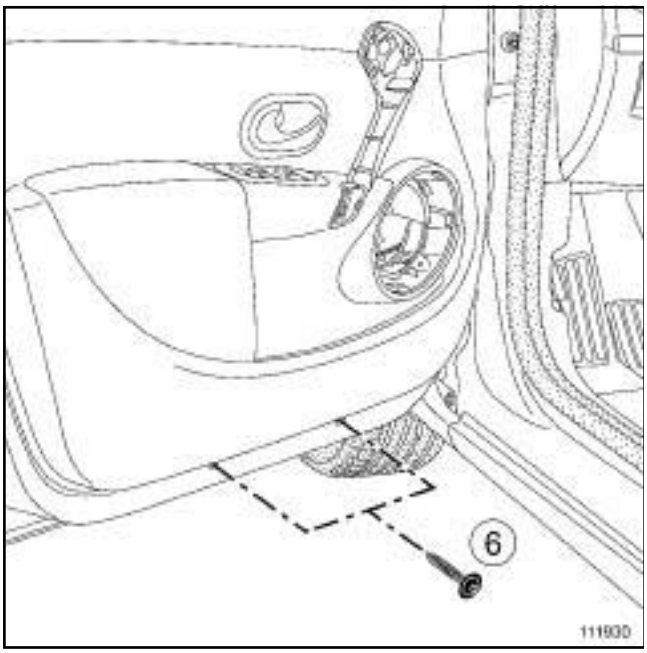
Note:

For vehicles fitted with manual window winders, protect the door trim and remove the winder handle using an unclipping tool.



111931

❏ Remove the bolt (**5**) .



111930

❏ Remove the bolts (**6**) .

❏ Unclip:

- trim using a pair of unclipping pliers (protect the door box section),
- the interior door handle cable using a flat-blade screwdriver.

❏ Disconnect the supply connectors.

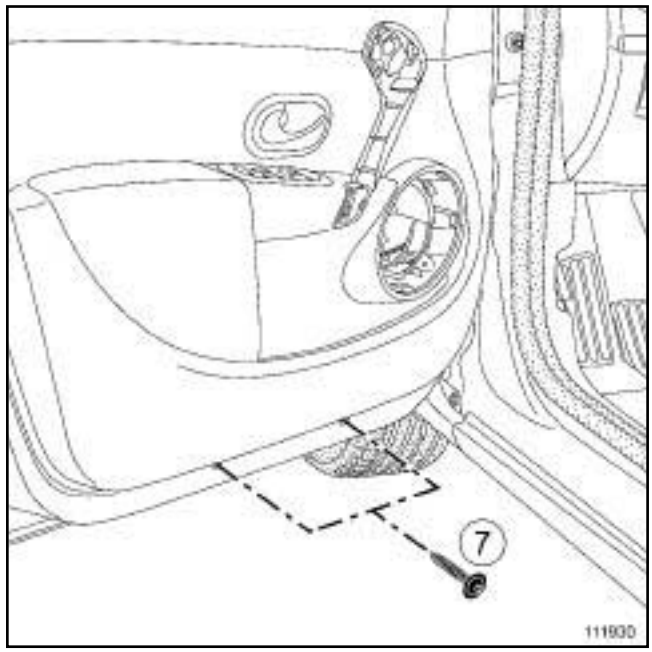
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Reconnect the supply connectors.

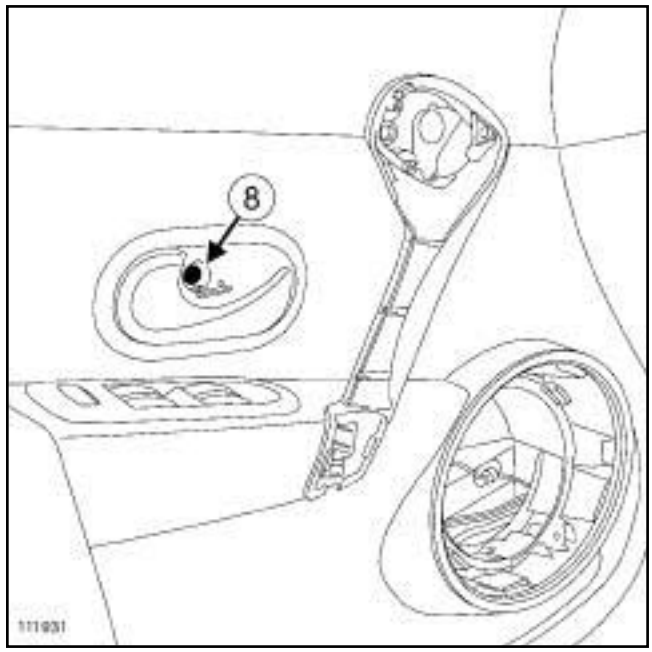
❏ Reclip:

- the interior door handle cable,
- the door trim.



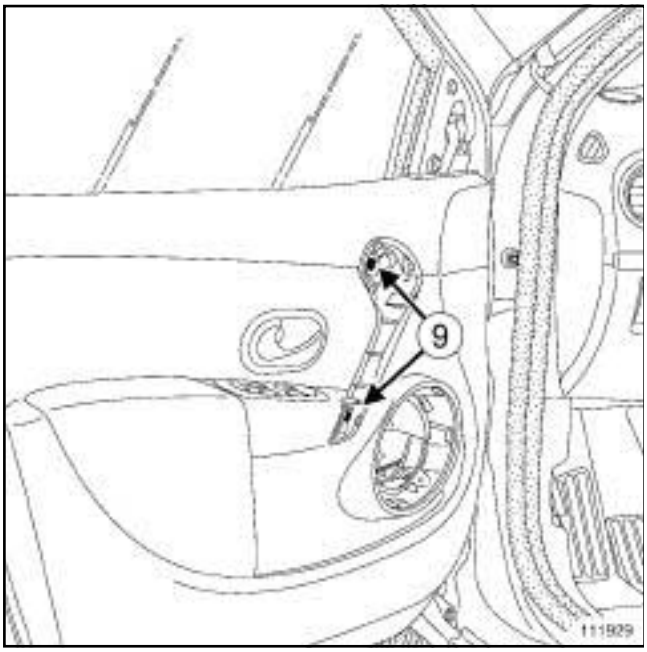
111930

❏ Refit the bolts (**7**) .



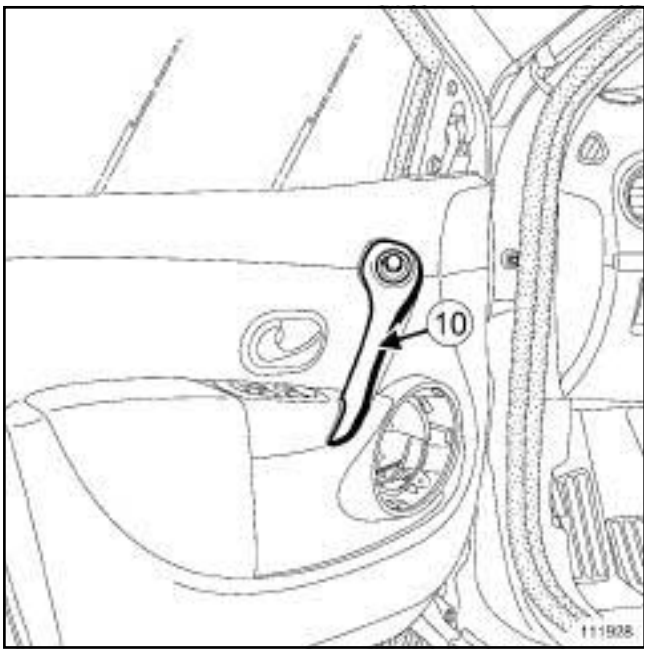
111931

❏ Refit the bolt (**8**) .



111929

❏ Refit the bolts (**9**) .



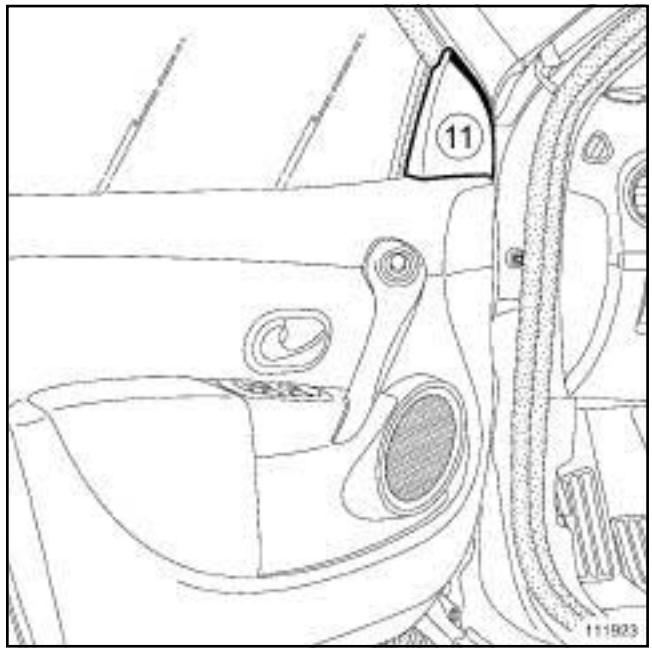
111928

❏ Reconnect the supply connector.

❏ Reclip the trim piece (**10**) .

II - FINAL OPERATION

❏ Refit the front speaker (see **Front speakers: Removal - Refitting**) (MR 392, 86A, Radio).



111923

❏ Reclip:

- the door mirror trim piece (**11**) ,
- window winder handle (if fitted in vehicle).

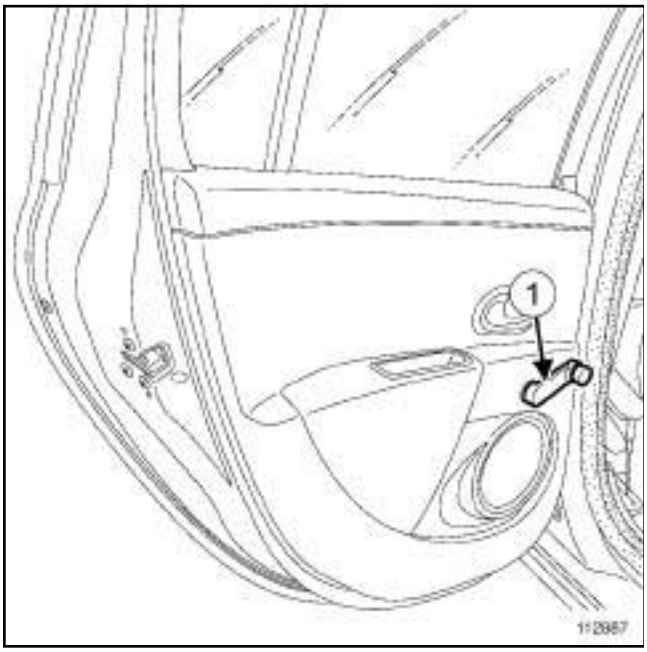
❏ Carry out a function test.

B85 or K85

REMOVAL

I - REMOVAL PREPARATION OPERATION

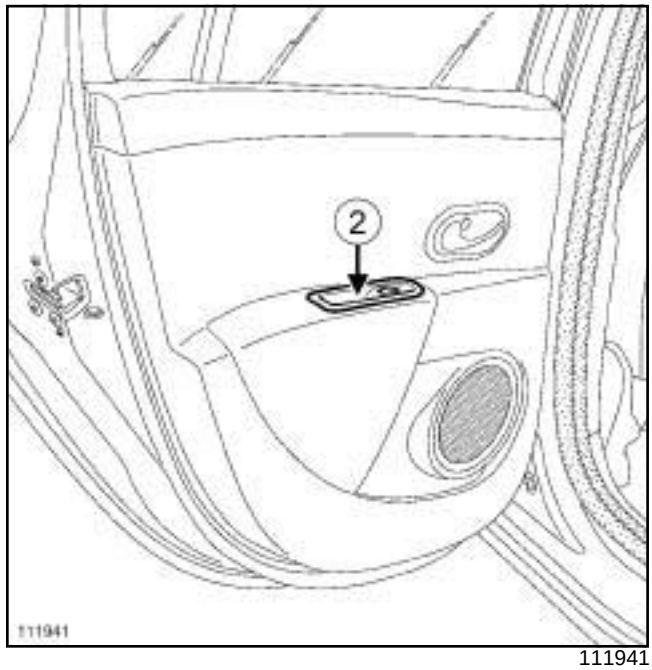
Special features of vehicles fitted with manual window winders



112887

❏ Unclip the winder handle (**1**) using a pair of unclipping pliers (protect the door trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

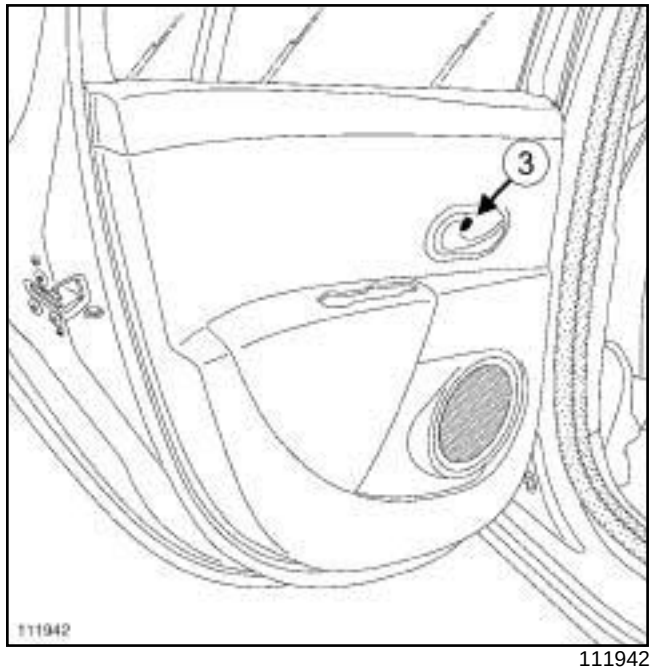


111941

❏ Remove the trim piece and bolt (**2**) .

❏ Take out interior handle.

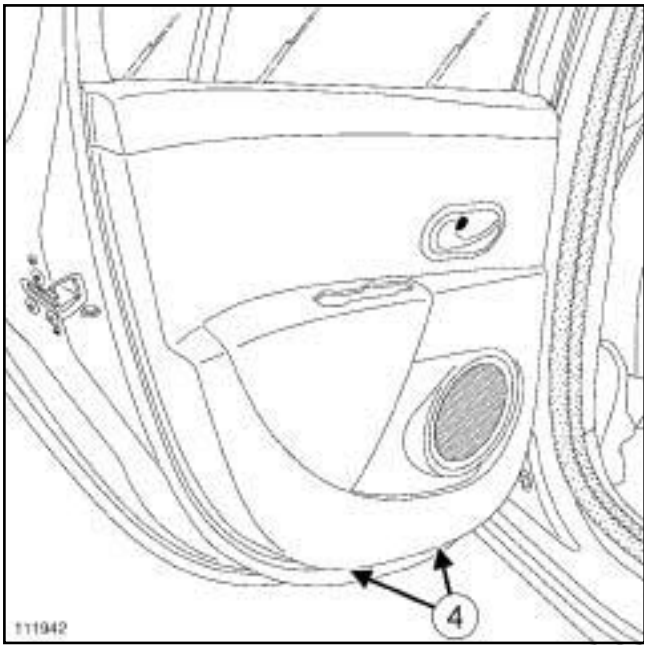
❏ Disconnect the supply connectors (depending on equipment level).



111942

❏ Remove the trim piece and bolt (**3**) .

B85 or K85



111942

❏ Remove the bolts (**4**) .

❏ Remove trim using a pair of unclipping pliers (protect the door box section).

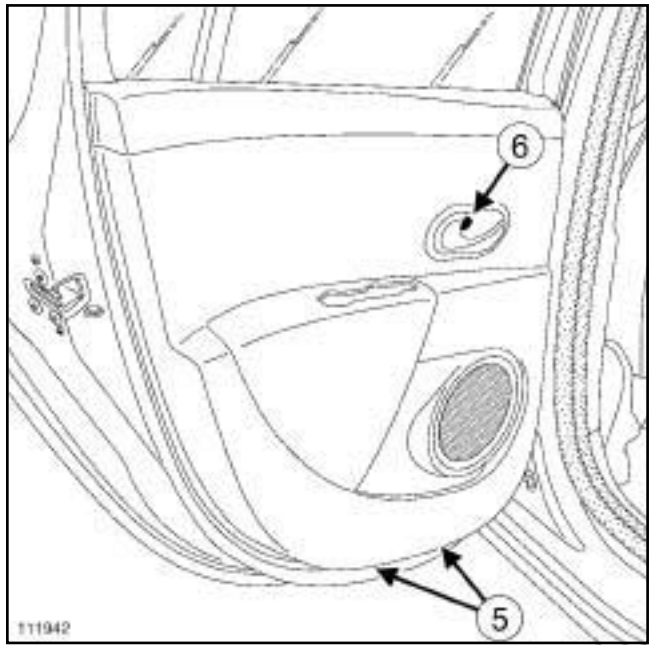
❏ Unclip the interior door handle cable using a flat-blade screwdriver.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Reclip:

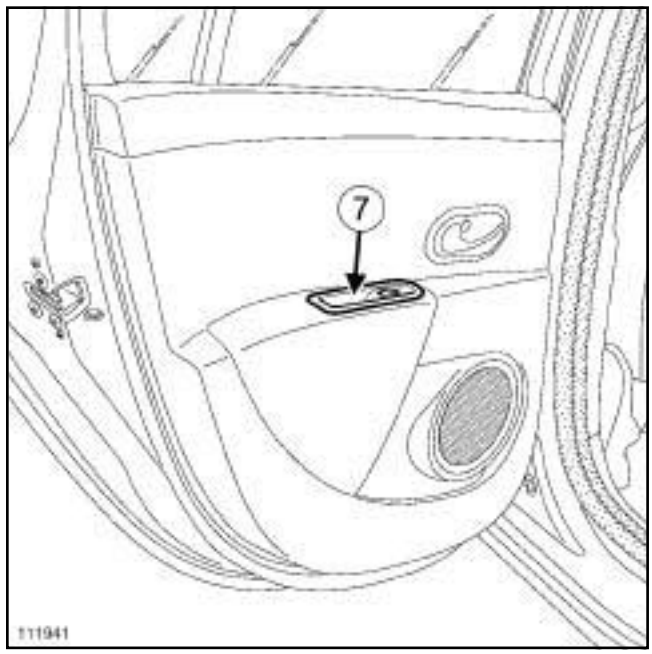
- the interior door handle cable,
- the door trim.



111942

❏ Refit:

- the bolts (**5**) ,
- the trim piece and bolt (**6**) .



111941

❏ Reconnect the supply connectors on the window switch (depending on equipment level).

❏ Refit:

- the interior handle,
- the trim piece and bolt (**7**) .

B85 or K85

II - FINAL OPERATION.

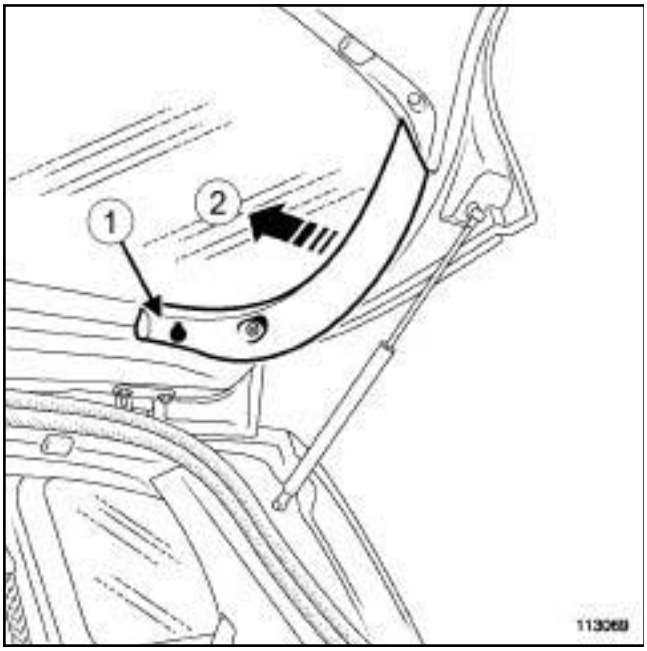
Special features of vehicles fitted with manual window winders

❏ Reclip the winder handle.

❏ Carry out a function test.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113069

❏ Remove the bolts (**1**) .

❏ Unclip the tailgate side trim panels (**2**) .

113072

❏ Remove the bolts (**3**) .

❏ Unclip the tailgate trim (**4**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Clip the tailgate trim in place.

❏ Refit the bolts ***(3)*** .

❏ Clip on the tailgate side trim panels.

❏ Refit the bolts ***(1)*** .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

Tightening torques ▽	
new front "seatback - seat base" frame bolts	**40 N.m**

IMPORTANT

Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

IMPORTANT

In order not to weaken a seat frame or bench seat frame, all welding operations on the seat frames or bench seat frames are forbidden.

Note:

Depending on the sales mode defined by the Parts Department, conversions can be carried out on the seat frames.

In this case, it is permitted to eliminate certain components (supports, wires, brackets, inserts, etc) depending on vehicle type.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Remove:

- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) ,
- the front seat base "cover - foam" assembly (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) .

B85

❑ Remove the front seat belt buckle (see **Front lap belt pretensioner: Removal - Refitting**) (88C, Airbags and pretensioners).

C85

❑ Remove:

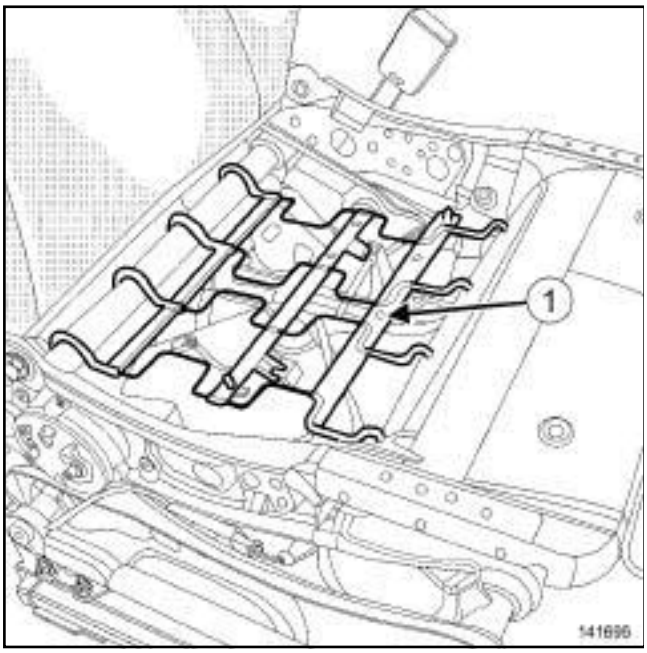
- the anti-submarining airbag (see **Anti-submarining airbag: Removal - Refitting**) (88C, Airbags and pretensioners),
- the front seat runners unlocking cable (see **75A**, **Front seat frames and mechanisms**, **Rear seat access mechanisms: Removal - Refitting**, page **75A-27**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Remove the front seat height adjustment mechanism (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjustment: Removal - Refitting**, page **75A-24**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

❑ Remove the front seat runners (see **75A**, **Front seat frames and mechanisms**, **Front seat runner: Removal - Refitting**, page **75A-13**) .

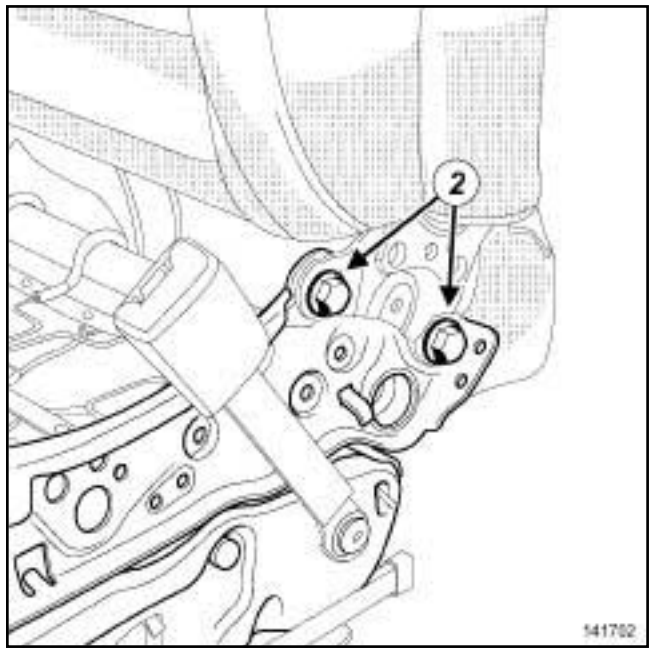


141696

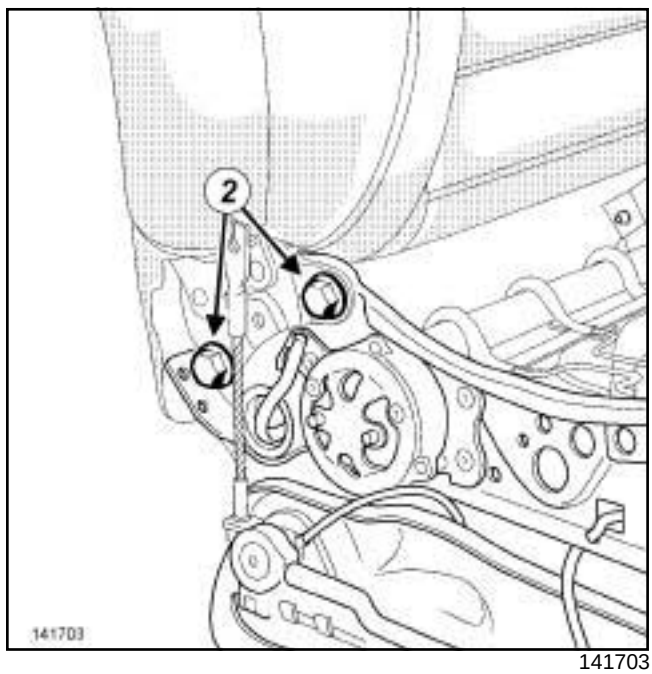
❑ Remove:

- the electrical wiring,
- the front seat base pad (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



141702



141703

❑ Remove:

- the front seat frame bolts (**2**) ,
- the front seat base frame.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seatback frame mounting on front seat base frame**.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front seat base frame.

❑ Torque tighten the **new front "seatback - seat base" frame bolts (40 N.m)**.

III - FINAL OPERATION

❑ Refit:

- the front seat base pad,
- the electrical wiring,
- the front seat runners (see **75A**, **Front seat frames and mechanisms**, **Front seat runner: Removal - Refitting**, page **75A-13**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit the front seat height adjustment mechanism (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjustment: Removal - Refitting**, page **75A-24**) .

B85

❑ Refit the front seat belt buckle (see **Front lap belt pretensioner: Removal - Refitting**) (88C, Airbags and pretensioners).

C85

❑ Refit:

- the front seat runners unlocking cable (see **75A**, **Front seat frames and mechanisms**, **Rear seat access mechanisms: Removal - Refitting**, page **75A-27**) ,
- the anti-submarining airbag (see **Anti-submarining airbag: Removal - Refitting**) (88C, Airbags and pretensioners).

❑ Refit:

- the front seat base "cover - foam" assembly (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

❑ Carry out a function test.

SPORT FRONT SEATS

Tightening torques ▽	
new bolts for the front « seatback - seat base » frame	35 N.m

IMPORTANT

In order not to weaken a seat frame or bench seat frame, all welding operations on the seat frames or bench seat frames are forbidden.

Note:

The Parts Department delivers the front seat base frame assembled with the front seat runners.

Note:

Depending on the method of sale defined by the Parts Department, adaptations can be made to the seat frames.

In this case, it is permitted to eliminate certain components (supports, wires, brackets, inserts, etc.) depending on the vehicle type.

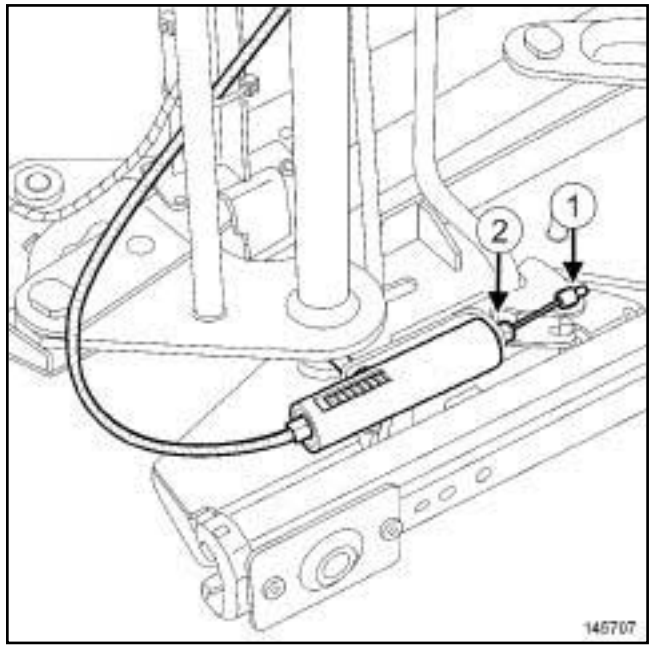
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see) (80A, Battery).

❏ Remove:

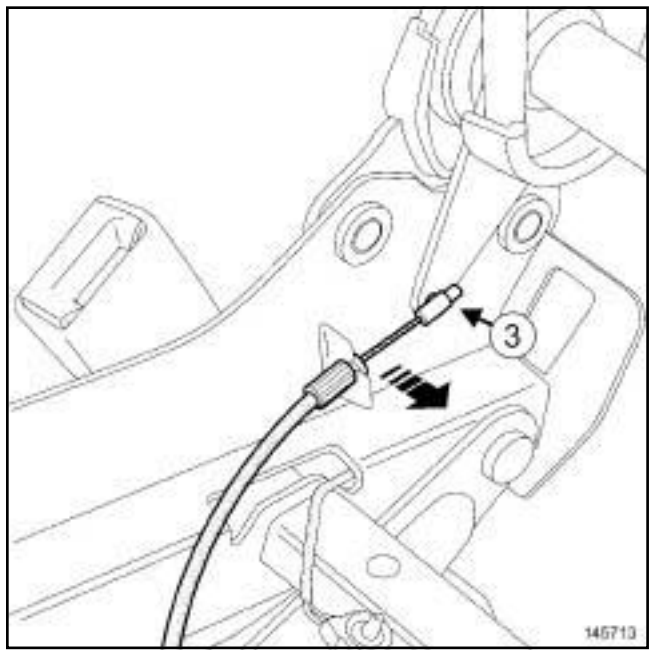
- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the « cover - foam - shell » assembly of the front seat base (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the front seat base casings (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) ,
- the front seat belt buckle stalk (see **Front seat belt buckle: Removal - Refitting**) (88C, Airbags and pretensioners).



145707

❏ Remove the stop of the unlocking cable for the front seat runners (**1**) .

❏ Unclip the unlocking cable for the front seat runners (**2**) .



145713

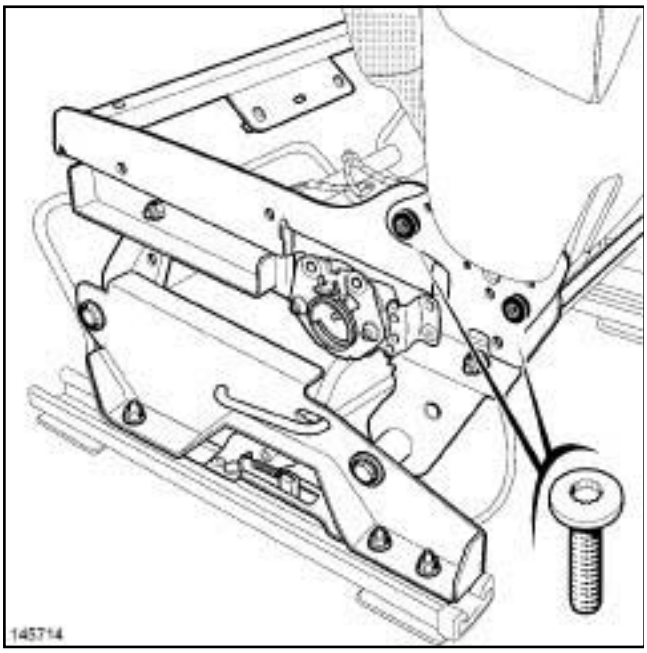
❏ Remove the stop of the unlocking cable for the front seat runners (**3**) .

❏ Unclip the sheath stop of the unlocking cable for the front seat runners.

❏ Remove the unlocking cable from the front seat runners.

SPORT FRONT SEATS

II - REMOVAL OPERATION



145714

❑

Note:

The bolts for the front « seatback - seat base » frame have a 12-sided recess in the head, (use a socket part number: **SV.8LB**).

Remove:

- the bolts from the front « seatback - seat base » frame,
- the front seat base frame.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seatback frame mounting on front seat base frame**.

II - REFITTING OPERATION

❑ Refit the front seat base frame.

❑ Torque tighten the **new bolts for the front « seatback - seat base » frame (35 N.m)**.

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

❑ Carry out a function test.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

Tightening torques ▽	
new front "seatback - seat base" frame bolts	**40 N.m**

IMPORTANT

Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

IMPORTANT

In order not to weaken a seat frame or bench seat frame, all welding operations on the seat frames or bench seat frames are forbidden.

Note:

Depending on the method of sale defined by the Parts Department, adaptations can be made to the seat frames.

In this case, it is permitted to eliminate certain components (supports, wires, brackets, inserts, etc) depending on vehicle type.

REMOVAL

I - REMOVAL PREPARATION OPERATION

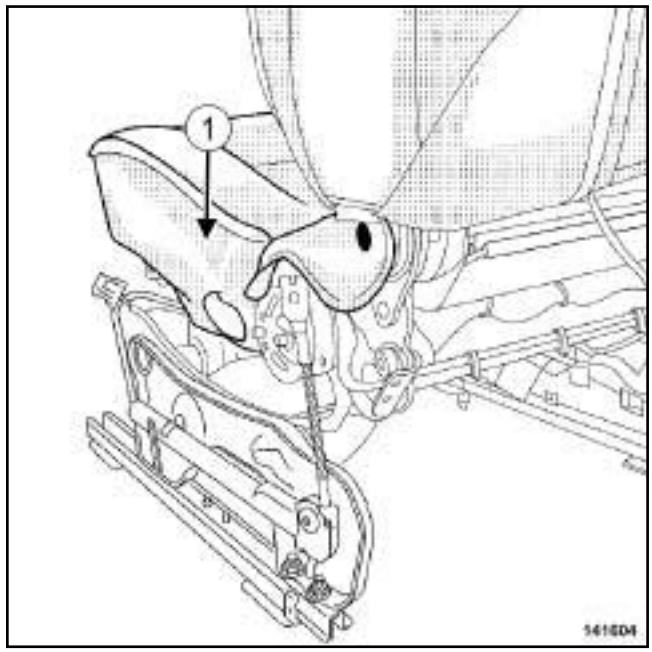
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Remove the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

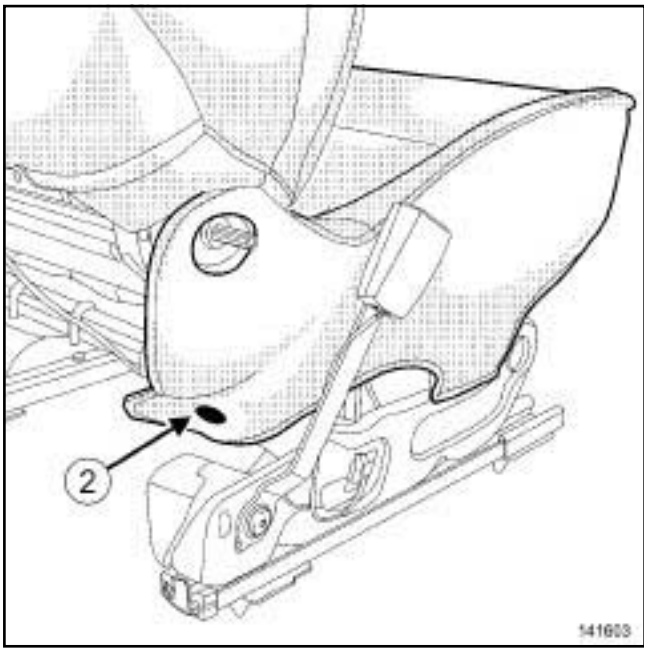


141604

❑ Unclip the retaining clip (**1**) for the front seat base cover.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

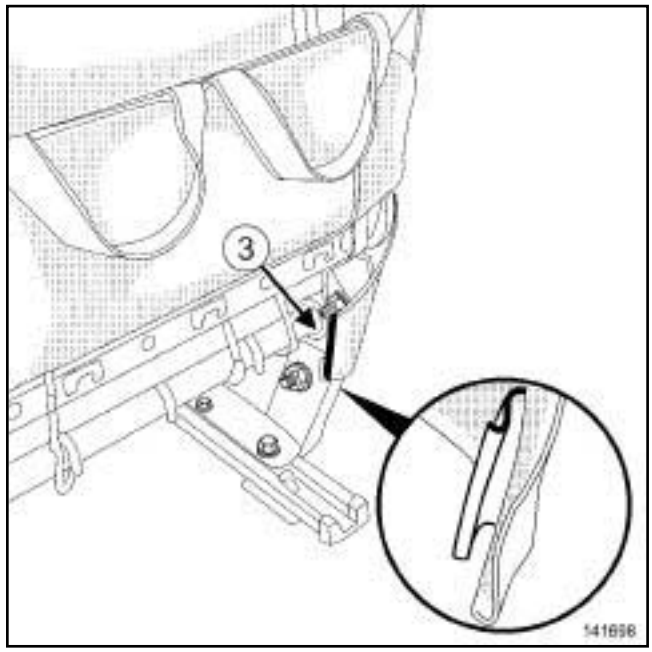
B85



141603

❏ Unclip the retaining clip (**2**) for the front seat base cover.

C85



141698

❏ Unclip the retaining section (**3**) of the front seat base cover.

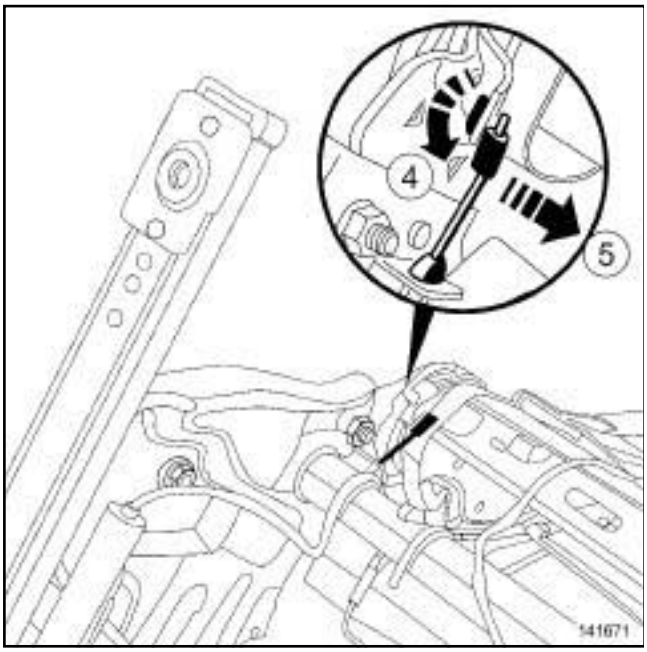
❏ Separate the seat base cover from the front seatback adjustment shaft.

❏ Remove:

- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seatback « cover - foam » assembly (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

C85



141671

❑ Remove:

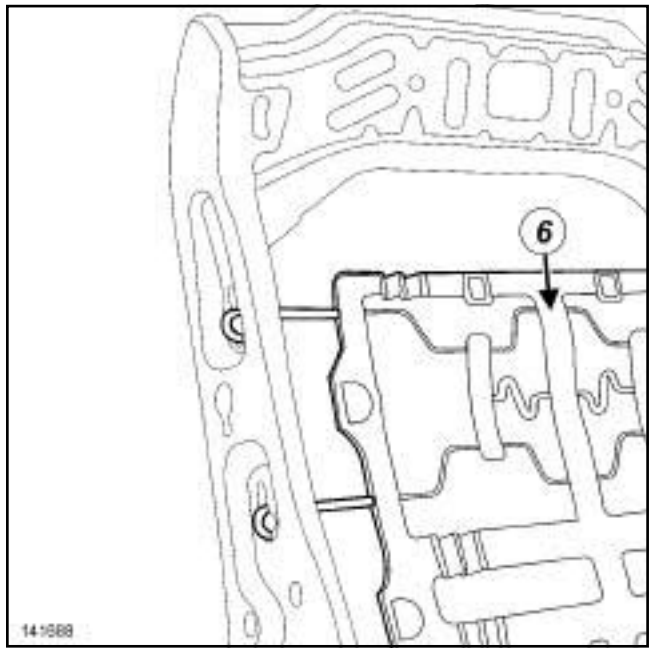
- the runners unlocking cable at the front seatback frame (see **75A**, **Front seat frames and mechanisms**, **Rear seat access mechanisms: Removal - Refitting**, page **75A-27**) ,
- the front seat runners unlocking cable stop at (**4**) then at (**5**) of the front seatback frame.

❑ Remove the front (chest-level) side airbag (see **Front (chest-level) side airbag: Removal - Refitting**) (88C, Airbags and pretensioners).

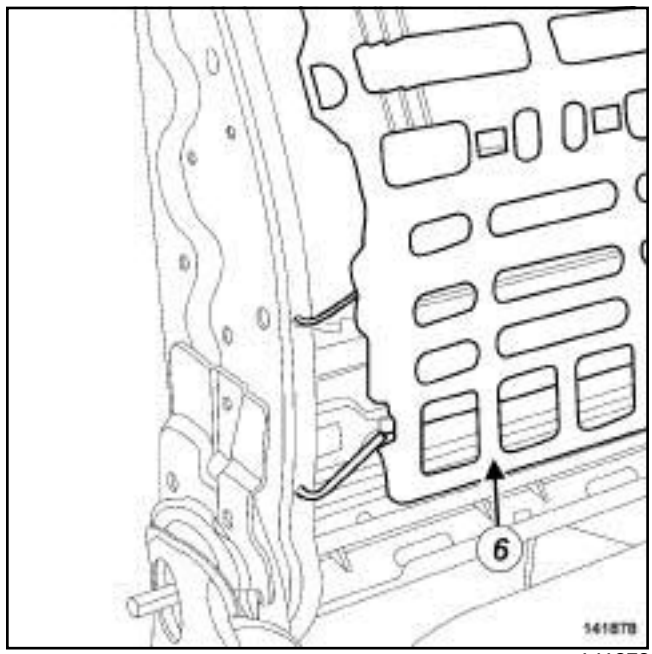
FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Remove the "lumbar adjustment mechanism - lumbar pad" assembly of the front seat (see **75A**, **Front seat frames and mechanisms**, **Front seat lumbar adjustment: Removal - Refitting**, page **75A-20**) .

FRONT SEAT TYPE 01 or FRONT SEAT TYPE 02



141688

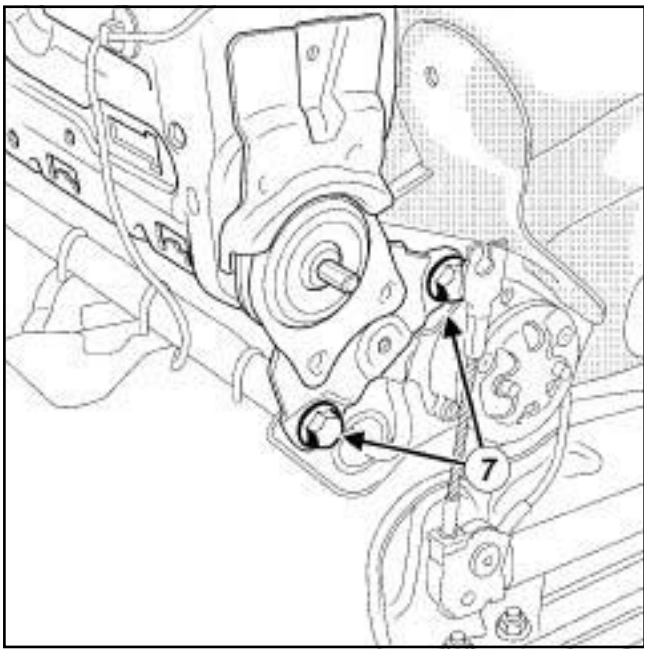


141878

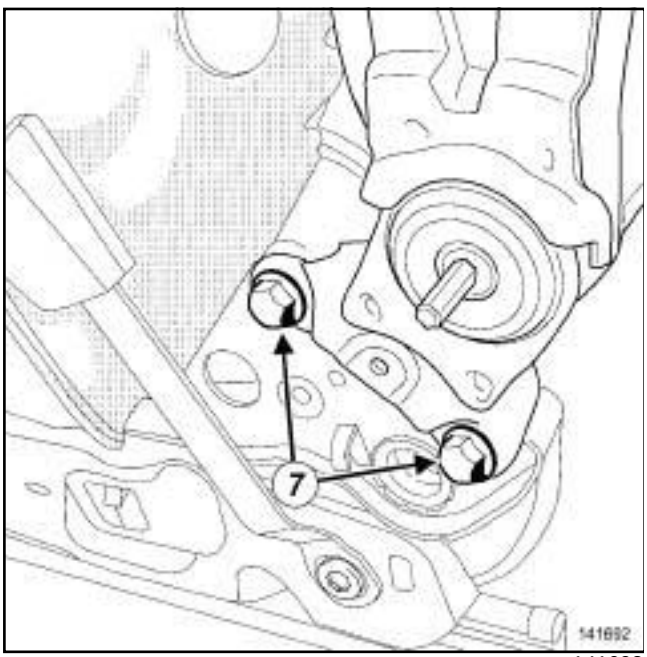
❑ Remove the lumbar pad from the front seat (**6**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

II - OPERATION FOR REMOVAL OF PART CONCERNED



141691



141692

❑ Remove:

- the bolts (**7**) from the front seat "seatback - seat base" frame,
- the front seatback frame.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seatback frame mounting on front seat base frame**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front seatback frame.

❑ Torque tighten the **new front "seatback - seat base" frame bolts (40 N.m)**.

III - FINAL OPERATION

FRONT SEAT TYPE 01 or FRONT SEAT TYPE 02

❑ Refit the front seat lumbar pad.

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit the "lumbar adjustment mechanism - lumbar pad" assembly of the front seat (see **75A**, **Front seat frames and mechanisms**, **Front seat lumbar adjustment: Removal - Refitting**, page **75A-20**) .

❑ Refit the front (chest-level) side airbag (see **Front (chest-level) side airbag: Removal - Refitting**) (88C, Airbags and pretensioners).

C85

❑ Refit:

- the front seat runners unlocking cable stop of the front seatback frame,
- the front seatback frame runners unlocking cable (see **75A**, **Front seat frames and mechanisms**, **Rear seat access mechanisms: Removal - Refitting**, page **75A-27**) .

❑ Refit:

- the front seatback « cover - foam » assembly (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) .

❏ Refit the seat base cover on the front seatback adjustment shaft.

B85

❏ Clip on the retaining clip of the front seat base cover.

C85

❏ Clip on the retaining section of the front seat base cover.

❏ Clip on the retaining clip of the front seat base cover.

❏ Refit the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❏ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❏ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

❏ Carry out a function test.

SPORT FRONT SEATS

Tightening torques ▽	
new bolts for the front « seatback - seat base » frame	35 N.m

IMPORTANT
In order not to weaken a seat frame or bench seat frame, all welding operations on the seat frames or bench seat frames are forbidden.

Note:
The Parts Department delivers the front seat base frame assembled with the front seat runners.

Note:
Depending on the method of sale defined by the Parts Department, adaptations can be made to the seat frames.
In this case, it is permitted to eliminate certain components (supports, wires, brackets, inserts, etc.) depending on the vehicle type.

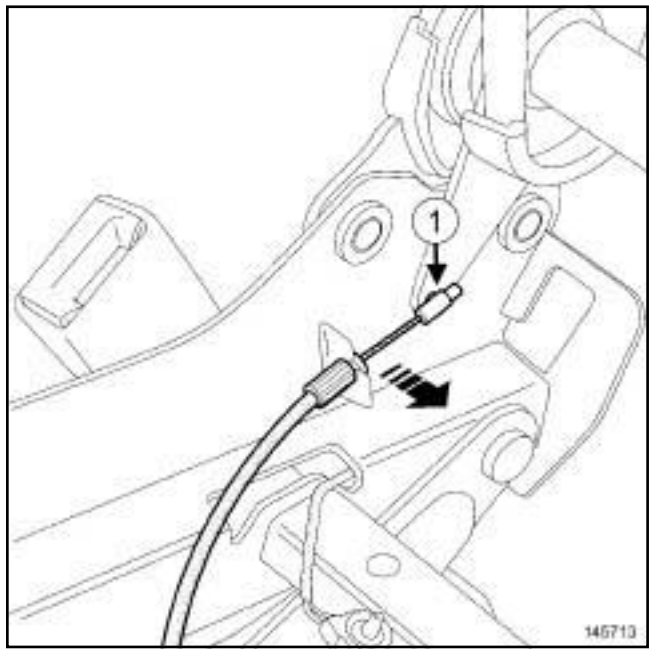
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see) (80A, Battery).

❏ Remove:

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the « cover - foam - shell» assembly of the front seat base (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the front seat base casings (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) ,
- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the side (chest-level) airbag (see **Front (chest-level) side airbag: Removal - Refitting**) (88C, Airbags and pretensioners),
- the front seatback casing (see **Front seatback casing: Removal - Refitting**) .



145713

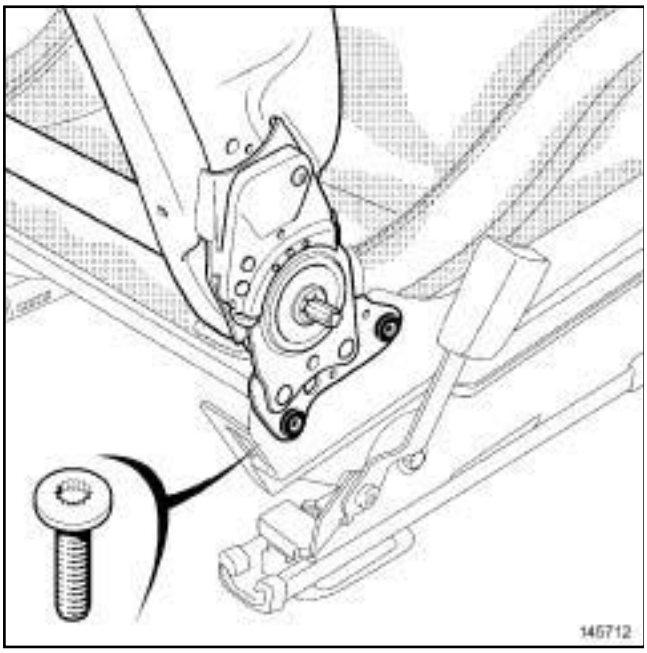
❏ Remove the stop of the unlocking cable for the front seat runners (**1**) .

❏ Unclip the sheath stop of the unlocking cable for the front seat runners.

❏ Remove the unlocking cable from the front seat runners.

SPORT FRONT SEATS

II - REMOVAL OPERATION



145712

❑

Note:

The bolts for the front « seatback - seat base » frame have a 12-sided recess in the head, (use a socket part number: **SV.8LB**).

Remove:

- the bolts from the front « seatback - seat base » frame,
- the front seatback frame.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seatback frame mounting on front seat base frame**.

II - REFITTING OPERATION

❑ Refit the front seatback frame.

❑ Torque tighten the **new bolts for the front « seatback - seat base » frame (35 N.m)**.

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

❑ Carry out a function test.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

Tightening torques ▽	
new nuts of the front seat runner - seat base frame	**21 N.m**

IMPORTANT
Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

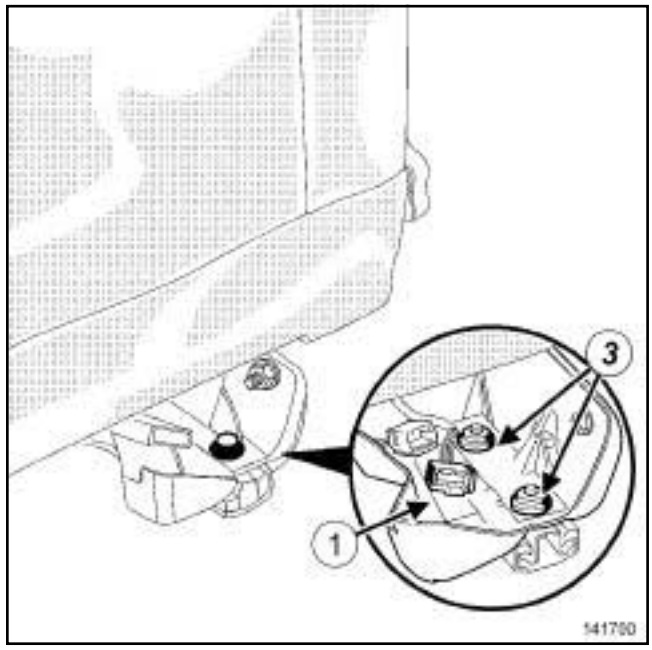
❏ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❏ Remove the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

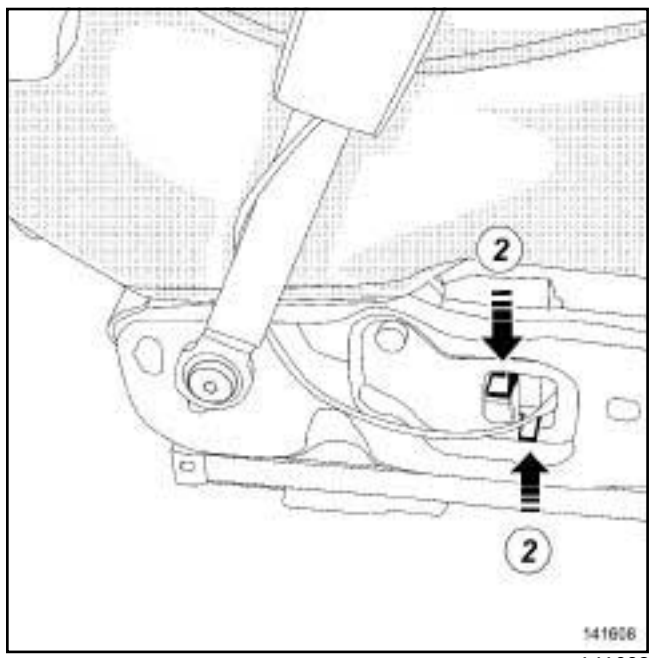
FRONT SEAT WITH HEATING

❏ Unclip the connector for the front seat heated pad.

B85



141700



141608

❏ Unclip the front seat connector (**1**) .

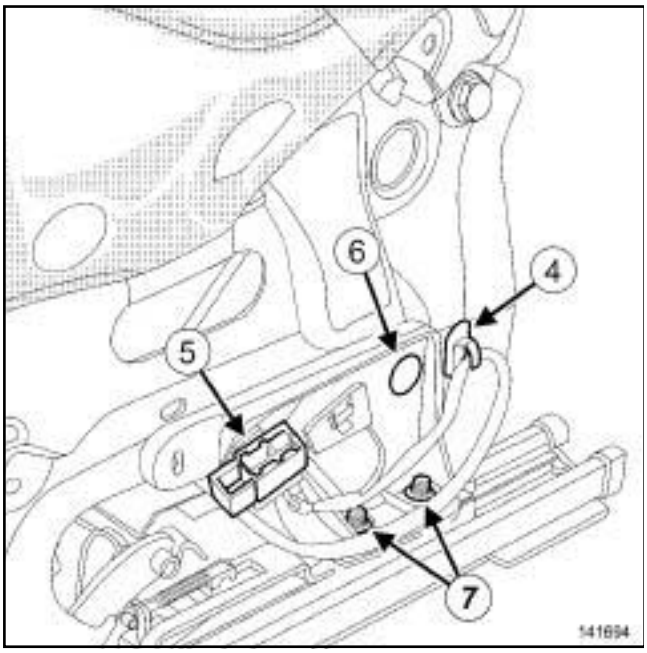
❏ Unclip the connector support by pinching at (**2**) and pulling at (**3**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

❑ Remove:

- the connector support,
- the seat runner switch (see **Seat runner switch: Removal - Refitting**) ,
- the front lap belt pretensioner (see **Front lap belt pretensioner: Removal - Refitting**) (88C, Airbags and pretensioners).

C85

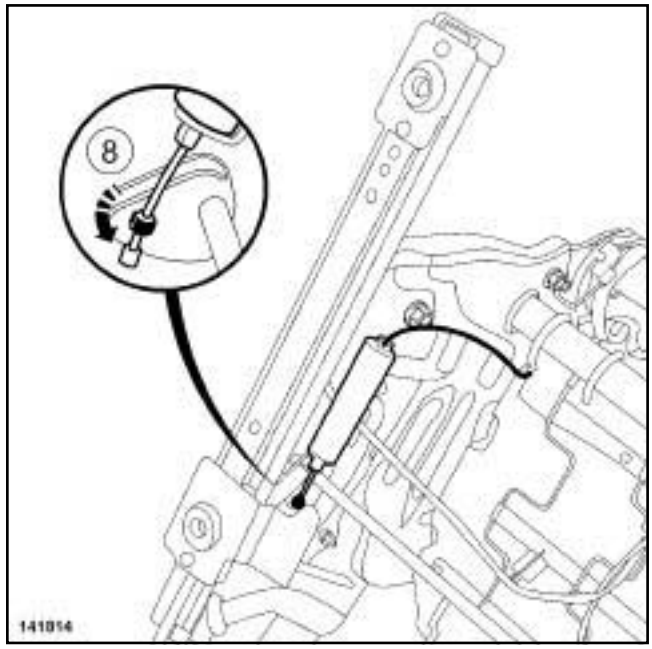


141694

❑ Unclip:

- the front seat wiring at (**4**) and (**5**) ,
- the clip (**6**) ,
- the connector support at (**7**) .

❑ Remove the connector support.

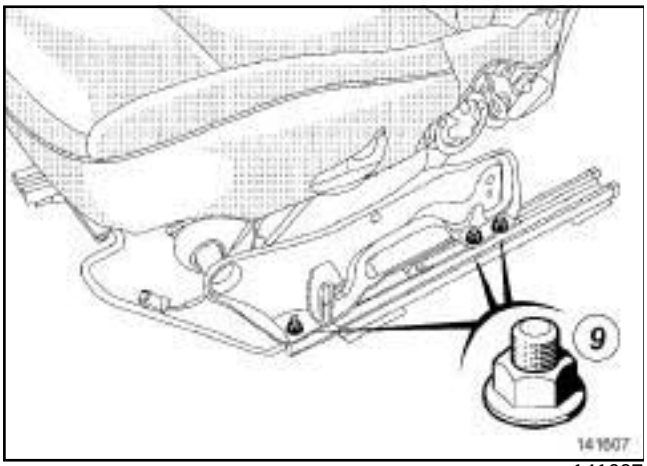


141814

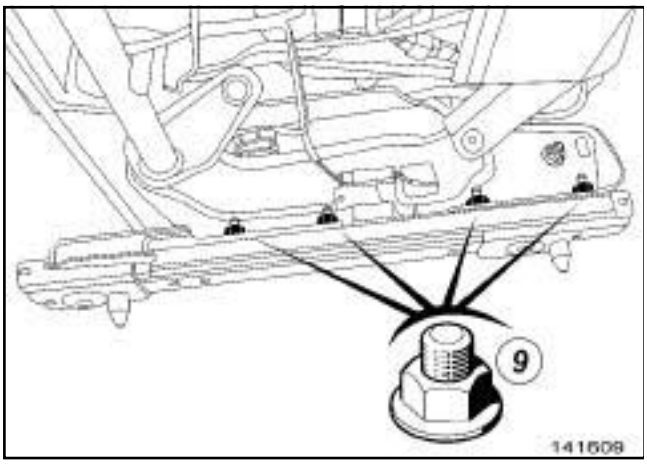
❑ Remove the unlocking cable for the runners by pivoting it at (**8**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

II - OPERATION FOR REMOVAL OF PART CONCERNED



141607



141609

❑ Remove:

- the nuts of the front seat « runner - seat base » frame (**9**) ,
- the front seat runners.

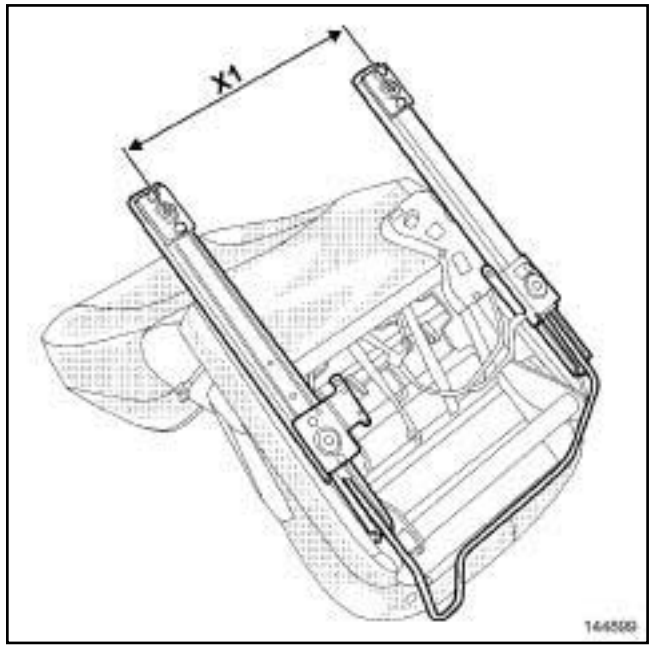
REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seat runner mounting on front seat frame**.

II - REFITTING OPERATION FOR PART CONCERNED

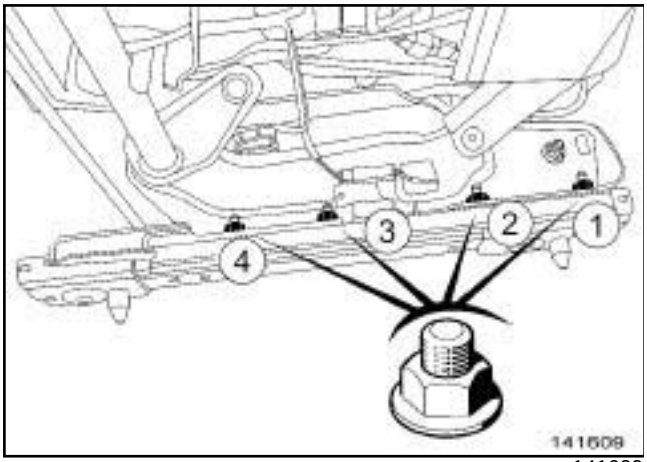
❑ Refit the front seat runners.



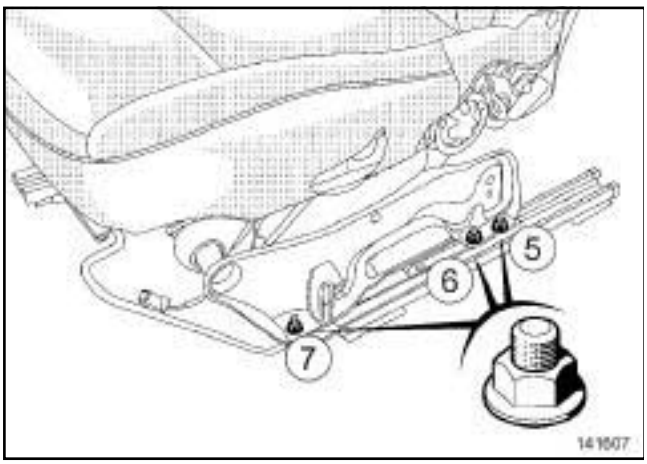
144899

❑ Position the runners in order to ensure a centre-to-centre distance between the two rear mountings of **X1 = 418 mm**.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141609



141607

❑ Torque tighten in order (**1**) , (**2**) , (**3**) , (**4**) , (**5**) , (**6**) , (**7**) the **new nuts of the front seat runner - seat base frame (21 N.m)**.

III - FINAL OPERATION

❑ Refit the connector support.

FRONT SEAT WITH HEATING

❑ Clip on the heated pad connector.

C85

❑ Clip on the front seat wiring.

❑ Refit the unlocking cable for the runners.

B85

❑ Clip on the front seat connector.

❑ Refit:

- the seat runner switch (see **Seat runner switch: Removal - Refitting**) ,
- the front lap belt pretensioner (see **Front lap belt pretensioner: Removal - Refitting**) (88C, Airbags and pretensioners).

❑ Refit the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Carry out a function test.

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

SPORT FRONT SEATS

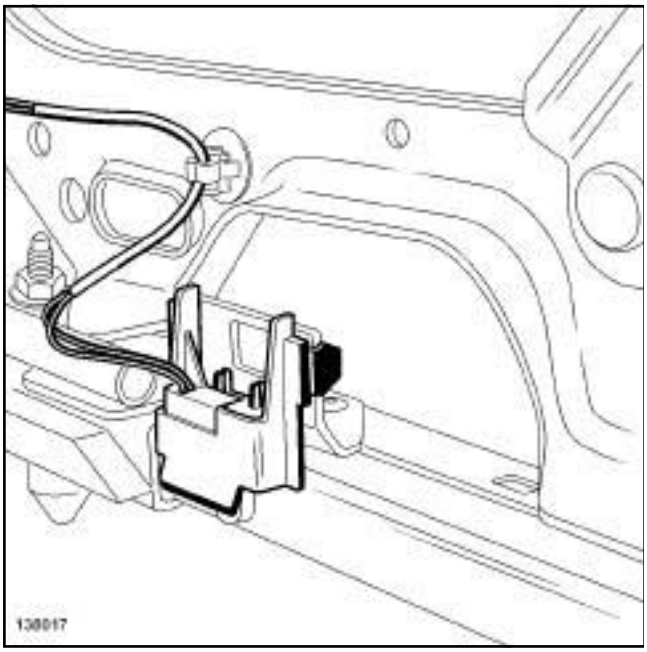
Tightening torques ▽	
new nuts of the front seat « base - runners » frame	**21 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

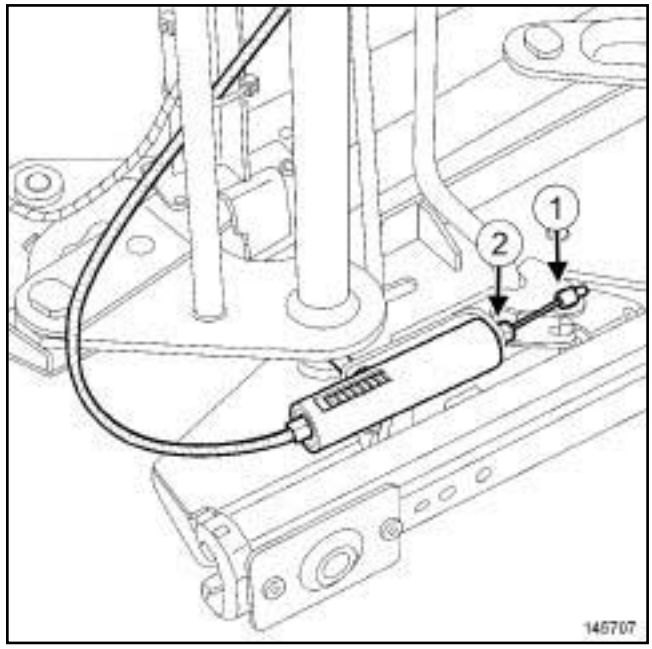
❏ Disconnect the battery (see) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .



138017

❏ Unclip the front seat runner switch.



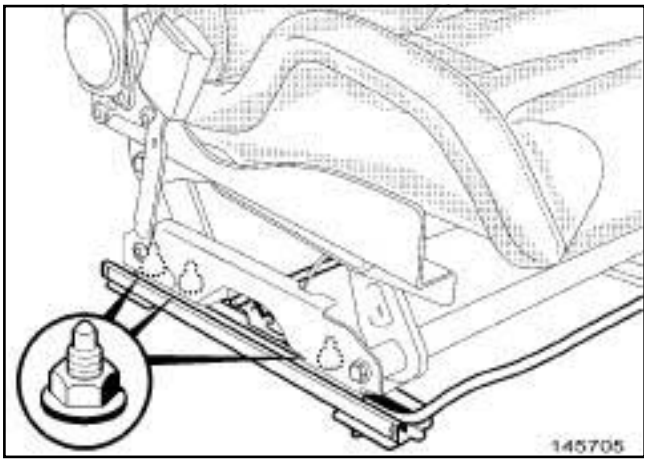
145707

❏ Remove the stop of the unlocking cable for the front seat runners (**1**) .

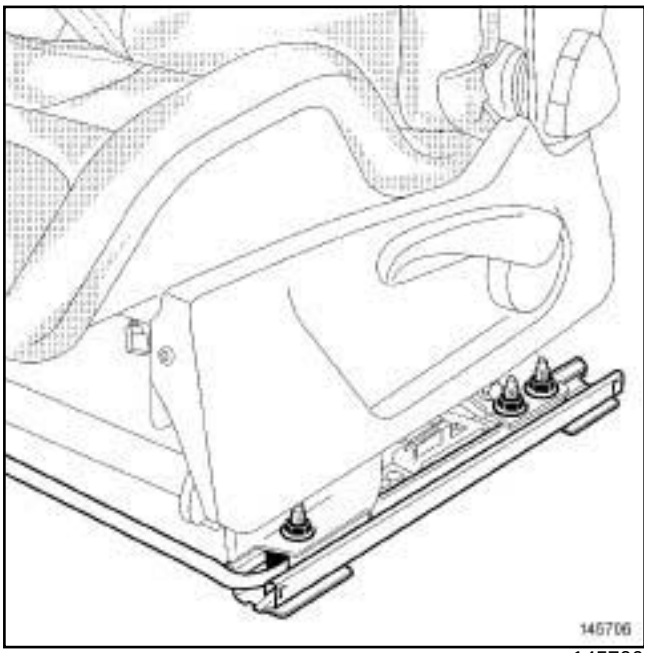
❏ Unclip the unlocking cable for the front seat runners (**2**) .

SPORT FRONT SEATS

II - REMOVAL OF THE PART CONCERNED



145705



145706

❑ Remove:

- the nuts of the front seat « base - runners » frame,
- the front seat runners.

REFITTING

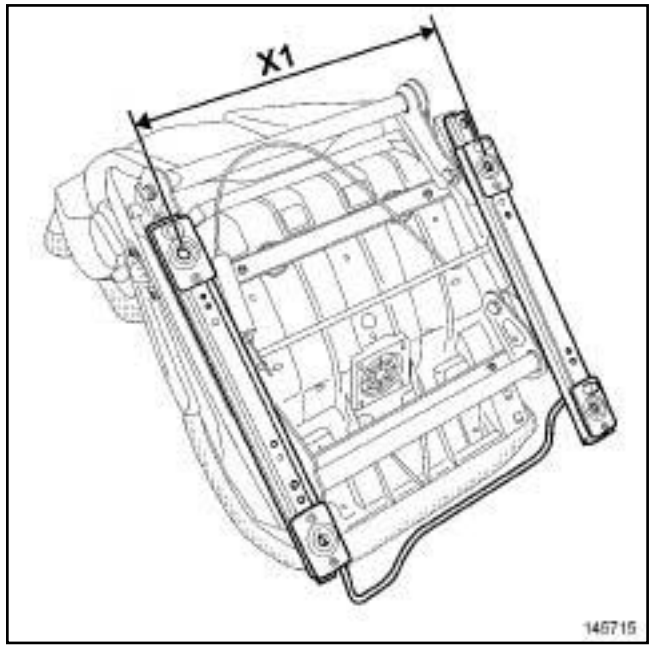
I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seat runner mounting on front seat frame**.

II - REFITTING OPERATION

❑ Refit the front seat runners.

❑ Fit all the nuts without tightening them.



145715

❑ Position the front seat runners to ensure a centre-to-centre distance of **X1 = 418 mm** between the two front and rear mountings.

❑ Torque tighten the **new nuts of the front seat « base - runners » frame (21 N.m)** starting with the inner rail (tunnel side).

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

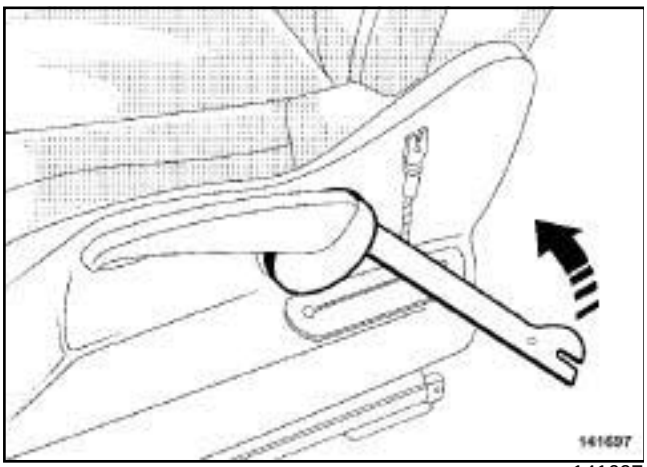
❑ Carry out a function test.

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1 or DOCUMENTATION PHASE 2

Special tooling required	
Car. 1363	Set of trim removal levers.

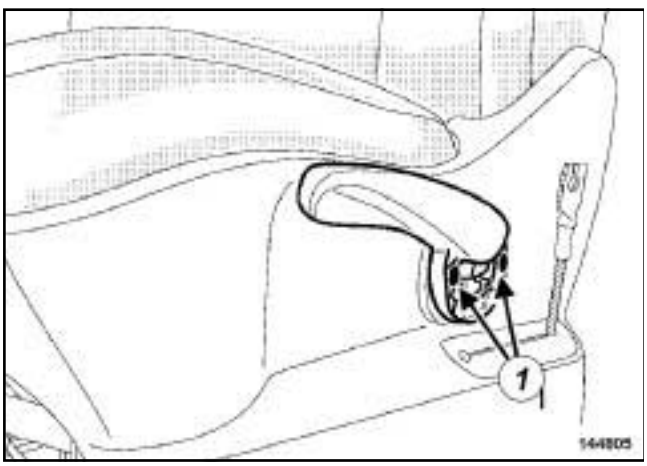
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



141697

❑ Unclip the trim of the front seat height adjustment control using the tool **(Car. 1363)**.



144805

❑ Remove:

- the front seat height adjustment control bolts (**1**) ,
- the front seat height adjustment control.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front seat height adjustment control.

❑ Clip on the trim of the front seat height adjustment control.

II - FINAL OPERATION

❑ Carry out a function test.

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

IMPORTANT

Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

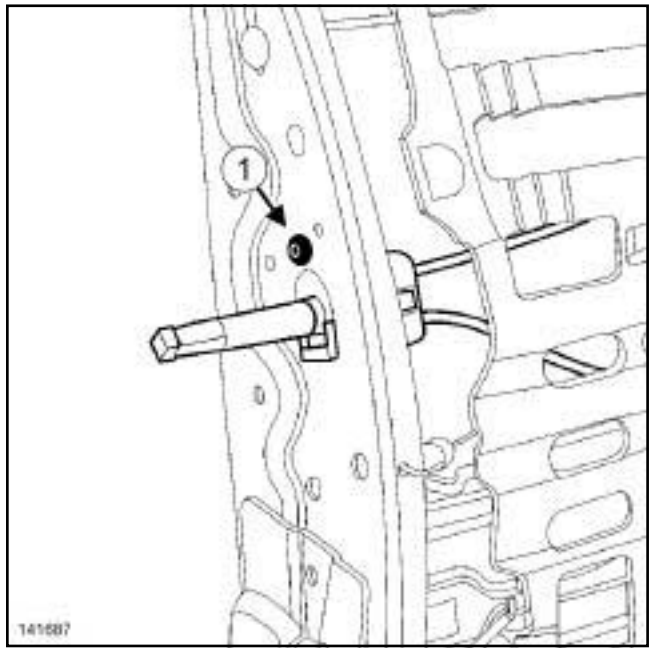
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seatback « cover - foam » assembly (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



141687

❏

Note:

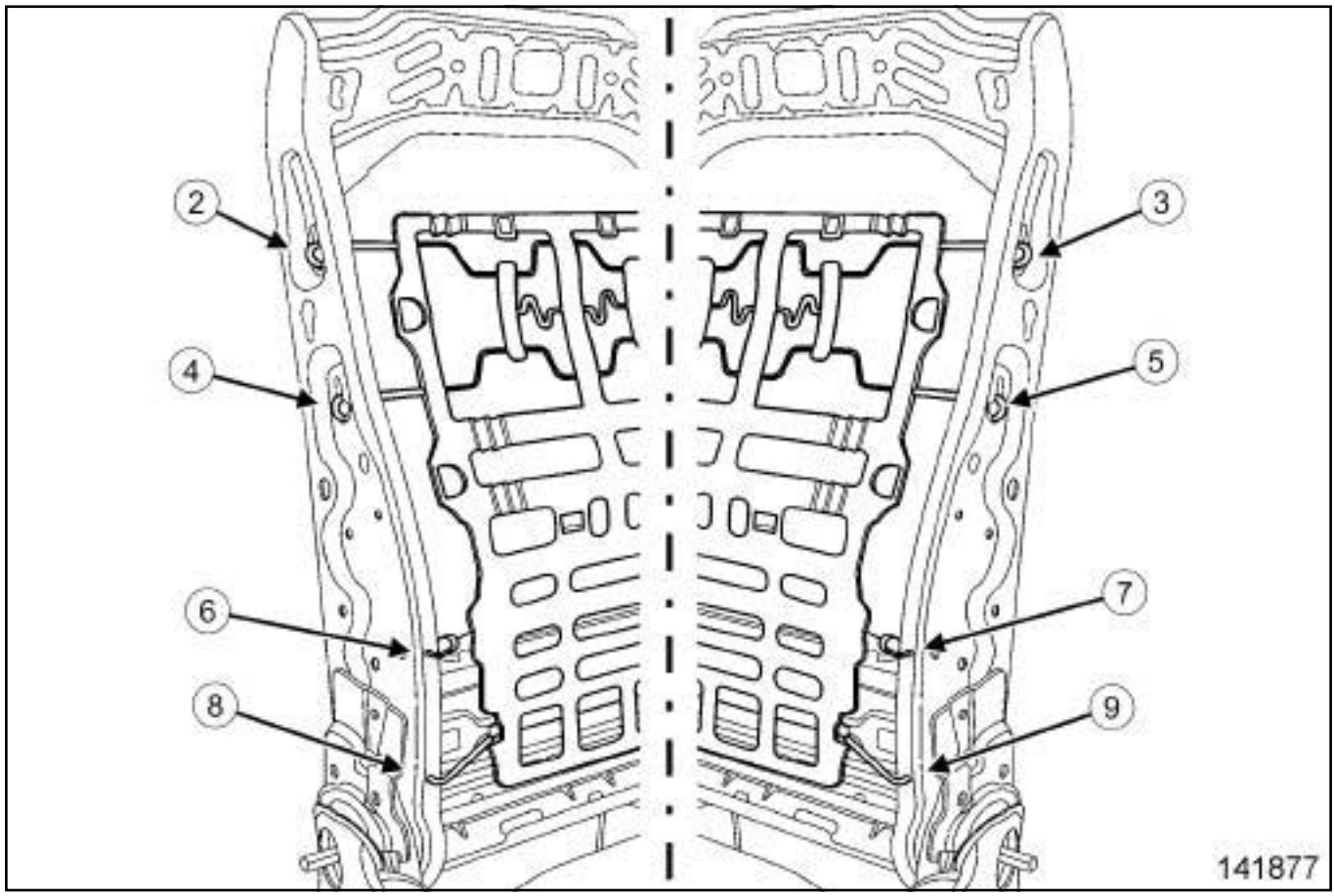
For this operation, the lumbar pad must be loose.

❏ Remove the bolt (**1**) from the front seat lumbar adjustment mechanism.

❏ Release the front seat lumbar adjustment mechanism.

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

1 - First fitting

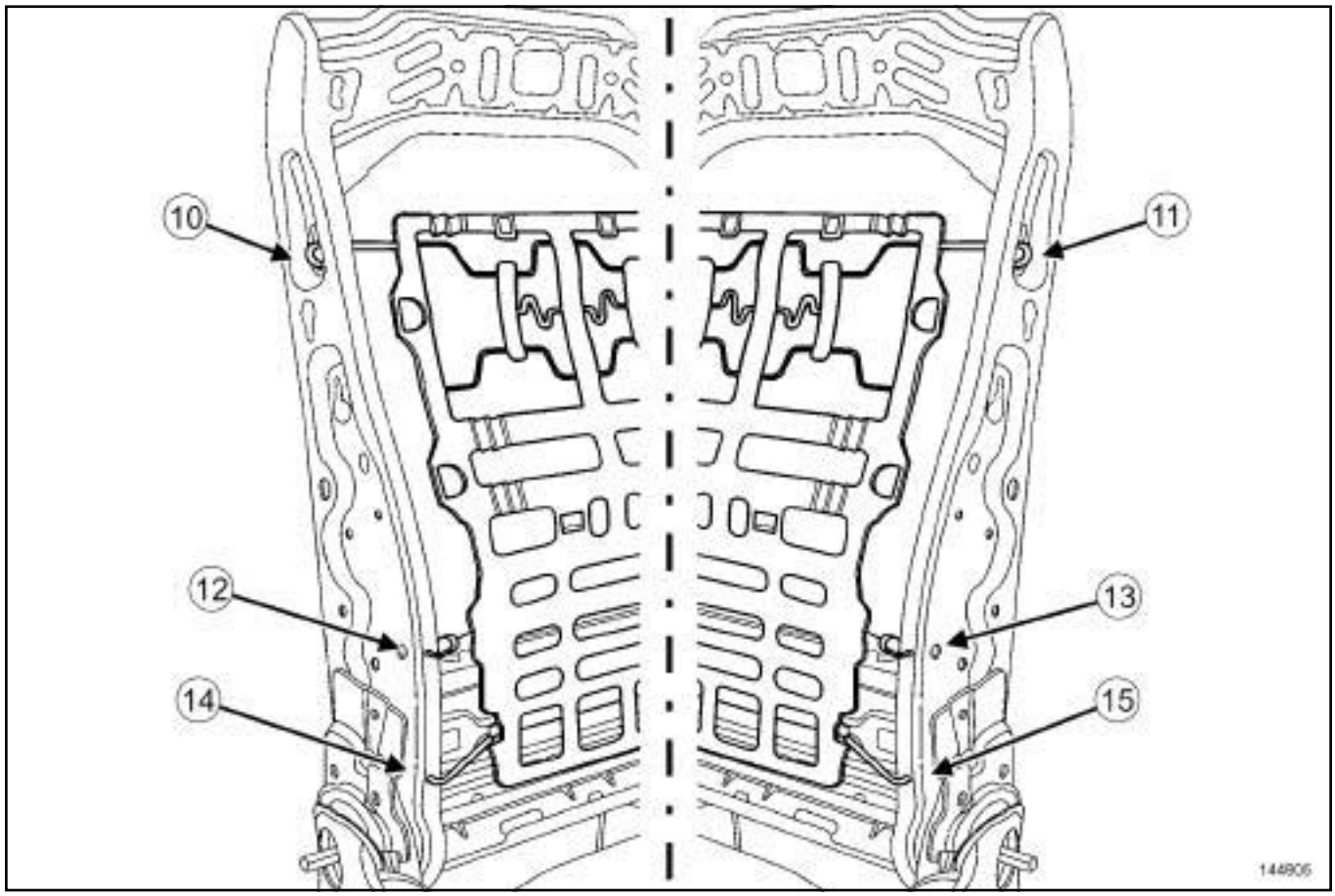


141877

❑ Unclip the front seat lumbar pad in the order shown.

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

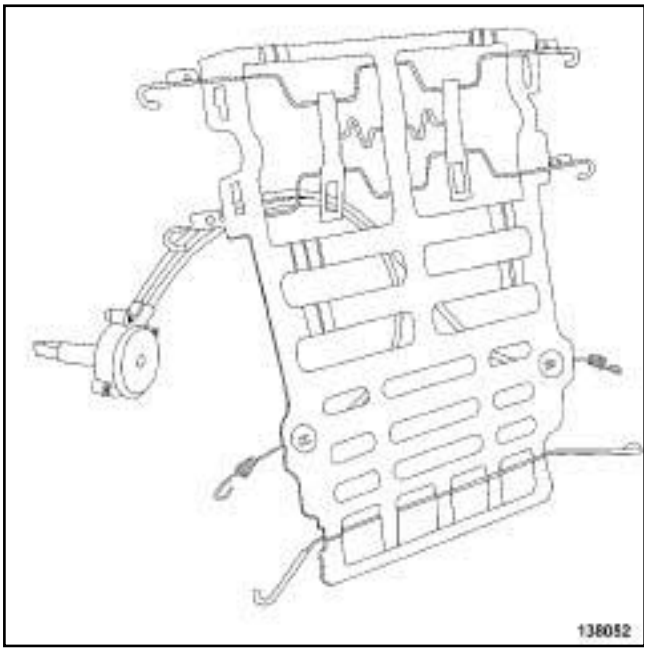
2 - Second fitting



144905

❑ Unclip the front seat lumbar pad in the order shown.

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



138052

❑ Remove the « lumbar adjustment mechanism - lumbar pad » assembly.

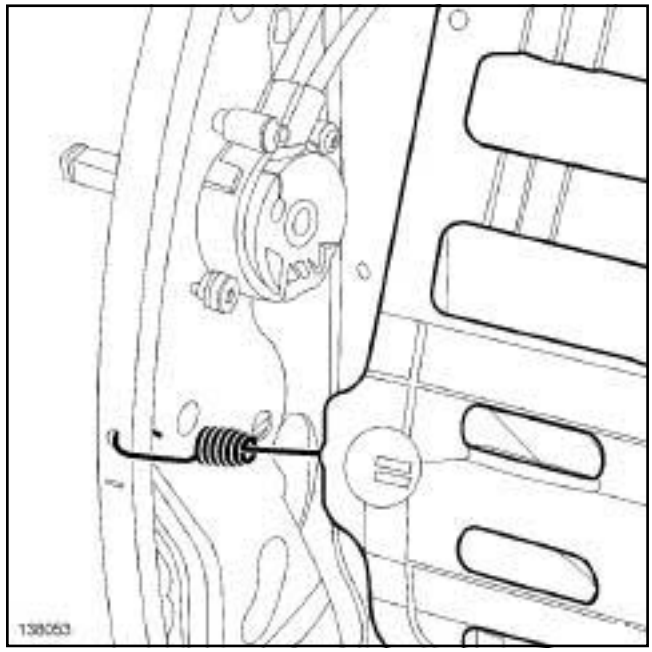
Note:

The Parts Department supplies the lumbar adjustment mechanism assembled with the lumbar pad.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the « lumbar adjustment mechanism - lumbar pad » assembly.



138053

❑ Clip the lumbar pad onto the front seat

Note:

The lumbar pad springs are positioned on the front seatback frame with the hook towards the rear

❑ Carry out a function test.

II - FINAL OPERATION

❑ Refit:

- the front seatback « cover - foam » assembly (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Special tooling required	
Car. 1922	Tool for removing and refitting torsion bar mechanisms

Equipment required
Diagnostic tool

IMPORTANT

Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

Note:

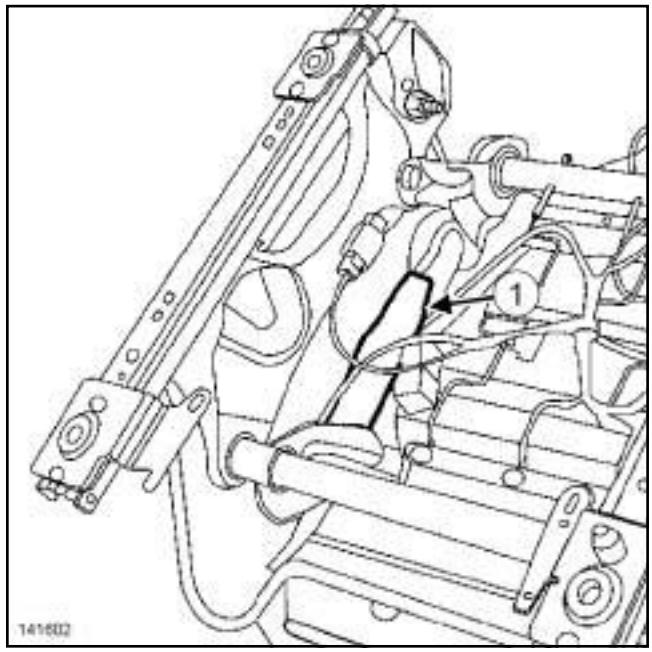
To remove the torsion bar, the seat must always be in the raised position.

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove:

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) ,
- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

B85

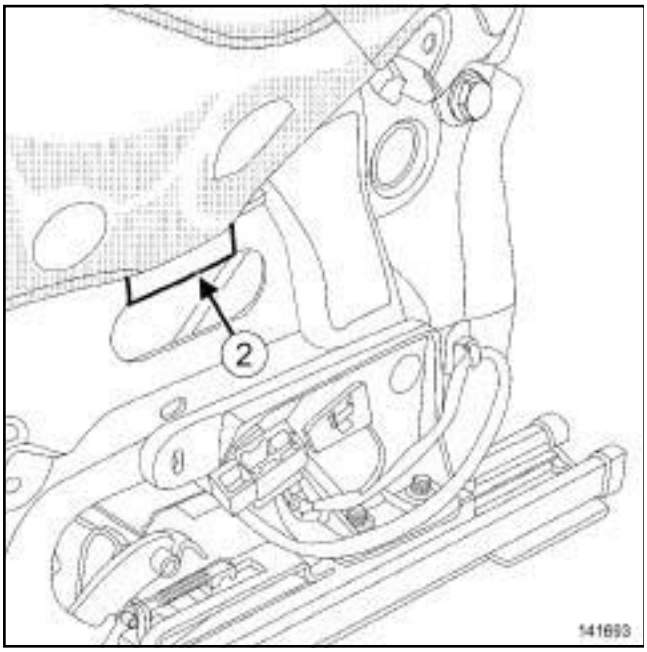


141602

❑ Unclip the side retaining section (**1**) of the front seat base cover.

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

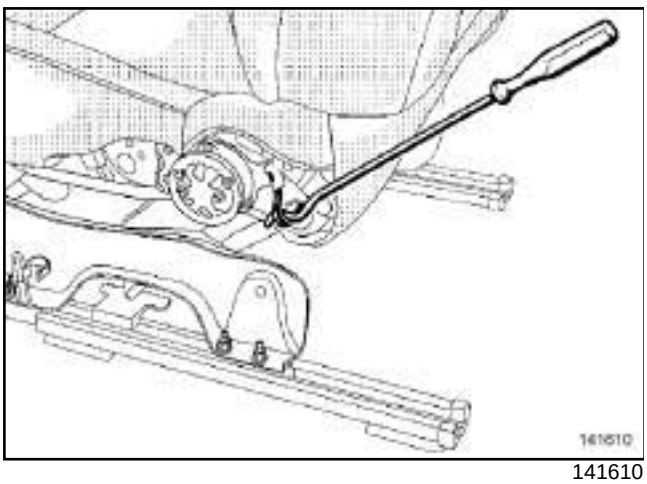
C85



141693

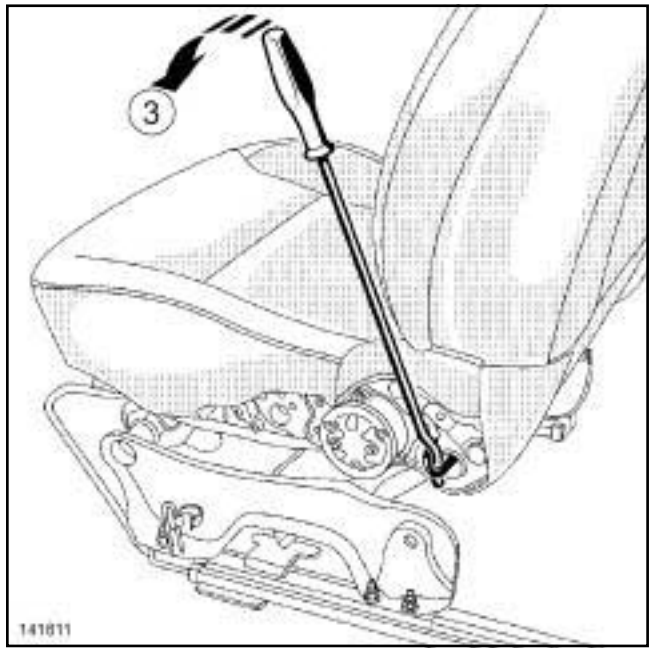
❑ Unclip the side retaining section (**2**) of the front seat base cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



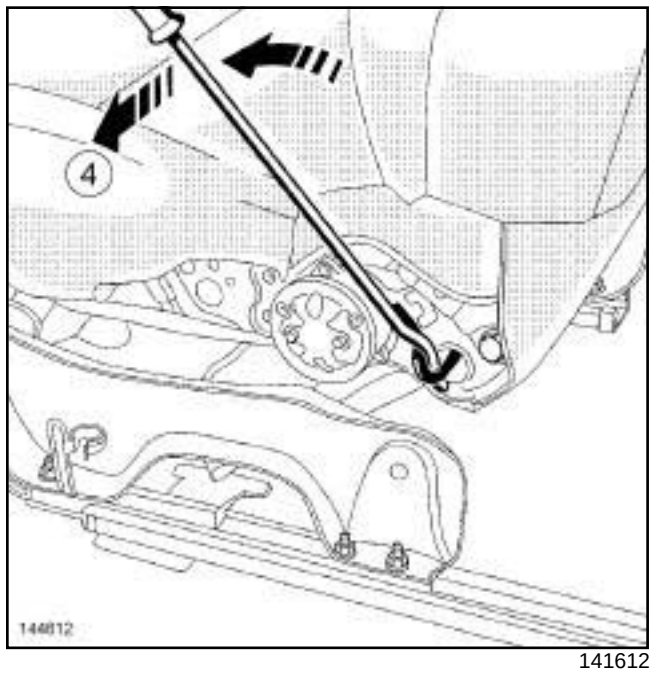
141610

❑ Position the tool **(Car. 1922)** on the torsion bar of the front seat height adjustment mechanism as indicated on the illustration.



141611

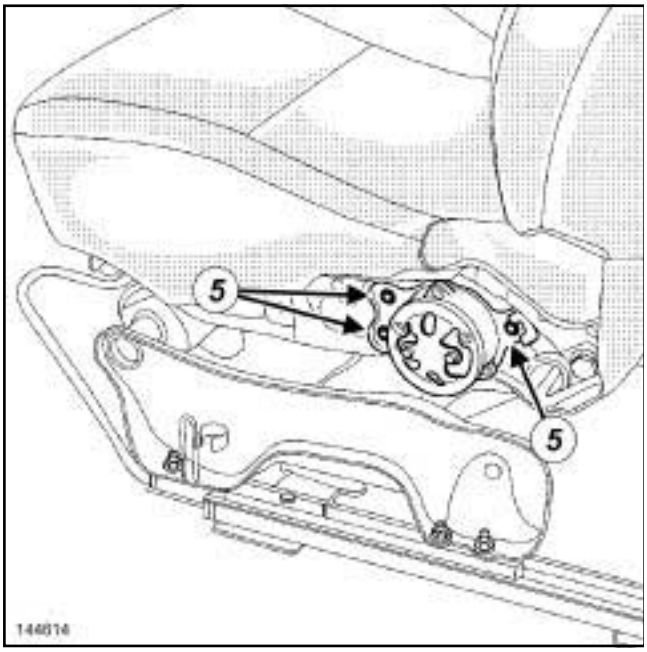
❑ Slacken the torsion bar using the tool **(Car. 1922)** at (**3**) .



141612

❑ Release the torsion bar from the front seat height adjustment mechanism using the tool **(Car. 1922)** by pulling it at (**4**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141614

❏ Drill the rivets (**5**) of the front seat height adjustment mechanism.

WARNING

To prevent any risk of damaging the covers and mechanisms, recover any metal residues when cutting the seat trim clips and/or drilling out the rivet.

❏ Remove the front seat height adjustment mechanism.

REFITTING

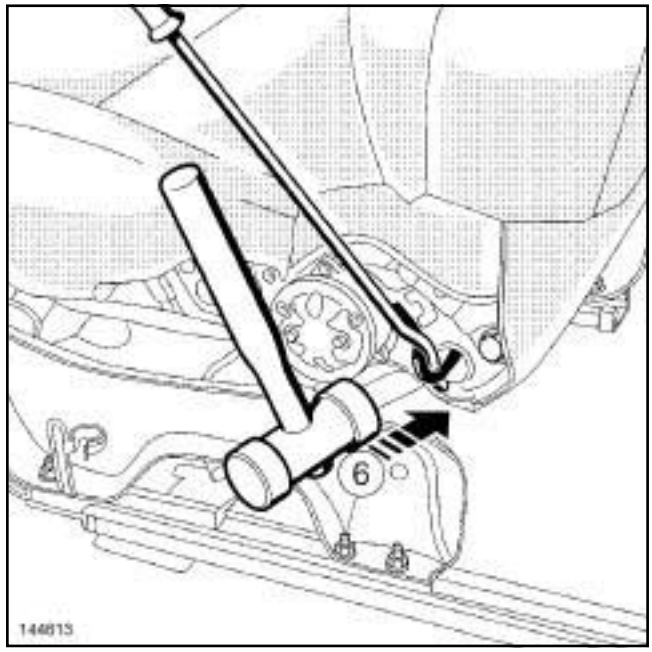
I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Front seat height adjustment mechanism rivet**

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the front seat height adjustment mechanism.

❏ Position and crimp new rivets for the front seat height adjustment mechanism.



141613

❏ Position the torsion bar on the front seat height adjustment mechanism using the tool **(Car. 1922)** and by tapping slightly with a mallet at (**6**) .

III - FINAL OPERATION

❏ Clip on the side retaining section of the front seat base cover.

❏ Refit:

- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) ,

- the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❏ Carry out a function test.

❏ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbags and pretensioners).

C85, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

IMPORTANT
Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

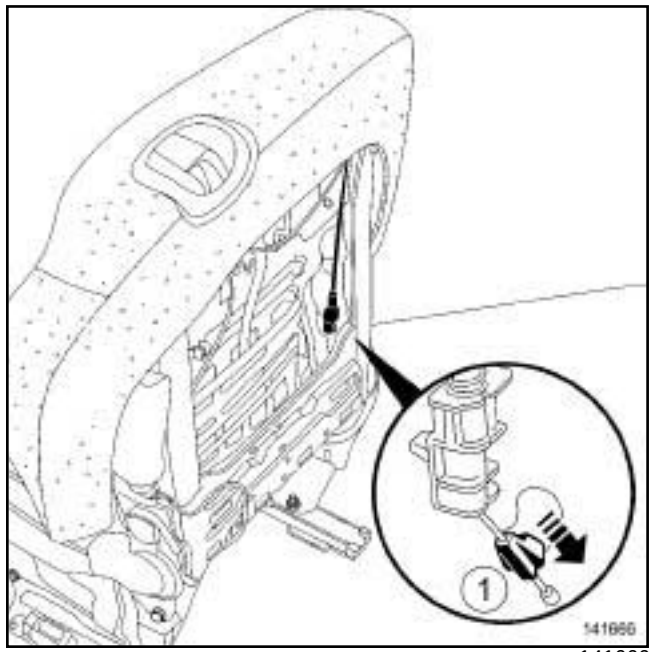
❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Remove:

- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

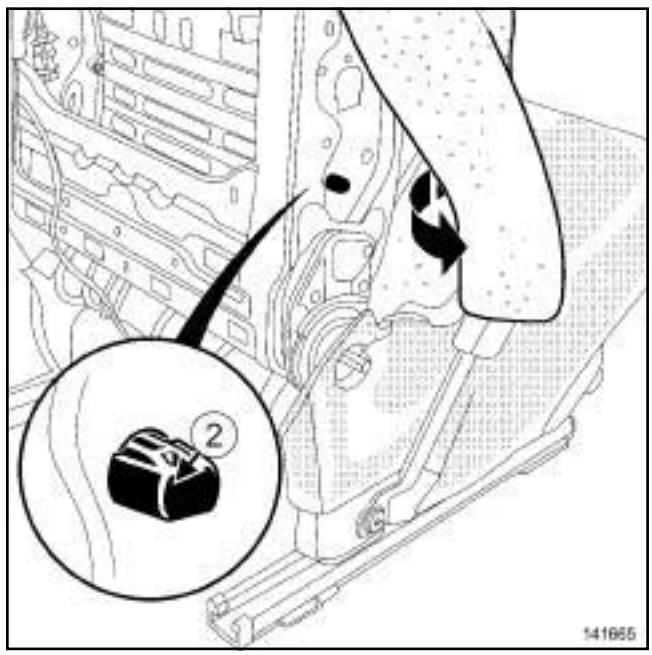
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Rear seat access mechanism



141666

❏ Carefully unclip the stop clips (**1**) on the front seatback frame unlocking cables.

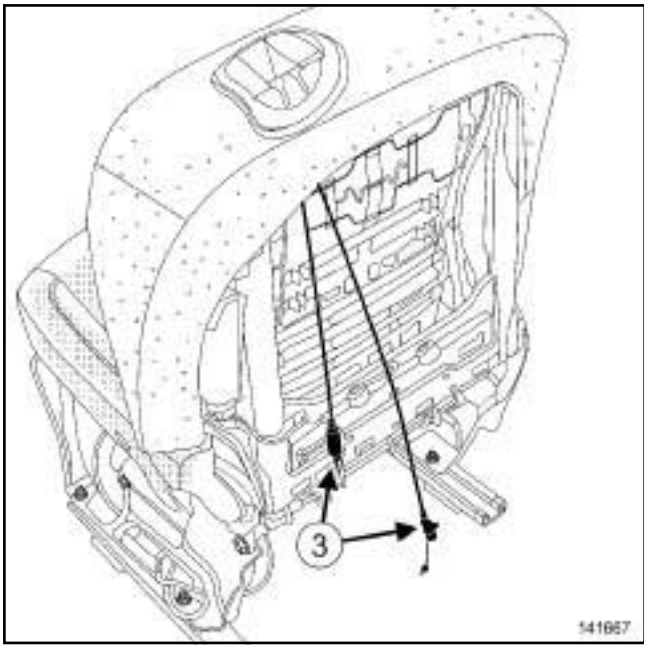


141665

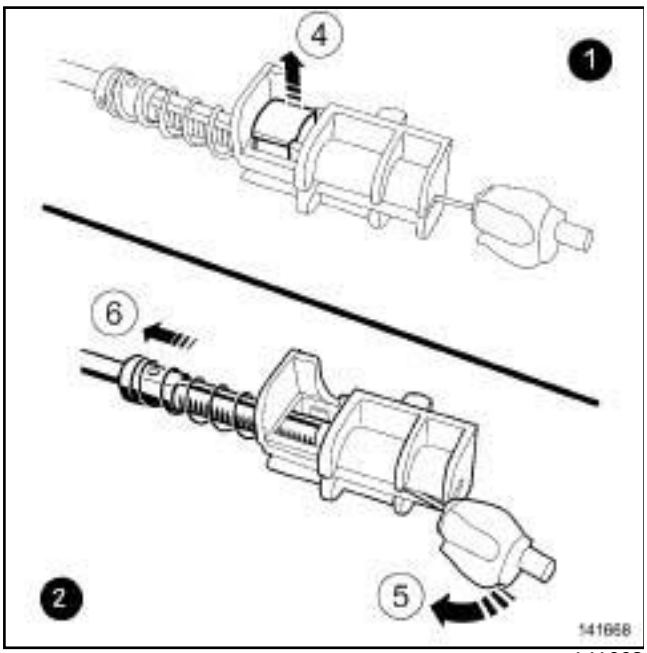
❏ Separate the front seatback foam on each side of the front seatback frame.

❏ Unclip the clips (**2**) from the cable adjustment systems of the front seatback frame unlocking mechanism.

C85, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141667

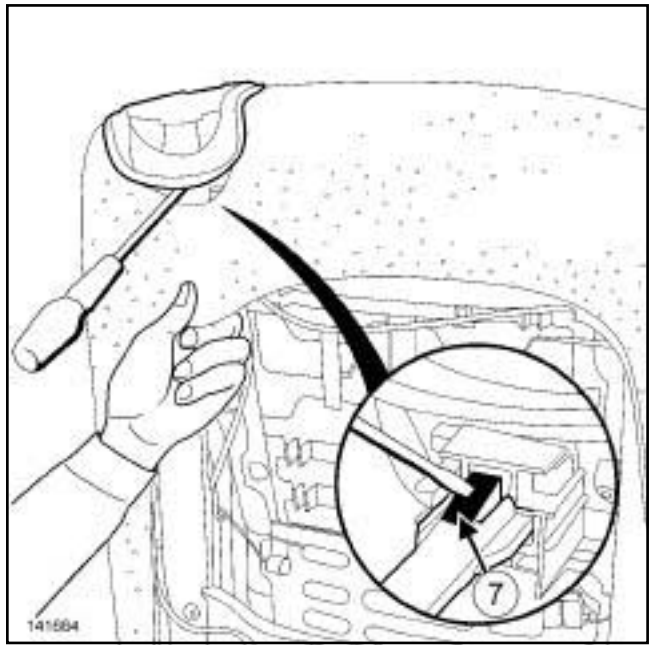


141668

❑ Mark the position of the adjustment system of the front seatback frame unlocking cables.

❑ Remove:

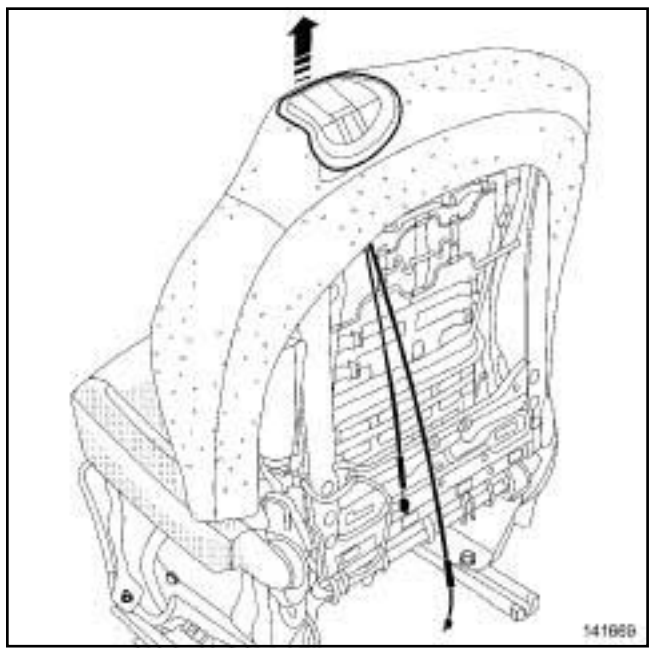
- the locks (**4**) of the adjustment system (**3**) of the front seatback frame unlocking cables,
- the adjustment systems of the front seatback frame unlocking cables by (**5**) and (**6**) .



141664

❑ Move the front seatback foam away from the rear seat access control.

❑ Unclip the mounting of the rear seat access control (**7**) using a flat-blade screwdriver.

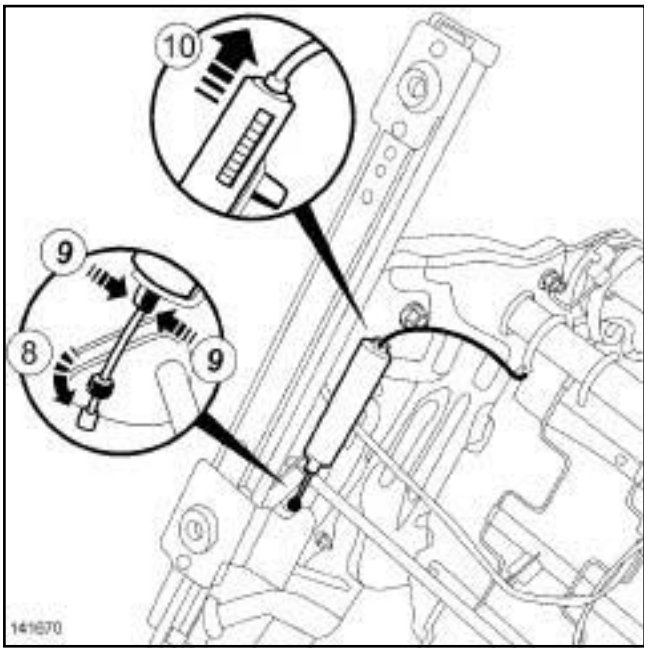


141669

❑ Remove the « rear seat access control mounting - front seatback frame unlocking cables » assembly.

C85, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

2 - Front seat runners unlocking cable



141670

❏ Remove the front seat runners unlocking cable stop from the front seat base frame by turning it a quarter of a turn (**8**) .

❏ Unclip at (**9**) the front seat runners unlocking cable from the front seat base frame.

❏ Release at (**10**) the front seat runners unlocking cable.

141671

❏ Remove:

- the front seat runners unlocking cable stop from the front seatback frame by (**11**) then (**12**) ,
- the front seat runners unlocking cable clip (**13**) from the front seat base frame,
- the front seat runners unlocking cable.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

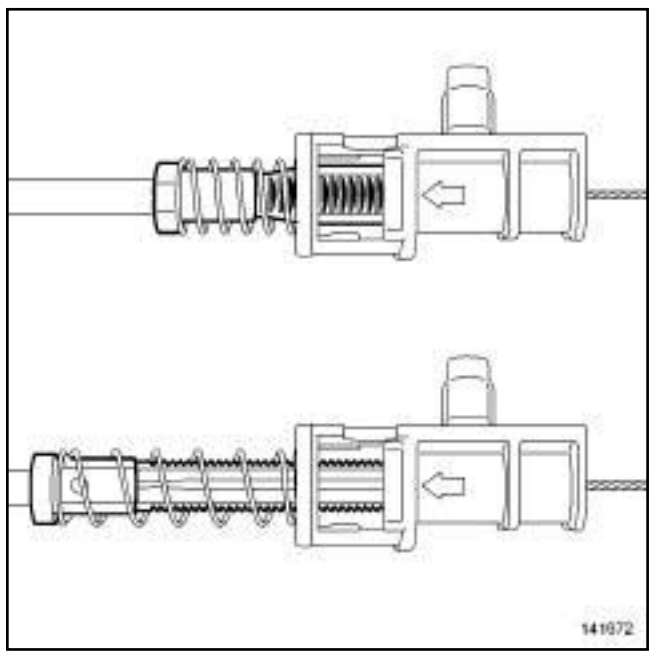
1 - Front seat runners unlocking cable

❏ Position the front seat runners unlocking cable.

❏ Clip the front seat runners unlocking cable onto the front seat base frame.

2 - Rear seat access mechanism

❏ Position the « rear seat access control mounting - front seatback frame unlocking cables » assembly.



141672

❏ Properly position the front seatback unlocking cables in the cable adjustment systems.

Note:

The cable adjustment system is used to compensate for play.

C85, and WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

❑ Clip on:

- the « rear seat access control mounting - front seatback frame unlocking cables » assembly on the front seatback frame,
- the adjustment systems of the front seatback frame unlocking cables onto the front seatback frame,
- the stop clips of the front seatback frame unlocking cables onto the front seatback frame.

❑ Refit:

- the locks of the adjustment systems of the front seatback frame unlocking cables,
- the rear seat access control.

❑ Perform an operational test of the rear seat access mechanism and adjust if necessary.

❑ Refit the rear seat access control.

II - FINAL OPERATION

❑ Refit:

- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) .

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (see 88C, Airbag and Pretensioners).

SPORT FRONT SEATS

REMOVAL

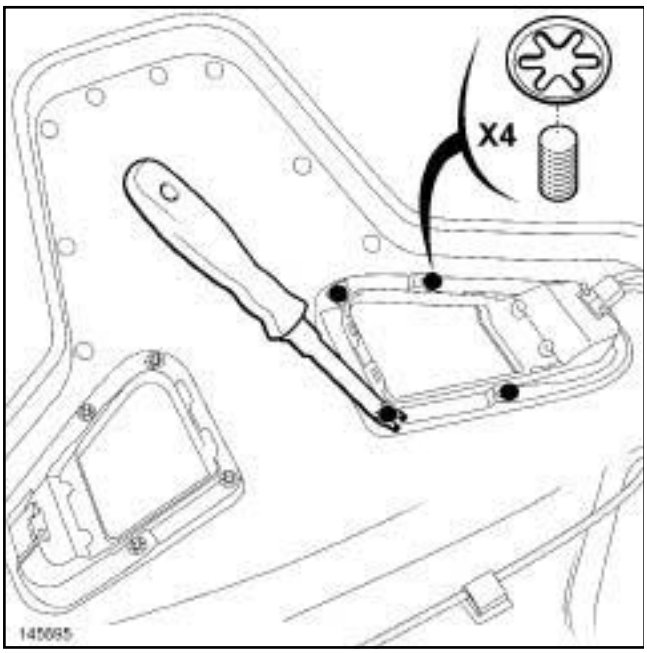
I - REMOVAL PREPARATION OPERATION

❑ Disconnect the battery (see) (80A, Battery).

❑ Remove:

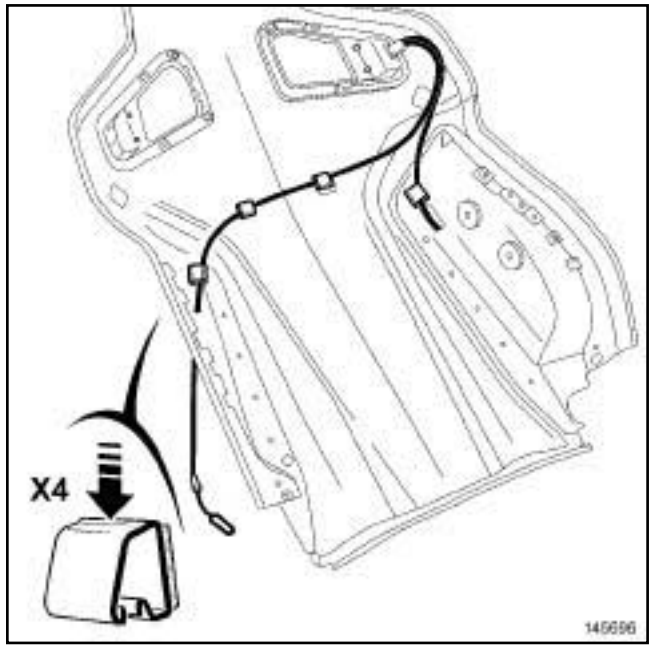
- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the front seatback casing (see **Front seatback casing: Removal - Refitting**) .

II - REMOVAL OPERATION



145695

❑ Remove the clips of the rear seat access mechanism control support.



145696

❑ Detach the cables of the rear seat access mechanism from the guide clips.

> Note:
>
> The Parts Department delivers the rear seat access control assembled with the front seatback frame unlocking cables.

❑ Remove the « rear seat access control support - front seatback frame unlocking cables » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clip of front seatback casing exterior trim**.

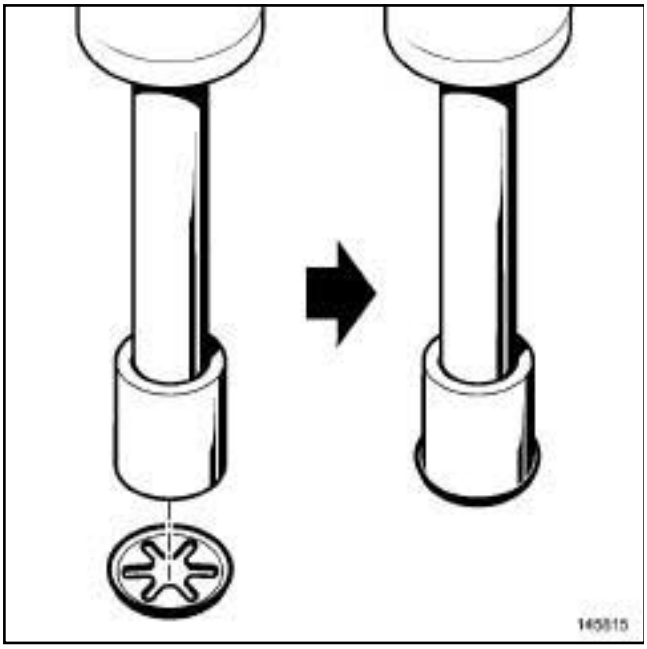
> Note:
>
> If the guide clips of the front seatback frame unlocking cables are detached, replace the **double-sided adhesive tape** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION

❑ Refit the « rear seat access control support - front seatback frame unlocking cables » assembly.

❑ Position the cables of the rear seat access mechanism in the guide clips.

SPORT FRONT SEATS



145815

❏ Refit the new clips of the rear seat access control support using a socket of the same diameter as the clips.

> Note:
>
> The socket should rest against the edge of the clip to avoid damaging the clip teeth.

III - FINAL OPERATION

❏ Proceed in the reverse order to removal.

❏ Carry out a function test.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

Equipment required
Diagnostic tool

Tightening torques ▽	
new front seat bolts	**35 N.m**

IMPORTANT
Before carrying out any work on a safety or proximity system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit when the ignition is switched on.

IMPORTANT
It is forbidden to work on pyrotechnic systems (pretensioner or airbag) near a source of heat or a naked flame; there is a risk of the airbags or pretensioners being triggered.

REMOVAL

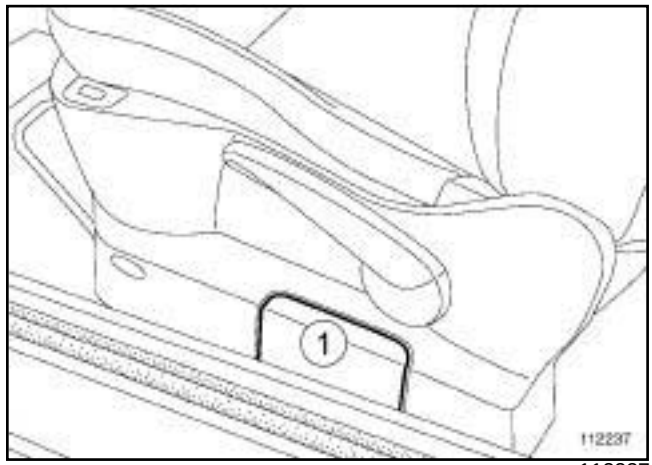
I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

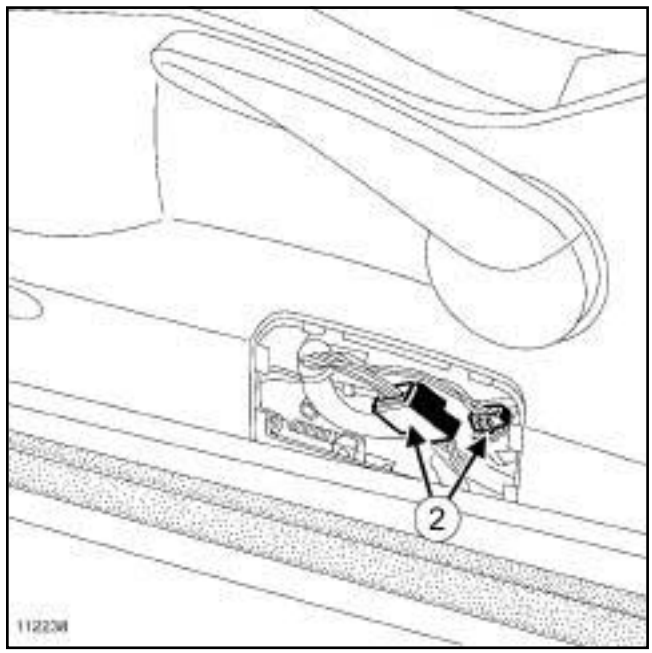
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

II - OPERATION FOR REMOVAL OF PART CONCERNED

C85



112237



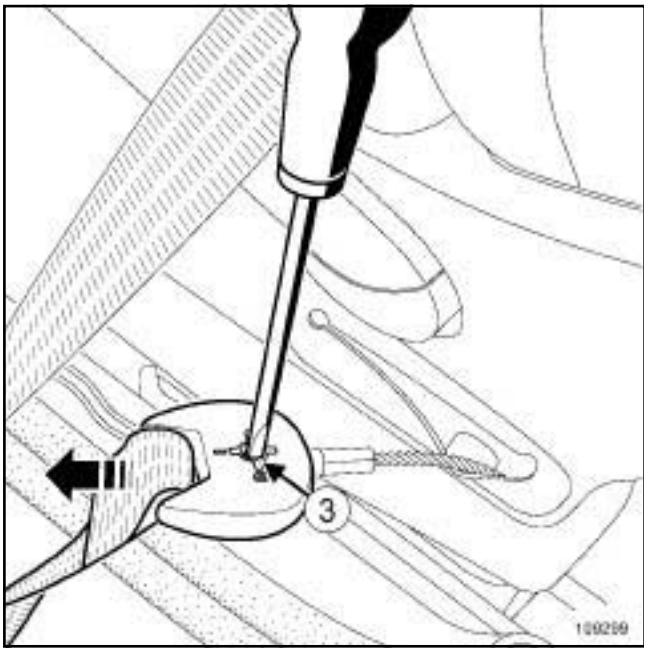
112238

❏ Remove the flap (**1**) .

❏ Disconnect and take out the connectors (**2**) .

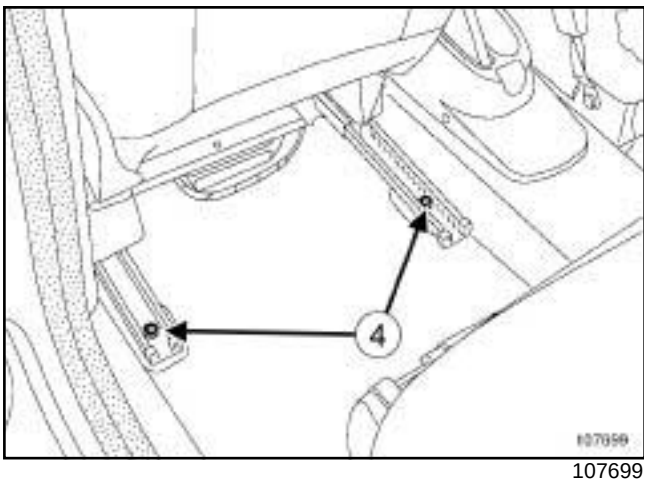
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

B85



109299

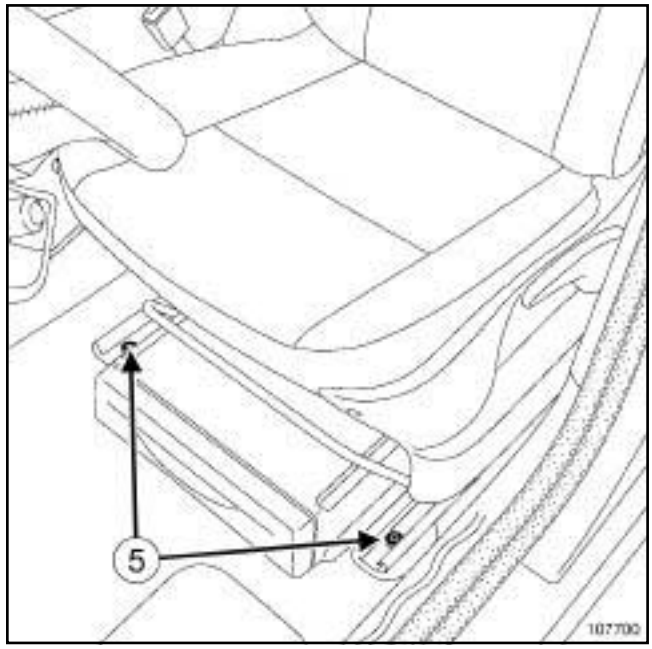
❏ Detach the seat belt by undoing bolt (**3**) .



107699

❏ Move the front seat forwards.

❏ Remove the bolts (**4**) .

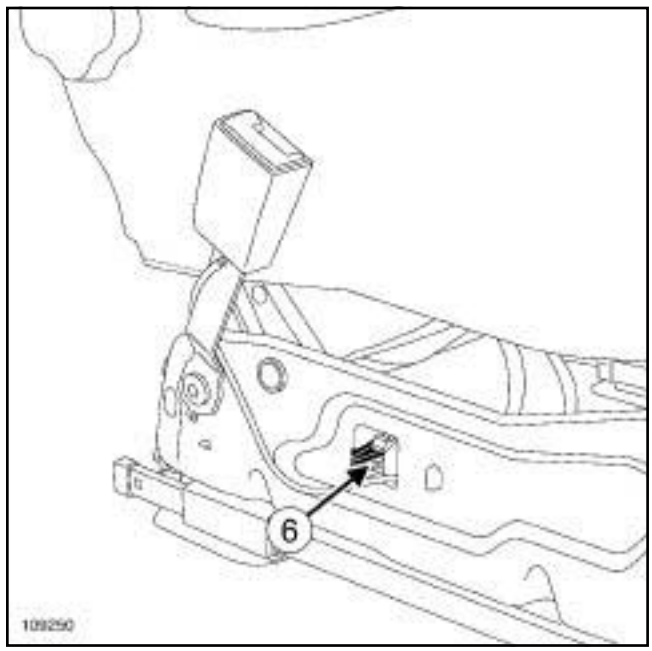


107700

❏ Move the front seat back.

❏ Remove the bolts (**5**) .

B85

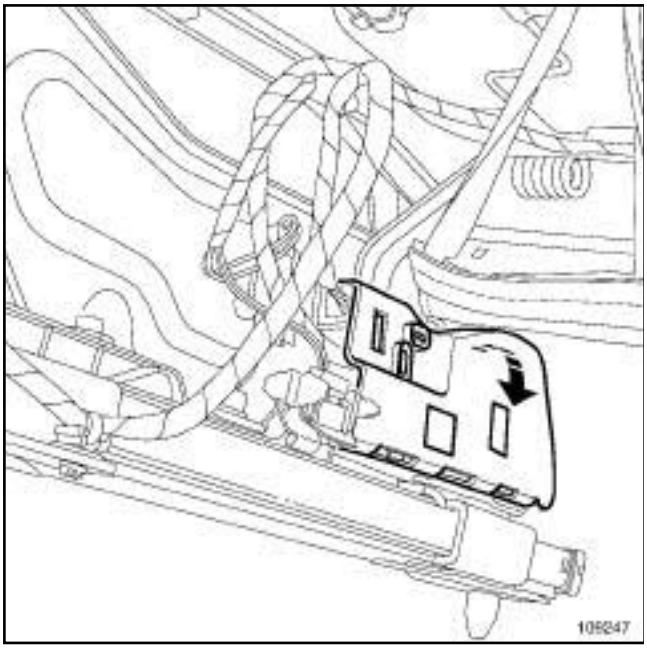


109250

❏ Move the seat to gain access to the connector unit.

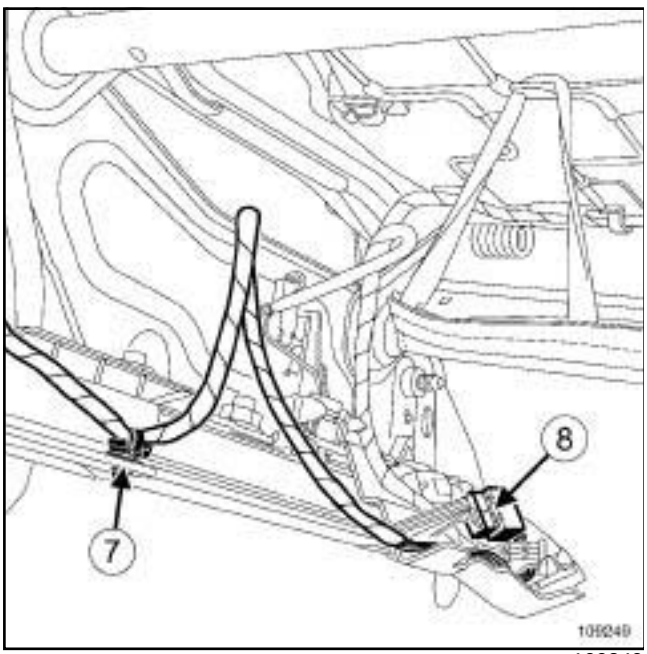
❏ Undo the clip (**6**) from the unit.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



109247

❑ Open the connector access flap.



109249

❑ Unfasten clip (**7**) .

❑ Disconnect the connector (**8**) .

❑ Remove the front seat (this operation requires two people).

REFITTING

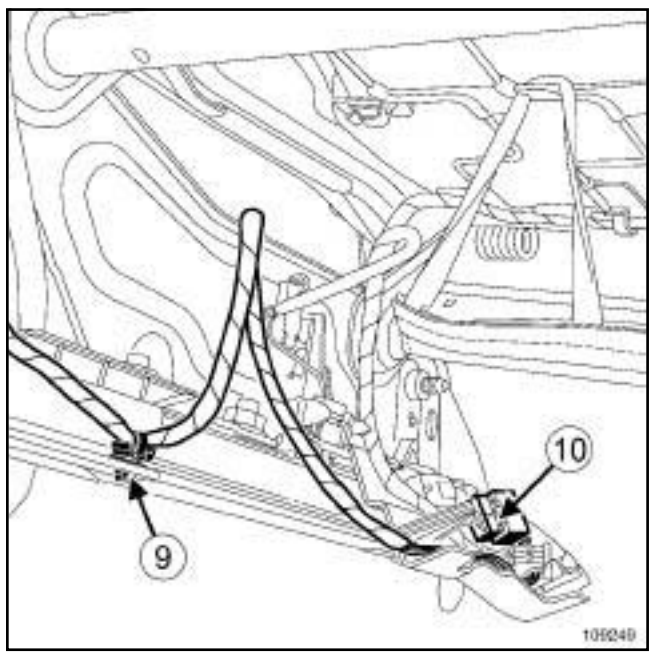
I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seat mounting on body**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Reposition the front seat.

B85



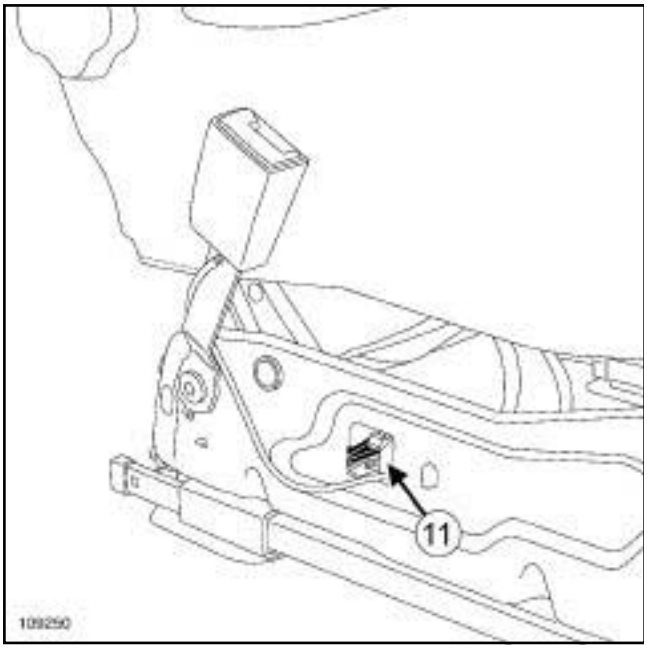
109249

❑ Engage clip (**9**) .

❑ Connect the connector (**10**) .

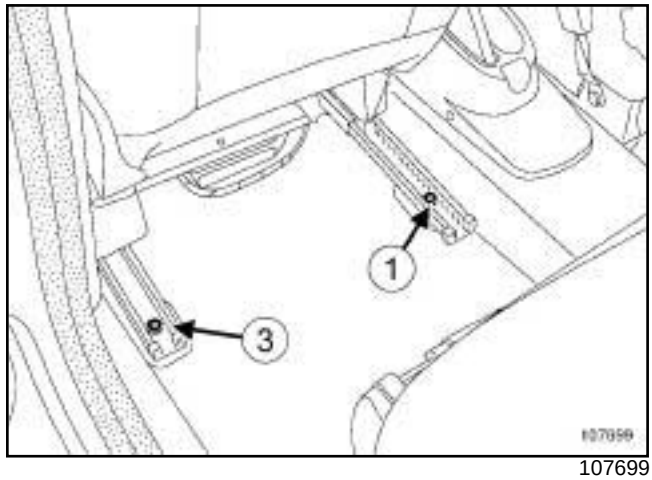
❑ Close the connector unit.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

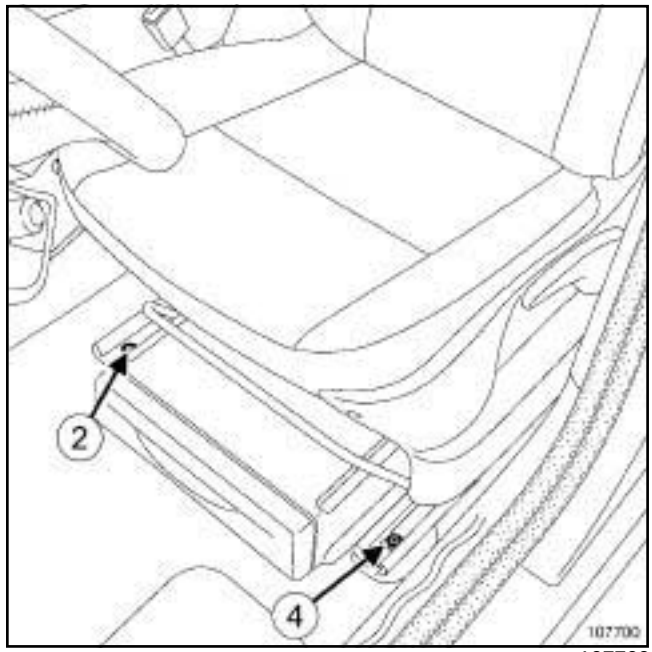


109250

❑ Clip on the connector unit at (**11**) .



107699



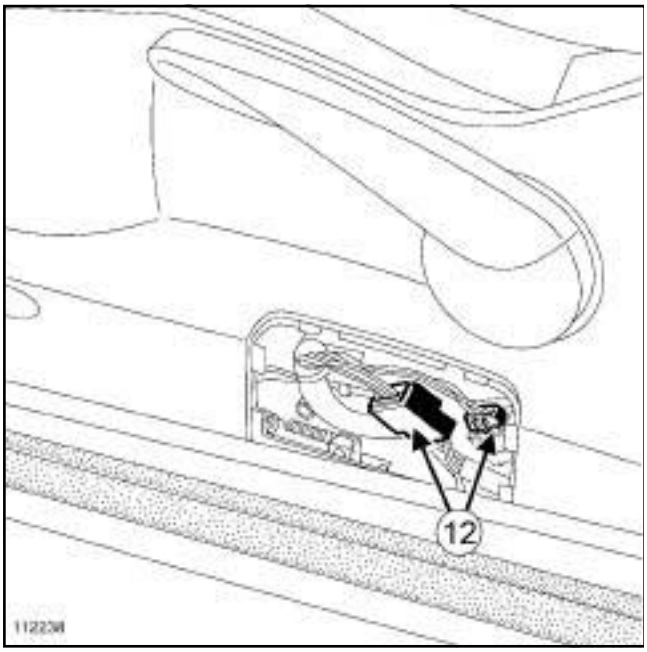
107700

❑

WARNING
Be sure to follow the seat tightening order.

❑ Torque tighten in order the **new front seat bolts (35 N.m)**.

C85



112238

❏ Refit the wiring.

❏ Connect the connectors (**12**) .

❏ Refit the flap.

III - FINAL OPERATION

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

Tightening torques ▽	
new front seat bolts on the body	**35 N.m**

IMPORTANT
Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

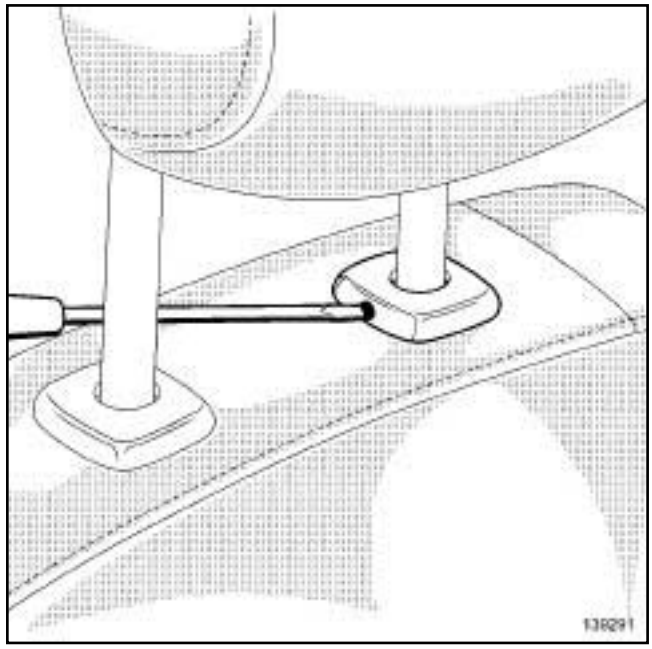
IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

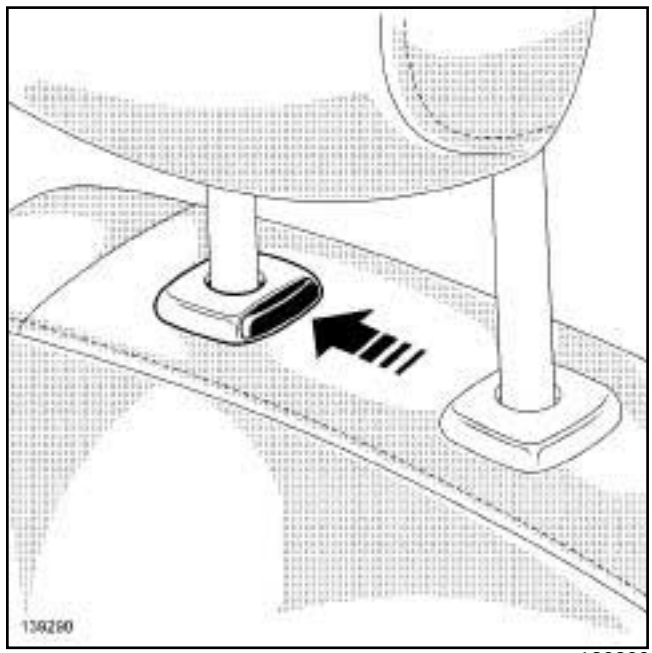
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Tilt the front seatback towards the rear.



139291

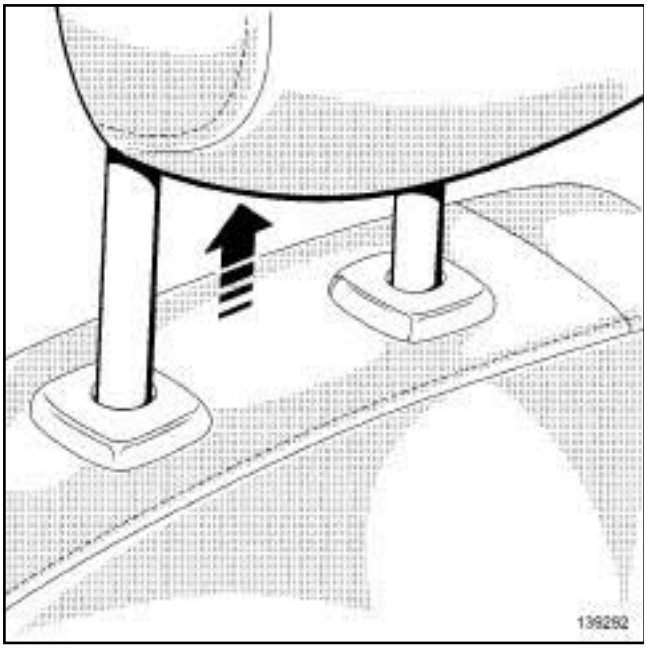


139290

❏ Press the unlocking button on each headrest guide.

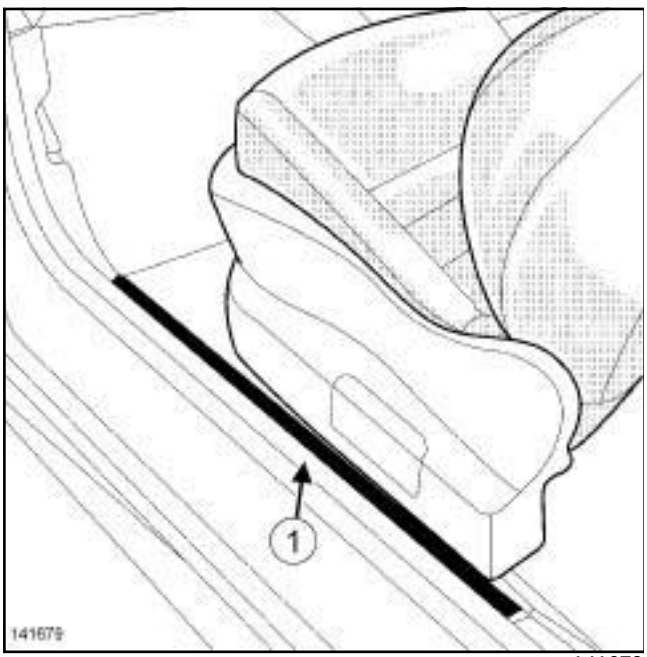
Note:
Depending on the type of unlocking button, this operation is performed manually or using a flat-blade screwdriver.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



139292

❏ Remove the front seat headrest.



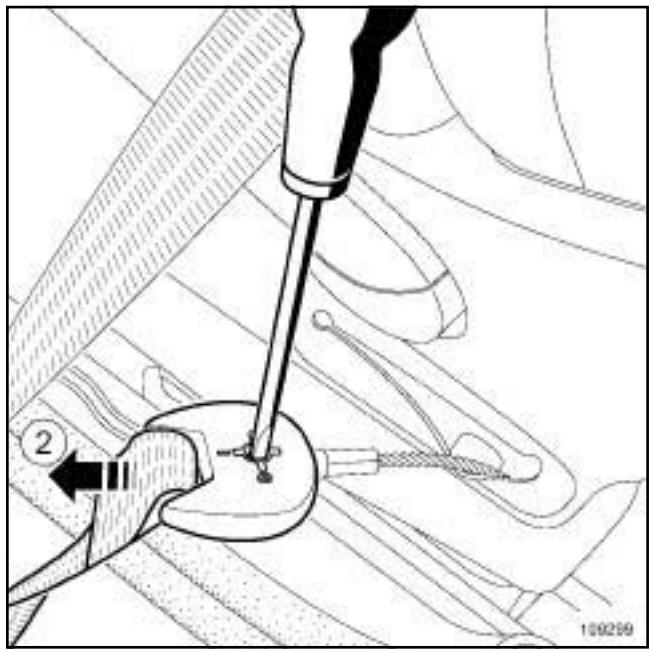
141679

❏ Protect the door sill lining with masking tape (**1**) .

❏ Adjust:

- the front seatback angle to the vertical position,
- the height of the front seat base to the lowered position,
- the steering wheel to the highest position and push it in.

B85



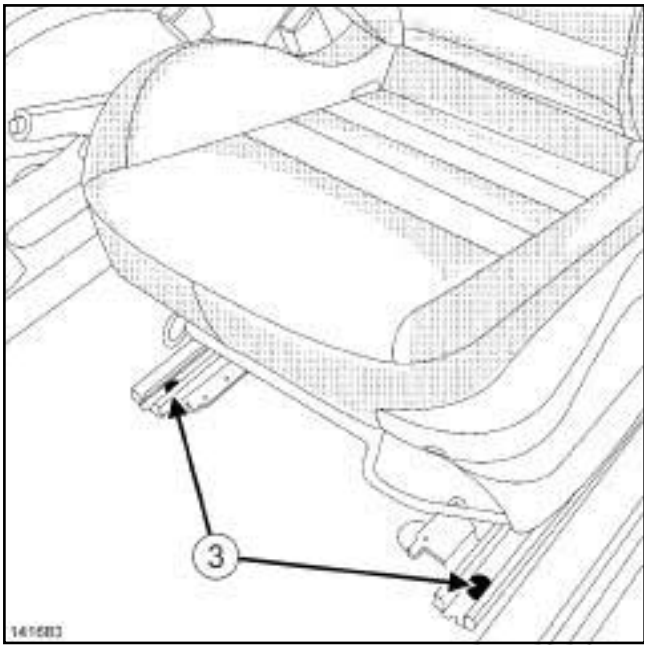
109299

❏ Unclip the front seat belt at (**2**) using a flat-blade screwdriver by turning it a quarter of a turn.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Move the front seat back.

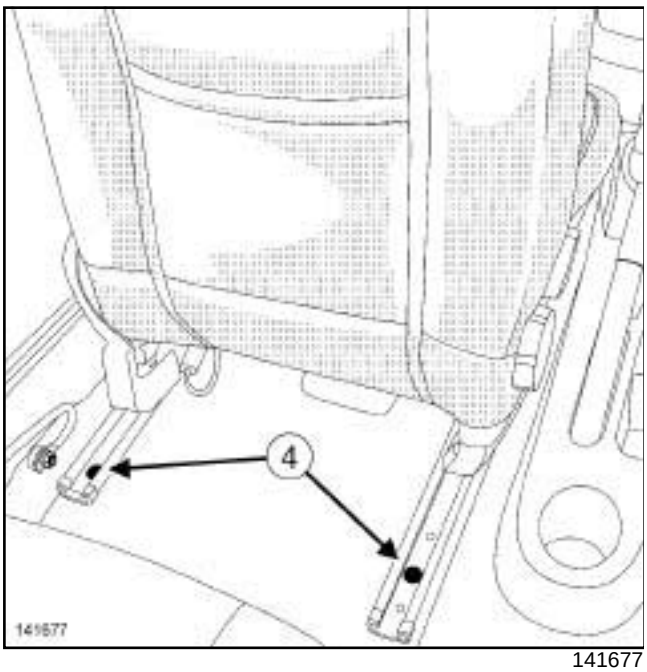
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141683

❏ Remove the front seat bolts (**3**) on the body.

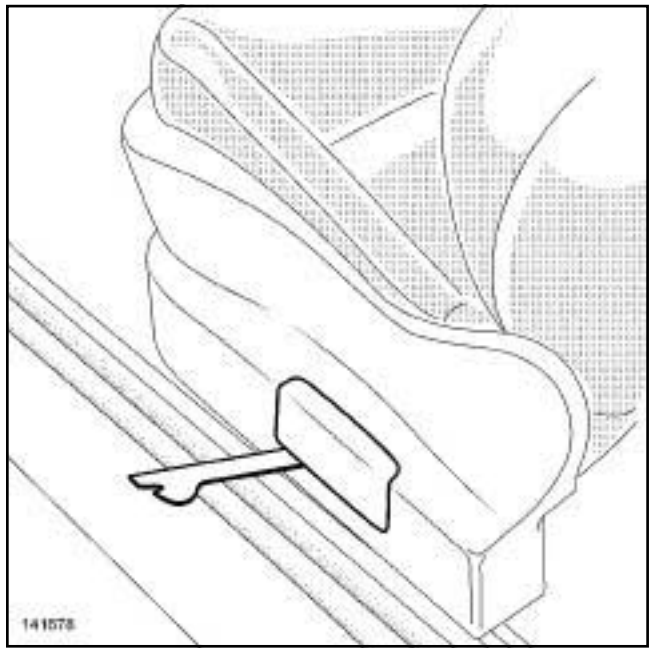
❏ Move the front seat forwards.



141677

❏ Remove the front seat bolts (**4**) on the body.

C85



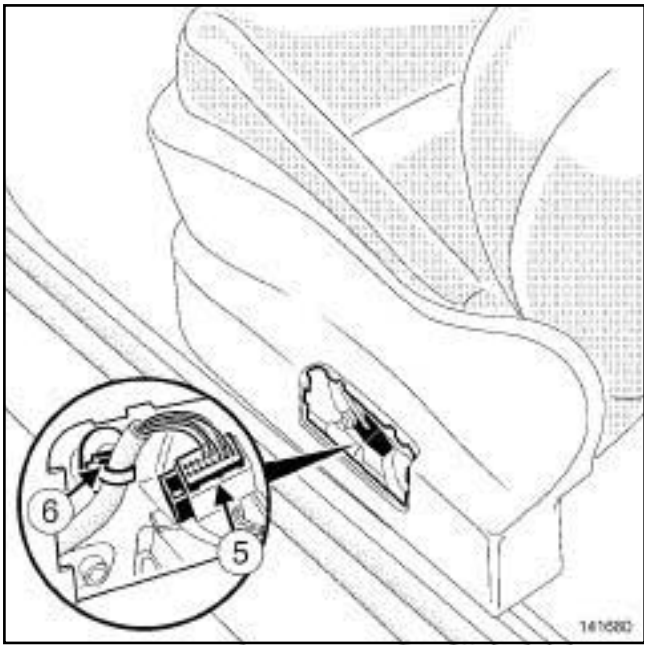
141678

❏ Remove the flap to access the front seat connectors on the front seat base casing using the tool **(Car. 1363)**.

FRONT SEAT WITH HEATING

❏ Disconnect the heated seat pad connector.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

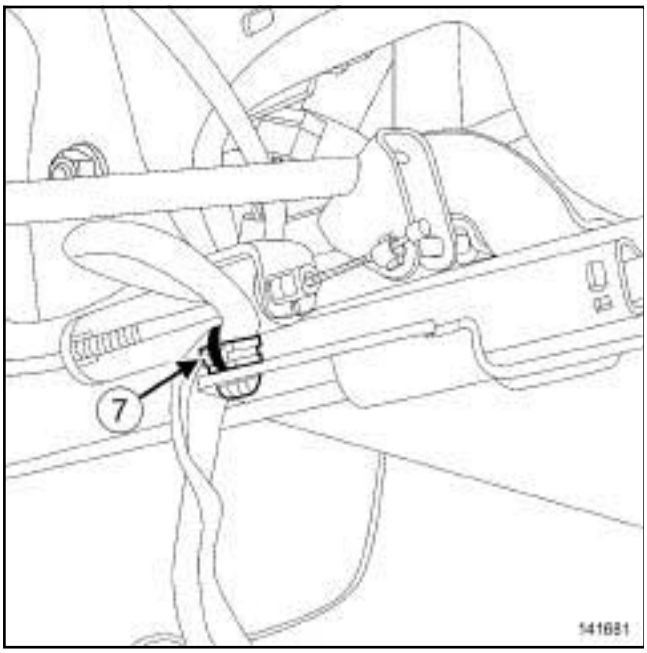


141680

❏ Unlock the connector (**5**) from the front seat wiring.

❏ Disconnect the connectors from the front seat wiring.

❏ Remove the clip (**6**) from the front seat wiring.



141681

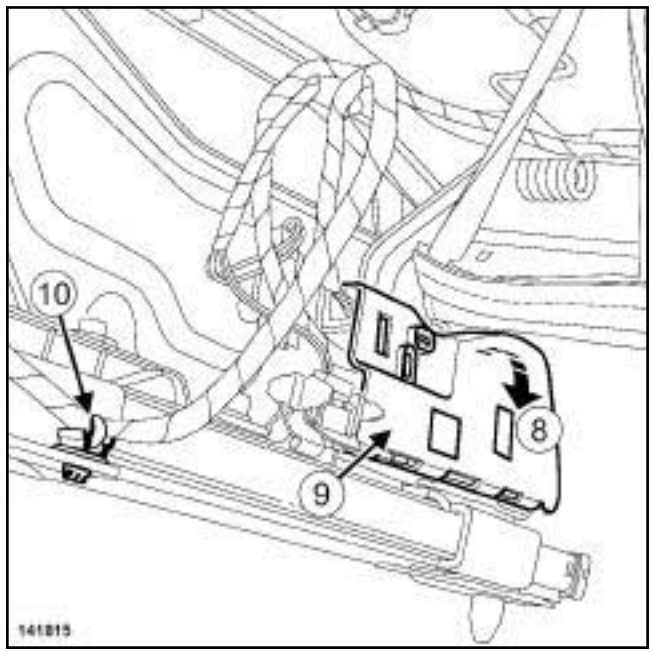
❏ Tilt the front seat backwards.

❏ Remove the clip (**7**) from the front seat wiring.

❏ Move aside front seat wiring.

B85

❏ Tilt the front seat forwards.

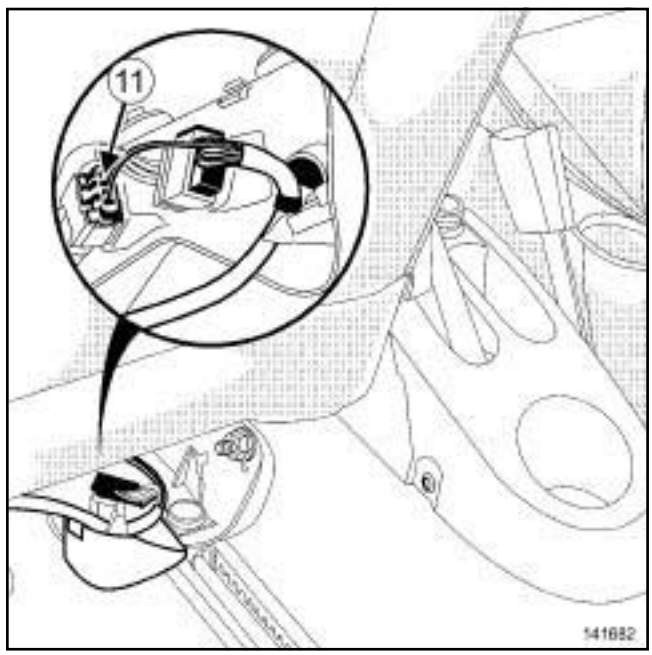


141815

❏ Open at (**8**) the front seat connectors support (**9**) .

❏ Remove the clip (**10**) from the front seat wiring.

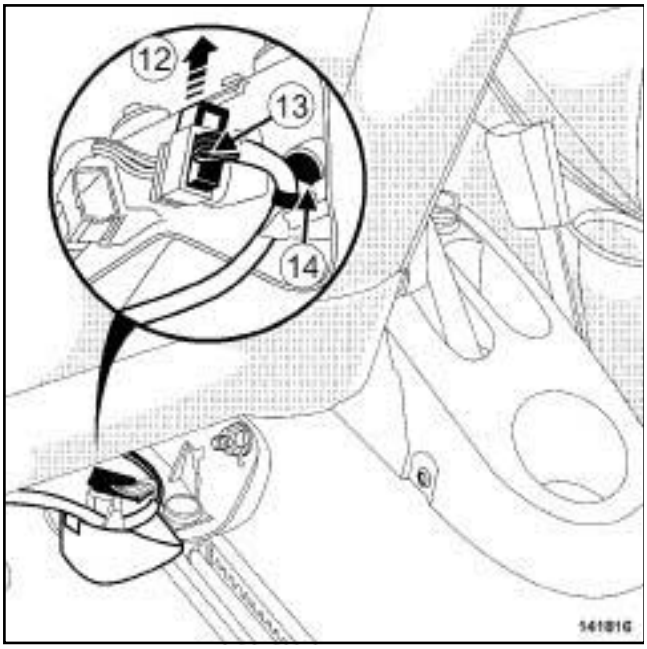
FRONT SEAT WITH HEATING



141682

❏ Disconnect the heated seat pad connector (**11**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141816

❑ Unlock the connector of the front seat wiring at (**12**) .

❑ Disconnect the connector (**13**) from the front seat wiring.

❑ Remove the clip (**14**) from the front seat wiring.

❑ Move aside front seat wiring.

❑ Remove the front seat.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front seat mounting on body**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the front seat in the vehicle.

❑ Refit the front seat wiring.

❑ Connect the front seat wiring connector.

❑ Lock the connector of the front seat wiring.

FRONT SEAT WITH HEATING

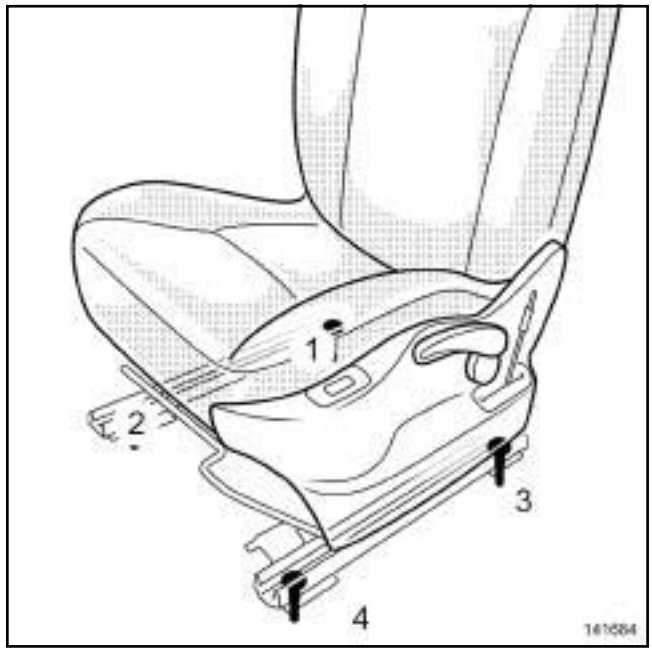
❑ Connect the heated seat pad connector.

C85

❑ Refit the flap to access the front seat connectors on the front seat base casing.

B85

❑ Close the front seat connectors support.



141684

❑ Torque tighten in order the **new front seat bolts on the body (35 N.m)**.

❑ Carry out a function test.

III - FINAL OPERATION

B85

❑ Clip on the front seat belt.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

❏ Tilt the front seatback.

❏ Refit the front seat headrest.

IMPORTANT
To prevent the headrest coming away from the guide during a collision, check that headrest guide locking system is functioning correctly.

❏ Adjust the following to their original positions:

- the front seatback angle,
- the height of the front seat base,
- the steering wheel .

❏ Remove the masking tape from the door sill lining.

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (see 88C, Airbag and Pretensioners).

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

Equipment required
Diagnostic tool

Tightening torques ▽	
runner mounting nuts	**21 N.m**
seatback frame mounting bolts	**40 N.m**

IMPORTANT
Before carrying out any work on a safety or proximity system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated all the ignition lines are disabled and the airbag warning light on the instrument panel is lit when ignition is switched on.

IMPORTANT
It is forbidden to work on pyrotechnic systems (pretensioner or airbag) near a source of heat or a naked flame; there is a risk of the airbags or pretensioners being triggered.

STRIPPING

I - STRIPPING PREPARATION OPERATION

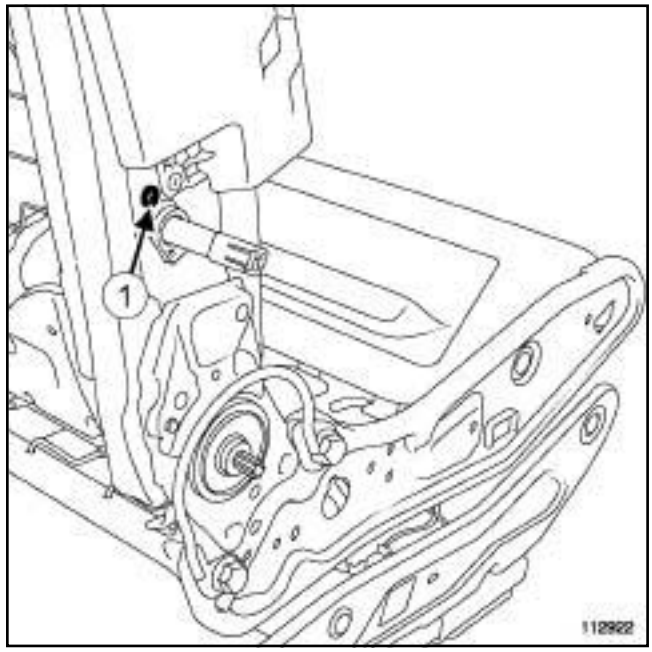
❑ Lock the airbag computer using **Diagnostic tool** (see **MR 392, Electricity, 88C, Airbags and pretensioners, Precautions for repair**).

❑ Disconnect the battery starting with the negative terminal (see **MR 392, Electricity, 80A, Battery: Removal - Refitting**).

❑ Remove:

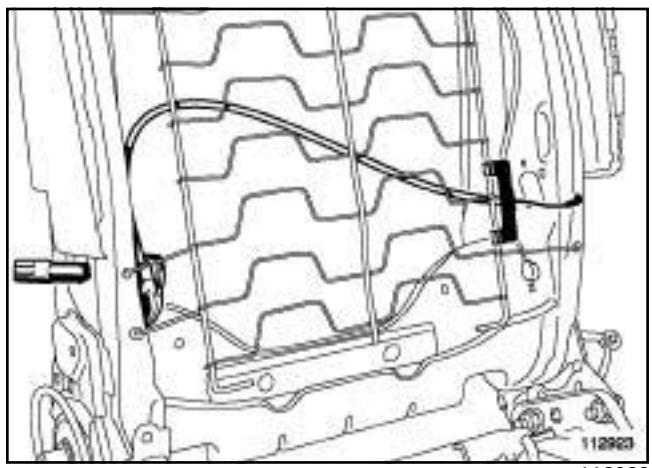
- the compete front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the front seat base trim (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the front seatback trim (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

II - STRIPPING THE PART CONCERNED



112922

❑ Remove the rivet (**1**)

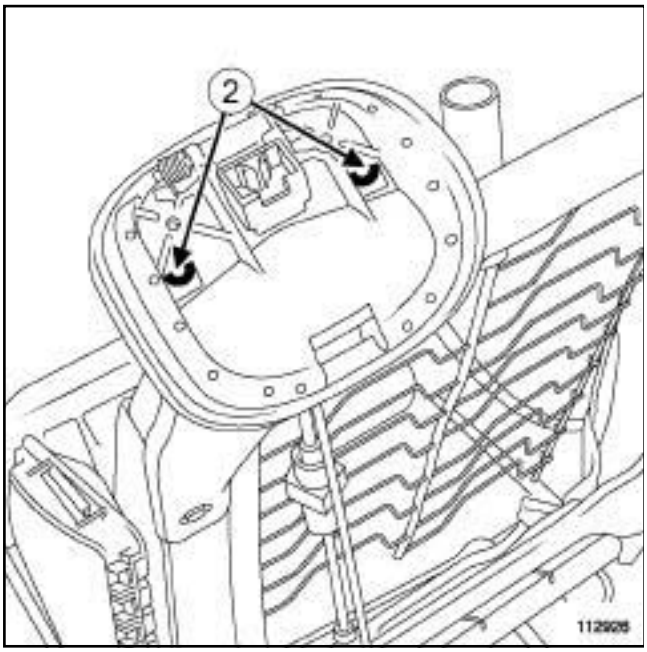


112923

❑ Take out the adjustable lumbar support mechanism (depending on the equipment level).

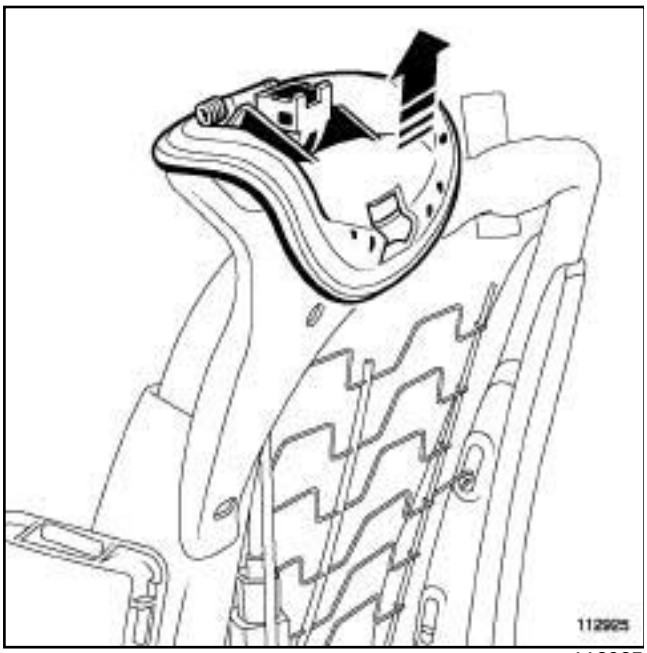
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

C85



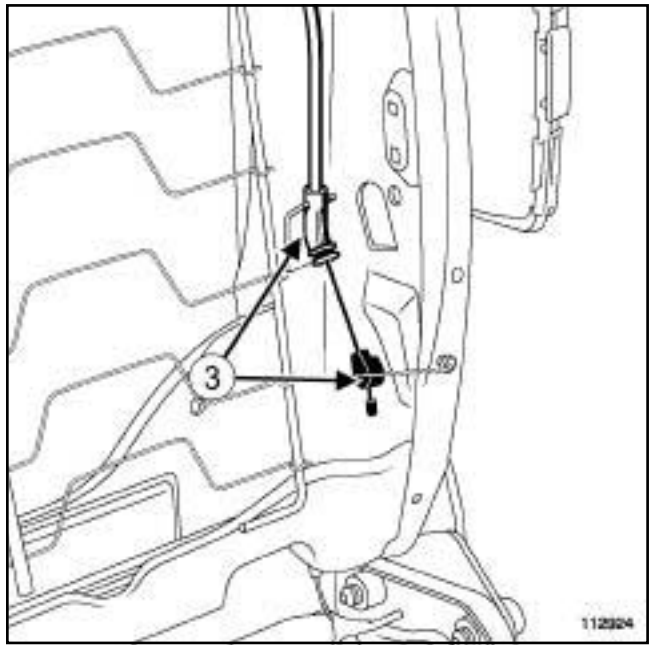
112926

❏ Unclip the control at (**2**) .



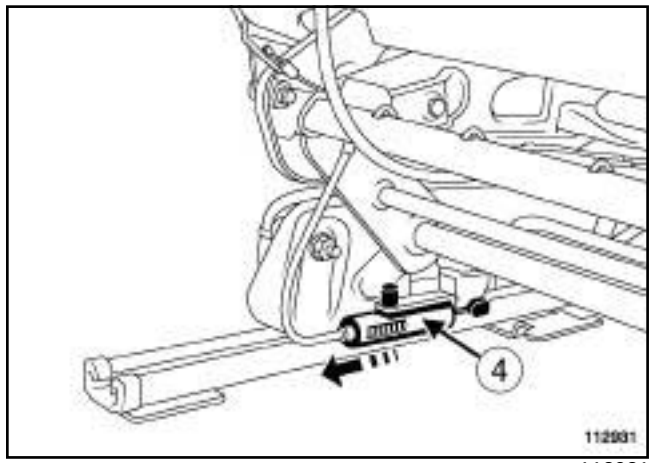
112925

❏ Take out the control.



112924

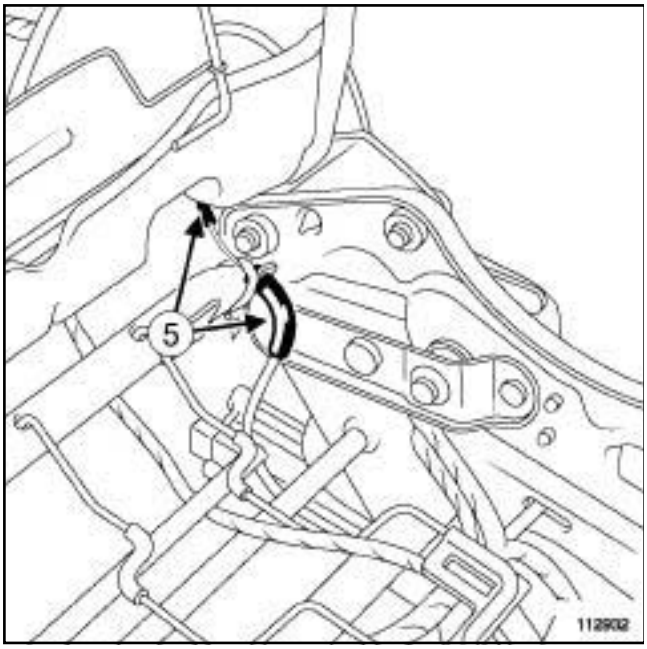
❏ Unclip the seatback locking cable (**3**) .



112931

❏ Remove the unlocking system (**4**) for the runners.

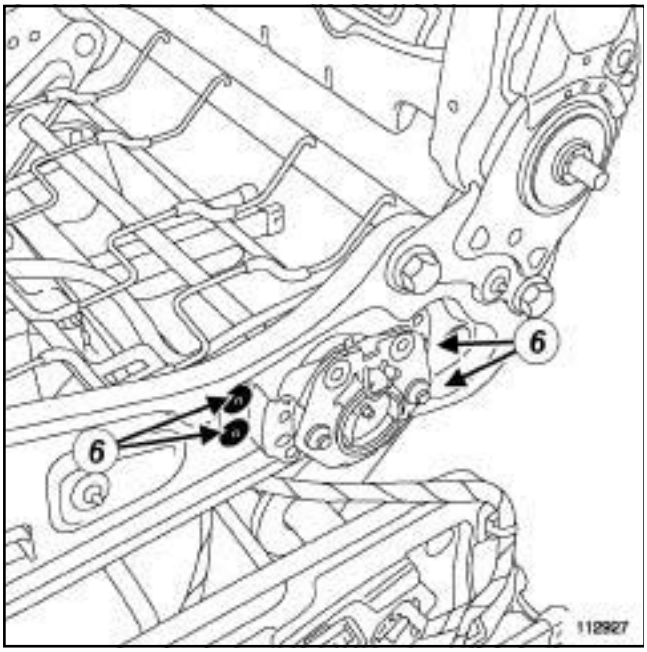
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



112932

❑ Unclip the unlocking cable for the runners (**5**) .

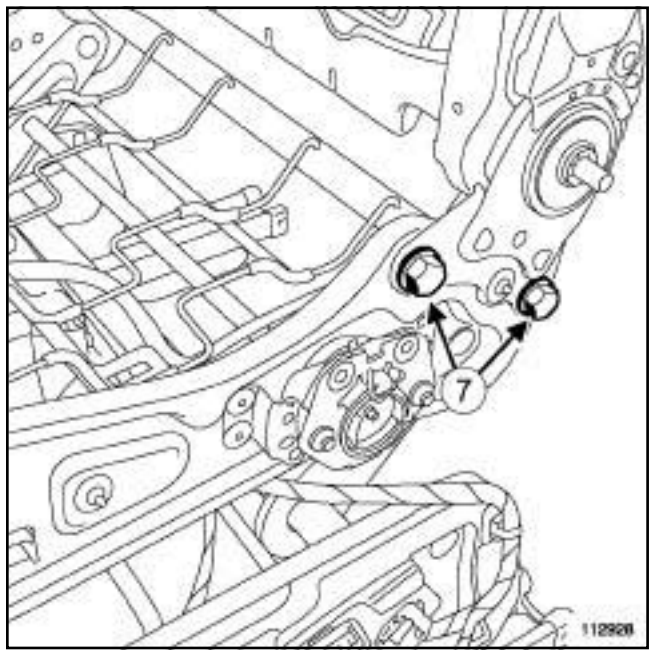
❑ Remove the anti-submarining airbag (see **MR 392, Electricity, 88C, Airbags et pretensioners, Anti-submarining airbag: Removal - Refitting**).



112927

❑ Remove:

- the rivets (**6**) ,
- the seat height adjustment mechanism (depending on equipment level),
- the front side chest-level airbag (see **MR 392, Mechanical, 88C, Airbags and pretensioners, Front side chest-level airbag: Removal - Refitting**).



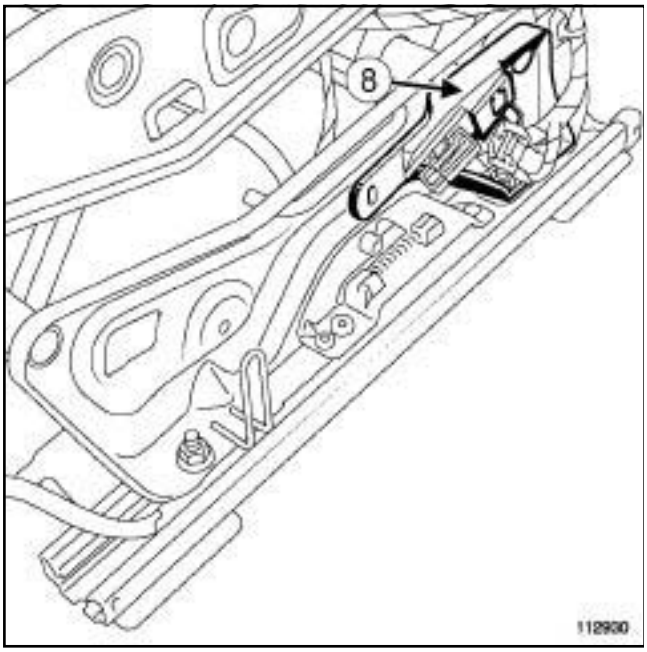
112928

❑ Remove:

- the bolts (**7**) ,
- the seatback frame.

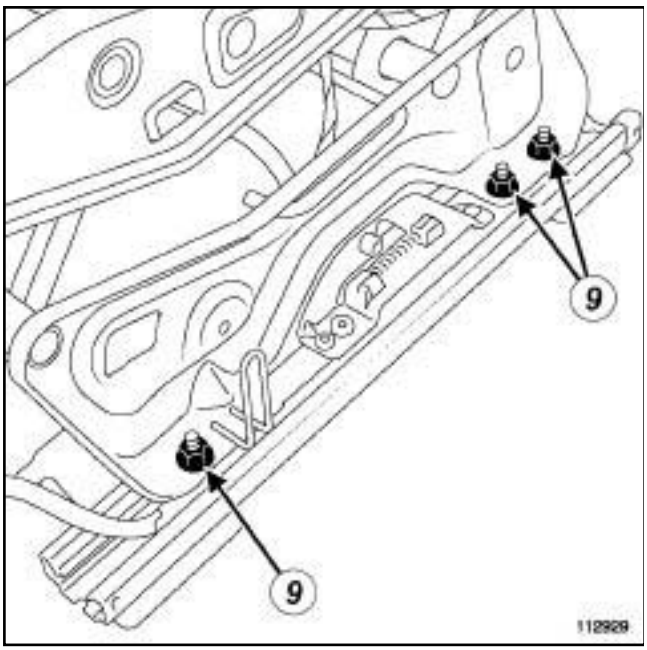
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

C85



112930

❏ Unclip the connector support (**8**) .



112929

❏ Remove the nuts (**9**) from each side of the seat frame.

❏ Remove the runners.

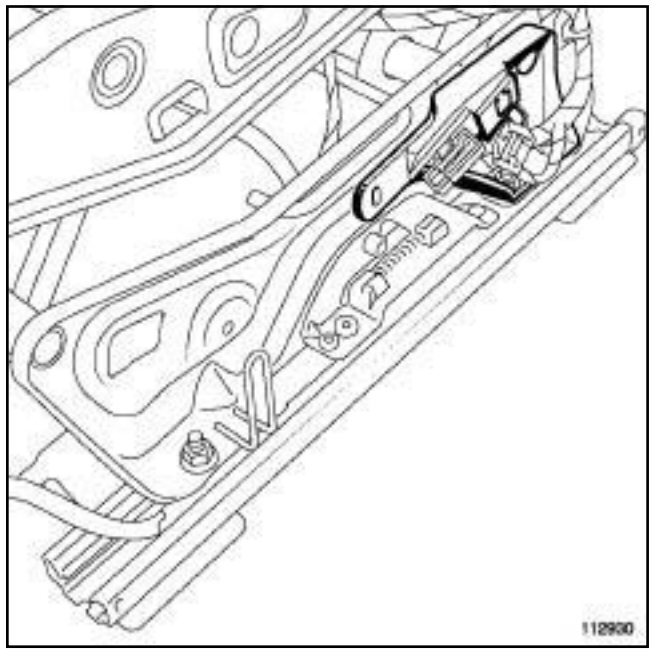
REBUILDING

I - REBUILDING OPERATION FOR PART CONCERNED

❏ Refit the runners on the seat base frame.

❏ Torque tighten the **runner mounting nuts (21 N.m)**.

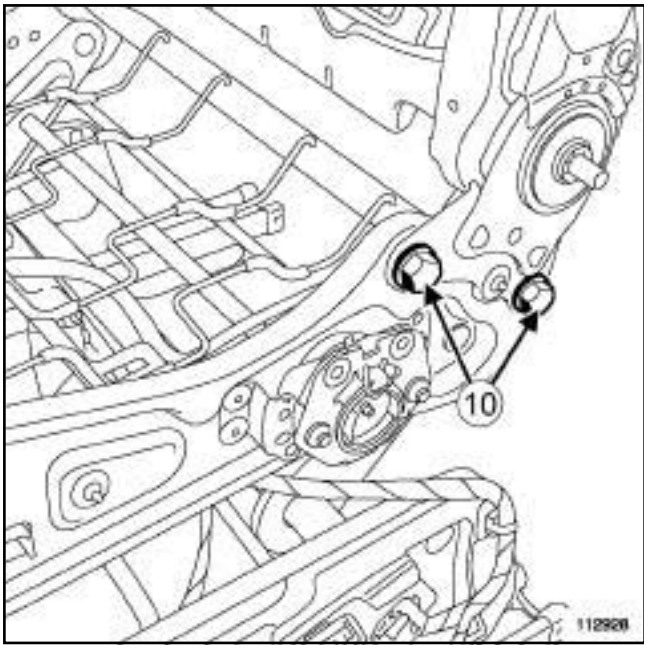
C85



112930

❏ Reclip the connector support.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



112928

❏ Refit the backrest frame.

❏ Torque tighten the **seatback frame mounting bolts (40 N.m)**, (**10**) .

❏ Refit:

- the seat height adjustment mechanism (depending on equipment level),
- the rivets,
- the front side chest-level airbag (see **MR 392, Electricity, 88C, Airbags and pretensioners, Front side chest-level airbag: Removal - Refitting**).

C85

❏ Refit:

- the unlocking cable for the runners,
- the seatback unlocking cable,
- the control.

❏ Fit the adjustable lumbar support mechanism (depending on the equipment level).

II - FINAL OPERATION

❏ Refit:

- the front seatback trim (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the front seat base trim (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the entire front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Connect the battery starting with the positive terminal (see **MR 392, Mechanical, 80A, Battery: Removal - Refitting**).

❏ Unlock the airbag computer using **Diagnostic tool** (see **MR 392, Electricity, 88C, Airbag and pretensioners, Precautions for repair**).

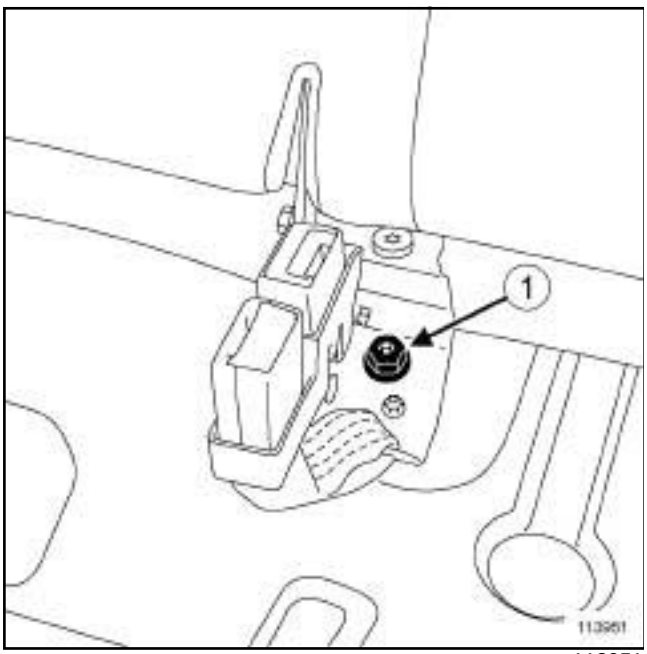
Tightening torques ▽	
rear bolt of the seat-back central support	**21 Nm**
front bolt of the seat-back central support	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

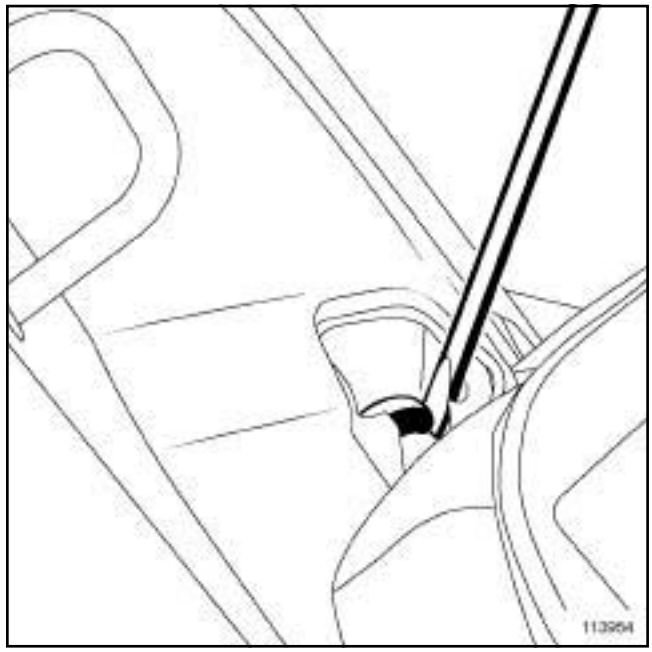
❏ Remove the single unit rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

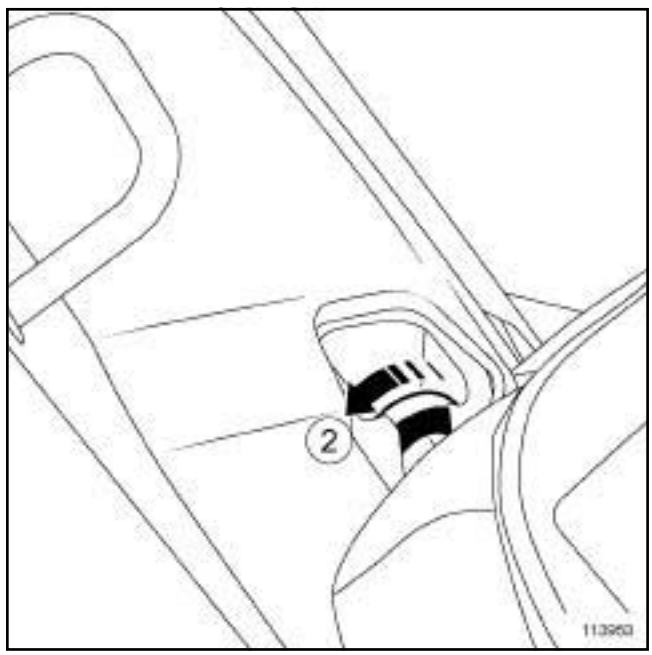


113951

❏ Remove the bolt (**1**) from the central support of the single unit rear bench seatback.



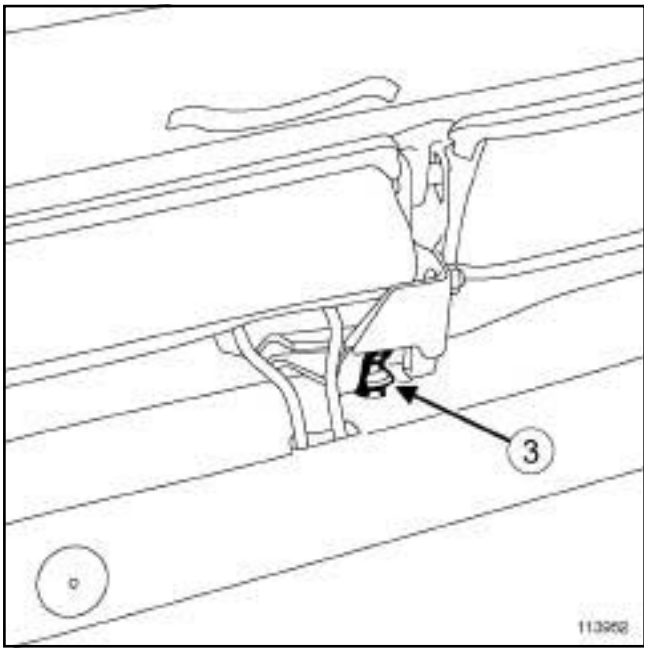
113954



113953

❏ Pull down the single unit rear bench seatback.

❏ Unlock the side locks (**2**) using a flat-blade screwdriver.

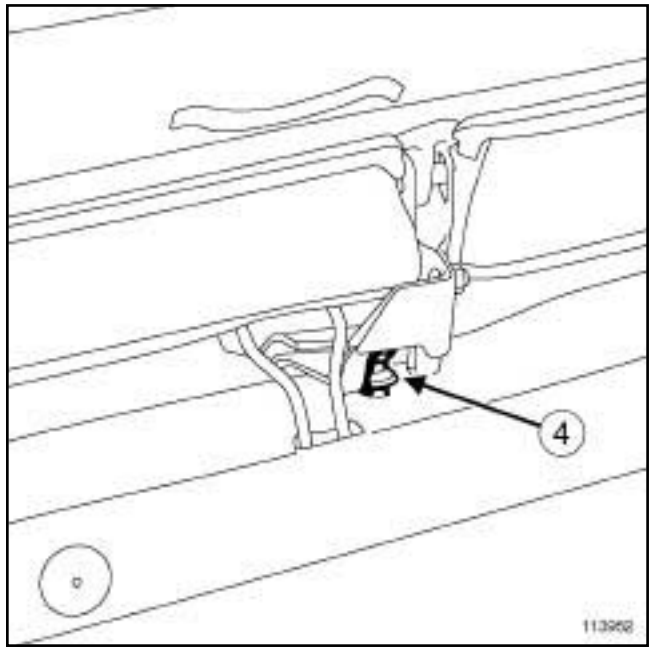


113952

- ❏ Loosen the bolt (**3**) from the central support of the single unit rear bench seatback.
- ❏ Remove the single unit rear bench seatback.
- ❏ This operation requires two people.

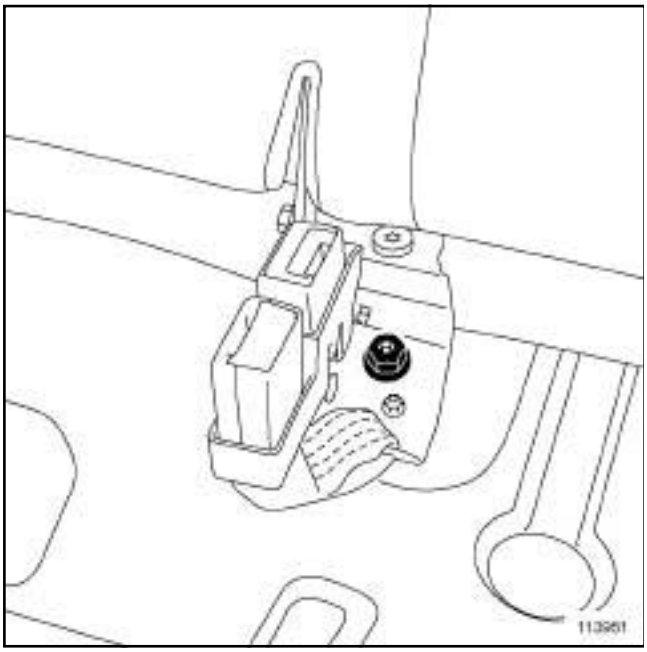
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113952

- ❏ Refit the single unit rear bench seatback.
- ❏ This operation requires two people.
- ❏ Fit bolt (**4**) .
- ❏ Lock the side locks using a flat-blade screwdriver.
- ❏ Torque tighten the **rear bolt of the seatback central support (21 Nm)**.



113951

❑ Refit and torque tighten the **front bolt of the seat-back central support (21 Nm)**.

II - FINAL OPERATION

❑ Refit the single unit rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) .

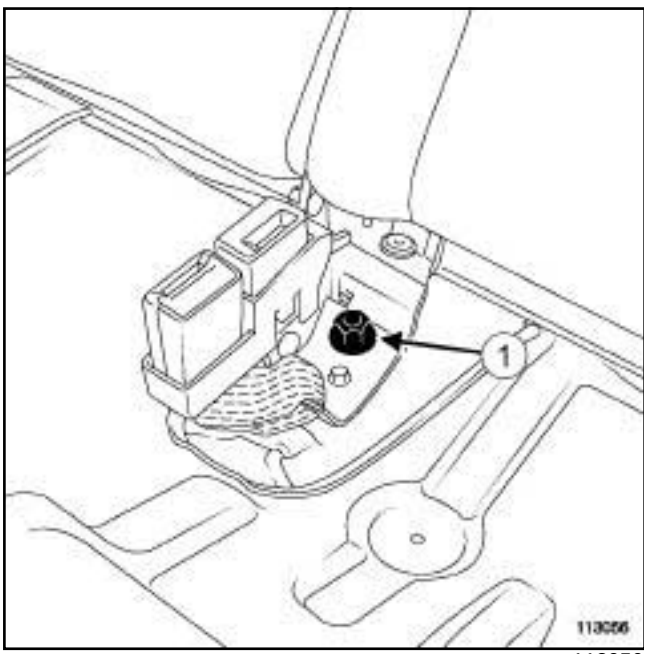
Tightening torques ▽	
bench seatback bolt	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lift up the rear bench seat bases (see **76A**, **Rear seat frames and mechanisms**, **1/3 and 2/3 rear bench seat base: Removal - Refitting**, page **76A-7**) .

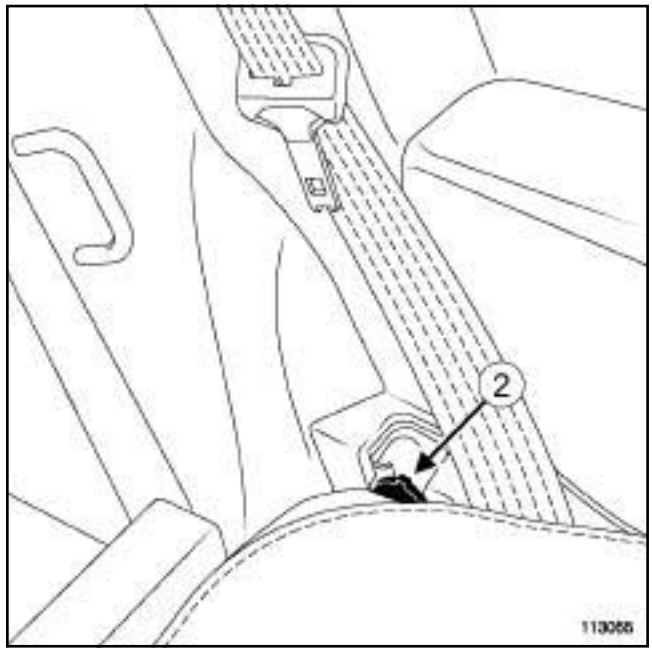
II - OPERATION FOR REMOVAL OF PART CONCERNED



113056

❏ Remove the bolt (**1**) .

❏ Tilt the bench seatbacks.



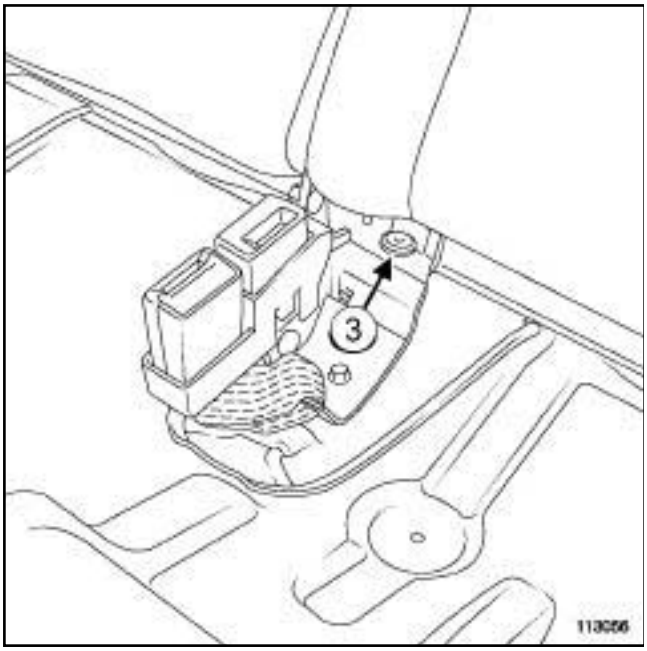
113055

❏ Unlock the side mountings (**2**) using a flat-blade screwdriver.

❏ Remove the rear bench seatback (this operation requires two people).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



113056

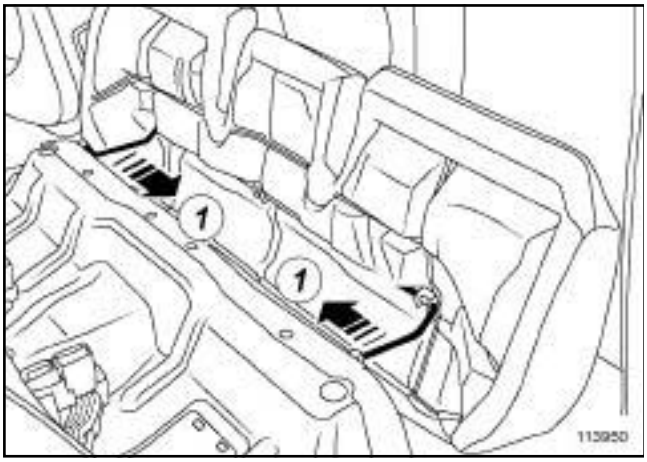
- ❏ Refit the rear bench seatback, making sure that it is inserted under the bolt (**3**) .
- ❏ Lock the side mountings ***(2)*** .
- ❏ Refit the bolt ***(1)*** .
- ❏ Torque tighten the **bench seatback bolt (21 Nm)**.

II - FINAL OPERATION

- ❏ Refit the rear bench seat bases (see **76A**, **Rear seat frames and mechanisms**, **1/3 and 2/3 rear bench seat base: Removal - Refitting**, page **76A-7**) .

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113950

❏ Tilt the single unit rear bench seat base.

❏ Unclip the seat base frame linkages (**1**) from the single unit rear bench seat.

❏ Remove the single unit rear bench seat base.

REFITTING

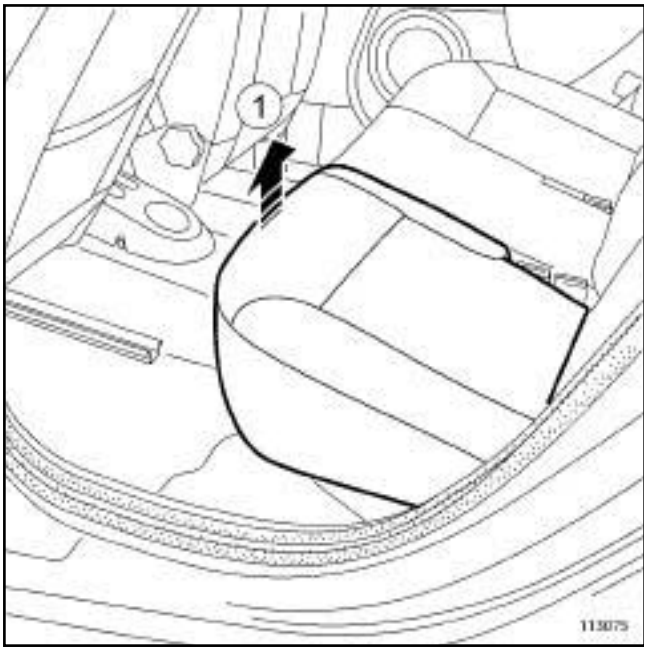
REFITTING OPERATION FOR PART CONCERNED

❏ Clip on the single unit rear bench seat base frame linkages.

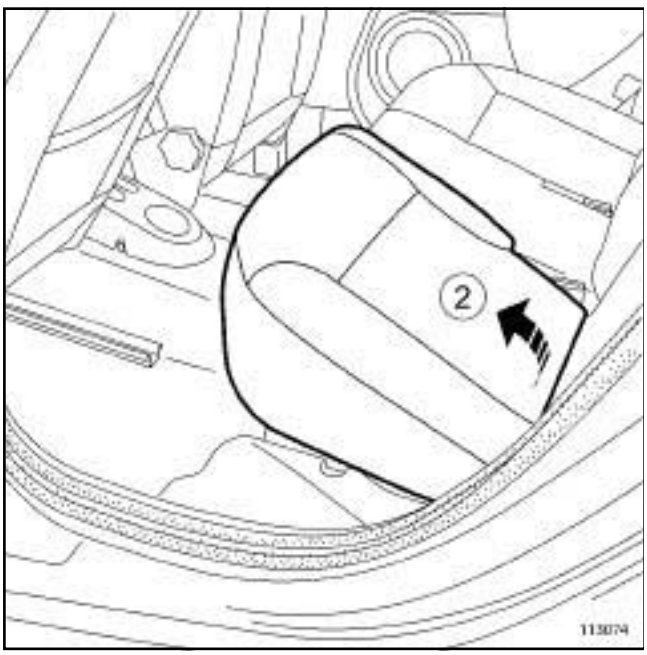
❏ Pull down the single unit rear bench seat seat base.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

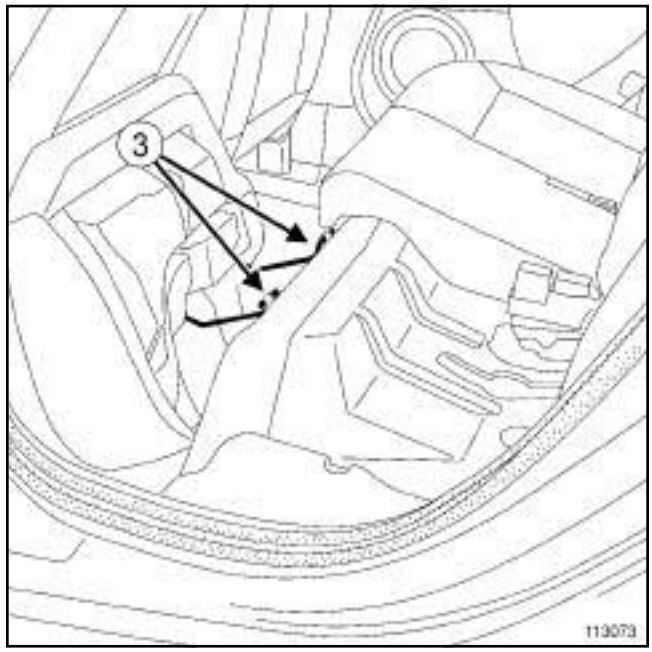


113075



113074

❏ Lift up the rear bench seat base (**1**) et (**2**) .



113073

❏ Unclip the two retaining parts on the rear bench seat base (**3**) .

❏ Remove the rear bench seat base.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Clip the two retaining parts on to the rear bench seat base.

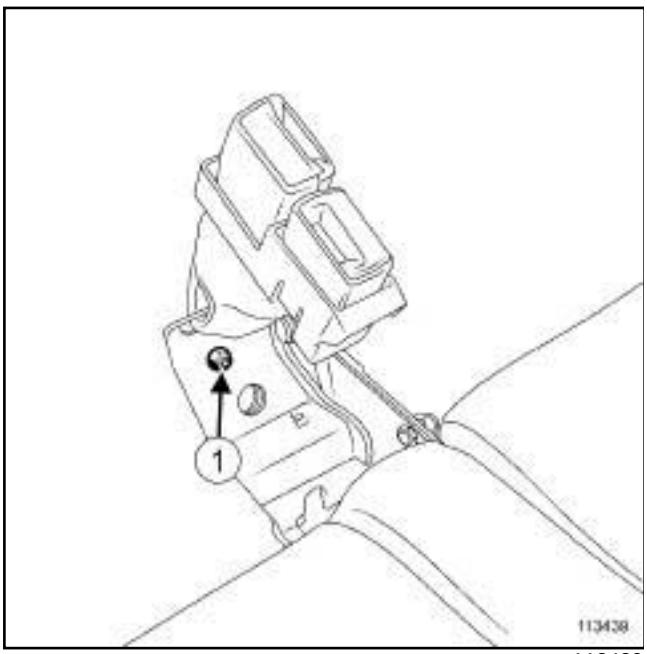
❏ Refit the rear bench seat base.

Tightening torques ▽	
centre retaining bracket nut	**21 Nm**
bench seat mounting nuts on the centre retaining bracket	**21 Nm**
seat belt buckle support mounting nut	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

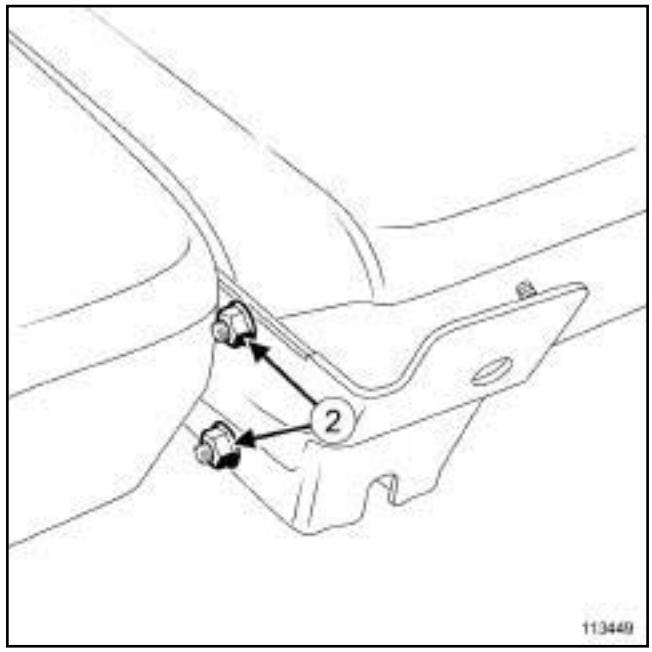
❏ Remove the complete rear bench seat (see) .



113439

❏ Remove:

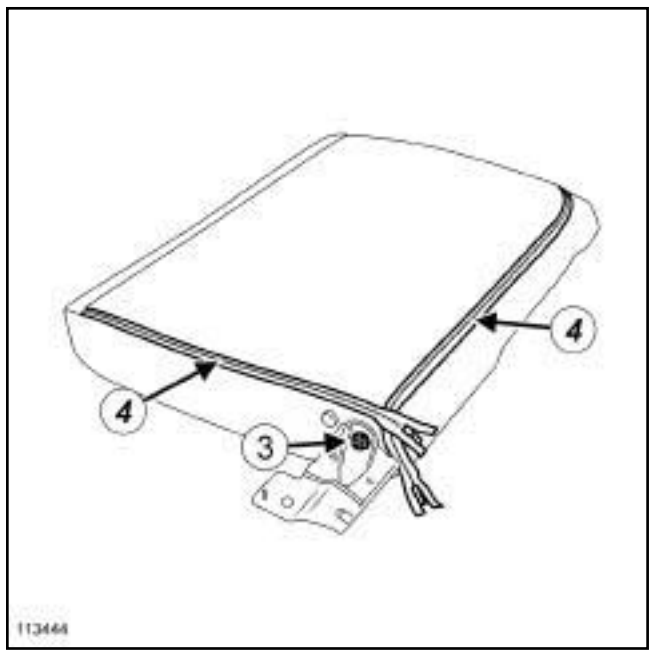
- the nut (**1**) ,
- the seat belt buckle support.



113449

❏ Remove nuts (**2**) .

❏ Separate the bench seatbacks.

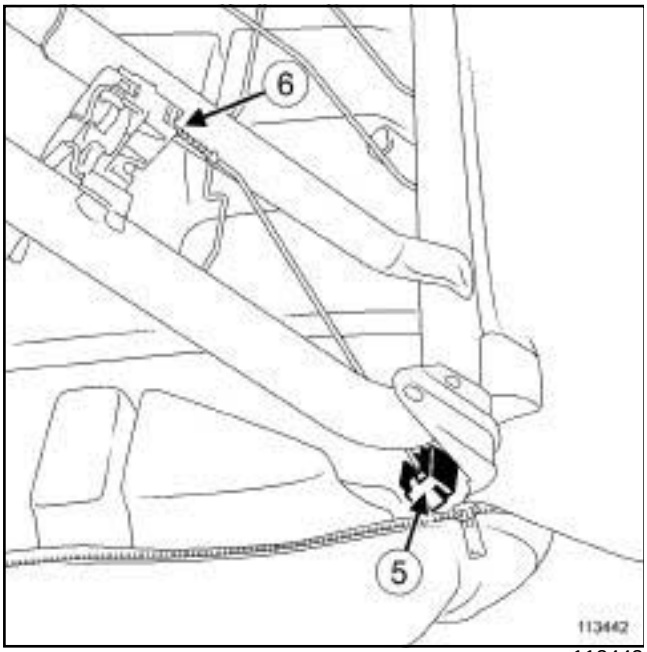


113444

❏ Remove nut (**3**) and remove the centre retaining bracket (depending on the side removed).

❏ Open the zip fasteners (**4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113442

❏ Unclip:

- the unlocking mechanism (**5**) ,
- the unlocking system (**6**) .

REFITTING

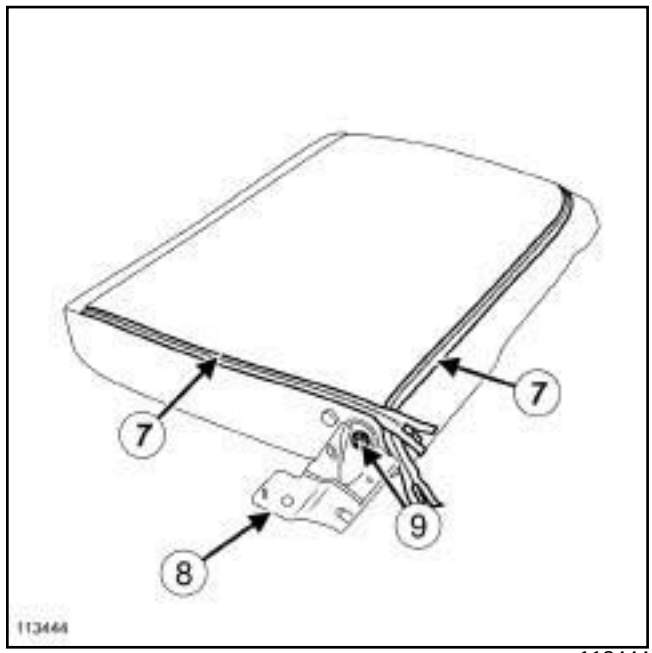
I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the unlocking system,
- the unlocking mechanism.

❏ Carry out a function test.

II - FINAL OPERATION

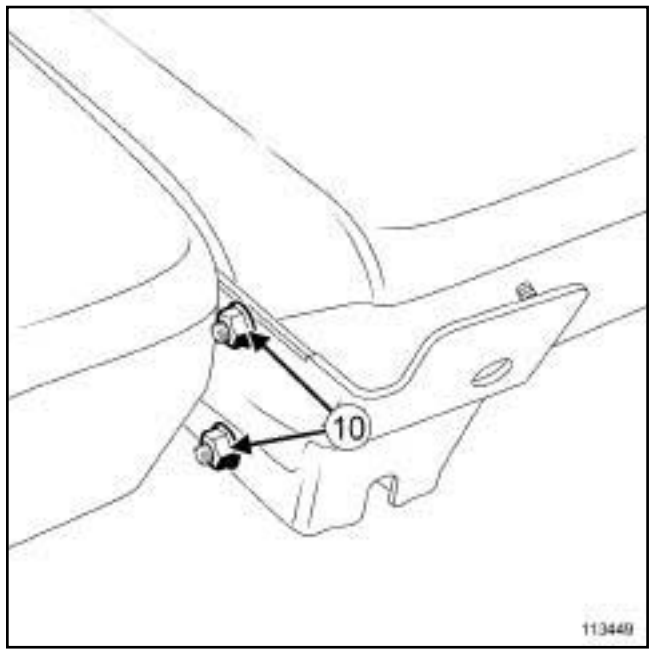


113444

❏ Close the zip fasteners (**7**) .

❏ Refit the centre retaining bracket (**8**) (depending on the side removed).

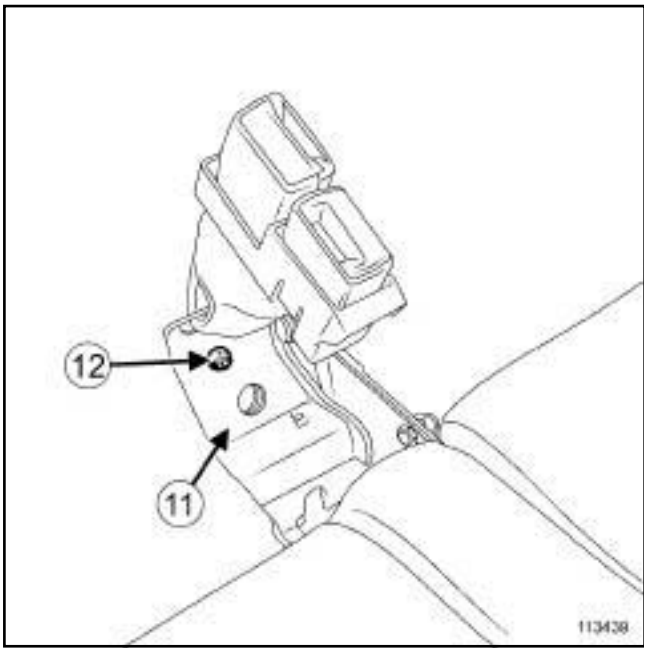
❏ Tighten to torque the **centre retaining bracket nut (21 Nm)**, (**9**) .



113449

❏ Assemble the bench seatbacks.

❏ Tighten to torque the **bench seat mounting nuts on the centre retaining bracket (21 Nm)**, (**10**) .



113439

❑ Refit the seat belt buckle support (**11**) .

❑ Tighten to torque the **seat belt buckle support mounting nut (8 Nm)**, (**12**) .

❑ Refit the complete rear bench seat (see) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

Equipment required
Diagnostic tool

❑

IMPORTANT
Before carrying out any work on a safety or proximity system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit (with the ignition on).

IMPORTANT
It is forbidden to work on pyrotechnic systems (pretensioner or airbag) near a source of heat or a naked flame; there is a risk of the airbags or pretensioners being triggered.

REMOVAL

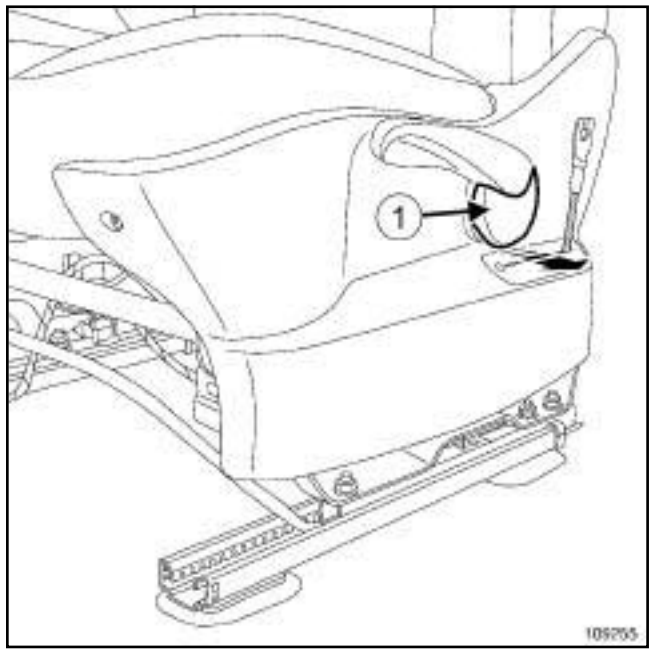
I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

❑ Disconnect the battery (see **Battery: Precautions for the repair**) (MR 392, 80A, Battery).

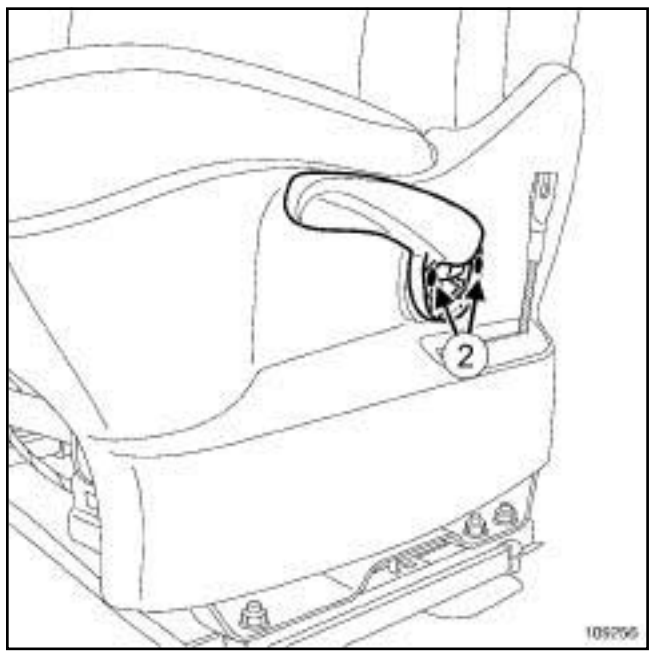
❑ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109255

❑ Unclip the cover (**1**) from the seat height adjustment handle.

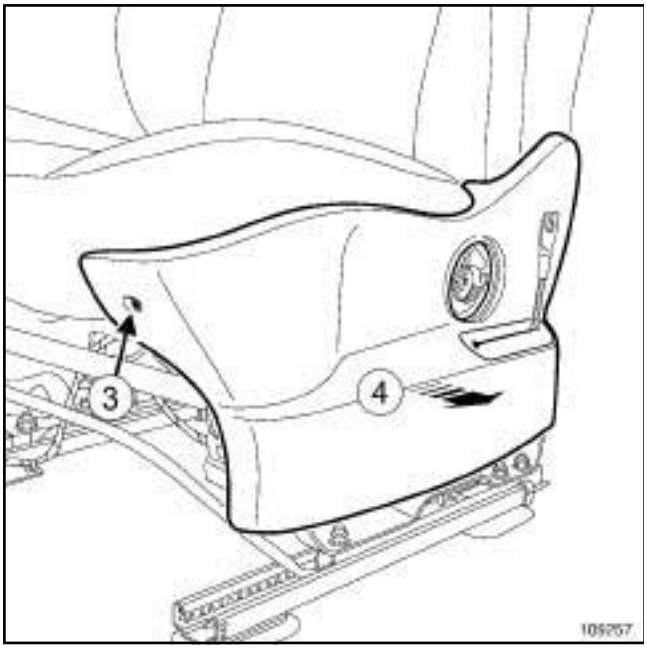


109256

❑ Remove:

- the bolts (**2**) ,
- the seat base height adjustment handle (depending on equipment level).

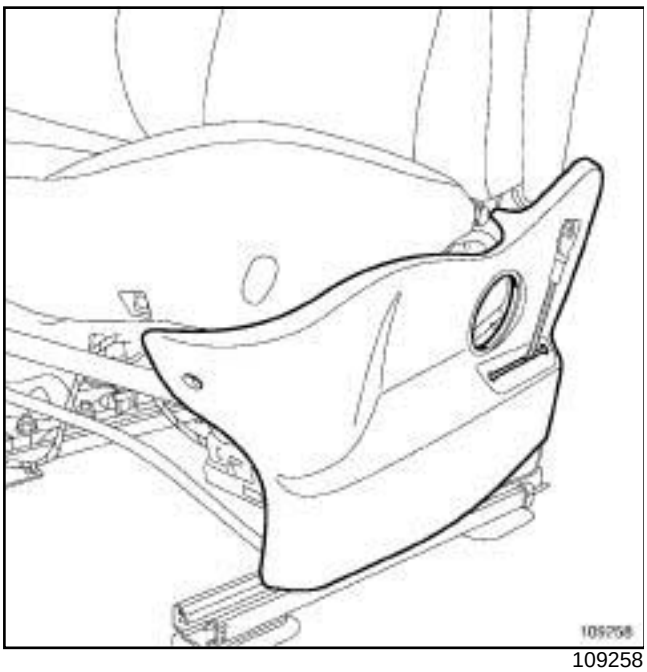
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



109257

❏ Remove the bolt (**3**) .

❏ Unclip the front section (**4**) of the trim.

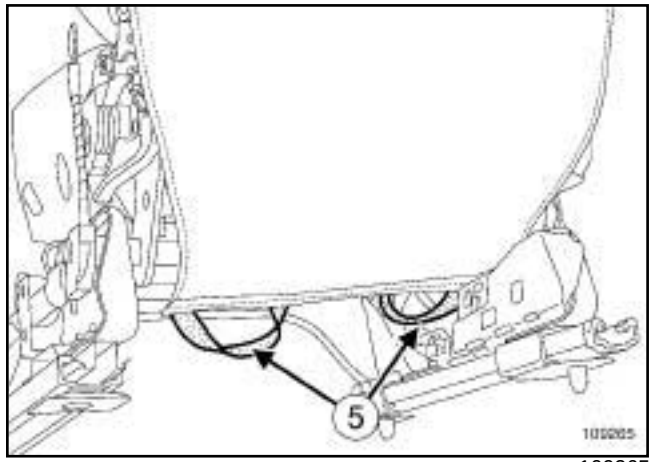


109258

❏ Unclip the rear section of the trim.

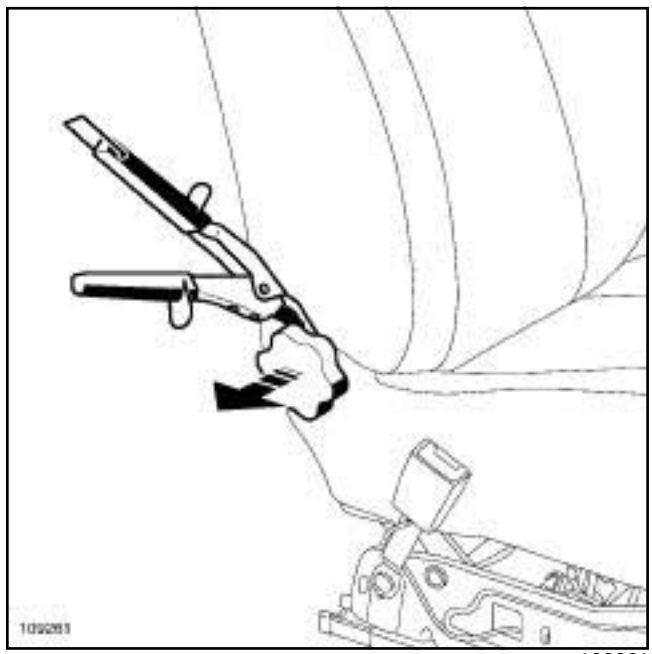
❏ Remove the trim.

❏ Disconnect the connector (depending on equipment level).



109265

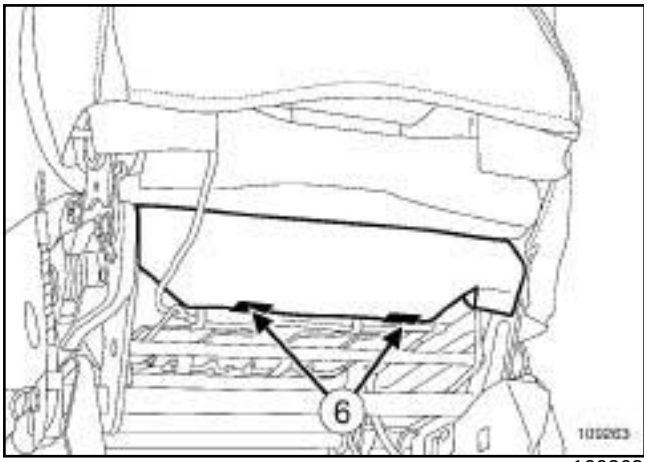
❏ Remove the elastic straps (**5**) securing the seatback cover.



109261

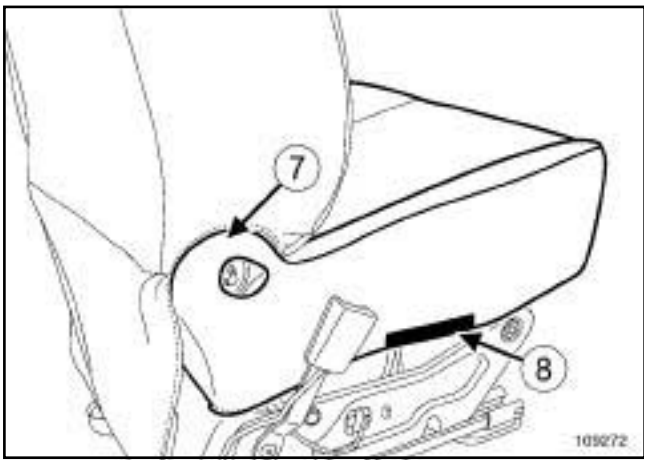
❏ Using a pair of unclipping pliers, unclip the seatback adjustment handle.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



109263

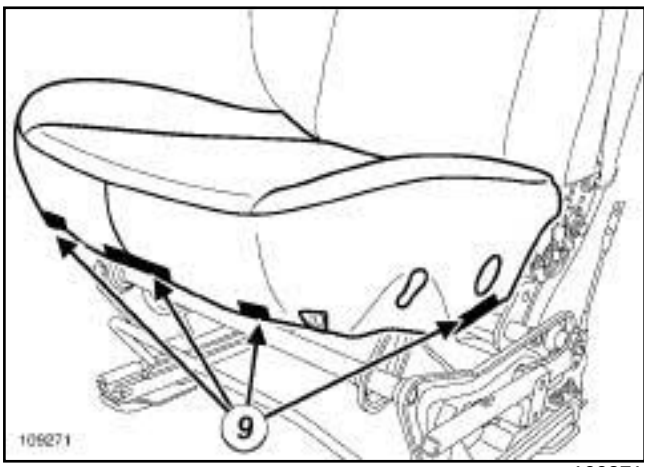
❏ Unclip the seat base cover retaining strips (**6**) .



109272

❏ Remove:

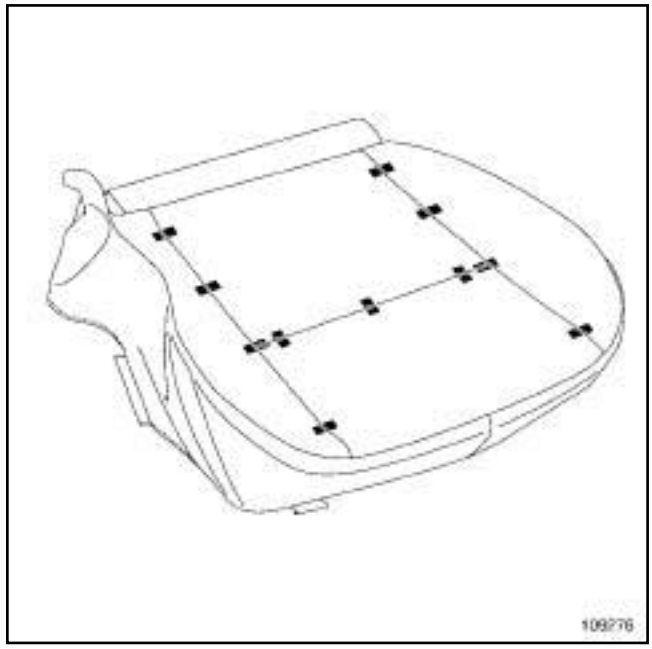
- the cover at (**7**) ,
- the retaining strip (**8**) .



109271

❏ Unclip the retaining strips (**9**) .

❏ Remove the « cover - foam » assembly.

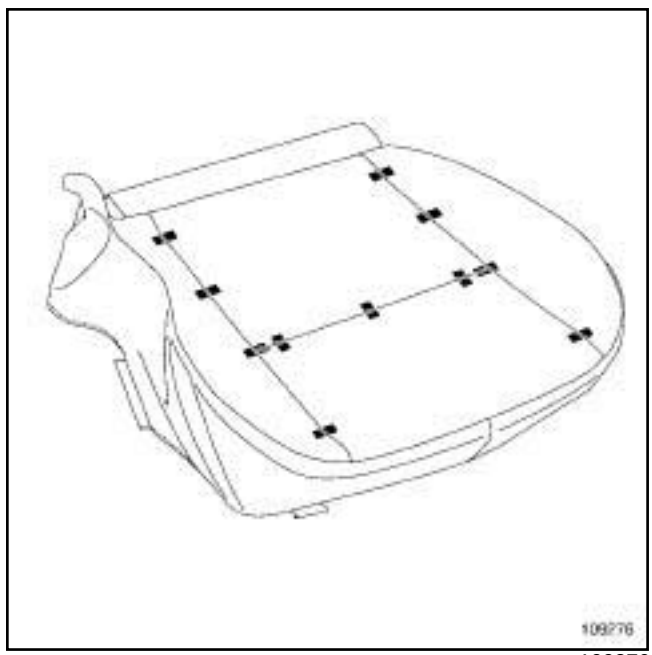


109276

❏ Turn the seat base cover over and cut the clips.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



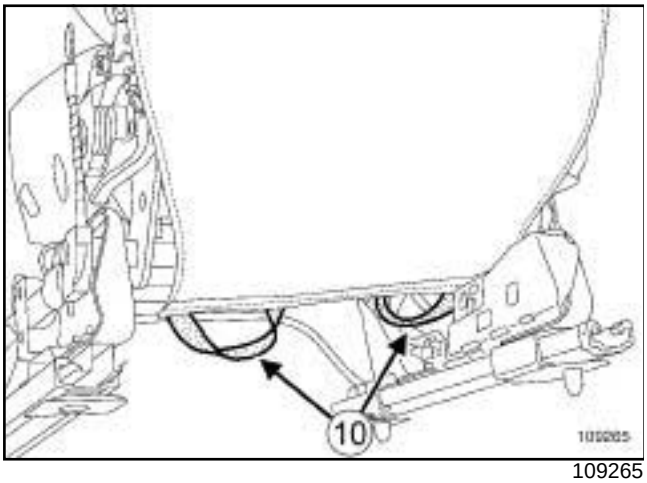
109276

❏ Refit:

- the mounting clips,
- the « cover-foam » assembly,
- the retaining strips,

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

- the seatback adjustment handle.



109265

❑ Reattach the elastic straps (**10**) securing the seatback cover.

❑ Fit:

- the side housing,
- the height adjustment handle.

II - FINAL OPERATION.

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Precautions for the repair**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbag and pretensioners).

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Special tooling required	
Car. 1363	Set of trim removal levers.
Car. 1521	Clip crimping pliers.

Equipment required
Diagnostic tool

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

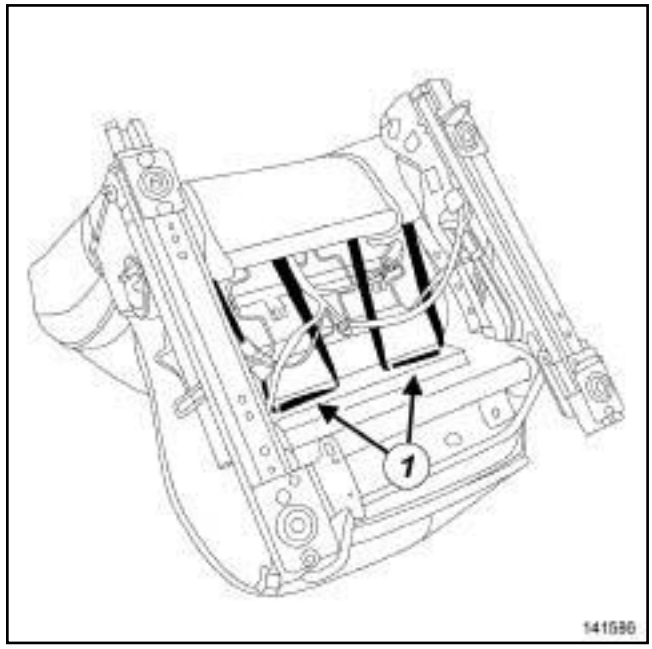
❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

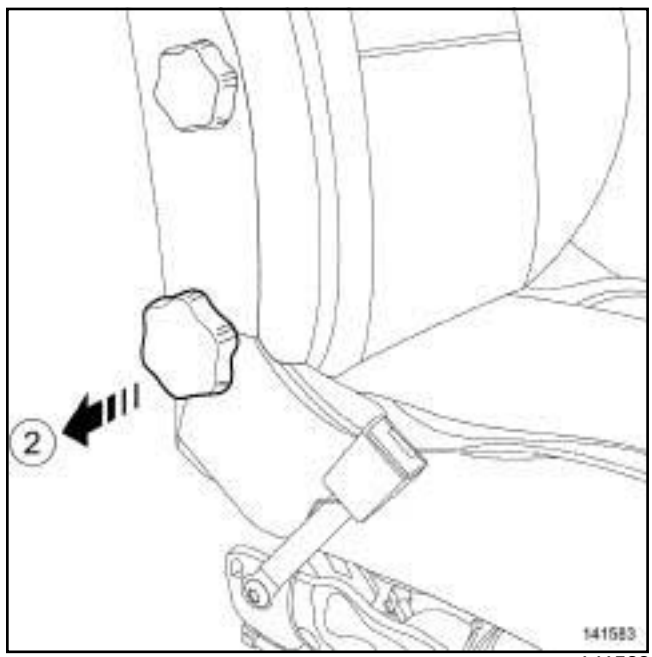
❑ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Remove the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .



141586

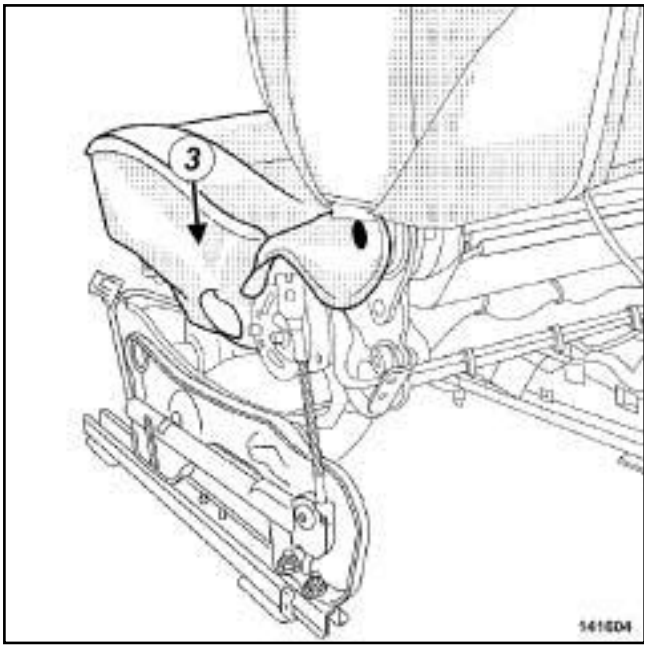
❑ Remove the elastic securing straps (**1**) from the seatback cover.



141583

❑ Unclip the front seatback angle adjustment control at (**2**) using the tool **(Car. 1363)**.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

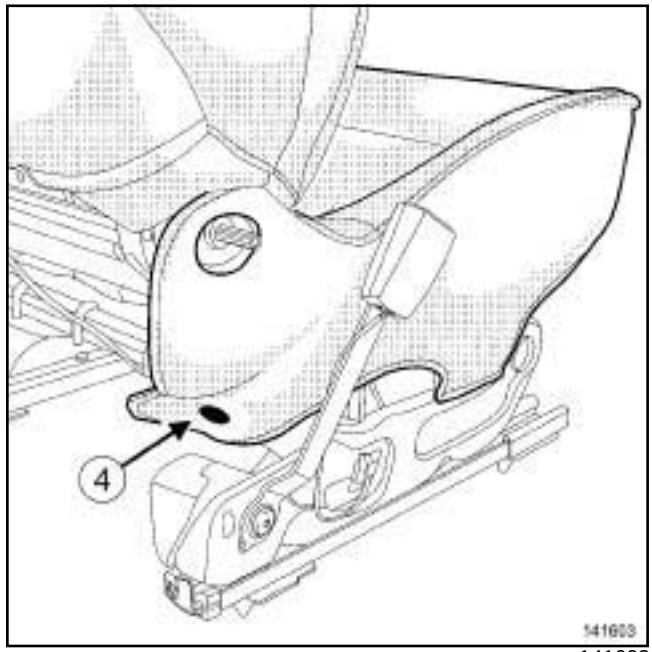


141604

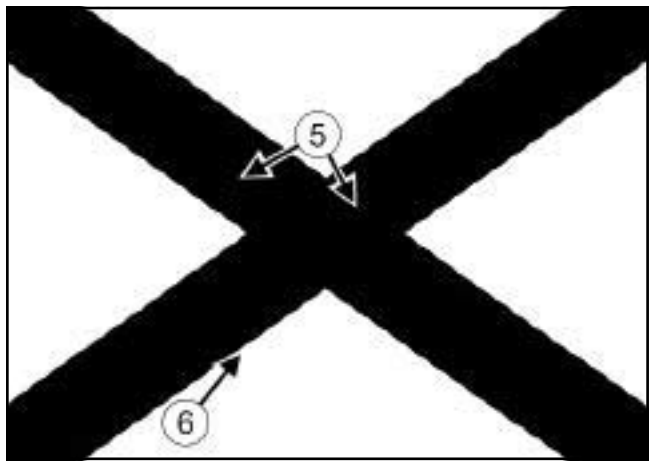
❏ Unclip the retaining clip (**3**) from the front seat base cover using the tool **(Car. 1363)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED

B85



141603



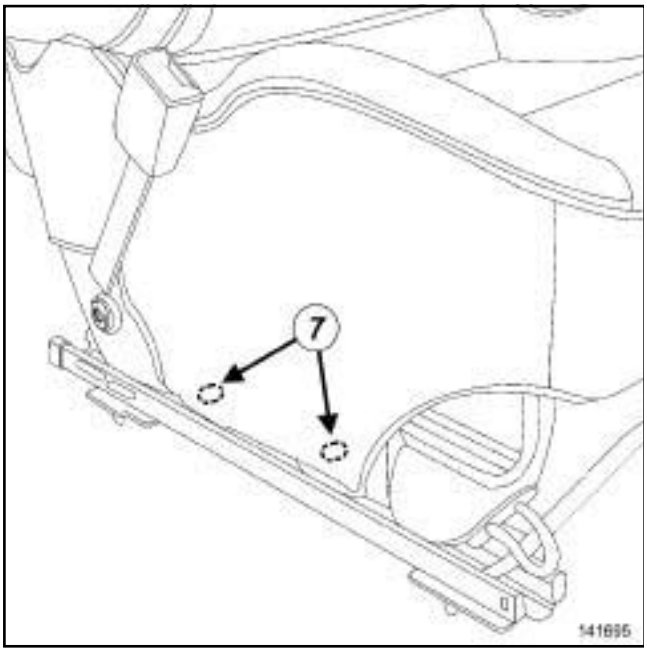
141602

❏ Unclip:

- the retaining clip (**4**) from the front seat base cover using the tool **(Car. 1363)**,
- the side retaining sections (**5**) of the front seat base cover,
- the front retaining section (**6**) of the front seat base cover.

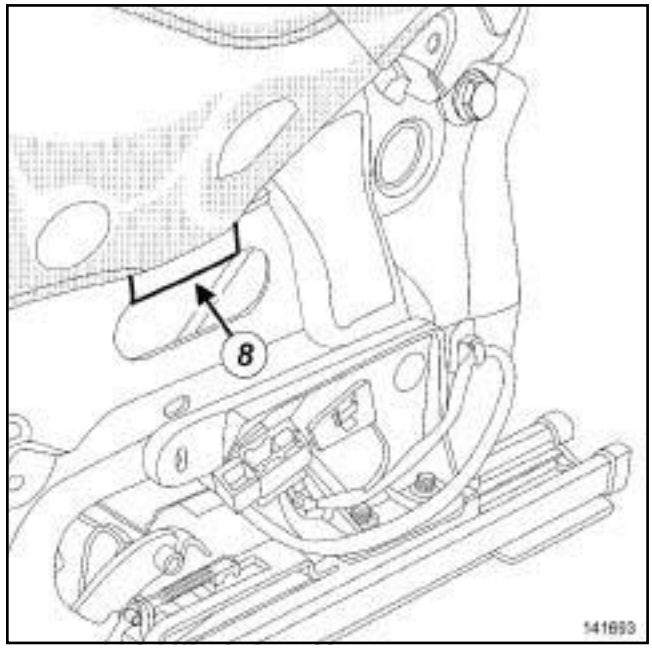
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

C85

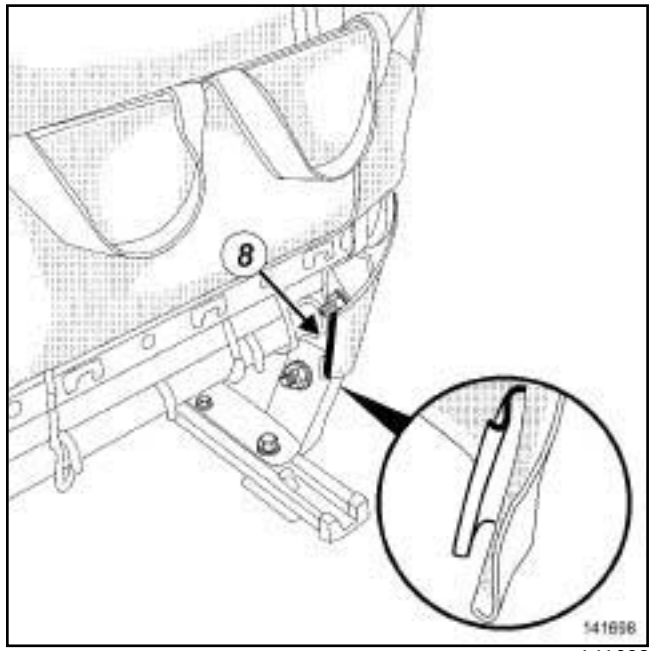


141695

❑ Unclip the clips (**7**) of the front seat base trim using the tool **(Car. 1363)**.



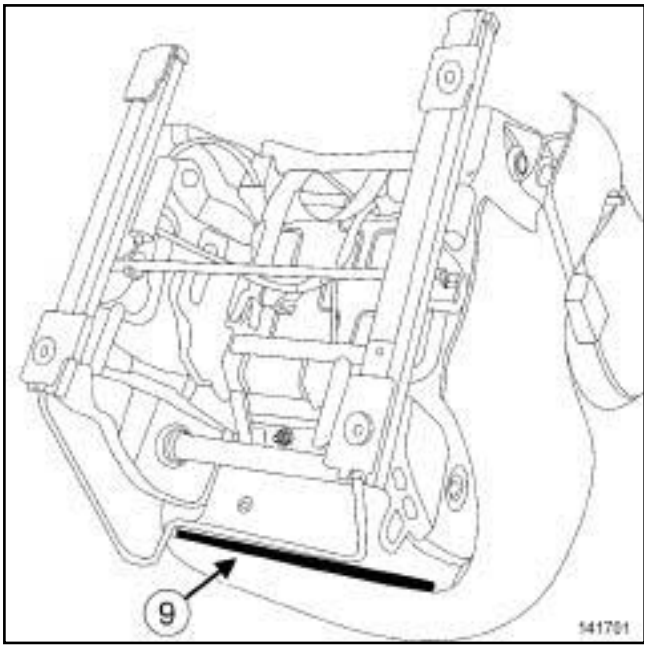
141693



141698

❑ Unclip the side retaining sections (**8**) of the front seat base cover.

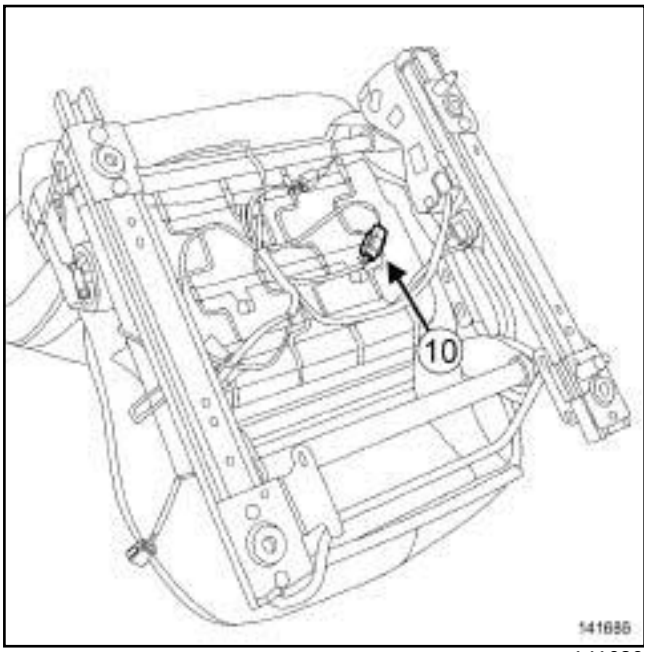
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141701

❑ Unclip the front retaining section (**9**) of the front seat base cover.

FRONT SEAT WITH HEATING

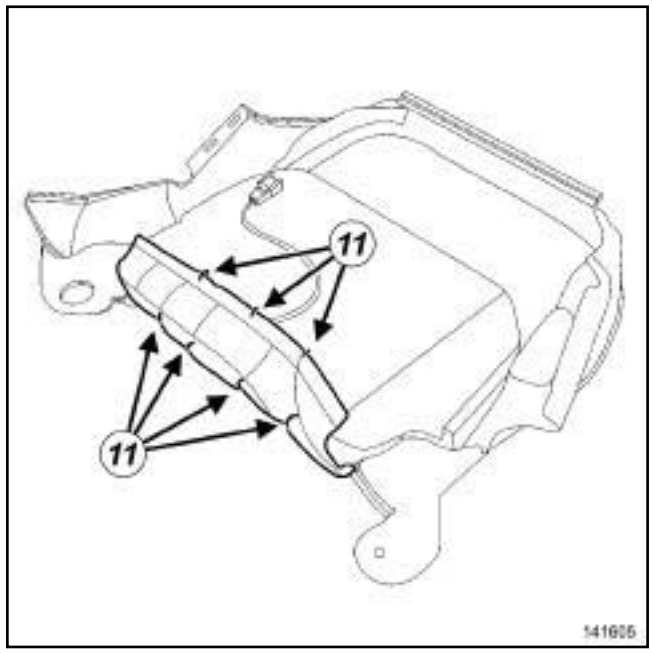


141686

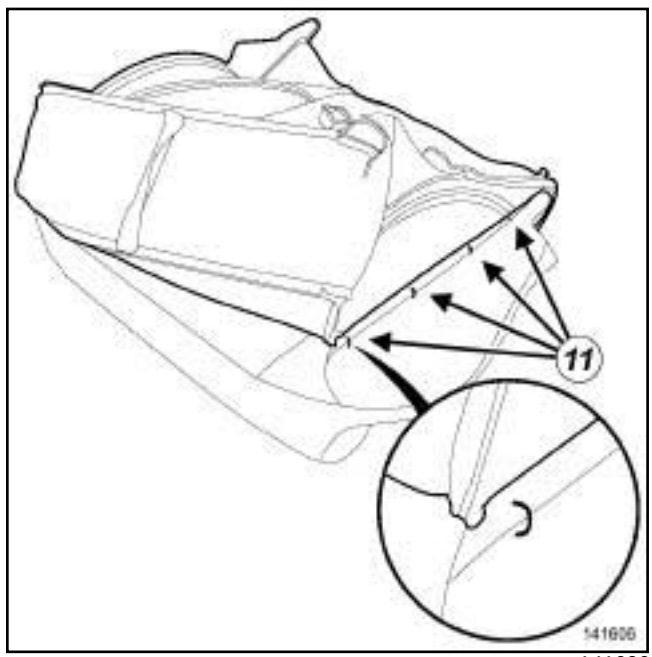
❑ Unclip the heated pad connector (**10**) .

❑ Disconnect the heated pad connector (**10**) .

❑ Remove the « cover - foam » assembly from the front seat base.



141605

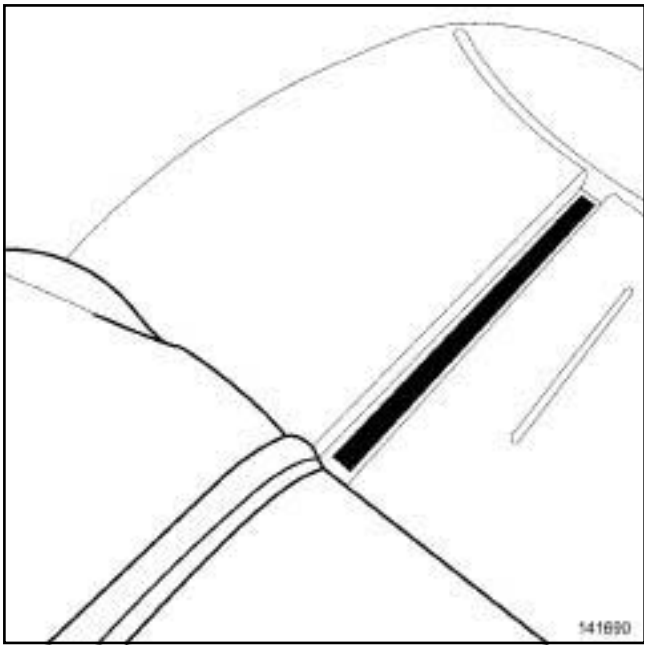


141606

❑ Rotate the « cover - foam» assembly of the front seat base.

❑ Cut the clips (**11**) on the front seat base trim.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141690

❑ Remove the front seat base cover.

Note:

When separating the « cover - foam » , hold the Velcro strips.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Seat trim clip**.

WARNING

To avoid any risk of damaging the seat trims and mechanisms, remove any metal residues of the seat trim clips.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front seat base cover.

❑ Fit the new seat trim clips using the tool **(Car. 1521)** on the side section.

❑ Refit the front seat base cover on the centre velcro strip.

❑ Fit the new seat trim clips using the tool **(Car. 1521)** on the opposite side section.

❑ Fold the cover over the foam starting with the front corners.

❑ Pass one hand between the cover and the foam to ensure that the side sections of the seat base foam are correctly positioned

❑ Check that there are no folds in the cover.

❑ Fit the new seat trim clips using the tool **(Car. 1521)** on the rear section.

❑ Refit the « cover - foam » assembly of the front seat base.

FRONT SEAT WITH HEATING

❑ Connect the heated pad connector ***(10)*** .

❑ Clip on the heated pad connector ***(10)*** .

B85

❑ Clip:

- the front retaining section ***(6)*** of the front seat base cover,
- the side retaining sections ***(5)*** of the front seat base cover,
- the retaining clips ***(4)*** of the front seat base cover.

C85

❑ Clip:

- the front retaining section ***(9)*** of the front seat base cover,
- the side retaining sections ***(8)*** of the front seat base cover,
- the clips ***(7)*** on the front seat base trim.

❑ Clip on the retaining clip ***(3)*** of the front seat base cover.

III - FINAL OPERATION

❑ Clip on the front seatback angle adjustment control.

❑ Refit:

- the elastic straps ***(1)*** securing the seatback cover,
- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❏ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

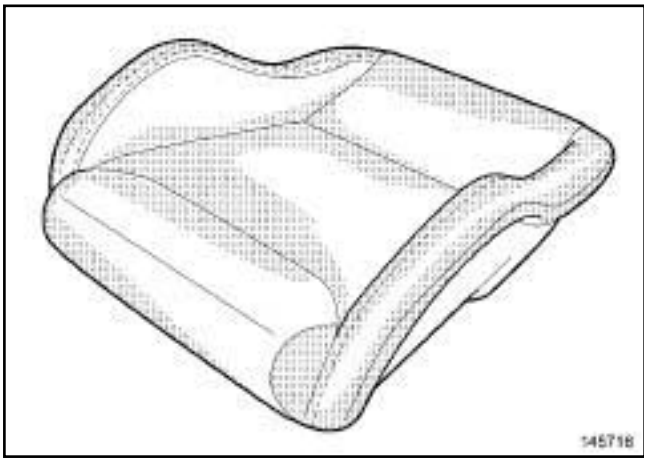
❏ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

SPORT FRONT SEATS

Tightening torques ▽	
new seat base frame bolts on the front seat base shell	24 N.m



145718

Note:

The Parts Department delivers the front seat base cover assembled with the shell.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) (80A, Battery).

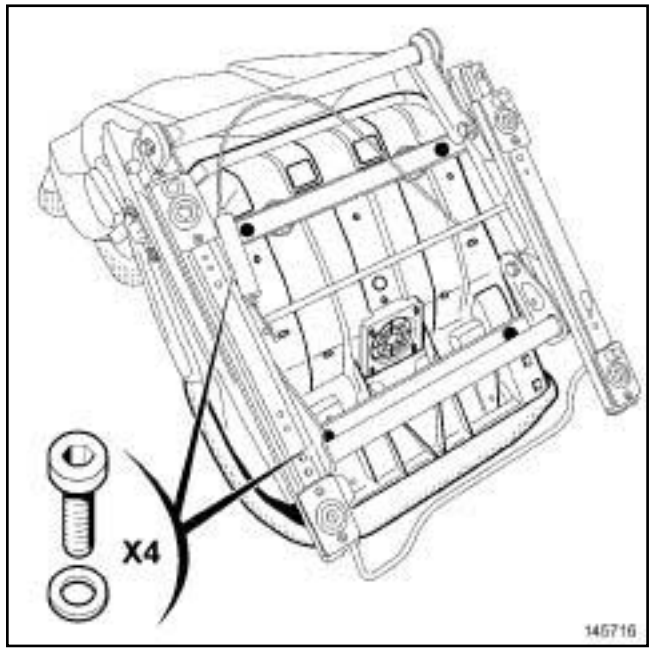
❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

Note:

Mark the routing of the front seat base electrical wiring.

❏ Unclip the clips of the front seat base electrical wiring.

II - REMOVAL OPERATION



145716

❏ Remove:

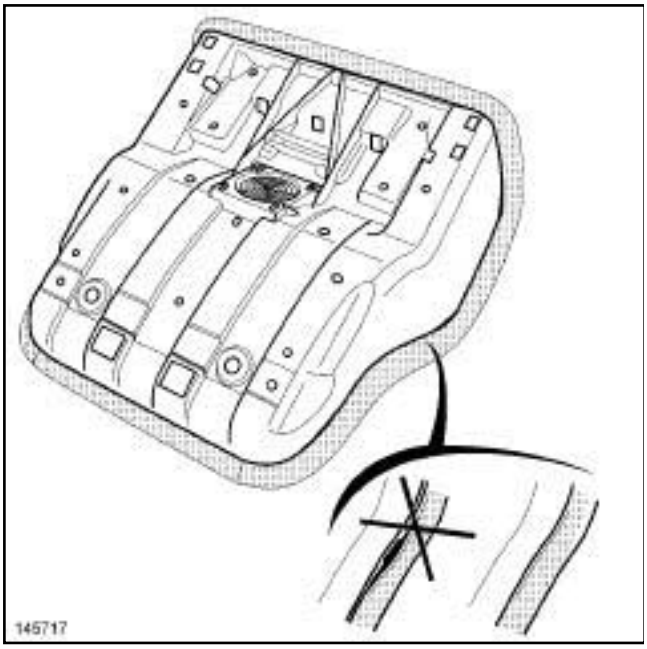
- the seat base frame bolts on the front seat base shell,
- the « foam - cover - shell» assembly of the front seat base.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Front seat base bolt**.

SPORT FRONT SEATS



145717

❑ Check that the seat base cover edge is correctly tucked into the front seat base shell.

> Note:
>
> If the seat base cover is detached from the front seat base shell, clip the retaining sections on the edge of the front seat base shell using a mallet.

II - REFITTING OPERATION

❑ Refit the « foam - cover - shell » assembly of the front seat base.

❑ Torque tighten the **new seat base frame bolts on the front seat base shell (24 N.m)**.

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

Equipment required
Diagnostic tool

❑

IMPORTANT
Before carrying out any work on a safety or proximity system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated, all the trigger lines are disabled and the airbag instrument panel warning light is continuously lit when the ignition is switched on.

IMPORTANT
It is forbidden to work on pyrotechnic systems (pretensioner or airbag) near a source of heat or a naked flame; there is a risk of the airbags or pretensioners being triggered.

REMOVAL

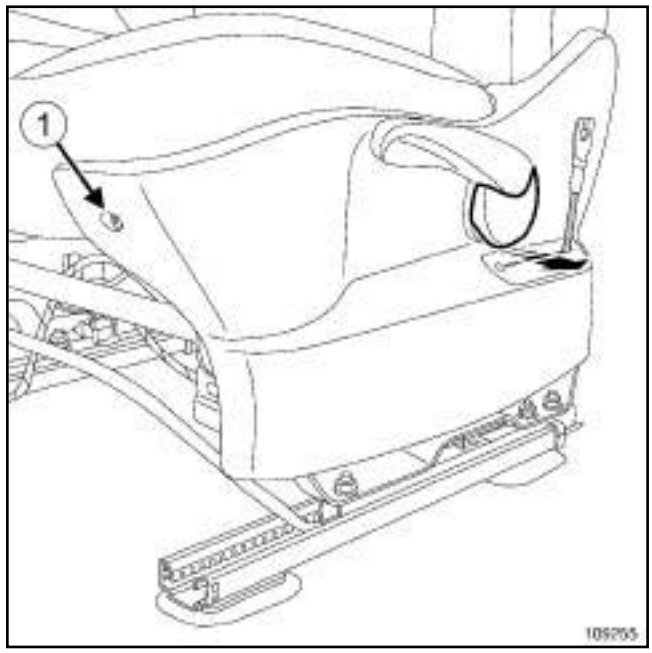
I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

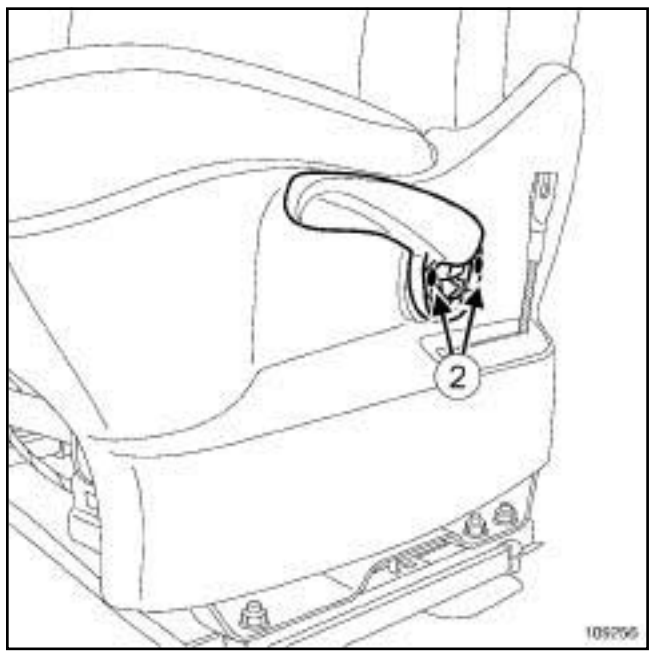
❑ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109255

❑ Unclip the cover (**1**) from the seat height adjustment handle.

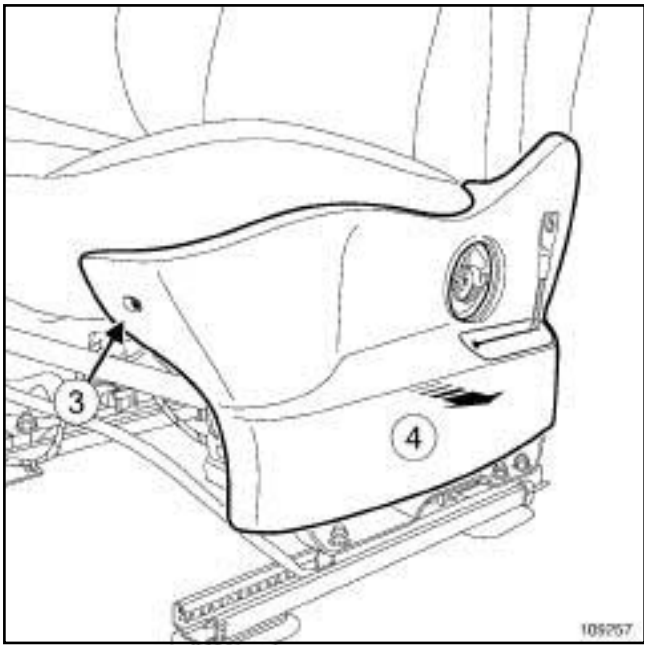


109256

❑ Remove:

- the bolts (**2**) ,
- the seat base height adjustment handle (depending on equipment level).

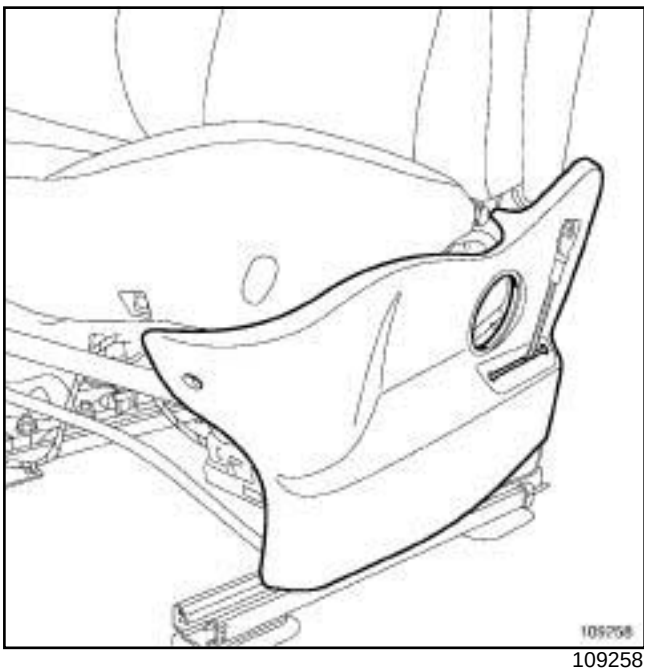
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



109257

❏ Remove the bolt (**3**) .

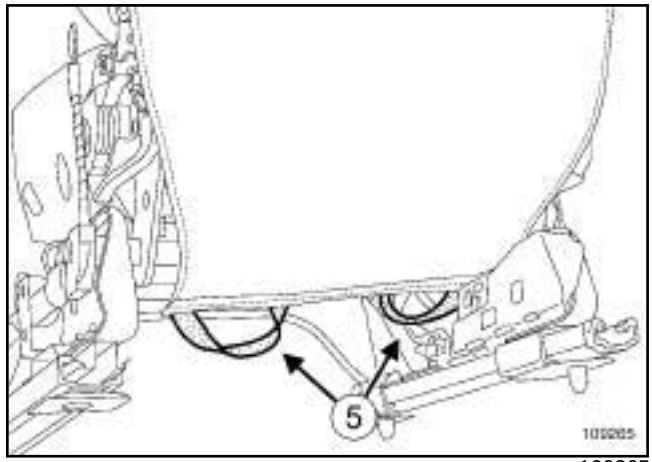
❏ Unclip the front section (**4**) of the trim.


109258

❏ Unclip the rear section of the trim.

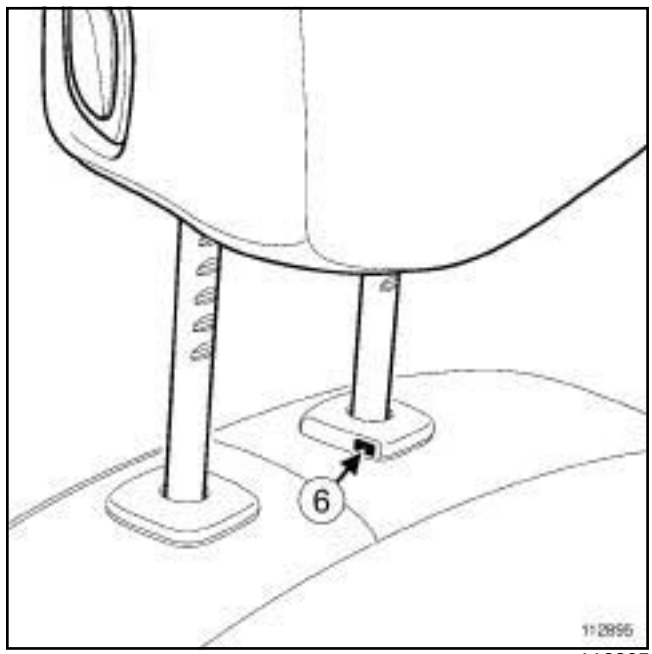
❏ Remove the trim.

❏ Disconnect the connector (depending on equipment level).



109265

❏ Remove the elastic straps (**5**) securing the seatback cover.



112895

❏ Unlock the headrest through the opening (**6**) using a small flat-blade screwdriver.

❏ Remove the headrest.

❏ Remove the lumbar adjustment lever using a pair of unclipping pliers (depending on the equipment level).

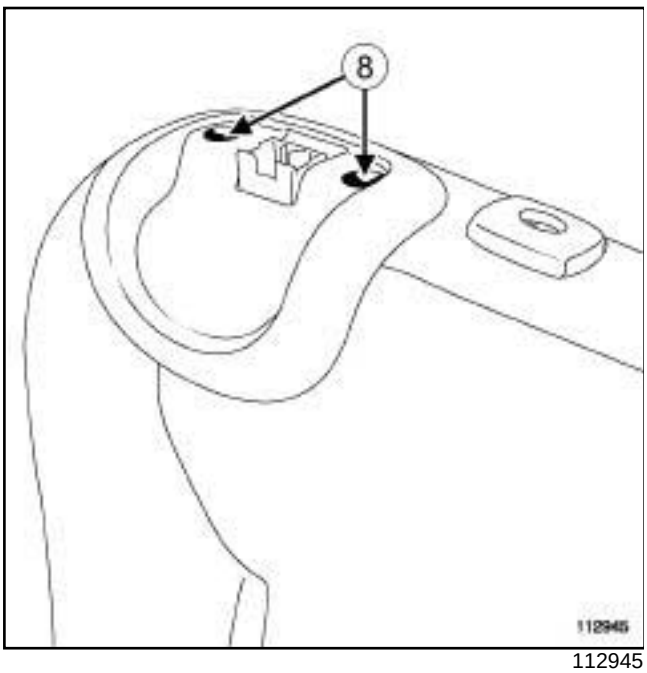
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

C85

112944

❏ Remove the bolt (**7**) .

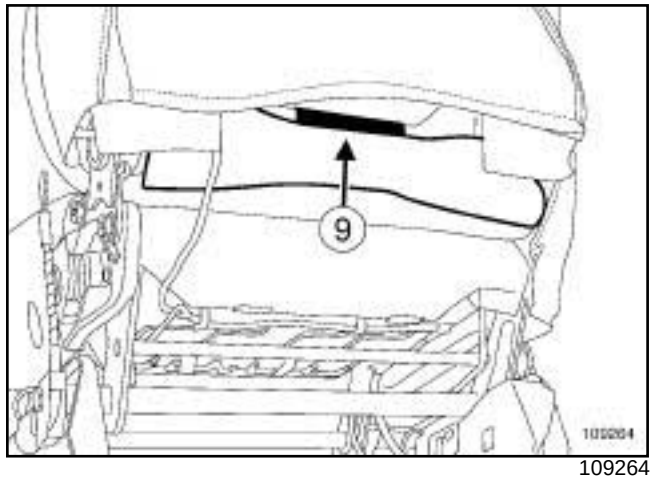
❏ Take out the seatback unlocking mechanism.



112945

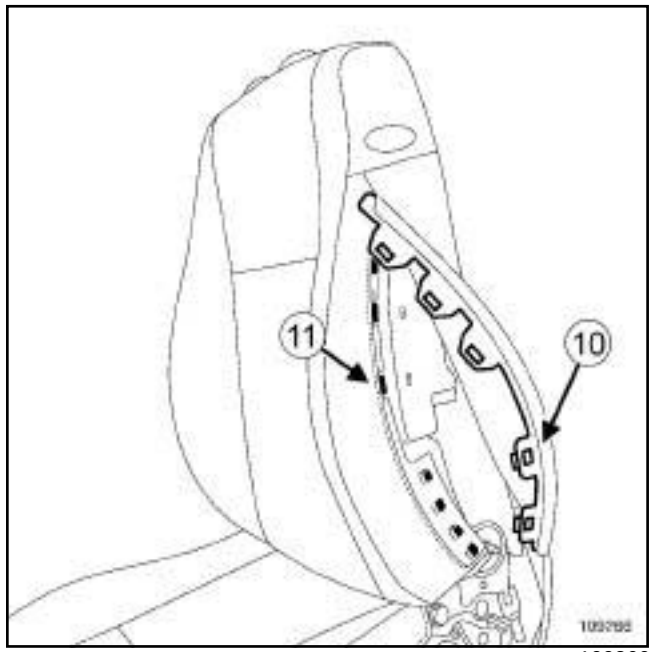
❏ Remove the bolts (**8**) .

❏ Take out the seatback unlocking mechanism support.



109264

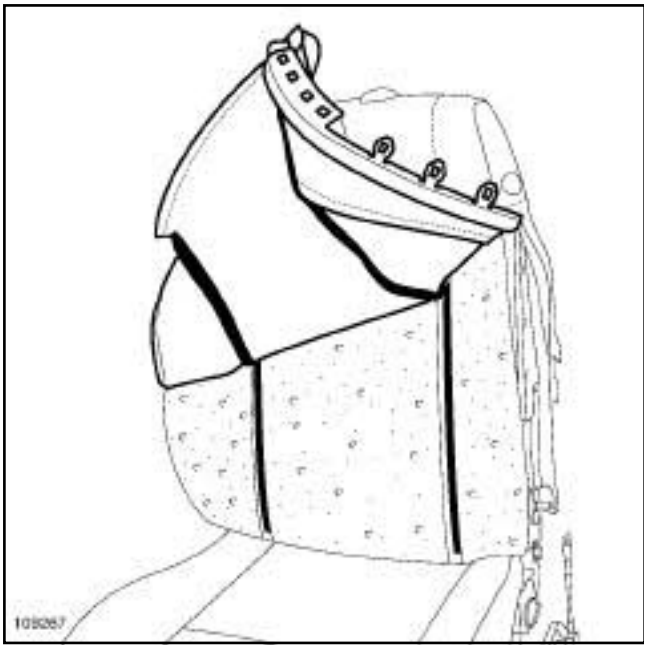
❏ Unclip the retaining section (**9**) from the seatback cover.



109266

❏ Carefully undo the cover clips on the airbag module (**10**) and (**11**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

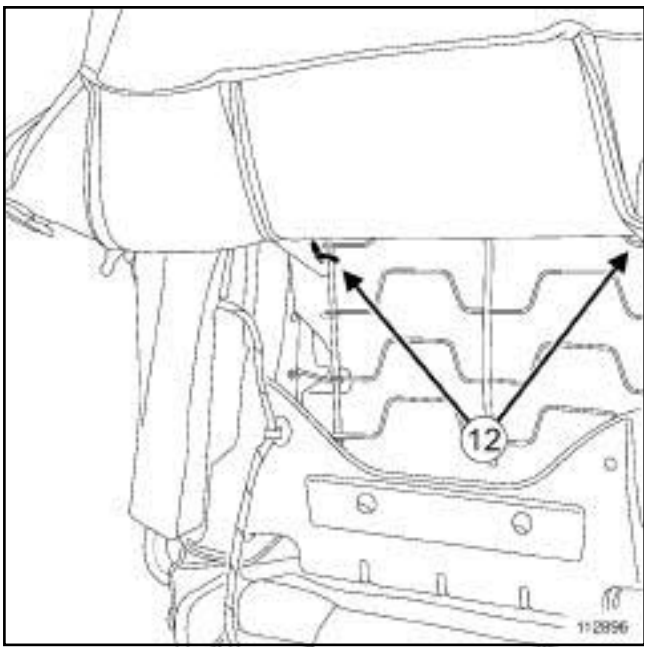


109267

❑

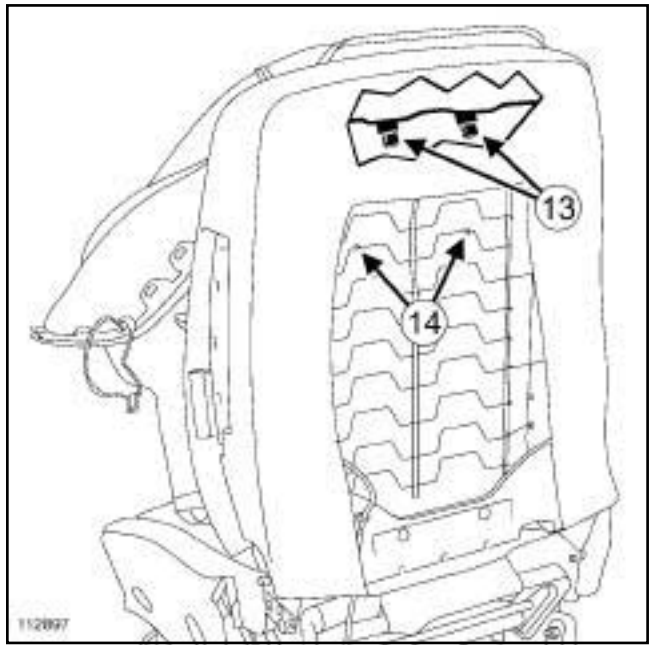
WARNING

Carefully remove the cover, keeping the velcro strips attached to the foam to avoid damaging the seatback foam.



112896

❑ Lift the rear section of the seatback cover and cut the clips (**12**) as necessary.



112897

❑ Unclip the head rest guides (**13**) .

❑ Cut the clips (**14**) .

❑ Remove the « foam-cover » assembly.

❑ Disconnect the heated pad connector (depending on the equipment level).

❑ Separate the cover from the seatback foam.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑

WARNING

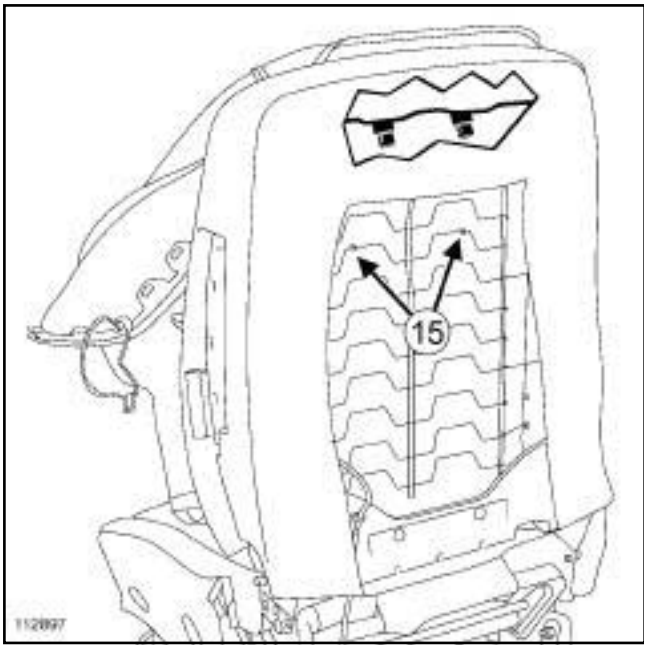
Before refitting the seatback cover, check that the Velcro strips are securely glued to the seatback foam.

❑ Refit the cover to the seatback foam

❑ Connect the heated pad connector (depending on the equipment level).

❑ Refit the « foam-cover » assembly.

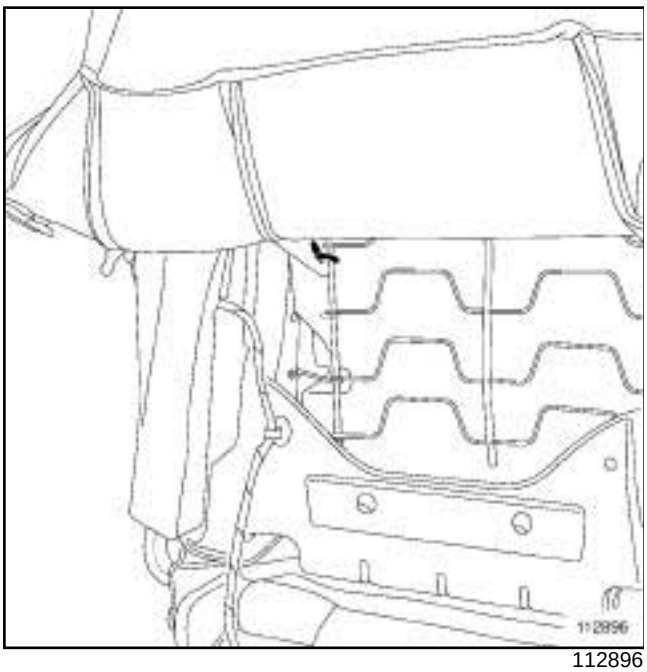
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1



112897

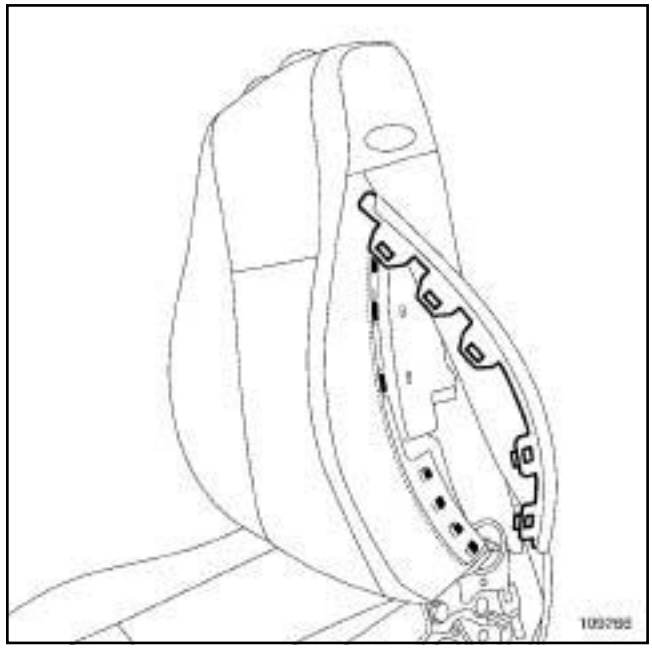
❏ Clip on the headrest guides.

❏ Fit the clips (**15**) .



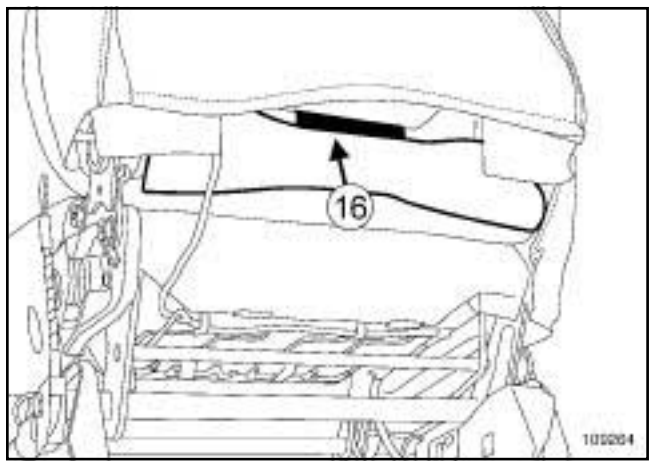
112896

❏ Refit the clips on the rear section of the seatback.



109266

❏ Clip the cover clips back onto the airbag module.



109264

❏ Clip in the retaining section (**16**) .

C85

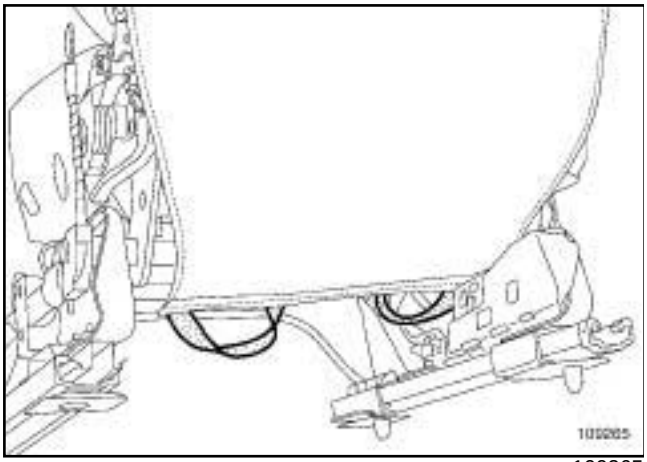
❏ Refit:

- the seatback unlocking mechanism support,
- the seatback unlocking control.

❏ Refit:

- the lumbar adjustment lever (depending on the equipment level),
- the head rest

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1


109265

❑ Refit:

- the elastic securing straps,
- the side housing,
- the seat base height adjustment handle (depending on equipment level).

II - FINAL OPERATION

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Special tooling required	
Car. 1363	Set of trim removal levers.
Car. 1521	Clip crimping pliers.

Equipment required
Diagnostic tool

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - OPERATION FOR REMOVAL OF PART CONCERNED

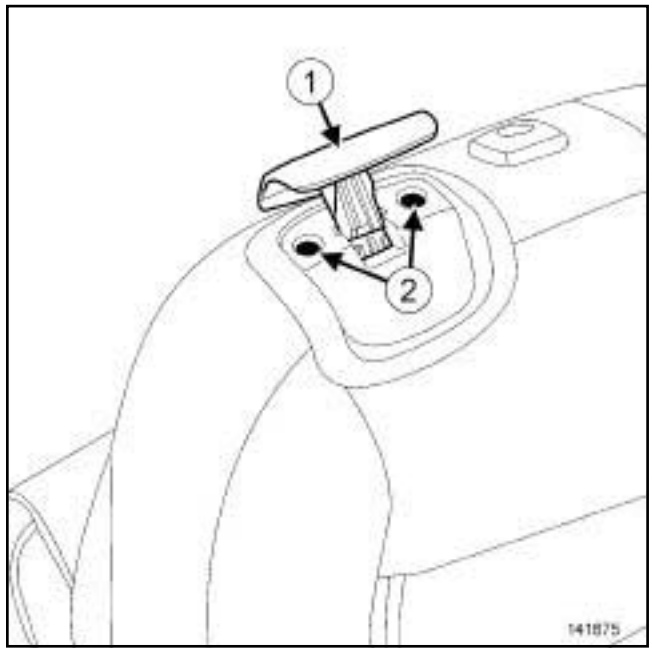
❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) .

C85



141675

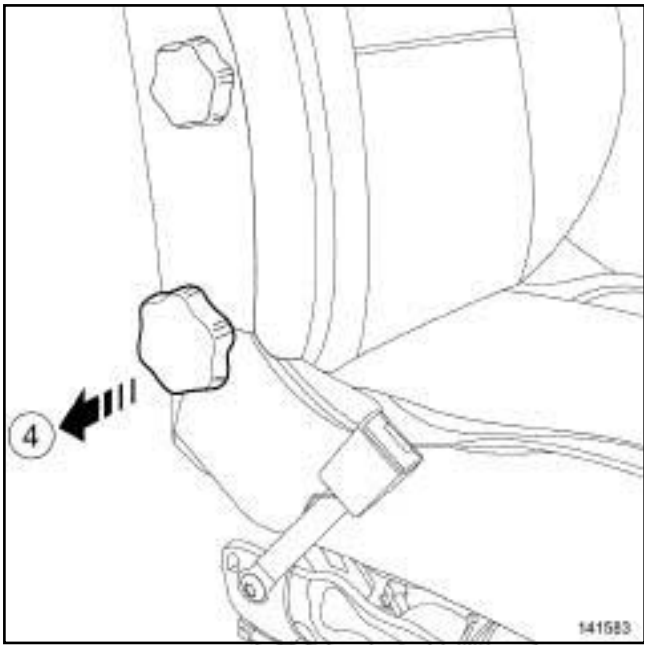
❏ Raise the rear seat access control (**1**) .

❏ Remove the bolts (**2**) of the rear seat access control.

141676

❏ Remove the rear seat access control at (**3**) .

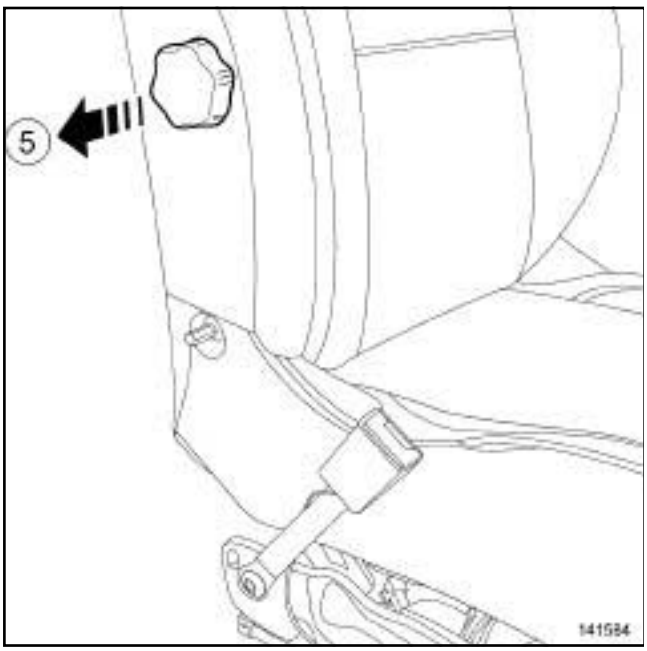
WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141583

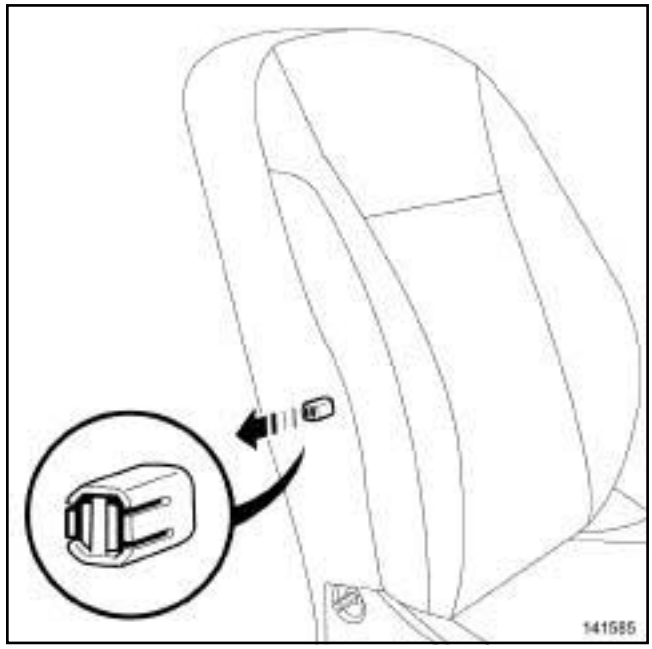
❏ Unclip the front seatback angle adjustment control at (**4**) .

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05



141584

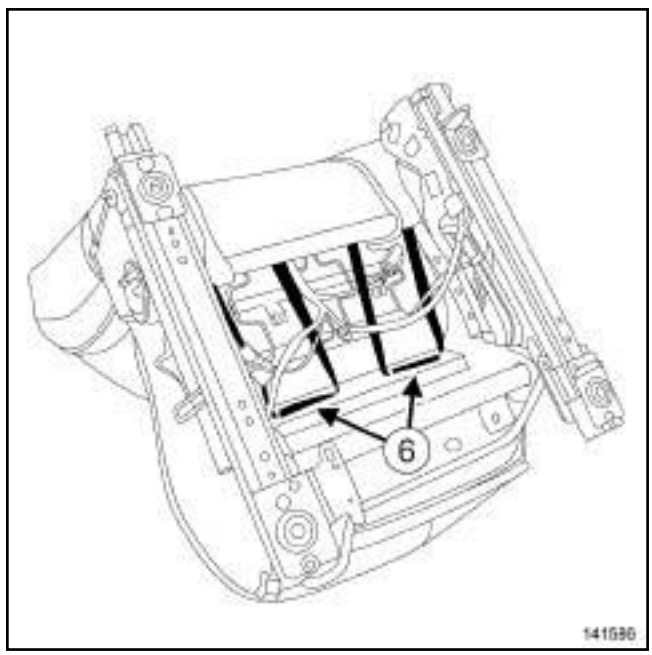
❏ Remove the front seat lumbar adjustment control at (**5**) .



141585

❏ Remove the support of the front seat lumbar adjustment control.

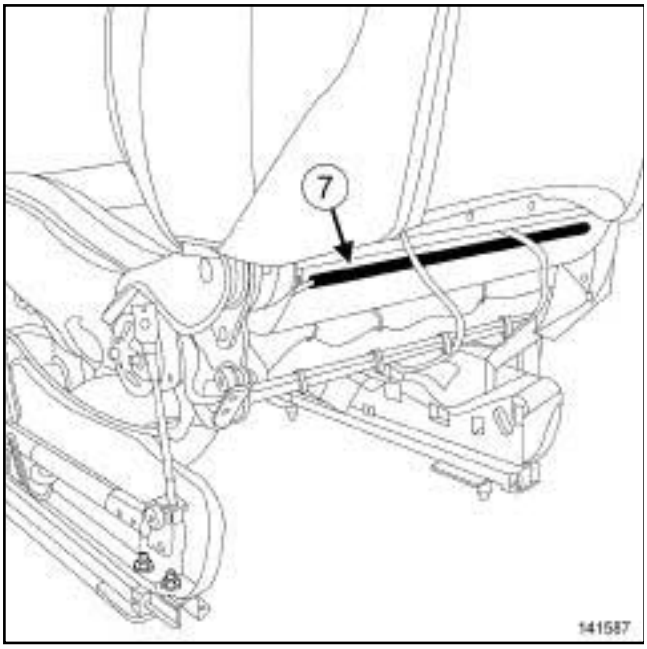
II - OPERATION FOR REMOVAL OF PART CONCERNED



141586

❏ Detach the elastic retaining straps (**6**) of the front seatback cover from the front seat base frame.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

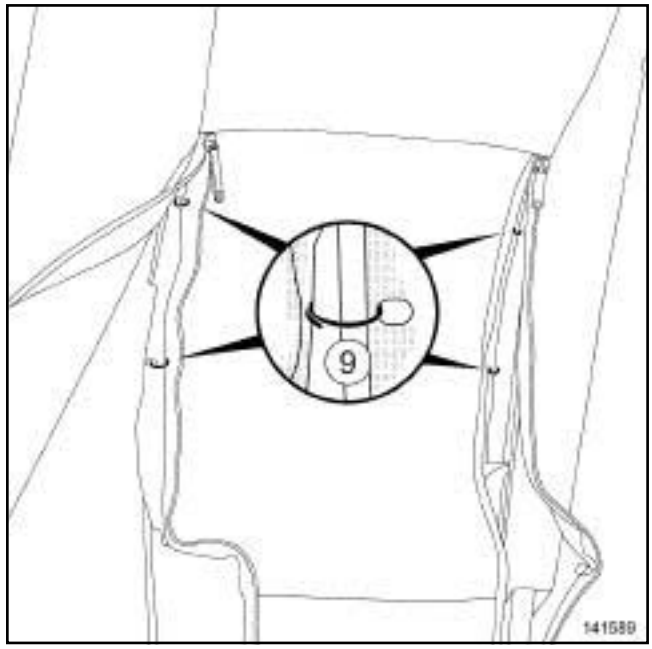


141587

❏ Unclip the lower retaining section (**7**) of the front seatback cover.

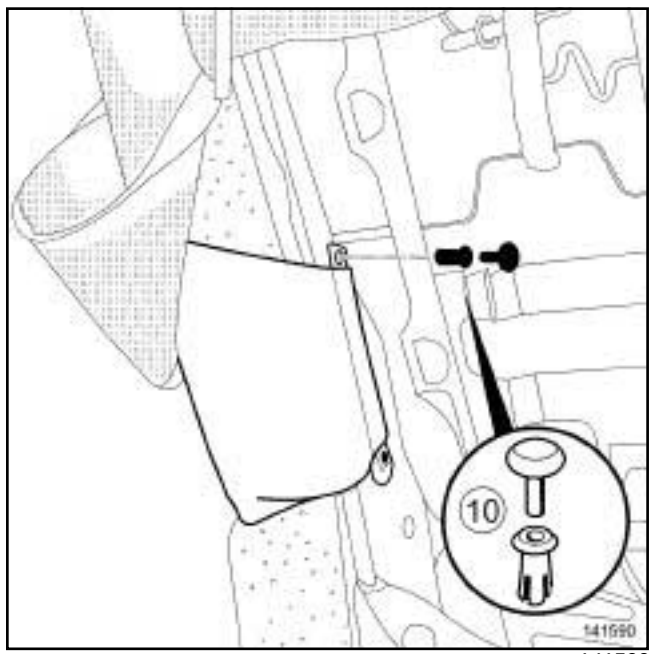
141588

❏ Open the zip fasteners (**8**) .



141589

❏ Cut the clips on the seat trim (**9**) .

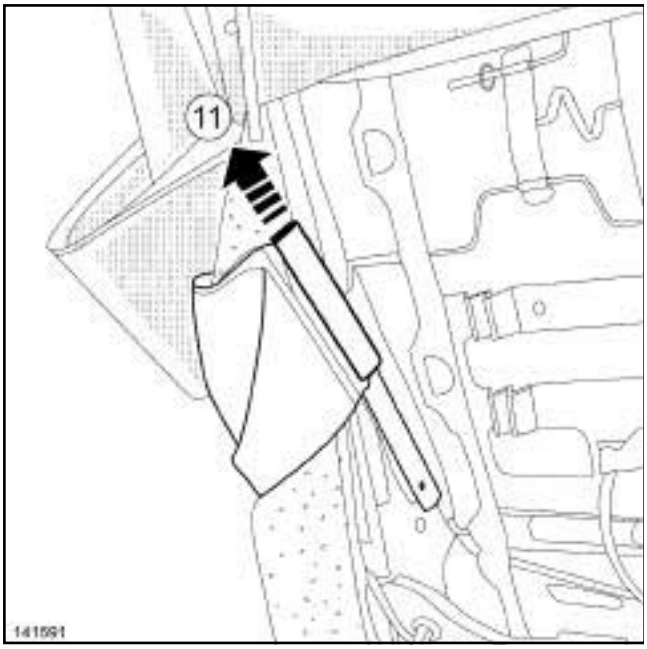


141590

❏ Unlock the retaining section pin of the front seat (chest-level) side airbag concentrator.

❏ Remove the retaining section pin (**10**) from the front seat (chest-level) side airbag concentrator.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



141591

❑ Detach the retaining section of the front seat side (chest-level) airbag at (**11**) by sliding it.

141592

❑ Detach the front retaining sections of the front seat-back cover near the lower clips by sliding them.

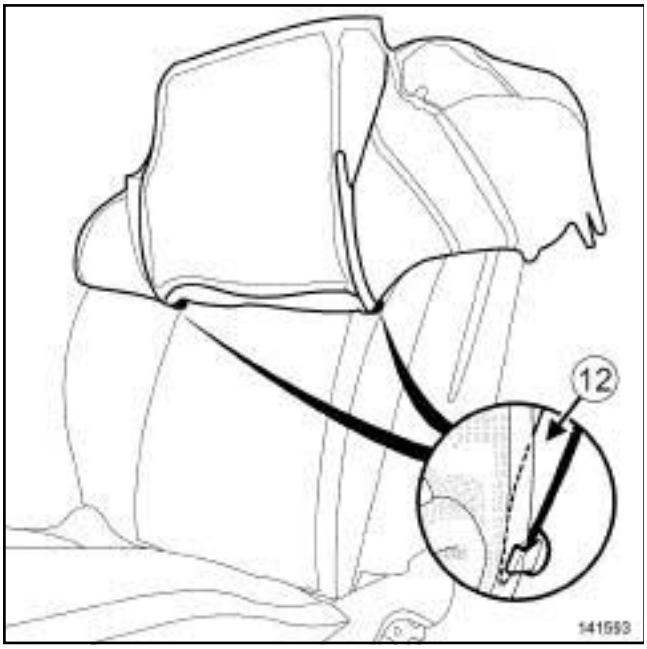
Note:

When separating the "cover - foam", keep the mounting clips of the cover section in position.

These clips are moulded into the foam.

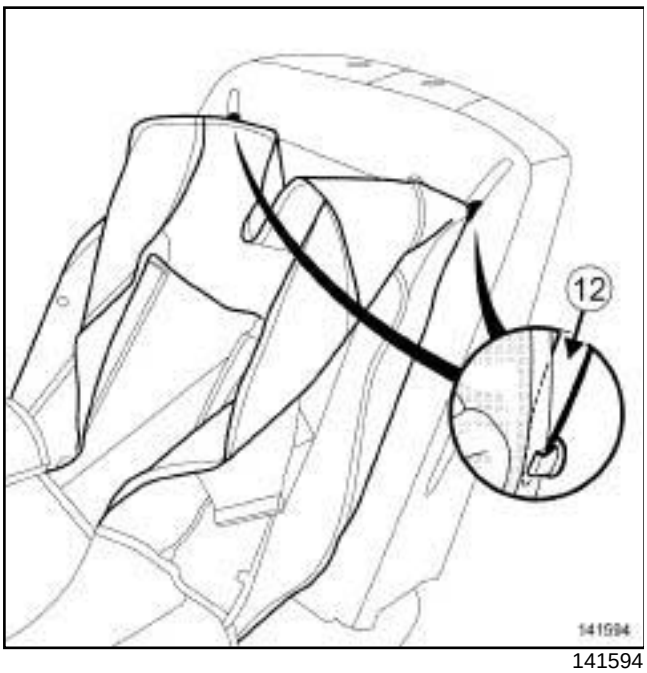
The mounting clips of the cover retaining section are not sold separately by the Parts Department.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2



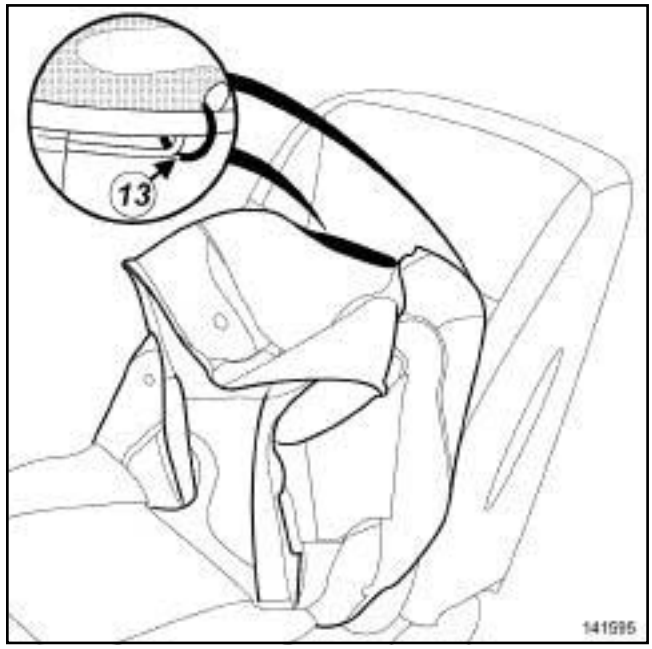
141593

❑ Unclip the front retaining sections from the front seatback cover near the central clips using the tool **(Car. 1363)** (**12**) .

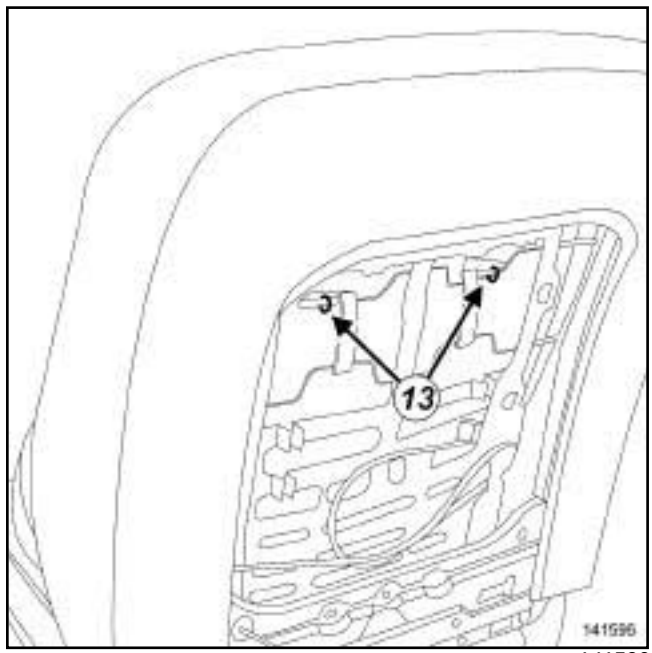


141594

❑ Unclip the front retaining sections from the front seatback cover near the top clips using the tool **(Car. 1363)**.



141595



141596

❑ Cut the clips of the seat trim (**13**) on the front seat lumbar pad.

WARNING

To avoid any risk of damaging the seat trims and mechanisms, remove any metal residues of the seat trim clips.

❑ Remove the front seatback cover.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

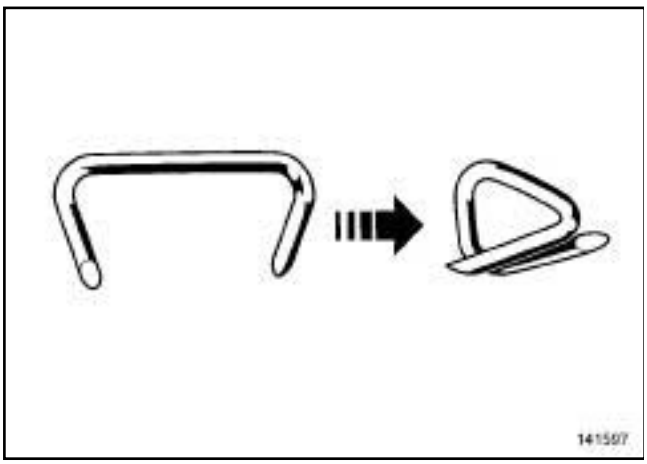
REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Seat trim clip**.

IMPORTANT
To avoid any risk of a fault in the event of the seat side airbag being deployed, always use the clips for the 2nd generation seat trim.

1 - Seat trim clips - 1st generation

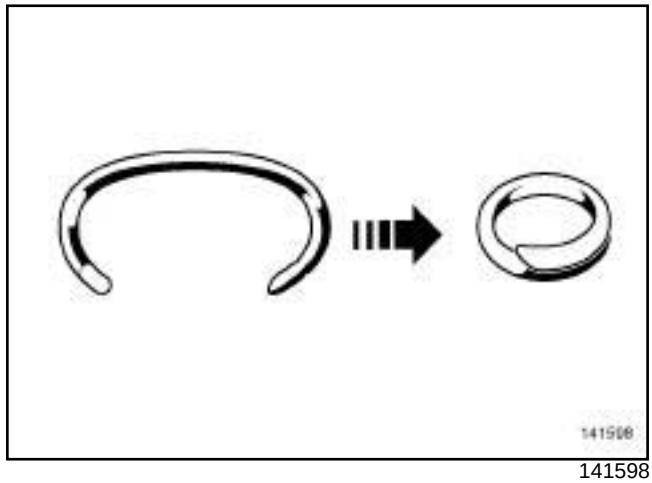


141597

❑

Note:
After crimping, the ends of the clips for the 1st generation seat trim protrude slightly.

2 - Seat trim clips - 2nd generation



141598

❑

Note:
After crimping using the tool **(Car. 1521)**, the ends of the clips for the 2nd generation seat trim are completely contained, thereby avoiding any risk of snagging or injuries.

WARNING
To avoid any risk of the cover detaching or any folds in the cover, check that the clips of the retaining section are secure on the foam. If a clip is pulled out, replace the foam.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the front seatback cover over the front seatback foam.

❑ Crimp the new seat trim clips onto the lumbar pad using the tool **(Car. 1521)**.

❑ Clip the front retaining sections of the front seatback cover.

❑ Refit:

- the retaining section of the front seat (chest-level) side airbag concentrator,
- the retaining section pin for the front seat (chest-level) side airbag concentrator.

❑ Crimp the new seat trim clips at the rear section of the front seat cover using the tool **(Car. 1521)**.

❑ Close the zip fasteners.

❑ Clip on the lower retaining section of the front seatback cover.

❑ Refit the elastic securing straps of the front seatback cover.

III - FINAL OPERATION

FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit:

- the support of the front seat lumbar adjustment control,
- the front seat lumbar adjustment control.

❑ Refit the front seatback angle adjustment control.

C85

❑ Refit the rear seat access control.

❑ Refit:

- the headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

SPORT FRONT SEATS

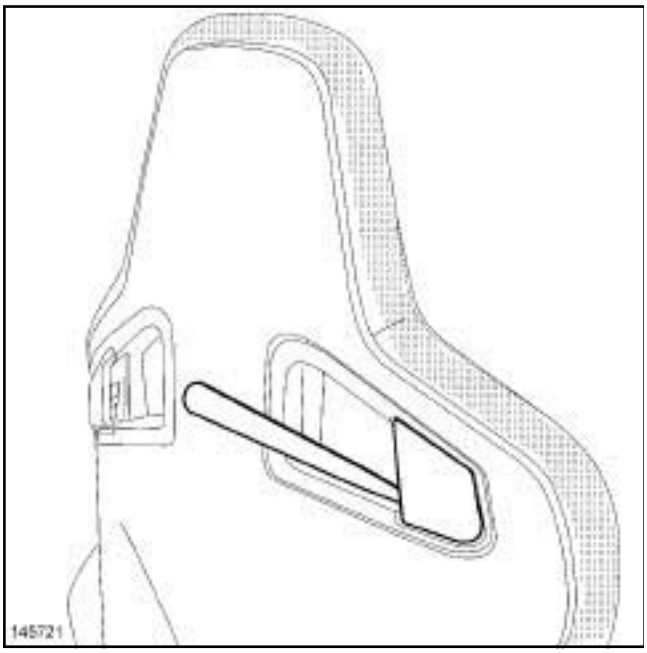
Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

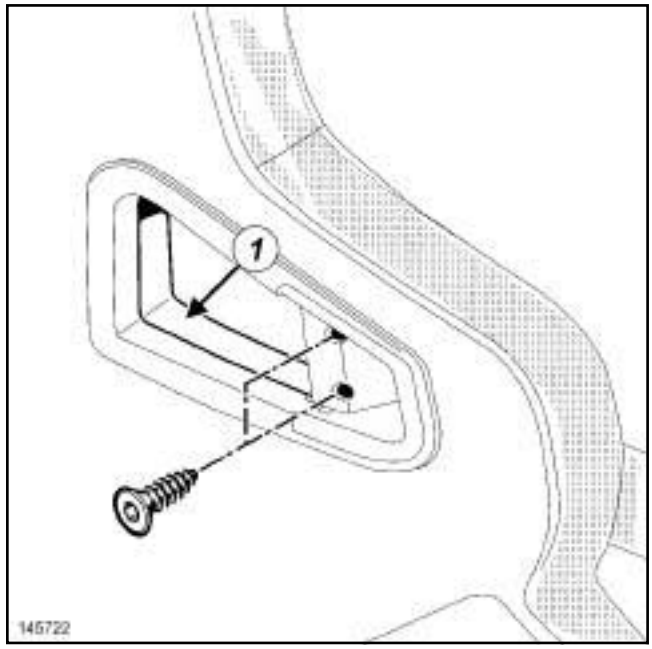
❏ Disconnect the battery (see) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

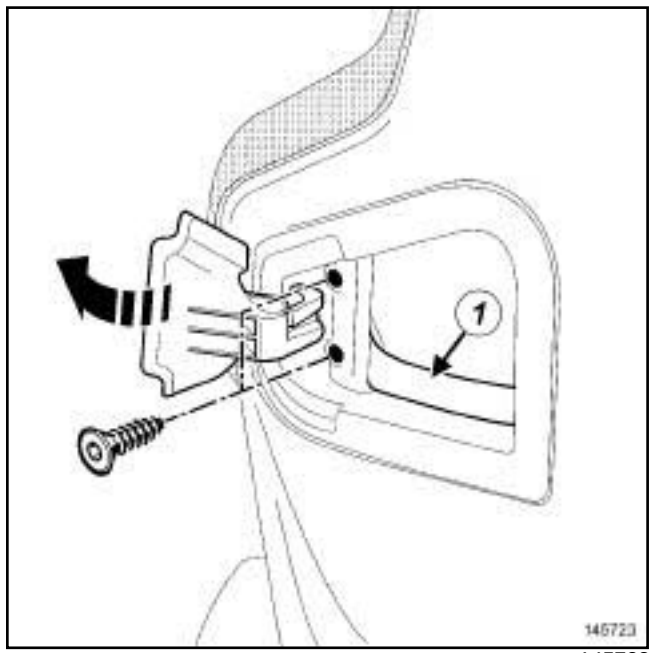


145721

❏ Unclip the exterior trim of the front seatback casing using the **(Car. 1363)**.



145722



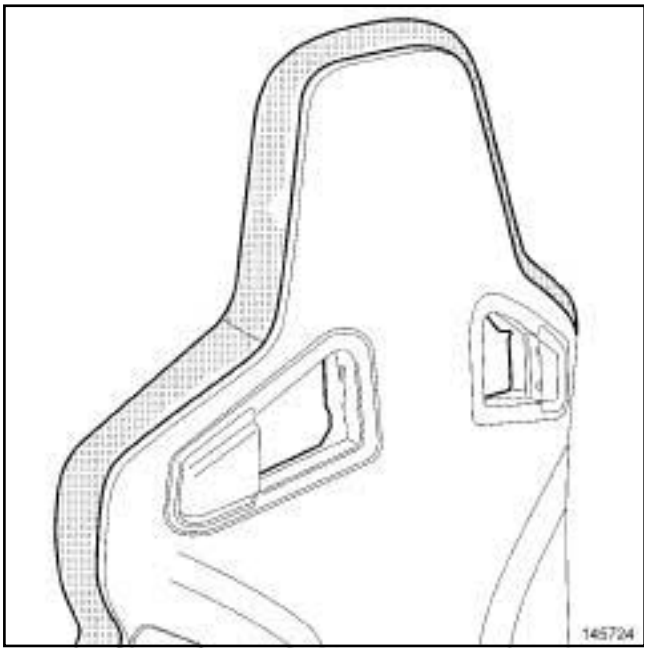
145723

❏ Remove the bolts of the interior trim of the front seatback casing.

❏ Unclip the interior trims of the front seatback casing (**1**) .

SPORT FRONT SEATS

II - REMOVAL OPERATION

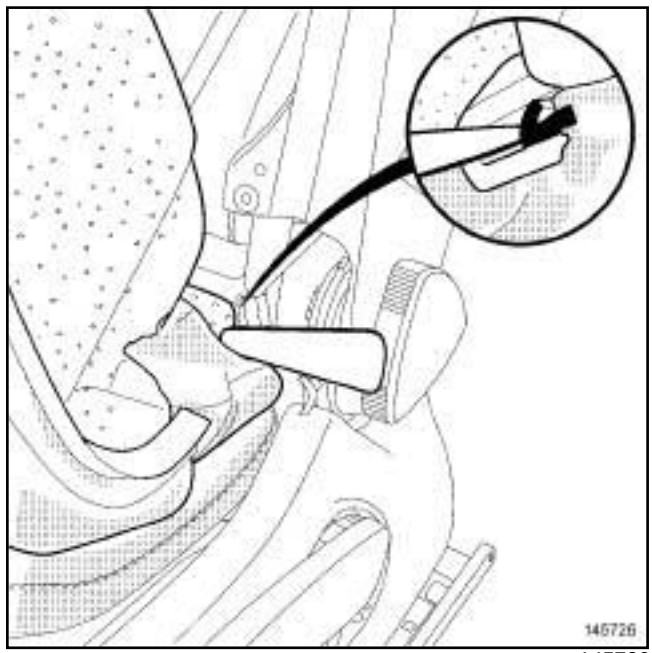


145724

❏ Unclip the retaining sections of the front seatback cover, starting at the top.

❏ Tilt the front seatback « foam - cover » assembly.

145725

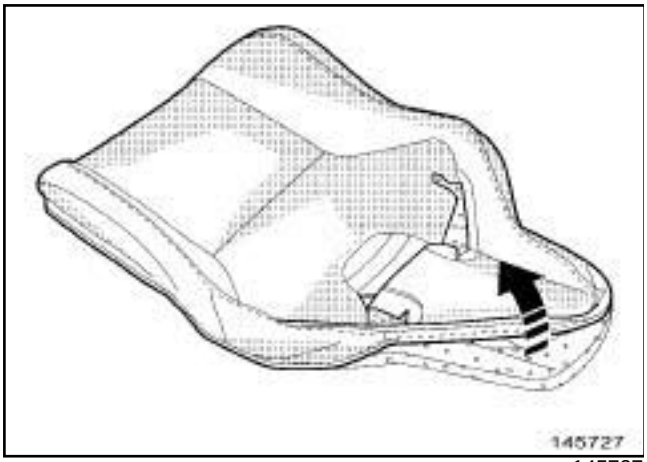


145726

❏ Unclip the lower retaining section of the front seatback cover using the **(Car. 1363)**.

❏ Remove the front seatback « foam - cover » assembly.

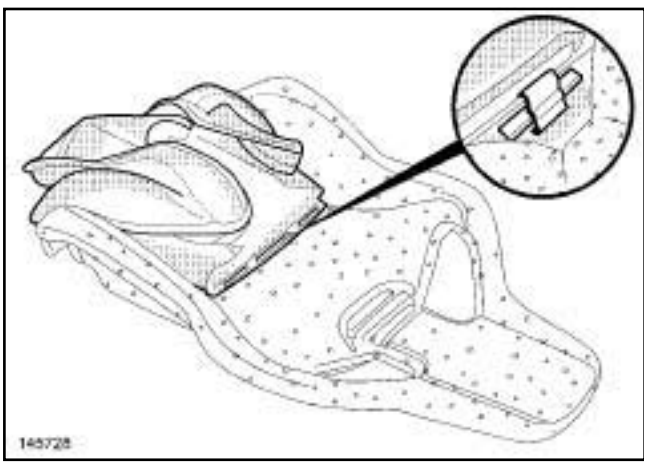
SPORT FRONT SEATS



145727

❏ Partially remove the front seatback trim.

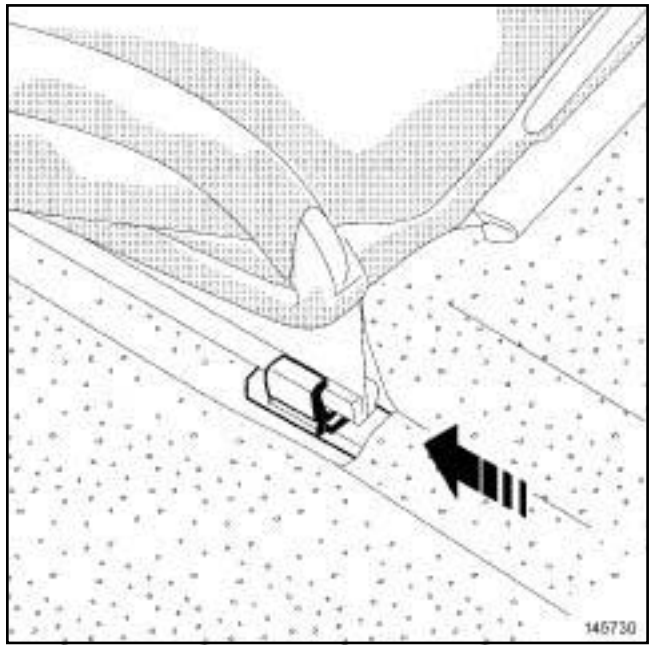
WARNING
To avoid any risk of damaging the foam, separate the cover from the foam by holding the velcro strips.



145728

❏ Unclip the front seatback cover.

WARNING
To avoid any risk of damaging the foam, separate the cover from the foam by holding the cover retaining section clips.



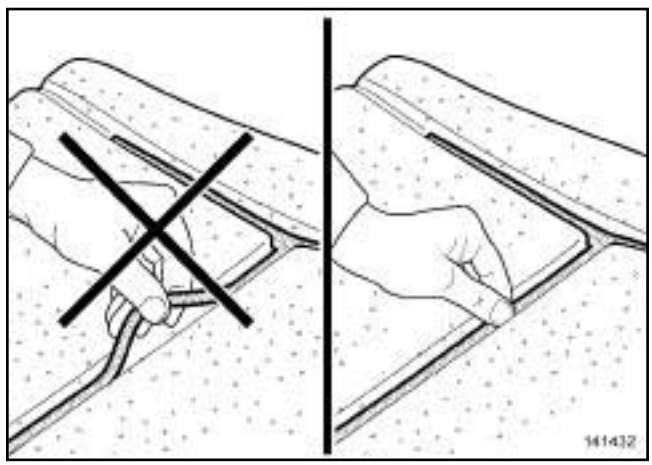
145730

❏ Detach the side retaining sections of the front seatback cover at the clips by sliding them.

❏ Remove the front seatback cover.

REFITTING

I - REFITTING PREPARATION OPERATION

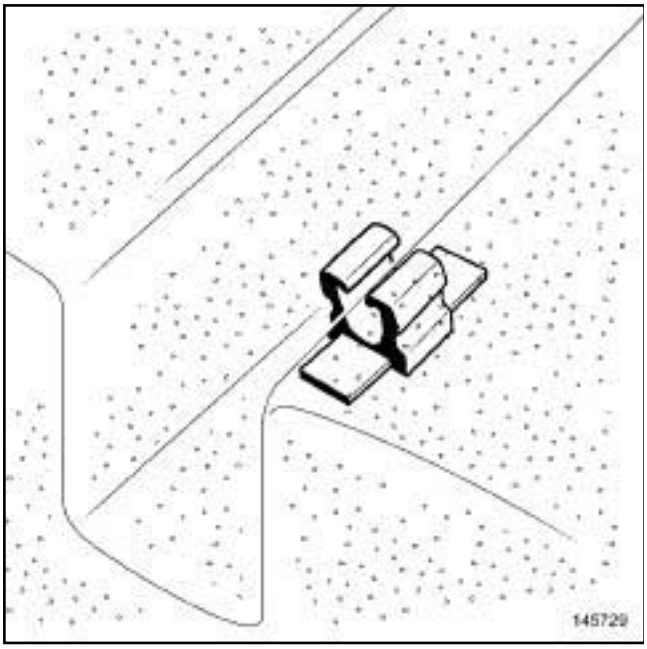


141432

❏ Check that the velcro strips are properly fastened on the foam.

WARNING
To avoid any risk of detaching or creating folds in the cover, check that the velcro strips are secured correctly on the foam. If the velcro strips tear, replace the foam.

SPORT FRONT SEATS



145729

❑

WARNING

To avoid any risk of the cover detaching or any folds in the cover, check that the clips of the retaining section are secure on the foam. If a clip is pulled out, replace the foam.

II - REFITTING OPERATION

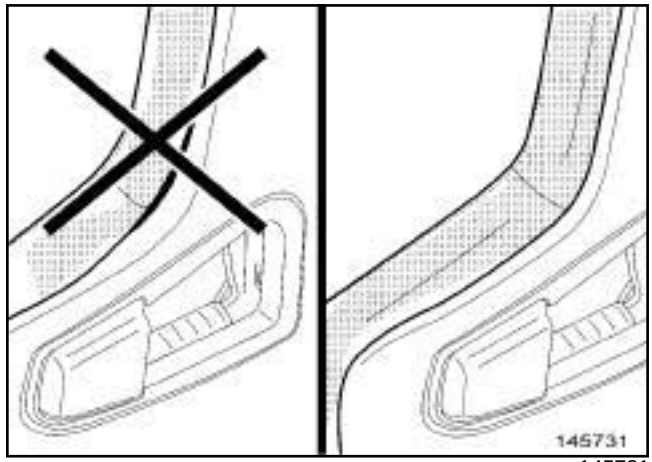
❑ Clip on the side retaining sections of the front seatback cover.

❑ Refit the front seatback cover.

❑ Check that there are no folds in the cover.

❑ Refit the front seatback « foam - cover » assembly.

❑ Clip the retaining sections of the front seatback cover.



145731

❑ Check that the cover edge is correctly tucked into the front seatback casing.

Note:

There must be no separations between the cover and the front seatback casing.

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

IMPORTANT

Before doing any work on a safety system component, be sure to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) . When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

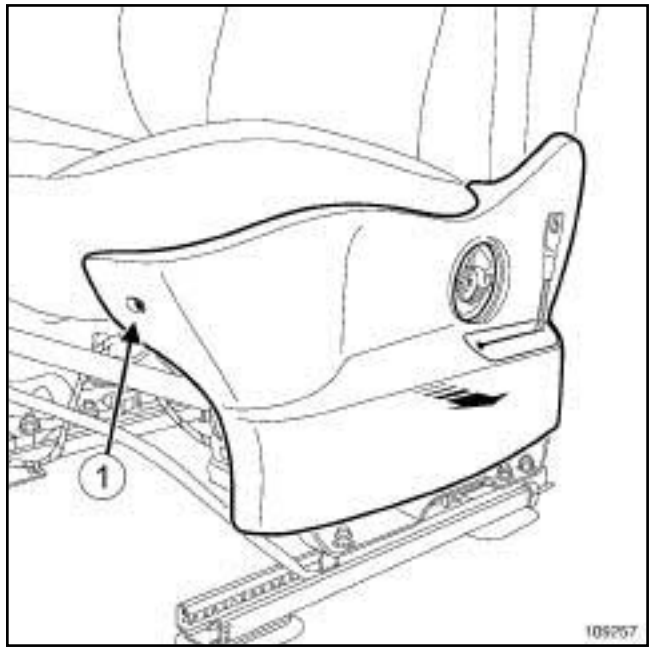
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

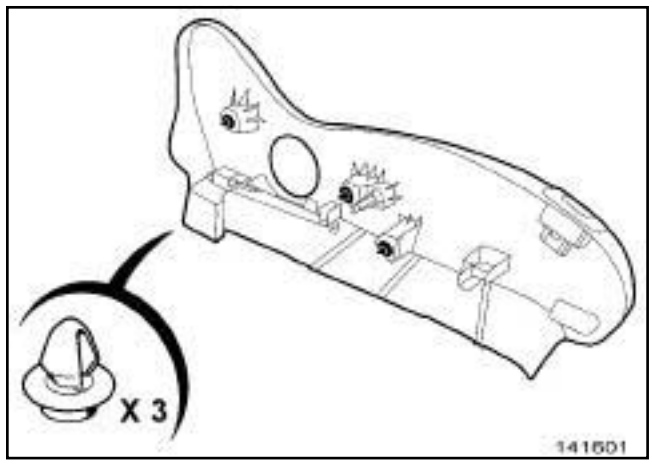
FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❏ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



109257



141601

❏ Remove the bolt (**1**) from the front seat base exterior casing.

❏ Unclip:

- the front section of the seat base exterior casing,
- the rear section of the seat base exterior casing.

FRONT SEAT WITH HEATING

❏ Disconnect the heated pad switch connector.

❏ Remove the front seat base exterior casing.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

FRONT SEAT WITH HEATING

❏ Connect the heated pad switch connector.

❏ Refit the front seat base casing.

II - FINAL OPERATION

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❏ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❏ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❏ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (see 88C, Airbag and Pretensioners).

❏ Carry out a function test.

SPORT FRONT SEATS

REMOVAL

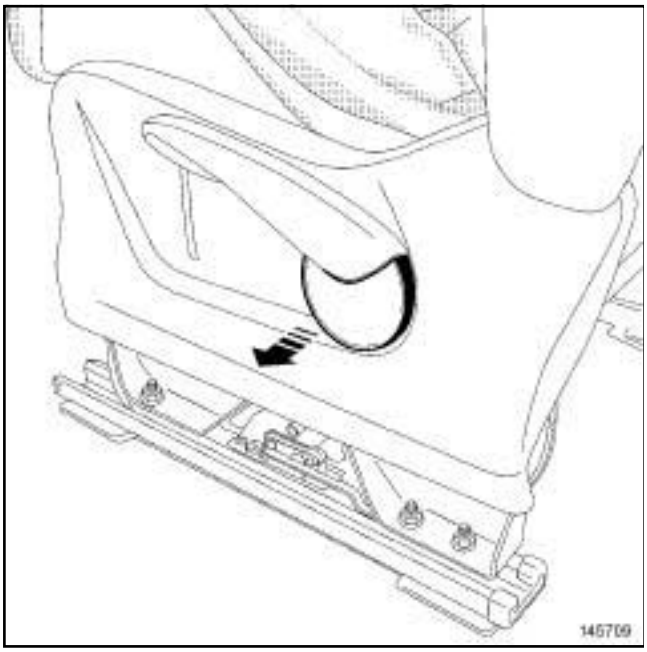
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

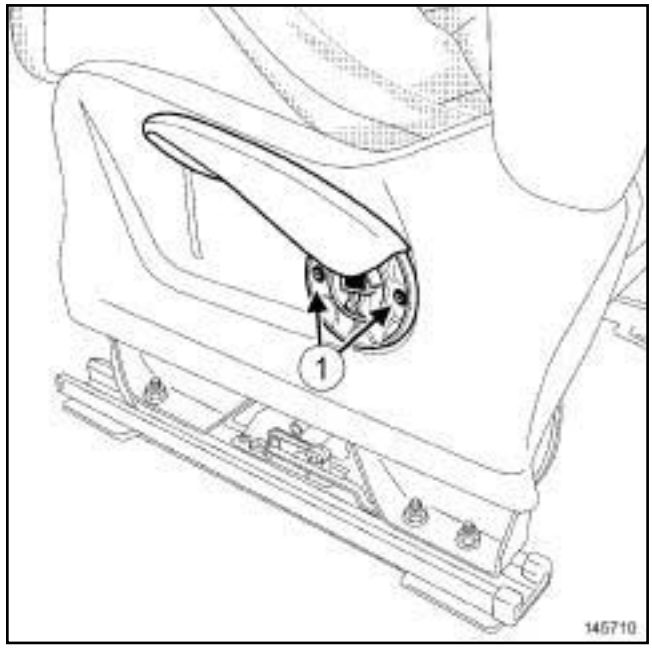
❏ Remove the « foam - cover » assembly from the front seat base (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) .

Front seat base exterior casing



145709

❏ Remove the trim of the front seat height adjustment control.



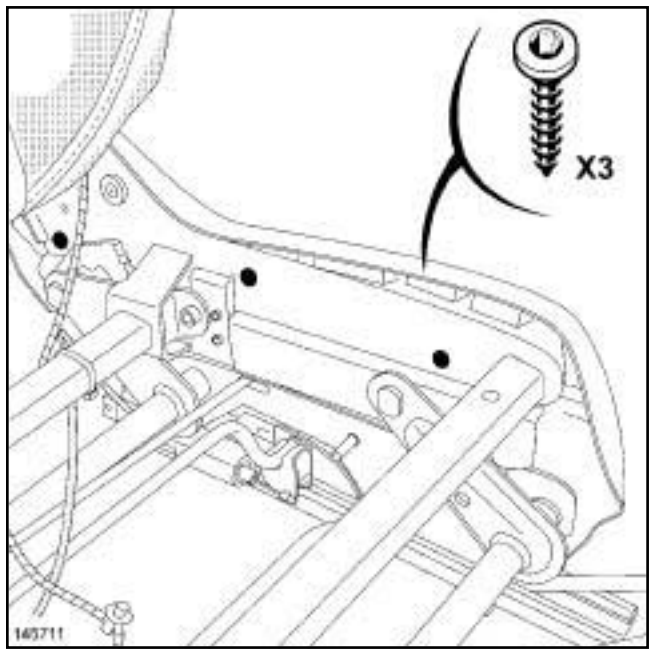
145710

❏ Remove:

- the front seat height adjustment control bolts (**1**) ,
- the front seat height adjustment control.

II - REMOVAL OPERATION

1 - Front seat base exterior casing



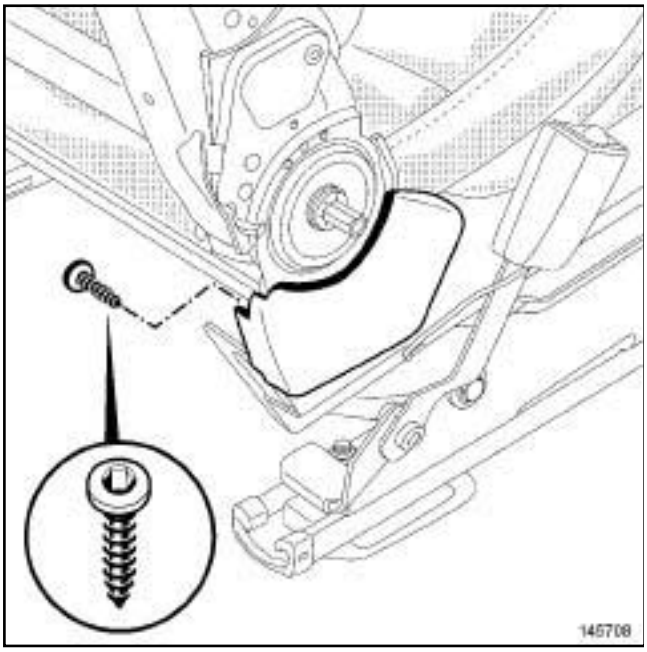
145711

❏ Remove:

- the bolts,
- the front seat base exterior casing.

SPORT FRONT SEATS

2 - Front seat base interior casing



145708

❑ Remove:

- the bolt,
- the front seat base interior casing.

REFITTING

I - REFITTING PREPARATION OPERATION

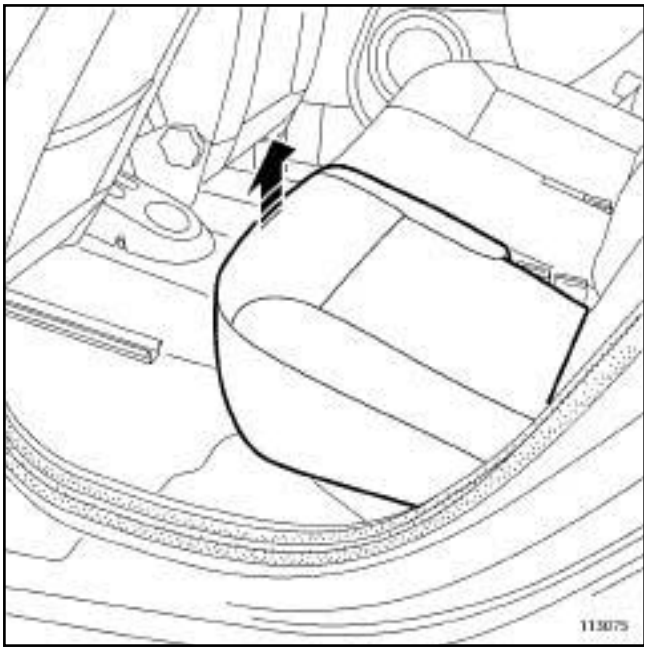
❑ **parts always to be replaced: Bolt of front seat height adjuster control**.

II - REFITTING OPERATION

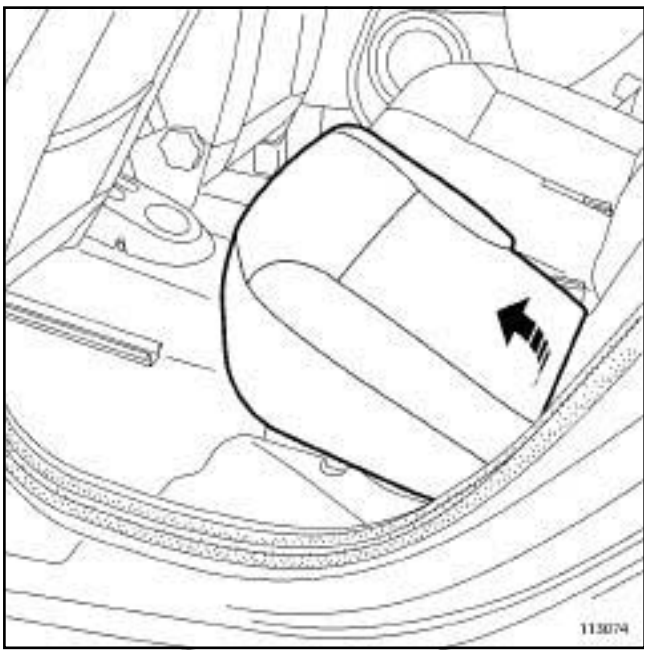
❑ Proceed in the reverse order to removal.

REMOVAL

I - REMOVAL PREPARATION OPERATION

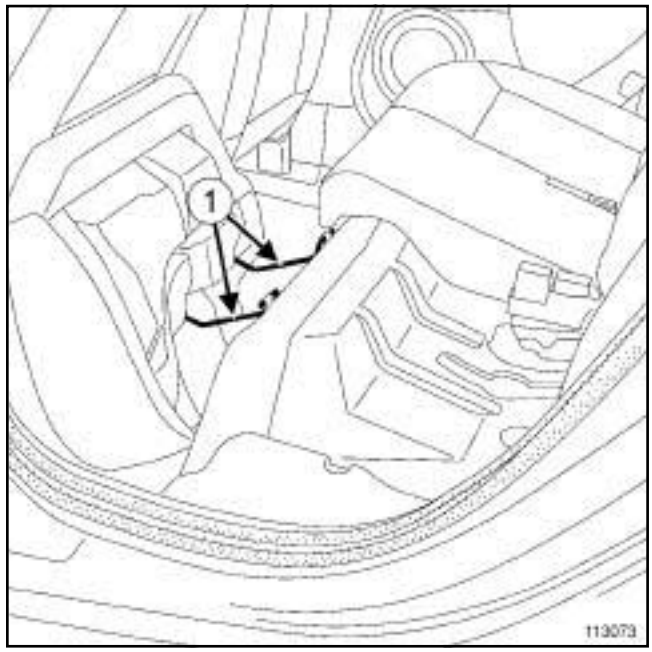


113075



113074

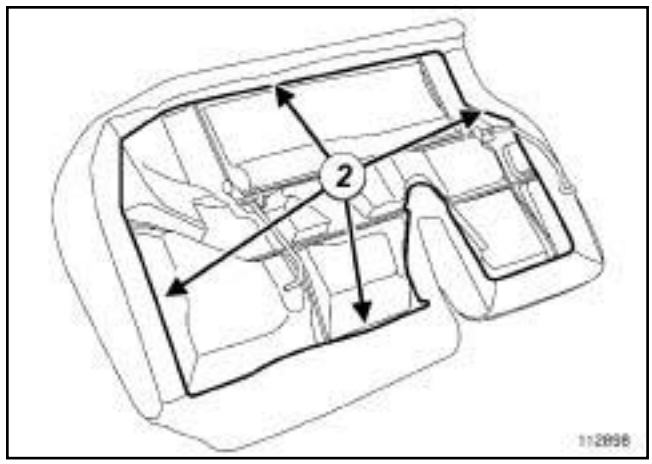
❏ Lift up the rear bench seat base.



113073

❏ Remove the rear bench seat base at (**1**) .

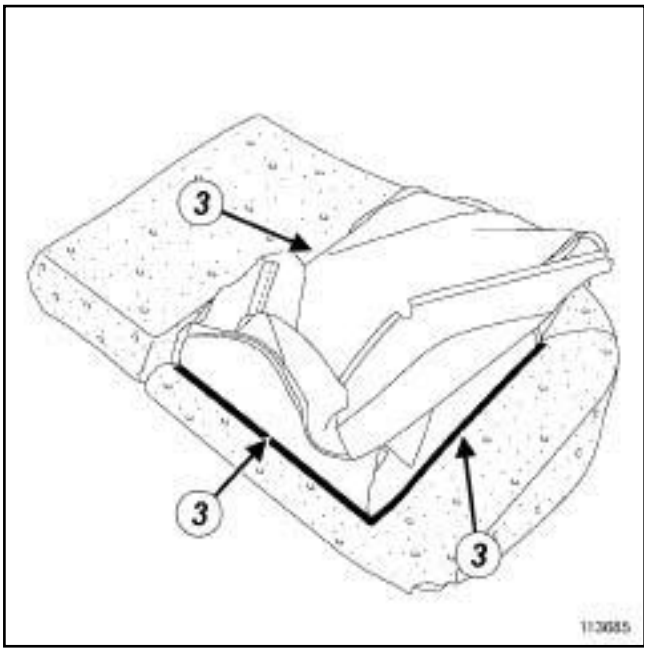
II - OPERATION FOR REMOVAL OF PART CONCERNED



112898

❏ Unclip the retaining strips (**2**) .

❏ Remove the seat trim and foam.



113685

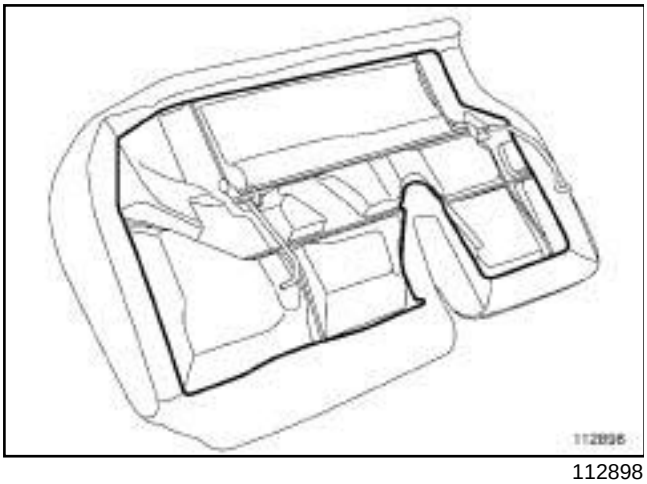
❏ Cut the retaining clips (**3**) .

❏ Extract the seat base trim.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the seat base trim to the foam.



112898

❏ Clip the retaining strips back onto the seat base frame.

II - FINAL OPERATION

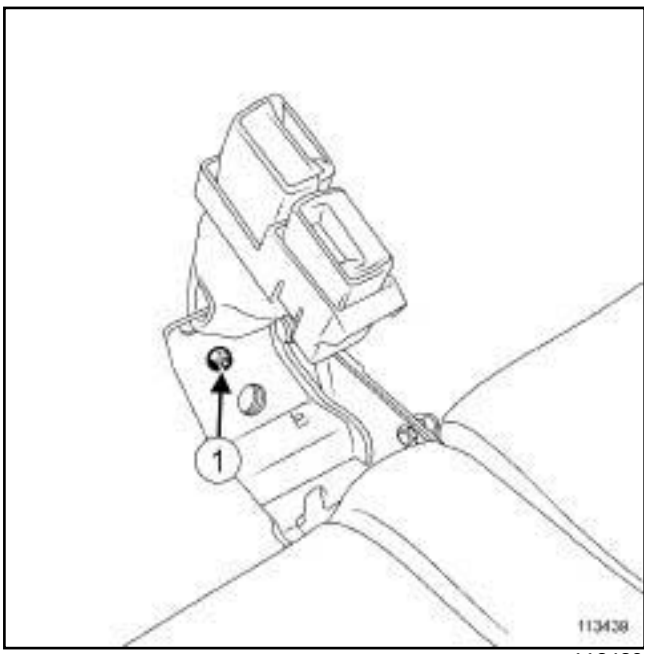
❏ Refit the rear bench seat base.

Tightening torques ▽	
central retaining bracket nut	**21 Nm**
bench seat mounting nuts on the central bracket	**21 Nm**
flexible stalk support mounting nut	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

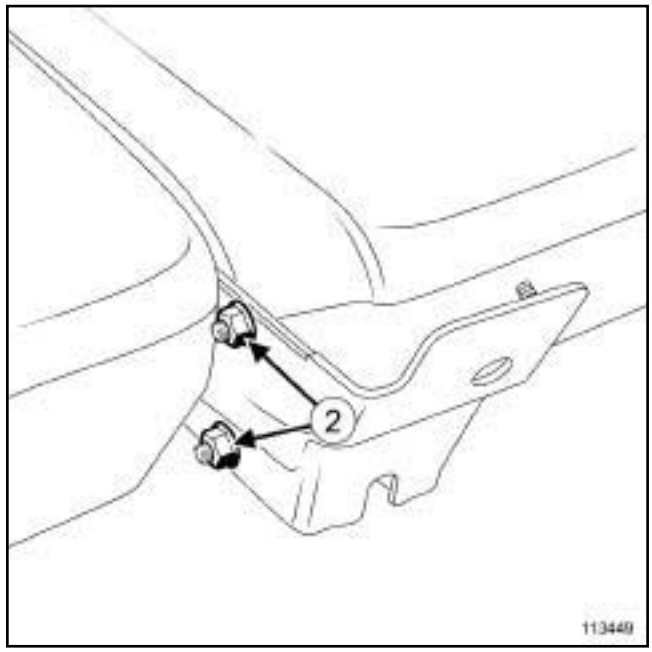
❏ Remove the complete rear bench seat (see) .



113439

❏ Remove:

- the nut (**1**) ,
- the flexible stalk support.

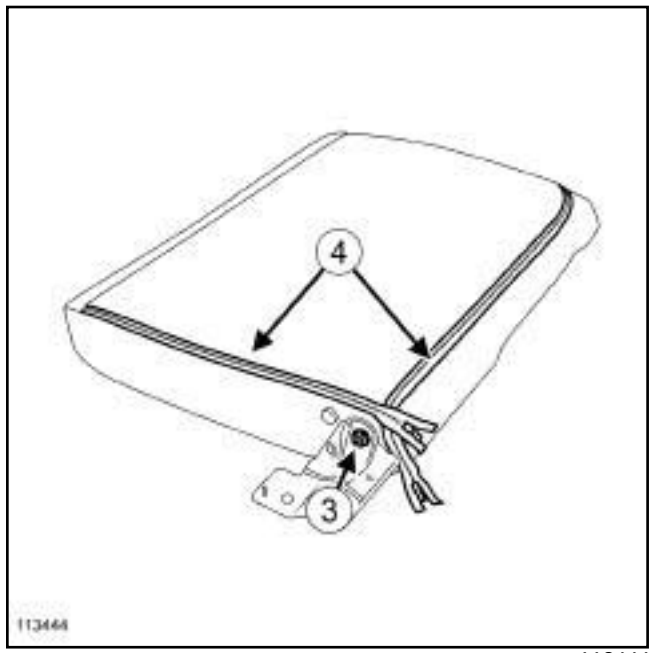


113449

❏ Remove nuts (**2**) .

❏ Separate the bench seat seatbacks.

II - OPERATION FOR REMOVAL OF PART CONCERNED

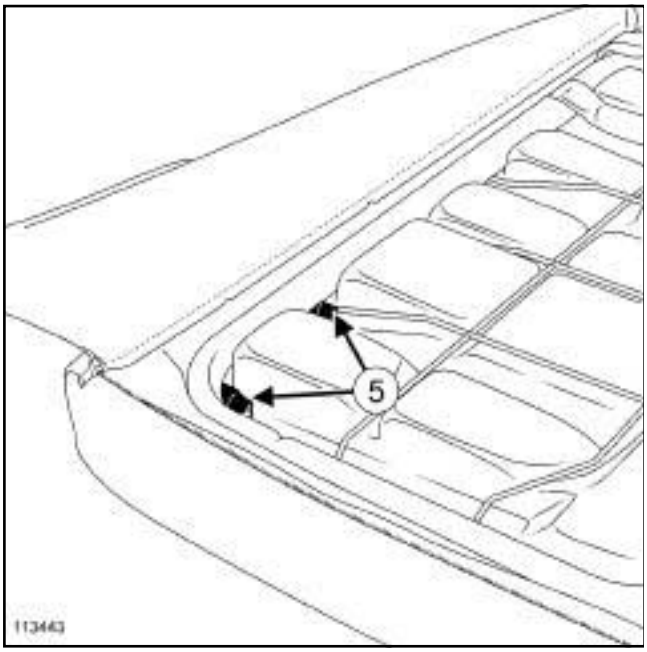


113444

❏ Remove the nut (**3**) and take out the central retaining bracket (according the side removed).

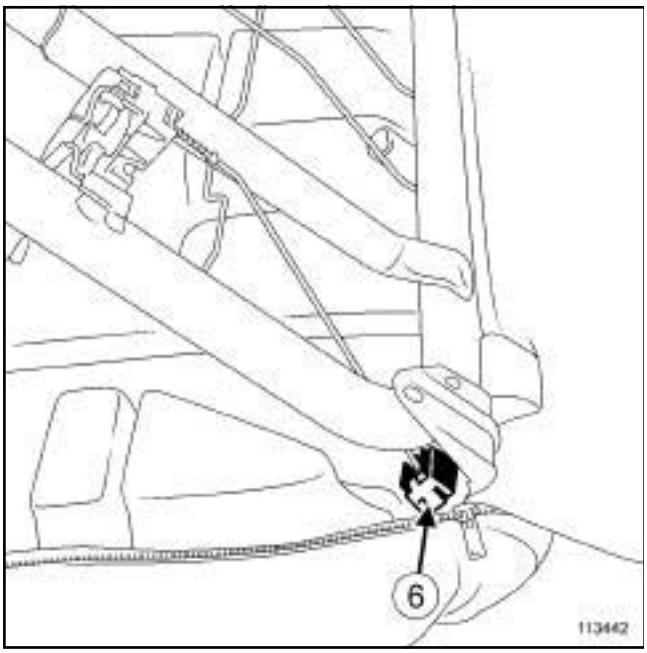
❏ Open the zip fasteners (**4**) .

❏ Move the seatback frame aside.



113443

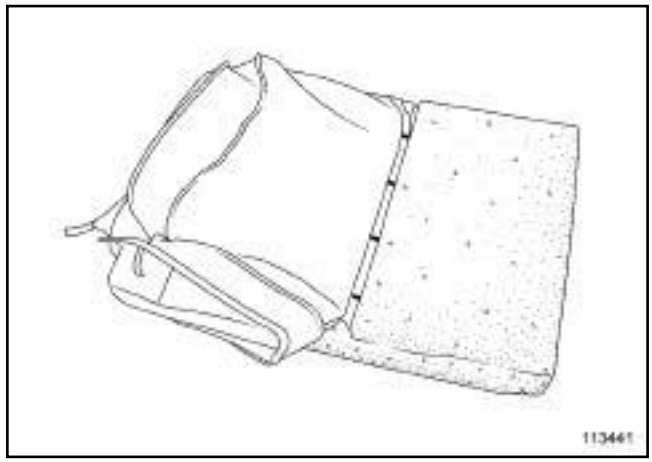
❏ Unclip the head rest (**5**) guides.



113442

❏ Unclip the unlocking mechanism (**6**) ,

❏ Remove the seatback trim and foam.

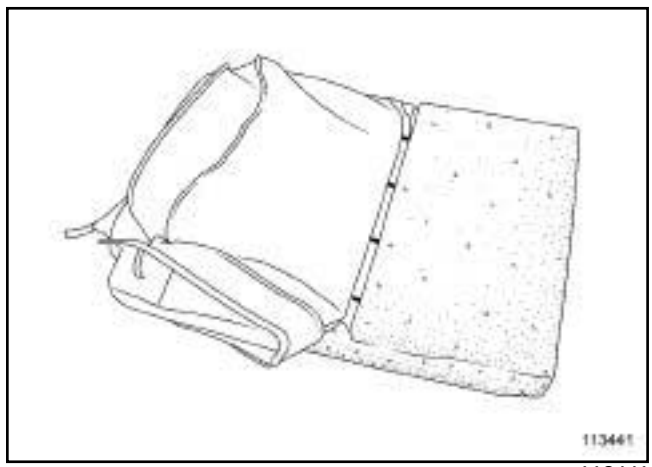


113441

❏ Cut the seatback trim retaining clips.

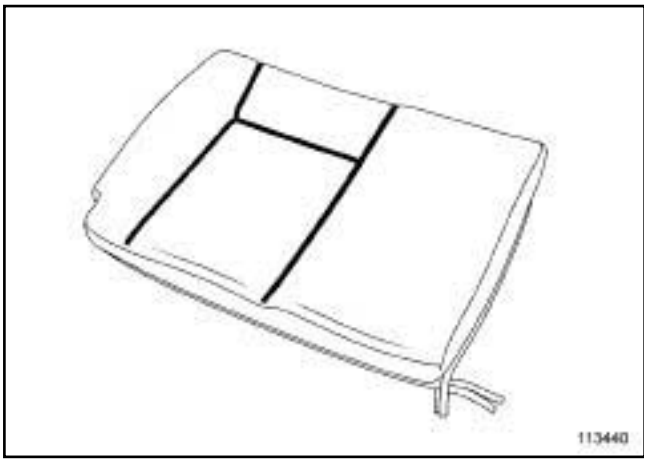
REFITTING

I - REFITTING STAGE OF PART IN QUESTION



113441

❏ Clip the seatback trim onto the foam.



113440

❏ Check that the trim is correctly positioned on the foam.

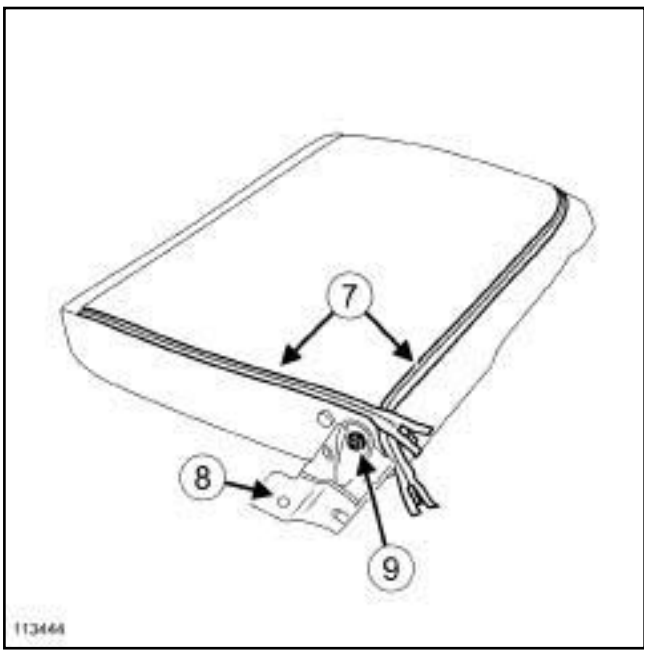
❏ Fit the « foam-trim» assembly to the seatback frame.

❏ Clip on:

- the unlocking system,
- the unlocking mechanism.

❏ Carry out a function test.

❏ Refit the head rest guides.



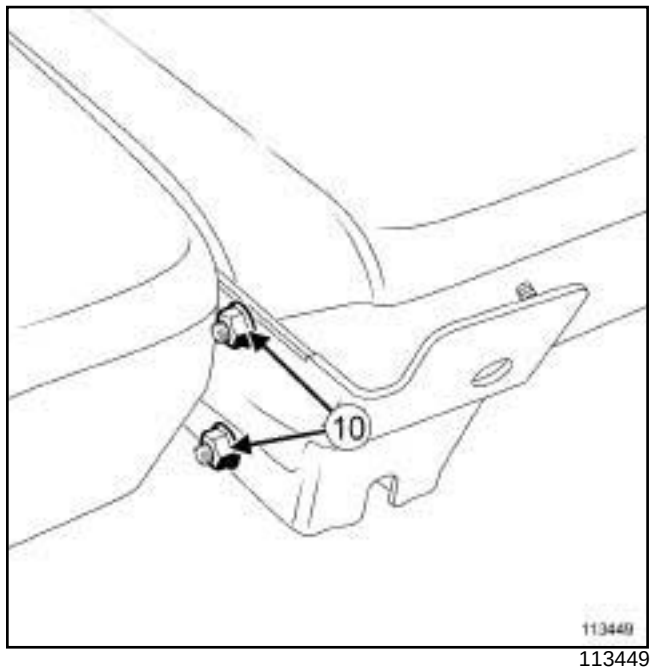
113444

❏ Close the zip fasteners (**7**) .

❏ Refit the central retaining bracket (**8**) (according to the side removed).

❏ Tighten to torque the **central retaining bracket nut (21 Nm)** (**9**) .

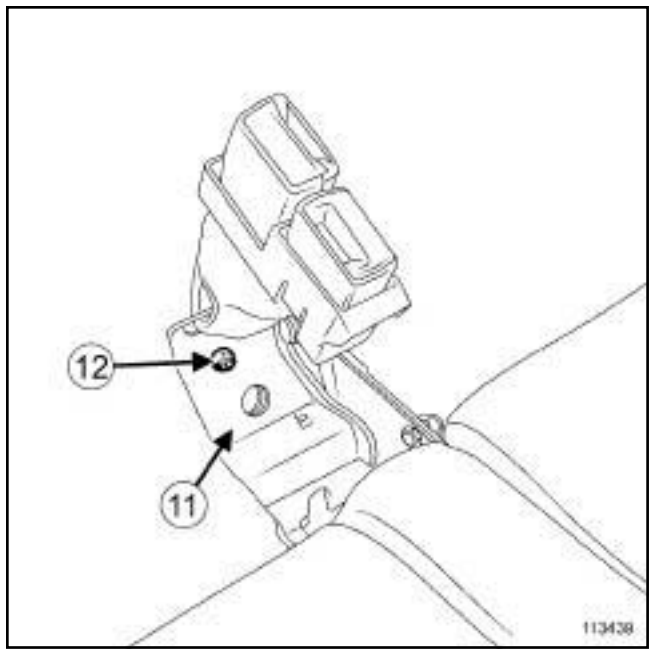
II - FINAL OPERATION



113449

❏ Assemble the bench seat seatbacks.

❏ Tighten to torque the **bench seat mounting nuts on the central bracket (21 Nm)** (**10**) .



113439

❏ Refit the flexible stalk support.

❏ Tighten to torque the **flexible stalk support mounting nut (8 Nm)**.

❏ Refit the complete rear bench seat (see) .

REMOVAL

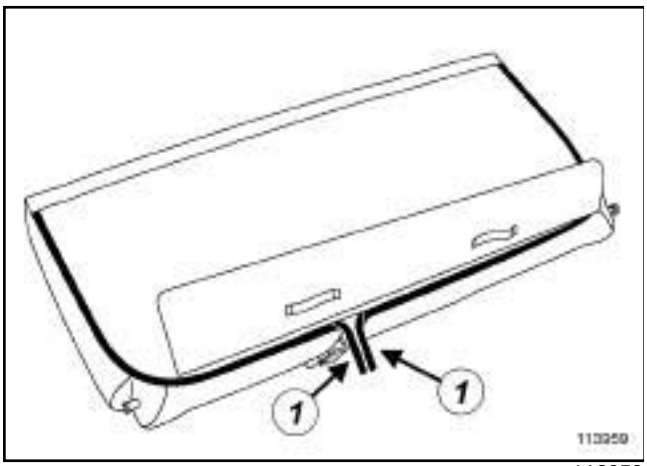
I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the single unit rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) ,

- the single unit rear bench seatback (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seatback: Removal - Refitting**, page **76A-1**) .

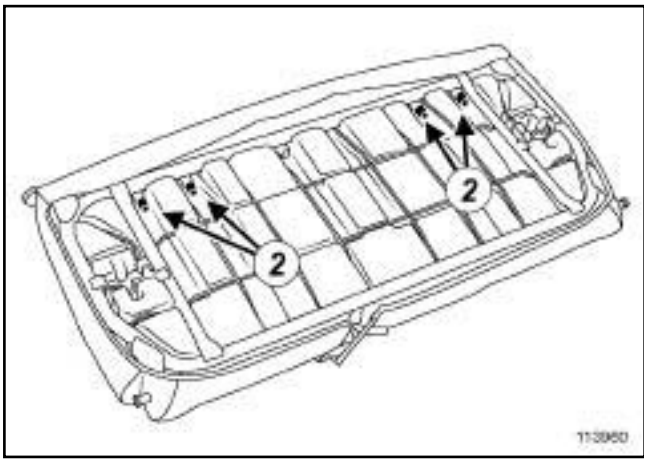
II - OPERATION FOR REMOVAL OF PART CONCERNED



113959

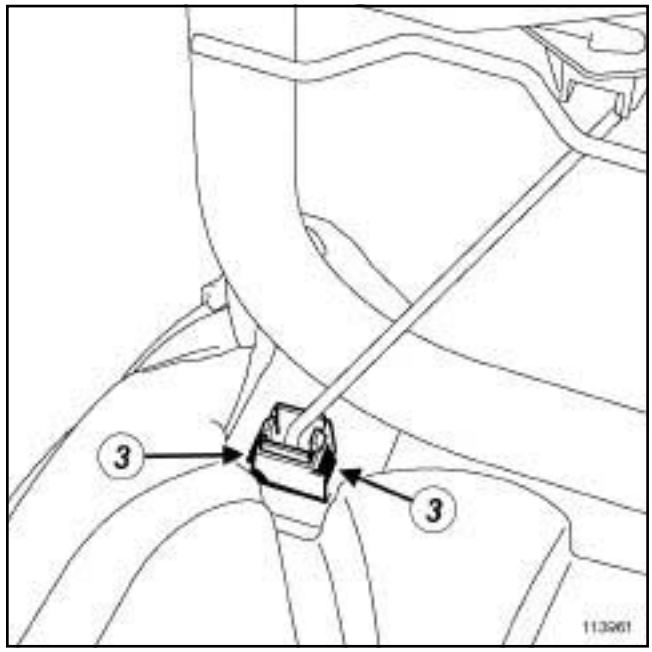
❑ Open the zip fasteners (**1**) .

❑ Fold down the rear section of the seatback.

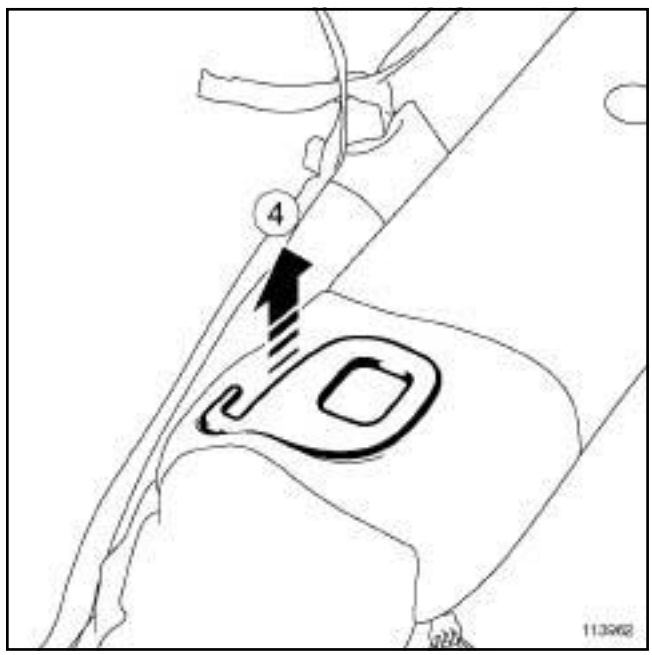


113960

❑ Unclip the head rest guides (**2**) .



113961



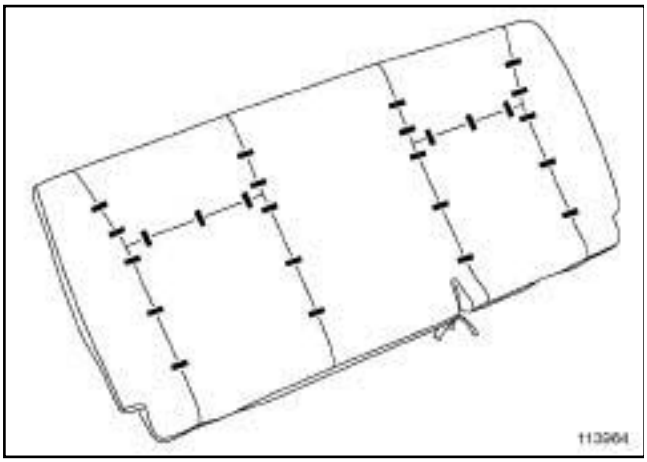
113962

❑ Move the foam away from the seatback frame.

❑ Unclip the clips (**3**) .

❑ Remove the seatback unlocking control (**4**) .

❑ Separate the seatback trim from the seatback frame.

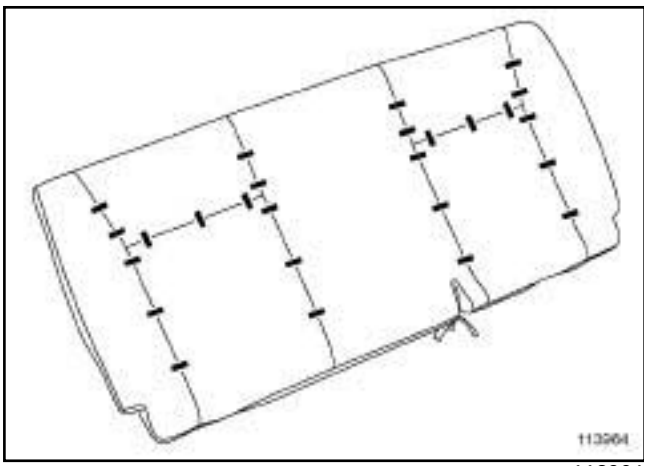

113964

❏ Cut the foam cover clips.

❏ Separate the cover from the seatback foam.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

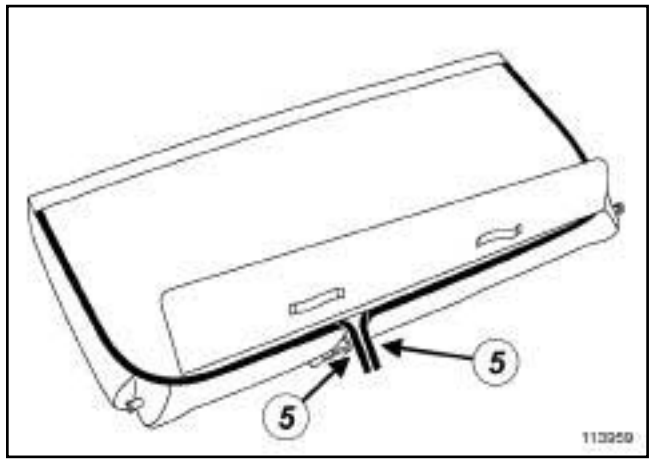

113964

❏ Clip the seatback cover onto the foam.

❏ Fit the cover and foam cushion pad assembly back onto the seatback frame.

❏ Clip:

- the unlocking mechanism,
- the head rest guides.



113959

❏ Close the zip fasteners (**5**) .

II - FINAL OPERATION

❏ Refit:

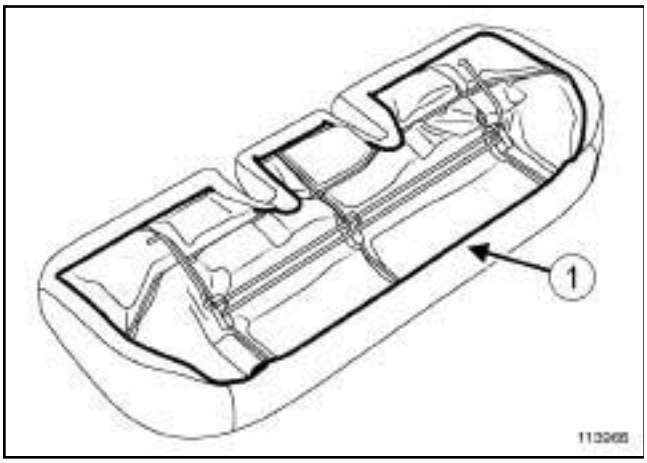
- the single unit rear bench seatback (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seatback: Removal - Refitting**, page **76A-1**) .
- the single unit rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) ,

REMOVAL

I - REMOVAL PREPARATION OPERATION

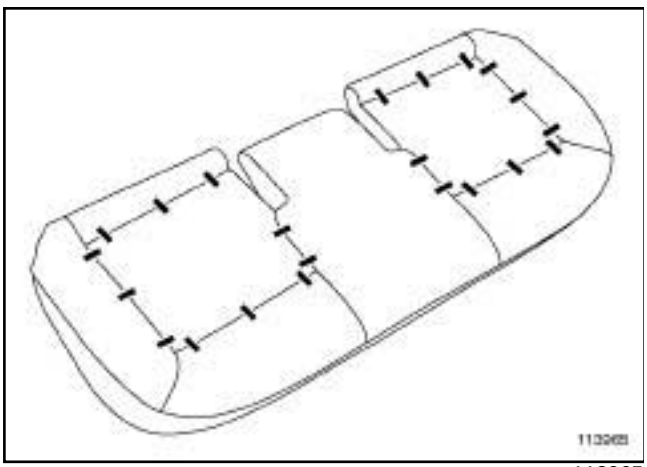
❏ Remove the rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



113966

❏ Unclip the cover retaining strips (**1**) .

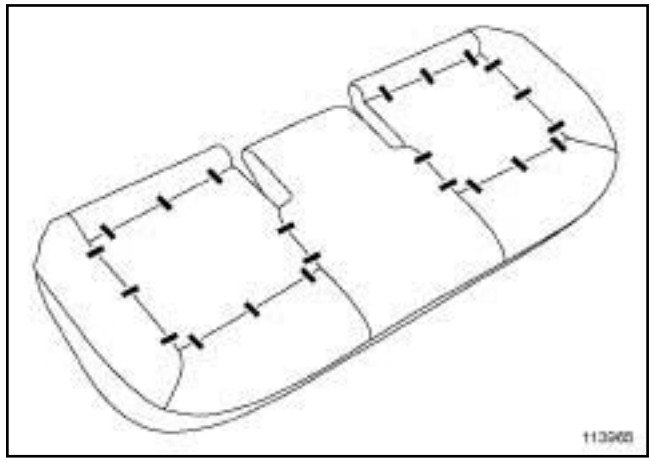

113965

❏ Cut the foam cover clips.

❏ Separate the cover from the seat base foam.

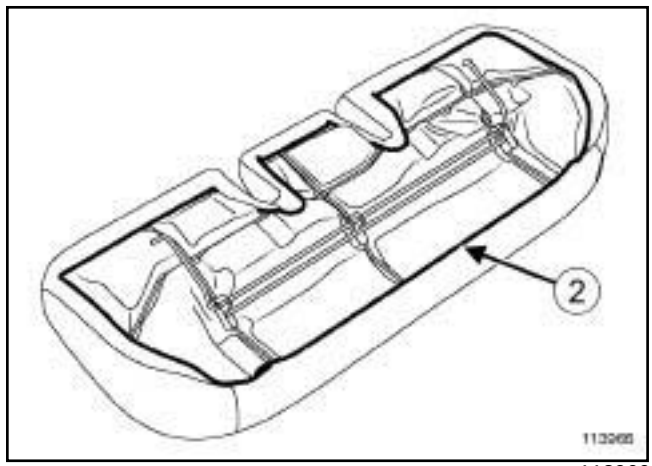
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED


113965

❏ Clip the seat base cover to the foam.

❏ Fit the cover and foam cushion pad back onto the seat base frame.



113966

❏ Clip the retaining strips (**2**) .

II - FINAL OPERATION

❏ Refit the rear bench seat base (see **76A**, **Rear seat frames and mechanisms**, **Single unit rear bench seat base: Removal - Refitting**, page **76A-6**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) ,
- the seat base trim (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the seatback trim (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

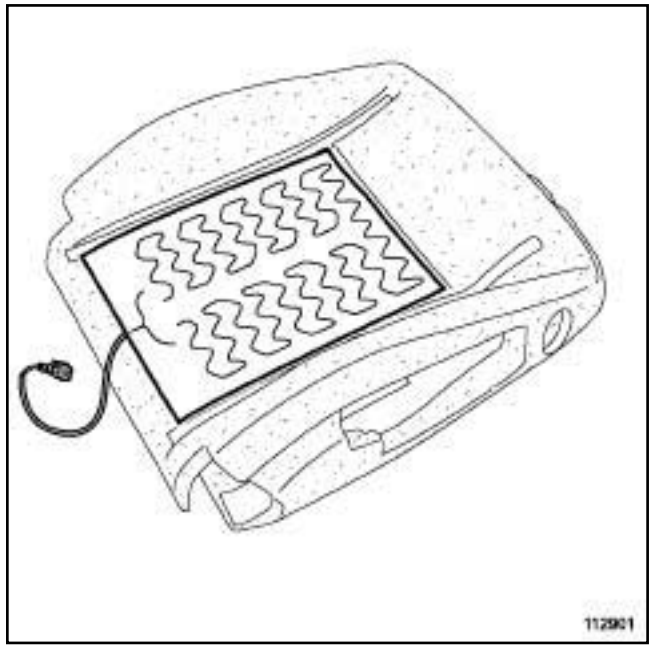
❑ Disconnect the heated pad connectors.

112900

❑ Remove the seat base « foam - heated pad » assembly from the seat frame.

❑

WARNING
Carefully remove the seat heated pad (risk of damaging the foam).



112901

❑ Remove the seatback « foam - heated pad » assembly from the seat frame.

❑

WARNING
Carefully remove the seat heated pad (risk of damaging the foam).

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Check the condition of the seat base and seatback foam pads (replace them if necessary).

❑ Remove the protective backing from the seat base heated pad adhesive.

❑ Bond the seat base heated pad in position.

❑ Remove the protective backing from the seatback heated pad adhesive.

❑ Bond the seatback heated pad in position.

II - FINAL OPERATION

❑ Refit:

- the seatback trim (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .
- the seat base trim (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 1

- the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

FRONT SEAT WITH HEATING, and DOCUMENTATION PHASE 2

Equipment required
Diagnostic tool

IMPORTANT
Before beginning work on any component of the safety system, it is essential to lock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (88C, Airbag and pretensioners). When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

1 - Front seatback heated pad

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❏ Remove the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❏ Remove:

- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) ,
- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) .

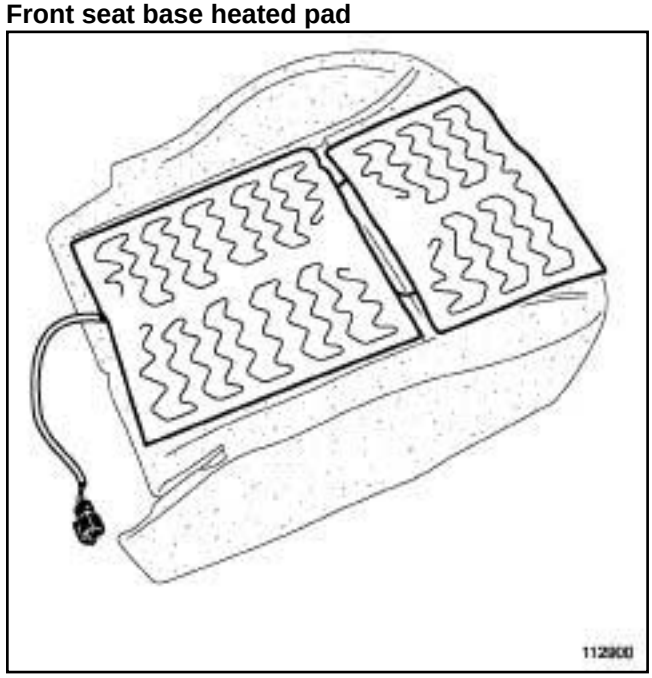
2 - Front seat base heated pad

❏ Remove:

- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) ,
- the front seat base cover (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

Front seat base heated pad



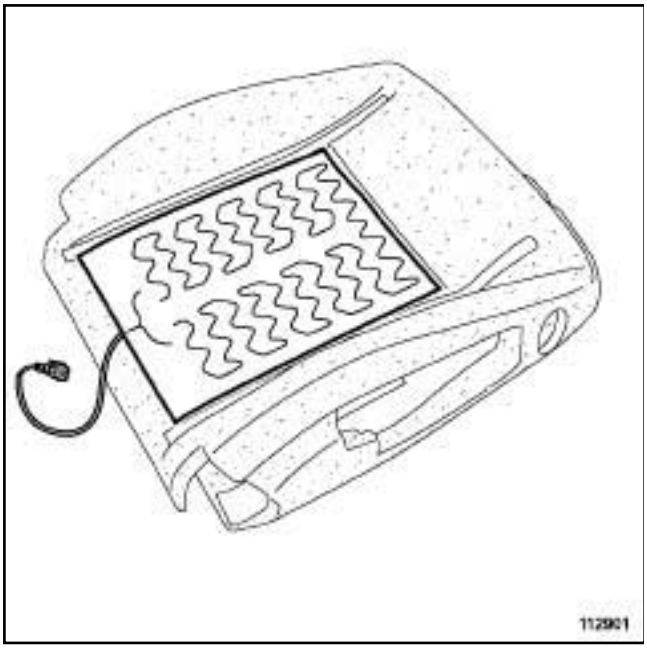
112900

❏ Detach the heated pad from the « foam - heated pad » assembly of the front seat base.

WARNING
To avoid any damage to the foam, detach the heated pad carefully.

FRONT SEAT WITH HEATING, and DOCUMENTATION PHASE 2

Front seatback heated pad



112901

❑ Remove the seatback « foam - heated pad » assembly from the front seatback frame.

❑ Detach the heated pad from the front seatback « foam - heated pad » assembly.

WARNING
To avoid any damage to the foam, detach the heated pad carefully.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Check the condition of the front seat base and seatback foam pads; replace them if necessary.

❑ Detach the protective backing from the heated pad adhesive of the front seat base or seatback.

❑ Bond the heated pad of the seatback or seat base in position.

II - FINAL OPERATION

1 - Front seatback heated pad

❑ Refit:

- the front seatback cover (see **77A**, **Front seat trim**, **Front seatback trim: Removal - Refitting**, page **77A-13**) ,
- the front seat headrest guides (see **79A**, **Seat accessories**, **Front seat headrest guide: Removal - Refitting**, page **79A-6**) .

2 - Front seat base heated pad

❑ Refit:

- the front seat base cover (see **77A**, **Front seat trim**, **Front seat base trim: Removal - Refitting**, page **77A-1**) ,
- the front seat base casing (see **77A**, **Front seat trim**, **Front seat lower casing: Removal - Refitting**, page **77A-30**) .

FRONT SEAT TYPE 02 or FRONT SEAT TYPE 03 or FRONT SEAT TYPE 05

❑ Refit the front seat height adjustment control (see **75A**, **Front seat frames and mechanisms**, **Front seat height adjuster control: Removal - Refitting**, page **75A-19**) .

❑ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

❑ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

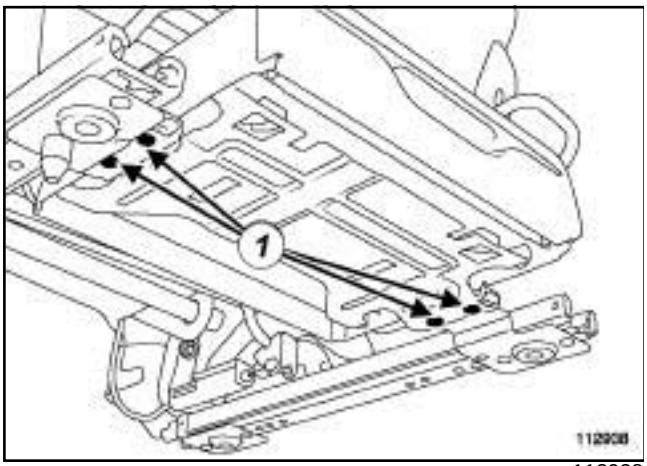
❑ Unlock the airbag computer using the **Diagnostic tool** (see **Airbag and pretensioners: Precautions for the repair**) (see 88C, Airbag and Pretensioners).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



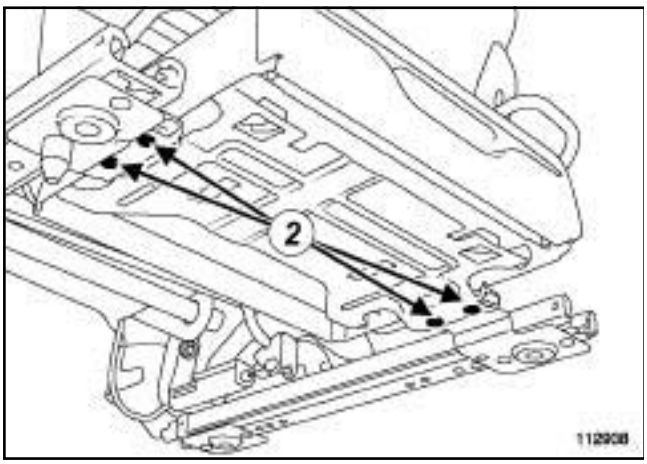
112938

❏ Remove rivets (**1**) .

❏ Remove the under-seat storage compartment.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112938

❏ Refit:

- the under-seat storage compartment,
- the rivets (**2**) .

II - FINAL OPERATION

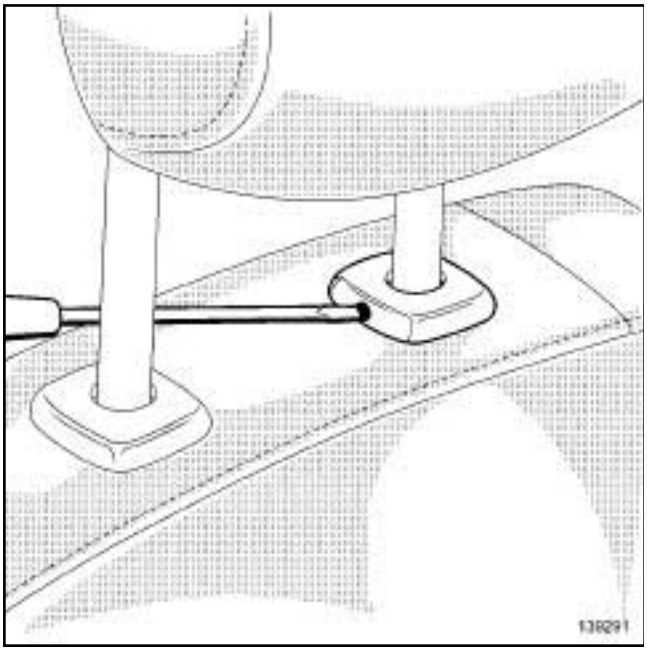
❏ Refit the front seat (see **75A**, **Front seat frames and mechanisms**, **Complete front seat: Removal - Refitting**, page **75A-33**) .

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

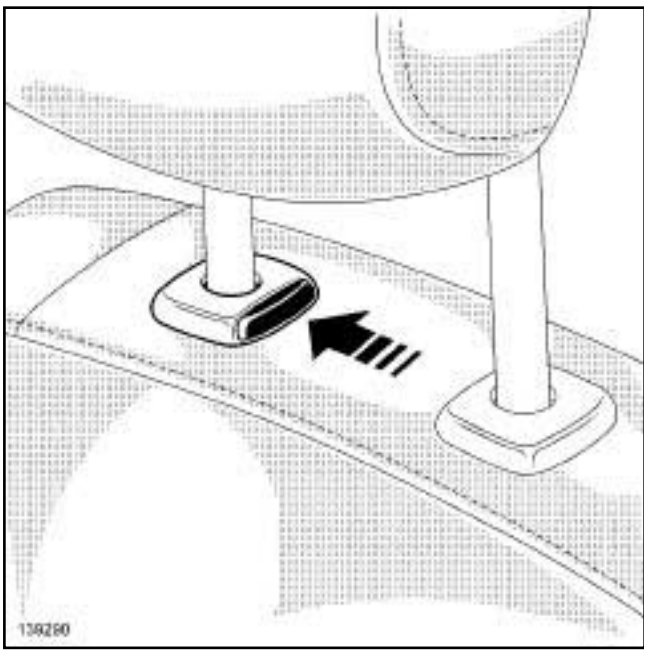
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Tilt the front seatback towards the rear.



139291

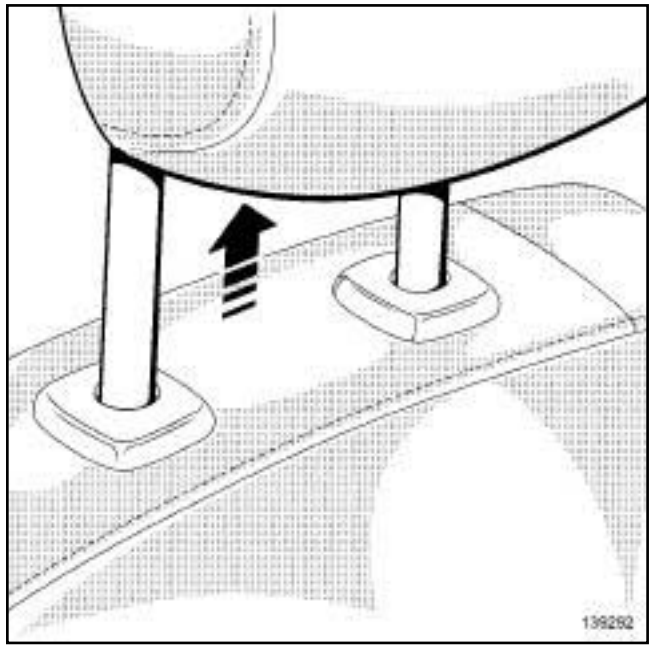


139290

❑ Press the unlocking button on each headrest guide.

Note:

Depending on the type of unlocking button, this operation is performed manually or using a flat-blade screwdriver.



139292

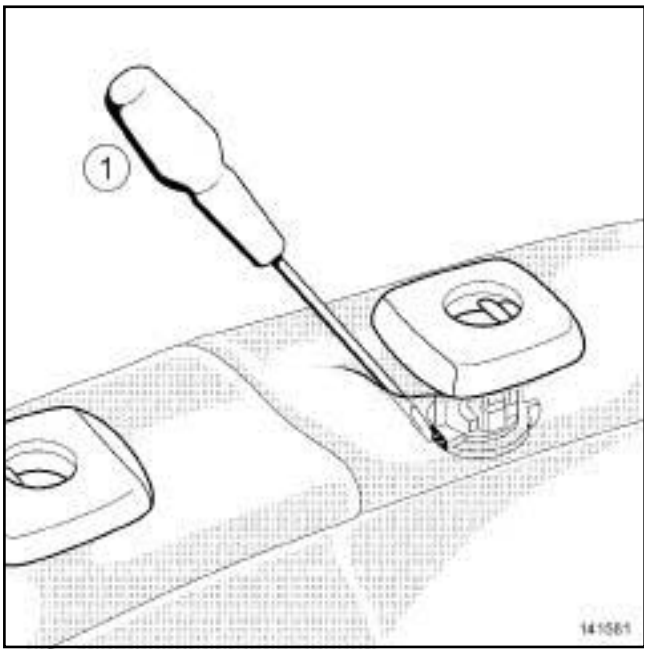
❑ Remove the front seat headrest.

Note:

The front seat headrest guides can be removed without removing the front seatback cover.

WITHOUT SPORT SEATS, and DOCUMENTATION PHASE 2

II - OPERATION FOR REMOVAL OF PART CONCERNED



141581

141582

❑ Slightly detach the "foam - cover" assembly of the front seatback near the headrest guides to reveal the locking clips of the front seat headrest guides.

❑ Unclip the front seat headrest guides from the front seat frame by pressing the locking clips (**2**) using a flat-blade screwdriver (**1**) .

❑ Remove the front seat headrest guides.

Note:

The locking clips of the front seat headrest guides are all on the same side.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the front seat headrest guides fully into the front seatback frame.

Note:

To prevent the headrest guides from being mixed up, every headrest guide has a specific foolproofing device.

❑ Check that the front seat headrest guides are secure on the front seatback frame.

II - FINAL OPERATION

❑ Refit the front seat headrest.

❑ Carry out a function test.

IMPORTANT

To prevent the headrest coming away from the guide during a collision, check that headrest guide locking system is functioning correctly.

❑ Set the angle of the front seatback to its original position.

RENAULT

8 Electrical equipment

80A BATTERY

80B HEADLIGHTS

81A REAR LIGHTING

81B INTERIOR LIGHTING

81C FUSES

82A ENGINE IMMOBILISER

82B HORN

83A INSTRUMENT PANEL

83C ON-BOARD TELEMATICS SYSTEM

83D CRUISE CONTROL

84A CONTROL - SIGNALS

X85

JULY 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

85A WIPING - WASHING

86A RADIO

86B CAR PHONE

87B PASSENGER COMPARTMENT CONNECTION UNIT

87C OPENING ELEMENT MANAGEMENT

87D ELECTRIC WINDOWS - SUNROOF

87F PARKING DISTANCE CONTROL

87G ENGINE COMPARTMENT CONNECTION UNIT

88A WIRING HARNESS

88C AIR BAG AND PRETENSIONERS

88D DRIVER'S POSITION

X85

JULY 2009 **EDITION ANGLAISE**

"The repair procedures given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The procedures may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which the vehicles are constructed".

All rights reserved by Renault.

Copying or translating, in part or in full, of this document or use of the service part reference numbering system is forbidden without the prior written authority of Renault.

© Renault s.a.s 2007

CLIO III - Section 8

Contents

Pages

80A BATTERY

Battery: Removal - Refitting 80A-1

Battery: Precautions for the repair 80A-4

Battery tray: Removal - Refitting 80A-5

80B HEADLIGHTS

Front lighting: List and location of components 80B-1

Headlight: Removal - Refitting 80B-7

Headlight: Adjustment 80B-9

Headlight bulb: Removal - Refitting 80B-17

Front fog light bulb: Removal - Refitting 80B-27

Front fog light: Removal - Refitting 80B-28

Side indicator: Removal - Refitting 80B-30

Remote headlight beam adjustment actuator: Removal - Refitting 80B-31

Headlight beam adjustment front sensor: Removal - Refitting 80B-35

80B HEADLIGHTS

Headlight beam adjustment rear sensor: Removal - Refitting 80B-37

Xenon headlight high voltage unit: Removal - Refitting 80B-38

Front lighting computer: Removal - Refitting 80B-40

81A REAR LIGHTING

Rear lighting: List and location of components 81A-1

Rear wing light: Removal - Refitting 81A-5

Rear light bulb: Removal - Refitting 81A-7

3rd brake light: Removal - Refitting 81A-10

High level brake light bulb: Removal - Refitting 81A-12

Rear fog lights: Removal - Refitting 81A-14

Number plate light: Removal - Refitting 81A-16

Contents

81B INTERIOR LIGHTING

Interior lighting: Function 81B-1

Interior lighting: List and location of components 81B-3

Interior light: Removal - Refitting 81B-5

Courtesy light: Removal - Refitting 81B-6

Lower door light: Removal - Refitting 81B-7

Storage compartment light: Removal - Refitting 81B-8

Luggage compartment light: Removal - Refitting 81B-9

81C FUSES

Fuses: List and location of components 81C-1

82A ENGINE IMMOBILISER

Immobiliser system: List and location of components 82A-1

Starting aerial: Removal - Refitting 82A-5

Ignition switch: Removal - Refitting 82A-9

Transponder ring: Removal - Refitting 82A-13

Start button: Removal - Refitting 82A-16

Electric steering column lock: Removal - Refitting 82A-18

Battery for remote door locking control: Removal - Refitting 82A-21

Card reader: Removal - Refitting 82A-23

82B HORN

Audible warning: Removal - Refitting 82B-1

83A INSTRUMENT PANEL

Clock: Before/after repair procedure 83A-1

Instrument panel: Removal - Refitting 83A-3

Instrument panel: Before/ after repair procedure 83A-4

Vehicle speed management unit: Removal - Refitting 83A-5

83C ON-BOARD TELEMATICS SYSTEM

Navigation: List and location of components 83C-1

Radio navigation: Removal - Refitting 83C-3

Navigation computer: Removal - Refitting 83C-4

Multimedia network interface unit: Removal - Refitting 83C-7

Navigation screen: Removal - Refitting 83C-10

Navigation aerial: Removal - Refitting 83C-11

83D CRUISE CONTROL

Cruise control - speed limiter: List and location of components 83D-1

Switch: Removal - Refitting 83D-2

Contents

84A CONTROL - SIGNALS

Rotary switch: Removal - Refitting 84A-1

Steering column switch assembly: List and location of components 84A-2

Steering column switch assembly: Removal - Refitting 84A-4

Screen wiper switch: Removal - Refitting 84A-8

Signals and lighting switch: Removal - Refitting 84A-9

Gear selector on the steering wheel: Removal - Refitting 84A-11

Hazard warning lights and central door control: Removal - Refitting 84A-14

ESP inhibitor switch: Removal - Refitting 84A-16

Remote headlight beam adjustment control: Removal - Refitting 84A-17

Lighting dimmer: Removal - Refitting 84A-18

Exterior rear view mirror control switch: Removal - Refitting 84A-19

Heated rear screen: Repair 84A-20

Heated seat pad switch: Removal - Refitting 84A-22

Driving school repeater electrical control unit: Removal - Refitting 84A-24

85A WIPING - WASHING

Wiping and washing: List and location of components 85A-1

Wiping and washing: Function 85A-4

85A WIPING - WASHING

Rain and light sensor: Removal - Refitting 85A-5

Windscreen wiper blade: Removal - Refitting 85A-7

Windscreen wiper arm: Removal - Refitting 85A-8

Wiping arm: Removal - Refitting 85A-9

Windscreen wiper mechanism: Removal - Refitting 85A-10

Windscreen wiper motor: Removal - Refitting 85A-13

Rear screen wiper motor: Removal - Refitting 85A-15

Screen washer pump: Removal - Refitting 85A-17

Headlight washer pump: Removal - Refitting 85A-18

Headlight washer jet: Removal - Refitting 85A-19

Rear screen wiper arm: Removal - Refitting 85A-20

Windscreen washer reservoir: Removal - Refitting 85A-22

86A RADIO

Radio: List and location of components 86A-1

Radio: Before/after repair procedure 86A-5

Radio: Removal - Refitting 86A-8

Radio aerial: Removal - Refitting 86A-11

Tweeter: Removal - Refitting 86A-13

Front speakers: Removal - Refitting 86A-14

Contents

86A RADIO

Rear speakers: Removal - Refitting 86A-15

Display: Removal - Refitting 86A-18

Radio control satellite: Removal - Refitting 86A-19

Receiver: Removal - Refitting 86A-20

Offset multimedia socket: Removal - Refitting 86A-21

Offset multimedia socket computer: Removal - Refitting 86A-23

86B CAR PHONE

Car phone: List and location of components 86B-1

Computer: Removal - Refitting 86B-3

"Hands-free" microphone: Removal - Refitting 86B-4

87B PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Removal - Refitting 87B-1

87C OPENING ELEMENT MANAGEMENT

Opening elements management: List and location of components 87C-1

Tailgate opening switch: Removal - Refitting 87C-5

Tailgate locking switch: Removal - Refitting 87C-6

Fuel filler flap locking motor: Removal - Refitting 87C-8

Opening aerial: Removal - Refitting 87C-9

87D ELECTRIC WINDOWS - SUNROOF

Electric window: List and location of components 87D-1

Front electric window switches on driver's door: Removal - Refitting 87D-3

Front electric window switch on passenger door: Removal - Refitting 87D-4

Rear electric window switch: Removal - Refitting 87D-5

Child safety switch: Removal - Refitting 87D-6

Electric sunroof: List and location of components 87D-7

Sunroof opening motor: Removal - Refitting 87D-8

Sunroof opening control: Removal - Refitting 87D-10

87F PARKING DISTANCE CONTROL

Parking distance control: List and location of components 87F-1

Parking distance control switch: Removal - Refitting 87F-3

Parking distance control buzzer: Removal - Refitting 87F-5

Parking distance control computer: Removal - Refitting 87F-6

Proximity radar: Removal - Refitting 87F-7

87G ENGINE COMPARTMENT CONNECTION UNIT

Protection and Switching Unit: Removal - Refitting 87G-1

Contents

88A WIRING HARNESS

Headlining wiring: Removal - Refitting 88A-1

Computers: List and location of components 88A-2

Diagnostic socket: List and location of components 88A-4

Wiring: Precautions for the repair 88A-5

Front bumper wiring: Connector access 88A-6

Front bumper wiring: Removal - Refitting 88A-8

Front left-hand wiring: Connector access 88A-10

Front left-hand wiring: Removal - Refitting 88A-16

Engine wiring: Connector access 88A-30

Engine wiring: Removal - Refitting 88A-44

Dashboard wiring: Connector access 88A-78

Dashboard wiring: Removal - Refitting 88A-88

Driver's front side door wiring: Removal - Refitting 88A-108

Passenger's front side door wiring: Removal - Refitting 88A-112

Rear right-hand side door wiring: Removal - Refitting 88A-116

Rear left-hand side door wiring: Removal - Refitting 88A-119

Rear wiring: Connector access 88A-122

Rear wiring: Removal - Refitting 88A-134

Rear bumper wiring: Connector access 88A-154

Rear bumper wiring: Removal - Refitting 88A-155

88C AIR BAG AND PRETENSIONERS

Airbag and pretensioners: List and location of components 88C-1

Airbag and pretensioners: Precautions for the repair 88C-6

Airbags and pretensioners: Recycling - Destruction 88C-7

Airbag computer: Removal - Refitting 88C-9

Inhibitor switch: Removal - Refitting 88C-11

Seat runner switch: Removal - Refitting 88C-12

Front lap belt pretensioner: Removal - Refitting 88C-13

Front pyrotechnic inertia reel: Removal - Refitting 88C-16

Rear pyrotechnic inertia reel: Removal - Refitting 88C-20

Driver's frontal airbag: Removal - Refitting 88C-22

Passenger's frontal airbag: Removal - Refitting 88C-26

Front (chest-level) side airbag: Removal - Refitting 88C-29

Side curtain airbag: Removal - Refitting 88C-31

Anti-submarining airbag: Removal - Refitting 88C-34

Side impact sensor: Removal - Refitting 88C-36

88D DRIVER'S POSITION

Cigarette lighter: Removal - Refitting 88D-1

Tightening torques ▽	
positive battery terminal nut	**6 N.m**
battery bracket nut	**12 N.m**
fuse holder nuts	**6 N.m**
negative battery terminal nut	**6 N.m**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **80A**, **Battery**, **Battery: Precautions for the repair**, page **80A-4**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

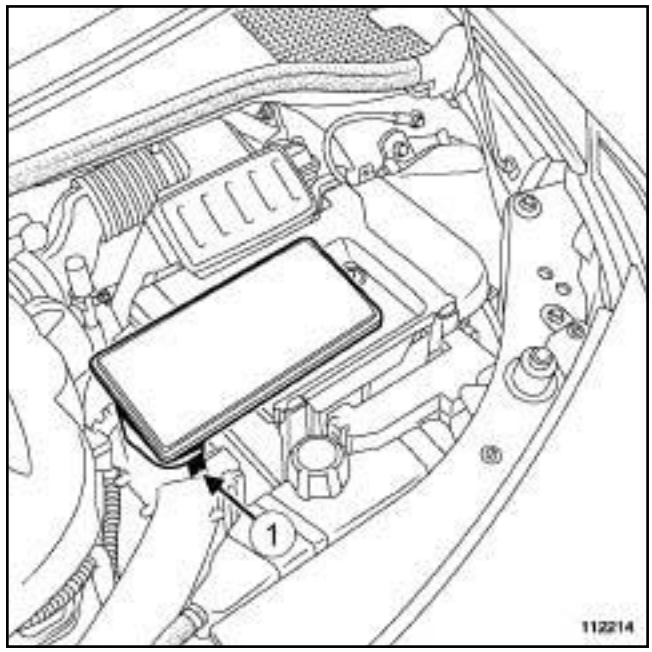
WARNING

Before disconnecting the battery:

- wait for the motor-driven fan assembly to stop,
- wait for the computer to finish saving (**1 minute**).

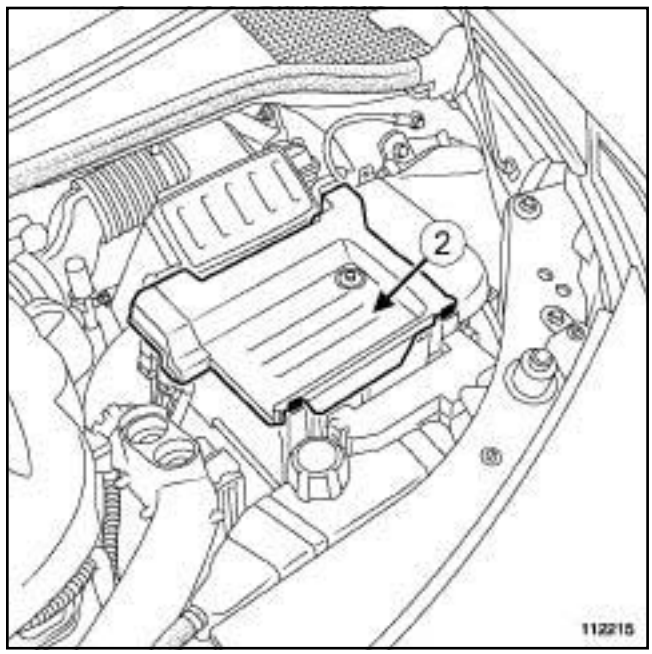
WARNING
The visual indicator cannot be considered reliable in After-Sales; do not use it to determine the state of the battery.

K4J or K4M or M4R



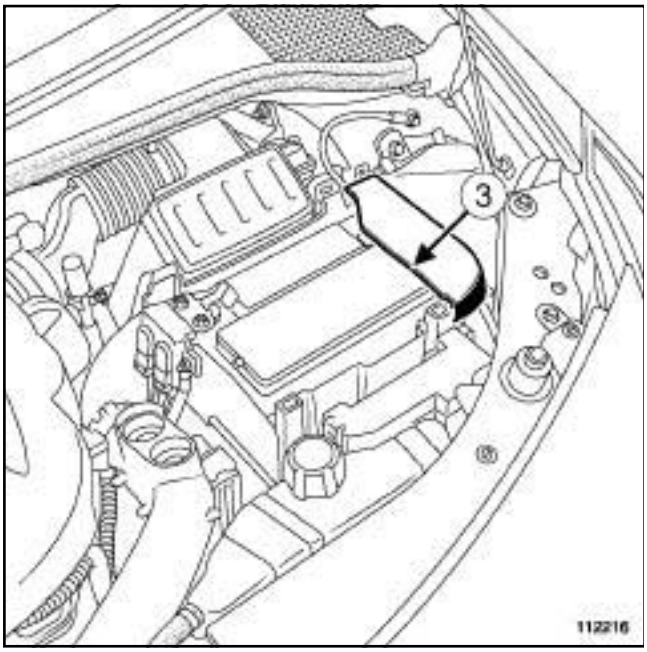
112214

❑ Remove the air resonator by pressing the clip (**1**) .



112215

❑ Remove the large part of the battery cover (**2**) .

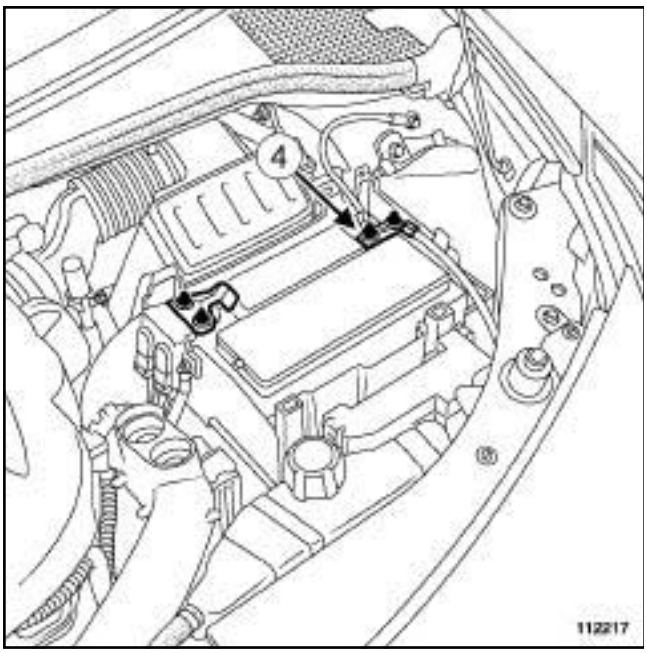


112216

❏ Remove the small part of the battery cover (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

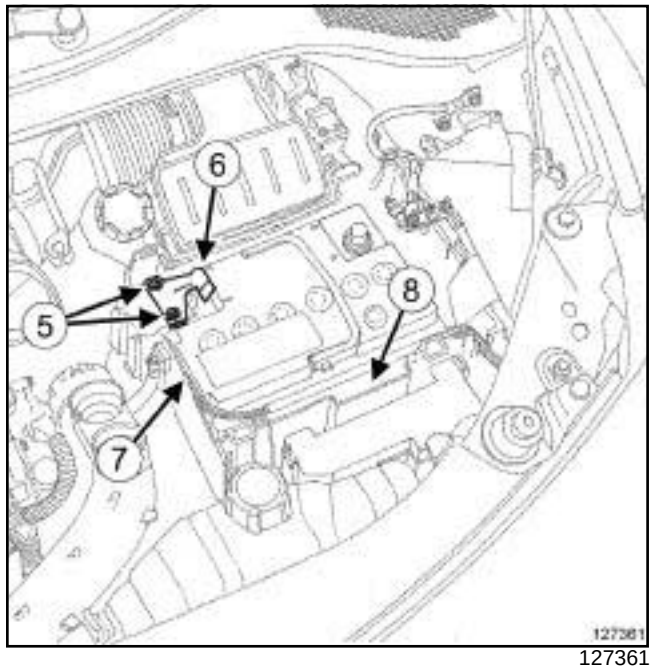
1 - DISCONNECTING



112217

❏ Remove the negative battery terminal (**4**) .

2 - REMOVAL



127361

❏ Remove the nuts (**5**) from the protective fuse holder.

❏ Remove the charge terminal (**6**) .

❏ Disconnect the protective fuse holder.

❏ Unclip the degassing pipe (**7**) .

❏ Remove:

- the nut from the battery bracket,
- the battery bracket (**8**) ,
- the battery.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check the battery (see **Battery: Check**) (80A, Battery).

❏ In the event of a replacement, remove the positive battery terminal.

II - REFITTING OPERATION FOR PART CONCERNED

1 - REPLACEMENT

❏ Undo the positive battery terminal.

❏ Push the positive battery terminal fully onto the battery terminal post.

❏ Torque tighten the **positive battery terminal nut (6 N.m)**.

WARNING
Poor contact may cause starting or charging faults, create sparks and cause the battery to explode.

(see **80A**, **Battery**, **Battery: Precautions for the repair**, page **80A-4**) .

2 - REFITTING

❏ Fit the battery into its housing, placing it as close as possible to the engine side.

❏ Refit the battery bracket.

❏ Tighten to torque the **battery bracket nut (12 N.m)**.

❏ Connect the degassing pipe to the battery.

❏ Connect the protective fuse holder to the positive battery terminal.

❏ Position the charge terminal on the positive terminal studs.

❏ Fit the protective fuse holder against the battery heat shield while securing.

❏ Torque tighten the **fuse holder nuts (6 N.m)**.

WARNING
Poor contact may cause starting or charging faults, create sparks and cause the battery to explode.

(see **80A**, **Battery**, **Battery: Precautions for the repair**, page **80A-4**)

3 - CONNECTION

❏ Loosen the negative battery terminal.

❏ Push the negative battery terminal fully onto the battery terminal post.

❏ Torque tighten the **negative battery terminal nut (6 N.m)**.

WARNING
Poor contact may cause starting or charging faults, create sparks and cause the battery to explode.

(see **80A**, **Battery**, **Battery: Precautions for the repair**, page **80A-4**) .

III - FINAL OPERATION

❏ Clip:

- the small part of the battery housing,
- the large part of the battery housing.

K4J or K4M or M4R

❏ Refit the air resonator.

❏ When refitting the battery or each time it is disconnected, carry out a certain number of operations, without using the diagnostic tool, so that the vehicle can operate correctly (see **Battery: Initialisation**) (80A, Battery).

I - SAFETY

1 - DANGER: RISK FROM ACID LINKED TO HANDLING

Sulphuric acid is a highly aggressive and toxic substance which corrodes most metals.

When handling batteries, it is very important to take the following precautions:

- protect your eyes by wearing goggles,

- wear acid-proof gloves and clothing.

IMPORTANT

A battery contains sulphuric acid, a dangerous substance.

If acid splashes on to your clothing, rinse all contaminated areas thoroughly in water.

If it comes into contact with the skin or eyes, seek medical attention.

2 - DANGER: RISK OF EXPLOSION LINKED TO CHARGING AND TO INCORRECT TIGHTENING OF THE TERMINALS.

IMPORTANT

To prevent damaging the battery or even causing it to explode, do not place any heat sources or create any sparks near a charging battery.

WARNING

Incorrect tightening could cause heating of contacts, starting or charging faults, sparking, or could cause the battery to explode.

When a battery is charging, oxygen and hydrogen are produced. The mixture of these two gases is explosive.

The smallest of sparks or heat sources can cause an explosion. The explosion is so strong that the battery can shatter and spray the acid into the surrounding atmosphere.

People nearby are at risk (exploded fragments, acid splashes). Acid splashes are dangerous. They also damage clothing.

Safeguarding against the danger of explosion, which can be caused by handling a battery carelessly, must be taken very seriously.

IMPORTANT

To avoid all risk of sparks, ensure that all electrical consumers are fully switched off.

When a battery is being charged inside a building, switch off the charger before connecting or disconnecting the battery.

Do not place any metallic items on the battery as this may create a short circuit across the terminals.

Never hold a naked flame, welding gun, blowtorch, cigarette or lighted match near to a battery.

II - GENERAL RECOMMENDATIONS

WARNING

These vehicles are equipped with a battery with low water consumption. Topping up the electrolyte is therefore prohibited.

WARNING

Before disconnecting the battery:

- wait for the motor-driven fan assembly to stop,

- wait for the computer to finish saving (**1 minute**).

WARNING

Some vehicles are only fitted with «TB» (low height) batteries. To avoid damaging the bonnet, only refit a battery which is identical to the battery originally fitted.

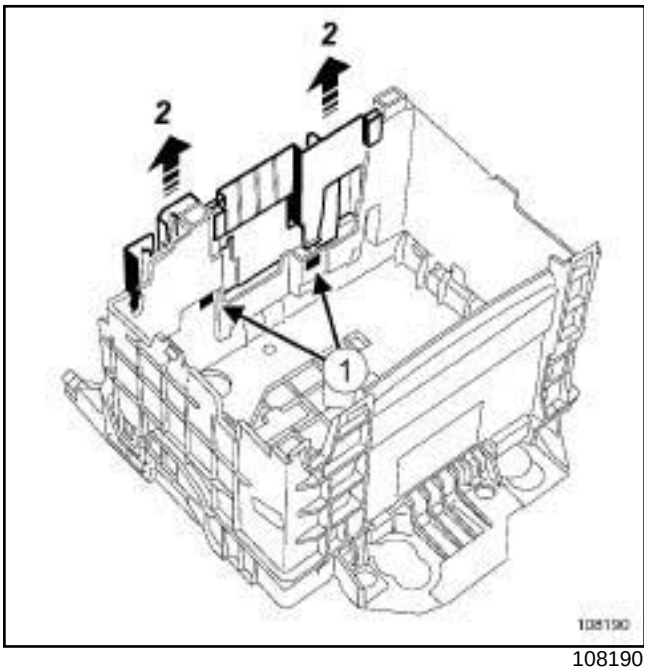
Tightening torques ▽	
bolts (M8) of the battery base shield	**21 Nm**
bolt (M6) of the battery base shield	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

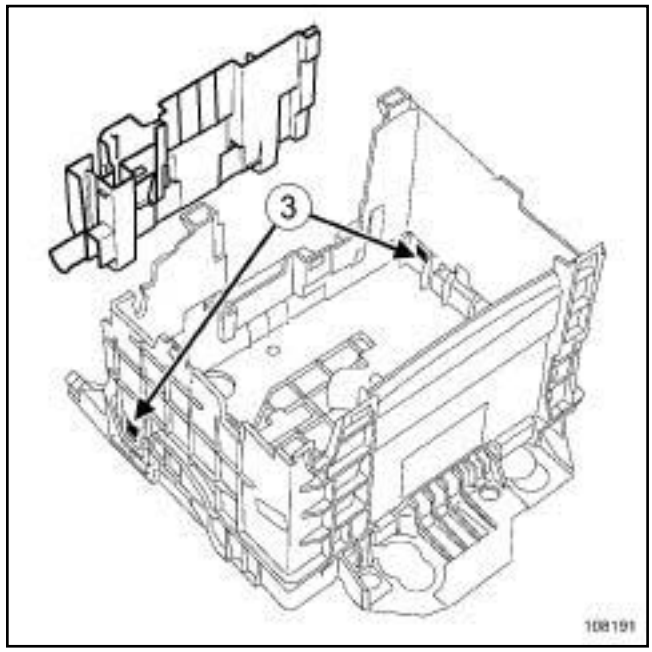
II - OPERATION FOR REMOVAL OF PART CONCERNED



108190

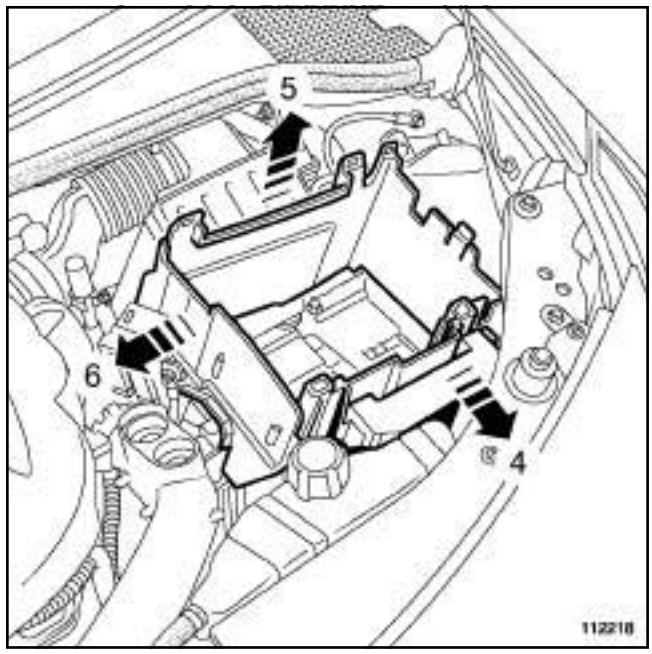
❑ Unclip the power feed fuse board support (**1**) .

❑ Remove the power feed fuse board support (**2**) .



108191

❑ Unclip the battery protective tray at (**3**) .



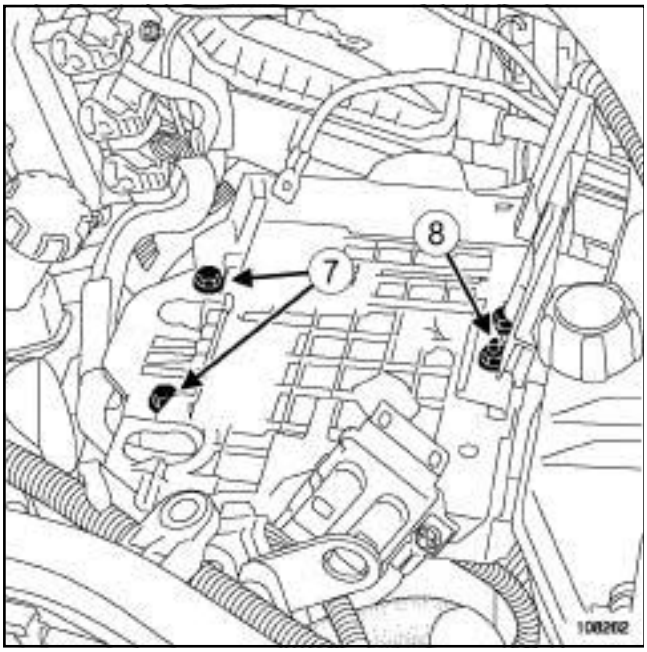
112218

❑ Keep the fuse board support away (**4**) .

❑ Move away the battery protective shield (**5**) and (**6**) .

❑ Remove the battery protective shield.

❑ Remove the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



108262

❑ Remove:

- the battery base shield bolts (**7**) (M8),
- the battery base shield bolt (**8**) (M6).

❑ Unclip the harness attached to the battery base shield.

❑ Remove the battery base shield.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the battery base shield and the mounting bolts.

❑ Torque tighten:

- the **bolts (M8) of the battery base shield (21 Nm)**,
- the **bolt (M6) of the battery base shield (8 Nm)**.

❑ Refit the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❑ Clip in place

- the battery protective tray,
- the power supply fuse board support.

❑ Refit the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

DOCUMENTATION PHASE 1

I - LIST OF COMPONENTS

The front lighting consists of:

- headlights (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**)
- halogen bulbs (see **80B**, **Headlights**, **Headlight bulb: Removal - Refitting**, page **80B-17**)
- headlight beam adjustment actuator (see **80B**, **Headlights**, **Remote headlight beam adjustment actuator: Removal - Refitting**, page **80B-31**)
- side indicators (see **80B**, **Headlights**, **Side indicator: Removal - Refitting**, page **80B-30**)

FOG LIGHTS

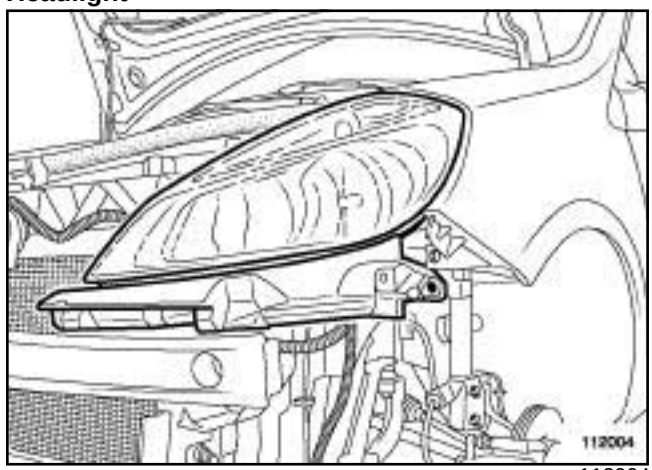
- front fog lights (see **80B**, **Headlights**, **Front fog light: Removal - Refitting**, page **80B-28**)
- front fog lights bulbs (see **80B**, **Headlights**, **Front fog light bulb: Removal - Refitting**, page **80B-27**)

DISCHARGE LAMPS

- xenon bulbs (see **80B**, **Headlights**, **Headlight bulb: Removal - Refitting**, page **80B-17**)
- a headlight beam adjustment front sensor (see **80B**, **Headlights**, **Headlight beam adjustment front sensor: Removal - Refitting**, page **80B-35**)
- a headlight beam adjustment rear sensor (see **80B**, **Headlights**, **Headlight beam adjustment rear sensor: Removal - Refitting**, page **80B-37**)
- xenon headlights high voltage unit (see **80B**, **Headlights**, **Xenon headlight high voltage unit: Removal - Refitting**, page **80B-38**)
- a front lighting computer (see **80B**, **Headlights**, **Front lighting computer: Removal - Refitting**, page **80B-40**)

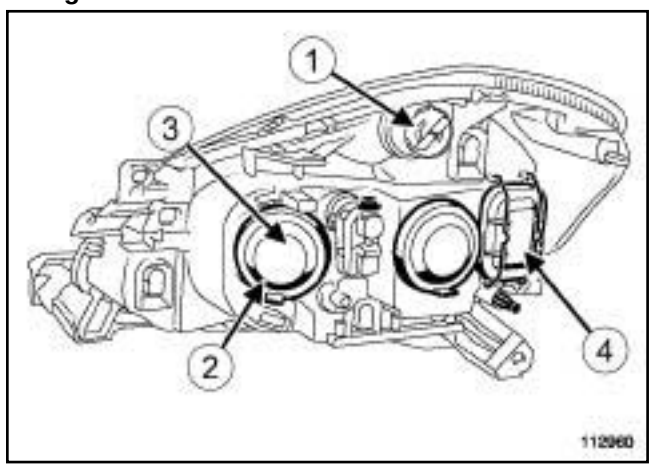
II - POSITION OF THE COMPONENTS

Headlight



112004

Halogen bulbs



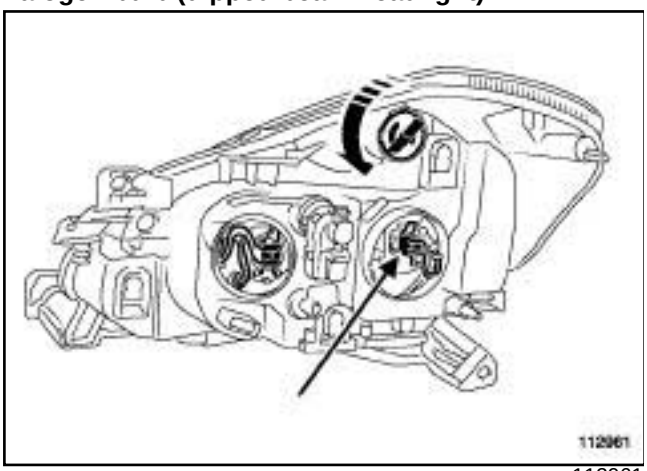
112960

(**1**) Direction indicator bulb
(**2**) Side light bulbs
(**3**) Main beam headlight bulbs
(**4**) Additional cornering light bulb

DOCUMENTATION PHASE 1

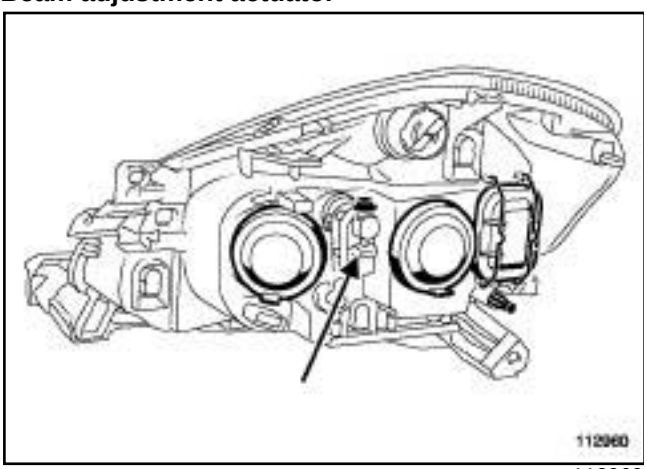
WITHOUT DISCHARGE LAMPS

Halogen bulb (dipped beam headlight)



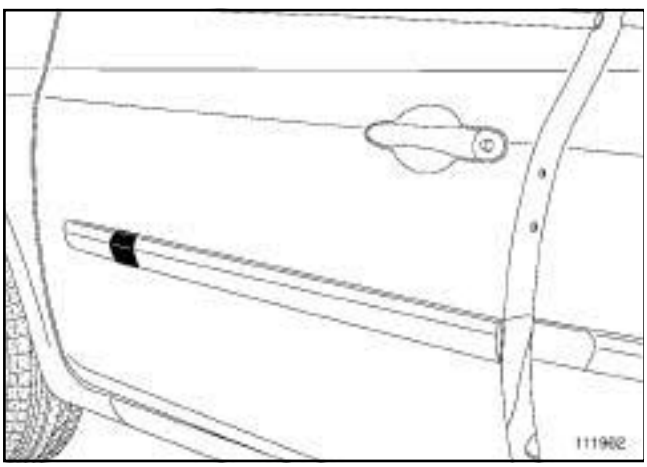
112961

Beam adjustment actuator



112960

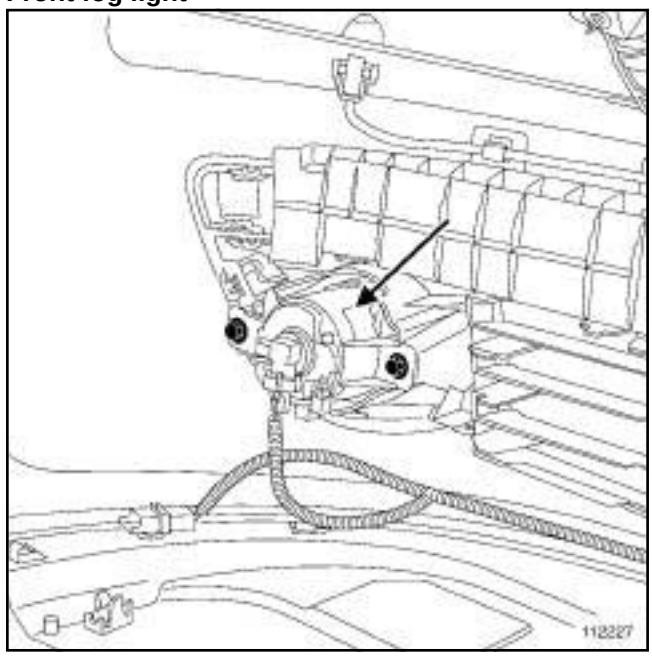
Side indicator



111962

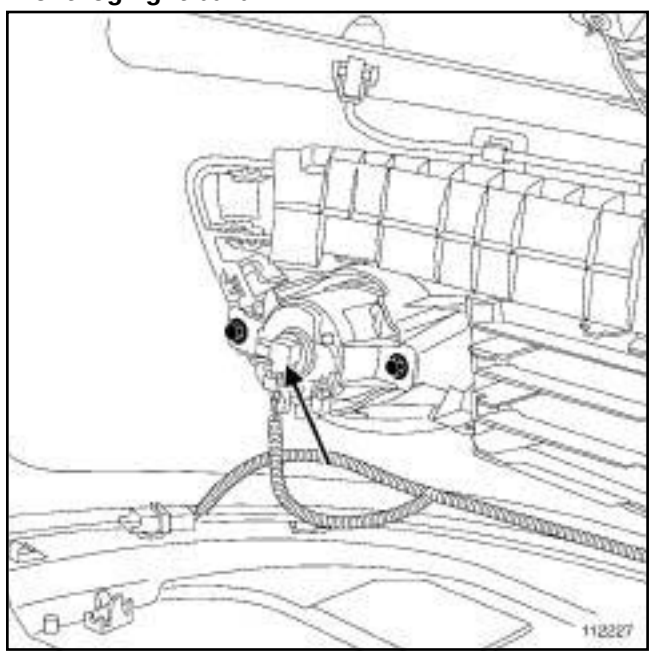
FOG LIGHTS

Front fog light



112227

Front fog light bulb

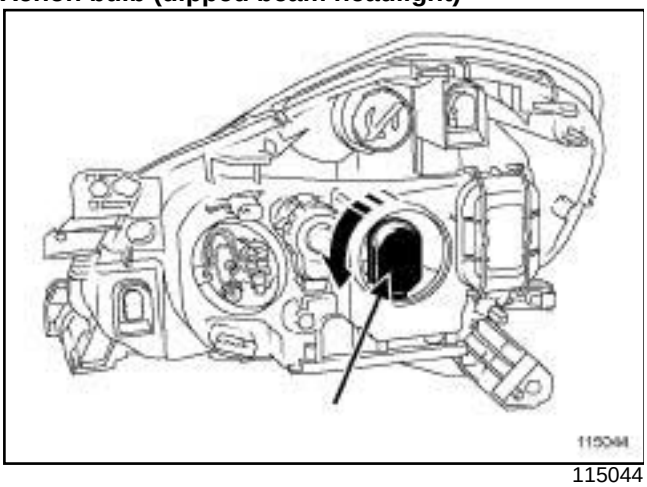


112227

DOCUMENTATION PHASE 1

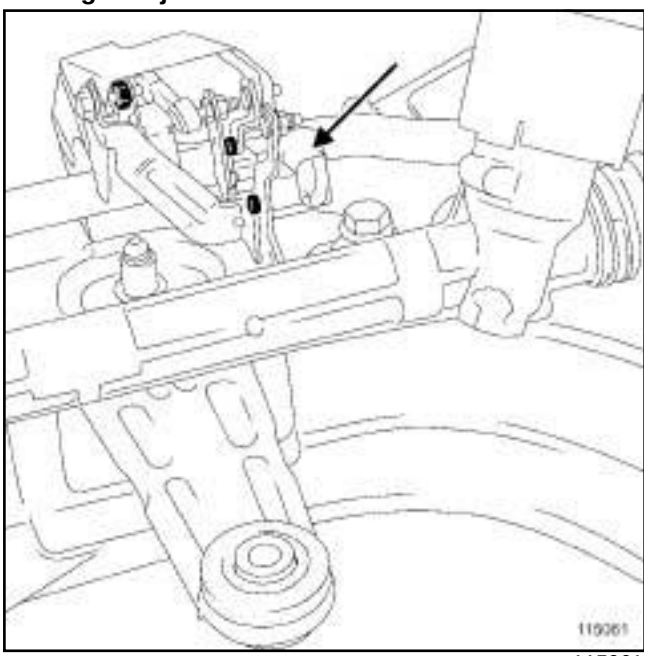
DISCHARGE LAMPS

Xenon bulb (dipped beam headlight)



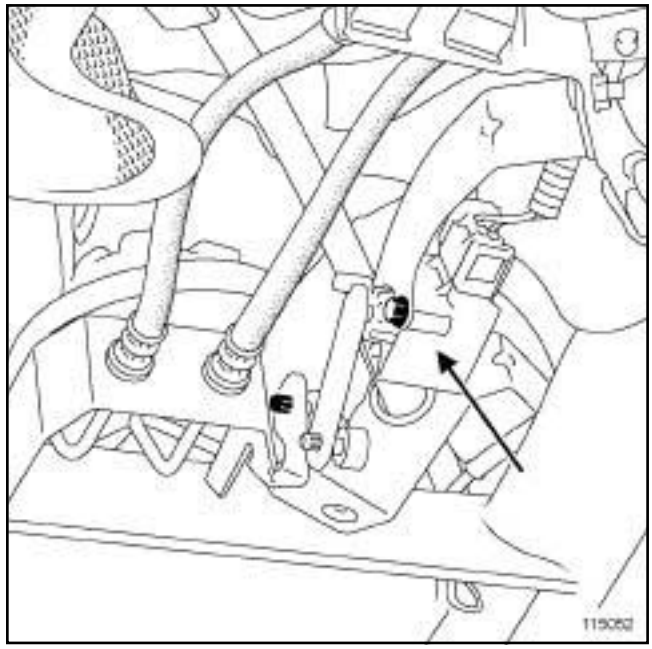
115044

Headlight adjustment front sensor



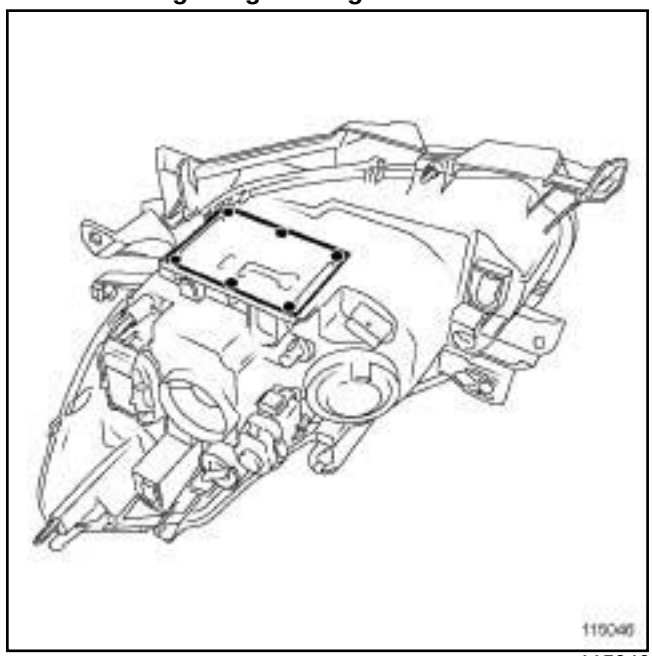
115061

Headlight adjustment rear sensor



115052

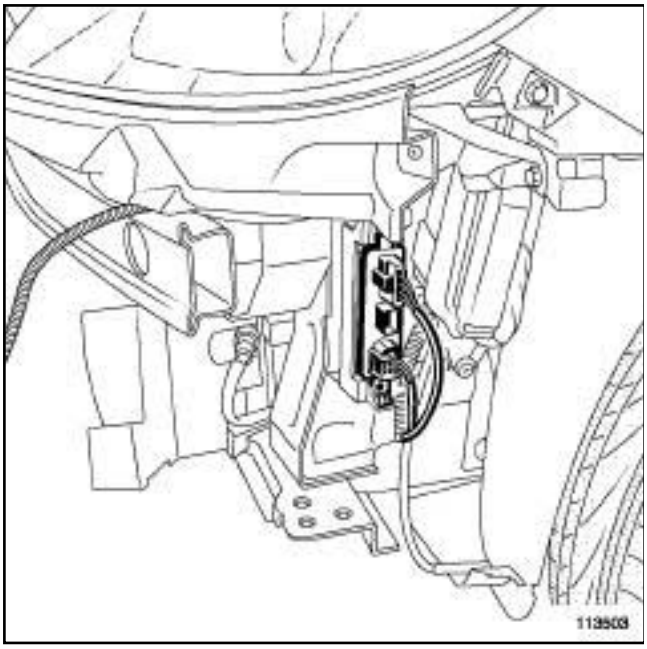
Xenon headlight high voltage unit



115046

DOCUMENTATION PHASE 1

Front lighting computer



113503

DOCUMENTATION PHASE 2

I - LIST OF COMPONENTS

The front lighting consists of:

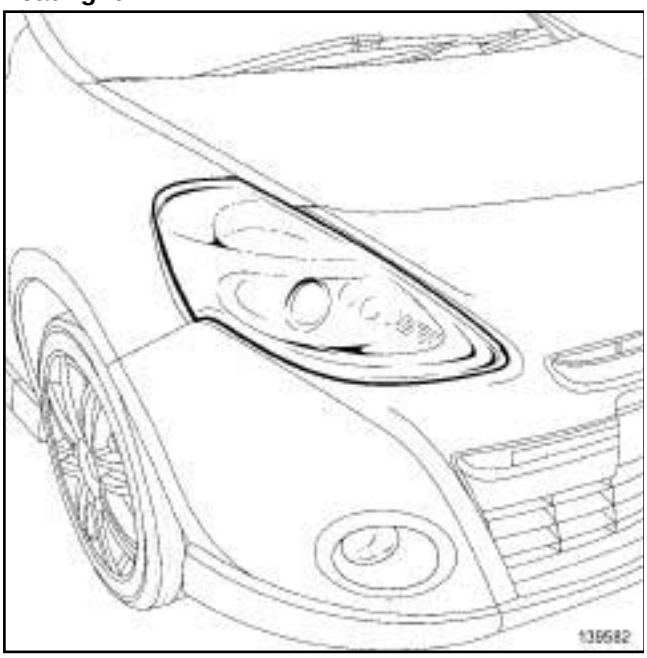
- headlights (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**)
- halogen bulbs (see **80B**, **Headlights**, **Headlight bulb: Removal - Refitting**, page **80B-17**)
- headlight beam adjustment actuators (see **80B**, **Headlights**, **Remote headlight beam adjustment actuator: Removal - Refitting**, page **80B-31**)
- side indicators (see **80B**, **Headlights**, **Side indicator: Removal - Refitting**, page **80B-30**)

FOG LIGHTS

- front fog light (see **80B**, **Headlights**, **Front fog light: Removal - Refitting**, page **80B-28**)
- front fog lights bulbs (see **80B**, **Headlights**, **Front fog light bulb: Removal - Refitting**, page **80B-27**)

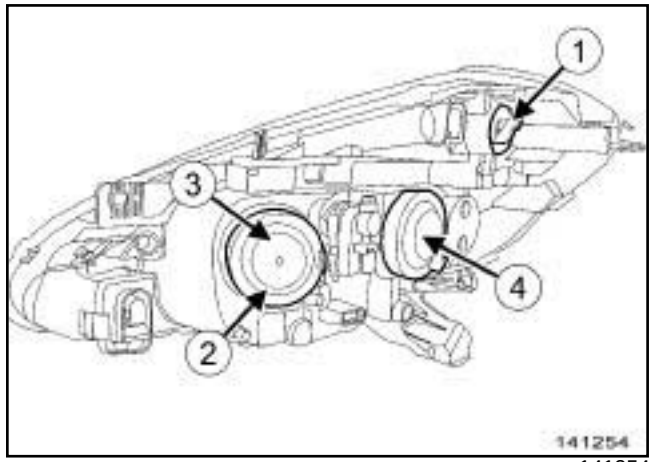
II - POSITION OF THE COMPONENTS

Headlight



139582

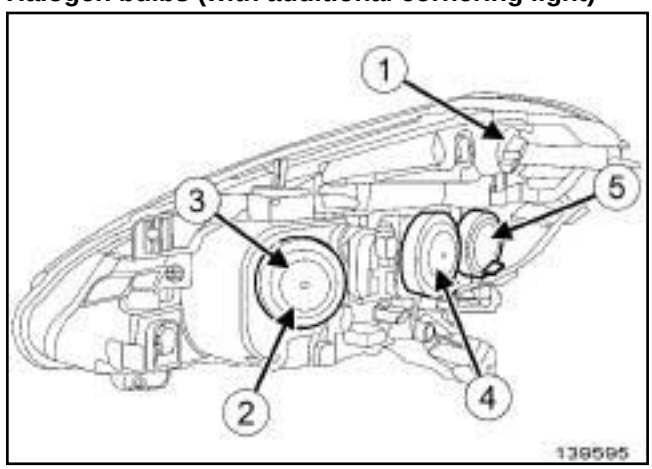
Halogen bulbs (without additional cornering light)



141254

(**1**) Direction indicator bulb
(**2**) Side light bulbs
(**3**) Main beam headlight bulbs
(**4**) Dipped beam headlight bulb

Halogen bulbs (with additional cornering light)

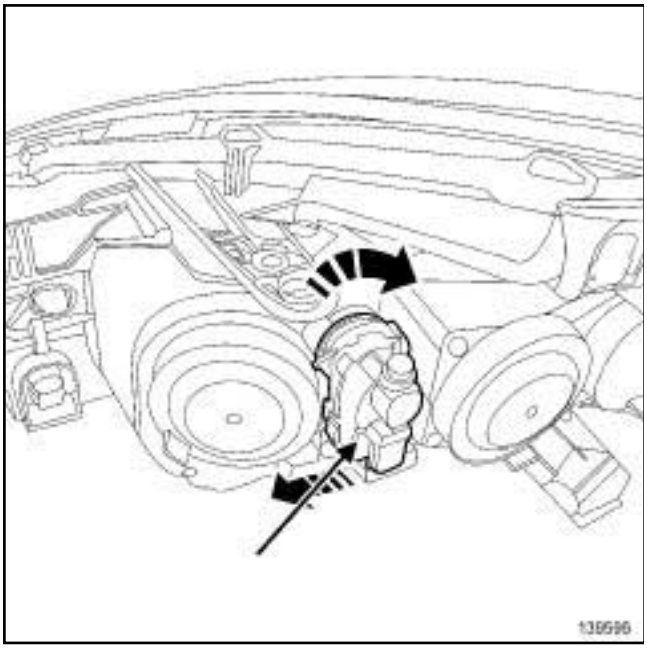


139595

(**1**) Direction indicator bulb
(**2**) Side light bulbs
(**3**) Main beam headlight bulbs
(**4**) Dipped beam headlight bulb
(**5**) Additional cornering light bulb

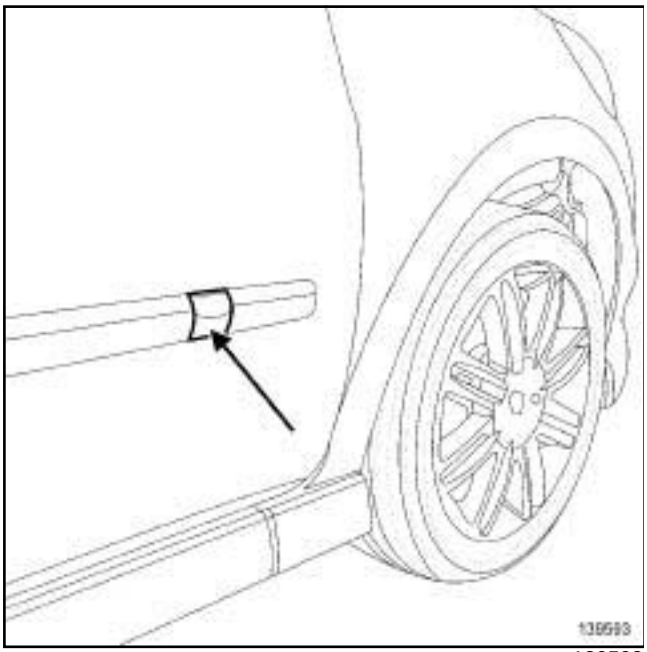
DOCUMENTATION PHASE 2

Headlight beam adjustment actuator



139596

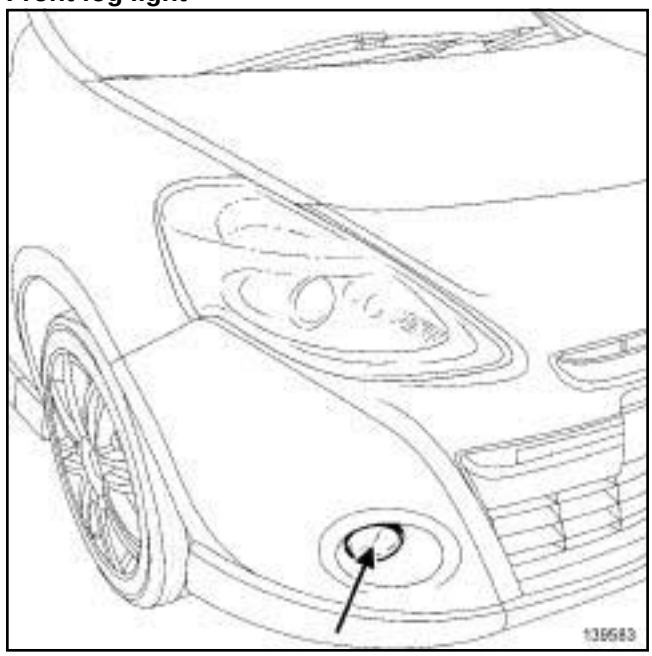
Side indicator



139593

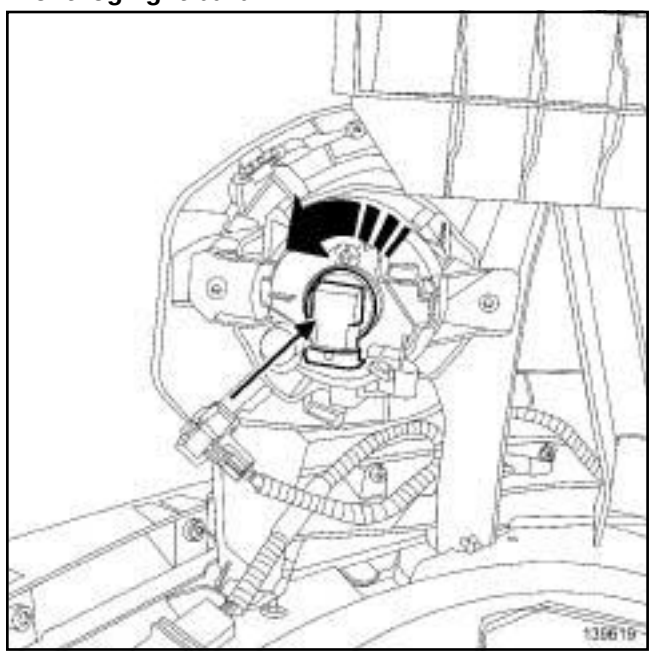
FOG LIGHTS

Front fog light



139583

Front fog light bulb



139619

DISCHARGE LAMPS, and DOCUMENTATION PHASE 1

❑

IMPORTANT

To prevent eye injuries:

- do not look at a xenon bulb when lit (voltage when lit **20000 V**),
- do not light a bulb which has not been fitted into its headlight.

IMPORTANT

To prevent burns, wait until the «computers - power unit » assemblies are cold before removal.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

DISCHARGE LAMPS, and DOCUMENTATION PHASE 1

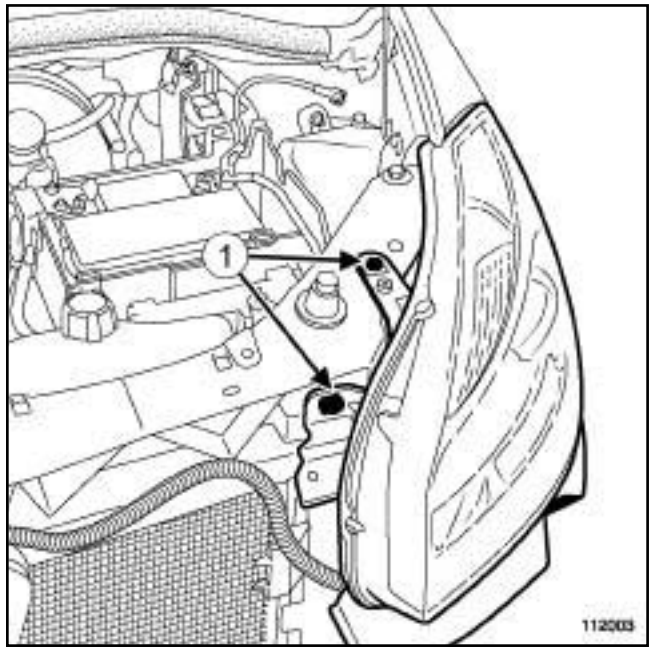
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

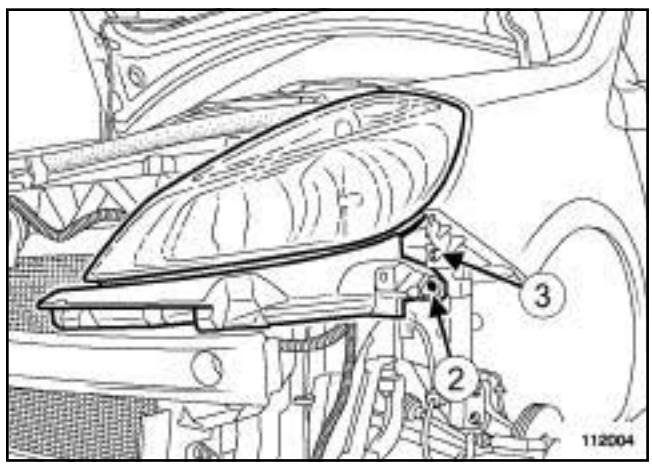
II - OPERATION FOR REMOVAL OF PART CONCERNED

DOCUMENTATION PHASE 1



112003

❑ Remove the upper bolts (**1**) from the headlight.

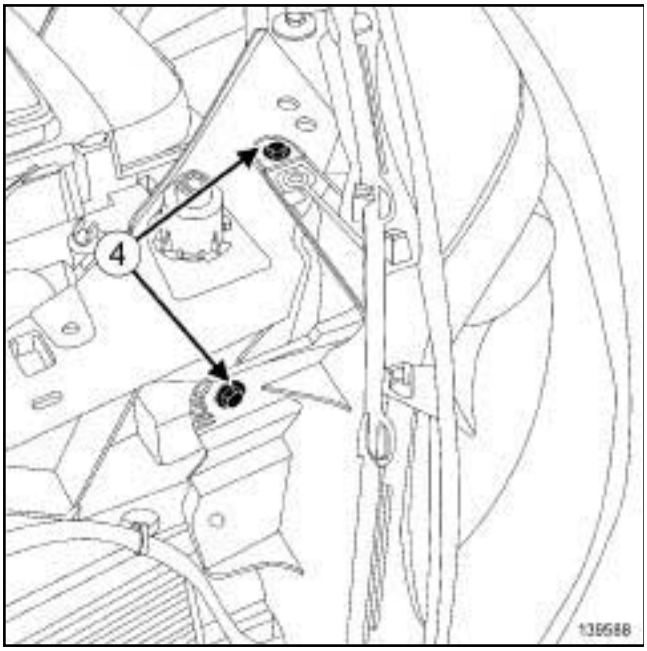


112004

❑ Remove:

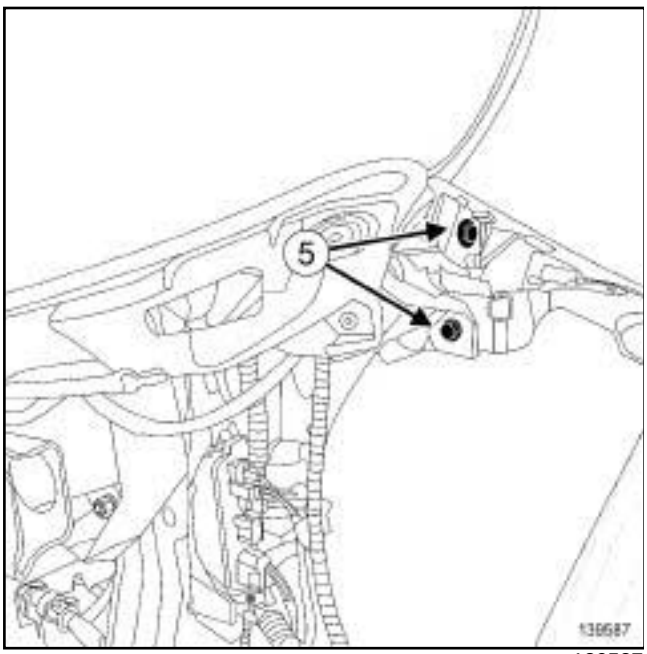
- the headlight lower bolt (**2**) ,
- the plastic rivet (**3**) .

DOCUMENTATION PHASE 2



139588

❏ Remove the upper bolts (**4**) from the headlight.



139587

❏ Remove the lower bolts (**5**) from the headlight.

❏ Remove the headlight.

❏ Disconnect the headlight connectors.

❏ Remove the headlight.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the headlight connectors

❏ Refit the headlight.

II - FINAL OPERATION

DISCHARGE LAMPS, and DOCUMENTATION PHASE 1

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Adjust the headlights (see **80B**, **Headlights**, **Headlight: Adjustment**, page **80B-9**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

DOCUMENTATION PHASE 1

Equipment required
headlight adjustment and checking tool

ADJUSTMENT

I - PREPARATION OPERATION FOR CHECK

❑ Place the vehicle in a working area equipped with a two-post lift.

Note:
Check that the lift is on flat, horizontal ground.

❑ Do not apply the parking brake.

❑ Check and inflate the tyres to the recommended pressure (see **Tyre pressure: Identification**) (35A, Wheels and tyres).

❑ Open the bonnet.

❑ Check:

- that the luggage compartment is empty,
- that the headlights are clean.

Note:
Do not get into the vehicle throughout the operation.

WITHOUT DISCHARGE LAMPS

❑ Position the headlight beam remote adjustment control on **0**.

❑ Switch on the dipped headlights.

II - TEST OPERATION

❑

WARNING
Consult the device's operating manual to avoid incorrect use.

WITHOUT DISCHARGE LAMPS

❑ Place the **headlight adjustment and checking tool** adjusted to **-1%** in front of the vehicle.

DISCHARGE LAMPS

❑ Place the **headlight adjustment and checking tool** adjusted to **-1.3%** in front of the vehicle.

❑ Using the **headlight adjustment and checking tool**, check the headlight beam adjustment.

III - ADJUSTMENT OPERATION

1 - Left-hand headlight

❑ Raise the vehicle (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

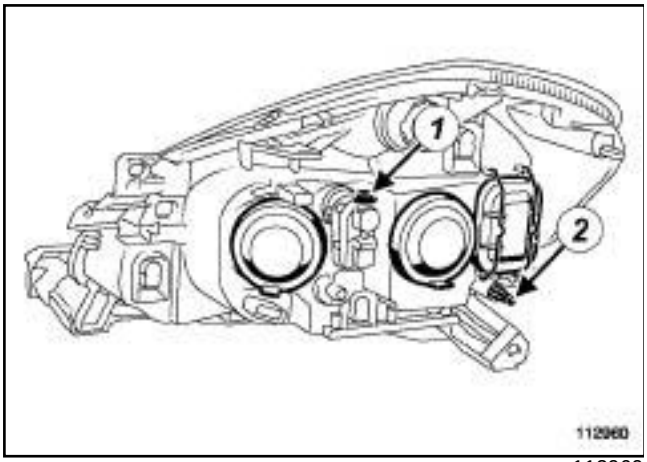
❑ Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Lower the vehicle.

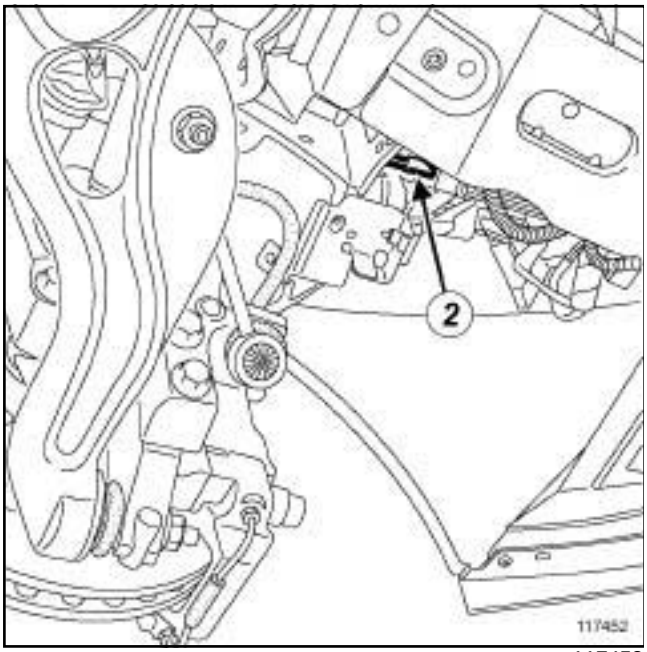
❑ Position the vehicle back on the ground.

❑ Compress the suspension.

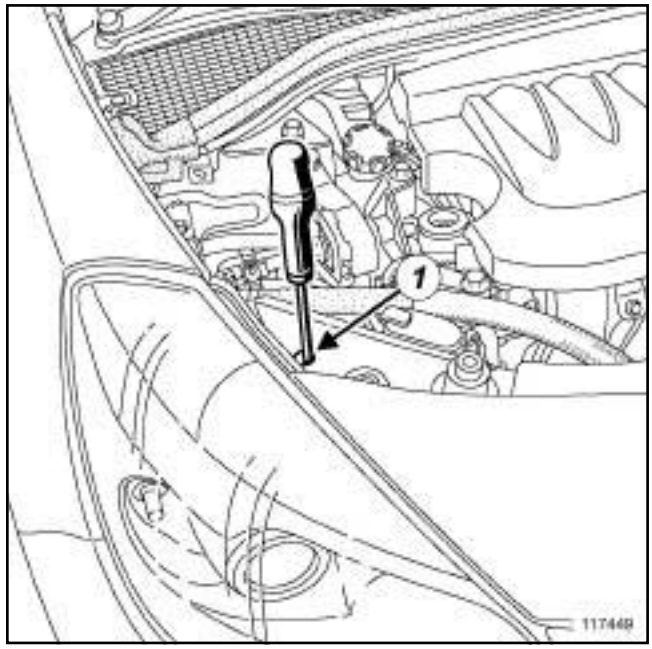
DOCUMENTATION PHASE 1



112960



117452



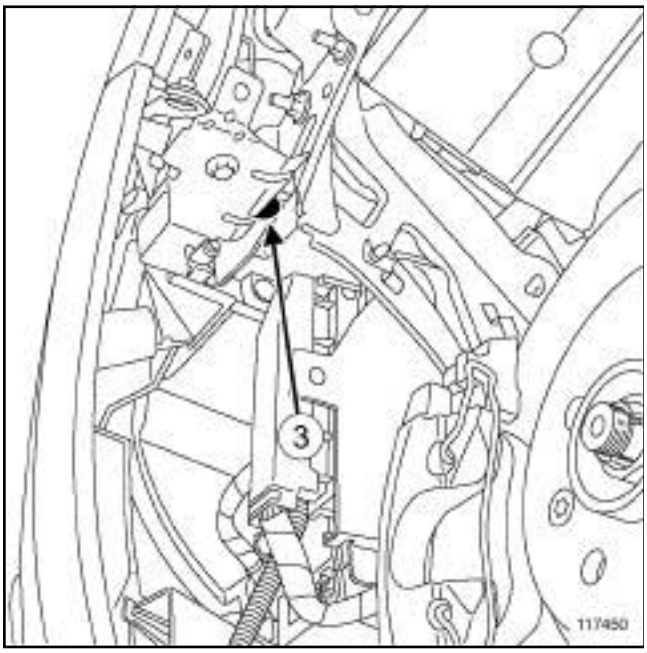
117449

❑ Using the **headlight adjustment and checking tool** :

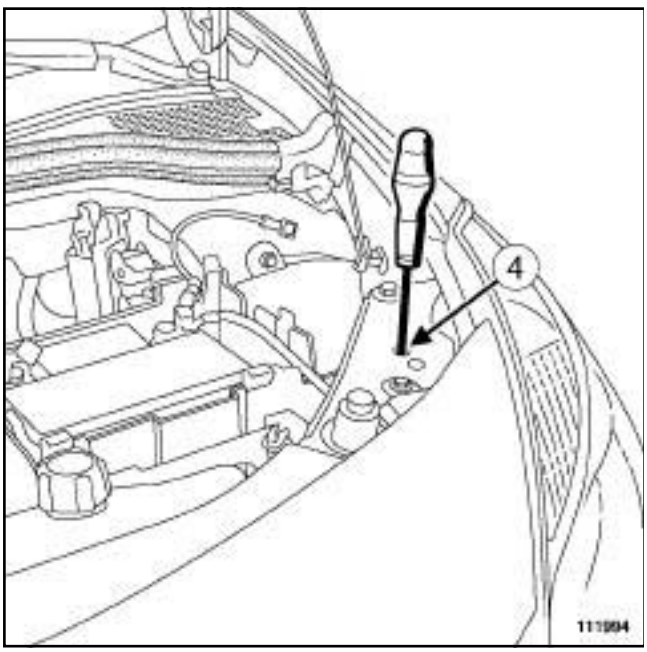
- perform lateral adjustment of the headlight using the screw (**2**) ,
- perform the beam adjustment using the screw located above the headlight (**1**) .

DOCUMENTATION PHASE 1

JAPAN SPECIAL FEATURES



117450



111994

❑ Using the **headlight adjustment and checking tool** :

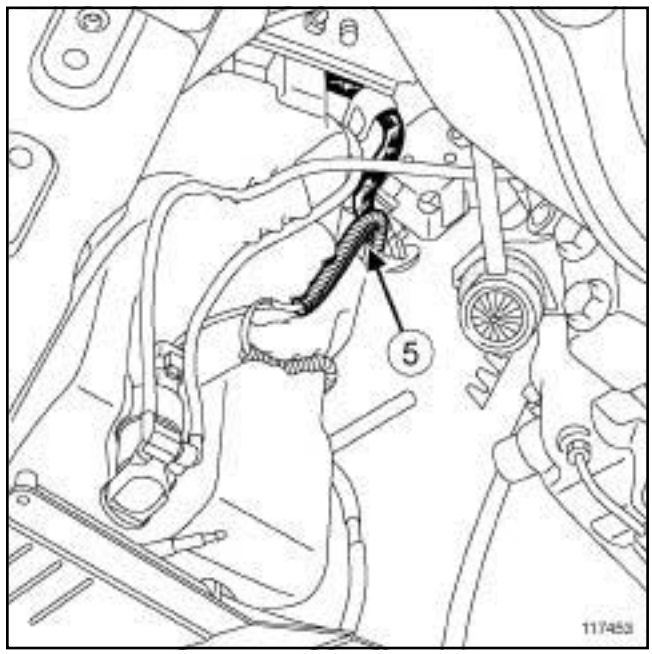
- perform lateral adjustment of the headlight using the screw (**3**) ,
- perform the beam adjustment using the screw located above the headlight (**4**) .

2 - Right-hand headlight

❑ Raise the vehicle (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).



117453

❑ Move aside the washer fluid pump electrical wiring (**5**) to access the lateral adjustment screw.

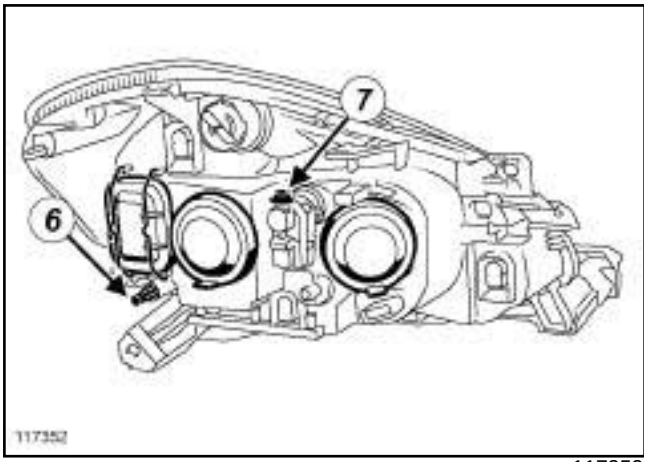
❑ Refit the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Lower the vehicle.

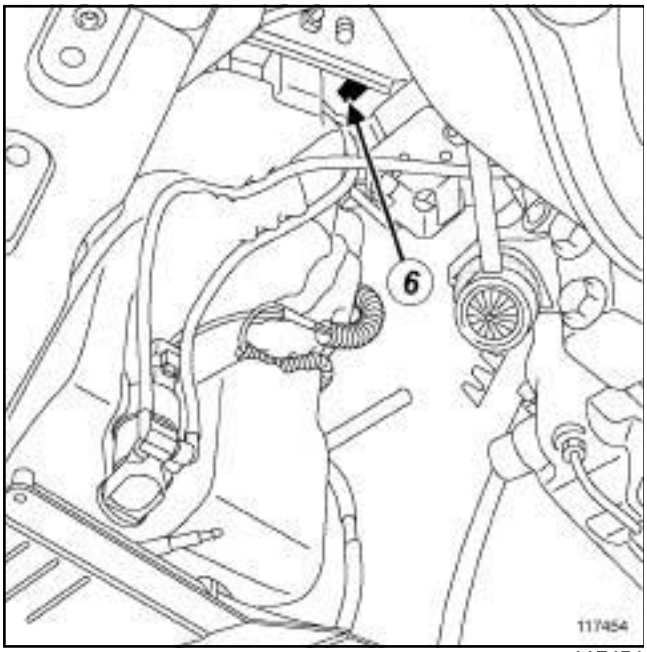
❑ Position the vehicle back on the ground.

❑ Compress the suspension.

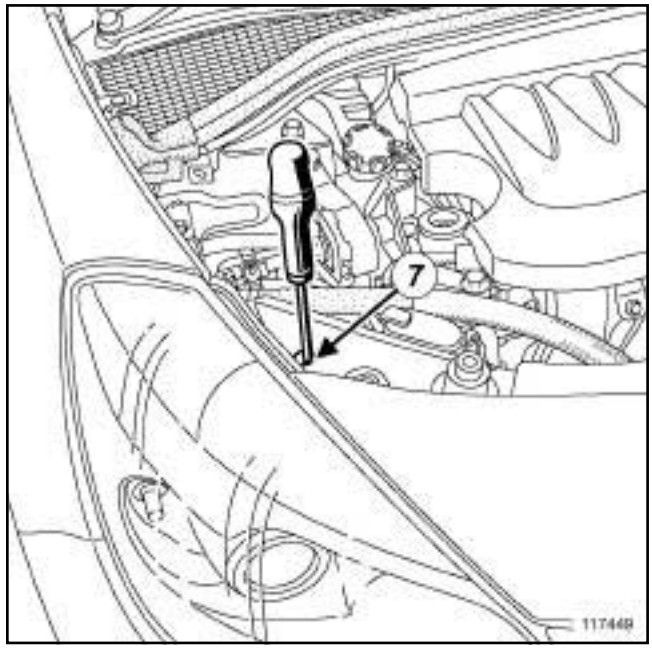
DOCUMENTATION PHASE 1



117352



117454



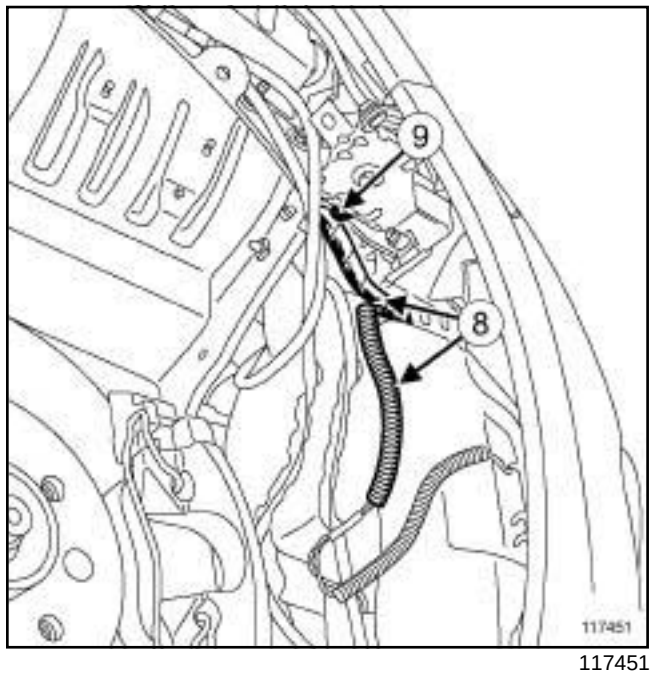
117449

❑ Using the **headlight adjustment and checking tool** :

- perform lateral adjustment of the headlight using the screw (**6**) ,

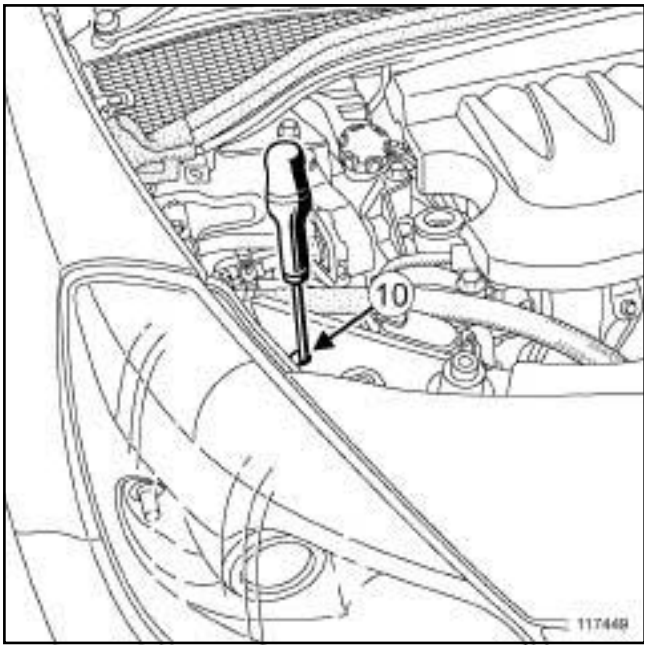
- perform the beam adjustment using the screw located above the headlight (**7**) .

JAPAN SPECIAL FEATURES



117451

❑ Move aside the washer fluid pump electrical wiring (**8**) to access the adjustment screw.



117449

❏ Using the **headlight adjustment and checking tool** :

- perform lateral adjustment of the headlight using the screw ***(9)*** ,
- perform the beam adjustment using the screw located above the headlight (**10**) .

IV - FINAL OPERATION

❏ Raise the vehicle.

❏ Remove the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Refit:

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Lower the vehicle.

❏ Close the bonnet.

DOCUMENTATION PHASE 2

Equipment required
headlight adjustment and checking tool

ADJUSTMENT

I - PREPARATION OPERATION FOR CHECK

❏ Place the vehicle in a working area equipped with a two-post lift.

> Note:
> Check that the lift is on flat, horizontal ground.

❏ Do not apply the parking brake.

❏ Check and inflate the tyres to the recommended pressure (see **Tyre pressure: Identification**) (35A, Wheels and tyres).

❏ Open the bonnet.

❏ Check:

- that the luggage compartment is empty,
- that the headlights are clean.

> Note:
> Do not get into the vehicle throughout the operation.

❏ Position the headlight beam remote adjustment control on **0**.

❏ Switch on the dipped headlights.

II - TEST OPERATION

❏

> **WARNING**
> Consult the device's operating manual to avoid incorrect use.

❏ Place the **headlight adjustment and checking tool** adjusted to **-1%** in front of the vehicle.

❏ Using the **headlight adjustment and checking tool**, check the headlight beam adjustment.

III - ADJUSTMENT OPERATION

❏ Raise the vehicle (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❏ Refit the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

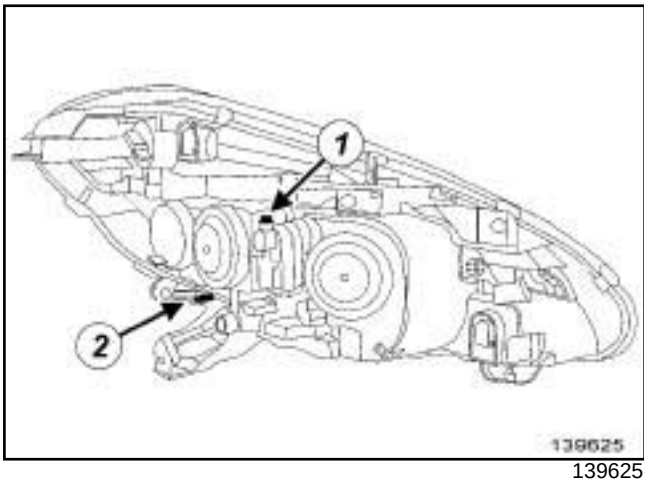
❏ Lower the vehicle.

❏ Position the vehicle back on the ground.

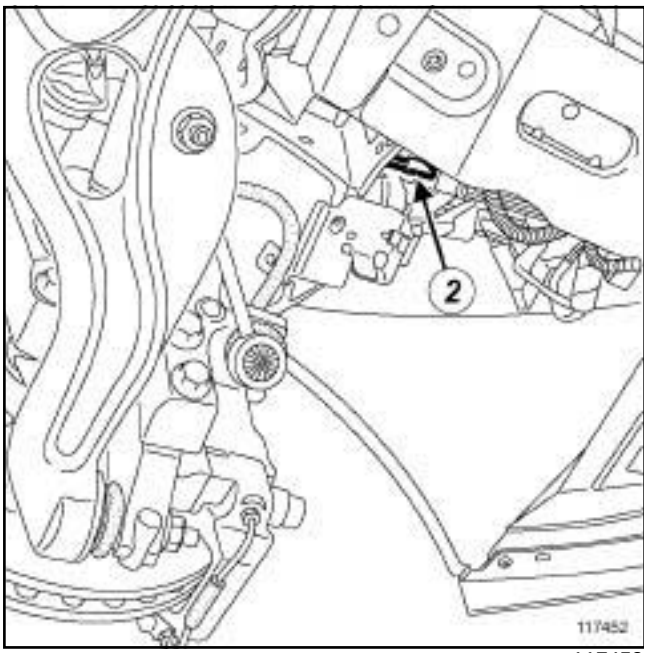
❏ Compress the suspension.

DOCUMENTATION PHASE 2

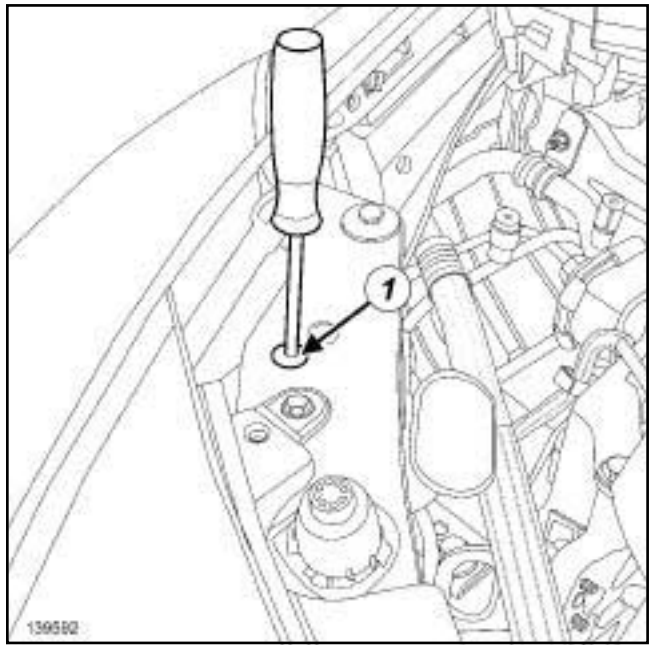
1 - Left-hand headlight



139625



117452



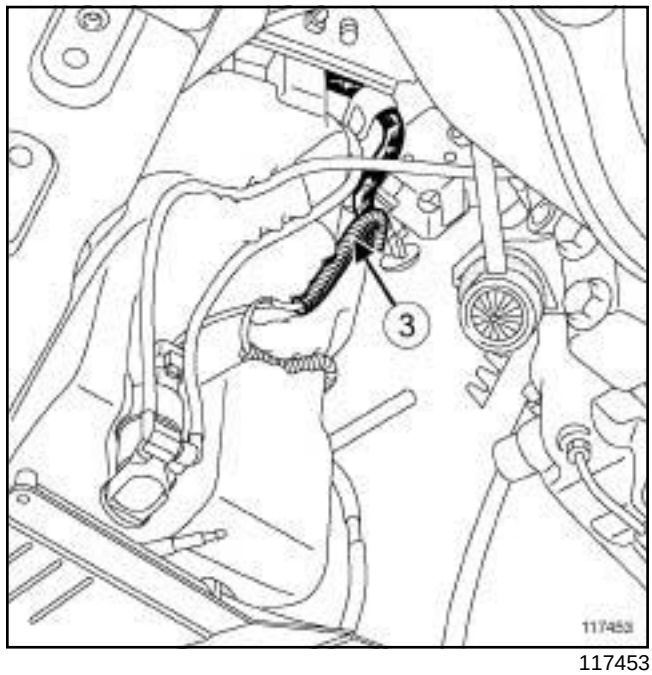
139592

❑ Using the **headlight adjustment and checking tool** :

- perform lateral adjustment of the headlight using the screw (**1**) ,

- perform the beam adjustment using the screw located above the headlight (**2**) .

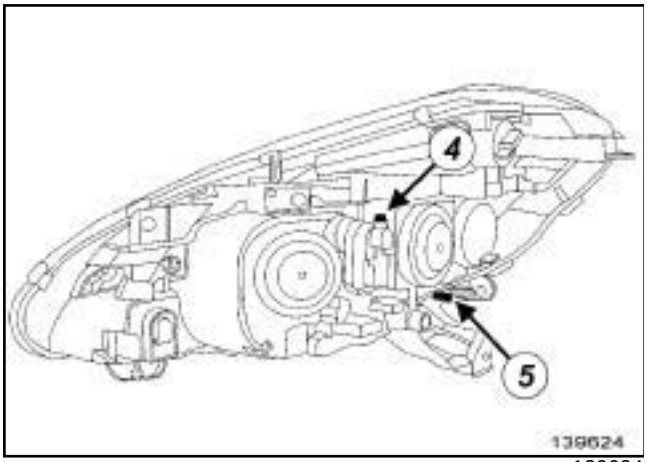
2 - Right-hand headlight



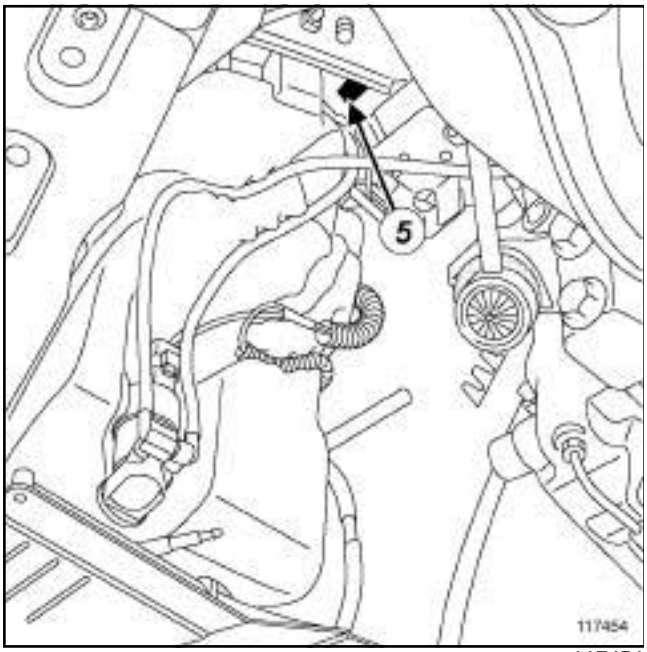
117453

❑ Move aside the washer fluid pump wiring (**3**) to access the lateral adjustment screw.

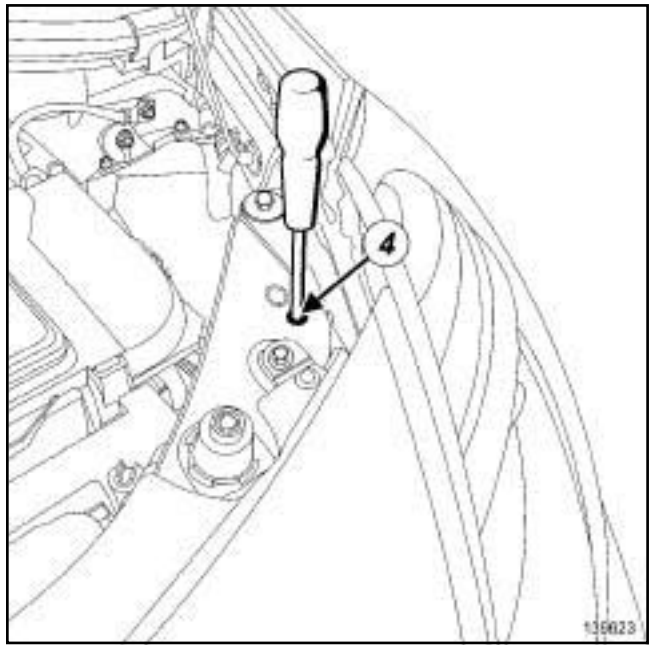
DOCUMENTATION PHASE 2



139624



117454



139623

❑ Using the **headlight adjustment and checking tool** :

- perform lateral adjustment of the headlight using the screw (**5**) ,
- perform the beam adjustment using the screw located above the headlight (**4**) .

IV - FINAL OPERATION

❑ Raise the vehicle.

❑ Remove the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Refit:

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Lower the vehicle.

DOCUMENTATION PHASE 1

REMOVAL

DISCHARGE LAMPS

❑

IMPORTANT

To prevent eye injuries:

- do not look at a xenon bulb when lit (voltage when lit **20000 V**),
- do not light a bulb which has not been fitted into its headlight.

IMPORTANT

To prevent burns, wait until the «computers - power unit » assemblies are cold before removal.

I - REMOVAL PREPARATION OPERATION

❑ Switch off the ignition.

The side light bulbs, dipped headlight bulbs, main beam headlight bulbs and additional cornering light bulbs require removal of the headlight

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

DISCHARGE LAMPS

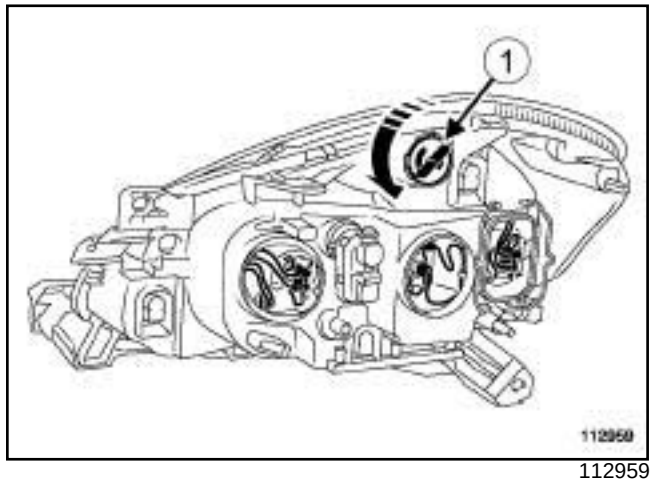
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Direction indicator bulb

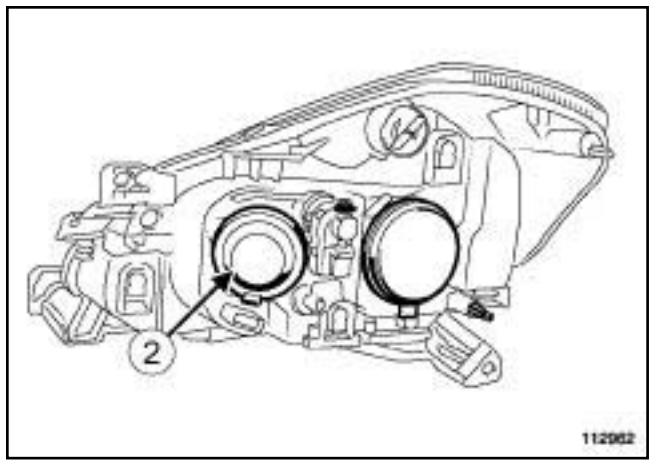


112959

❑ Unlock the bulb holder (**1**) by turning it a quarter of a turn anti-clockwise.

❑ Remove the direction indicator bulb from the bulb holder.

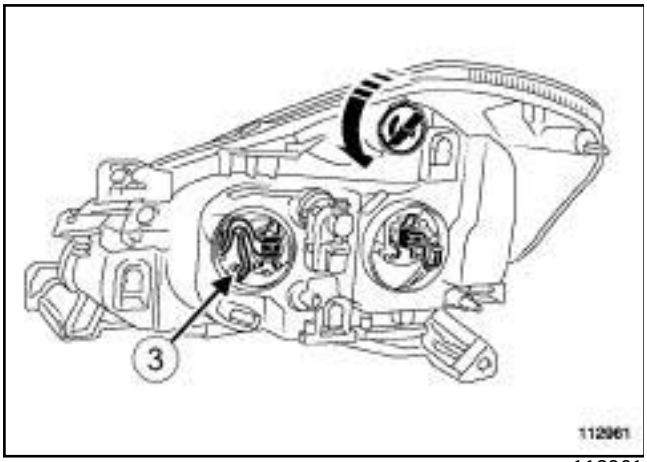
2 - Side light bulbs



112962

❑ Remove the sealing cover (**2**) .

DOCUMENTATION PHASE 1

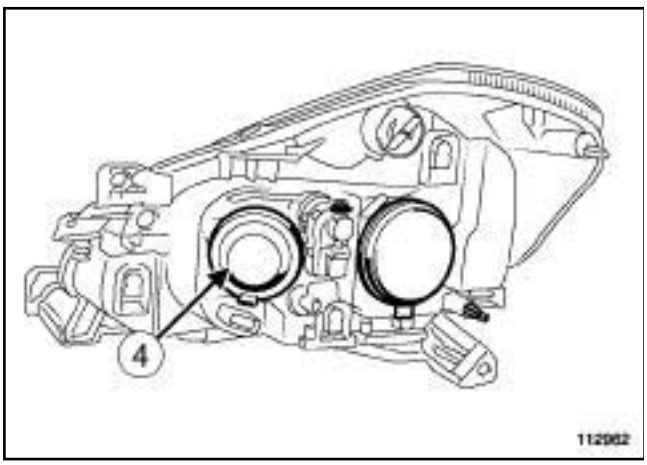


112961

❏ Unclip the bulb holder from the side light bulb at (**3**) .

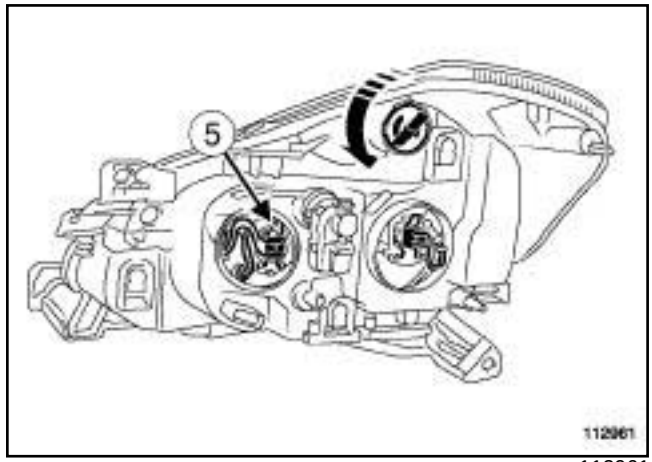
❏ Remove the side light bulb from the bulb holder.

3 - Main beam headlight bulbs



112962

❏ Remove the sealing cover (**4**) .



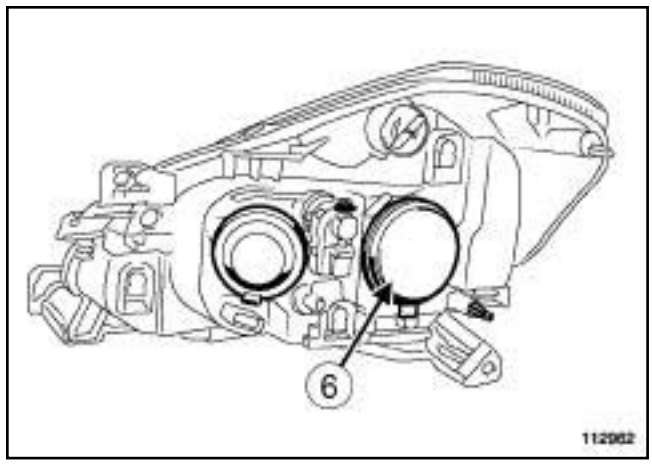
112961

❏ Disconnect the connector from the main beam headlight bulb.

❏ Unlock the clip (**5**) of the main beam headlight bulb.

❏ Remove the main beam headlight bulb.

4 - Dipped beam headlight bulb

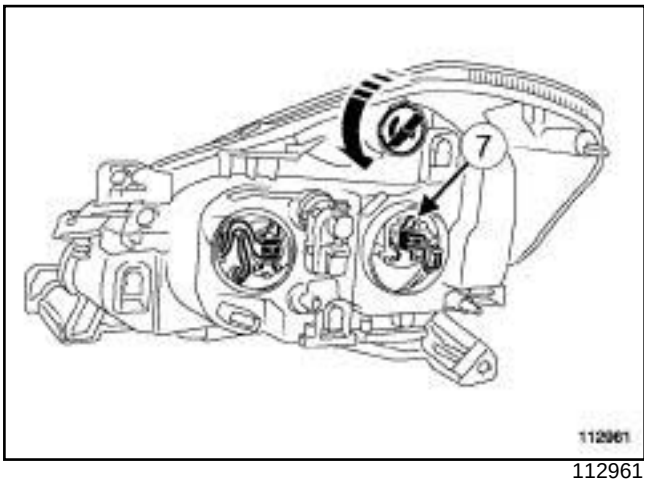


112962

❏ Remove the sealing cover (**6**) .

DOCUMENTATION PHASE 1

WITHOUT DISCHARGE LAMPS



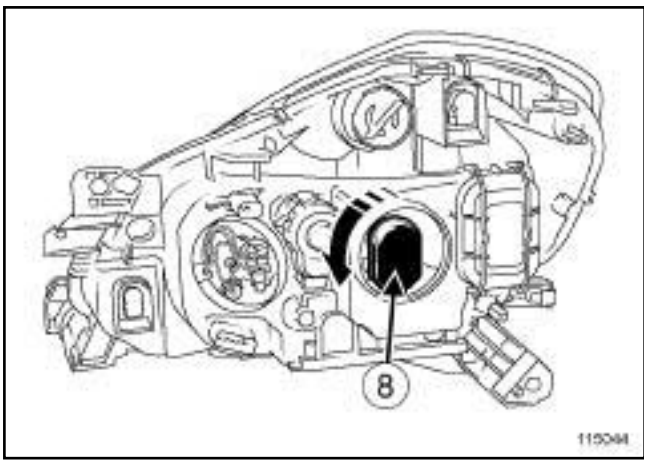
112961

❏ Disconnect the connector from the dipped beam headlight bulb.

❏ Unclip the clip of the dipped beam headlight bulb at (**7**) .

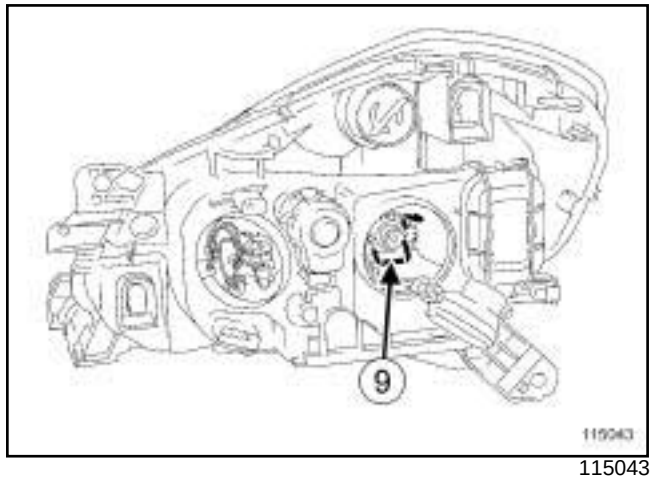
❏ Remove the dipped beam headlight bulb.

DISCHARGE LAMPS



115044

❏ Remove the condenser (**8**) by turning it 45 degrees anti-clockwise.



115043

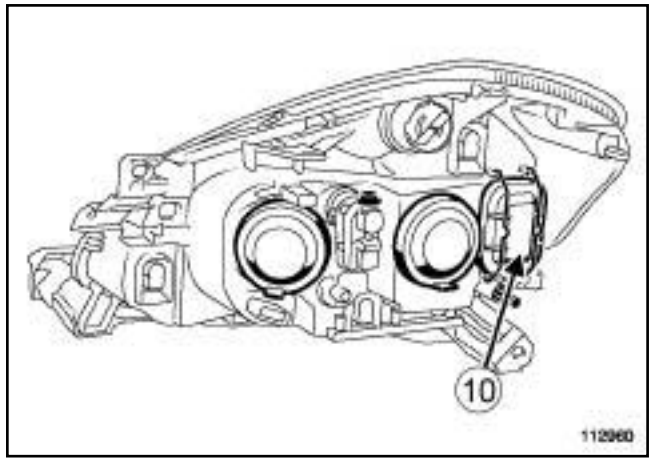
❏ Unclip the clip (**9**) from the dipped beam headlight bulb.

WARNING

To prevent any breakages, handle the bulb by its base. If you should touch the glass, clean it with alcohol and a lint-free cloth.

❏ Remove the dipped beam headlight bulb.

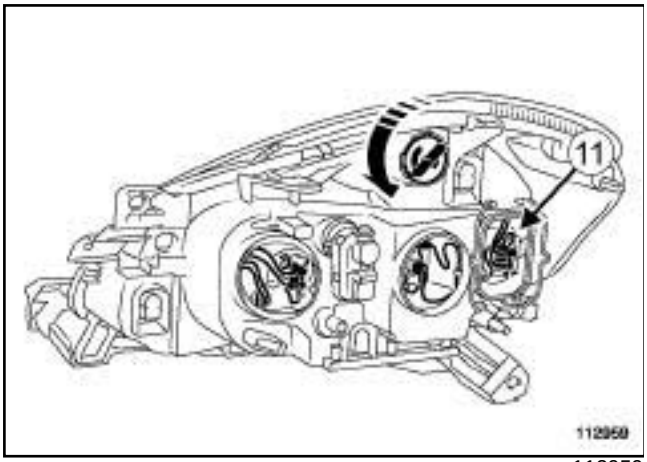
5 - Additional cornering light bulb



112960

❏ Remove the sealing cover (**10**) .

DOCUMENTATION PHASE 1



112959

❏ Disconnect the connector from the additional cornering light bulb.

❏ Unlock the clip of the additional cornering light bulb at (**11**) .

❏ Remove the additional cornering light bulb.

REFITTING

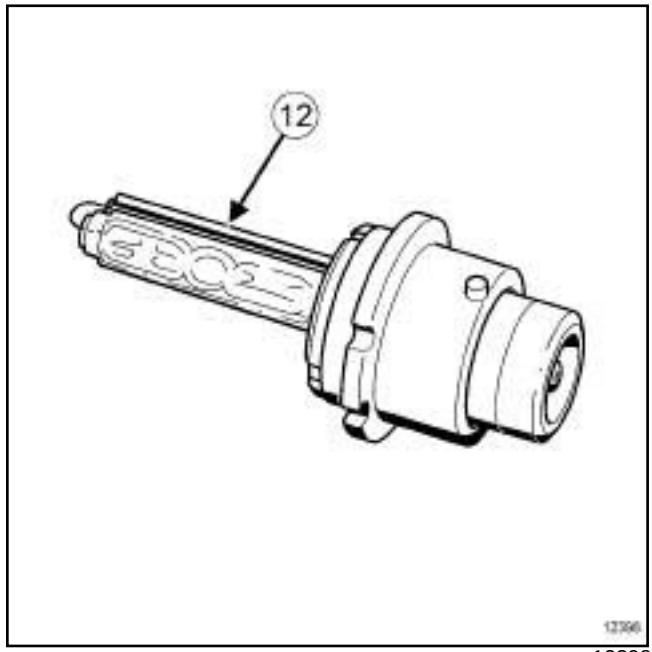
I - REFITTING PREPARATION OPERATION

❏

Note:

When replacing a bulb, only use approved bulbs.

DISCHARGE LAMPS



12398

❏

WARNING

To prevent any breakages, handle the bulb by its base. If you should touch the glass, clean it with alcohol and a lint-free cloth.

WARNING

The bulb must be handled with care.

The external conductor (**12**) is very fragile and must not be damaged.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Direction indicator bulb

❏ Refit the direction indicator bulb on the bulb holder.

❏ Lock the bulb holder by turning it a quarter of turn clockwise.

2 - Side light bulbs

❏ Refit the side light bulb on the bulb holder.

❏ Clip the side light bulb holder onto the headlight.

❏ Refit the sealing cover.

DOCUMENTATION PHASE 1

3 - Main beam headlight bulbs

❏ Refit the main beam headlight bulb.

❏ Lock the clip of the main beam headlight bulb.

❏ Connect the connector of the main beam headlight bulb.

❏ Refit the sealing cover.

4 - Dipped beam headlight bulb

WITHOUT DISCHARGE LAMPS

❏ Refit the dipped beam headlight bulb.

❏ Fasten the clip on the dipped beam headlight bulb.

❏ Connect the connector to the dipped beam headlight bulb.

DISCHARGE LAMPS

❏ Refit the dipped beam headlight bulb.

❏ Fasten the clip on the dipped beam headlight bulb.

❏ Refit the capacitor by turning it an eighth of a turn clockwise.

❏ Refit the sealing cover.

5 - Additional cornering light bulb

❏ Refit the additional cornering light bulb.

❏ Lock the clip of the additional cornering light bulb.

❏ Connect the connector of the additional cornering light bulb.

❏ Refit the sealing cover.

III - FINAL OPERATION

❏ Refit the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

❏ Lower the vehicle.

DISCHARGE LAMPS

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Adjust the headlights (see **80B**, **Headlights**, **Headlight: Adjustment**, page **80B-9**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

DOCUMENTATION PHASE 2

REMOVAL

❏

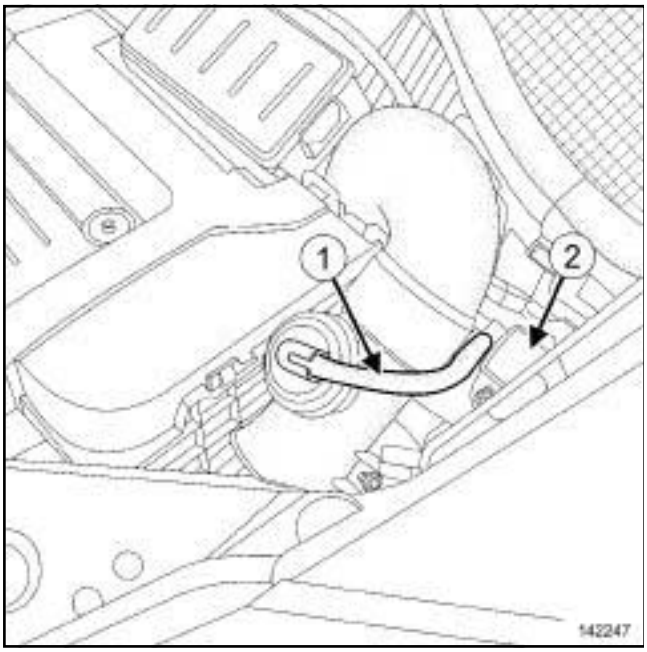
Note:
Do not remove the headlight to replace the bulbs.

I - REMOVAL PREPARATION OPERATION

❏ Switch off the ignition.

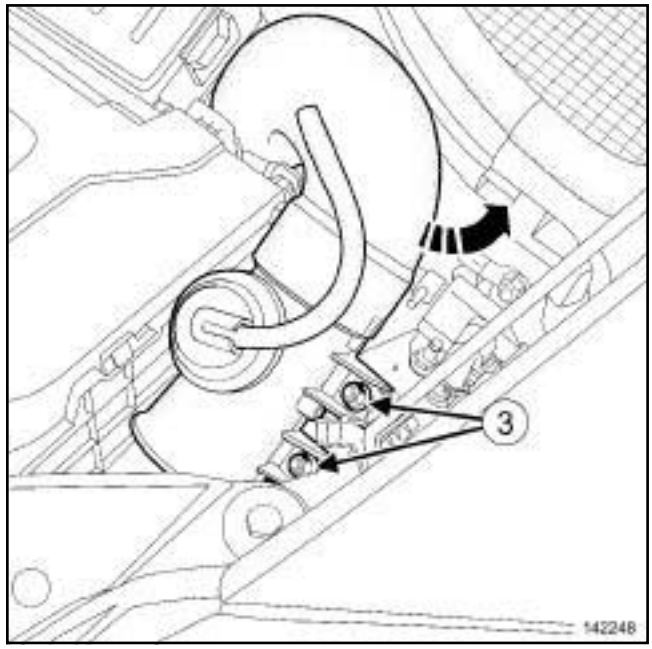
F4R

For the left-hand headlight bulbs



142247

❏ Disconnect the vacuum pipe (**1**) of the soundproofing unit control solenoid valve (**2**) .



142248

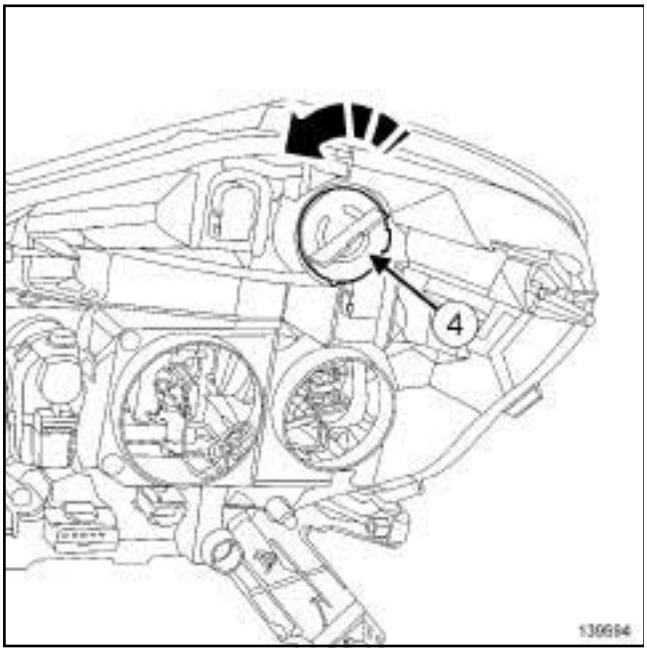
❏ Remove the soundproofing unit nuts (**3**) .

❏ Move aside the soundproofing unit.

DOCUMENTATION PHASE 2

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Direction indicator bulb

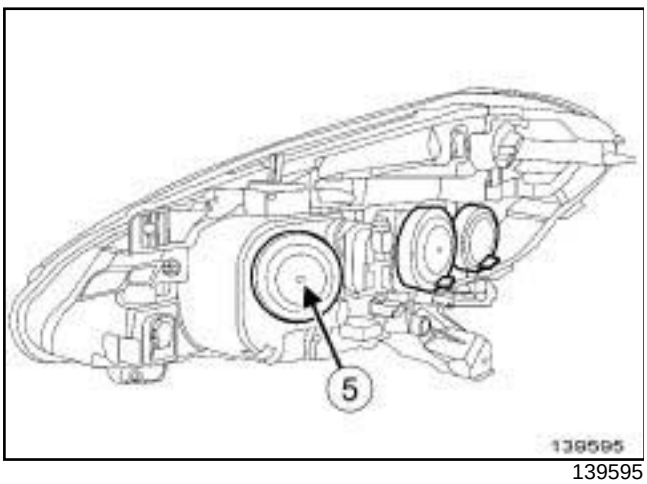


139594

❏ Unlock the bulb holder (**4**) by turning it a quarter of a turn anti-clockwise.

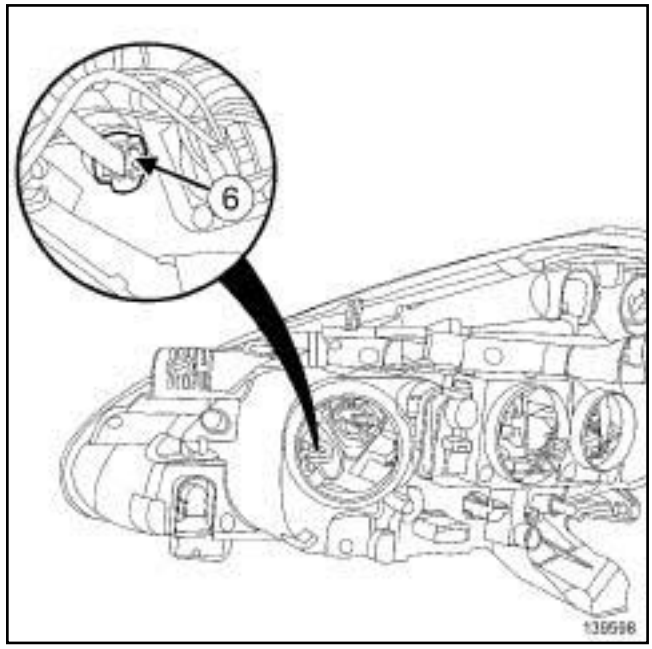
❏ Remove the direction indicator bulb from the bulb holder.

2 - Side light bulb



139595

❏ Remove the sealing cover (**5**) .

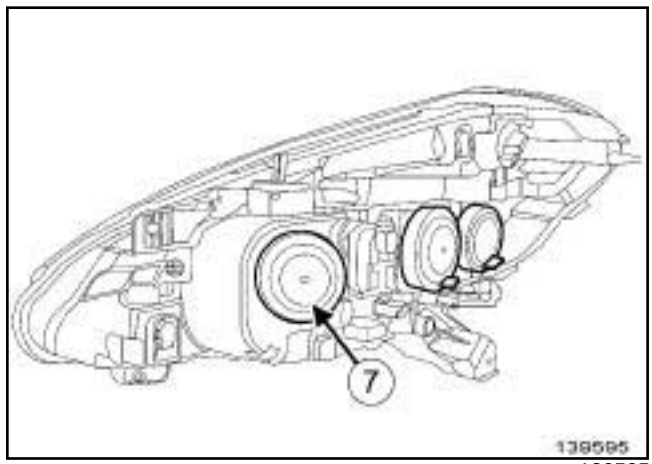


139598

❏ Unclip:

- the bulb holder (**6**) from the headlight,
- the side light bulb from the bulb holder.

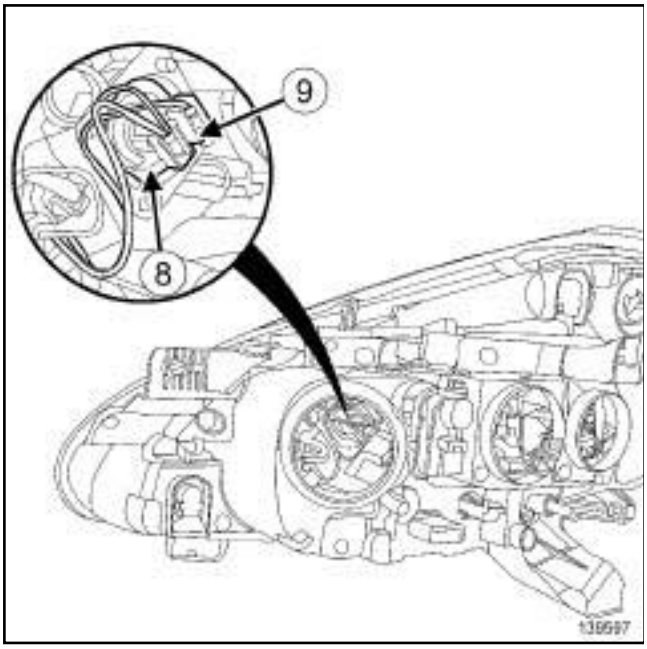
3 - Main beam headlight bulbs



139595

❏ Remove the sealing cover (**7**) .

DOCUMENTATION PHASE 2



139597

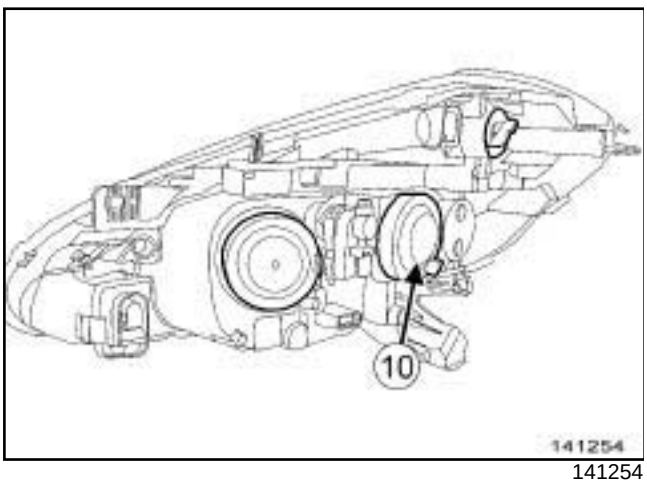
❏ Unclip the main beam headlight bulb (**8**) .

❏ Remove the main beam headlight bulb.

❏ Disconnect the connector (**9**) from the main beam headlight bulb.

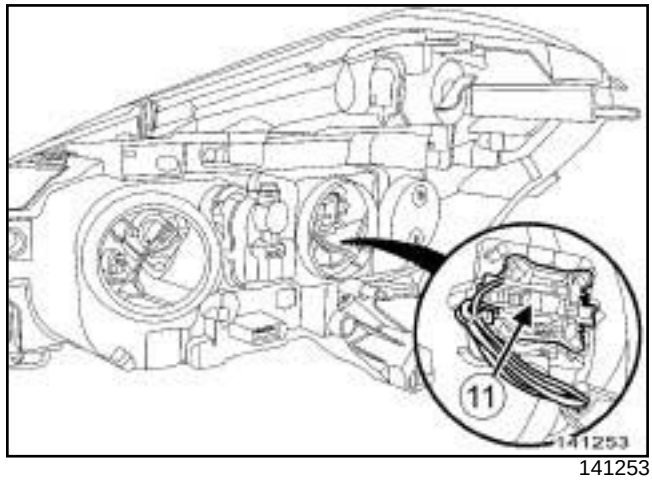
4 - Dipped beam headlight bulb

a - Halogen headlight without additional cornering light



141254

❏ Remove the sealing cover (**10**) .



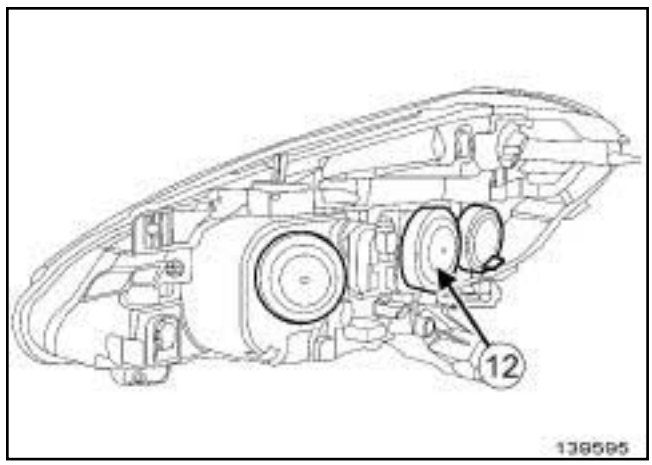
141253

❏ Unclip the dipped beam headlight bulb.

❏ Disconnect the connector (**11**) from the dipped beam headlight bulb.

❏ Remove the dipped beam headlight bulb.

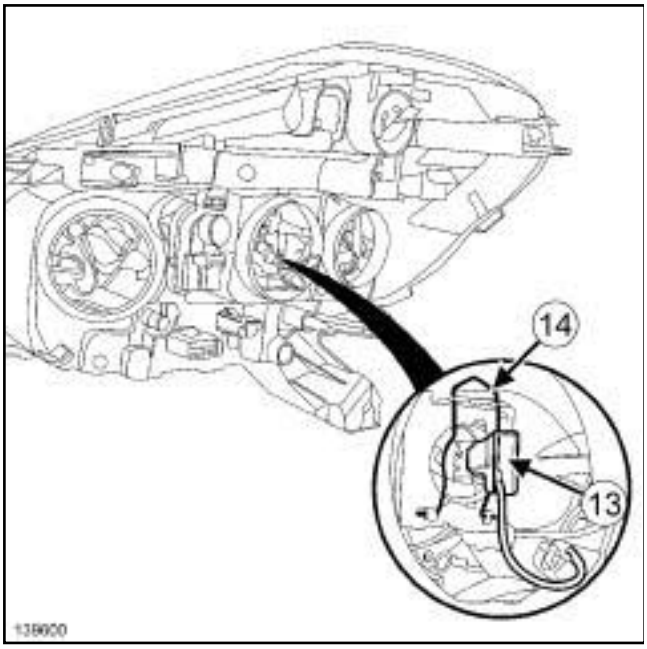
b - Halogen headlight with additional cornering light



139595

❏ Remove the sealing cover (**12**) .

DOCUMENTATION PHASE 2



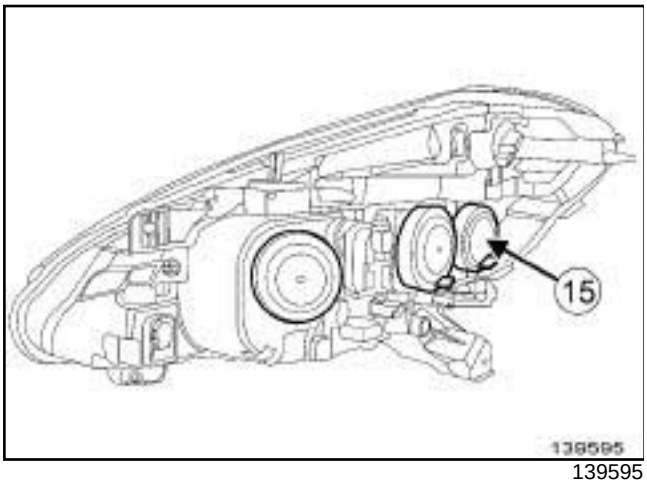
139600

❏ Disconnect the connector (**13**) from the dipped beam headlight bulb.

❏ Unlock the clip (**14**) from the dipped beam headlight bulb.

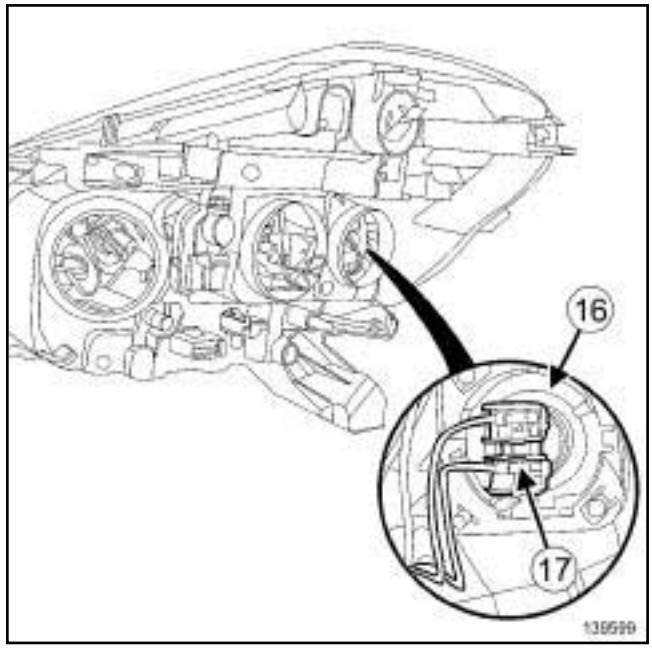
❏ Remove the dipped beam headlight bulb.

5 - Additional cornering light bulb



139595

❏ Remove the sealing cover (**15**) .



139599

❏ Unclip the additional cornering light bulb (**16**) .

❏ Remove the additional cornering light bulb.

❏ Disconnect the connector (**17**) from the additional cornering light bulb.

REFITTING

I - REFITTING PREPARATION OPERATION

❏

Note:

If the bulbs are changed, only use approved bulbs.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Direction indicator bulb

❏ Refit the direction indicator bulb on the bulb holder.

❏ Lock the bulb holder by turning it a quarter of turn clockwise.

2 - Side light bulb

❏ Clip on:

- the side light bulb onto the bulb holder,

- the side light bulb holder onto the headlight.

❏ Refit the sealing cover.

DOCUMENTATION PHASE 2

3 - Main beam headlight bulbs

❏ Connect the connector to the main beam headlight bulb.

❏ Refit:

- the main beam headlight bulb by clipping it onto the headlight,
- the sealing cover.

4 - Dipped beam headlight bulb

a - Halogen headlight without additional cornering light

❏ Refit the dipped beam headlight bulb.

❏ Connect the connector of the dipped beam headlight.

❏ Refit the sealing cover.

b - Halogen headlight with additional cornering light

❏ Refit the dipped beam headlight bulb.

❏ Fasten the clip on the dipped beam headlight bulb.

❏ Connect the connector to the dipped beam headlight bulb.

❏ Refit the sealing cover.

5 - Additional cornering light bulb

❏ Connect the connector of the additional cornering light bulb.

❏ Refit:

- the additional cornering light bulb by clipping it onto the headlight,
- the sealing cover.

III - FINAL OPERATION

F4R

❏ Fit the soundproofing unit in place.

❏ Refit the soundproofing unit nuts.

❏ Connect the vacuum pipe of the soundproofing unit control solenoid valve.

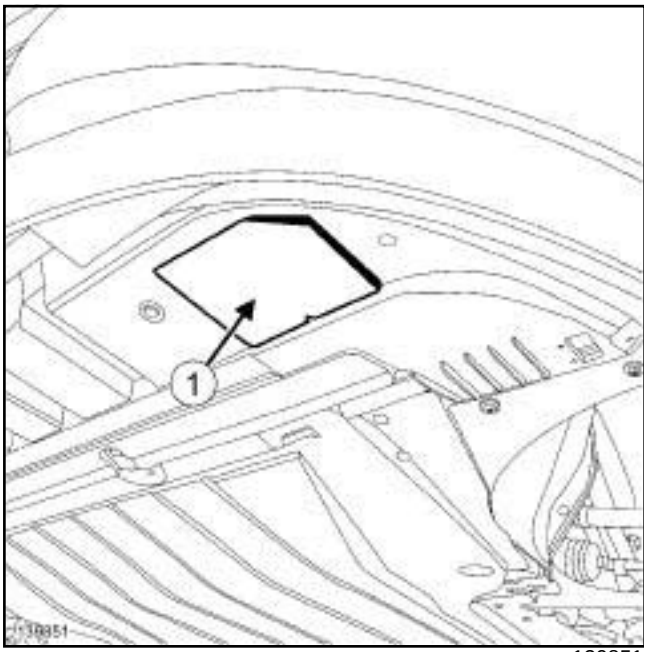
FOG LIGHTS

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

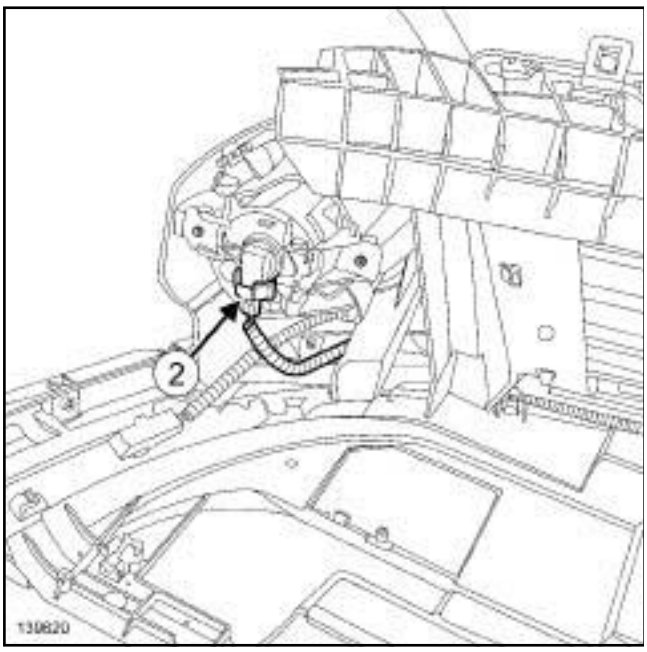
❏ Raise the vehicle.



139851

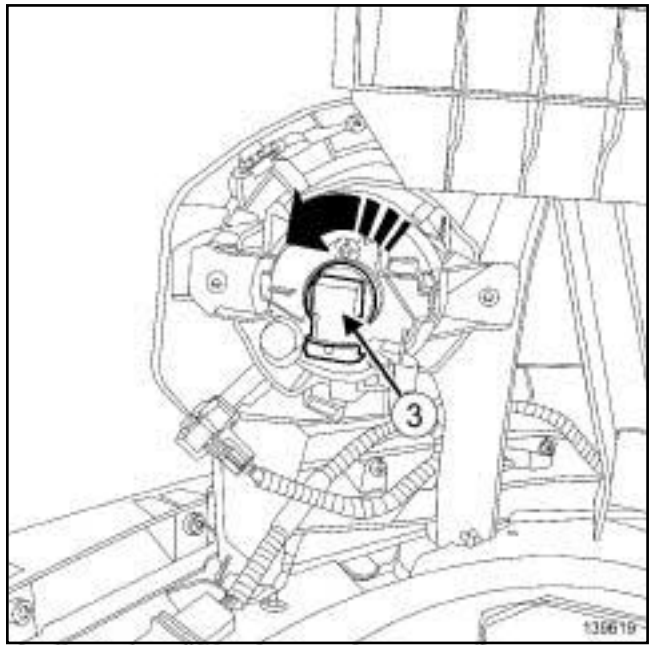
❏ Unclip the access flap (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



139620

❏ Disconnect the front fog light connector (**2**) .



139619

❏ Remove the front fog light bulb (**3**) anti-clockwise.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏

Note:

When replacing a bulb, only use approved bulbs.

❏ Refit the front fog light bulb clockwise.

❏ Connect the front fog light connector.

II - FINAL OPERATION

❏ Clip on the access flap.

❏ Lower the vehicle.

FOG LIGHTS

REMOVAL

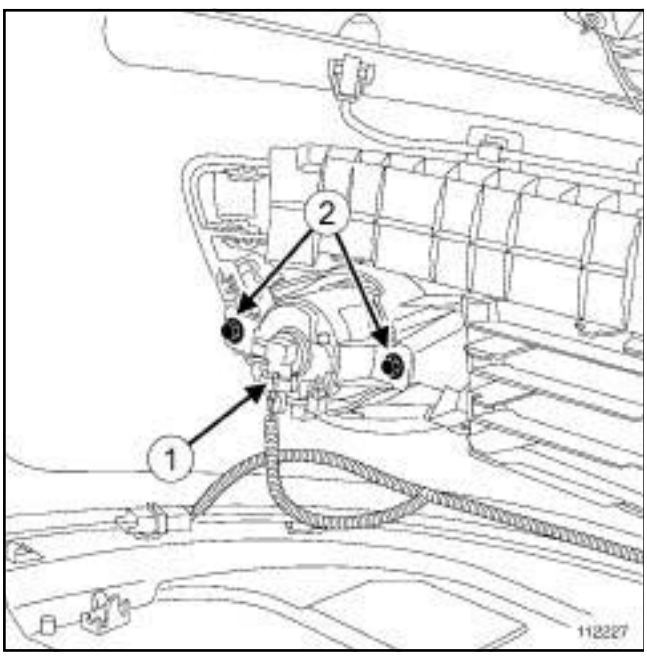
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112227

❏ Disconnect the connector (**1**) .

❏ Remove:

- the bolts (**2**) ,
- the fog light.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ To replace a bulb, use an approved bulb.

❏ Refit:

- the fog light,
- the fog light bolts.

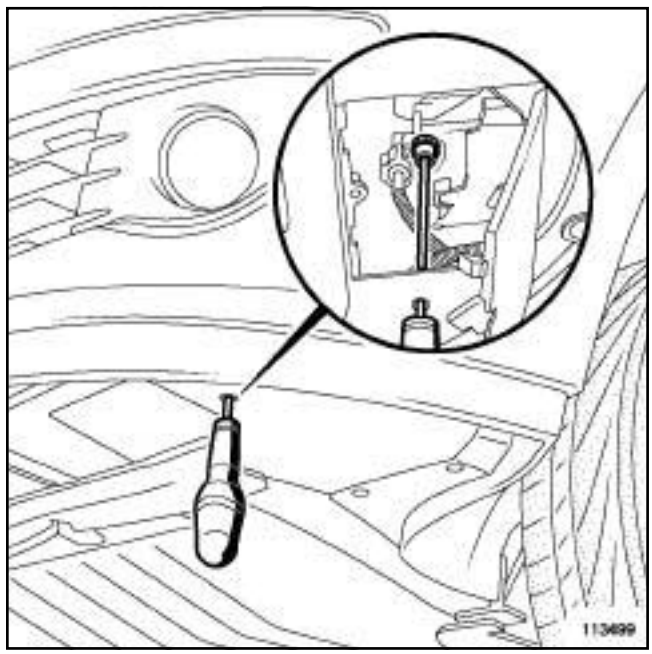
❏ Connect the connector.

II - FINAL OPERATION

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

DOCUMENTATION PHASE 1

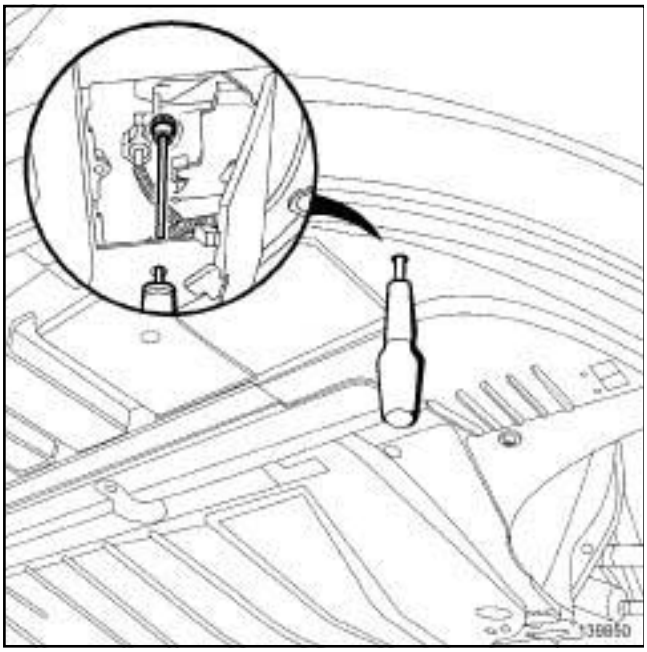


113499

❏ Adjust the fog lights using a screwdriver.

FOG LIGHTS

DOCUMENTATION PHASE 2



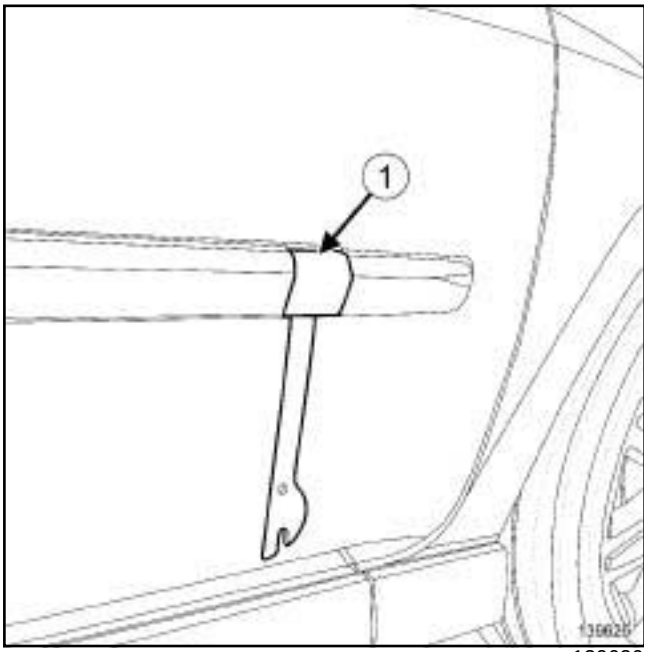
139850

❑ Adjust the fog lights using a screwdriver.

Special tooling required	
Car. 1363	Set of trim removal levers.

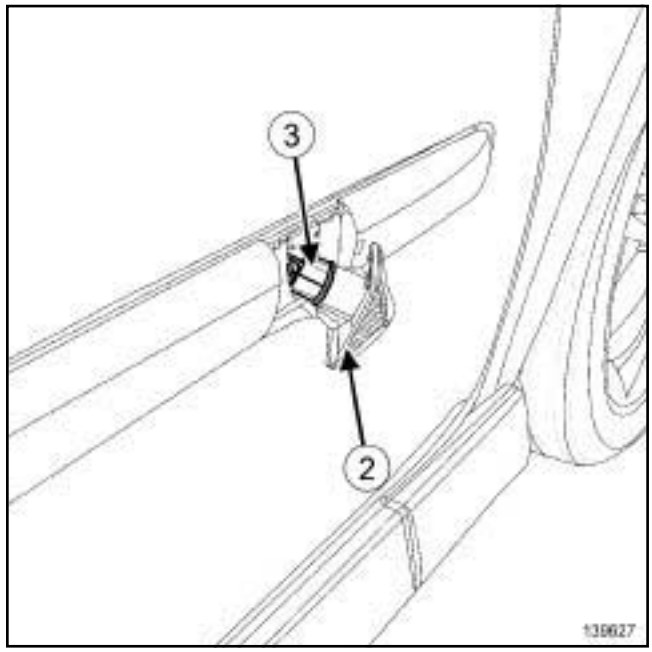
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



139626

❏ Unclip the side indicator (**1**) by inserting the tool **(Car. 1363)** from underneath.



139627

❏ Remove:

- the side indicator (**2**) from the bulb holder (**3**) ,
- the bulb from the bulb holder.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏

> Note:
> If the bulbs are changed, use approved bulbs.

❏ Refit:

- the bulb onto the side indicator bulb holder,
- the side indicator on the bulb holder.

❏ Clip the side indicator onto the front side door.

DOCUMENTATION PHASE 1

DISCHARGE LAMPS

❑

IMPORTANT

To prevent burns, wait until the «computers - power unit » assemblies are cold before removal.

IMPORTANT

To prevent eye injuries:

- do not look at a xenon bulb when lit (voltage when lit **20000 V**),
- do not light a bulb which has not been fitted into its headlight.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

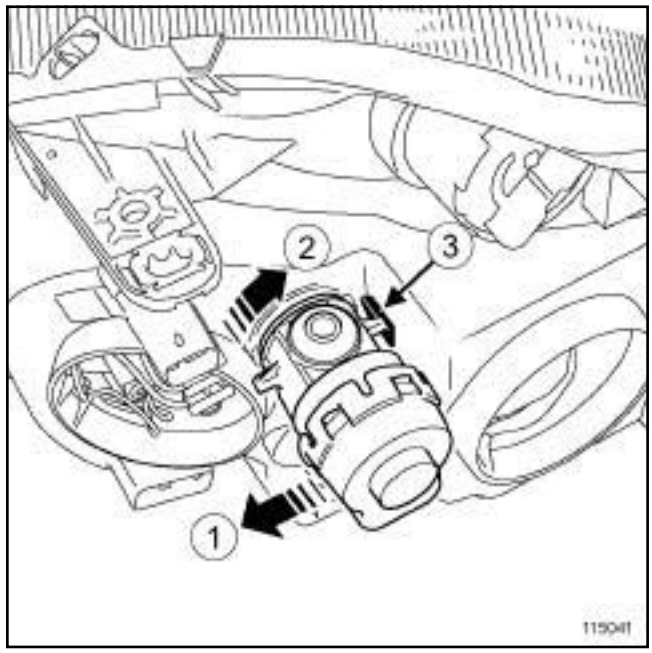
DISCHARGE LAMPS

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



115041

❑ Press on (**1**) .

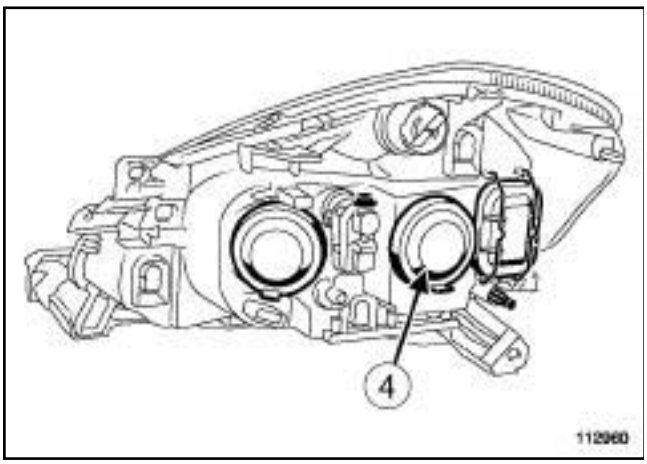
❑ Unclip the actuator (**2**) by rotating it a quarter of a turn clockwise while pressing the clip (**3**) .

❑ Remove the actuator by unclipping the actuator ball joint from the clip groove.

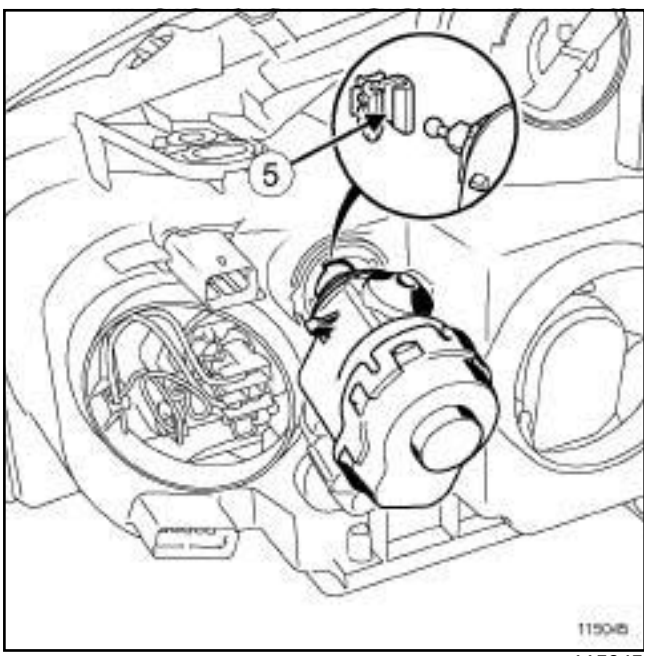
DOCUMENTATION PHASE 1

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112960



115045

❏ Remove the sealing cover (**4**) .

❏ Pull the reflector shell (headlight lens unit) towards you to bring the clip groove as close as possible to the ball joint.

❏ Insert the ball joint into clip groove (**5**)

> Note:
>
> The ball joint should not just be in contact with the groove, it should be fitted into it.

❏ Clip in the actuator.

II - FINAL OPERATION

❏ Refit:

- the sealing cover,
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

❏ Lower the vehicle.

DISCHARGE LAMPS

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Adjust the headlight beam (see **80B**, **Headlights**, **Headlight: Adjustment**, page **80B-9**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

DOCUMENTATION PHASE 2

REMOVAL

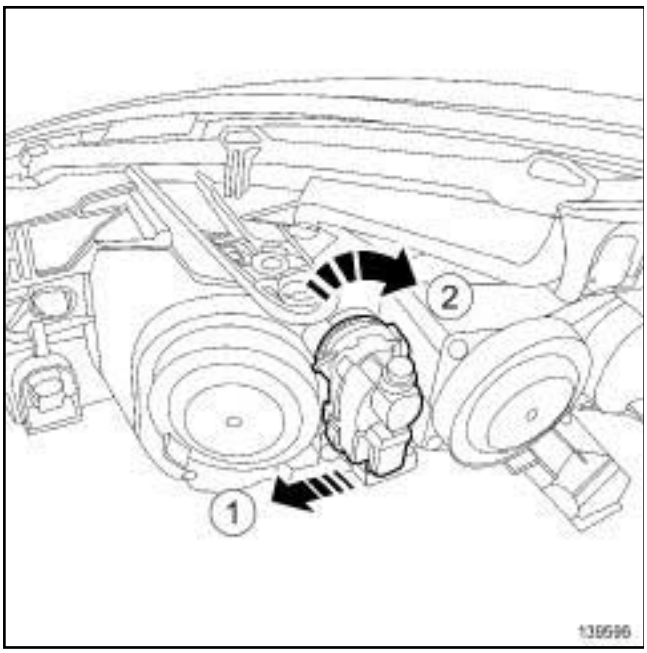
I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



139596

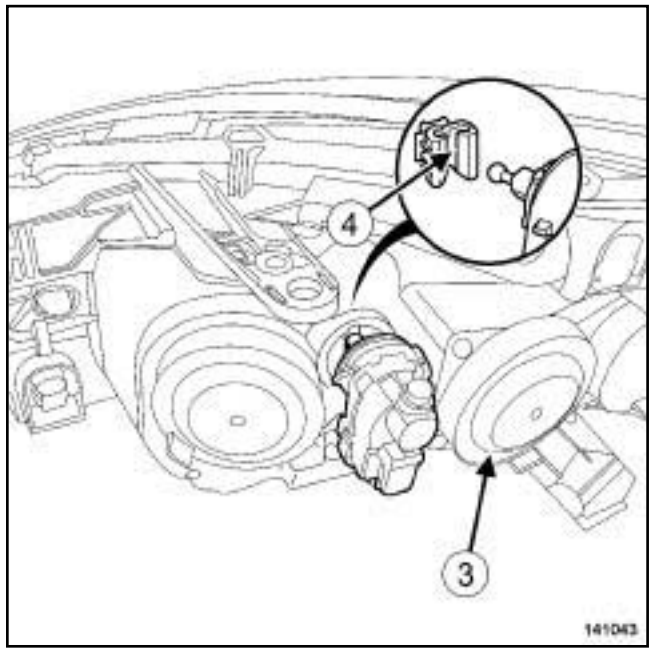
❏ Press on (**1**) .

❏ Unclip the beam adjustment actuator (**2**) by turning it a quarter of a turn clockwise.

❏ Remove the beam adjustment actuator by unclipping the ball joint from the clip groove.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



141043

❏ Remove the sealing cover (**3**) .

❏ Pull the reflector shell to bring the clip groove as close as possible to the ball joint of the beam adjustment actuator.

❏ Fit the beam adjustment actuator ball joint in the clip groove (**4**) .

> Note:
>
> The ball joint should not just be in contact with the groove, it should be fitted into it.

❏ Clip the beam adjustment actuator by turning it a quarter of a turn anti-clockwise.

II - FINAL OPERATION

❏ Refit:

- the sealing cover,
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

❏ Adjust the headlight beam (see **80B**, **Headlights**, **Headlight: Adjustment**, page **80B-9**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),

DOCUMENTATION PHASE 2

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

DISCHARGE LAMPS

Equipment required
Diagnostic tool

Tightening torques ▽	
steering box bolt	**105 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

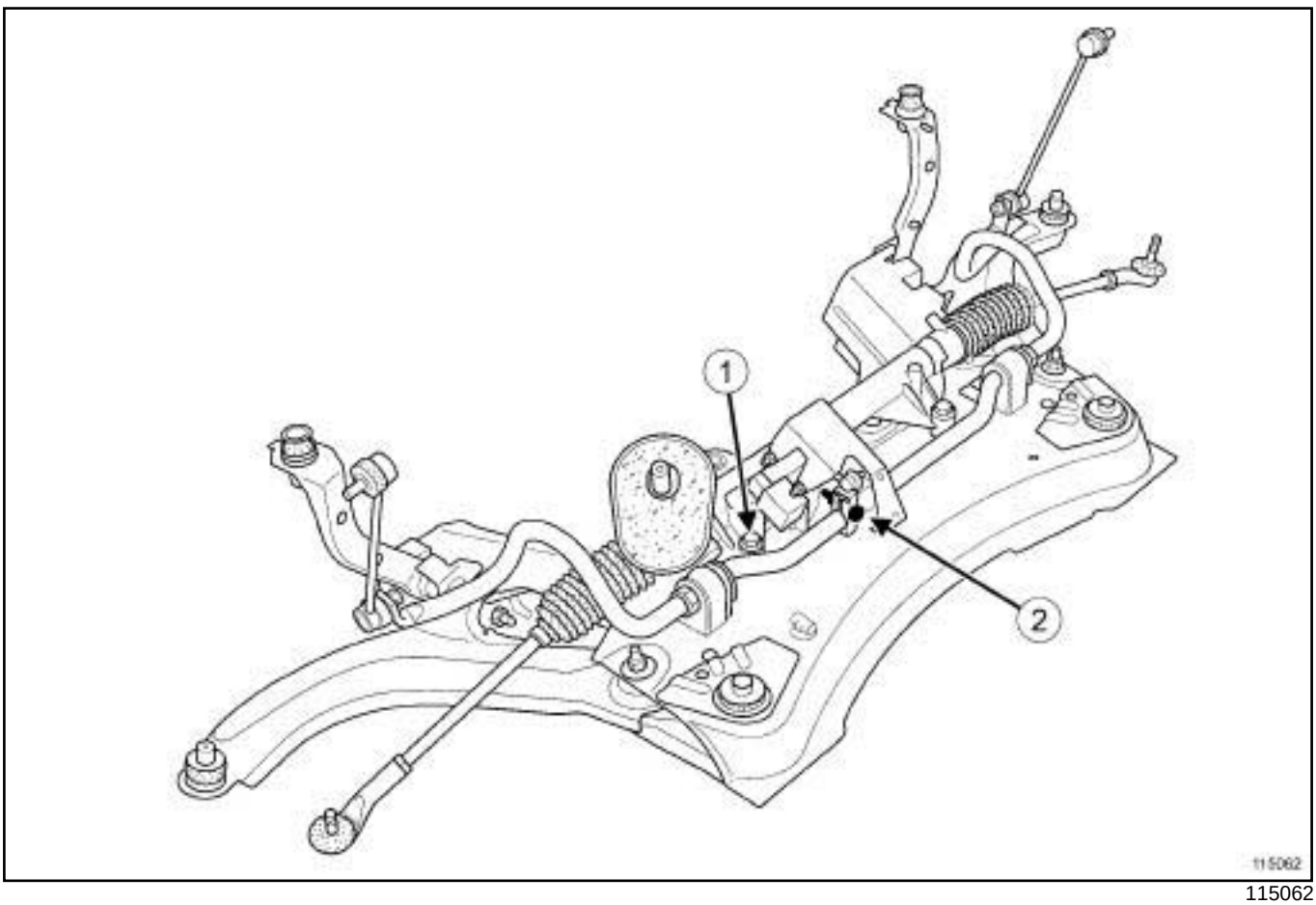
❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 392, 31A, Front axle components).

II - OPERATION FOR REMOVAL OF PART CONCERNED

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5



115062

❏ Remove the nut (**1**) from the height sensor support.

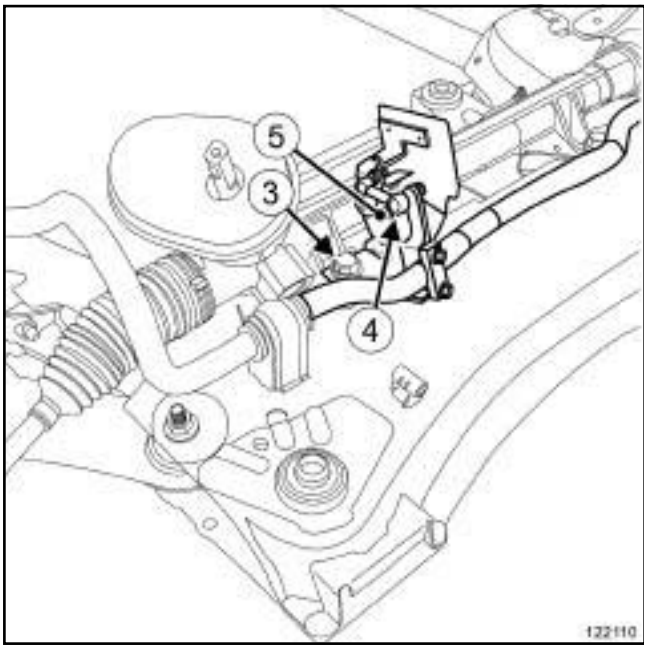
❏ Undo the linkage bolt (**2**) .

❏ Disconnect the height sensor connector.

❏ Remove the height sensor.

DISCHARGE LAMPS

EQUIPMENT LEVEL SPORT



122110

❏ Remove the steering box bolt (**3**) .

❏ Unclip the bracket ball joint (**4**) .

❏ Remove the headlight beam adjustment front sensor with its mounting (**5**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

EQUIPMENT LEVEL EA1 or EQUIPMENT LEVEL EA2 or EQUIPMENT LEVEL EA3 or EQUIPMENT LEVEL EA4 or EQUIPMENT LEVEL EA5

❏ Refit the headlight beam adjustment front sensor.

❏ Refit the linkage on the flat surface of the anti-roll bar.

❏ Refit the bolt of the height sensor support.

❏ Retighten the linkage bolt.

❏ Connect the headlight beam adjustment front sensor connector.

EQUIPMENT LEVEL SPORT

❏ Fit the headlight beam adjustment front sensor with its mounting.

❏ Refit the steering box bolt.

❏ Clip the ball joint onto the bracket.

❏ Torque tighten the **steering box bolt (105 N.m)**.

II - FINAL OPERATION

❏ Refit:

- the front wheels (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 392, 31A, Front axle components).

❏ If replacing the headlight beam adjustment front sensor, carry out the necessary operations using the **Diagnostic tool** (see **MR 394 Fault finding, 80B, Headlights, Fault finding - Replacement of components**).

Equipment required
Diagnostic tool

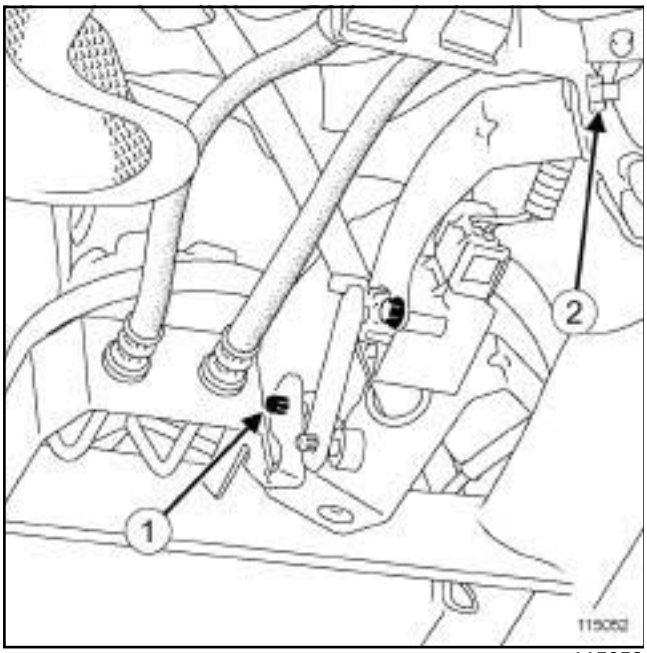
Tightening torques ▽	
rear height sensor support mounting bolts	**8 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR392, 02, Lifting equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



115052

❑ Unlock the clip of the return linkage (**1**) .

❑ Remove the rear height sensor support mounting bolt (**2**) .

❑ Disconnect the rear height sensor.

❑ Remove the rear height sensor with its support.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

WARNING
The headlight beam adjustment sensor clip is very fragile. If the clip breaks during the removal operation, the whole headlight beam adjustment sensor must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the rear height sensor with its support.

❑ Connect the rear height sensor.

❑ Refit the rear height sensor support mounting bolt.

❑ Torque tighten the **rear height sensor support mounting bolts (8 Nm)**.

❑ Clip on the return linkage clip.

❑ If replacing the rear height sensor, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 80B, Headlights).

Tightening torques ▽	
high voltage unit mounting bolts	12 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

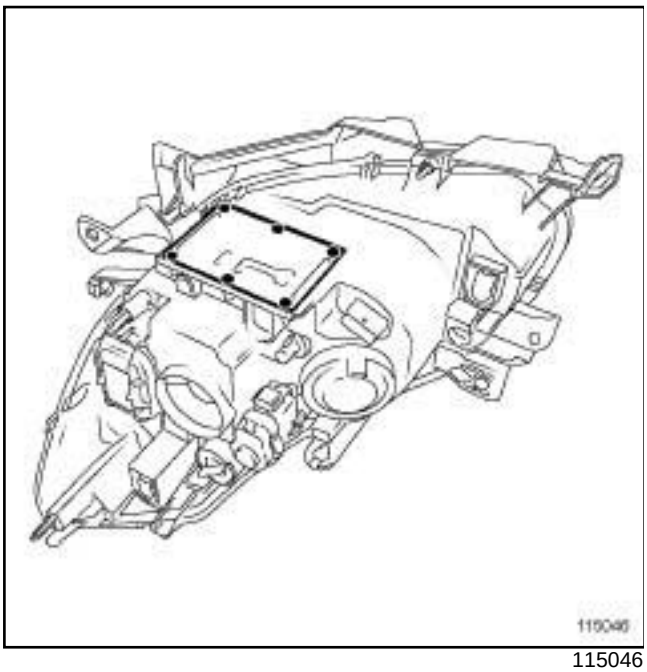
❑

IMPORTANT
- To prevent eye injuries, do not look at a xenon bulb when lit (lighting voltage of **20,000 V**).
- Wait until the « computer-power unit » assemblies have cooled before removing them.
- It is forbidden to switch on a xenon bulb if the bulb is not fitted in the headlight (risk of serious eye injury).

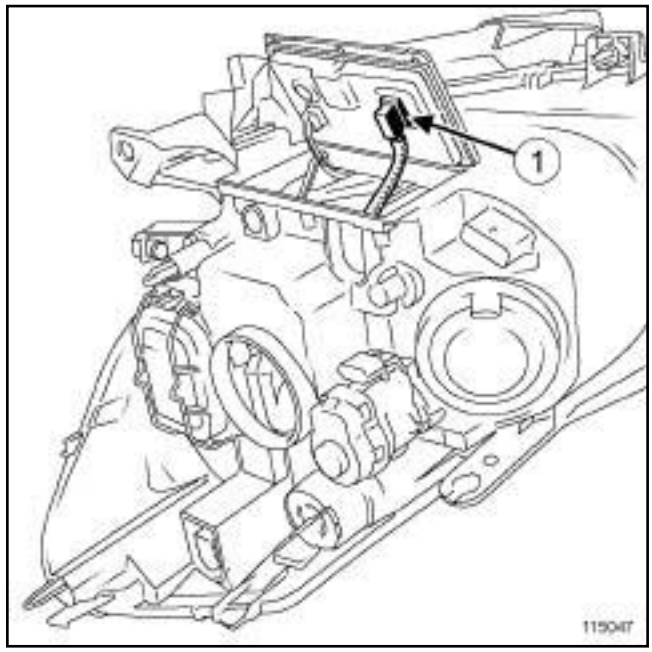
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the headlight (see **Xenon headlight: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

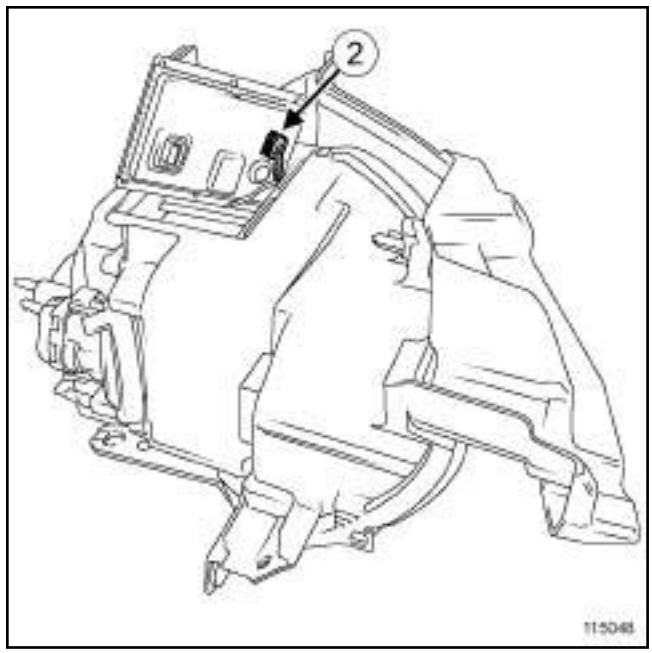

115046

❑ Remove the mounting bolts from the high voltage unit.



115047

❑ Disconnect the connector (**1**) .



115048

❑

Note:
Locking the connector is a delicate operation.

❑ Disconnect the connector with caution (**2**) .

❑ Remove the high voltage unit.

REFITTING

I - REFITTING PREPARATION OPERATION

❏

> **WARNING**
> The seal must be replaced when replacing the high voltage unit.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

> Note:
> Check that the connectors are locked correctly.

❏ Refit the high voltage unit with a new seal.

❏ Tighten to torque the **high voltage unit mounting bolts (12 Nm)**.

III - FINAL OPERATION

❏ Refit the headlight (see **Xenon headlight: Removal - Refitting**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

DISCHARGE LAMPS

Equipment required
Diagnostic tool

REMOVAL

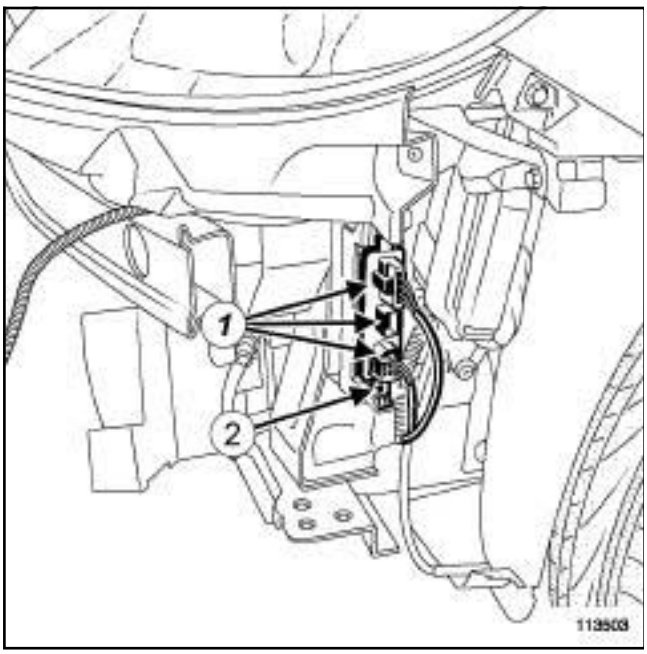
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

> Note:
>
> The computer controls the additional cornering lights and the xenon bulbs (depending on the vehicle equipment level).

II - OPERATION FOR REMOVAL OF PART CONCERNED

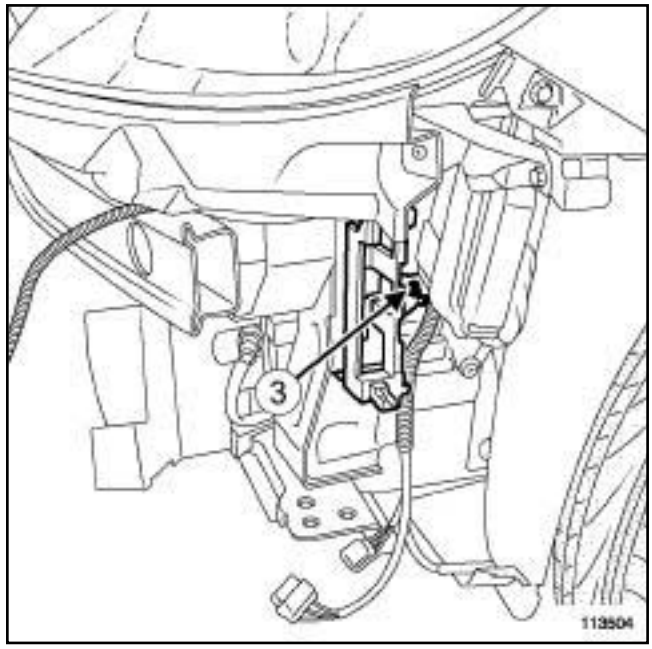


113503

❏ Disconnect the connectors (**1**) .

❏ Remove:

- the bolt (**2**) ,
- the computer.



113504

❏ Remove the nut (**3**) from the computer mounting.

❏ Withdraw the mounting.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the computer support.

❏ Refit the computer.

❏ Connect the connectors.

II - FINAL OPERATION.

❏ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ If replacing the discharge bulb computer, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 80B, Headlights).

I - LIST OF COMPONENTS

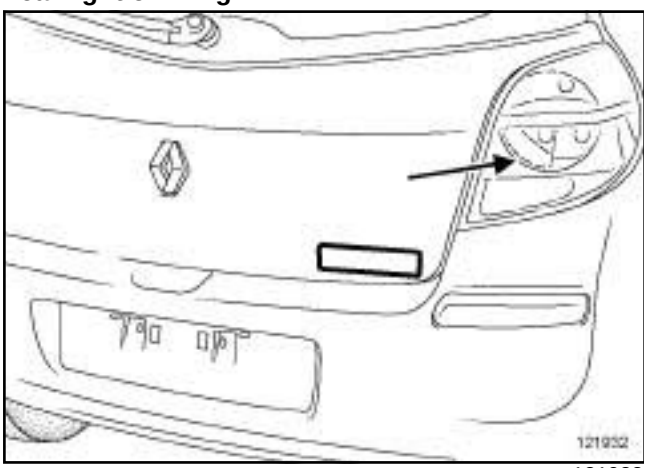
The rear lighting is composed of:

- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**)
- rear light bulbs (see **81A**, **Rear lighting**, **Rear light bulb: Removal - Refitting**, page **81A-7**)
- a high-level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**)
- the rear fog lights (see **81A**, **Rear lighting**, **Rear fog lights: Removal - Refitting**, page **81A-14**)
- the number plate lights (see **81A**, **Rear lighting**, **Number plate light: Removal - Refitting**, page **81A-16**)

II - LOCATION OF COMPONENTS

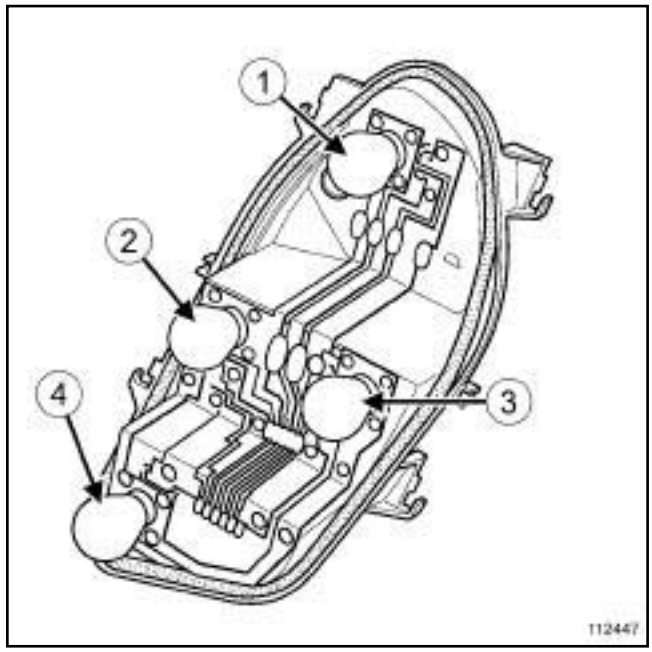
B85 or C85 or S85, and DOCUMENTATION PHASE 1

Rear light on wing



121932

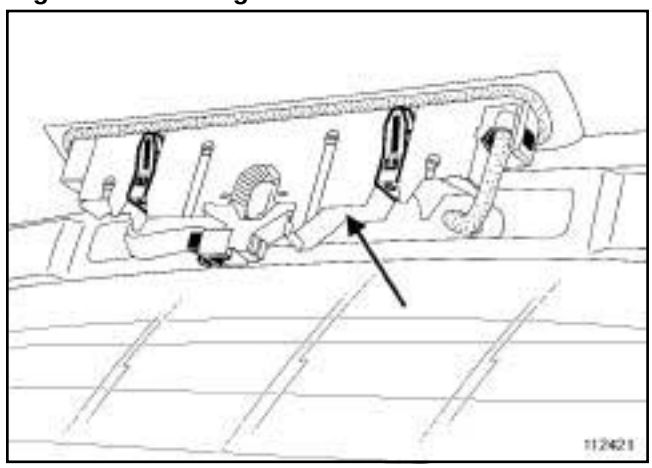
Rear light bulbs



112447

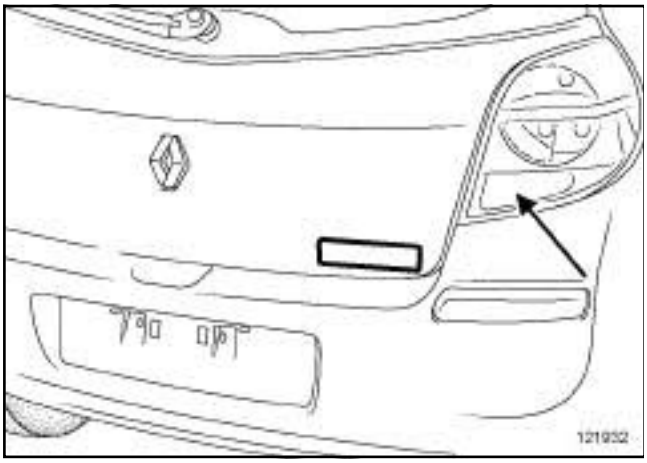
(**1**) Brake light and side light bulb
(**2**) Reversing light bulb
(**3**) Direction indicator bulb
(**4**) Rear fog light bulb

High level brake light



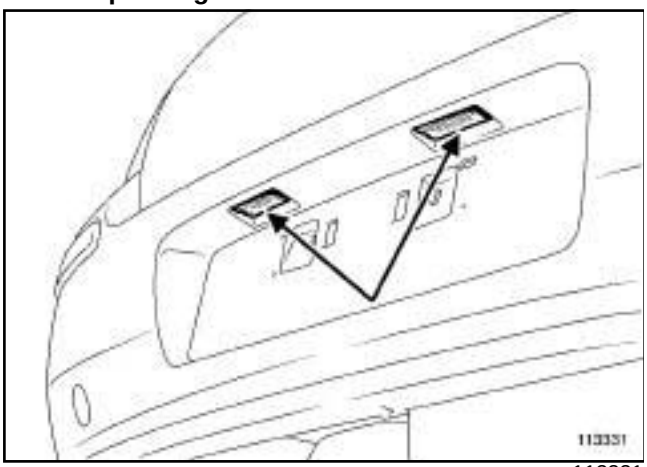
112421

Rear fog light



121932

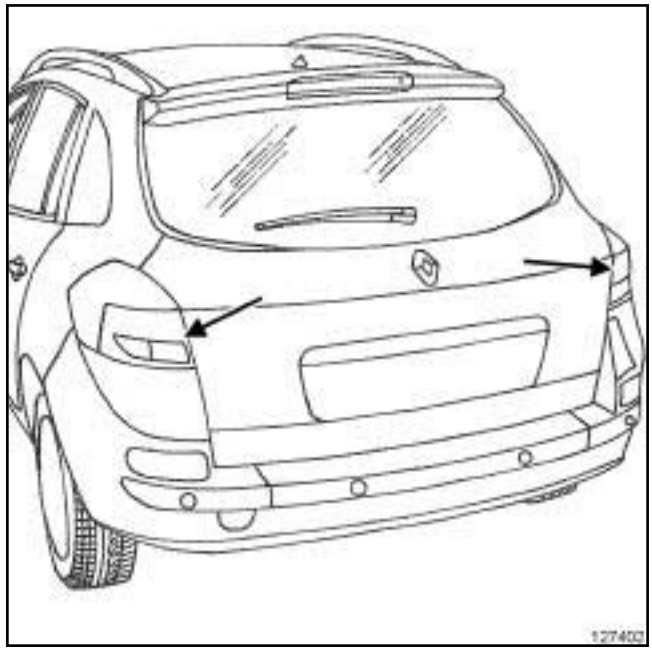
Number plate lights



113331

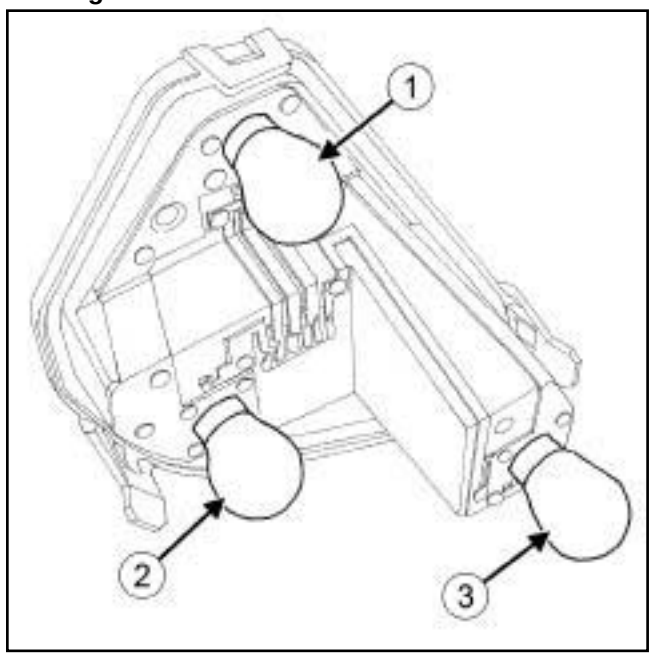
K85, and DOCUMENTATION PHASE 1

Rear lights on the wing



127402

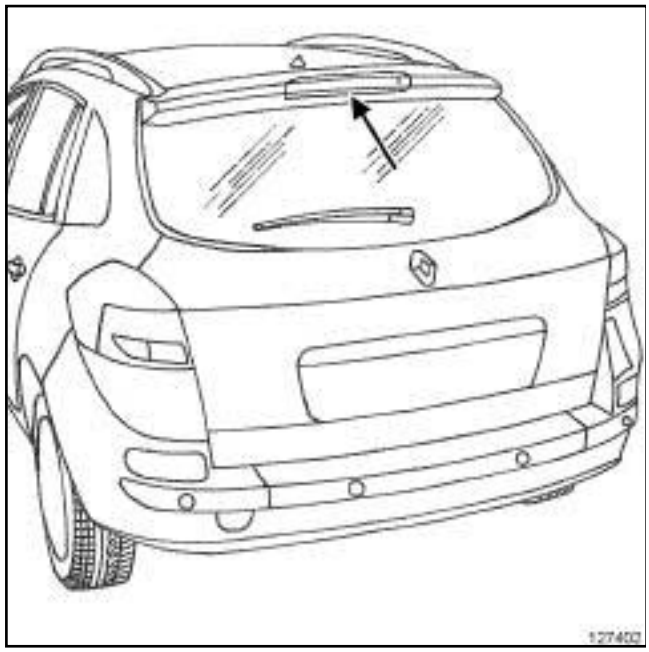
Rear light bulbs



127355

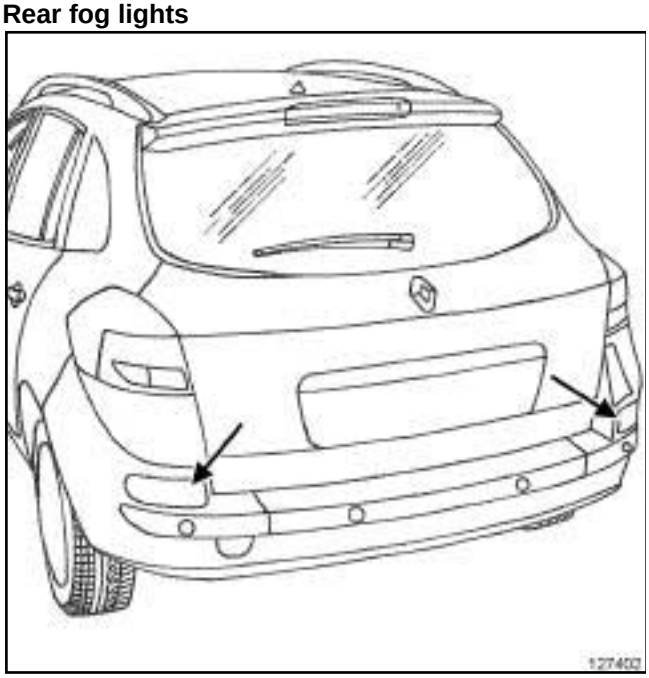
(**1**) Brake light and side light bulb
(**2**) Direction indicator bulb
(**3**) Reversing light bulb

High level brake light



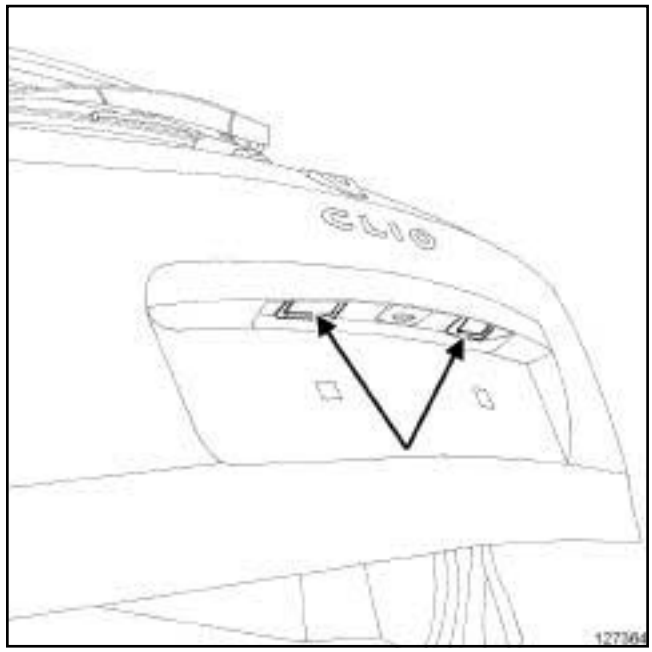
127402

Rear fog lights



127402

Number plate lights



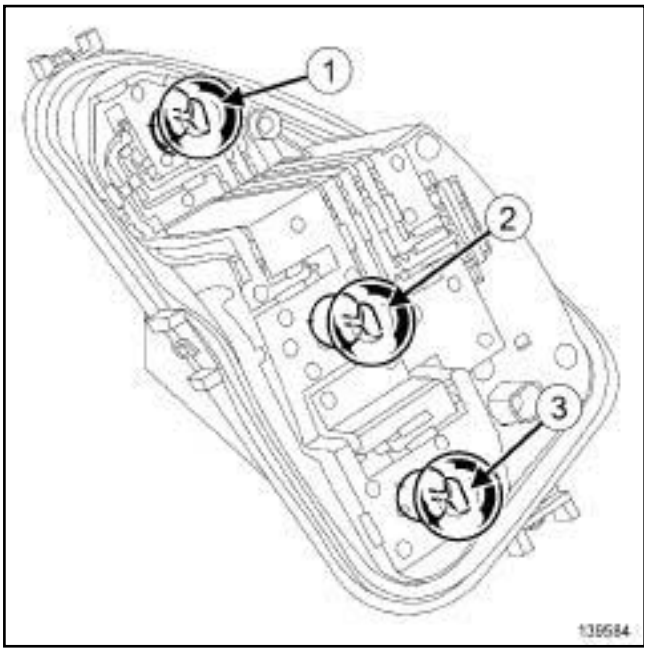
127364

B85 or C85 or S85, and DOCUMENTATION PHASE 2

Rear lights on the wing

139585

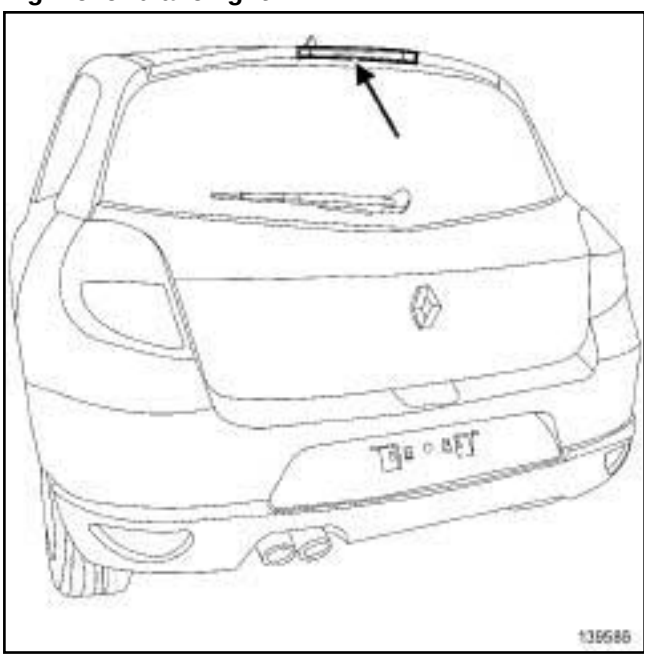
Rear light bulbs



139584

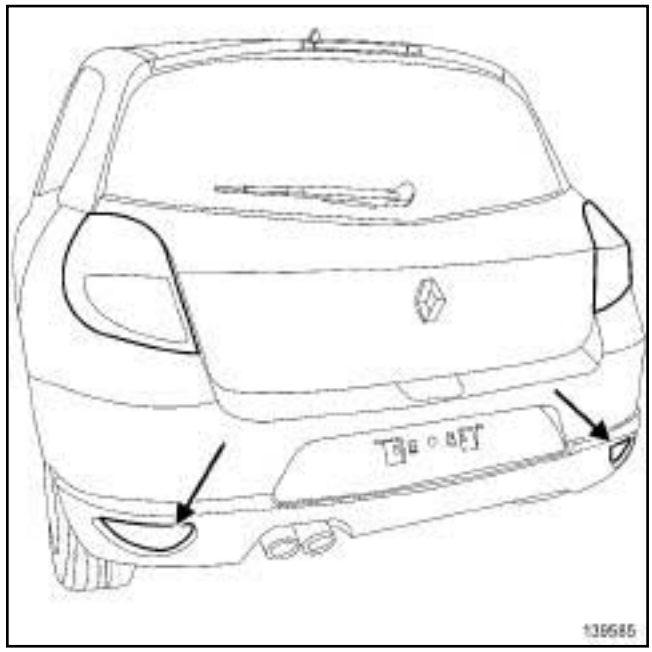
(**1**) Brake light and side light bulb
(**2**) Reversing light bulb
(**3**) Direction indicator bulb

High level brake light



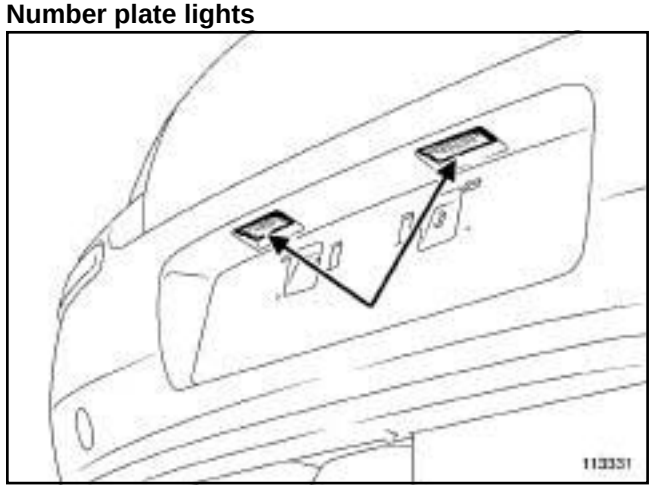
139586

Rear fog lights



139585

Number plate lights



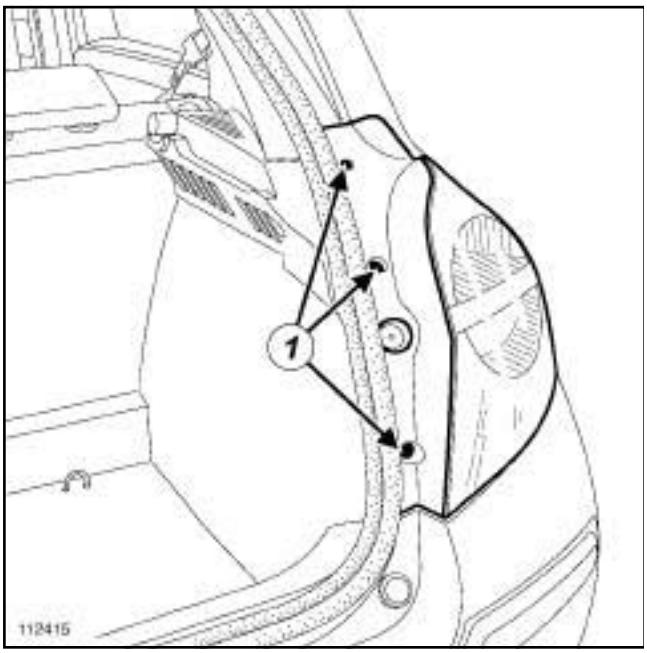
113331

B85 or C85 or S85

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❏ Open the luggage compartment.



112415

❏ Remove the bolts from the rear wing light (**1**) .

❏ Remove the rear wing light.

❏ Disconnect the connector from the rear light on the wing.

❏ Remove the rear light.

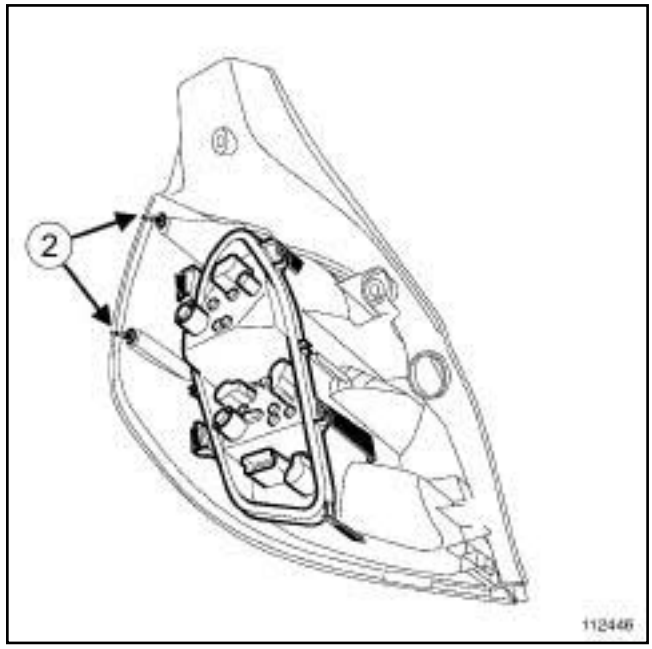
❏ If replacing the rear light, remove the bulbs (see **81A**, **Rear lighting**, **Rear light bulb: Removal - Refitting**, page **81A-7**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ If replacing the rear light, refit the bulbs (see **81A**, **Rear lighting**, **Rear light bulb: Removal - Refitting**, page **81A-7**) .

❏ Connect the connector for the rear light on the wing.



112446

❏ Position the rear light on the wing using the centring devices (**2**) .

❏ Refit the bolts for the rear light on the wing.

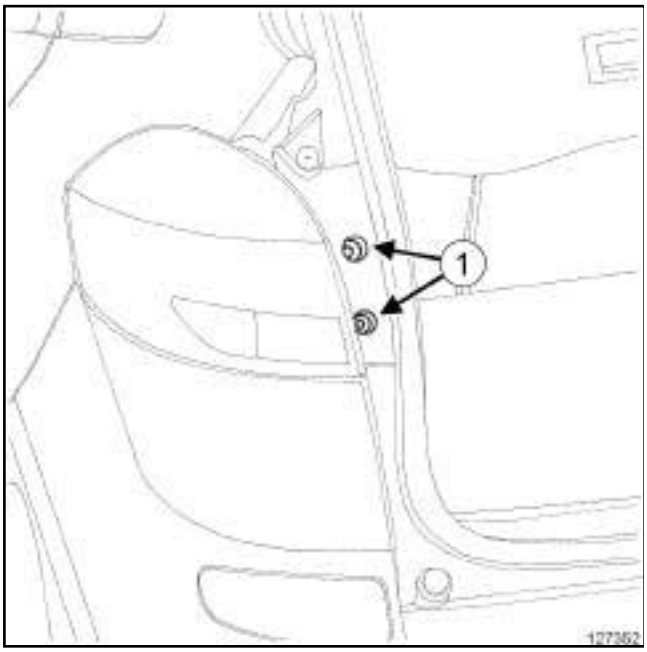
❏ Close the luggage compartment.

K85

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❏ Open the luggage compartment.



127352

❏ Remove the bolts from the rear wing light (**1**) .

❏ Remove the rear wing light.

❏ Disconnect the connector from the rear light on the wing.

❏ Remove the rear light.

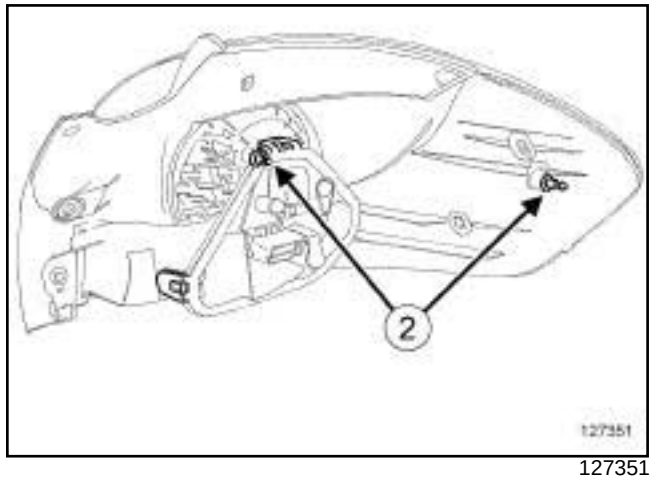
❏ If replacing the rear light, remove the bulbs (see **81A**, **Rear lighting**, **Rear light bulb: Removal - Refitting**, page **81A-7**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ If replacing the rear light, refit the bulbs (see **81A**, **Rear lighting**, **Rear light bulb: Removal - Refitting**, page **81A-7**) .

❏ Connect the connector for the rear light on the wing.



127351

❏ Position the rear light on the wing using the centring devices (**2**) .

❏ Refit the bolts for the rear light on the wing.

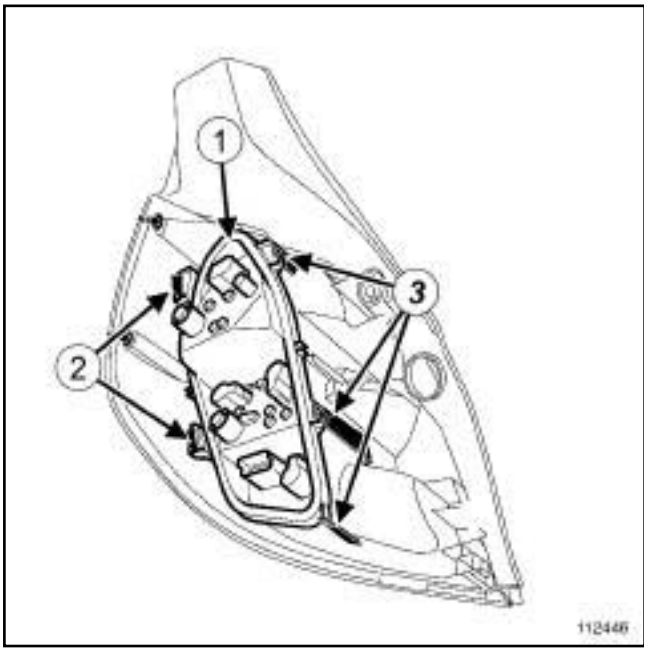
❏ Close the luggage compartment.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the rear light on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .

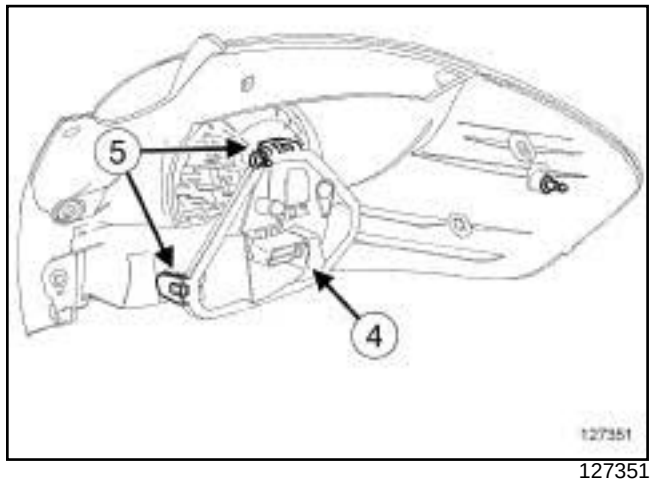
B85 or C85 or S85, and DOCUMENTATION PHASE 1



112446

❏ Unclip the bulb holder plate (**1**) by pressing clips (**2**) and (**3**) .

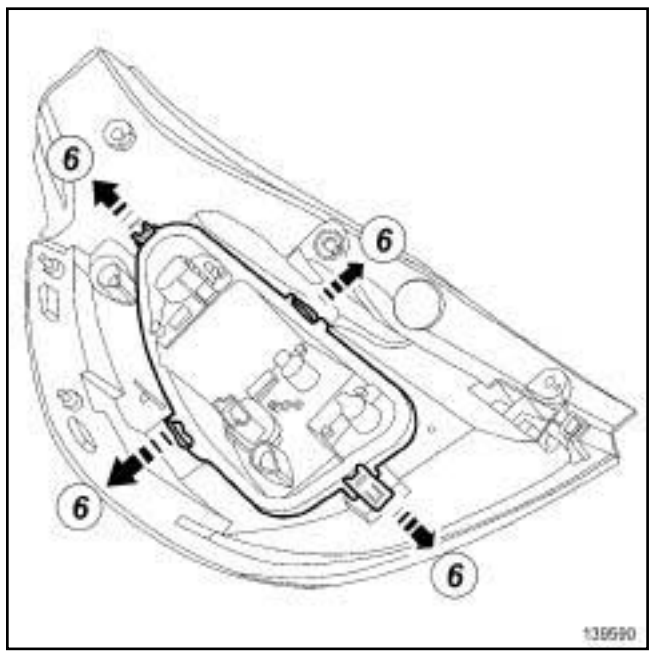
K85, and DOCUMENTATION PHASE 1



127351

❏ Unclip the bulb holder plate by pressing clips (**4**) and (**5**) .

B85 or C85 or S85, and DOCUMENTATION PHASE 2



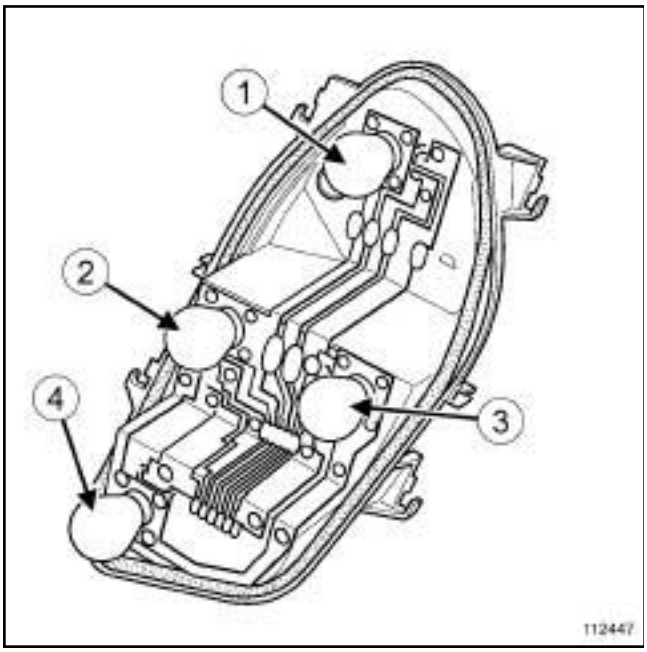
139590

❏ Unclip the bulb holder plate by pressing on the clips (**6**) .

❏ Remove the bulb holder plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED

B85 or C85 or S85, and DOCUMENTATION PHASE 1



112447

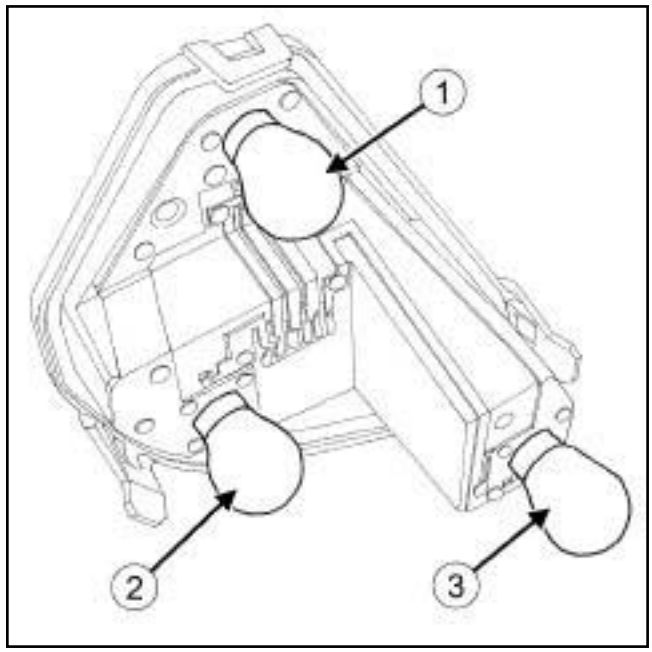
(**1**) Brake light and side light bulb
(**2**) Reversing light bulb
(**3**) Direction indicator bulb
(**4**) Rear fog light bulb

❏ Remove the bulbs from the bulb holders.

Note:

The layout of bulbs is the same for both rear lights.

K85, and DOCUMENTATION PHASE 1



127355

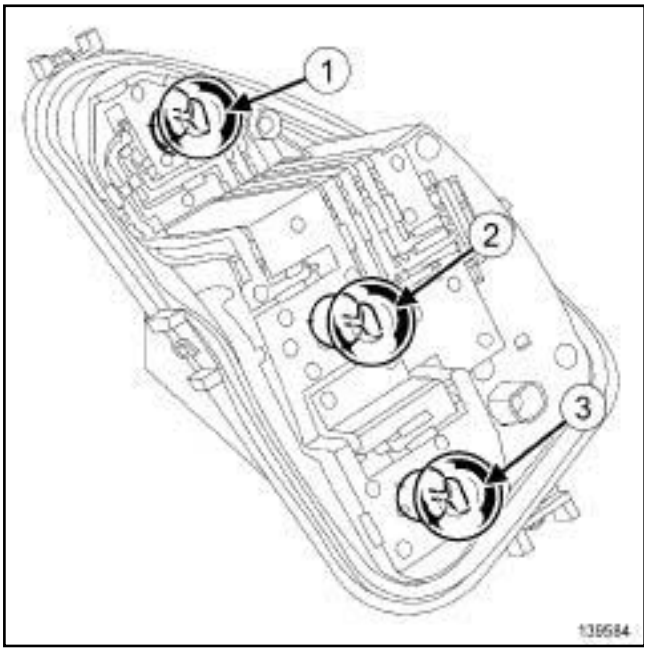
(**1**) Brake light and side light bulb
(**2**) Direction indicator bulb
(**3**) Reversing light bulb

❏ Remove the bulbs from the bulb holders.

Note:

The layout of bulbs is the same for both rear lights.

B85 or C85 or S85, and DOCUMENTATION PHASE 2



139584

(**1**) Brake light and side light bulb
(**2**) Reversing light bulb
(**3**) Direction indicator bulb

❑ Remove the bulbs from the bulb holders.

Note:
The layout of bulbs is the same for both rear lights.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑

Note:
When replacing a bulb, only use approved bulbs.

❑ Refit the bulbs on the bulb holder plate.

II - FINAL OPERATION

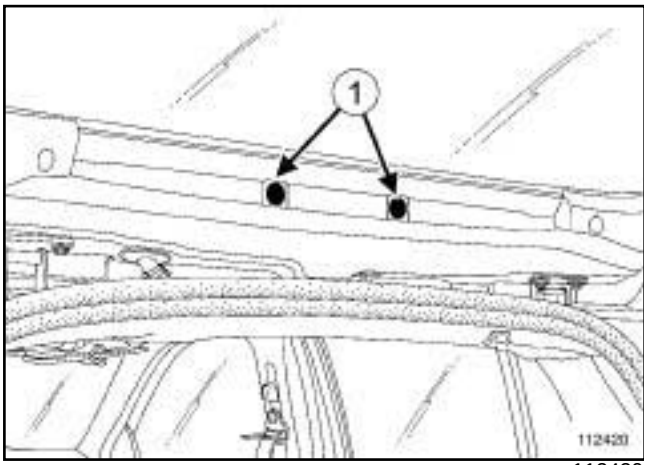
❑ Clip the bulb holder plate onto the rear light.

❑ Refit the rear light on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .

B85 or C85 or S85

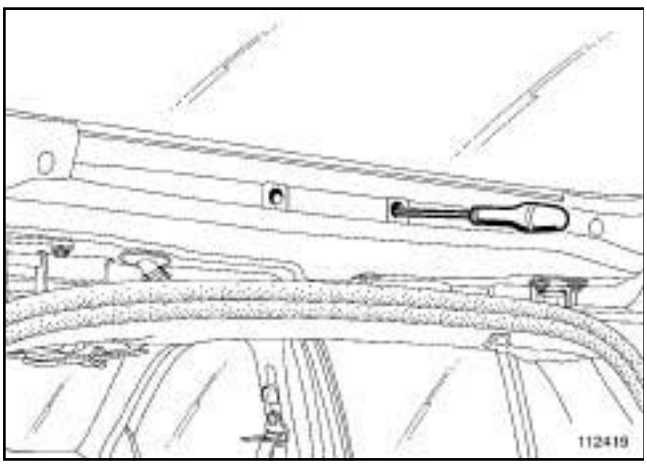
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



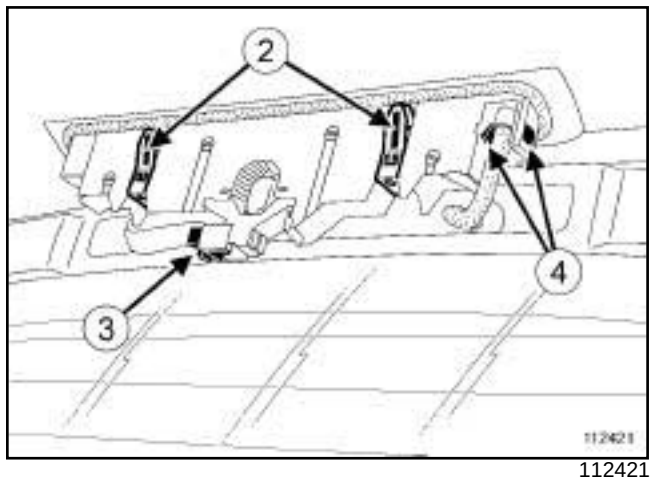
112420

❏ Remove the blanking covers (**1**) .



112419

❏ Insert a screwdriver in the openings to move the clips ***(2)*** .



112421

❏ Apply pressure to the clips (**2**) to unclip the high level brake light.

❏ Partially remove the raised brake light using a flat-blade screwdriver while protecting the tailgate area with masking tape.

❏ Disconnect the connector (**3**) .

❏ Unclip the window washer jet by moving the clips (**4**) .

❏ If replacing the high level brake light, remove the bulb (see **81A**, **Rear lighting**, **High level brake light bulb: Removal - Refitting**, page **81A-12**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ If replacing the high level brake light, refit the bulb (see **81A**, **Rear lighting**, **High level brake light bulb: Removal - Refitting**, page **81A-12**) .

❏ Connect the connector.

❏ Clip:

- the window washer jet,
- the high level brake light.

❏ Refit the blanking covers.

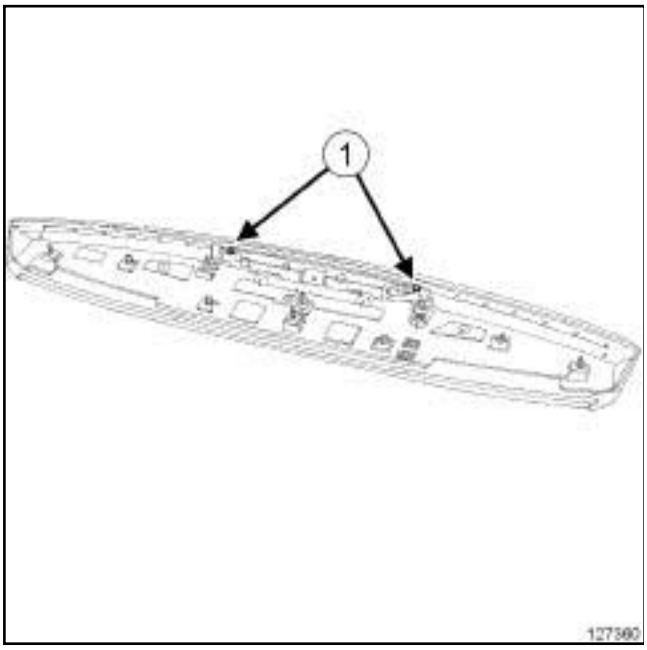
K85

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) (56A, Exterior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



127360

❏ Remove:

- the bolts (**1**) of the high-level brake light on the tailgate,
- The high-level brake light.

❏ If replacing the high-level brake light,remove the bulb (see **81A**, **Rear lighting**, **High level brake light bulb: Removal - Refitting**, page **81A-12**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ If replacing the high-level brake light, refit the bulb (see **81A**, **Rear lighting**, **High level brake light bulb: Removal - Refitting**, page **81A-12**) .

❏ Refit the high-level brake light on the tailgate.

II - FINAL OPERATION.

❏ Refit the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) (56A, Exterior equipment).

K85

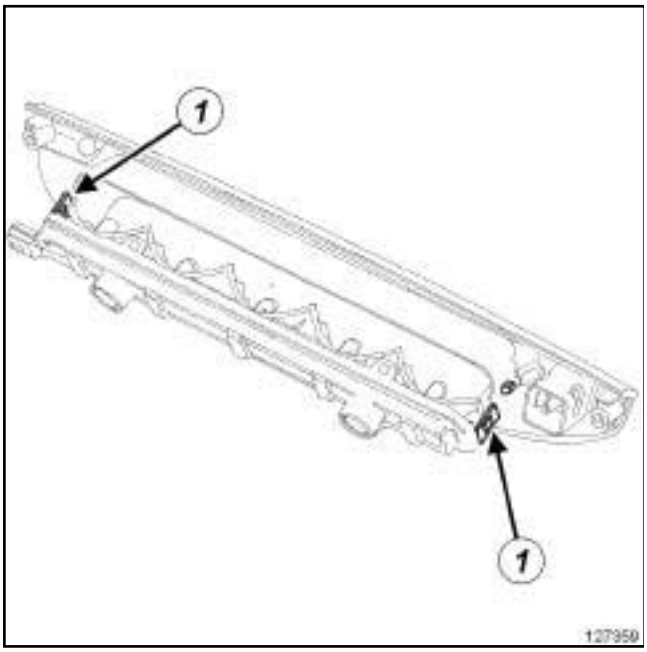
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) ,
- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



127359

❑ Remove:

- the bulb holder by pressing on the clips (**1**) ,
- the bulbs.

Note:
When replacing bulbs, use approved **W5W** bulbs.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip:

- the bulbs into the bulb holder,
- the bulb holder onto the high-level brake light.

II - FINAL OPERATION.

❑ Refit:

- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) ,
- the tailgate spoiler (see **Tailgate spoiler: Removal - Refitting**) .

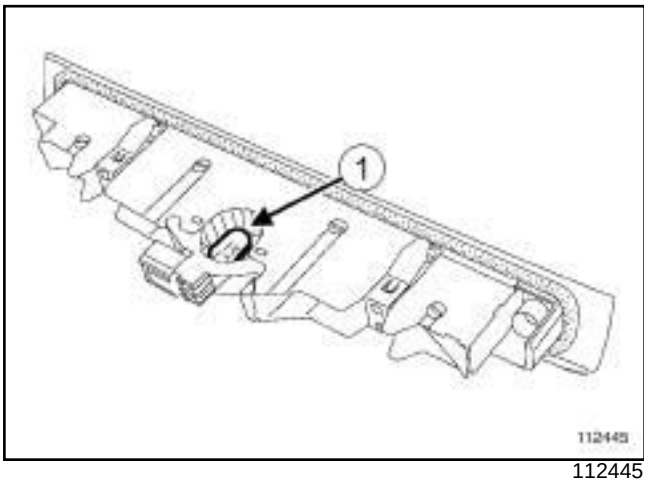
B85 or C85 or S85

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112445

❑ Remove the bulb (**1**) from the bulb holder.

> Note:
>
> When replacing the bulb, use an approved **W16W** bulb.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the bulb in the bulb holder.

II - FINAL OPERATION.

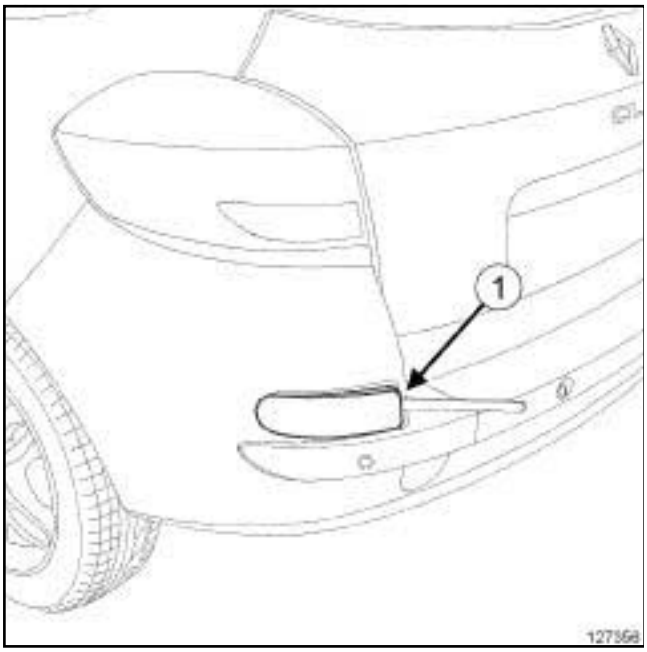
❑ Refit the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

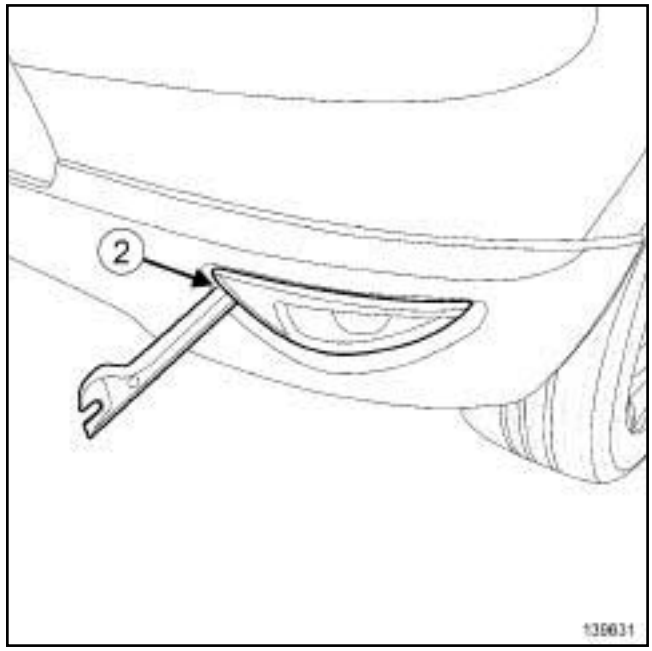
K85, and DOCUMENTATION PHASE 1



127356

❏ Move the rear fog light using the tool **(Car. 1363)** as a lever at (**1**) .

B85 or C85 or S85, and DOCUMENTATION PHASE 2



139631

❏ Move the rear fog light using the tool **(Car. 1363)** as a lever at (**2**) .

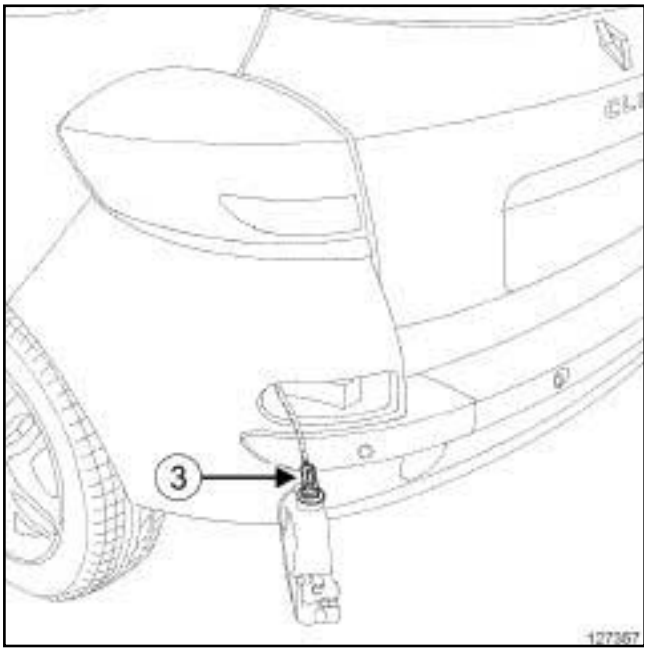
❏ Disconnect the rear fog light connector.

❏ Remove the rear fog light.

REFITTING

I - REFITTING PREPARATION OPERATION

K85, and DOCUMENTATION PHASE 1

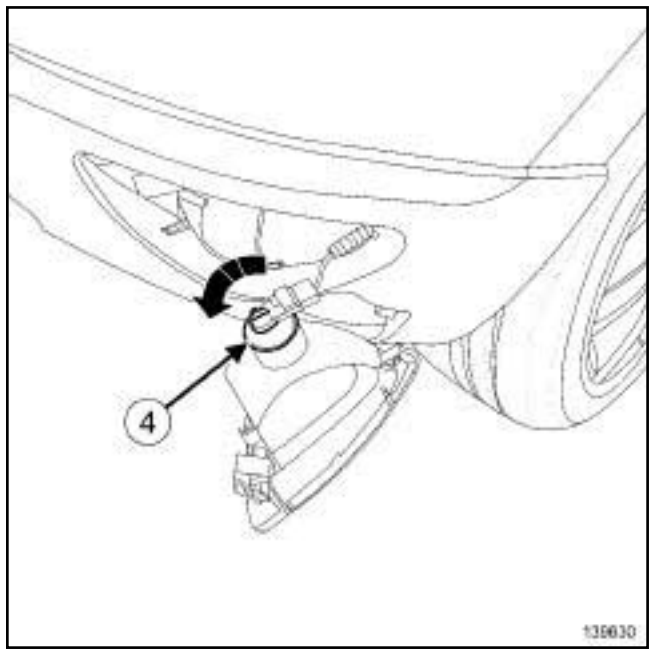


127357

❏ If the indicator light bulb needs replacing, remove:

- the bulb holder (**3**) by turning it forty-five degrees counter-clockwise,
- the bulb from the bulb holder.

B85 or C85 or S85, and DOCUMENTATION PHASE 2



139630

❏ If the indicator light bulb needs replacing, remove:

- the bulb holder (**4**) by turning it forty-five degrees counter-clockwise,
- the bulb from the bulb holder.

❏ When replacing a bulb, use an approved bulb.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

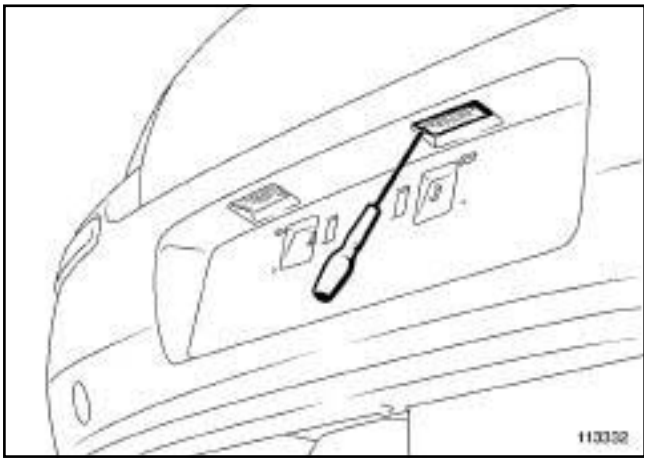
- the bulb on the bulb holder,
- the bulb holder by turning it forty-five degrees clockwise.

❏ Connect the rear fog light connector.

❏ Clip the fog light onto the rear bumper.

REMOVAL

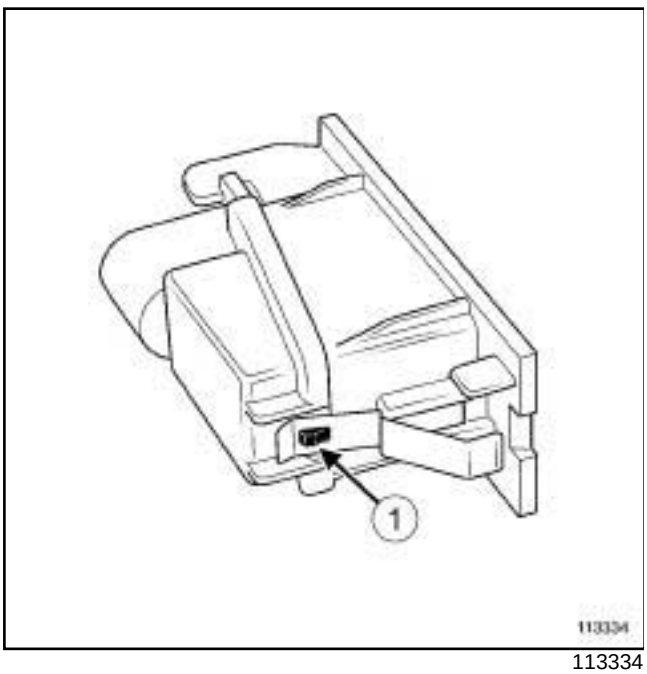
OPERATION FOR REMOVAL OF PART CONCERNED



113332

❏ Remove the licence plate light using a flat-blade screwdriver.

❏ Disconnect the connector.



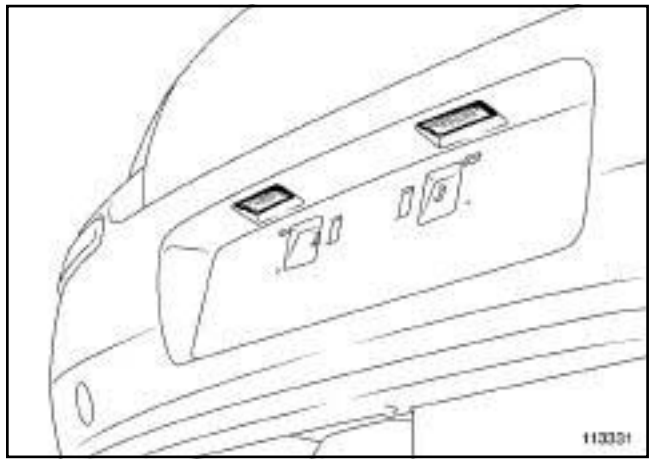
113334

❏ Unclip the light at (**1**) to gain access to the bulb.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ When replacing a bulb, use an approved bulb.



113331

❏ Connect the connector.

❏ Refit the light.

I - GENERAL INFORMATION

Vehicles may be fitted with the following units for lighting the interior of the passenger compartment, depending on the level of equipment:

- a courtesy light (front central zone),
- a courtesy light (rear central zone),
- courtesy mirror lights (driver and passenger),
- a glovebox light,
- footwell lights located in the centre of the front door panel,
- a boot light.

The courtesy lights located on the interior roof trim may be equipped as follows:

- for the central front courtesy light:
  - a light without map-reading light,
  - a light with passenger-side map reading light,
  - a light with two map-reading lights.

  for the central rear courtesy light:
  - a light without map-reading light,
  - a light with two map-reading lights.

II - OPERATIONAL PROGRAMMING FOR THE LIGHTING

The interior lights are automatically and instantly switched on by the UCH:

- when a door or the tailgate is opened,
- on unlocking the opening elements by the remote control or by the detection of presence or movement by the exterior opening control (in hands-free mode),
- on removal of the key or the Renault card.

To switch off the interior lights, the UCH enforces the following, depending on the circumstances:

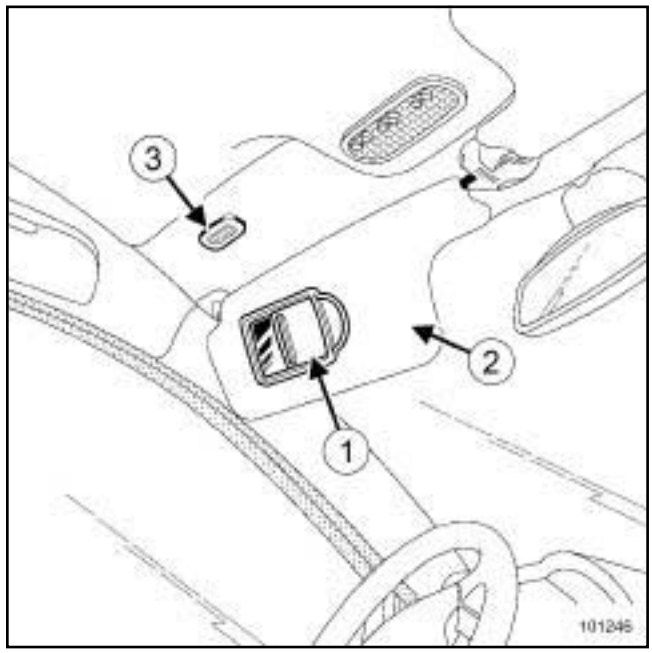
- the switching off, without delay, on closure of the opening elements by the remote control or the Renault card.
- delayed (progressive) switching off:
  - after the last door or the boot is closed,
  - on unlocking the opening elements by the remote control or by the detection of presence or movement by the exterior opening control (in hands-free mode),
  - after the engine has started.

Note:

The UCH controls the switching off of the interior lights after a delay of approximately **20 minutes** when the light is in forced on position.

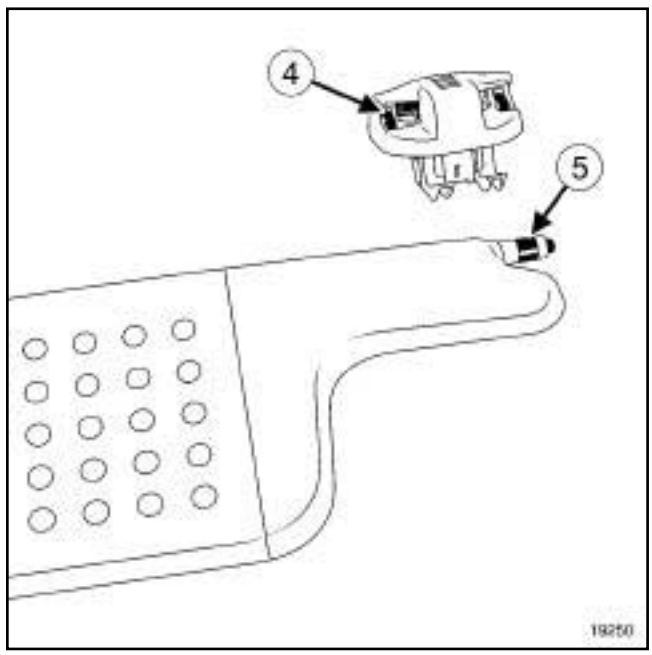
III - OPERATION OF THE COURTESY LIGHT

The courtesy mirrors may be fitted with a light incorporated into the headlining.



101246

The switch is located on the cover (**1**) of the sun visor mirror (**2**) .



19250

The courtesy light supply (**3**) passes via the contact (**4**) implanted on the central mounting and via the sun visor contact (**5**) .

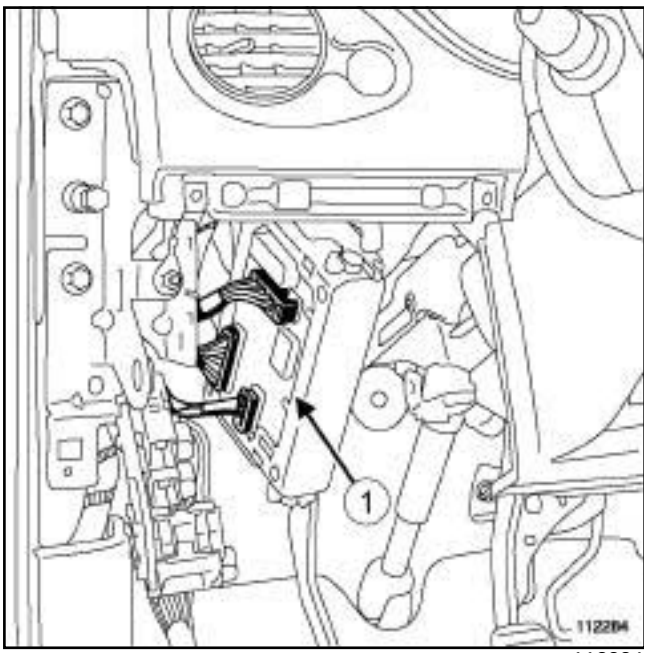
Note:

Operation of the switch can be checked by connecting a multimeter at (**5**) :

- mirror cover closed (switch open) = light out = infinite resistance,
- mirror cover open (switch closed) = light on = zero resistance.

No.	Description
(1)	UCH
(2)	Passenger compartment fuse and relay box
(3)	Front / rear courtesy light
(4)	Vanity light
(5)	Glovebox light
(6)	Door lower light
(7)	Luggage compartment light

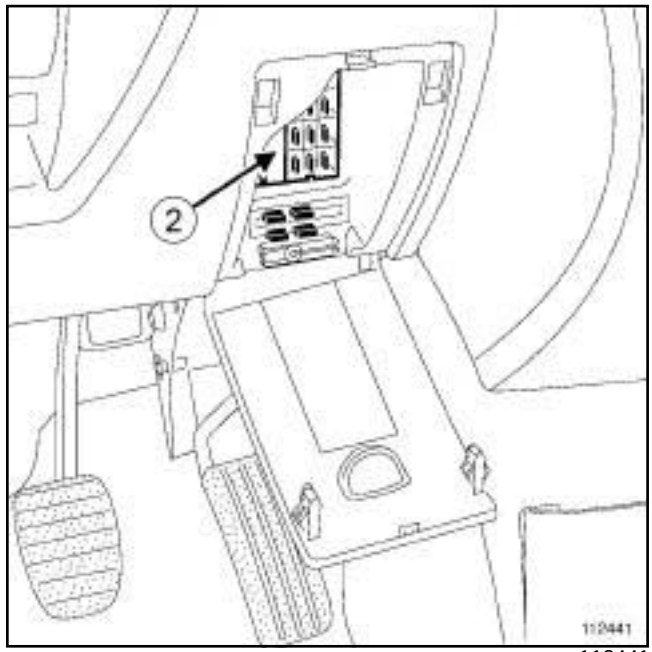
I - UCH



112284

UCH (**1**)

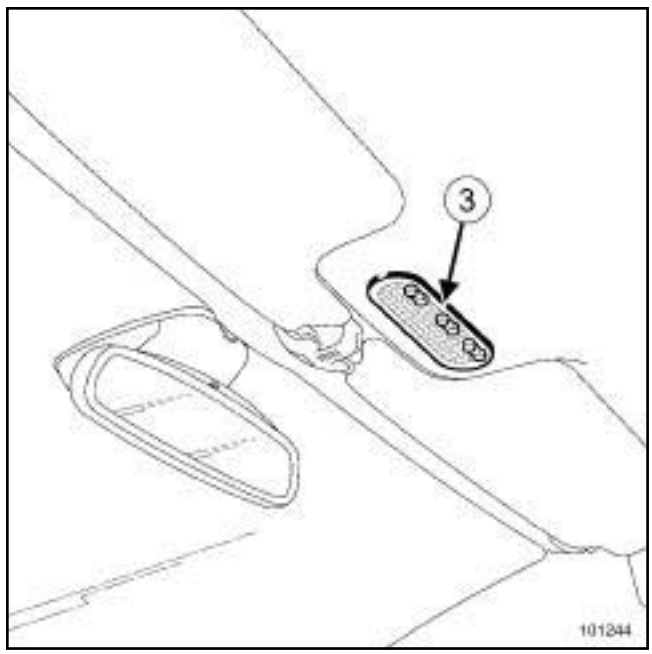
II - PASSENGER COMPARTMENT FUSE AND RELAY BOX



112441

Passenger compartment fuse and relay box (**2**)

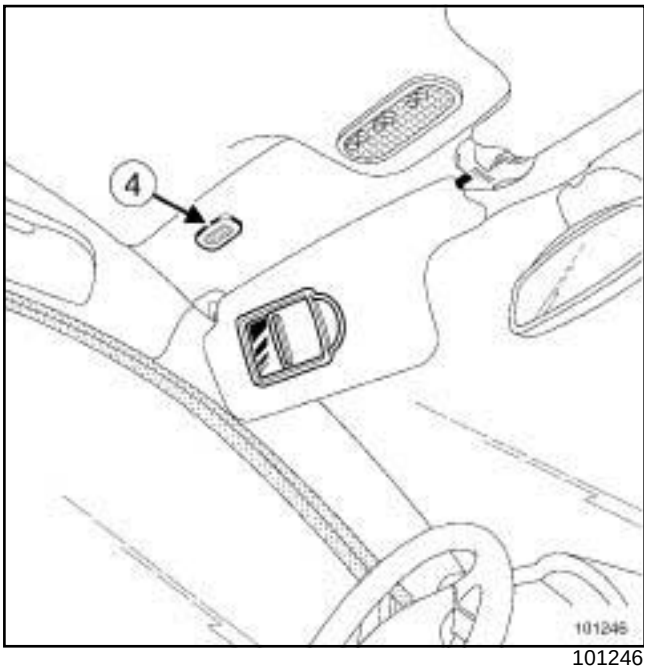
III - FRONT / REAR COURTESY LIGHT



101244

Courtesy light (**3**) integrated in the headlining

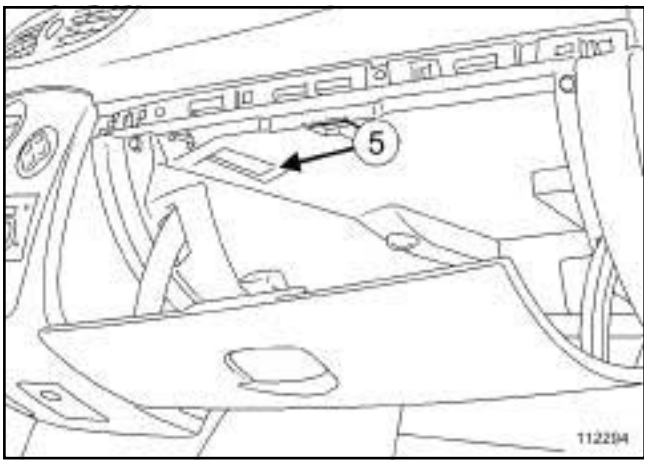
IV - COURTESY LIGHT



101246

Courtesy light (**4**)

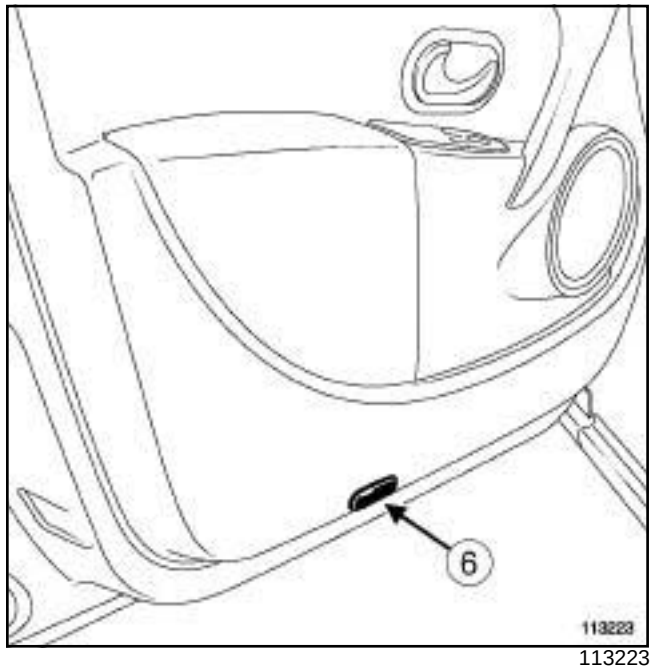
V - GLOVEBOX LIGHT



112294

Glovebox light (**5**)

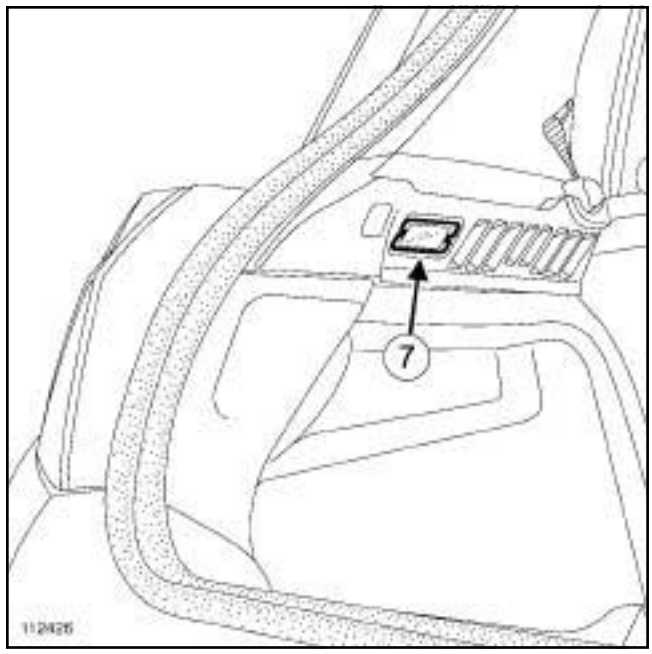
VI - LOWER DOOR LIGHT



113223

Lower door light (**6**)

VII - LUGGAGE COMPARTMENT LIGHT

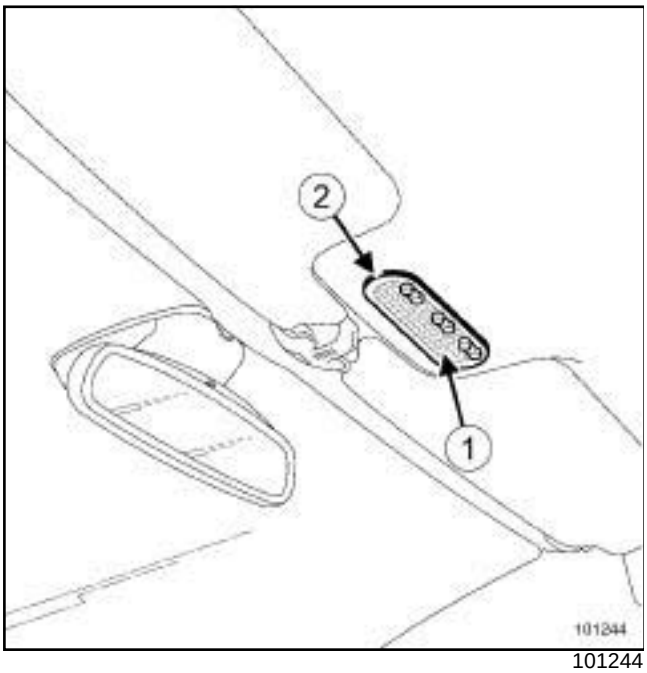


112426

Luggage compartment light (**7**)

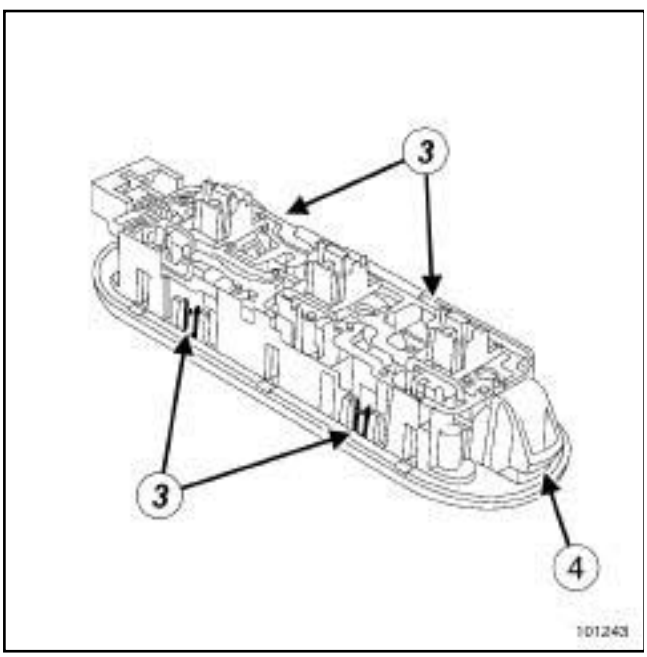
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



101244

❏ Unclip the translucent cover (**1**) using a flat-blade screwdriver, inserting it into notch (**2**) .



101243

❏ Pull on the securing tabs .

❏ Press on the clip (**4**) using a flat-blade screwdriver to remove the interior light from the headlining.

❏ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Replace the bulb with an approved **W5W** bulb.

❏ Connect the connector.

❏ Refit the courtesy light.

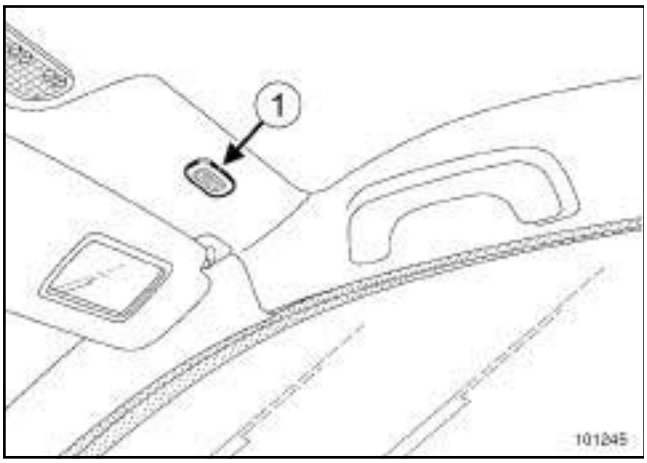
❏ Clip the translucent cover in place.

S/VIS MIR+FOLD+LIGHT

Special tooling required	
Car. 1597	Trim removal lever.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



101245

❏ Unclip the courtesy light at (**1**) using the **(Car. 1597)**.

❏ Remove the courtesy light.

❏ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

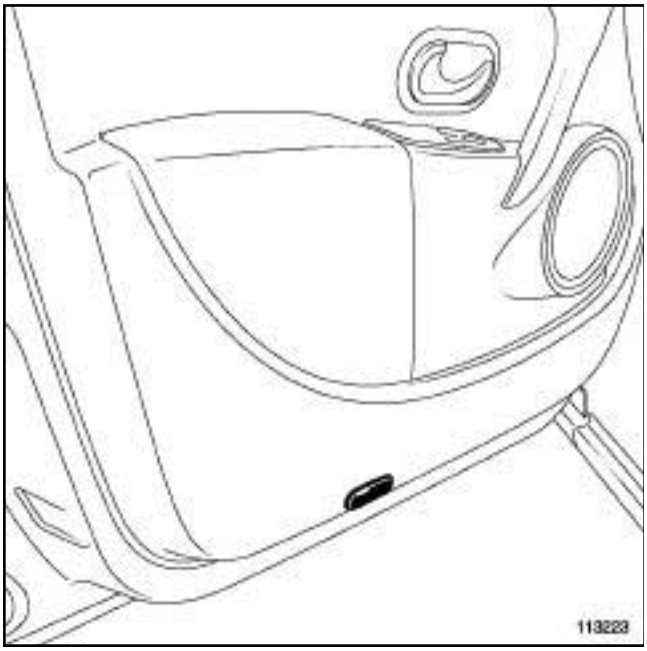
❏ Replace the bulb with an approved **W5W** bulb.

❏ Connect the connector.

❏ Clip on the light ***(1)*** .

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113223

❏ Unclip the light with a small flat-blade screwdriver.

❏ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Replace the bulb with an approved **W5W** bulb.

❏ Connect the connector.

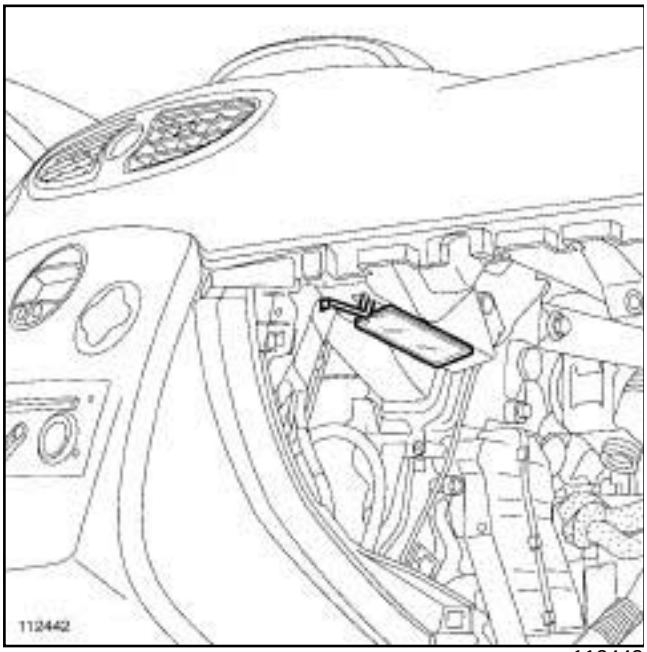
❏ Refit the light.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112442

❑ Remove the glove compartment light.

❑ Disconnect the connector.

> Note:
>
> The switch is built into the light.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Replace the bulb with an approved **C5W** bulb.

❑ Connect the connector.

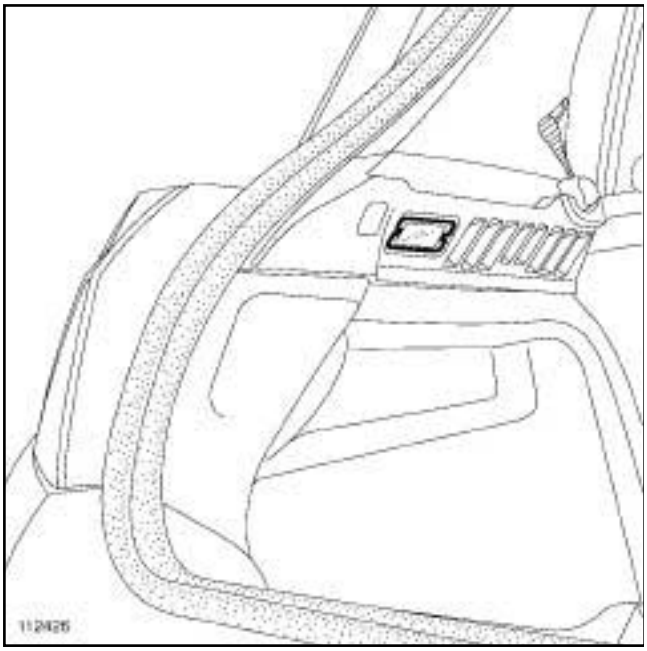
❑ Clip the light in place.

II - FINAL OPERATION.

❑ Refit the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112426

❏ Unclip the luggage compartment light.

❏ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ To replace a bulb, use an approved **C5W** bulb.

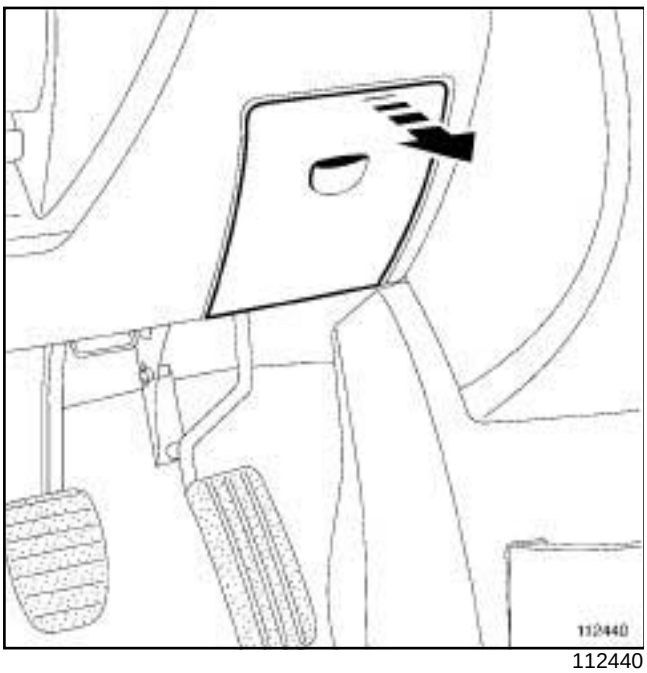
❏ Connect the connector.

❏ Clip the boot light in place.

No.	Description
(1)	Passenger compartment fuse and relay box
(2)	Consumer cut-out fuse
(3)	Additional relay/fuse box
(4)	Battery protection fuses
(5)	Protection and switching unit
(6)	Power supply fuse board
(7)	Optional relay unit

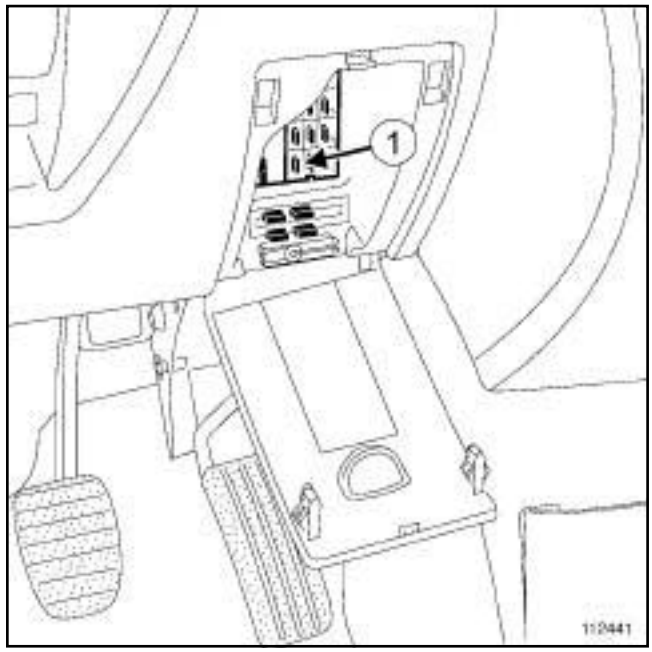
I - PASSENGER COMPARTMENT FUSE AND RELAY BOX

LEFT-HAND DRIVE



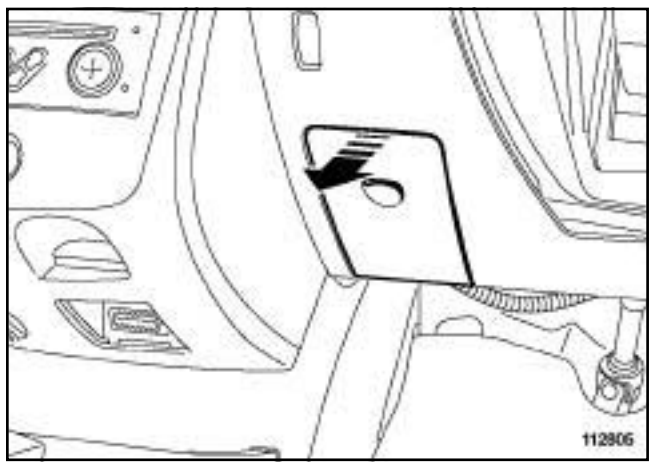
112440

Open the access flap to gain access to the unit.



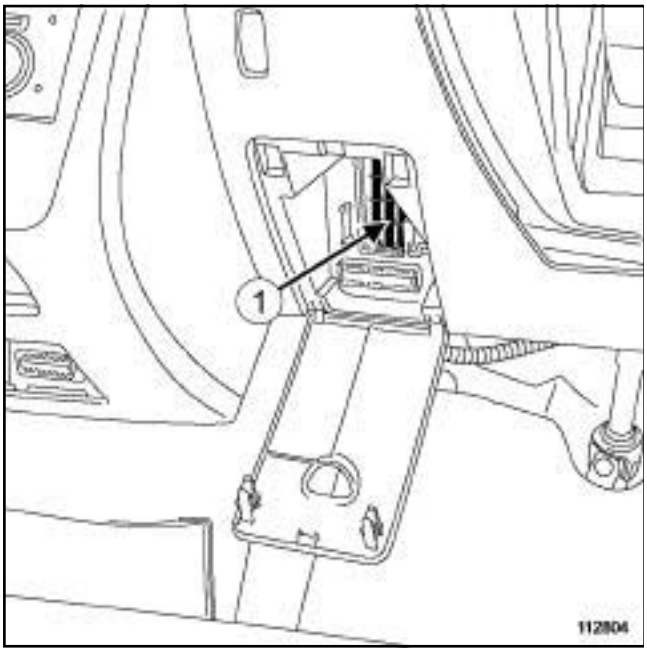
112441

RIGHT-HAND DRIVE



112805

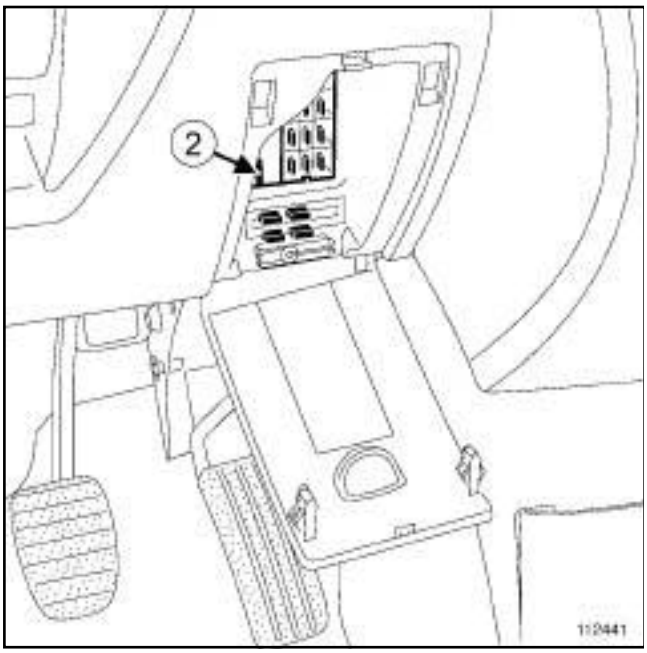
Open the access flap to gain access to the unit.



112804

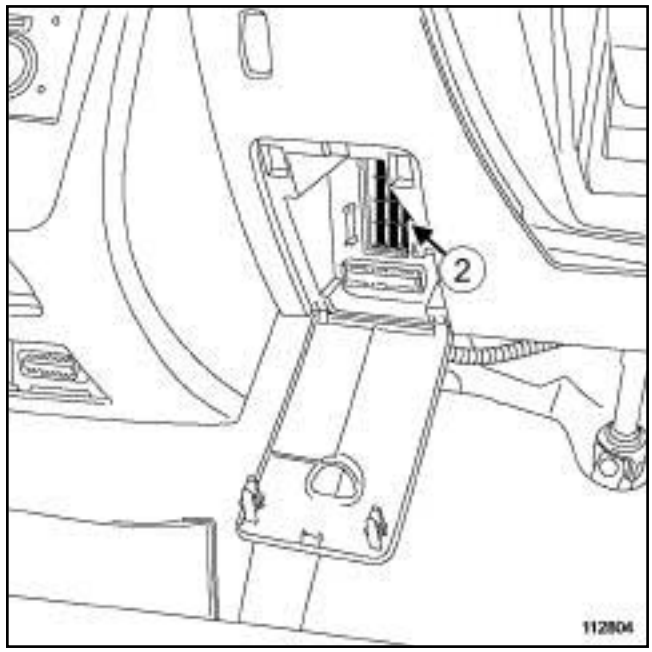
II - CONSUMER CUT-OUT FUSE

LEFT-HAND DRIVE



112441

RIGHT-HAND DRIVE

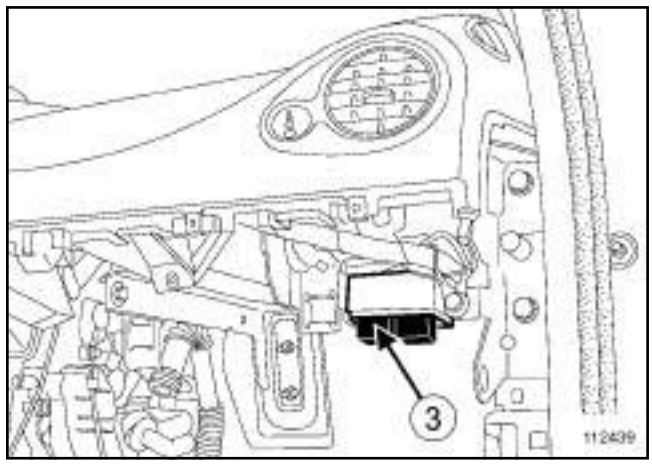


112804

III - ADDITIONAL FUSE AND RELAY BOX

LEFT-HAND DRIVE

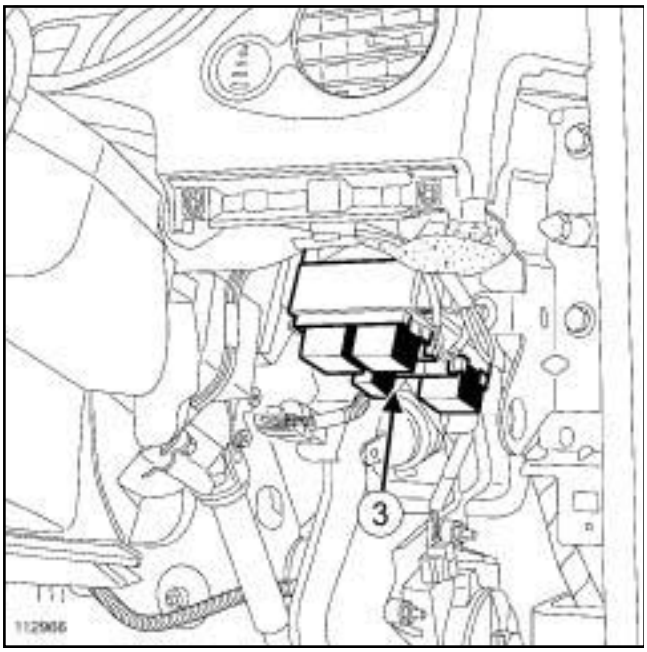
Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment) to access the box.



112439

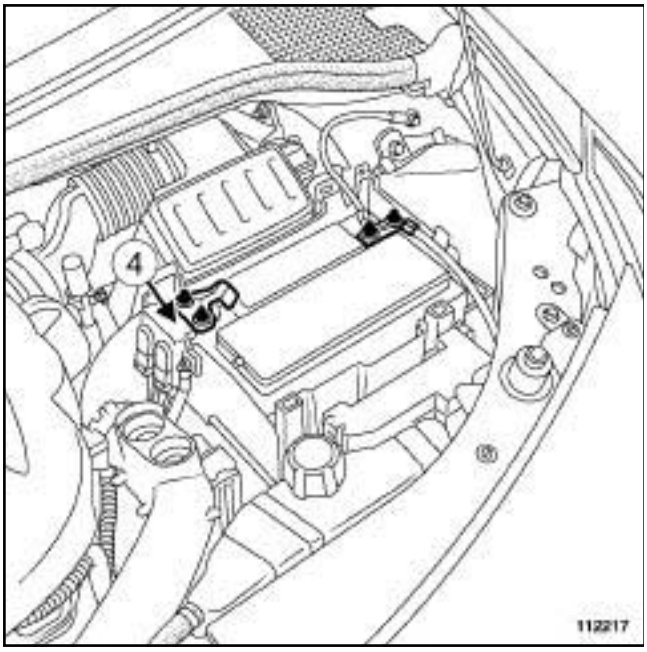
RIGHT-HAND DRIVE

Remove the lower dashboard trim (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment)to access the box.



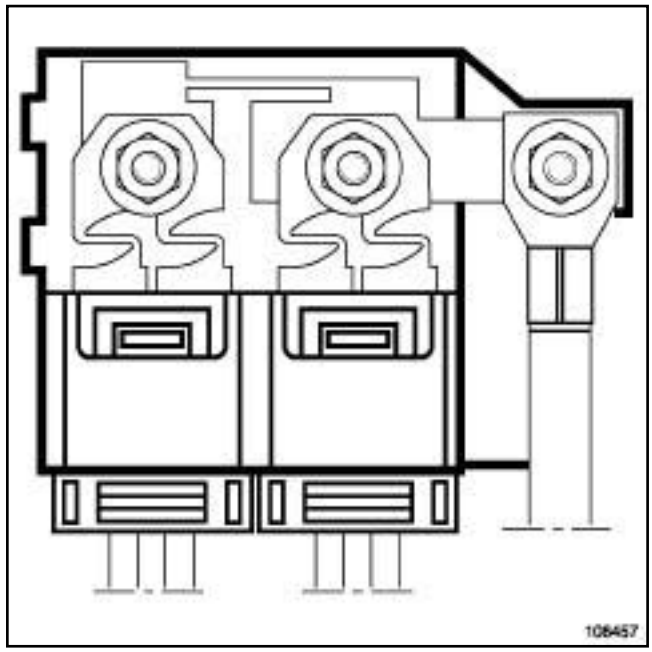
112966

IV - BATTERY PROTECTION FUSES



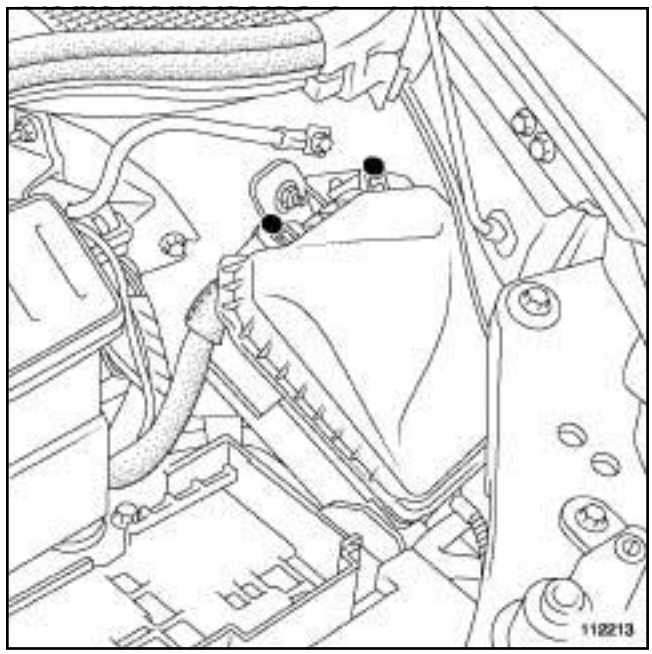
112217

This box is located on the positive battery terminal.



108457

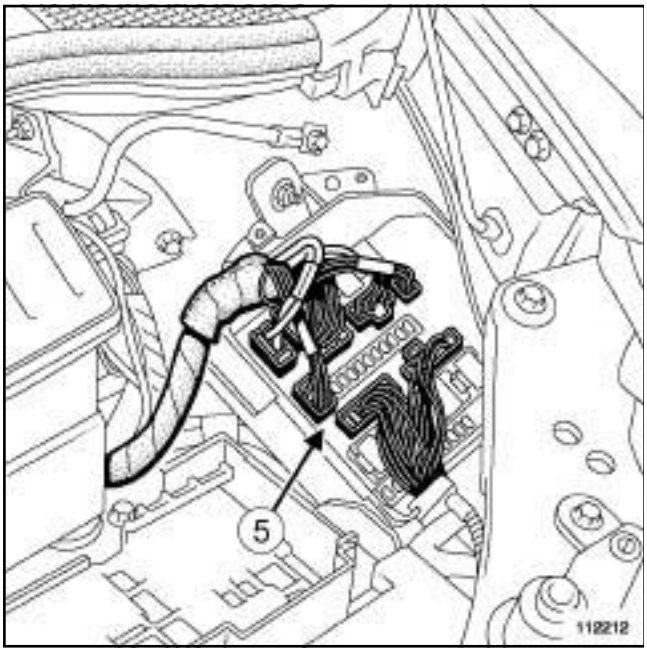
V - PROTECTION AND SWITCHING UNIT



112213

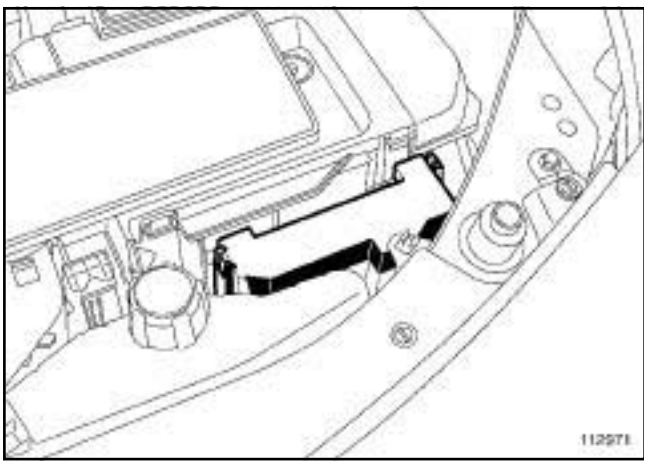
This box is located in the engine compartment, behind the left headlamp.

Remove the cover to gain access to the unit.



112212

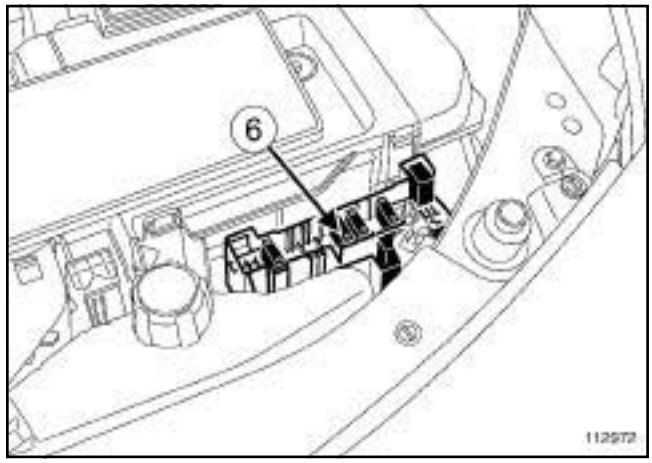
VI - POWER SUPPLY FUSE BOARD



112971

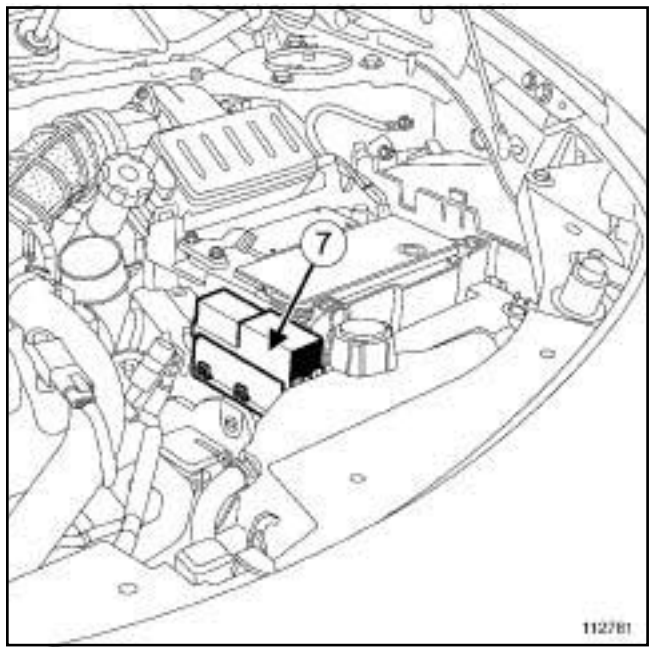
This box is located on the front panel of the battery tray.

Remove the cover to gain access to the unit.



112972

VII - OPTIONAL RELAY UNIT



112781

This box is located on the engine-side panel of the battery tray.

Remove the cover to gain access to the unit.

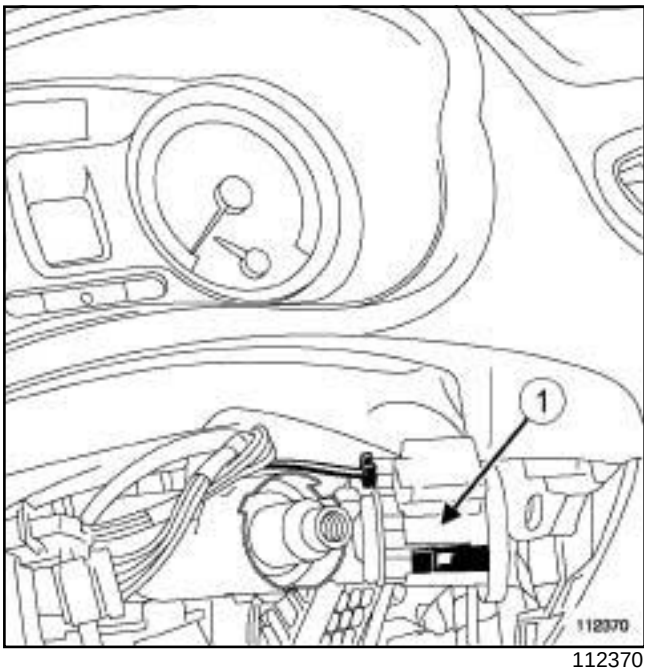
I - LIST OF COMPONENTS

Number	Description
(1)	Transponder ring
(2)	Ignition switch
(3) or *(10)*	UCH
(4)	Key
(5)	Front starting aerial
(6)	Central starting aerial
(7)	Rear starting aerial
(8)	Start button
(9)	Card reader
(11)	Electric steering column lock
(12)	Card

II - LOCATION OF COMPONENTS

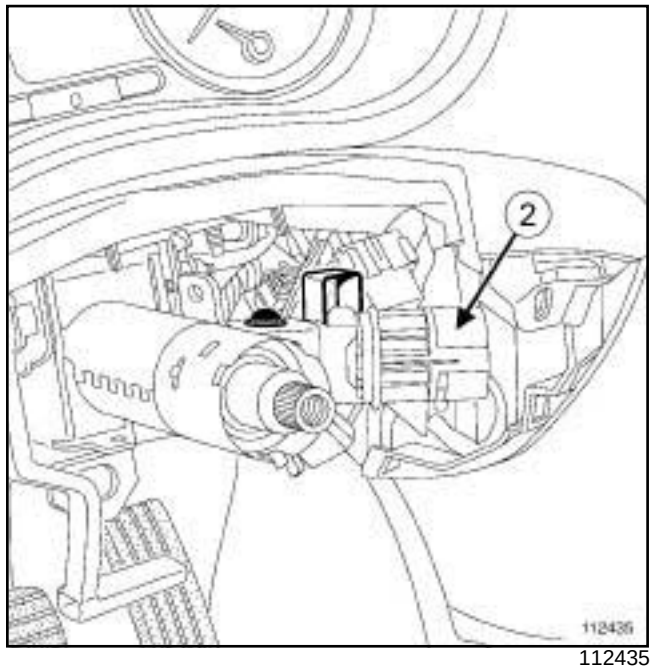
VEHICLE WITH KEY

1 - Antenna/Transponder ring



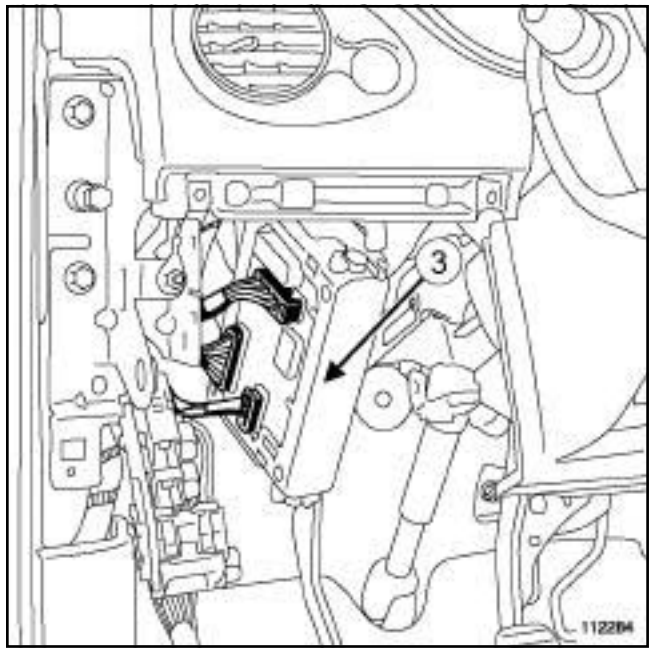
112370

2 - Ignition switch



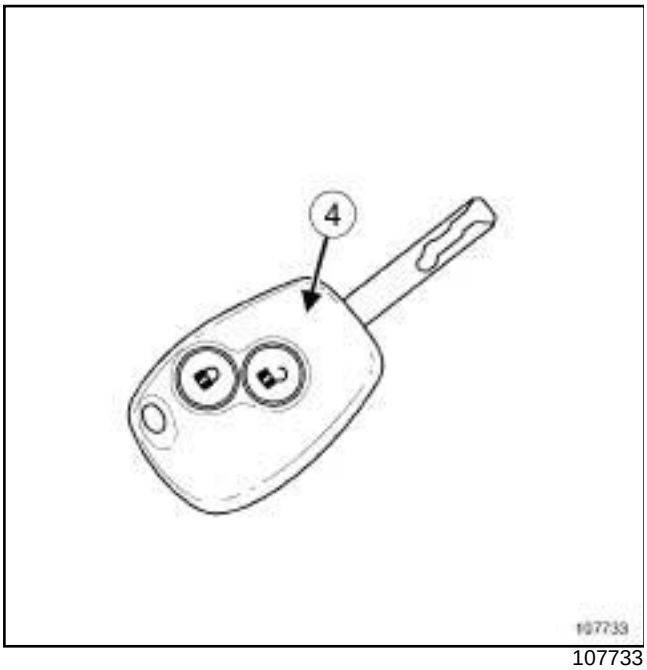
112435

3 - UCH



112284

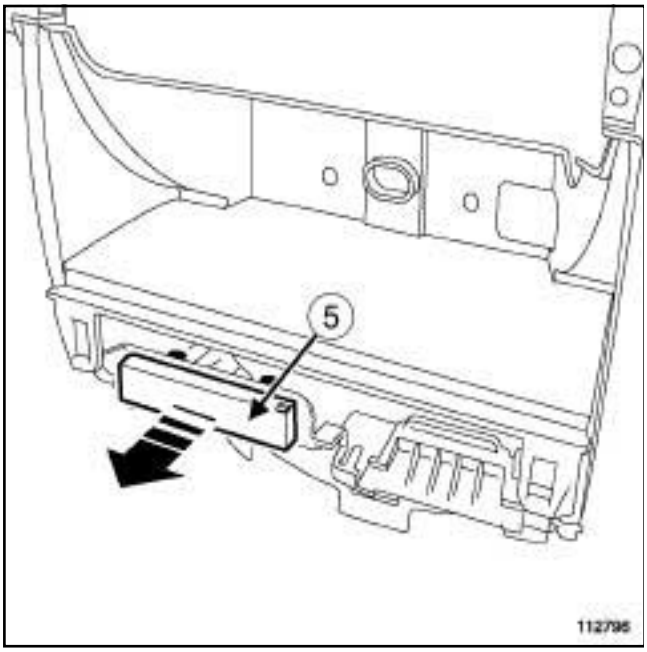
4 - Key



107733

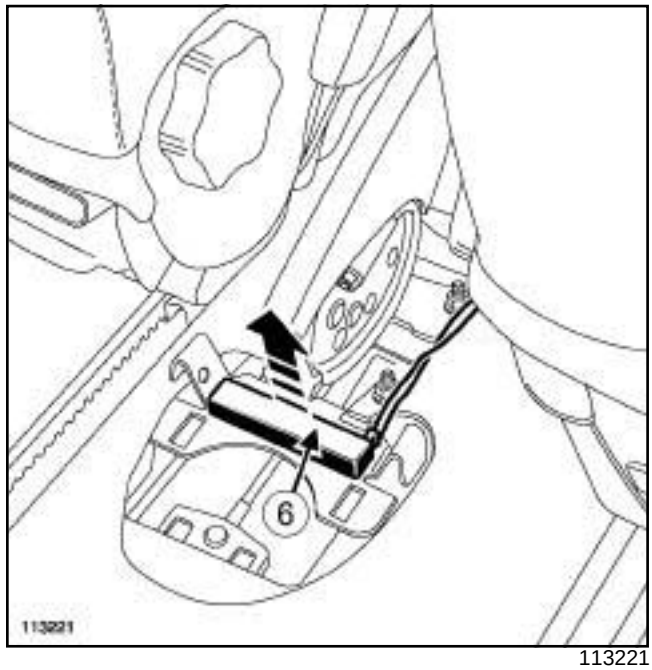
VEHICLE WITH CARD

5 - Front starting aerial



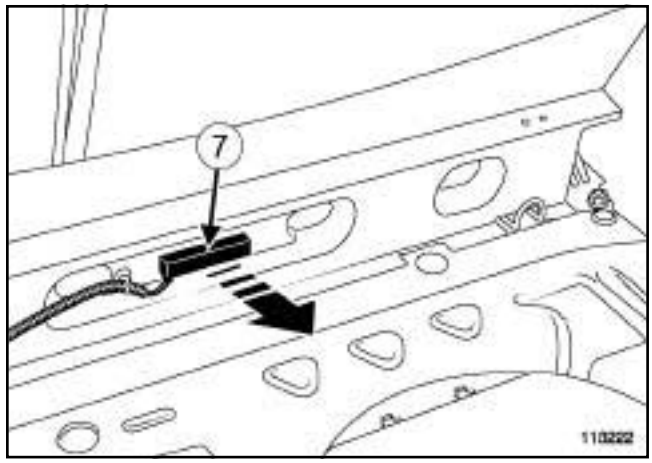
112796

6 - Central starting aerial



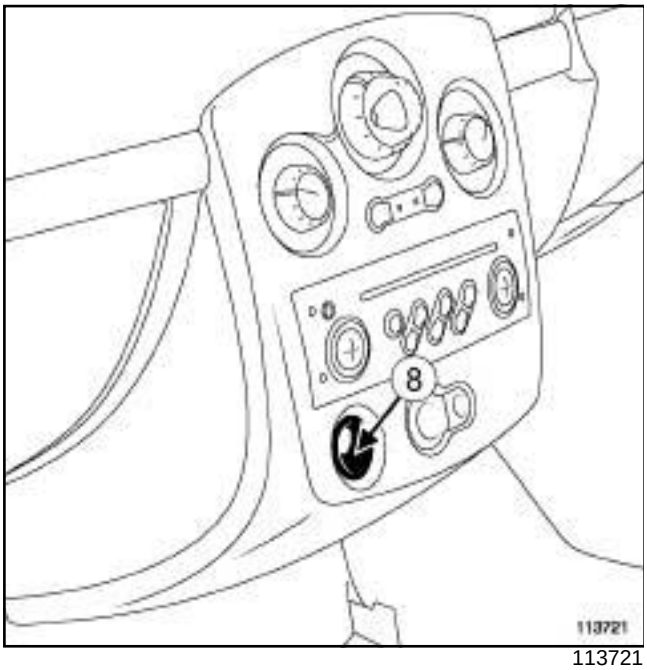
113221

7 - Rear starting aerial



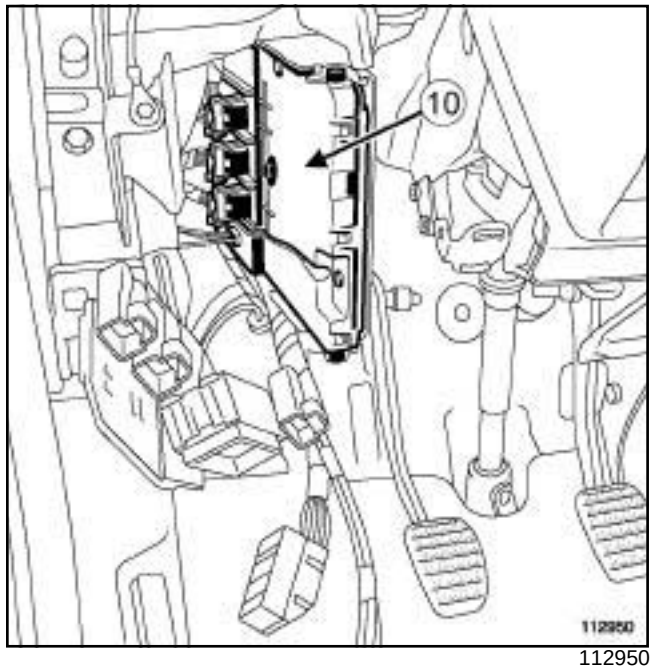
113222

8 - Start button



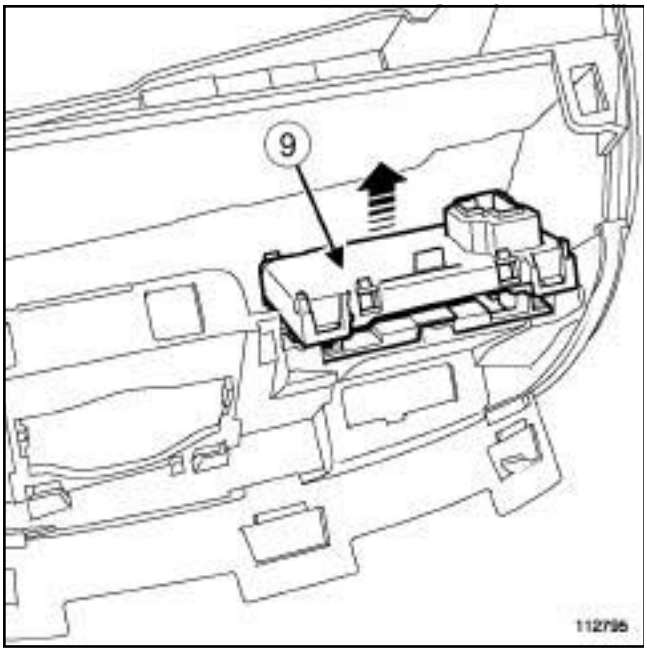
113721

10 - UCH



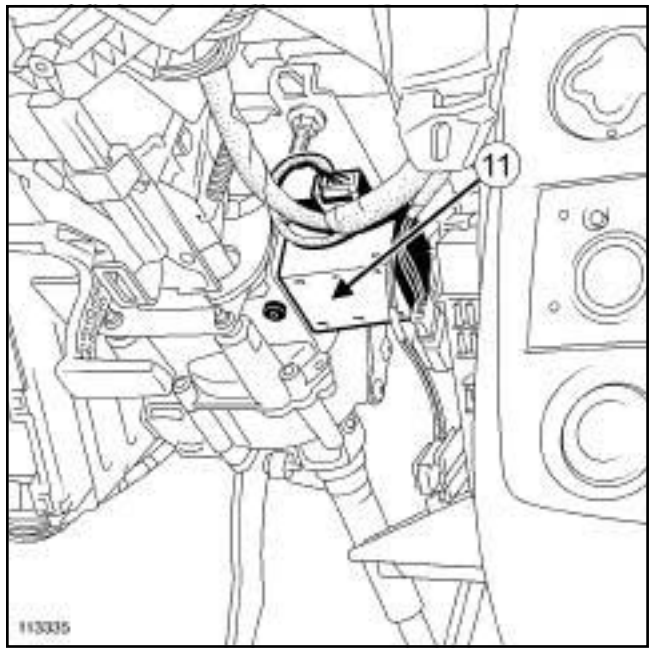
112950

9 - Card reader



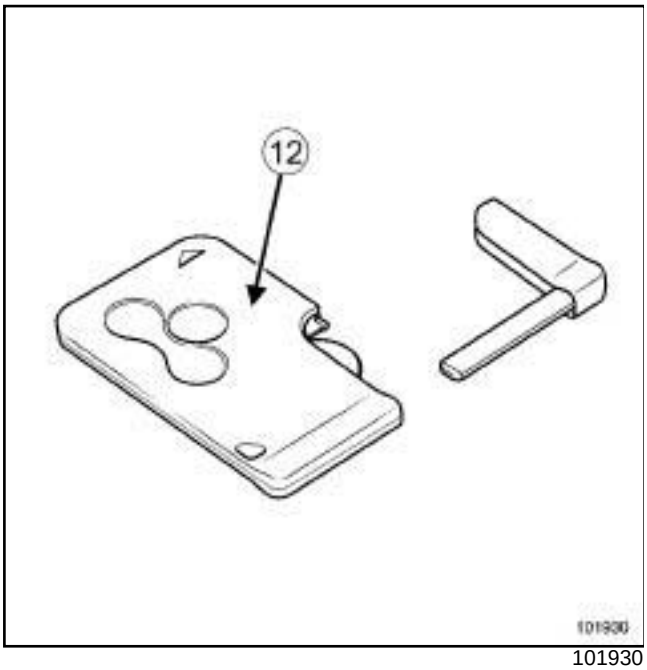
112795

11 - Electric steering column lock



113335

12 - Card



101930

VEHICLE WITH CARD

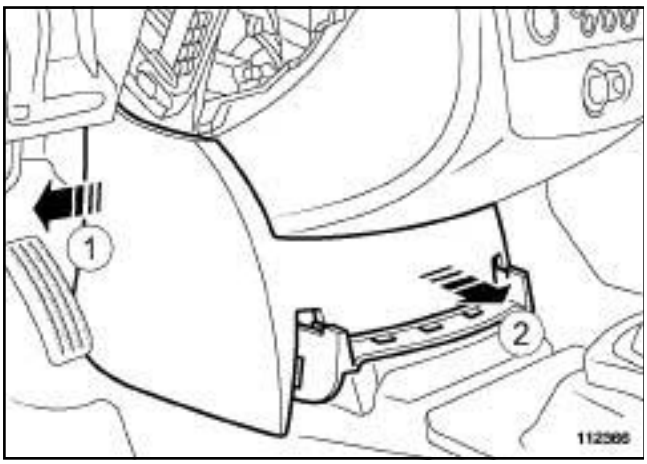
Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

1 - Front starting aerial

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) .

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

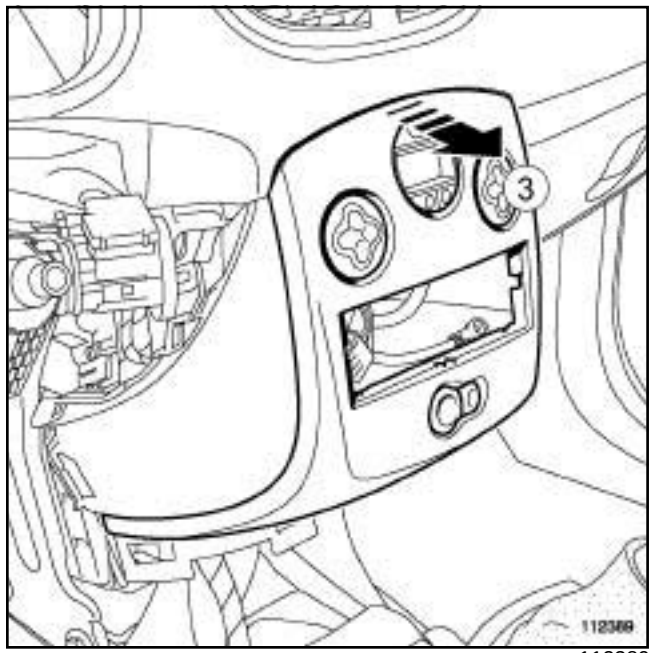
❑ Remove the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❑ Remove the radio navigation system (see **83C**, **Onboard telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

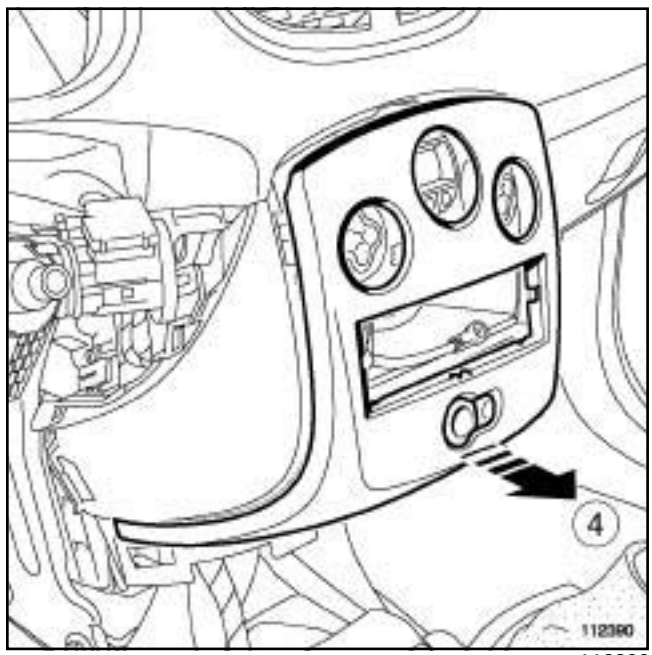
WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

❑ Unclip the centre front panel at (**3**) .



112390

❑ Unclip:

- the centre front panel at (**4**) ,
- the connectors.

VEHICLE WITH CARD

2 - Central starting aerial

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

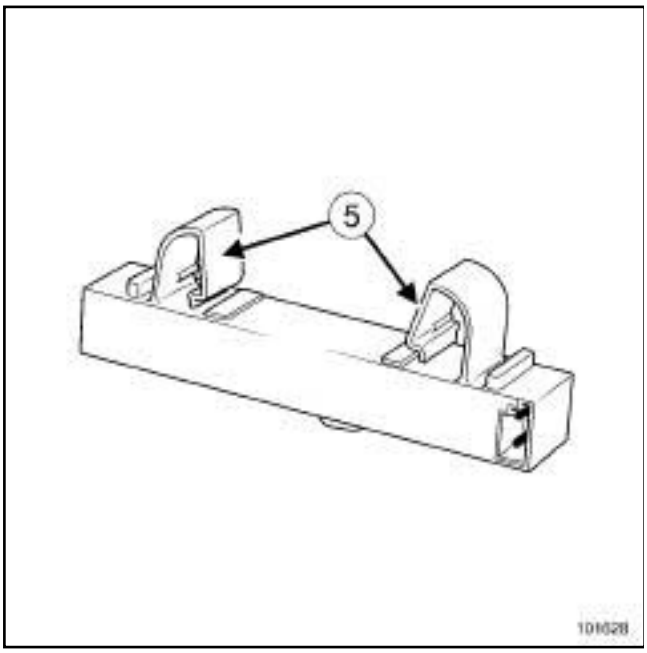
3 - Rear starting aerial

❑ Remove the luggage compartment carpet.

❑ Lift up the luggage retainer cross member trim.

II - REMOVAL OPERATION FOR THE PART CONCERNED

1 - Front starting aerial

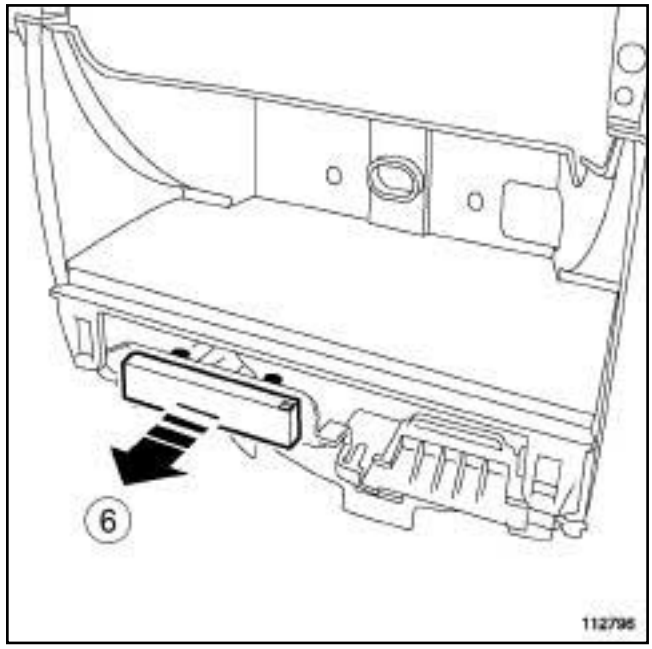


101628

❑

WARNING
The retaining clips are fragile; handle with care.

Press the retaining clips at (**5**) .

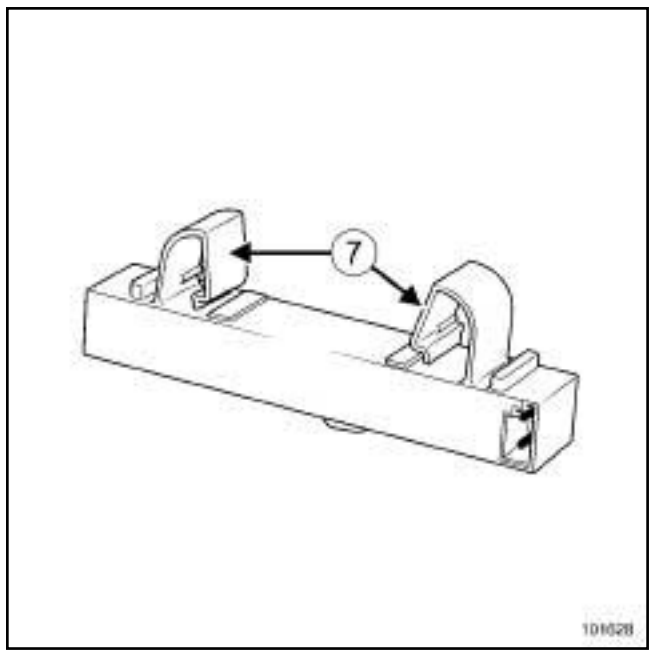


112796

❑ Unclip:

- the starting aerial (**6**) ,
- the connector.

2 - Central starting aerial



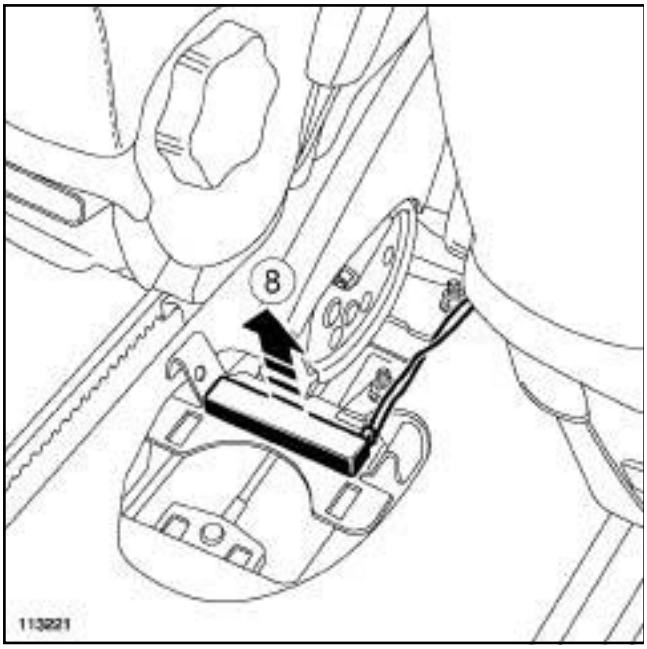
101628

❑

WARNING
The retaining clips are fragile; handle with care.

Press the retaining clips at (**7**) .

VEHICLE WITH CARD

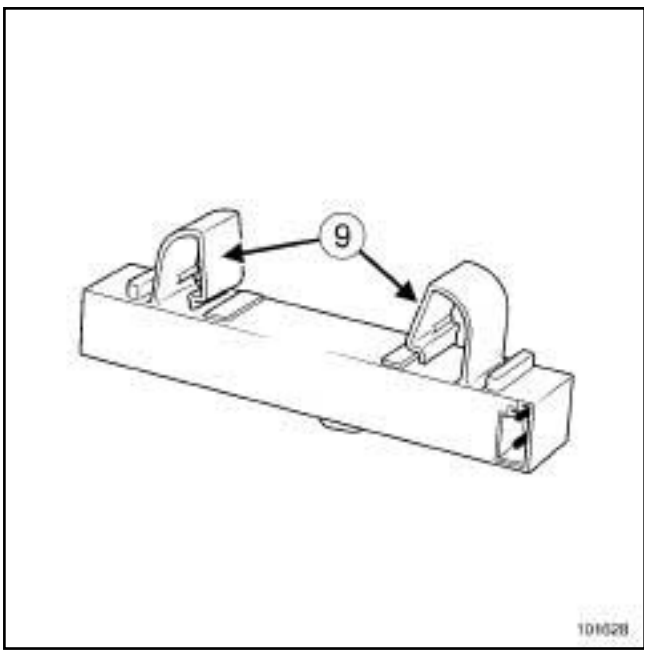


113221

❑ Unclip:

- the starting aerial (**8**) ,
- the connector.

3 - Rear starting aerial

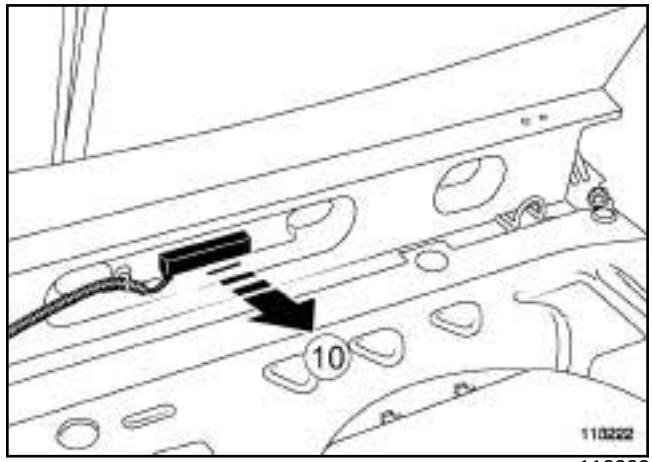


101628

❑

WARNING
The retaining clips are fragile; handle with care.

Press the retaining clips at (**9**) .



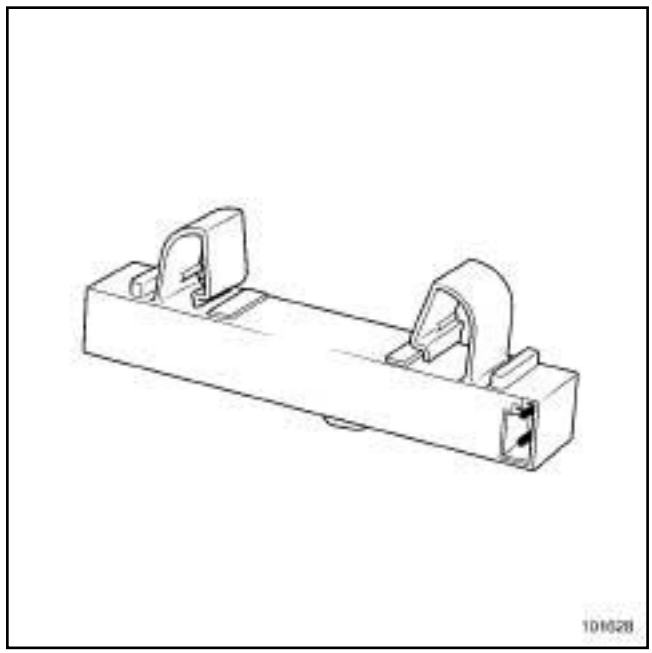
113222

❑ Unclip:

- the starting aerial (**10**) ,
- the connector.

REFITTING

I - REFITTING OPERATION FOR THE PART CONCERNED



101628

❑ Clip on:

- the aerial connector,
- the aerial onto its mounting.

VEHICLE WITH CARD

II - FINAL OPERATION

1 - Front starting aerial

❑ Connect the centre front panel connectors.

❑ Clip in the centre front panel beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❑ Refit the radio navigation system (see **83C**, **Onboard telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the glovebox in position.

❑ Clip the trim under the centre front panel.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

2 - Central starting aerial

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

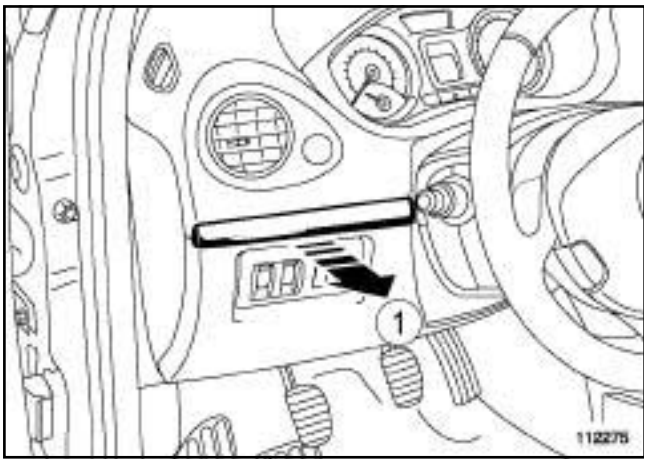
3 - Rear starting aerial

❑ Refit the luggage compartment carpet.

REMOVAL

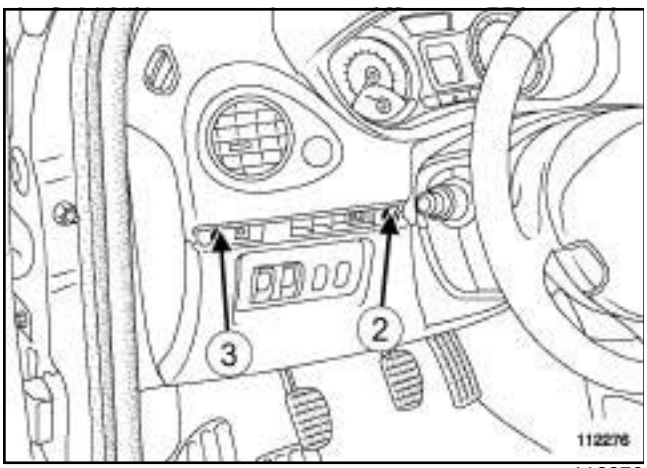
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .



112275

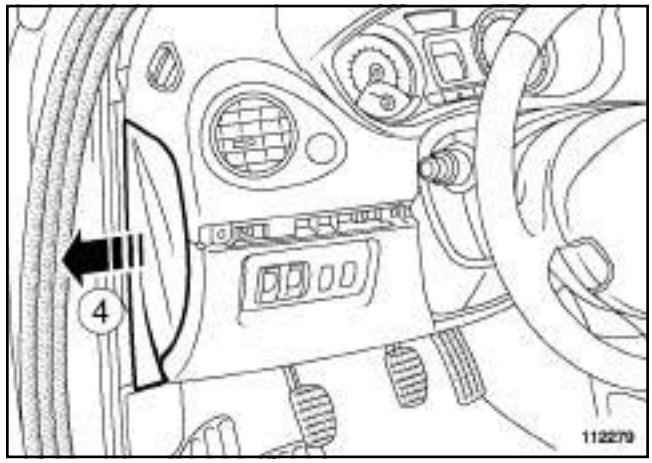
❏ Unclip trim (**1**) .



112276

❏ Remove:

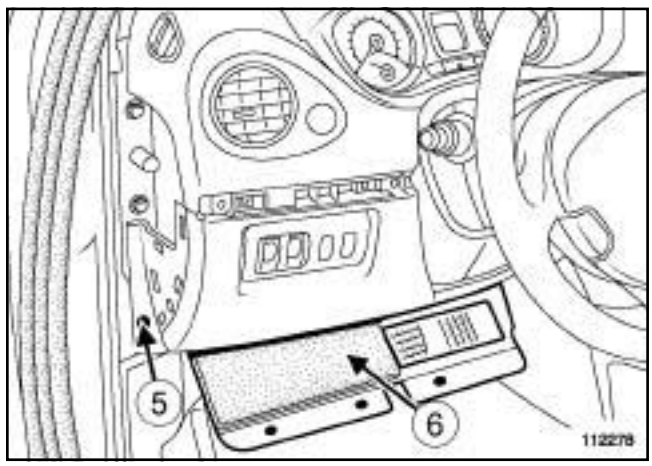
- the plastic rivet (**2**) ,
- bolt (**3**) .



112279

❏ Remove the door seal.

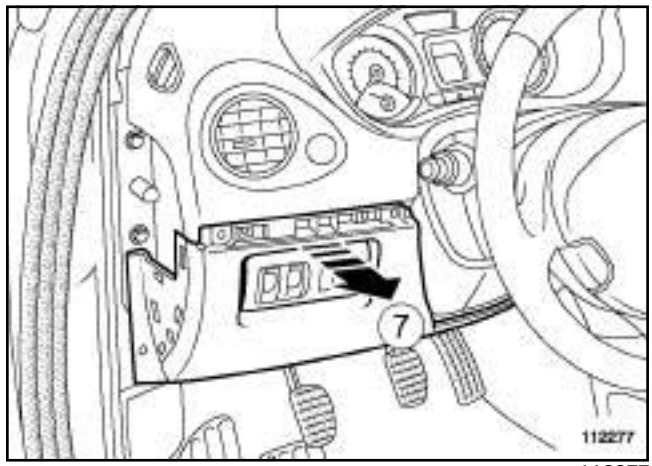
❏ Unclip the dashboard side face (**4**) .



112278

❏ Remove:

- the bolt (**5**) ,
- the dashboard lower trim (**6**) .



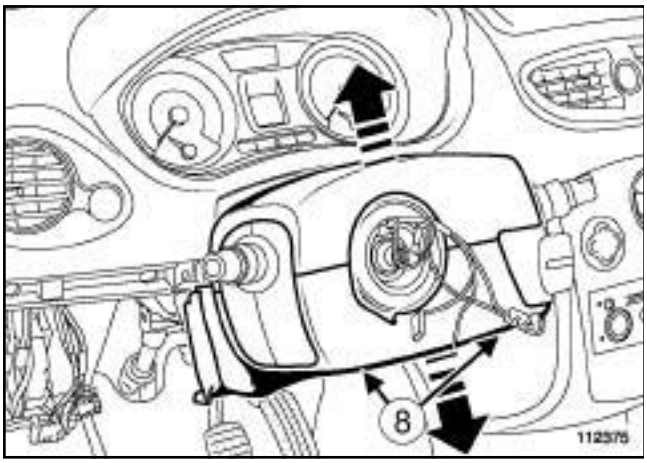
112277

❏ Remove the lower cover (**7**) .

❏ Disconnect the connectors.

❏ Remove:

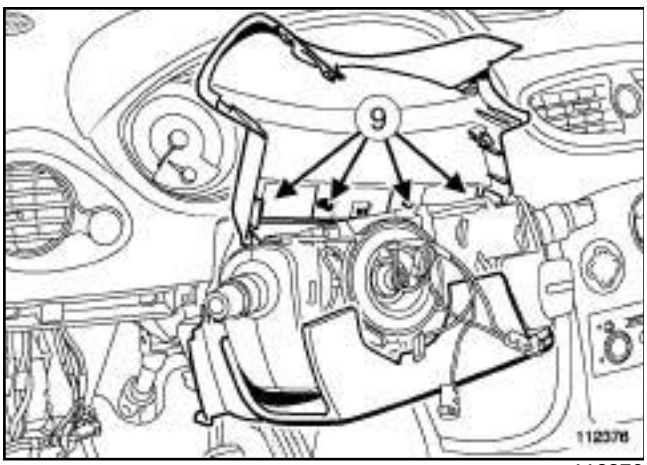
- the driver's side front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering).



112375

❏ Remove the bolts ***(8)*** under the lower half cowling.

❏ Unclip the lower and upper half cowling.



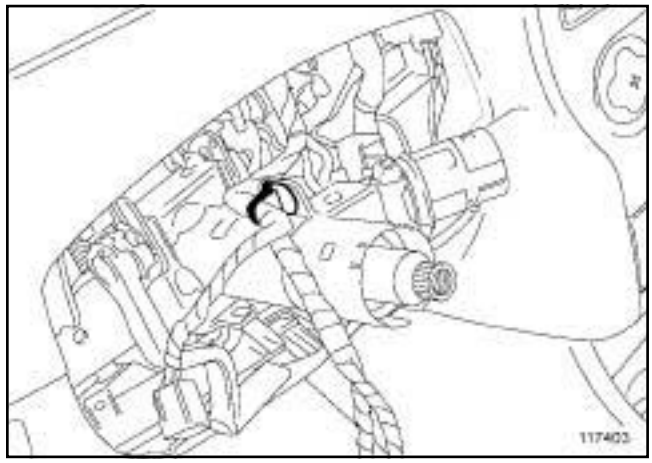
112376

❏ Unclip the upper half cowling from the dashboard gaiter ***(9)*** .

❏ Pull the lower half cowling out from the steering column adjustment handle.

❏ Remove:

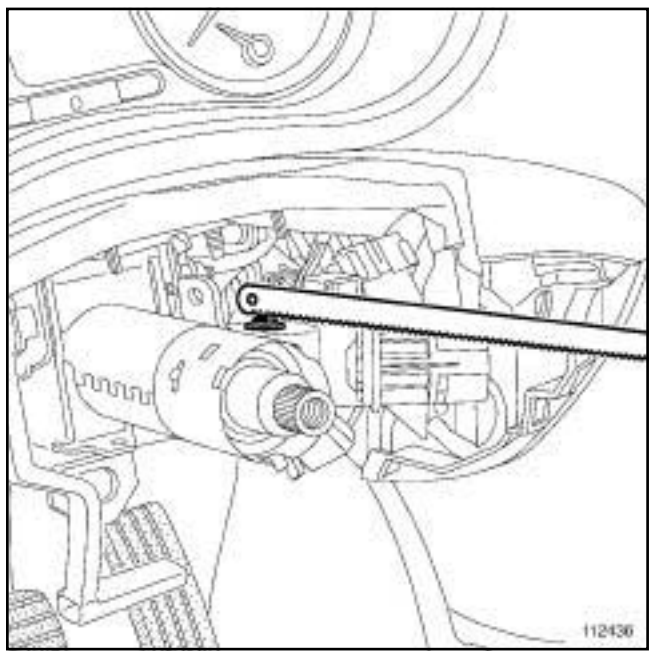
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the antenna/transponder ring (see **82A**, **Engine immobiliser**, **Transponder ring: Removal - Refitting**, page **82A-13**) .



117403

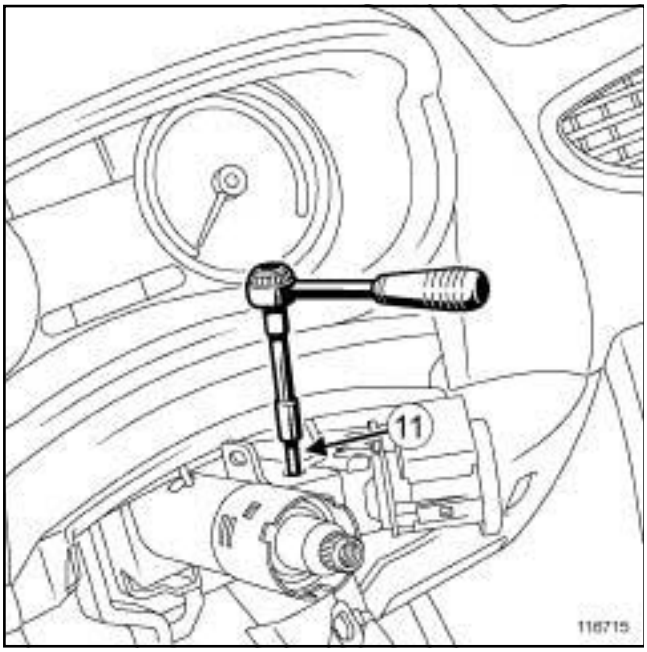
❏ Unclip the wiring harness clip.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112436

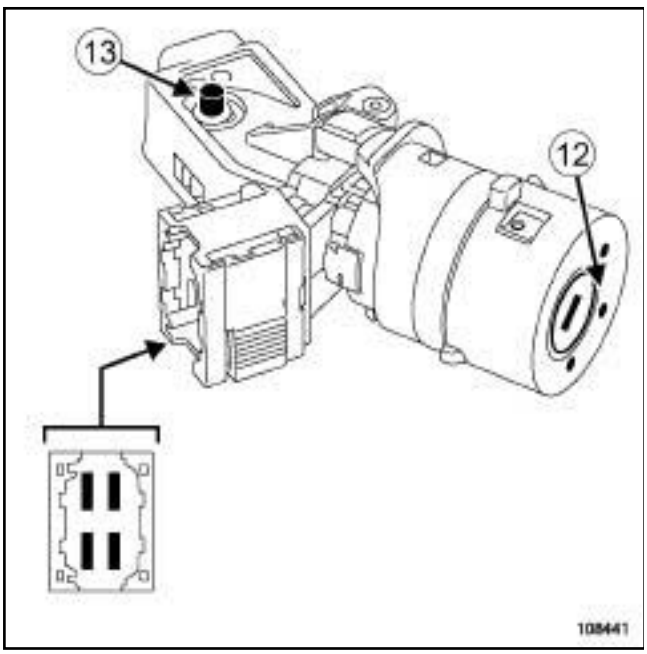
❏ Make a saw mark on the shear bolt.



116715

❏ Remove the bolt ***(11)*** .

❏ Disconnect the connector.



108441

❏ Position the ignition key between the first and second position (+Accessories and +APC) (**12**) .

❏ Press on the retaining lug ***(13)*** .

❏ Remove the ignition switch.

REFITTING

I - REFITTING PREPARATIONS OPERATION

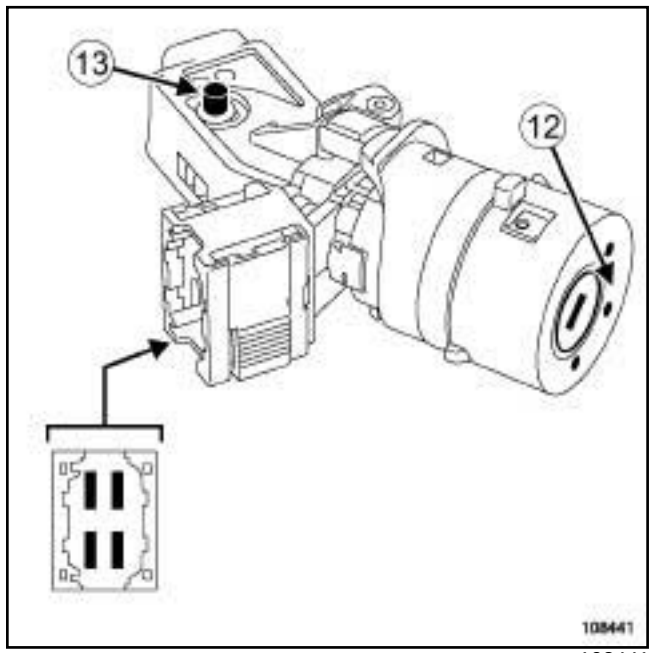
❏

Note:

To protect against tampering, always secure the ignition switch with a shear bolt.

Be sure to recover the sheared-off part of the bolt after it has been tightened.

II - REFITTING OPERATION FOR PART CONCERNED

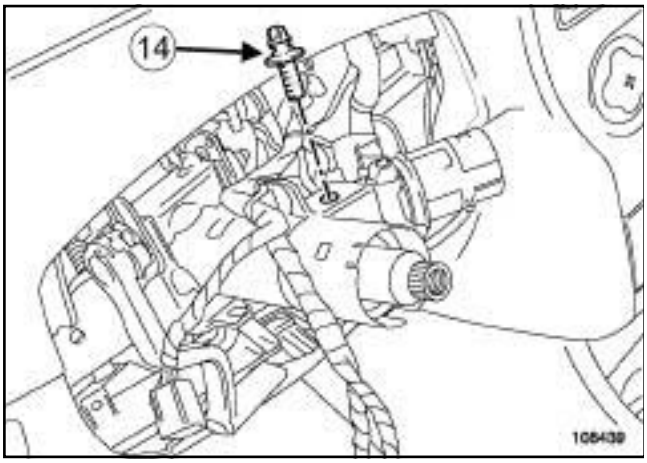


108441

❏ Position the ignition key between the first and second position (+Accessories and +APC) (**12**) .

❏ Press on the retaining lug ***(13)*** .

❏ Fit the ignition switch.



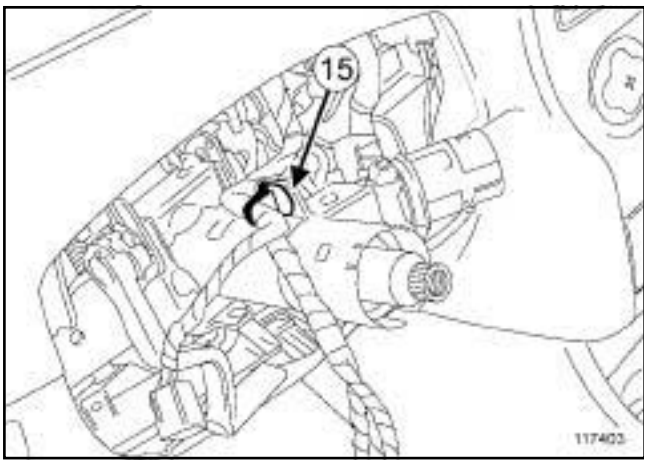
108439

❏ Tighten the shear bolt (**14**) until the bolt head shears off.

❏ Connect the starter switch connector.

❏ Lock the starter switch connector.

III - FINAL OPERATION.



117403

❏ Clip on the wiring harness clip (**15**) .

❏ Refit:

- the antenna/transponder ring (see **82A**, **Engine immobiliser**, **Transponder ring: Removal - Refitting**, page **82A-13**) ,
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the lower half-shell.

❏ Clip on:

- the dashboard gaiter on the upper half cowling ***(9)*** ,
- the upper half cowling to the lower half cowling.

❏ Refit:

- the bolts ***(8)*** under the lower half cowling,
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36B, Power-assisted steering),
- the driver's front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) .

❏ Connect the connectors on the lower cover ***(7)*** .

❏ Refit:

- the lower cover ***(7)*** ,
- the dashboard lower trim ***(6)*** .

❏ Tighten:

- the dashboard lower trim bolt ***(5)***
- the lower cover bolt ***(3)*** ,

❏ Clip on:

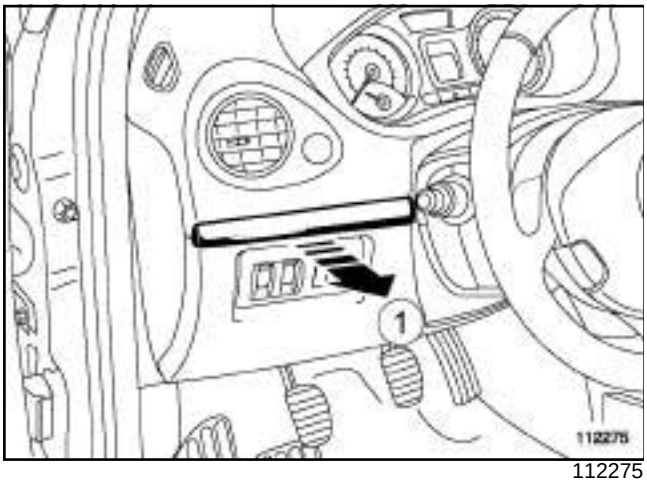
- the plastic rivet,
- the dashboard side panel,
- the trim ***(1)*** ,
- the door seal,

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

VEHICLE WITH KEY

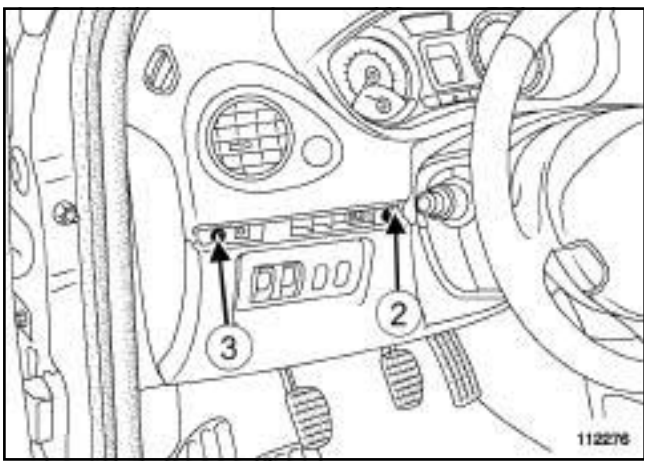
REMOVAL

I - REMOVAL PREPARATION OPERATION



112275

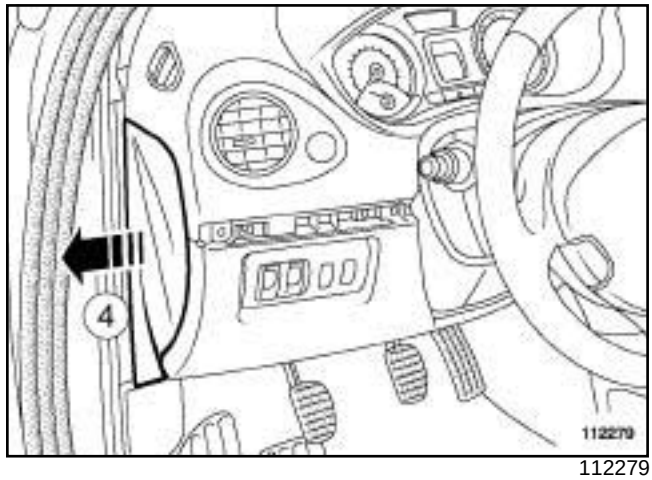
❏ Unclip trim (**1**) .



112276

❏ Remove:

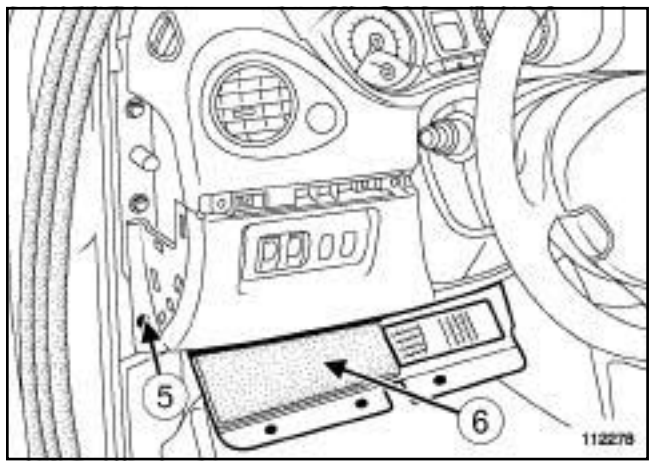
- the plasti-rivet (**2**) ,
- the bolt (**3**) .



112279

❏ Remove the door seal.

❏ Unclip the dashboard side face (**4**) .

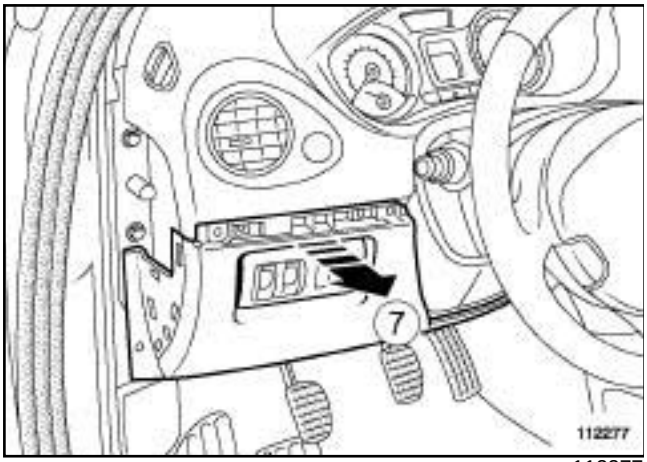


112278

❏ Remove:

- the bolt (**5**) ,
- the dashboard lower trim (**6**) .

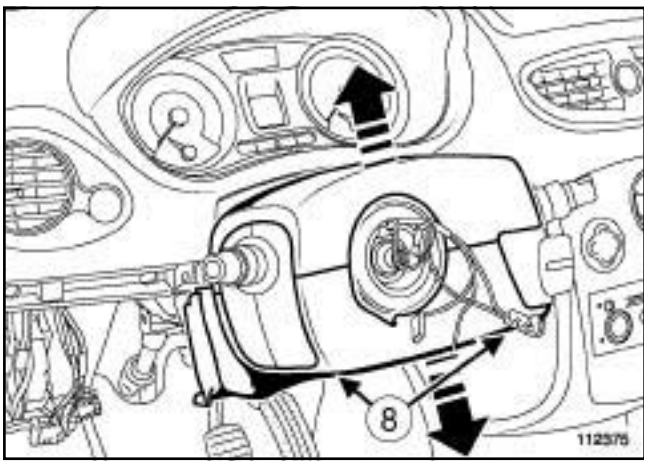
VEHICLE WITH KEY



112277

❏ Remove the lower cover (**7**) .

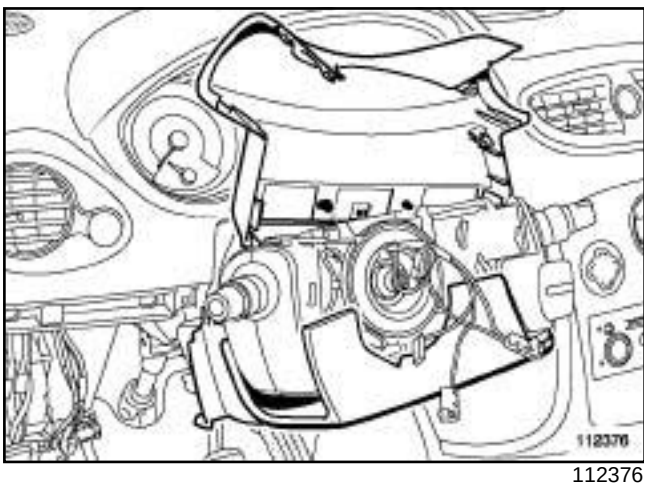
❏ Disconnect the connectors.



112375

❏ Remove the bolts (**8**) under the lower half cowling.

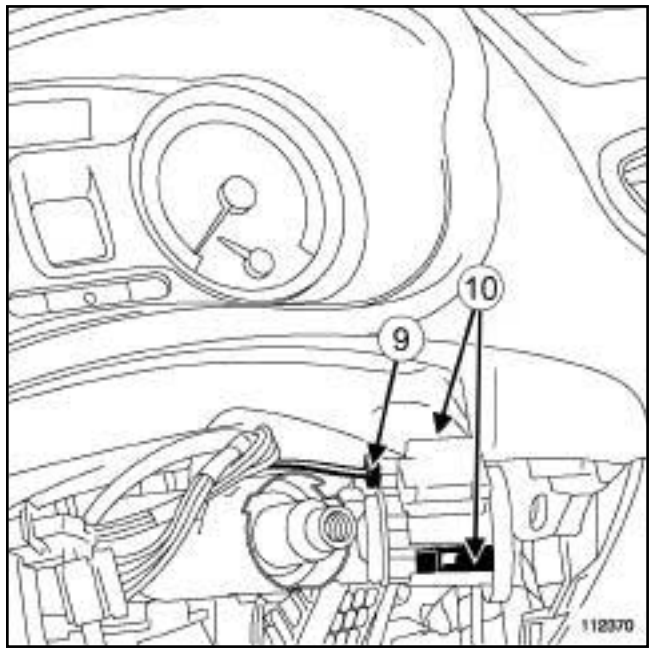
❏ Unclip the lower and upper half cowling.



112376

❏ Pull the lower half cowling out from the steering column adjustment handle.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112370

❏ Unclip the two antenna/transponder ring tabs (**10**) .

❏ Remove the antenna/transponder ring.

❏ Disconnect the connector (**9**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip on the antenna/transponder ring.

❏ Connect the antenna/transponder ring connector.

II - FINAL OPERATION

❏ Refit the lower half-shell.

❏ Clip the upper half cowling onto the lower half cowling.

❏ Tighten the bolts ***(8)*** under the lower half cowling.

❏ Connect the connectors on the lower cover ***(7)*** .

❏ Refit the lower cover ***(7)*** .

❏ Tighten the bolts ***(3)*** , ***(5)*** .

❏ Clip on:

- the plastic rivet,
- the dashboard side panel,
- the trim ***(1)*** ,
- the door seal,

VEHICLE WITH KEY

- the dashboard lower trim ***(6)*** .

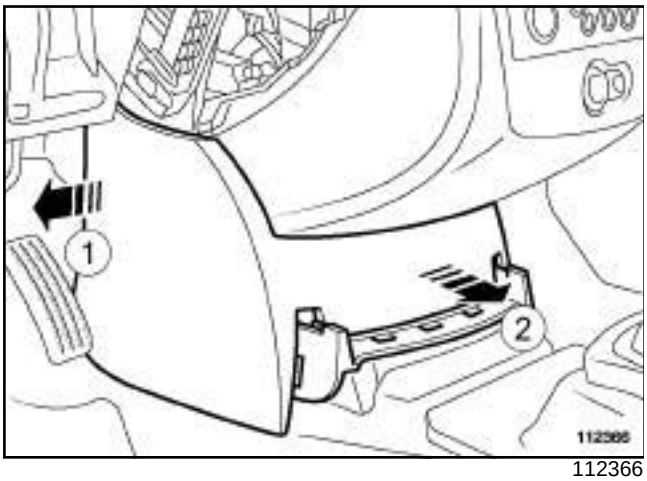
VEHICLE WITH CARD

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❑ Unclip the trim at (**1**) and (**2**) .

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

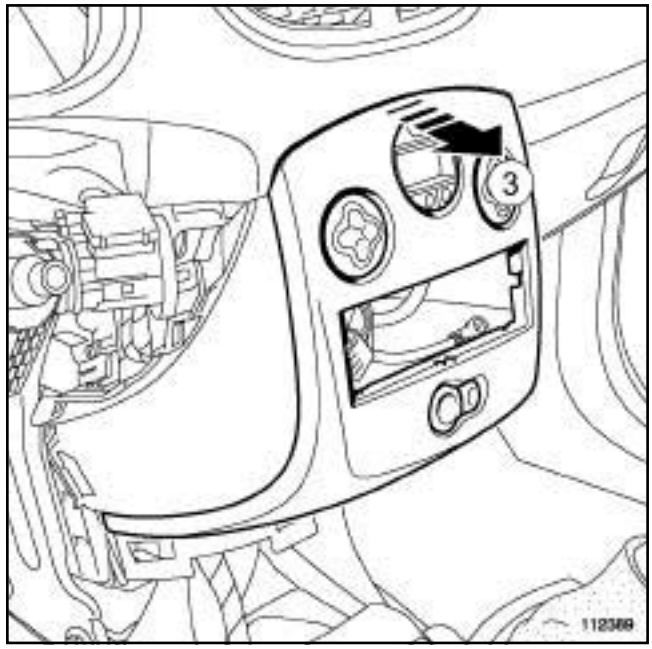
❑ Remove the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❑ Remove the radio navigation system (see **83C**, **Onboard telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

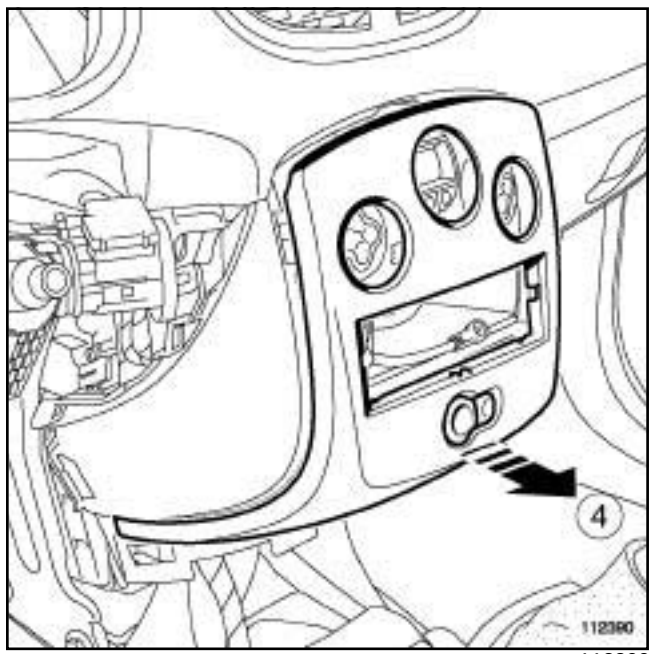
WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Unclip the glovebox using the **(Car. 1363)**.



112389

❑ Unclip the centre front panel at (**3**) .



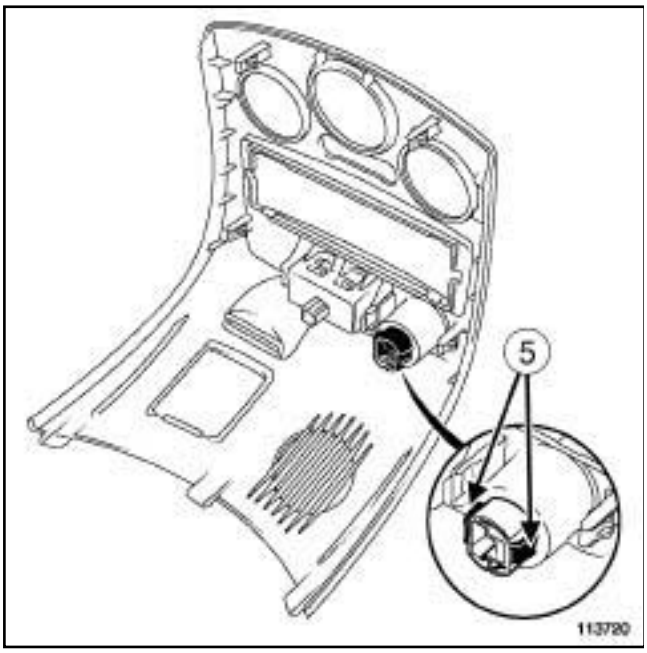
112390

❑ Unclip the centre front panel at (**4**) .

❑ Disconnect the connectors.

VEHICLE WITH CARD

II - OPERATION FOR REMOVAL OF PART CONCERNED



113720

❑ Unclip the start button (**5**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the start button onto the centre front cover.

II - FINAL OPERATION.

❑ Connect the centre front panel connectors.

❑ Clip in the centre front panel beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❑ Refit the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❑ Refit the radio navigation system (see **83C**, **On-board telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❑ Clip the glovebox in position.

❑ Clip the trim under the centre front panel.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

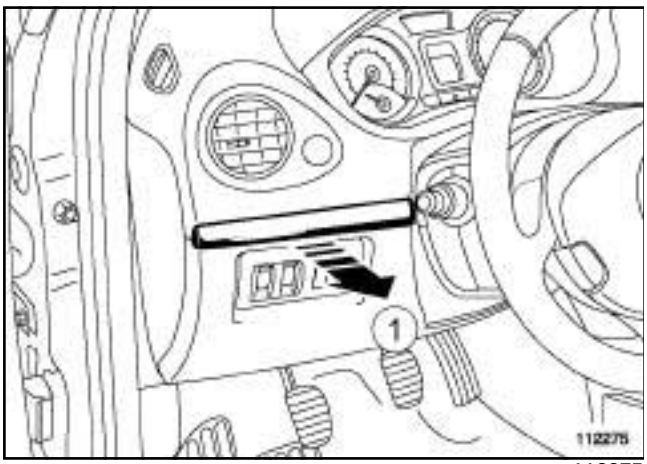
Equipment required
Diagnostic tool

Tightening torques ▽	
steering column lock mounting bolt	**8 Nm**

REMOVAL

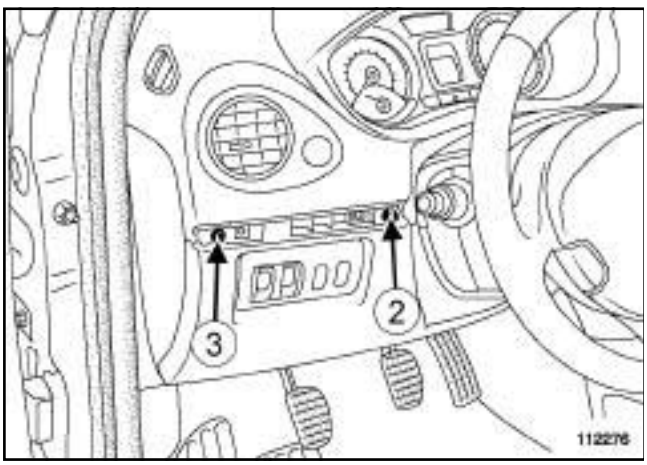
I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** to unlock the steering column lock (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).



112275

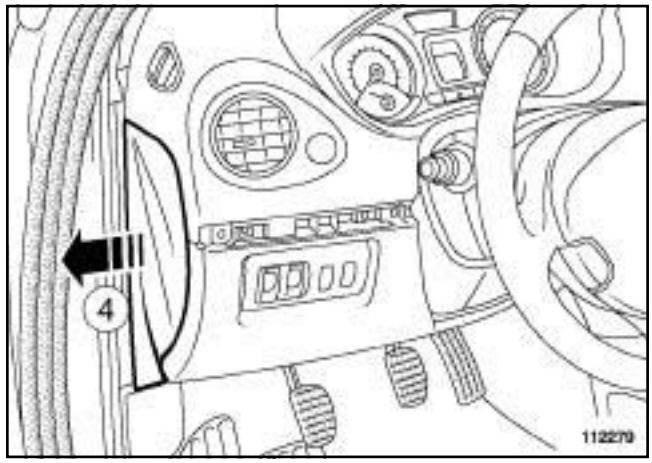
❏ Unclip trim (**1**) .



112276

❏ Unclip:

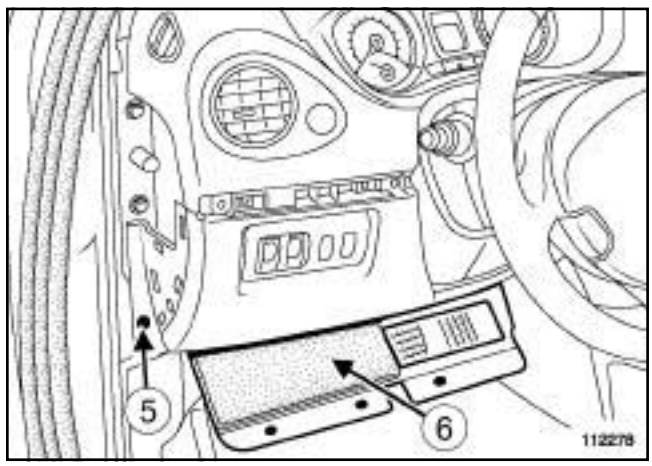
- the plasti-rivet (**2**) ,
- the bolt (**3**) .



112279

❏ Remove the door seal.

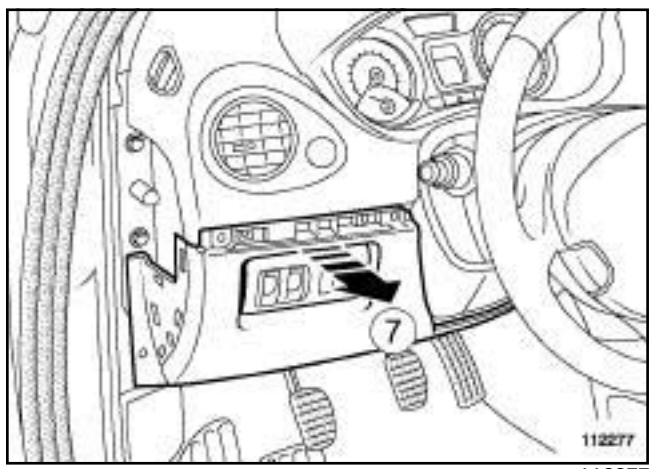
❏ Remove the dashboard side face (**4**) .



112278

❏ Remove:

- the bolt (**5**) ,
- the lower cover trim (**6**) .

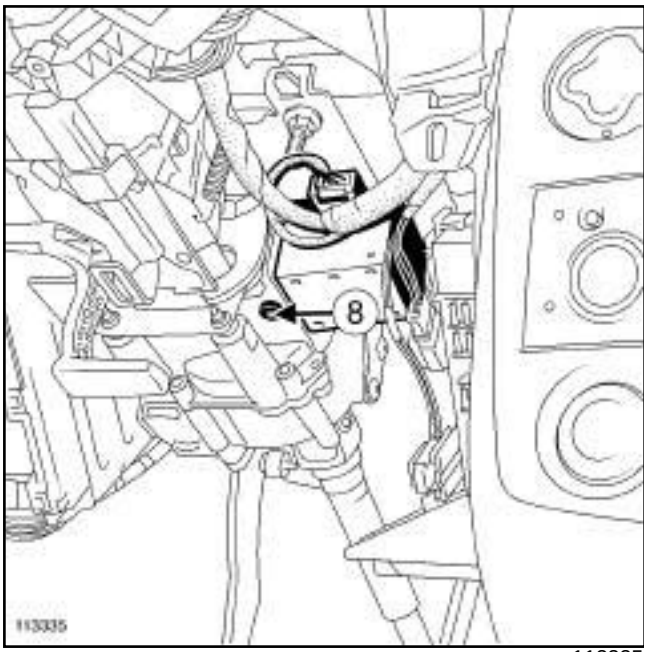


112277

❏ Remove the lower cover (**7**) .

❏ Unclip the connectors.

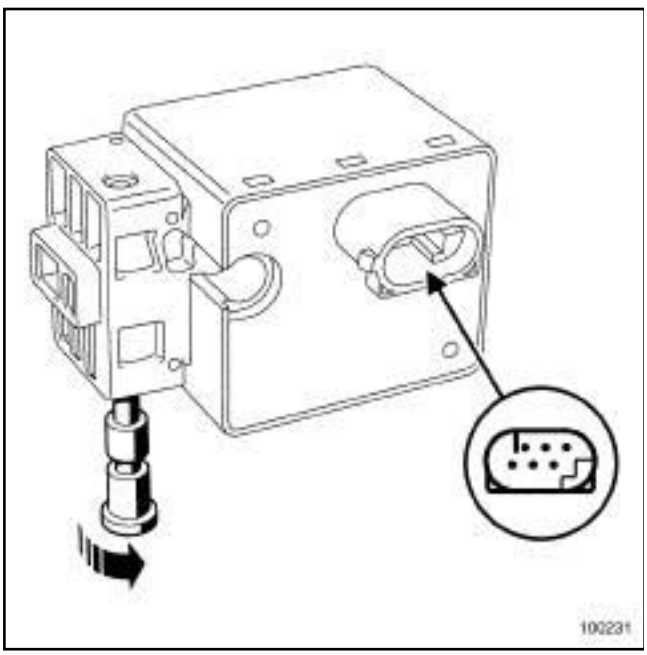
II - OPERATION FOR REMOVAL OF PART CONCERNED



113335

❏ Disconnect the connector.

❏ Remove the electric steering column lock mounting bolt (**8**) by turning it clockwise.



100231

❏

> **WARNING**
> The electric steering column lock mounting bolt has a left-hand thread, it is unscrewed in the opposite direction.

❏ Remove the electric steering column lock.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Position the electric steering column lock,

❏ Torque tighten the **steering column lock mounting bolt (8 Nm)** ***(8)*** ,

❏ Clip the connector.

CODING OF THE ELECTRIC STEERING COLUMN LOCK.

❏

> Note:
> The electric lock is supplied without a code. The engine immobiliser code must be programmed when it is fitted to allow the ignition to be switched on.

> **WARNING**
> The injection computer retains the immobiliser code for life.
> The system has no security code.
> It is forbidden to perform tests with computers borrowed from the Parts Department or from another vehicle which must then be returned. These computers are permanently coded.

❏ If replacing the steering column lock, carry out the necessary operations using the diagnostic tool (see **Fault finding, Replacement of components**) (MR 394, 87B, Passenger compartment connection unit).

❏

> Note:
> The electric steering column lock locks the steering column after a few seconds; coding is then complete. The red immobiliser warning light flashes to indicate that the engine immobiliser function is active.

II - FINAL OPERATION.

❏ Clip on:

- the mounting for the connectors,
- the connectors,
- the sump.

❏ Tighten the bolts ***(3)*** , ***(5)*** ,

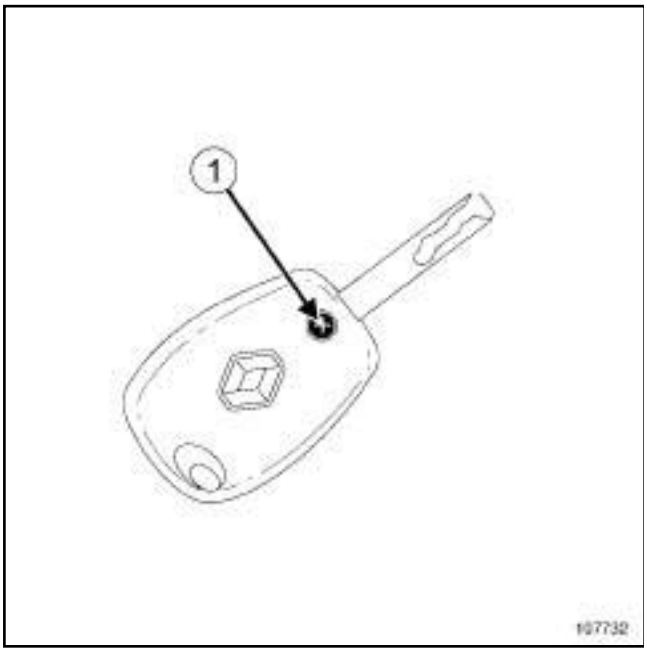
❏ Clip on:

- the plastic rivet,
- the dashboard side panel,
- the trim ***(1)*** ,
- the door seal,
- the dashboard lower trim ***(6)*** .

REMOVAL

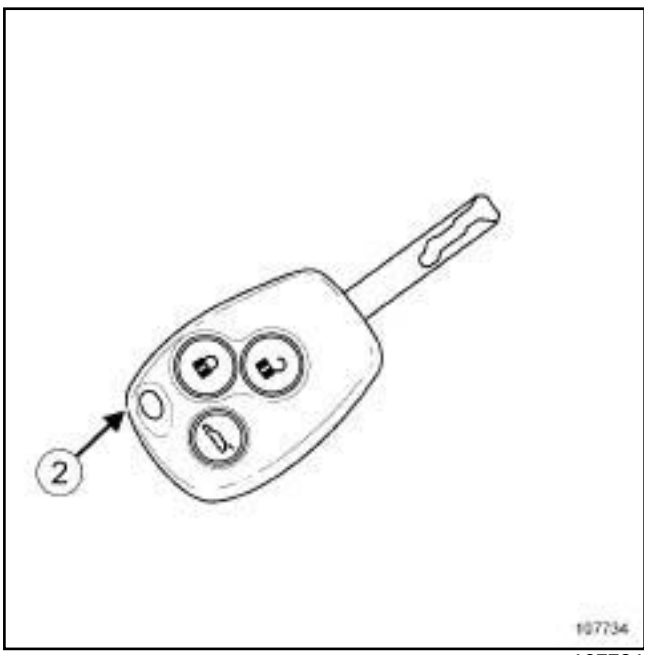
OPERATION FOR REMOVAL OF PART CONCERNED

VEHICLE WITH KEY



107732

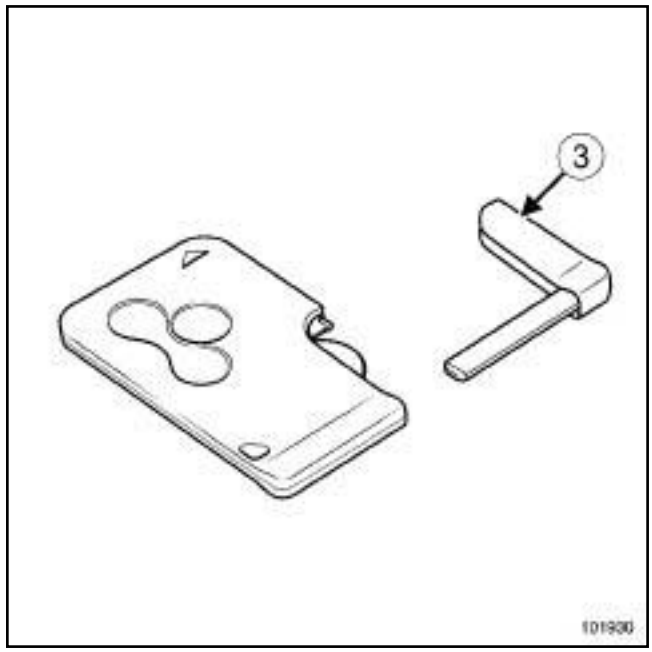
❑ Remove the bolt (**1**) .



107734

❑ Open the key with a coin (**2**) .

VEHICLE WITH CARD



101930

❑ Remove the mechanical insert (**3**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑

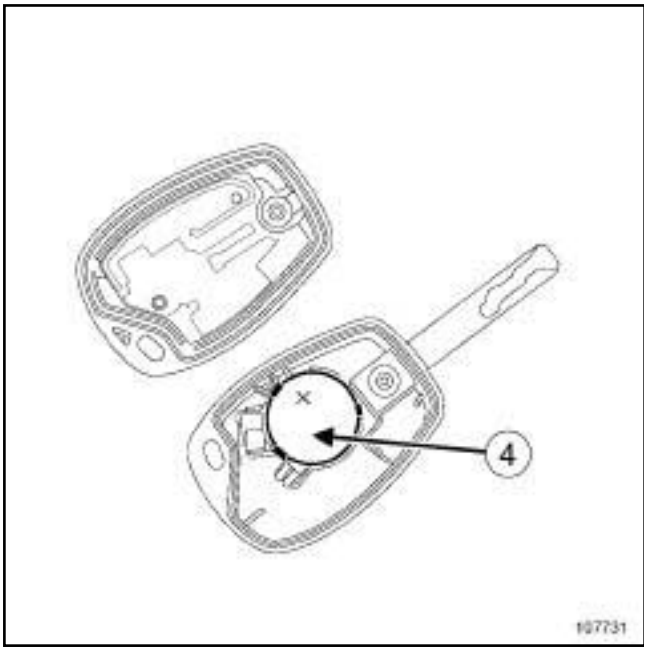
WARNING

To ensure that the remote control operates correctly, take care not to damage the battery contacts.

Only handle the new battery with dry, grease-free hands or wearing clean gloves to avoid any risk of dirt and oxidation on the battery.

II - REFITTING OPERATION FOR PART CONCERNED

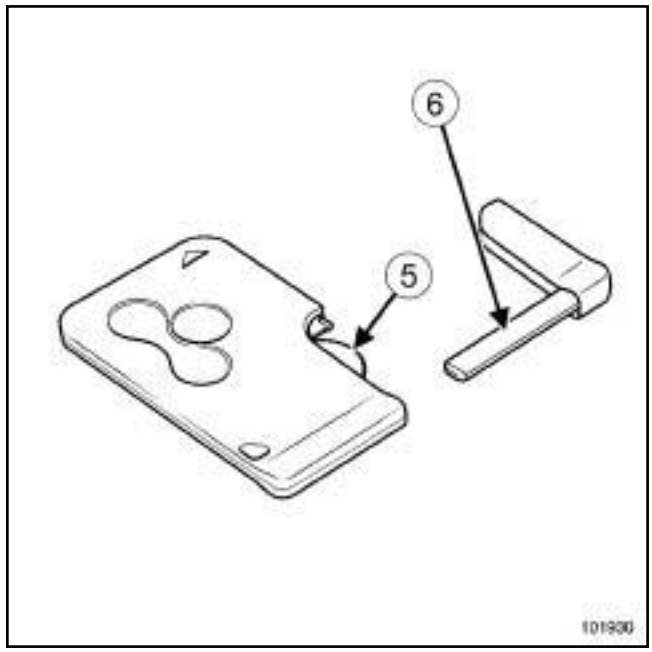
VEHICLE WITH KEY



107731

❏ Replace the battery (**4**) using a flat-blade screwdriver.

VEHICLE WITH CARD



101930

❏ Replace the battery (**5**) .

III - FINAL OPERATION.

VEHICLE WITH KEY

❏ Close the key.

❏ Tighten the bolt ***(1)*** .

VEHICLE WITH CARD

❏ Refit the mechanical insert ***(6)*** .

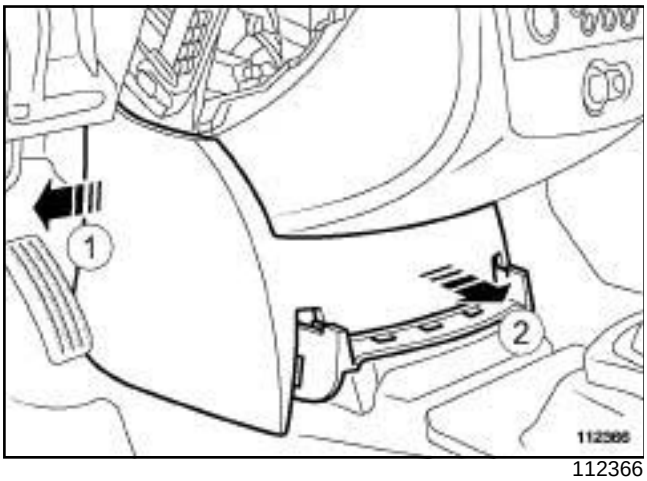
VEHICLE WITH CARD

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at (**1**) and (**2**) .

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

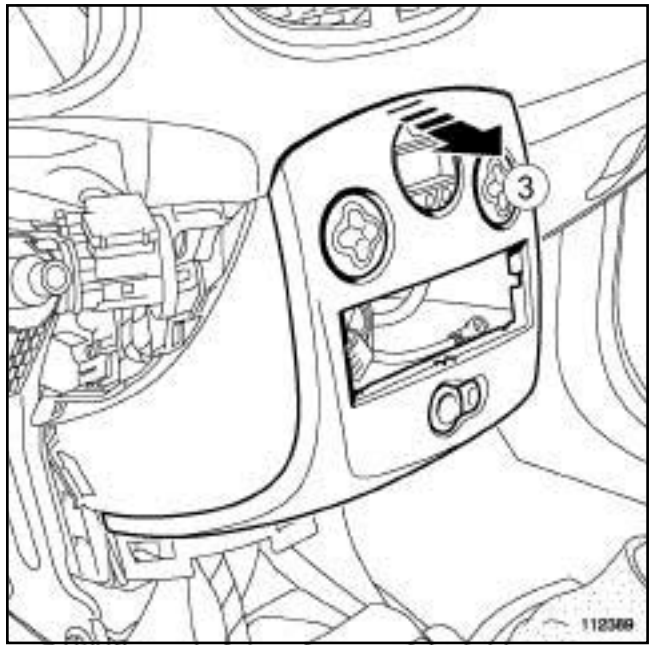
❏ Remove the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❏ Remove the radio navigation system (see **83C**, **Onboard telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

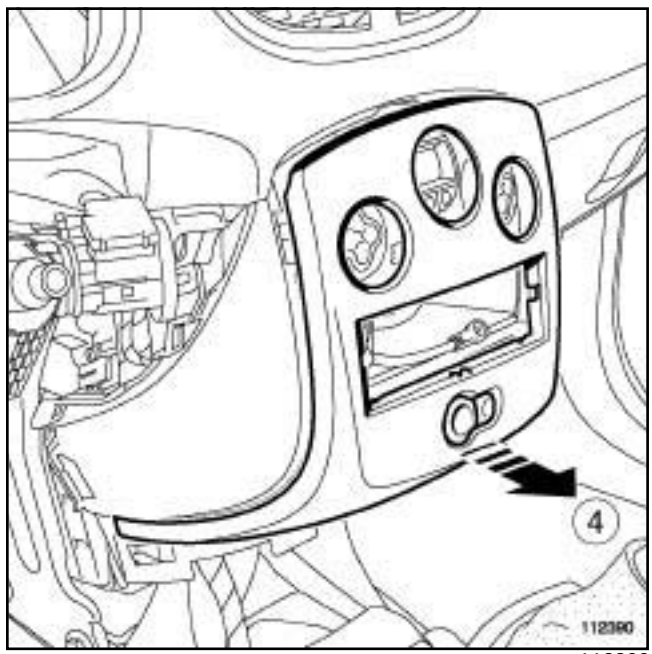
WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Unclip the glovebox using the **(Car. 1363)**.



112389

❏ Unclip the centre front panel at (**3**) .



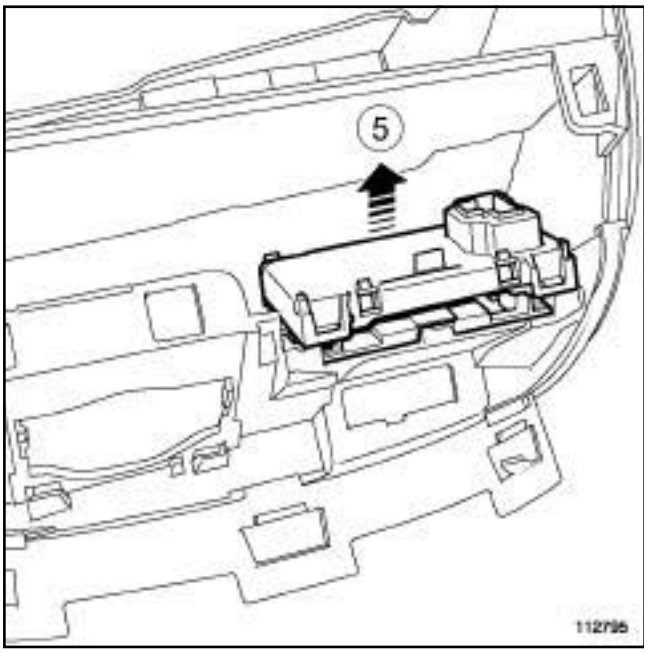
112390

❏ Unclip the centre front panel at (**4**) .

❏ Disconnect the connectors.

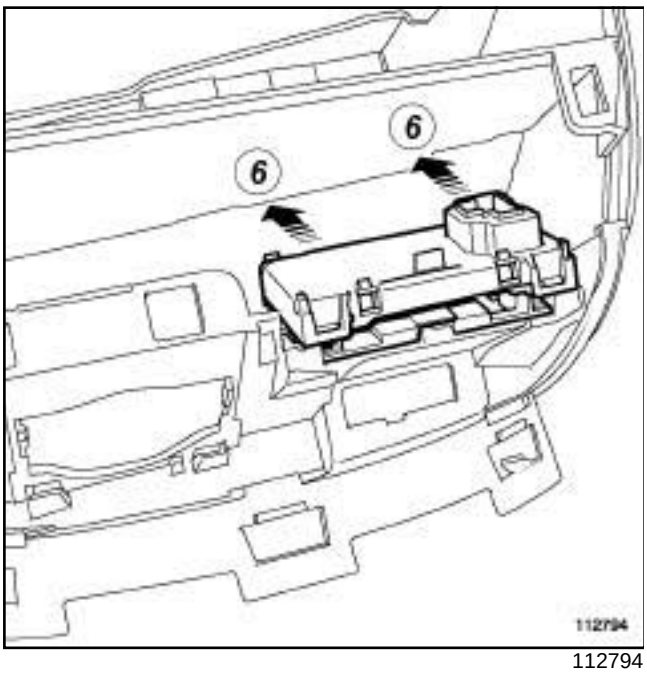
VEHICLE WITH CARD

II - REMOVAL OPERATION FOR THE PART CONCERNED



112795

❏ Lift up the card reader at the rear section (**5**) .

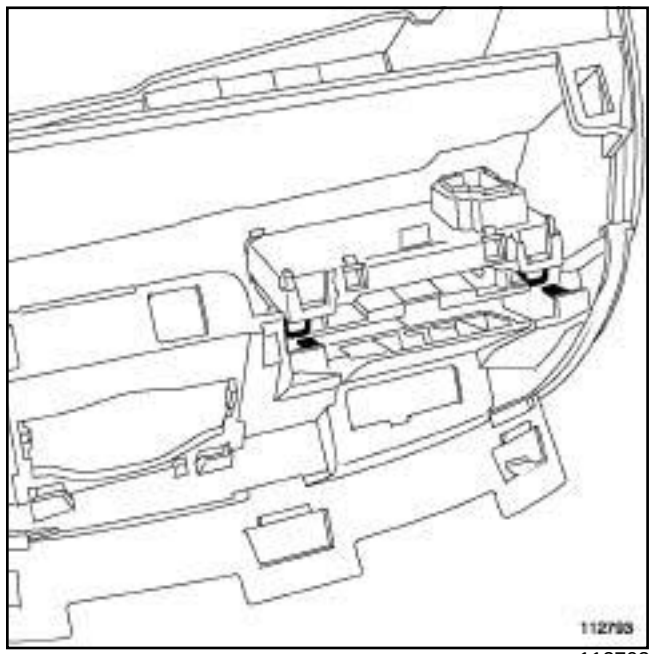


112794

❏ Remove the card reader at (**6**) .

REFITTING

I - REFITTING OPERATING FOR THE PART CONCERNED



112793

❏ Insert the card reader along the guides.

❏ Clip on the card reader.

II - FINAL OPERATION.

❏ Connect the centre front panel connectors.

❏ Clip in the centre front panel beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❏ Refit the radio navigation system (see **83C**, **On-board telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

VEHICLE WITH CARD

WITHOUT NAVIGATION AID, and VEHICLEWITH-OUT RADIO

❑ Clip the glovebox in position.

❑ Clip the trim under the centre front panel.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

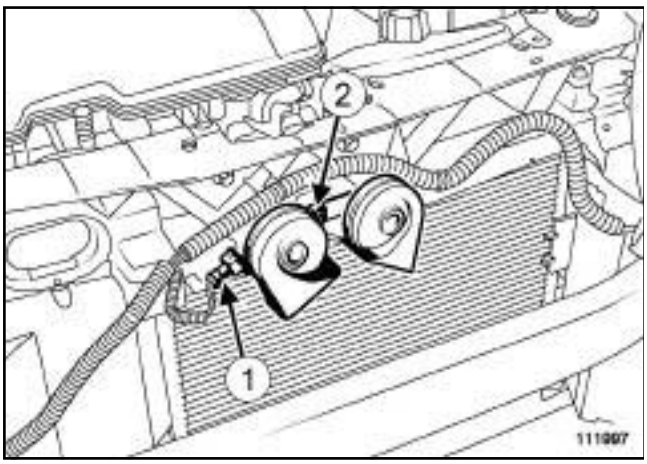
Tightening torques ▽	
horn bolt	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



111997

❏ Disconnect the connector (**1**) .

❏ Remove:

- the bolt (**2**) ,
- the horn.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the horn.

❏ Torque tighten the **horn bolt (21 Nm)** ***(2)*** .

❏ Connect the connector ***(1)*** .

II - FINAL OPERATION.

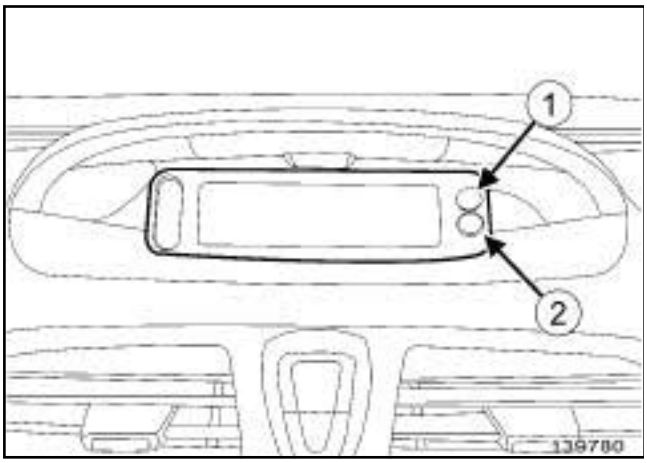
❏ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

SETTING THE CLOCK

WITHOUT NAVIGATION AID, and RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06 or RADIO NO. 07 or RADIO NO. 08

❏ Switch on the ignition.

❏ Switch the radio on.



139780

❏ Adjusting the hour: press button (**1**) to obtain the correct value.

❏ Adjusting the minutes: press button (**2**) to obtain the correct value.

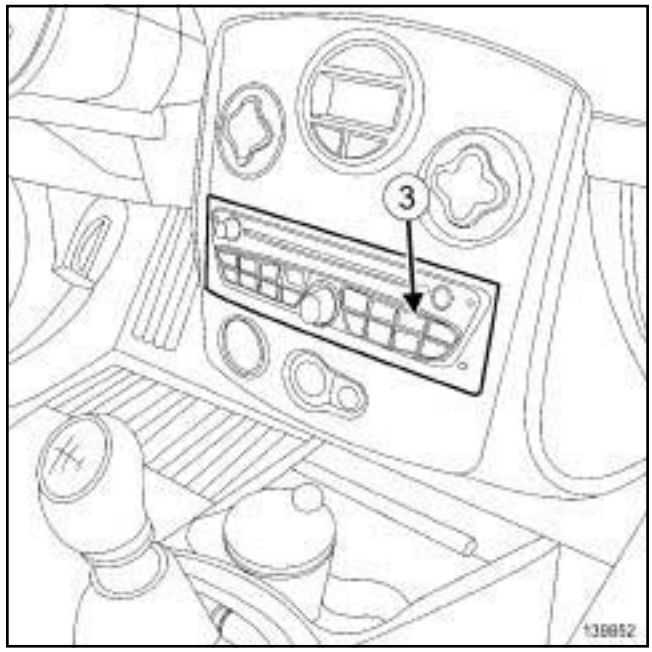
Note:

Pressing and holding enables the values to be scrolled through more quickly.

WITHOUT NAVIGATION AID, and RADIO NO. 07 or RADIO NO. 08

❏ Switch on the ignition.

❏ Switch the radio on.



139852

❏ Press the « SETTINGS » button (**3**) .

❏ Using the central button, select « System settings » in the central display.

❏ Confirm the operation by pressing the OK button or the right-hand arrow.

❏ Using the central button, select « Clock » in the central display.

❏ Confirm the operation by pressing the OK button or the right-hand arrow.

❏ Two groups of values appear on the display.

❏ Setting the hour: turn the central button towards the right or left to obtain the correct value.

> Note:
>
> The hour can also be set by pressing on the + or - buttons on the steering column switch.

❏ To move on to setting the minutes, press the « RIGHT » button on the radio or the « RIGHT » button on the steering column switch.

❏ Adjusting the minutes: turn the central button towards the right or left to obtain the correct value.

> Note:
>
> The minutes can also be set by pressing the + or - buttons on the steering column switch.

❏ To go back to setting the hour, press the « LEFT » button on the radio or the « LEFT » button on the steering column switch.

NAVIGATION AID 1 LEVEL or NAVIGATION AID 1

❏ The time is set through the navigation system.

As soon as the system detects the satellites, the time is automatically displayed.

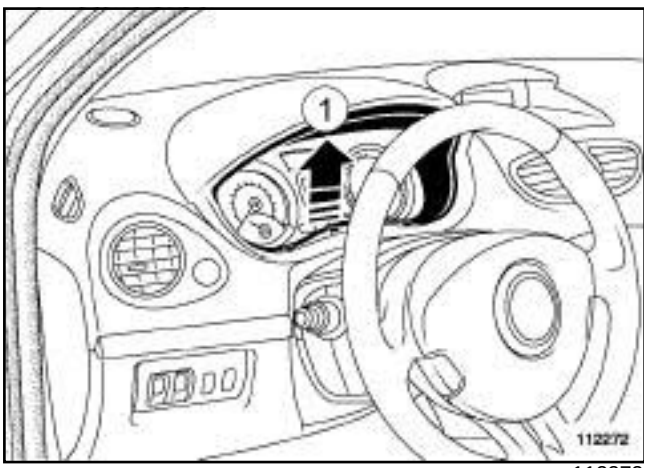
Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

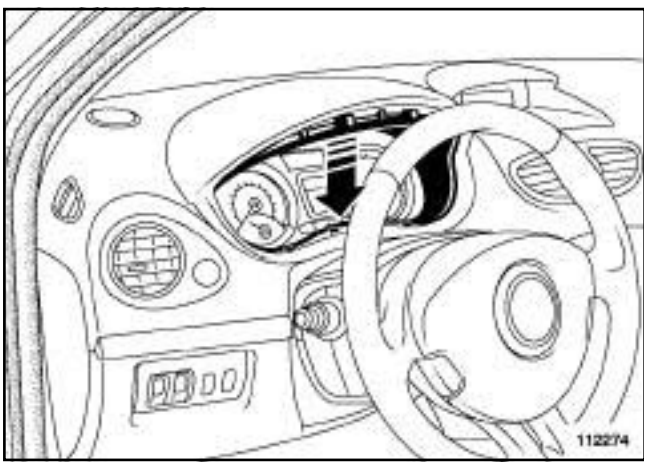
❑ If replacing the instrument panel, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 83A, Instrument panel).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112272

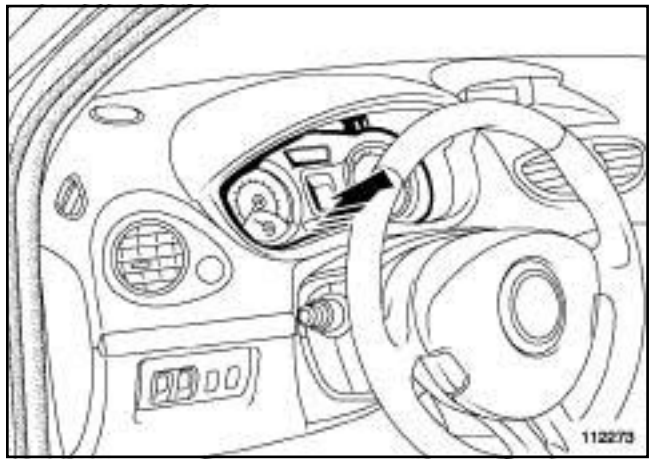
❑ Unclip the lower section of trim (**1**) .



112274

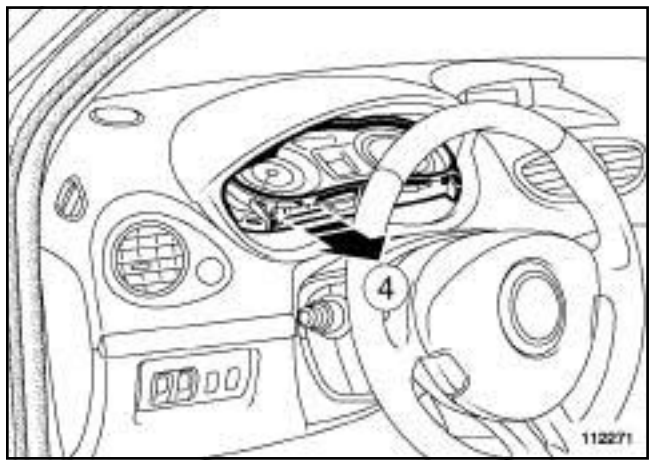
❑ Unclip the upper trim .

❑ Remove the trim.



112273

❑ Unclip instrument panel at .



112271

❑ Remove the instrument panel (**4**) .

❑ Disconnect the connectors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the connectors to the instrument panel.

❑ Clip on:

- the upper section of the instrument panel,
- the lower section of the instrument panel,
- the instrument panel frame trim.

II - FINAL OPERATION

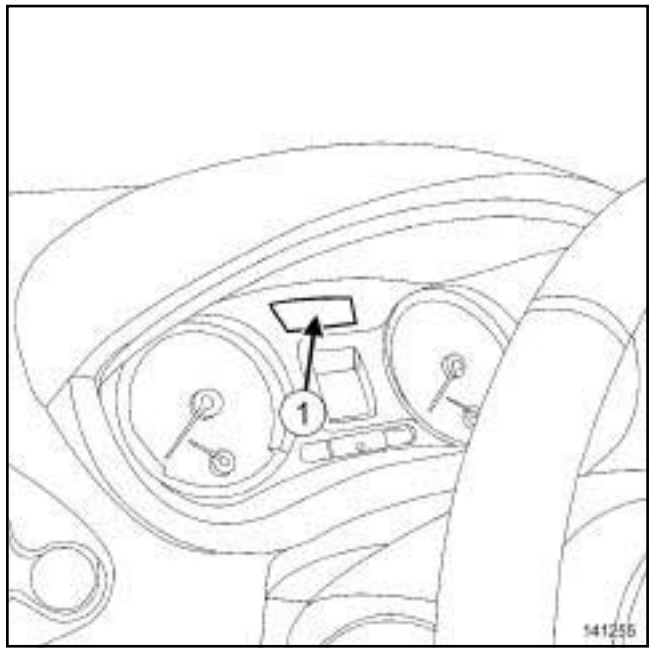
❑ If replacing the instrument panel, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 83A, Instrument panel).

Note:

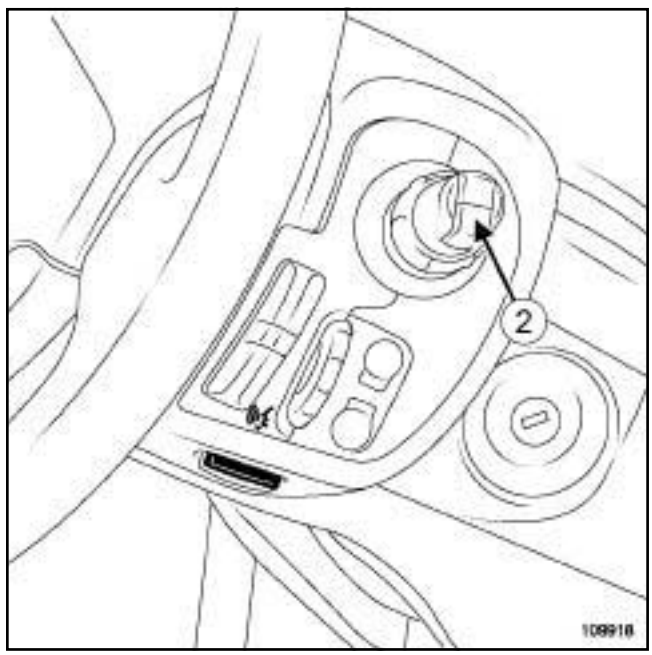
The oil change interval must only be reinitialised after a service in accordance with the maintenance booklet.

REINITIALISING THE DISPLAY AFTER A SERVICE IN ACCORDANCE WITH THE MAINTENANCE PROGRAMME

❑ Switch on the ignition.



141255



109918

❑ Select the « OIL CHANGE INTERVAL » information on the display (**1**) by pressing the « Trip computer scroll » button (**2**) .

❑ Keep the button (**2**) pressed for **10 seconds** :

- the value on the display flashes 4 times,
- the value is replaced by the reinitialised oil change interval value,
- this new value flashes 4 times.

❑ Release the « Trip computer scroll » button (**2**) .

The value illuminates continuously and is stored.

❑ Switch off the ignition.

WITHOUT ANTI-LOCK BRAKING SYSTEM

Tightening torques ▽	
vehicle speed management unit bolts	**12 Nm**

REMOVAL

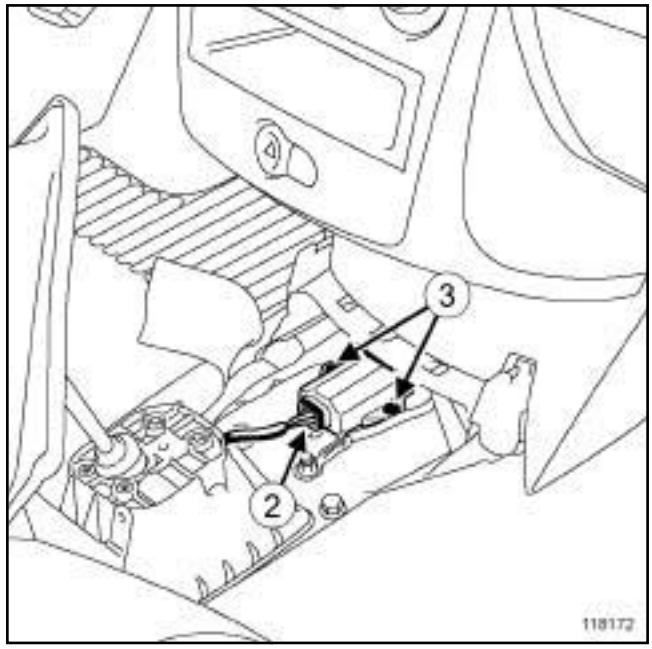
I - REMOVAL PREPARATION OPERATION

❑ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED

118173

❑ Cut the carpet under the centre console at (**1**) .



118172

❑ Disconnect the vehicle speed management unit connector (**2**) .

❑ Remove:

- the bolts (**3**) from the vehicle speed management unit,
- the vehicle speed management unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the vehicle speed management unit,
- the vehicle speed management unit bolts.

❑ Torque tighten the **vehicle speed management unit bolts (12 Nm)**.

❑ Connect the vehicle speed management unit connector.

❑ Attach the carpet using clips (part no. **77 01 047 751**).

II - FINAL OPERATION.

❑ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

NAVIGATION AID 1 LEVEL or NAVIGATION AID 1

I - LIST OF COMPONENTS

The "navigation" equipment consists of:

- a navigation aerial (see **86A**, **Radio**, **Radio aerial: Removal - Refitting**, page **86A-11**)

NAVIGATION AID 1

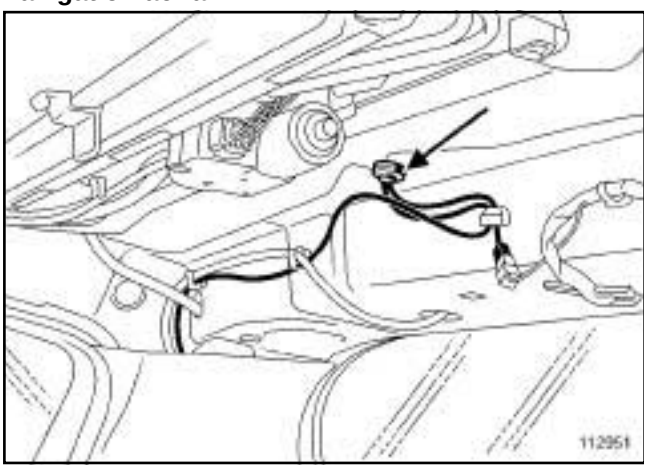
- a radionavigation system (see **83C**, **On-board telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**)
- a navigation screen (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**)

NAVIGATION AID 1 LEVEL

- a "computer - navigation screen" assembly (see **83C**, **On-board telematics system**, **Navigation computer: Removal - Refitting**, page **83C-4**)
- a multimedia network interface unit (see **83C**, **On-board telematics system**, **Multimedia network interface unit: Removal - Refitting**, page **83C-7**)
- a remote control and its support on the centre console

II - LOCATION OF COMPONENTS

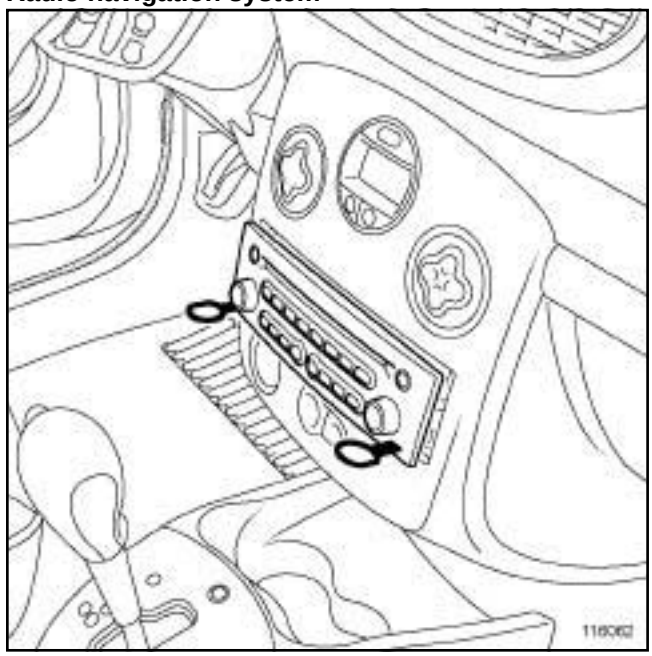
Navigation aerial



112951

NAVIGATION AID 1

Radio navigation system



116062

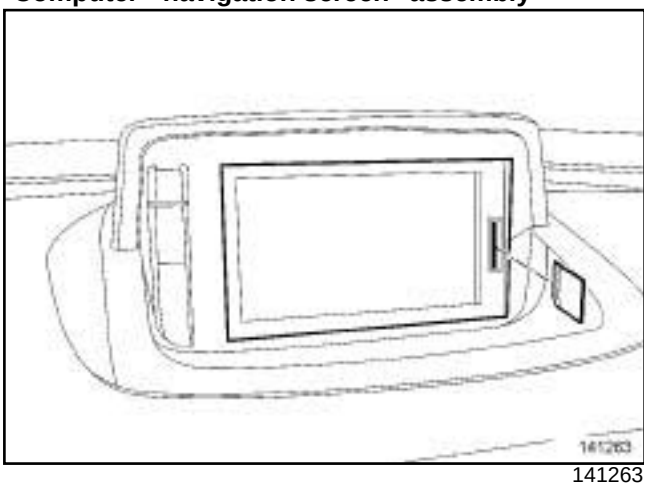
Navigation screen

113389

NAVIGATION AID 1 LEVEL or NAVIGATION AID 1

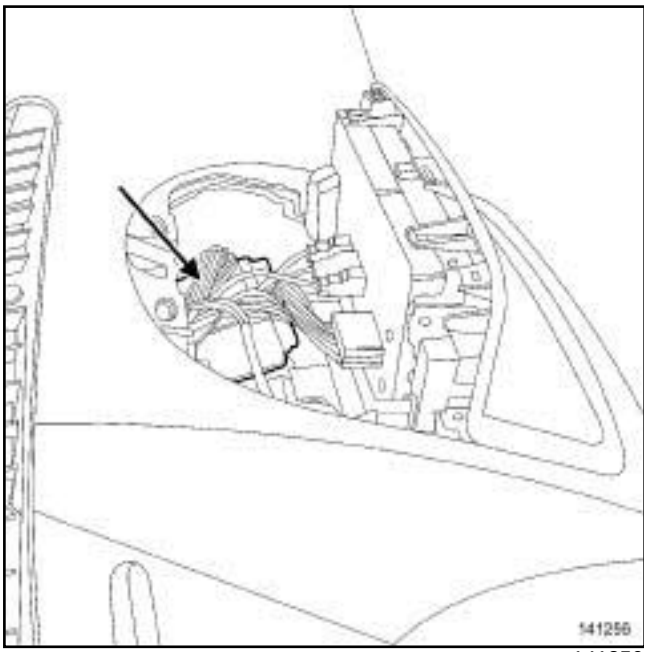
NAVIGATION AID 1 LEVEL

"Computer - navigation screen" assembly



141263

Multimedia network interface unit



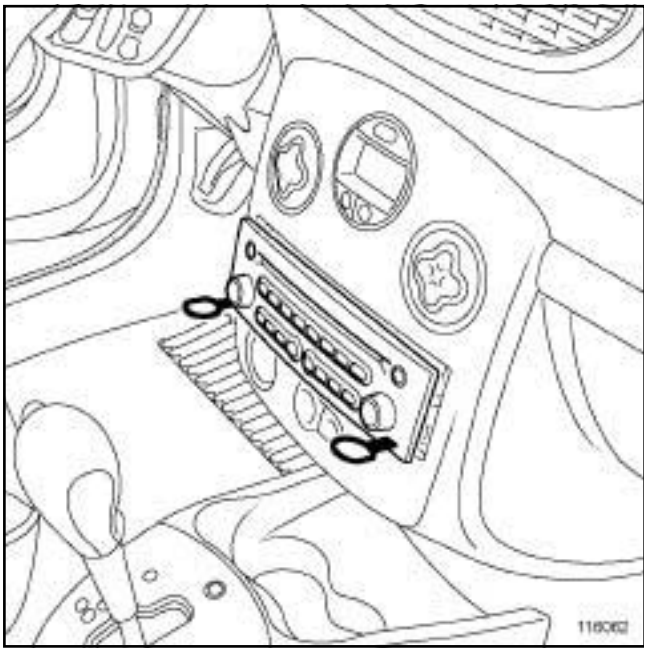
141256

NAVIGATION AID 1

Special tooling required	
Ms. 1544	Tool for removing radios - Carminat Becker and Cabasse.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



116062

❑ Remove the radio navigation system using tool **(Ms. 1544)**.

❑ Disconnect the radio navigation system connectors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the radio navigation system connectors.

❑ Refit the radio navigation system.

II - FINAL OPERATION

❑ Carry out the necessary operations (see **MR 394 Fault finding, 83C, Navigation, Replacement of components**).

NAVIGATION AID 1 LEVEL

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ If the "computer - navigation screen" is being replaced, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86C, Navigation).

❏ Switch off the ignition.

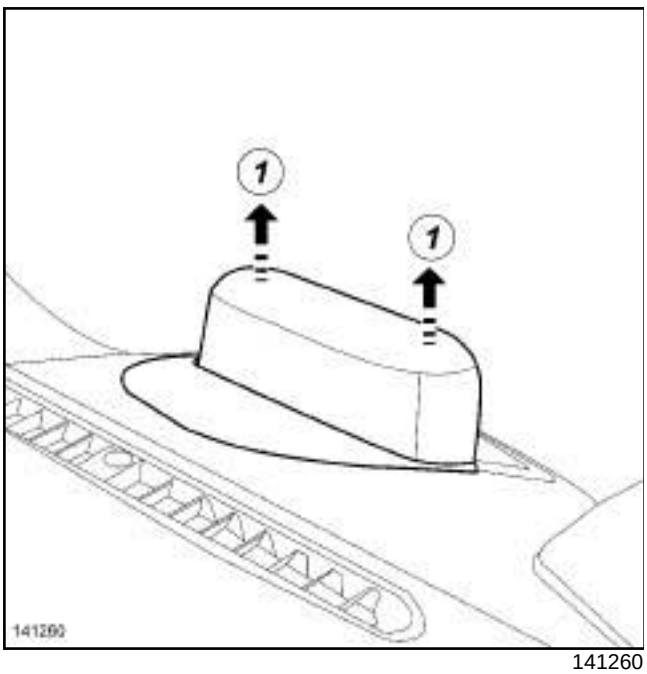
WARNING

To prevent damaging the navigation system, wait **1 minute** after switching off the + after ignition feed.

WARNING

Do not press on the screen as this may damage it.

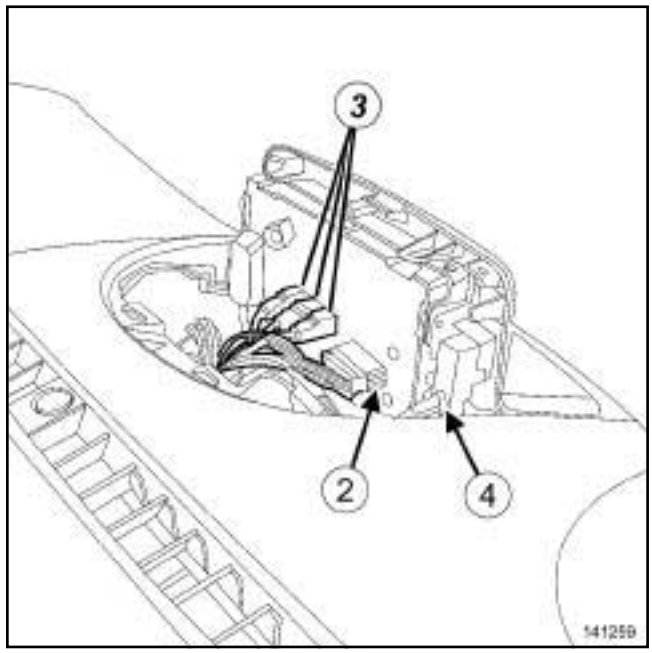
❏ Take the SD card out of its housing.



141260

❏ Unclip the navigation screen upper trim (**1**) using the tool **(Car. 1363)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



141259

❏ Mark the routing of the wiring and the aerials.

WARNING

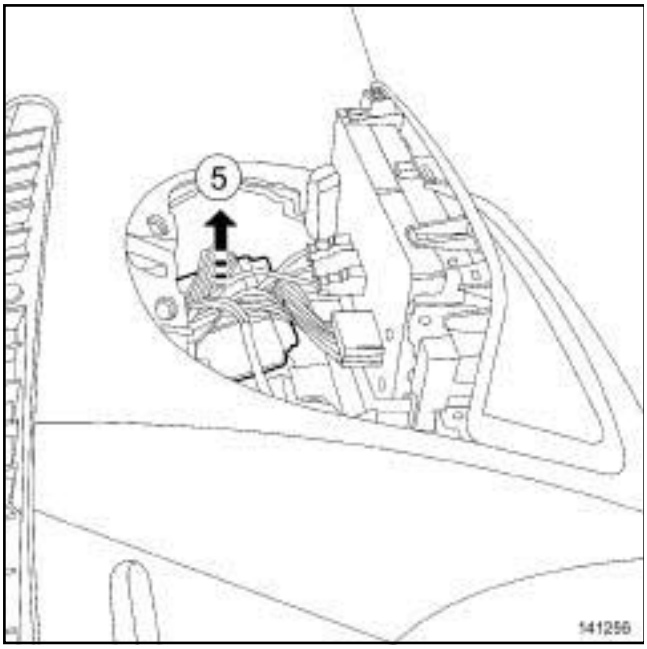
To ensure correct operation:

- do not pinch the aerial cables,
- do not bend the aerial cables,
- do not force the aerial cables when refitting.

❏ Mark the aerial position on the unit.

❏ Disconnect:

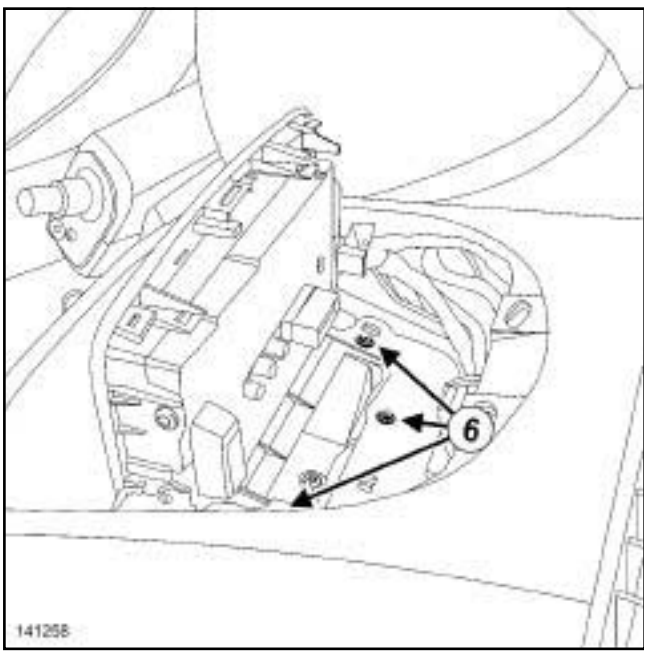
- the connector (**2**) of the navigation screen,
- the aerials (**3**) on the navigation screen,
- the connector (**4**) of the seat belt reminder warning light.



141256

❏ Unclip the multimedia network interface unit from the navigation screen support (**5**) .

❏ Move aside the multimedia network interface unit.

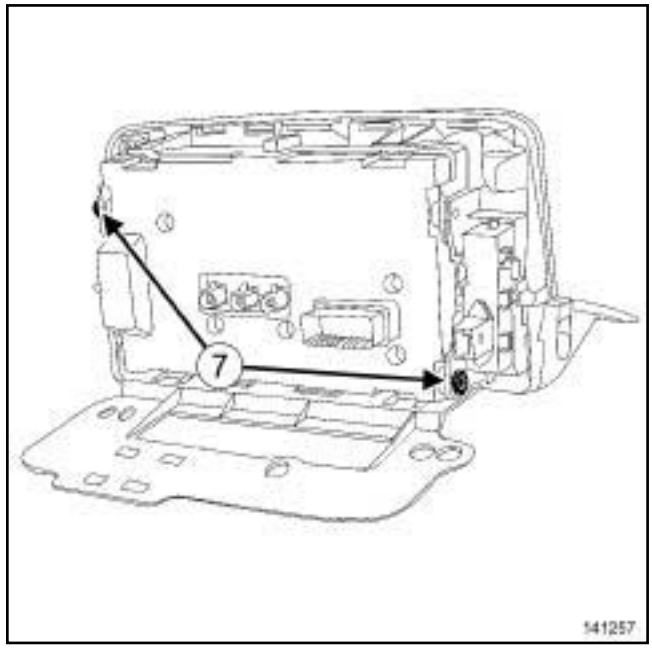


141258

❏ Remove the bolts (**6**) from the « support - navigation screen » assembly.

❏ Unclip the « support - navigation screen » assembly.

❏ Remove the « support - navigation screen » assembly.



141257

❏ Remove the navigation screen bolts (**7**) .

❏ Unclip the navigation screen from the support.

❏ Remove the navigation screen.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏

WARNING
Do not press on the screen as this may damage it.

❏ Refit:

- the navigation screen on the support,

- the « support - navigation screen » assembly.

❏ Fit the multimedia network interface unit.

❏ Clip on the multimedia network interface unit.

WARNING

To ensure correct operation:

- do not pinch the aerial cables,

- do not bend the aerial cables,

- do not force the aerial cables when refitting.

NAVIGATION AID 1 LEVEL

❏ Connect:

- the connector of the navigation screen,
- the aerials on the navigation screen in the position marked during removal,
- the connector of the seat belt reminder warning light.

❏ Refit the wiring in the position marked during removal.

II - FINAL OPERATION

❏ Clip on the navigation screen upper trim.

❏ Insert the SD card in its housing.

❏ Switch on the ignition.

❏ If the "computer - navigation screen" is being replaced, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86C, Navigation).

❏ Check the correct operation:

- of the seat belt warning light,
- of the navigation system, if the satellites can be accessed.

NAVIGATION AID 1 LEVEL

Special tooling required	
Car. 1363	Set of trim removal levers.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

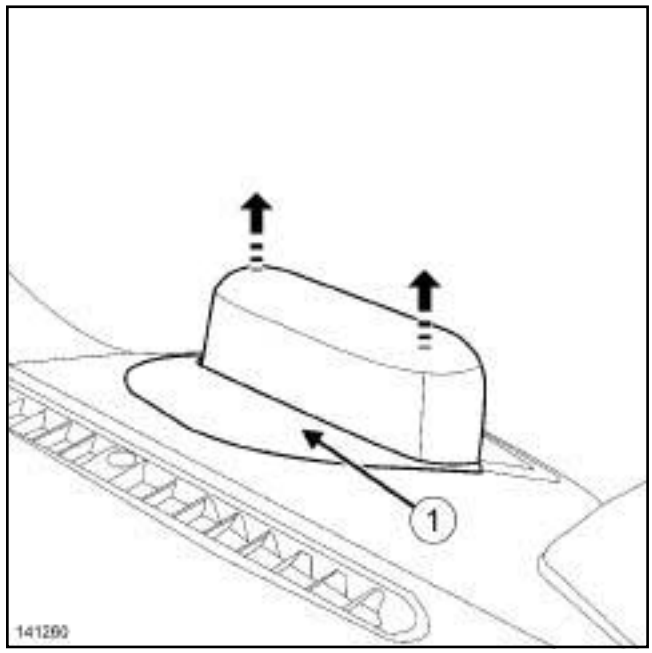
❏ When replacing the multimedia network interface unit, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86C, Multimedia network interface unit).

❏ Switch off the ignition.

WARNING
To prevent damaging the navigation system, wait **1 minute** after switching off the + after ignition feed.

WARNING
Do not press on the screen as this may damage it.

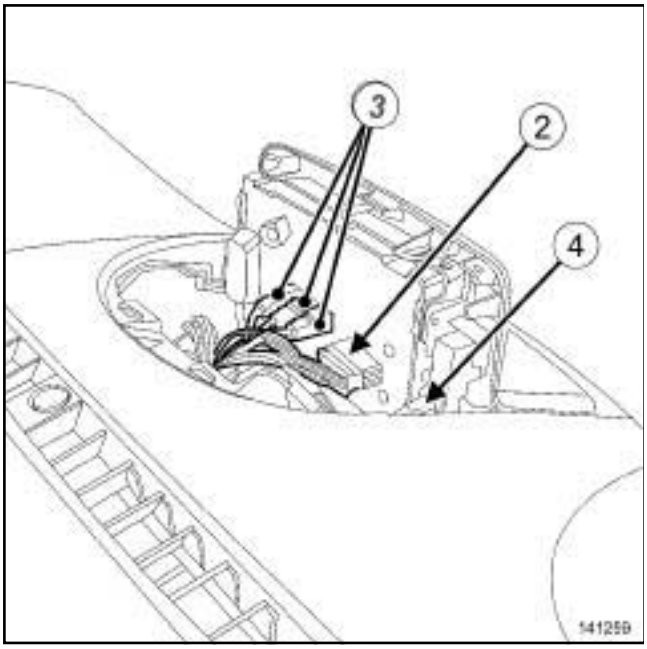
II - OPERATION FOR REMOVAL OF PART CONCERNED



141260

❏ Unclip the navigation screen upper trim (**1**) using the tool **(Car. 1363)**.

NAVIGATION AID 1 LEVEL



141259

❏ Mark the routing of the wiring and the aerials.

WARNING

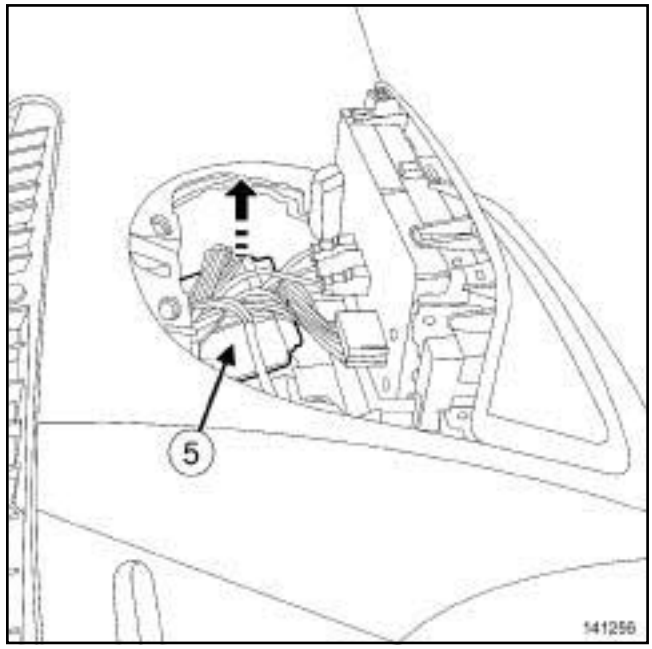
To ensure correct operation:

- do not pinch the aerial cables,
- do not bend the aerial cables,
- do not force the aerial cables when refitting.

❏ Mark the position of the aerials on the unit.

❏ Disconnect:

- the connector (**2**) of the navigation screen,
- the aerials (**3**) on the navigation screen,
- the connector (**4**) of the seat belt reminder warning light.



141256

❏ Unclip the multimedia network interface unit (**5**) from the navigation screen support.

❏ Remove the multimedia network interface unit.

❏ Disconnect the multimedia network interface unit connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the multimedia network interface unit connector

❏ Fit the multimedia network interface unit.

❏ Clip on the multimedia network interface unit.

❏ Connect:

- the connector of the navigation screen,
- the aerials on the navigation screen in the position marked during removal,
- the connector of the seat belt reminder warning light.

NAVIGATION AID 1 LEVEL

❏ Refit the wiring in the position marked during removal.

WARNING

To ensure correct operation:

- do not pinch the aerial cables,
- do not bend the aerial cables,
- do not force the aerial cables when refitting.

❏ Clip on the navigation screen upper trim.

II - FINAL OPERATION

❏ Switch on the ignition

❏ Check the operation of the seat belt warning light.

❏ Check the operation of navigation system, if the satellites can be accessed.

❏ When replacing the multimedia network interface unit, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86C, Multimedia network interface unit).

NAVIGATION AID 1

The navigation screen is located in the offset radio display. It is not sold separately.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the radio display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the radio display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) .

NAVIGATION AID 1

The navigation aerial is the same as the radio aerial.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the radio aerial (see **86A**, **Radio**, **Radio aerial: Removal - Refitting**, page **86A-11**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

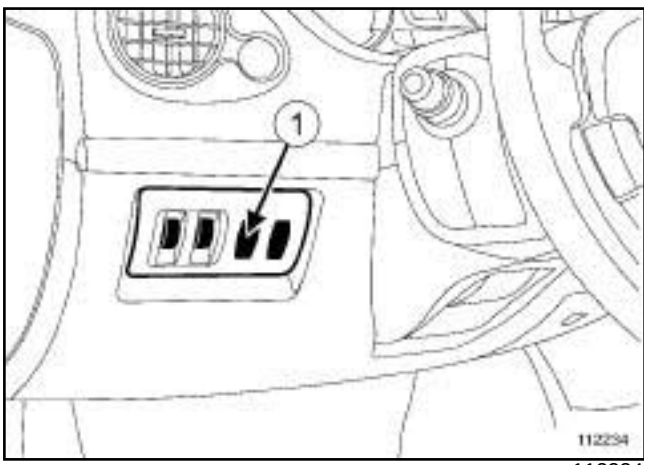
❑ Refit the radio aerial (see **86A**, **Radio**, **Radio aerial: Removal - Refitting**, page **86A-11**) .

I - LIST OF COMPONENTS

No.	Description
(1)	Switch
(2)	Steering wheel switch
(3)	Brake switch
(4)	Clutch switch

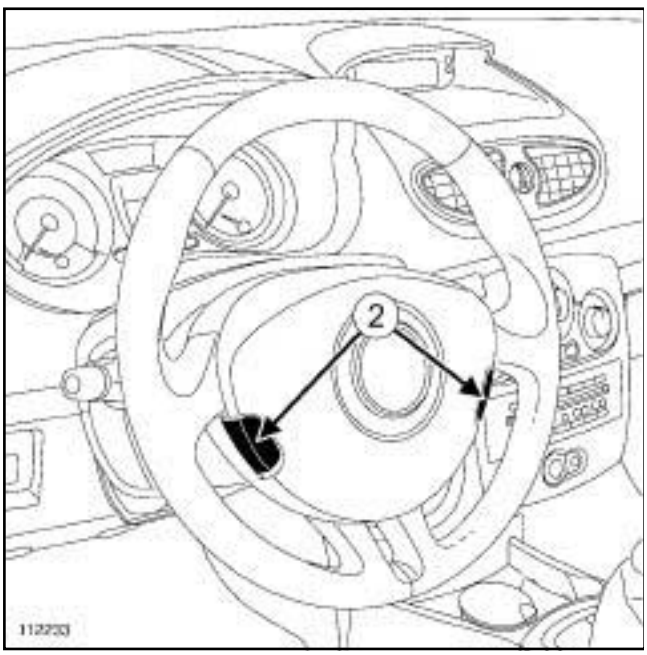
II - LOCATION OF COMPONENTS

1 - Switch



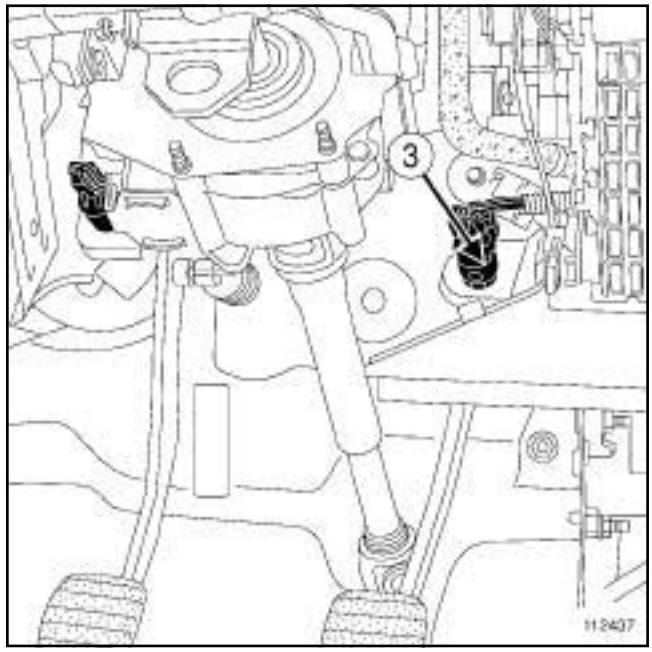
112234

2 - Steering wheel switch



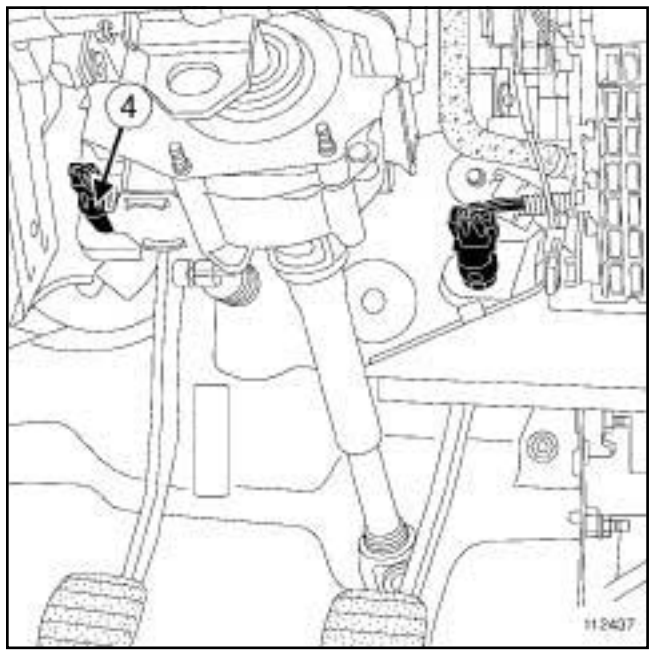
112233

3 - Brake switch



112437

4 - Clutch switch

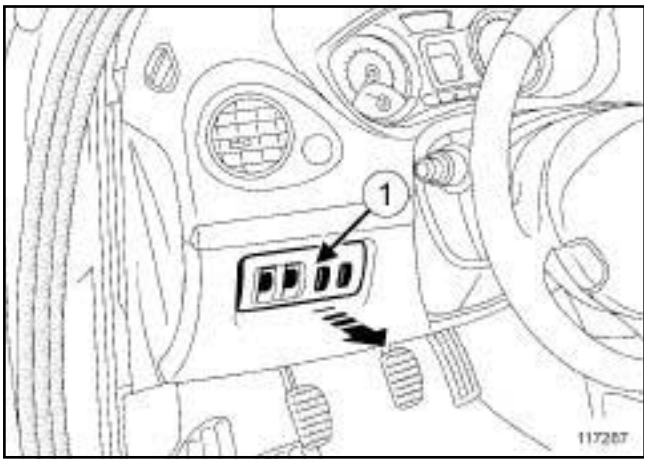


112437

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

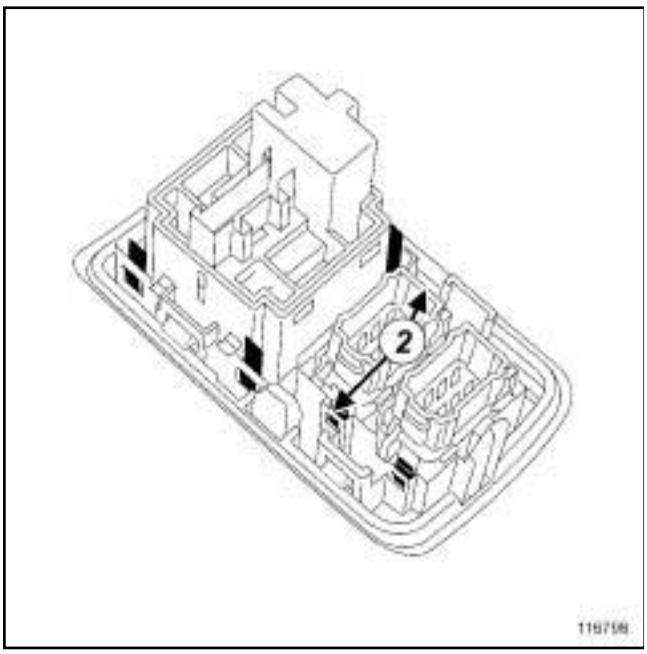


117287

❑ Unclip the switch panel (**1**) using the **(Car. 1363)**.

❑ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116798

❑ Remove the switch by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the switch on the switch panel.

❑ Connect the connectors.

II - FINAL OPERATION.

❑ Clip the switch panel onto the lower cover.

The rotary switch is part of the steering column control assembly. It cannot be replaced on its own.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the steering column control assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove:

- the lighting switch (see **84A**, **Control - Signals**, **Signals and lighting switch: Removal - Refitting**, page **84A-9**) ,
- the windscreen wiper switch (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

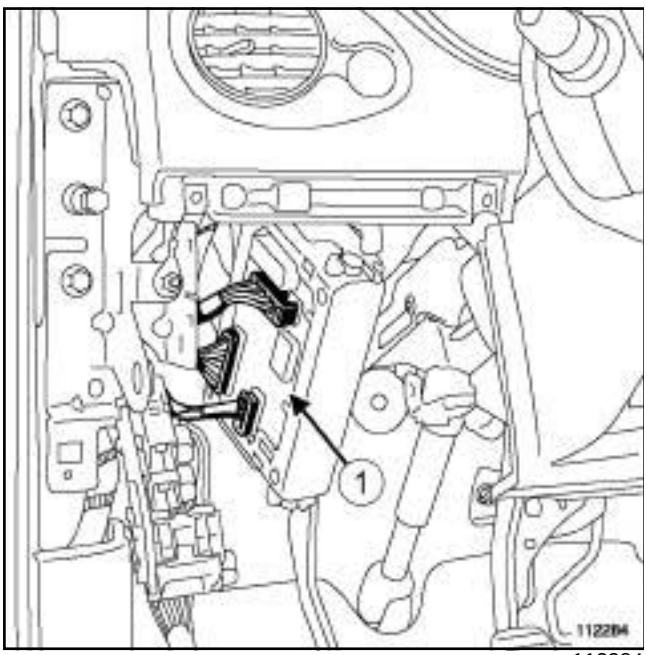
- the lighting switch (see **84A**, **Control - Signals**, **Signals and lighting switch: Removal - Refitting**, page **84A-9**) ,
- the windscreen wiper switch (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) .

II - FINAL OPERATION.

❏ Refit the steering column control assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

No.	Description
(1)	UCH
(2)	Steering wheel gear selector
(3)	Windscreen wiper switch
(4)	Signalling light switch
(5)	Remote control satellite

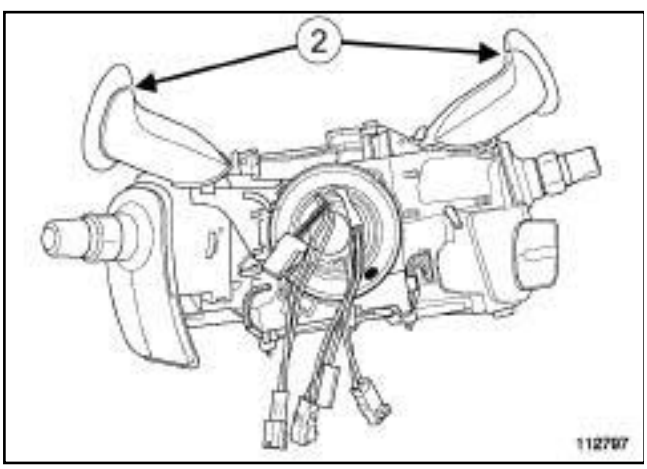
I - UCH



112284

UCH (**1**)

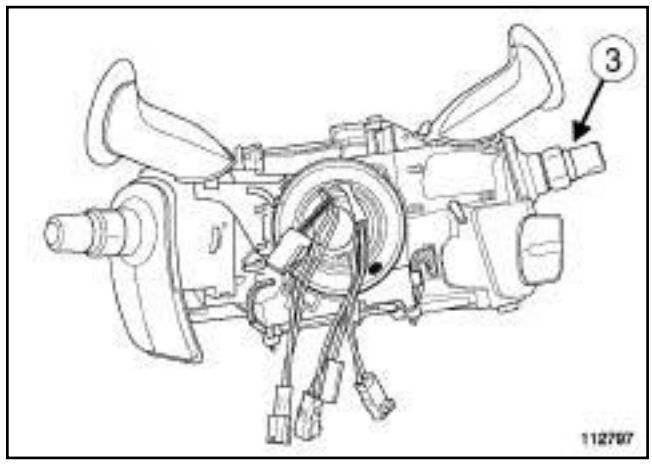
II - STEERING WHEEL GEAR SELECTOR



112797

Steering wheel gear selector (**2**) (the selector is an integral part of the rotary switch)

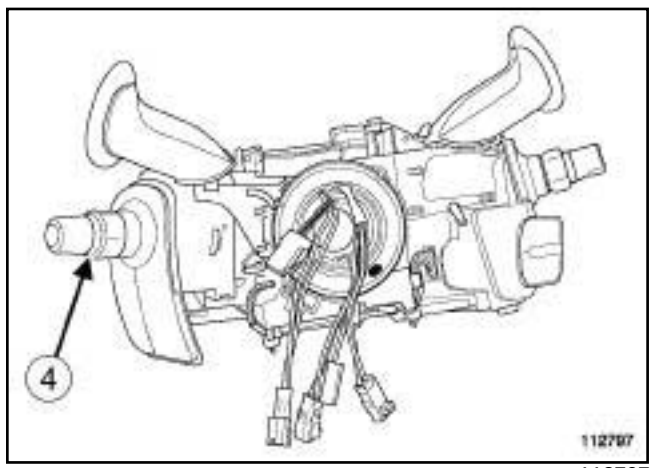
III - WINDSCREEN WIPER SWITCH



112797

Windscreen wiper switch (**3**)

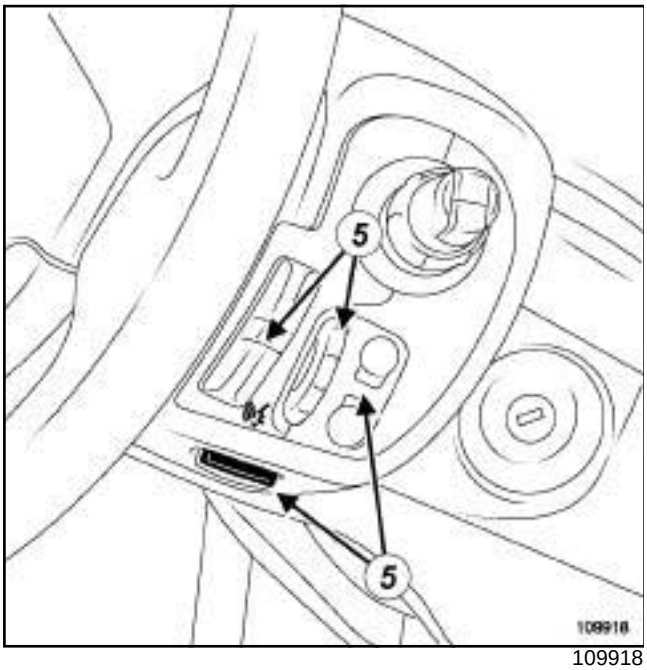
IV - SIGNALLING LIGHT SWITCH



112797

Signalling light switch (**4**)

V - REMOTE CONTROL SATELLITE



109918

Car phone control satellite (**5**) (the satellite is an integral part of the windscreen wiper switch)

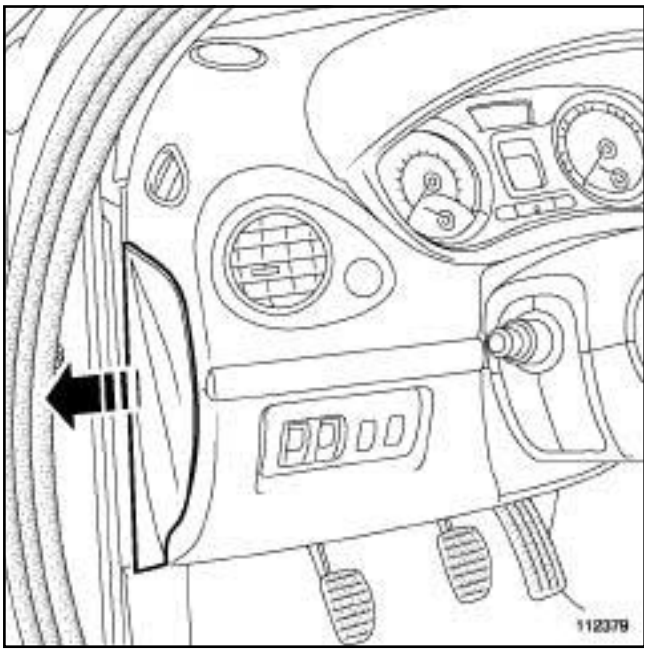
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the driver's frontal airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) .

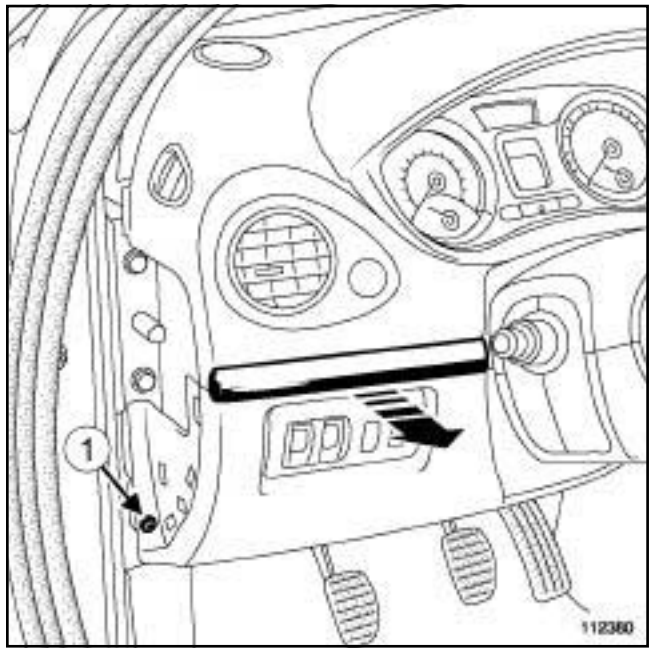
❏ The wheels must be set straight ahead.



112379

❏ Remove the front door seal

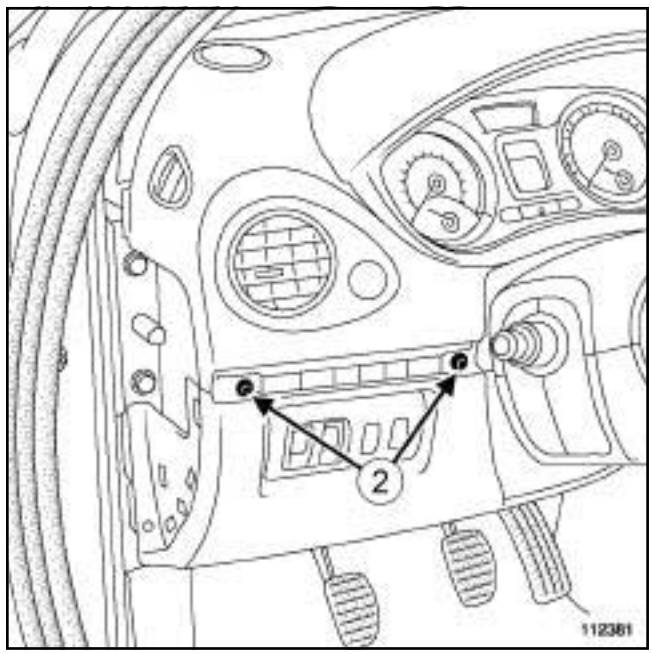
❏ Unclip the dashboard side panel.



112380

❏ Unclip the protective strip.

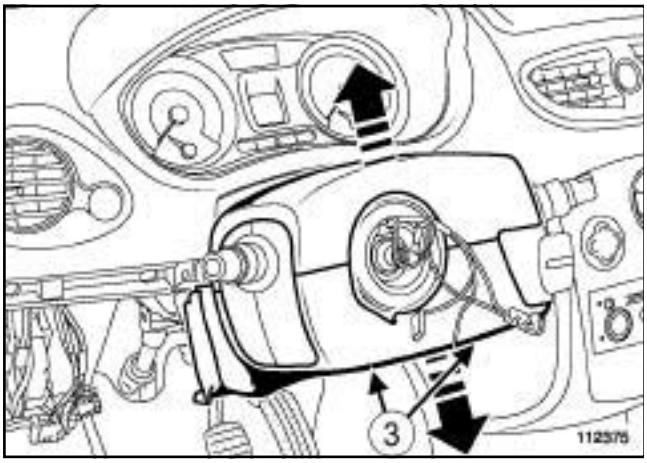
❏ Remove the bolt (**1**) .



112381

❏ Remove bolts (**2**) .

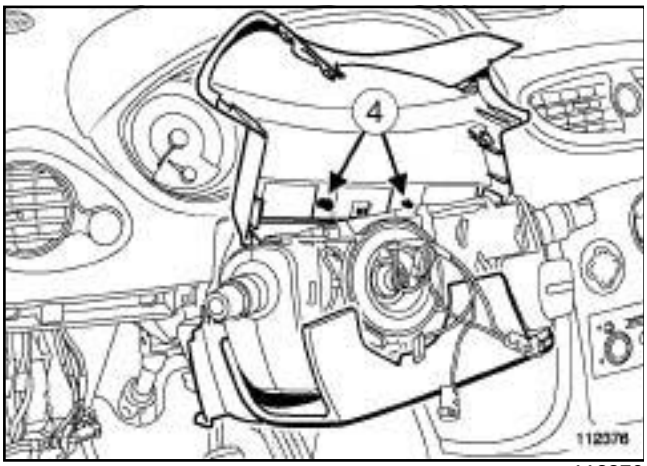
❏ Unclip the trim underneath the steering wheel.



112375

❏ Remove the lower half cowling mounting bolts (**3**) .

❏ Unclip the half covers.

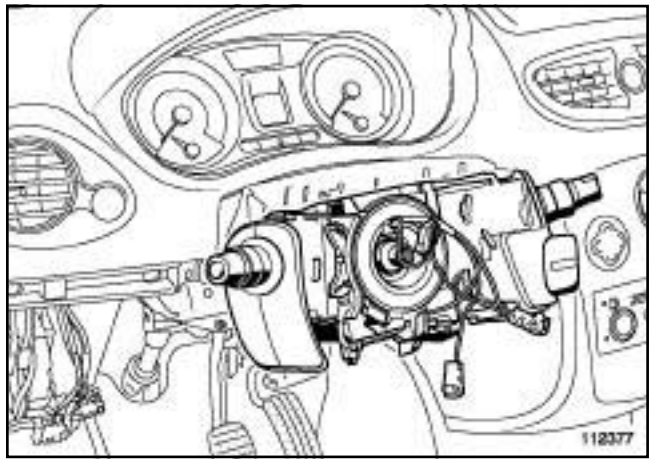


112376

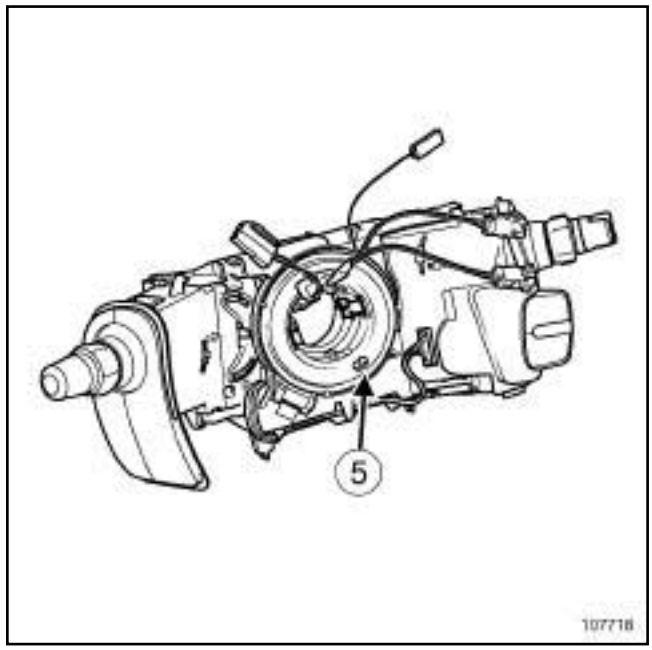
❏ Remove the gaiter upper trim by pressing down on the clips (**4**) .

❏ Extract the lower half-cowling from the driving position height adjustment handle.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112377

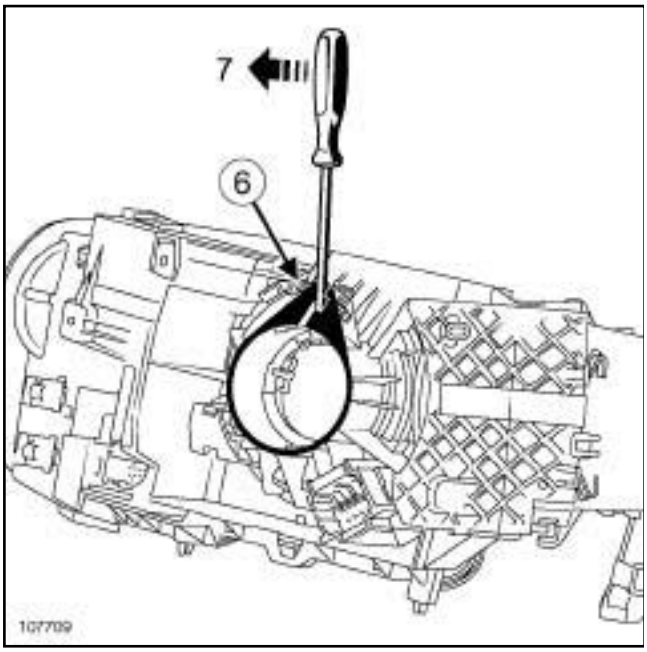


107718

❏

WARNING

Check that the wheels are set straight ahead and that the rotary switch mark (**5**) is correctly positioned opposite the index.



107709

❏ Undo the rotary switch mounting bolt (**6**) .

❏ Press down on (**7**) using a flat-blade screwdriver to release the rotary switch.

❏ Remove part of the steering column controls assembly to disconnect the connectors.

❏ Remove the steering wheel control assembly.

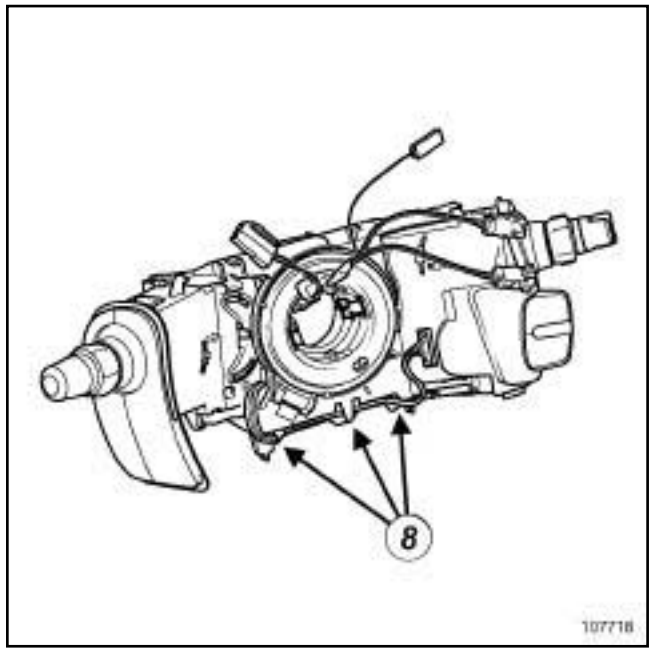
REFITTING

I - REFITTING PREPARATION OPERATION

❏

WARNING

Make sure that the wheels are set straight ahead and that the rotary switch mark is at 0.



107718

❏

WARNING

It is essential to observe the wiring harness routing to prevent it being damaged when the half-shells are refitted.

❏ Position the wiring harness as indicated (**8**) .

II - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

❏ Position the steering column controls assembly.

❏ Fix the steering column controls assembly into place.

III - FINAL OPERATION

❏ Refit the steering column half-covers.

❏ Fix the half-covers into place.

❏ Refit the steering column trim.

❏ Fix the steering column trim.

❏ Clip the protective strip into place.

❑ Refit:

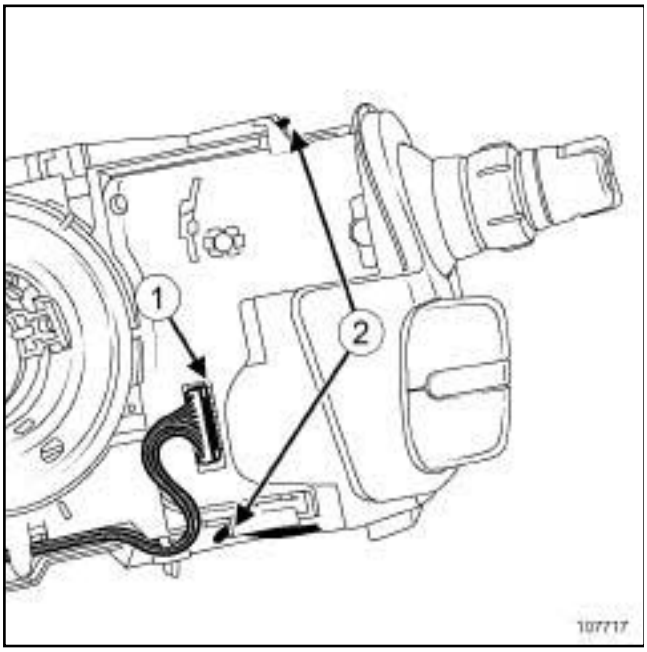
- the dashboard side panel.
- the steering wheel (see **Steering wheel: Removal - Refitting**) ,
- the driver's frontal airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the steering column controls assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



107717

❏ Disconnect the connector (**1**) .

❏ Remove the windscreen wiper switch by pressing down on the clips (**2**) .

> Note:
>
> The remote control satellite and the windscreen wiper switch are one inseparable component.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the windscreen wiper switch onto the rotary switch.

❏ Connect the connector.

II - FINAL OPERATION

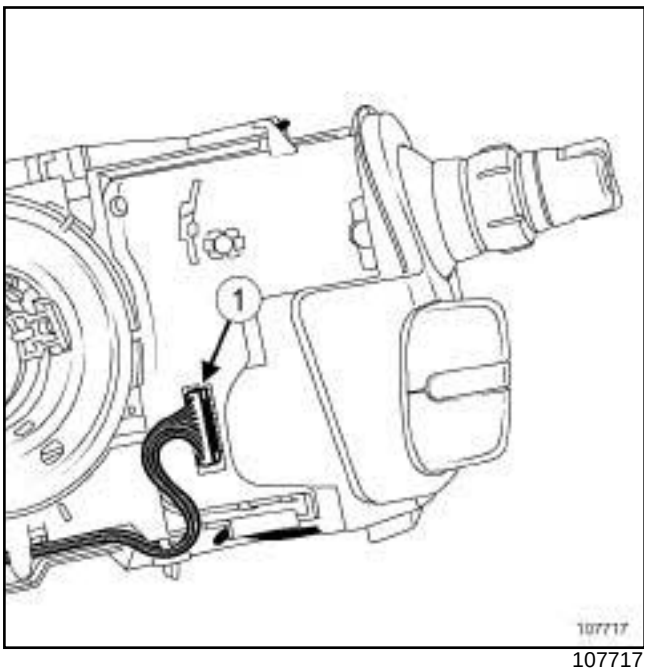
❏ Refit the steering column controls assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the steering column controls assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

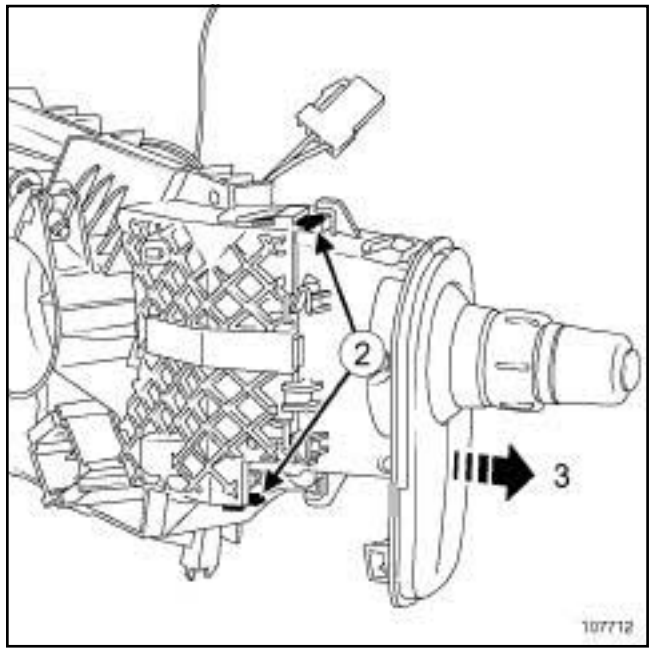
II - OPERATION FOR REMOVAL OF PART CONCERNED



107717

❏ Disconnect the connector (**1**) .

❏ Free the rotary switch wiring harness.

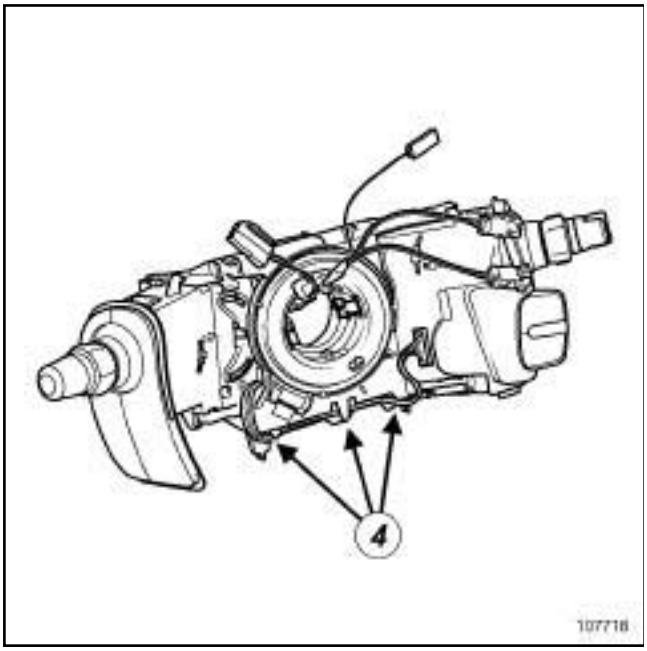


107712

❏ Unclip the light switch (**3**) by pressing down on the clips. (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



107718

❏ Clip the light switch onto the rotary switch.

❏ Connect the connector.

❏ Position the wiring harness as indicated (**4**) .

WARNING

It is essential to observe the harness routing to prevent it from being damaged when the covers are refitted.

II - FINAL OPERATION

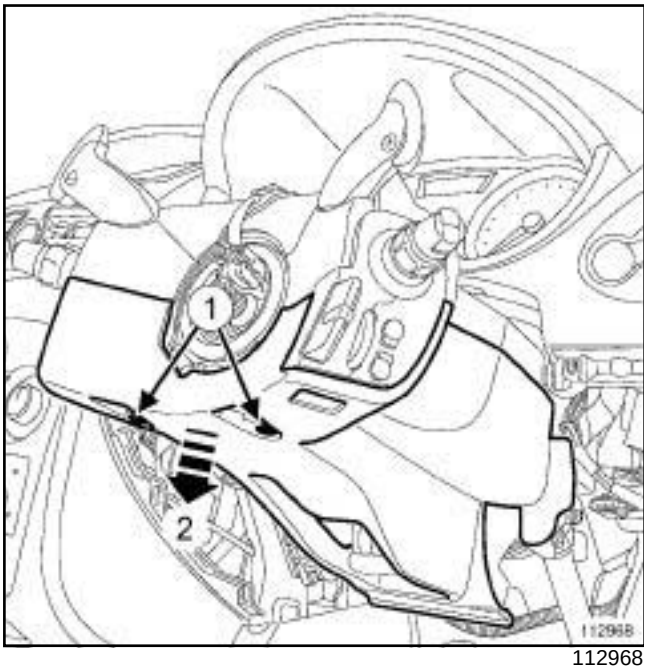
❏ Refit the steering column controls assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

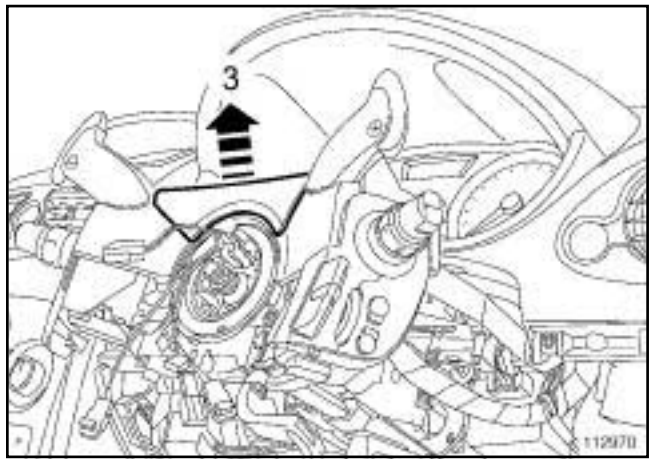
- the driver's airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) ,
- the steering column controls (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .



112968

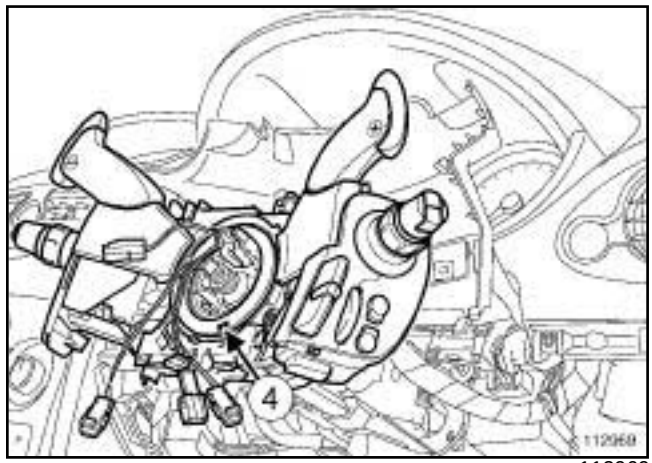
❑ Remove the mounting bolts (**1**) from the shell under the steering wheel.

❑ Unclip the half-shell underneath the lower part of the steering wheel (**2**) .



112970

❑ Unclip upper trim (**3**)

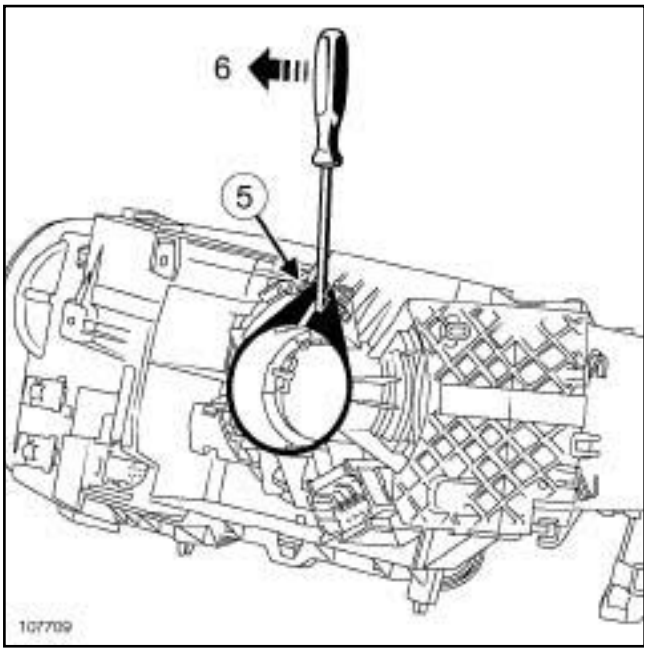


112969

❑

WARNING

Check that the wheels are set straight ahead and that the rotary switch mark (**4**) is correctly positioned opposite the index.

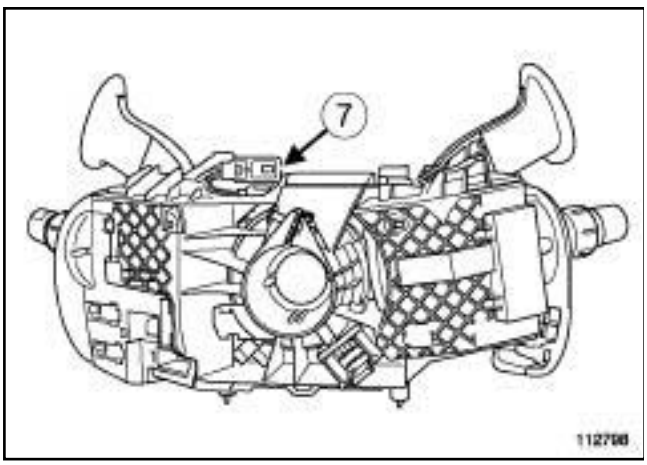


107709

❏ Undo the rotary switch mounting bolt (**5**) .

❏ Press down on (**6**) using a flat-blade screwdriver to release the rotary switch.

❏ Remove part of the steering column controls assembly.

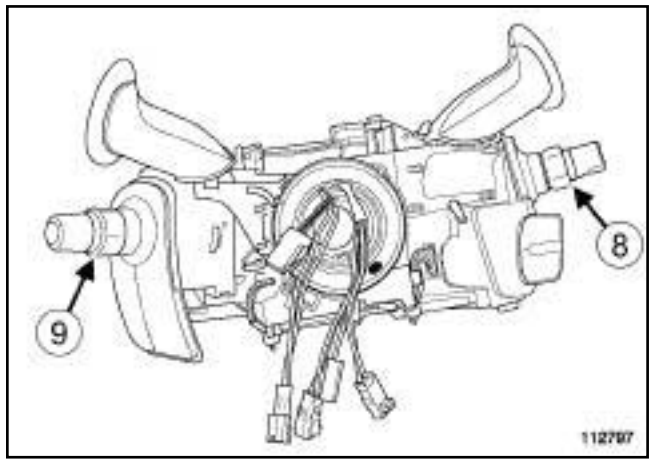


112798

❏ Disconnect:

- the connectors for the steering column controls,
- the gear selector connector on the steering wheel (**7**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112797

❏ Remove:

- the windscreen wiper switch (**8**) (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) ,
- the signal lighting switch (**9**) (see **84A**, **Control - Signals**, **Signals and lighting switch: Removal - Refitting**, page **84A-9**) .

Note:

The speed selector on the steering wheel cannot be separated from the rotary switch.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the windscreen wiper switch (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) ,
- the signalling light switch (see **84A**, **Control - Signals**, **Signals and lighting switch: Removal - Refitting**, page **84A-9**) ,
- the steering column controls (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) .

II - FINAL OPERATION

❏ Refit:

- the steering wheel (see **Steering wheel: Removal - Refitting**) ,

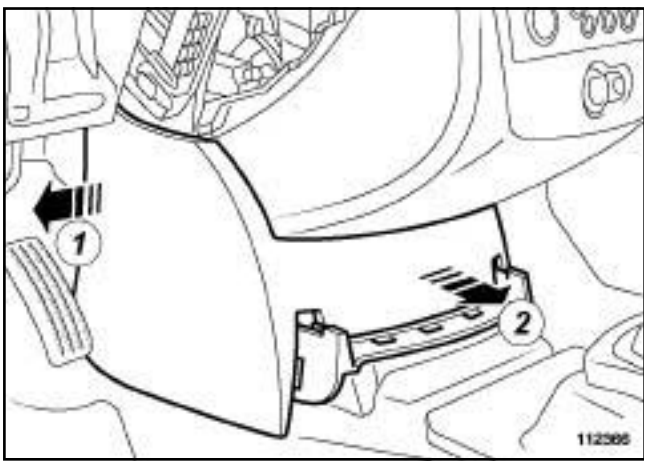
- the driver's airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) .

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112366

❏ Unclip the trim at (**1**) and (**2**) .

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

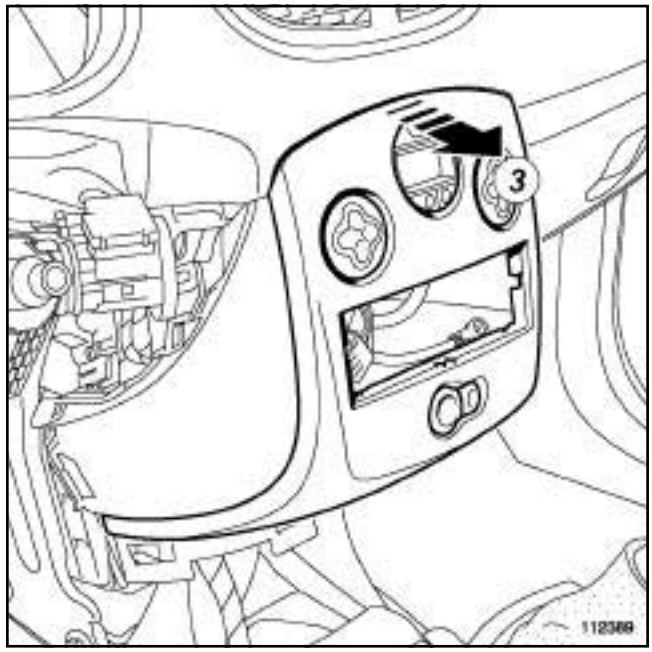
❏ Remove the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❏ Remove the radio navigation system (see **83C**, **Onboard telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

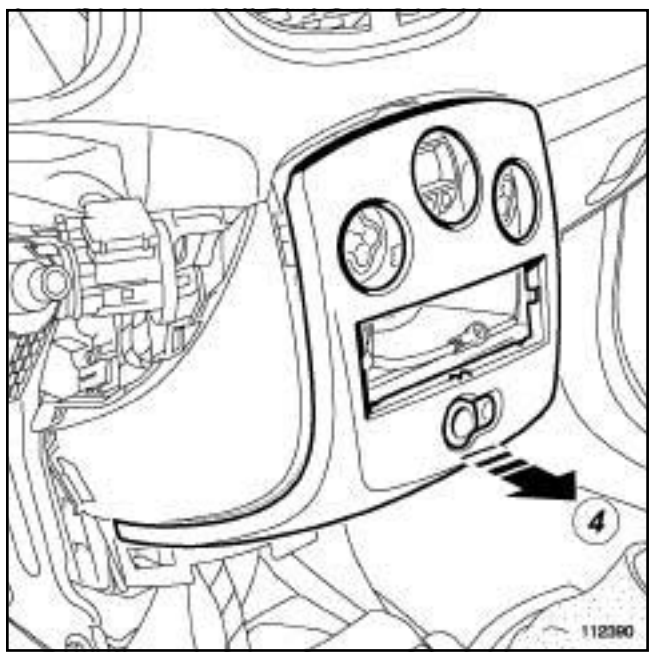
WITHOUT NAVIGATION AID, and VEHICLEWITHOUT RADIO

❏ Unclip the glovebox using the **(Car. 1363)**.



112389

❏ Unclip the centre front panel at (**3**) .

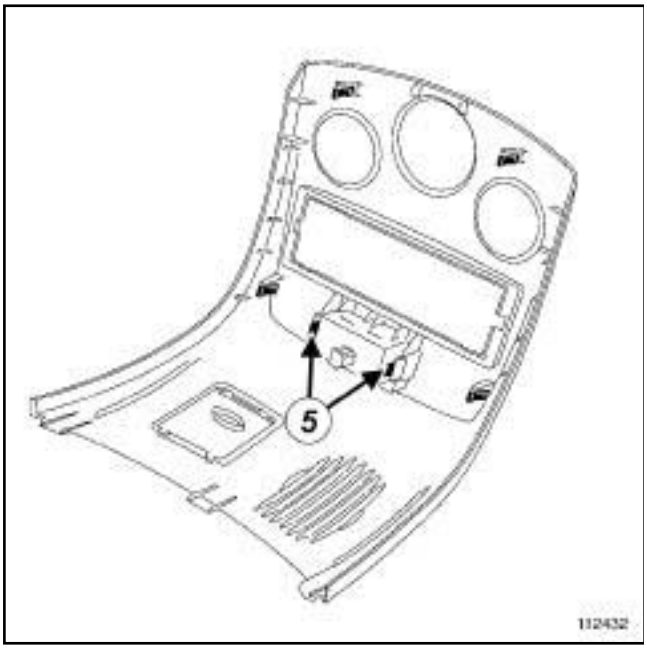


112390

❏ Unclip the centre front panel at (**4**)

❏ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112432

❏ Unclip the switch by moving clips (**5**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the switch onto the front panel.

II - FINAL OPERATION.

❏ Connect the centre front panel connectors.

❏ Clip in the centre front panel beginning with the lower section.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 05 or RADIO NO. 06

❏ Refit the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

NAVIGATION AID 1

❏ Refit the radio navigation system (see **83C**, **On-board telematics system**, **Radio navigation: Removal - Refitting**, page **83C-3**) .

WITHOUT NAVIGATION AID, and VEHICLEWITH-OUT RADIO

❏ Clip the glovebox in position.

❏ Clip the trim under the centre front panel.

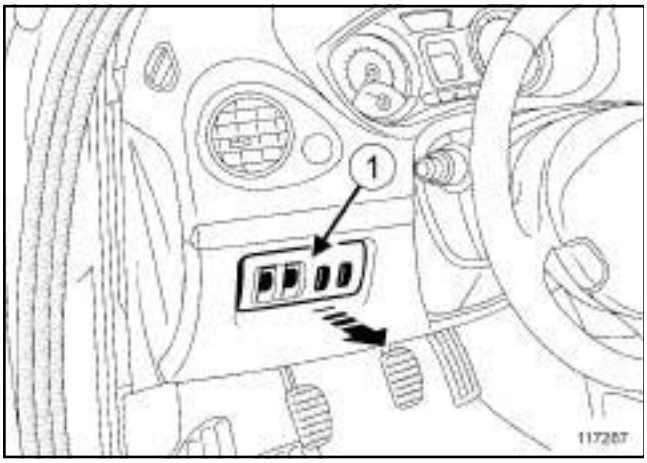
❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

ELECTRONIC STABILITY PROGRAM

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION



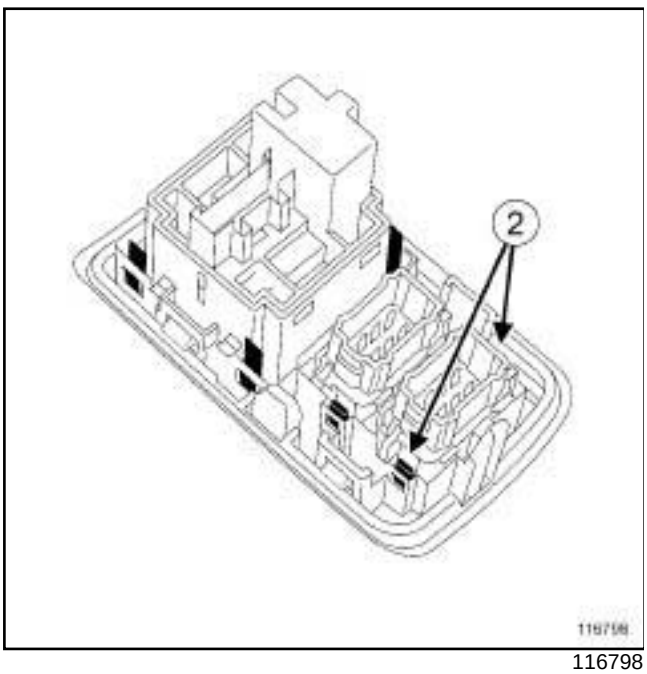
117287

❏ Unclip the control plate (**1**) using the tool **(Car. 1363)**.

❏ Disconnect the connectors.

❏ Remove the plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116798

❏ Remove the ESP disabling switch by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the ESP disabling switch onto the switch plate.

❏ Connect the connectors.

II - FINAL OPERATION.

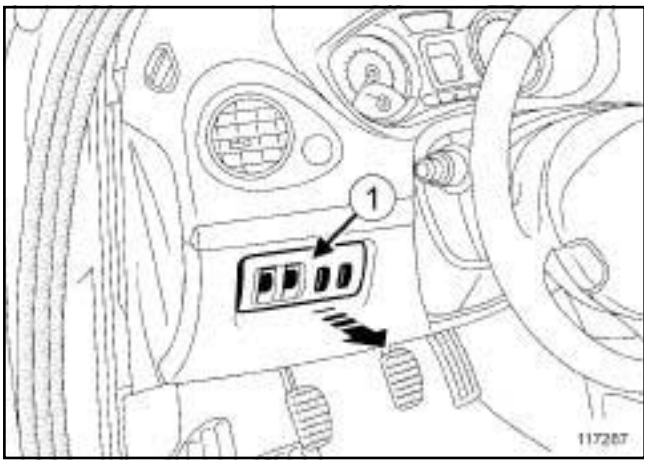
❏ Clip the switch plate onto the lower dashboard trim.

WITHOUT DISCHARGE LAMPS

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION



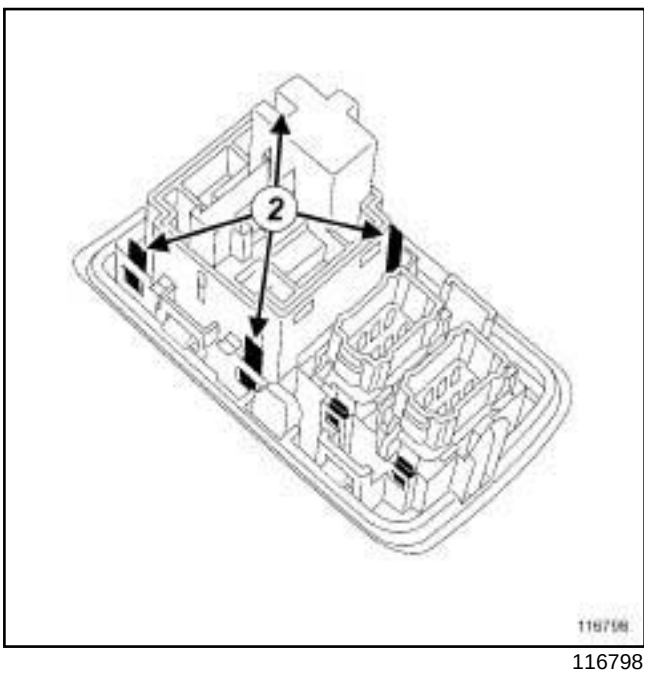
117287

❑ Unclip the switch plate (**1**) using the **(Car. 1363)** tool.

❑ Disconnect the connectors.

❑ Remove the plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116798

❑ Remove the headlight remote adjustment control by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the headlight remote adjustment control onto the switch plate.

❑ Connect the connectors.

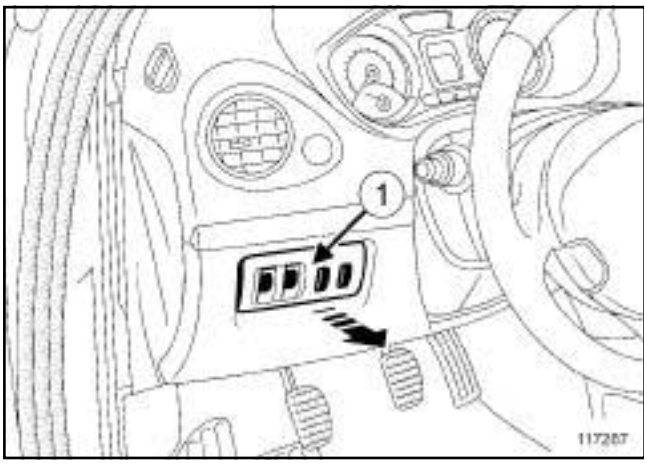
II - FINAL OPERATION.

❑ Clip the switch plate on the dashboard lower trim.

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

I - REMOVAL PREPARATION OPERATION



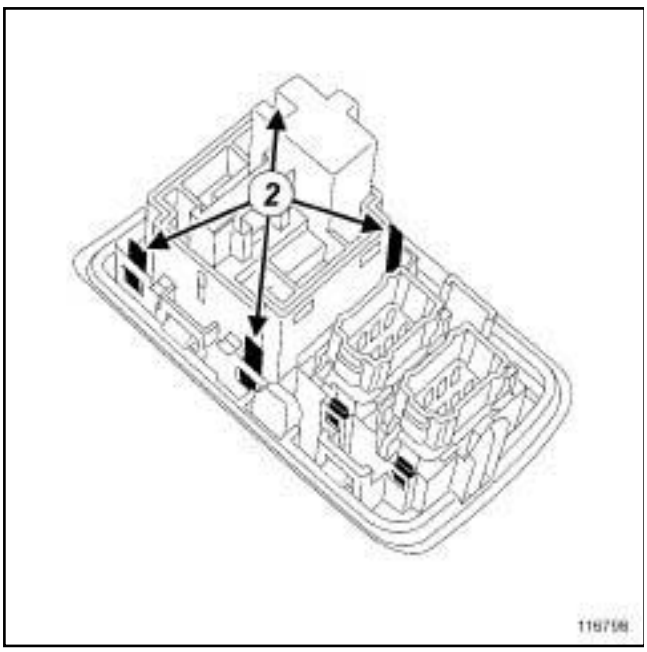
117287

❏ Unclip the switch plate (**1**) using the tool **(Car. 1363)**.

❏ Disconnect the connectors.

❏ Remove the plate.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116798

❏ Remove the lighting dimmer by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the lighting dimmer on the switch plate.

❏ Connect the connectors.

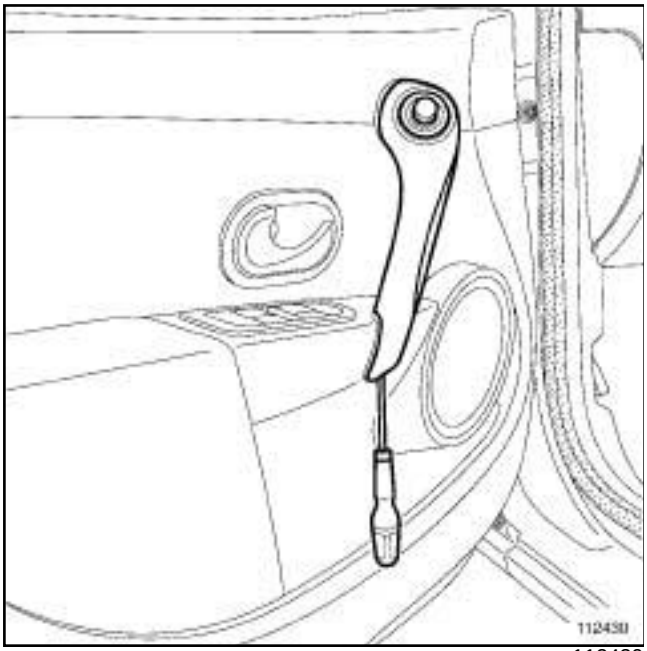
II - FINAL OPERATION.

❏ Clip the switch plate on the dashboard lower trim.

DOOR MIRRORS 02 or DOOR MIRRORS 03

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED


112430

112430

❑ Unclip the interior handle trim using a small flat-blade screwdriver.

❑ Disconnect the connector.

112433

112433

❑ Squeeze the clips (**1**) to unclip the door mirror control switch.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑ Clip the switch onto the interior handle trim.

❑ Connect the connector.

❑ Clip on the interior handle trim.

The screen printed heated grid on the inner face of the window may have an accidental cut, making the affected part of the circuit useless.

❏ Determine the exact location of the cut using a voltmeter.

Faults such as these can be repaired by using the heated rear screen varnish available at the. **Magasin Pièces de Rechange**

I - DETERMINING THE EXACT LOCATION OF THE CUT USING A VOLTMETER

❏ Switch on the ignition.

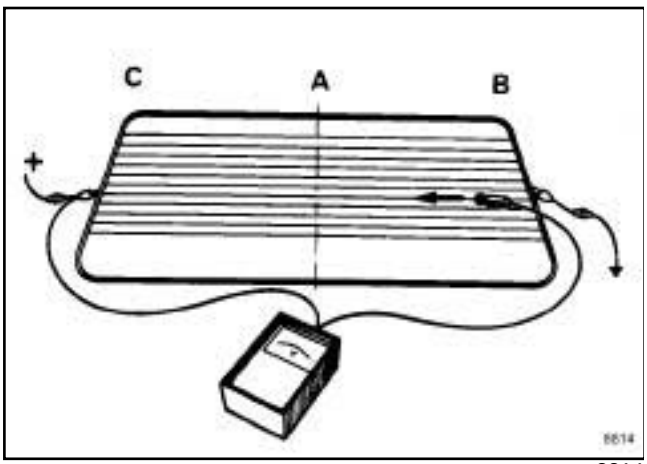
❏ Switch on the heated rear screen supply.

1 - Detection between lines B and A

❏ Connect the + wire of the voltmeter to the + feed terminal of the rear screen.

❏ Put the - wire of the voltmeter on a filament at the - terminal side of the rear screen (line B); the voltage obtained should be roughly equal to that of the battery.

❏ Move the wire - to line A (arrowed line): the voltage gradually drops.



8814

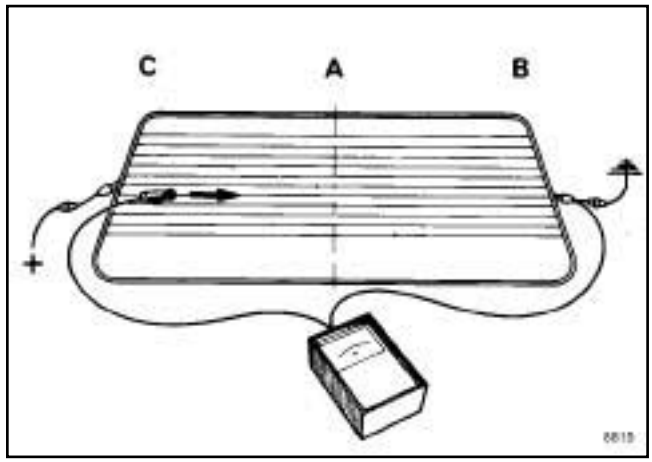
❏ A sudden voltage drop indicates that the filament is cut at that point (carry out this operation for each filament).

2 - Detection between lines C and A

❏ Connect the - wire of the voltmeter to the - terminal of the rear screen.

❏ Put the + wire of the voltmeter on the filament at the + terminal end of the rear screen (line C); the voltage obtained should be roughly equal to battery voltage.

❏ Move the + wire towards line A (arrowed line); the voltage gradually drops.



8815

❏ A sudden voltage drop indicates that the filament is cut at that point (carry out this operation for each filament).

II - REPAIRING THE FILAMENT

❏ Clean the section to be treated to remove all dust or grease, preferably using alcohol or a glass cleaner, and wipe with a clean, dry cloth.

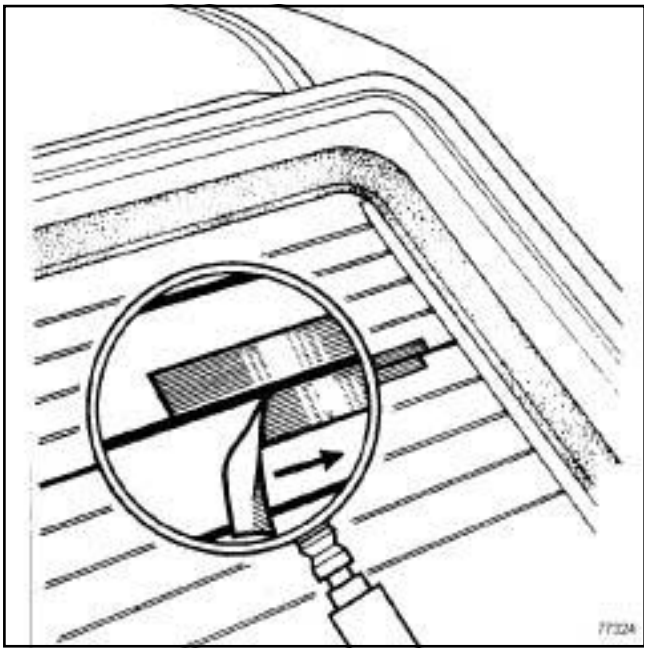
❏ To ensure that the new line is straight, before varnishing, apply adhesive tape to either side of the section to be repaired, leaving the conducting line exposed.

❏ Before using the varnish, shake the bottle to prevent the silver particles settling at the bottom.

Repair

❏ Carry out the repair using a small brush, applying a sufficiently thick layer. If applying successive coats, allow sufficient drying time between each coat and do not repeat the operation more than three times.

❏ If an error is made with the varnish (runs, smudges, etc.), it can be removed using a knife point, but only after several hours, once the product has properly hardened.



77324

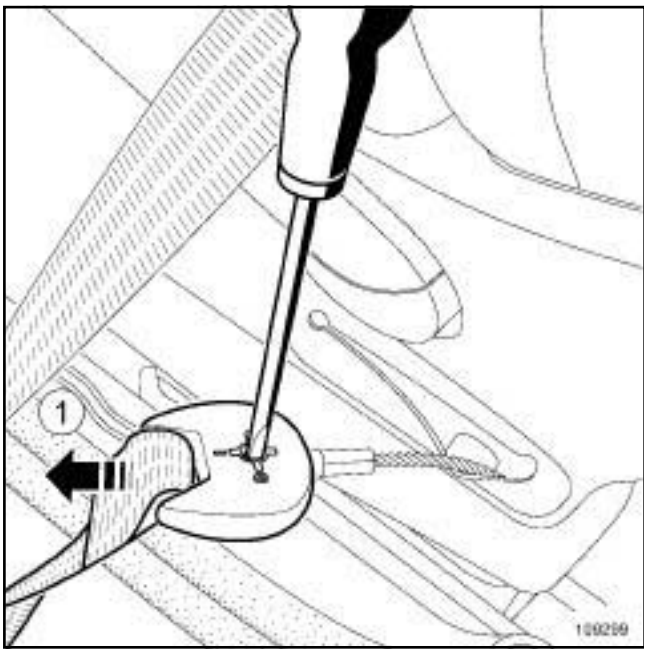
- The adhesive tape used as a guide must not be removed until approximately one hour after application. The tape must be pulled off perpendicularly to the resistance, in the direction of the arrow. When used at an ambient temperature of **20°C**, the varnish is completely dry in three hours. At lower temperatures the drying time is slightly longer.

FRONT SEAT WITH HEATING

REMOVAL

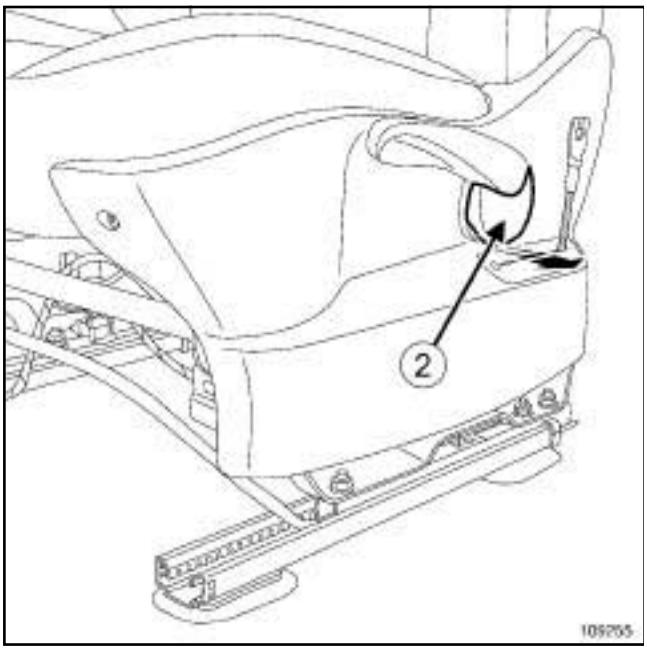
I - REMOVAL PREPARATION OPERATION

❏ Move the seat as far forward as possible.



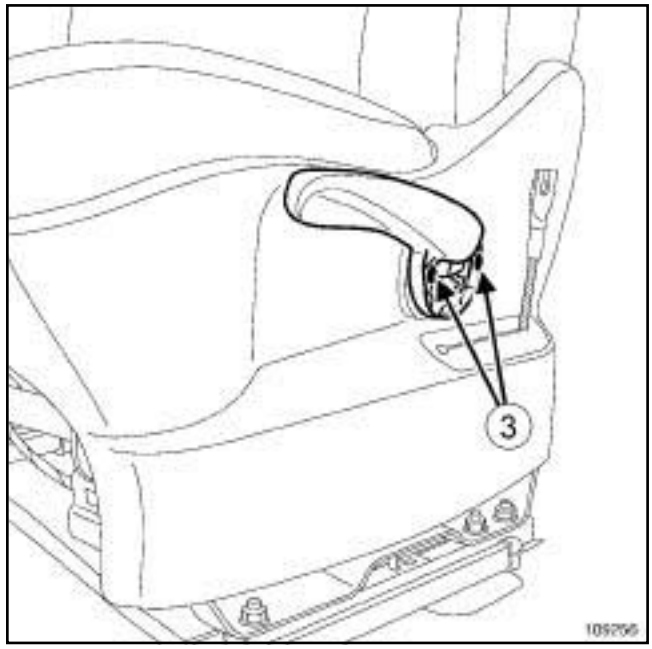
109299

❏ Unclip the seat belt strap (**1**) by turning the bolt a quarter of a turn.



109255

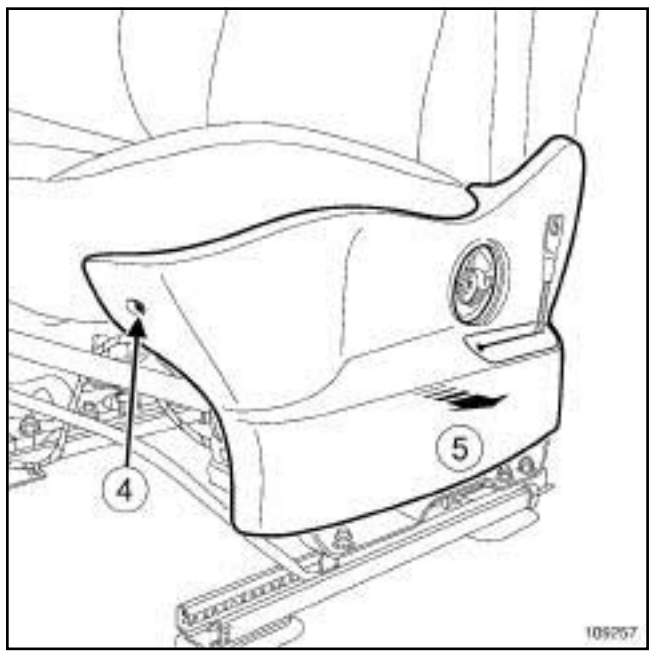
❏ Remove the cover (**2**) from the seat height adjustment lever.



109256

❏ Remove:

- the seat base height adjustment lever bolts (**3**) ,
- the seat base height adjustment lever.

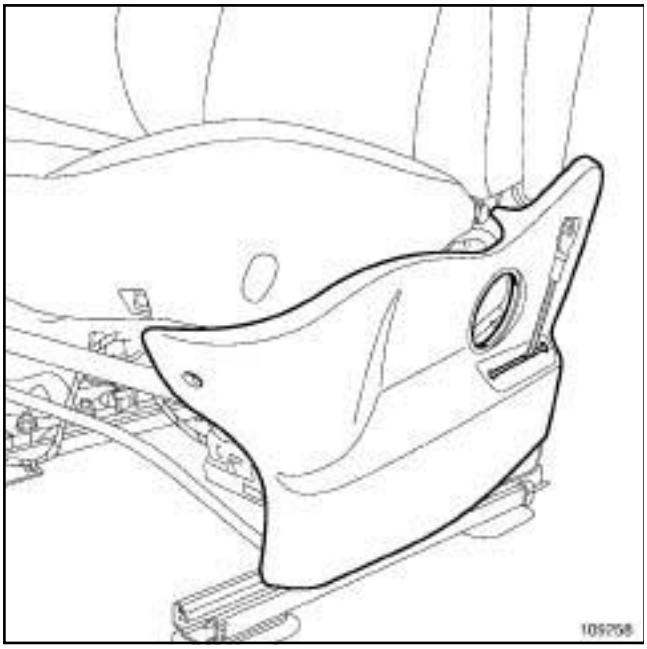


109257

❏ Remove the seat base cover bolt (**4**) .

❏ Unclip the front section of the seat housing side panel (**5**) .

FRONT SEAT WITH HEATING

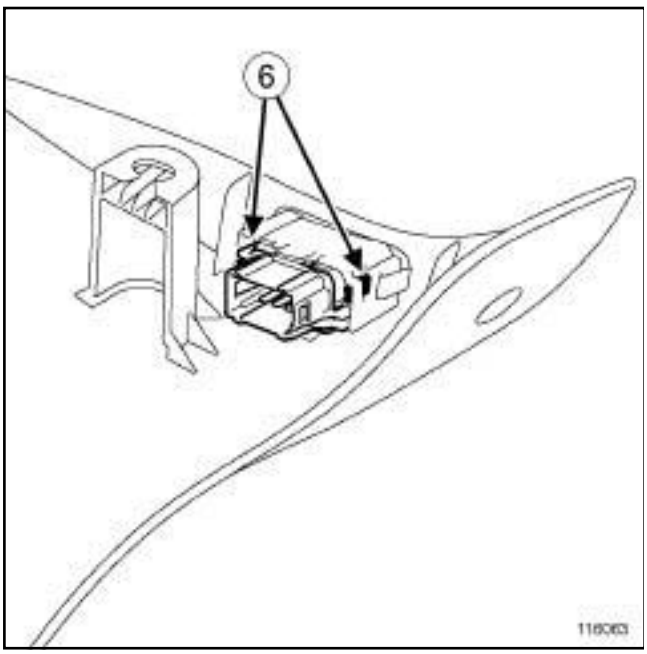

109258

❏ Unclip the rear section of the seat cover.

❏ Disconnect the connectors.

❏ Remove the seat base cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116063

❏ Unclip the heating pad switch by pressing on the clips (**6**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the heating pad switch onto the seat housing panel.

II - FINAL OPERATION.

❏ Connect the seat housing panel connectors.

❏ Clip on:

- the rear section of the seat cover,
- the front section of the seat cover.

❏ Refit:

- the seat cover bolt,
- the seat base height adjustment lever,
- the seat base height adjustment lever bolts,
- the seat base height adjustment lever cover.

❏ Clip on the seat belt strap.

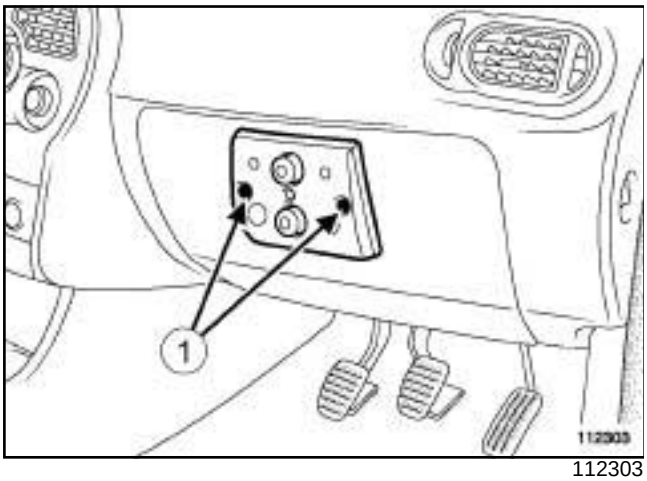
SCHOOL VEHICLE

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112303

❏ Remove:

- the bolts (**1**) from the driving school repeater control electrical unit,
- the driving school repeater control electrical unit.

❏ Disconnect the driving school repeater control electrical unit connectors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the driving school repeater electrical control unit connectors.

❏ Refit:

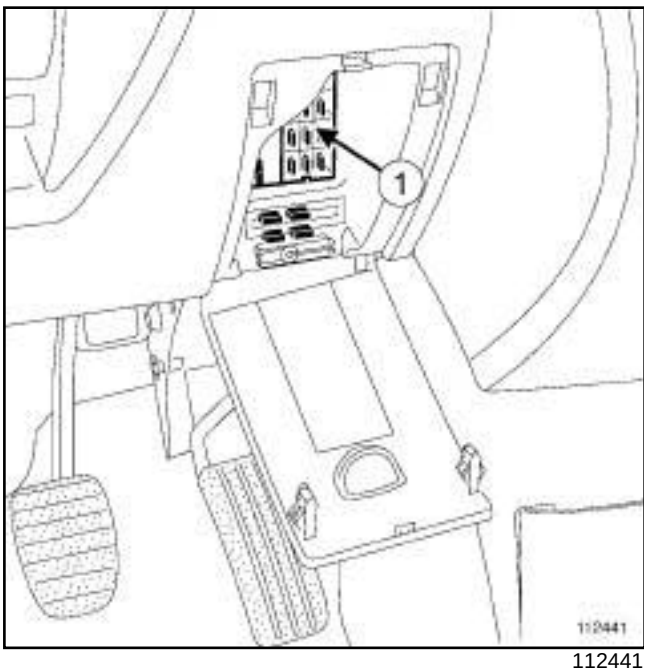
- the driving school repeater electrical control unit,
- the driving school repeater electrical control unit bolts.

II - FINAL OPERATION.

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

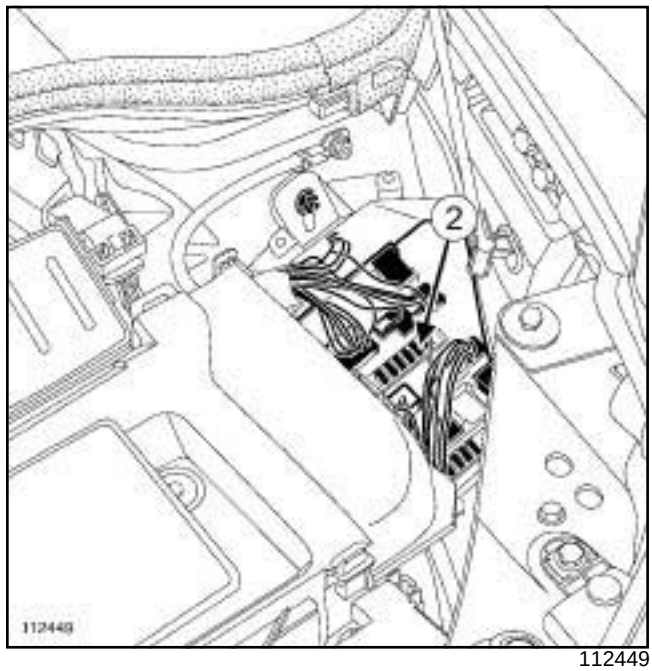
No.	Description
(1)	Passenger compartment fuse and relay box
(2)	Protection and Switching Unit
(3)	Power supply fuse board
(4)	UCH
(5)	Rain sensor
(6)	Wiper switch
(7)	Windscreen wiper motor
(8)	Rear screen wiper motor
(9)	Washer pump
(10)	Headlight washer pump

I - PASSENGER COMPARTMENT FUSE AND RELAY BOX



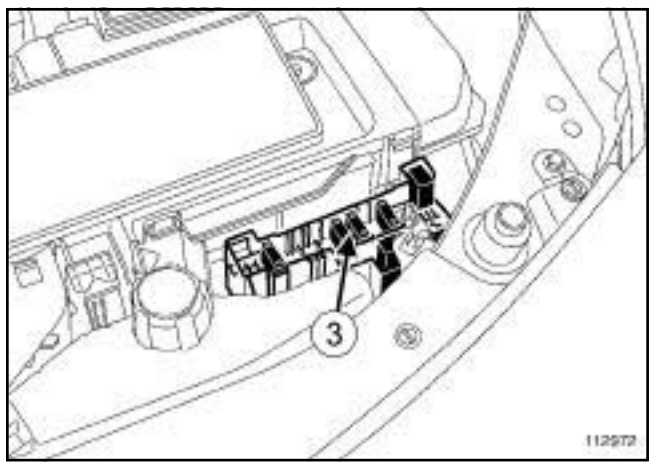
112441

II - PROTECTION AND SWITCHING UNIT



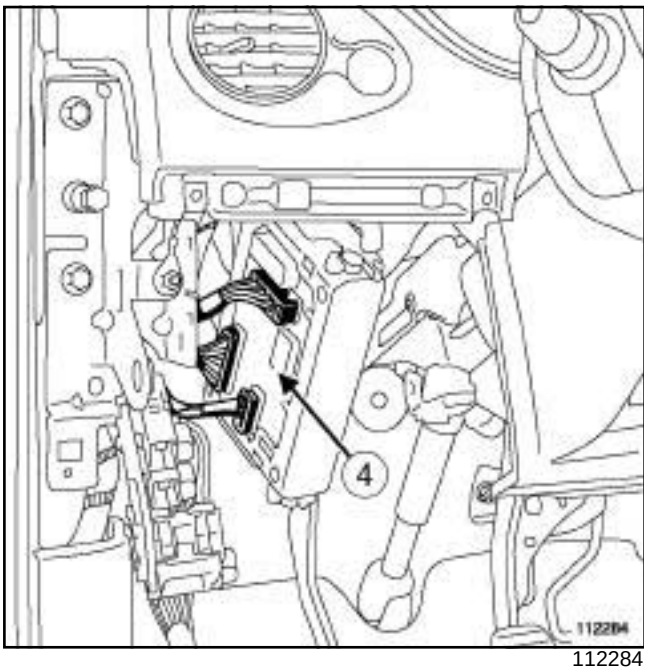
112449

III - POWER SUPPLY FUSE BOARD



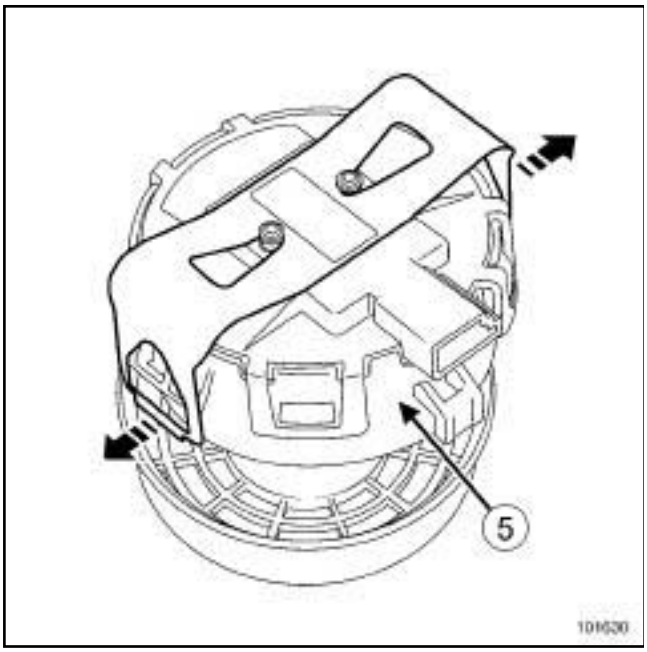
112972

IV - UCH



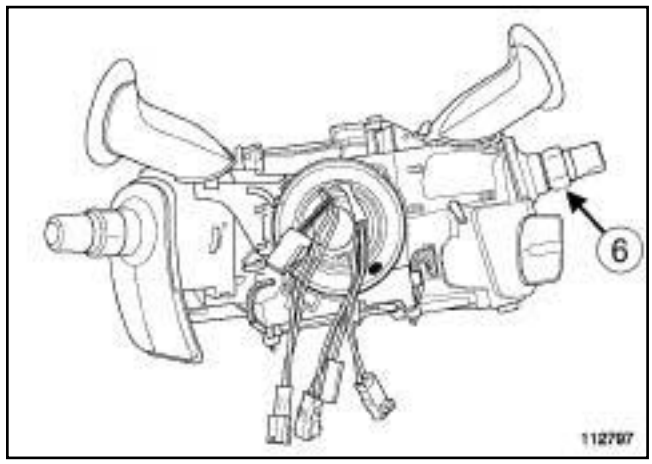
112284

V - RAIN AND LIGHT SENSOR



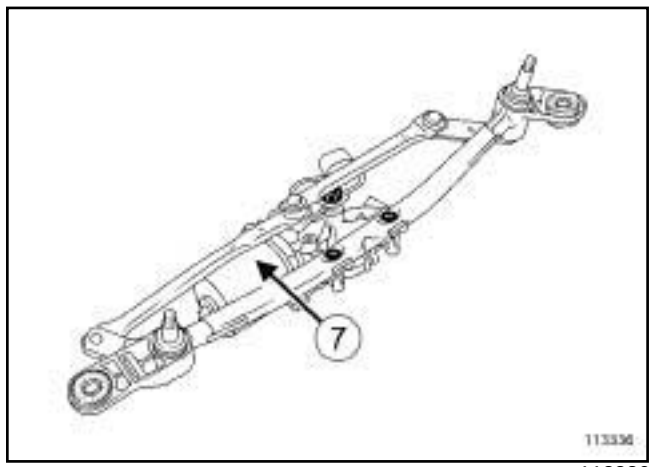
101630

VI - WIPER SWITCH



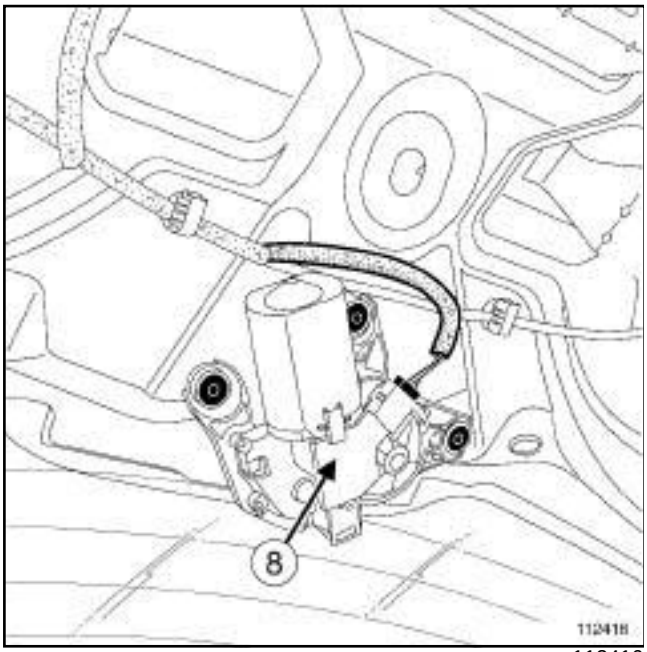
112797

VII - WINDSCREEN WIPER MOTOR



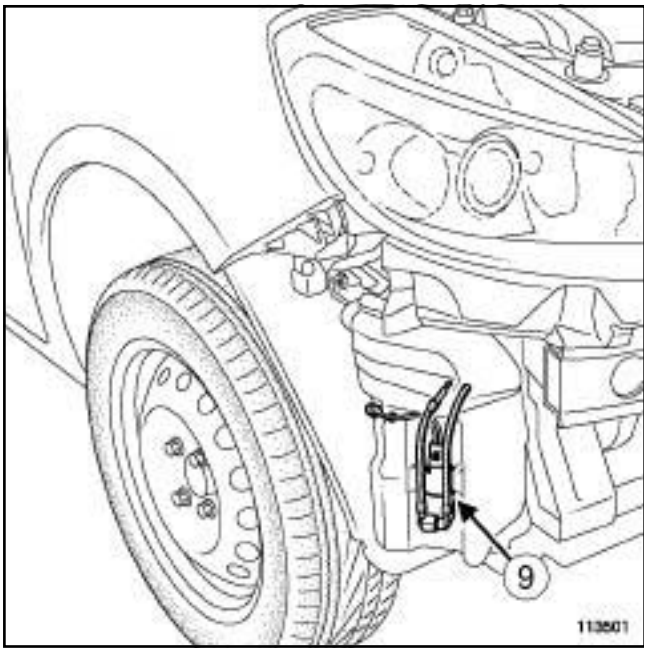
113336

VIII - REAR SCREEN WIPER MOTOR



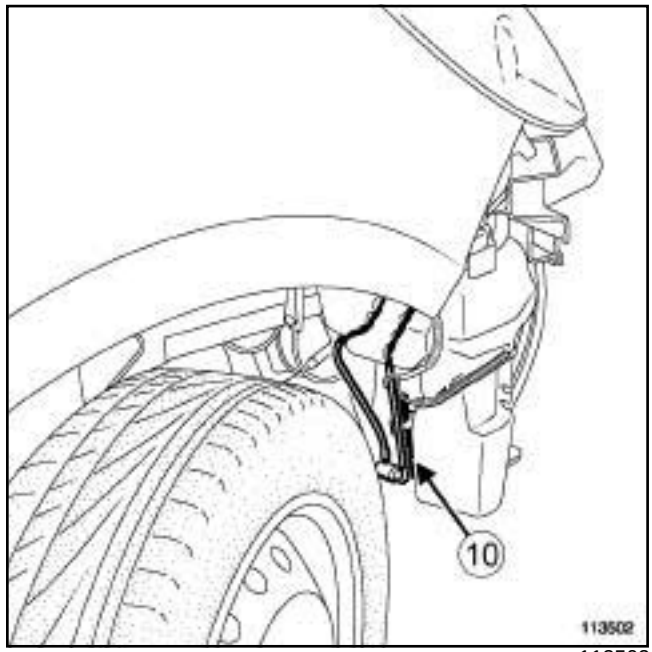
112416

IX - WASHER PUMP



113501

X - HEADLIGHT WASHER PUMP



113502

I - AUTOMATIC OPERATION

vehicles may be fitted with a wiper stalk with a sensitivity adjustment ring for the rain sensor.

In this instance the vehicles have:

- a sensor sensitivity ring on the wipers stalk,

- rain and light sensors.

To operate the system, move the wiper stalk to the « intermittent » position.

If switching the ignition off, reposition the stalk at « stop » then « intermittent » .

Note:

Vehicles not fitted with a rain sensor have an intermittent automatic system with a timing modification ring.

II - OPERATING NOTES

If there is too much stress on the wiper arms (e.g.: at high speed), the Protection and Switching unit automatically commands wiping at a lower speed.

If the wiper mechanism is jammed (e.g.: icy windscreen), the protection and switching unit automatically cuts the supply to the motor.

If the windscreen wipers have been requested (by the stalk or by the rain sensor), changing to reverse gear will activate the rear wiper.

Any movement of the wiper stalk overrides and cancels any UCH commands from the Protection and Switching Unit.

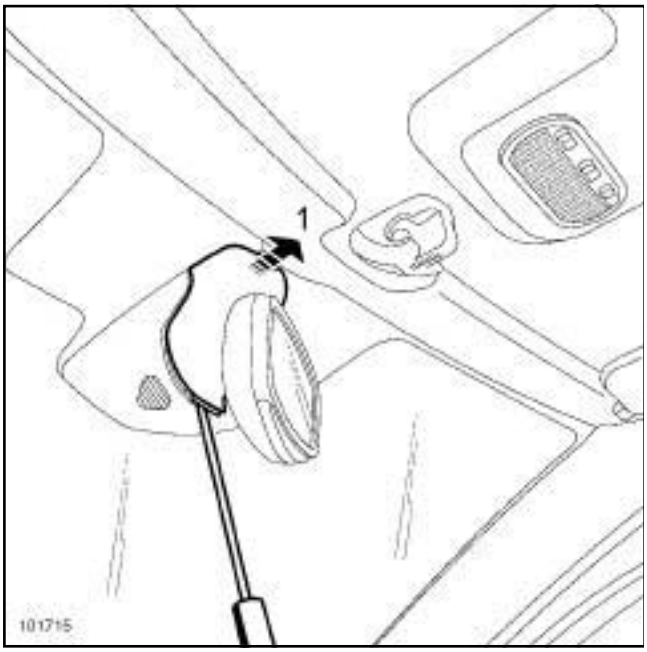
The intermittent rear wiper system is governed by the vehicle speed.

If the UCH does not detect any signal from the steering column control, the wiper speed selected before the fault is maintained.

The UCH has configurations which are specific to the washing - wiping function (see **Fault finding - Configurations and programming) (MR 394, 87B, Connection unit)**.

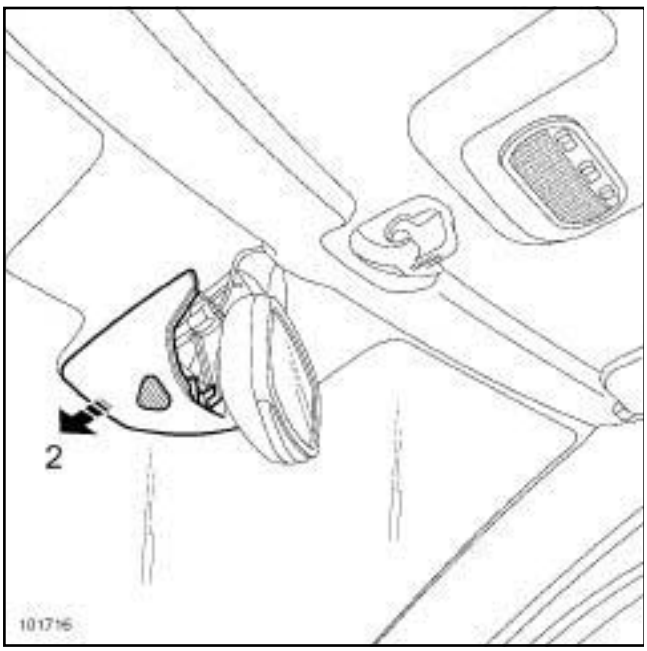
REMOVAL

I - REMOVAL PREPARATION OPERATION



101715

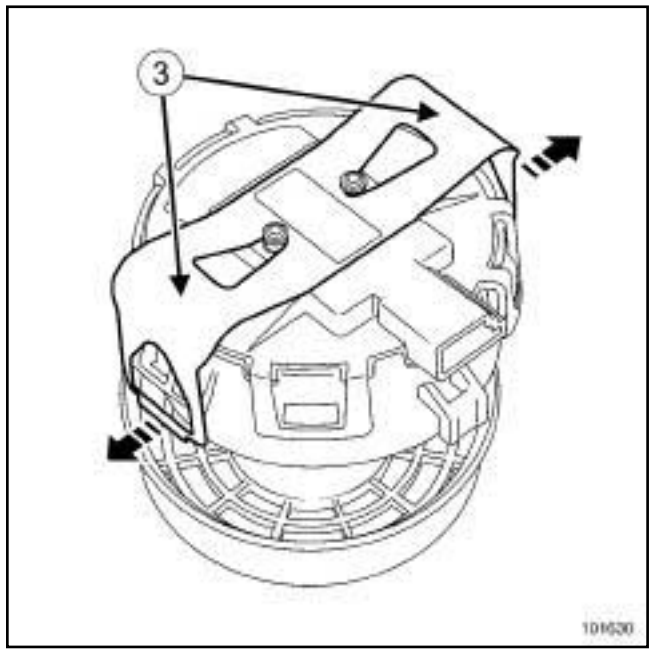
❏ Unclip the upper casing using a flat-blade screwdriver (**1**) .



101716

❏ Remove the lower cover (**2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101630

❏ Disconnect the connector.

❏ Unclip the two side clips (**3**) from the detector using a small screwdriver.

REFITTING

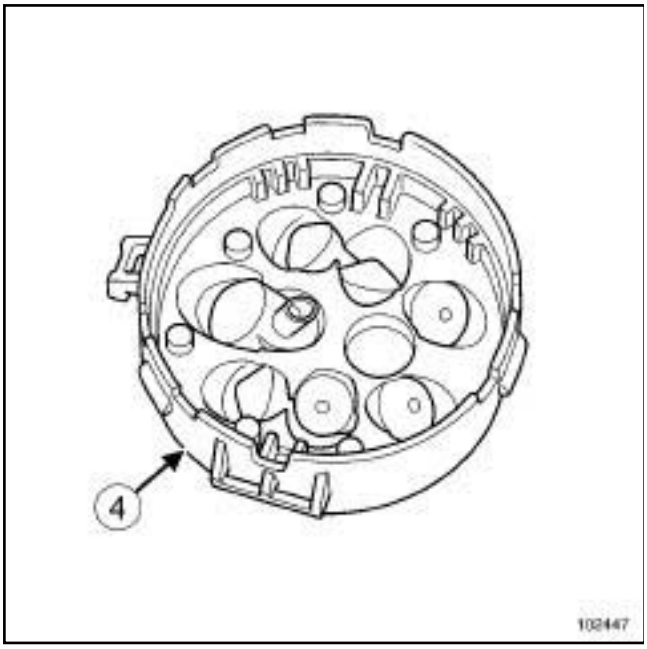
I - REFITTING PREPARATION OPERATION

❏ Clean the windscreen using a wooden spatula (so as not to scratch the surface).

WARNING

Refit the rain sensor in perfectly clean conditions: any dust or fibres could cause a fault.

Do not touch the electronic part of the sensor. Fit the sensor to the vehicle immediately after removing it from its packaging.



102447

❑

Note:

When replacing the windscreen (and keeping the rain and light sensor), it is essential to replace the sensor's adhesive base (**4**) .

The adhesive base is available separately from the Parts Department.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the sensor on the support.

❑ Clip the sensor on the support.

❑ Connect the connector.

III - FINAL OPERATION.

❑ Clip in place the interior rear-view mirror casings.

❑ Carry out an operating test:

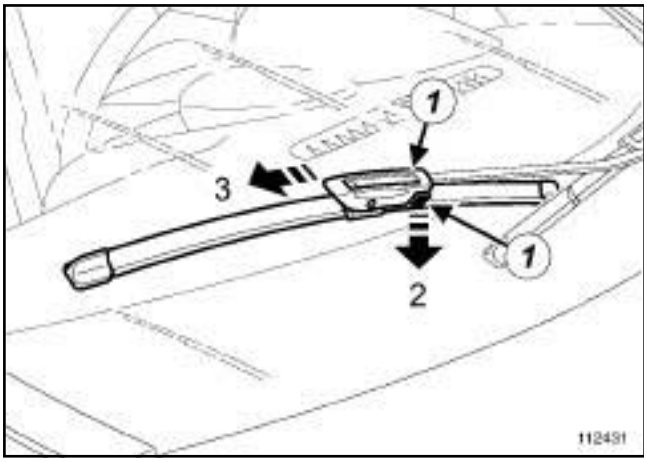
- select automatic wiping,

- spray water droplets onto the windscreen within the sensor's detection area,

- check that the automatic wiping function is operating correctly.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112431

❏ Squeeze the clips (**1**) and move downwards simultaneously (**2**) .

❏ Remove the blade (**3**) .

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Clip the blade onto the wiper arm.

Special tooling required	
Ele. 1294-01	Tool for removing wiper arms.

Tightening torques ▽	
wiper arm nuts	**21 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

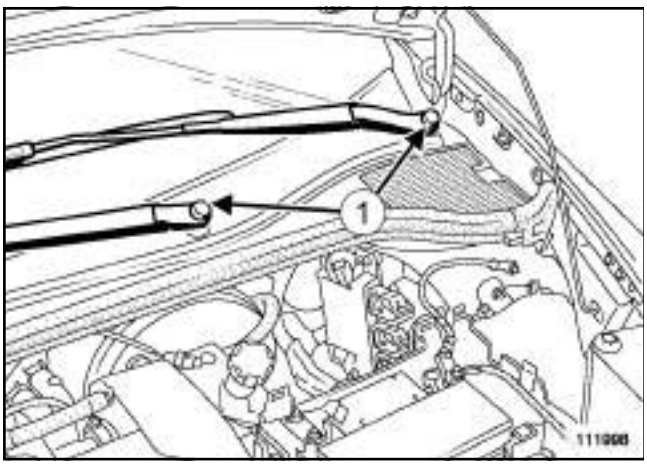
❏ Operate the wiper switch to set the wiper motor in the park position.

- move the switch from 0 to 1.
- move the switch from 1 to 0.

❏ Open the cover.

❏ Mark the position of the wiper arms.

II - OPERATION FOR REMOVAL OF PART CONCERNED



111998

❏ Remove:

- the nut covers (**1**) ,
- the wiper arm nuts (**1**) ,
- the wiper arms using the **(Ele. 1294-01)**

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the wiper arms in the position marked before removal,
- the wiper arm nuts.

❏ Torque tighten the **wiper arm nuts (21 Nm)**.

II - FINAL OPERATION.

❏ Refit the nut covers.

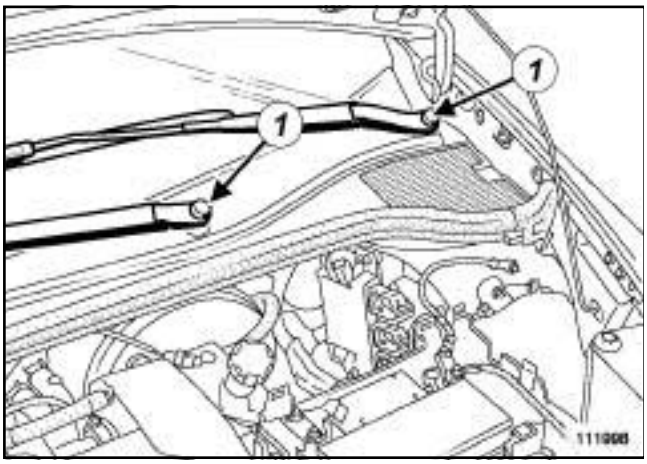
❏ Test that the wipers operate correctly.

❏ Close the bonnet.

Special tooling required	
Ele. 1294-01	Tool for removing wiper arms.

Tightening torques ▽	
wiper arm mounting nuts	**21 N.m**

REMOVAL



111998

❏ Move the wiper switch to set the wiper motor in the park position.

- move the switch from status 0 to 1.
- move the switch from 1 to 0.

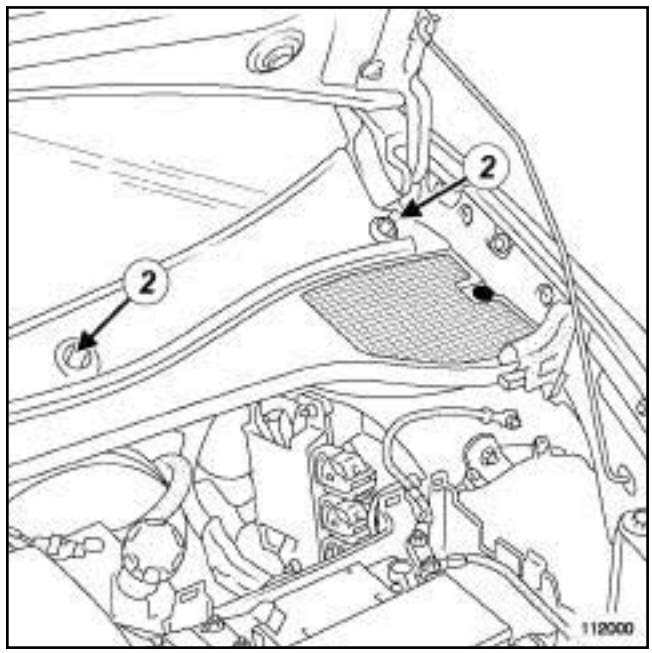
❏ Lift the bonnet.

❏ Note the position of the wiper arms.

❏ Remove:

- the covers (**1**) ,
- the wiper arm mounting nuts (**1**) ,
- the wiper arms using the **(Ele. 1294-01)**.

REFITTING



112000

❏ Refit the wiper arms in the position marked before removal.

❏ Torque tighten the **wiper arm mounting nuts (21 N.m)** (**2**) .

❏ Refit the covers (**2**) .

❏ Test that the wipers operate correctly.

Tightening torques ▽	
mechanism bolts	**8 Nm**
offset mechanism bolts	**8 Nm**
mechanism bolts	**8 Nm**
motor shaft linkage nut	**18 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

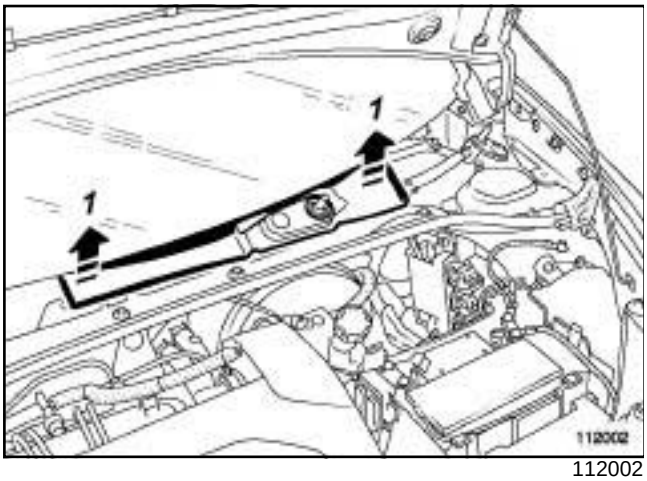
❏ Remove the wiper arms (see **85A**, **Wiping - Washing**, **Windscreen wiper arm: Removal - Refitting**, page **85A-8**) .

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

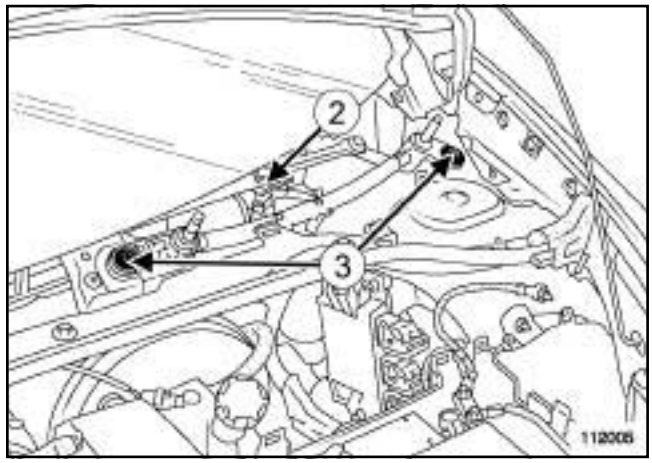
II - OPERATION FOR REMOVAL OF PART CONCERNED

LEFT-HAND DRIVE



112002

❏ Unclip the trim (**1**) under the scuttle panel grille.



112005

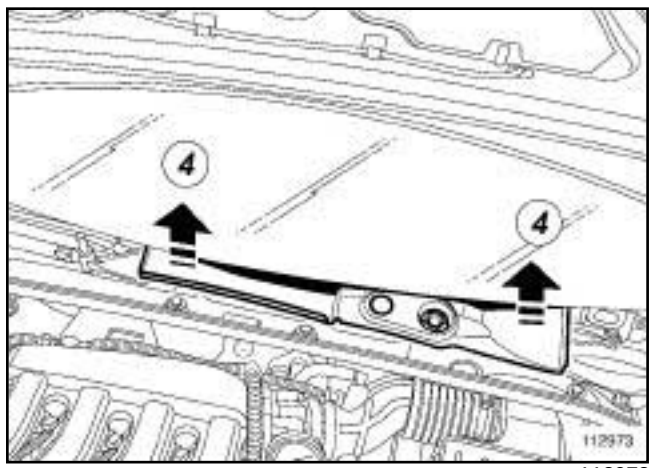
❏ Note the position of the motor shaft linkage (**2**) in relation to the mechanism.

❏ Remove the wiper mechanism bolts (**3**) .

❏ Partially remove the mechanism and disconnect the connector.

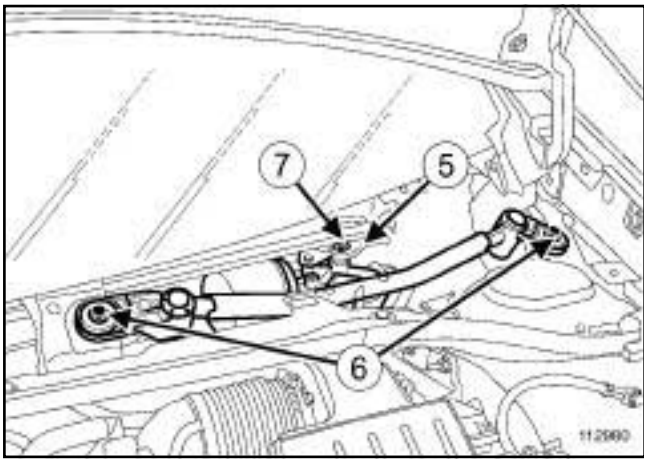
❏ Remove the mechanism.

RIGHT-HAND DRIVE



112973

❏ Unclip the trim (**4**) under the scuttle panel grille.



112980

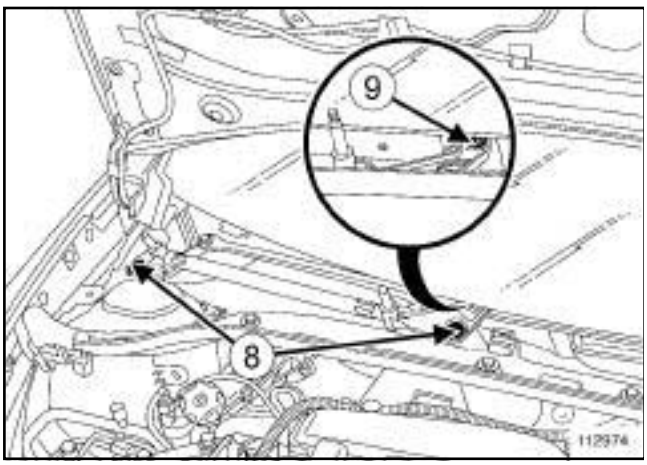
❏ Note the position of the motor shaft linkage (**5**) in relation to the mechanism.

❏ Remove:

- the motor shaft linkage nut (**7**) ,
- the mechanism bolts (**6**) .

❏ Partially remove the mechanism and disconnect the connector.

❏ Remove the mechanism.



112974

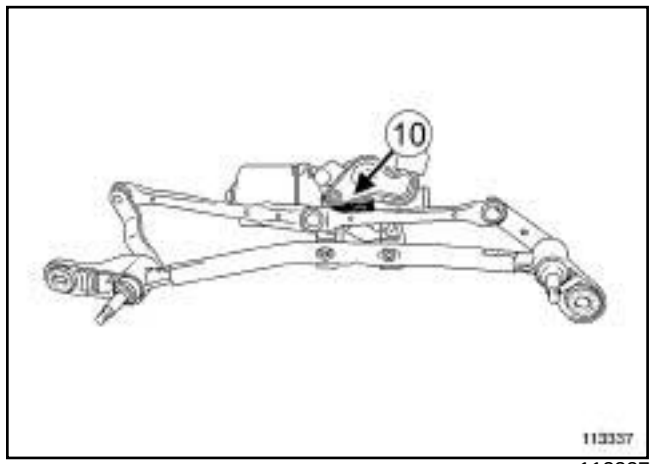
❏ Remove the offset mechanism bolts (**8**) and (**9**) .

❏ Remove the linkage.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

LEFT-HAND DRIVE



113337

❏ Check that the motor shaft linkage (**10**) is correctly positioned.

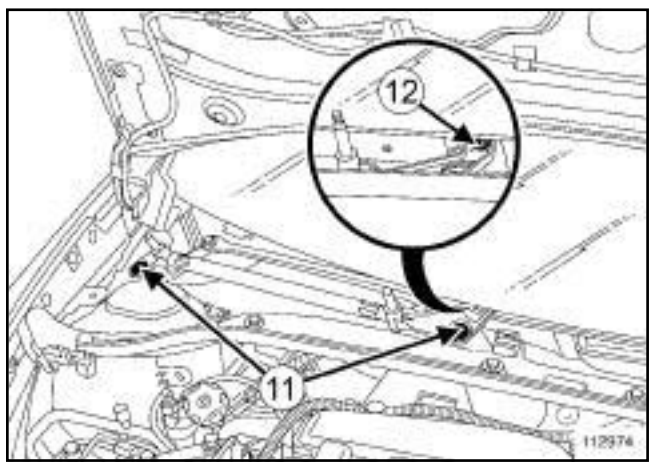
❏ Connect the connector.

❏ Refit the mechanism.

❏ Torque tighten the **mechanism bolts (8 Nm)**.

❏ Refit the trim.

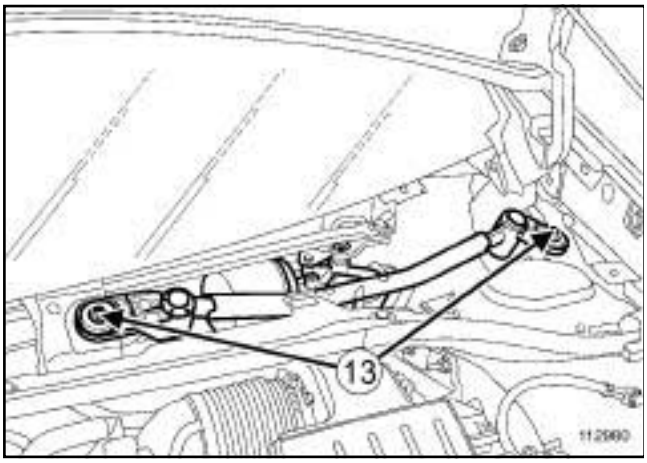
RIGHT-HAND DRIVE



112974

❏ Refit the offset mechanism.

❏ Torque tighten the **offset mechanism bolts (8 Nm)** (**11**) and (**12**) .

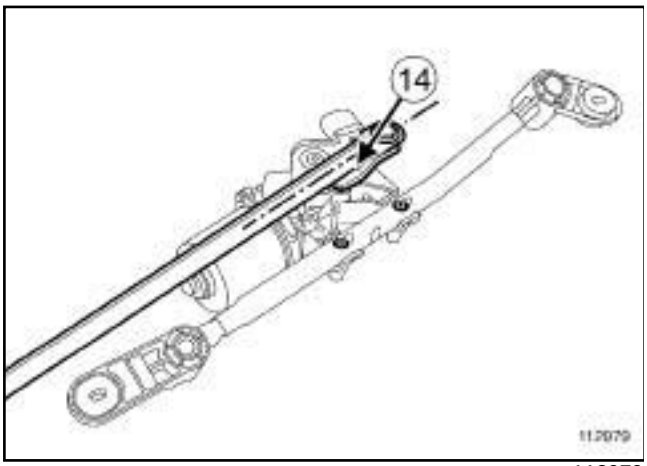


112980

❏ Connect the connector.

❏ Refit the mechanism.

❏ Torque tighten the **mechanism bolts (8 Nm)** (**13**) .



112979

❏ Refit the motor shaft linkage (**14**) in the position noted before removal.

❏ Torque tighten the **motor shaft linkage nut (18 Nm)**.

❏ Refit the trim under the scuttle panel grille.

FINAL OPERATION.

❏ Refit the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Operate the wiper switch to set the wiper motor in the park position.

- move the switch from status 0 to 1.
- move the switch from 1 to 0.

❏ Refit the wiper arm (see **85A**, **Wiping - Washing**, **Windscreen wiper arm: Removal - Refitting**, page **85A-8**) .

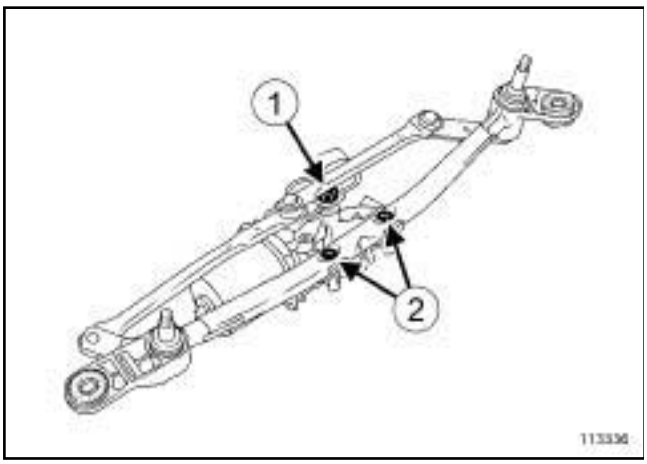
Tightening torques ▽	
motor bolts	**9 N.m**
motor shaft linkage nut	**18 Nm**
motor bolts	**9 N.m**
motor shaft linkage nut	**18 Nm**

I - REMOVAL PREPARATION OPERATION

❑ Remove the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

LEFT-HAND DRIVE



113336

❑

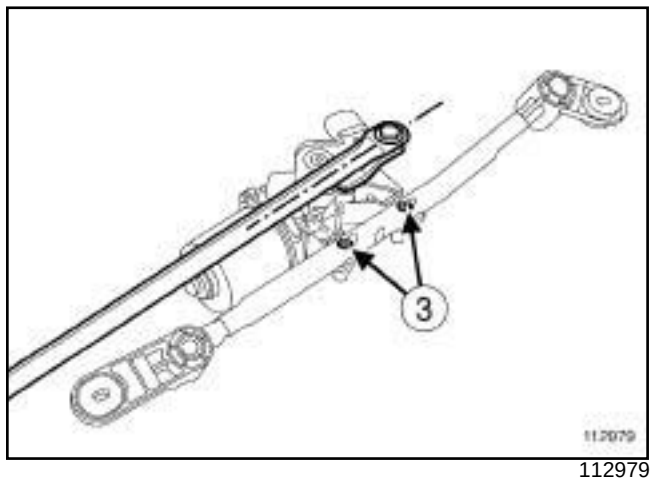
Note:

Mark the position of the motor shaft linkage in relation to the mechanism before removing it.

❑ Remove:

- the motor bolts (**1**) and (**2**) on the mechanism,
- the motor.

RIGHT-HAND DRIVE



112979

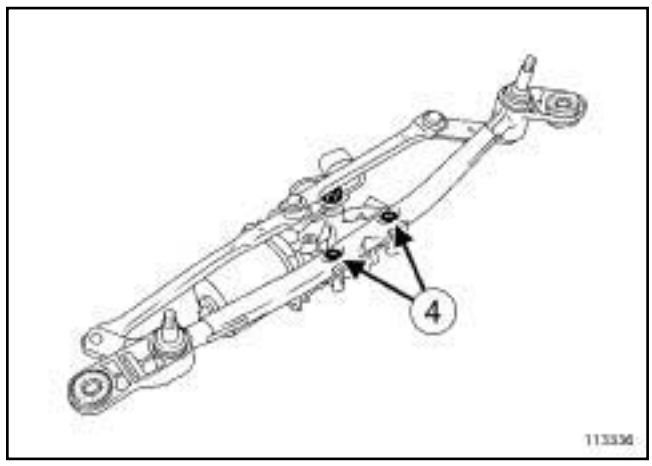
❑ Remove:

- the motor bolts (**3**) on the mechanism,
- the motor.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

LEFT-HAND DRIVE

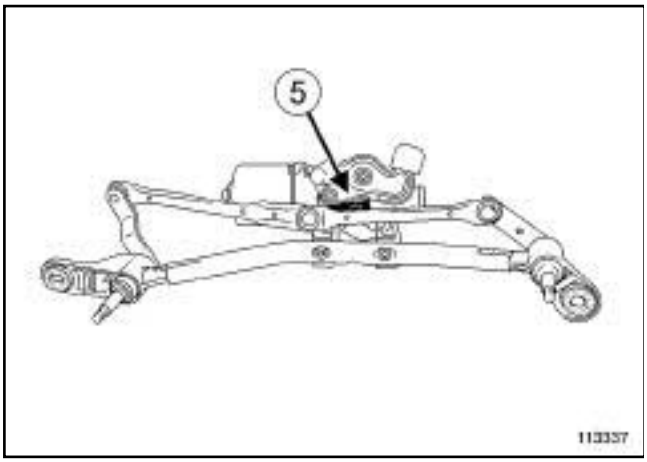


113336

❑ refit:

- the motor.
- the bolts (**4**) .

❑ Torque tighten the **motor bolts (9 N.m)** (**4**) .

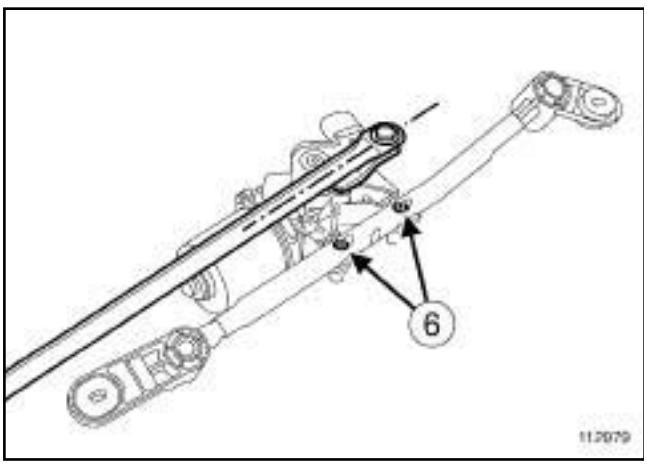


113337

❑ Position the motor shaft linkage (**5**) as shown in the illustration above.

❑ Torque tighten the **motor shaft linkage nut (18 Nm)**.

RIGHT-HAND DRIVE



112979

❑ Refit:

- the motor.
- the motor bolts (**6**) on the mechanism.

❑ Torque tighten the **motor bolts (9 N.m)** (**6**) .

❑ Align the motor shaft linkage as shown in the illustration above.

❑ Torque tighten the **motor shaft linkage nut (18 Nm)**.

FINAL OPERATION.

❑

Note:

Check that the motor is correctly positioned in the park position after tightening the nut.

❑ Refit the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) .

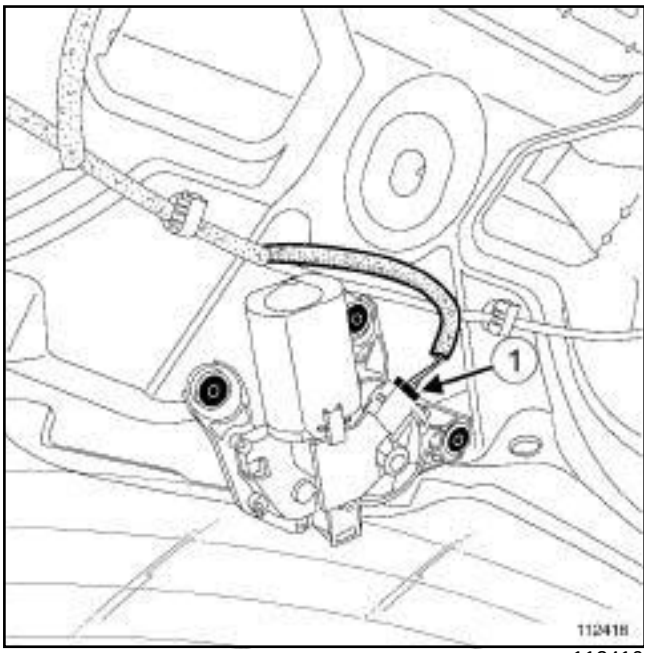
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the rear screen wiper arm (see **85A**, **Wiping - Washing**, **Rear screen wiper arm: Removal - Refitting**, page **85A-20**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112416

❑ Disconnect the connector (**1**) .

❑

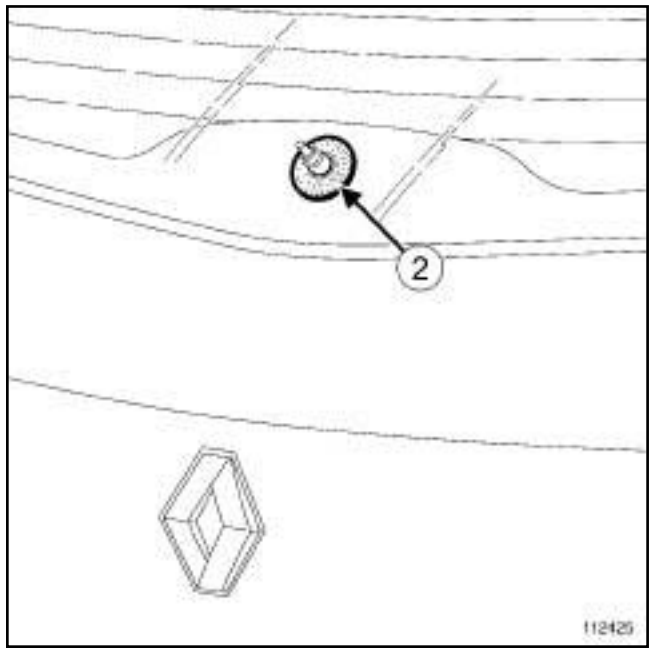
> Note:
>
> Be careful not to damage the outer skin and the tailgate box when removing the rivets. Recover the rivet bodies from the tailgate box section.

❑ Drill out the rivets(see **MR 400, 40A, General information**).

❑ Remove the motor.

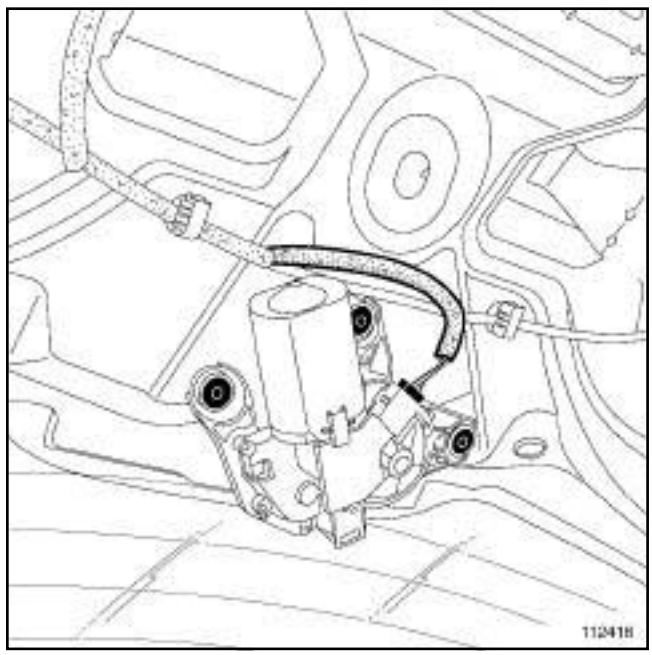
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



112425

❑ Replace the seal (**2**) if necessary.



112416

❑ Position the motor.

❑ Rivet the engine (see **MR 400, 40A, General information**) (Rivets Part no. **77 03 072 362**).

❑ Connect the motor connector.

II - FINAL OPERATION.

❑ Refit:

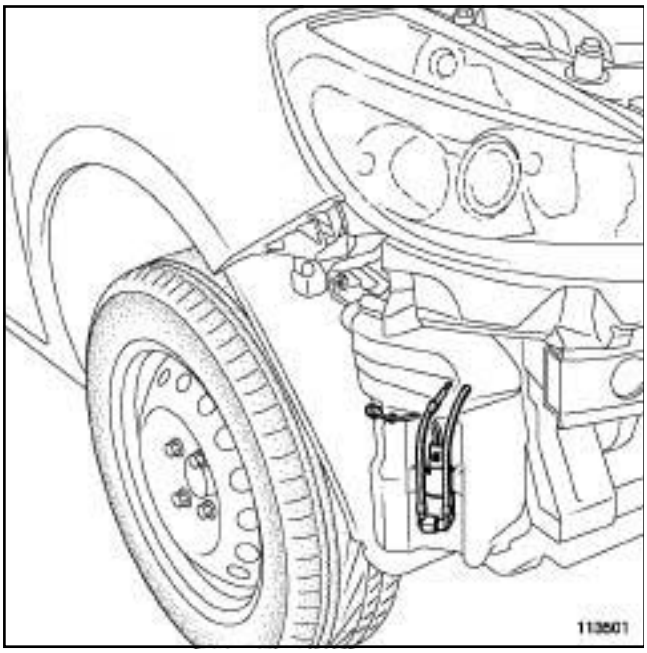
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the rear screen wiper arm (see **85A**, **Wiping - Washing**, **Rear screen wiper arm: Removal - Refitting**, page **85A-20**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - REMOVAL OPERATION FOR PART CONCERNED



113501

❑

Note:
Mark the routing of the supply pipes and wiring.

❑ Unclip the supply pipes.

❑ Disconnect the connector.

❑ Unclip the windscreen washer pump.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the windscreen washer pump.

❑ Connect the connector.

❑ Clip on the supply pipes.

II - FINAL OPERATION.

❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

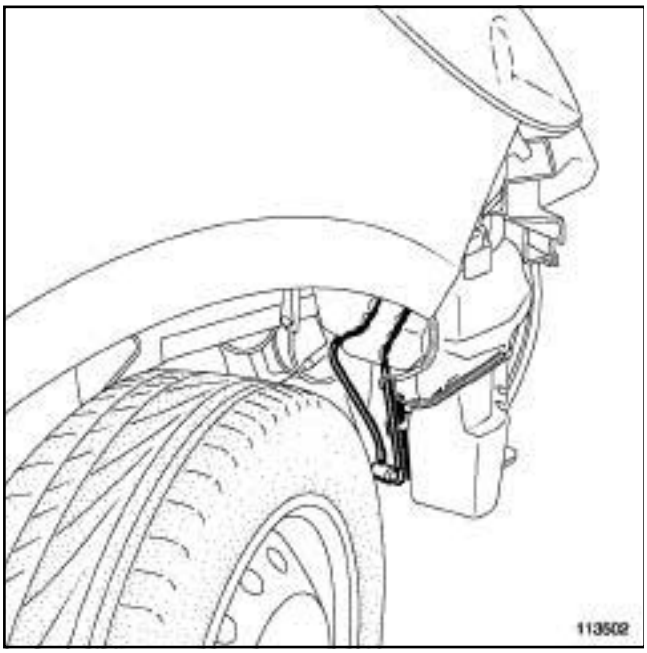
HEADLIGHT WASHERS WITH BLADE

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - REMOVAL OPERATION FOR PART CONCERNED



113502

❑ Unclip the supply pipes.

❑ Disconnect the connector.

❑ Unclip the headlight washer pump.

Note:
Mark the routing of the supply pipes and wiring.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip on the headlight washer pump.

❑ Connect the connector.

❑ Clip on the supply pipes.

II - FINAL OPERATION.

❑ Refit the front wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

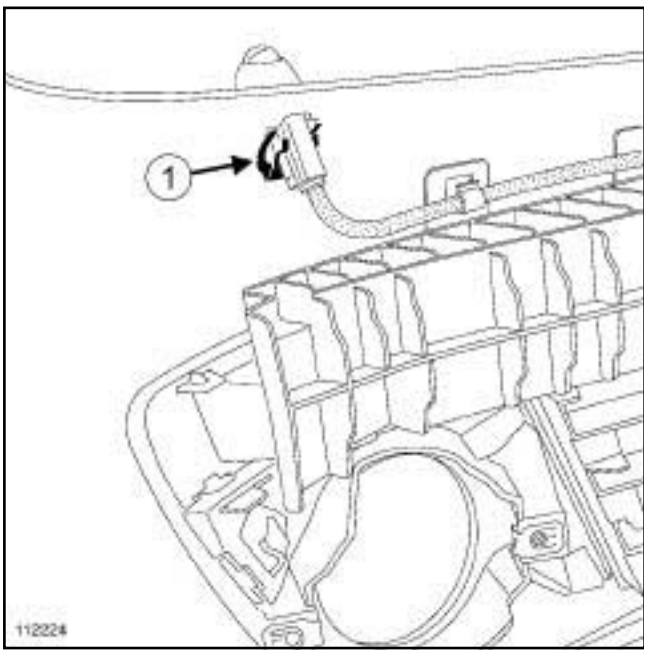
HEADLIGHT WASHERS WITH BLADE

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112224

❑ Remove clip (**1**) .

❑ Disconnect the supply pipe.

❑ Remove the jet.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the jet.

❑ Connect the supply pipe.

❑ Refit the clip.

II - FINAL OPERATION.

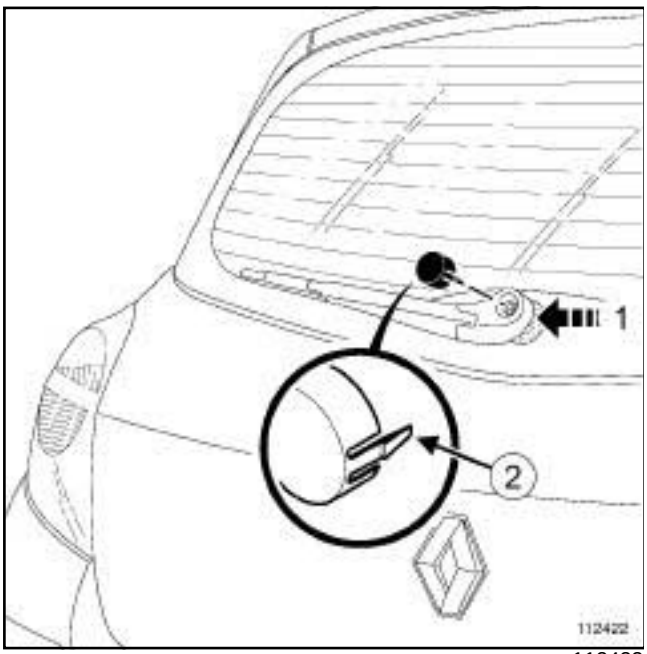
❑ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

Special tooling required	
Ele. 1781	Tool for removing windscreen wiper arms

Tightening torques ▽	
wiper arm nut	**12 N.m**

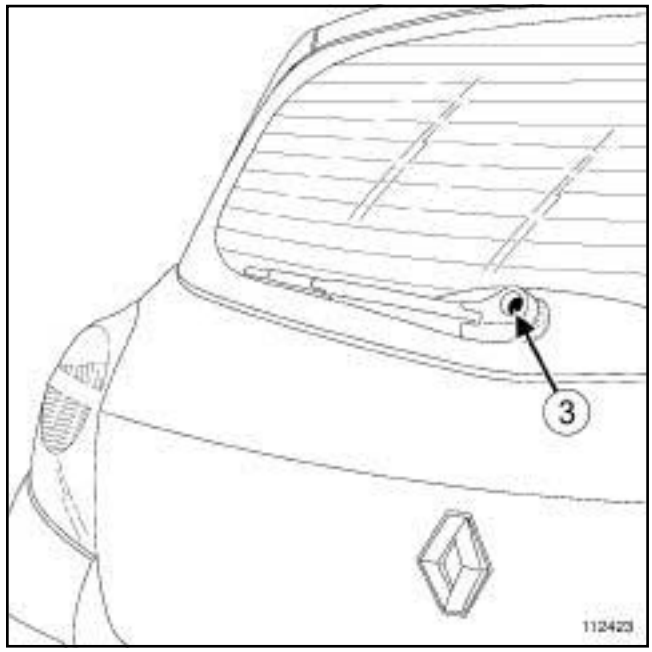
REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112422

❑ Unclip the blanking cover by applying slight pressure (**1**) on the clip (**2**) .



112423

❑ Mark the position of the rear screen wiper arm before removing it.

❑ Remove:

- the wiper arm nut (**3**) ,
- the wiper arm using the **(Ele. 1781)**.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❑

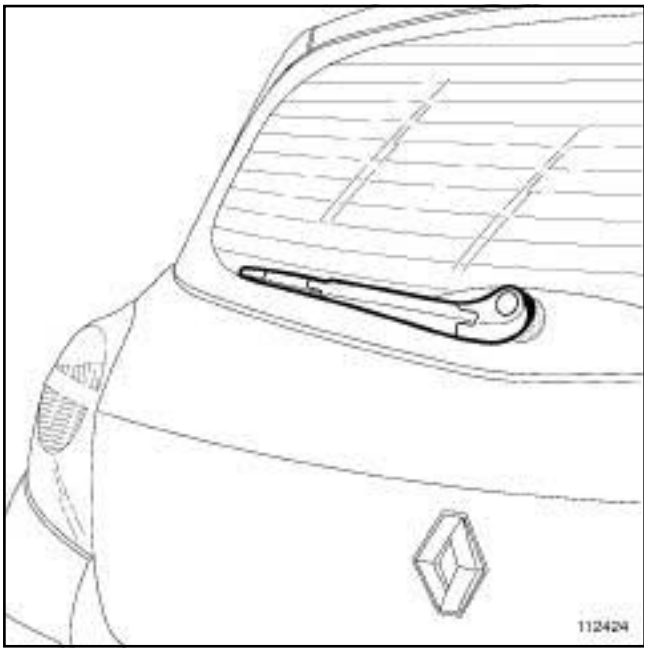
> Note:
>
> It is essential to initialise the rear screen wiper motor in the park position.

❑ Operate the wiper switch to set the wiper motor in the park position.

- move the switch from 0 to 1.
- move the switch from 1 to 0.

❑ Check that the wiper switch remains at position 0.

❑ Clean the motor shaft splines.



112424

- ❏ Refit the wiper arm in the rest position.
- ❏ Torque tighten the **wiper arm nut (12 N.m)**.
- ❏ Refit the blanking cover.

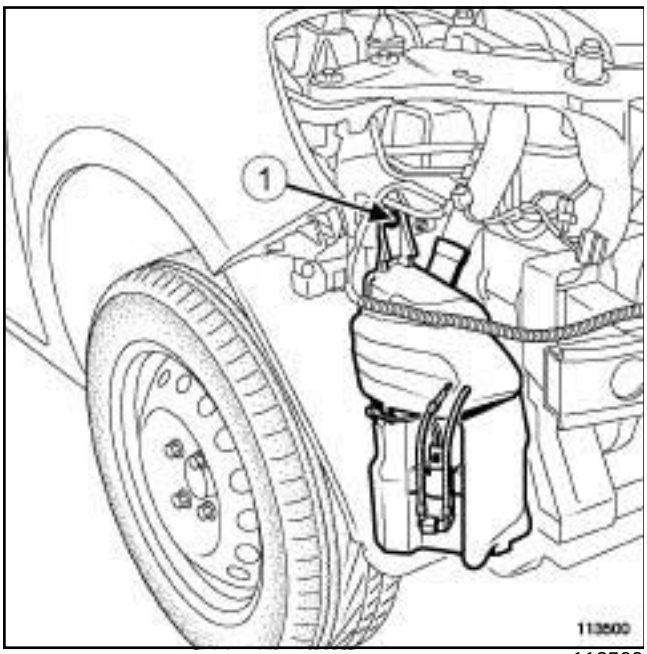
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) .

II - REMOVAL OPERATION FOR PART CONCERNED



113500

❏ Unclip:

- the filler neck,
- the supply pipes,
- the connector,

❏ Remove:

- the bolt (**1**) ,
- the bottle.

Note:
Mark the routing of the supply pipes and wiring.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the bottle,
- bolt ***(1)*** .

❏ Clip:

- the filler neck,
- the connector,
- the supply pipes.

II - FINAL OPERATION.

❏ Refit:

- the headlight (see **80B**, **Headlights**, **Headlight: Removal - Refitting**, page **80B-7**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

Radio: List and location of components

I - LIST OF COMPONENTS

The radio system comprises:

- a radio control satellite (see **86A**, **Radio**, **Radio control satellite: Removal - Refitting**, page **86A-19**)
- a radio aerial (see **86A**, **Radio**, **Radio aerial: Removal - Refitting**, page **86A-11**)
- a radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**)
- a display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**)
- tweeters (see **86A**, **Radio**, **Tweeter: Removal - Refitting**, page **86A-13**)
- front speakers (see **86A**, **Radio**, **Front speakers: Removal - Refitting**, page **86A-14**)
- rear speakers (see **86A**, **Radio**, **Rear speakers: Removal - Refitting**, page **86A-15**)

RADIO NO. 05

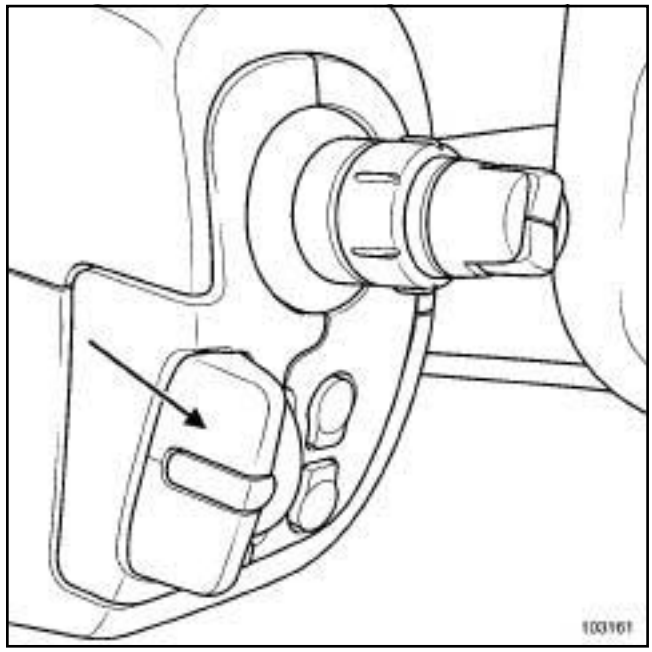
- a receiver (see **86A**, **Radio**, **Receiver: Removal - Refitting**, page **86A-20**)

RADIO NO. 08

- an offset multimedia socket (see **86A**, **Radio**, **Offset multimedia socket: Removal - Refitting**, page **86A-21**)
- an offset multimedia socket computer (see **86A**, **Radio**, **Offset multimedia socket computer: Removal - Refitting**, page **86A-23**)

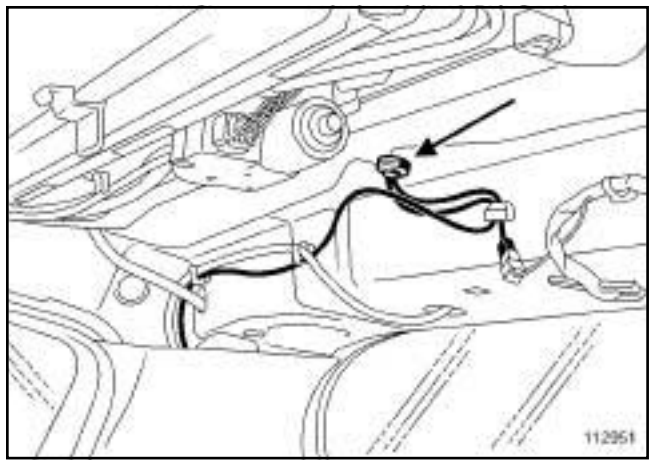
II - POSITION OF THE COMPONENTS

Radio control satellite



103161

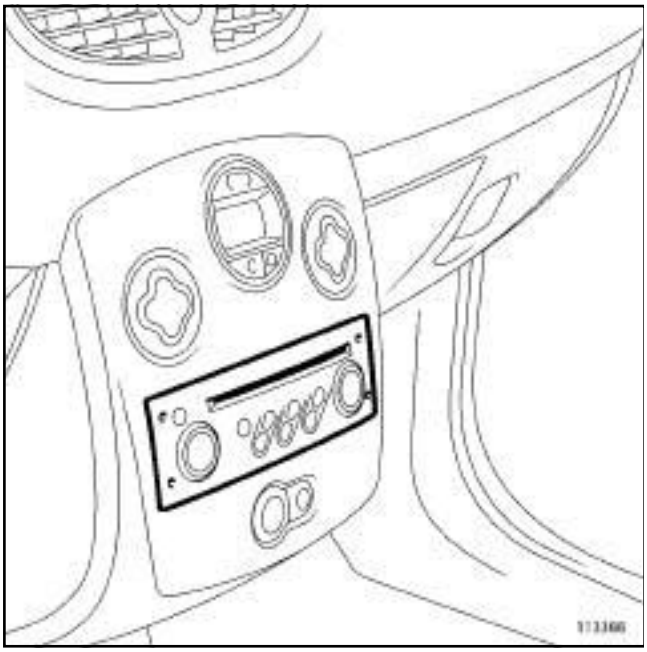
Radio aerial



112951

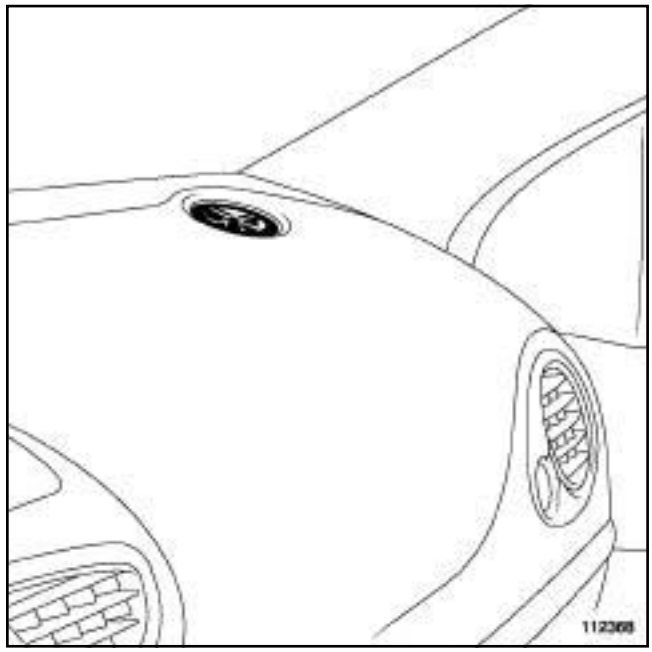
The radio aerial is located on the roof in the rear section.

Radio



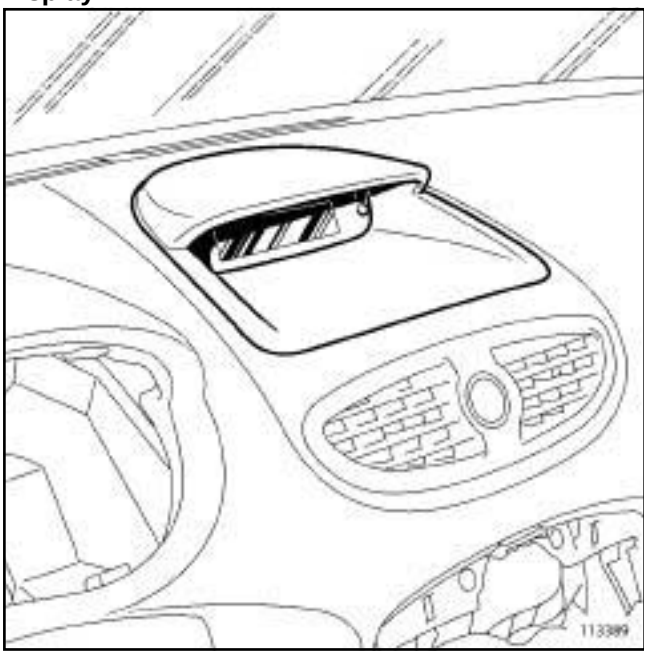
113388

Tweeter



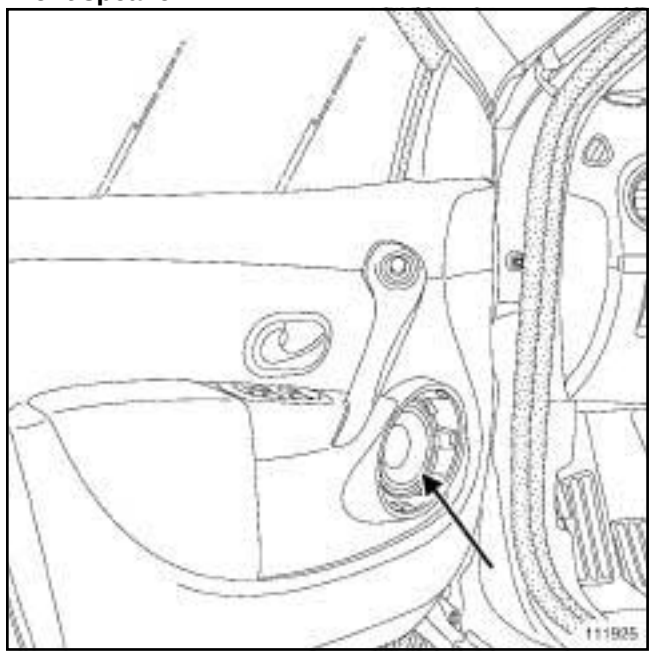
112368

Display



113389

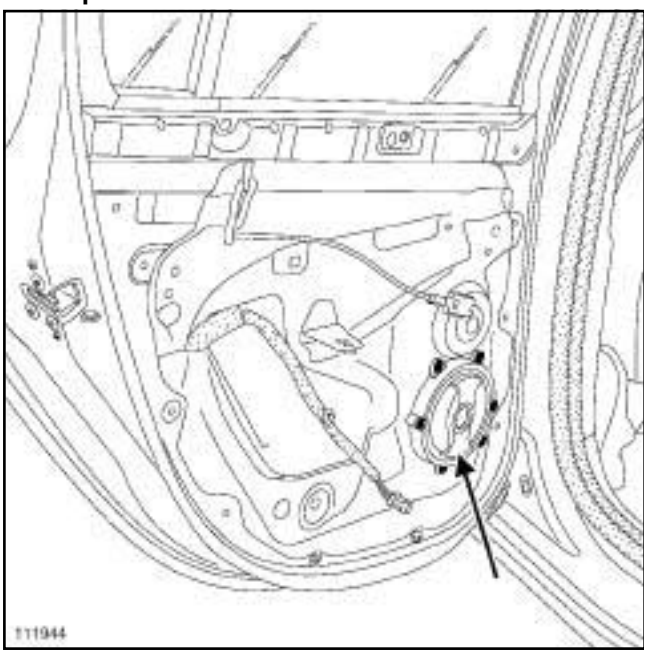
Front speaker



111925

B85 or K85

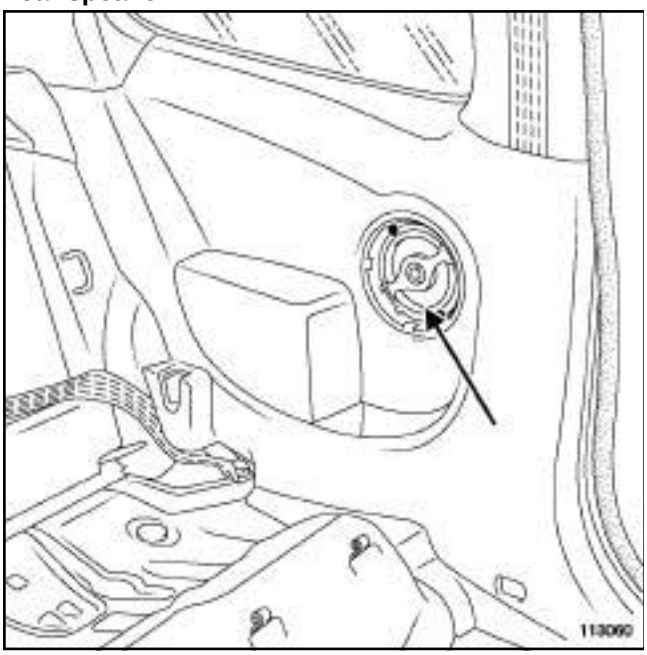
Rear speaker



111944

C85 or S85

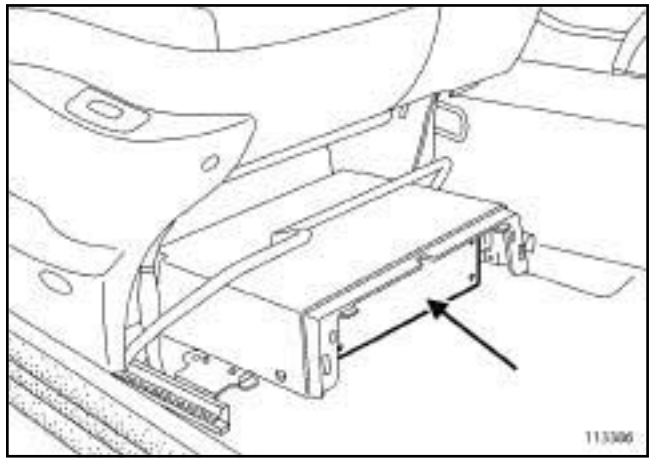
Rear speaker



113060

RADIO NO. 05

Tuner-amplifier

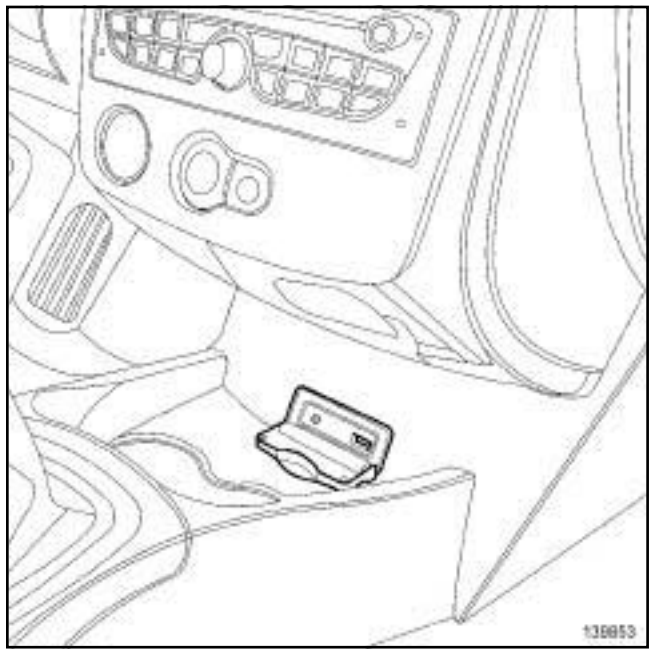


113386

The receiver is located under the front right-hand seat.

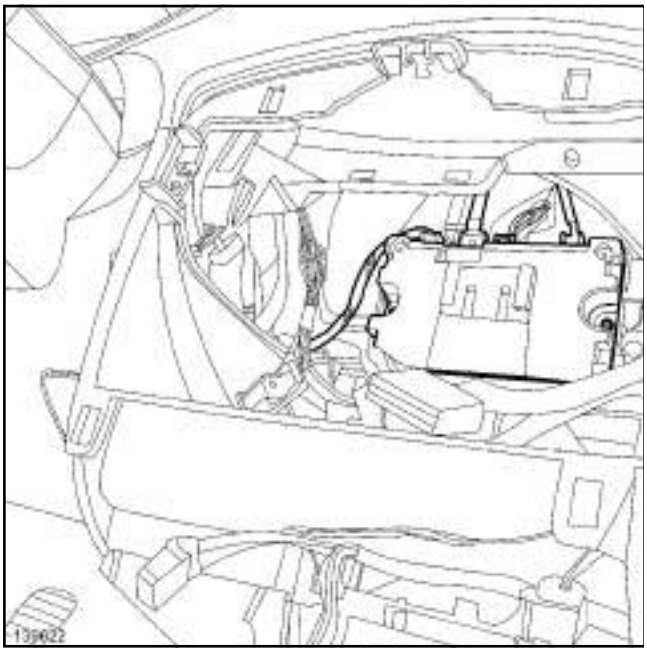
RADIO NO. 08

Offset multimedia socket



139853

Offset multimedia socket computer



139622

The offset multimedia socket computer is located behind the dashboard centre front panel.

The radio is protected by a four-digit code.

ENTERING THE RADIO ANTI-THEFT CODE

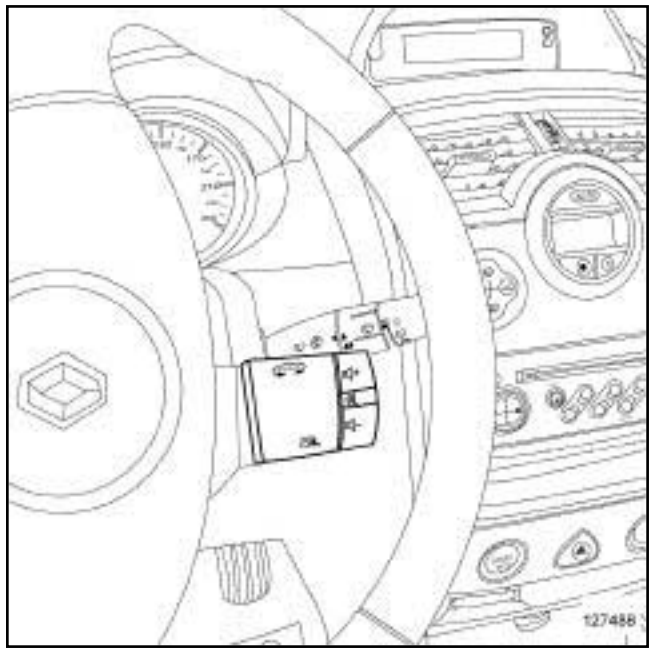
RADIO NO. 01

❏ Switch on the ignition.

❏ Switch the radio on.

❏ Wait until **0000** appears on the central display and the first **0** flashes.

1 - Entering the code using the steering column control



127488

❏ Display the first digit by pressing the + or - buttons on the steering column switch.

Confirm this digit by pressing the wheel on the steering column control.

Press on the right-hand button of the steering column control to move on to the second digit.

❏ Display the second digit by pressing the + or - buttons on the steering column control.

Confirm this digit by pressing the wheel on the steering column control.

Press on the right-hand button of the steering column control to move on to the third digit.

❏ Display the third digit by pressing the + or - buttons on the steering column control.

Confirm this digit by pressing the wheel on the steering column control.

Press on the right-hand button of the steering column control to move on to the fourth digit.

❏ Display the fourth digit by pressing the + or - buttons on the steering column control.

Confirm this digit by pressing the wheel on the steering column control.

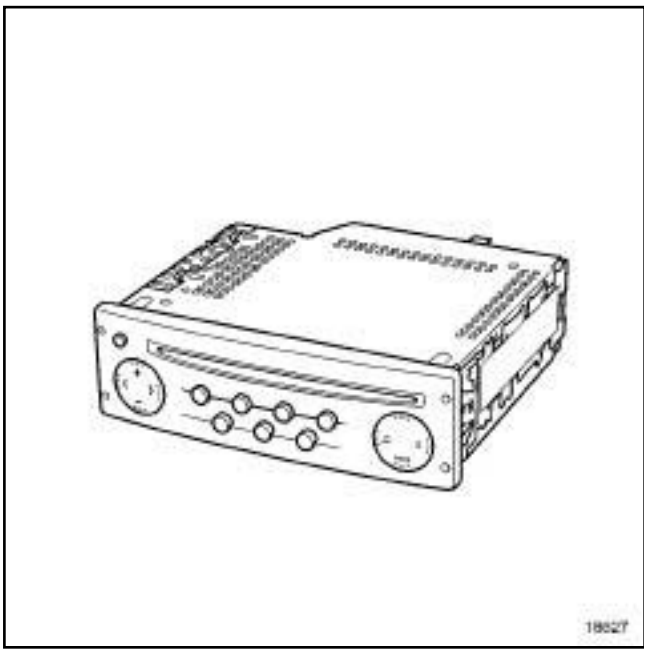
Keep the wheel pressed to transfer this code to the radio. As soon as the operation is complete, the confirmation beep will sound.

❏ If the code entered is correct, the radio operates.

❏ If the code is incorrect , the word **CODE** appears on the display.

❏ Wait until **0000** appears on the screen and repeat the operations again.

2 - Entering the code using the radio



18627

❏ Press on button 1 of the keypad until the desired number is obtained for the first digit.

Press on button 2 of the keypad until the desired number is obtained for the second digit.

Press on button 3 of the keypad until the desired number is obtained for the third digit.

Press on button 4 of the keypad until the desired number is obtained for the fourth digit.

❏ As soon as the code is correctly displayed, press and hold button 6 on the keypad to transfer this code to the radio. As soon as the operation is complete, the confirmation beep will sound.

❏ If the code entered is correct, the radio operates.

❏ If the code is incorrect , the word **CODE** appears on the display.

❏ Wait until **0000** appears on the screen and repeat the operations again.

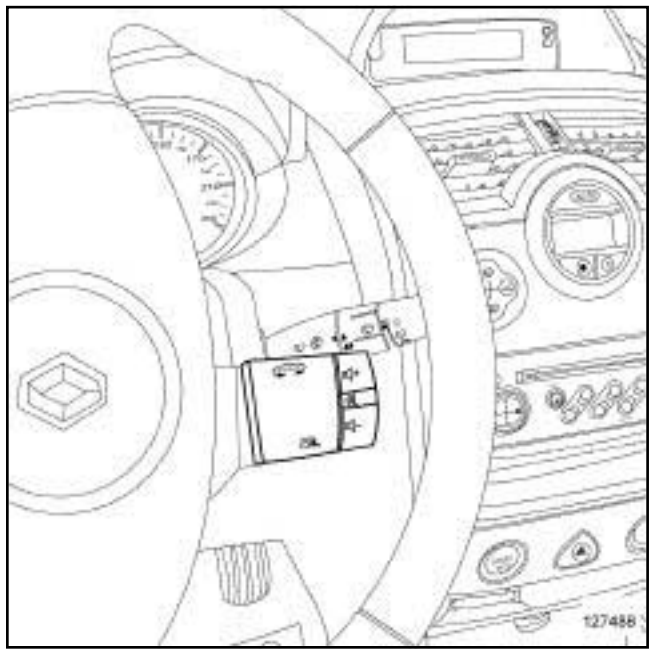
RADIO NO. 02 or RADIO NO. 03 or RADIO NO.04 or RADIO NO. 05 or RADIO NO. 06 or RADIO NO. 07 or RADIO NO. 08

❏ Switch on the ignition.

❏ Switch the radio on.

❏ Wait until **RADIO CODE 0000** appears on the central display and the first **0** flashes.

3 - Entering the code using the steering column control



127488

❏ Display the first digit by pressing the + or - buttons on the steering column switch.

Press on the right-hand button of the steering column control to move on to the second digit.

❏ Display the second digit by pressing the + or - buttons on the steering column control.

Press on the right-hand button of the steering column control to move on to the third digit.

❏ Display the third digit by pressing the + or - buttons on the steering column control.

Press on the right-hand button of the steering column control to move on to the fourth digit.

❏ Display the fourth digit by pressing the + or - buttons on the steering column control.

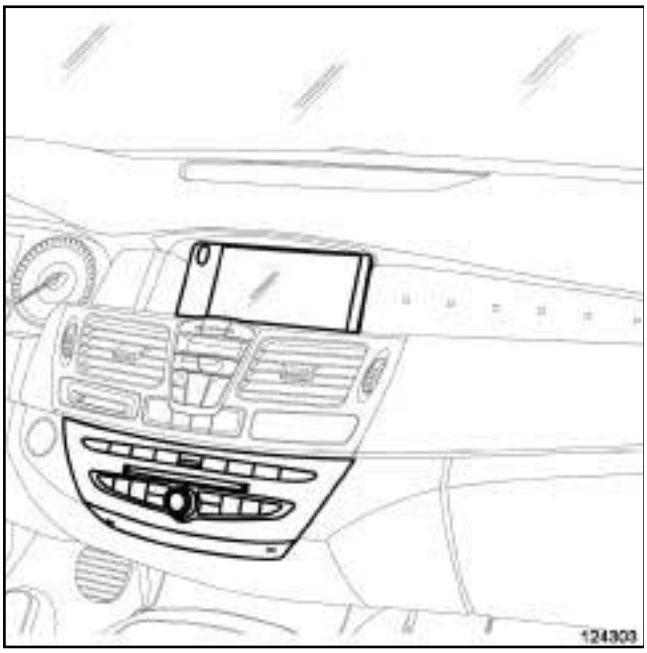
Keep the OK button pressed to transfer this code to the radio. As soon as the operation is complete, the confirmation beep will sound.

❏ If the code entered is correct, the radio operates.

❏ If the code is incorrect, the words **ERROR CODE** appear on the display.

❏ Wait until **RADIO CODE 0000** appears on the screen and repeat the operations again.

4 - Entering the code using the rotary button on the radio



124303

❏ Display the first digit by turning the rotary button on the radio.

Press the right-hand button to move on to the second digit.

❏ Display the second digit by turning the rotary button on the radio.

Press the right-hand button to move on to the third digit.

❏ Display the third digit by turning the rotary button on the radio.

Press the right-hand button to move on to the fourth digit.

❏ Display the fourth digit by turning the rotary button on the radio.

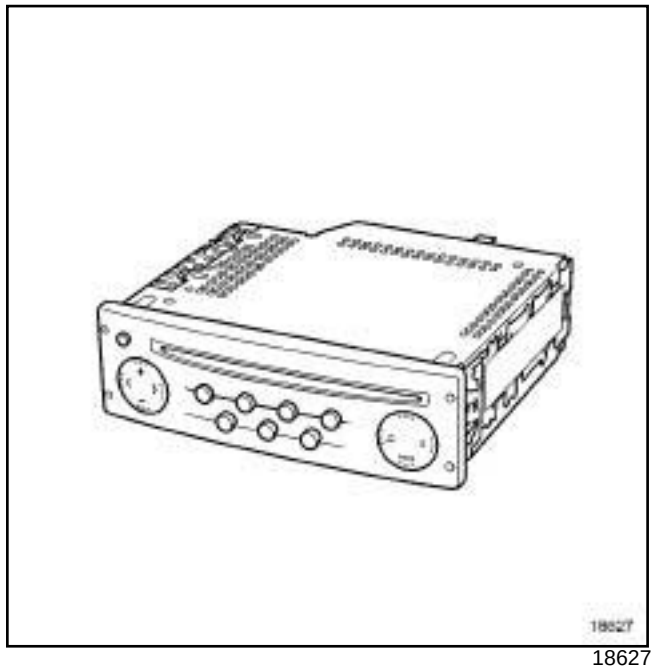
Keep the OK button pressed to transfer this code to the radio. As soon as the operation is complete, the confirmation beep will sound.

❏ If the code entered is correct, the radio operates.

❏ If the code is incorrect, the words **ERROR CODE** appear on the display.

❏ Wait until **RADIO CODE 0000** appears on the screen and repeat the operations again.

5 - Entering the code using the radio



18627

❏ Press on button 1 of the keypad until the desired number is obtained for the first digit.

Press on button 2 of the keypad until the desired number is obtained for the second digit.

Press on button 3 of the keypad until the desired number is obtained for the third digit.

Press on button 4 of the keypad until the desired number is obtained for the fourth digit.

❏ As soon as the code is correctly displayed, press and hold button 6 on the keypad to transfer this code to the radio. As soon as the operation is complete, the confirmation beep will sound.

❏ If the code entered is correct, the radio operates.

❏ If the code is incorrect, the words **ERROR CODE** appear on the display.

❏ Wait until **RADIO CODE 0000** appears on the screen and repeat the operations again.

Special tooling required	
Ms. 1544	Tool for removing radios - Carminat Becker and Cabasse.
Ms. 1373	Tool for removing radios or chronotachographs.

Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

RADIO NO. 07

❑ If replacing, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86A, R01-08).

RADIO NO. 08

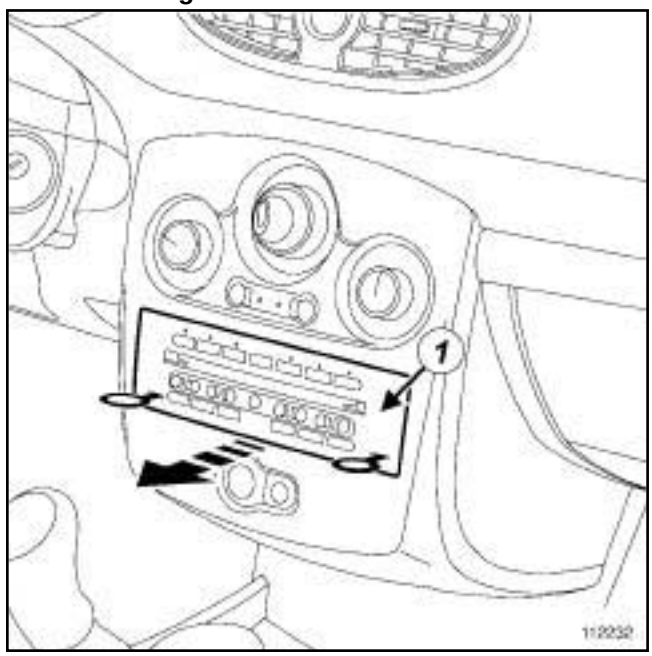
❑ If replacing, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86A, R02-08).

❑ Switch off the ignition.

II - OPERATION FOR REMOVAL OF PART CONCERNED

RADIO NO. 05

CD multichanger radio

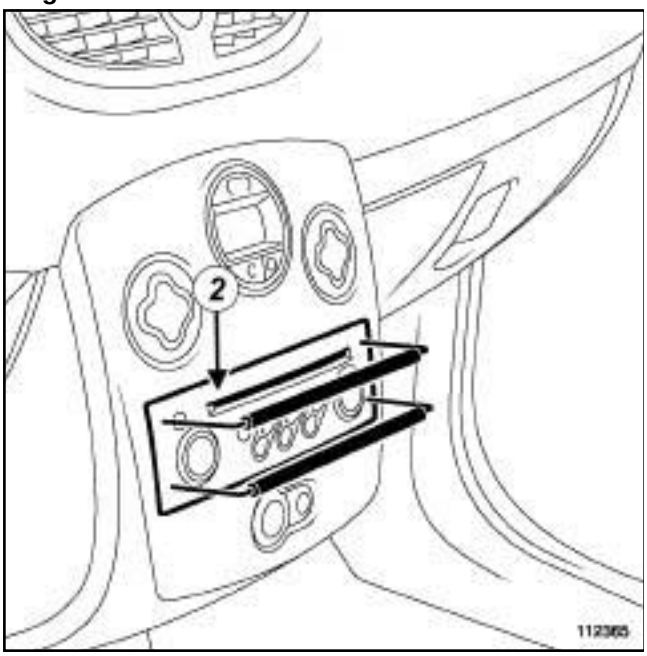


112232

❑ Remove the radio (**1**) using the **(Ms. 1544)**.

RADIO NO. 01 or RADIO NO. 02 or RADIO NO.03 or RADIO NO. 04 or RADIO NO. 06 or RADIO NO. 07 or RADIO NO. 08

Single CD radio



112365

❏ Remove the radio (**2**) using the two **(Ms. 1373)**.

❏ Disconnect the audio equipment connectors.

WARNING

To ensure correct operation:

- do not pinch the aerial cable,
- do not bend the aerial cable,
- do not force the aerial cable when refitting.

❏ Disconnect the aerial.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

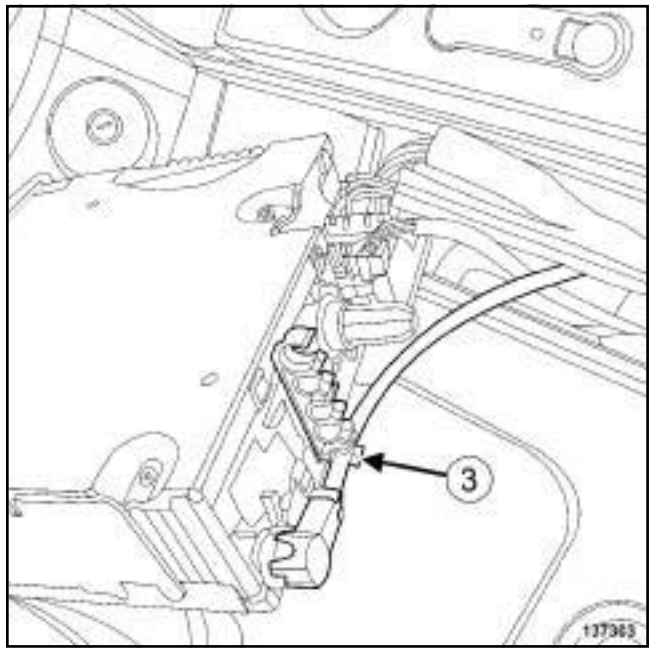
❏

WARNING

To ensure correct operation:

- do not pinch the aerial cable,
- do not bend the aerial cable,
- do not force the aerial cable when refitting.

❏ Connect the aerial.



137303

❏ Clip on the aerial wiring at (**3**) .

❏ Connect the radio connectors.

❏ Refit the radio.

II - FINAL OPERATION

❏ Carry out the necessary operations (see **Fault finding - Replacement of components**) (86A, Radio).

RADIO NO. 07

❏ If replacing, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86A, R01-08).

RADIO NO. 08

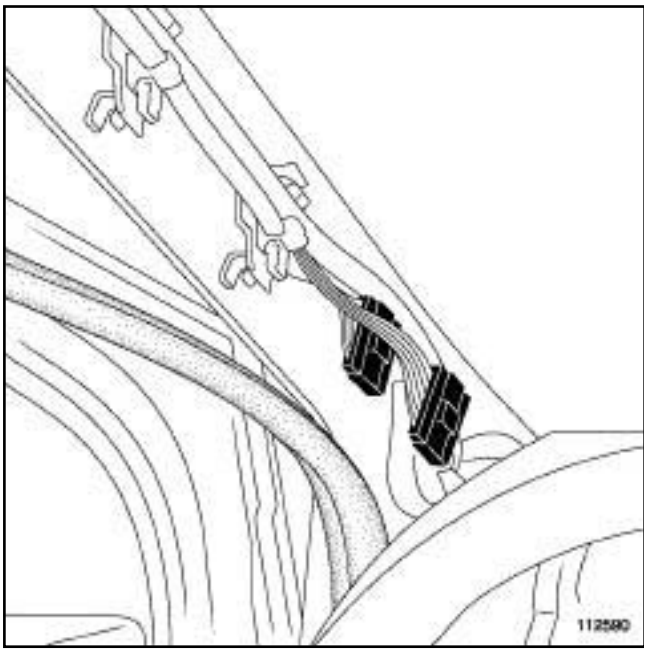
❑ If replacing, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86A, R02-08).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Depending on the equipment level of the vehicle, remove the covers for the interior rear-view mirror in order to disconnect the rain sensor connector (see **85A**, **Wiping - Washing**, **Rain and light sensor: Removal - Refitting**, page **85A-5**) .

❏ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

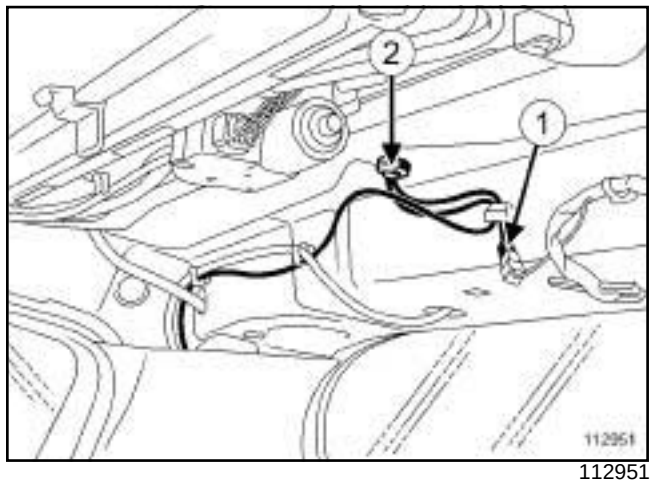


112590

❏ Carefully disconnect the various connectors.

❏ Remove the right-hand rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

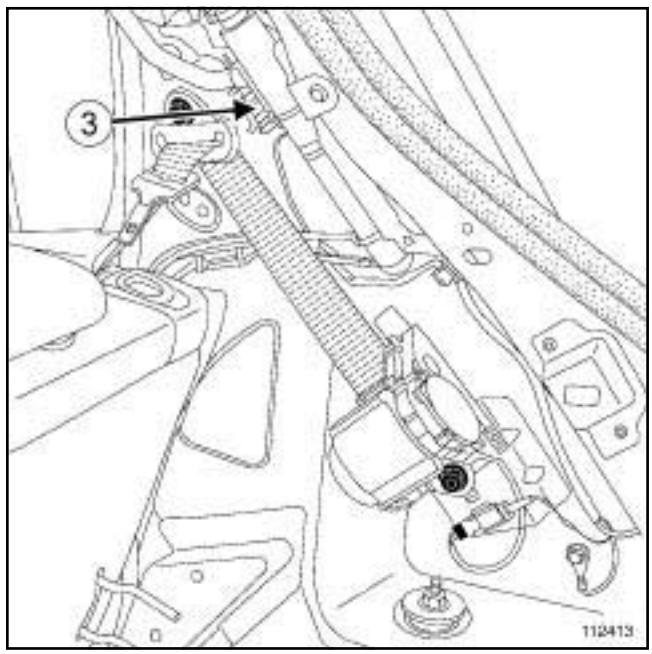
II - OPERATION FOR REMOVAL OF PART CONCERNED



112951

❏ Unclip the connector (**1**) .

❏ Remove the bolt ***(2)*** .



112413

❏ Unclip the connector(s) (depending on the version) from the union board (**3**) .

❏ Remove the aerial.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the aerial.

❏ Tighten the bolt ***(2)*** .

❑

Note:

Make sure that the wiring is in good condition.

Clip the connectors in place.

II - FINAL OPERATION.

❑ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

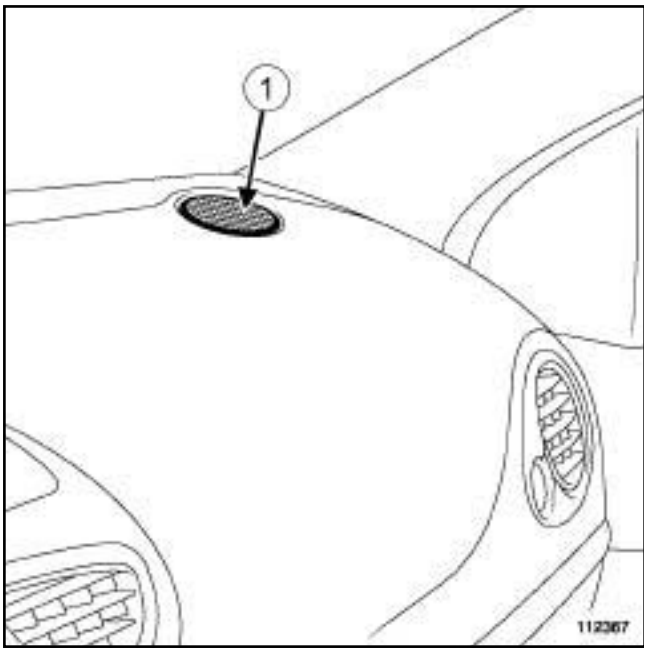
❑ Depending on the level of equipment of the vehicle, reconnect the rain sensor connector.

❑ Depending on the equipment level of the vehicle, refit the interior rear-view mirror covers (see **85A**, **Wiping - Washing**, **Rain and light sensor: Removal - Refitting**, page **85A-5**) .

❑ Refit the right-hand rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

REMOVAL

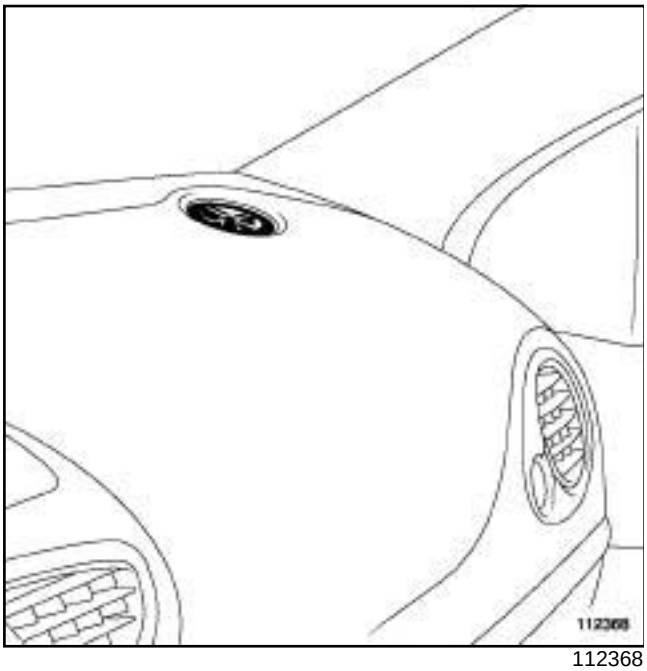
I - REMOVAL PREPARATION OPERATION



112367

❏ Unclip the tweeter grille using a flat-blade screwdriver (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



112368

❏ Unclip:

- the tweeter,
- the connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip on:

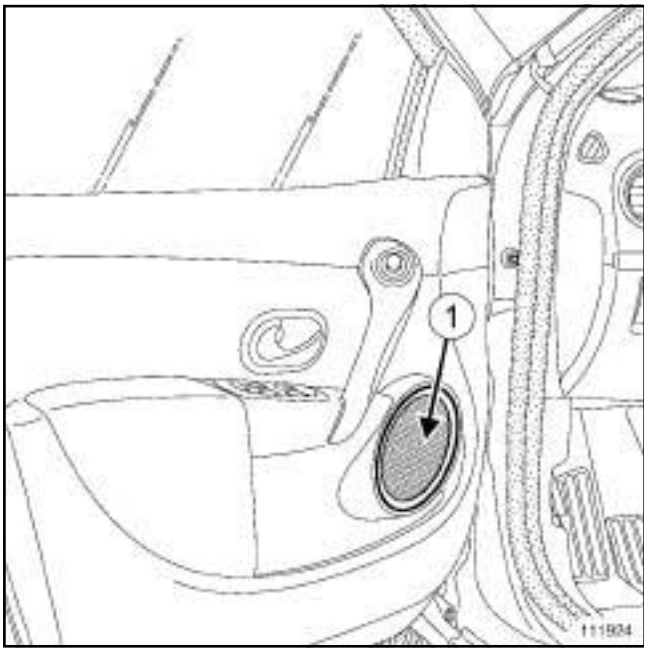
- the connector,
- the tweeter.

II - FINAL OPERATION

❏ Clip on the tweeter grille.

REMOVAL

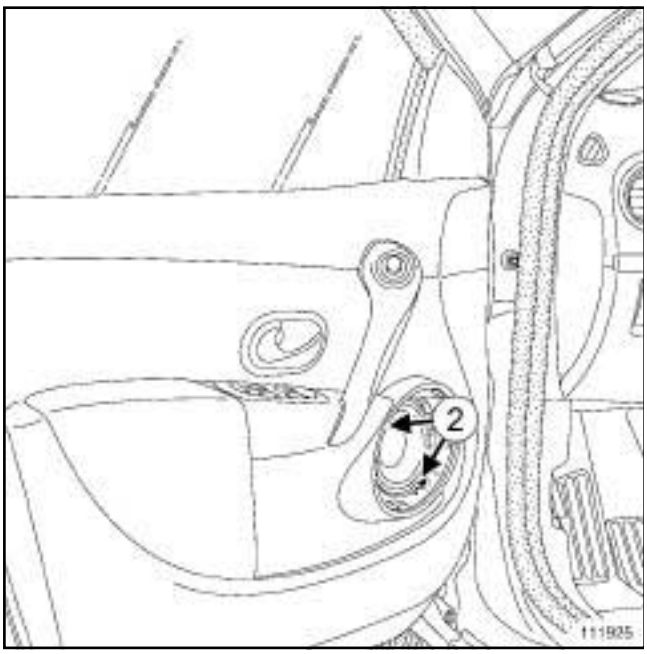
I - REMOVAL PREPARATION OPERATION



111924

❏ Remove the front speaker grille (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



111925

❏ Remove:

- the bolts (**2**) ,
- the front speaker.

❏ Disconnect the connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connector,

❏ Refit:

- the front speaker,
- the bolts ***(2)*** .

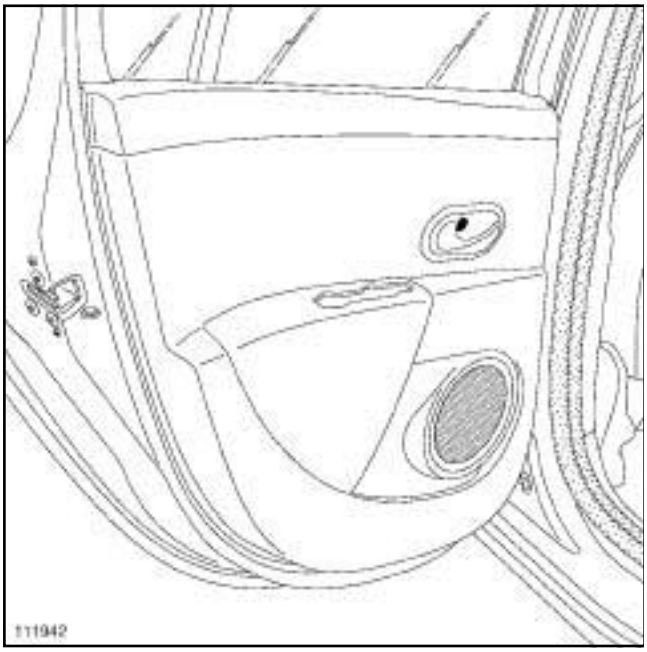
II - FINAL OPERATION

❏ Clip on the front speaker grille.

REMOVAL

I - REMOVAL PREPARATION OPERATION

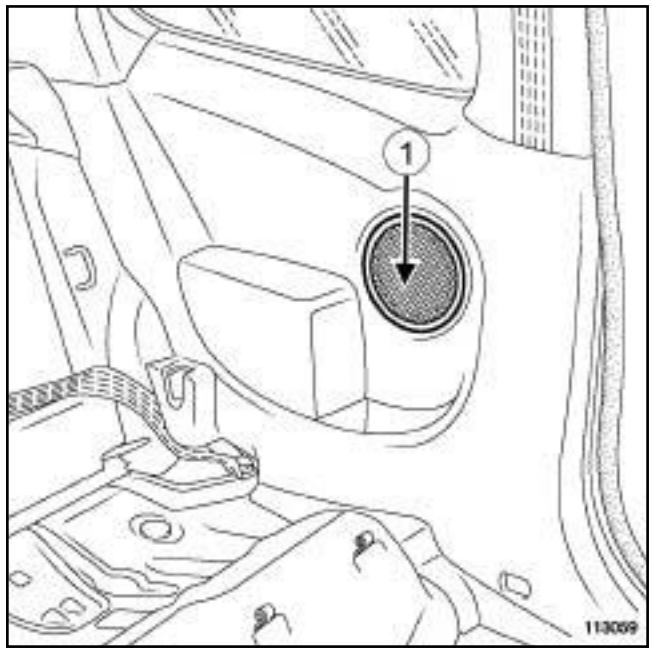
B85 or K85



111942

❑ Remove the rear door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

C85 or S85

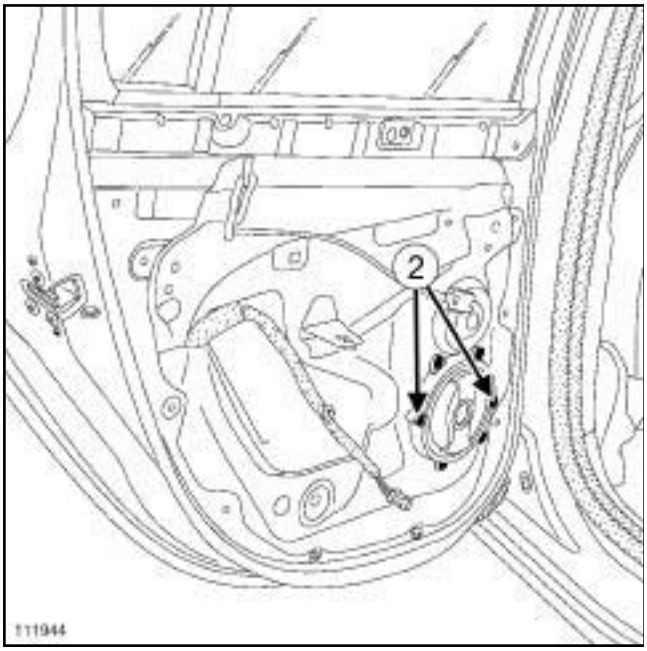


113059

❑ Unclip the rear speaker grille (**1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

B85 or K85



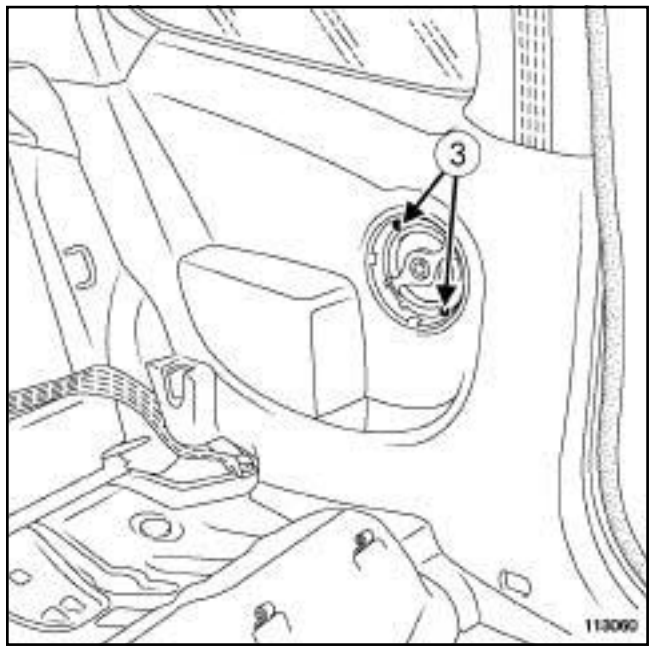
111944

❏ Remove:

- the bolts (**2**) ,
- the rear speaker.

❏ Disconnect the connector.

C85 or S85



113060

❏ Remove:

- the bolts (**3**) ,
- the rear speaker.

❏ Disconnect the connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

B85 or K85

❏ Connect the connector,

❏ Refit:

- the rear speaker,
- the bolts ***(2)*** .

C85 or S85

❏ Connect the connector.

❏ Refit:

- the rear speaker,

- the bolts ***(3)*** .

II - FINAL OPERATION.

B85 or K85

❑ Refit the rear door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

C85 or S85

❑ Clip in the rear speaker grille ***(1)*** .

Special tooling required	
Car. 1597	Trim removal lever.

REMOVAL

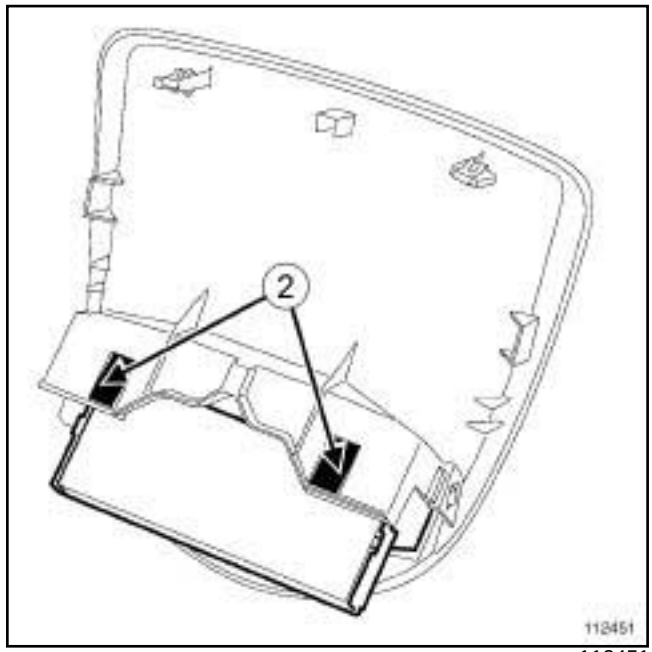
I - REMOVAL PREPARATION OPERATION

112450

❏ Unclip the display mounting (**1**) using the **(Car. 1597)**.

❏ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112451

❏ Unclip the display at (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the display onto the mounting.

II - FINAL OPERATION.

❏ Connect the connectors.

❏ Clip on the display mounting.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

❑

> Note:
>
> The satellite radio control and the wiper stalk form a single inseparable part.

❑ Remove the wiper switch (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) .

REFITTING OPERATION FOR PART CONCERNED

❑ Refit the wiper switch (see **84A**, **Control - Signals**, **Screen wiper switch: Removal - Refitting**, page **84A-8**) .

RADIO NO. 05

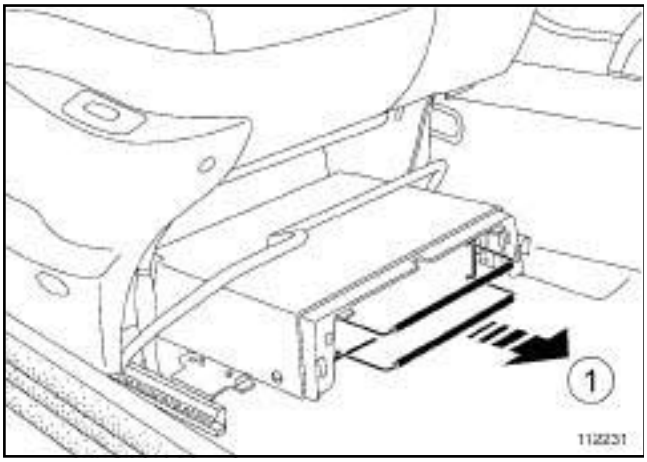
Special tooling required	
Ms. 1373	Tool for removing radios or chronotachographs.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the cover from the tuner-amplifier compartment.

II - REMOVAL OPERATION FOR THE PART CONCERNED



112231

❏ Remove the receiver (**1**) using two **(Ms. 1373)**.

❏ Disconnect the connectors.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

❏ Refit the receiver.

II - FINAL OPERATION

❏ Refit the cover for the tuner-amplifier compartment.

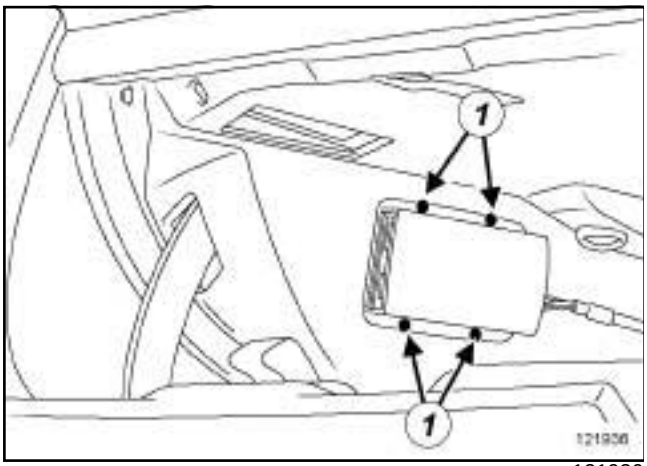
Offset multimedia socket: Removal - Refitting

RADIO NO. 01 or RADIO NO. 02 or RADIO NO. 03 or RADIO NO. 04

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED

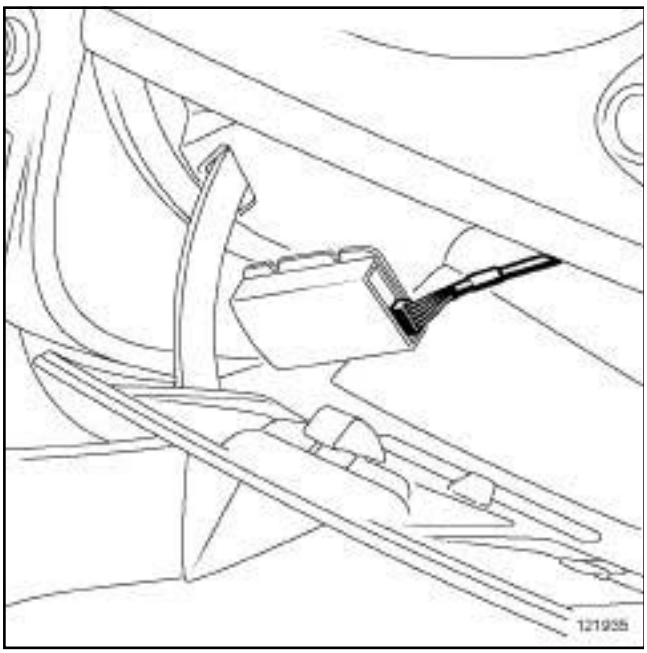
❏ Open the glovebox.



121936

❏ Remove:

- the offset audio unit bolts (**1**) ,
- the offset audio unit.



121935

❏ Disconnect the offset audio unit connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏

Note:

When replacing the offset audio unit, replace the wiring harness and check that the wiring harness runs correctly to the radio.

(see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

❏ Connect the offset audio unit connector.

❏ Refit:

- the offset audio unit,
- the offset audio unit bolts.

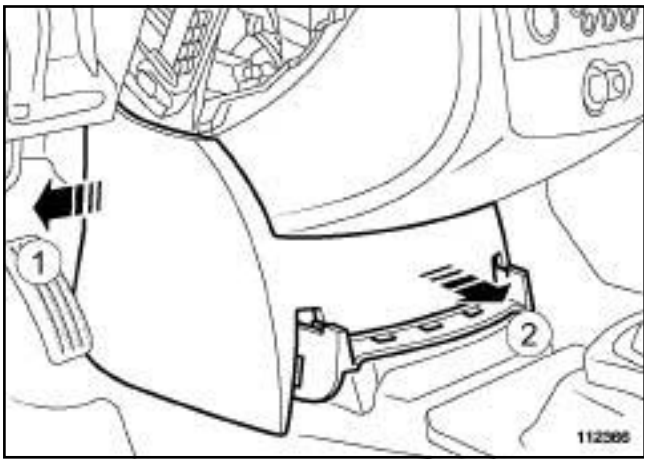
RADIO NO. 08

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Switch off the ignition.

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (57A, Interior equipment).



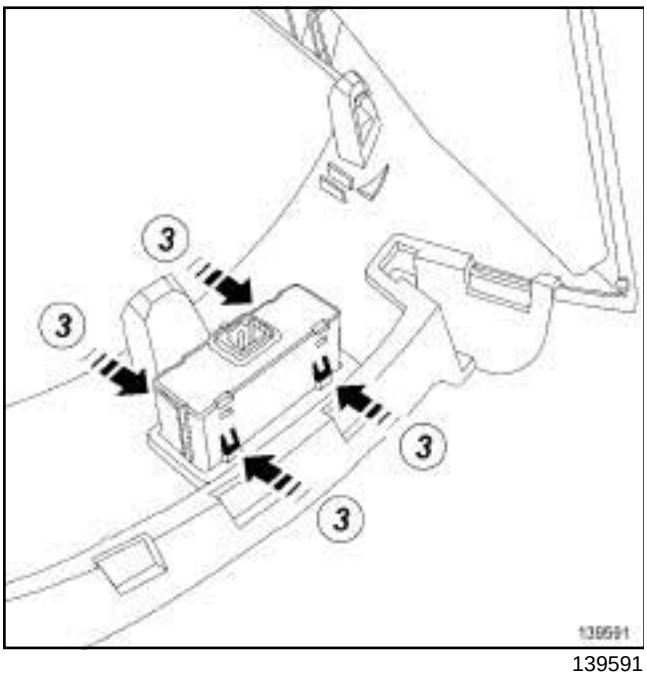
112366

❏ Unclip the lower centre trim at (**1**) and (**2**) .

❏ Disconnect the offset multimedia socket connectors.

❏ Remove the lower centre trim.

II - OPERATION FOR REMOVAL OF PART CONCERNED



139591

❏ Remove the offset multimedia socket by pressing on the clips at (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the offset multimedia socket onto the lower centre trim.

II - FINAL OPERATION

❏ Fit the lower centre trim.

❏ Connect the offset multimedia socket connectors.

❏ Clip on the lower centre trim.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (57A, Interior equipment).

RADIO NO. 08

Equipment required
Diagnostic tool

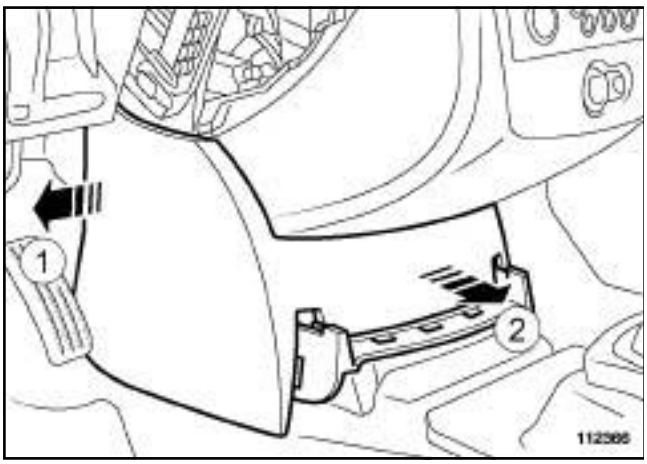
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove:

- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the central console (see **Centre console: Removal - Refitting**) (57A, Interior equipment).



112366

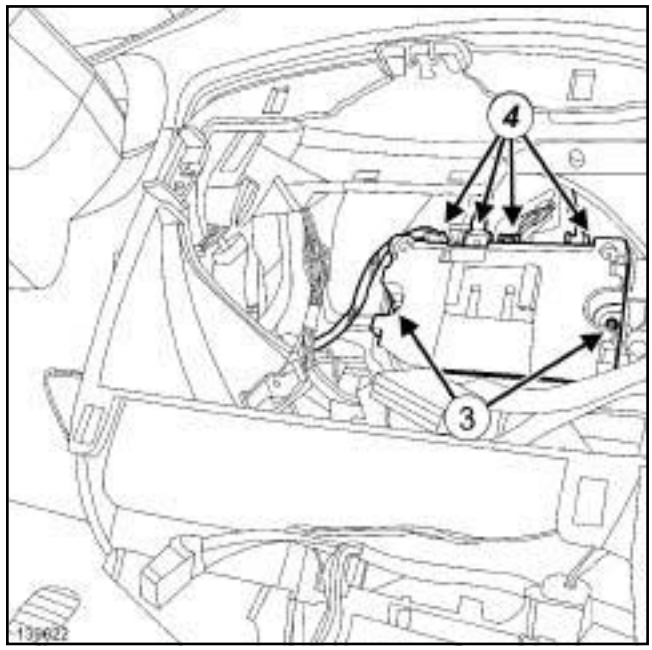
❏ Unclip the lower centre trim at (**1**) and (**2**) .

❏ Disconnect the offset multimedia socket connectors.

❏ Remove:

- the centre front panel (see **Centre front panel: Removal - Refitting**) (57A, Interior equipment),
- the control panel (see **Control panel: Removal - Refitting**) (61A, Heating).

II - OPERATION FOR REMOVAL OF PART CONCERNED



139622

❏ Remove the bolts (**3**) from the offset multimedia socket computer.

❏ Separate the offset multimedia socket computer from its housing.

❏ Disconnect the offset multimedia socket computer connectors (**4**) .

❏ Remove the offset multimedia socket computer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the offset multimedia socket computer.

❏ Connect the offset multimedia socket computer connectors.

❏ Refit the offset multimedia socket computer.

II - FINAL OPERATION

❏ Refit:

- the control panel (see **Control panel: Removal - Refitting**) (61A, Heating),
- the centre front panel (see **Centre front panel: Removal - Refitting**) (57A, Interior equipment).

❏ Fit the lower centre trim.

❏ Connect the offset multimedia socket connectors.

❏ Clip on the lower centre trim.

RADIO NO. 08

❏ Refit:

- the central console (see **Centre console: Removal - Refitting**) (57A, Interior equipment),
- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86A, Radio).

CAR PHONE PRE-EQUIPMENT or HANDS-FREE TELEPHONE KIT

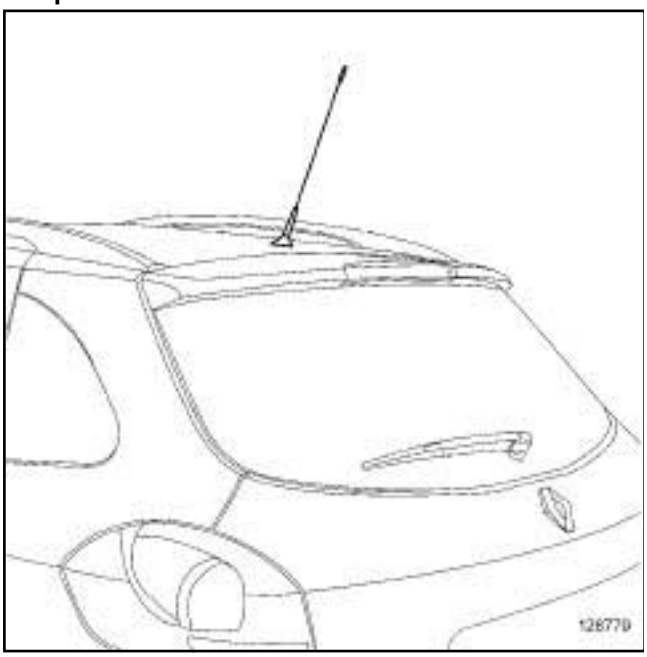
I - LIST OF COMPONENTS

The « car phone » consists of:

- a telephone aerial
- a computer
- a "hands-free" microphone
- a telephone control on the steering wheel

II - LOCATION OF COMPONENTS

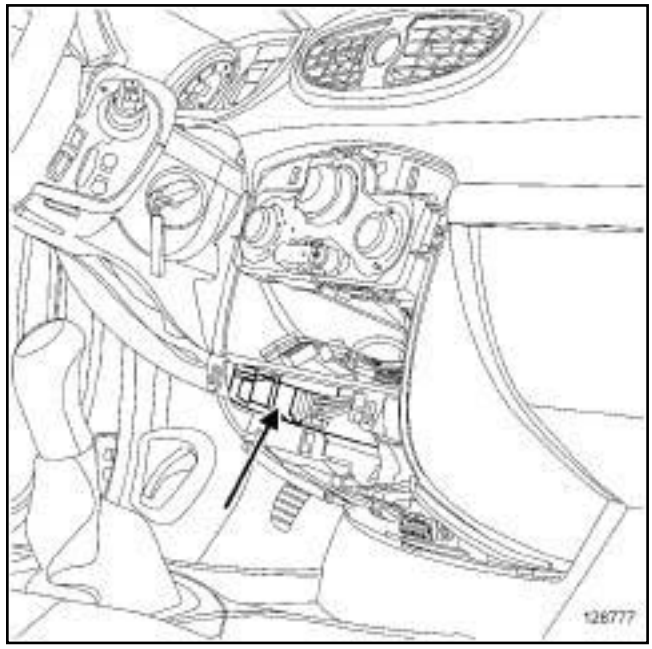
Telephone aerial



128779

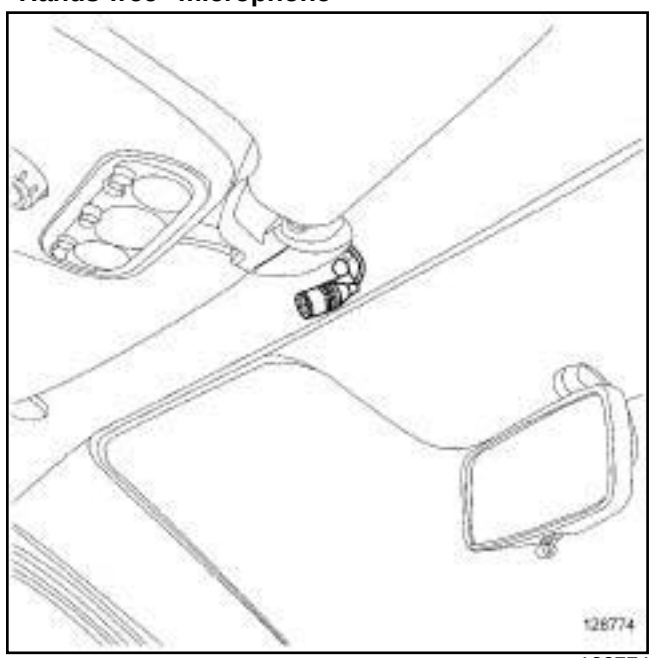
To remove the telephone aerial (see **86A**, **Radio**, **Radio aerial: Removal - Refitting**, page **86A-11**) .

Computer



128777

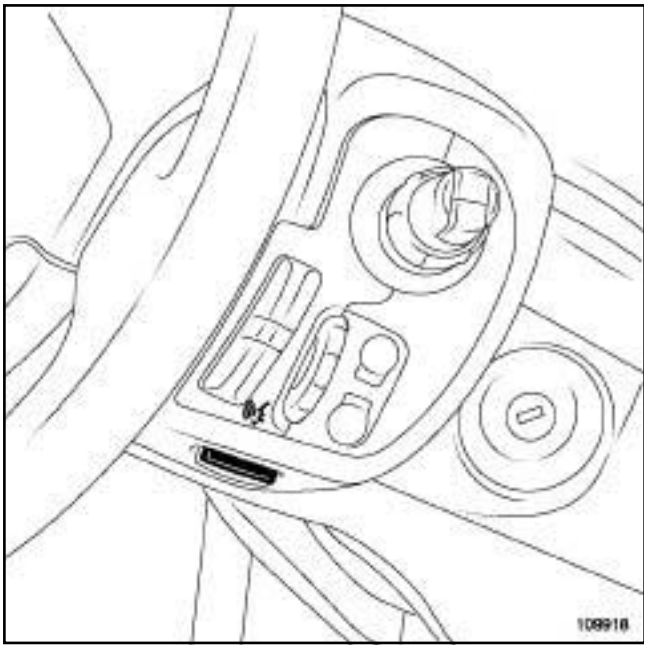
"Hands-free" microphone



128774

CAR PHONE PRE-EQUIPMENT or HANDS-FREE TELEPHONE KIT

Telephone control at steering wheel



109918

To remove the steering wheel car phone control (see **86A**, **Radio**, **Radio control satellite: Removal - Refitting**, page **86A-19**) .

CAR PHONE PRE-EQUIPMENT or HANDS-FREE TELEPHONE KIT

Equipment required
Diagnostic tool

Note:

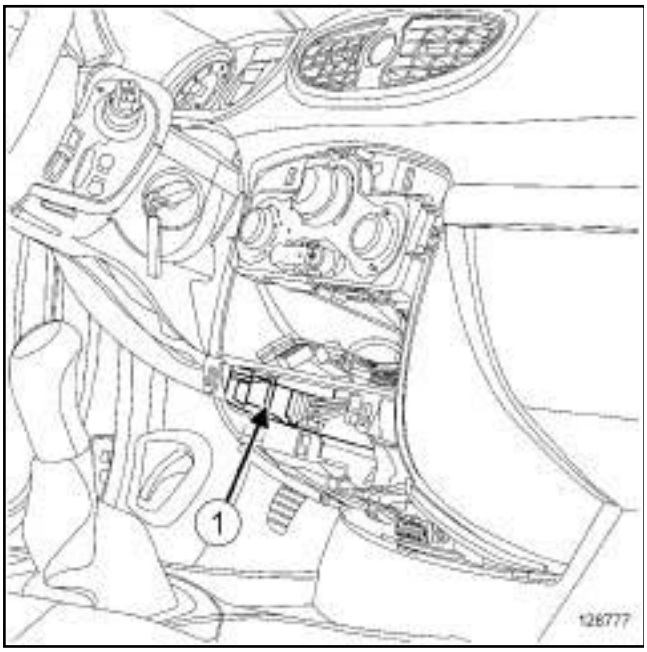
The computer is fitted behind the dashboard centre front panel under the radio.

REMOVAL

REMOVAL PREPARATION OPERATION

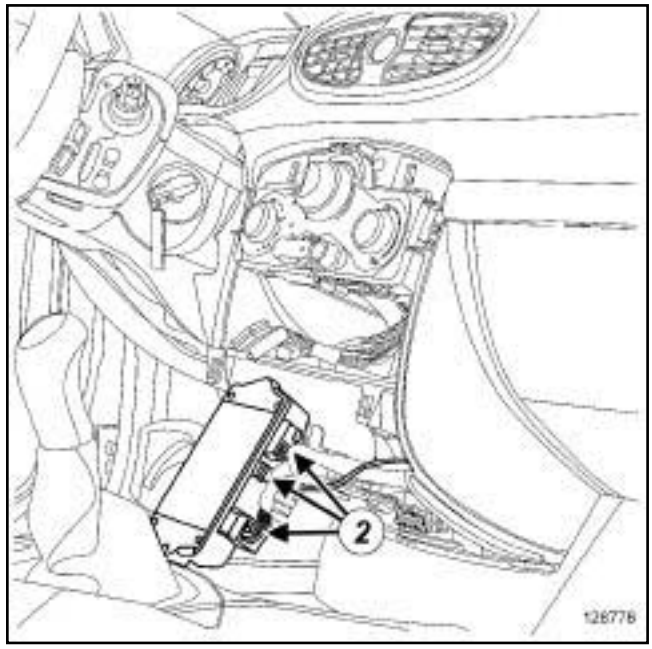
❏ Disconnect the battery (see **Battery: Removal - Refitting**) .

❏ Remove the dashboard centre front panel (see **Centre front panel: Removal - Refitting**)



128777

❏ Remove the computer (**1**) .



128778

❏ Disconnect the computer connectors (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the computer connectors.

❏ Refit the computer.

II - FINAL OPERATION.

❏ Refit the dashboard centre front panel (see **Centre front panel: Removal - Refitting**)

❏ Connect the battery (see **Battery: Removal - Refitting**) .

❏ If replacing the computer, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (86B, Car phone).

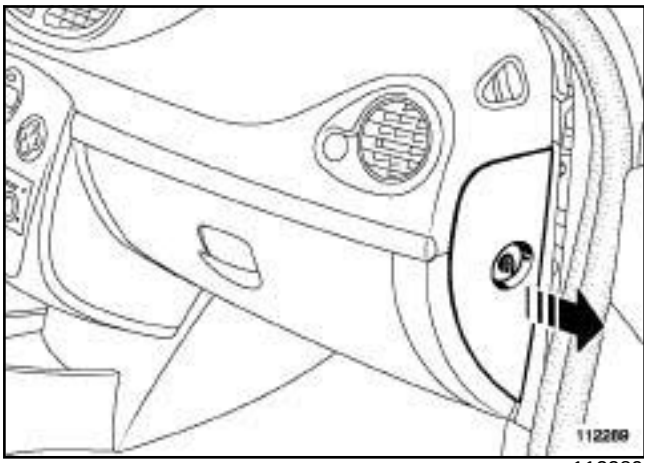
CAR PHONE PRE-EQUIPMENT or HANDS-FREE TELEPHONE KIT

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the computer (see **86B**, **Car phone**, **Computer: Removal - Refitting**, page **86B-3**) .

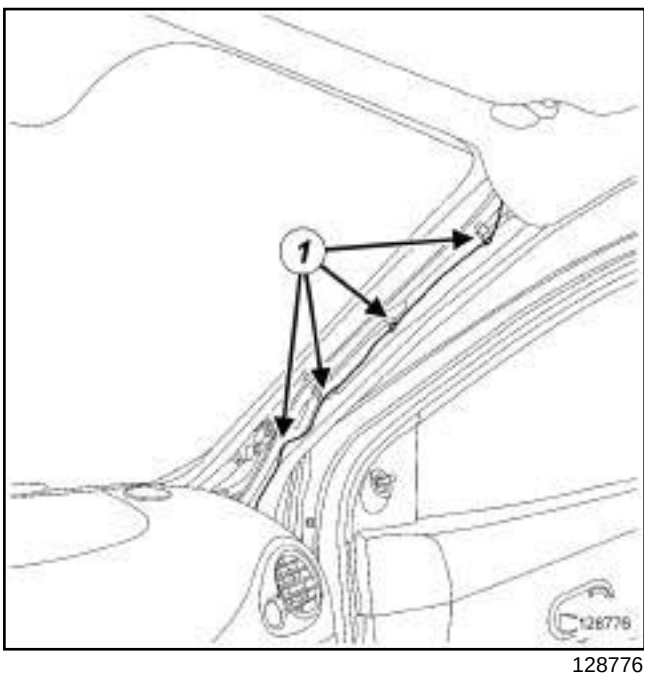


112289

❏ Unclip the dashboard side panel on the passenger side.

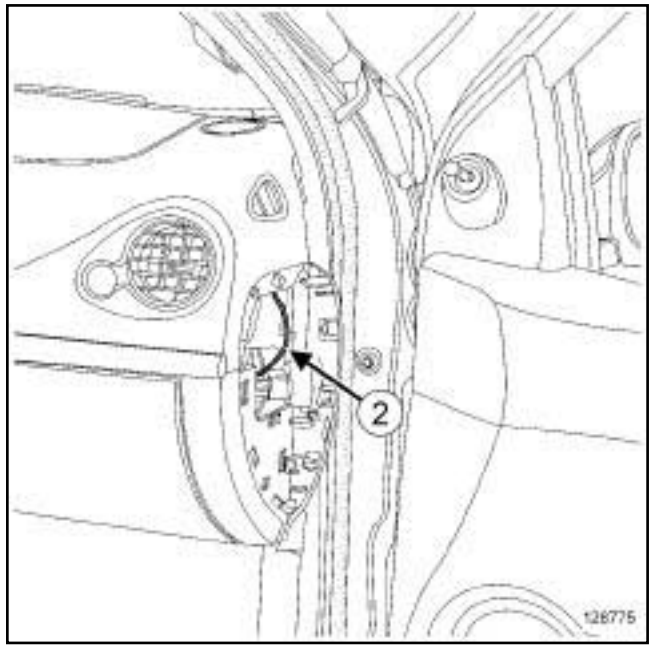
❏ Unclip the A-pillar trim on the passenger side (see **Windscreen pillar trim: Removal - Refitting**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



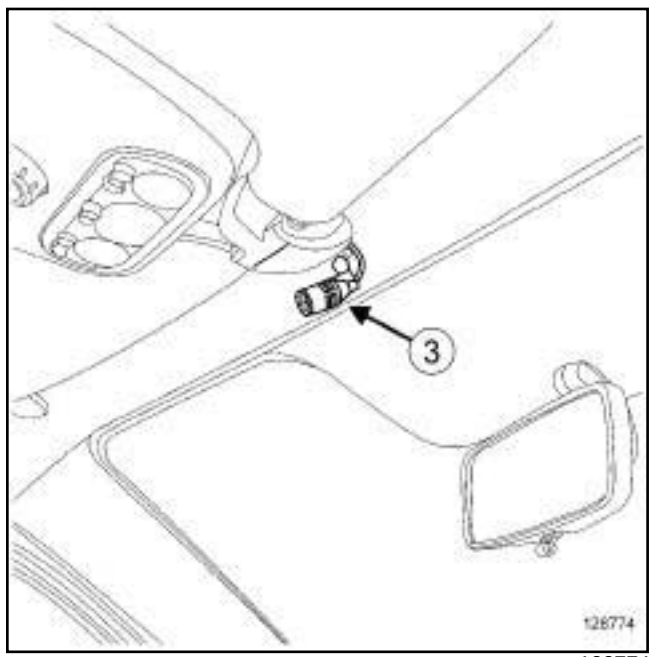
128776

❏ Remove the “hands-free” microphone wire from the A-pillar clips (**1**) .



128775

❏ Remove the “hands-free” microphone wire (**2**) from the dashboard side panel.



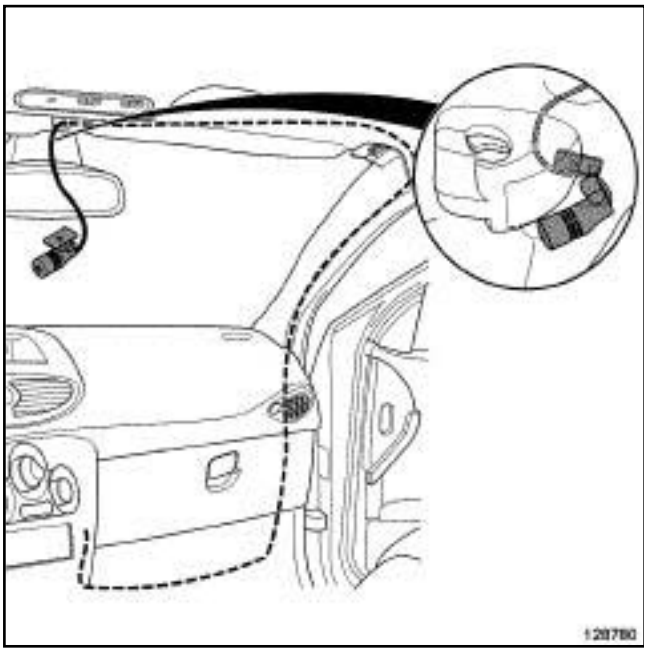
128774

❏ Remove the “hands-free” microphone (**3**) from the headlining.

CAR PHONE PRE-EQUIPMENT or HANDS-FREE TELEPHONE KIT

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



128780

❏ Refit the “hands-free” microphone with its wire as shown in the diagram above.

❏ Connect the “hands-free” microphone connector to the computer.

II - FINAL OPERATION.

❏ Clip:

- the A-pillar trim (see **Windscreen pillar trim: Removal - Refitting**) ,
- the dashboard side panel .

❏ Refit the computer (see **86B**, **Car phone**, **Computer: Removal - Refitting**, page **86B-3**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

RIGHT-HAND DRIVE

Equipment required
Diagnostic tool

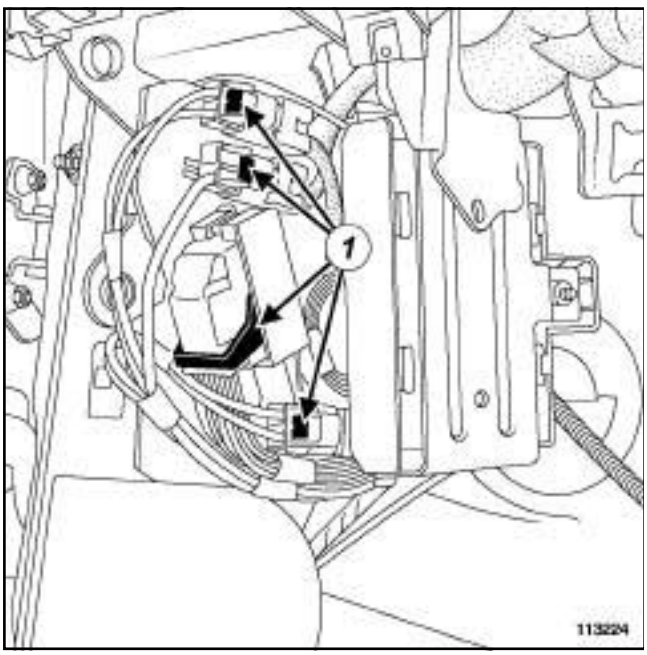
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ If replacing the UCH, carry out the necessary programming using the **Diagnostic tool**. (see **Fault finding - Replacement of components**) (MR 394, 87B, Passenger compartment connection unit).

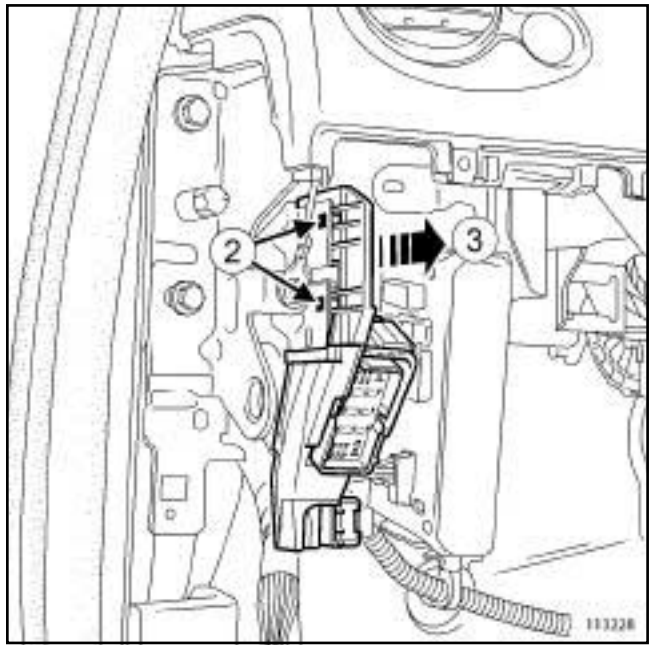
❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the storage compartment (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).



113224

❏ Unclip the connectors from the beam.



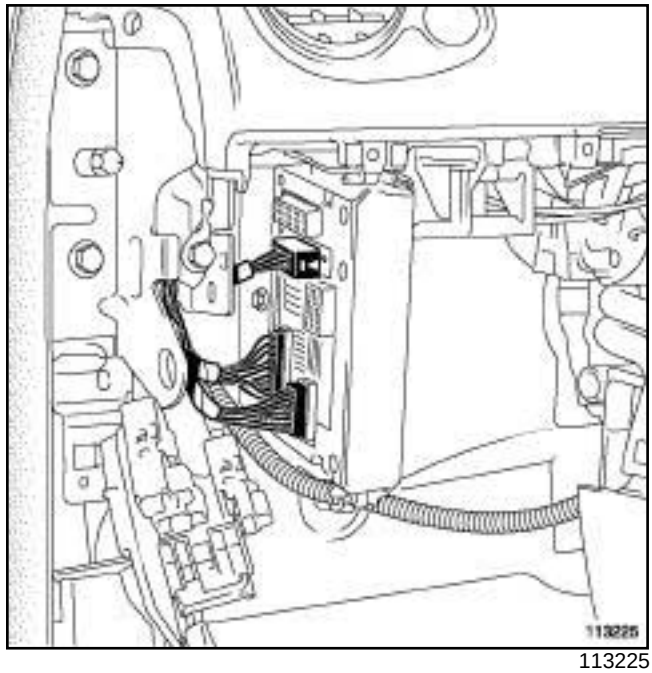
113228

❏ Unclip the connector mountings on the beam at (**2**) ,

❏ Remove the connector mountings at (**3**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

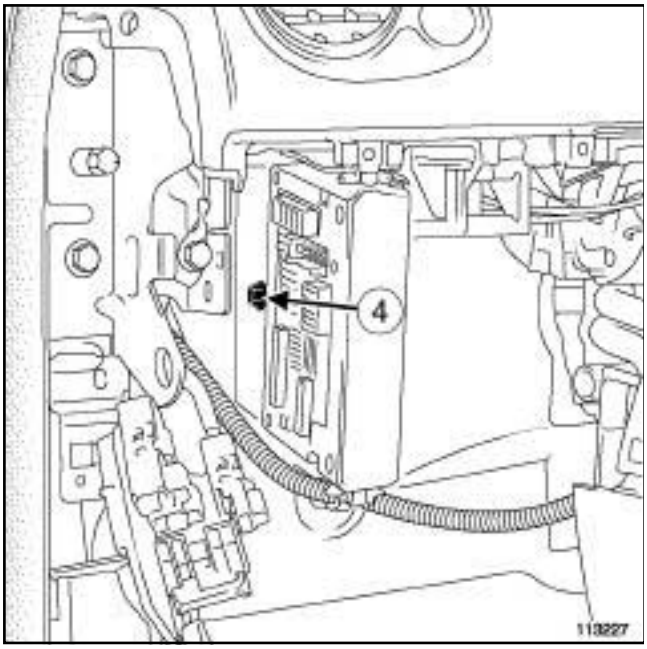
VEHICLE WITH KEY



113225

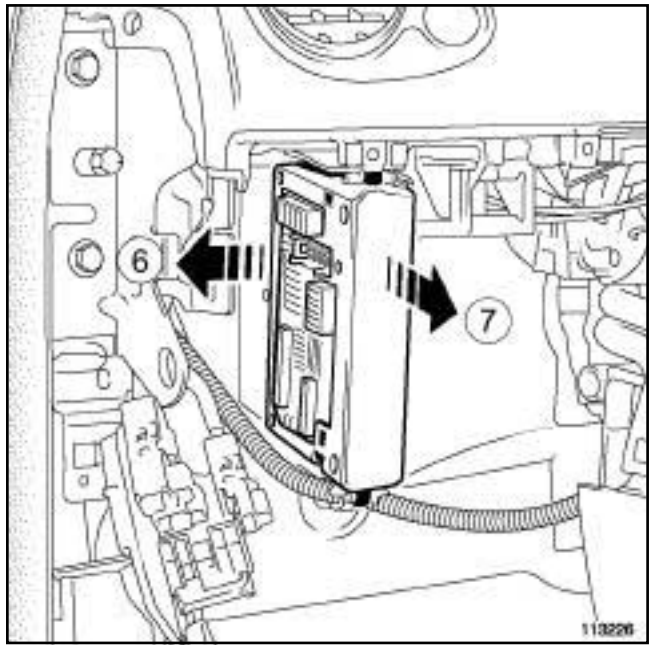
❏ Unclip the connectors.

RIGHT-HAND DRIVE



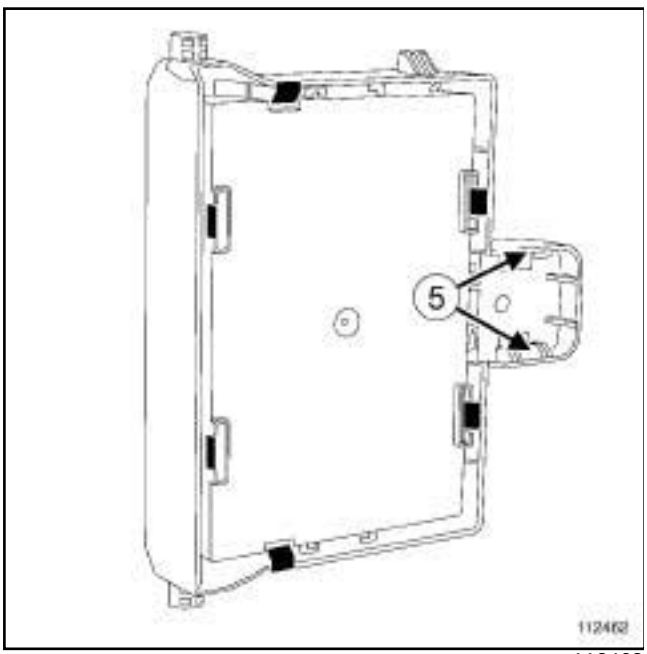
113227

❏ Remove the bolt (**4**) .



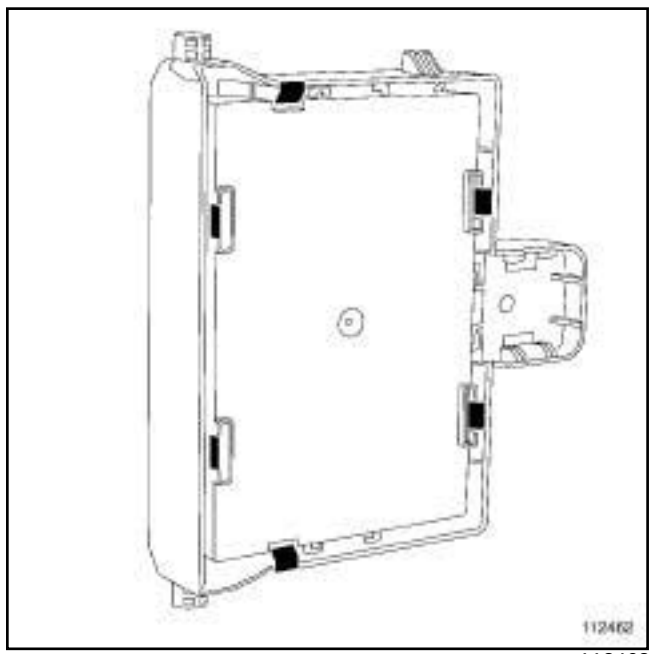
113226

❏ Remove the UCH at (**6**) , (**7**) .



112462

❏ Unclip the rear section of the UCH by pressing on the lugs (**5**) with a small flat-blade screwdriver.

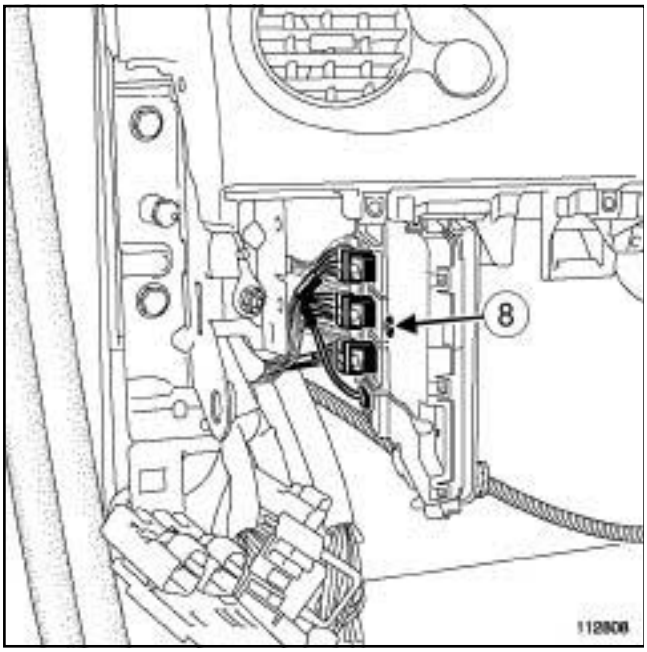


112462

❏ Unclip the UCH from its mounting.

RIGHT-HAND DRIVE

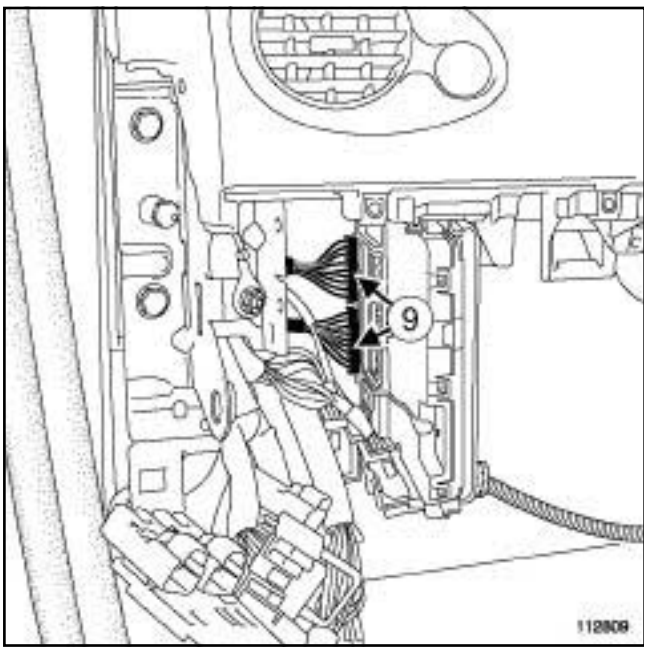
VEHICLE WITH CARD



112808

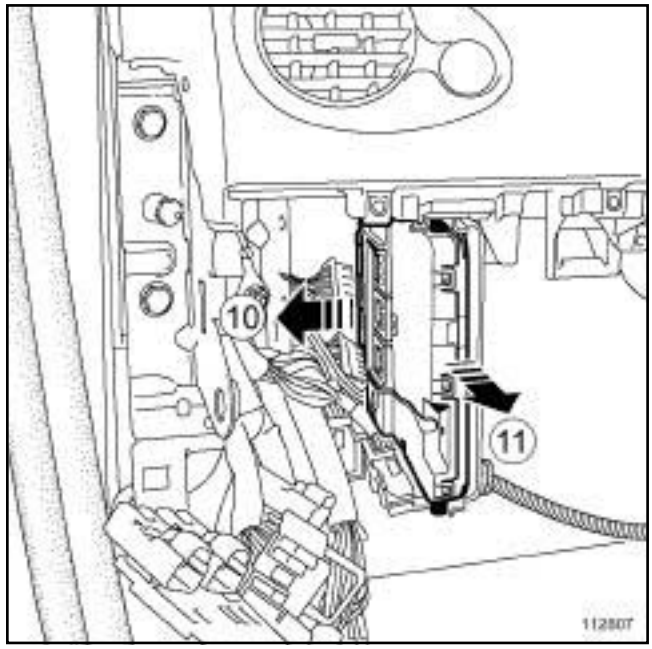
❏ Unclip the first row of connectors.

❏ Remove the bolt (**8**) .



112809

❏ Unclip the second row of connectors (**9**) .



112807

❏ Remove the UCH (**10**) , (**11**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

VEHICLE WITH KEY

❏ Fit the front section of the UCH,

❏ Clip the rear section of the UCH,

❏ Tighten the bolt ***(4)*** ,

❏ Clip the connectors in place.

VEHICLE WITH CARD

❏ Fit the UCH,

❏ Tighten the bolt ***(8)*** ,

❏ Clip the connectors in place.

RIGHT-HAND DRIVE

II - FINAL OPERATION.

❑ Clip:

- the connector mountings on the beam,
- the connectors.

❑ Refit the storage compartment (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ If replacing the UCH, carry out the necessary programming using the **Diagnostic tool**. (see **Fault finding - Replacement of components**) (MR 394, 87B, Passenger compartment connection unit).

LEFT-HAND DRIVE

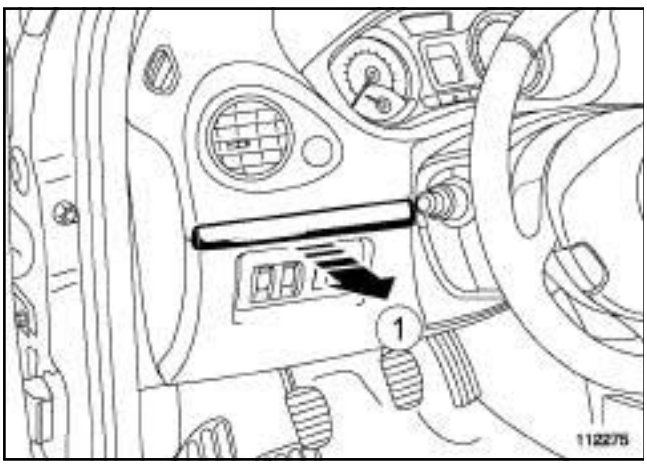
Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

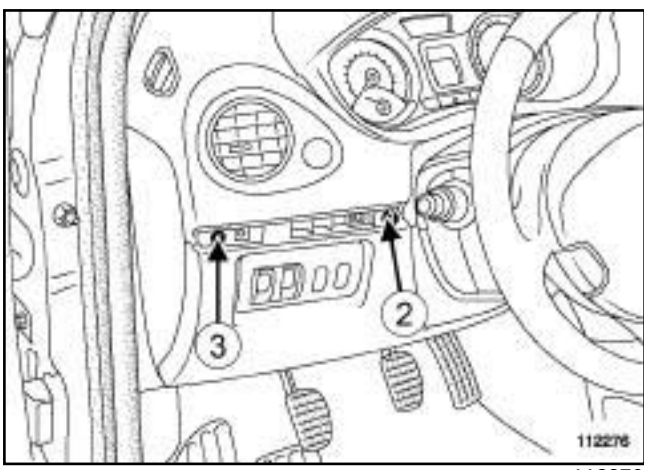
❏ When replacing the UCH, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 87B, Passenger compartment connection unit).

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .



112275

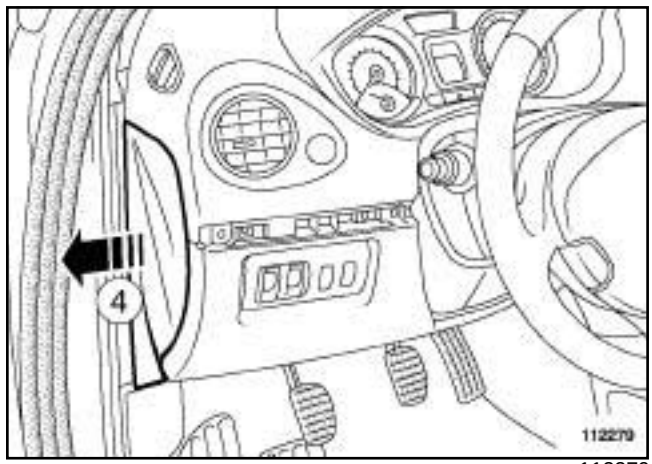
❏ Unclip the moulding at (**1**) .



112276

❏ Remove:

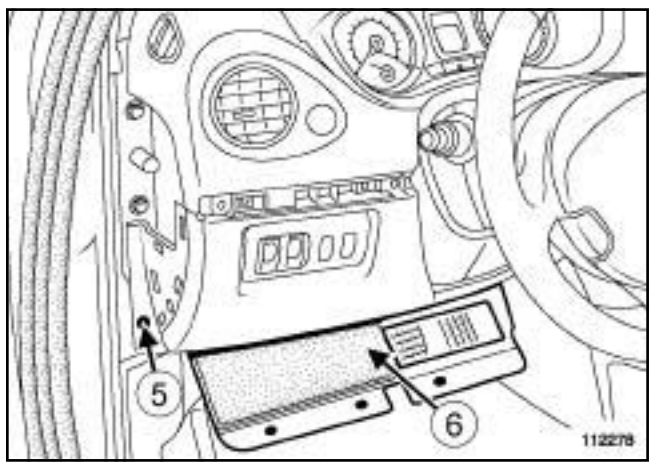
- the plastic rivet (**2**) ,
- bolt (**3**) .



112279

❏ Remove the door seal,

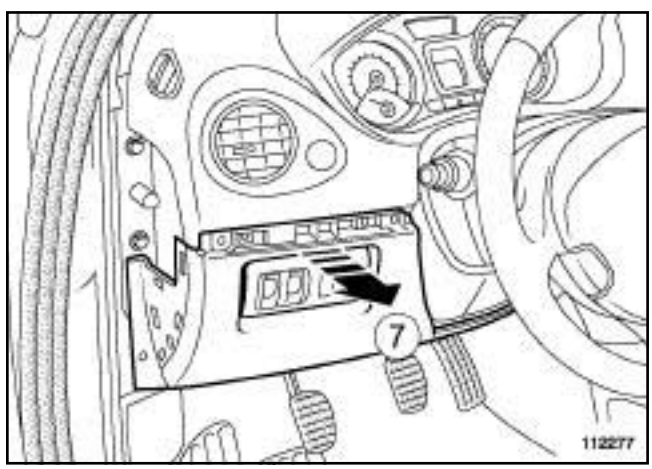
❏ Remove the dashboard side face (**4**) .



112278

❏ Remove:

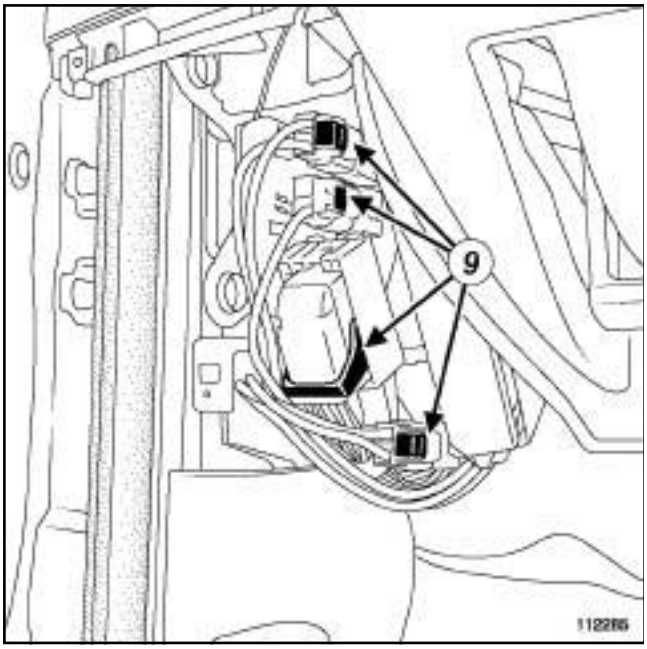
- the bolt (**5**) ,
- the dashboard lower trim (**6**) .



112277

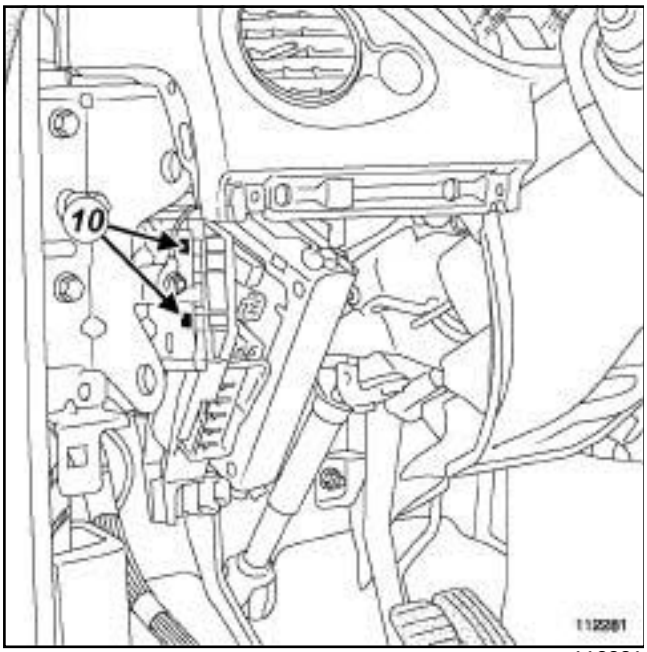
❏ Remove the dashboard trim (**7**) while unclipping the connectors.

LEFT-HAND DRIVE



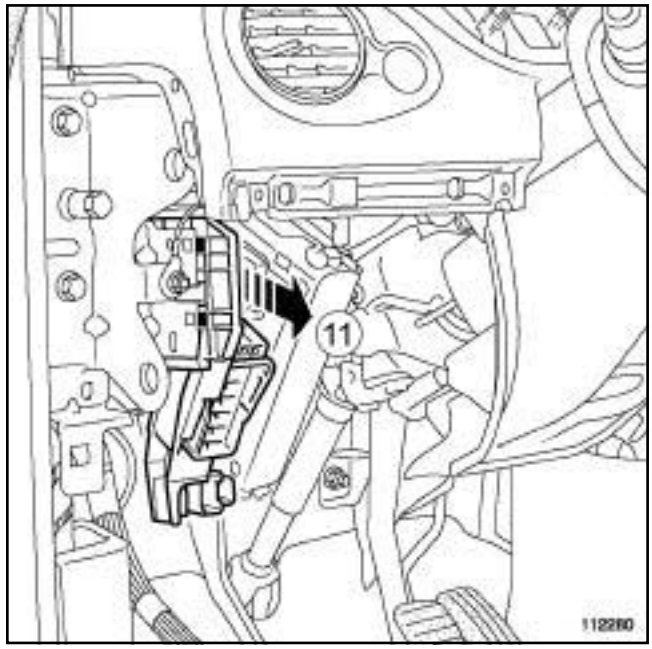
112285

❏ Unclip the connectors on the beam (**9**) .



112281

❏ Unclip the connector mountings on the beam at (**10**) .

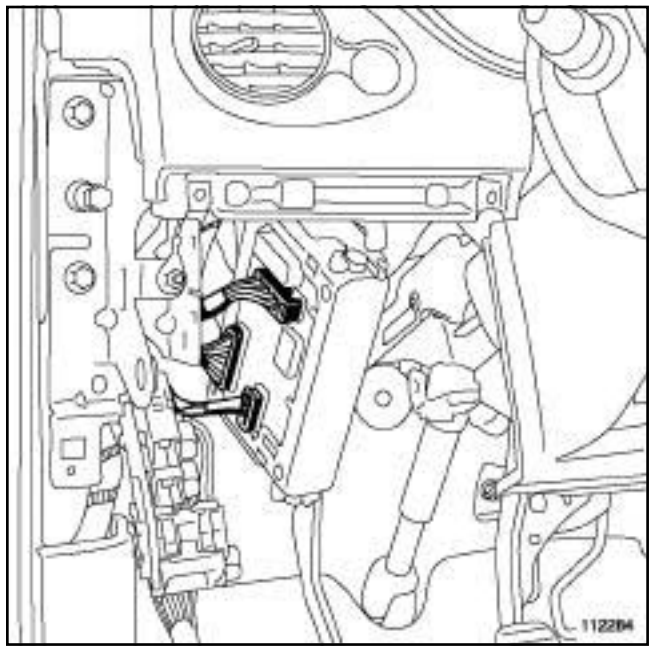


112280

❏ Remove the connector mountings at (**11**) .

II - REMOVAL STAGE FOR THE PART CONCERNED.

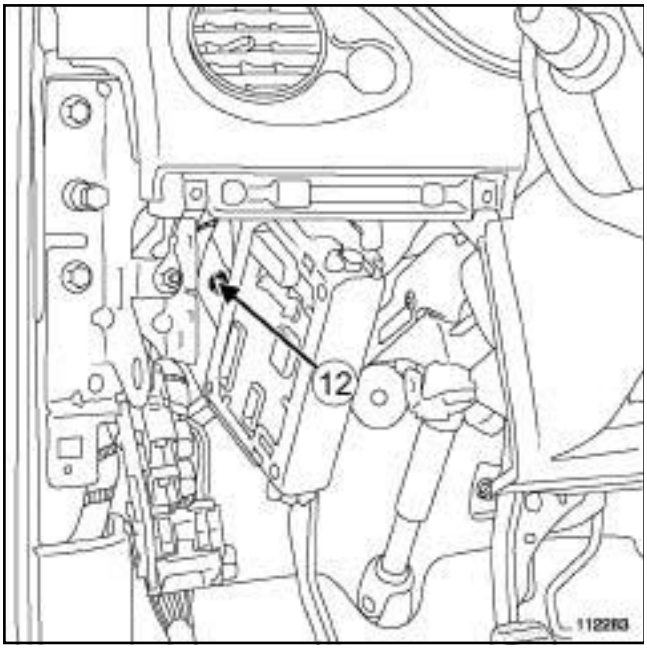
VEHICLE WITH KEY



112284

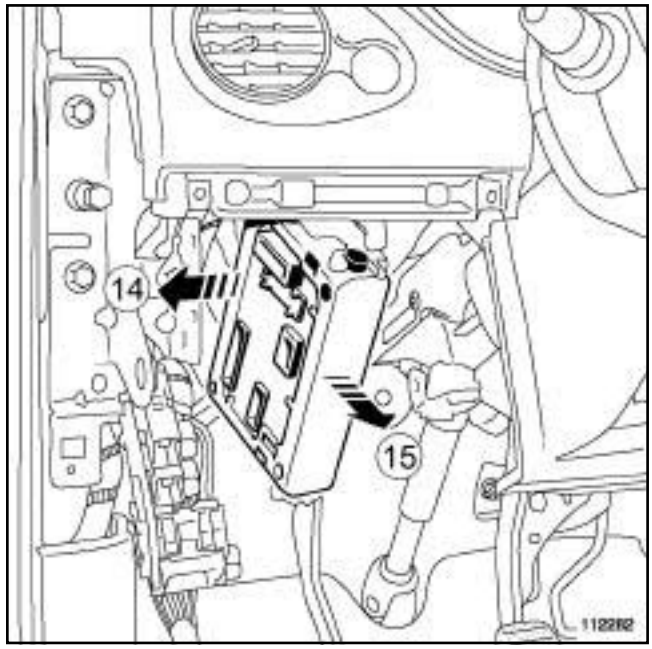
❏ Unclip the connectors.

LEFT-HAND DRIVE



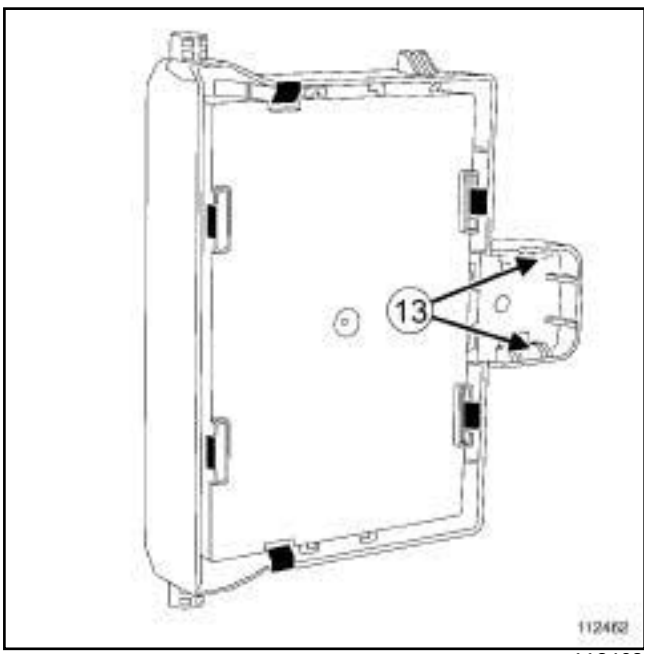
112283

❏ Remove the bolt (**12**) .



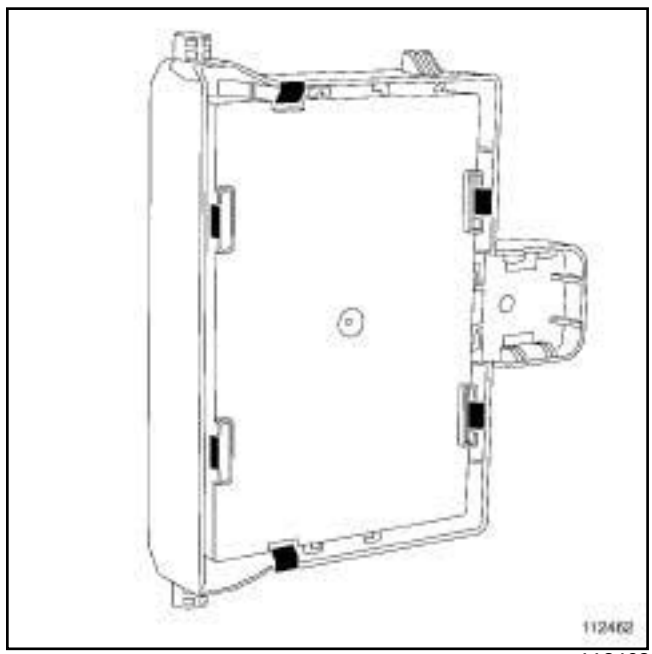
112282

❏ Remove the UCH at (**14**) , (**15**) .



112462

❏ Unclip the rear section of the UCH by pressing on the lugs (**13**) with a small flat-blade screwdriver.

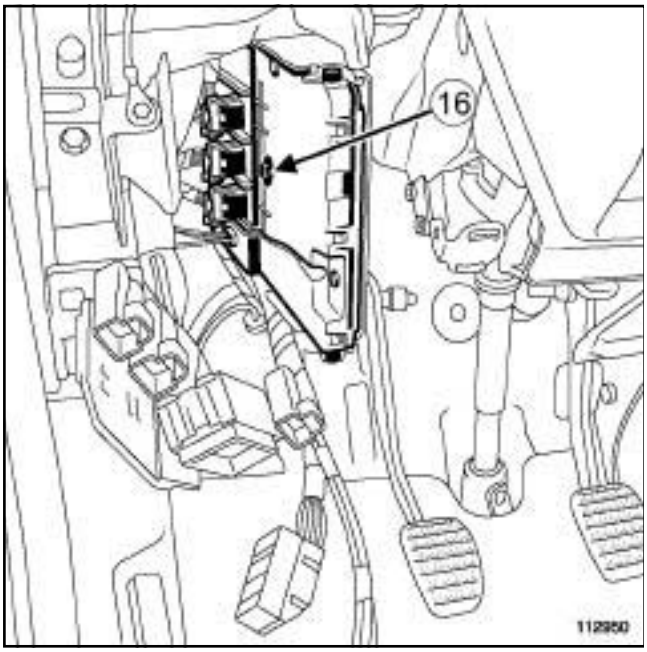


112462

❏ Unclip the UCH from its mounting.

LEFT-HAND DRIVE

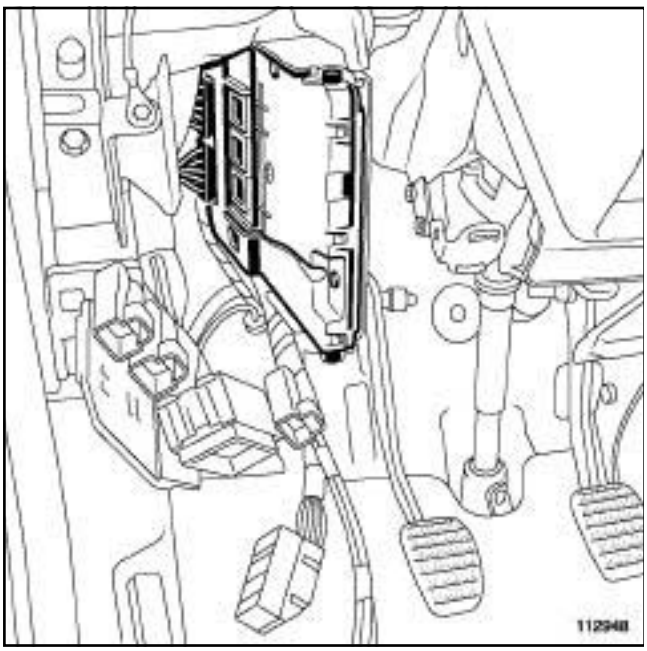
VEHICLE WITH CARD



112950

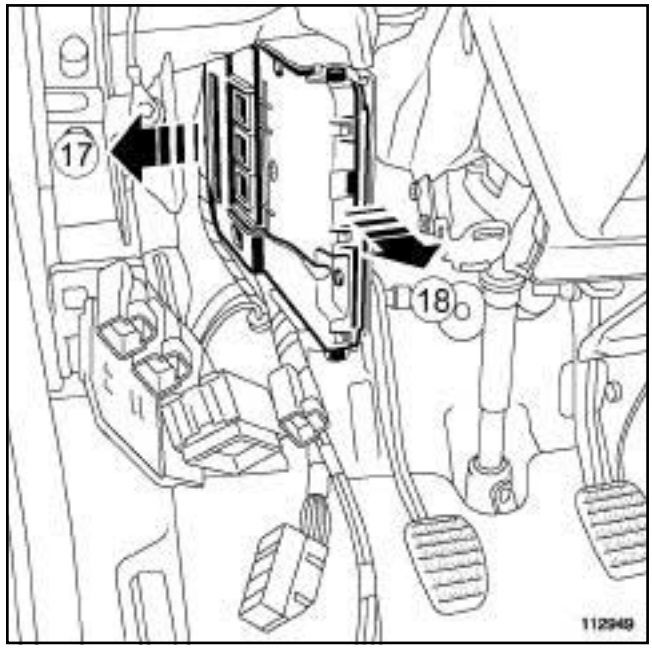
❏ Unclip the first row of connectors,

❏ Remove the bolt (**16**) .



112948

❏ Unclip the second row of connectors.



112949

❏ Remove the UCH (**17**) , (**18**) .

REFITTING

I - REFITTING STAGE FOR THE PART CONCERNED.

VEHICLE WITH KEY

❏ Fit the front section of the UCH,

❏ Clip the rear section of the UCH,

❏ Tighten the bolt ***(12)*** ,

❏ Clip the connectors in place.

VEHICLE WITH CARD

❏ Fit the UCH,

❏ Tighten the bolt ***(16)*** ,

II - FINAL OPERATION.

❏ Clip:

- the connector mountings on the beam,

LEFT-HAND DRIVE

- the connectors on the beam,
- the dashboard trim.

❏ Tighten the bolts ***(3)*** , ***(5)*** ,

❏ Clip:

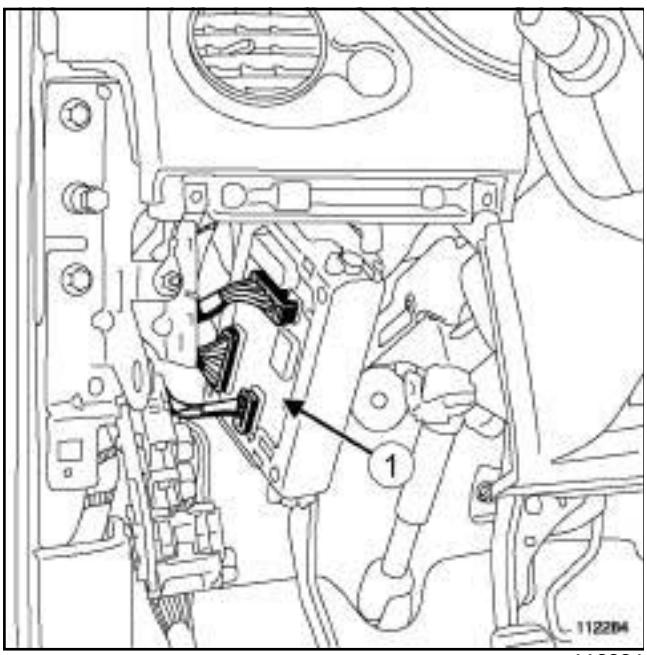
- the plastic rivet,
- the dashboard side panel,
- the dashboard moulding,
- the door seal,
- the dashboard lower trim ***(6)*** .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ If replacing the UCH, carry out the necessary programming using the **Diagnostic tool**. (see **Fault finding - Replacement of components**) (MR 394, 87B, Passenger compartment connection unit).

No.	Description
(1)	UCH
(2)	Renault card (simple or hands-free)
(3)	Key equipped with remote control locking
(4)	Locking - unlocking motor
(5)	Specific reception receivers in the handles and the rear bumper
(6)	Proximity and movement sensor
(7)	Locking button on the handles
(8)	Tailgate locking switch
(9)	Tailgate lock
(10)	Tailgate opening switch
(11)	Lock motor for the fuel filler flap
(12)	Central locking switch

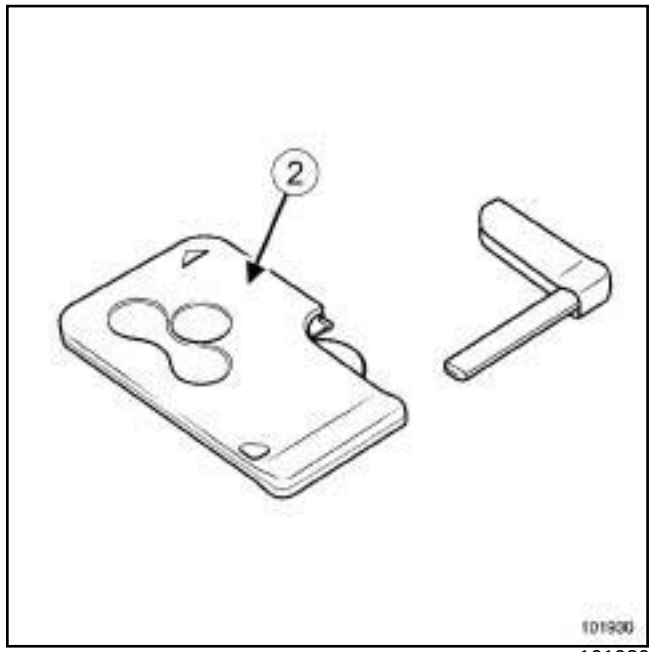
I - UCH



112284

UCH (**1**)

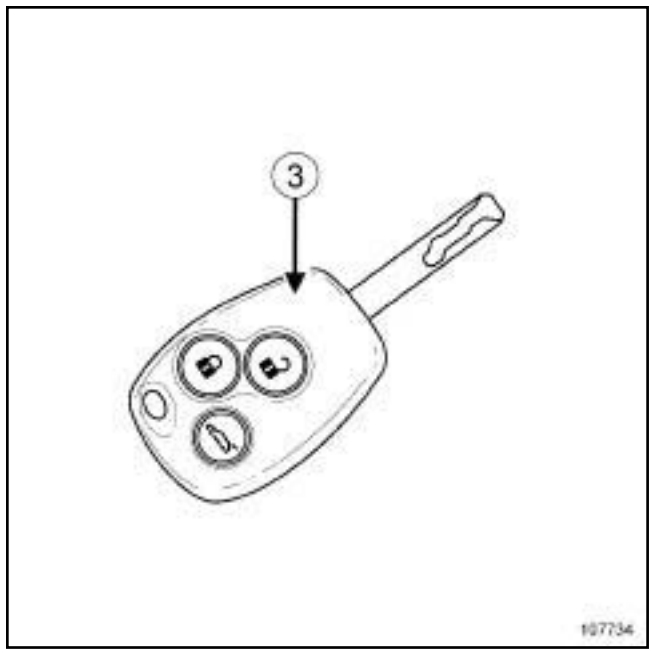
II - RENAULT CARD



101930

RENAULT card (**2**) (simple or hands-free)

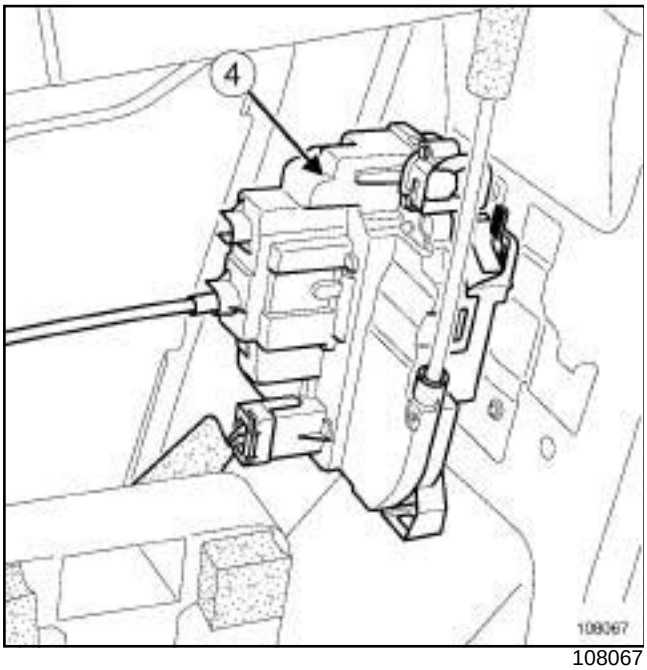
III - REMOTE CONTROL KEY



107734

Remote control key (**3**)

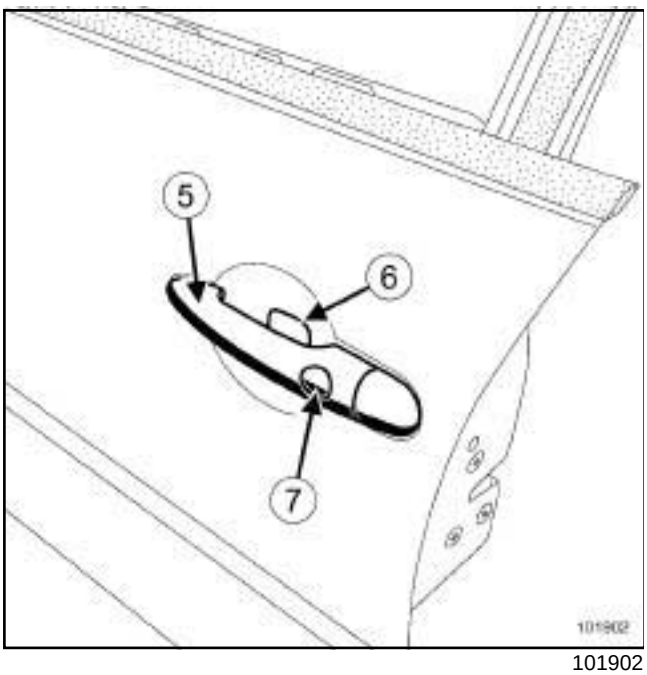
IV - DOOR LOCKING / UNLOCKING MOTOR



108067

Locking - unlocking motor integrated in the door locks (**4**)

V - OPENING RECEIVERS INTEGRATED IN HANDLES WITH HANDS-FREE FUNCTION AND THE REAR BUMPER

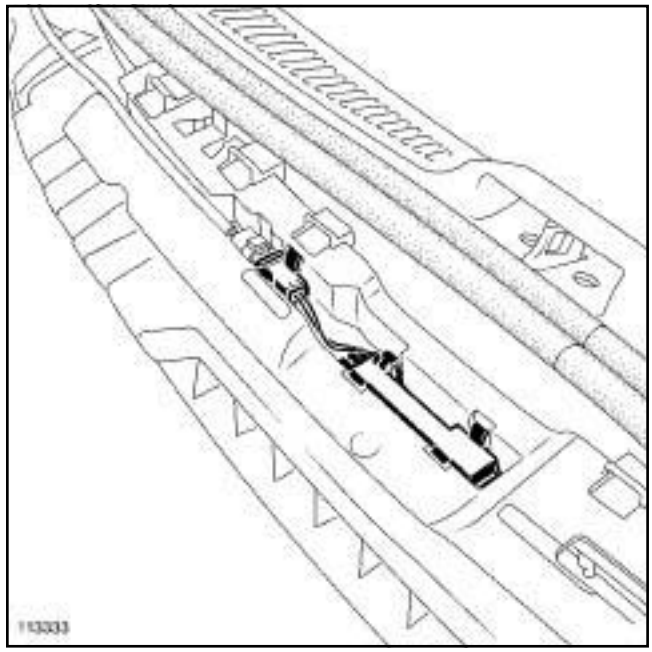


101902

Opening receiver integrated in the exterior handles (**5**) (hands-free version)

Presence and motion sensor (**6**) (hands-free version),

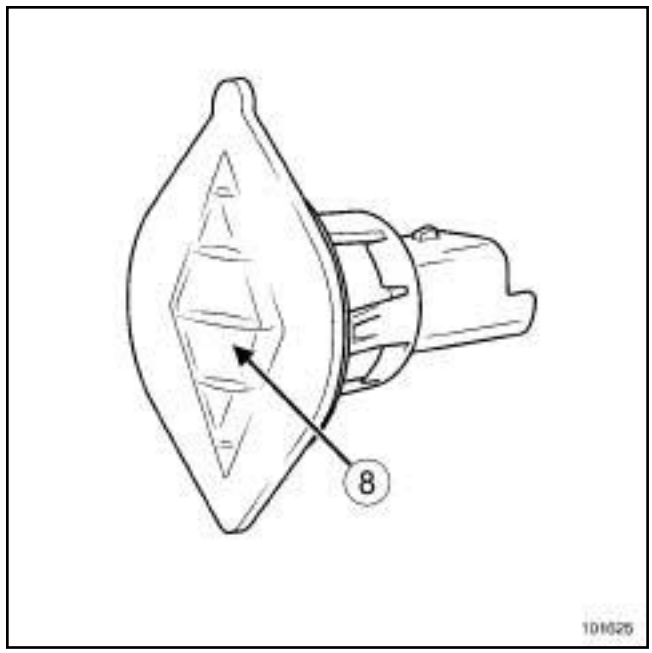
Locking button (**7**) (hands-free version)



113333

Opening receiver integrated in the rear bumper

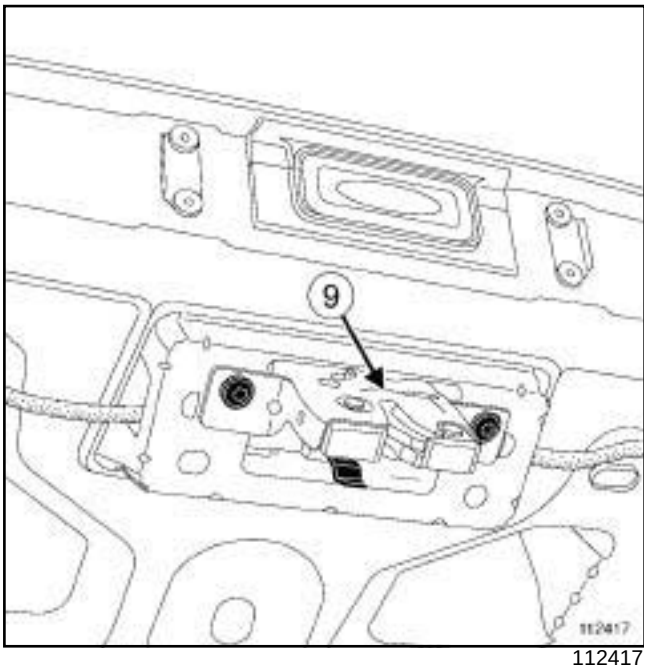
VI - HANDS-FREE TAILGATE SWITCH



101625

Tailgate locking switch (**8**) (hands-free version)

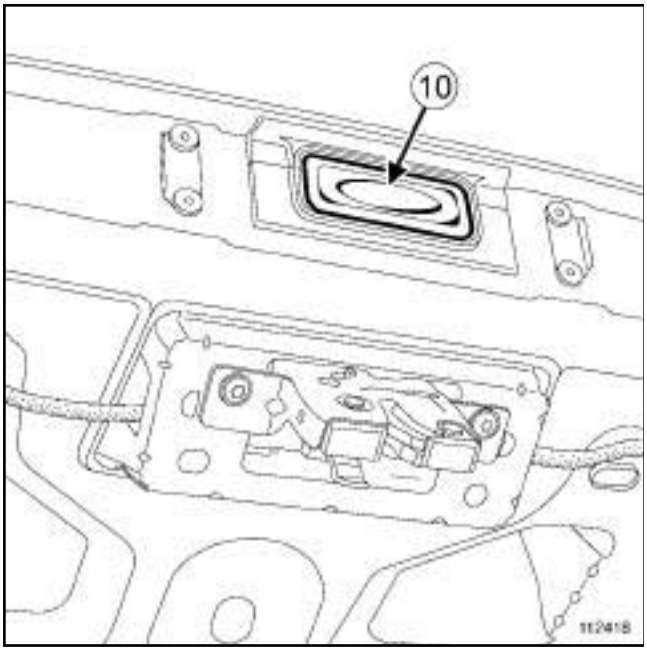
VII - TAILGATE LOCK



112417

Tailgate lock (**9**)

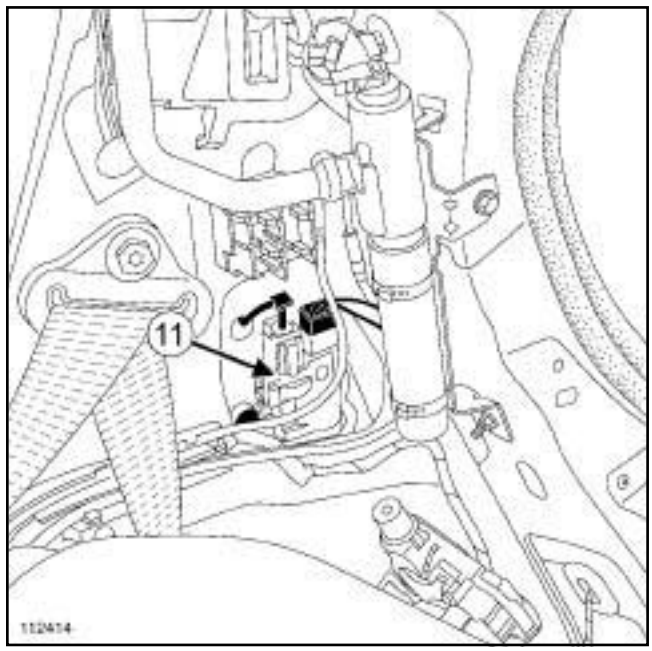
VIII - TAILGATE OPENING SWITCH



112418

Tailgate opening switch (**10**)

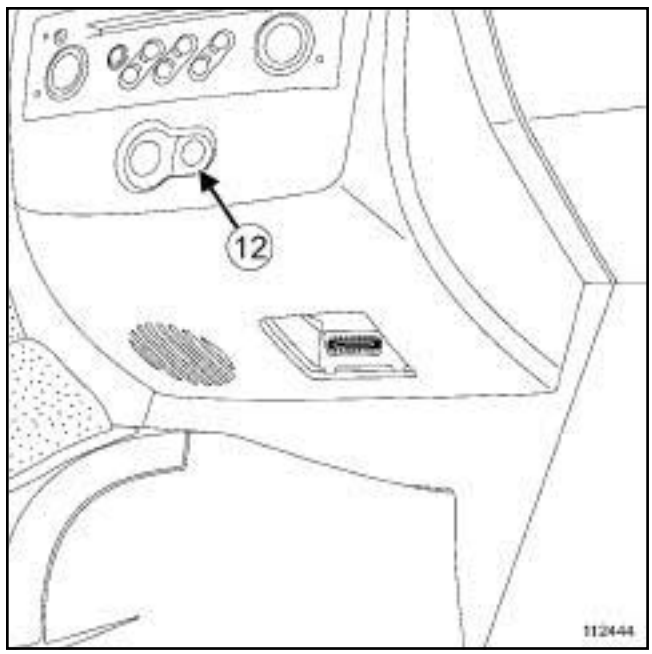
IX - LOCK MOTOR FOR THE FUEL FILLER FLAP



112414

Lock motor for the fuel filler flap (**11**)

X - CENTRAL LOCKING SWITCH

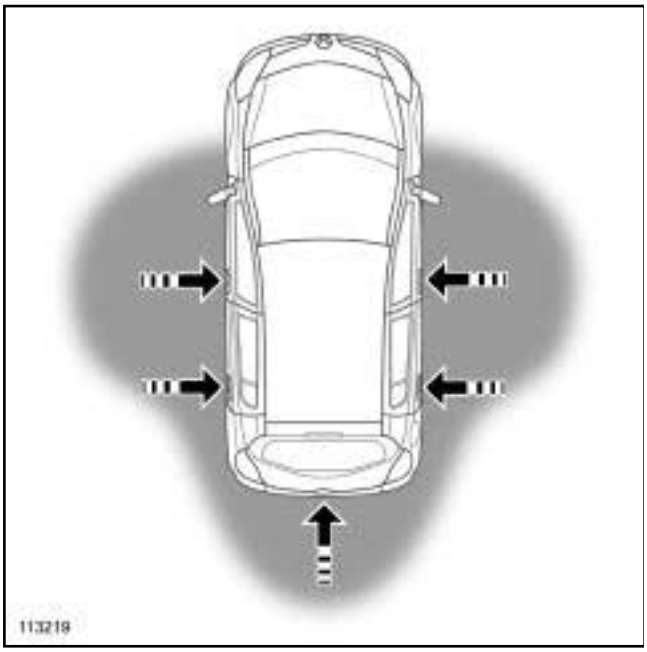


112444

Central door locking switch (**12**)

XI - LOCATION OF OPENING RECEIVERS AND COVERAGE ZONE

These receivers are only fitted to hands-free version vehicles.



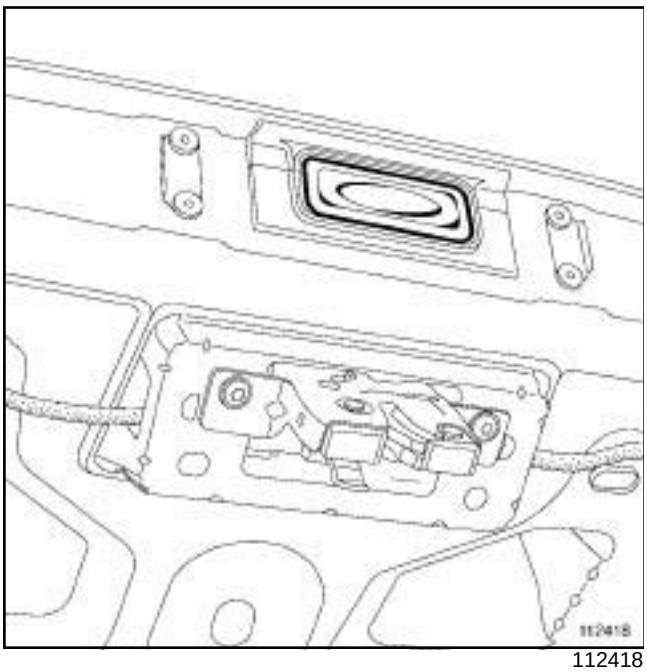
113219

REMOVAL

I - REMOVAL PREPARATION OPERATION

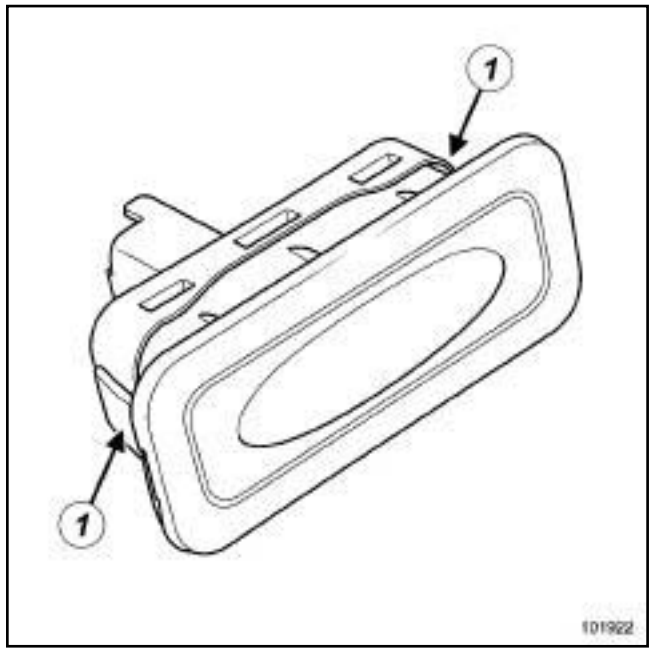
❑ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112418

❑ Access the control via the tailgate interior.



101922

❑ Squeeze the clips (**1**) .

❑ Take out the control.

❑ Disconnect the connector.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the connector.

❑ Clip on the tailgate opening control.

II - FINAL OPERATION.

❑ Refit the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).

VEHICLE WITH CARD

Special tooling required	
Car. 1363	Set of trim removal levers.

REMOVAL

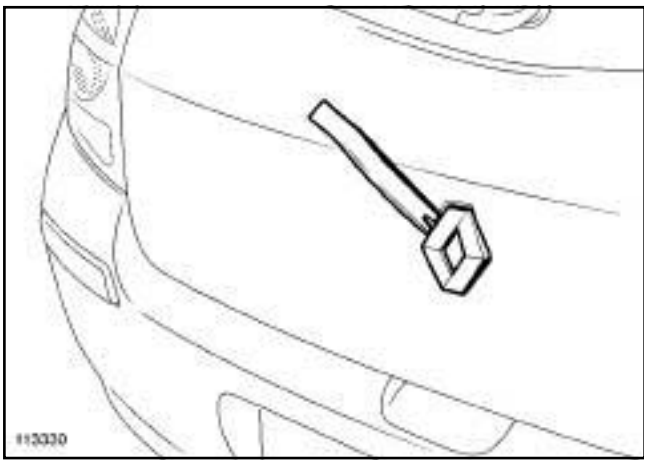
I - REMOVAL PREPARATION OPERATION

❑

Note:

The tailgate locking switch is only present on vehicles equipped with hands-free.

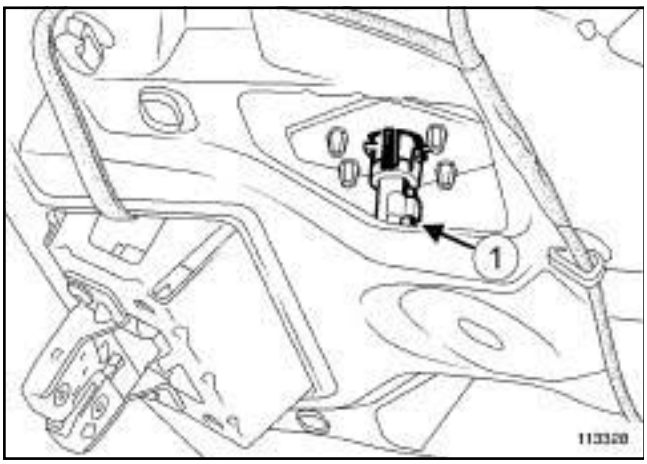
❑ Remove the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening element trim).



113330

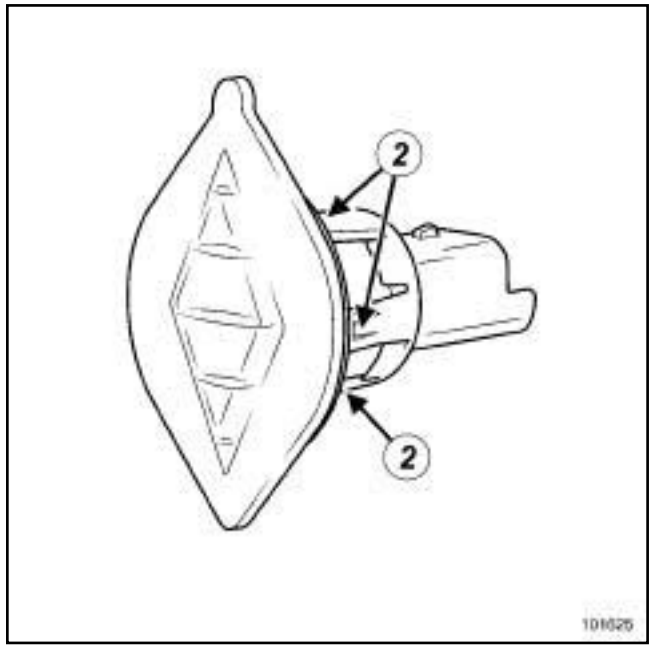
❑ Remove the badge using tool **(Car. 1363)**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113328

❑ Disconnect the connector (**1**) .



101625

❑ Squeeze the clips (**2**) and remove the switch towards the rear of the vehicle.

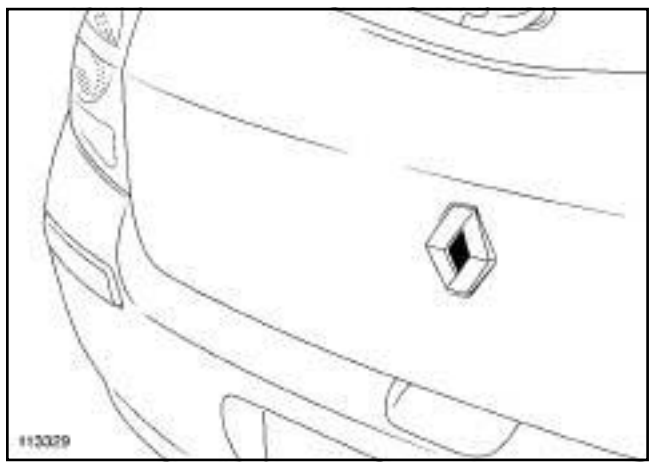
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the switch.

❑ Connect the connector.

II - FINAL OPERATION.



113329

❑ Refit:

- the badge,

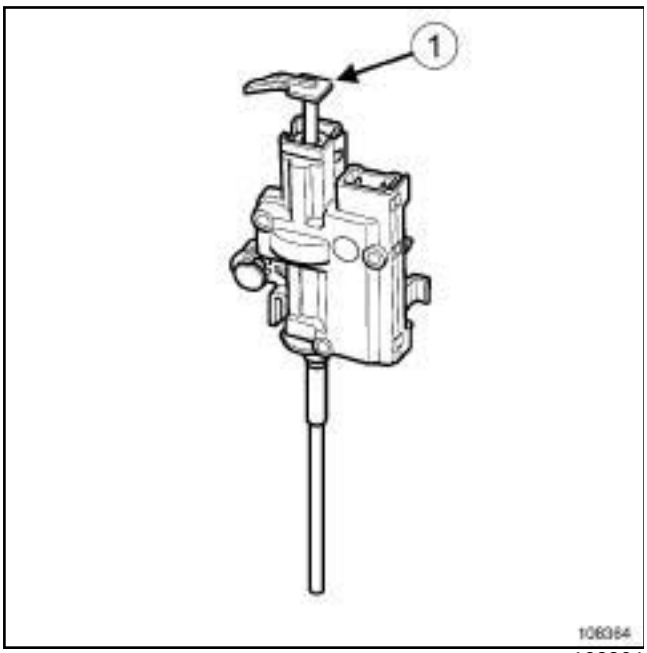
VEHICLE WITH CARD

- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).



108364

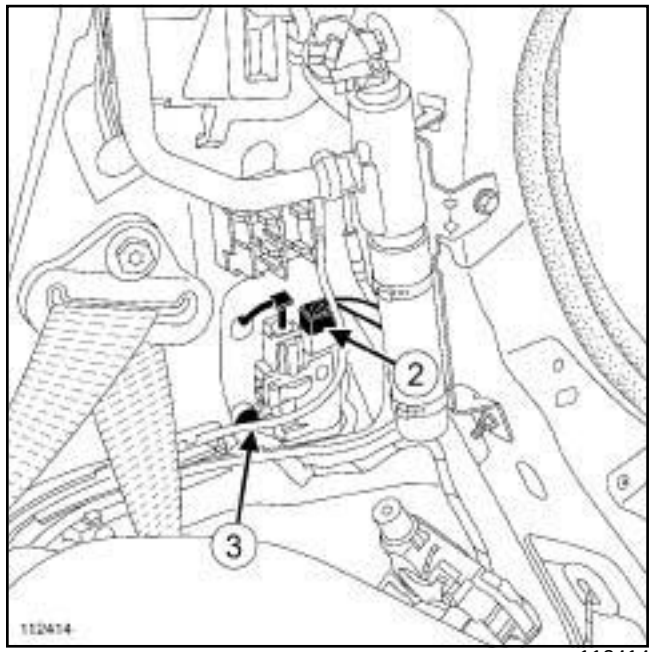
❑

Note:

During an electrical fault, activate the motor manually by raising the catch (**1**) .

❑ Check that the motor is in the correct position (fuel filler flap unlocked).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112414

❑ Disconnect the connector (**2**) .

❑ Unfasten clip (**3**) .

❑ Remove the motor.

REFITTING

I - REFITTING PART CONCERNED

❑ Refit the motor.

❑ Clip on the motor clip.

❑ Connect the connector.

II - FINAL OPERATION.

❑ Refit the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

VEHICLE WITH CARD

REMOVAL

I - REMOVAL PREPARATION OPERATION

1 - Opening aerials integrated in the door handles

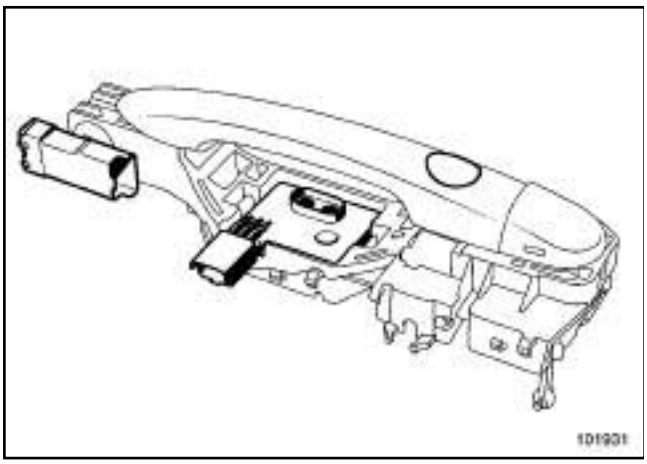
❑ Remove the door handle (see **Exterior door handle: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms).

2 - Opening receiver integrated in the rear bumper

❑ Remove the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED

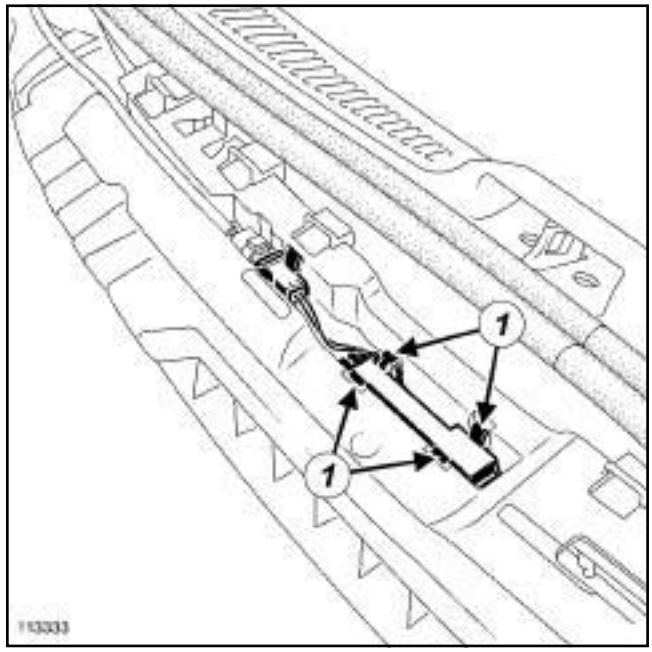
1 - Opening aerials integrated in the door handles



101931

❑ The handle - aerial - presence and movement sensor assembly cannot be dismantled.

2 - Opening receiver integrated in the rear bumper



113333

❑ Unclip the aerial by pushing the clips (**1**) .

❑ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

1 - Opening aerials integrated in the door handles

❑ Refit the door handle (see **Exterior door handle: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms).

2 - Opening receiver integrated in the rear bumper

❑ Connect the connector.

❑ Clip the aerial onto the bumper.

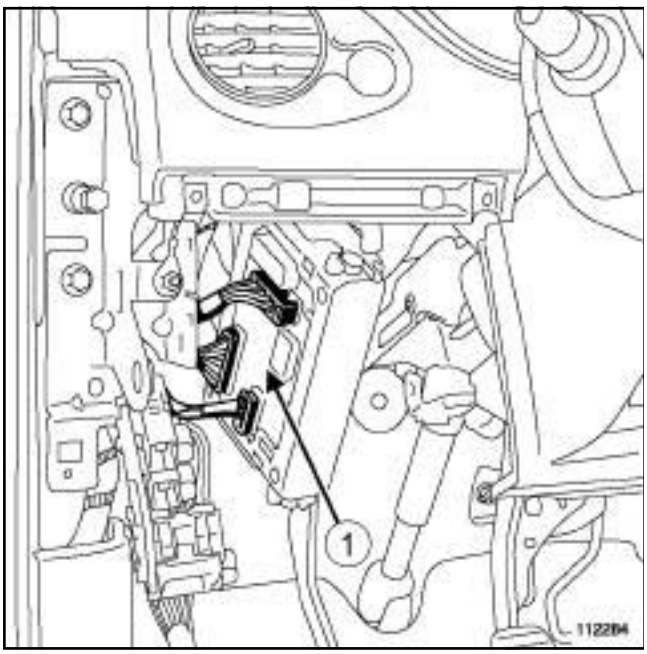
❑ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

Electric window: List and location of components

ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL, and ELECTRIC REAR WINDOW

No.	Description
(1)	UCH
(2)	Driver's window lift switch board
(3)	Passenger window lift switch board
(4)	Rear window lift switch board

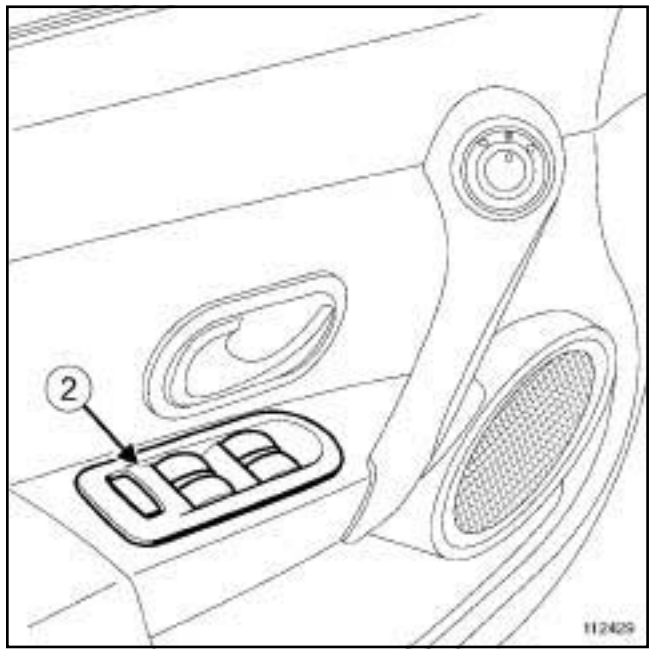
I - UCH



112284

UCH (**1**)

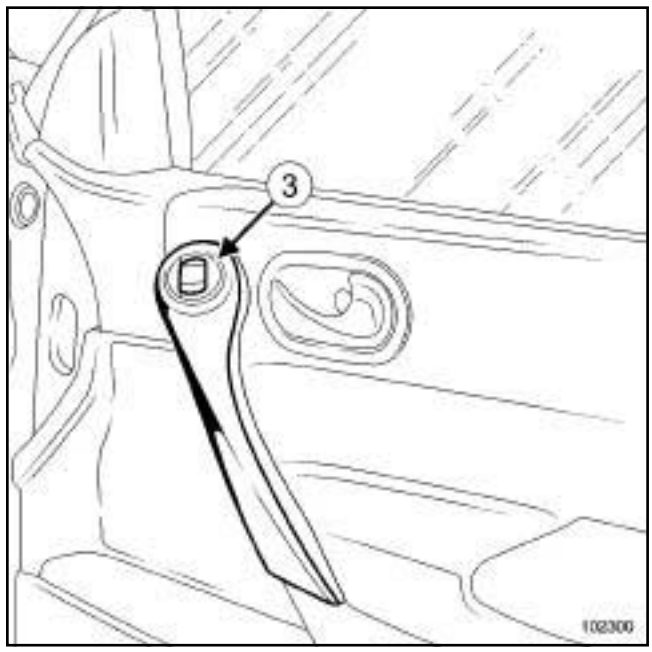
II - DRIVER'S WINDOW LIFT SWITCH BOARD



112429

Driver's window lift switch board (**2**)

III - PASSENGER WINDOW LIFT SWITCH BOARD

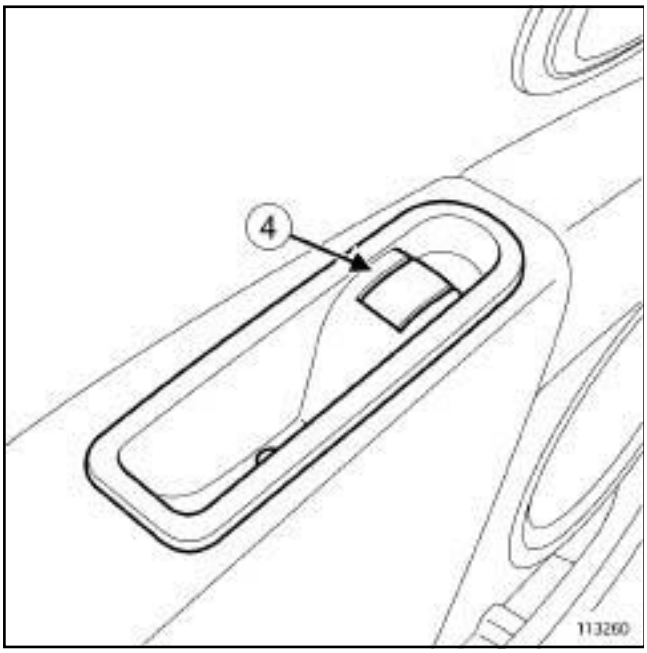


102300

Passenger window lift switch board (**3**)

ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL, and ELECTRIC REAR WINDOW

IV - REAR WINDOW LIFT SWITCH BOARD



113260

Rear window lift switch board (**4**)

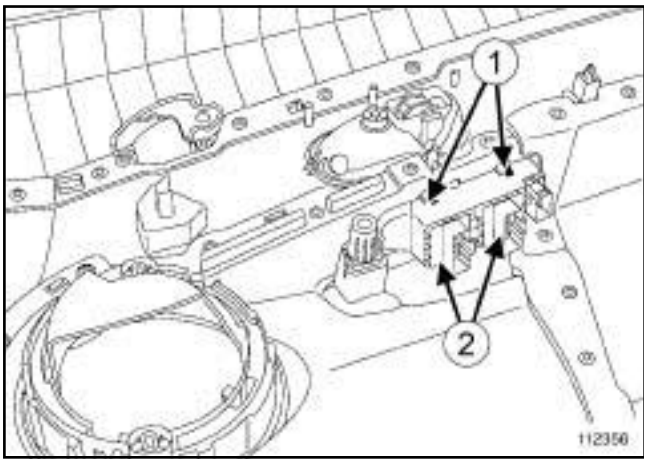
ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL

REMOVAL

I - REMOVAL PREPARATION OPERATION

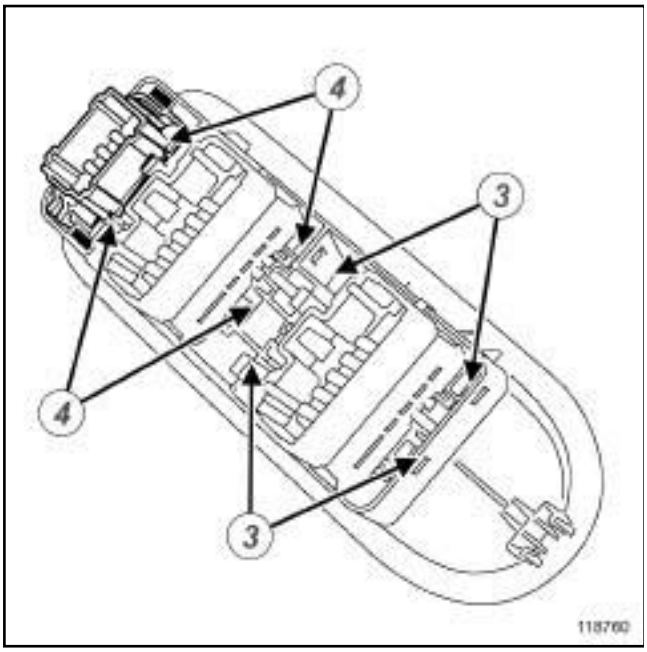
❏ Remove the driver's front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112356

❏ Remove the board by moving clips (**1**) and (**2**) .



118760

❏ Unclip the front electric window switches by pressing on the clips (**3**) .

❏ Unclip the rear electric window switches by pressing on the clips (**4**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the electric window switches onto the plate,
- the plate onto the front side door trim.

II - FINAL OPERATION.

❏ Refit the driver's front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

Front electric window switch on passenger door: Removal - Refitting

ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL

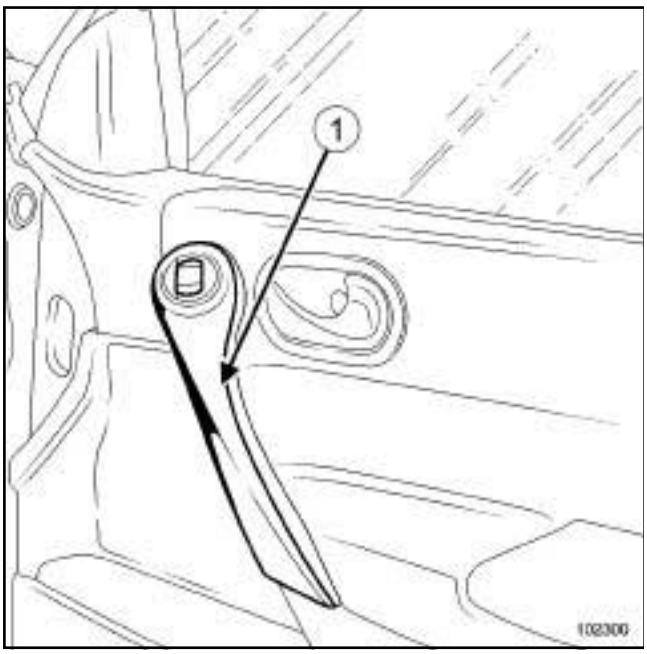
Special tooling required	
Car. 1363	Set of trim removal levers.

The front electric window switch (passenger side) is clipped to a plate.

The plate is clipped to the door trim.

REMOVAL

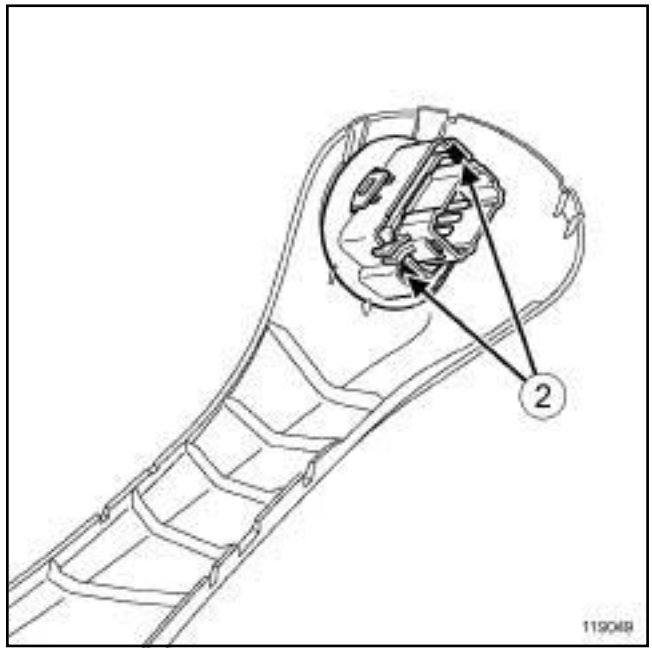
OPERATION FOR REMOVAL OF PART CONCERNED



102300

❏ Unclip the upper section (**1**) of the door handle using the **(Car. 1363)**.

❏ Disconnect the front electric window switch connector.



119049

❏ Unclip the front window switch from the door handle upper section by pressing the clips (**2**) .

❏ Remove the front door switch from the passenger door.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Clip the front window switch on the door handle upper section.

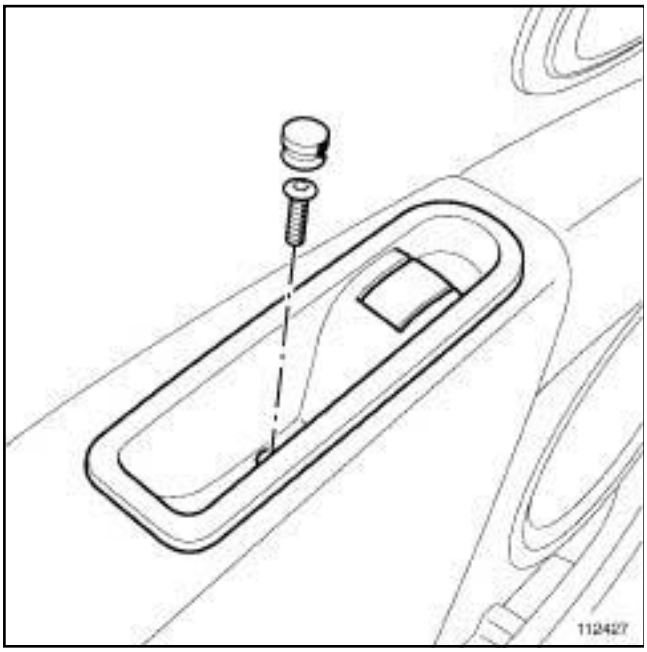
❏ Connect the front electric window switch connector.

❏ Clip on the upper section of the door handle.

B85 or K85, and ELECTRIC REAR WINDOW

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112427

❏ Remove:

- the blanking cover using a small flat-blade screwdriver,
- the board mounting bolt.

❏ Extract the board towards the front.

❏ Disconnect the connector.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connector.

❏ Refit the board inserting it from the rear.

❏ Refit:

- the board mounting bolt,
- the blanking cover.

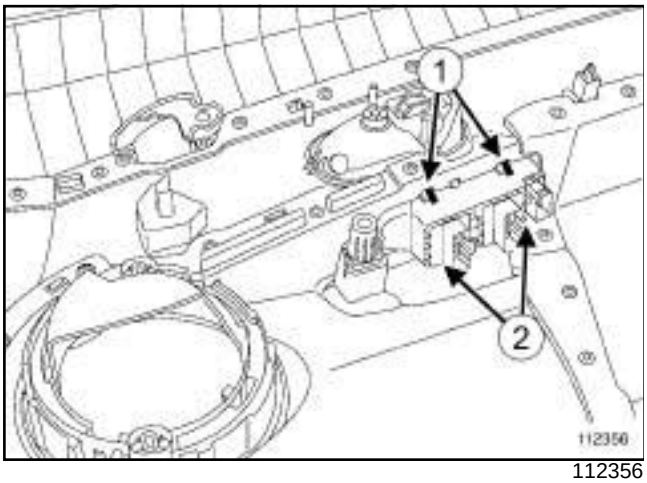
B85 or K85, and ELECTRIC REAR WINDOW

REMOVAL

I - REMOVAL PREPARATION OPERATION

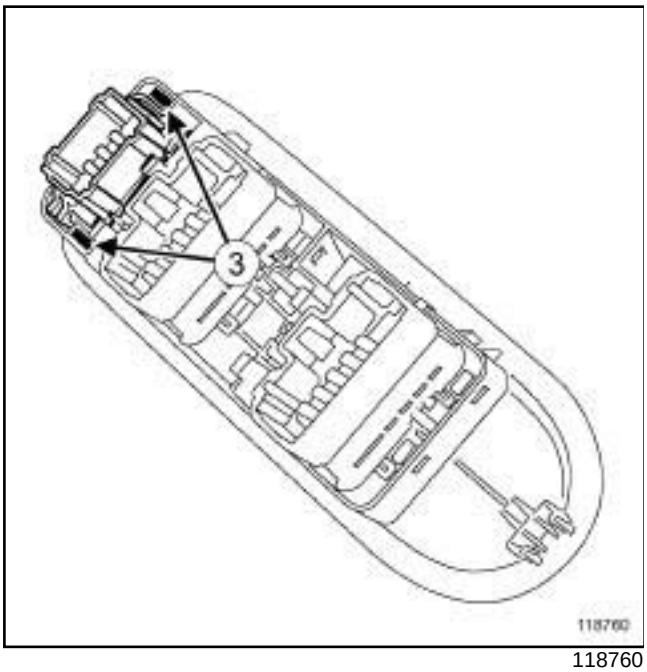
❑ Remove the driver's front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112356

❑ Remove the board by moving clips (**1**) and (**2**) .



118760

❑ Remove the child safety switch by pressing on the clips (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the child safety switch on the plate,
- the plate onto the front side door trim.

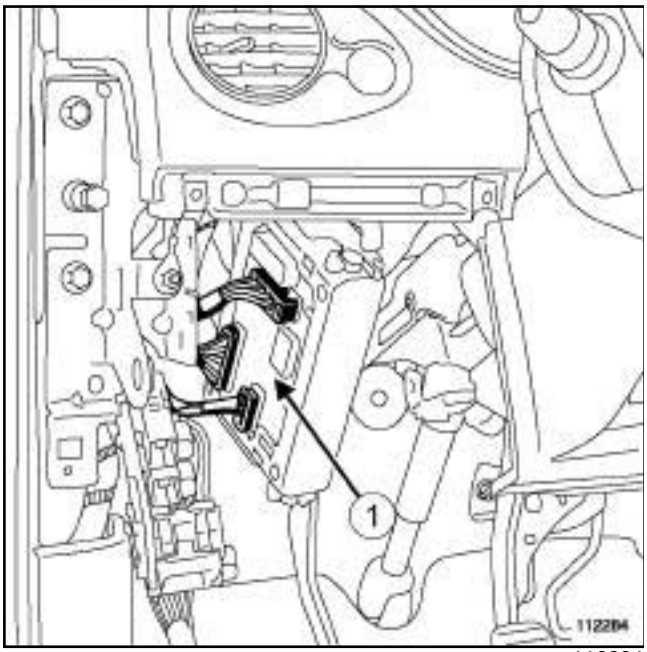
II - FINAL OPERATION.

❑ Remove the driver's front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

PANORAMIC SUNROOF

No.	Description
(1)	UCH
(2)	Sunroof mobile glass
(3)	Sunroof open and close switch
(4)	Sunroof motor/computer

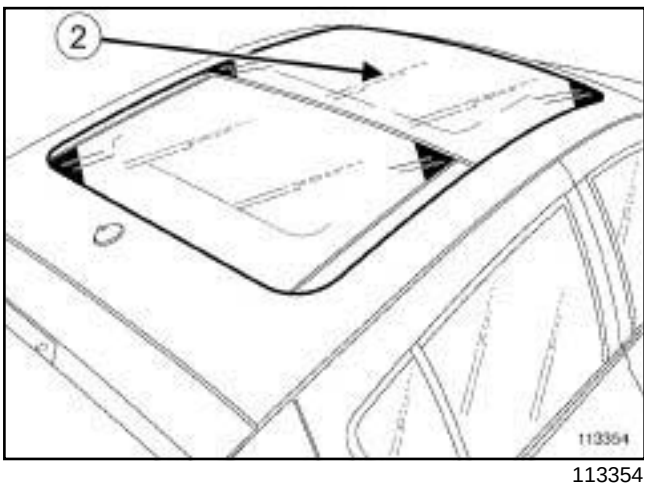
I - UCH



112284

UCH (**1**) .

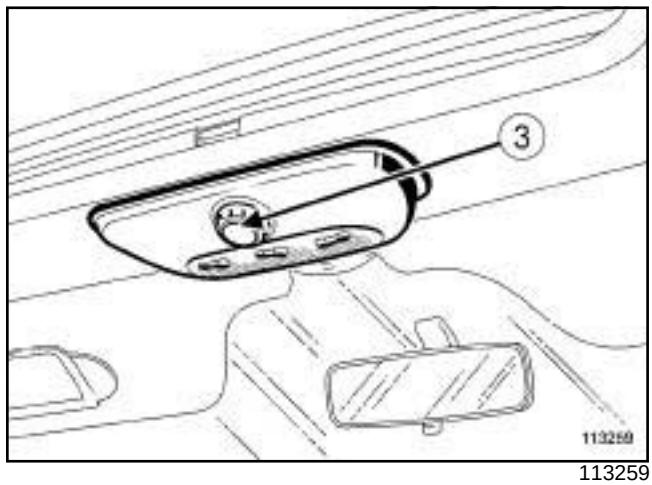
II - SUNROOF MOBILE GLASS



113354

Sunroof mobile glass (**2**) .

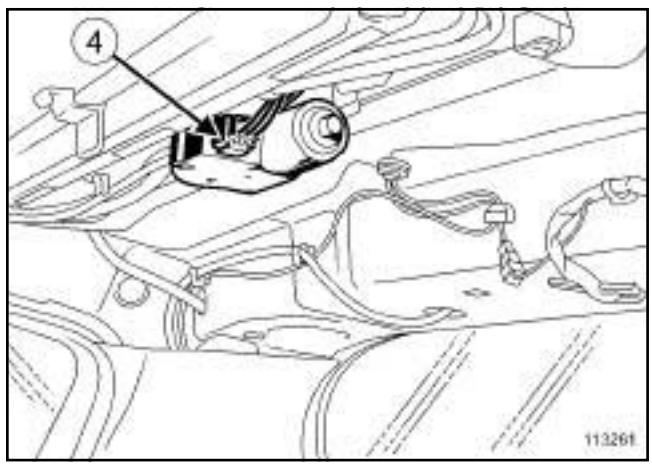
III - SUNROOF OPEN AND CLOSE SWITCH



113259

Sunroof open and close switch (**3**) .

IV - SUNROOF MOTOR/COMPUTER



113261

Sunroof motor/computer, located towards the rear of the roof (**4**) .

PANORAMIC SUNROOF

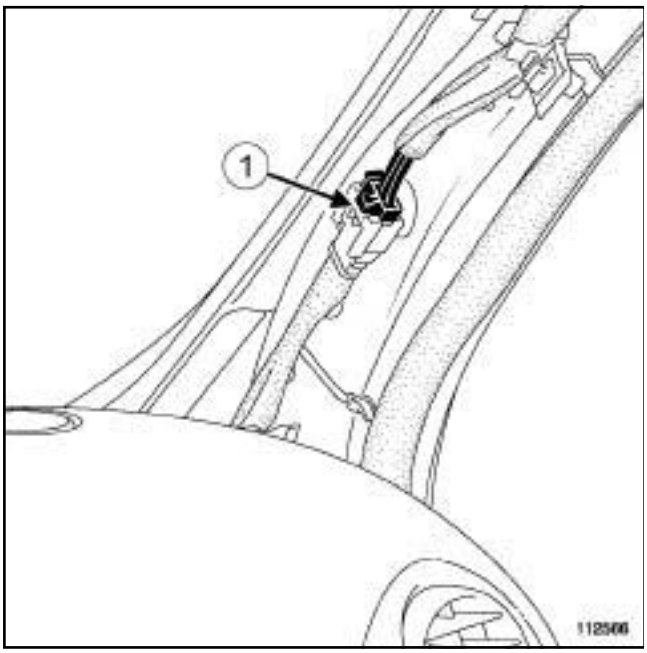
Tightening torques ▽	
motor bolts	**4 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

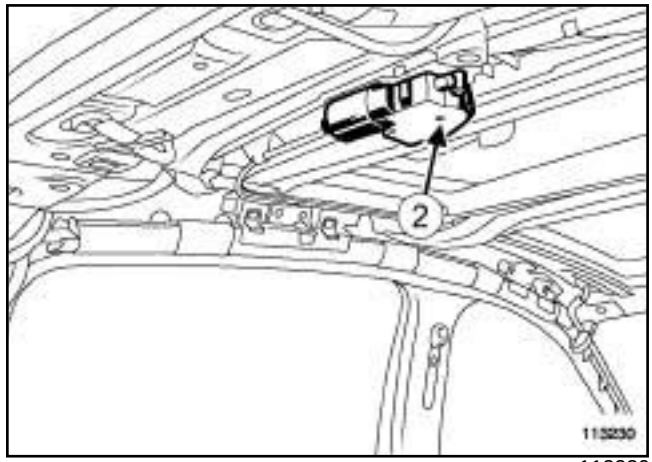
❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) (MR 392, 80A, Battery).

❏ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).



112566

❏ Disconnect the sunroof supply and control connector (**1**) .



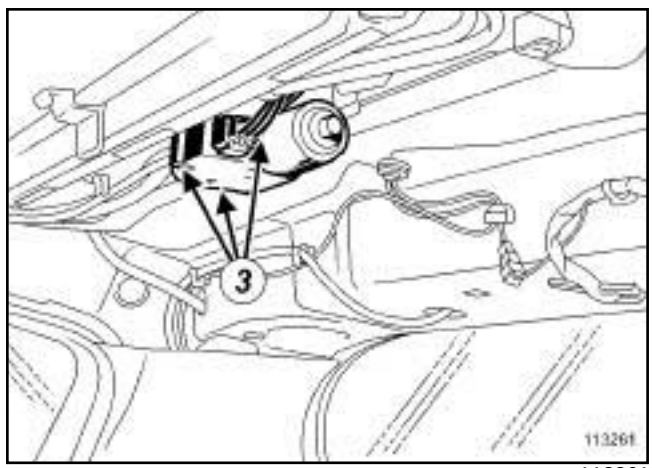
113230

❏

Note:

If there is an electrical fault with the motor, it is possible to move the sunroof manually (**2**) using an Allen key.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113261

❏ Disconnect the connector.

❏ Remove:

- the motor bolts (**3**) ,
- the motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the motor.

PANORAMIC SUNROOF

❑ Torque tighten the **motor bolts (4 N.m)**.

❑ Connect the connector.

II - FINAL OPERATION.

❑ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

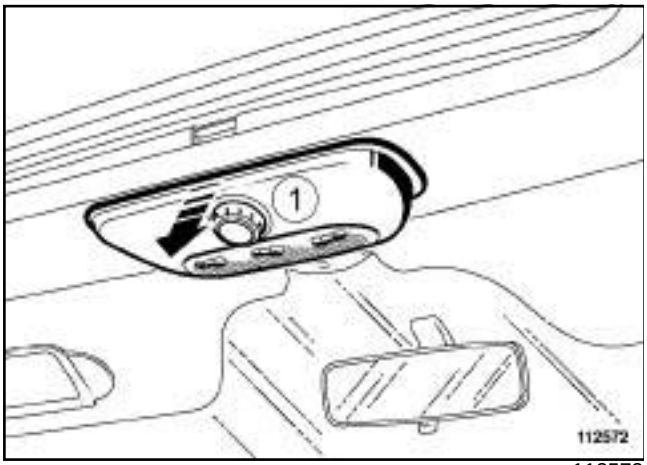
❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) (MR 392, 80A, Battery).

❑ Carry out the necessary operations without the diagnostic tool (see **Battery: Initialisation**) (MR 394, 80A, Battery).

PANORAMIC SUNROOF

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



112572

❏ Unclip the roof opening control using a flat-blade screwdriver (**1**) .

❏ Disconnect the connectors.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Connect the connectors.

❏ Clip the sunroof opening control.

REAR PROXIMITY RADAR

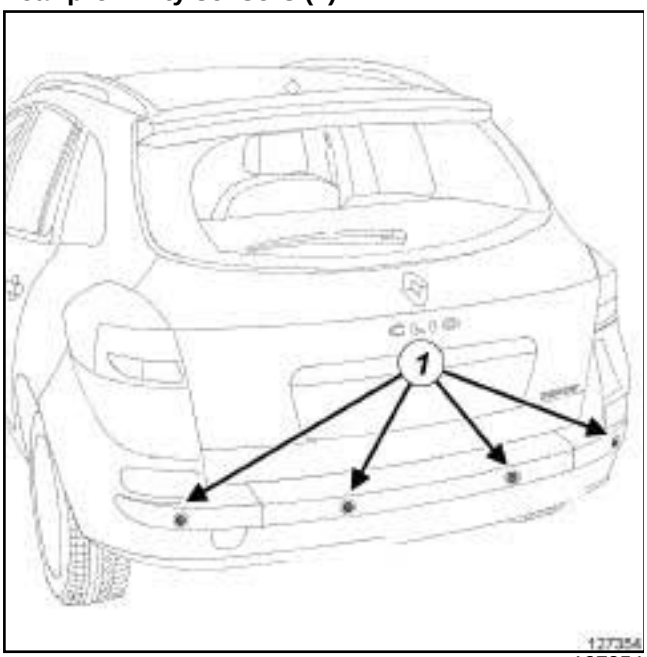
I - LIST OF COMPONENTS

The parking distance control function consists of:

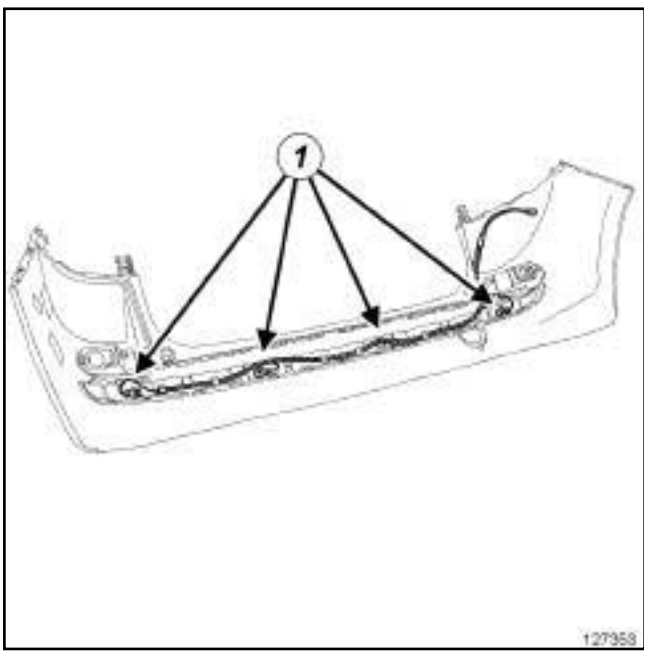
- rear proximity sensors,
- a parking distance control buzzer,
- a parking distance control computer,
- a parking distance control switch.

II - LOCATION OF COMPONENTS

Rear proximity sensors (1)

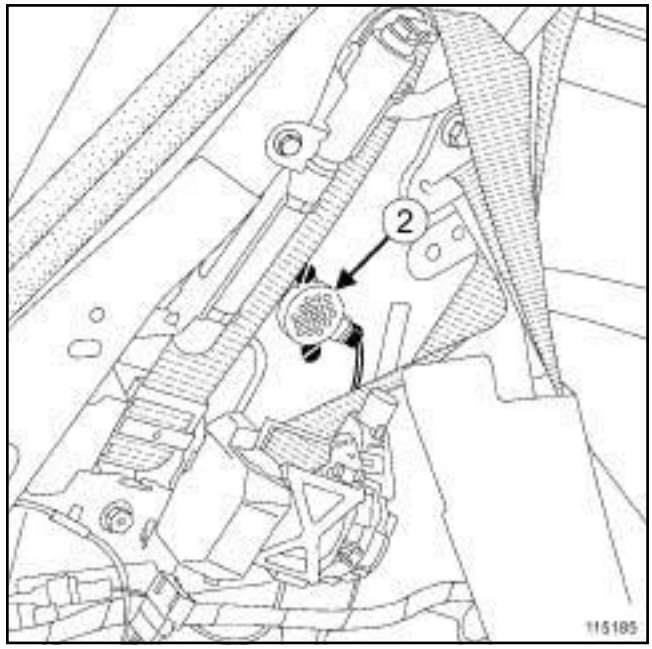


127354



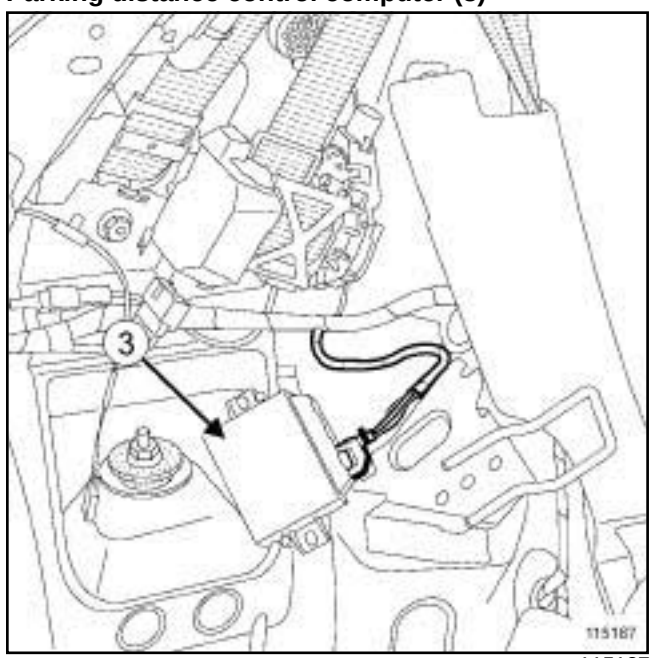
127353

Rear parking distance control buzzer (2)



115185

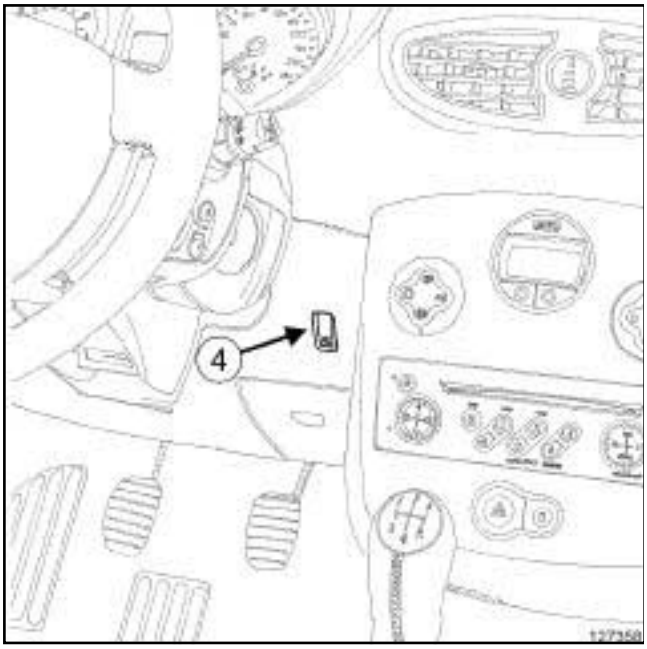
Parking distance control computer (3)



115187

REAR PROXIMITY RADAR

Parking distance control switch (4)

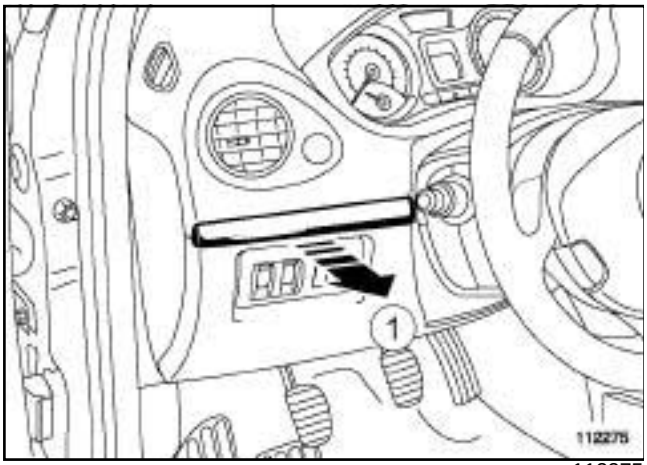


127358

PROXIMITY RADAR

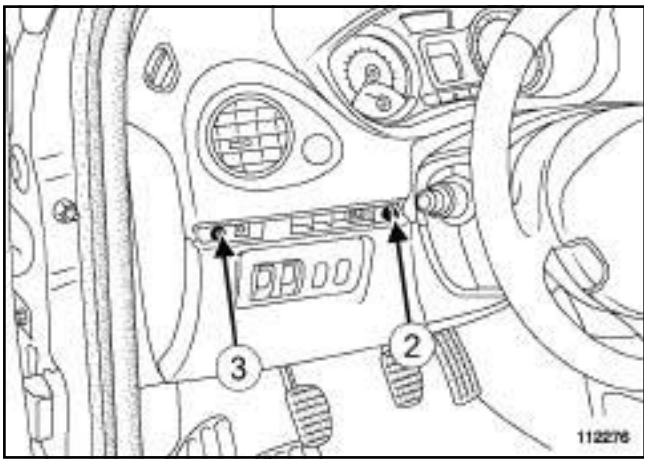
REMOVAL

I - OPERATION FOR REMOVAL OF PART CONCERNED



112275

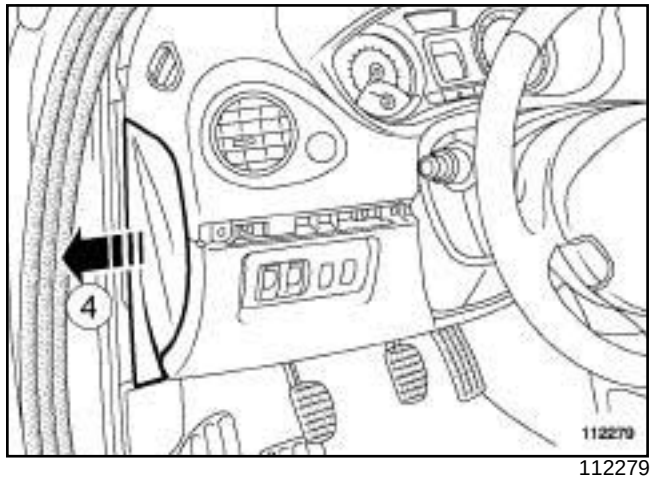
❏ Unclip the trim (**1**) .



112276

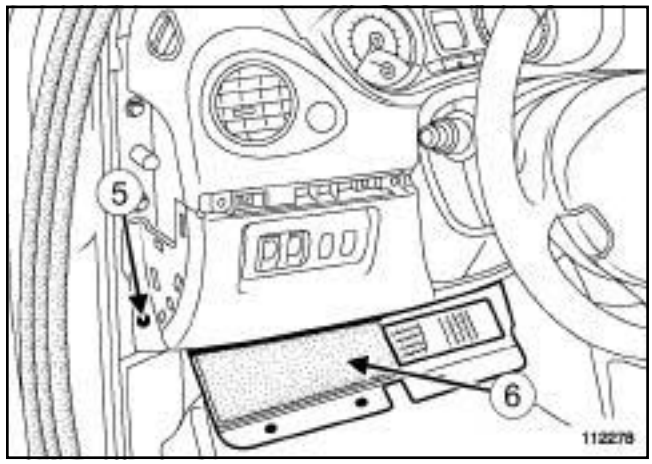
❏ Remove:

- the plastic rivet (**2**) ,
- the upper mounting bolt (**3**) .



112279

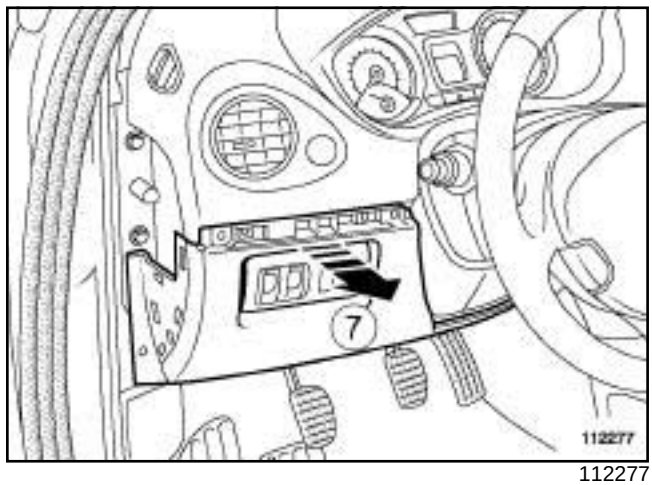
❏ Unclip the dashboard side panel (**4**) .



112278

❏ Remove:

- the lower mounting bolt (**5**) ,
- the lower cover trim (**6**) .

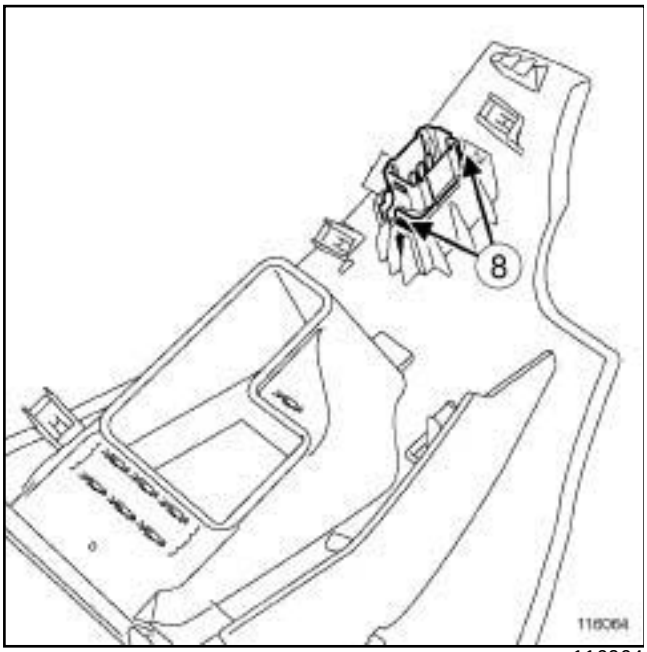


112277

❏ Remove the lower cover (**7**) .

❏ Disconnect the connectors.

II - OPERATION FOR REMOVAL OF PART CONCERNED



116064

❑ Unclip the parking proximity sensor switch by pressing on the clips (**8**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the parking proximity sensor switch onto the lower cover.

II - FINAL OPERATION

❑ Connect the lower cover connectors.

❑ Refit:

- the lower cover,
- the lower cover trim,
- the lower mounting bolt.

❑ Clip on the dashboard side panel.

❑ Refit:

- the upper mounting bolt,
- the plastic rivet.

❑ Clip the trim piece in place.

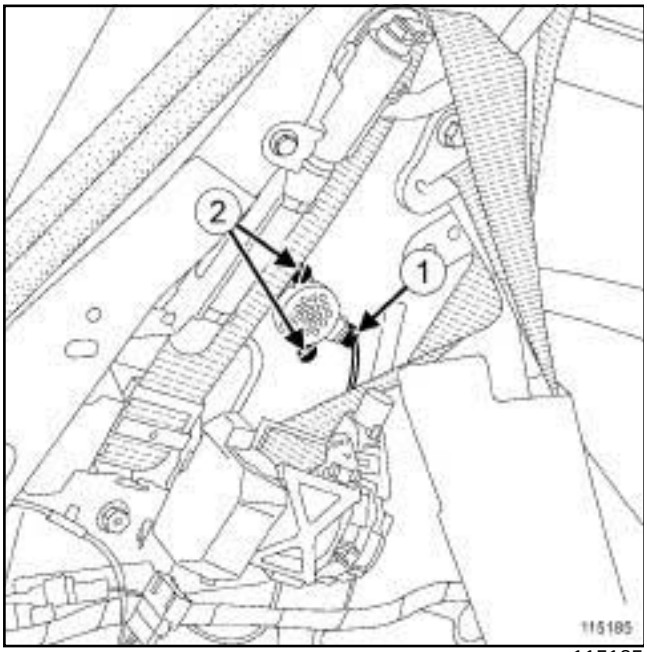
REAR PROXIMITY RADAR

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



115185

❏ Disconnect the connector (**1**) from the parking distance control buzzer.

❏ Remove:

- the parking distance control buzzer rivets (**2**) by turning them a quarter of a turn,
- the parking distance control buzzer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the parking distance control buzzer,
- the parking distance control buzzer rivets.

❏ Connect the parking distance control buzzer connector.

II - FINAL OPERATION.

❏ Refit the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

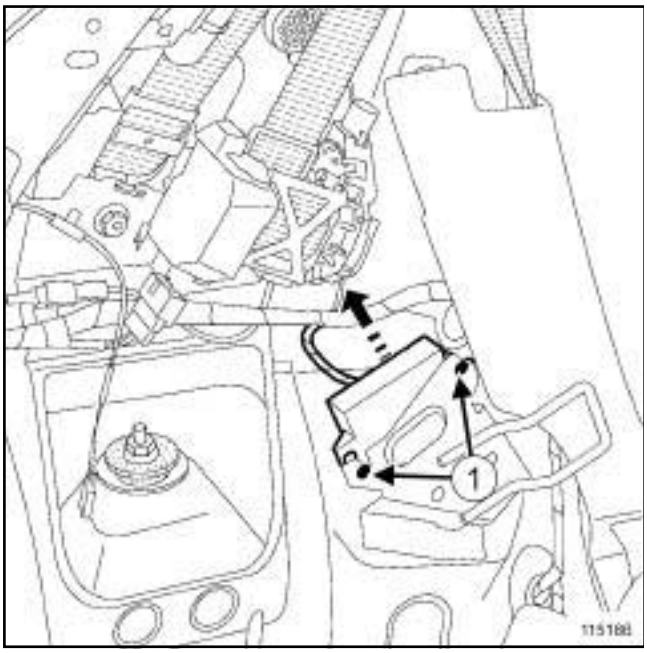
Equipment required
Diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove the rear left-hand wheel arch liner (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

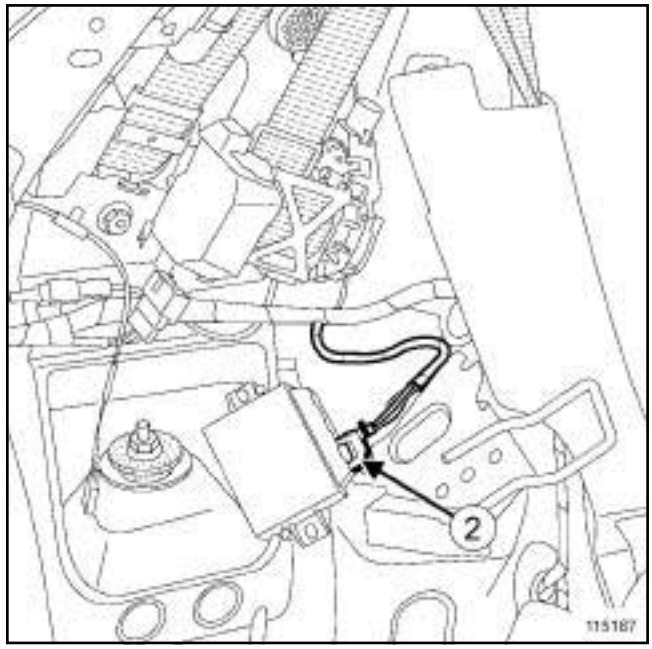
II - OPERATION FOR REMOVAL OF PART CONCERNED



115186

❑ Undo the parking distance control computer bolts (**1**) without removing them.

❑ Remove the computer upwards.



115187

❑ Disconnect the connector (**2**) from the parking distance control computer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the parking distance control computer connector.

❑ Position the computer on its support.

❑ Tighten the parking distance control computer bolts.

II - FINAL OPERATION.

❑ Refit the rear left-hand wheel arch liner (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ If replacing the parking distance control computer, carry out the necessary operations using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394 , 87F, Parking distance control).

REAR PROXIMITY RADAR

REMOVAL

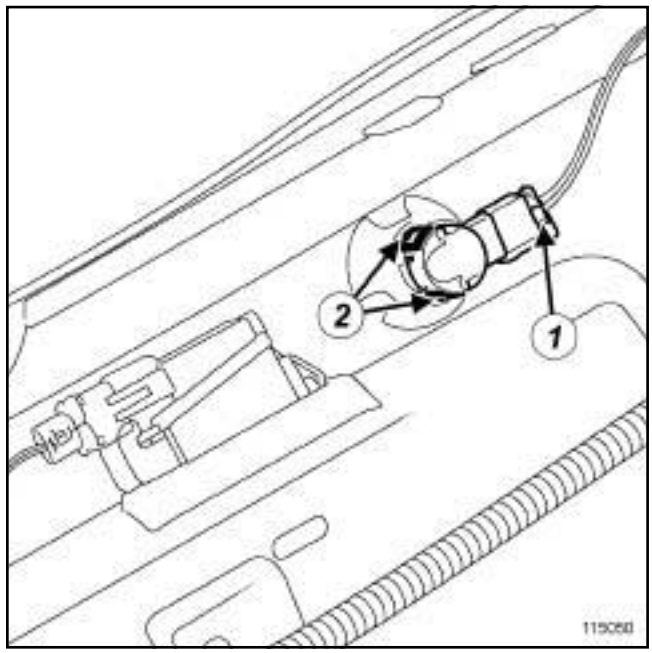
I - REMOVAL PREPARATION OPERATION

❑ Remove the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

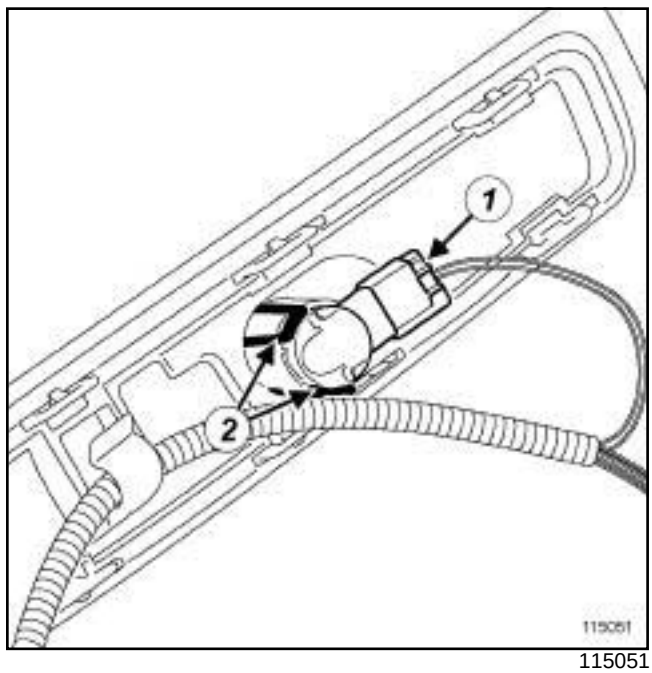
WARNING

The distance control radars are fragile. Handle with care as the external part cannot withstand impacts.

II - OPERATION FOR REMOVAL OF PART CONCERNED



115050



115051

❑ Disconnect the connectors (**1**) from the proximity radar.

❑ Remove the radars by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the proximity radars onto the bumper.

REAR PROXIMITY RADAR

❑ Connect the connectors to the proximity radars.

II - FINAL OPERATION.

❑ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

Special tooling required	
Car. 1597	Trim removal lever.

Tightening torques ▽	
engine compartment connection unit bolts	**4 Nm**
engine compartment connection unit cover bolts	**4 Nm**

IMPORTANT

Never apply pressure to the engine compartment connection unit joint face (risk of moisture entering).

If the joint face is damaged, the unit will need to be replaced.

REMOVAL

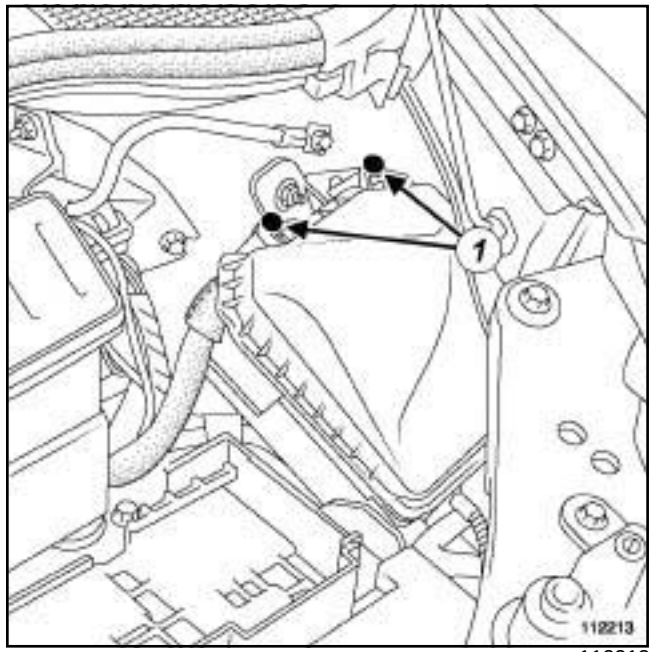
I - REMOVAL PREPARATION OPERATION

❑ In the event of replacement:

- Carry out the necessary programming (see **MR 394 Fault finding, 87G, Engine compartment connection unit, Fault finding - Replacement of components**).

❑ Remove the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**)

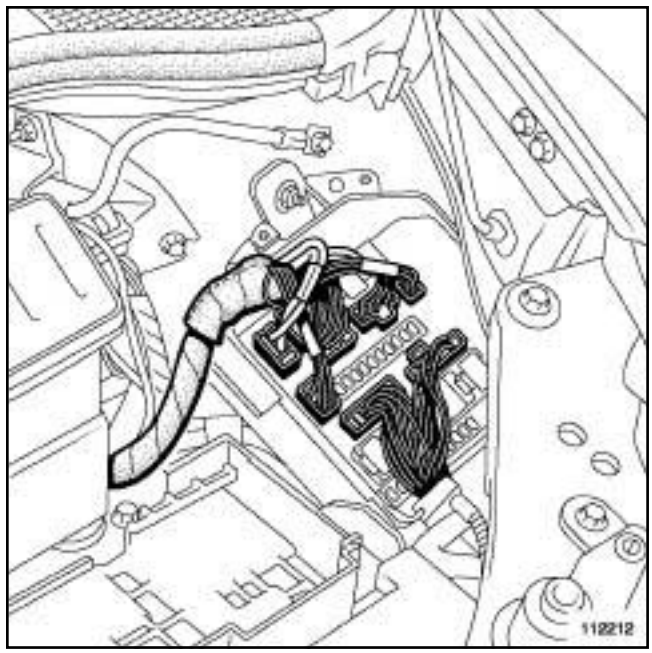
II - REMOVAL STAGE FOR THE PART CONCERNED



112213

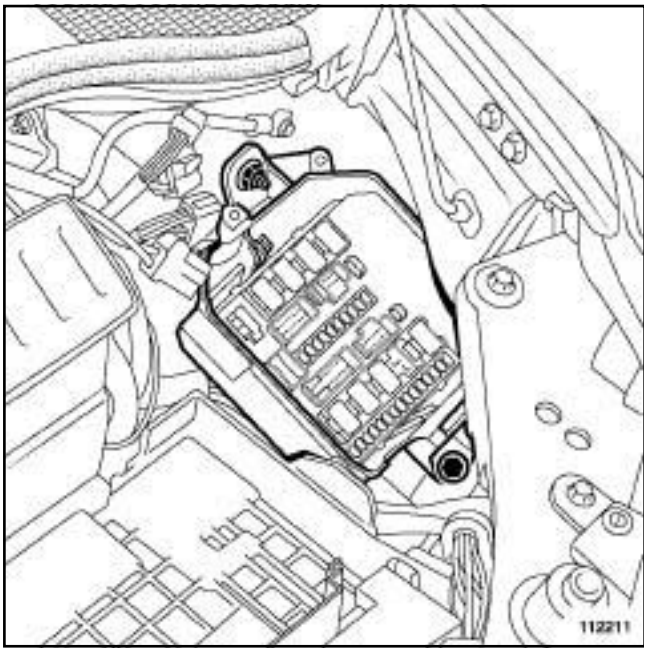
❑ Remove:

- the bolts (**1**) from the engine compartment connection unit cover,
- the cover.



112212

❑ Unclip each Protection and Switching Unit connector by pressing the connector retaining lug, without applying any pressure to the unit joint face.

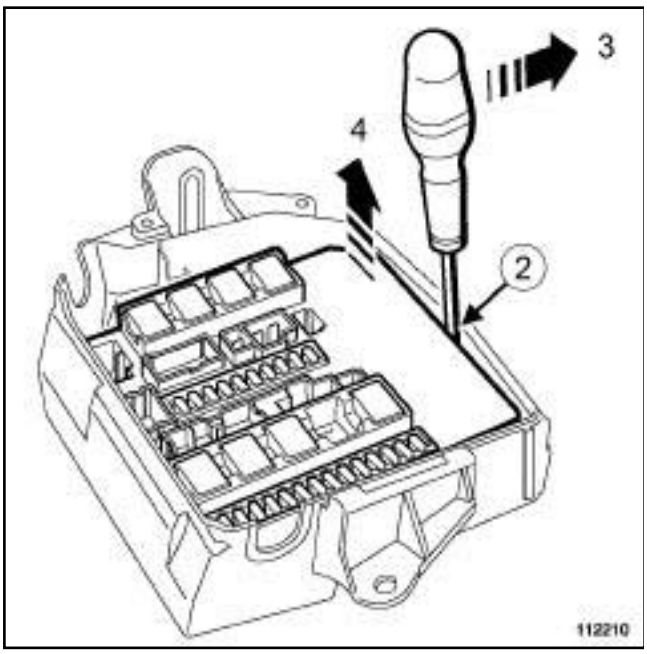


112211

❑

Remove:

- the engine compartment connection unit bolts,
- the engine compartment connection unit.



112210

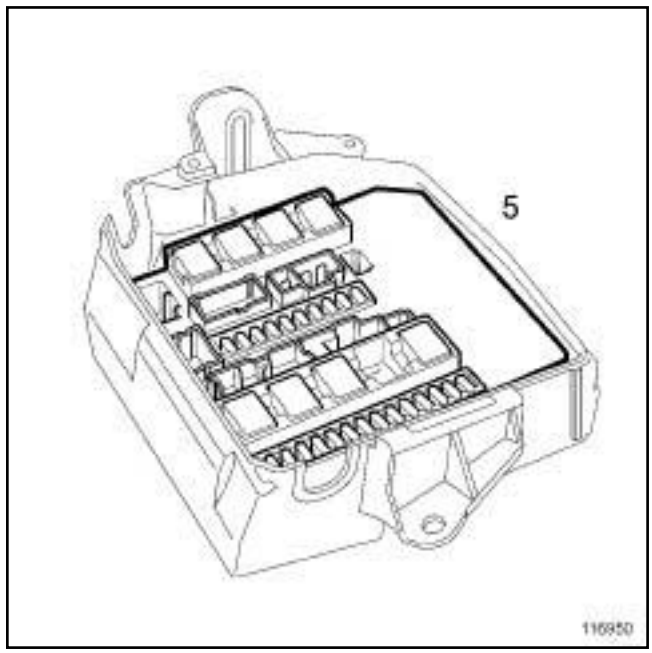
❑ Insert the **(Car. 1597)**, observing the correct engagement position (**2**) .

❑ Apply pressure at (**3**) using the tool to unclip the Protection and Switching Unit.

❑ Remove the Protection and Switching Unit at (**4**) .

REFITTING

I - REFITTING PREPARATION OPERATION



116950

❑ Position the Protection and Switching Unit by inserting it at an angle into the unit (**5**) .

❑ Clip the Protection and Switching Unit into the unit until you hear the characteristic « click » , indicating that it is correctly positioned.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the engine compartment connection unit in the engine compartment.

❑ Torque tighten the **engine compartment connection unit bolts (4 Nm)**.

❑ Clip on the connectors; the characteristic « click » noise tells you that they are properly connected.

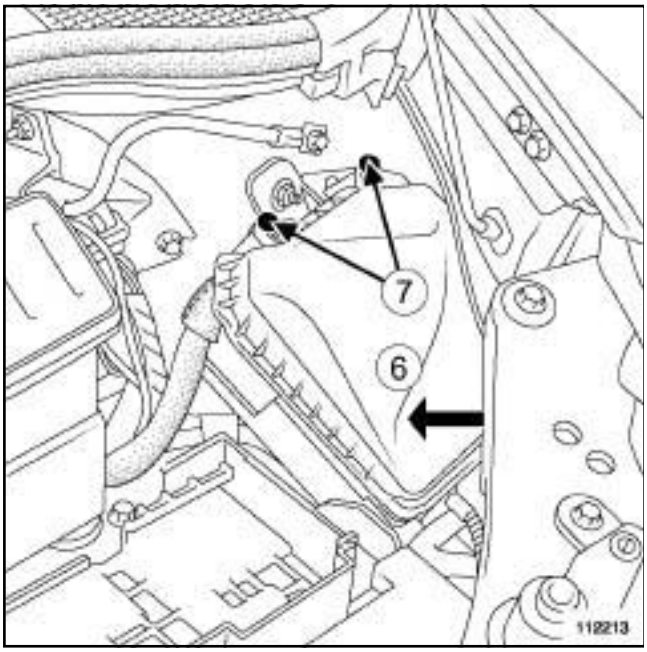
❑ Check that the wiring is in good condition.

WARNING
It is essential to observe the wiring harness routing to prevent it being damaged during refitting.

❑ Position the wiring foam pads and seals in their housings.

WARNING
The joint faces should be clean and dry.

❑ Check the condition and position of the seal on the cover.



112213

❑ Fit the cover on the engine compartment connection unit, starting by inserting it at (**6**) .

WARNING

Position this part correctly; its position is determined by the position of the inner reinforcements.

❑ Torque tighten the **engine compartment connection unit cover bolts (4 Nm)** (**7**) .

FINAL OPERATION.

❑ Refit the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) .

❑ In the event of replacement:

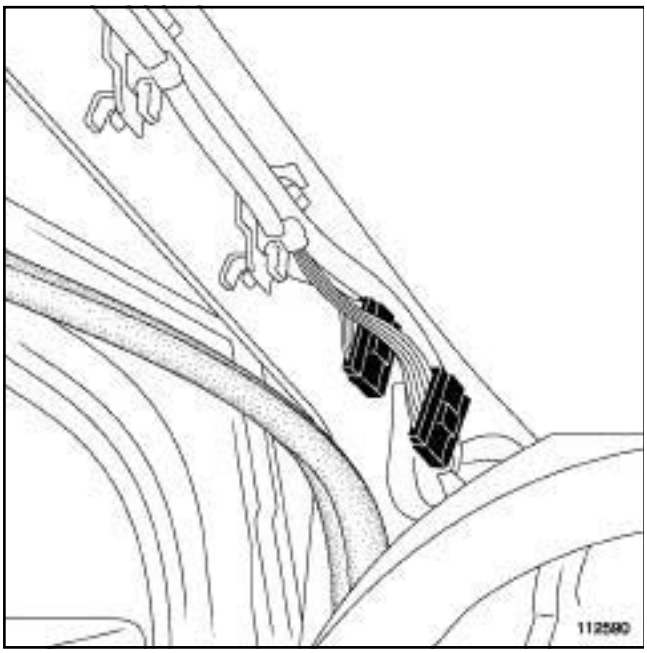
- Carry out the necessary programming (see **MR 394 Fault finding, 87G, Engine compartment connection unit, Fault finding - Replacement of components**).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Depending on the equipment level of the vehicle, remove the covers for the interior rear-view mirror in order to disconnect the rain sensor connector (see **85A**, **Wiping - Washing**, **Rain and light sensor: Removal - Refitting**, page **85A-5**) .

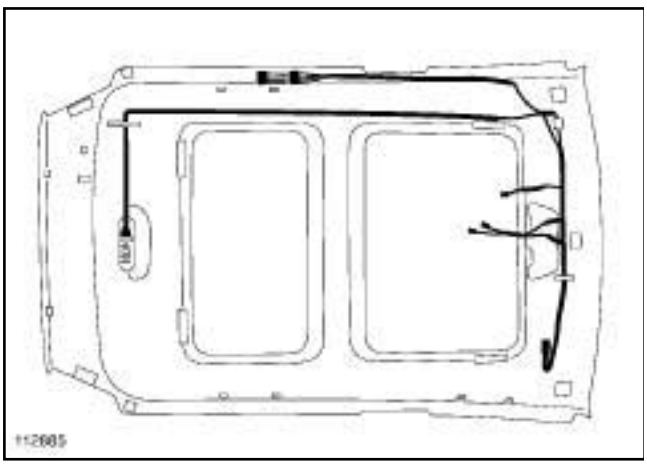
❏ Remove the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).



112590

❏ Gently disconnect the wiring harness connector.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112885

❏ Mark out the routing of the wiring harness.

❏ Gently detach the wiring harness.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏

> Note:
>
> It is possible to replace the headlining and keep the wiring harness, and vice-versa.
>
> The wiring harness cannot be repaired. It must be replaced if it is cut, broken or burnt.

❏ Use a pasting nozzle to refit the wiring harness.

❏ Paste the wiring harness onto the routing that was marked out.

> **WARNING**
>
> The position of the connectors in relation to the side of the headlining must be respected. A mark on the harness must coincide with the edge of the headlining.

❏ Cut the bead, taking care not to damage the wiring harness.

> Note:
>
> It is also possible to leave the faulty harness in place, and to glue the new harness alongside it.

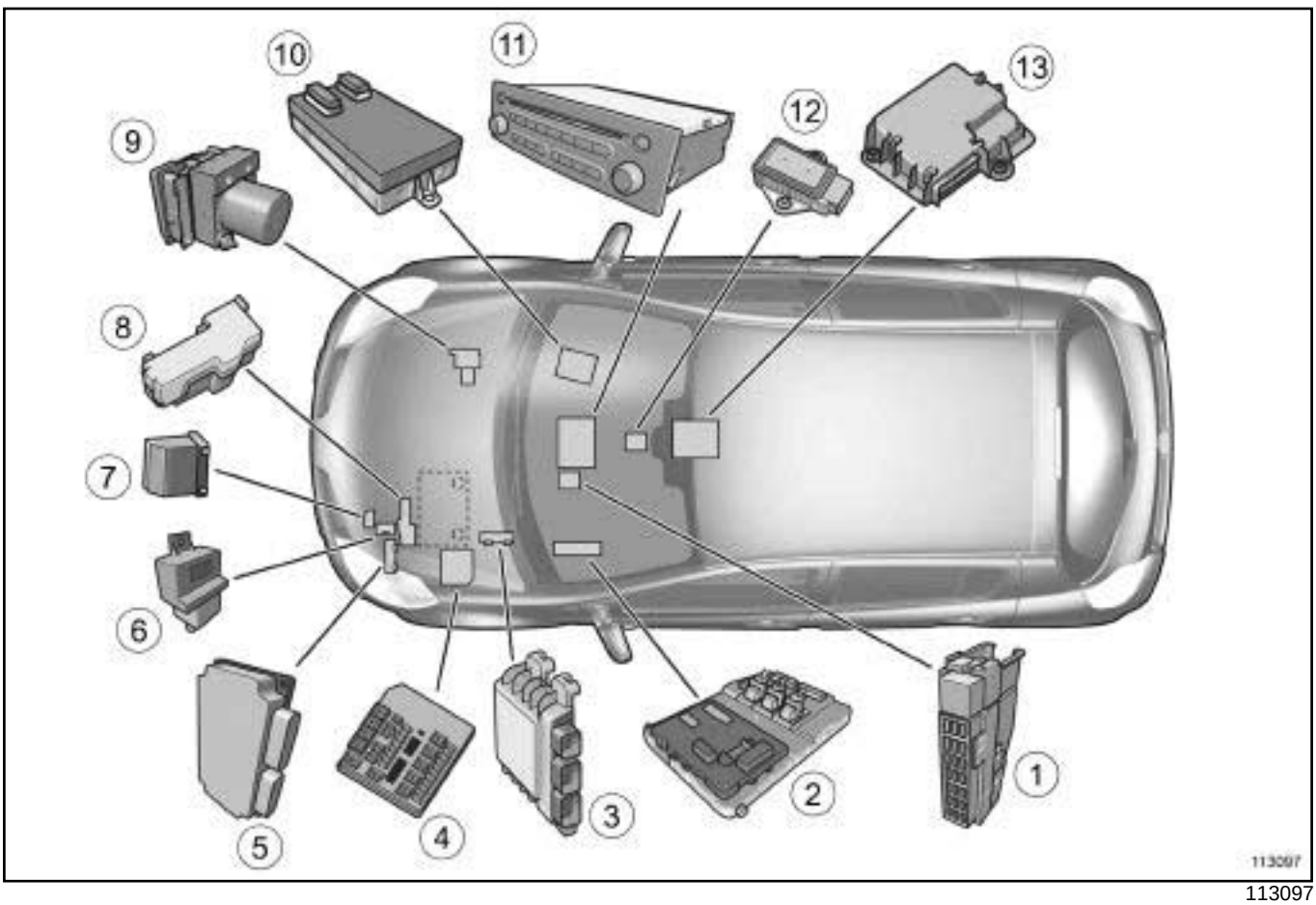
II - FINAL OPERATION.

❏ Refit the headlining (see **Headlining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❏ Depending on the level of equipment of the vehicle, reconnect the rain sensor connector.

❏ Depending on the equipment level of the vehicle, refit the interior rear-view mirror covers (see **85A**, **Wiping - Washing**, **Rain and light sensor: Removal - Refitting**, page **85A-5**) .

No.	Description
(1)	Passenger compartment fuse and relay box
(2)	UCH
(3)	Injection ECU
(4)	Protection and Switching Unit
(5)	Automatic gearbox electric control unit
(6)	Preheating unit
(7)	Electric control unit for discharge bulbs - additional cornering lights
(8)	Engine fuse and relay box - power supply fuse board
(9)	ABS - ESP electric control unit
(10)	Radio - telephone electric control unit
(11)	Radio
(12)	Yaw speed and lateral acceleration sensor
(13)	Airbag - pretensioner electric control unit



113097

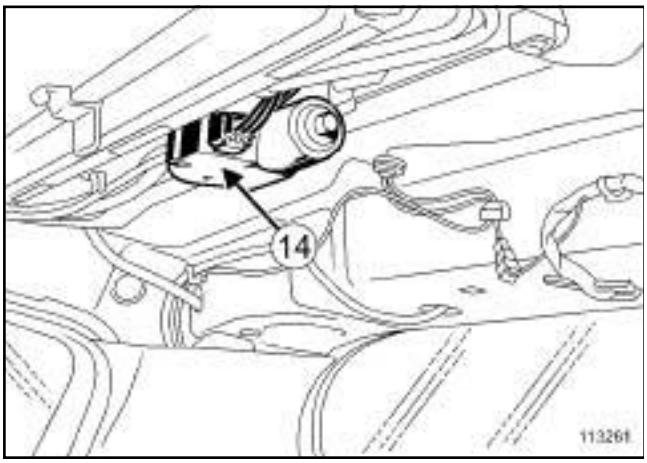
Note:

There are two types of UCH depending on the vehicle equipment level:

- a specific UCH for key-operated vehicles,

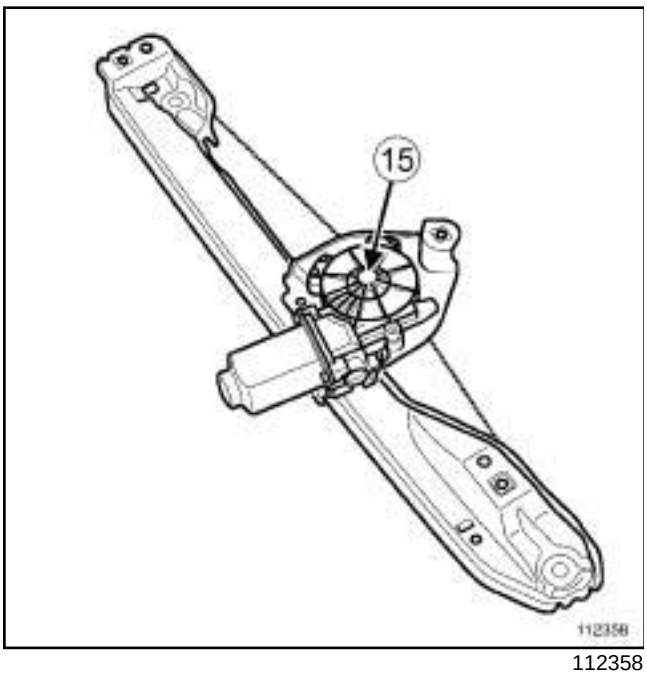
- a specific UCH for vehicles operated with a Renault card.

COMPUTERS INTEGRATED INTO COMPONENTS



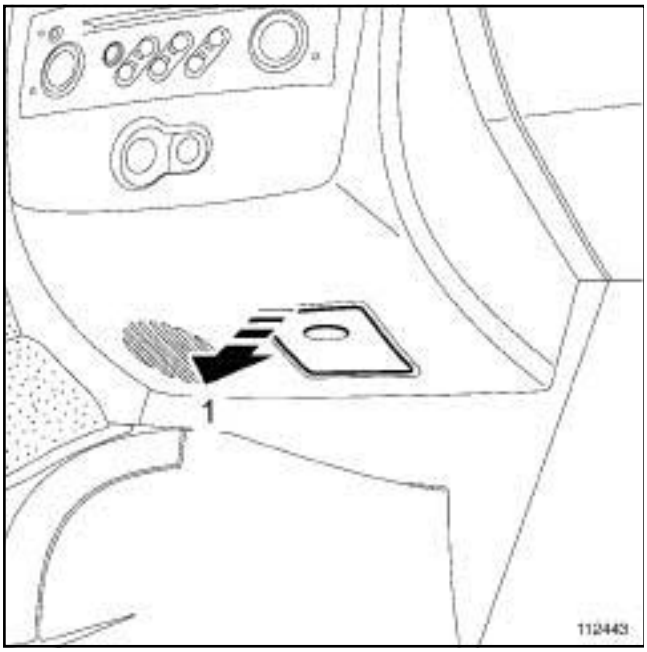
113261

The sunroof electric control unit is integrated into the motor (**14**) (anti-pinch function).



112358

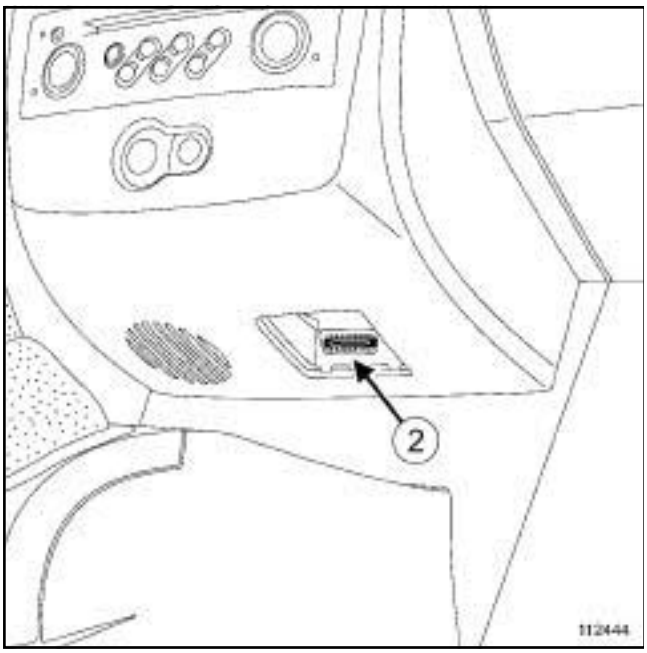
The anti-pinch function is integrated into the window winder motor (**15**) .



112443

The diagnostic socket is located on the bottom part of the dashboard, above the centre console.

Remove the flap (**1**) .



112444

Diagnostic socket (**2**) .

I - SAFETY

1 - Potentially dangerous components

Do not leave any unused +12V connectors exposed to the air without any protection (see **Connector: Sealing and locking**) (Technical Note 6015A, 88A, Wiring).

Check that there is no contact between the wiring and the fuel and brake pipes.

Avoid mounting the wiring in areas with a temperature above 100°C.

2 - Advice to be followed before any operation

Before carrying out any work on the wiring, disconnect the battery.

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

3 - Instructions to be followed during the operation

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

To prevent the wiring from being damaged, check that the surrounding area is not mechanically harmful (e.g.: door windows, sharp corners, burrs, studs, etc.).

The wiring should be **at least 30 mm** away from any moving components (belt, pulley, steering column, etc.).

Depending on the surrounding area, check that the unused connectors respect the necessary sealing constraints (see **Connector: Sealing and locking**) (Technical Note 6015A, 88A, Wiring).

All of the connections (connectors) used in the engine compartment are sealed; do not remove the seal from around the connectors.

II - GENERAL RECOMMENDATIONS

Do not connect an earth to a stud with insulating protection (paint,etc.).

Do not use more than two earth terminals on the same point.

Do not use power earths on the same point as electronic earths.

To prevent water flowing into the connectors, make a low point just on the wiring routing (just before the connector).

For connections between fixed and mobile components, secure the wiring on the fixed part.

Overlapping of the battery feed wires (positive and negative) causes disruption; they must be secured separately.

Wiring mountings:

- use plastic clips, ensuring that the colour coding is respected,

-do not use steel clips that are not protected with rubber,

- keep the clips integrated into the wiring during a replacement operation,

- do not leave steering wheel wires without protection.

Check that:

- the shunts are correctly secured,

- the connectors are correctly housed and locked.

Wiring routing:

- when it is visible it must be aesthetically pleasing, and resemble the routing marked during removal,

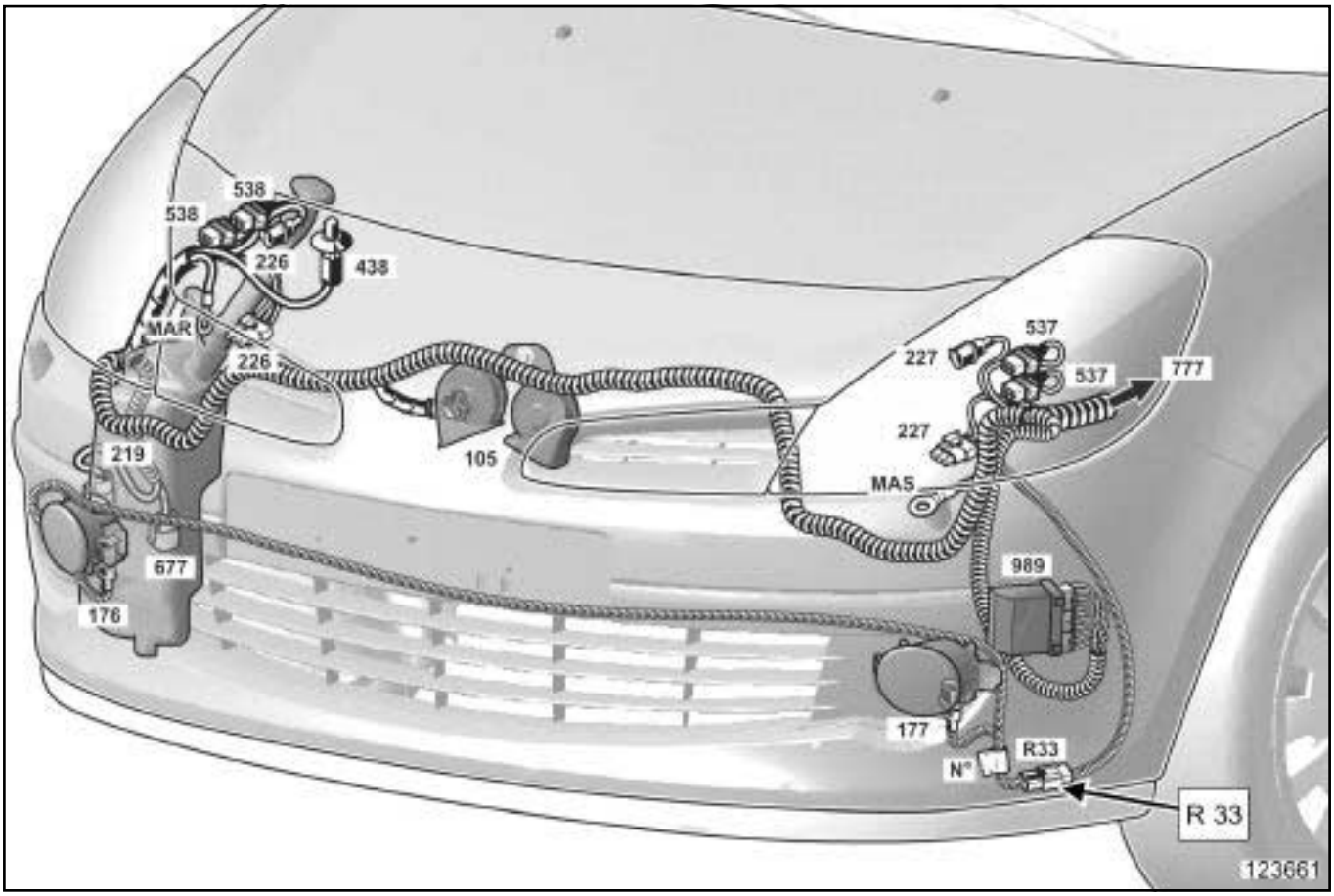
- prohibit wiring routing in grooves and overlaps (risk of wear through friction),

- prohibit mounting several wires on the same clip,

- do not lock the connectors or wiring in areas that are sensitive to drilling (number plate etc.).

FOG LIGHTS

I - LOCATION OF CONNECTORS



123661

❑ R 33 connector (front end panel/front bumper connection).

II - ACCESS TO CONNECTORS

❑

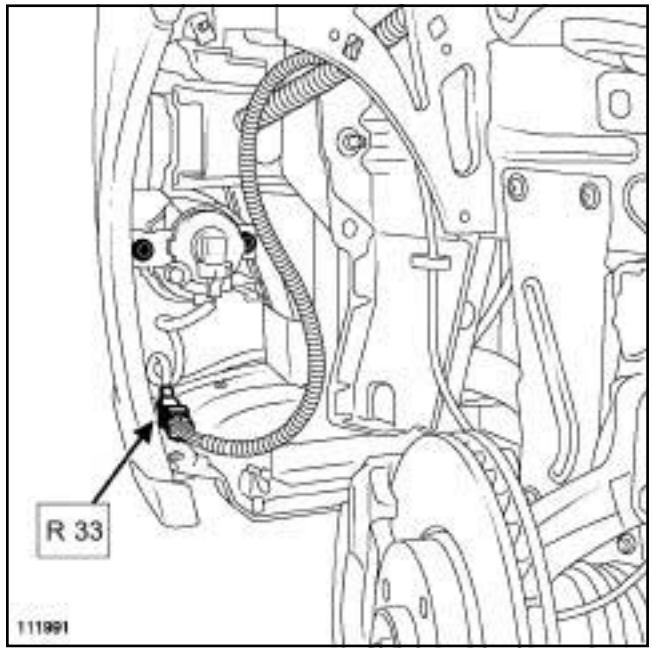
IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the front section of the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



111991

❑ Disconnect the R 33 connector.

FOG LIGHTS

FOG LIGHTS

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

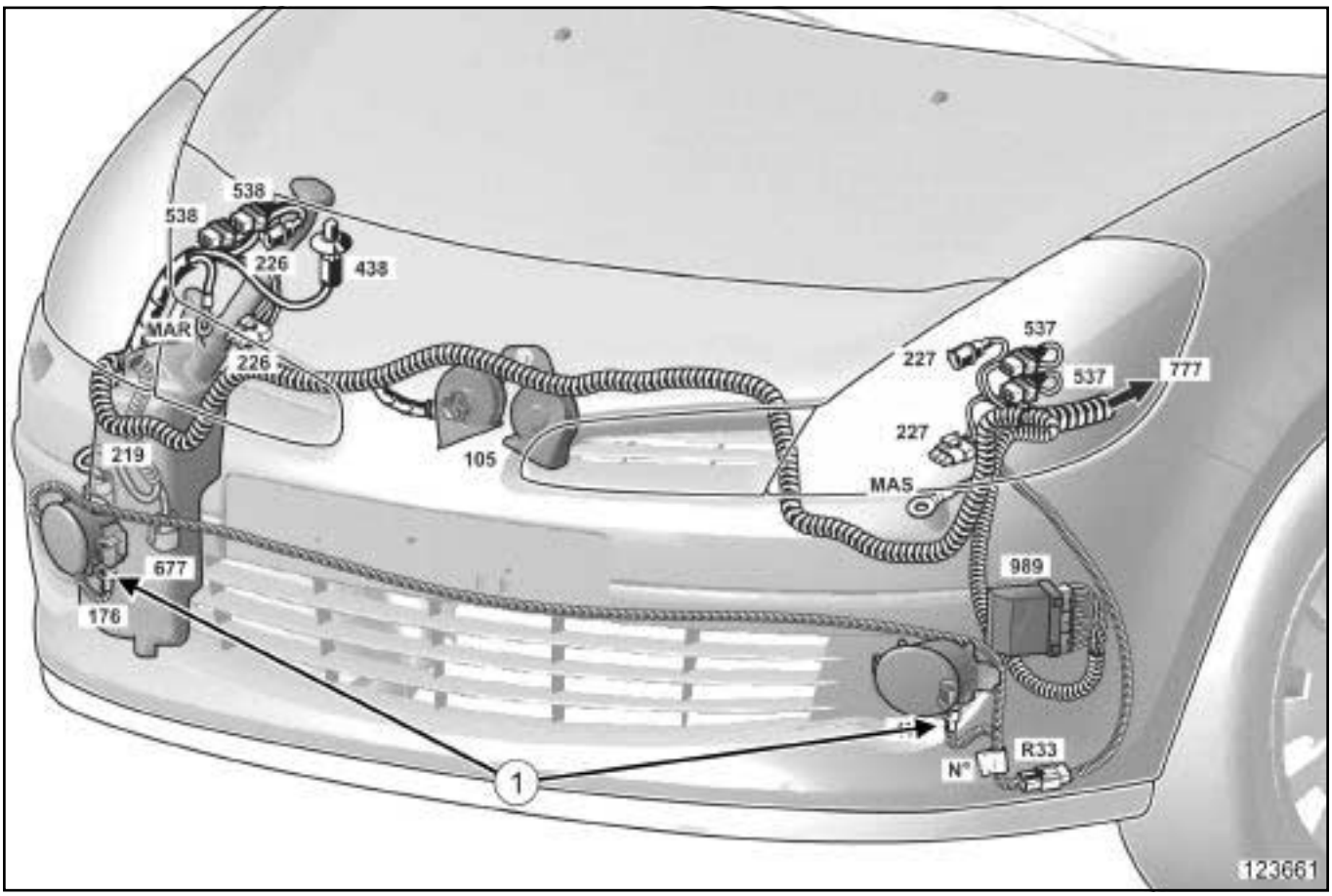
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove:

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED

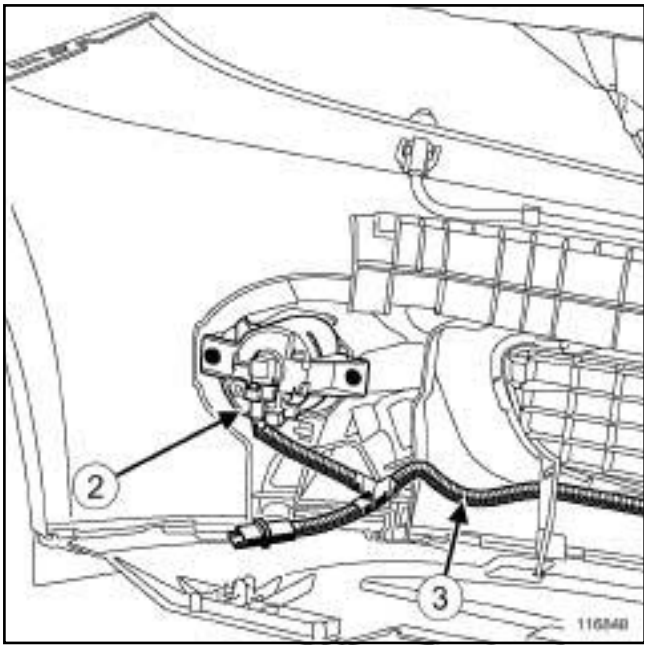


123661

❑

WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

FOG LIGHTS



116848

❏ Disconnect the (**2**) fog light connector ***(1)*** .

❏ Mark the routing of the wiring in the front bumper.

❏ Unclip the front bumper wiring (**3**) .

❏ Remove the wiring.

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Reconnect the fog light connector.

❏ Clip the wiring onto the front bumper in the position marked during the removal operation.

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

III - FINAL OPERATION.

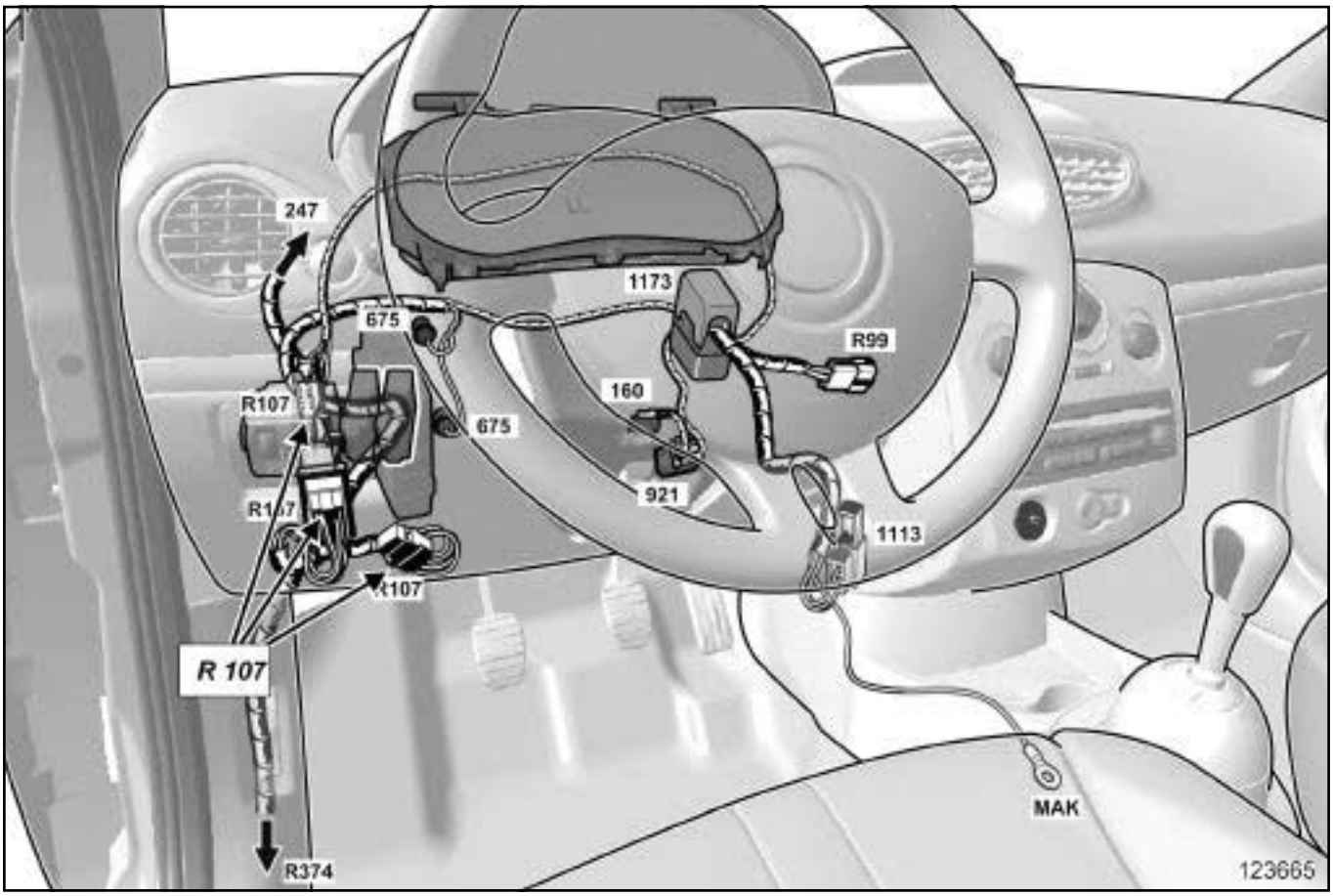
❏ refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

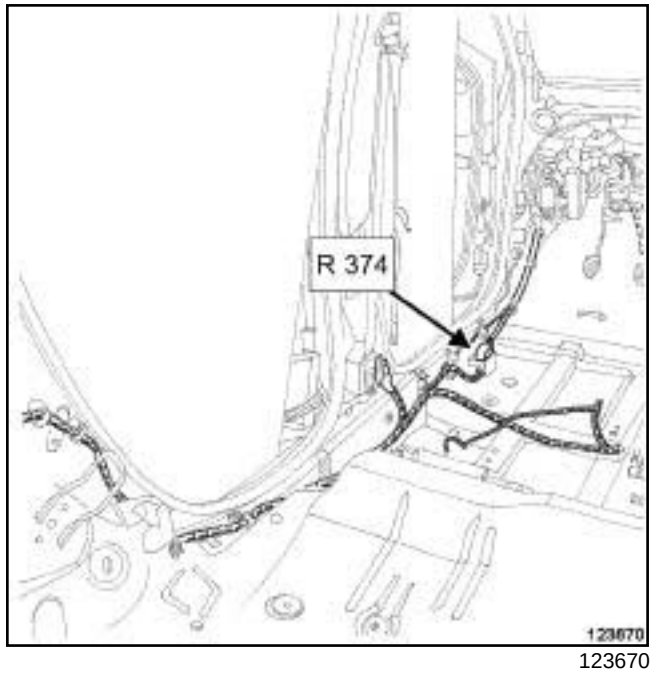
❏ Check the operation of the fog lights.

I - LOCATION OF CONNECTORS



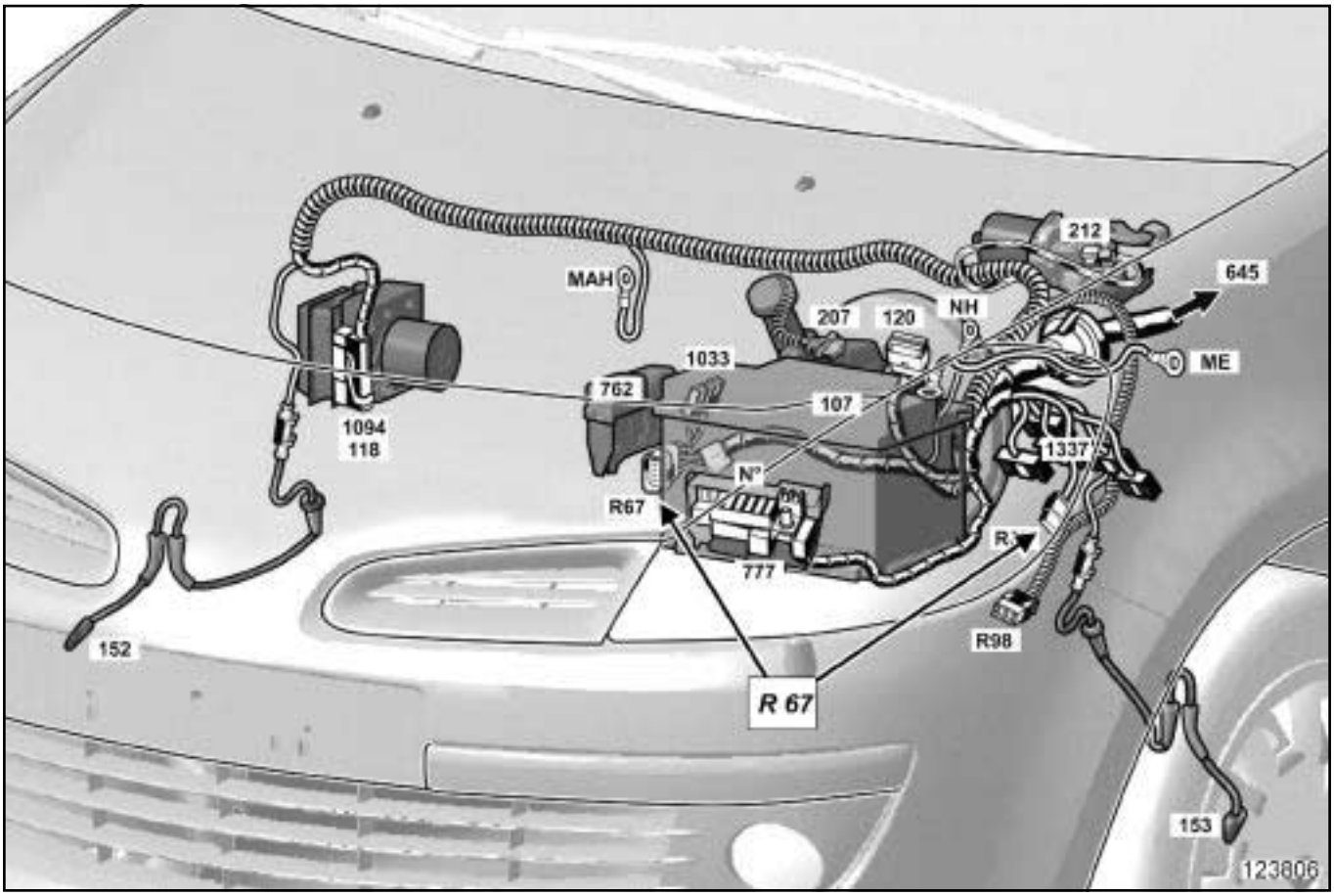
123665

❑ Connection R 107 (front left-hand wiring/dashboard wiring connection) composed of two to four connectors depending on equipment.



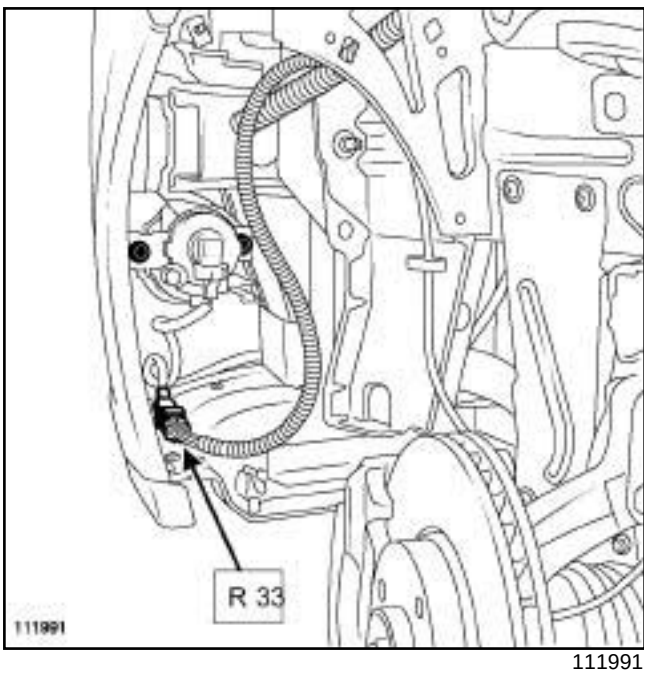
123670

❑ R 374 connector (front left-hand wiring/rear left-hand wiring connection).



123806

❑ Connection R 67 (front left-hand wiring/engine wiring harness connection) composed of two to three connectors depending on equipment.



111991

❑ R 33 connector (front left-hand wiring/front bumper wiring connection).

II - ACCESS TO CONNECTORS

❑

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

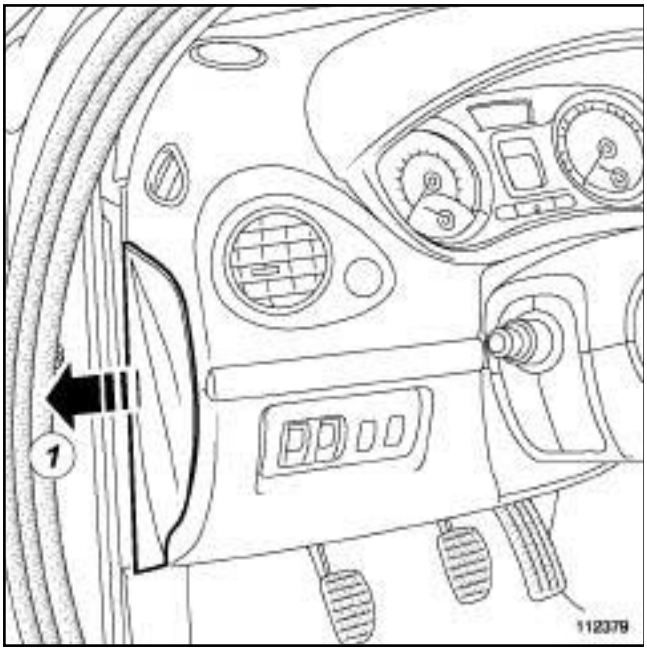
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

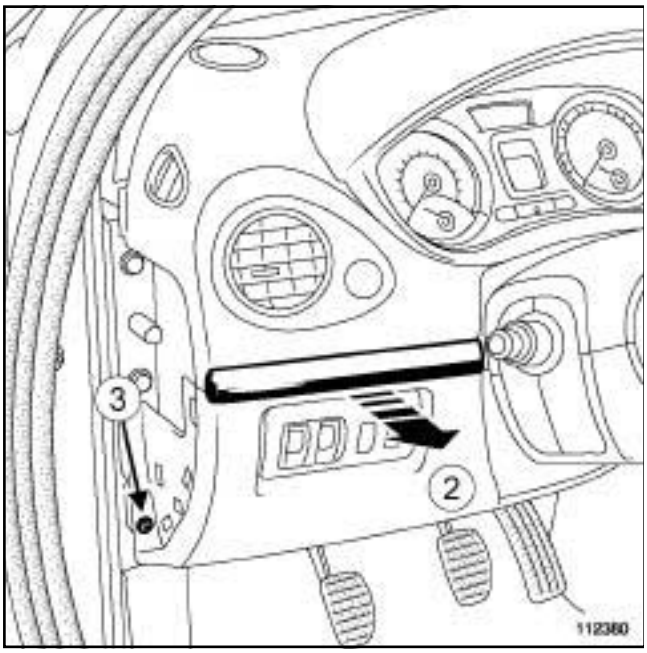
1 - Access to the R 107 connectors

LEFT-HAND DRIVE



112379

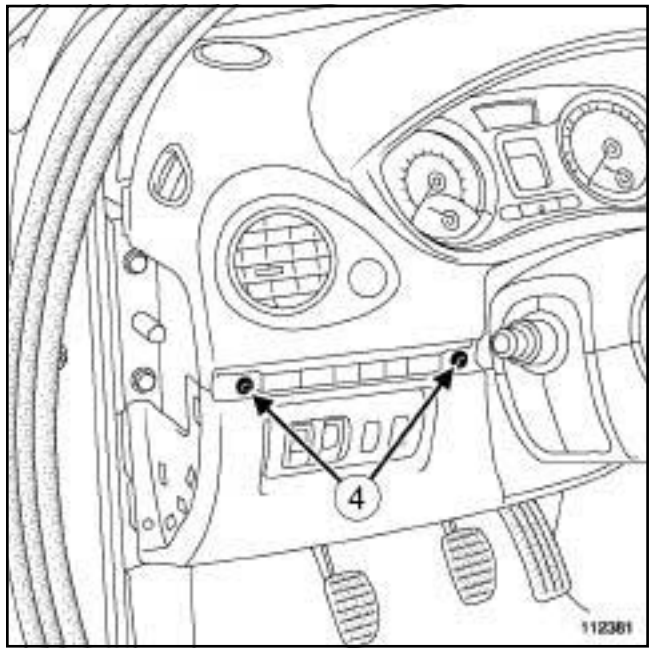
❏ Remove the dashboard side face (**1**) .



112380

❏ Remove:

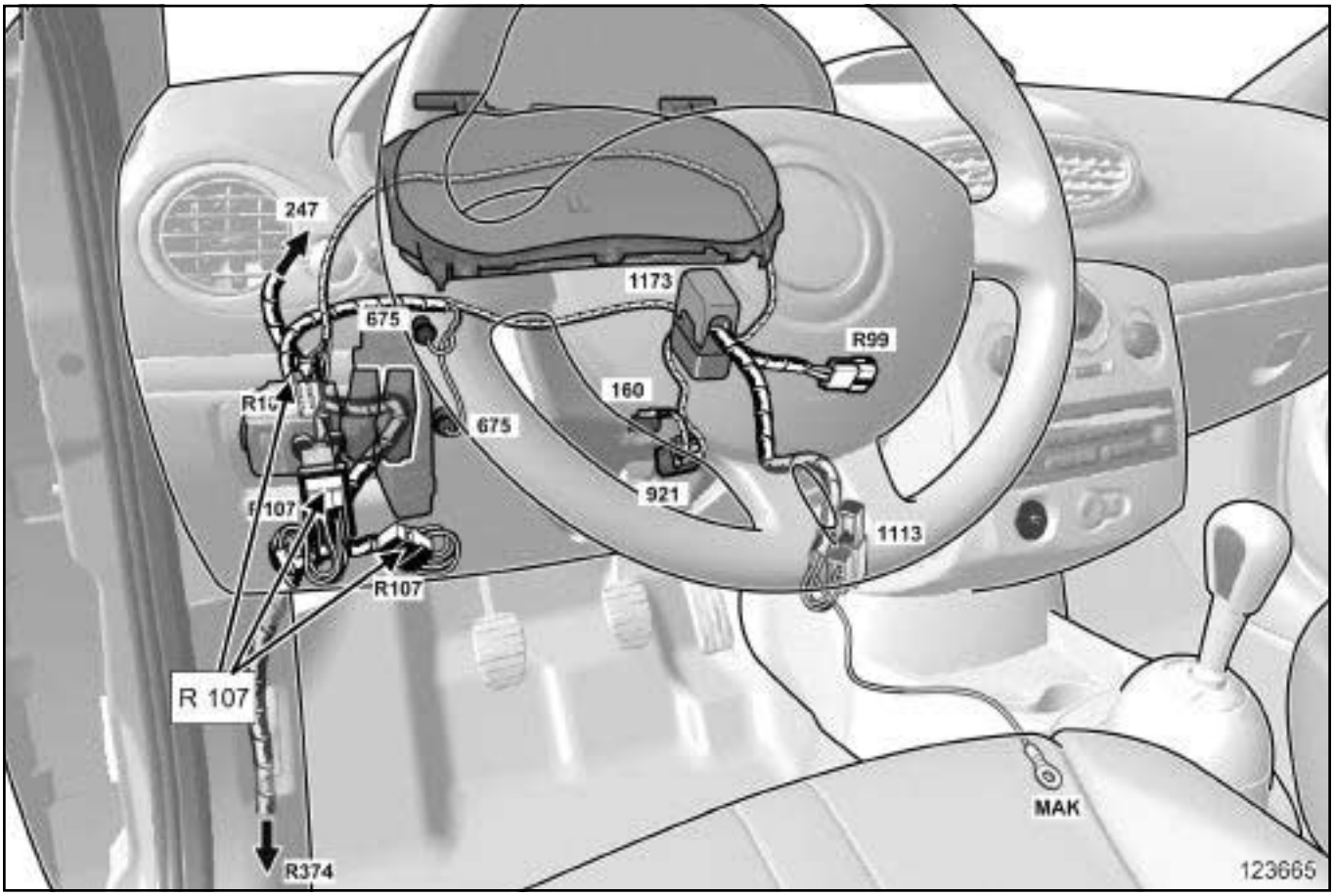
- the dashboard trim piece (**2**) ,
- the dashboard lower trim bolt (**3**) .



112381

❏ Remove:

- the dashboard lower trim bolt (**4**) .
- the dashboard lower trim.

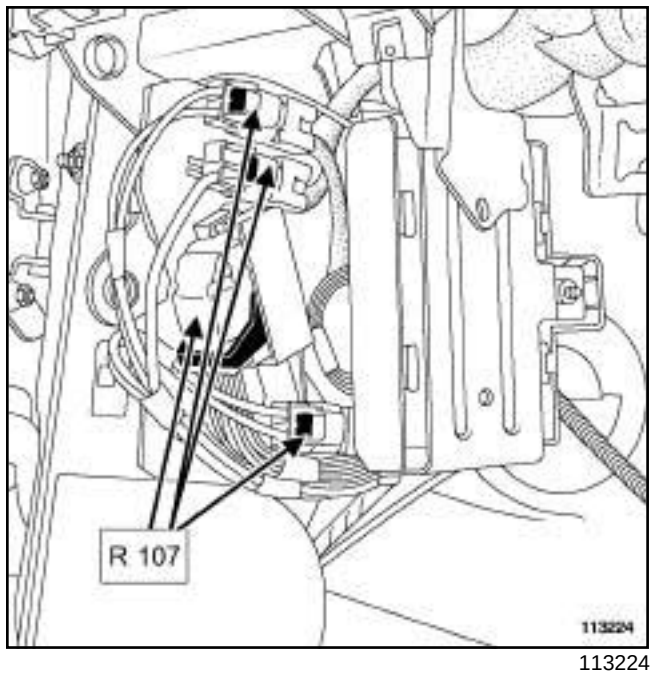


123665

❑ Disconnect the connectors from connection R 107.

RIGHT-HAND DRIVE

❑ Remove the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).

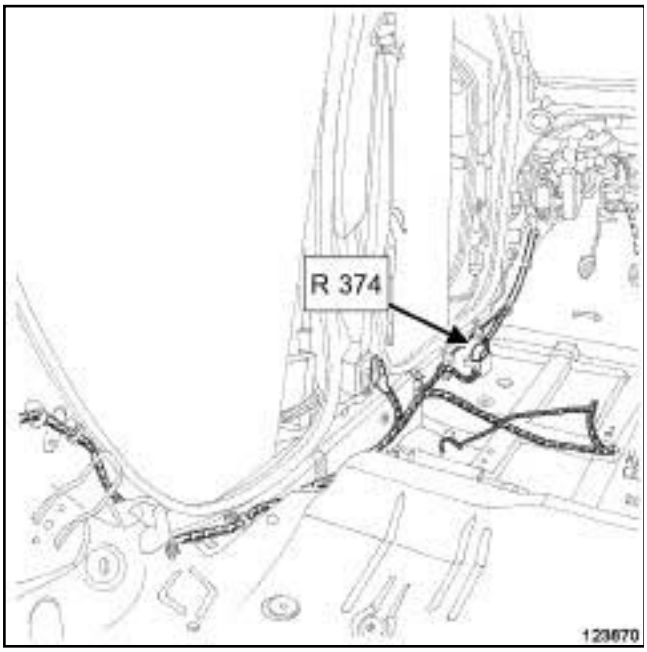


113224

❑ Disconnect the connectors from connection R 107.

2 - Access to the R 374 connector

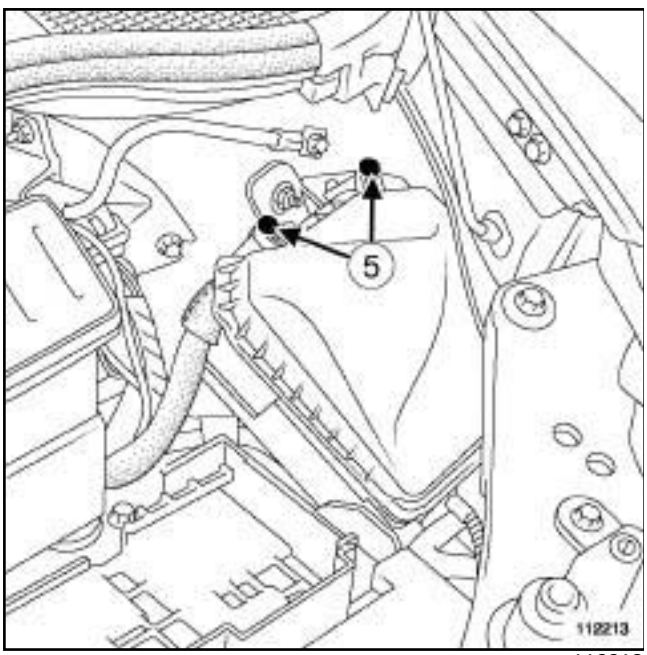
❑ Remove the front left-hand door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).



123670

❑ Disconnect the R 374 connector.

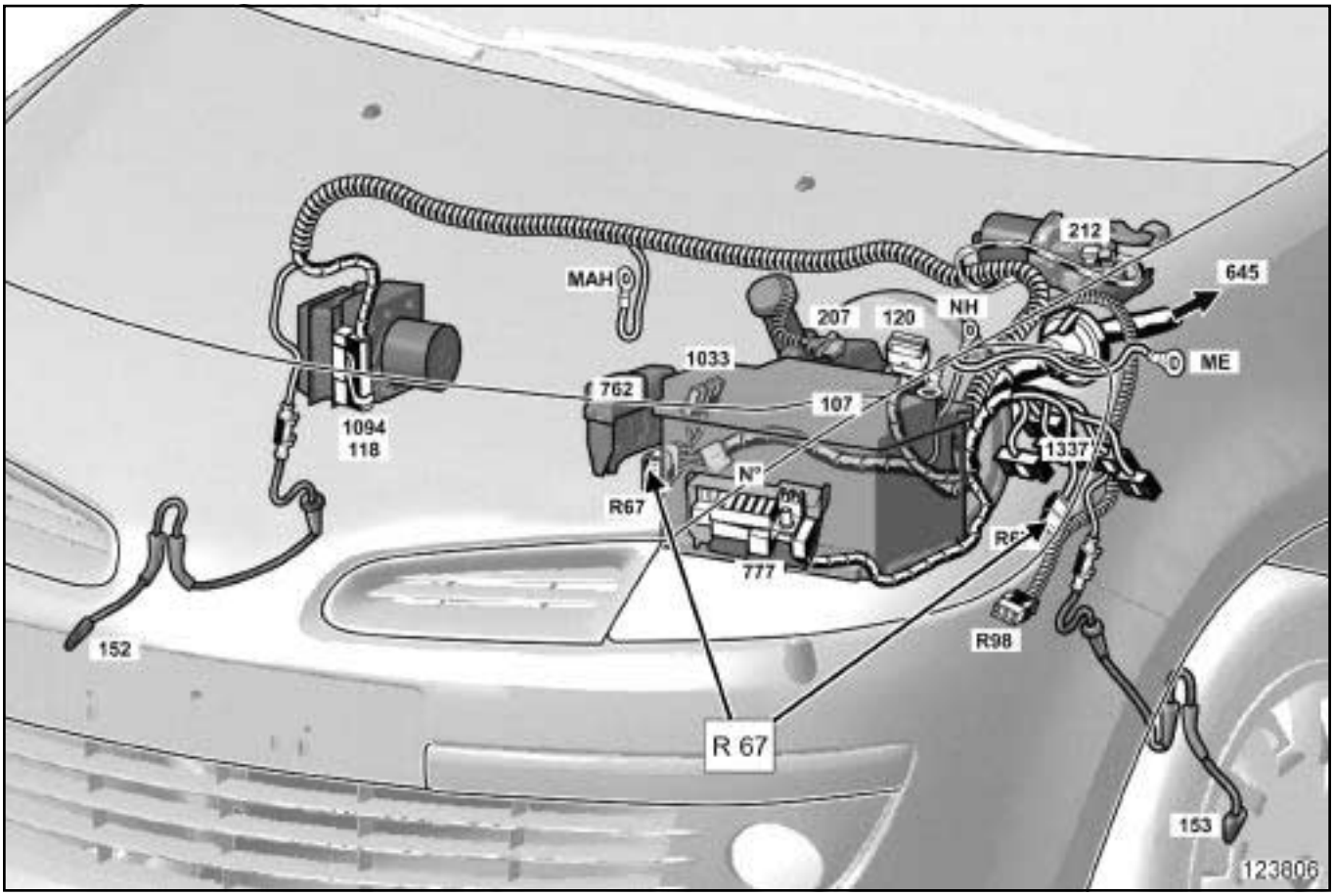
3 - Access to the R 67 connector



112213

❑ Remove:

- the bolts (**5**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

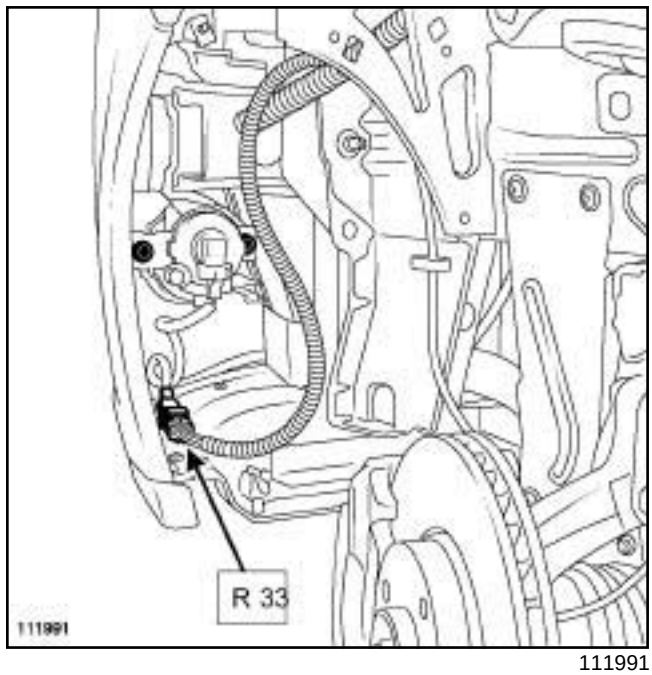


123806

❑ Disconnect the connectors from connection R 67.

4 - Access to the R 33 connector

❑ Remove the front section of the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



111991

❑ Disconnect the R 33 connector.

LEFT-HAND DRIVE

Tightening torques ▽	
earth cable nut on the body	**8 Nm**
earth wiring nut to the brake hydraulic unit	**8 Nm**
earth wiring nut on the front left-hand side member	**8 Nm.**
earth wiring nut on the front right-hand side member	**8 Nm.**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

Note:
It is not necessary to remove the dashboard to access the pedal wiring.

REMOVAL

REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

D4F or F4R or K4J or K4M or M4R

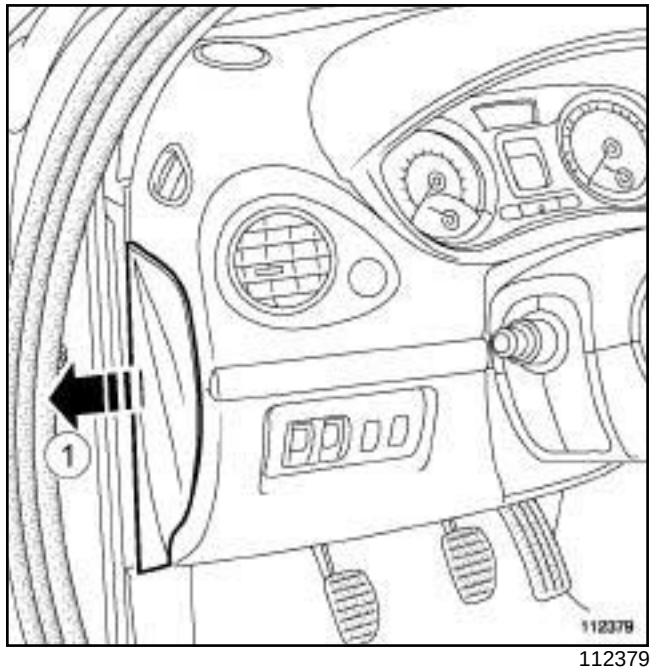
❑ Remove the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (MR 392, 17B, Petrol injection).

K9K

❑ Remove the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection).

❑ Remove:

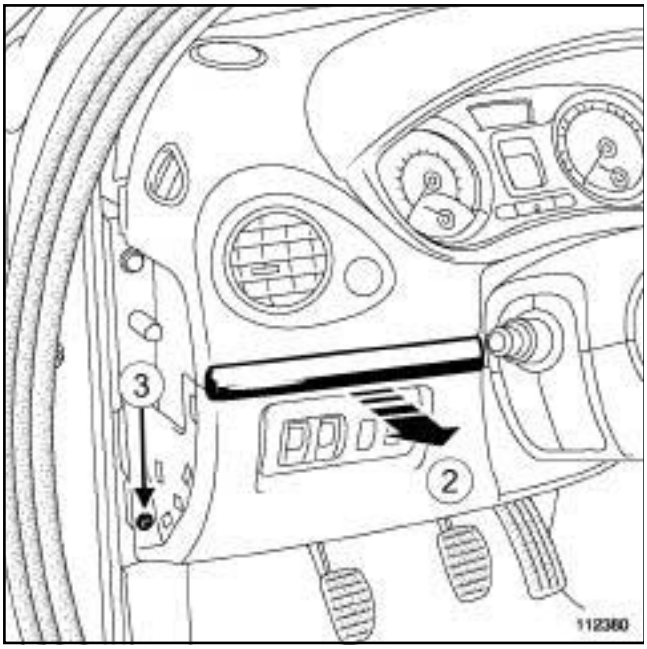
- the injection computer mounting,
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).



112379

❑ Remove the dashboard side face (**1**) .

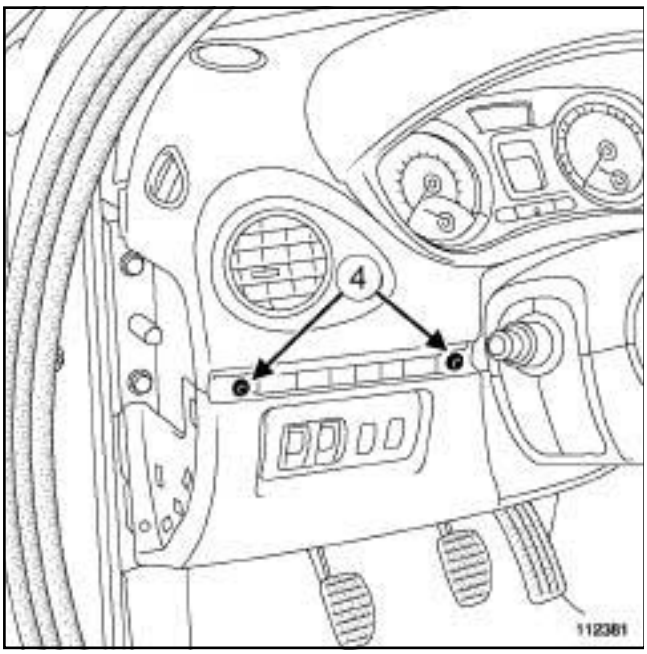
LEFT-HAND DRIVE



112380

❑ Remove:

- the dashboard trim piece (**2**) ,
- the dashboard lower trim bolt (**3**) .

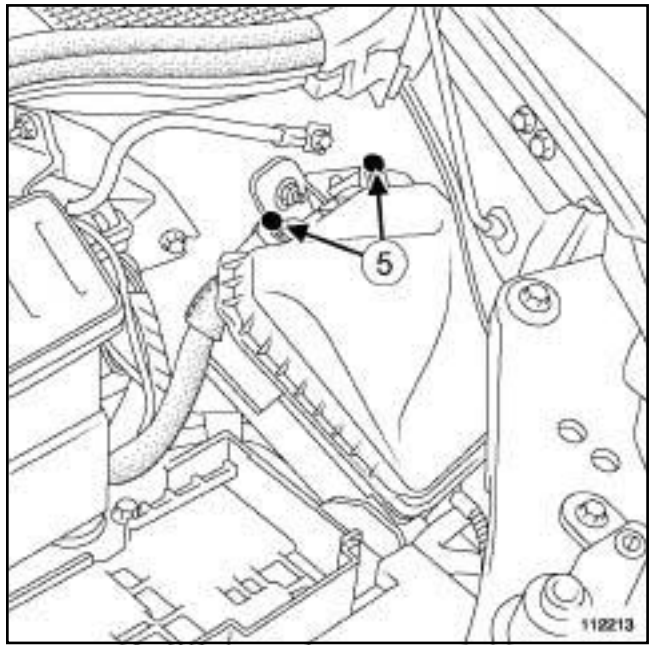


112381

❑ Remove:

- the dashboard lower trim bolts (**4**) ,
- the dashboard lower trim.

❑ Disconnect the connectors depending on equipment.



112213

❑ Remove:

- the bolts (**5**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

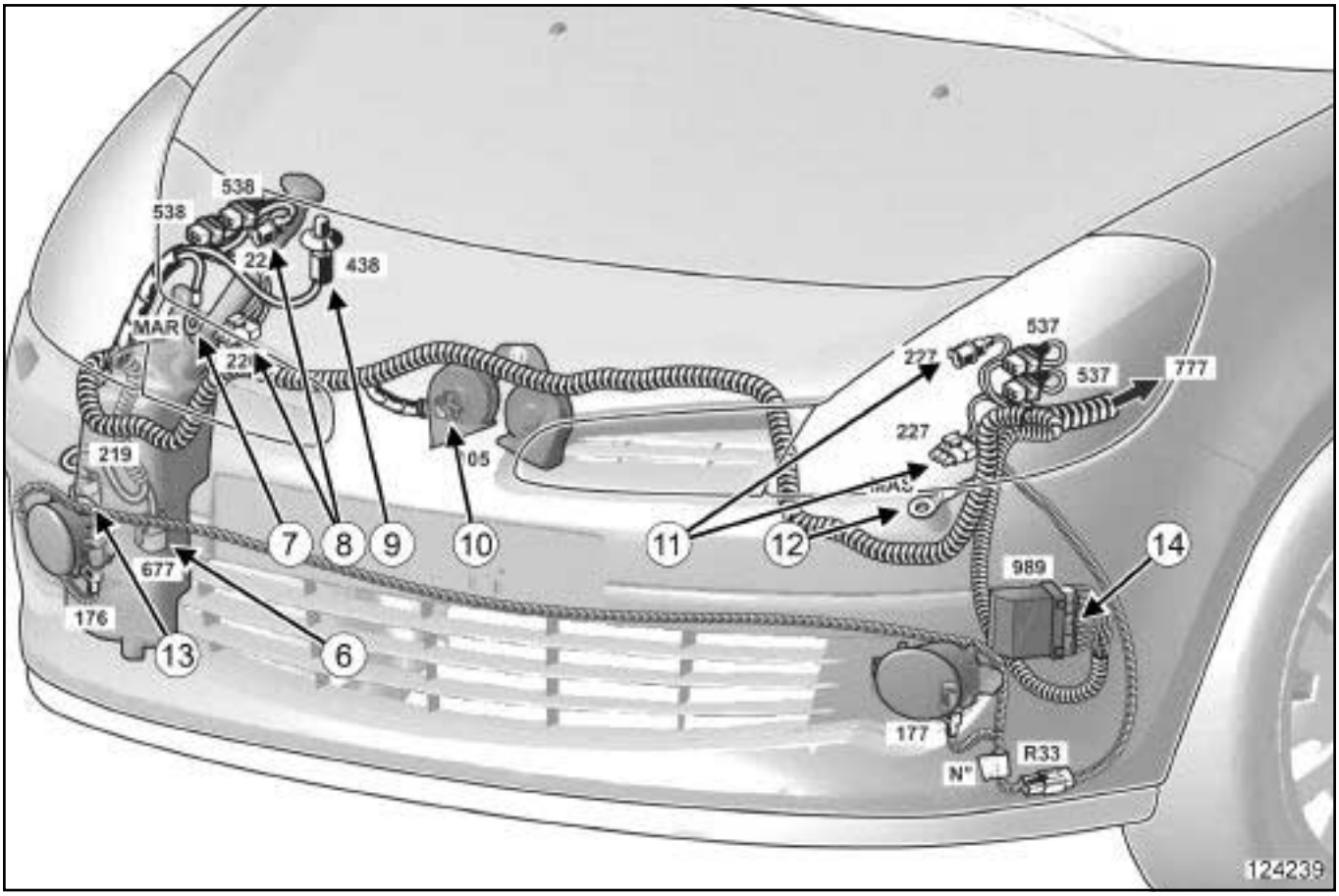
OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

LEFT-HAND DRIVE



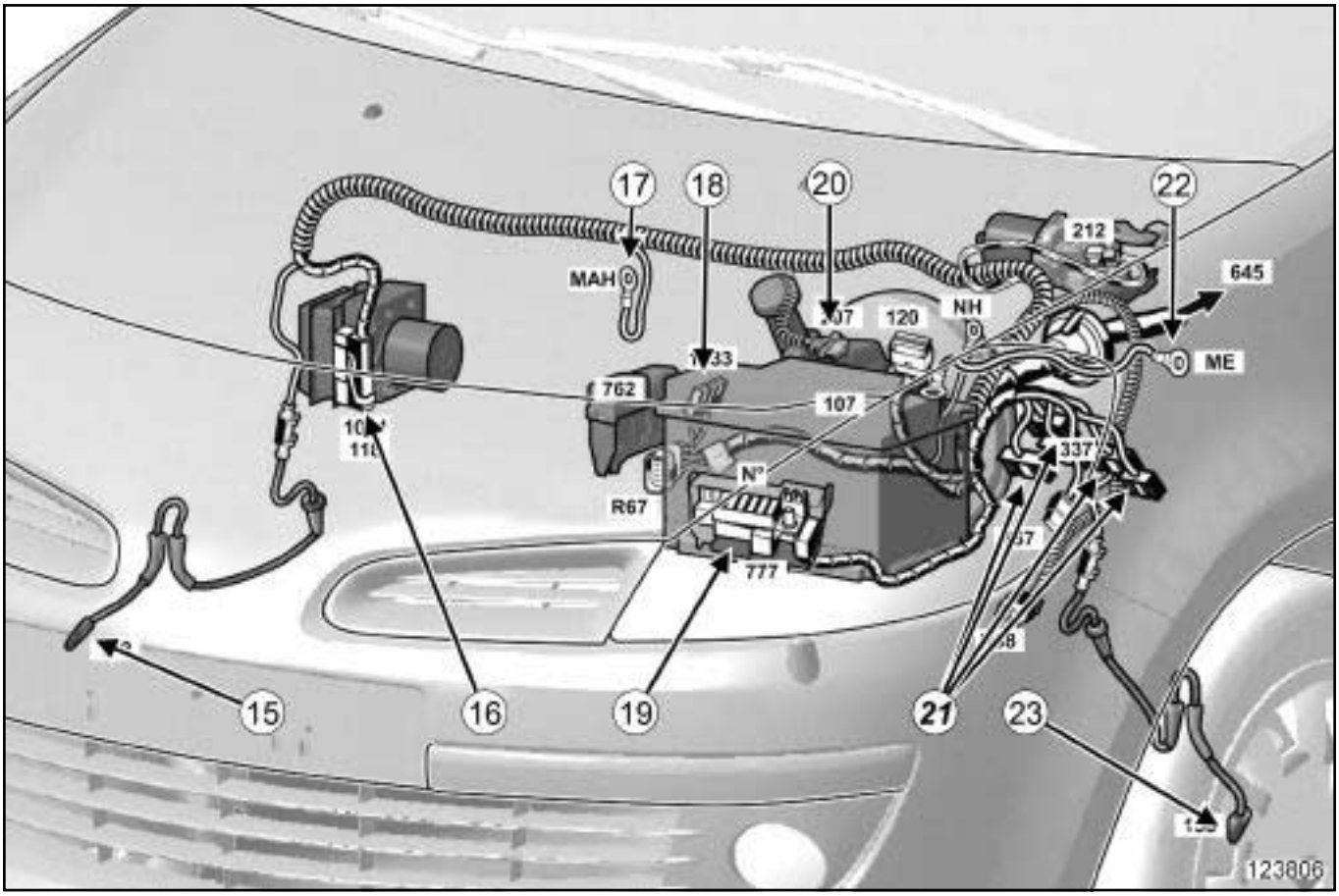
124239

- ❏ Disconnect the bidirectional windscreen and rear screen washer pump connector (**6**) .
- ❏ Remove the earth wiring nut (**7**) from the front right-hand side member.
- ❏ Disconnect:
  - the right-hand headlight connectors (**8**) ,
  - the bonnet switch connector (**9**) ,
  - the horn connector (**10**) ,
  - the left-hand headlight connectors (**11**) .
- ❏ Remove the earth wiring nut (**12**) from the front left-hand side member.

DISCHARGE LAMPS

- ❏ Disconnect:
  - the headlight washer pump connector ***(13)*** ,
  - the discharge bulb computer connectors ***(14)*** .

LEFT-HAND DRIVE



123806

❏ Disconnect:

- the front right-hand wheel speed sensor connector (**15**) ,
- the brake hydraulic unit connector (**16**) .

❏ Remove the earth wiring nut (**17**) from the brake hydraulic unit.

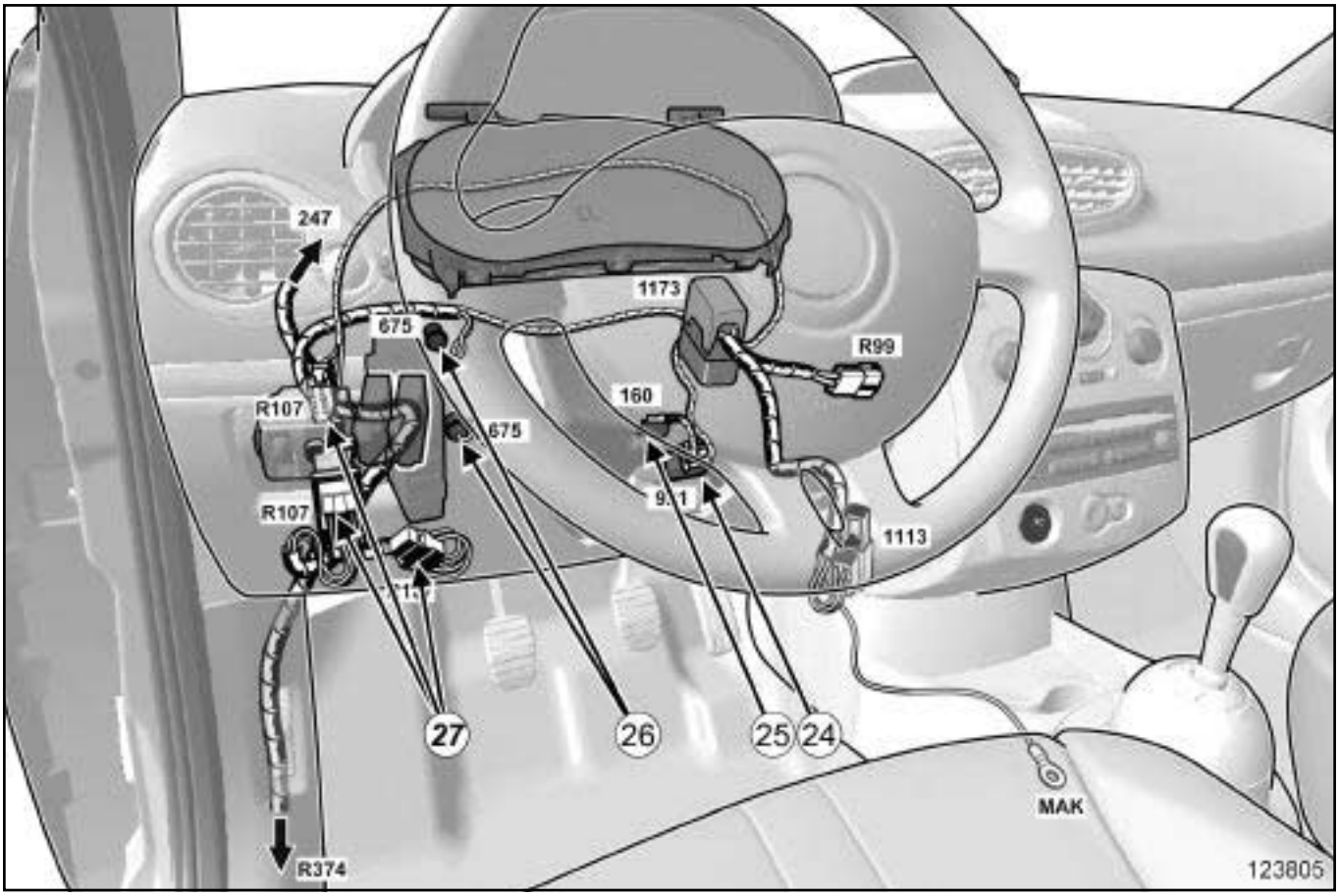
❏ Disconnect:

- the battery protective fuse holder connectors (**18**) ,
- the power supply fuse board connector (**19**) ,
- the brake fluid level sensor connector (**20**) .
- the Protection and Switching Unit connectors (**21**) ,

❏ Remove (**22**) the earth wiring nut on the body.

❏ Disconnect the front left-hand wheel speed sensor connector (**23**) .

LEFT-HAND DRIVE



123805

❑ Disconnect:

- the accelerator pedal potentiometer connector (**24**) ,
- the brake light switch connector (**25**) ,
- the clutch pedal position sensor connectors (**26**) ,
- the front left-hand wiring/dashboard wiring connection (**27**) .

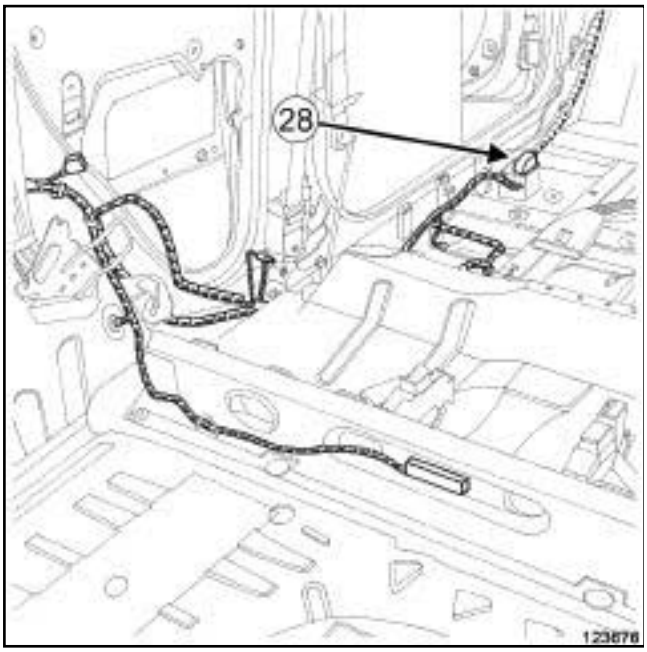
❑ Remove the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) (MR 392, 85A, Wiping - Washing).

❑ Unclip:

- the bulkhead wiring,
- the front bumper upper cross member wiring,
- the windscreen washer fluid reservoir wiring,
- the dashboard cross member wiring.

LEFT-HAND DRIVE

B85

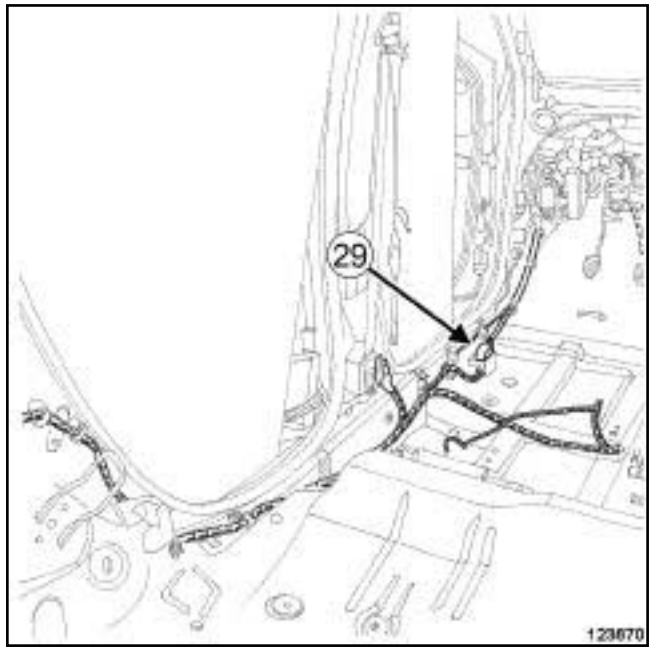


123676

❏ Disconnect the front left-hand wiring/rear left-hand wiring connection (**28**) .

❏ Unclip the front left-hand wiring.

C85



123670

❏ Disconnect the front left-hand wiring/rear left-hand wiring connection (**29**) .

❏ Unclip the front left-hand wiring.

❏ Unclip the front left-hand wiring on the bulkhead.

❏ Remove the bonnet lock cable (see **Bonnet lock: Removal - Refitting**) (MR 393, 52A, Non-side opening element mechanisms).

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❏ Remove the front left-hand wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

LEFT-HAND DRIVE

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front left-hand wiring,
- the bonnet lock cable (see **Bonnet lock: Removal - Refitting**) (MR 393, 52A, Non-side opening element mechanisms).

❑ Clip:

- Unclip the front left-hand wiring on the bulkhead,
- the front left-hand wiring.

❑ Connect the front left-hand wiring/rear left-hand wiring connection.

❑ Clip:

- the dashboard cross member wiring,
- the windscreen washer fluid reservoir wiring,
- the front bumper upper cross member wiring,
- the bulkhead wiring.

❑ Refit the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) (MR 392, 85A, Wiping - Washing).

❑ Connect:

- the front left-hand wiring/dashboard wiring connection.
- the clutch pedal position sensor connectors,
- the brake light switch connector,
- the accelerator pedal potentiometer connector.

❑ Disconnect the front left-hand wheel speed sensor connector.

❑ Refit the earth wiring nut on the body.

❑ Torque tighten the **earth cable nut on the body (8 Nm)**.

❑ Connect:

- the Protection and Switching Unit connectors,
- the brake fluid level sensor connector,
- the power supply fuse board connector,
- the battery protective fuse holder connectors.

❑ Refit the earth wiring nut to the brake hydraulic unit.

❑ Torque tighten the **earth wiring nut to the brake hydraulic unit (8 Nm)**.

❑ Connect:

- the brake hydraulic unit connector,
- the front right-hand wheel speed sensor connector.

DISCHARGE LAMPS

❑ Connect:

- the discharge bulb computer connectors,
- the headlight washer pump connector.

❑ Refit the earth wiring nut on the front left-hand side member.

❑ Torque tighten the **earth wiring nut on the front left-hand side member (8 Nm.)**

❑ Connect:

- the left-hand headlight connectors,
- the horn connector,
- the bonnet switch connector,
- the right-hand headlight connectors.

❑ Refit the earth wiring nut on the front right-hand side member.

❑ Torque tighten the **earth wiring nut on the front right-hand side member (8 Nm.)**

❑ Disconnect the bidirectional windscreen and rear screen washer pump connector.

FINAL OPERATION.

❑ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❑ Tighten the bolts on the Protection and Switching Unit cover.

❑ Connect the connectors depending on equipment.

❑ Refit:

- the dashboard lower trim,
- the dashboard lower trim bolts.

❑ Tighten the dashboard lower trim bolts.

❑ Refit:

- the dashboard trim piece,
- the dashboard side panel.

LEFT-HAND DRIVE

❏ Refit:

- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the injection computer support.

K9K

❏ Remove the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection).

D4F or F4R or K4J or K4M or M4R

❏ Remove the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (MR 392, 17B, Petrol injection).

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

RIGHT-HAND DRIVE

Tightening torques ▽	
earth cable nut on the body	**8 Nm**
earth wiring nut to the brake hydraulic unit	**8 Nm**
earth wiring nut on the front left-hand side member	**8 Nm.**
earth wiring nut on the front right-hand side member	**8 Nm.**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

Note: It is not necessary to remove the dashboard to access the pedal wiring.

REMOVAL

REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Switch off the ignition.

❏ Remove:

- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

D4F or F4R or K4J or K4M or M4R

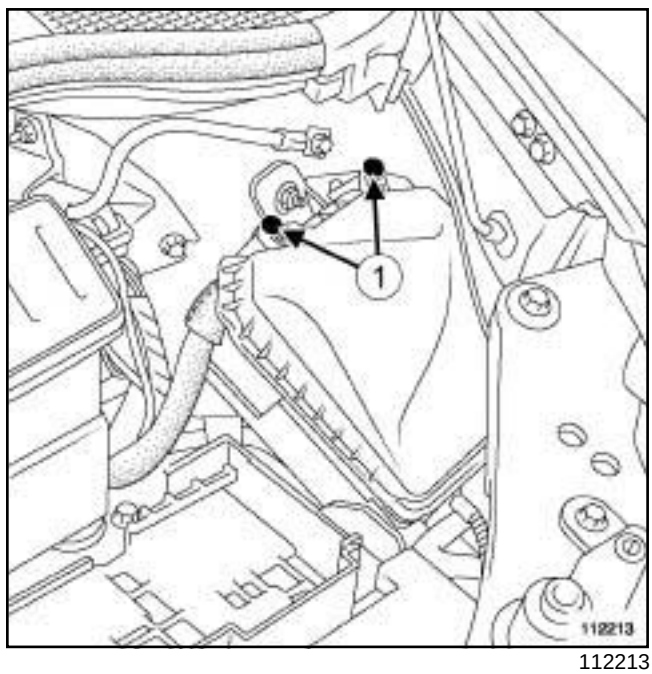
❏ Remove the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (MR 392, 17B, Petrol injection).

K9K

❏ Remove the diesel injection compute r (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection).

❏ Remove:

- the injection computer mounting,
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment).



112213

❏ Remove:

- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

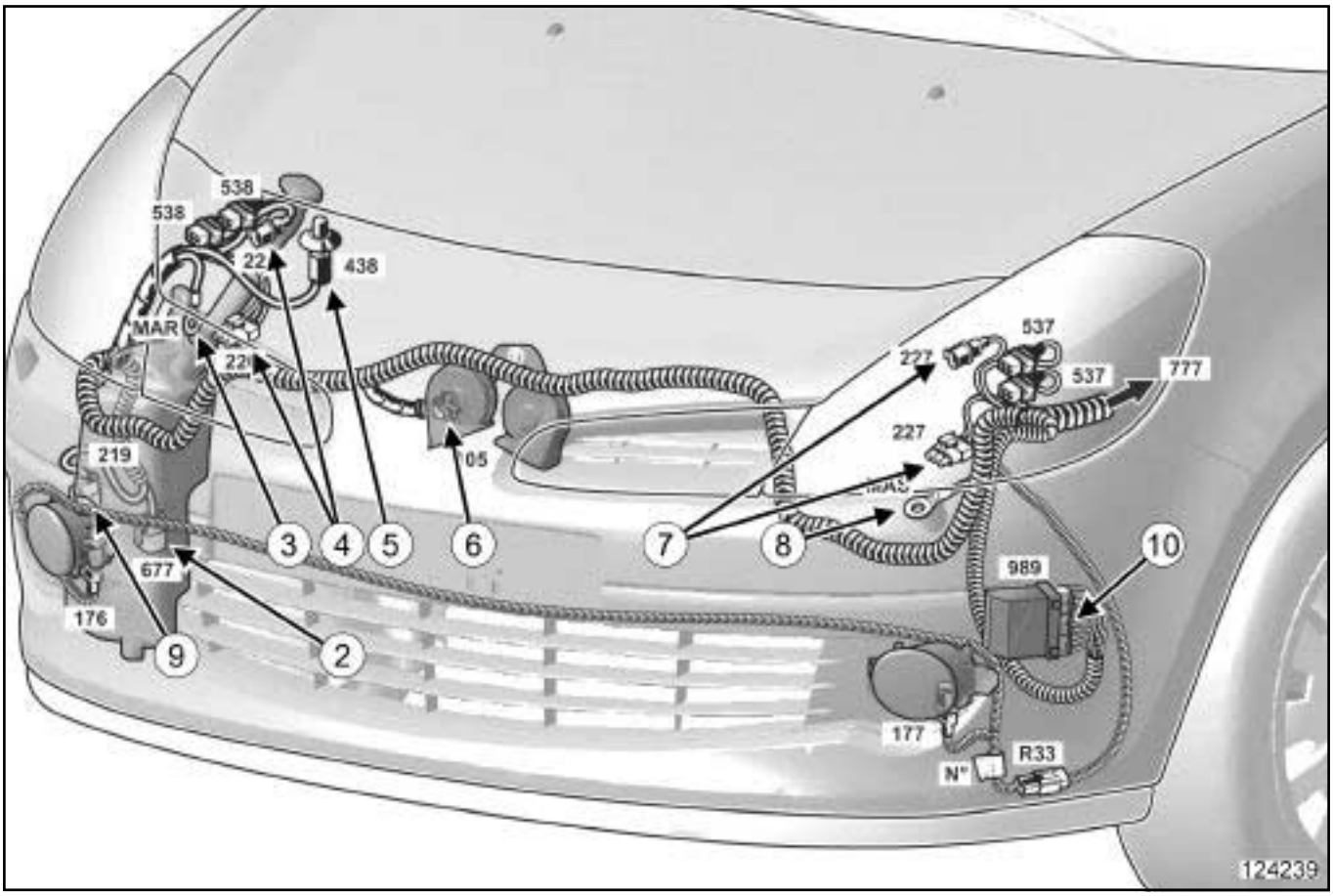
RIGHT-HAND DRIVE

OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.



124239

❑ Disconnect the bidirectional windscreen and rear screen washer pump connector (**2**) .

❑ Remove the earth wiring nut (**3**) from the front right-hand side member.

❑ Disconnect:

- the right-hand headlight connectors (**4**) ,
- the bonnet switch connector (**5**) ,
- the horn connector (**6**) ,
- the left-hand headlight connectors (**7**) .

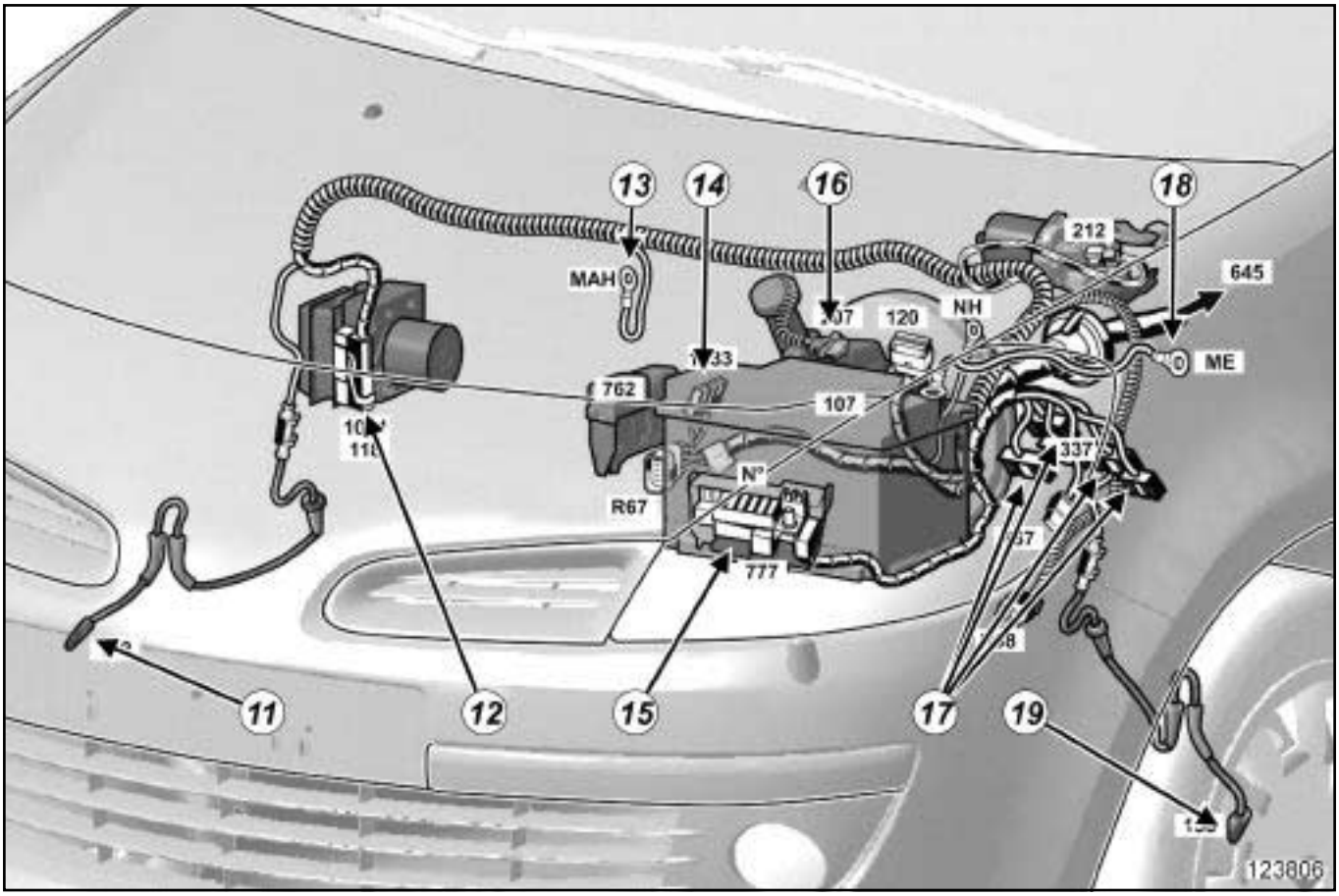
❑ Remove the earth wiring nut (**8**) from the front left-hand side member.

DISCHARGE LAMPS

❑ Disconnect:

- the headlight washer pump connector ***(9)*** ,
- the discharge bulb computer connectors ***(10)*** .

RIGHT-HAND DRIVE



123806

❏ Disconnect:

- the front right-hand wheel speed sensor connector (**11**) ,
- the brake hydraulic unit connector (**12**) .

❏ Remove the earth wiring nut (**13**) from the brake hydraulic unit.

❏ Disconnect:

- the battery protective fuse holder connectors (**14**) ,
- the power supply fuse board connector (**15**) ,
- the brake fluid level sensor connector (**16**) ,
- the Protection and Switching Unit connectors (**17**) ,

❏ Remove (**18**) the general earth wiring nut on the body.

❏ Disconnect the front left-hand wheel speed sensor connector (**19**) .

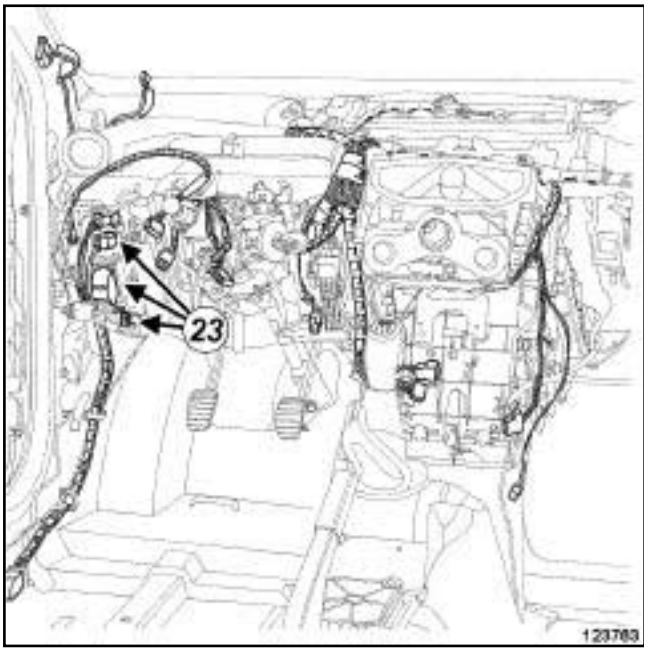
123894

❏ Disconnect:

- the accelerator pedal potentiometer connector (**20**) ,
- the brake light switch connector (**21**) ,

RIGHT-HAND DRIVE

- the clutch pedal position sensor connectors (**22**) .



123763

❏ the front left-hand wiring/dashboard wiring connection (**23**) .

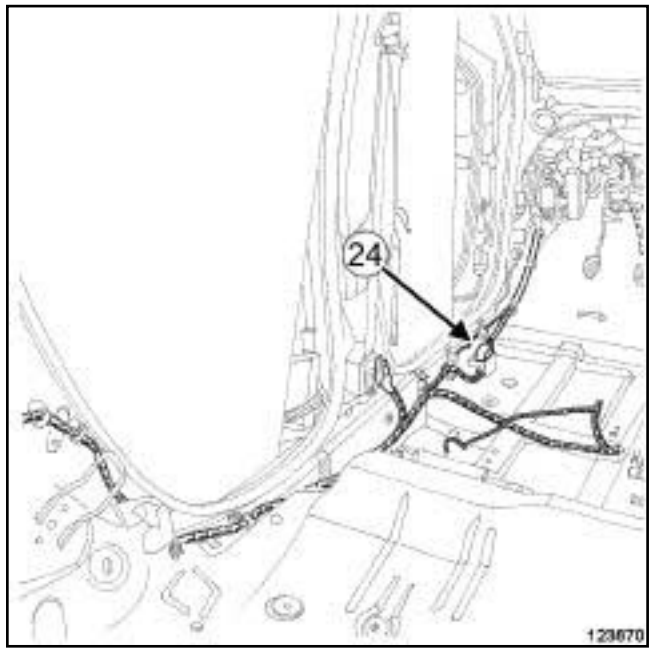
❏ Remove the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) (MR 392, 85A, Wiping - Washing).

❏ Unclip the pedal wiring.

❏ Unclip:

- the bulkhead wiring,
- the front bumper upper cross member wiring,
- the windscreen washer fluid reservoir wiring,
- the dashboard cross member wiring.

B85



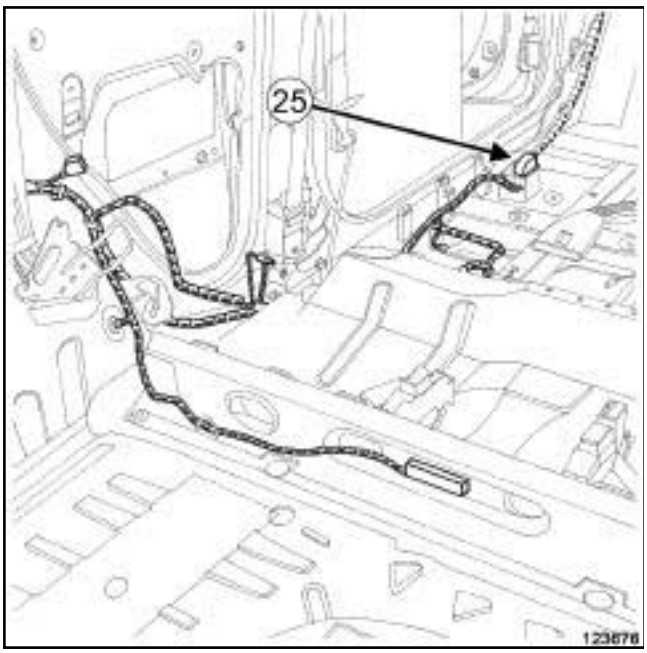
123670

❏ Disconnect the front left-hand wiring/rear left-hand wiring connection (**24**) .

❏ Unclip the front left-hand wiring.

RIGHT-HAND DRIVE

C85



123676

❑ Disconnect the front left-hand wiring/rear left-hand wiring connection (**25**) .

❑ Unclip the front left-hand wiring.

❑ Unclip the front left-hand wiring on the bulkhead.

❑ Remove the bonnet lock cable (see **Bonnet lock: Removal - Refitting**) (MR 393, 52A, Non-side opening element mechanisms).

❑ Remove the front left-hand wiring.

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the front left-hand wiring,
- the bonnet lock cable (see **Bonnet lock: Removal - Refitting**) (MR 393, 52A, Non-side opening element mechanisms).

❑ Clip:

- the front left-hand wiring on the bulkhead,
- the front left-hand wiring.

❑ Connect the front left-hand wiring/rear left-hand wiring connection.

❑ Clip:

- the dashboard cross member wiring,
- the windscreen washer fluid reservoir wiring,
- the front bumper upper cross member wiring,
- the bulkhead wiring.

❑ Clip the pedal wiring.

❑ Refit the windscreen wiper mechanism (see **85A**, **Wiping - Washing**, **Windscreen wiper mechanism: Removal - Refitting**, page **85A-10**) (MR 392, 85A, Wiping - Washing).

❑ Connect:

- the front left-hand wiring/dashboard wiring connection,
- the clutch pedal position sensor connectors,
- the brake light switch connector,
- the accelerator pedal potentiometer connector.

❑ Disconnect the front left-hand wheel speed sensor connector.

❑ Refit the general earth wiring nut on the body.

❑ Torque tighten the **earth cable nut on the body (8 Nm)**.

❑ Connect:

- the Protection and Switching Unit connectors,
- the brake fluid level sensor connector,
- the power supply fuse board connector,
- the battery protective fuse holder connectors.

❑ Refit the earth wiring nut to the brake hydraulic unit.

❑ Torque tighten the **earth wiring nut to the brake hydraulic unit (8 Nm)**.

RIGHT-HAND DRIVE

❑ Connect:

- the brake hydraulic unit connector,
- the front right-hand wheel speed sensor connector.

DISCHARGE LAMPS

❑ Connect:

- the discharge bulb computer connectors,
- the headlight washer pump connector.

❑ Refit the earth wiring nut on the front left-hand side member.

❑ Torque tighten the **earth wiring nut on the front left-hand side member (8 Nm.)**

❑ Connect:

- the left-hand headlight connectors,
- the horn connector,
- the bonnet switch connector,
- the right-hand headlight connectors.

❑ Refit the earth wiring nut on the front right-hand side member.

❑ Torque tighten the **earth wiring nut on the front right-hand side member (8 Nm.)**

❑ Disconnect the bidirectional windscreen and rear screen washer pump connector.

FINAL OPERATION.

❑ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❑ Tighten the bolts on the Protection and Switching Unit cover.

❑ Refit:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the injection computer support.

K9K

❑ Remove the diesel injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 392, 13B, Diesel injection).

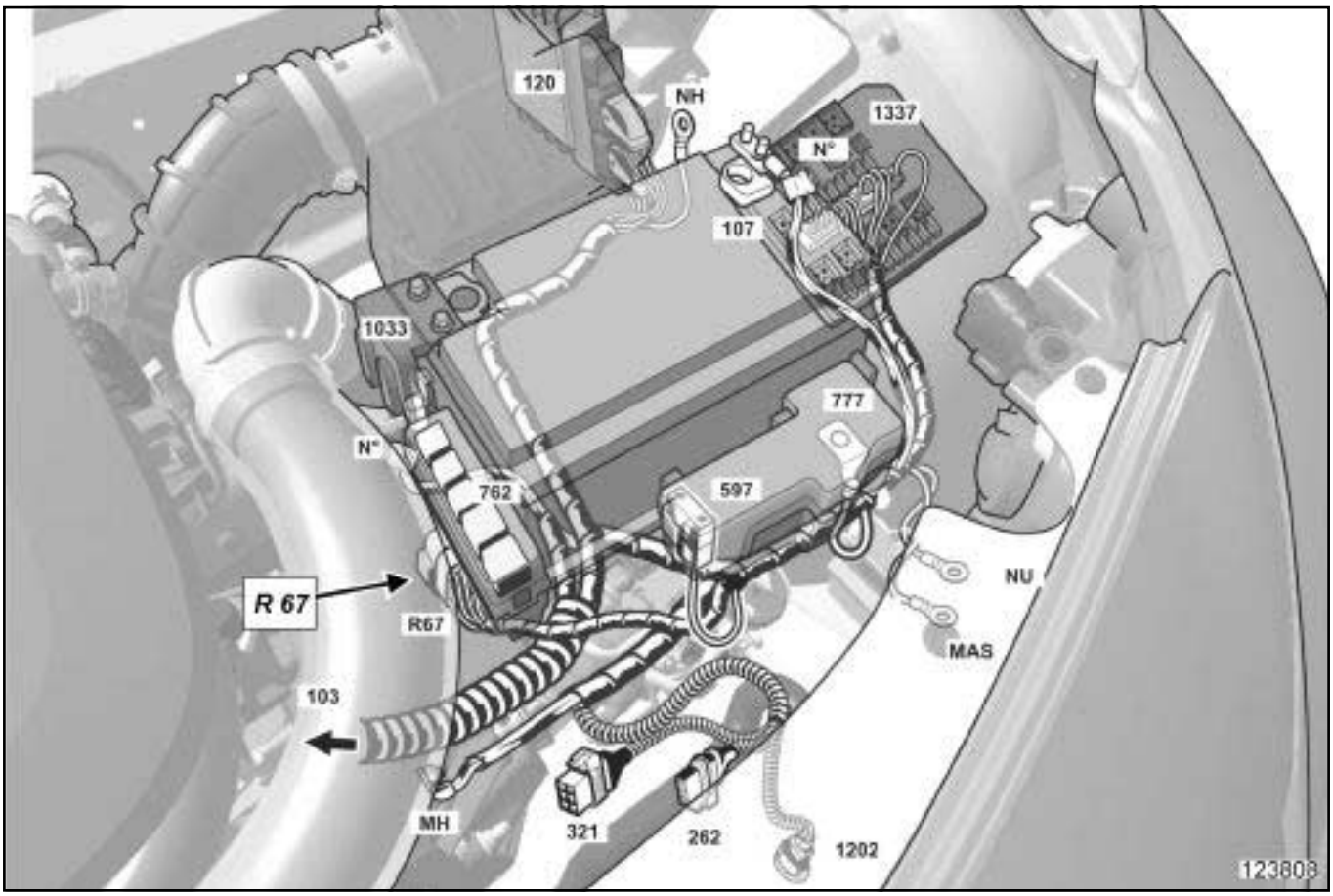
D4F or F4R or K4J or K4M or M4R

❑ Remove the petrol injection computer (see **Petrol injection computer: Removal - Refitting**) (MR 392, 17B, Petrol injection).

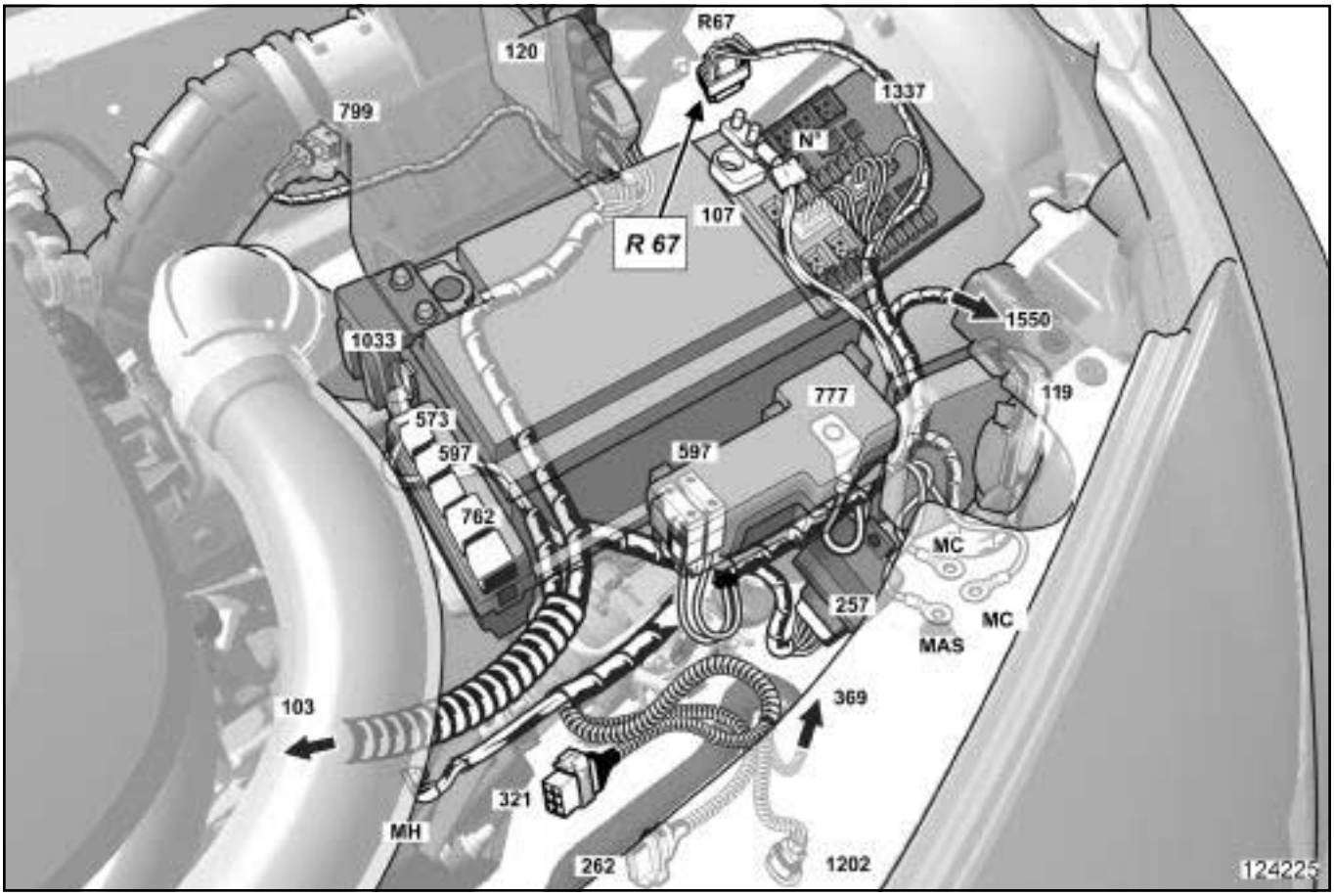
❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

I - LOCATION OF CONNECTORS



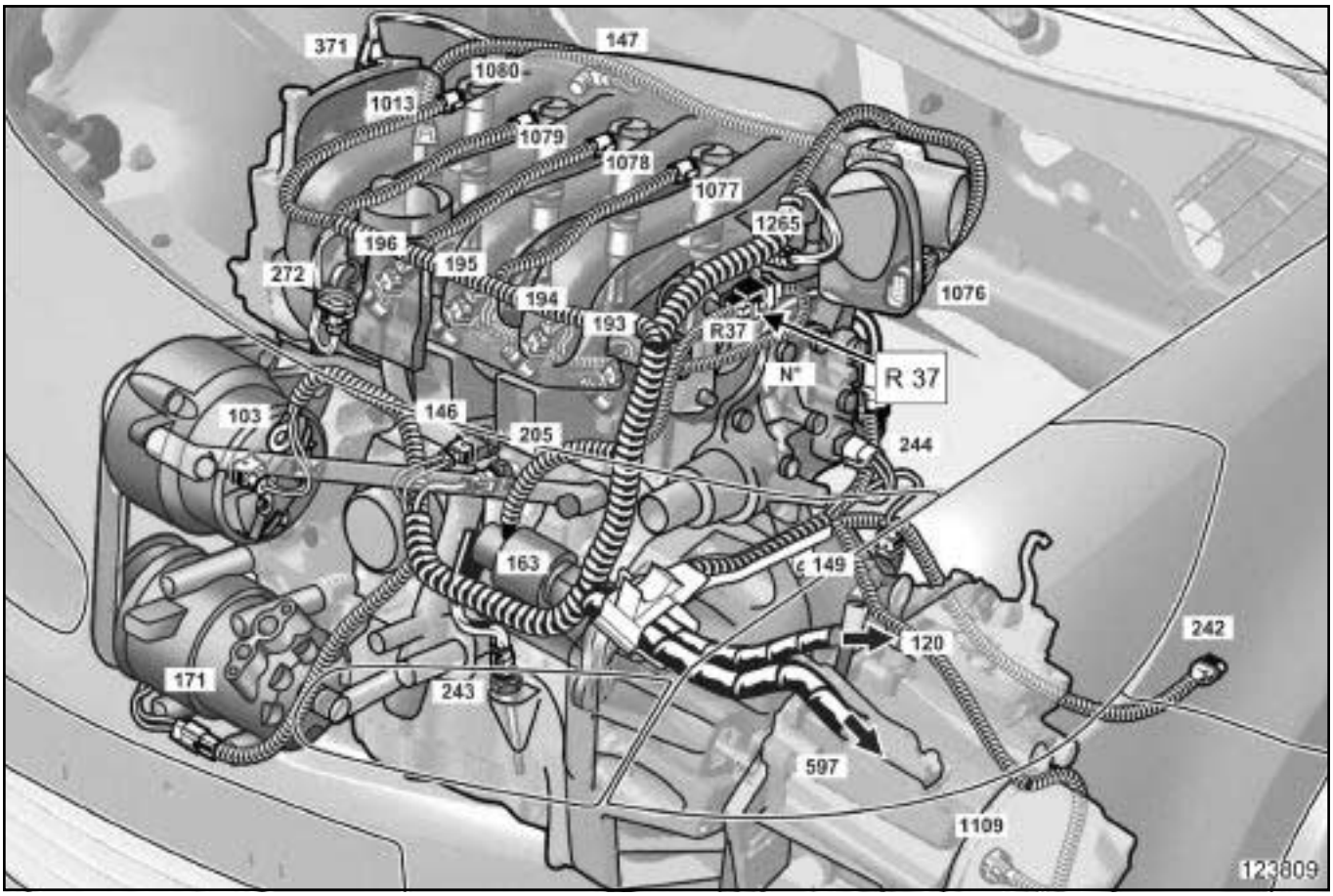
123808



124225

- R 67 connector (Engine wiring harness/front left-hand wiring connection).
- Depending on the engine, connection R 67 is composed of three or four connectors.

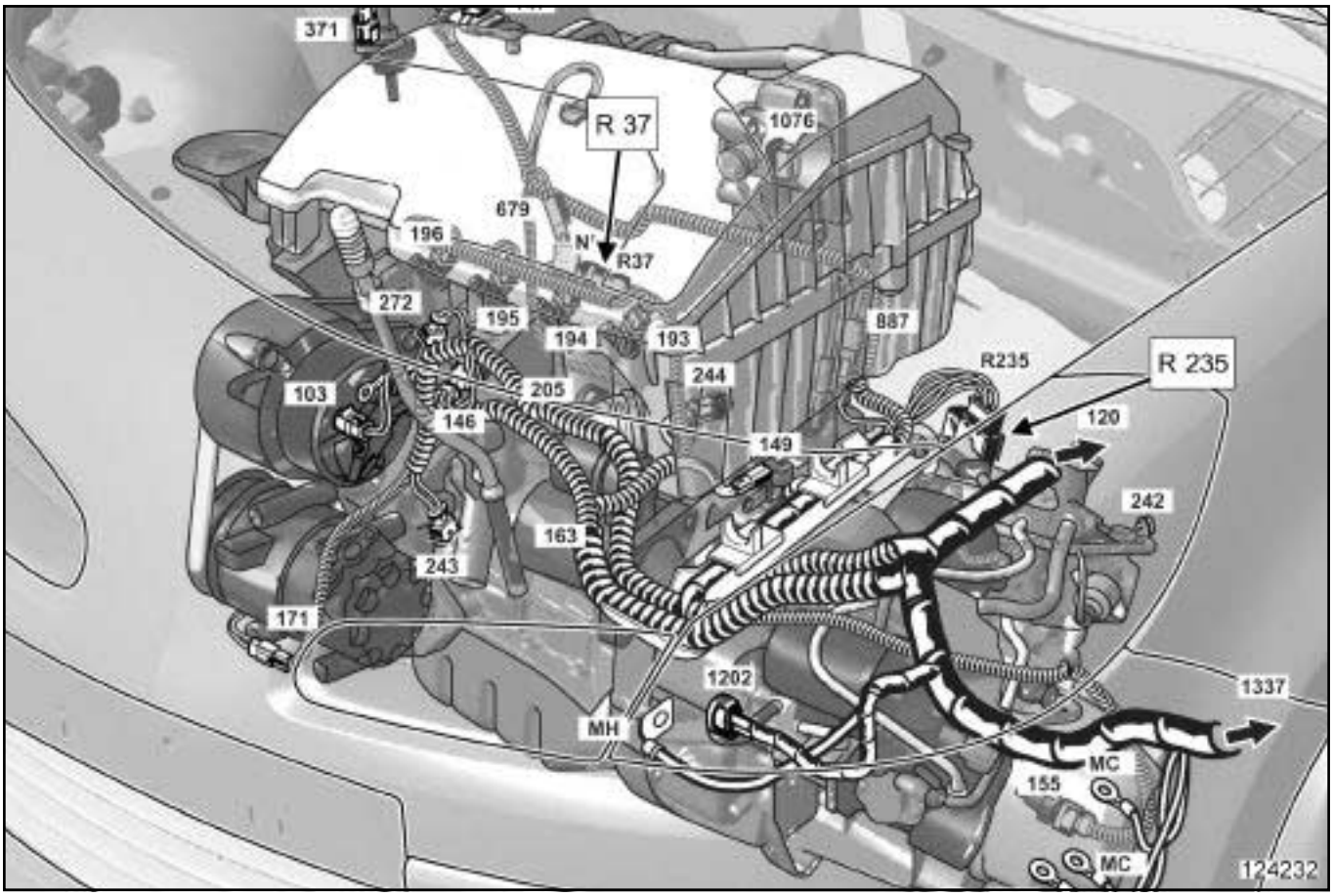
K4J or K4M



123809

❑ R 37 connector (Engine wiring harness/injection connection).

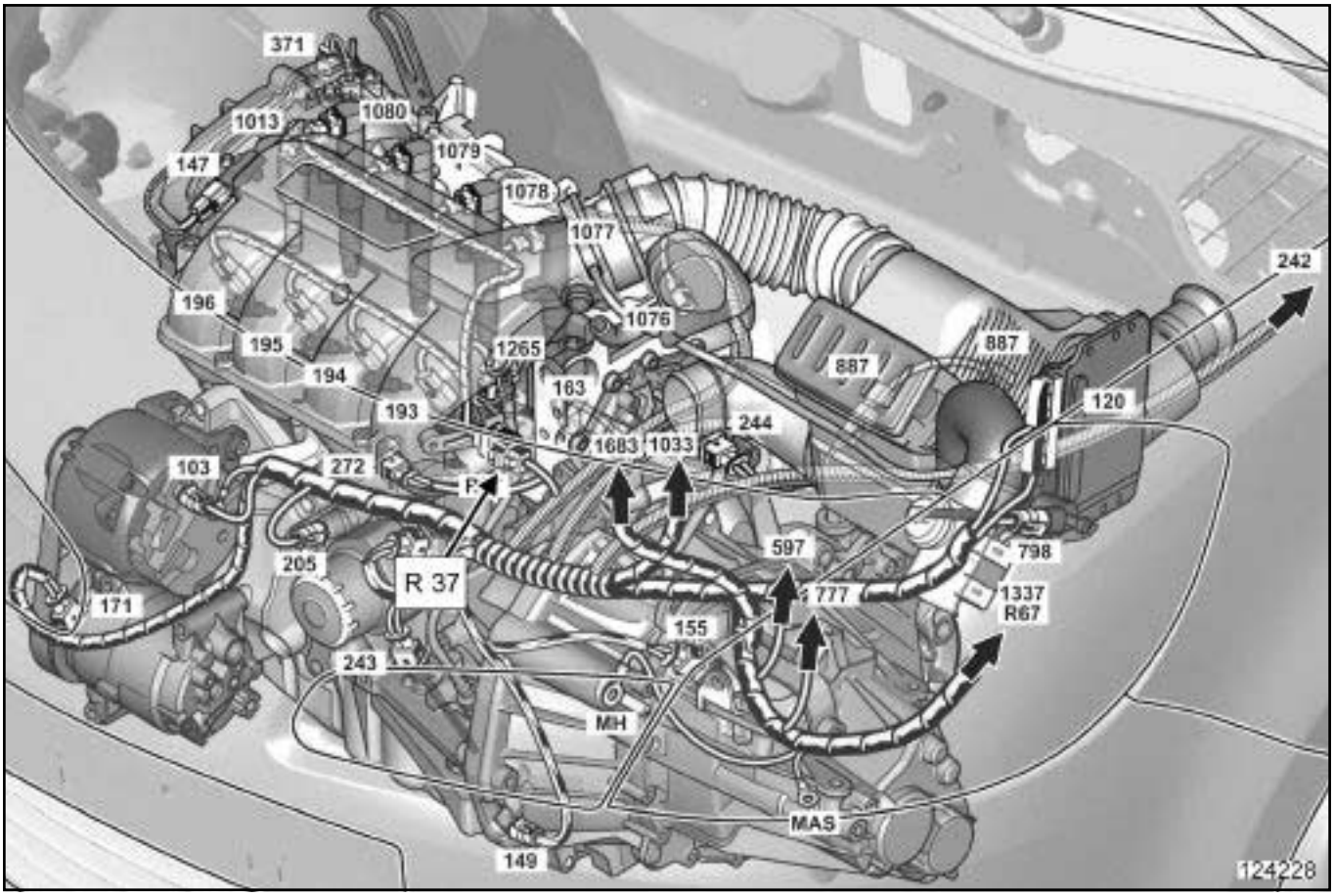
D4F



124232

- R 37 connector (Engine wiring harness/injection connection).
- R 235 connector (Automatic transmission wiring/ dashboard wiring connection).

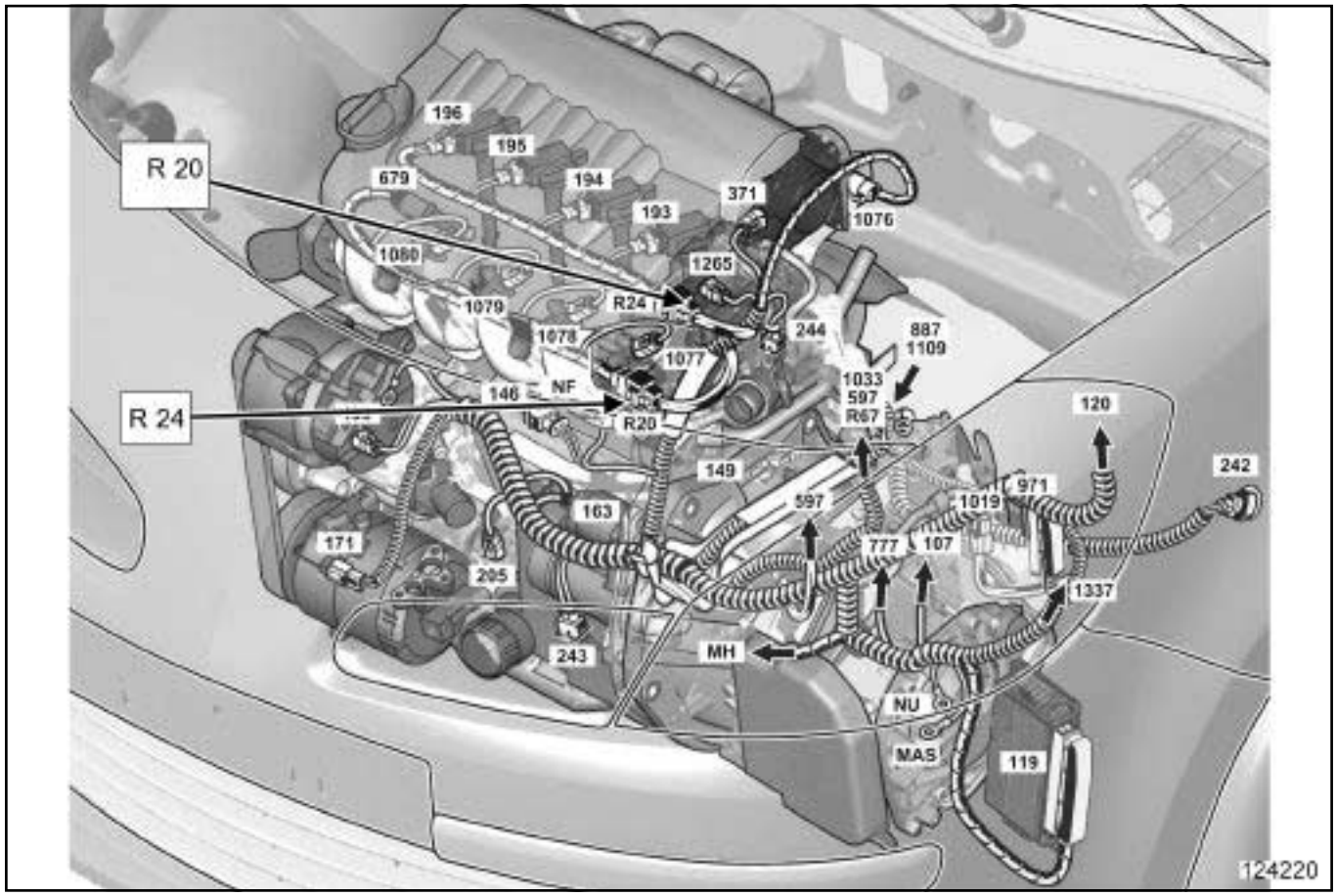
F4R



124228

❑ R 37 connector (Engine wiring harness/injection connection).

M4R



124220

- ❏ R 20 connector (Engine wiring harness/injection connection).
- ❏ R 24 connector (Engine wiring harness/injection connection).

II - ACCESS TO CONNECTORS

❏

IMPORTANT

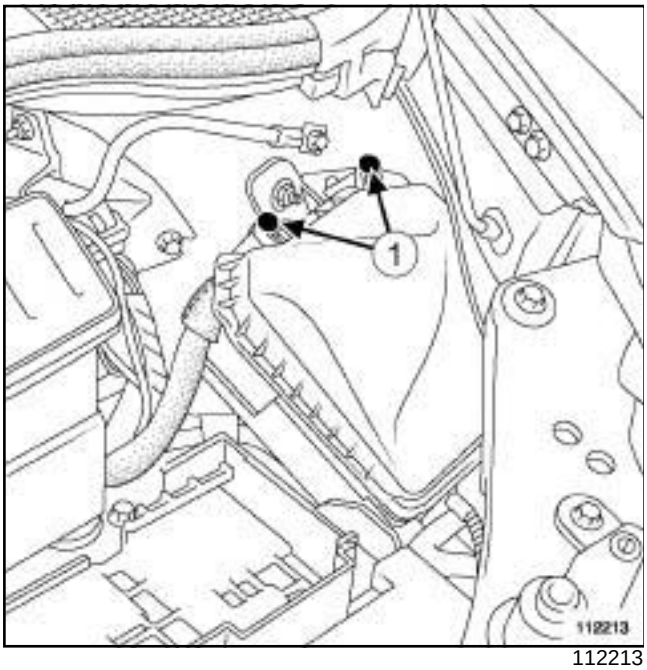
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

- ❏ Switch off the ignition.
- ❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**)

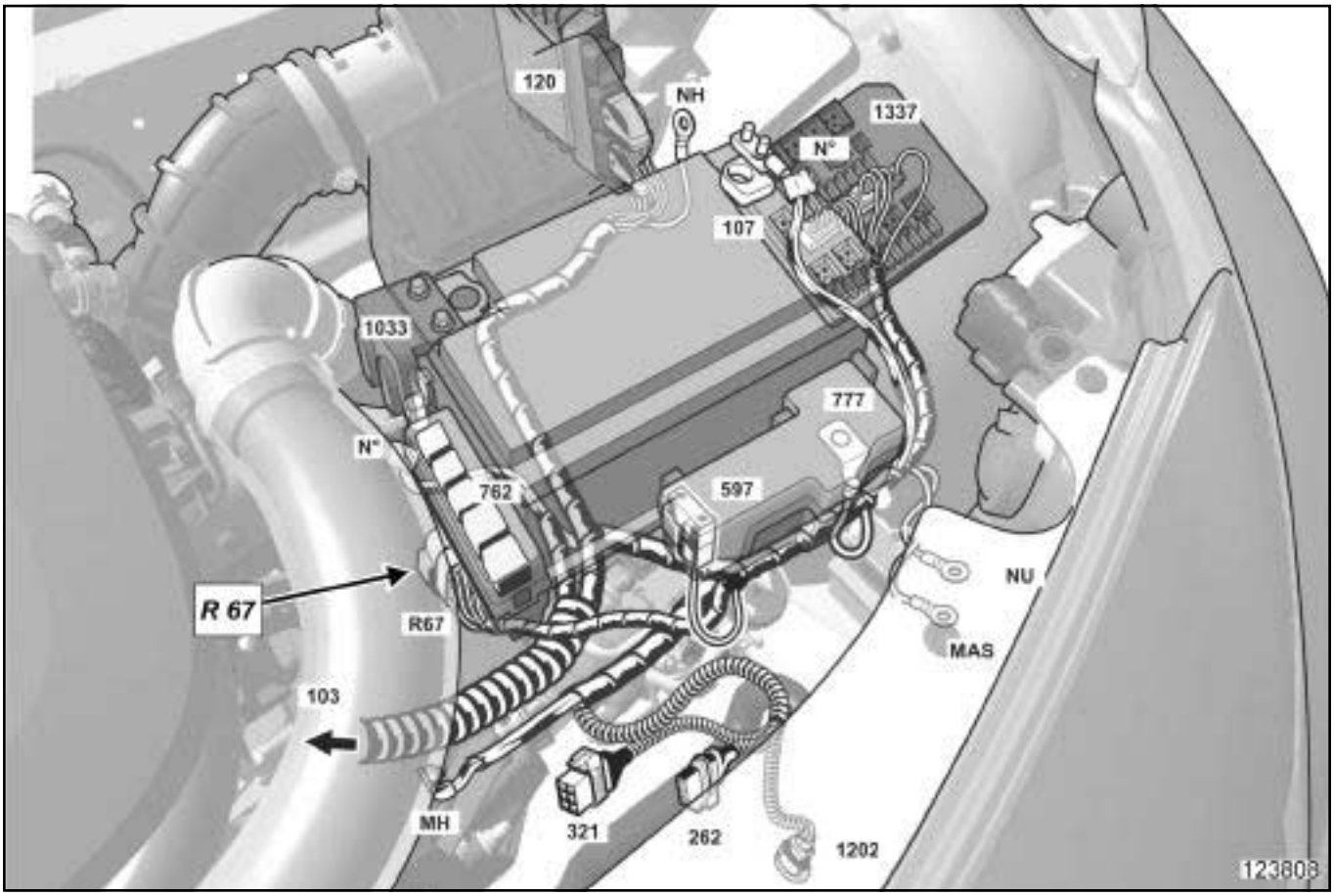
1 - Access to the R 67 connectors



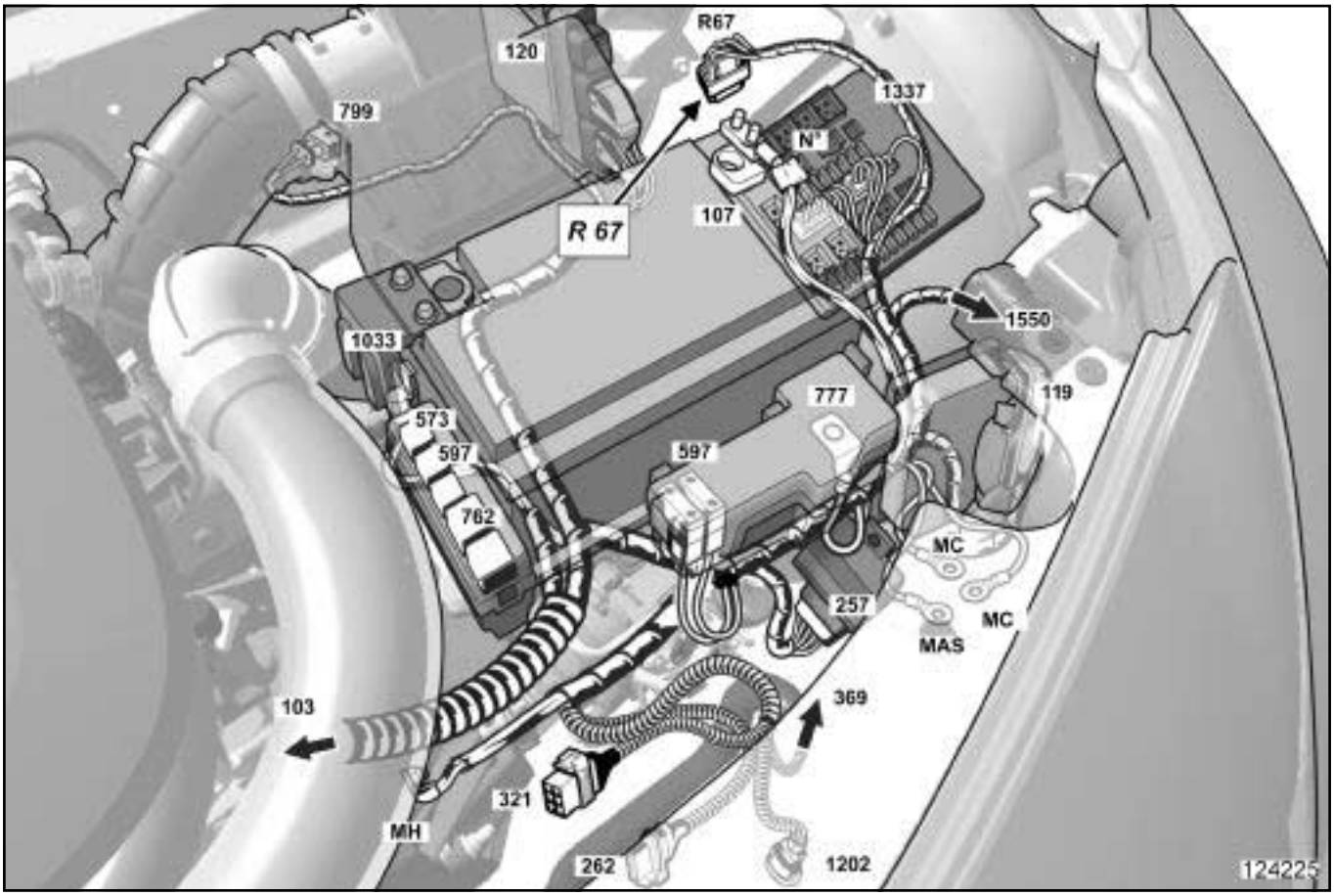
112213

❏ Remove:

- the bolts (**1**) ,
- the Protection and Switching Unit cover.


120
NH
1337
N°
107
1033
777
N°
762
597
R 67
R67
NU
MAS
103
MH
321
262
1202
123808

123808



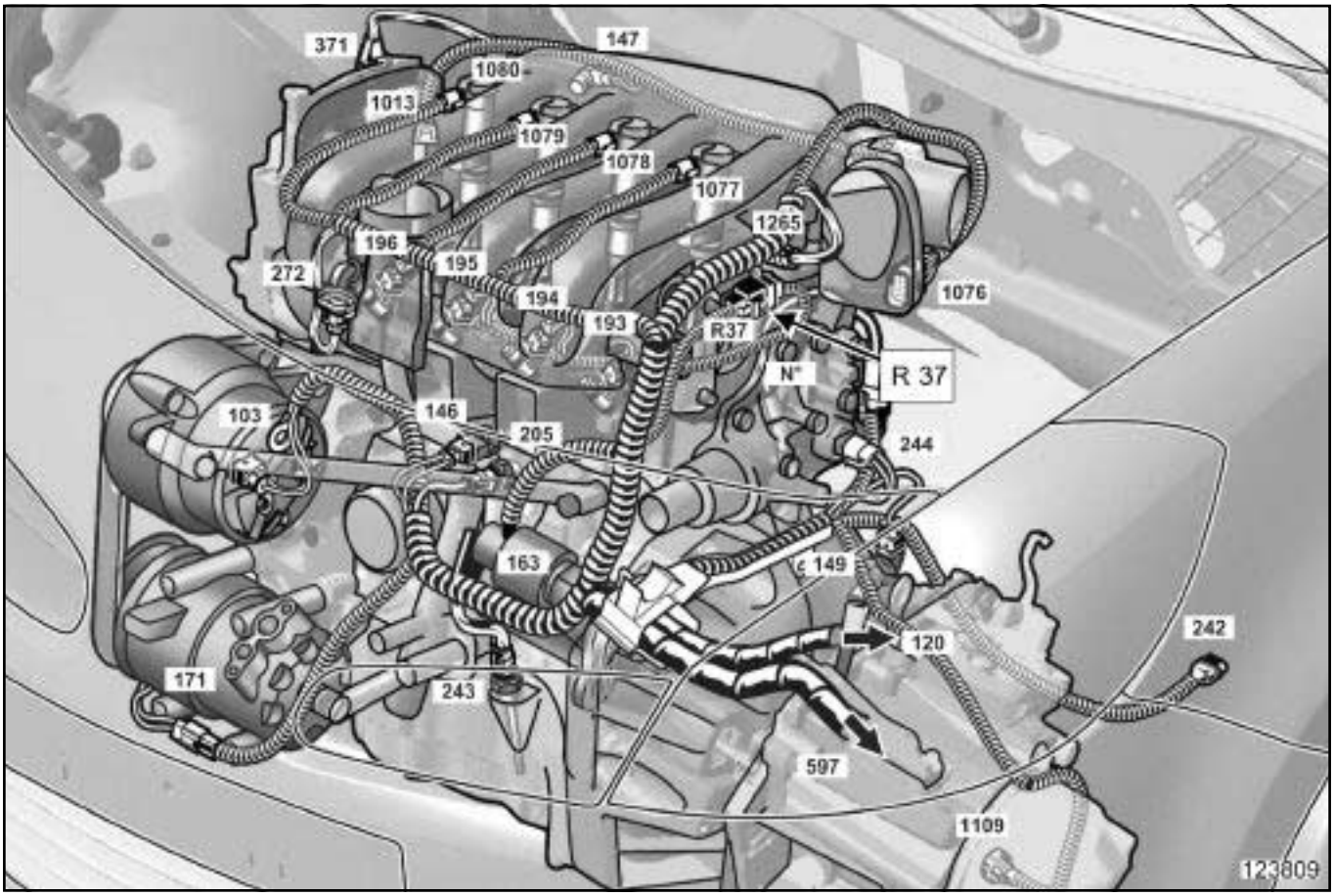
124225

❑ Disconnect the R 67 connectors.

2 - Access to the R 37 connector

K4J or K4M

❑ Remove the front engine cover.

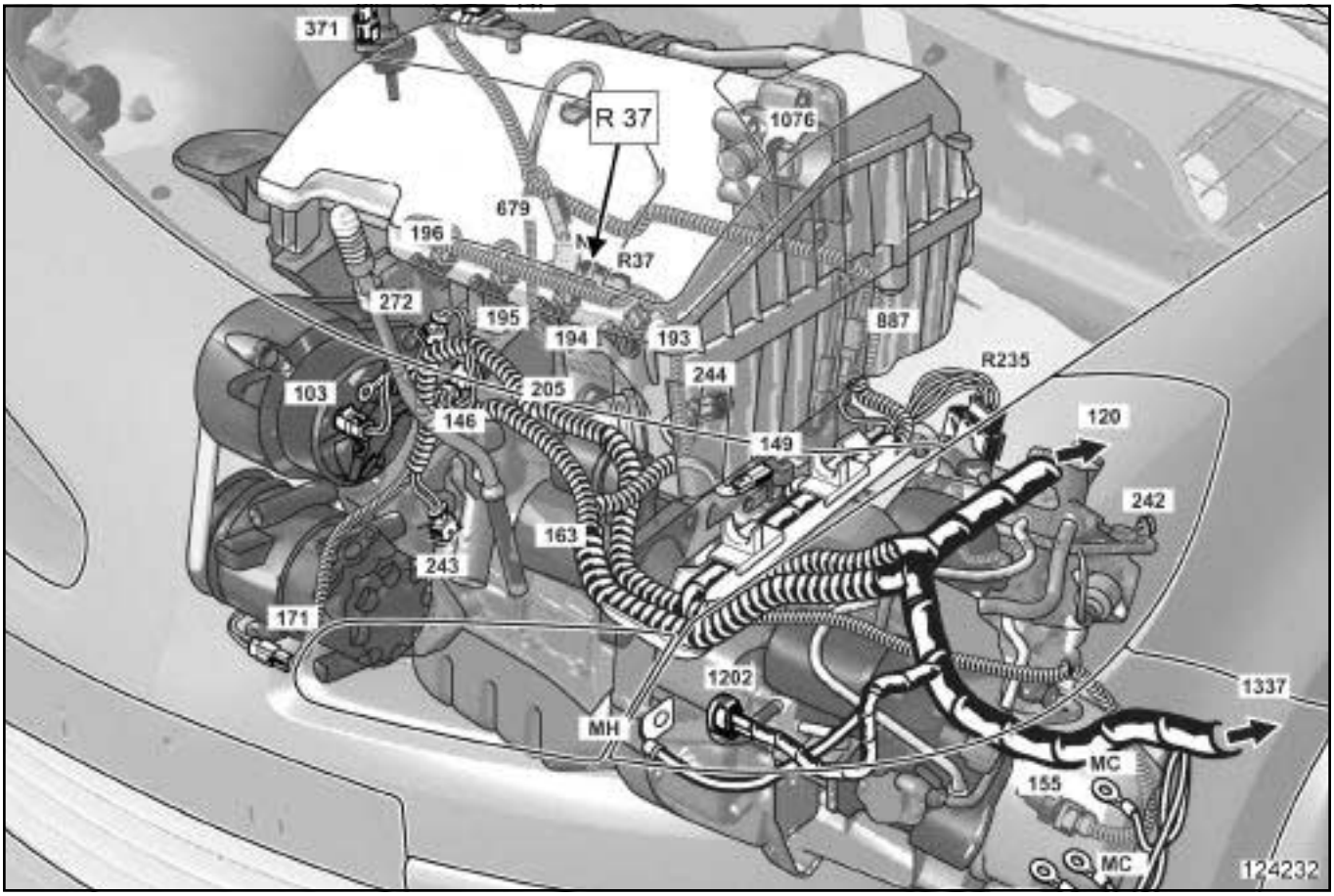


123809

❑ Disconnect the R 37 connector.

D4F

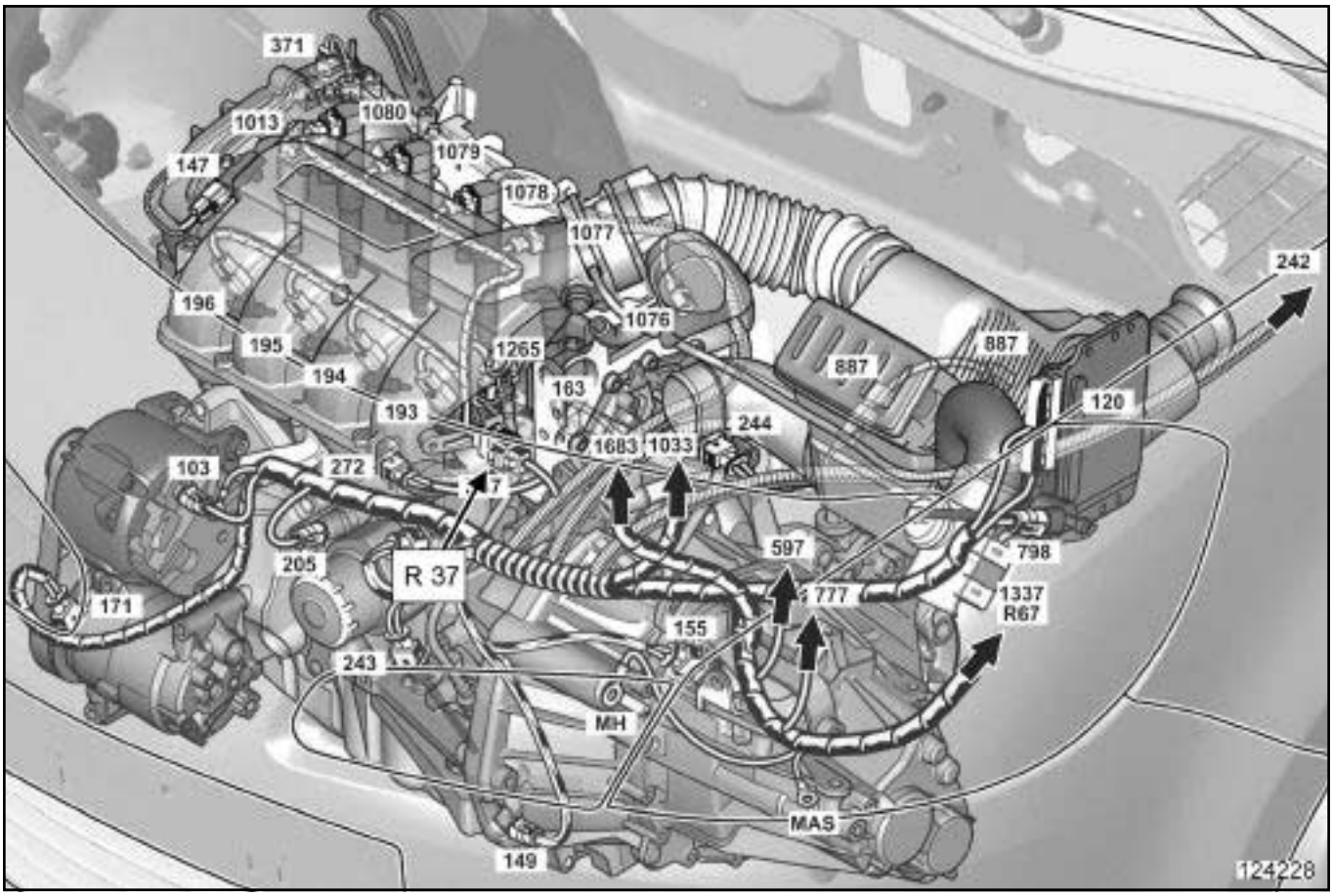
❑ Remove the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture).



124232

❑ Disconnect the R 37 connector.

F4R



124228

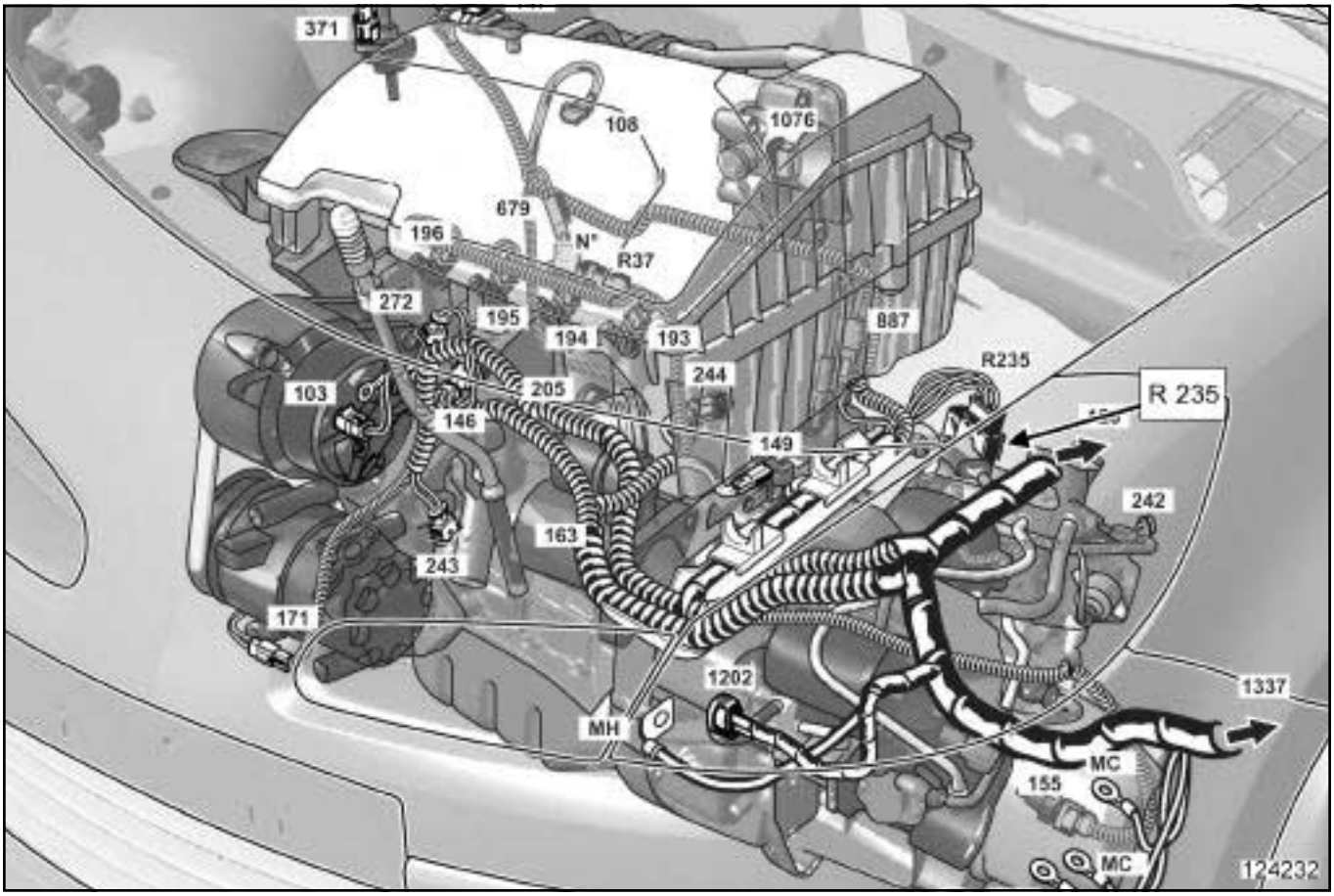
❑ Disconnect the R 37 connector.

3 - Access to the R 235 connector

D4F

❑ Remove:

- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the battery tray bracket (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) .



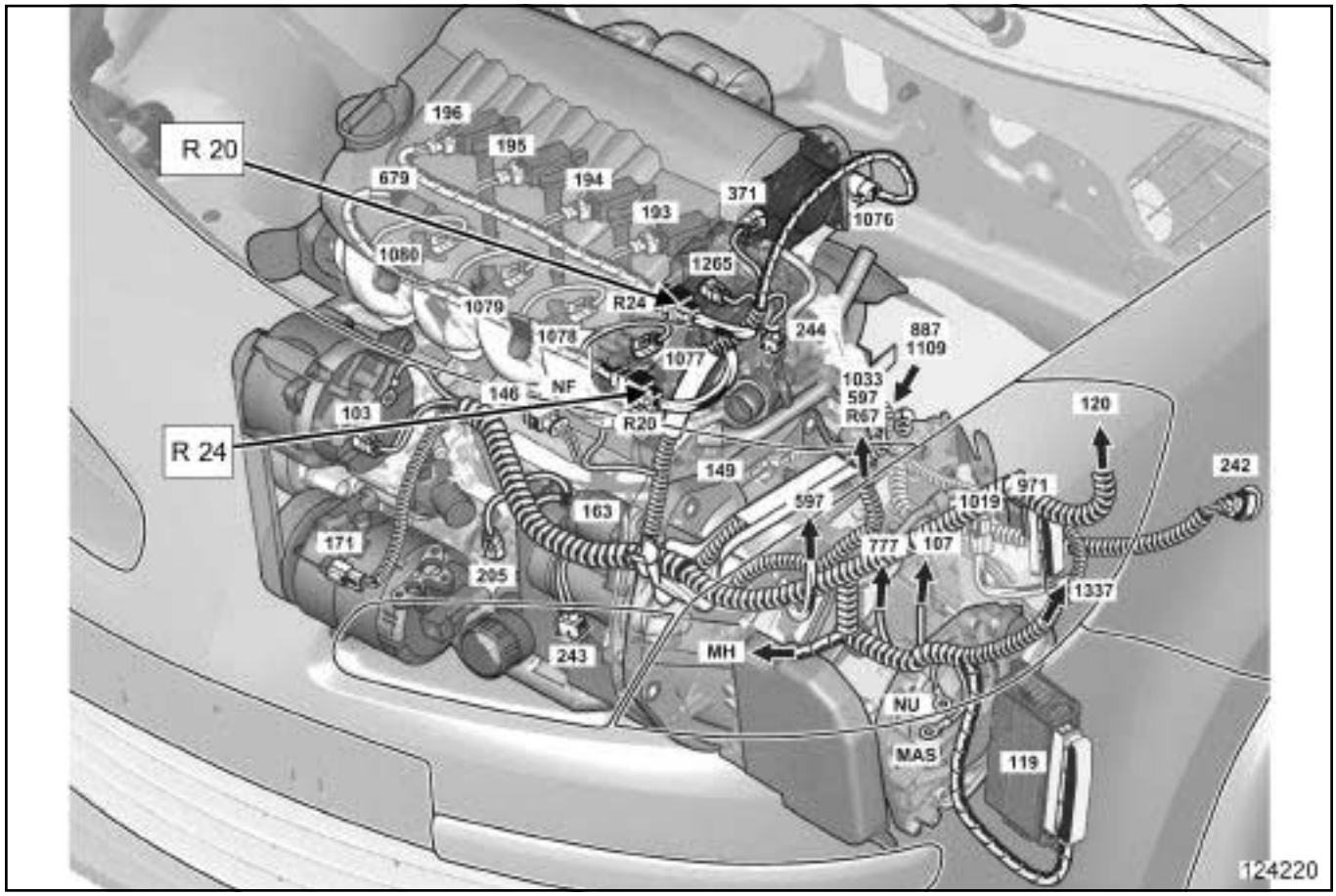
124232

❑ Disconnect the R 235 connector.

4 - Access to the R 20 and R 24 connectors

M4R

❑ Remove the front engine cover.



124220

❑ Disconnect the R 20 and R 24 connectors.

K4J or K4M

Tightening torques ▽	
earth nuts on the front left-hand side member	**8 N.m**
nut from the power feed fuse board cable	**6 Nm**
fuel injection computer earth wiring nut	**8 Nm**
earth wiring bolt on the manual gearbox	**24 Nm**
earth wiring bolt on the automatic transmission	**44 Nm**
nut on the excitation terminal of the starter	**5 Nm**
nut on the positive terminal of the starter	**8 Nm**
alternator positive terminal nut	**24 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

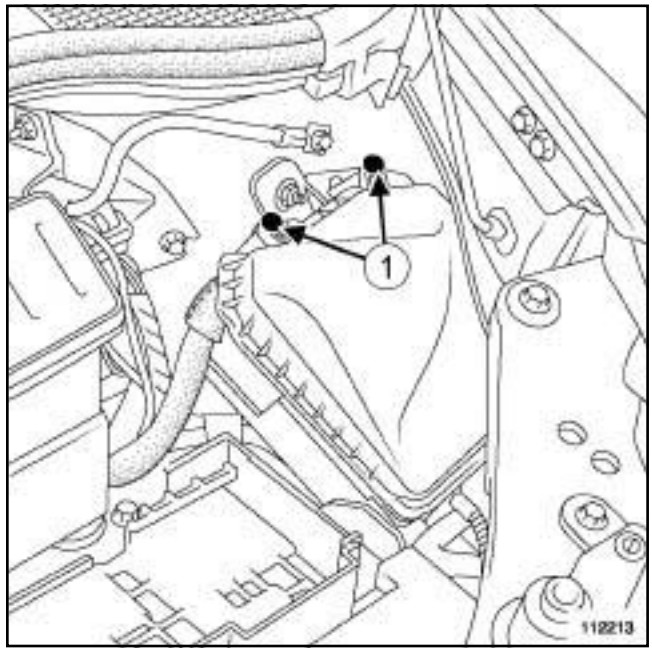
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the engine cover,
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112213

❑ Remove:

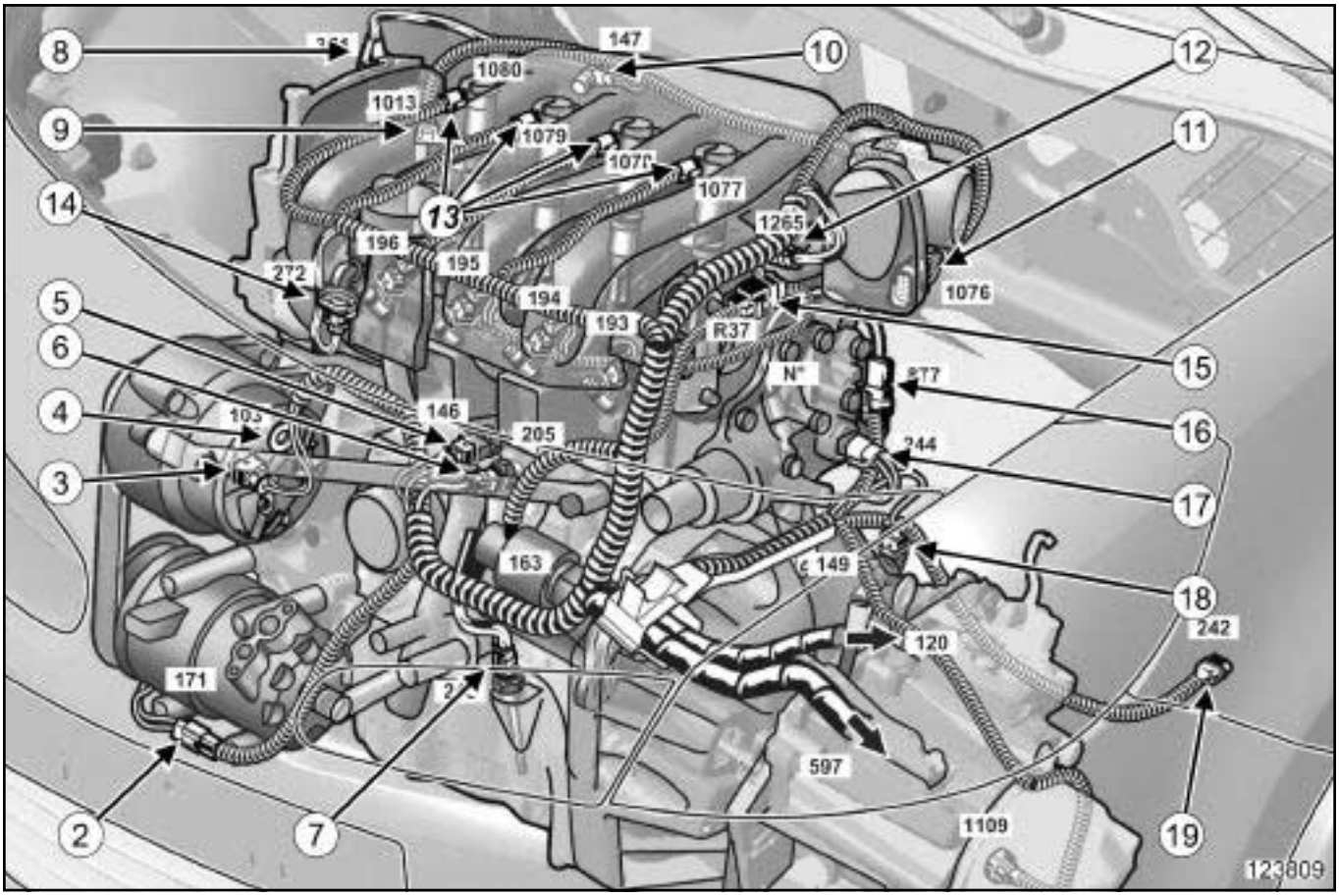
- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

K4J or K4M



123809

❏ Disconnect:

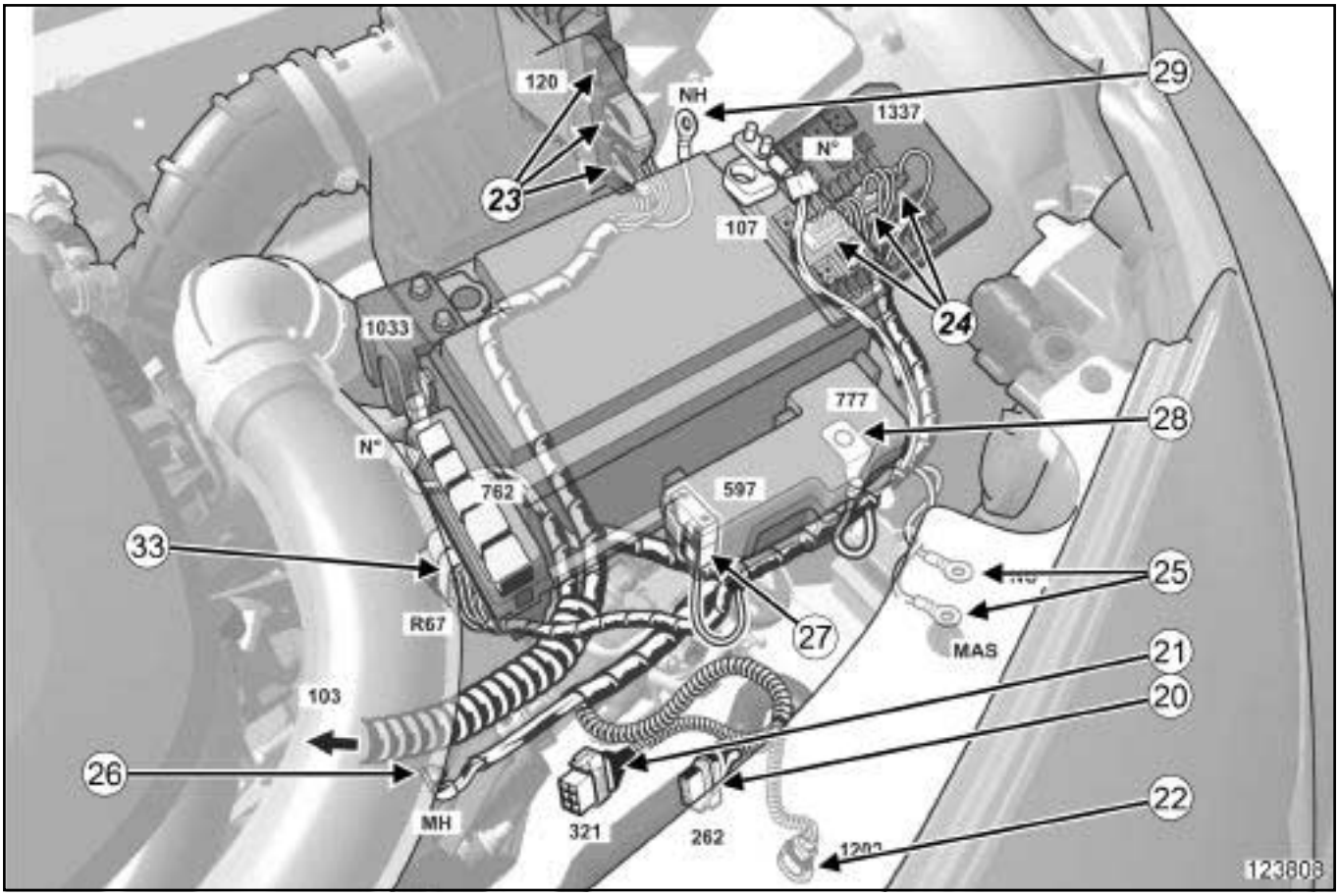
- the air conditioning compressor connector (**2**) ,
- the alternator exciter connector (**3**) .

❏ Remove the nut (**4**) from the alternator positive terminal.

❏ Disconnect:

- the pinking sensor connector (**5**) ,
- the connector (**6**) from the oil pressure sensor,
- the oil level sensor connector (**7**) ,
- the fuel vapour absorber solenoid valve connector (**8**) ,
- the camshaft dephaser solenoid valve connector (**9**) ,
- the inlet air pressure sensor connector (**10**) ,
- the throttle valve connector (**11**) ,
- the connector (**12**) from the camshaft position sensor,
- all coil connectors (**13**) ,
- the connector (**14**) from the air temperature sensor,
- the engine wiring/injection wiring connection (**15**) ,
- the upstream oxygen sensor connector (**16**) ,
- the coolant temperature sensor connector (**17**) ,
- ,the crankshaft position sensor connector (**18**) ,
- the downstream oxygen sensor connector (**19**) .

K4J or K4M



123808

❑ Remove the air resonator unit (see **Air resonator: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❑ Disconnect:

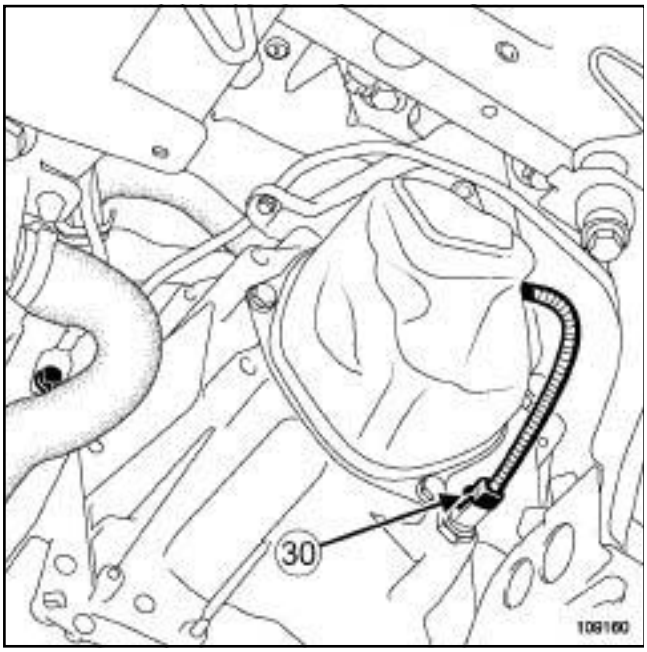
- the engine cooling fan assembly connector (**20**) ,
- the engine cooling fan assembly resistor connector (**21**) ,
- the refrigerant pressure sensor connector (**22**) ,
- the fuel injection computer connectors (**23**) ,
- the front left-hand wiring connector (**33**) ,
- the Protection and Switching Unit connectors (**24**) ,

❑ Remove:

- the nut on the excitation terminal of the starter,
- the nut on the positive terminal of the starter,
- all earth cable nuts on the front left-hand side member (**25**) ,
- the earth wiring bolt on the gearbox (**26**) ,
- the 30 A fuse from the power feed fuse board,
- the fuse holder (**27**) ,
- the nut (**28**) from the power feed fuse board cable,
- the fuel injection computer earth wiring nut (**29**) .

K4J or K4M

JH3 or JR5

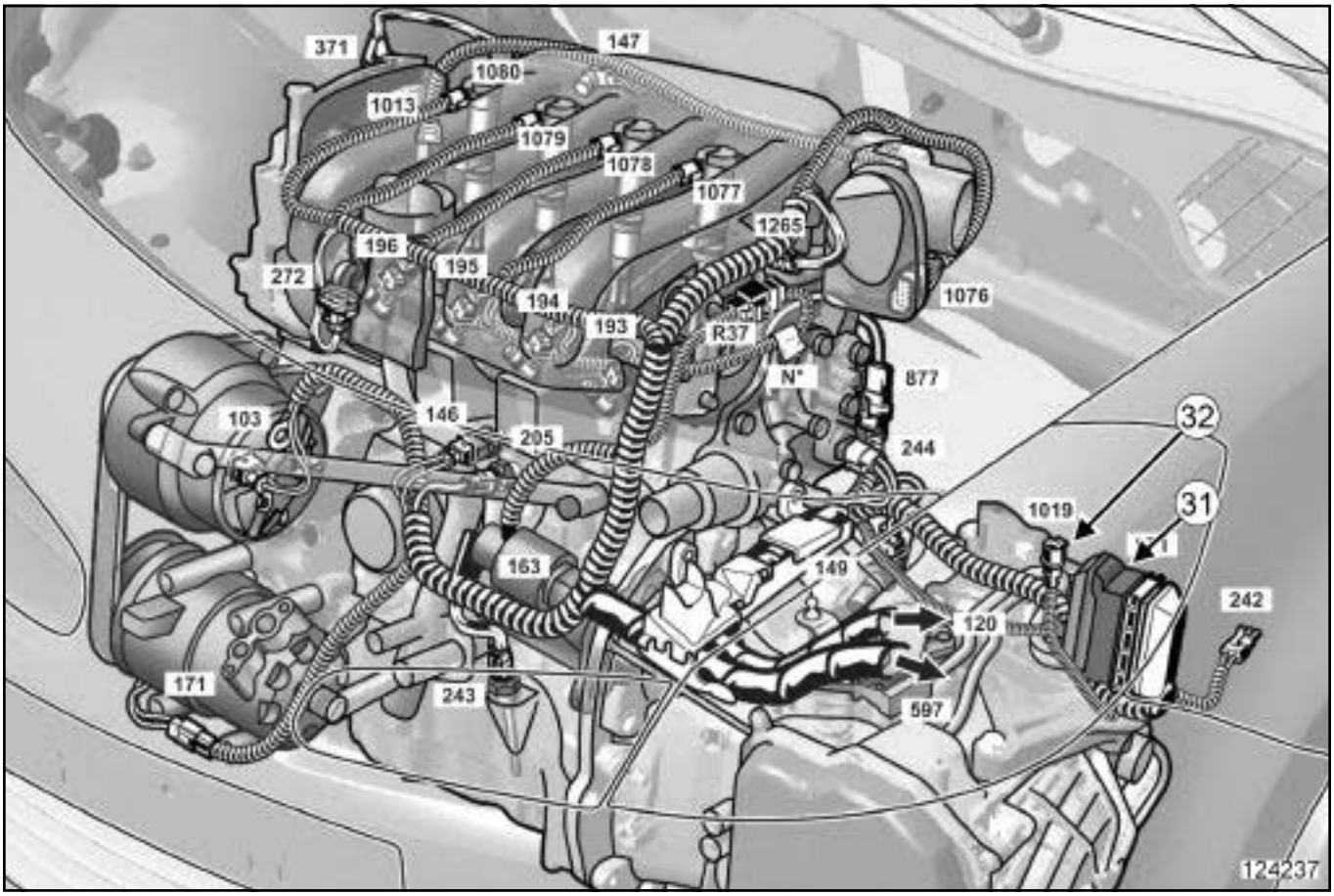


109160

❏ Disconnect the reverse gear switch connector (**30**) .

K4J or K4M

DP0



124237

❑ Remove:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the automatic transmission computer (see **Automatic gearbox converter: Removal - Refitting**) (MR 392, 23A, Automatic transmission),

❑ Disconnect:

- the flow control solenoid valve connector (**32**) ,
- the automatic transmission module connector (**31**) ,

WARNING
Protect the connector by sliding it into a waterproof plastic bag.

❑

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❑ Unclip:

- the sub-frame and cylinder block wiring,
- the engine cooling fan assembly wiring,
- the intake manifold wiring.

❑ Remove:

- the engine wiring harness mounting bolt on the clutch housing,
- the engine wiring harness.

K4J or K4M

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the engine wiring,
- the engine wiring harness mounting bolt on the clutch housing,

❑ Tighten the engine wiring harness mounting bolt on the clutch housing,

DP0

❑ Connect:

- the automatic transmission module connector,
- the flow control solenoid valve connector.

❑ Refit:

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the automatic transmission computer (see **Automatic gearbox converter: Removal - Refitting**) (MR 392, 23A, Automatic transmission),

JH3 or JR5

❑ Connect the reverse gear switch connector.

❑ Refit the automatic transmission and engine cooling fan assembly earth wiring nuts on the front left-hand side member.

❑ Torque tighten the **earth nuts on the front left-hand side member (8 N.m)**.

❑ Refit the nut from the power feed fuse board cable.

❑ Torque tighten the **nut from the power feed fuse board cable (6 Nm)**.

❑ Refit:

- the fuse holder,
- the 30 A fuse from the power feed fuse board.

❑ Refit the fuel injection computer earth cable nut.

❑ Torque tighten the **fuel injection computer earth wiring nut (8 Nm)**.

JH3 or JR5

❑ Refit the earth wiring bolt on the gearbox.

❑ Torque tighten the **earth wiring bolt on the manual gearbox (24 Nm)**.

DP0

❑ Refit the earth wiring bolt on the gearbox.

❑ Torque tighten the **earth wiring bolt on the automatic transmission (44 Nm)**.

❑ Refit:

- the nut on the excitation terminal of the starter,
- the nut on the positive terminal of the starter.

❑ Tighten to torque:

- the **nut on the excitation terminal of the starter (5 Nm)**.
- the **nut on the positive terminal of the starter (8 Nm)**.

❑ Connect:

- the Protection and Switching Unit connectors,
- The front left-hand wiring connector,
- the fuel injection computer connectors,
- the refrigerant pressure sensor connector,
- the engine cooling fan assembly resistor connector,
- the engine cooling fan assembly connector.

❑ Refit the air resonator unit (see **Air resonator: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❑ Connect:

- the downstream oxygen sensor connector,
- the crankshaft position sensor connector,
- the coolant temperature sensor connector,
- the upstream oxygen sensor connector,
- the engine wiring/injection wiring connection,

- the air temperature sensor connector,
- all coil connectors,
- the camshaft position sensor connector,
- the throttle valve connector,
- the air inlet pressure sensor connector,
- the camshaft dephaser solenoid valve connector,
- the fuel vapour absorber solenoid valve connector,
- the oil level sensor connector,
- the oil pressure sensor connector,
- the pinking sensor connector.

❏ Refit the alternator positive terminal nut.

❏ Torque tighten the **alternator positive terminal nut (24 Nm)**.

❏ Connect:

- the alternator exciter connector,
- the air conditioning compressor connector,

❏ Clip:

- the sub-frame and cylinder block wiring,
- the engine cooling fan assembly wiring,
- the intake manifold wiring.

III - FINAL OPERATION.

❏ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Tighten the bolts on the Protection and Switching Unit cover.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the engine cover.

K9K

Tightening torques ▽	
sequential gearbox earth wiring nuts on the front left-hand side member	**8 Nm**
heating element nuts	**4 Nm**
earth wiring bolt from the heating element unit support on the gearbox	**21 Nm**
nut from the power feed fuse board cable	**6 Nm**
engine cooling fan assembly earth cable nut on the front left-hand side member	**8 Nm**
earth wiring bolt on the gearbox	**24 Nm**
nut on the positive terminal of the starter	**8 Nm**
nut on the positive terminal of the starter	**5 Nm**
alternator positive terminal nut	**24 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

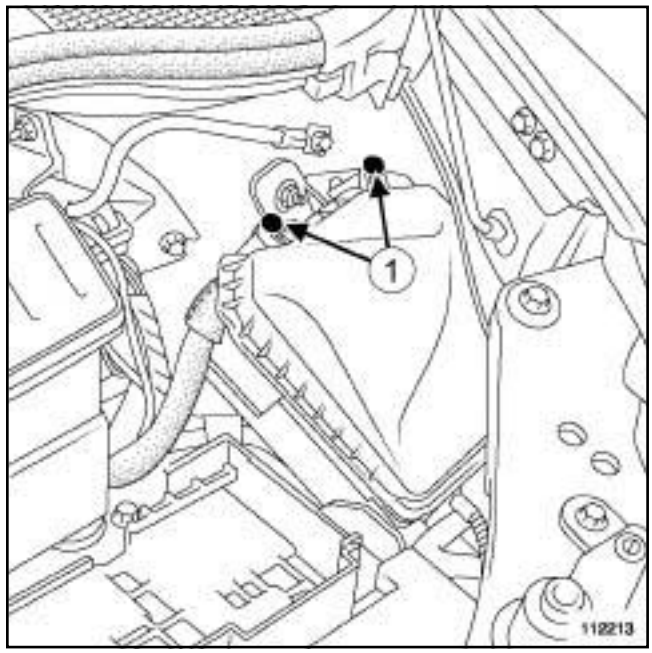
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the engine cover,
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112213

❑ Remove:

- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover,
- the pre-postheating unit (see **Pre-postheating unit: Removal - Refitting**) (MR 392, 13C, Preheating).

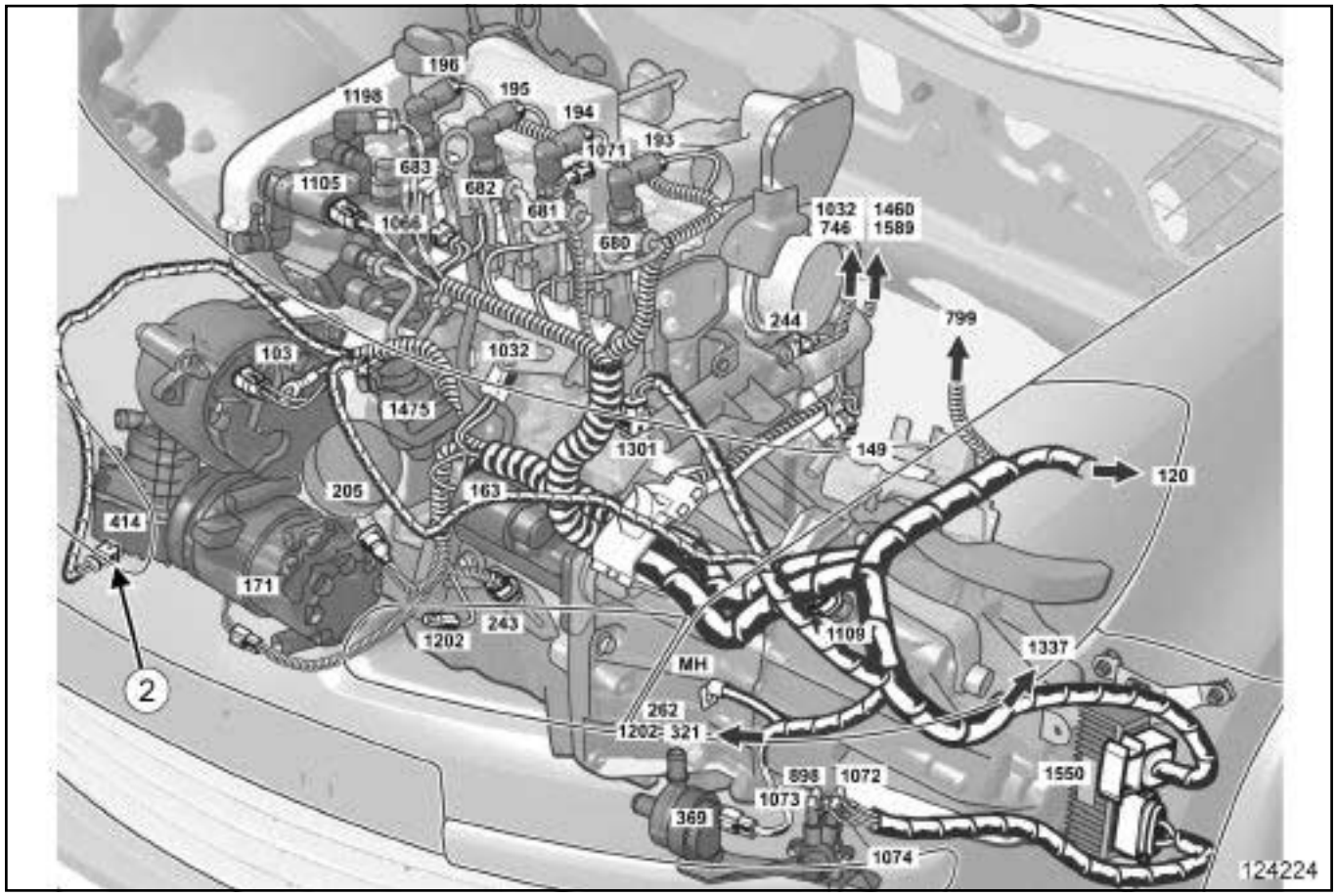
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

K9K

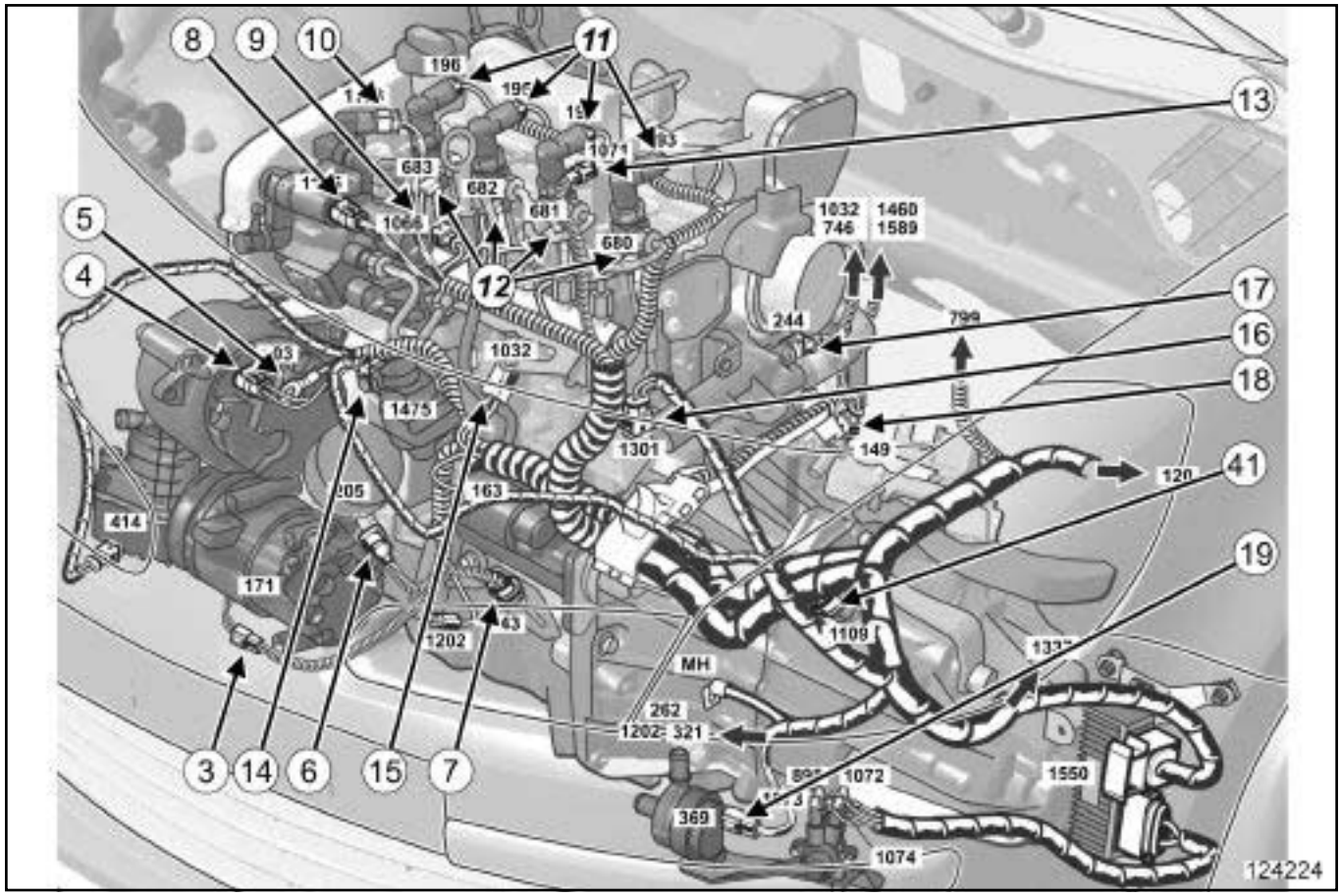
DIESEL SEPARATOR FILTER



124224

❑ Disconnect the water detection sensor connector (**2**) from the diesel filter.

K9K



124224

❑ Disconnect:

- the air conditioning compressor connector (**3**) ,
- the alternator exciter connector (**4**) .

❑ Remove the nut (**5**) from the positive terminal of the starter.

❑ Disconnect:

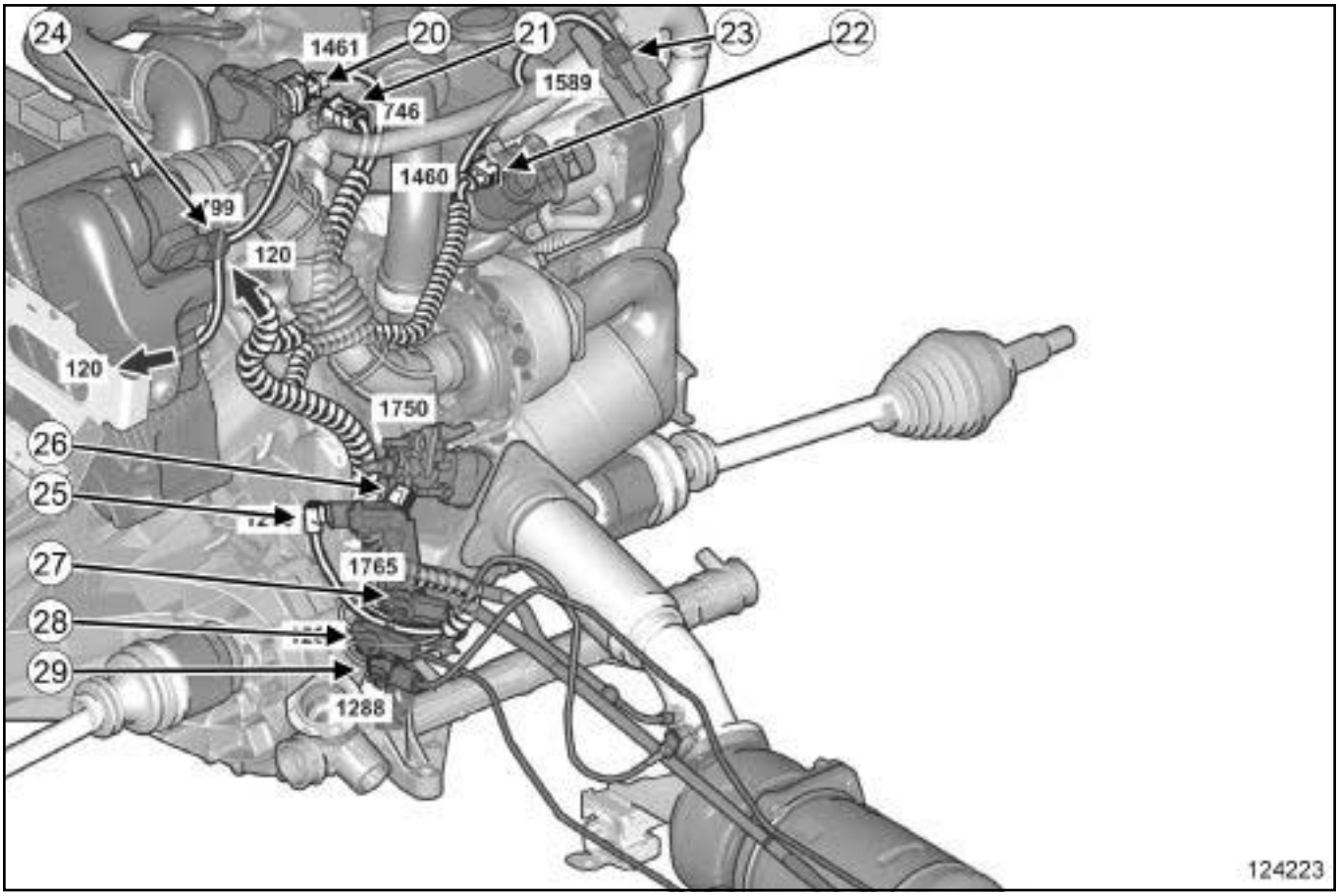
- the connector (**6**) from the oil pressure sensor,
- the oil level sensor connector (**7**) ,
- the fuel flow actuator connector (**8**) ,
- the fuel pressure regulator connector (**9**) ,
- the fuel temperature sensor connector (**10**) ,
- the connector (**11**) from each injector,
- all heater plug connectors (**12**) ,
- the turbocharger pressure sensor connector (**13**) ,
- the turbocharging pressure regulation solenoid valve connector (**14**) ,
- the fuel rail pressure sensor connector (**15**) ,
- the EGR cooler bypass control diaphragm solenoid valve connector (**16**) ,
- the coolant temperature sensor connector (**17**) ,
- the crankshaft position sensor connector (**18**) .

TL4

❑ Disconnect the connector ***(41)*** from the reverse gear switch.

❑ Disconnect the electric coolant pump ***(19)*** connector.

K9K



124223

❑ Disconnect:

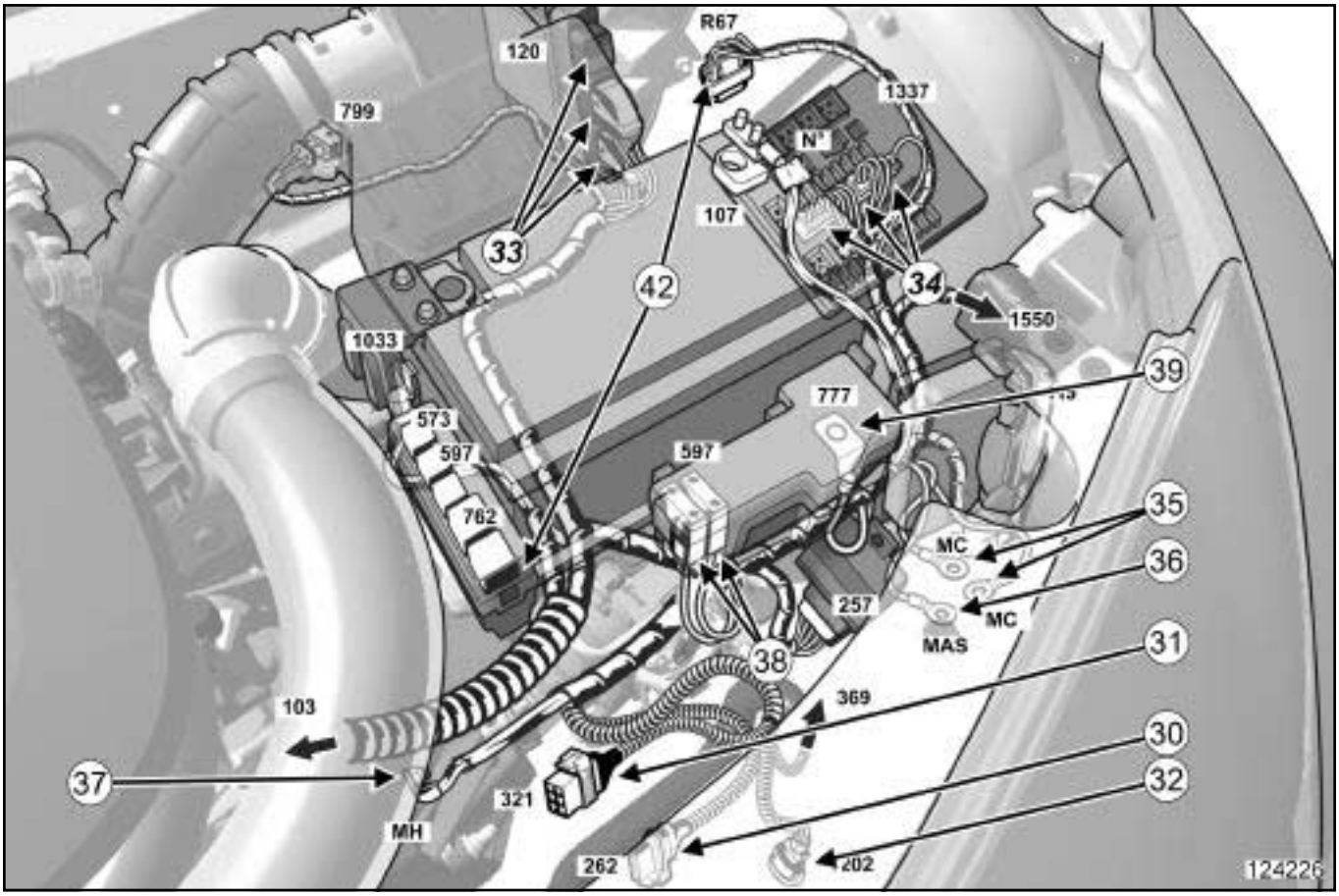
- the damper valve connector (**20**) ,
- the connector (**21**) from the camshaft position sensor,
- the connector (**22**) from the EGR solenoid valve,
- the connector (**23**) from the exhaust gas temperature sensor,
- the air flowmeter connector (**24**) ,

K9K, and 772

❑ Disconnect:

- the particle filter pressure sensor connector (**25**) ,
- the diesel injector connector (**26**) from the catalytic pre-converter,
- the catalytic converter downstream temperature sensor connector (**27**) ,
- the particle filter upstream temperature sensor connector (**28**) ,
- the particle filter downstream temperature sensor connector (**29**) ,

K9K



124226

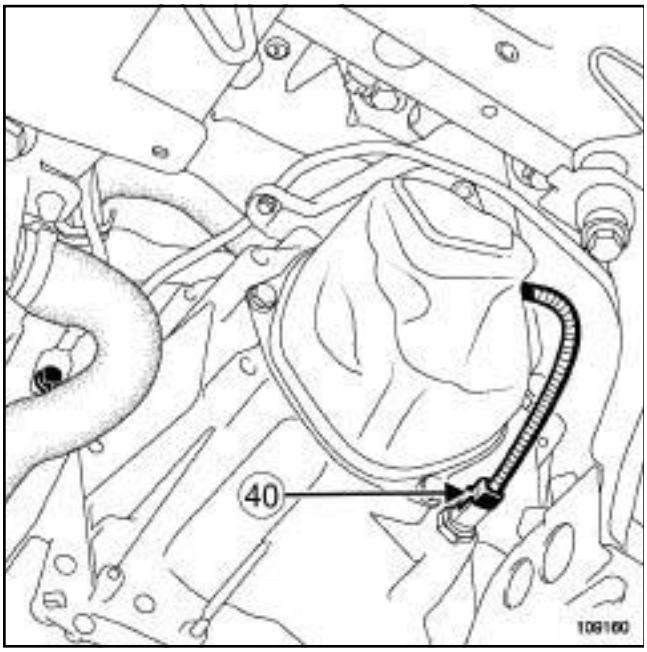
❏ Disconnect:

- the engine cooling fan assembly connector (**30**) ,
- the engine cooling fan assembly resistor connector (**31**) ,
- the refrigerant pressure sensor connector (**32**) ,
- the fuel injection computer connectors (**33**) ,
- the front left-hand wiring connectors (**42**) ,
- the Protection and Switching Unit connectors (**34**) ,

❏ Remove:

- the nut on the excitation terminal of the starter
- the nut on the positive terminal of the starter,
- all earth wiring nuts (**35**) from the gearbox computer,
- the engine cooling fan assembly earth cable nut (**36**) on the front left-hand side member,
- the gearbox earth wiring bolt (**37**) ,
- the 30 A fuse from the power feed fuse board,
- the fuse holders (**38**) ,
- the nut (**39**) from the power feed fuse board cable.

JA5 or JH3 or JR5



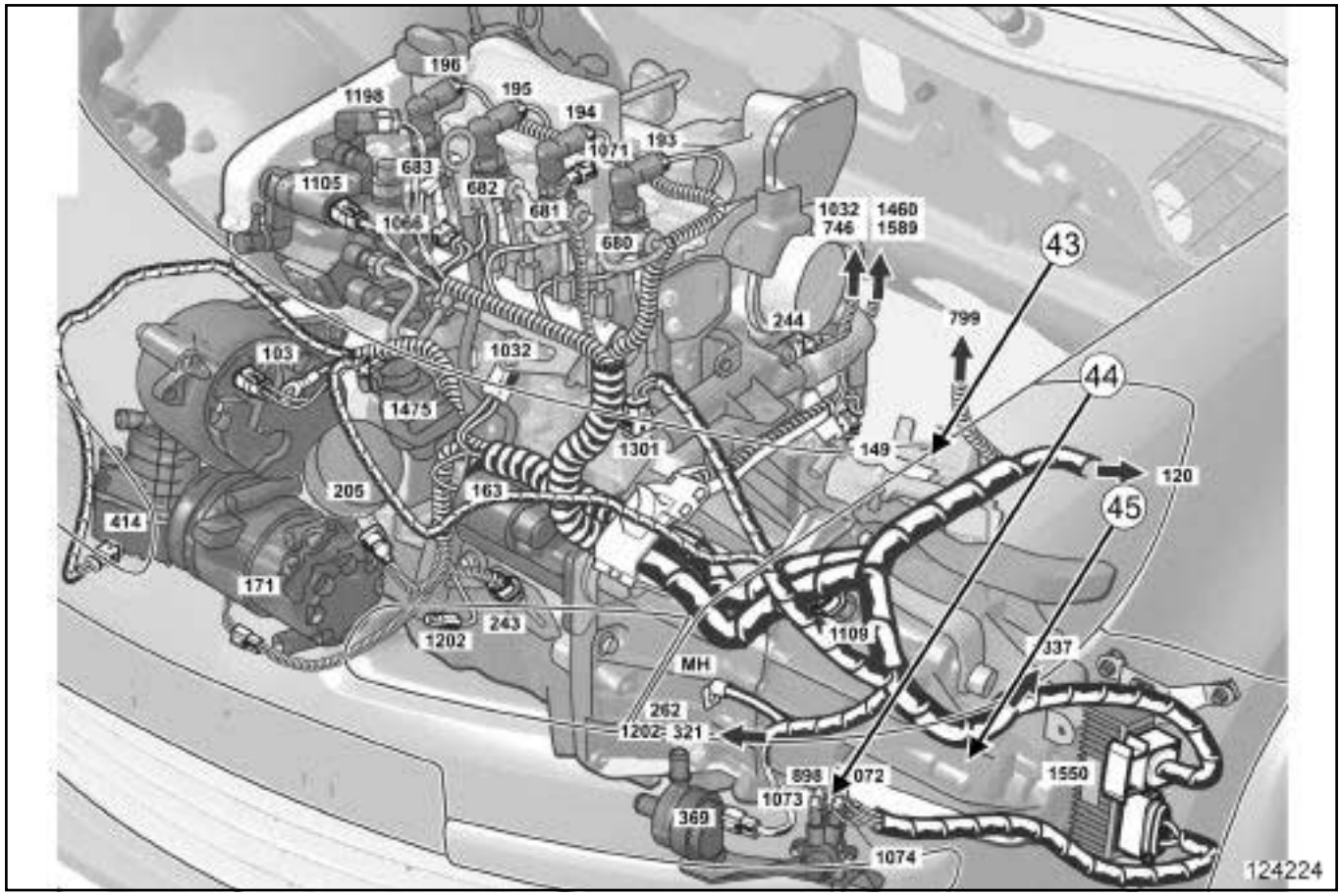
109160

❏ Disconnect the reverse gear switch connector (**40**) .

JA5

❏ Remove the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).

K9K



124224

❑ Disconnect the sequential gearbox pump assembly connectors ***(43)*** .

K9K, and 772

❑

Remove:

- the heating element nuts ***(44)*** ,
- the earth wiring ***(45)*** from the heating element unit support on the gearbox.

❑

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❑ Unclip:

- the sub-frame and cylinder block wiring,
- the engine cooling fan assembly wiring,
- the cylinder head wiring.

❑ Remove:

- the engine wiring harness mounting bolt on the clutch housing,
- the engine wiring harness.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the engine wiring,

K9K

- the engine wiring mounting bolt on the clutch housing.

❏ Tighten the engine wiring harness mounting bolt on the clutch housing.

JA5

❏ Refit the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).

❏ Connect the sequential gearbox pump assembly connectors.

❏ Refit the sequential gearbox earth wiring nuts on the front left-hand side member.

❏ Torque tighten the **sequential gearbox earth wiring nuts on the front left-hand side member (8 Nm)**.

K9K, and 772

❏ Refit:

- the heating element nuts,
- the earth wiring from the heating element unit support on the gearbox.

❏ Tighten:

- the **heating element nuts (4 Nm)**,
- the **earth wiring bolt from the heating element unit support on the gearbox (21 Nm)**.

❏ Connect:

- the particle filter downstream temperature sensor connector,
- the particle filter upstream temperature sensor connector,
- the catalytic converter downstream temperature sensor connector,
- the diesel injector connector to the catalytic preconverter,
- the particle filter pressure sensor connector.

❏ Refit the nut from the power feed fuse board cable.

❏ Torque tighten the **nut from the power feed fuse board cable (6 Nm)**.

❏ Refit the engine cooling fan assembly earth cable nut on the front left-hand side member.

❏ Torque tighten the **engine cooling fan assembly earth cable nut on the front left-hand side member (8 Nm)**.

❏ Refit:

- the fuse holders,
- the 30 A fuses from the power feed fuse board.

❏ Refit the earth wiring bolt on the gearbox.

❏ Tighten the **earth wiring bolt on the gearbox (24 Nm)**.

❏ Refit:

- the nut on the positive terminal of the starter,
- the nut on the excitation terminal of the starter.

❏ Tighten:

- the **nut on the positive terminal of the starter (8 Nm)**,
- the **nut on the positive terminal of the starter (5 Nm)**.

❏ Connect:

- the Protection and Switching Unit connectors,
- the front left-hand wiring connectors,
- the diesel injection computer connectors,
- the refrigerant pressure sensor connector,
- the engine cooling fan assembly resistor connector,
- the engine cooling fan assembly connector,
- the air flowmeter connector,
- the exhaust gas temperature sensor connector,
- the exhaust gas recirculation solenoid valve connector,
- the camshaft position sensor connector,
- the damper valve connector,
- the electric coolant pump connector,
- the reverse gear switch connector,
- the crankshaft position sensor connector,
- the coolant temperature sensor connector,
- the EGR cooler bypass control diaphragm solenoid valve connector,
- the fuel rail pressure sensor connector,
- the turbocharging pressure regulation solenoid valve connector,
- the turbocharger pressure sensor connector,
- all heater plug connectors,

K9K

- all injector connectors,
- the fuel temperature sensor connector,
- the fuel pressure regulator connector,
- the fuel flow actuator connector,
- the oil level sensor connector,
- the oil pressure sensor connector.

❏ Refit the alternator positive terminal nut.

❏ Torque tighten the **alternator positive terminal nut (24 Nm)**.

❏ Connect:

- the alternator exciter connector,
- the air conditioning compressor connector.

DIESEL SEPARATOR FILTER

❏ Connect the water detection sensor connector on the diesel filter.

❏ Clip:

- the wiring on the sub-frame and the cylinder block,
- the wiring on the engine cooling fan assembly,
- the wiring on the cylinder head.

FINAL OPERATION.

❏ Refit:

- the pre-postheating unit (see **Pre-postheating unit: Removal - Refitting**) (MR 392, 13C, Preheating),
- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Tighten the bolts on the Protection and Switching Unit cover.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the engine cover.

D4F, and 740 or 764

Tightening torques ▽	
nut for the positive terminal of the alternator	**21 Nm**
fuel injection computer earth wiring nut	**8 Nm**
nut from the power feed fuse board cable	**6 Nm**
earth wiring bolt on the gearbox	**24 Nm**
nut on the positive terminal of the starter	**8 Nm**
nut on the excitation terminal of the starter	**5 Nm**
engine cooling fan assembly earth cable nut on the front left-hand side member	**8 Nm**
earth wiring nuts on the gearbox computer	**8 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

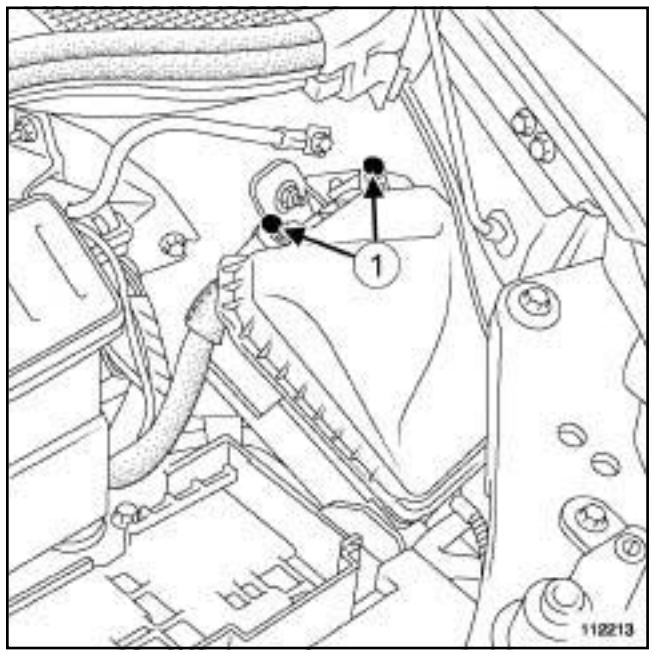
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the engine cover,
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112213

❑ Remove:

- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

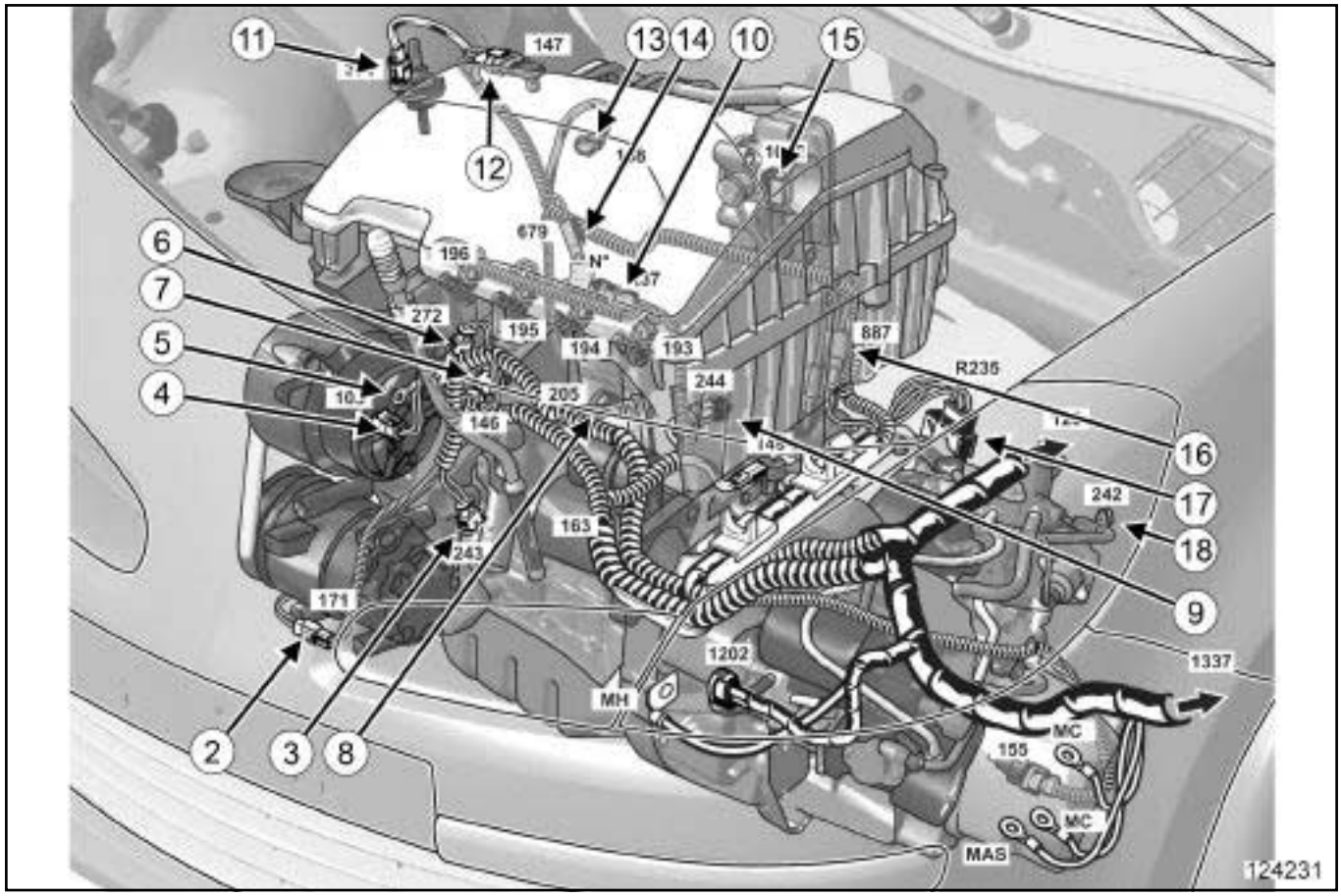
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

D4F, and 740 or 764



124231

❑ Disconnect:

- the air conditioning compressor connector (**2**) ,
- the oil level sensor connector (**3**) ,
- the alternator exciter connector (**4**) .

❑ Remove the nut (**5**) from the alternator positive terminal.

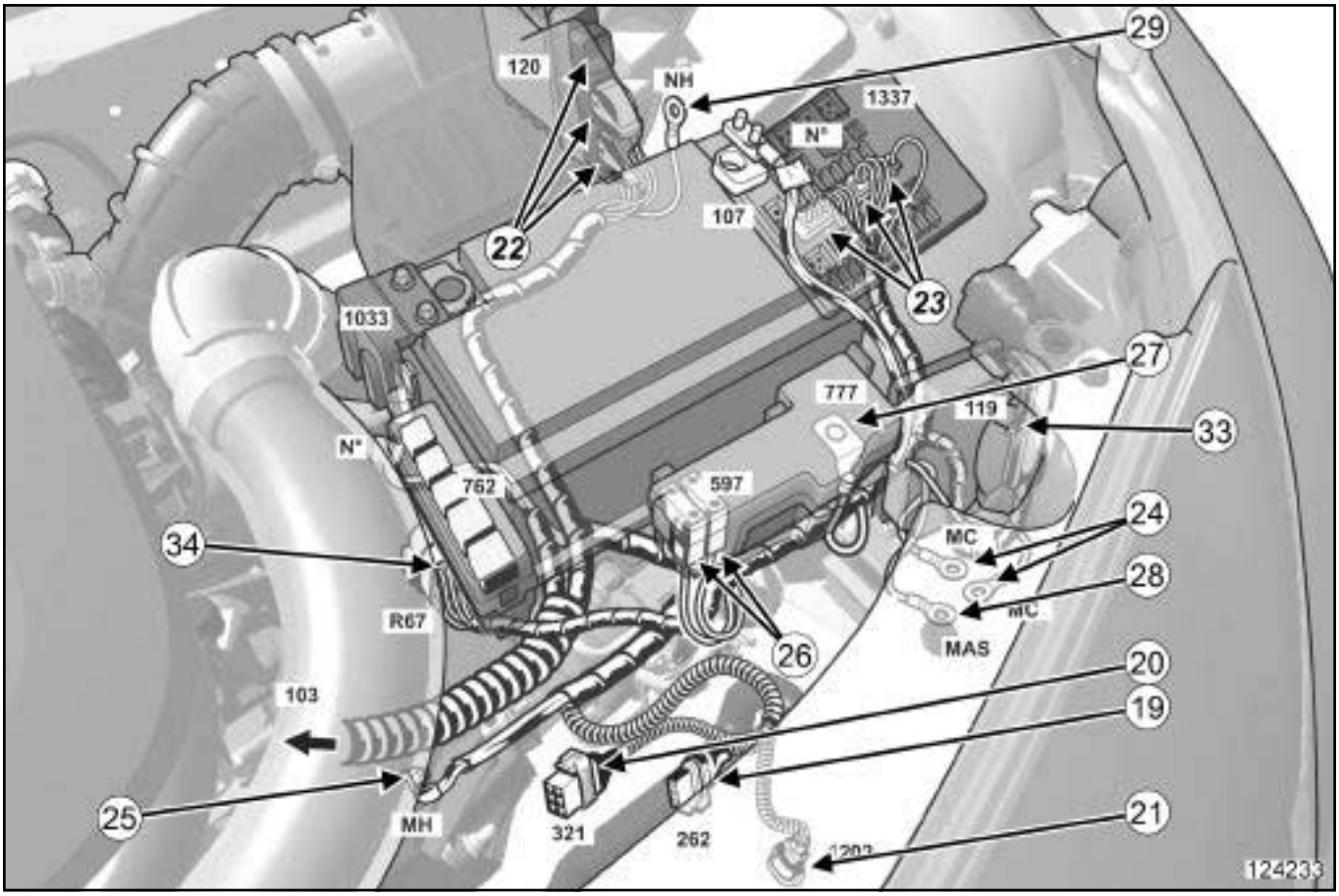
❑ Disconnect:

- the connector (**6**) from the air temperature sensor,
- the pinking sensor connector (**7**) ,
- the connector (**8**) from the oil pressure sensor,
- the coolant temperature sensor connector (**9**) ,
- the engine wiring/injection wiring connection (**10**) ,
- the fuel vapour absorber solenoid valve connector (**11**) ,
- the inlet air pressure sensor connector (**12**) ,
- the coil connector (**13**) ,
- the coil interference suppressor connector (**14**) ,
- the throttle valve connector (**15**) ,
- the upstream oxygen sensor connector (**16**) ,
- the downstream oxygen sensor connector (**18**) .

JA3

❑ Disconnect the passenger compartment wiring harness/sequential gearbox wiring connection (**17**) .

D4F, and 740 or 764



124233

❑ Disconnect:

- the engine cooling fan assembly connector (**19**) ,
- the engine cooling fan assembly resistor connector (**20**) ,
- the refrigerant pressure sensor connector (**21**) ,
- the fuel injection computer connectors (**22**) ,
- the Protection and Switching Unit connectors (**23**) ,
- the front left-hand wiring connector (**34**) .

❑ Remove:

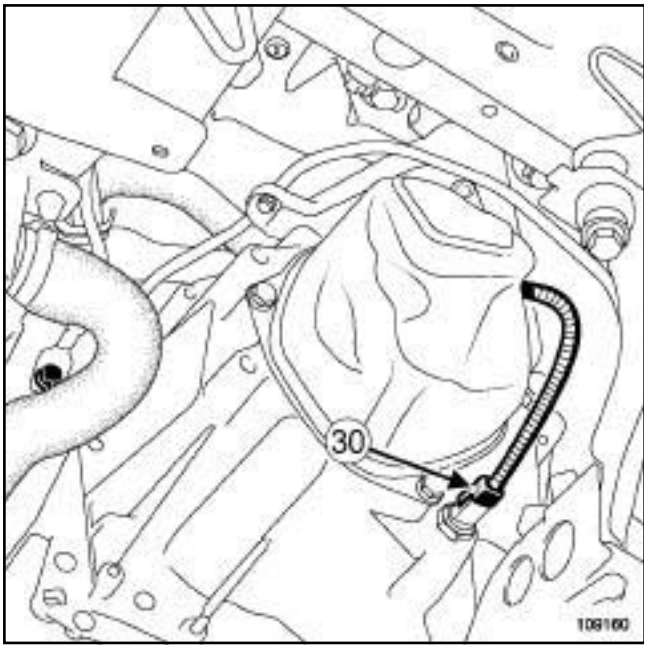
- the nut on the excitation terminal of the starter,
- the nut on the positive terminal of the starter,
- the gearbox earth wiring bolt (**25**) ,
- the 30 A fuses from the power feed fuse board,
- the fuse holders (**26**) ,
- the nut (**27**) from the power feed fuse board cable,
- the engine cooling fan assembly earth wiring nut (**28**) on the front left-hand side member,
- the fuel injection computer earth wiring nut (**29**) .

JA3

❑ Remove the earth wiring nuts (**24**) from the gearbox computer.

❑ Disconnect the computer connector ***(33)*** from the sequential gearbox.

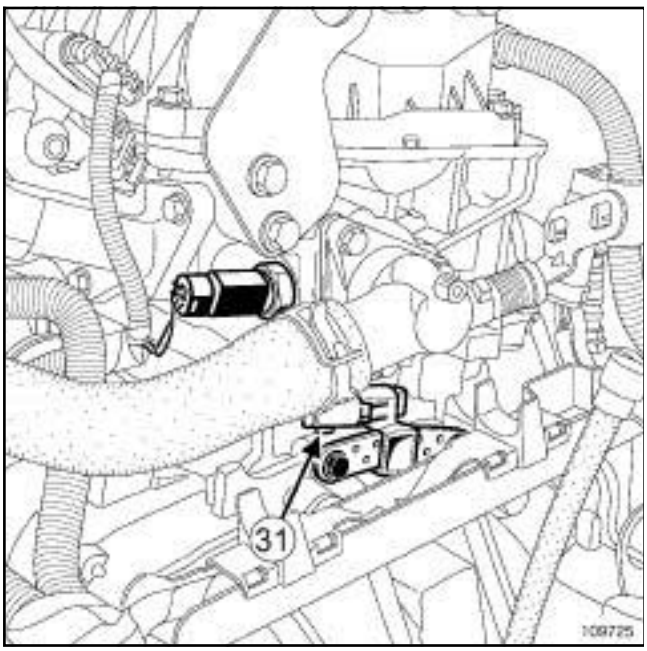
D4F, and 740 or 764



109160

❏ Disconnect the connector (**30**) from the reverse gear switch.

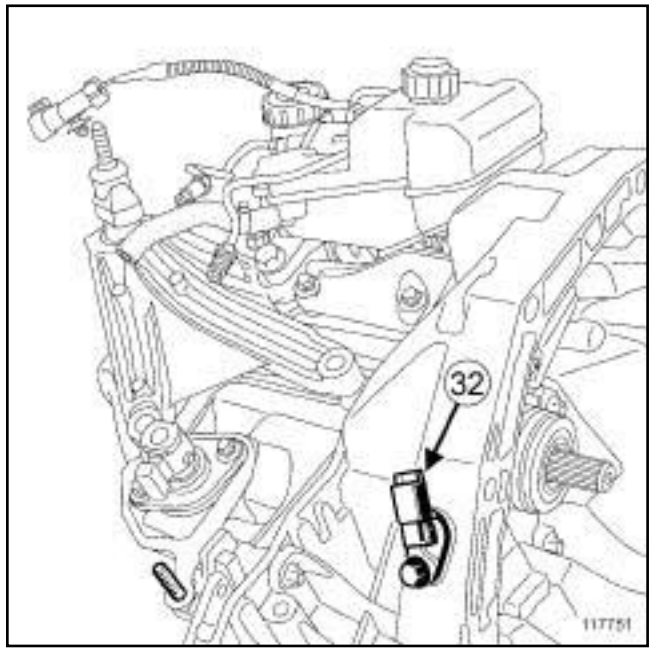
JH3



109725

❏ Disconnect the crankshaft position sensor connector (**31**) .

JA3



117751

❏ Disconnect the crankshaft position sensor connector (**32**) .

❏

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❏ Unclip:

- the cylinder head wiring,
- the engine cooling fan assembly wiring,
- the sub-frame and cylinder block wiring.

❏ Remove:

- the engine wiring harness mounting bolt on the clutch housing,
- the engine wiring harness.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

D4F, and 740 or 764

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the engine wiring,
- the engine wiring harness mounting bolt on the clutch housing.

❏ Tighten the engine wiring harness mounting bolt on the clutch housing.

❏ Connect:

- the crankshaft position sensor connector,
- the reverse gear switch connector,
- the front left-hand wiring connector,
- the Protection and Switching Unit connectors,
- the fuel injection computer connectors,
- the refrigerant pressure sensor connector,
- the engine cooling fan assembly resistor connector,
- the engine cooling fan assembly connector,
- the downstream oxygen sensor connector,
- the upstream oxygen sensor connector,
- the throttle valve connector,
- the coil interference suppressor connector,
- the coil connector,
- the air inlet pressure sensor connector,
- the fuel vapour absorber solenoid valve connector,
- the engine wiring harness/injection connection,
- the coolant temperature sensor connector,
- the oil pressure sensor connector,
- the pinking sensor connector,
- the air temperature sensor connector.

JA3

❏ Connect:

- the passenger compartment wiring harness/sequential gearbox wiring connection,
- the sequential gearbox computer connector.

❏ Refit the alternator positive terminal nut.

❏ Torque tighten the **nut for the positive terminal of the alternator (21 Nm)**.

❏ Connect:

- the alternator exciter connector,
- the oil level sensor connector,
- the air conditioning compressor connector.

❏ Refit the fuel injection computer earth cable nut.

❏ Torque tighten the **fuel injection computer earth wiring nut (8 Nm)**.

❏ Refit the nut from the power feed fuse board cable.

❏ Torque tighten the **nut from the power feed fuse board cable (6 Nm)**.

❏ Refit:

- the fuse holders,
- the 30 A fuses from the power feed fuse board,

❏ Refit the earth wiring bolt on the gearbox.

❏ Torque tighten the **earth wiring bolt on the gearbox (24 Nm)**.

❏ Refit:

- the nut on the positive terminal of the starter,
- the nut on the excitation terminal of the starter.

❏ Tighten to torque:

- the **nut on the positive terminal of the starter (8 Nm)**,
- the **nut on the excitation terminal of the starter (5 Nm)**.

❏ Refit the engine cooling fan assembly earth wiring nut on the front left-hand side member.

❏ Torque tighten the **engine cooling fan assembly earth cable nut on the front left-hand side member (8 Nm)**.

JA3

❏ Refit the earth wiring nuts on the gearbox computer.

❏ Torque tighten the **earth wiring nuts on the gearbox computer (8 Nm)**.

❏ Clip:

- the wiring on the sub-frame and the cylinder block,
- the wiring on the engine cooling fan assembly,
- the wiring on the cylinder head.

D4F, and 740 or 764

III - FINAL OPERATION.

❑ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❑ Tighten the bolts on the Protection and Switching Unit cover.

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the engine cover.

F4R

Tightening torques ▽	
fuel injection computer earth wiring nut	**8 Nm**
nut from the power feed fuse board cable	**6 Nm**
engine cooling fan assembly earth cable nut on the front left-hand side member	**8 Nm**
nut on the excitation terminal of the starter	**5 Nm**
nut on the positive terminal of the starter	**8 Nm**
earth wiring bolt on the gearbox	**24 Nm**
nut for the positive terminal of the alternator	**21 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

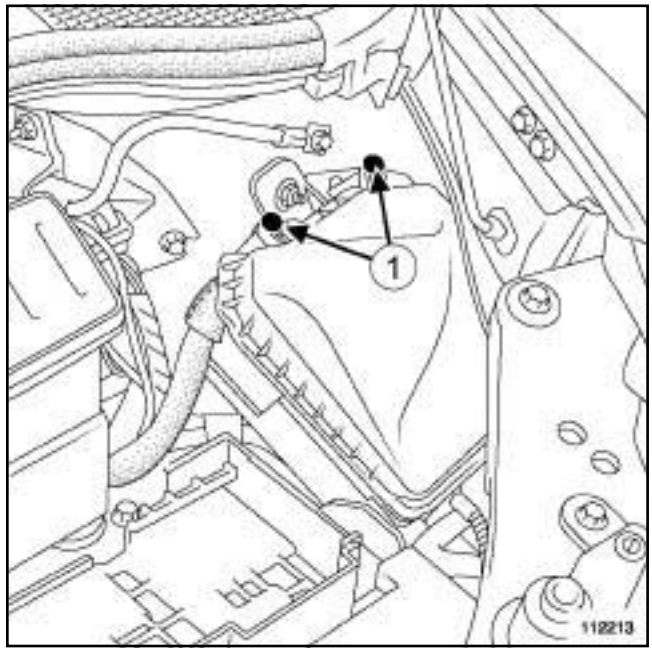
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the engine cover,
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112213

❑ Remove:

- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

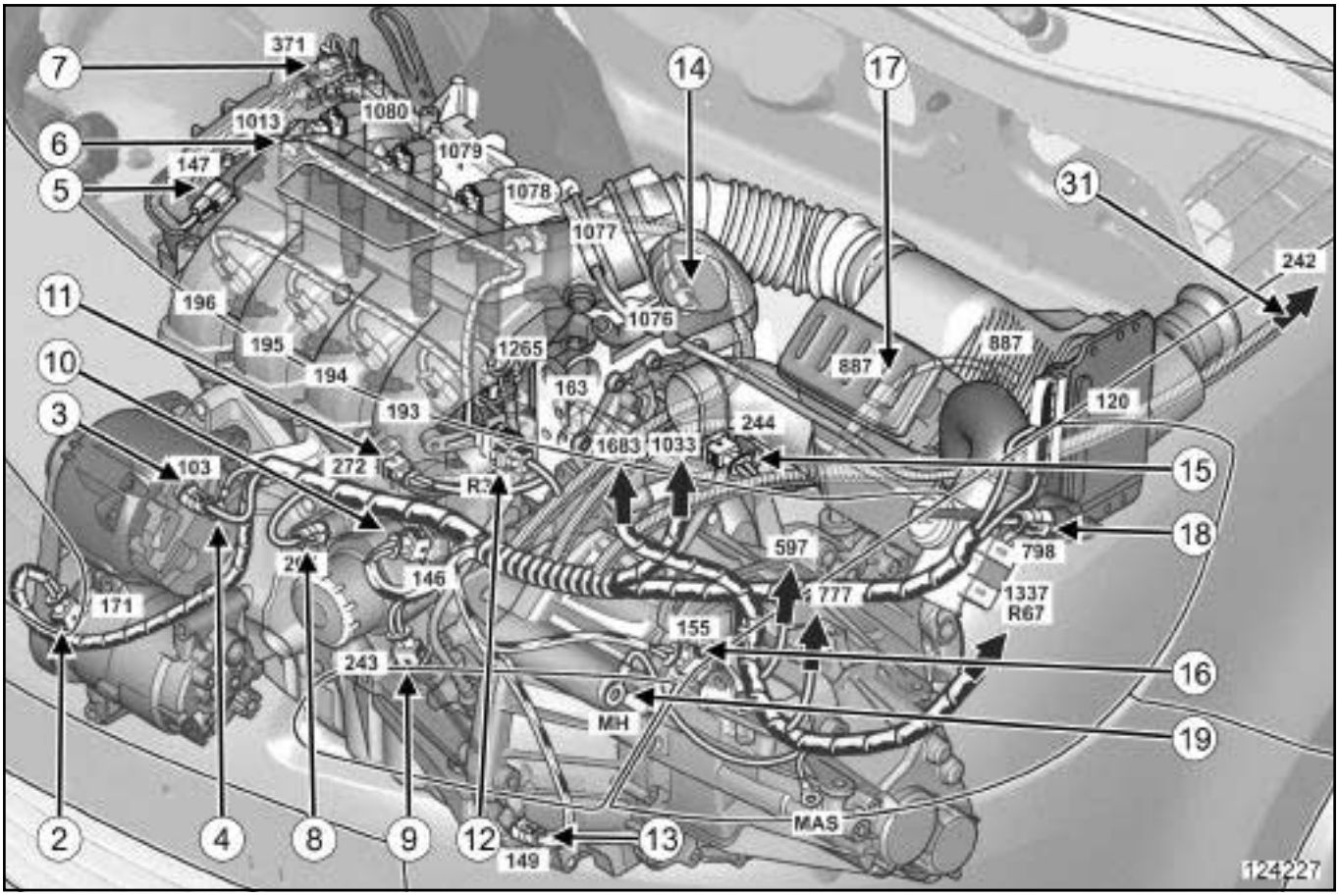
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

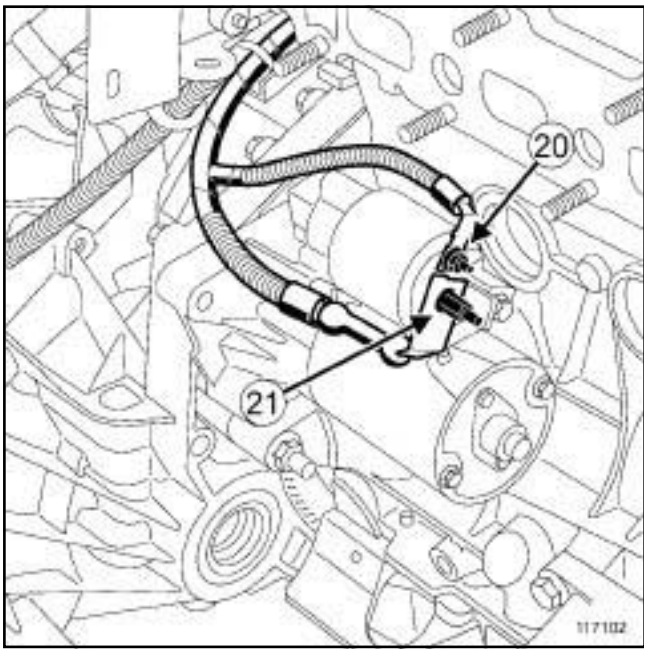
WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

F4R



124227



117102

❑ Disconnect:

- the air conditioning compressor connector (**2**) ,
- the alternator exciter connector (**3**) .

❑ Remove the nut (**4**) from the positive terminal of the starter.

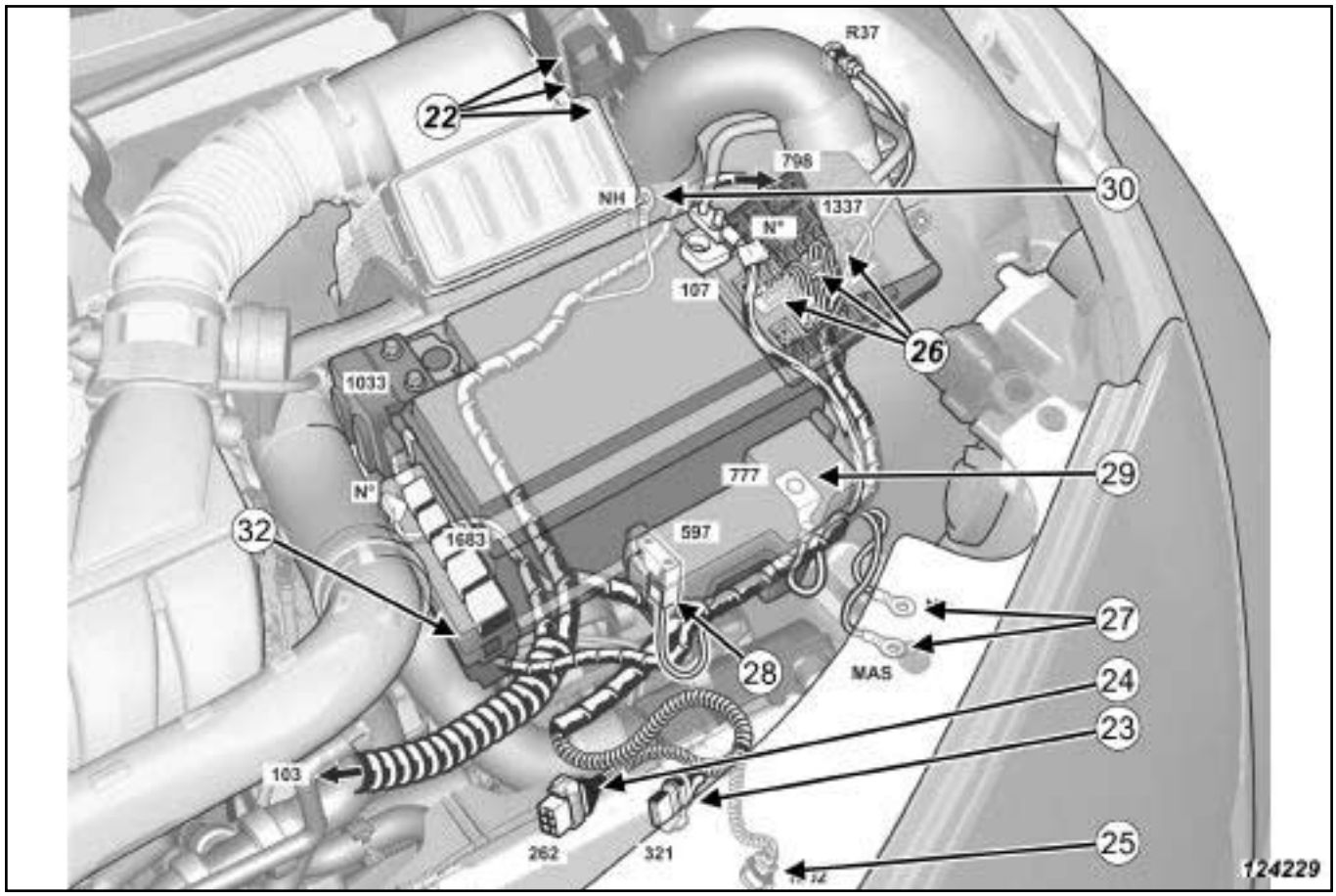
❑ Disconnect:

- the inlet air pressure sensor connector (**5**) ,
- the camshaft dephaser solenoid valve connector (**6**) ,
- the fuel vapour absorber solenoid valve connector (**7**) ,
- the connector (**8**) from the oil pressure sensor,
- the oil level sensor connector (**9**) ,
- the pinking sensor connector (**10**) ,
- the connector (**11**) from the air temperature sensor,
- the engine wiring/injection wiring connection (**12**) ,
- the crankshaft position sensor connector (**13**) ,
- the throttle valve connector (**14**) ,
- the coolant temperature sensor connector (**15**) ,
- the connector (**16**) from the reverse gear switch,
- the upstream oxygen sensor connector (**17**) .
- the dual-mode solenoid valve connector (**18**) ,
- the downstream oxygen sensor connector (**31**) .

F4R

❏ Remove:

- the gearbox earth cable bolt (**19**) ,
- the nut on the excitation terminal of the starter (**20**) ,
- the nut on the positive terminal of the starter (**21**) .



124229

❏ Remove the air resonator (see **Air resonator: Removal - Refitting**) (MR 392, 12A, Fuel mixture).

❏ Disconnect:

- the fuel injection computer connectors (**22**) ,
- the engine cooling fan assembly connector (**23**) ,
- the engine cooling fan assembly resistor connector (**24**) ,
- the refrigerant pressure sensor connector (**25**) ,
- the Protection and Switching Unit connectors (**26**) ,
- the front left-hand wiring connector (**32**) .

❏ Remove:

- the engine cooling fan assembly earth wiring nut (**27**) on the front left-hand side member,
- the 30 A fuse from the power feed fuse board,
- the fuse holder (**28**) ,
- the nut (**29**) from the power feed fuse board cable,
- the fuel injection computer earth wiring nut (**30**) .

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❏ Unclip:

- the sub-frame and cylinder block wiring,
- the engine cooling fan assembly wiring,
- the cylinder head wiring.

❏ Remove the engine wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

F4R

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the engine wiring,
- the fuel injection computer earth wiring nut.

❏ Torque tighten the **fuel injection computer earth wiring nut (8 Nm)**.

❏ Refit the nut from the power feed fuse board cable.

❏ Torque tighten the **nut from the power feed fuse board cable (6 Nm)**.

❏ Refit:

- the fuse holder,
- the 30 A fuse from the power feed fuse board,
- the engine cooling fan assembly earth wiring nut on the front left-hand side member.

❏ Torque tighten the **engine cooling fan assembly earth cable nut on the front left-hand side member (8 Nm)**.

❏ Connect:

- the Protection and Switching Unit connectors,
- the front left-hand wiring connector,
- the refrigerant pressure sensor connector,
- the engine cooling fan assembly resistor connector,
- the engine cooling fan assembly connector,
- the petrol injection computer connectors.

❏ Refit:

- the air resonator (see **Air resonator: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the nut on the excitation terminal of the starter,
- the nut on the positive terminal of the starter.

❏ Tighten to torque:

- the **nut on the excitation terminal of the starter (5 Nm)**.
- the **nut on the positive terminal of the starter (8 Nm)**,

❏ Refit the earth wiring bolt on the gearbox.

❏ Torque tighten the **earth wiring bolt on the gearbox (24 Nm)**.

❏ Connect:

- the downstream oxygen sensor connector,
- the dual-mode solenoid valve connector,
- the upstream oxygen sensor connector,
- the reverse gear switch connector,
- the coolant temperature sensor connector,
- the throttle valve connector,
- the crankshaft position sensor connector,
- the engine wiring/injection wiring connection,
- the air temperature sensor connector,
- the pinking sensor connector,
- the oil level sensor connector,
- the oil pressure sensor connector,
- the fuel vapour absorber solenoid valve connector,
- the camshaft dephaser solenoid valve connector,
- the air inlet pressure sensor connector.

❏ Refit the alternator positive terminal nut.

❏ Torque tighten the **nut for the positive terminal of the alternator (21 Nm)**.

❏ Connect:

- the alternator exciter connector,
- the air conditioning compressor connector.

❏ Clip:

- the wiring on the sub-frame and the cylinder block,
- the wiring on the engine cooling fan assembly,
- the wiring on the cylinder head.

III - FINAL OPERATION.

❏ Refit:

- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Tighten the bolts on the Protection and Switching Unit cover.

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),

F4R

- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the engine cover.

M4R

Tightening torques ▽	
fuel injection computer earth cable nut	**8 Nm**
nut from the power feed fuse board cable	**6 Nm**
earth wiring bolt on the manual gearbox	**24 Nm**
earth wiring bolt on the automatic transmission	**44 Nm**
engine cooling fan assembly earth cable nut on the front left-hand side member	**8 Nm**
automatic transmission earth cable nut on the front left-hand side member	**8 Nm**
nut on the positive terminal of the starter	**9 Nm**
nut on the excitation terminal of the starter	**5 Nm**
nut for the positive terminal of the alternator	**21 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

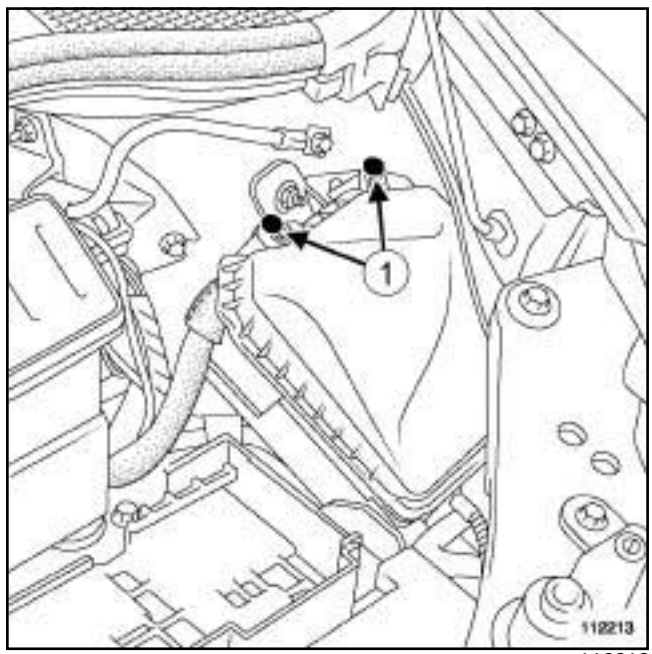
I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❑ Switch off the ignition.

❑ Remove:

- the engine cover,
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



112213

❑ Remove:

- the bolts (**1**) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.

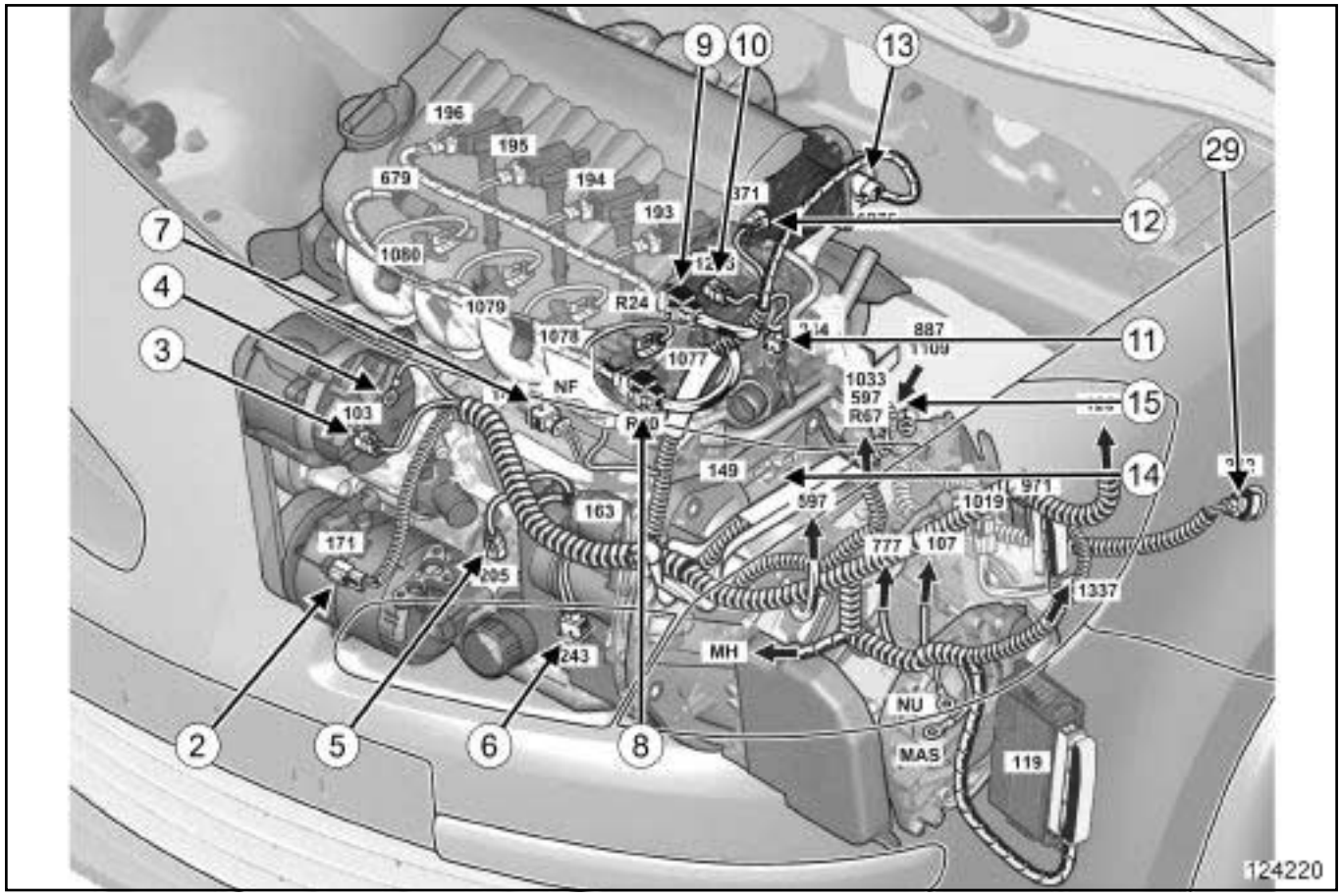
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

M4R



124220

❑ Disconnect:

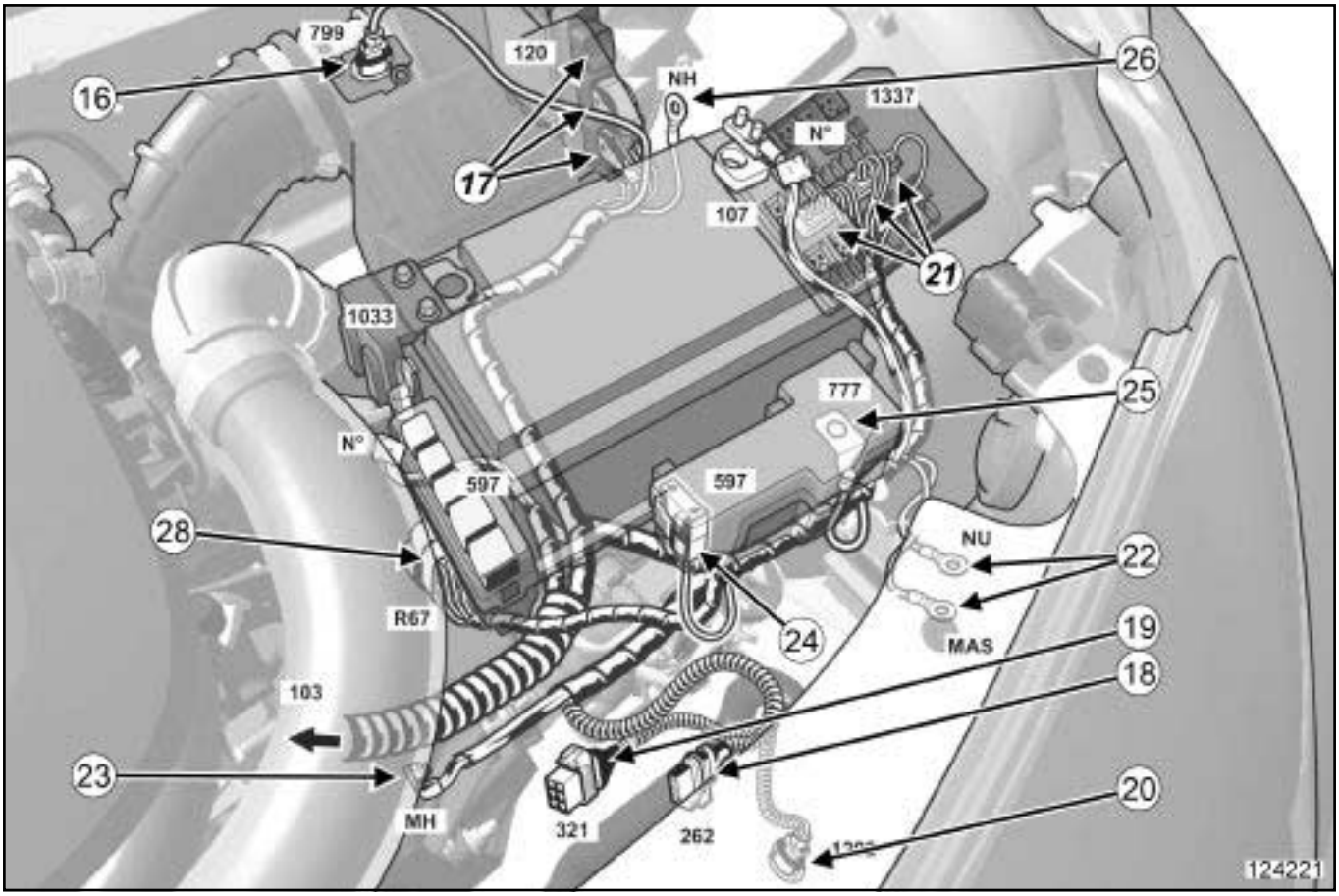
- the air conditioning compressor connector (**2**) ,
- The alternator exciter connector (**3**) .

❑ Remove the nut (**4**) from the alternator positive terminal.

❑ Disconnect:

- the connector (**5**) from the oil pressure sensor,
- the oil level sensor connector (**6**) ,
- the pinking sensor connector (**7**) ,
- the engine wiring/ignition wiring connection (**9**) ,
- the engine wiring/injection wiring connection (**8**) ,
- the connector (**10**) from the camshaft position sensor,
- the coolant temperature sensor connector (**11**) ,
- the fuel vapour absorber solenoid valve connector (**12**) ,
- the throttle valve connector (**13**) ,
- the crankshaft position sensor connector (**14**) ,
- the upstream oxygen sensor connector (**15**) ,
- the downstream oxygen sensor connector (**29**) .

M4R



124221

❑ Disconnect:

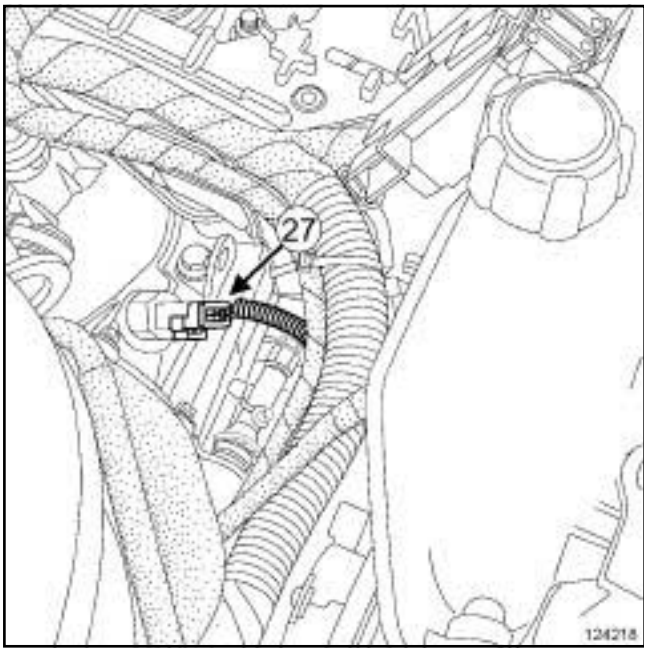
- the air flowmeter connector (**16**) ,
- the fuel injection computer connector (**17**) ,
- the engine cooling fan assembly connector (**18**) ,
- the engine cooling fan assembly resistor connector (**19**) ,
- the front left-hand wiring connector (**28**) ,
- the refrigerant pressure sensor connector (**20**) ,
- the Protection and Switching Unit connectors (**21**) ,

❑ Remove:

- the nut on the excitation terminal of the starter,
- the nut on the positive terminal of the starter,
- all earth cable nuts (**22**) on the front left-hand side member,
- the gearbox earth wiring bolt (**23**) ,
- the 30 A fuse from the power feed fuse board,
- the fuse holder (**24**) ,
- the nut (**25**) from the power feed fuse board cable,
- the fuel injection computer earth cable nut (**26**) .

M4R

TL4

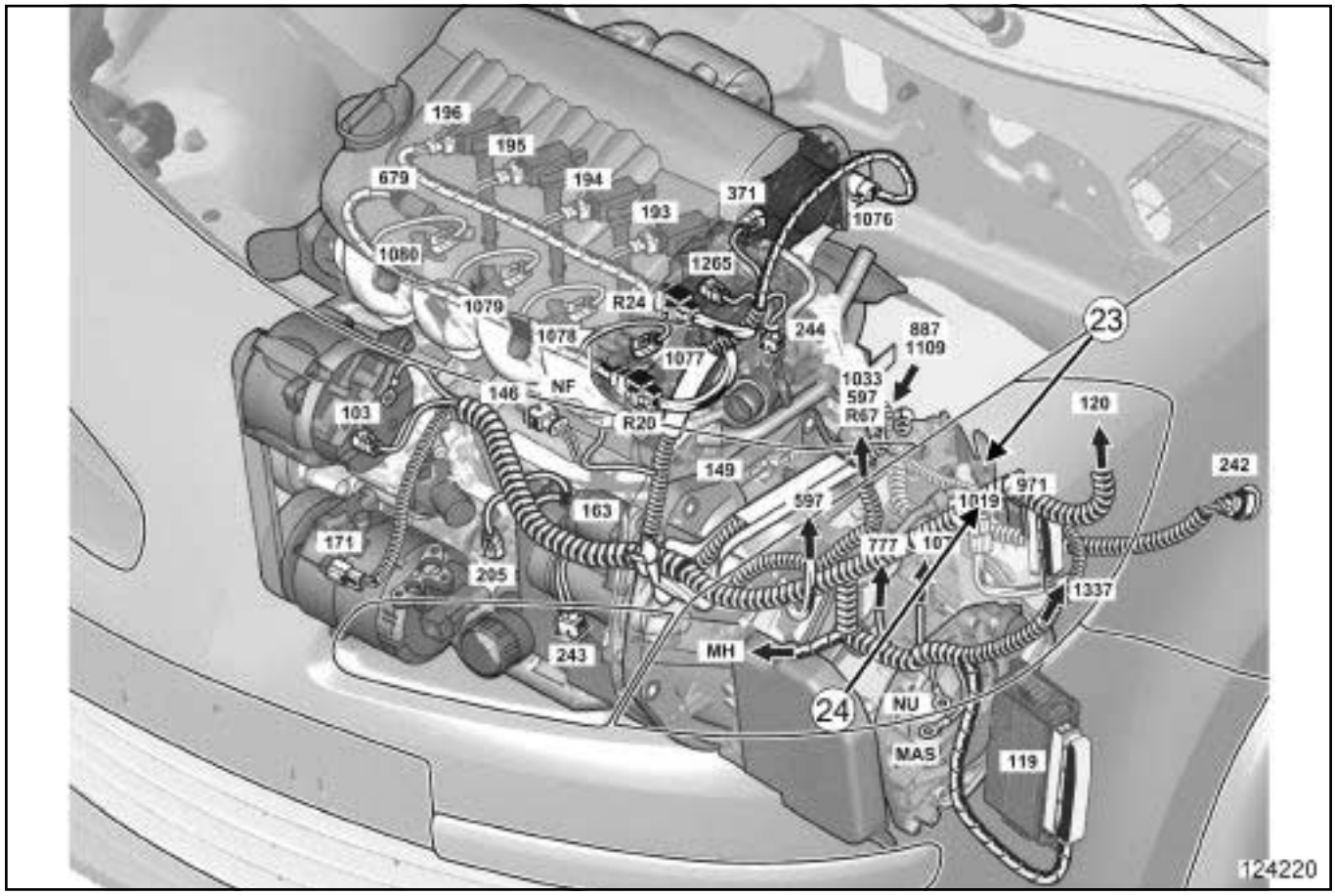


124218

❑ Disconnect the reverse gear switch connector (**27**) .

M4R

DP0



124220

❑ Remove:

- the automatic transmission computer (see **Automatic gearbox converter: Removal - Refitting**) (MR 392, 23A, Automatic transmission),

- the gearbox suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) .

❑ Disconnect:

- the automatic transmission module connector (**23**) ,

- the flow control solenoid valve connector (**24**) .

WARNING
Protect the connector by sliding it into a waterproof plastic bag.

❑

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❑ Unclip:

- the sub-frame and cylinder block wiring,

- the engine cooling fan assembly wiring,

- the cylinder head wiring.

❑ Remove:

- the engine wiring harness mounting bolt on the clutch housing,

- the engine wiring harness.

M4R

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the engine wiring,
- the engine wiring harness mounting bolt on the clutch housing,

❏ Tighten the engine wiring harness mounting bolt on the clutch housing,

DP0

❏ Connect:

- the automatic transmission module connector,
- the flow control solenoid valve connector.

❏ Refit:

- the gearbox suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 392, 19D, Engine mounting),
- the automatic transmission computer (see **Automatic gearbox converter: Removal - Refitting**) (MR 392, 23A, Automatic transmission),

TL4

❏ Connect the reverse gear switch connector.

❏ Refit the fuel injection computer earth cable nut.

❏ Torque tighten the **fuel injection computer earth cable nut (8 Nm)**.

❏ Refit the nut from the power feed fuse board cable.

❏ Torque tighten the **nut from the power feed fuse board cable (6 Nm)**.

❏ Refit:

- the fuse holder,
- the 30 A fuse from the power feed fuse board.

TL4

❏ Refit the earth wiring bolt on the manual gearbox.

❏ Torque tighten the **earth wiring bolt on the manual gearbox (24 Nm)**.

DP0

❏ Refit the earth wiring bolt on the automatic transmission.

❏ Torque tighten the **earth wiring bolt on the automatic transmission (44 Nm)**.

❏ Refit the engine cooling fan assembly earth cable nut on the front left-hand side member.

❏ Torque tighten the **engine cooling fan assembly earth cable nut on the front left-hand side member (8 Nm)**.

❏ Refit the automatic transmission earth cable nut on the front left-hand side member.

❏ Torque tighten the **automatic transmission earth cable nut on the front left-hand side member (8 Nm)**.

❏ Refit:

- the nut on the positive terminal of the starter,
- the nut on the excitation terminal of the starter.

❏ Tighten to torque:

- the **nut on the positive terminal of the starter (9 Nm)**,
- the **nut on the excitation terminal of the starter (5 Nm)**.

❏ Connect:

- the Protection and Switching Unit connectors,
- the refrigerant pressure sensor connector,
- the front left-hand wiring connector,
- the engine cooling fan assembly resistor connector,
- the engine cooling fan assembly connector,
- the fuel injection computer connectors,
- the air flowmeter connector,
- the downstream oxygen sensor connector,

- the upstream oxygen sensor connector,
- the crankshaft position sensor connector,
- the throttle valve connector,
- the fuel vapour absorber solenoid valve connector,
- the coolant temperature sensor connector,
- the camshaft position sensor connector,
- the engine wiring harness/injection connection,
- the engine wiring harness/ignition connection,
- the pinking sensor connector,
- the oil level sensor connector,
- the oil pressure sensor connector.

❏ Refit the alternator positive terminal nut.

❏ Torque tighten the **nut for the positive terminal of the alternator (21 Nm)**.

❏ Connect:

- the alternator exciter connector,
- the air conditioning compressor connector,

❏ Clip:

- the wiring on the sub-frame and the cylinder block,
- the wiring on the engine cooling fan assembly,
- the wiring on the cylinder head.

III - FINAL OPERATION.

❏ Refit:

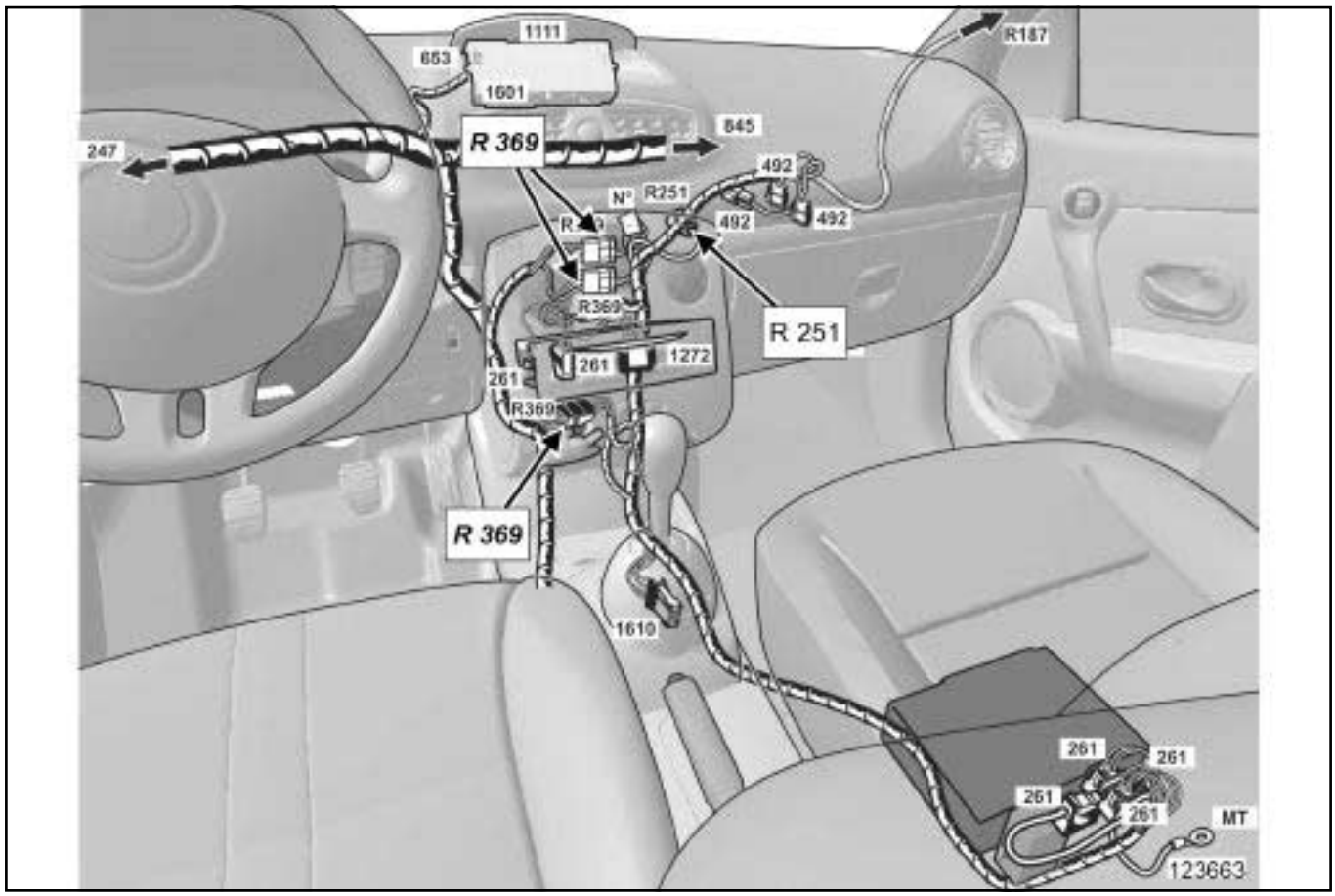
- the Protection and Switching Unit cover,
- the bolts on the Protection and Switching Unit cover.

❏ Tighten the bolts on the Protection and Switching Unit cover.

❏ Refit:

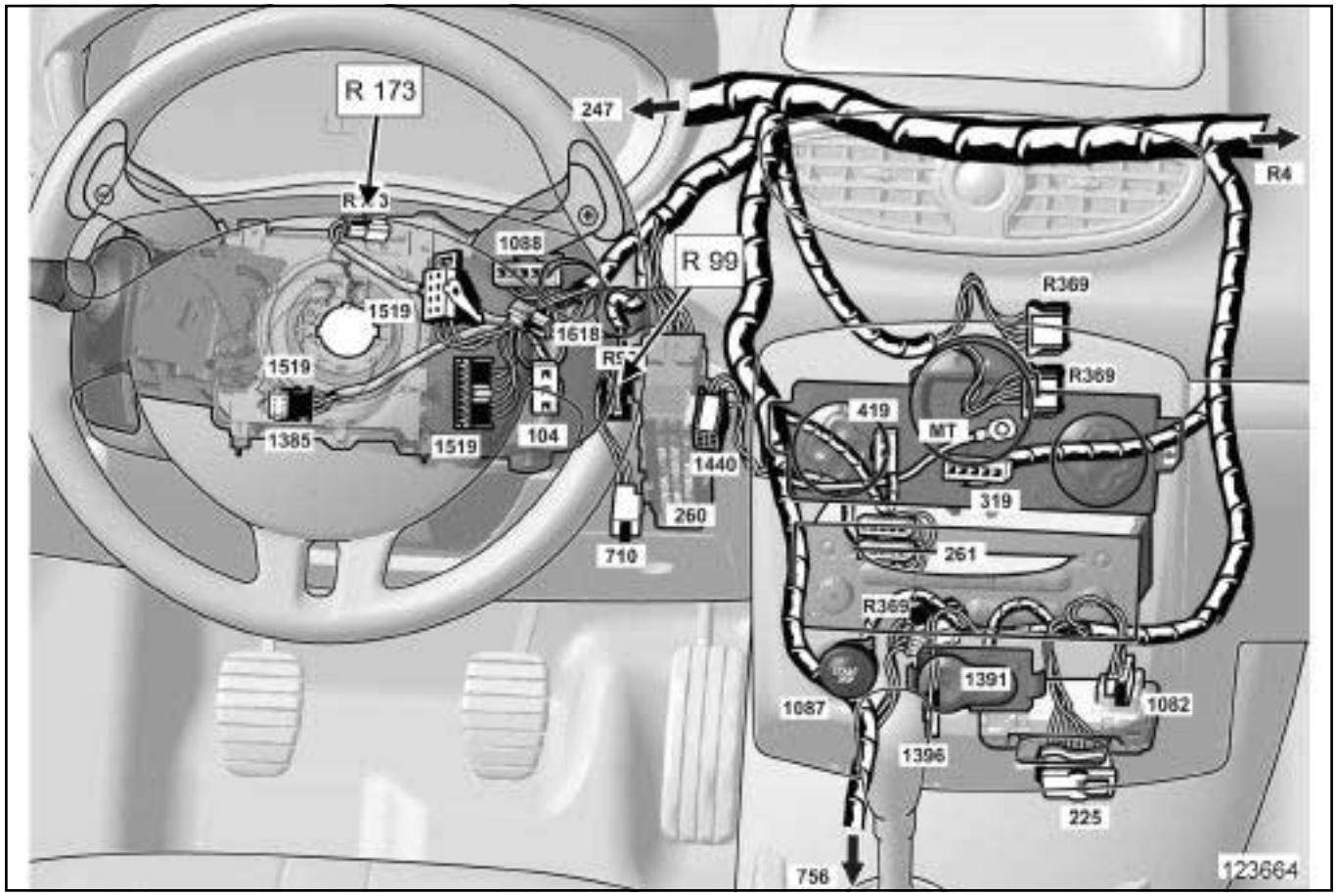
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the battery tray (see **80A**, **Battery**, **Battery tray: Removal - Refitting**, page **80A-5**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 392, 12A, Fuel mixture),
- the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) ,
- the engine cover.

I - LOCATION OF CONNECTORS



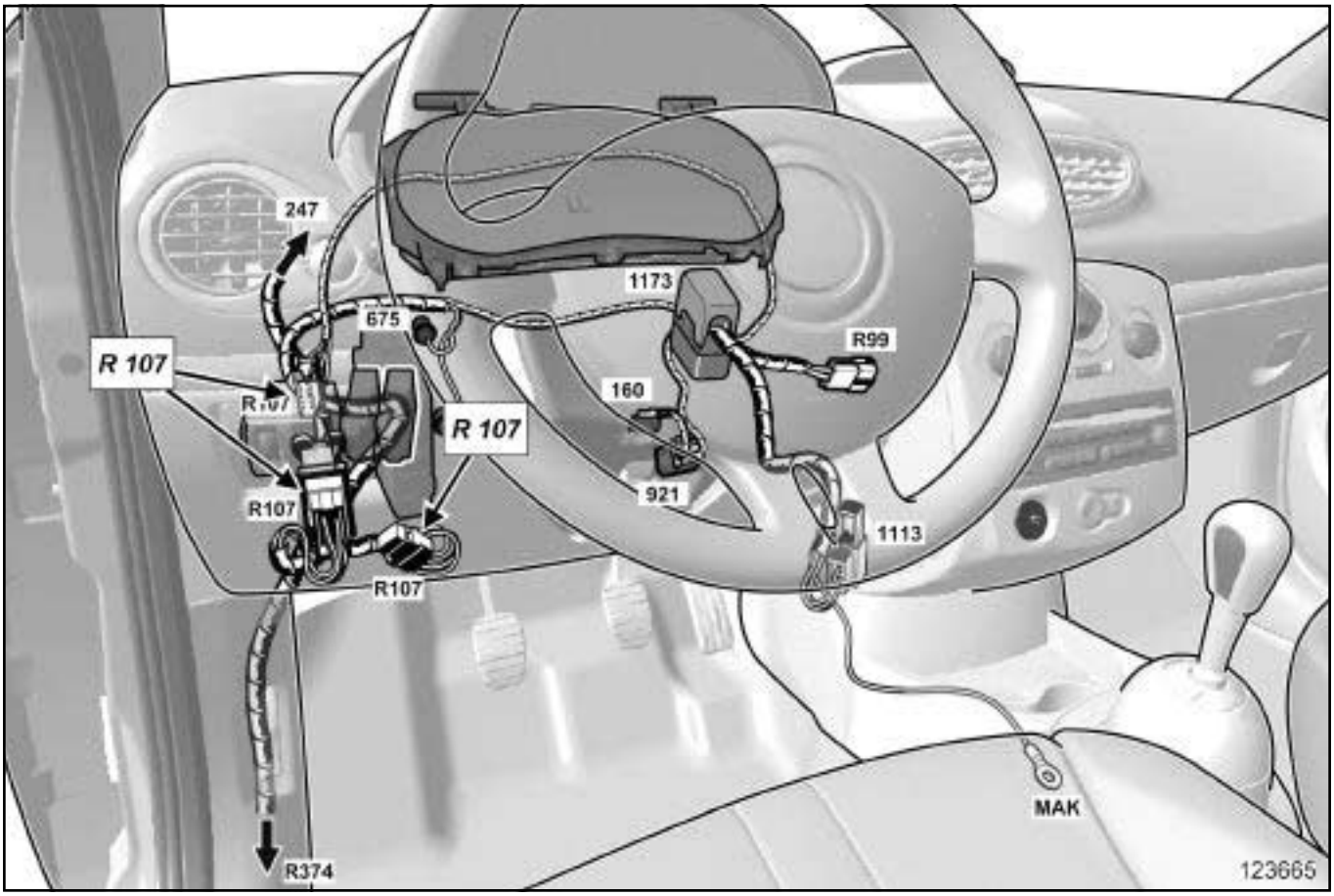
123663

- ❏ R251 connector (dashboard wiring/radio + telephone wiring connection).
- ❏ R369 connector (dashboard wiring//multimedia wiring connection).



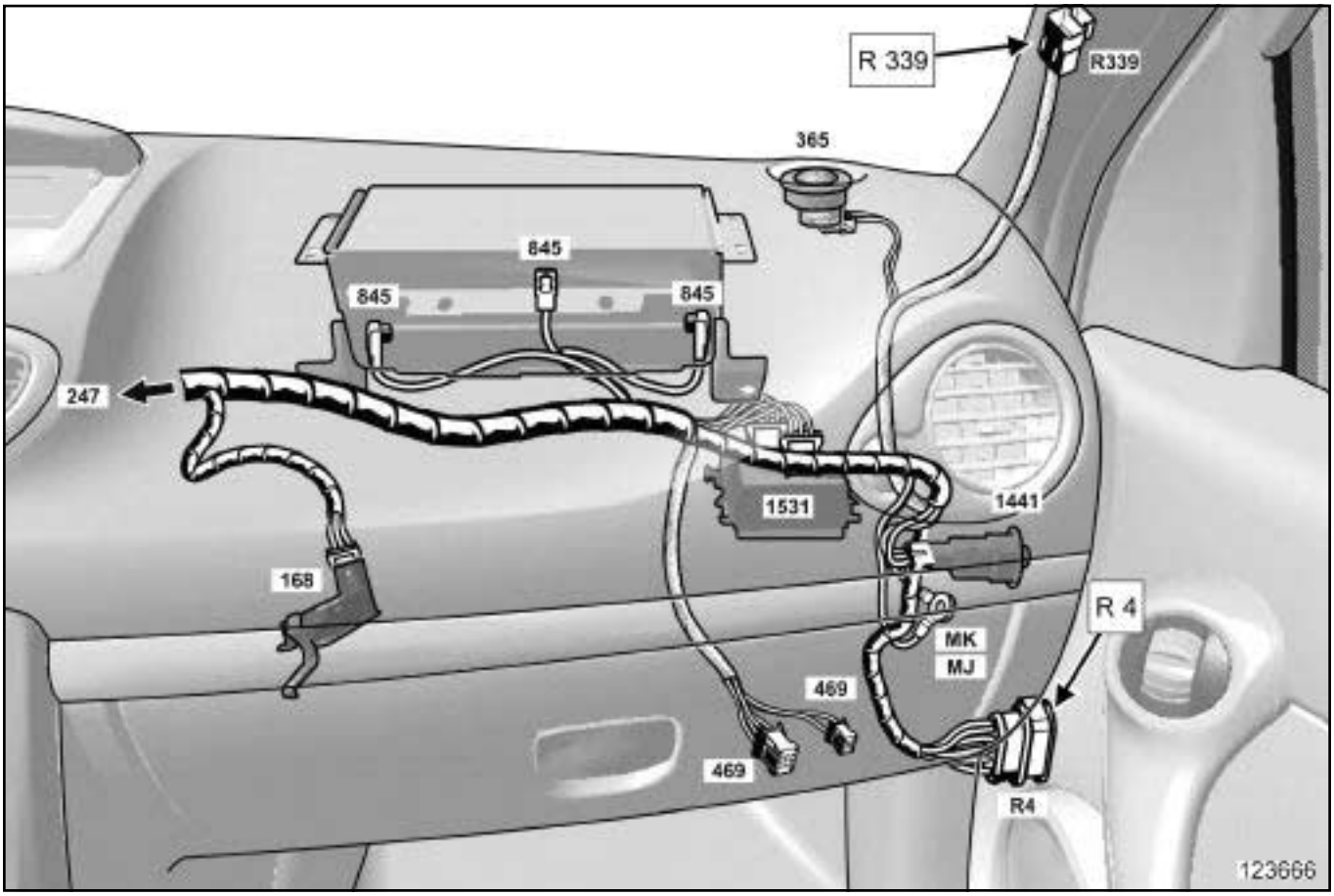
123664

- R99 connector (dashboard wiring/heating wiring connection).
- R 173 connector (dashboard wiring/wiring for one-touch steering wheel controls on sequential gearbox).



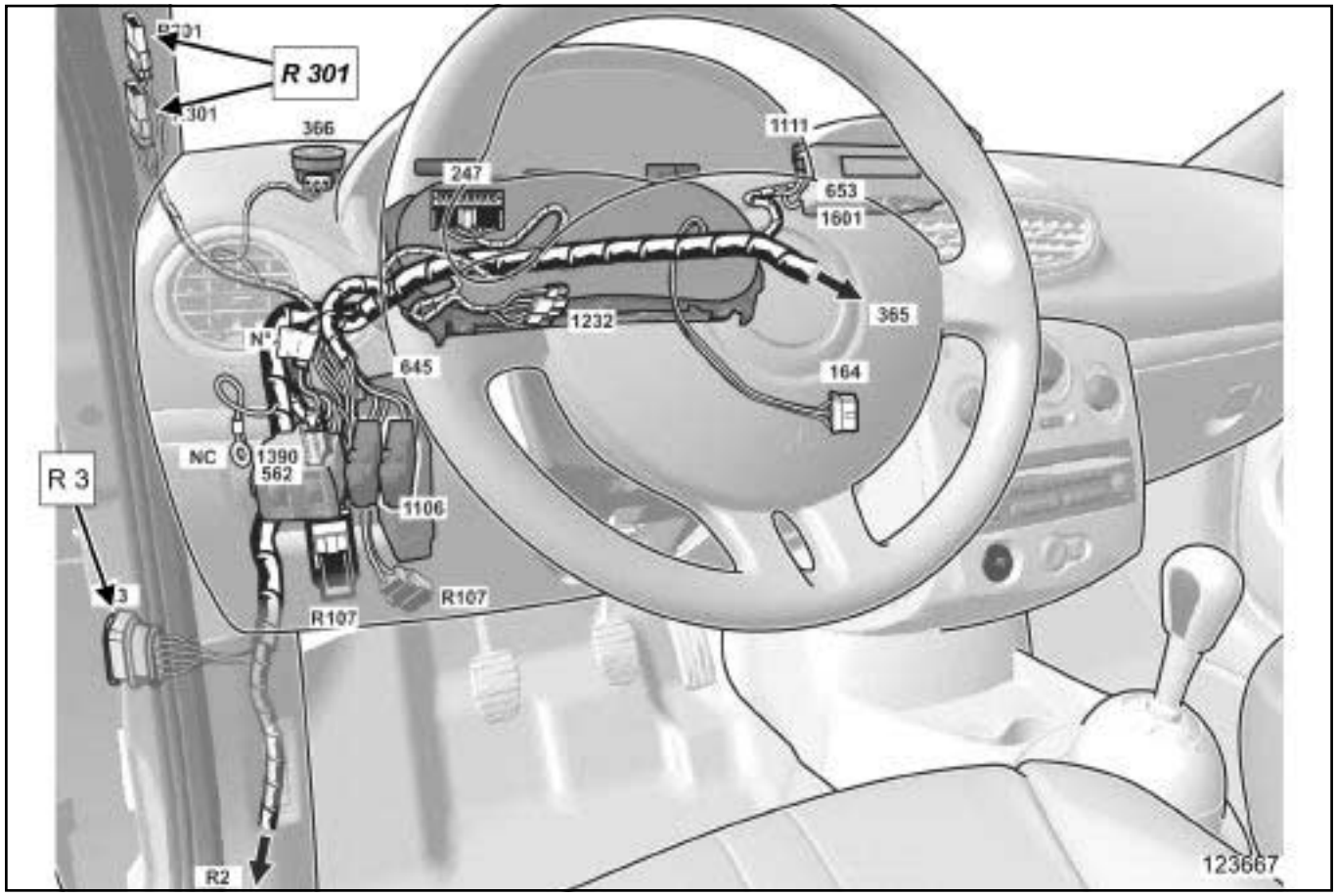
123665

❑ R107 connector (dashboard wiring/front engine wiring connection).



123666

- R4 connector (dashboard wiring/passenger door wiring connection).
- R339 connector (dashboard wiring/sunroof wiring connection).



123667

❑ R3 connector (dashboard wiring/driver's door wiring connection).

❑ R301 connector (dashboard wiring/courtesy light wiring connection).

II - ACCESS TO CONNECTORS

❑

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

1 - Access to the R 251 connectors

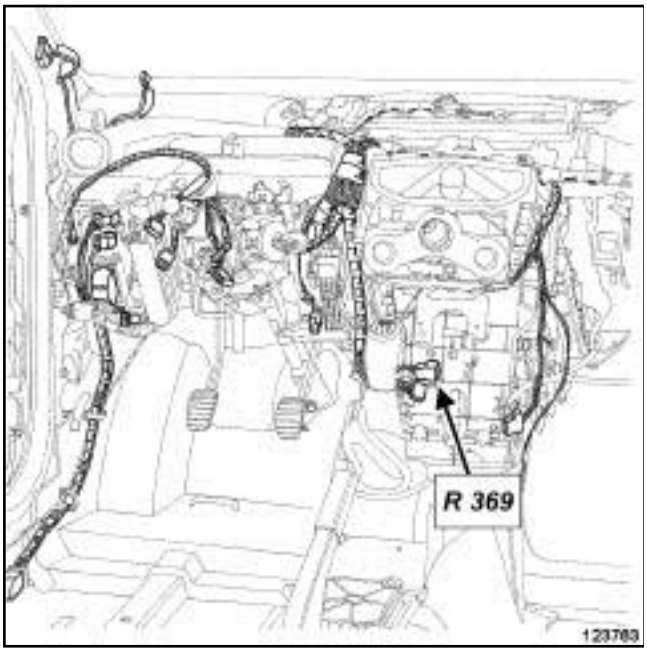
❑ Remove:

- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating),

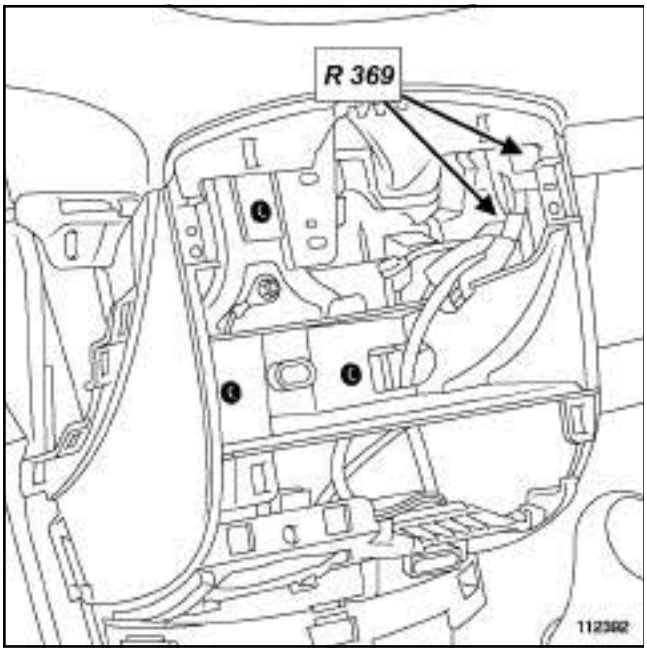
2 - Access to the R 369 connectors

❑ Remove:

- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating),



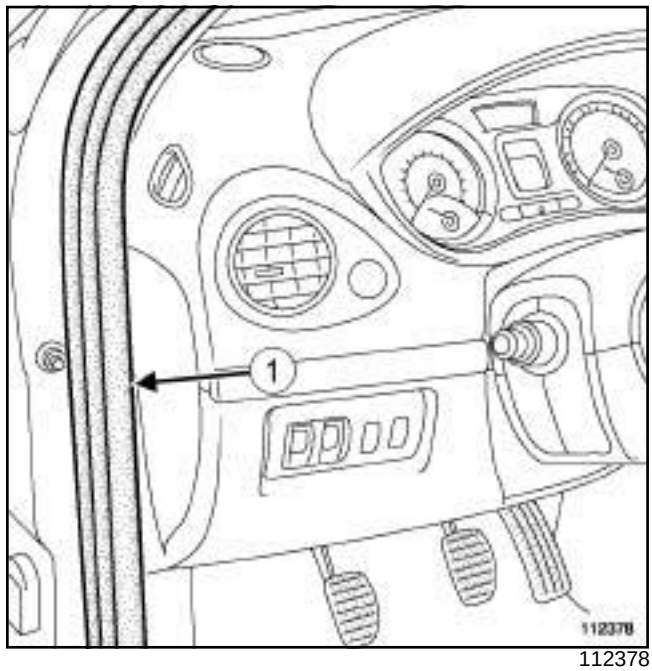
123763



112392

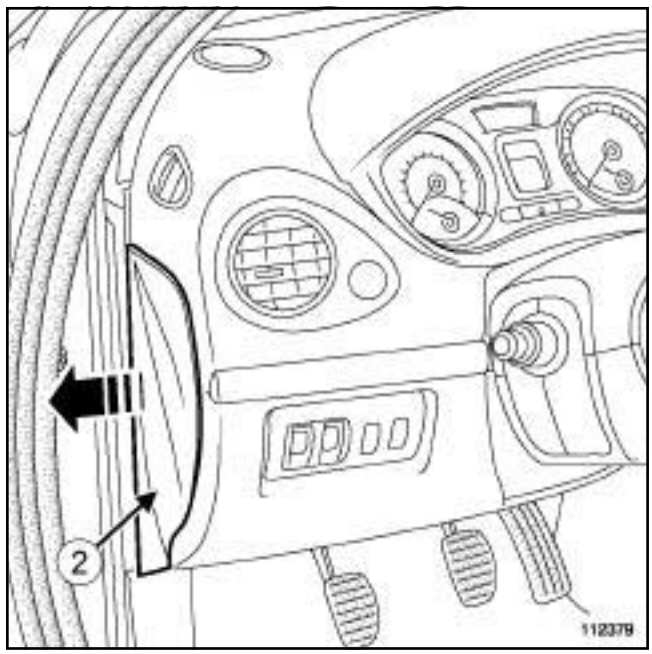
❏ Disconnect the R 369 connectors.

3 - Access to the R 99 connector



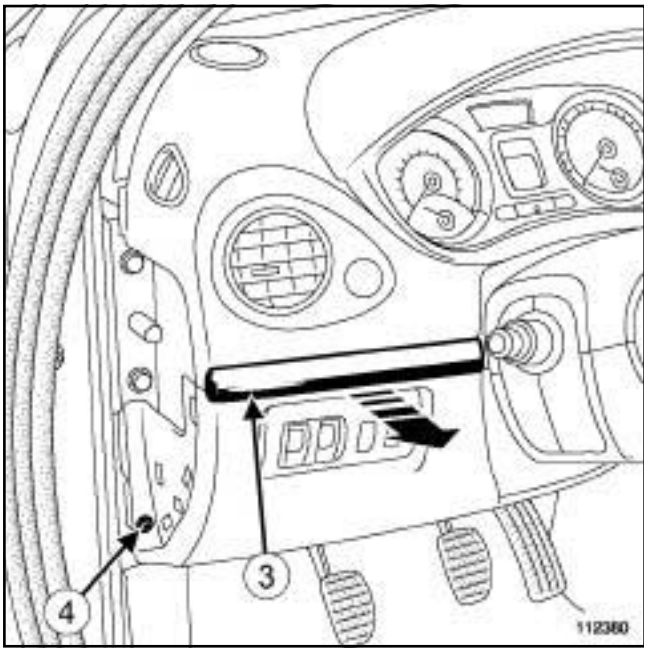
112378

❏ Partially remove seal (**1**) .



112379

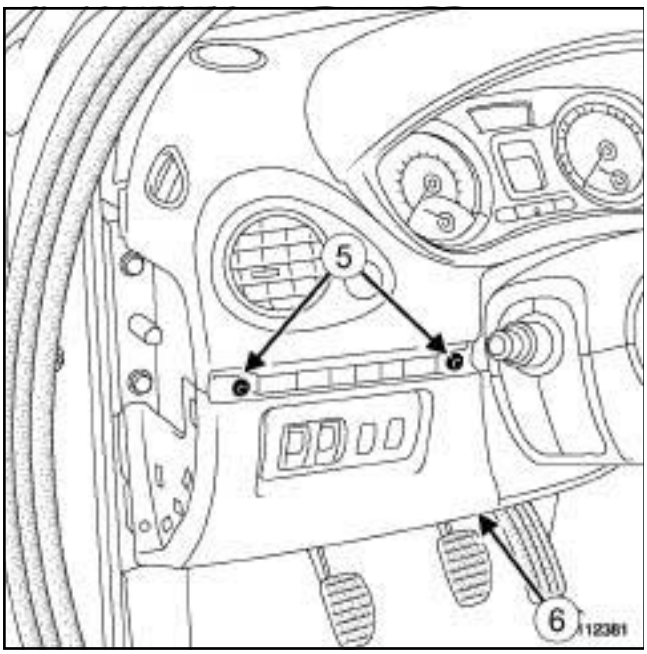
❏ Remove the dashboard side face (**2**) .



112380

❏ Unclip the trim (**3**) .

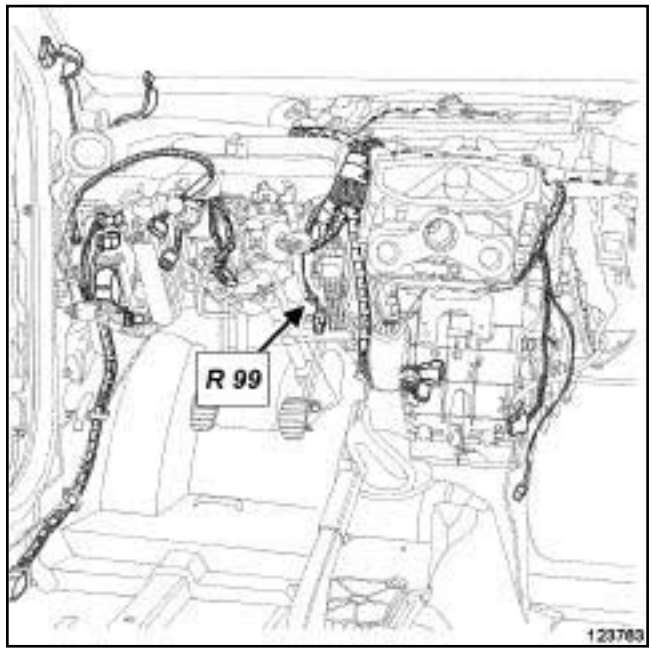
❏ Remove the dashboard lower trim bolt (**4**) .



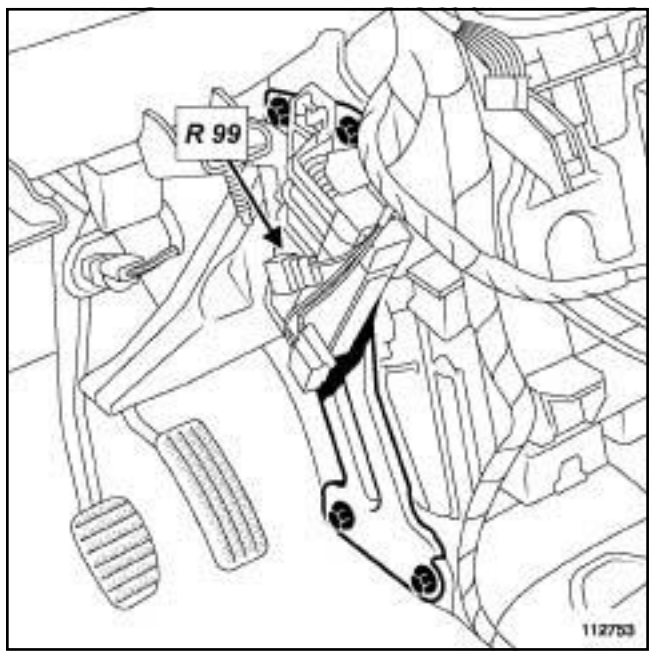
112381

❏ Remove:

- the dashboard lower trim bolts (**5**) ,
- the dashboard lower trim (**6**) .



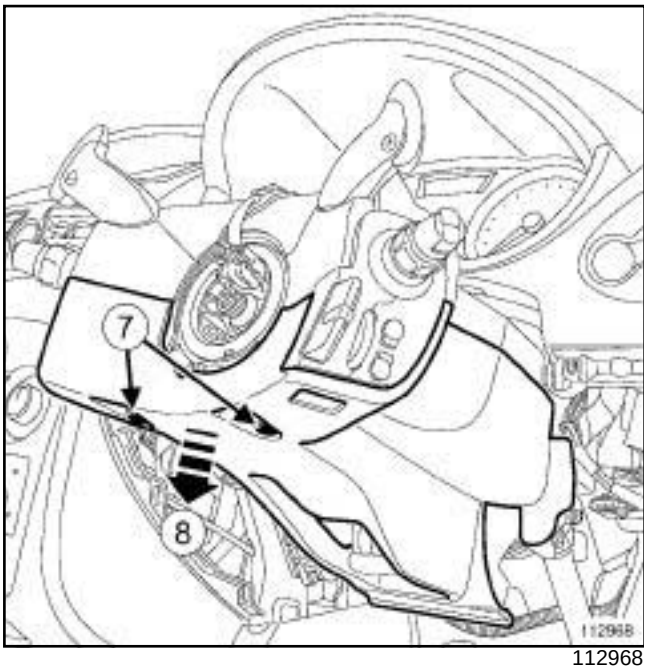
123763



112753

❏ Disconnect the R 99 connector.

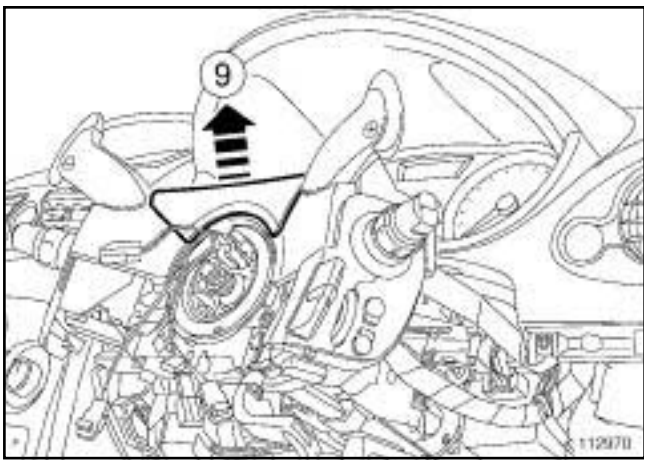
4 - Access to the R 173 connector



112968

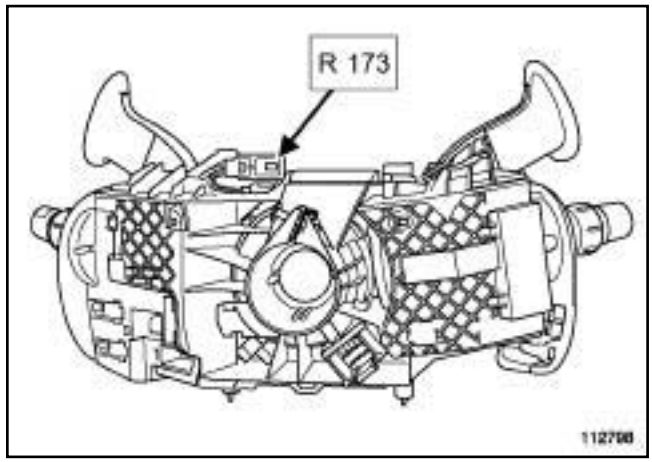
❏ Remove the bolts (**7**) from the shells under the steering wheel.

❏ Unclip the lower casing (**8**) .



112970

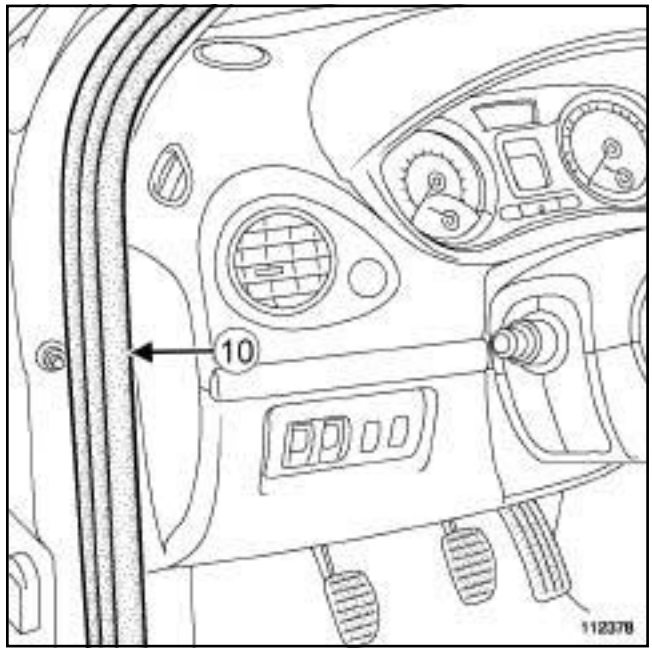
❏ Unclip the upper cover (**9**) .



112798

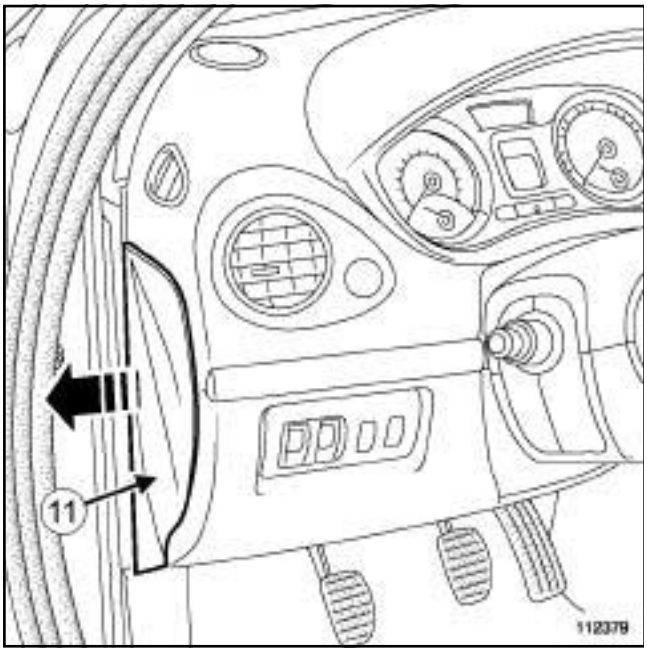
❏ Disconnect the R 173 connector.

5 - Access to the R 107 connectors



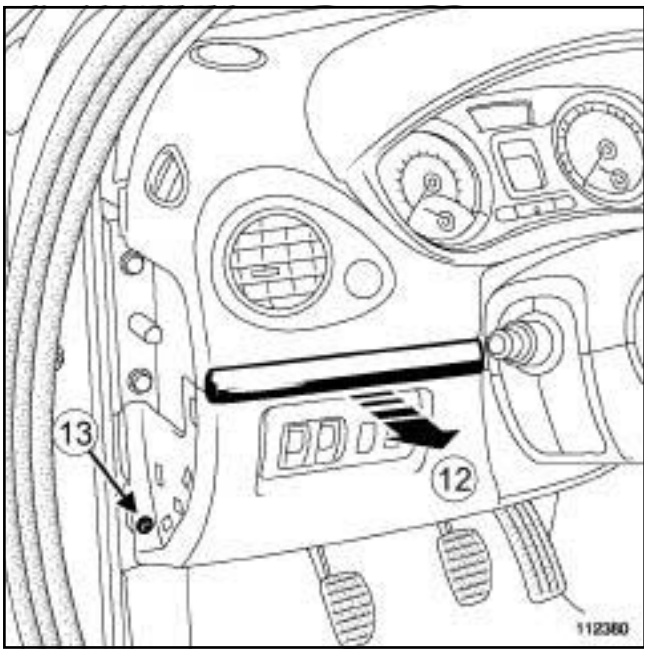
112378

❏ Partially remove seal (**10**) .



112379

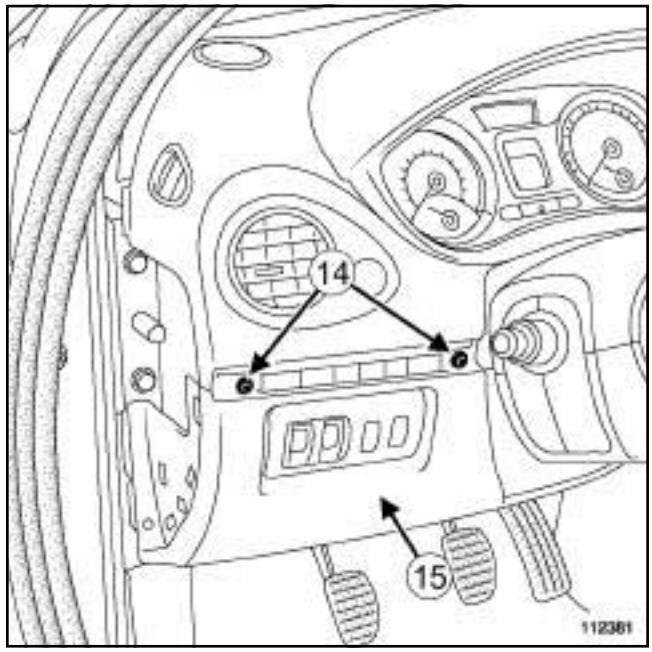
❏ Remove the dashboard side face (**11**) .



112380

❏ Unclip the trim (**12**) .

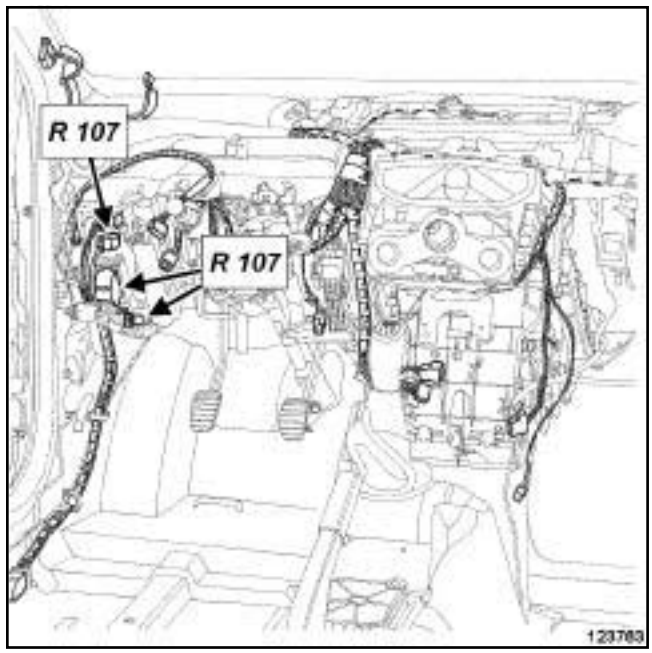
❏ Remove the dashboard lower trim bolt (**13**) .



112381

❏ Remove:

- the dashboard lower trim bolts (**14**) ,
- the dashboard lower trim (**15**) .



123763

❏ Disconnect the R 107 connectors.

6 - Access to the R 4 connector

❏ Open the passenger door.

123898

❏ Unclip the R 4 connector latch.

❏ Disconnect the R4 connector.

7 - Access to R 339 connector

❏ Remove the right-hand A-pillar trim (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

123775

❏ Disconnect the R 339 connector.

8 - Access to the R 3 connector

❏ Open the driver's door.

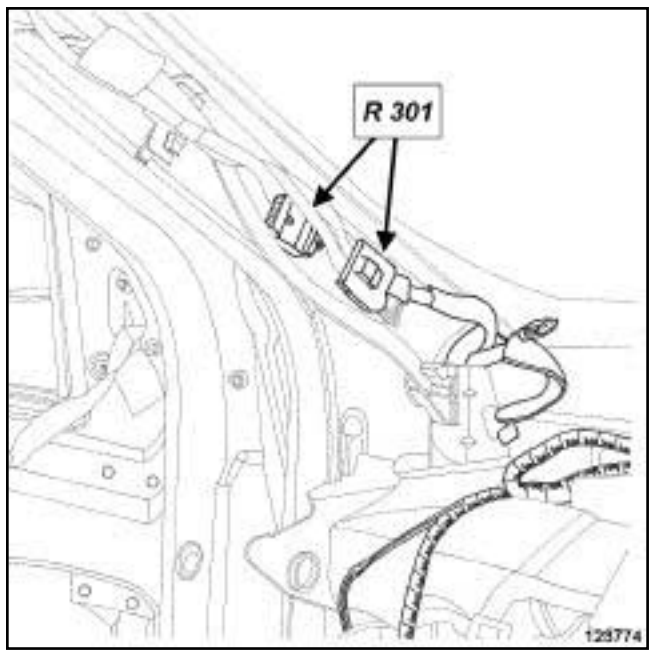
123901

❏ Unclip the R 3 connector latch.

❏ Disconnect the R3 connector.

9 - Access to the R 301 connectors

❏ Remove the left-hand A-pillar trim (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).



123774

❏ Disconnect the R 301 connectors.

LEFT-HAND DRIVE

Equipment required
Diagnostic tool

Tightening torques ▽	
earth terminal nuts	**8 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Remove:

- the driver's side front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Steering assembly),
- the dashboard cover gaiter (see **Dashboard cover gaiter: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the instrument panel (see **83A**, **Instrument panel**, **Instrument panel: Removal - Refitting**, page **83A-3**) ,
- the display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) ,

SCHOOL VEHICLE

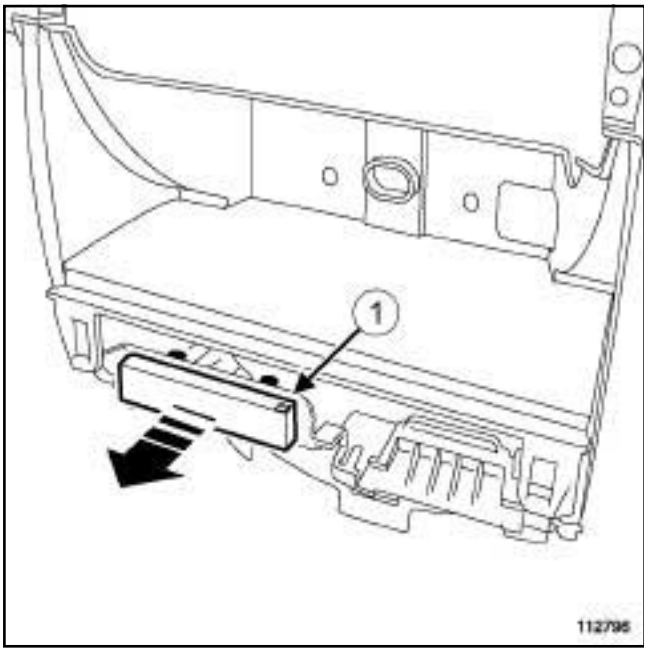
❑ Remove the driving school repeater electrical control unit (see **84A**, **Control - Signals**, **Driving school repeater electrical control unit: Removal - Refitting**, page **84A-24**) .

❑ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),

LEFT-HAND DRIVE

VEHICLE WITH CARD



112796

❑ Disconnect the dashboard starter aerial connector (**1**) .

❑ Remove:

- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeters (see **86A**, **Radio**, **Tweeter: Removal - Refitting**, page **86A-13**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front left-hand door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating),

❑ Move aside the front left-hand section of the centre floor front carpet.

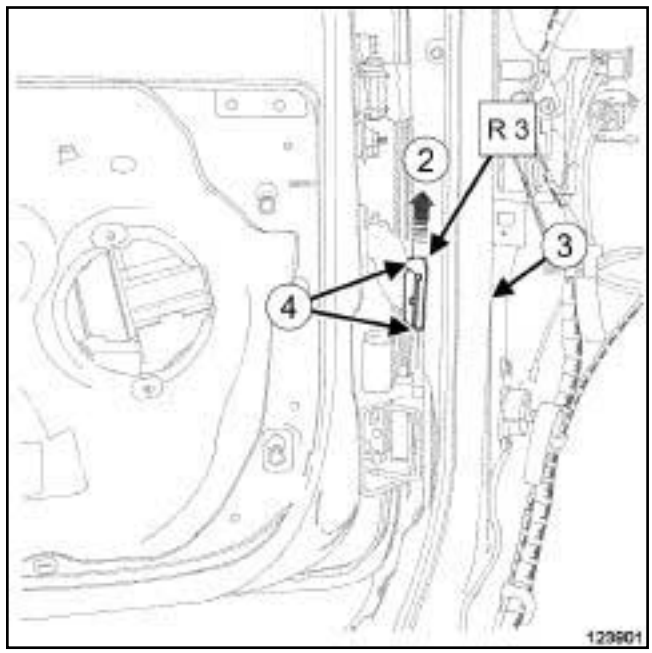
II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

❑ Open the driver's door.



123901

❑ Unclip the R 3 connector latch (**2**) .

❑ Disconnect the R3 connector.

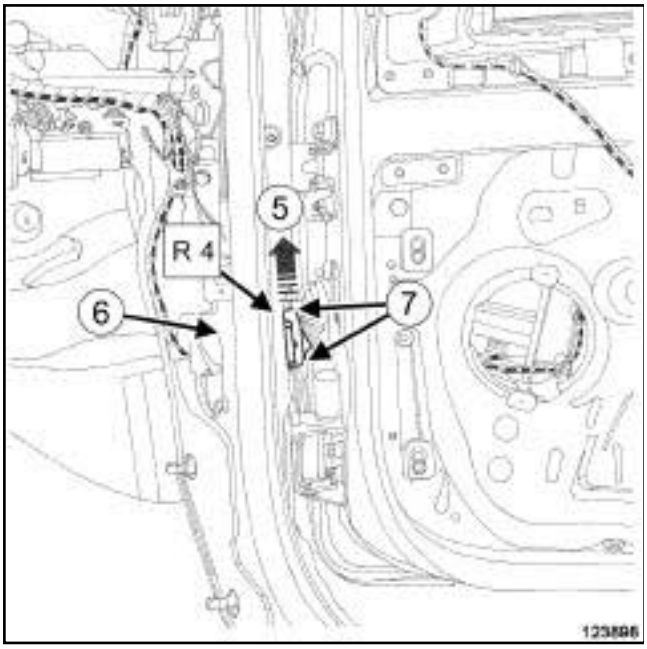
❑ Remove:

- the foam (**3**) ,
- The R 3 connector bolts (**4**) .

❑ Remove the dashboard wiring harness from the body.

❑ Open the passenger door.

LEFT-HAND DRIVE



123898

❏ Unclip the R 4 connector latch (**5**) .

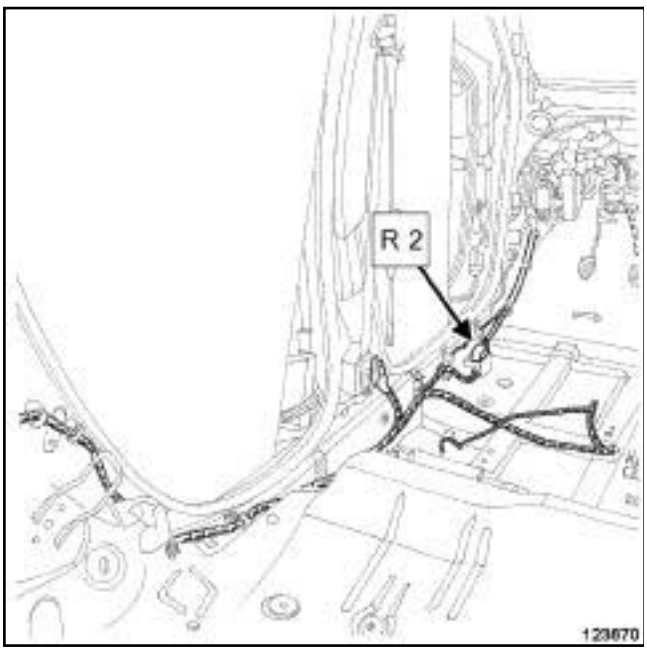
❏ Disconnect the R4 connector.

❏ Remove:

- the foam (**6**) ,

- The R 4 connector bolts (**7**) .

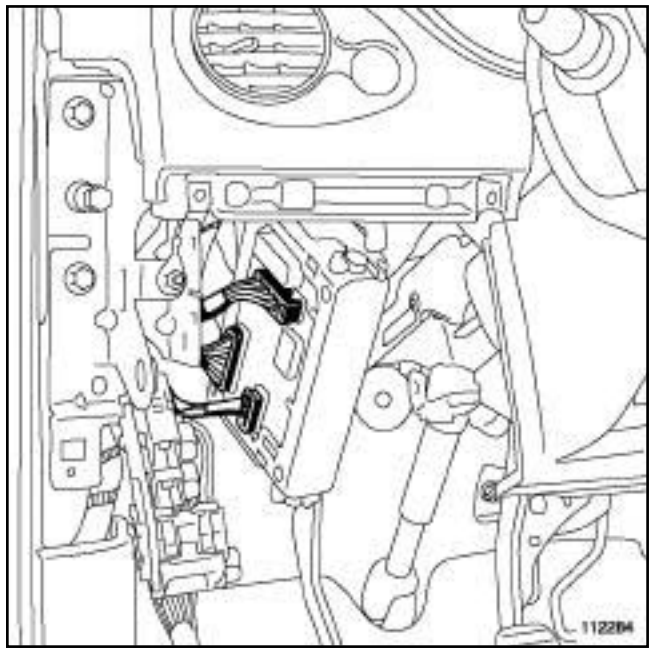
❏ Remove the dashboard wiring harness from the body.



123670

❏ Disconnect the R 2 connector.

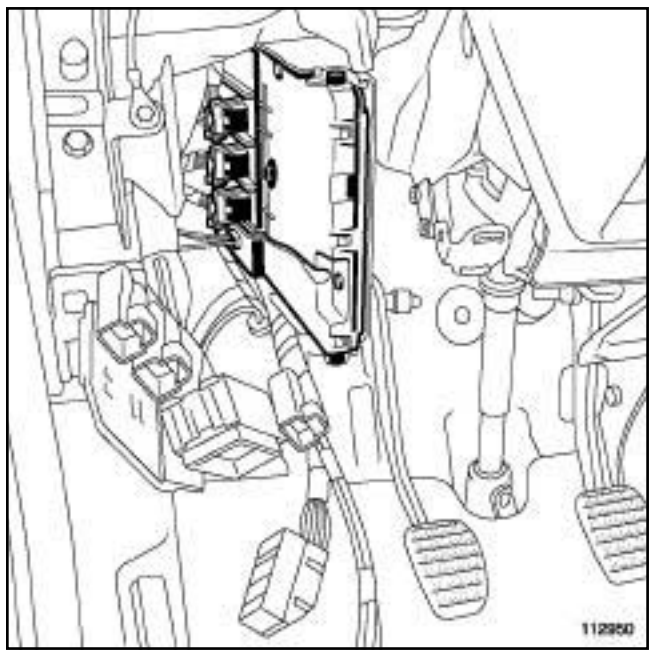
VEHICLE WITH KEY



112284

❏ Disconnect the connectors from the UCH.

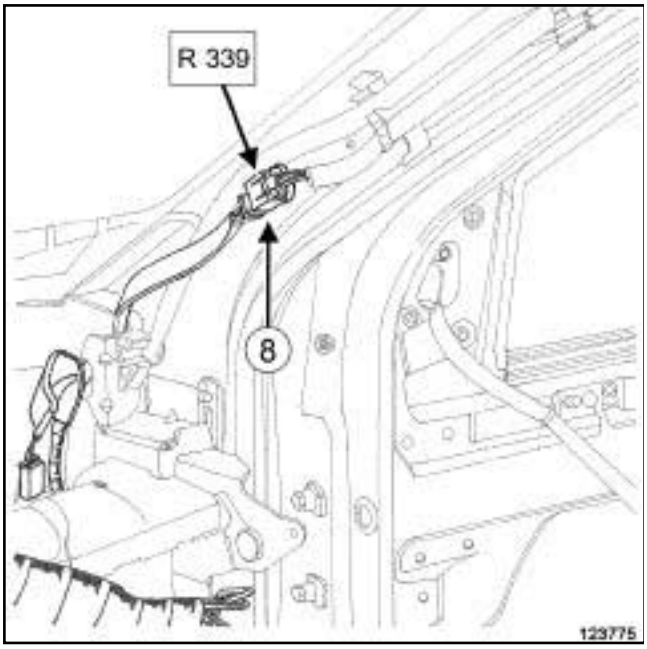
VEHICLE WITH CARD



112950

❏ Disconnect the connectors from the UCH.

LEFT-HAND DRIVE

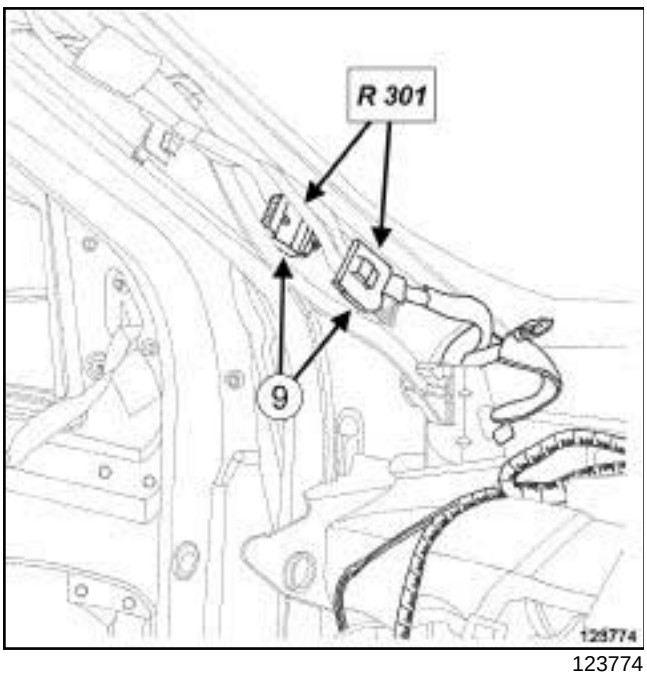


123775

❏ Unclip the dashboard wiring harness (**8**) .

PANORAMIC SUNROOF

❏ Disconnect the R 339 connector.



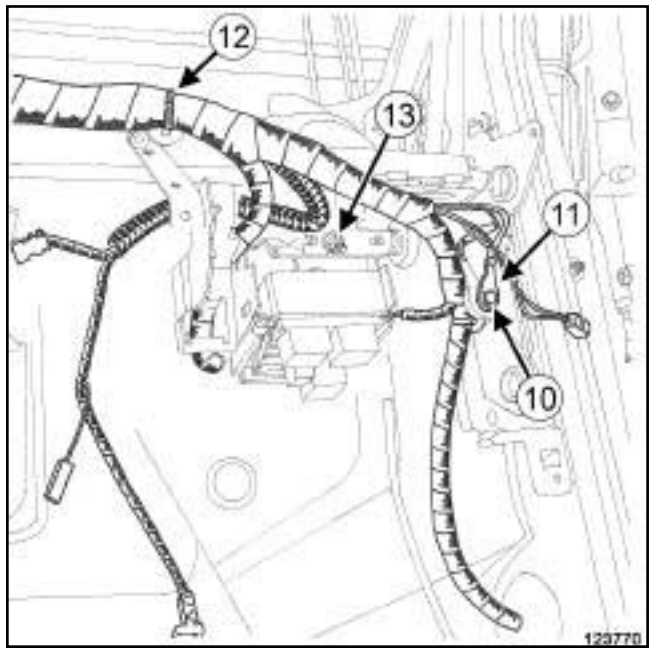
123774

❏ Unclip the dashboard wiring harness (**9**) .

❏ Disconnect the R 301 connector.

LIGHTS + AUTOMATIC WINDSCREEN WIPER

❏ Disconnect the R 301 connector.



123770

❏ Remove the nut (**10**) .

❏ Disconnect the earth terminals (**11**) .

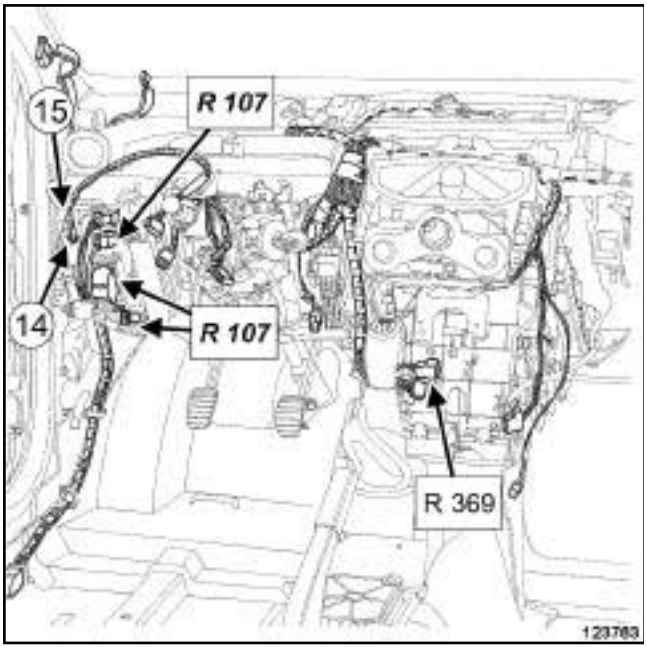
❏ Unclip the dashboard wiring harness (**12**) .

❏ Remove:

- the additional relay/fuse box nut (**13**) ,
- the additional relay/fuse box.

❏ Disconnect the additional relay/fuse box connectors.

LEFT-HAND DRIVE

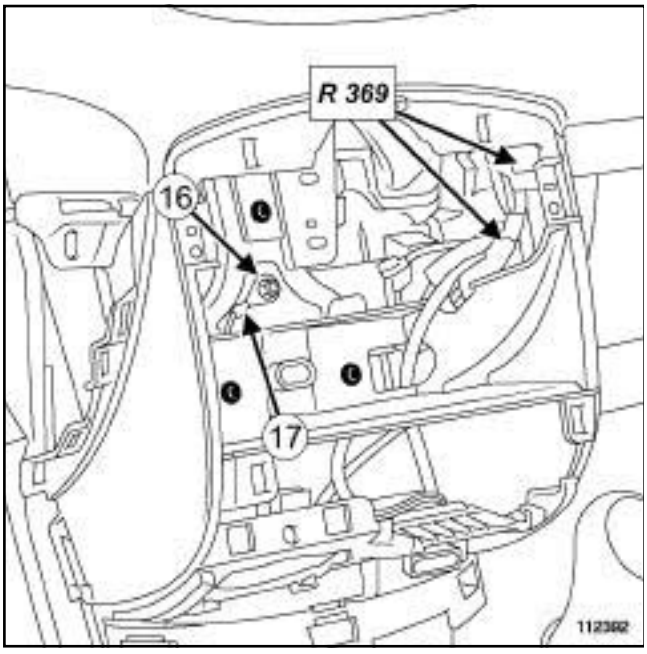


123763

❏ Remove the nut (**14**) .

❏ Disconnect:

- the earth terminal (**15**) ,
- the R 107 connectors,
- the R 369 connector,
- The electric power assisted steering connectors.



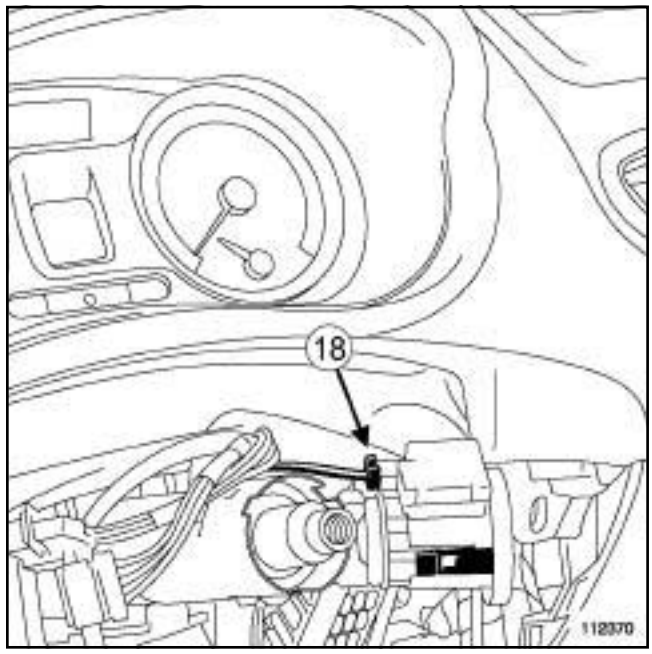
112392

❏ Remove the radio earth nut (**16**) .

❏ Disconnect:

- the earth terminal (**17**) ,
- the R 369 connectors.

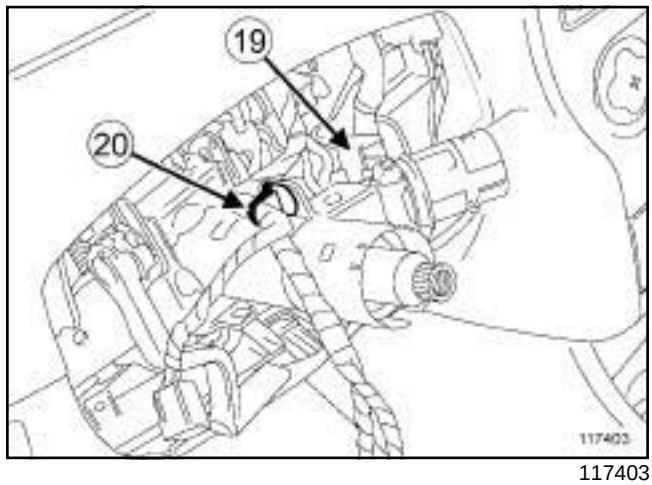
VEHICLE WITH KEY



112370

❏ Disconnect the antenna/transponder ring connector (**18**) .

VEHICLE WITH KEY



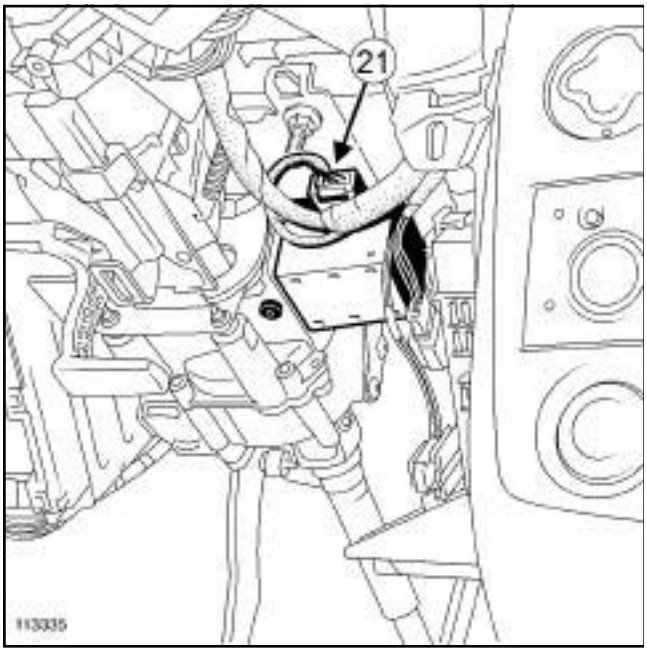
117403

❏ Disconnect the ignition switch connector (**19**) .

❏ Unclip the wiring at (**20**) .

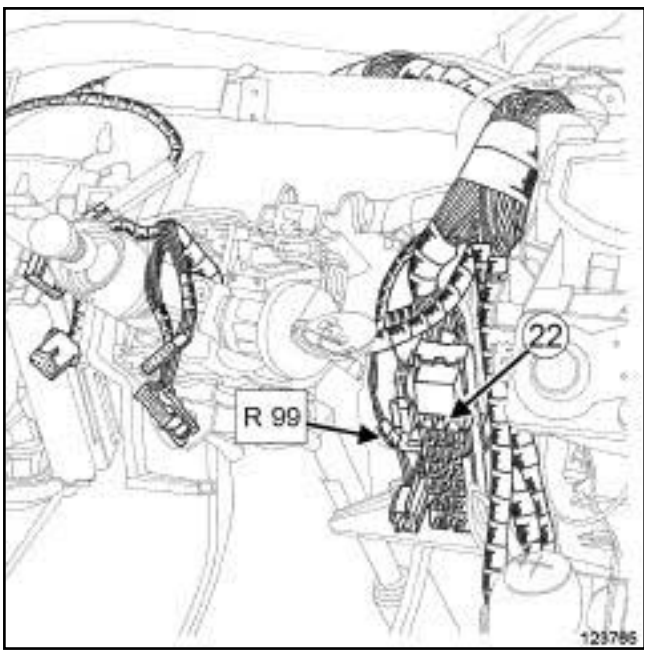
LEFT-HAND DRIVE

VEHICLE WITH CARD



113335

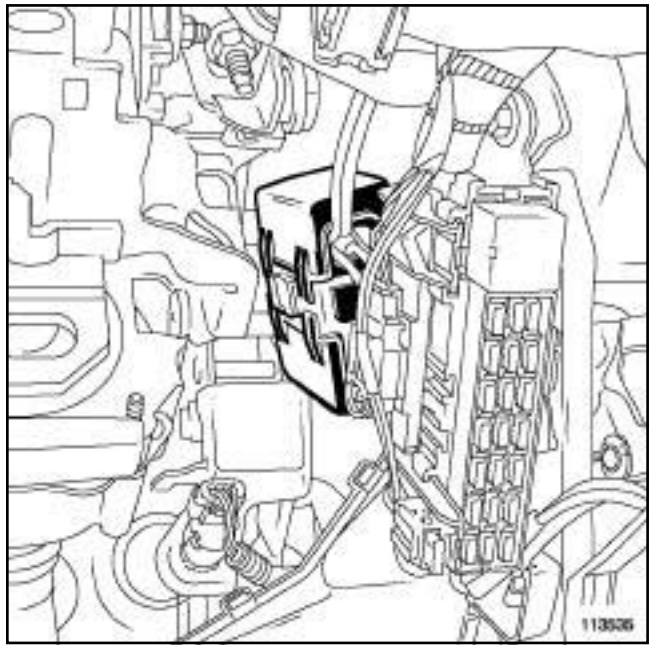
❏ Disconnect the electric steering column lock connector (**21**) .



123765

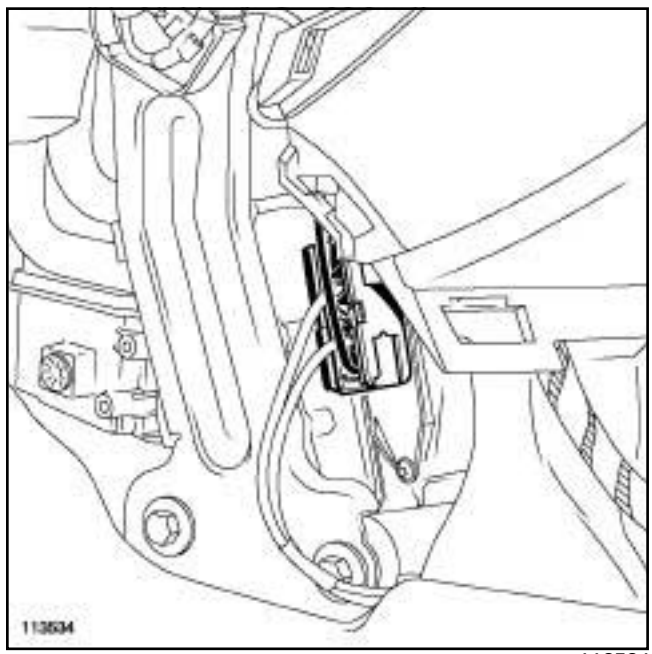
❏ Disconnect the R 99 connector.

❏ Unclip the passenger compartment fuse and relay box (**22**) .



113535

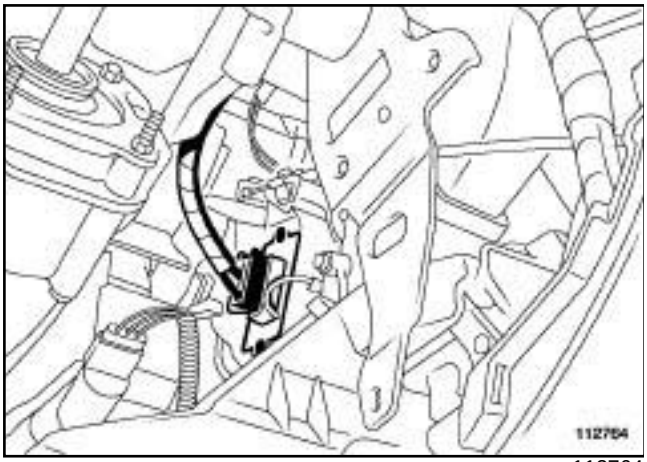
❏ Unclip the heating resistor relay unit.



113534

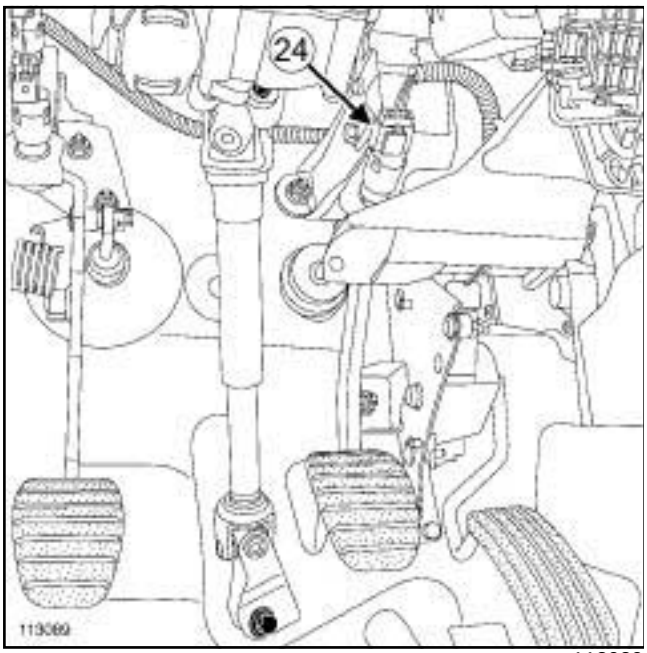
❏ Disconnect the heating resistor connector.

LEFT-HAND DRIVE



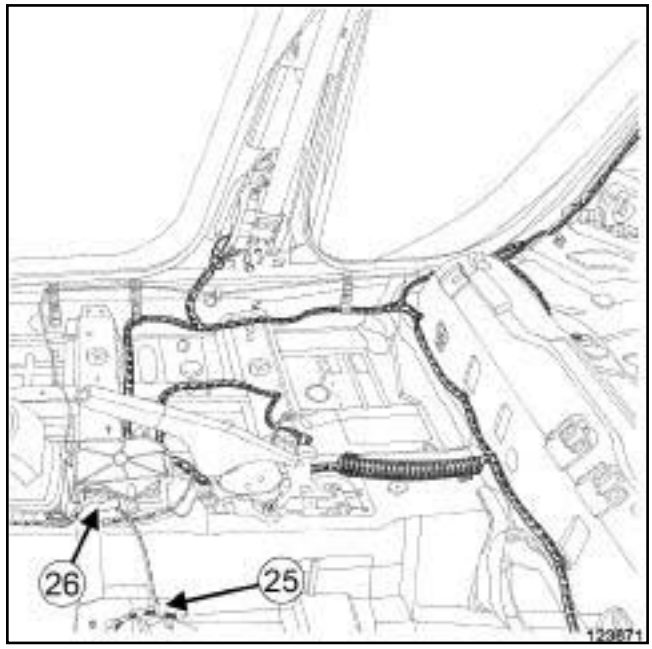
112764

❏ Disconnect the fan assembly control unit connector.



113089

❏ Disconnect the brake light switch connector (**24**) .



123671

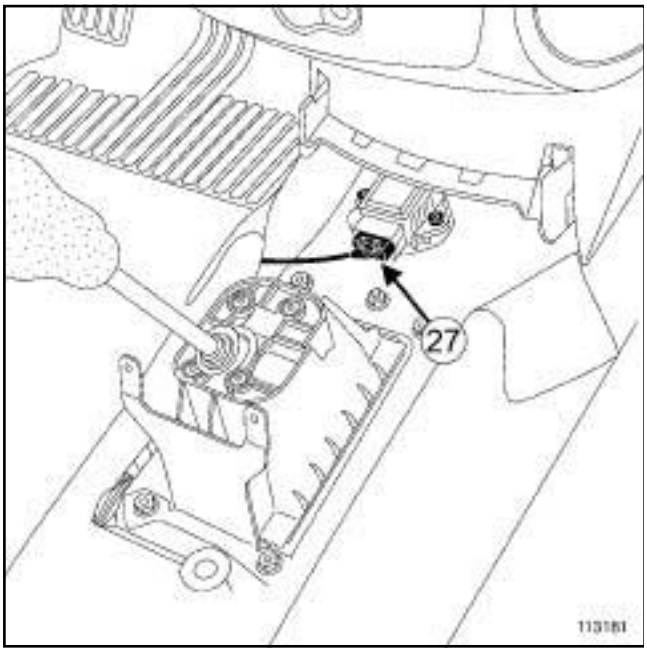
❏ Remove the nut (**25**) .

❏ Disconnect:

- the airbag computer connector (**26**) ,
- the earth terminal,
- the handbrake switch.

LEFT-HAND DRIVE

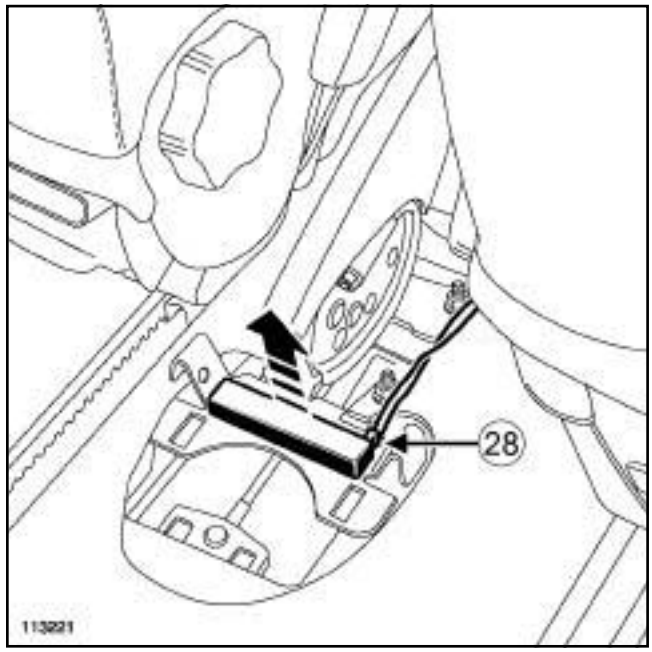
ELECTRONIC STABILITY PROGRAM



113181

❑ Disconnect the lateral acceleration and yaw sensor connector (**27**) .

VEHICLE WITH CARD



113221

❑ Disconnect the starter aerial connector (**28**) .

❑ Unclip the wiring.

❑ Remove the wiring.

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

❑ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the harness.

❑ Attach the wiring.

LEFT-HAND DRIVE

VEHICLE WITH CARD

❑ Connect the centre console starter aerial connector.

ELECTRONIC STABILITY PROGRAM

❑ Connect the lateral acceleration and yaw sensor connector.

❑ Connect:

- the earth on the centre floor ***(25)*** ,
- the airbag computer connector,
- the handbrake switch.

❑ Torque tighten the **earth terminal nut (8 Nm)**.

❑ Clip:

- the passenger compartment fuse and relay box.
- the heating resistor relay unit.

❑ Connect:

- the brake light switch connector,
- the clutch pedal sensor connectors,
- the fan assembly control unit connector,
- the heating resistor connector,
- the R 99 connector.

VEHICLE WITH CARD

❑ Connect the electric steering column lock connector.

VEHICLE WITH KEY

❑ Connect:

- the antenna/transponder ring connector,
- the starter switch connector.

❑ Clip the wiring on the steering column.

❑ Connect:

- the electric power assisted steering connectors,
- the R 107 connectors,
- the R 369 connectors,
- the right-hand dashboard cross member earth terminals ***(11)*** in the position marked during removal,
- the radio earth terminal on the centre section of the dashboard cross member ***(16)*** ,
- the left-hand dashboard cross member earth terminal ***(15)*** .

❑ Torque tighten the **earth terminal nuts (8 Nm)**.

❑ Refit:

- the additional relay/fuse box,
- the additional relay/fuse box nut.

❑ Reconnect the additional relay/fuse box connectors.

❑ Clip the dashboard wiring harness.

LIGHTS + AUTOMATIC WINDSCREEN WIPER

❑ Connect the R 301 connector.

❑ Connect the R 301 connector.

❑ Clip the dashboard wiring harness on the left-hand A-pillar trim.

PANORAMIC SUNROOF

❑ Connect the R 339 connector.

❑ Clip the dashboard wiring harness on the right-hand A-pillar trim.

❑ Connect:

- the UCH connectors,
- the R 2 connector,
- The R 3 and R 4 connectors.

❑ Refit:

- the bolts for the R 3 and R 4 connectors,
- the protective foam for the R 3 and R 4 connectors.

❑ Clip on the R 3 and R 4 connector mountings.

II - FINAL OPERATION.

❑ Refit the front left-hand section of the centre floor front carpet.

LEFT-HAND DRIVE

❏ Refit:

- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating system),
- the front left-hand door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeters (see **86A**, **Radio**, **Tweeter: Removal - Refitting**, page **86A-13**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),

VEHICLE WITH CARD

❏ Connect the dashboard starter aerial connector.

❏ Refit:

- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),

SCHOOL VEHICLE

❏ Refit the driving school repeater electrical control unit (see **84A**, **Control - Signals**, **Driving school repeater electrical control unit: Removal - Refitting**, page **84A-24**) .

❏ Refit:

- the display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) ,
- the instrument panel (see **83A**, **Instrument panel**, **Instrument panel: Removal - Refitting**, page **83A-3**) ,
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the dashboard cover gaiter (see **Dashboard cover gaiter: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Steering assembly),
- the driver's front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

RIGHT-HAND DRIVE

Equipment required
Diagnostic tool

Tightening torques ▽	
earth terminal nuts	**8 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING

To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove:

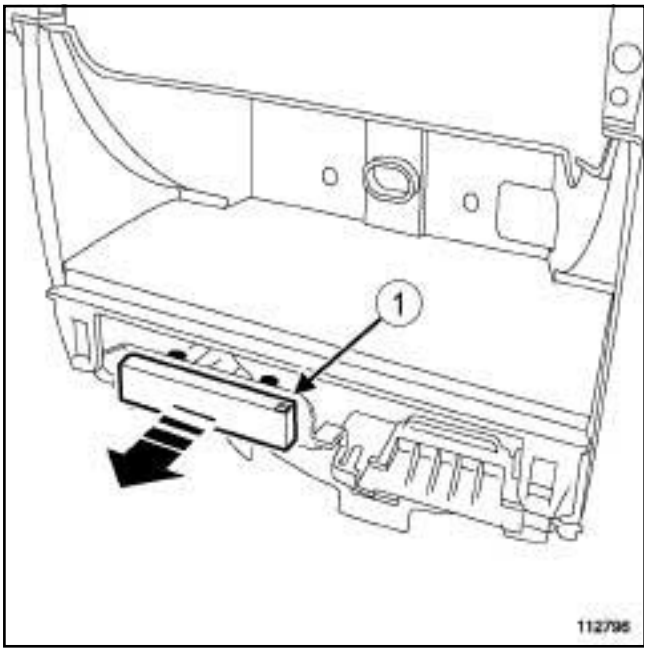
- the driver's side front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) ,
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Steering assembly),
- the dashboard cover gaiter (see **Dashboard cover gaiter: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the instrument panel (see **83A**, **Instrument panel**, **Instrument panel: Removal - Refitting**, page **83A-3**) ,
- the display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) .

❏ Remove:

- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),

RIGHT-HAND DRIVE

VEHICLE WITH CARD



112796

❑ Disconnect the dashboard starter aerial connector (**1**) .

❑ Remove:

- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeters (see **86A**, **Radio**, **Tweeter: Removal - Refitting**, page **86A-13**) ,
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the front left-hand door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating),

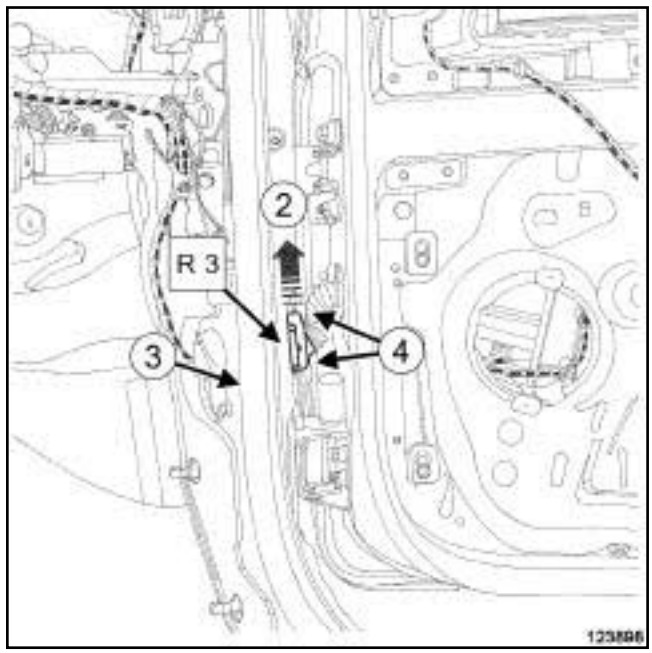
❑ Move aside the front left-hand section of the centre floor front carpet.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

❑ Open the driver's door.



123898

❑ Unclip the R 3 connector latch (**2**) .

❑ Disconnect the R 3 connector.

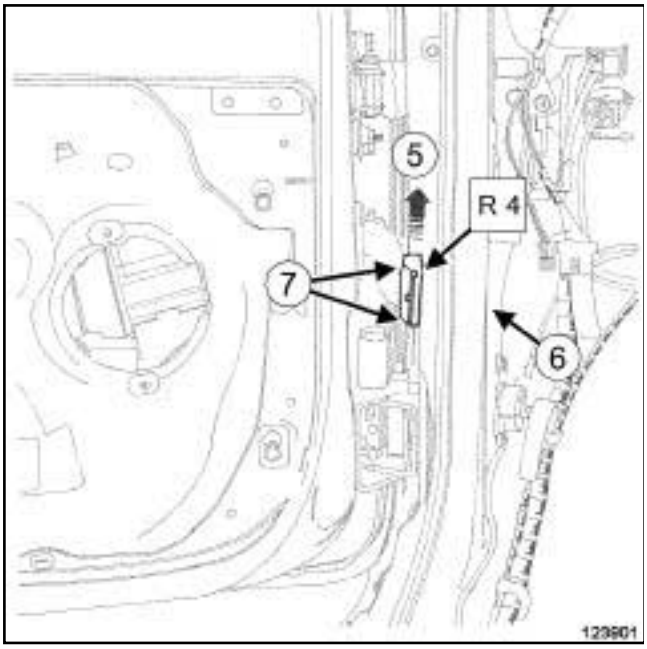
❑ Remove:

- the foam (**3**) ,
- The R 3 connector bolts (**4**) .

❑ Remove the dashboard wiring harness from the body.

❑ Open the passenger door.

RIGHT-HAND DRIVE



123901

❏ Unclip the R 4 connector latch (**5**) .

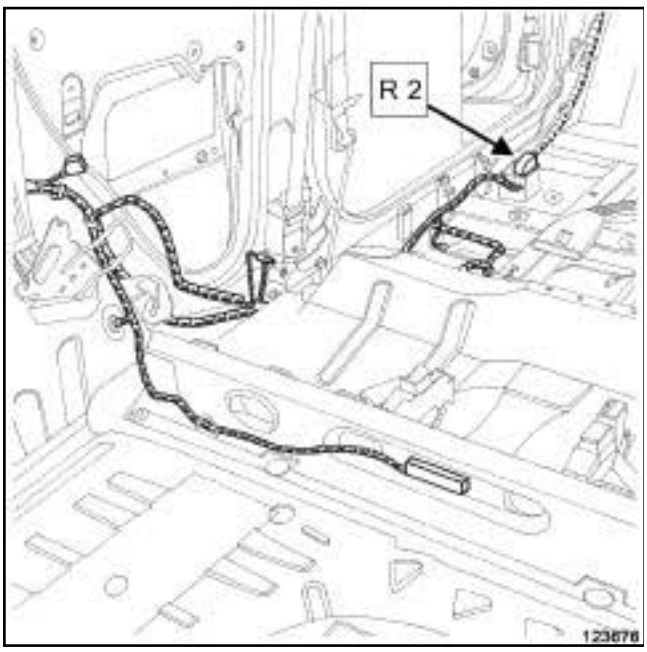
❏ Disconnect the R4 connector.

❏ Remove:

- the foam (**6**) ,

- the R 4 connector bolts (**7**) .

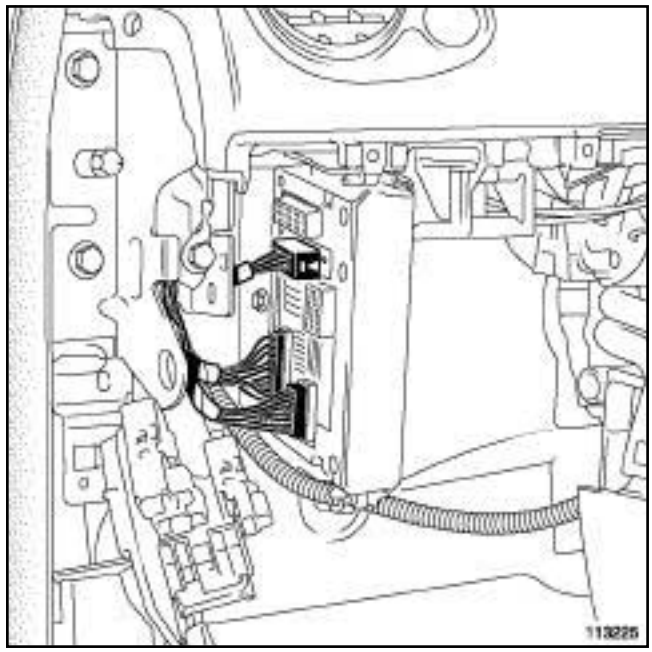
❏ Remove the dashboard wiring harness from the body.



123676

❏ Disconnect the R 2 connector.

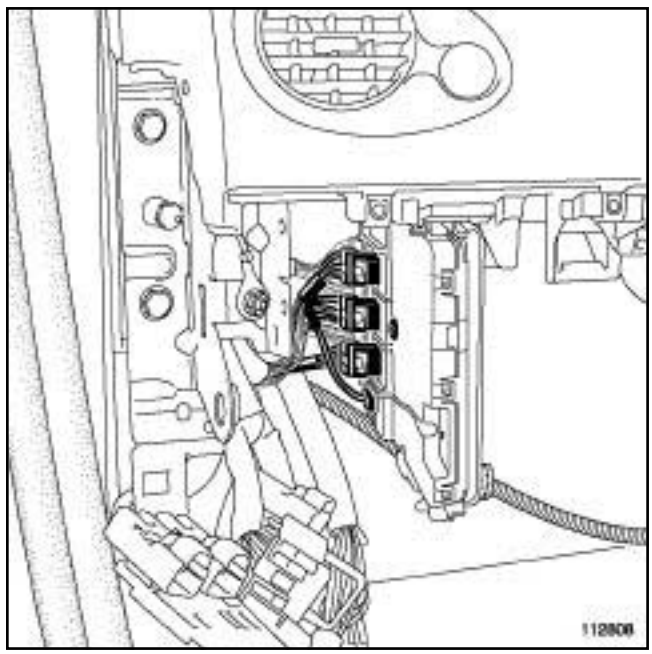
VEHICLE WITH KEY



113225

❏ Disconnect the connectors from the UCH.

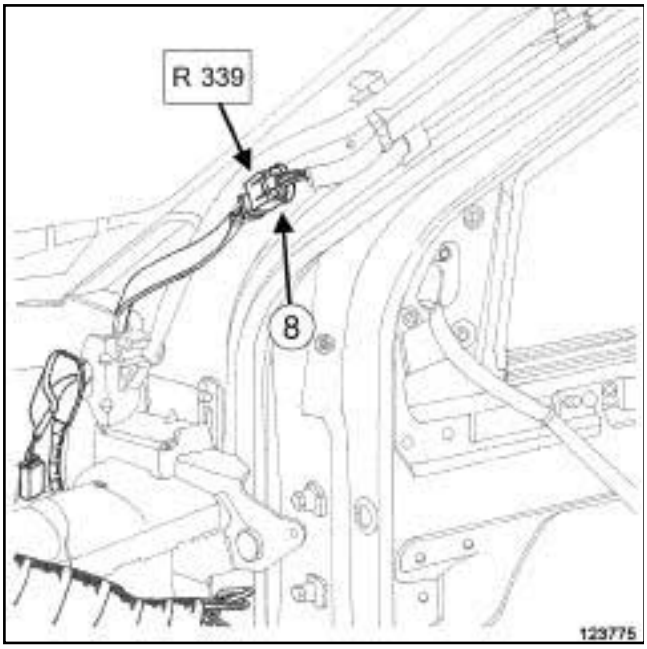
VEHICLE WITH CARD



112808

❏ Disconnect the connectors from the UCH.

RIGHT-HAND DRIVE

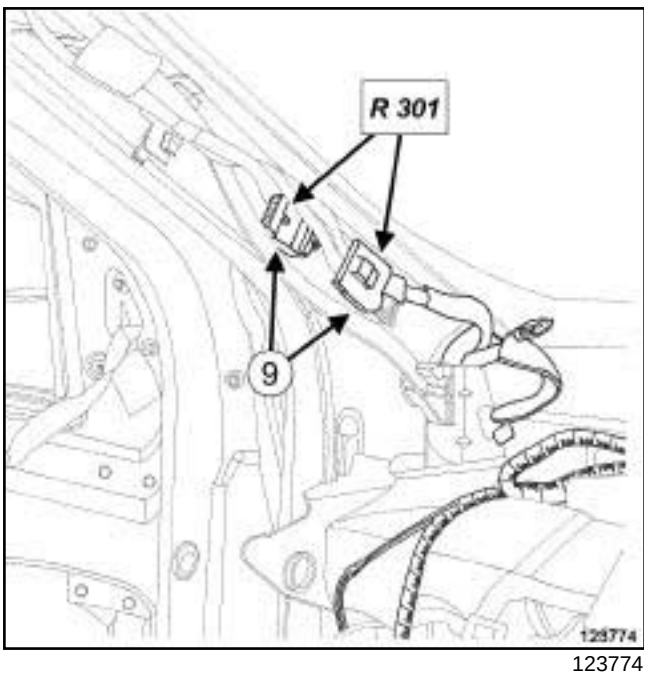


123775

❏ Unclip the dashboard wiring harness (**8**) .

PANORAMIC SUNROOF

❏ Disconnect the R 339 connector.



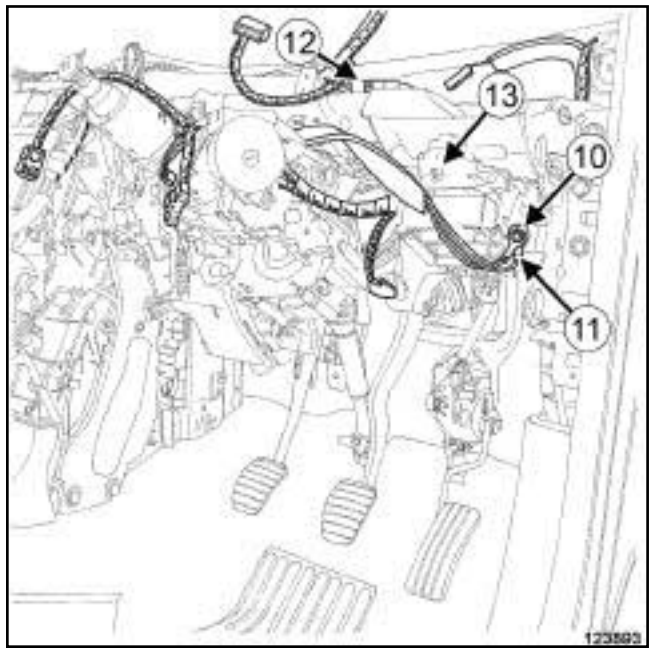
123774

❏ Unclip the dashboard wiring harness (**9**) .

❏ Disconnect the R 301 connector.

LIGHTS + AUTOMATIC WINDSCREEN WIPER

❏ Disconnect the R 301 connector.



123893

❏ Remove the earth terminal nuts (**10**) .

❏ Disconnect the earth terminals (**11**) .

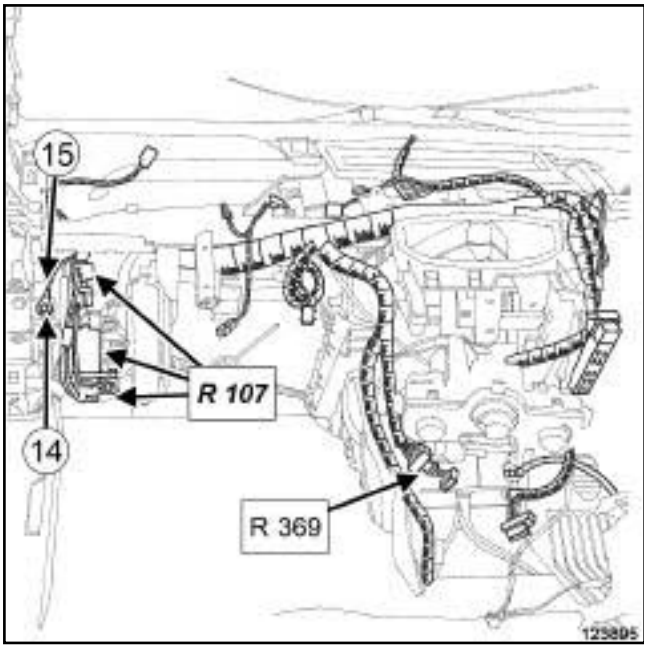
❏ Unclip the dashboard wiring harness (**12**) .

❏ Remove:

- the additional relay/fuse box nut (**13**) ,
- the additional relay/fuse box

❏ Disconnect the additional relay/fuse box connectors.

RIGHT-HAND DRIVE



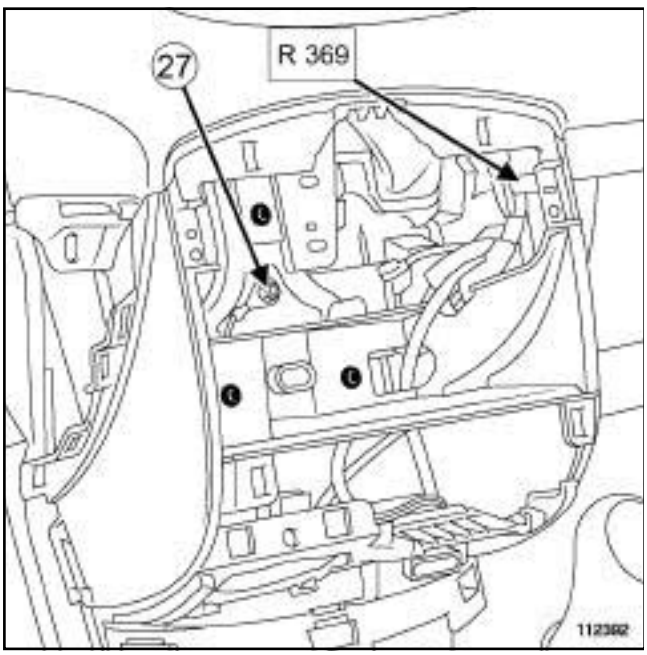
123895

❏ Remove:

- the nut (**14**) ,

❏ Disconnect:

- the earth terminal (**15**) ,
- the R 107 connectors,



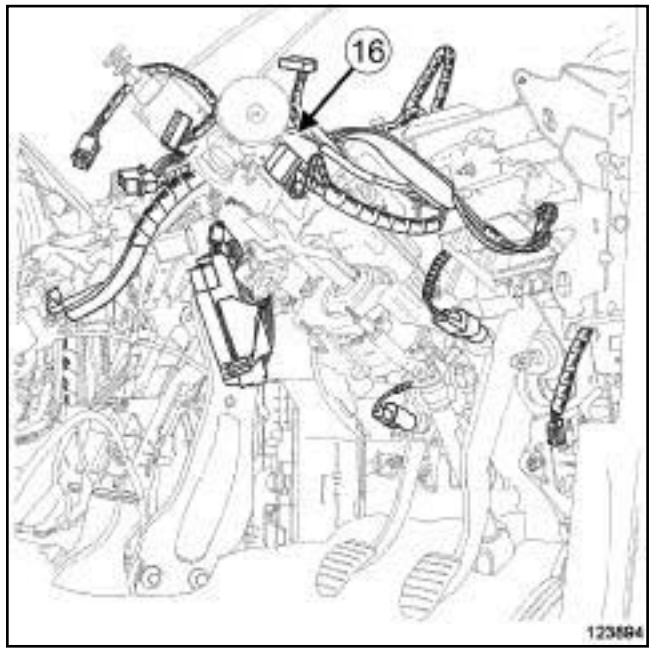
112392

❏ Remove the radio earth terminal nut (**27**) .

❏ Disconnect:

- the radio earth terminal on the cross member centre panel (**27**) ,
- the R 369 connectors.

VEHICLE WITH KEY



123894

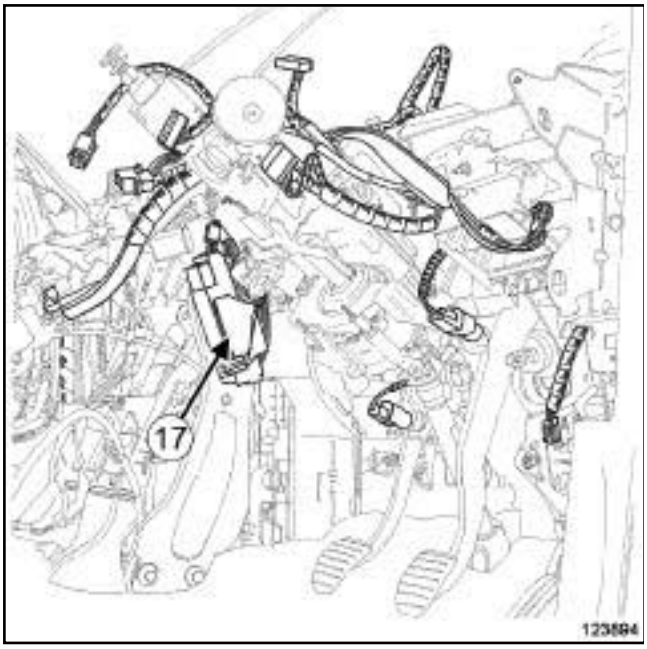
❏ Disconnect:

- Disconnect the antenna/transponder ring connector (**16**) ,
- the starter switch connector.

VEHICLE WITH CARD

❏ Disconnect the electric steering column lock connector.

RIGHT-HAND DRIVE

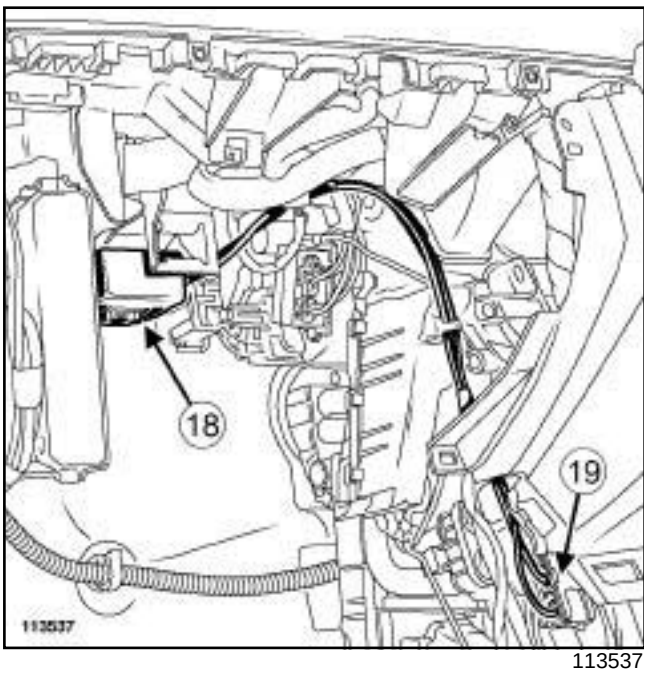


123894

❏ Disconnect:

- the R 99 connector,
- The electric power assisted steering connectors.

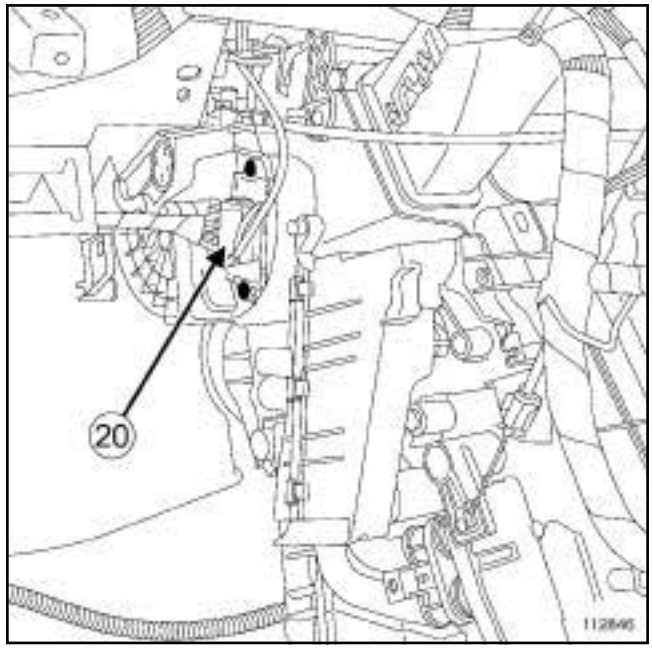
❏ Unclip the passenger compartment fuse and relay box (**17**) .



113537

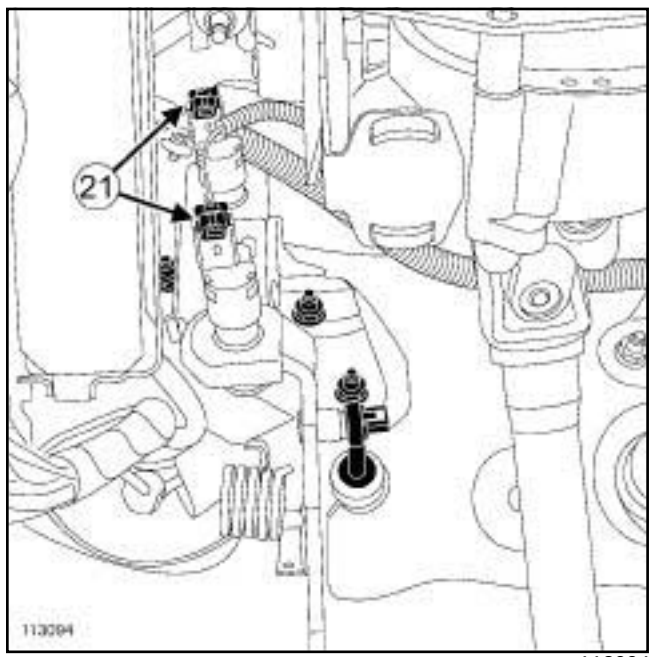
❏ Unclip the heating resistor relay unit (**18**) .

❏ Disconnect the connector (**19**) from the heating resistors.



112846

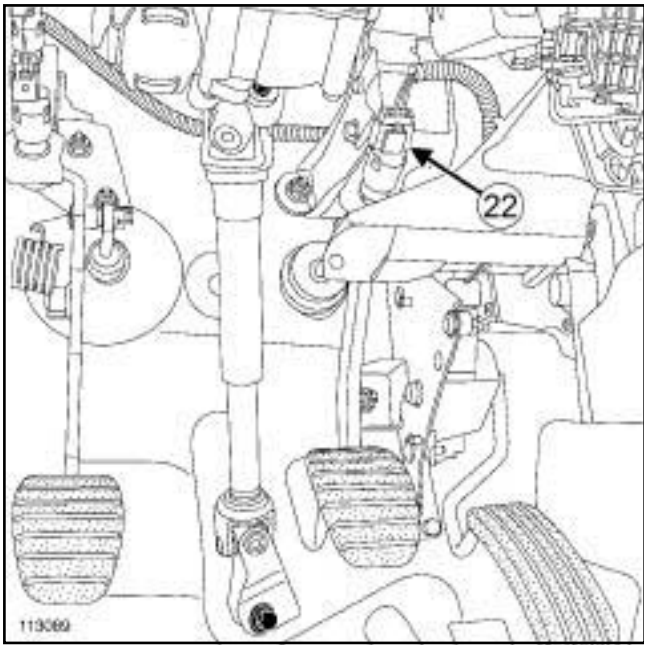
❏ Disconnect the fan assembly control unit connector (**20**) .



113094

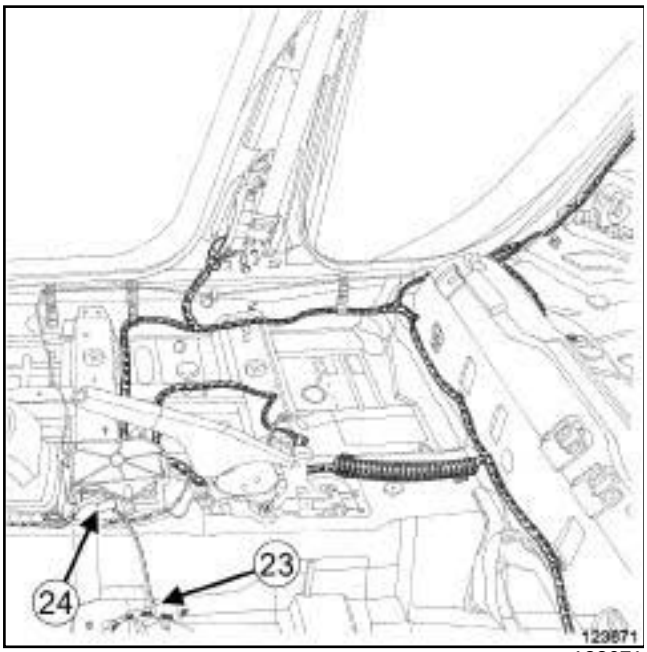
❏ Disconnect the clutch pedal switch connectors (**21**) .

RIGHT-HAND DRIVE



113089

❏ Disconnect the brake light switch connector (**22**) .



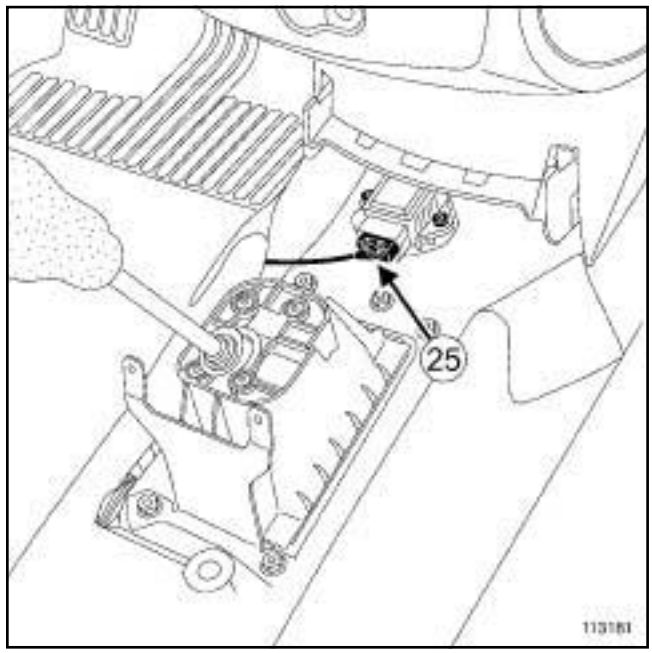
123671

❏ Remove the nut (**23**) .

❏ Disconnect:

- the airbag computer connector (**24**) .
- the earth terminal,
- the handbrake switch.

ELECTRONIC STABILITY PROGRAM

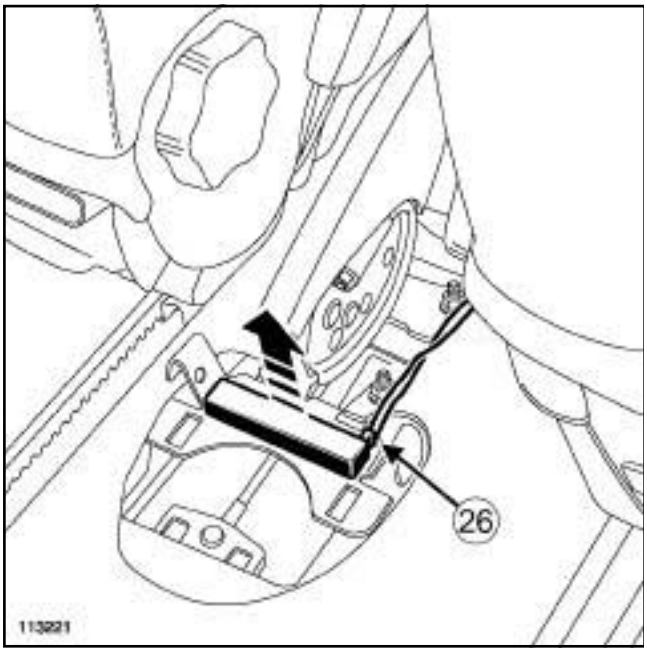


113181

❏ Disconnect the lateral acceleration and yaw sensor connector (**25**) .

RIGHT-HAND DRIVE

VEHICLE WITH CARD



113221

❏ Disconnect the starter aerial connector (**26**) .

❏ Unclip the wiring.

❏ Remove the wiring.

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

❏ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the harness.

❏ Attach the wiring.

VEHICLE WITH CARD

❏ Connect the centre console starter aerial connector.

ELECTRONIC STABILITY PROGRAM

❏ Connect the lateral acceleration and yaw sensor connector.

❏ Connect:

- the earth ***(23)*** ,
- the airbag computer connector,
- the handbrake switch.

❏ Torque tighten the **earth terminal nut (8 Nm)**.

❏ Clip:

- the passenger compartment fuse and relay box.
- the heating resistor relay unit.

❏ Connect:

- the brake light switch connector,
- the clutch pedal sensor connectors,
- the fan assembly control unit connector,
- the heating resistor connector,
- the R 99 connector.

VEHICLE WITH CARD

❏ Connect the electric steering column lock connector.

VEHICLE WITH KEY

❏ Connect:

- the antenna/transponder ring connector,
- the starter switch connector.

❏ Clip the wiring on the steering column.

❏ Connect:

- the electric power assisted steering connectors,

RIGHT-HAND DRIVE

- the R 107 connectors,
- the R 369 connectors,
- the right-hand dashboard cross member earth terminals ***(11)*** in the position marked during removal,
- the radio earth terminal nut on the centre section of the dashboard cross member (27),
- The left-hand dashboard cross member earth terminal ***(15)*** .

❏ Torque tighten the **earth terminal nuts (8 Nm)**.

❏ Refit:

- the additional relay/fuse box,
- the additional relay/fuse box nut.

❏ Reconnect the additional relay/fuse box connectors.

❏ Clip the dashboard wiring harness.

LIGHTS + AUTOMATIC WINDSCREEN WIPER

❏ Connect the R 301 connector.

❏ Connect the R 301 connector.

❏ Clip the dashboard wiring harness on the left-hand A-pillar trim.

PANORAMIC SUNROOF

❏ Connect the R 339 connector.

❏ Clip the dashboard wiring harness on the right-hand A-pillar trim.

❏ Connect:

- the UCH connectors,
- the R 2 connector,
- The R 3 and R 4 connectors.

❏ Refit:

- the bolts for the R 3 and R 4 connectors,
- the protective foam for the R 3 and R 4 connectors.

❏ Clip on the R 3 and R 4 connector mountings.

II - FINAL OPERATION.

❏ Refit the front left-hand section of the centre floor front carpet.

❏ Refit:

- the air conditioning control panel (see **Control panel: Removal - Refitting**) (MR 392, 61A, Heating system),
- the front left-hand door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the tweeters (see **86A**, **Radio**, **Tweeter: Removal - Refitting**, page **86A-13**) ,
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the A-pillar trims (see **Windscreen pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),

VEHICLE WITH CARD

❏ Connect the dashboard starter aerial connector.

❏ Refit:

- the centre front panel (see **Centre front panel: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the radio (see **86A**, **Radio**, **Radio: Removal - Refitting**, page **86A-8**) ,
- the glovebox (see **Glovebox: Removal - Refitting**) (MR 393, 57A, Interior equipment),

❏ Refit:

- the display (see **86A**, **Radio**, **Display: Removal - Refitting**, page **86A-18**) ,
- the instrument panel (see **83A**, **Instrument panel**, **Instrument panel: Removal - Refitting**, page **83A-3**) ,
- the steering column switch assembly (see **84A**, **Control - Signals**, **Steering column switch assembly: Removal - Refitting**, page **84A-4**) ,
- the dashboard cover gaiter (see **Dashboard cover gaiter: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the steering wheel (see **Steering wheel: Removal - Refitting**) (MR 392, 36A, Steering assembly),
- the driver's front airbag (see **88C**, **Air bag and Pretensioners**, **Driver's frontal airbag: Removal - Refitting**, page **88C-22**) .

RIGHT-HAND DRIVE

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❑ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Raise the window fully.

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING
To avoid damaging the connectors, consult the disconnection procedures (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Remove the front speaker (see **86A**, **Radio**, **Front speakers: Removal - Refitting**, page **86A-14**) .

LEFT-HAND DRIVE, and DOOR MIRRORS 02 or DOOR MIRRORS 03

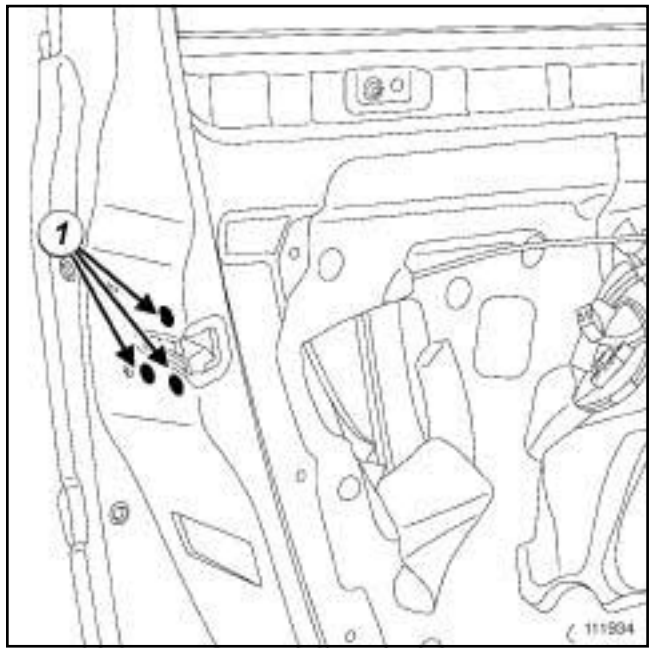
❑ Remove the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

RIGHT-HAND DRIVE

❑ Remove the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

❑ Remove:

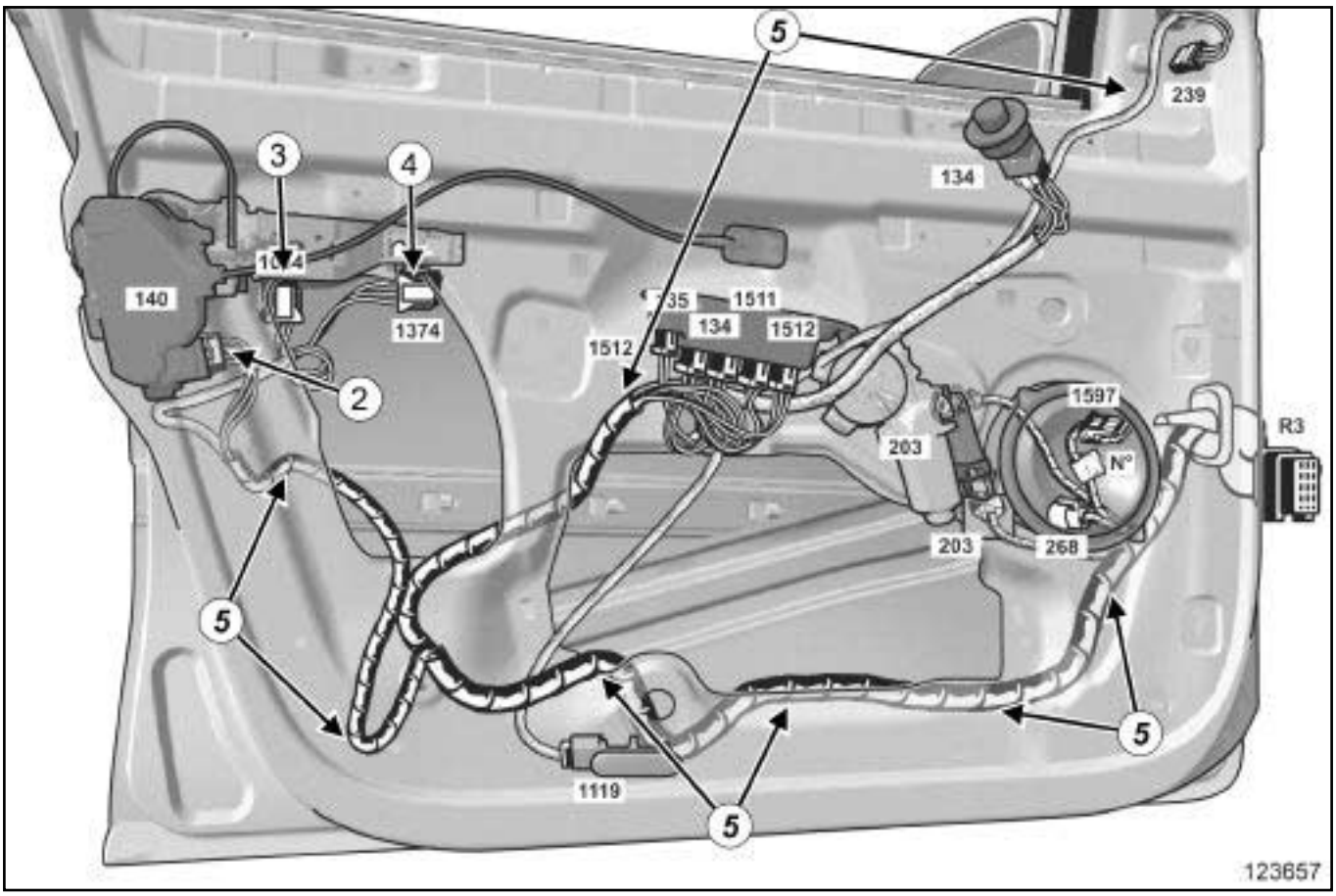
- the side door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the side indicator.



111934

❑ Remove the three door lock bolts (**1**) .

II - REMOVAL OF PART CONCERNED



123657

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

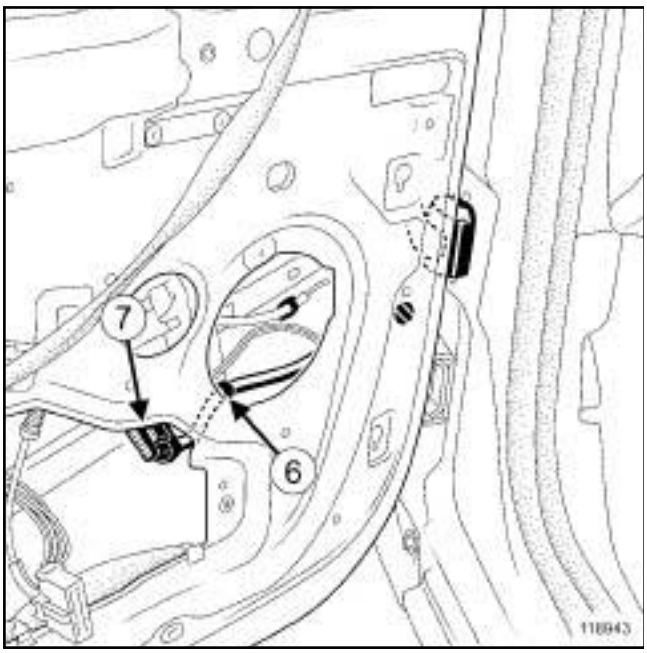
❑ Disconnect the door lock connector (**2**) .

VEHICLE WITH CARD

❑ Disconnect the presence detector connector ***(3)*** .

❑ Disconnect the opening aerial connector ***(4)*** .

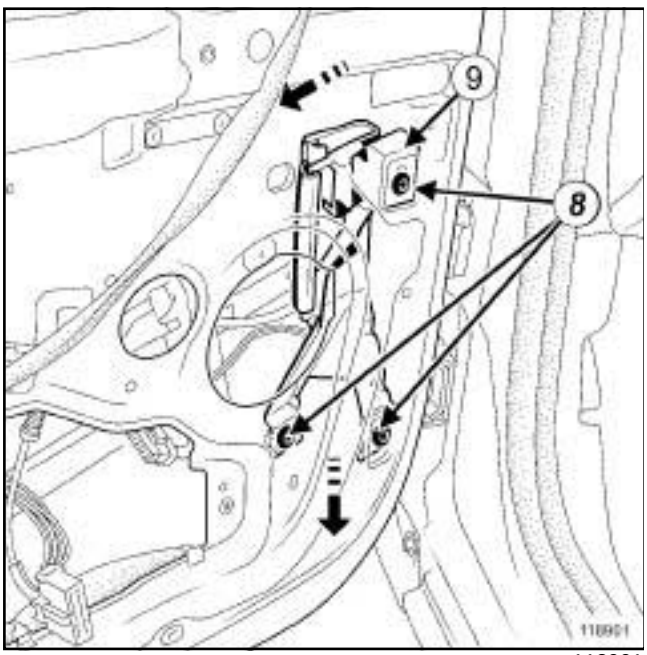
ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL



118943

❏ Remove clip (**6**) .

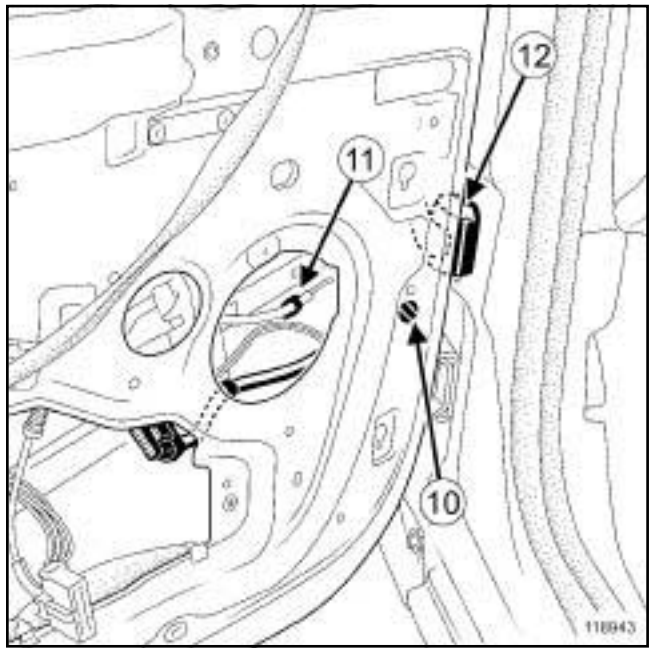
❏ Disconnect the electric window motor connector (**7**) .



118901

❏ Remove:

- The three bolts (**8**) of the front offset frame (**9**) .
- The front offset frame (**9**) , by lowering it, then pivoting it and removing it through the speaker mounting hole.



118943

❏ Remove the clips (**10**) and (**11**) .

❏ Disconnect the door connector (**12**) .

❏ Remove all of the clips ***(5)*** using a pair of unclipping pliers.

❏

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❏ Remove the wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more complete wiring, immobilise the unused connectors (see **Connector: Sealing and locking**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING PART CONCERNED

❏ Refit the wiring, respecting the original routing.

❏ Clip all the clips into place ***(5)*** .

❏ Refit:

- The front offset frame.
- The three bolts of the front offset frame.

ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL

❏ Clip on the clip ***(6)*** .

❏ Connect the electric window motor connector.

VEHICLE WITH CARD

❏ Connect the opening aerial connector.

❏ Connect the presence sensor connector.

❏ Connect the tailgate lock connector.

❏ Connect the door connector ***(12)*** .

❏ Clip on the clips ***(11)*** and ***(10)*** .

❏ Refit:

- the three door lock bolts,
- the side indicator,
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the side door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

RIGHT-HAND DRIVE

❏ Refit the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

LEFT-HAND DRIVE, and DOOR MIRRORS 02 or DOOR MIRRORS 03

❏ Refit the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment).

❏ Refit the front speaker (see **86A**, **Radio**, **Front speakers: Removal - Refitting**, page **86A-14**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Raise the window fully.

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING
To avoid damaging the connectors, consult the disconnection procedures (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove the front speaker (see **86A**, **Radio**, **Front speakers: Removal - Refitting**, page **86A-14**) .

LEFT-HAND DRIVE

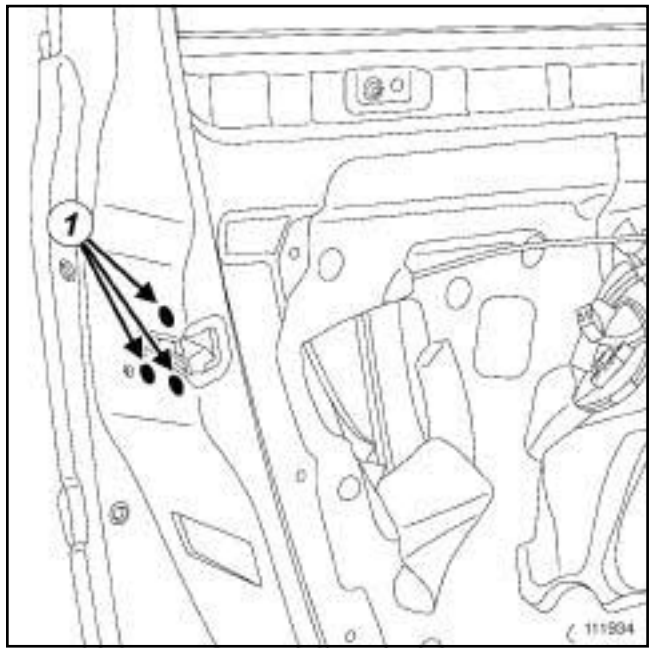
❏ Remove the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

RIGHT-HAND DRIVE, and DOOR MIRRORS 02 or DOOR MIRRORS 03

❏ Remove the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

❏ Remove:

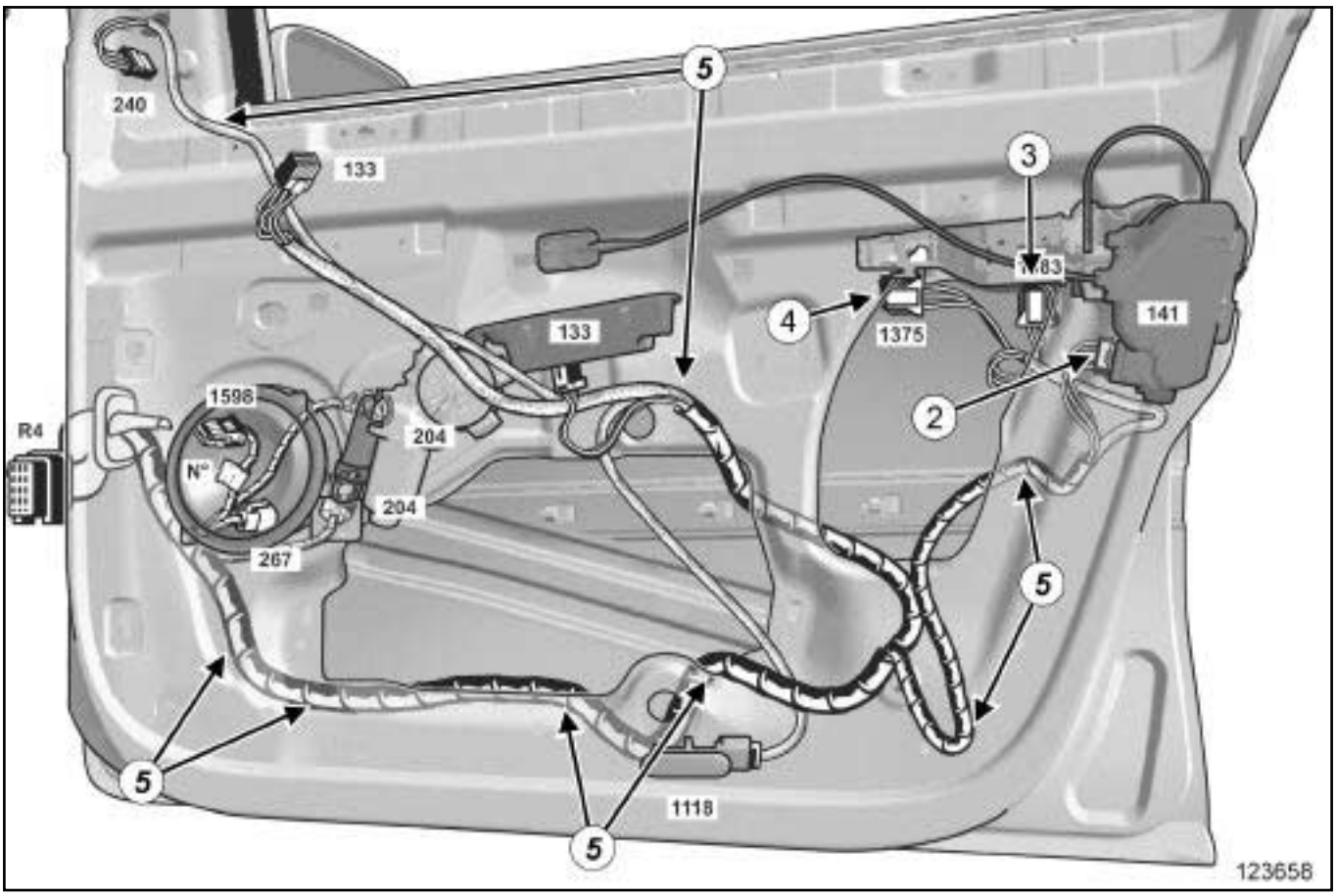
- the side door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the side indicator.



111934

❏ Remove the three door lock bolts (**1**) .

II - REMOVAL OF PART CONCERNED



123658

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

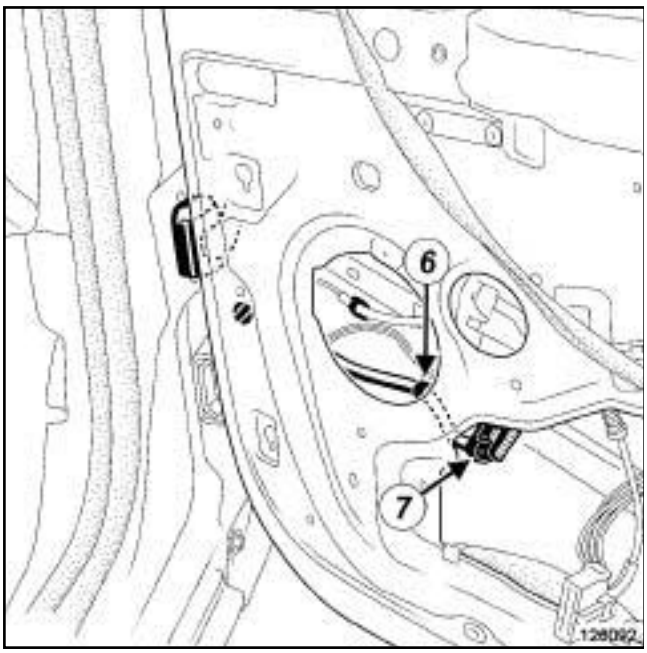
❑ Disconnect the door lock connector (**2**) .

VEHICLE WITH CARD

❑ Disconnect the presence detector connector ***(3)*** .

❑ Disconnect the opening aerial connector ***(4)*** .

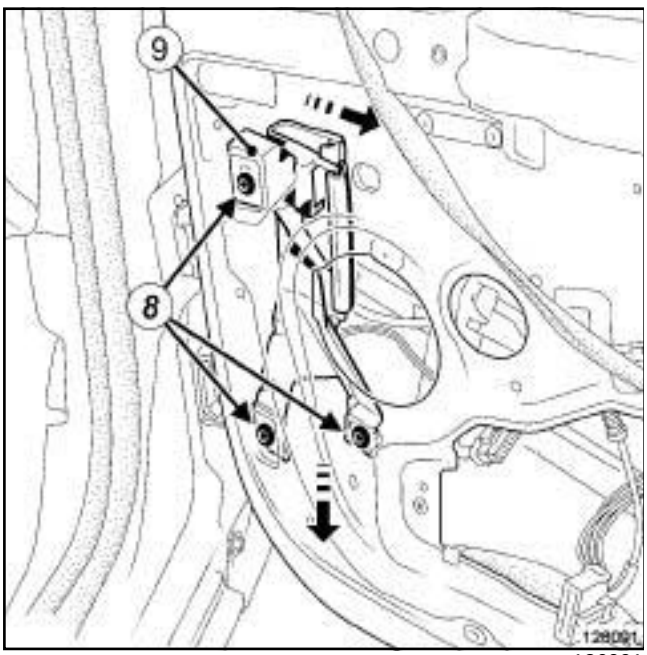
ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL



126092

❏ Remove clip (**6**) .

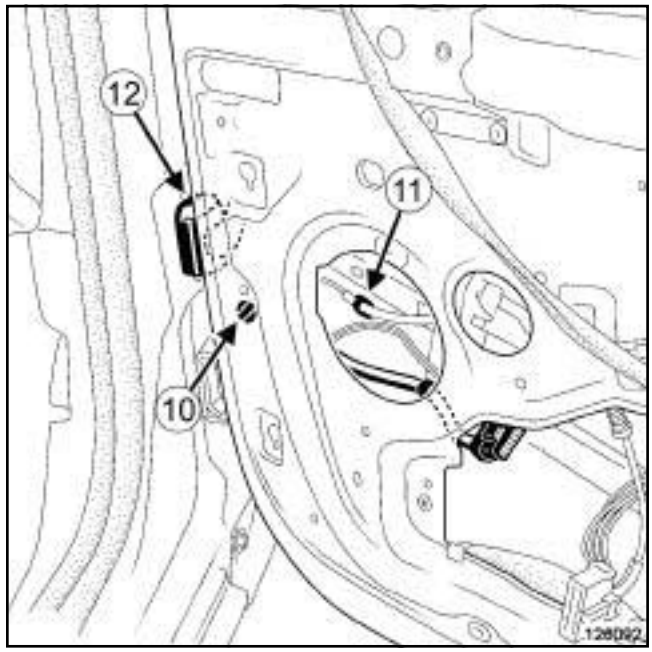
❏ Disconnect the electric window motor connector (**7**) .



126091

❏ Remove:

- The three bolts (**8**) of the front offset frame (**9**) .
- The front offset frame (**9**) , by lowering it, then pivoting it and removing it through the speaker mounting hole.



126092

❏ Remove the clips (**10**) and (**11**) .

❏ Disconnect the door connector (**12**) .

❏ Remove all of the clips ***(5)*** using a pair of unclipping pliers.

❏

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

❏ Remove the wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more complete wiring, immobilise the unused connectors (see **Connector: Sealing and locking**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING PART CONCERNED

❏ Refit the wiring, respecting the original routing.

❏ Clip all the clips into place ***(5)*** .

❏ Refit:

- The front offset frame.
- The three bolts of the front offset frame.

ELECTRIC FRONT WINDOW or ONE-TOUCH ELECTRIC FRONT WINDOW or PASSENGER ELECTRIC ONE-TOUCH WINDOW CONTROL

❏ Clip on the clip ***(6)*** .

❏ Connect the electric window motor connector.

VEHICLE WITH CARD

❏ Connect the opening aerial connector.

❏ Connect the presence sensor connector.

❏ Connect the tailgate lock connector.

❏ Connect the door connector ***(12)*** .

❏ Clip on the clips ***(10)*** and ***(11)*** .

❏ Refit:

- the three door lock bolts,
- the side indicator,
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the side door trim (see **Front side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

RIGHT-HAND DRIVE, and DOOR MIRRORS 02 or DOOR MIRRORS 03

❏ Refit the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

LEFT-HAND DRIVE

❏ Refit the door mirror (see **Door mirror: Removal - Refitting**) (MR 393, 56A, Exterior equipment),

❏ Refit the front speaker (see **86A**, **Radio**, **Front speakers: Removal - Refitting**, page **86A-14**) .

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

B85 or K85

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Raise the window fully.

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING

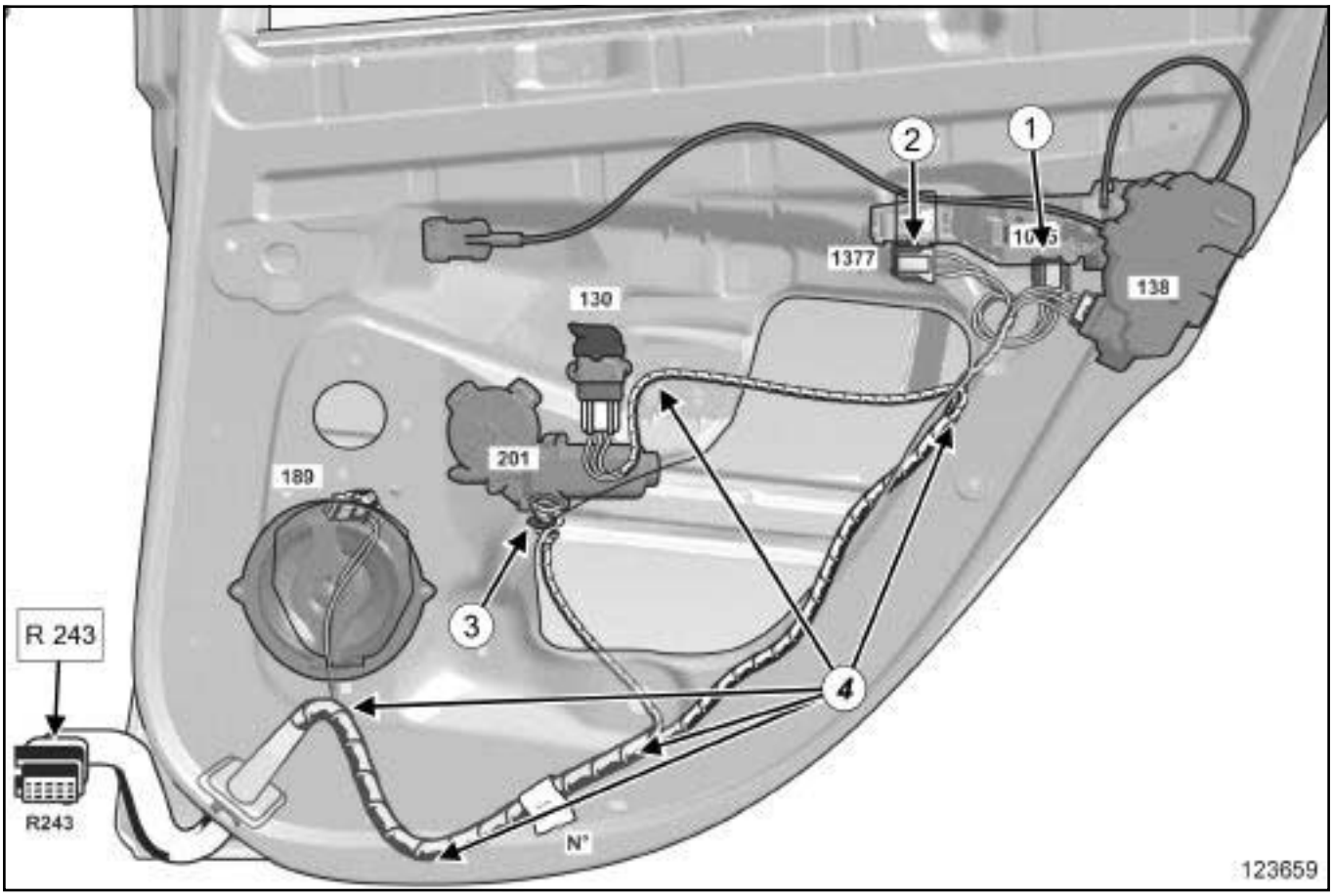
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove:

- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),
- the rear speaker (see **86A**, **Radio**, **Rear speakers: Removal - Refitting**, page **86A-15**) .
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the rear side door lock (see **Rear side door lock: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms).

B85 or K85

II - OPERATION FOR REMOVAL OF PART CONCERNED



123659

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

❑ Disconnect R 243 connector which connects the rear left-hand wiring/right-hand rear door.

VEHICLE WITH CARD

❑ Disconnect:

- the presence detector connector ***(1)*** ,
- the opening aerial connector ***(2)*** .

ELECTRIC REAR WINDOW

❑ Disconnect the ***(3)*** rear side door electric window winder mechanism connector.

❑ Unclip the rear side door wiring at ***(4)*** .

❑ Remove the rear side door wiring.

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

B85 or K85

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rear side door wiring.

❏ Clip the rear side door wiring into place ***(4)*** .

ELECTRIC REAR WINDOW

❏ Connect the rear side door electric window mechanism connector.

VEHICLE WITH CARD

❏ Connect:

- the opening aerial connector,
- the presence detector connector.

❏ Connect the R 243 connector to connect the rear left-hand wiring / right-hand rear door wiring.

III - FINAL OPERATION.

❏ Refit:

- the rear side door lock (see **Rear side door lock: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms),
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the rear speaker (see **86A**, **Radio**, **Rear speakers: Removal - Refitting**, page **86A-15**) .
- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

Rear left-hand side door wiring: Removal - Refitting

B85 or K85

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Raise the window fully.

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING

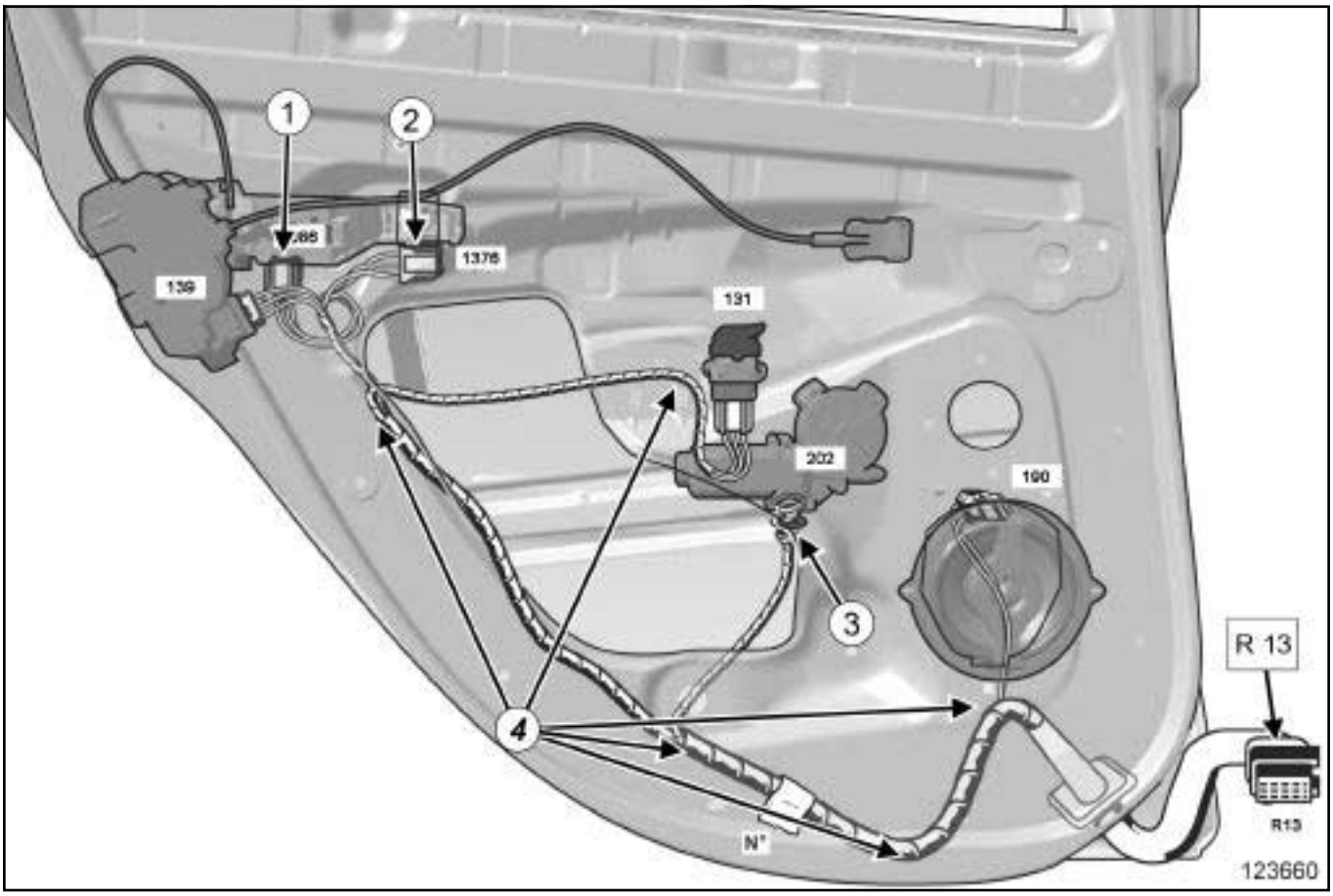
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove:

- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),
- the rear speaker (see **86A**, **Radio**, **Rear speakers: Removal - Refitting**, page **86A-15**) ,
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the rear side door lock (see **Rear side door lock: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms).

B85 or K85

II - OPERATION FOR REMOVAL OF PART CONCERNED



123660

❑

WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.

❑ Disconnect the R 13 connector for connection of rear left-hand wiring/left-hand rear door.

VEHICLE WITH CARD

❑ Disconnect:

- the presence detector connector ***(1)*** ,
- the opening aerial connector ***(2)*** .

ELECTRIC REAR WINDOW

❑ the ***(3)*** rear side door electric window winder mechanism connector.

❑ Unclip the rear side door wiring in ***(4)*** .

❑ Remove the rear side door wiring.

WARNING

To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

B85 or K85

REFITTING

I - REFITTING PREPARATION OPERATION

❏ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rear side door wiring.

❏ Clip on the rear side door wiring ***(4)*** .

ELECTRIC REAR WINDOW

❏ Connect the rear side door electric window winder mechanism connector.

VEHICLE WITH CARD

❏ Connect:

- the opening aerial connector,
- the presence detector connector.

❏ Connect the rear left-hand wiring/left rear door R 13 connector.

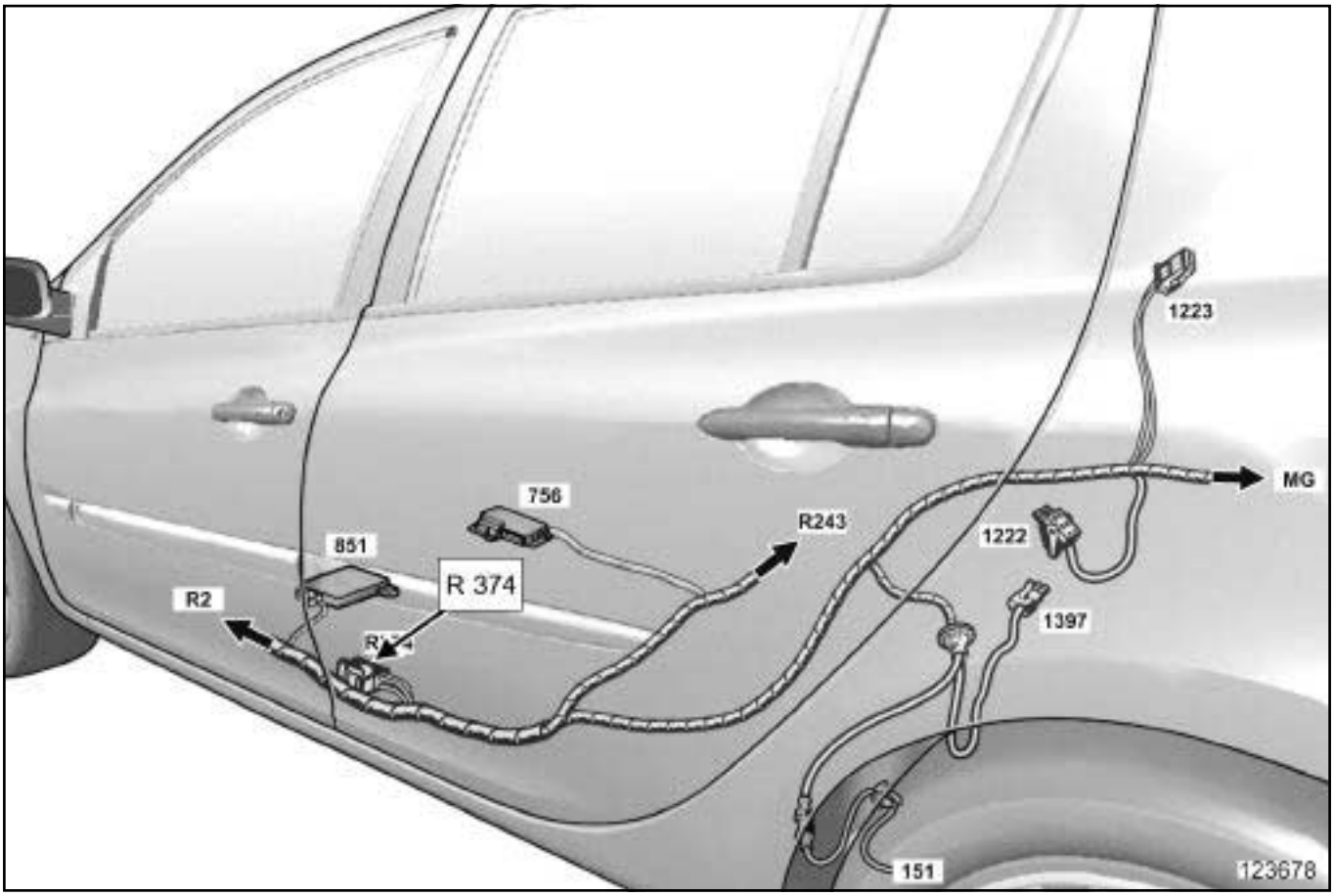
III - FINAL OPERATION.

❏ Refit:

- the rear side door lock (see **Rear side door lock: Removal - Refitting**) (MR 393, 51A, Side opening element mechanisms).
- the door sealing film (see **Door sealing film: Removal - Refitting**) (MR 393, 65A, Opening element sealing),
- the rear speaker (see **86A**, **Radio**, **Rear speakers: Removal - Refitting**, page **86A-15**) ,
- the rear side door trim (see **Rear side door trim: Removal - Refitting**) (MR 393, 72A, Side opening element trim),

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

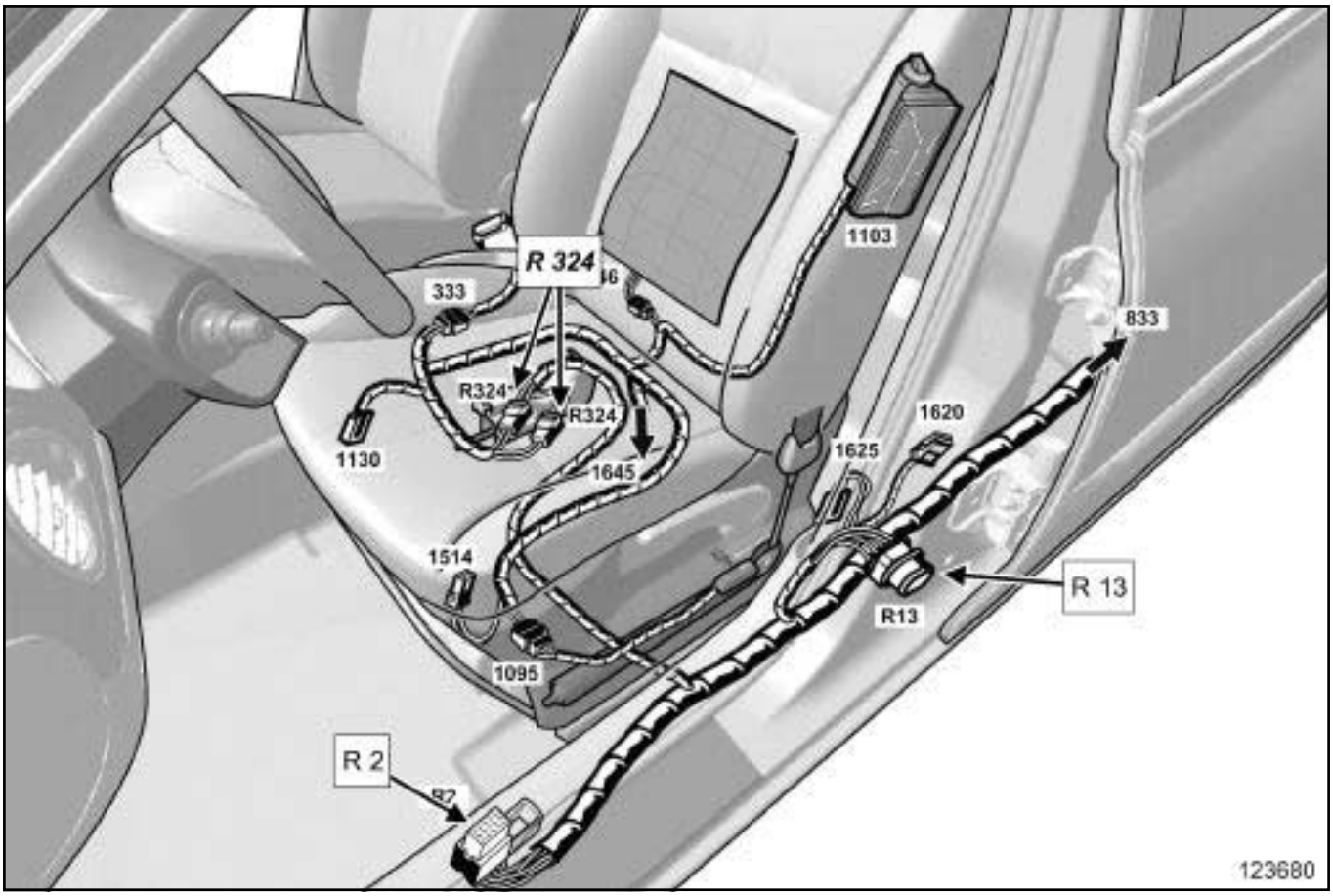
I - LOCATION OF CONNECTORS



123678

❑ R 374 connectors (left-hand rear wiring/front wiring connection).

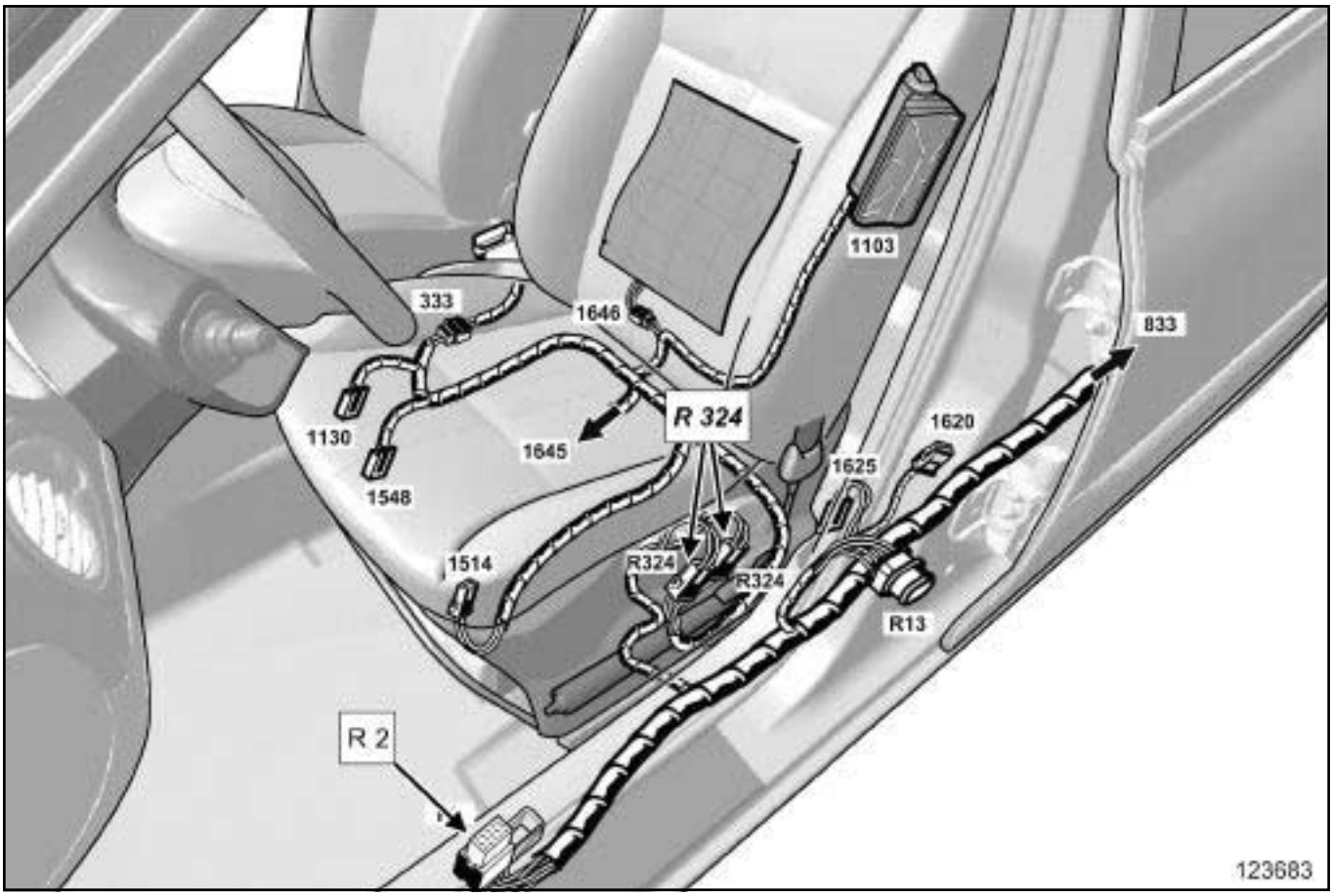
B85 or K85



123680

- R 2 connector (left-hand rear wiring/dashboard wiring connection).
- R 13 connector (left-hand rear wiring/left-hand rear door wiring connection).
- R 324 connector (left-hand rear wiring/left-hand front seat electrical function wiring connection).

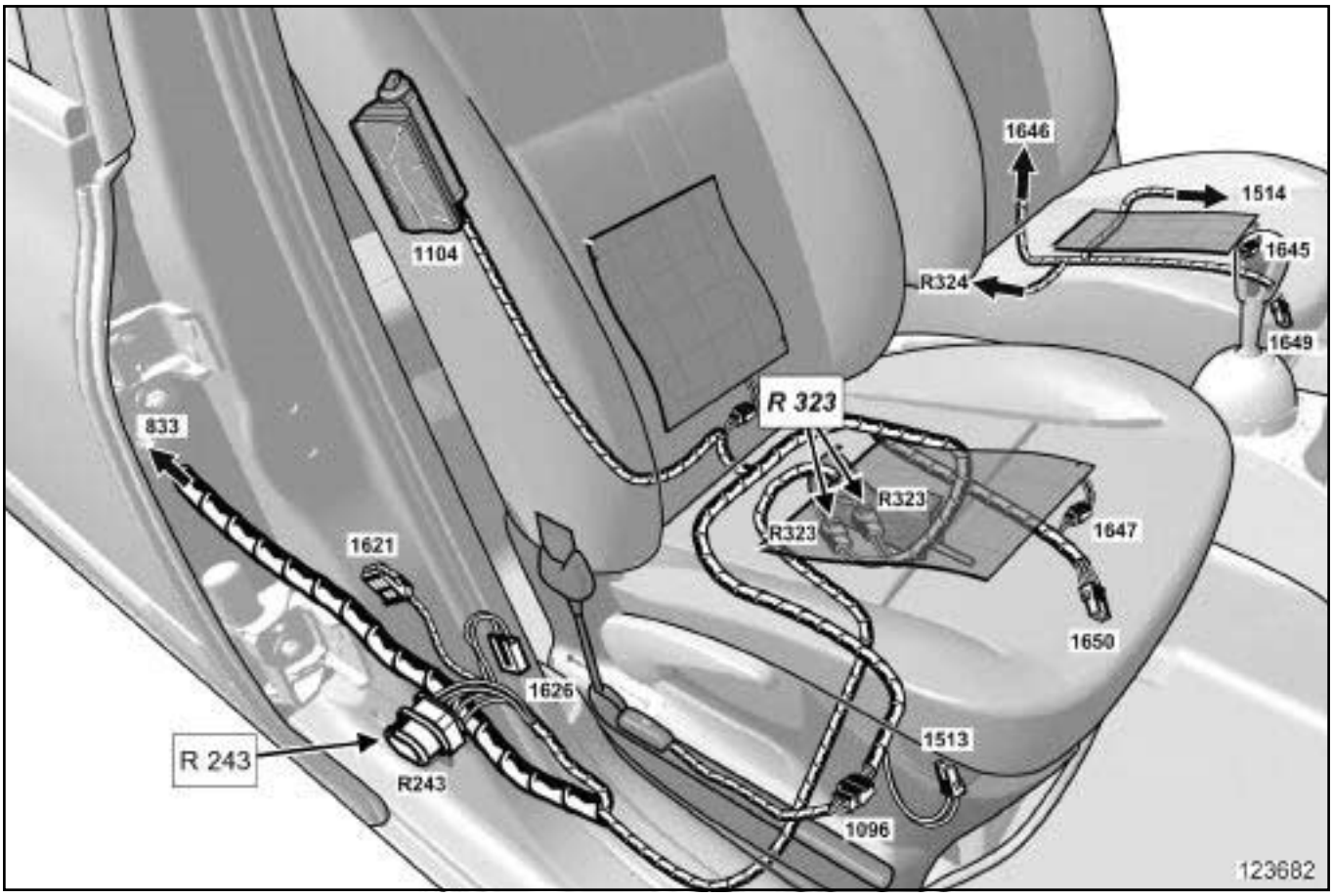
C85 or S85



123683

- R 2 connector (left-hand rear wiring/dashboard wiring connection).
- R 324 connector (left-hand rear wiring/left-hand front seat electrical function wiring connection).

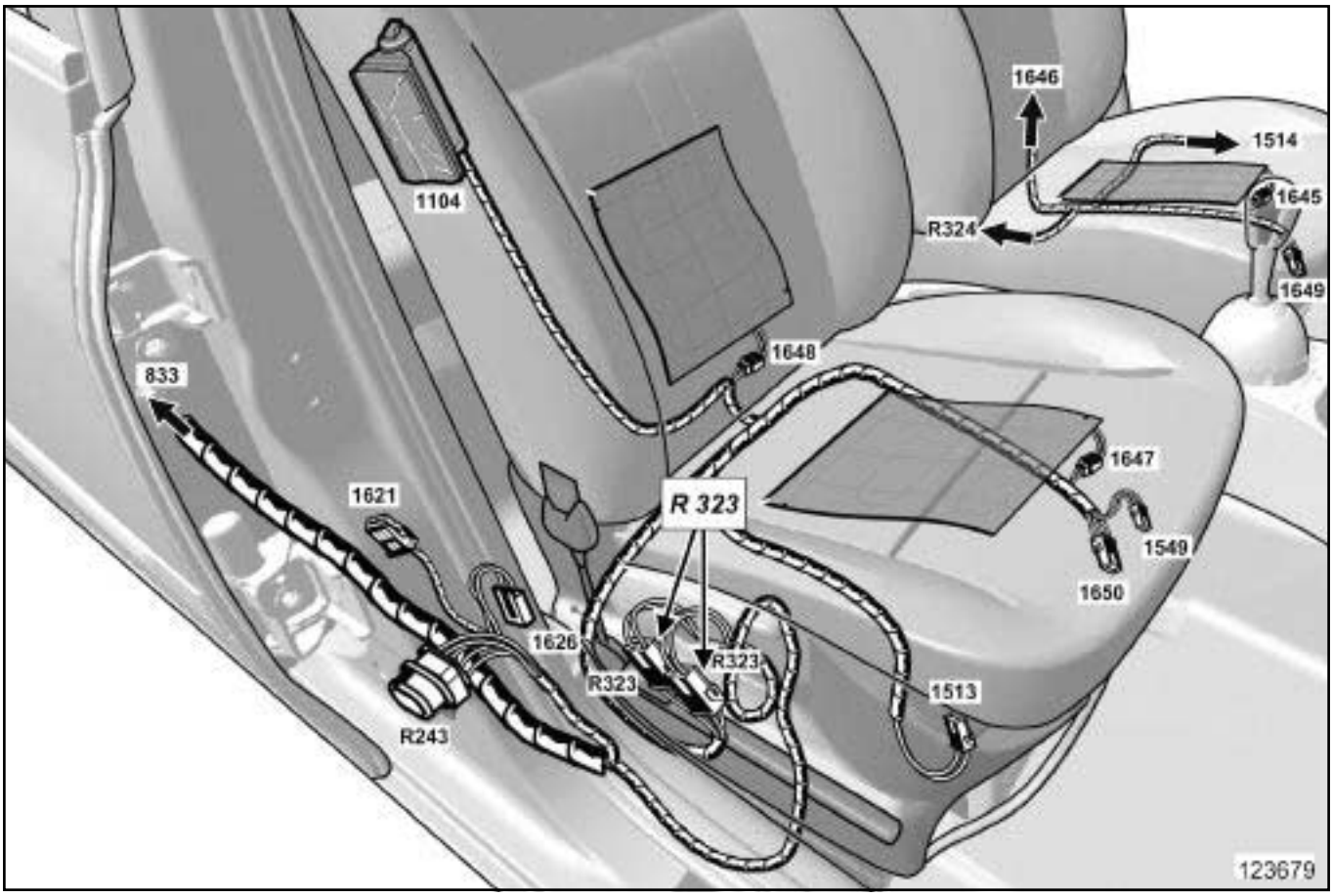
B85 or K85



123682

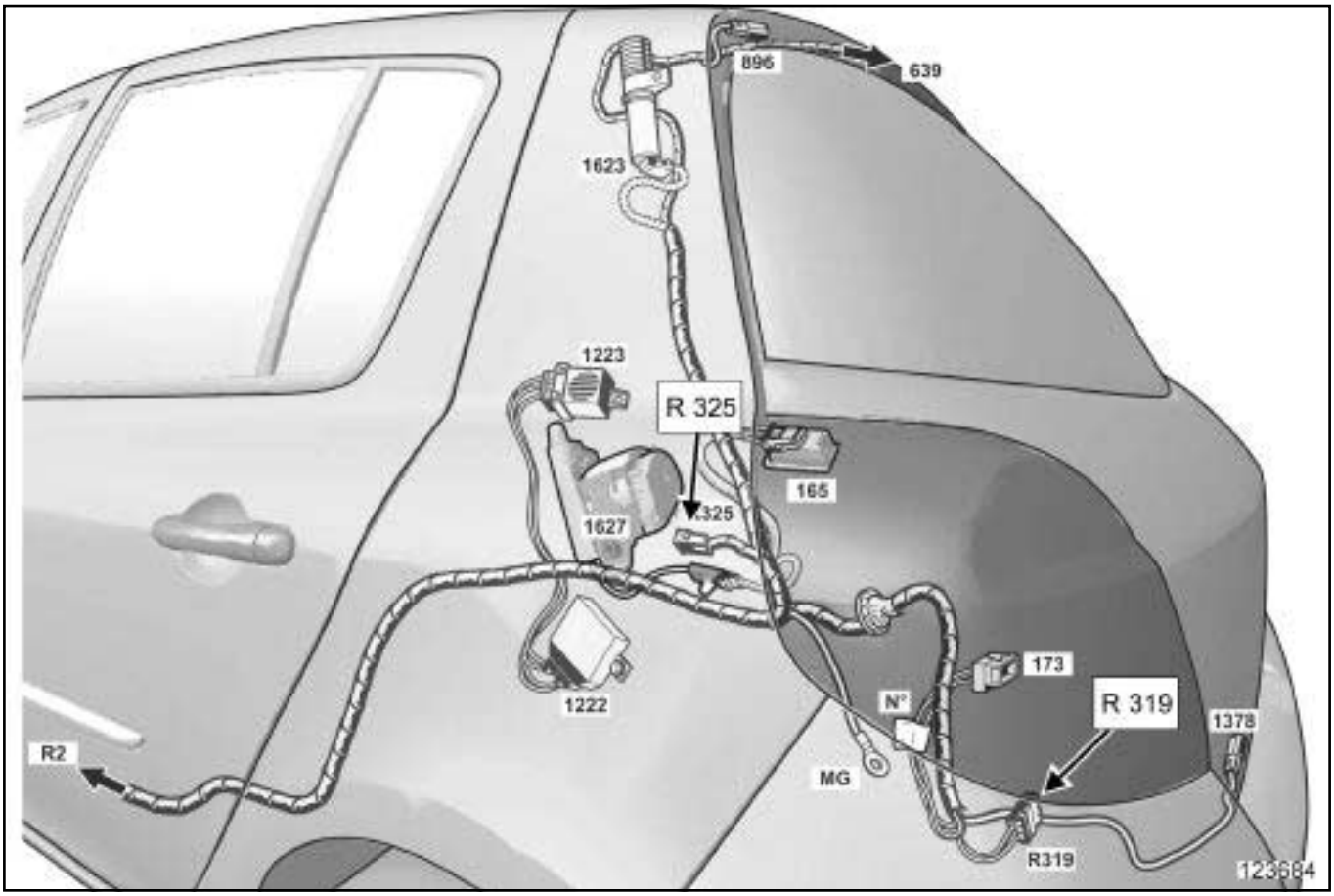
- R 243 connector (left-hand rear wiring/right-hand rear door wiring).
- R 323 connector (left-hand rear wiring/right-hand front seat electrical functions wiring connection).

C85 or S85



123679

❑ R 323 connector (left-hand rear wiring/right-hand front seat electrical functions wiring connection).



123684

❑ R 319 connector (left-hand rear wiring/rear bumper wiring connection).

❑ R 325 connector (left-hand rear wiring/second fitting alarm wiring).

II - ACCESS TO CONNECTORS

❑

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Switch off the ignition.

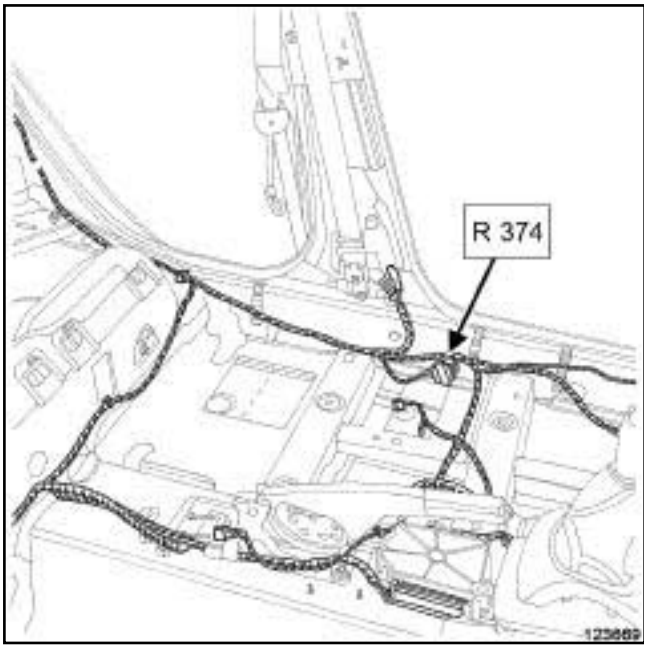
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

1 - Access to the R 374 connectors

❑ Remove the left-hand front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Partially remove the front centre floor carpet,

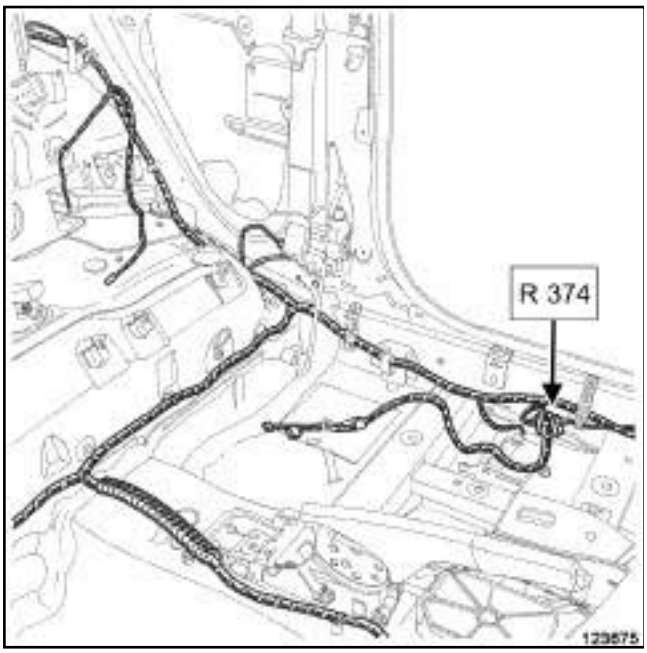
B85 or K85



123669

❏ Disconnect the R 374 connector.

C85 or S85



123675

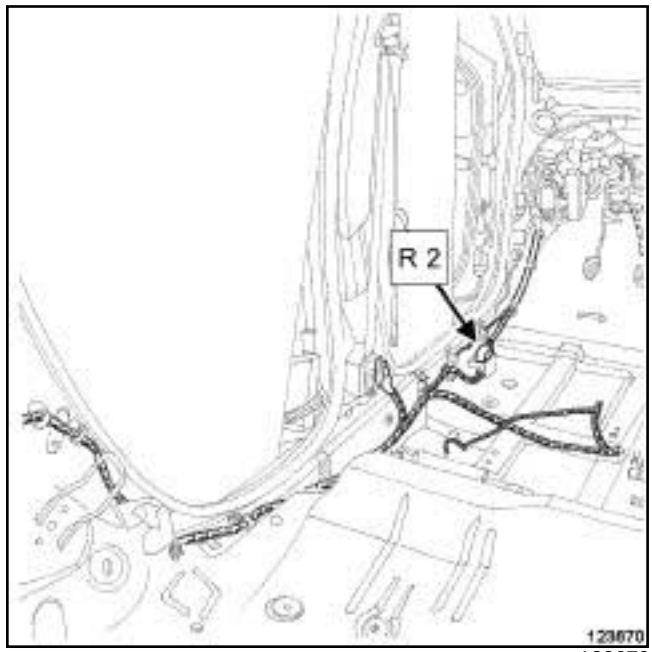
❏ Disconnect the R 374 connector.

2 - Access to the R 2 connector

❏ Remove the left-hand front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❏ Partially remove the front centre floor carpet,

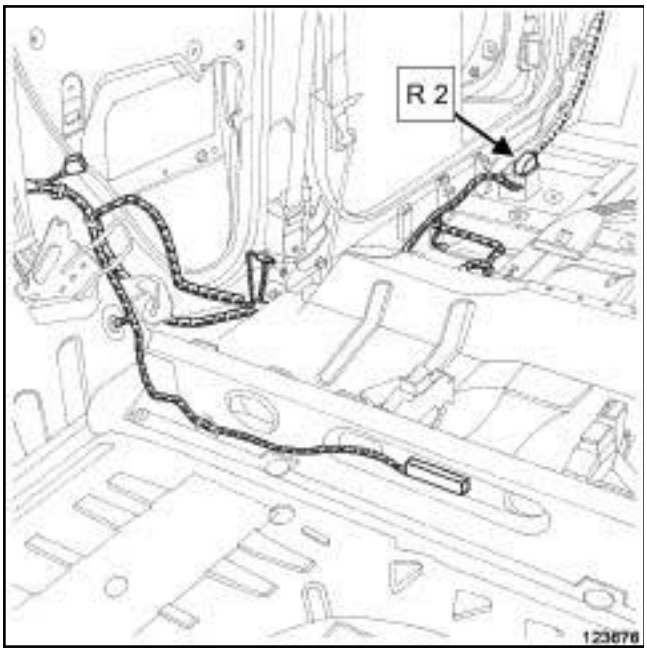
B85 or K85



123670

❏ Disconnect the R 2 connector.

C85 or S85

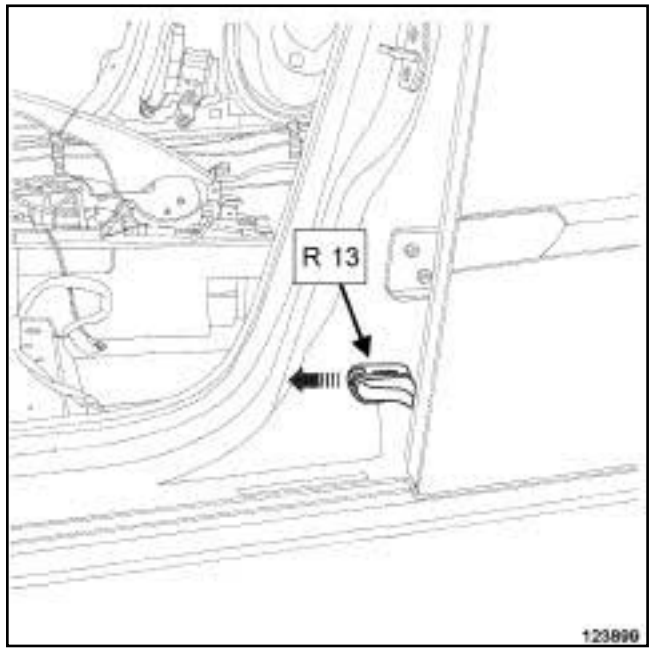


123676

❏ Disconnect the R 2 connector.

3 - Access to the R 13 connector

B85 or K85

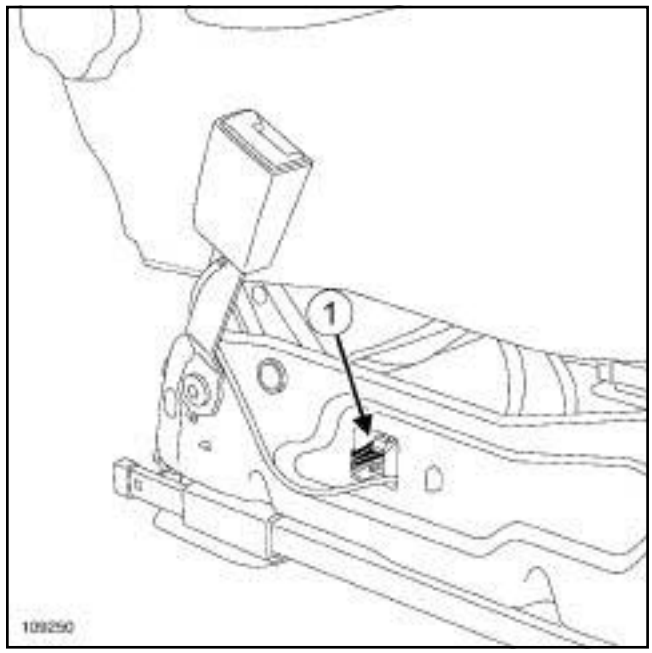


123899

❏ Disconnect the R 13 connector.

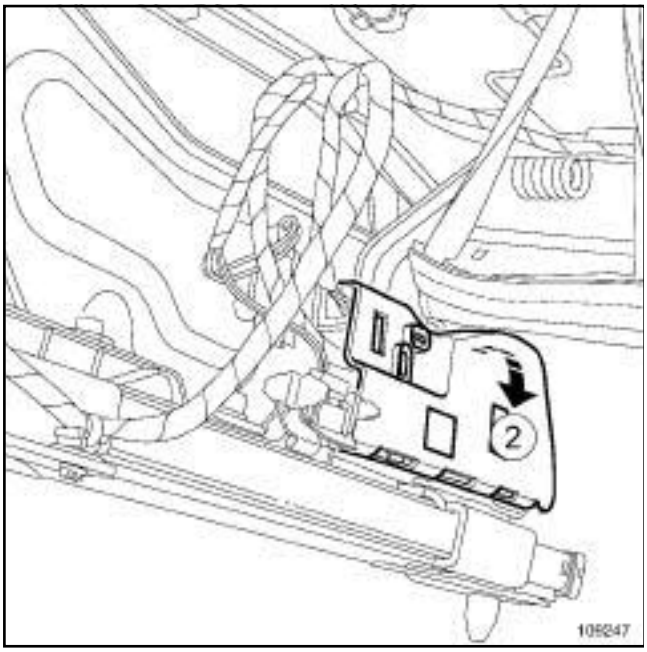
4 - Access to the R 324 connectors

B85 or K85



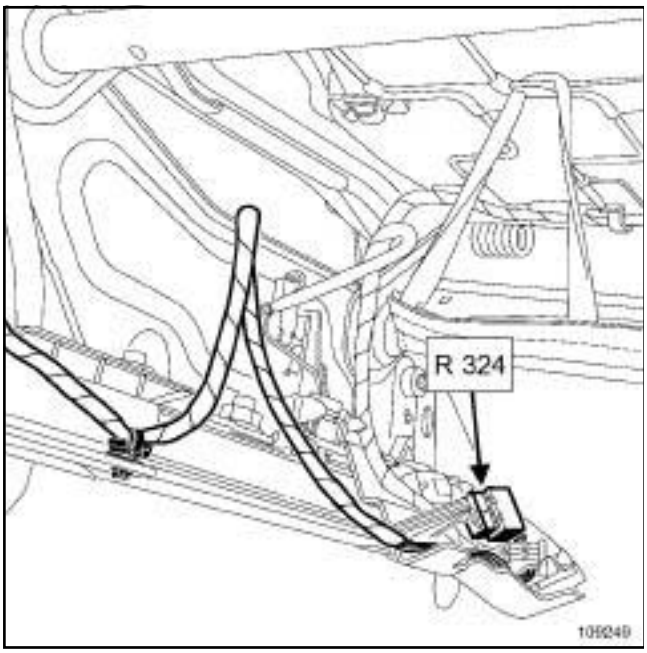
109250

❏ Unfasten clip (**1**) .



109247

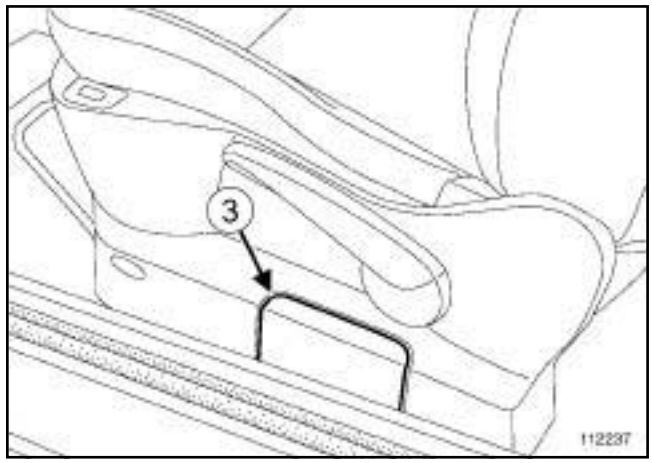
❏ Open the connector access flap (**2**) .



109249

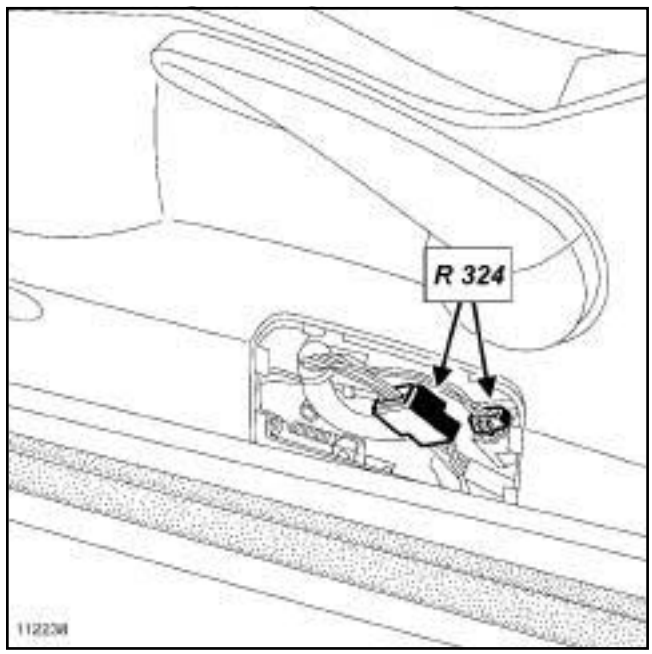
❏ Disconnect the R 324 connector.

C85 or S85



112237

❏ Remove the connectors access flap (**3**) .

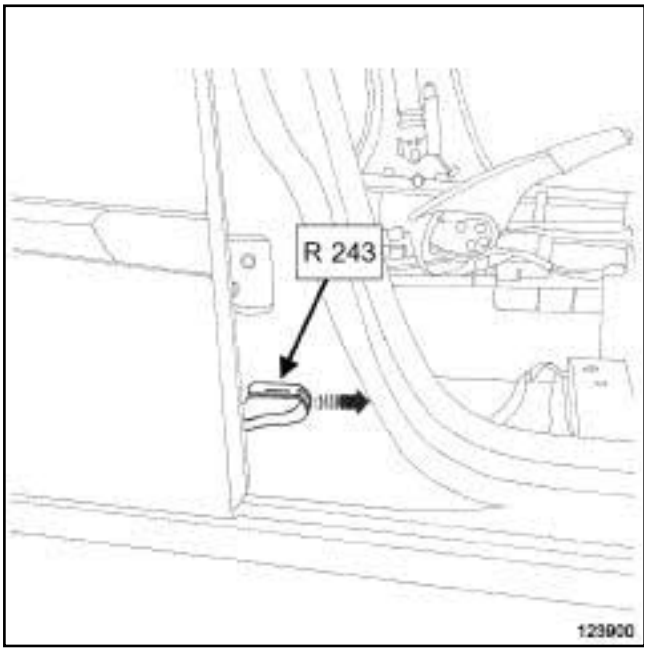


112238

❏ Disconnect the R 324 connectors.

5 - Access to the R 243 connector

B85 or K85

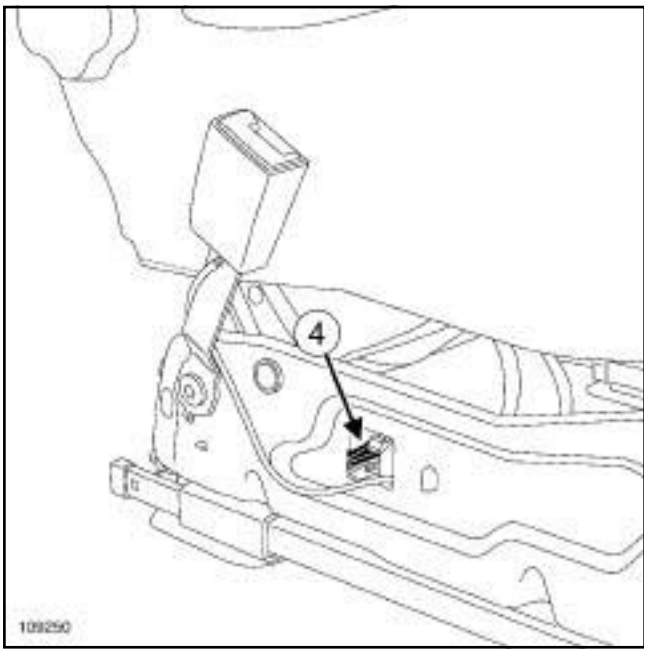


123900

❏ Disconnect the R 243 connector.

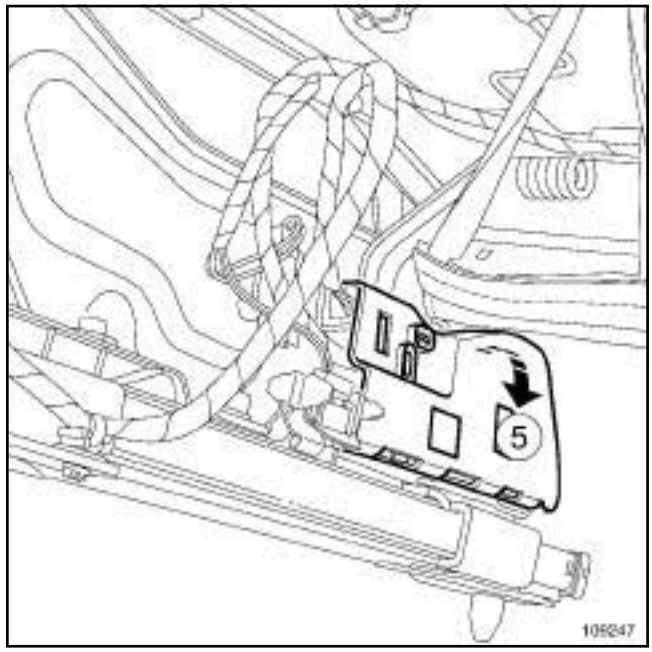
6 - Access to the R 323 connectors

B85 or K85



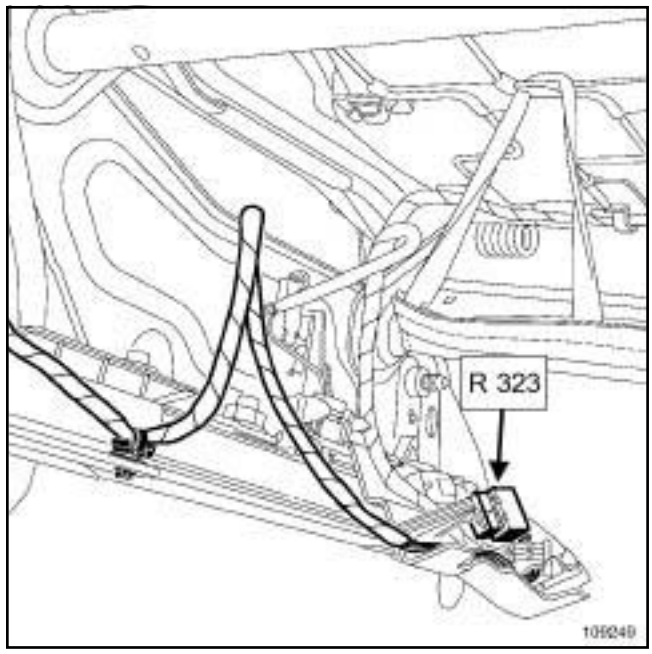
109250

❏ Unfasten clip (**4**) .



109247

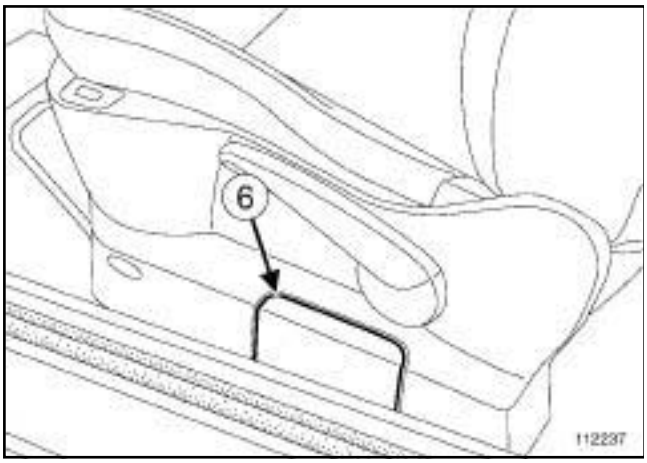
❏ Open the connector access flap (**5**) .



109249

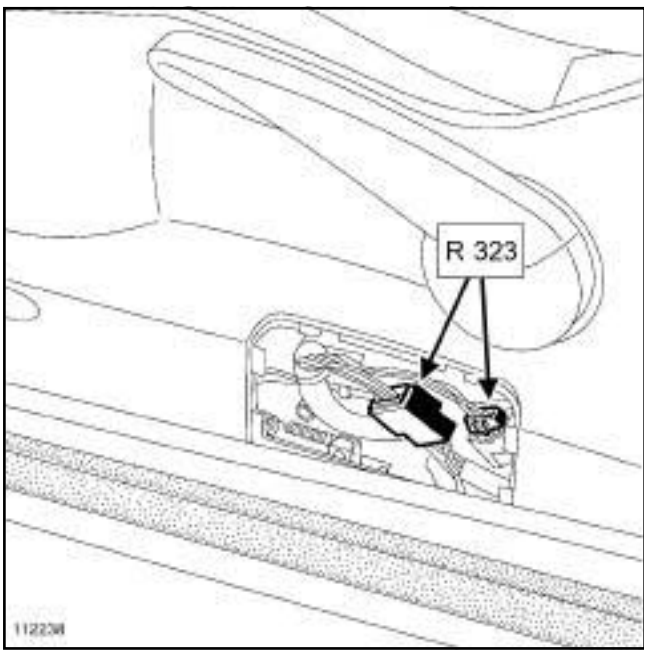
❏ Disconnect the R 323 connector.

C85 or S85



112237

❑ Remove the connectors access flap (**6**) .

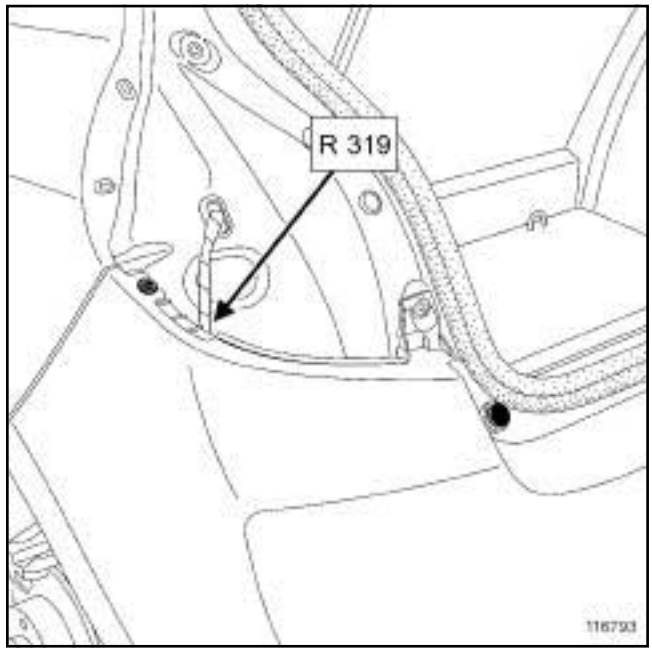


112238

❑ Disconnect the R 323 connectors.

7 - Access to the R 319 connector

❑ Remove the rear light on the left rear wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .



116793

❑ Disconnect the R 319 connector.

8 - Access to the R 325 connector

B85 or K85

❑ Remove:

- the left-hand rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear left-hand wheel arch liner (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

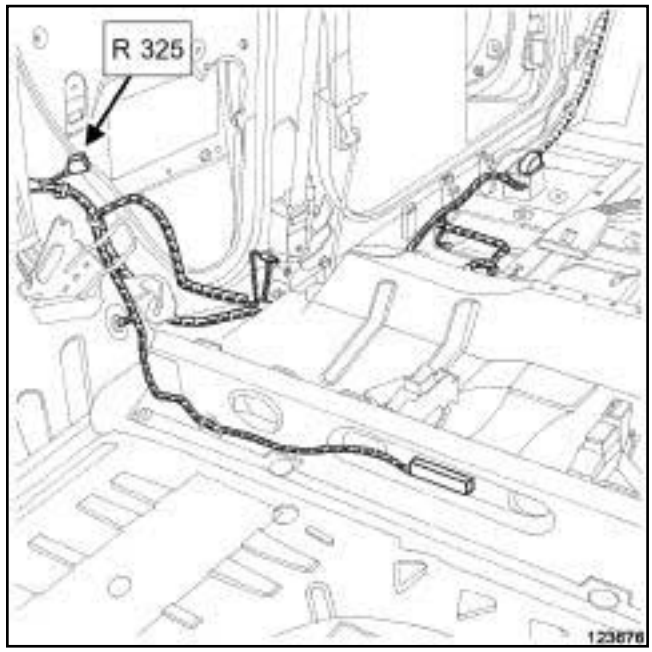
123902

❑ Disconnect the R 325 connector.

C85 or S85

❑ Remove:

- the left-hand rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear left-hand wheel arch liner (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).



123676

❑ Disconnect the R 325 connector.

B85 or K85

Equipment required
Diagnostic tool

Tightening torques ▽	
earth terminal nuts	**8 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Lock the airbag computer using the **Diagnostic tool** (see **MR 394 Electricity, 88C, Airbags and pretensioners).**

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING
To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove:

- the front seats (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),
- the rear bench seat base (see **Single unit rear bench seat base: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the rear bench seatback (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the quarter panel trims (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the wheel arch trims (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front door sill inner trims (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear door sill trims (see **Rear door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the rear centre floor carpet (see **Centre floor rear carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front centre floor carpet (see **Centre floor front carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre floor lateral soundproofing (see **Centre floor side soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the centre floor rear soundproofing (see **Centre floor rear soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),

B85 or K85

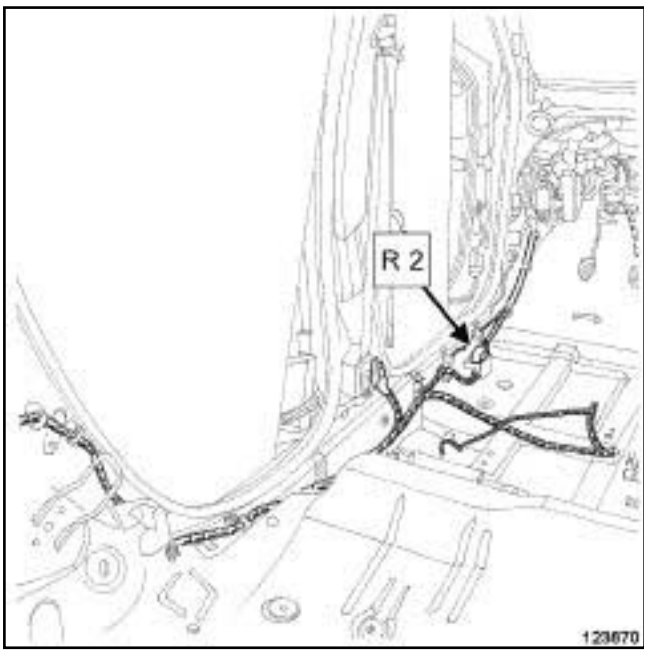
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

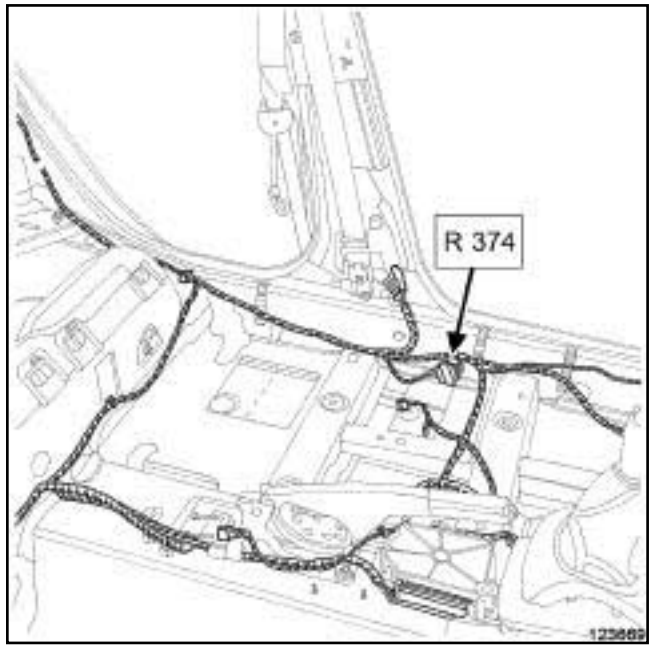
WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.



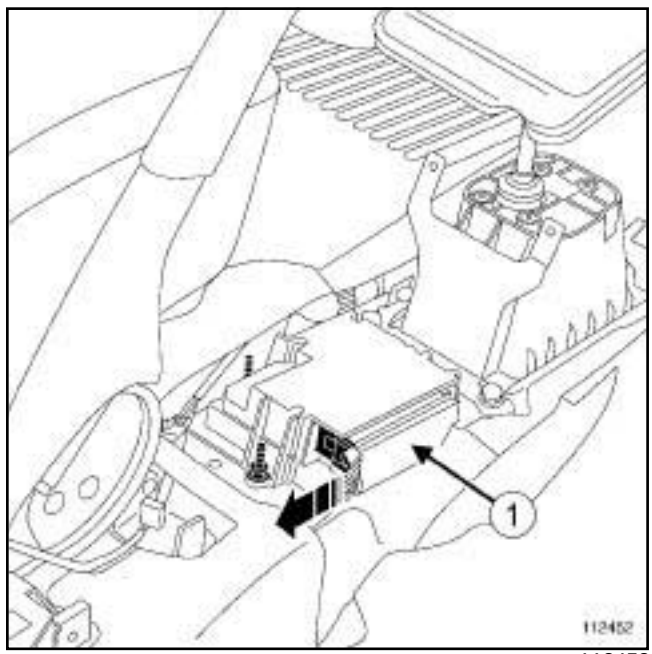
123670

❑ Disconnect the R 2 connector.



123669

❑ Disconnect the R 374 connector.

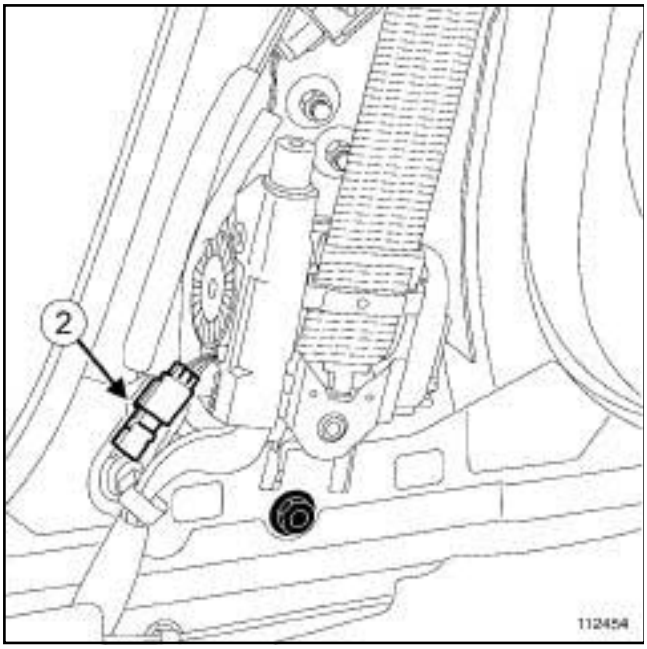


112452

❑ Unclip the lock from the airbag computer connector.

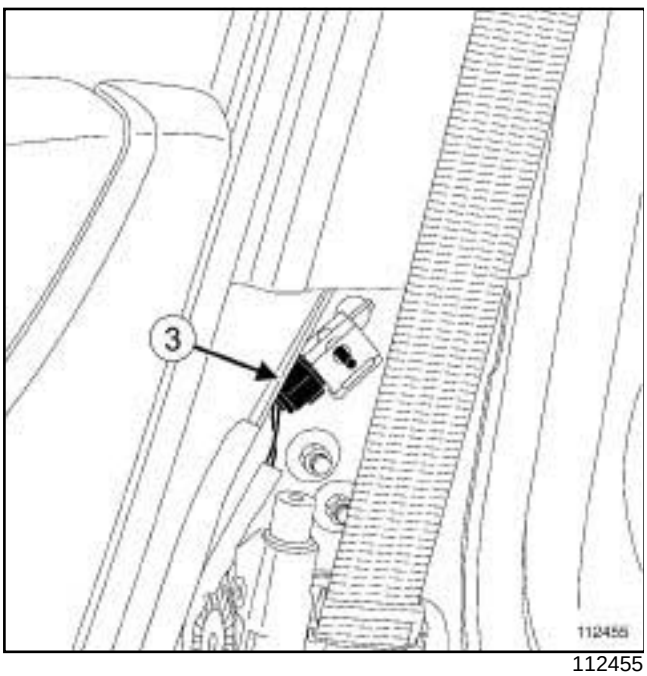
❑ Disconnect the (**1**) airbag computer connector.

B85 or K85



112454

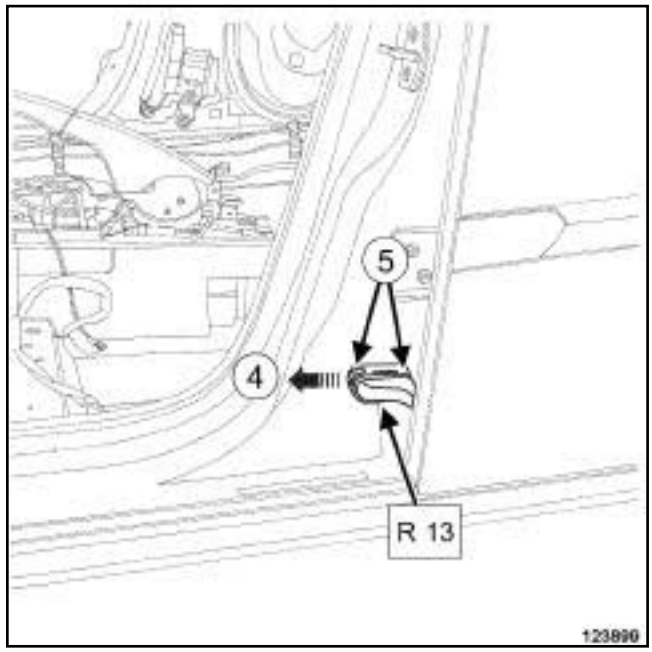
❏ Disconnect the connector (**2**) from the front right-hand and left-hand pyrotechnic inertia reel.



112455

❏ Disconnect the connector (**3**) from the right-hand and left-hand impact sensor.

LEFT-HAND DRIVE



123899

❏ Unclip the lock (**4**) from the R 13 connector.

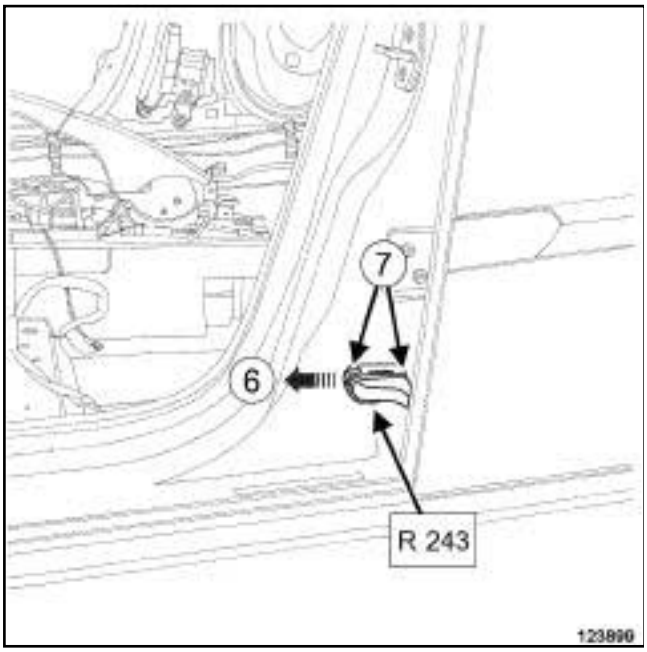
❏ Disconnect the R 13 connector.

❏ Remove the bolts (**5**) of the R 13 connector.

❏ Extract the wiring of the B-pillar.

B85 or K85

RIGHT-HAND DRIVE



123899

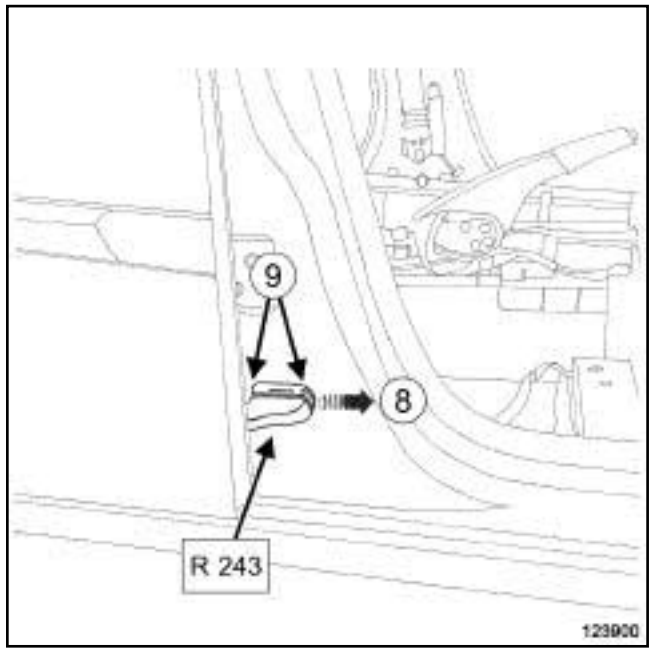
❏ Unclip the lock (**6**) from the R 243 connector.

❏ Disconnect the R 243 connector.

❏ Remove the bolts (**7**) of the R 243 connector.

❏ Extract the wiring of the B-pillar.

LEFT-HAND DRIVE



123900

❏ Unclip the lock (**8**) from the R 243 connector.

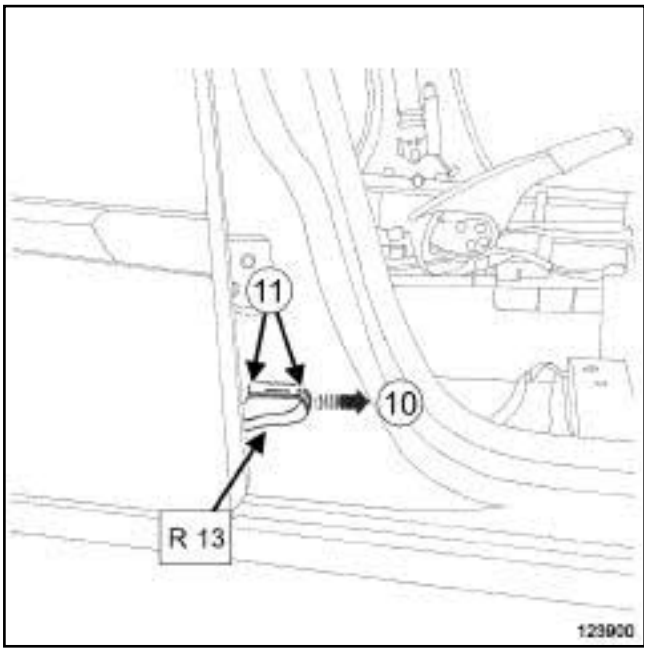
❏ Disconnect the R 243 connector.

❏ Remove the bolts (**9**) of the R 243 connector.

❏ Extract the wiring of the B-pillar.

B85 or K85

RIGHT-HAND DRIVE



123900

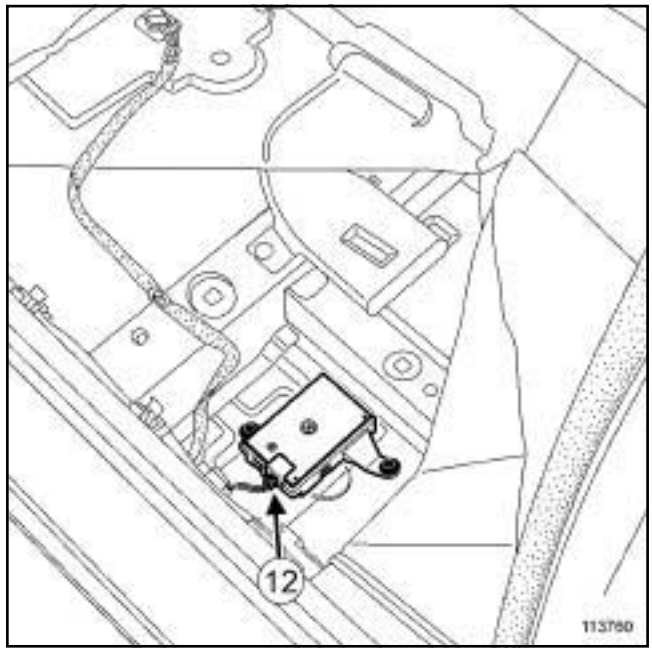
❏ Unclip the lock (**10**) from the R 13 connector.

❏ Disconnect the R 13 connector.

❏ Remove the bolts (**11**) of the R 13 connector.

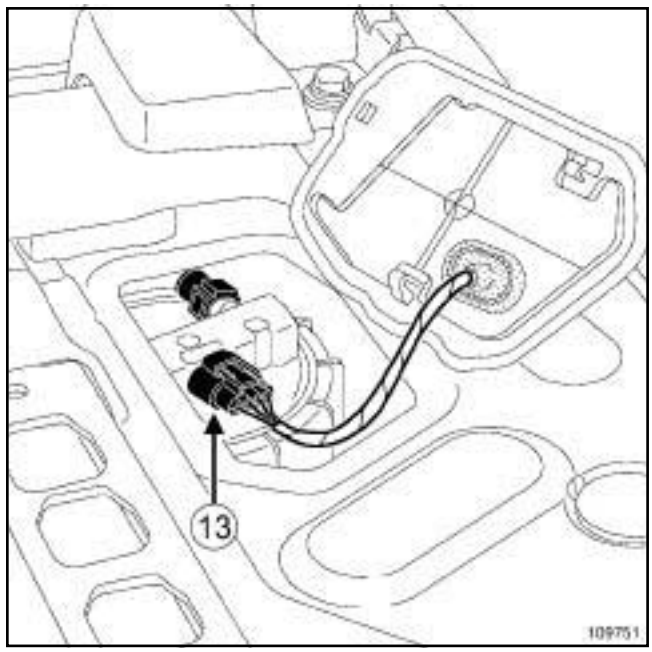
❏ Extract the wiring of the B-pillar.

TYRE PRESSURE SENSOR



113760

❏ Disconnect the connector (**12**) from the tyre pressure monitoring system computer.



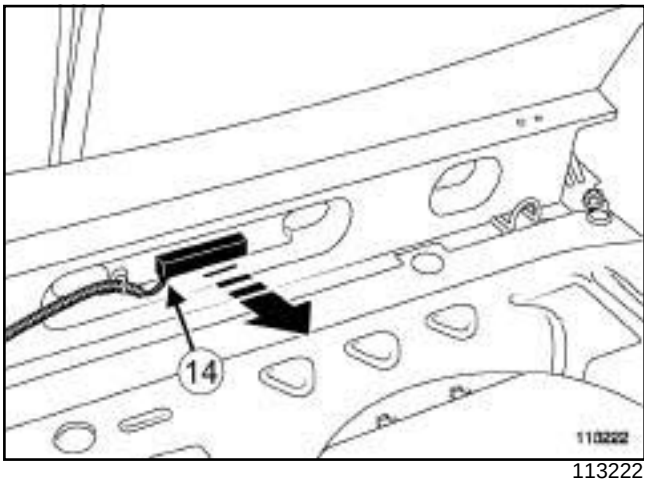
109751

❏ Open the fuel gauge flap.

❏ Disconnect the connector (**13**) from the fuel gauge.

B85 or K85

VEHICLE WITH CARD



113222

❏ Disconnect the (**14**) rear starter aerial connector.

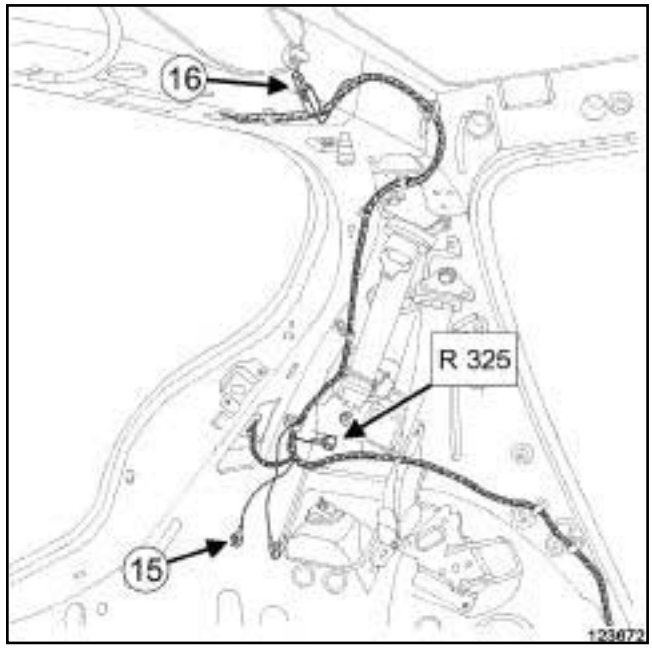
ELECTRONIC STABILITY PROGRAM

❏ Remove the front right and left-hand wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

❏ Unclip the rear right-hand and left-hand wheel speed sensor clip.

❏ Disconnect the connector of the rear right-hand and left-hand wheel speed sensor.

❏ Extract the wiring under body.



123672

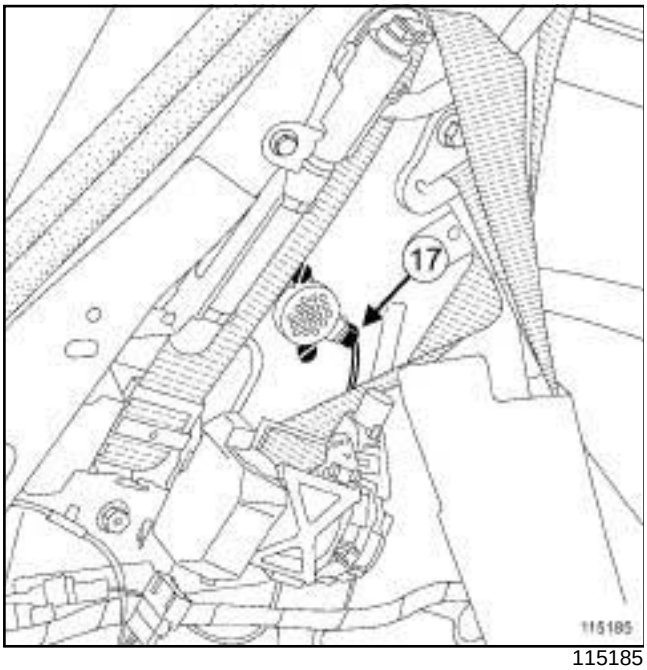
❏ Remove the nut (**15**) from the earth terminal.

❏ Disconnect:

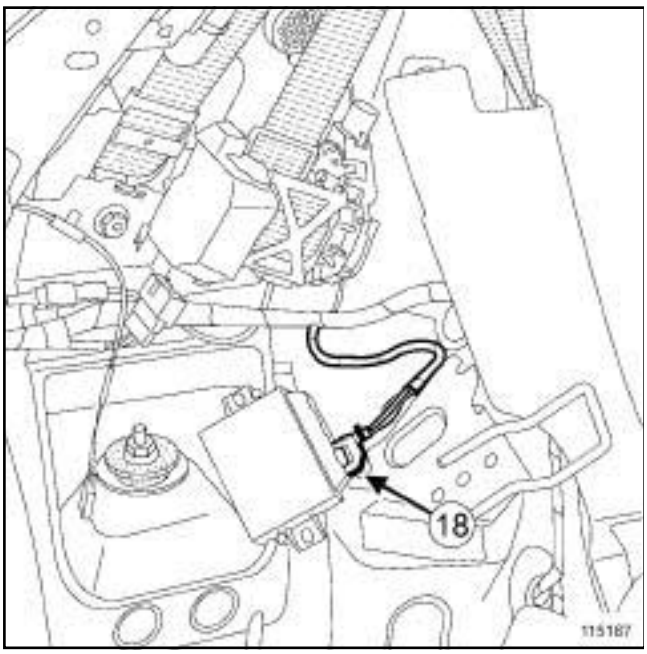
- the earth terminal,
- the radio aerial (**16**) connector.
- the R 325 connector.

B85 or K85

PROXIMITY RADAR



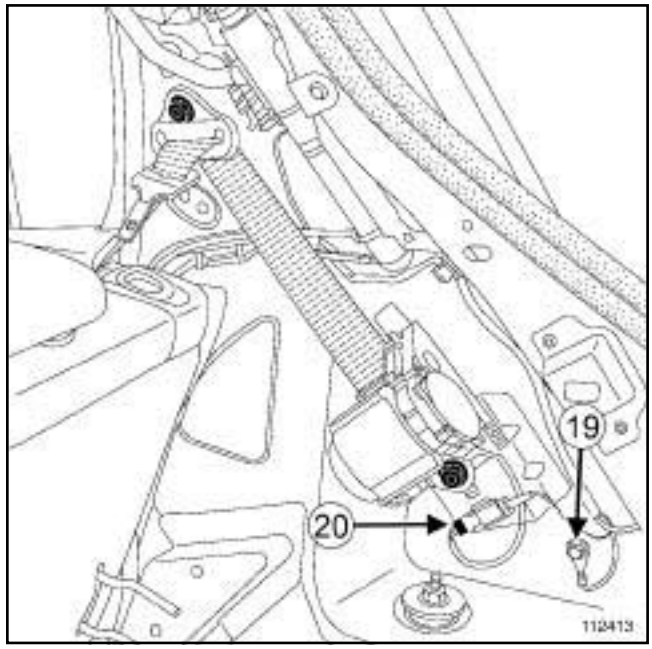
115185



115187

❏ Disconnect the connector (**17**) from the parking distance control buzzer.

❏ Remove the parking distance control computer to disconnect its connector (**18**) (see **87F**, **Parking distance control**, **Parking distance control computer: Removal - Refitting**, page **87F-6**) .

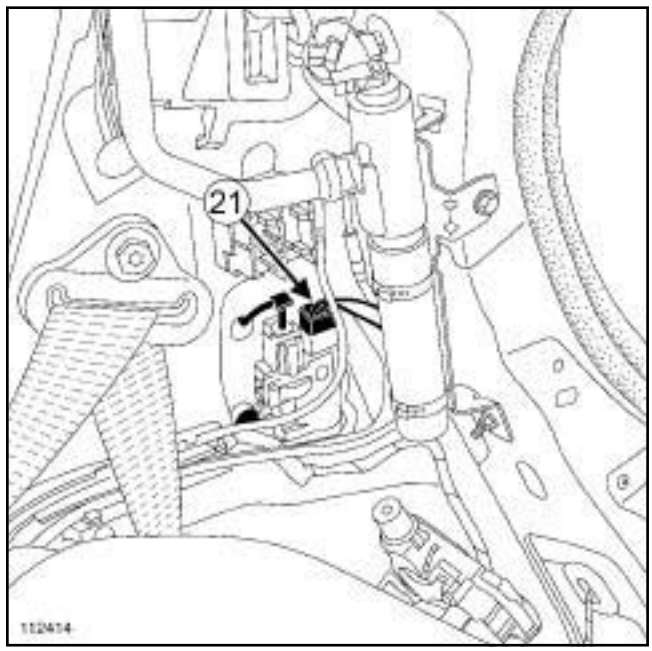


112413

❏ Remove the nut (**19**) from the earth terminal.

❏ Disconnect:

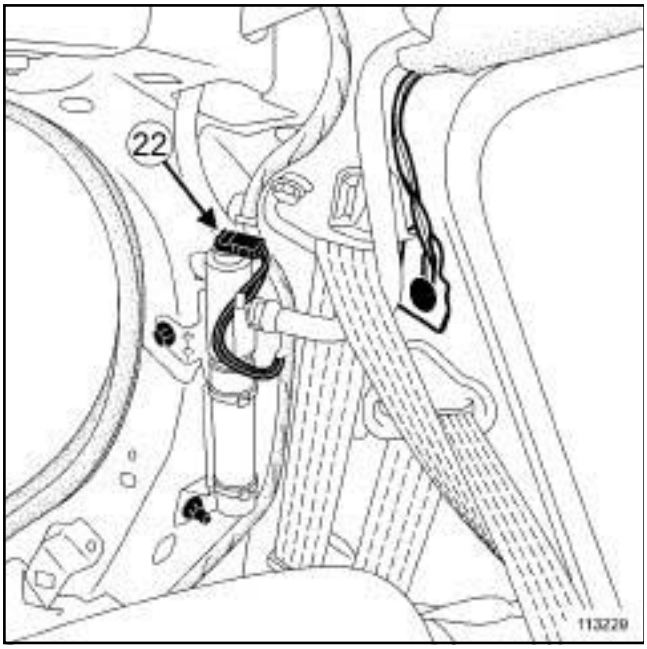
- the connector (**20**) of the right-hand and left-hand pyrotechnic inertia reel,
- the earth terminal.



112414

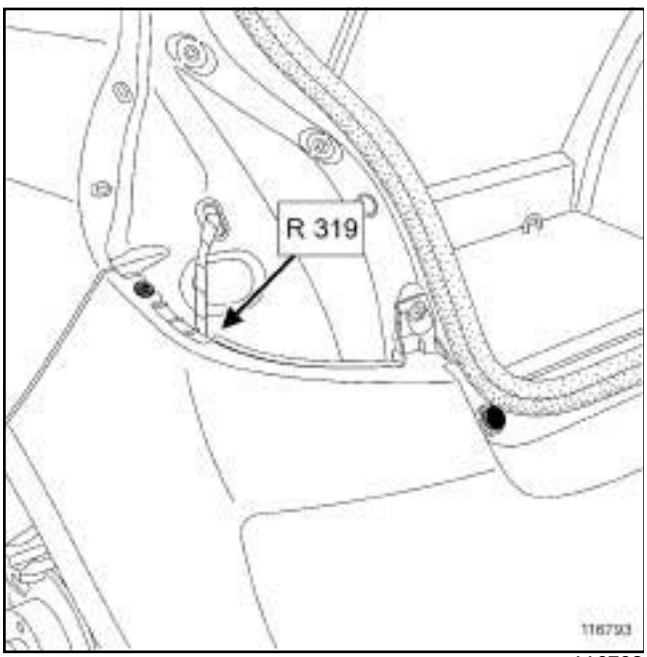
❏ Disconnect the connector (**21**) from the fuel filler flap lock motor.

B85 or K85



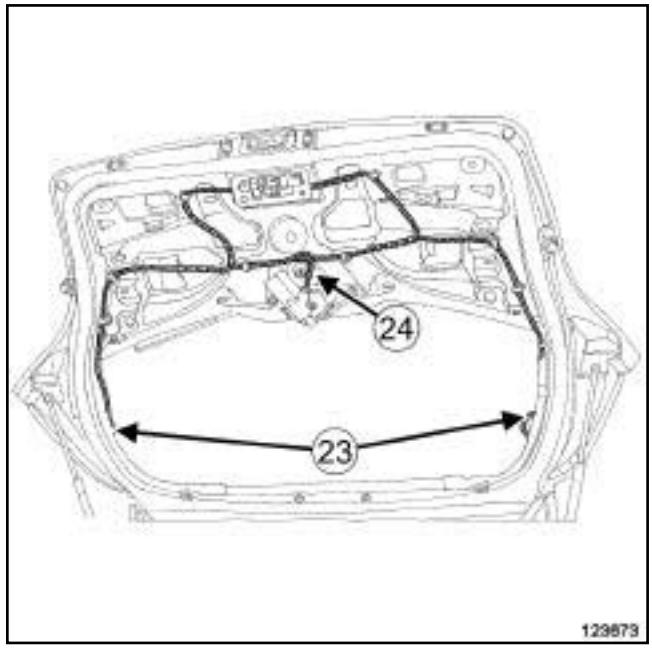
113229

❏ Disconnect the connector (**22**) of the right-hand and left-hand side curtain airbag.



116793

❏ Disconnect the R 319 connector.

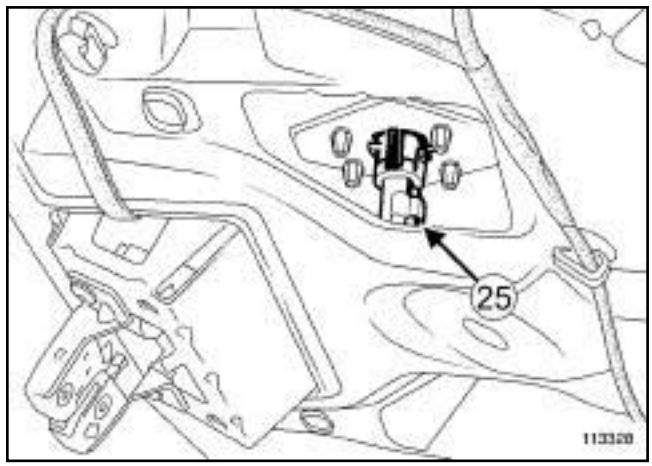


123673

❏ Disconnect:

- the connectors (**23**) of the rear screen defrosting system,
- the connector (**24**) of the rear screen wiper motor.

VEHICLE WITH CARD



113328

❏ Disconnect the connector (**25**) from the tailgate locking switch.

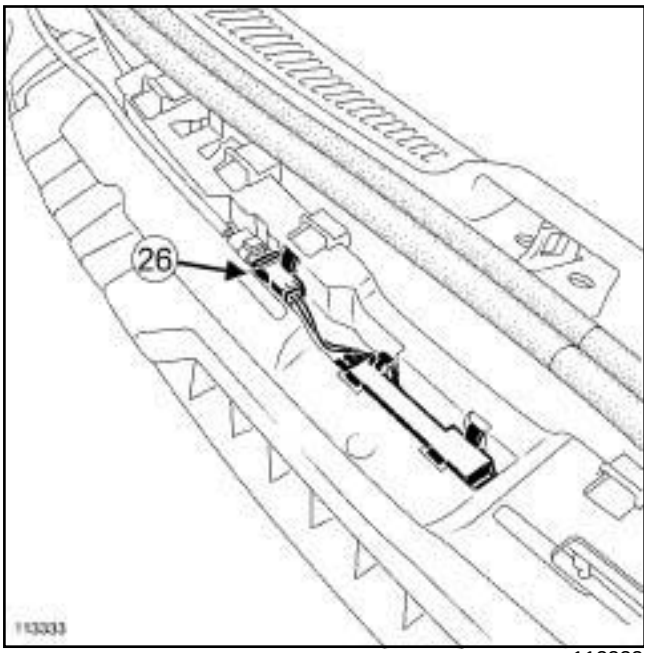
❏ Remove the following to disconnect the connectors:

- the tailgate lock (see **Tailgate lock: Removal - Refitting**) ,

B85 or K85

- the tailgate opening switch (see **87C**, **Opening element management**, **Tailgate opening switch: Removal - Refitting**, page **87C-5**) ,
- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

VEHICLE WITH CARD



113333

❏ Remove the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Unclip the connector of the rear bumper absorber.

❏ Disconnect the connector (**26**) from the opening aerial.

❏ Unclip the rear wiring.

❏ Remove the rear wiring.

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

❏ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rear wiring.

❏ Clip on the rear wiring.

VEHICLE WITH CARD

❏ Connect the opening aerial connector.

❏ Clip the opening aerial connector onto the rear bumper absorber.

❏ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Refit:

- the tailgate lock (see **Tailgate lock: Removal - Refitting**) ,
- the tailgate opening switch (see **87C**, **Opening element management**, **Tailgate opening switch: Removal - Refitting**, page **87C-5**) ,
- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

VEHICLE WITH CARD

❏ Connect the tailgate locking switch connector.

❏ Connect:

- the rear screen defrosting connectors,
- the rear screen wiper motor connector.

❏ Connect:

- the R 319 connector,
- the connector of the right-hand and left-hand side curtain airbag,
- the fuel filler flap lock motor connector,
- the right-hand and left-hand earth terminals,
- the connector of the rear pyrotechnic inertia reels,
- the R 325 connector,
- the radio aerial connector.

❏ Torque tighten the **earth terminal nuts (8 Nm)**.

B85 or K85

PROXIMITY RADAR

❏ Connect the parking distance control buzzer connector.

❏ Refit the parking distance control computer (see **87F**, **Parking distance control**, **Parking distance control computer: Removal - Refitting**, page **87F-6**) .

ELECTRONIC STABILITY PROGRAM

❏ Fit the wiring under body.

❏ Connect the rear right-hand and left-hand wheel speed sensor connector.

❏ Clip on the right-hand and left-hand wheel speed sensor.

❏ Refit the front right-hand and left-hand wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

VEHICLE WITH CARD

❏ Connect the rear starter aerial connector.

❏ Connect the fuel sender connector.

❏ Close the fuel gauge flap.

TYRE PRESSURE SENSOR

❏ Connect the tyre pressure monitoring system computer connector.

❏ Fit the wiring onto the B-pillars.

❏ Refit the side door connector bolts.

❏ Connect the rear side door connectors.

❏ Clip on the rear side door connector locks.

❏ Connect:

- the front pyrotechnic inertia reel connectors,
- the impact sensor connectors,
- the airbag computer connector.

❏ Clip on the airbag computer connector lock.

❏ Connect:

- the R 374 connector,
- the R 2 connector.

II - FINAL OPERATION.

❏ Refit:

- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the centre floor rear soundproofing (see **Centre floor rear soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the centre floor lateral soundproofing (see **Centre floor side soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the front centre floor carpet (see **Centre floor front carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear centre floor carpet (see **Centre floor rear carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the rear door sill trims (see **Rear door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front door sill inner trims (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the wheel arch trims (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the quarter panel trims (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear bench seatback (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the rear bench seat base (see **Single unit rear bench seat base: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),

B85 or K85

- the front seats (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❑ Unlock the airbag computer using the **Diagnostic tool** (see **MR 394, 88C, Airbags and pretensioners**).

C85 or S85

Equipment required
Diagnostic tool

Tightening torques ▽	
earth terminal nuts	**8 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

IMPORTANT

To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING

To prevent damage to the wiring harness when refitting, observe the original routing.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Lock the airbag computer using the **Diagnostic tool** (see **MR 394, 88C, Airbags and pretensioners).**

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❏ Remove:

- the front seats (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),
- the rear bench seat base (see **Single unit rear bench seat base: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the rear bench seatback (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the rear right-hand and left-hand panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear quarter panel trims (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the wheel arch trims (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front door sill inner trims (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the rear centre floor carpet (see **Centre floor rear carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front centre floor carpet (see **Centre floor front carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the side soundproofing of centre floor (see **Centre floor side soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the rear soundproofing of centre floor (see **Centre floor rear soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),

C85 or S85

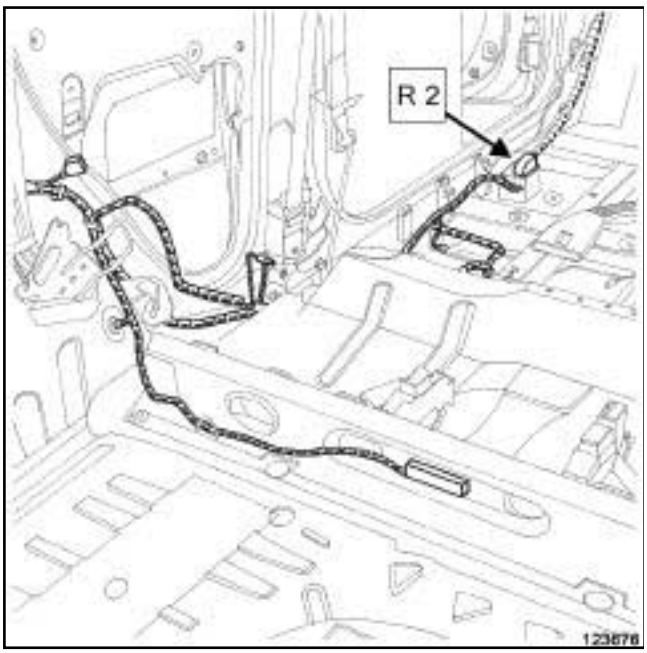
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑

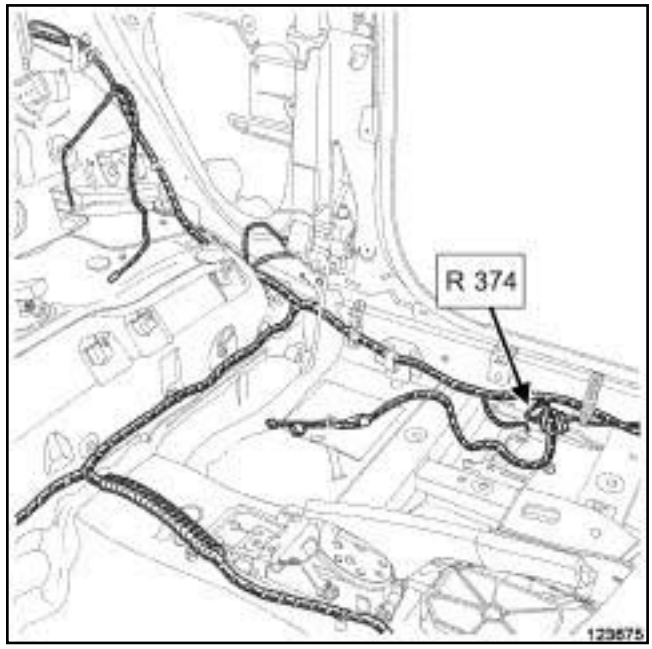
WARNING

To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.



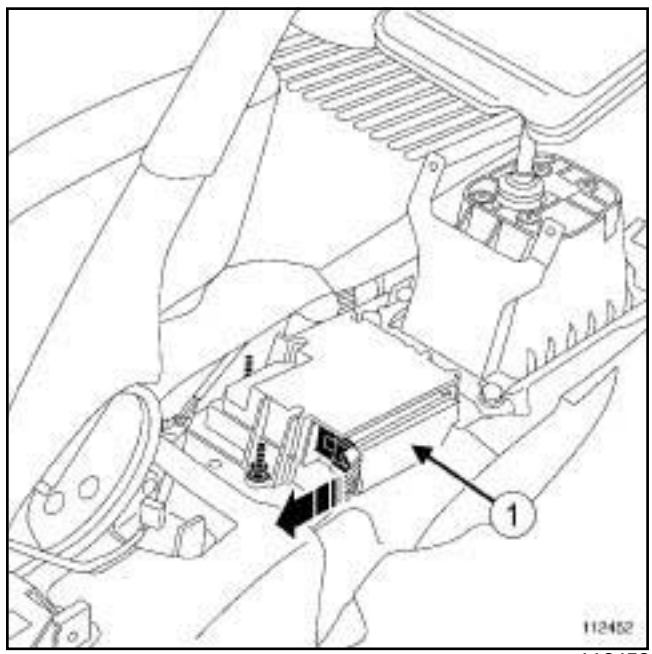
123676

❑ Disconnect the R 2 connector.



123675

❑ Disconnect the R 374 connector.

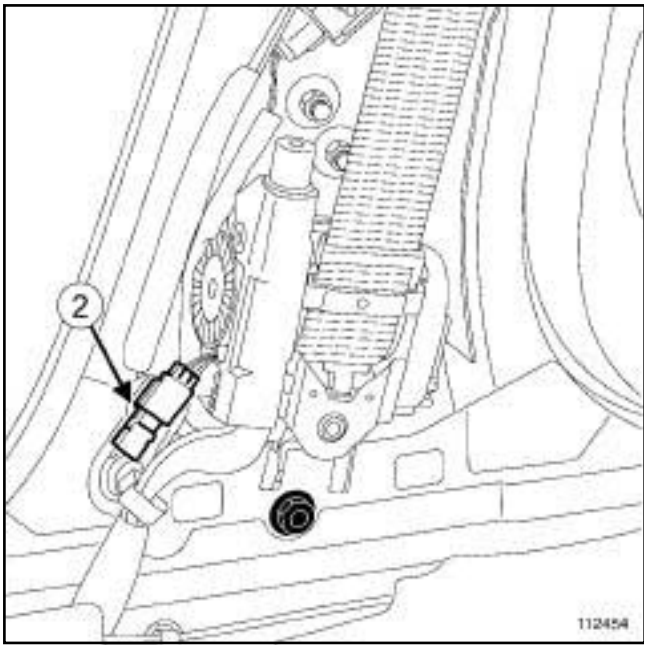


112452

❑ Unclip the airbag computer connector lock.

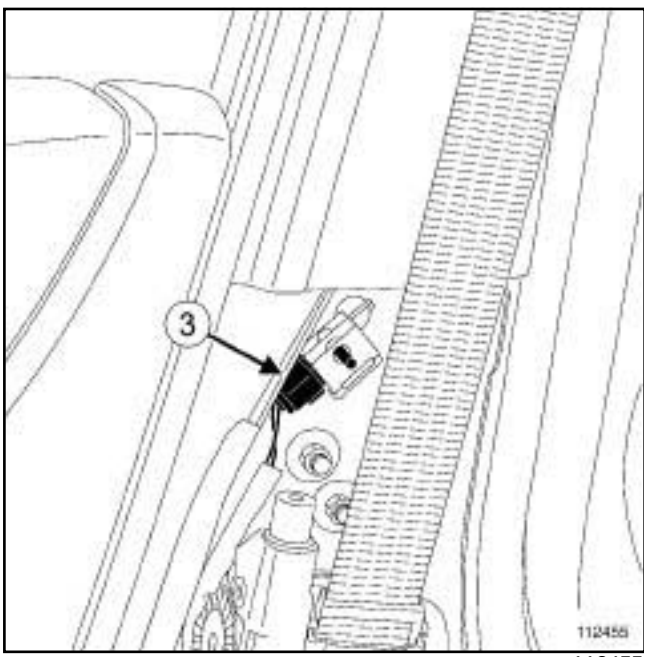
❑ Disconnect the airbag computer connector (**1**) .

C85 or S85



112454

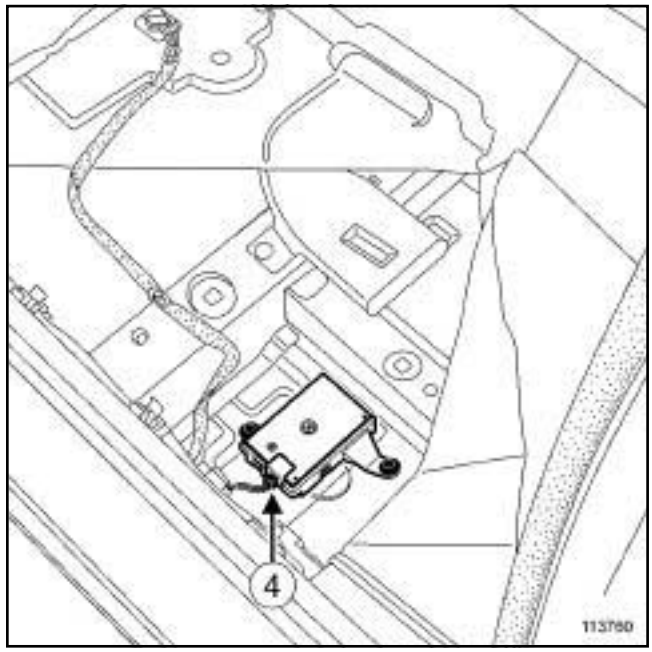
❏ Disconnect the front right-hand and left-hand pyrotechnic inertia reel connector (**2**) .



112455

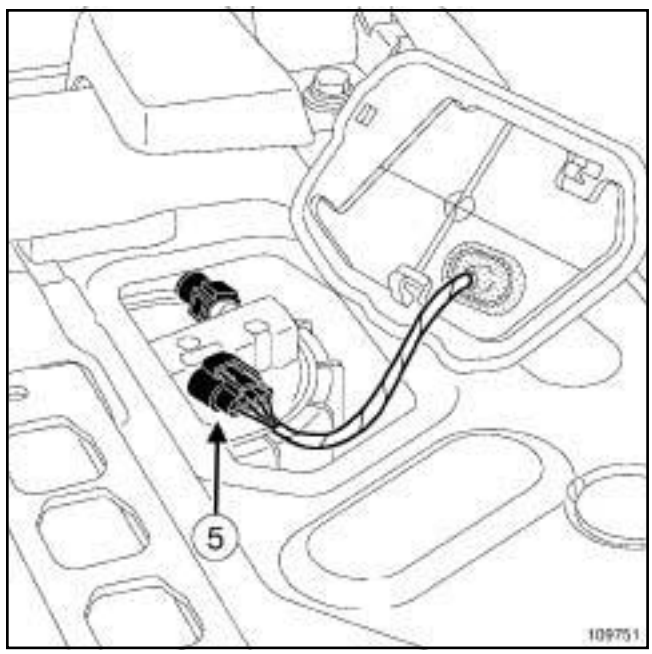
❏ Disconnect the right-hand and left-hand impact sensor connector (**3**) .

TYRE PRESSURE SENSOR



113760

❏ Disconnect the tyre pressure monitoring system computer connector (**4**) .



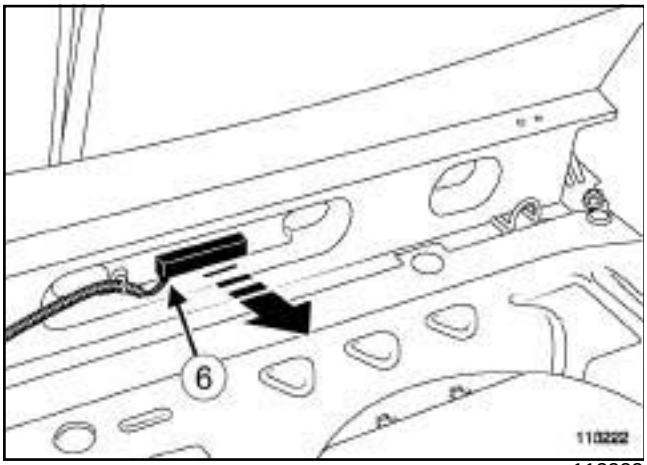
109751

❏ Open the fuel gauge flap.

❏ Disconnect the fuel gauge connector (**5**) .

C85 or S85

VEHICLE WITH CARD



113222

❏ Disconnect the rear starter aerial connector (**6**) .

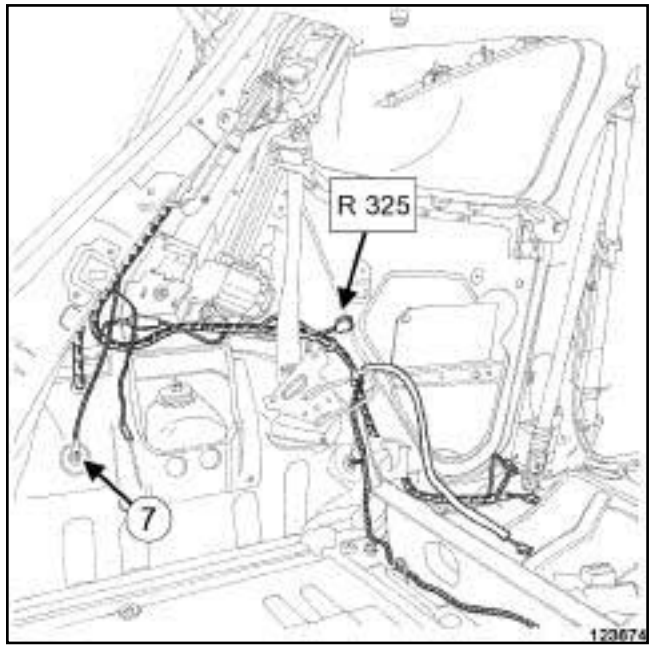
ELECTRONIC STABILITY PROGRAM

❏ Remove the rear right-hand and left-hand wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

❏ Unclip the rear right-hand and left hand wheel speed sensor clip.

❏ Disconnect the rear right-hand and left-hand wheel speed sensor connector.

❏ Extract the wiring under the body.

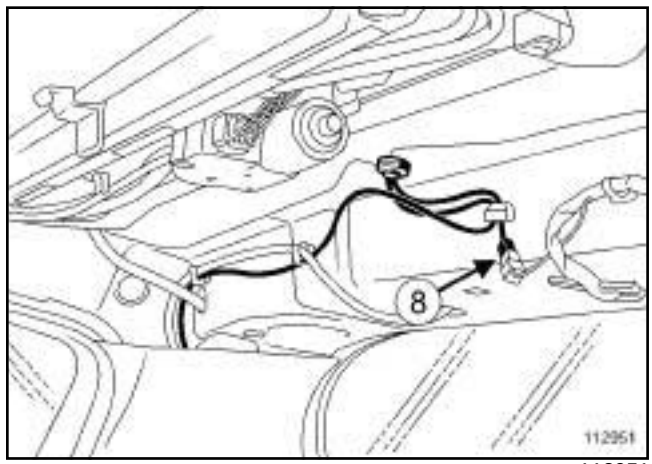


123674

❏ Remove the nut (**7**) from the earth terminal.

❏ Disconnect:

- the earth terminal,
- the R 325 connector.

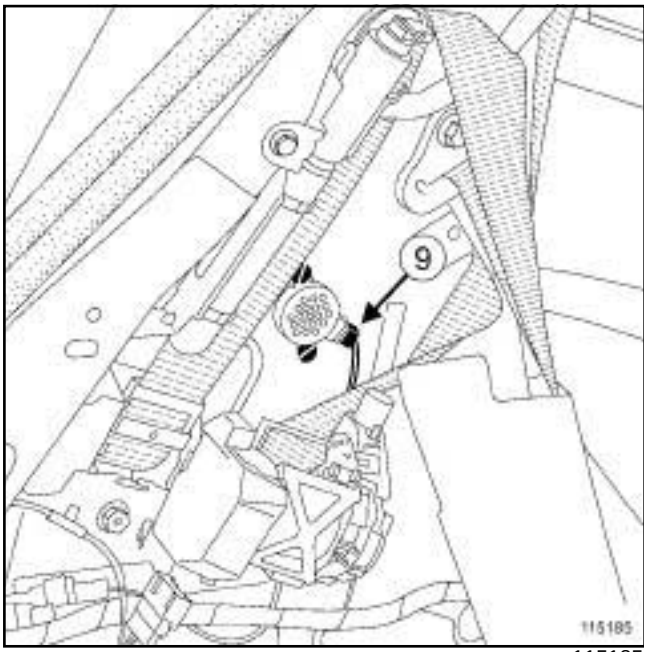


112951

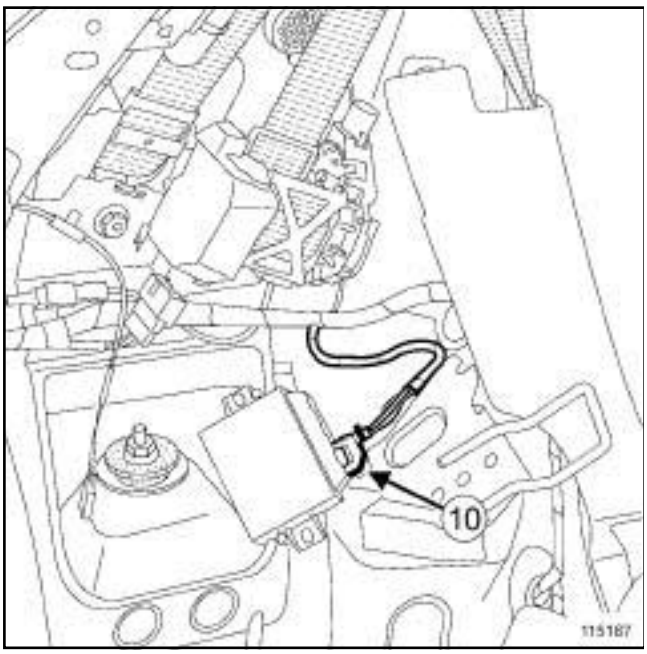
❏ Disconnect the radio aerial connector (**8**) .

C85 or S85

PROXIMITY RADAR



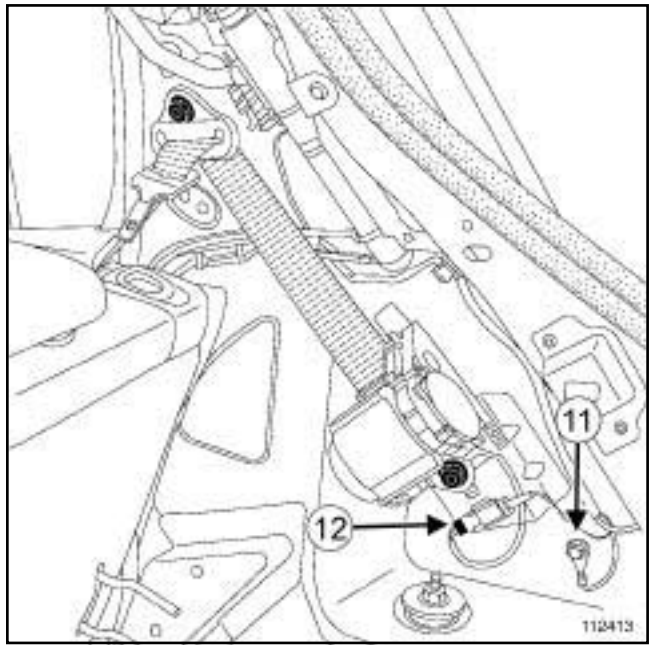
115185



115187

❏ Disconnect the connector (**9**) from the parking distance control buzzer.

❏ Remove the parking distance control computer to disconnect the connector (**10**) (see **87F**, **Parking distance control**, **Parking distance control computer: Removal - Refitting**, page **87F-6**) .

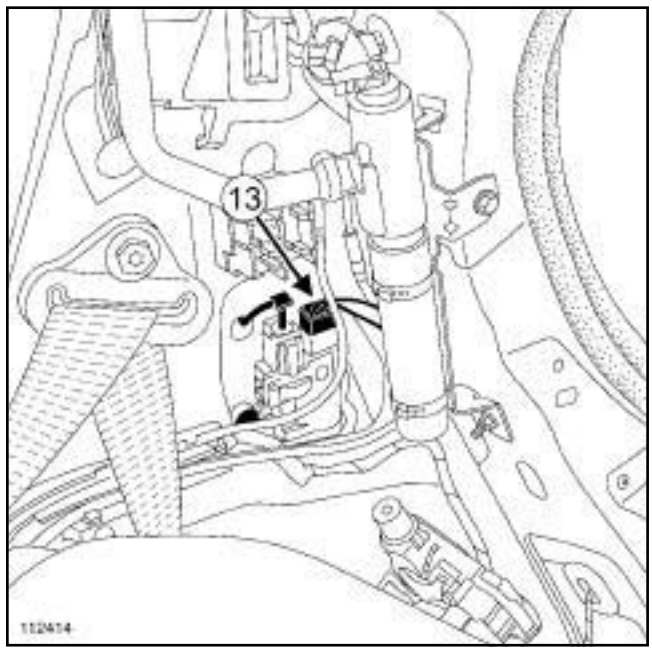


112413

❏ Remove the nut (**11**) from the earth terminal.

❏ Disconnect:

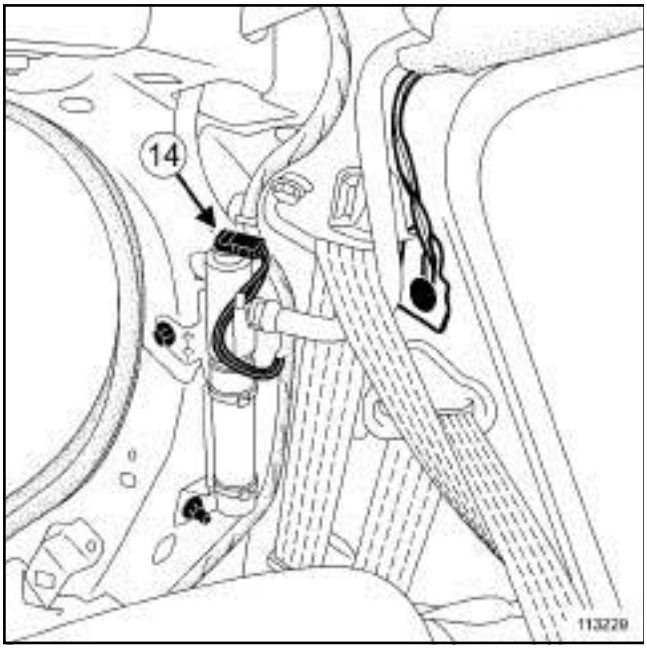
- the right-hand and left-hand pyrotechnic inertia reel connector (**12**) ,
- the earth terminal.



112414

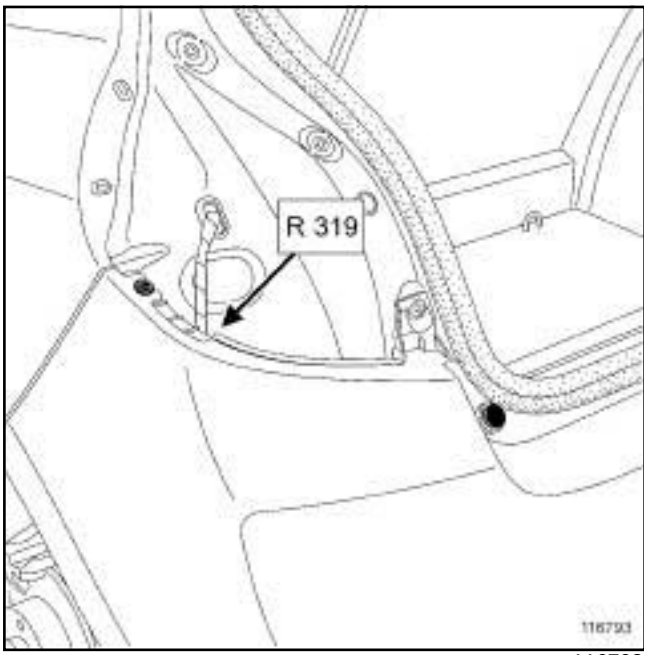
❏ Disconnect the connector (**13**) from the fuel filler flap lock motor.

C85 or S85



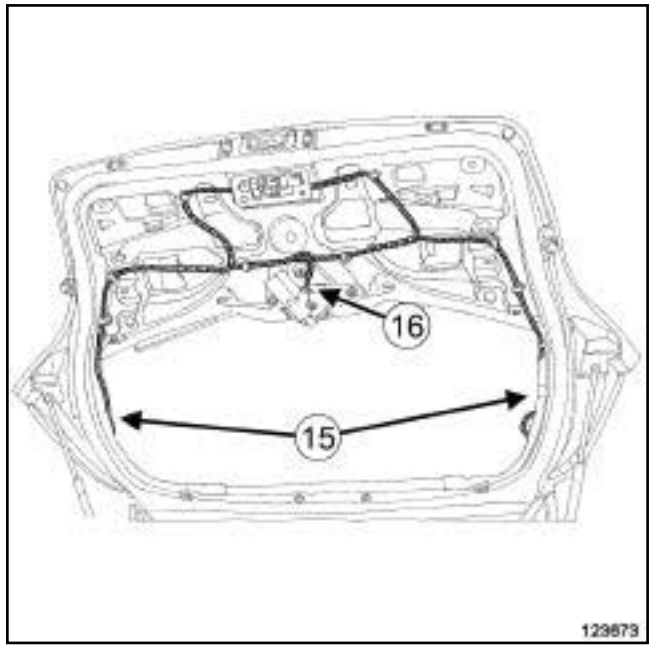
113229

❏ Disconnect the left-hand and right-hand side curtain airbag connector (**14**) .



116793

❏ Disconnect the R 319 connector.

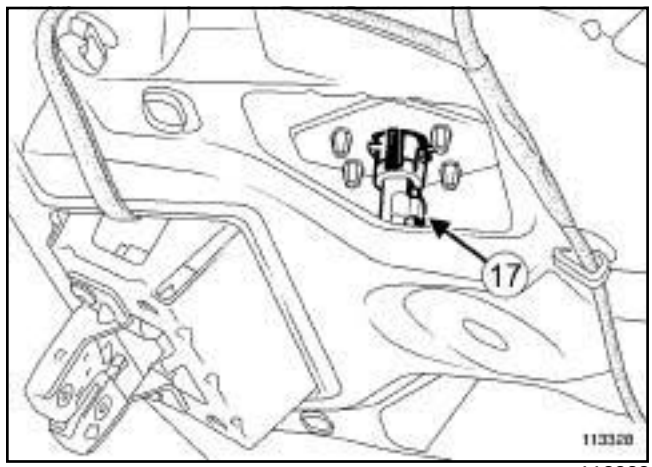


123673

❏ Disconnect:

- the connectors (**15**) of the heated rear screen,
- the rear screen wiper motor connector (**16**) .

VEHICLE WITH CARD



113328

❏ Disconnect the connector (**17**) from the tailgate locking switch.

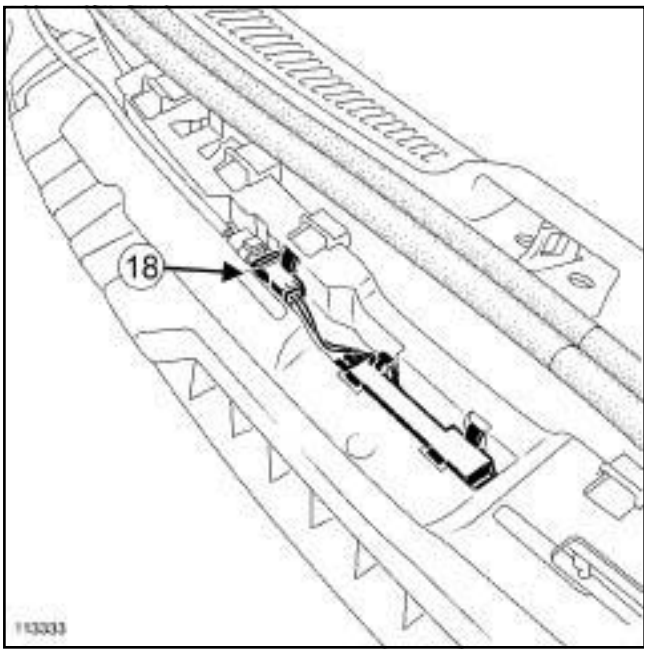
❏ To disconnect the connectors, remove:

- the tailgate lock (see **Tailgate lock: Removal - Refitting**) ,
- the tailgate opening switch (see **87C**, **Opening element management**, **Tailgate opening switch: Removal - Refitting**, page **87C-5**) ,

C85 or S85

- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

VEHICLE WITH CARD



113333

❏ Remove the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Unclip the rear bumper absorber connector.

❏ Disconnect the connector (**18**) from the opening aerial.

❏ Unclip the rear wiring.

❏ Remove the rear wiring.

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

❏ If replacing with more wiring, lock the unused connectors (see **Connector: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the rear wiring.

❏ Clip on the rear wiring.

VEHICLE WITH CARD

❏ Connect the opening aerial connector.

❏ Clip the opening aerial connector onto the rear bumper absorber.

❏ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❏ Refit:

- the tailgate lock (see **Tailgate lock: Removal - Refitting**) ,
- the tailgate opening switch (see **87C**, **Opening element management**, **Tailgate opening switch: Removal - Refitting**, page **87C-5**) ,
- the high level brake light (see **81A**, **Rear lighting**, **3rd brake light: Removal - Refitting**, page **81A-10**) .

VEHICLE WITH CARD

❏ Connect the tailgate locking switch connector.

❏ Connect:

- the heated rear screen connectors,
- the rear screen wiper motor connector.

❏ Connect:

- the R 319 connector,
- the right-hand and left-hand side curtain airbag connector,
- the fuel filler flap locking motor connector,
- the right-hand and left-hand earth terminals,
- the rear pyrotechnic inertia reel connector,
- the R 325 connector,
- the radio aerial connector.

❏ Torque tighten the **earth terminal nuts (8 Nm)**.

C85 or S85

PROXIMITY RADAR

❑ Connect the parking distance control buzzer connector.

❑ Refit the parking distance control computer (see **87F**, **Parking distance control**, **Parking distance control computer: Removal - Refitting**, page **87F-6**) .

ELECTRONIC STABILITY PROGRAM

❑ Fit the wiring under the body.

❑ Connect the rear right-hand and left-hand wheel speed sensor connector.

❑ Clip on the right-hand and left-hand wheel speed sensor clip.

❑ Refit the rear right-hand and left-hand wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

VEHICLE WITH CARD

❑ Connect the rear starter aerial connector.

❑ Connect the fuel sender connector.

❑ Close the fuel gauge flap.

TYRE PRESSURE SENSOR

❑ Connect the tyre pressure monitoring computer connector.

❑ Connect:

- the connector for the front pyrotechnic inertia reels,
- the connector for the impact sensors,
- the airbag computer connector.

❑ Clip on the airbag computer connector lock.

❑ Connect:

- the R 374 connector,
- the R 2 connector.

II - FINAL OPERATION.

❑ Refit:

- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .
- the tailgate trim (see **Tailgate trim: Removal - Refitting**) (MR 393, 73A, Non-side opening elements trim),
- the rear soundproofing of centre floor (see **Centre floor rear soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the side soundproofing of centre floor (see **Centre floor side soundproofing: Removal - Refitting**) (MR 393, 68A, Soundproofing),
- the front centre floor carpet (see **Centre floor front carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear centre floor carpet (see **Centre floor rear carpet: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment),
- the rear panel trims (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front door sill inner trims (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the wheel arch trims (see **Rear wheel arch trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear quarter panel trims (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear bench seatback (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the rear bench seat base (see **Single unit rear bench seat base: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seat base: Removal - Refitting**) (depending on the equipment level) (MR 393, 76A, Rear seat frames and runners),
- the front seats (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),

C85 or S85

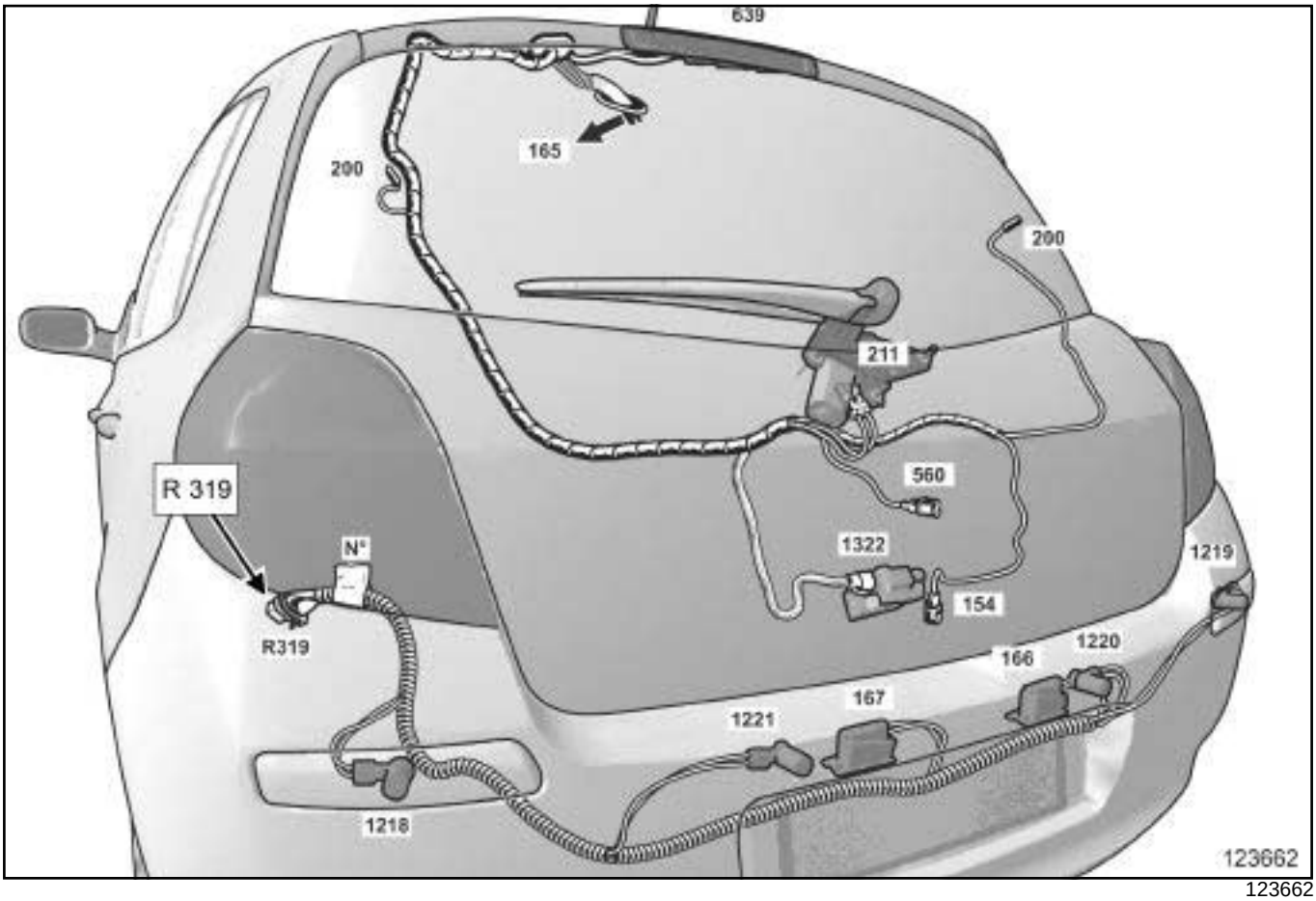
❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❑ Unlock the airbag computer using the **Diagnostic tool** (see **MR 394, 88C, Airbags and pretensioners).**

I - LOCATION OF CONNECTORS



123662

❑ R 319 connecter (rear bumper/rear connection).

II - ACCESS TO CONNECTORS

❑

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

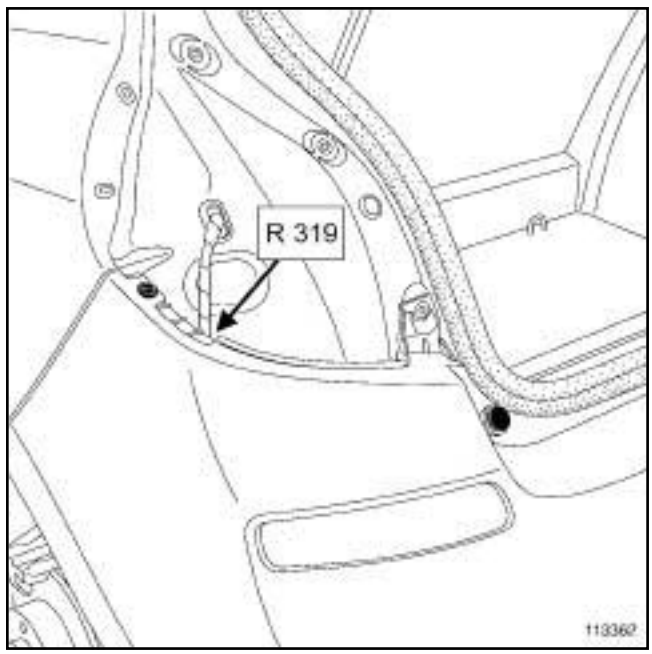
WARNING

To prevent damaging the connectors, consult the disconnection procedure (see **Connector: Disconnection and reconnection**) (Technical Note 6015A, 88A, Wiring).

❑ Switch off the ignition.

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the light on the rear left-hand wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) .



113362

❑ Disconnect the R 319 connector.

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88A**, **Wiring harness**, **Wiring: Precautions for the repair**, page **88A-5**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

❏ Switch off the ignition.

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

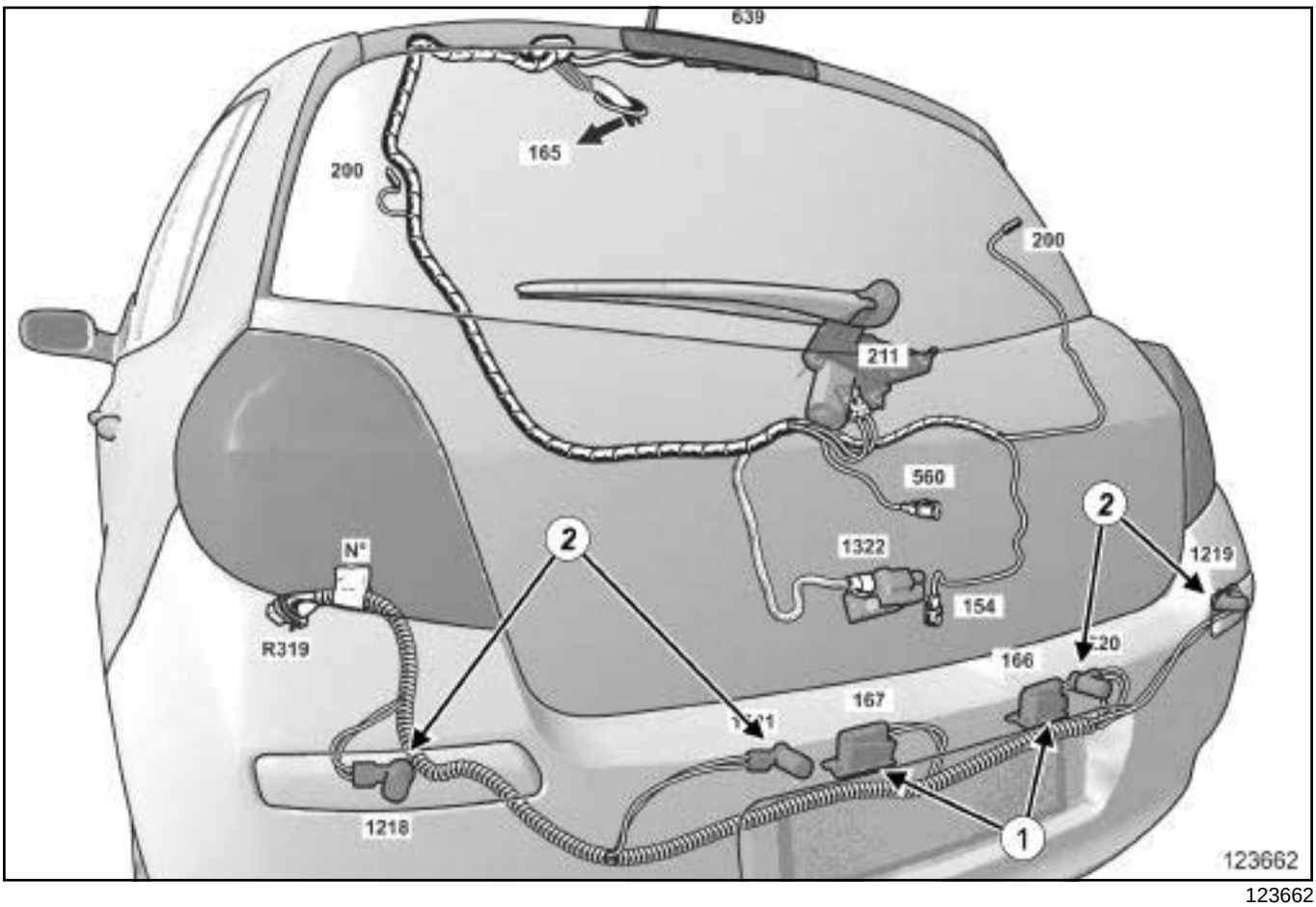
❏ Remove

- the rear wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) ,

❏ Disconnect the R 319 connector.

❏ Remove the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

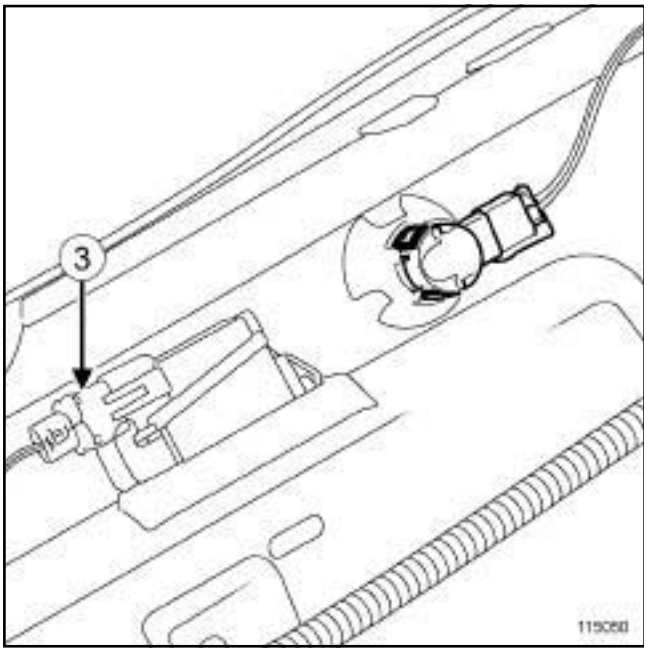
II - OPERATION FOR REMOVAL OF PART CONCERNED



123662

❏

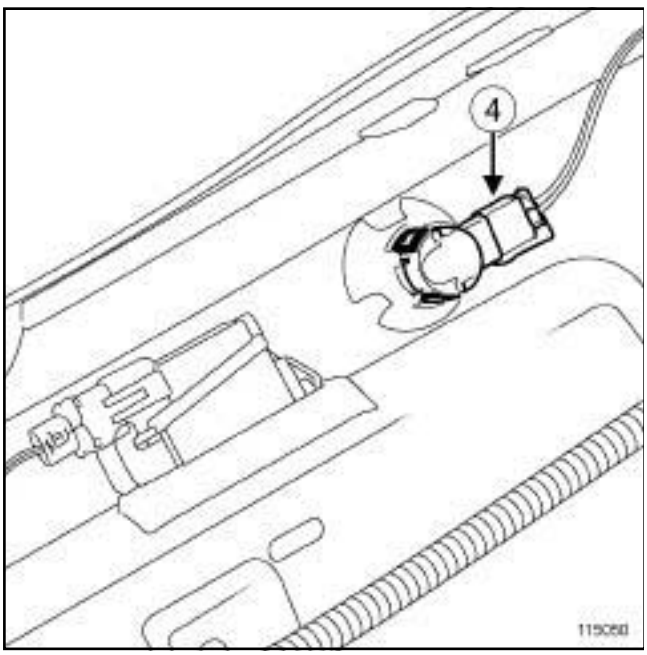
WARNING
To prevent any risk of noise, premature wear, short circuits, etc. after the refitting operation, mark the wiring routing and how to connect the connectors.



115050

❑ Disconnect the connector (**3**) from the number plate lights ***(1)*** .

REAR PROXIMITY RADAR



115050

❑ Disconnect the connector (**4**) from the rear proximity sensors ***(2)*** .

❑ Unclip the rear bumper wiring.

❑ Remove the rear bumper wiring.

WARNING
To prevent any damage during the removal operation, check that the wiring is free from its mountings (retaining clip, plastic clip, adhesive tape, connector, etc.).

REFITTING

I - REFITTING PREPARATION OPERATION

❑ If replacing with more wiring, lock the unused connectors (see **Connectors: Sealing and immobilisation**) (Technical Note 6015A, 88A, Wiring).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Connect the number plate light connectors.

REAR PROXIMITY RADAR

❑ Connect the proximity radar connectors.

❑ Clip the wiring onto the rear bumper.

WARNING
To prevent damage to the wiring harness when refitting, observe the original routing.

III - FINAL OPERATION.

❑ Refit the rear bumper (see **Rear bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

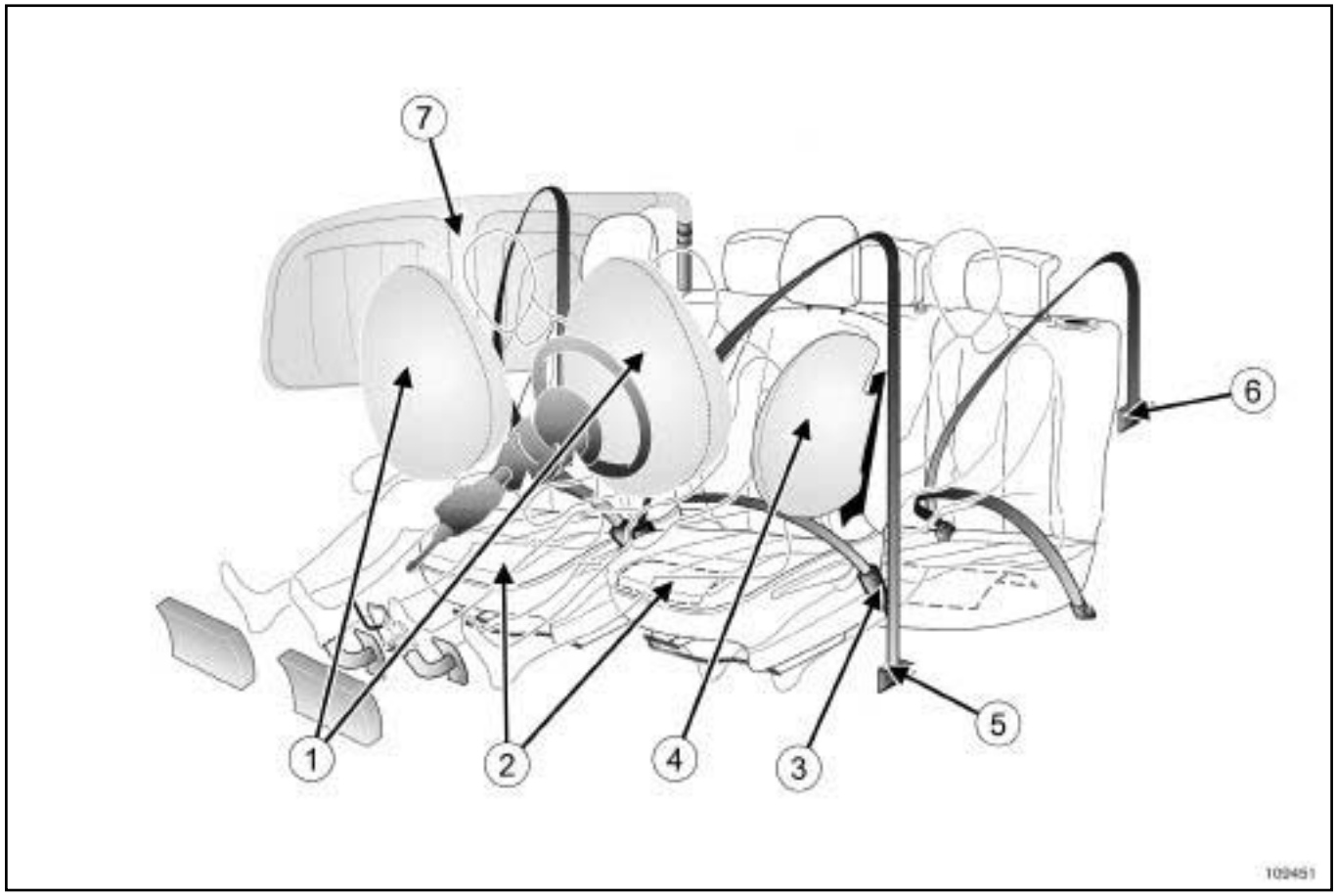
❑ Connect the R319 connector.

❑ Refit:

- the rear lights on the wing (see **81A**, **Rear lighting**, **Rear wing light: Removal - Refitting**, page **81A-5**) ,
- the rear wheel arch liners (see **Rear wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

I - LISTS OF COMPONENTS



109451

list of components

Driver and passenger front airbags ***(1)*** .

C85 or S85

Anti-submarining airbags located in the base of the front seats ***(2)*** .

B85 or K85

Front buckle pretensioners located on the outside of the seat ***(3)*** .

FRONT SIDE AIRBAG

Front chest-level side airbag located in the backrest of the front seats ***(4)*** .

Pyrotechnic front seat belt inertia reels ***(5)*** .

B85 or C85 or K85

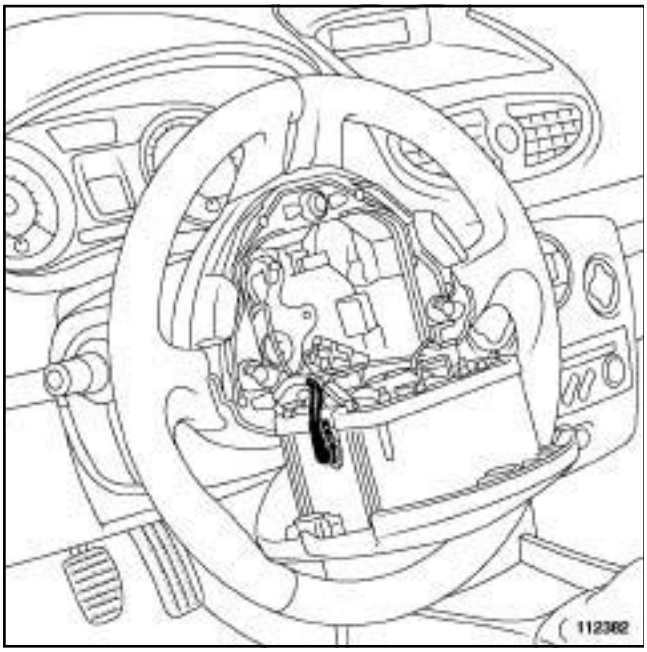
Pyrotechnic rear seat belt inertia reels ***(6)*** .

FRONT SIDE + CURTAIN AIRBAG

Side curtain airbag. ***(7)***

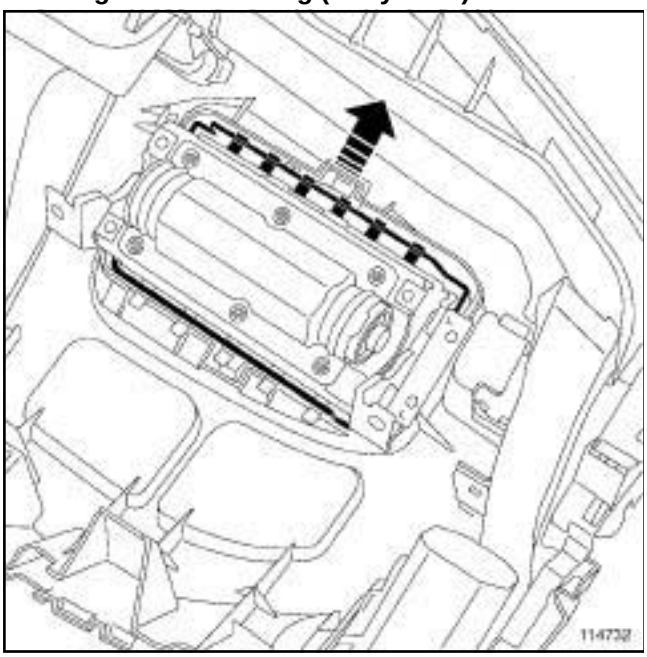
II - FRONTAL AIRBAGS

Driver's front airbag



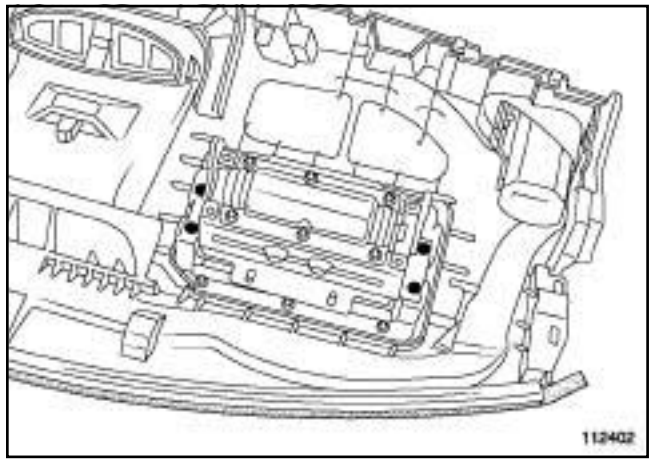
112382

Passenger frontal airbag (entry level)



114732

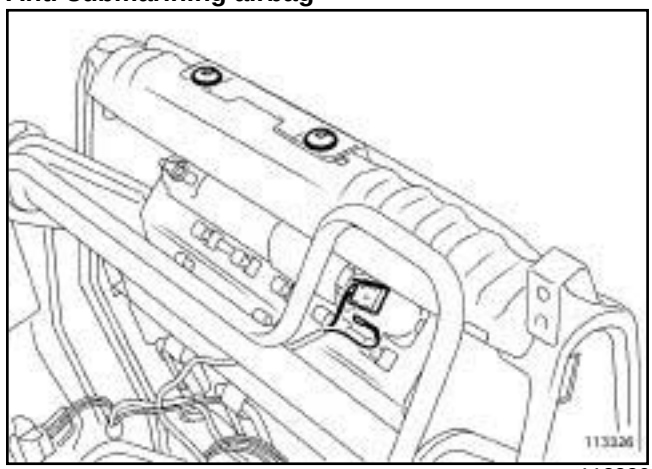
Passenger frontal airbag (top of the range)



112402

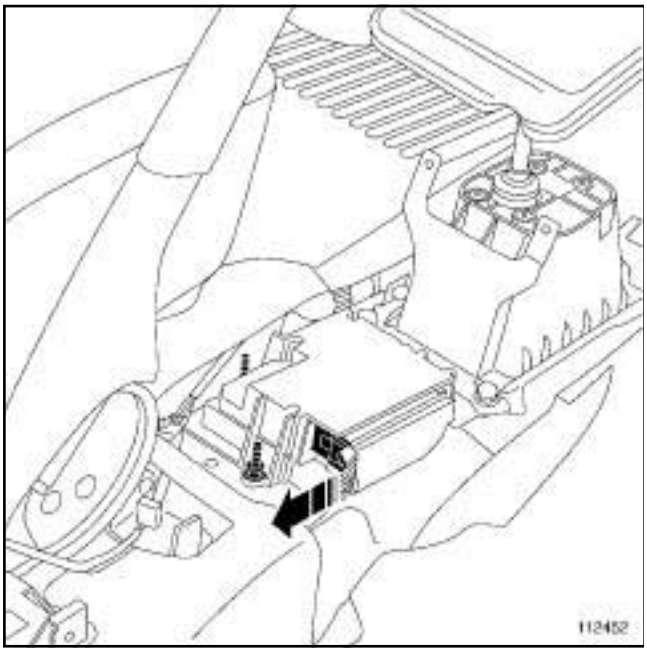
C85 or S85

Anti-submarining airbag



113326

Airbag computer

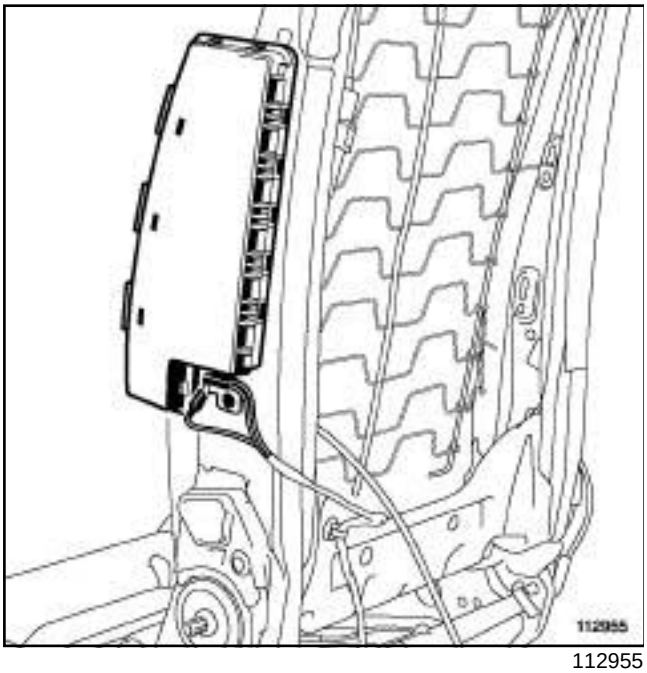


112452

III - LATERAL AIRBAGS

FRONT SIDE AIRBAG or FRONT SIDE + CURTAIN AIRBAG

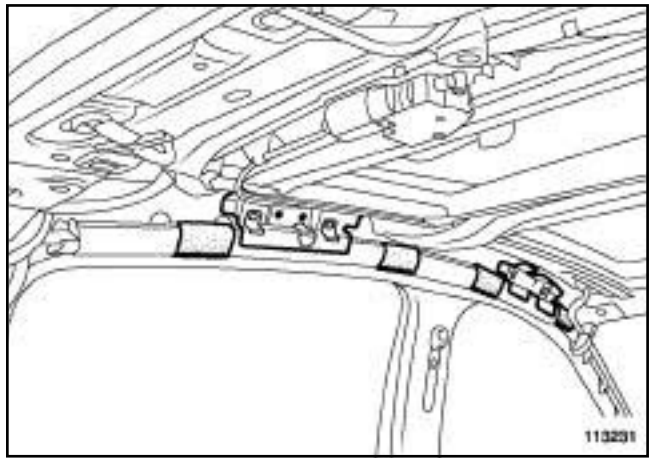
Frontal (thorax) side airbag



112955

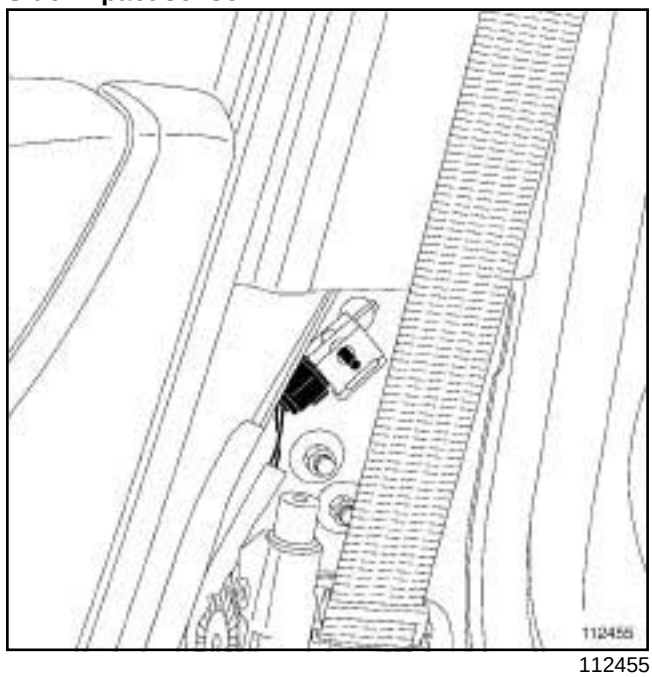
FRONT SIDE + CURTAIN AIRBAG

Curtain side airbag



113231

Side impact sensor

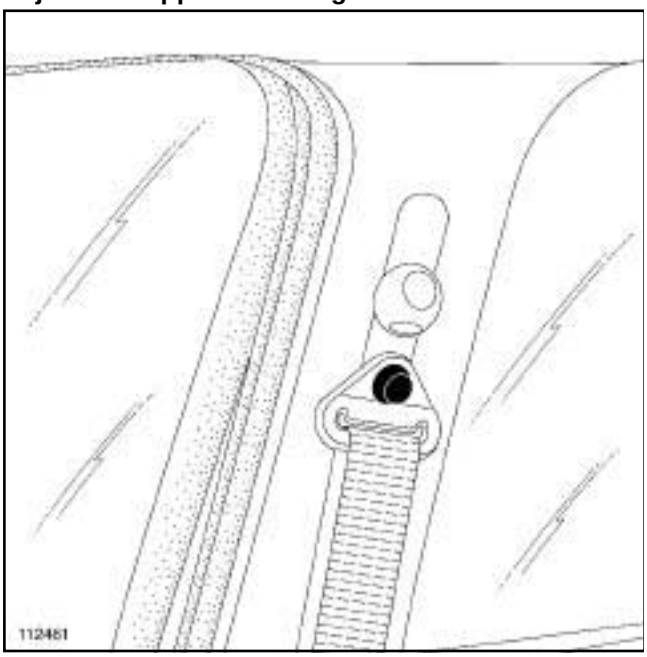


112455

IV - FRONT SEAT BELTS

B85 or K85

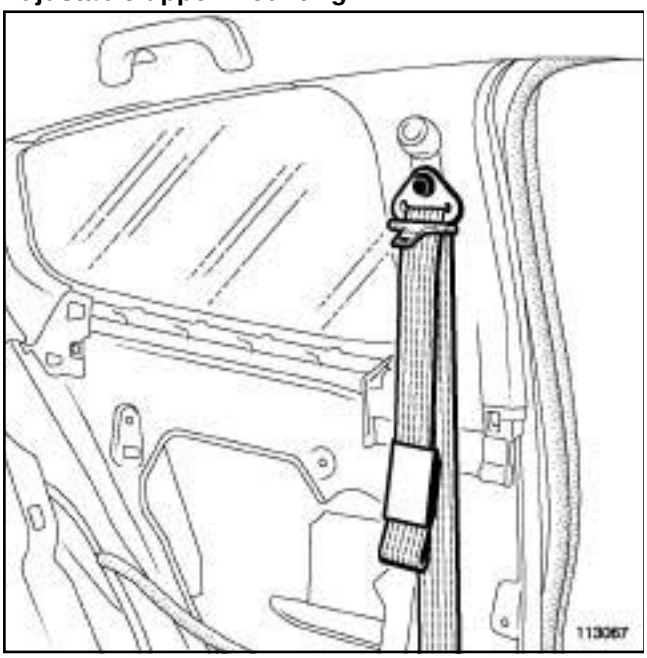
Adjustable upper mounting



112461

C85 or S85

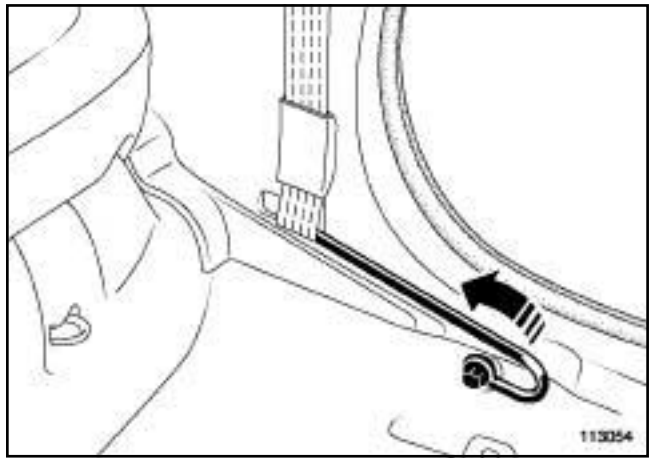
Adjustable upper mounting



113067

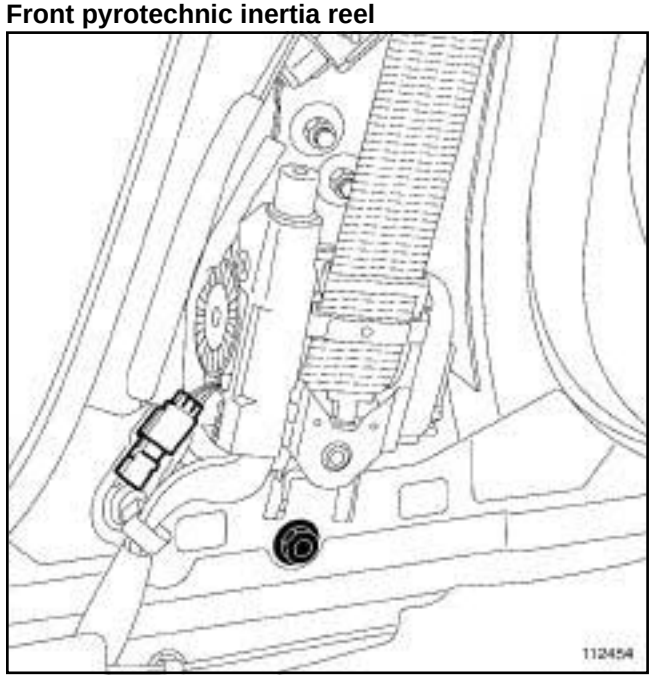
C85 or S85

Lower mounting



113054

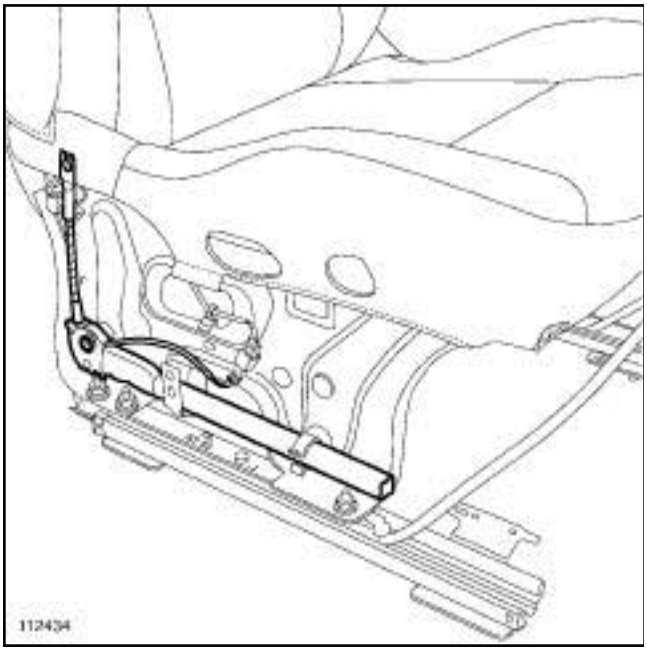
Front pyrotechnic inertia reel



112454

B85 or K85

Lap belt pretensioner

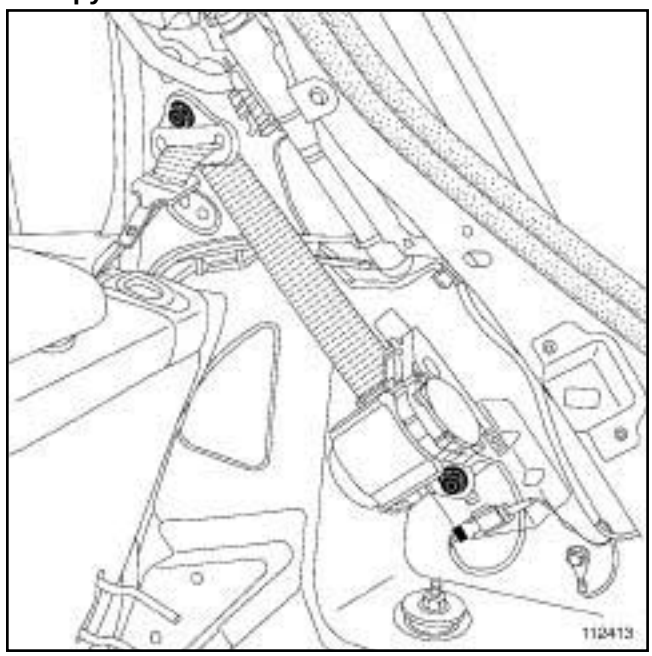


112434

V - REAR SEAT BELT

B85 or C85 or K85

Rear pyrotechnic inertia reel



112413

Equipment required
Diagnostic tool

I - PRECAUTIONS FOR REPAIR

IMPORTANT

All operations on airbag and pretensioner systems must be carried out by qualified trained personnel.

The airbags have a pyrotechnic gas generator, with an ignition module and bag which must not be separated.

The pretensioners have a pyrotechnic gas generator and an igniter which must, under no circumstances, be separated.

IMPORTANT

Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

IMPORTANT

To prevent any accidental triggering whilst working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the **Diagnostic tool**.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

(see **Fault finding - Replacement of components**) (88C, Airbag and pretensioners).

When working underneath the vehicle (on the bodywork, sill panel, etc.) or for certain operations involving removal or refitting of seat trims, it is essential to lock the airbag computer using the **Diagnostic tool** and to disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To prevent the pyrotechnic components from being permanently deactivated or triggered (airbags or pretensioners), check the airbag computer using the **Diagnostic tool**.

The pyrotechnic systems (pretensioners and airbags) must be checked using the **Diagnostic tool** :

- after an accident,
- after theft or attempted theft of the vehicle,
- before selling a used vehicle.

II - TRIGGERING OF THE SAFETY SYSTEMS

IMPORTANT

In order to prevent interference with the deployment of the airbags:

- do not fit a cover to the front seats,
- do not place objects in the area of deployment.

After detection of an impact, the airbag computer locks definitively and the « airbag fault » warning light is illuminated on the instrument panel. The airbag computer and the side impact sensors must always be replaced.

IMPORTANT

To eliminate the risk of any accident, do not reuse pyrotechnic components.

It is essential to destroy pretensioners or airbags before scrapping a vehicle or a part only (see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

III - DURABILITY OF THE PYROTECHNIC COMPONENTS

The precautions which recommended that pyrotechnic components (airbags and pretensioners) were replaced 10 years after the registration of the vehicle have now been lifted.

Pyrotechnic components (airbags and pretensioners) do not therefore require any maintenance.

Special tooling required	
Ele. 1287	Tool for destroying airbags and pretensioners.
Ele. 1287-02	Kit of 2 adapters for the air-bag and pretensioner destruction tool.
Ele. 1812	Kit of 2 adapters for the air-bag and pretensioner destruction tool.

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Air-bag and pretensioners: Precautions for the repair**, page **88C-6**) .

IMPORTANT

To eliminate the risk of any accident, do not reuse pyrotechnic components.

It is essential to destroy pretensioners or airbags before scrapping a vehicle or a part only.

WARNING

- Each part is intended for a specific vehicle type and should not be fitted on another vehicle under any circumstances. The parts are not interchangeable.
- Do not trigger pretensioners which are to be returned under warranty because of a faulty stalk. This makes analysis of the part by the supplier impossible. Return the defective part to Techline in the packaging of the new part.

WARNING

The destruction procedure cannot be carried out if local regulations require a special procedure which has been confirmed and published by the Fault finding, Repair and Procedures Department.

Note:

If triggering is not possible (faulty ignition module) return the part to Techline.

96832

❑ Always use the tool **(Ele. 1287)** and three kits of adapters **(Ele. 1287-02)**,and **(Ele. 1812)**.

❑ Use a wiring connector kit **82 00 518 971**.

❑ Attach the wiring connectors **82 00 518 971** to the adapters **(Ele. 1287-02)** to obtain an adapter for each colour (green, orange, blue, etc.) (see **Wiring: Repair**) (Technical Note 6015A, 88A, Wiring).

❑ Use a battery to power the destruction tool.

I - AIRBAGS

❑

Note:

The airbags must be destroyed outside the workshop, in an area with sufficient space.

The airbags to be destroyed must be removed.

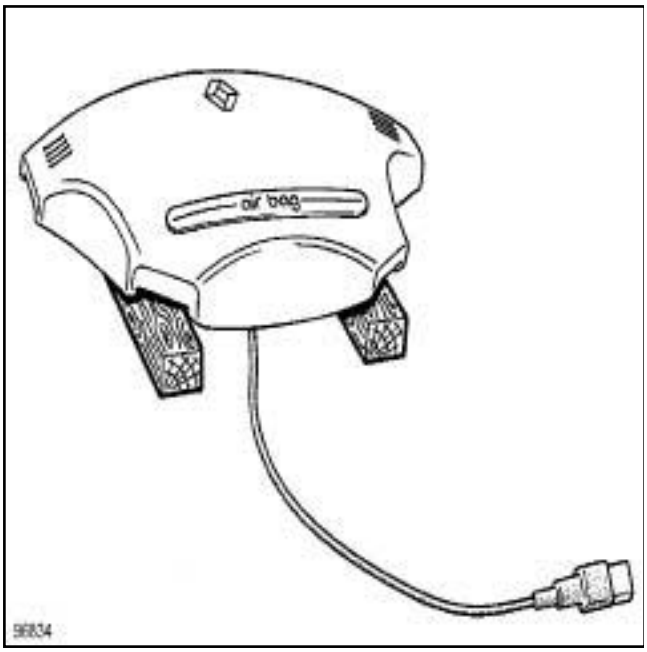
Note:

If the airbag has two levels of activation (i.e. it is fitted with two connectors), destroy both connectors.

❑ Prepare the adapter corresponding to the airbag to be destroyed.

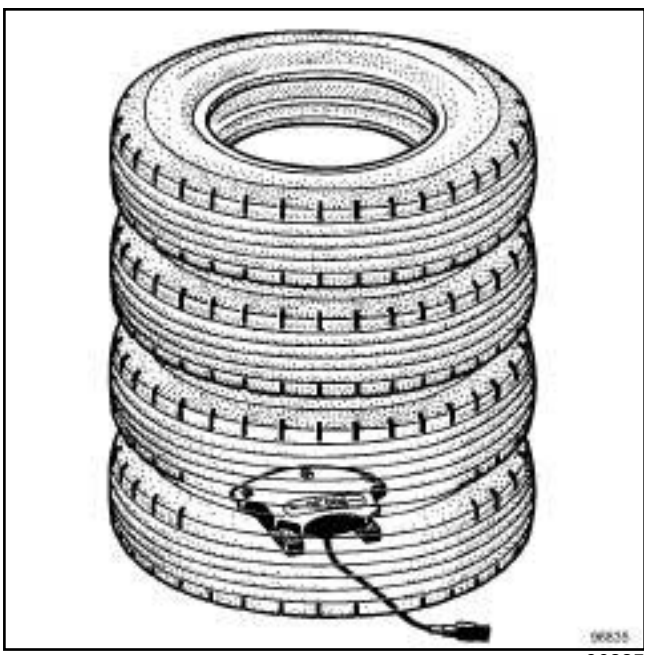
❏ Connect:

- the adapter to the destruction tool **(Ele. 1287)**,
- the adapter to the airbag.



96834

❏ Put the airbag on two wooden blocks.



96835

❏ The destruction procedure is carried out in a stack of old tyres.

❏ Make sure that the airbag deployment will not be hindered.

❏ Unwind the full length of the wiring for the tool, in order to distance it as far away as possible from the pyrotechnic component to be destroyed.

❏ Connect the two feed wires of the destruction tool **(Ele. 1287)** to a battery.

IMPORTANT
To prevent any risk of an accident when destroying a pyrotechnic component, check that no-one is in the vicinity.

❏ Destroy the airbag by pressing the two push buttons on the tool simultaneously.

II - PYROTECHNIC PRETENSIONERS AND INERTIA REELS

1 - Destruction of part fitted on the vehicle to be scrapped:

❏ Move the vehicle outside the workshop.

❏ Mark the adapter corresponding to the pyrotechnic component to be destroyed.

❏ Connect:

- the destruction tool **(Ele. 1287)** to the adapter,
- the adapter to the pyrotechnic component.

❏ Unwind the tool wiring fully, so that you are far enough away from the vehicle (approximately ten metres) when the device is triggered.

❏ Connect the two feed wires of the destruction tool **(Ele. 1287)** to a battery.

IMPORTANT
To prevent any risk of an accident when destroying a pyrotechnic component, check that no-one is in the vicinity.

❏ Destroy the pyrotechnic component by pressing the two push buttons on the tool simultaneously.

2 - Destruction of part removed from the vehicle:

❏ Proceed in the same way as for an airbag (in a stack of old tyres).

Equipment required
Diagnostic tool

Tightening torques ▽	
computer mounting nuts	**8 Nm**

IMPORTANT
To avoid any accidents, make sure you are aware of all risks associated with this operation.

(see **Airbags and pretensioners: Repair precautions**).

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are blocked and the airbag warning light on the instrument panel lights up continuously (ignition on).

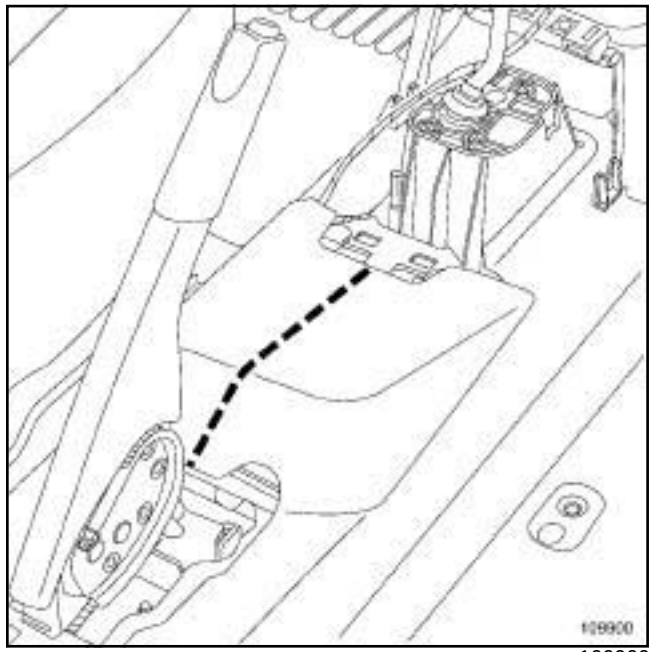
❑ Lock the airbag computer (see **MR 394 Fault finding, 88C, Airbags and pretensioners, Fault finding - Replacement of components**).

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the centre console (see **MR 393 Bodywork, 57A, Interior equipment, Centre console: Removal - Refitting**).

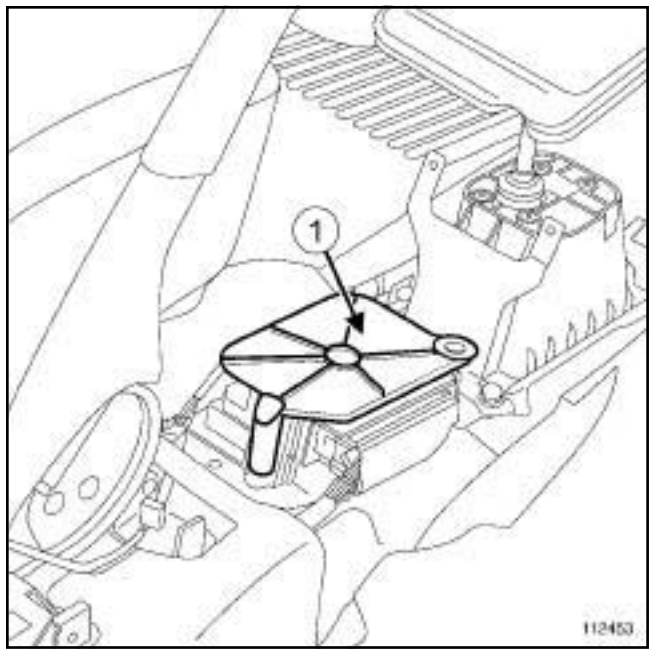
Note:
The seats and carpets do not have to be removed to remove the computer.

II - OPERATION FOR REMOVAL OF PART CONCERNED



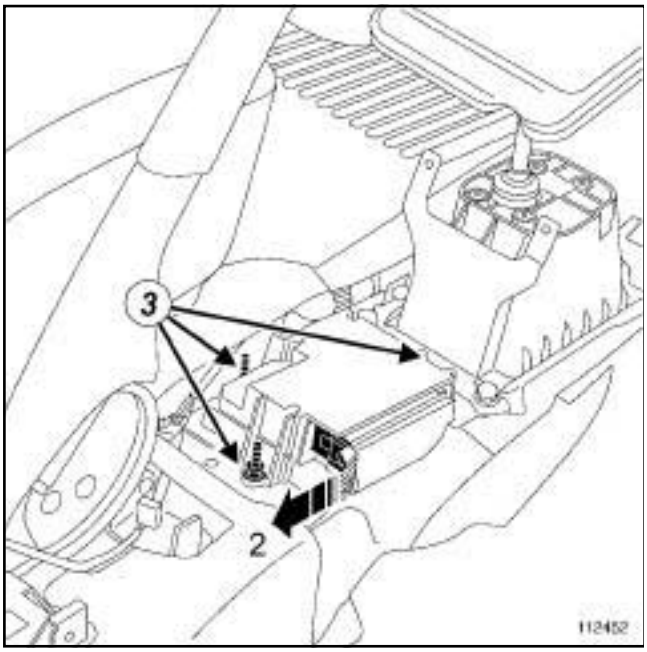
109900

❑ Cut the carpet between the gear lever and the parking brake as shown in the illustration above.



112453

❑ Remove the protective housing from the computer (**1**) .



112452

❑ Unclip the connector latch (**2**) .

❑ Disconnect the connector.

❑ Remove:

- the mounting nuts (**3**) from the computer,
- the computer.

REFITTING

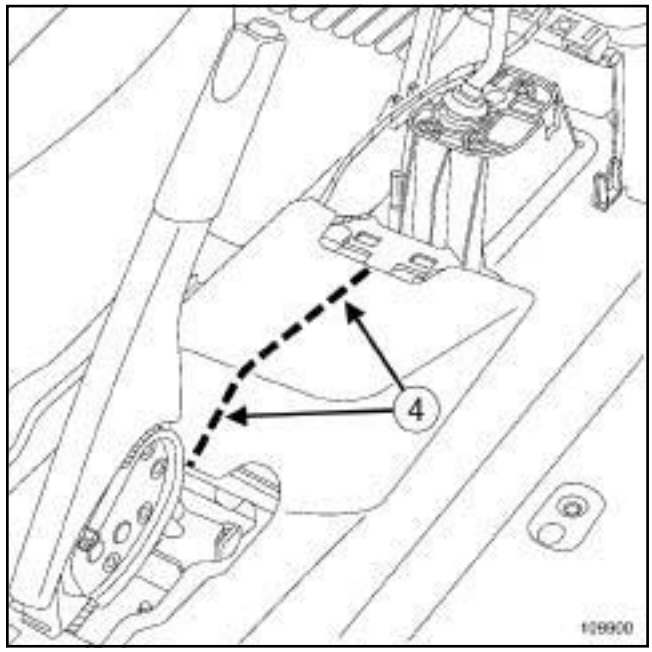
I - REFITTING OPERATION FOR PART CONCERNED

❑ Position the computer.

❑ Torque tighten the **computer mounting nuts (8 Nm)**.

❑ Connect the connector.

❑ Replace the computer's protective housing with a new one.



109900

❑ Attach the carpet at (**4**) with the clips (part number: **77 01 047 751**).

II - FINAL OPERATION.

❑ Refit the centre console (see **MR 393 Bodywork, 57A, Interior equipment, Centre console: Removal - Refitting**).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ If replacing the airbag computer, carry out the necessary operations using the **Diagnostic tool** (see **MR 394 Fault finding, 88C, Airbags and seat belt pretensioners, Fault finding - Replacement of components**).

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ If all is correct, unlock the airbag computer (see **MR 394 Fault finding, 88C, Airbags and pretensioners, Fault finding - Replacement of components**).

Equipment required
Diagnostic tool

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Air-bag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

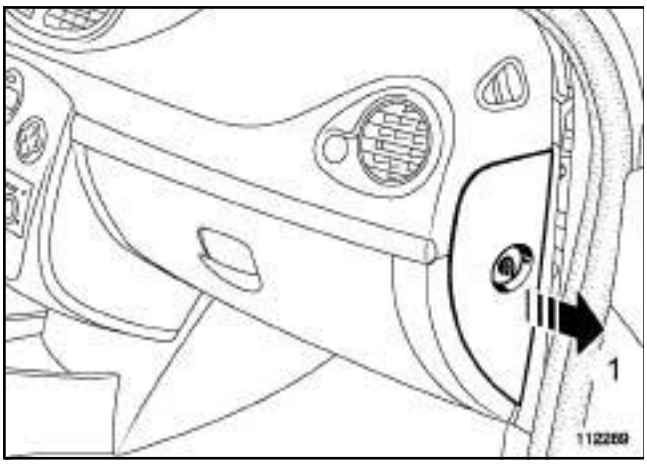
I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on). Locking the airbag computer also allows the electric steering column lock to be unlocked.

❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

II - OPERATION FOR REMOVAL OF PART CONCERNED

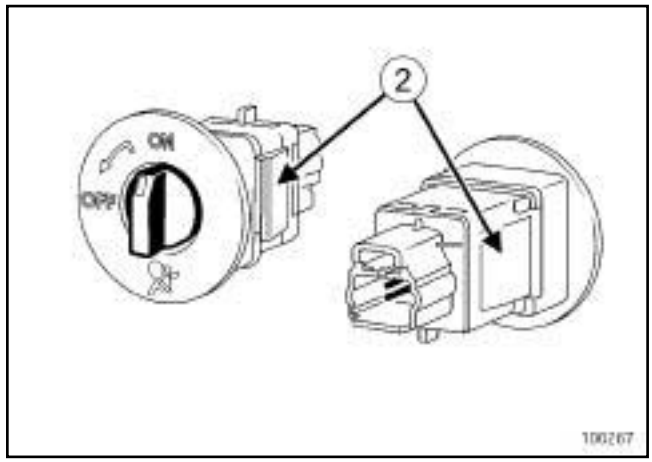


112289

❑ Partially remove the door seal.

❑ Unclip the side panel (**1**) .

❑ Disconnect the connector.



100267

❑ Remove the inhibitor switch on the side panel by pressing on the clips (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Clip the switch onto the side panel.

❑ Connect the inhibitor switch.

❑ Clip on the side panel.

❑ Refit the door seal.

II - FINAL OPERATION.

❑

IMPORTANT
Check the airbag computer with the diagnostic tool. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ If all is correct, unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

WARNING
The position of the inhibitor switch is only taken into account if the ignition is switched off and the computer is configured correctly.

❑ Check:

- the operation of the switch,
- the « airbag OFF » warning light on the instrument panel.

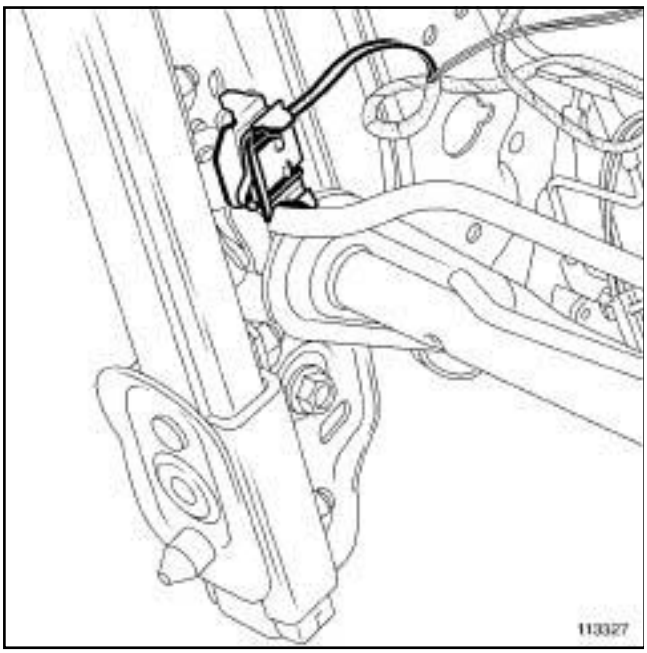
Seat runner switch: Removal - Refitting

Equipment required
Diagnostic tool

The driver's seat has a seat position sensor mounted on the runner. This sensor causes the level of inflation of the driver's frontal airbag to be adjusted (small or large volume) according to the position of the seat on the runner and the violence of the impact.

REMOVAL

OPERATION FOR REMOVAL OF PART CONCERNED



113327

❏ The resistance of the seat position sensor can be checked using the **Diagnostic tool** :

- seat forward: sensor resistance = **400 Ω**

- seat back: sensor resistance = **100 Ω**

Note:

The inflation volume of the passenger airbag does not change with the position of the seat on the runner.

Note:

The sensor is part of the seat wiring. If the position sensor malfunctions, replace the seat harness.

❏ Make a note of the harness routing.

❏ Unclip the harness.

REFITTING

REFITTING OPERATION FOR PART CONCERNED

❏ Refit the harness.

❏ Check that the harness is in good condition.

Front lap belt pretensioner: Removal - Refitting

B85 or K85

Equipment required
Diagnostic tool

Tightening torques ▽	
pretensioner mounting bolt	**35 Nm**

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT

It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are blocked and the airbag warning light on the instrument panel lights up continuously (ignition on).

❑

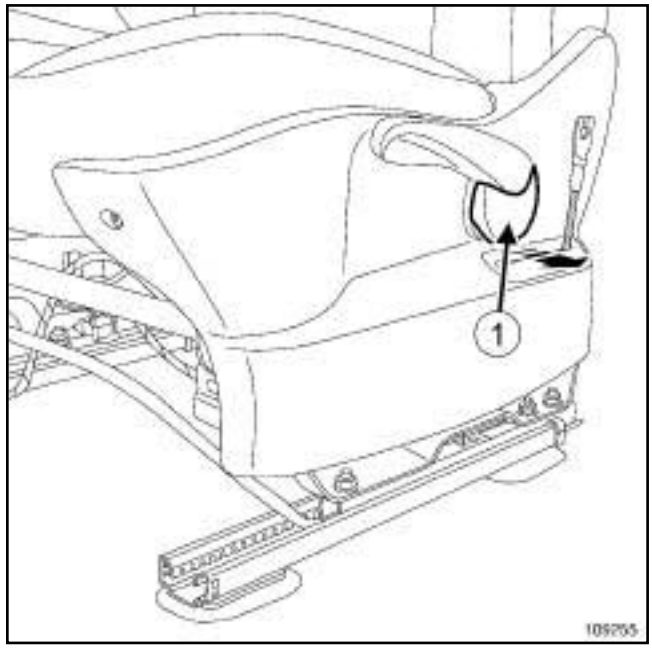
IMPORTANT

Handling pyrotechnic systems (airbags or pretensioners) near to a source of heat or flame is not permitted: there is a risk of triggering the airbags or pretensioners.

❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

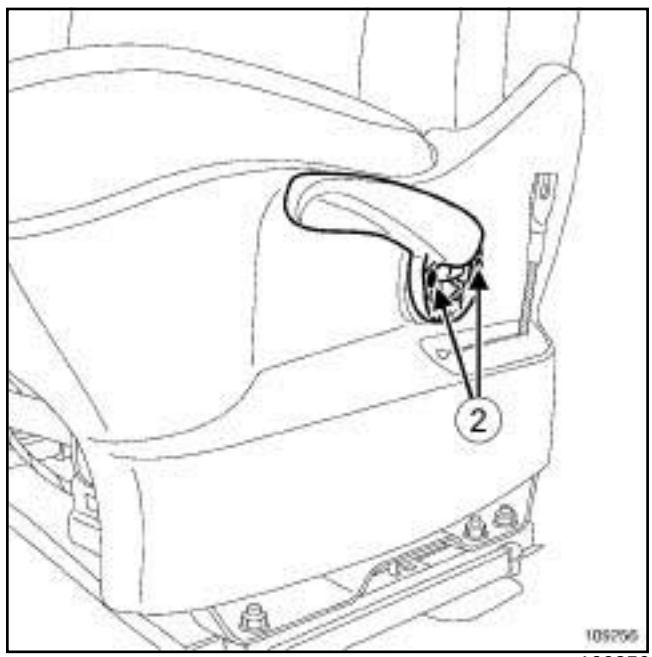
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the complete seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).



109255

❑ Remove the cover (**1**) from the seat height adjustment lever.

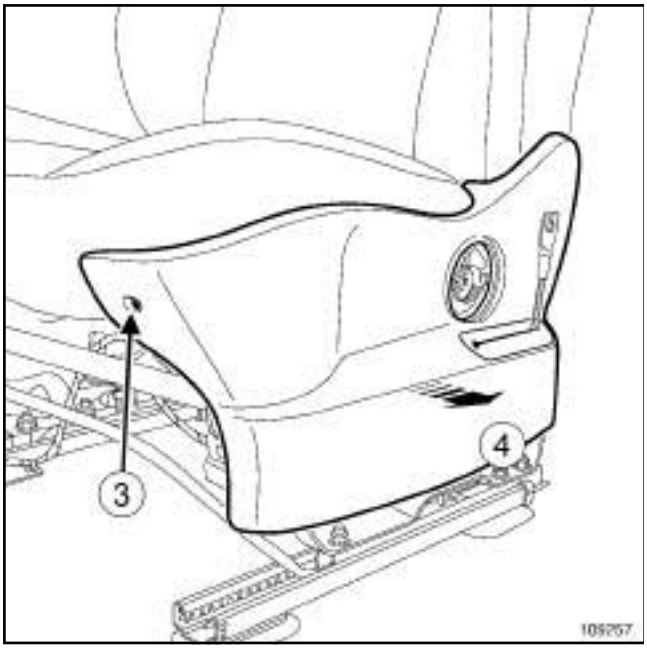


109256

❑ Remove:

- the mounting bolts (**2**) from the height adjustment handle,
- the height adjustment handle.

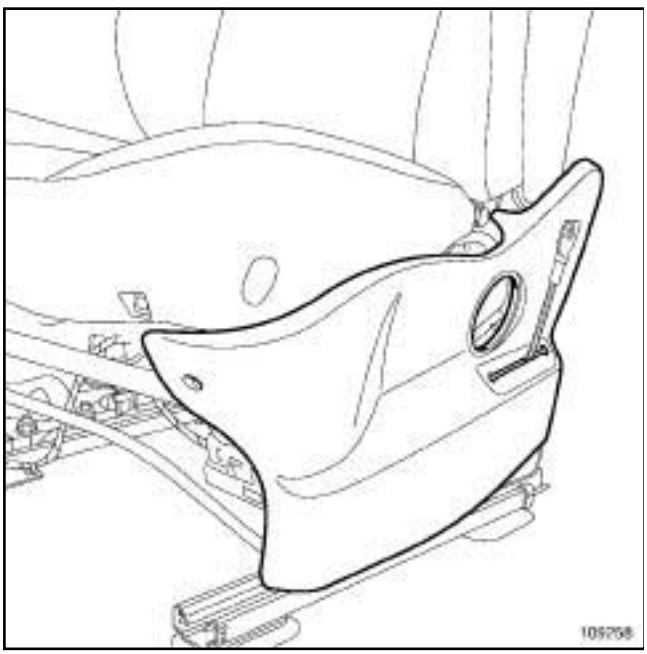
B85 or K85



109257

❏ Remove the mounting bolt (**3**) from the seat cover.

❏ Unclip the front section of the seat housing side panel (**4**) .



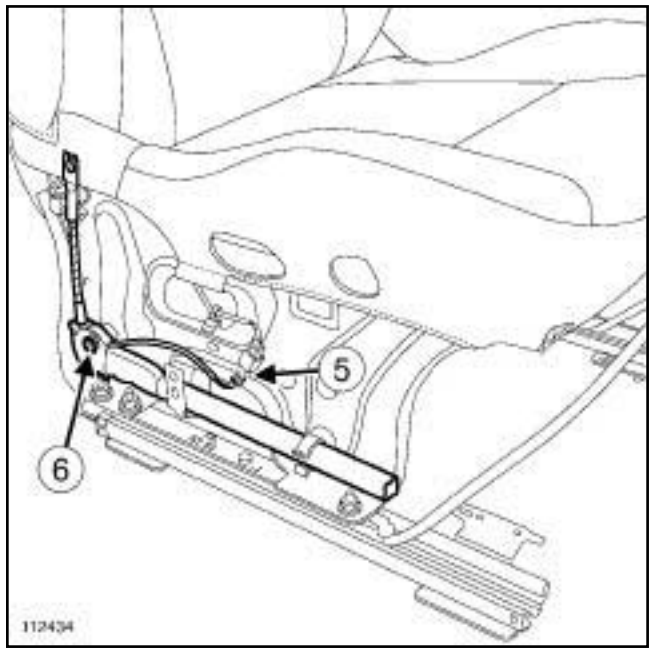
109258

❏ Unclip the rear section of the seat cover.

❏ Disconnect the connectors.

❏ Remove the seat base cover.

II - OPERATION FOR REMOVAL OF PART CONCERNED



112434

❏ Disconnect the connector (**5**) .

❏ Remove:

- the mounting bolt (**6**) from the pretensioner,
- the pretensioner.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the pretensioner bolt.

> **IMPORTANT**
> After a seat belt pyrotechnic component is triggered, it is essential to replace certain parts.
> (see **Airbag and pretensioners: Precautions for repair) (88C, Airbags and pretensioners**).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the pretensioner.

❏ Torque tighten the **pretensioner mounting bolt (35 Nm)**.

❏ Connect the pretensioner connector.

III - FINAL OPERATION.

❏ Connector the connector to the seat cover.

Front lap belt pretensioner: Removal - Refitting

B85 or K85

❑ Clip:

- the rear section of the seat cover,
- the front section of the seat cover.

❑ Refit:

- the seat cover mounting bolt,
- the seat height adjustment handle,
- the height adjustment handle mounting bolts,
- the height adjustment handle cover.

❑ Refit the front seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the accidental triggering of the airbags.

❑ If all is correct, unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Equipment required
Diagnostic tool

Tightening torques ▽	
inertia reel mounting bolt	**23 Nm**
seatbelt upper mounting bolt	**23 Nm**
seatbelt lower mounting bolt	**23 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

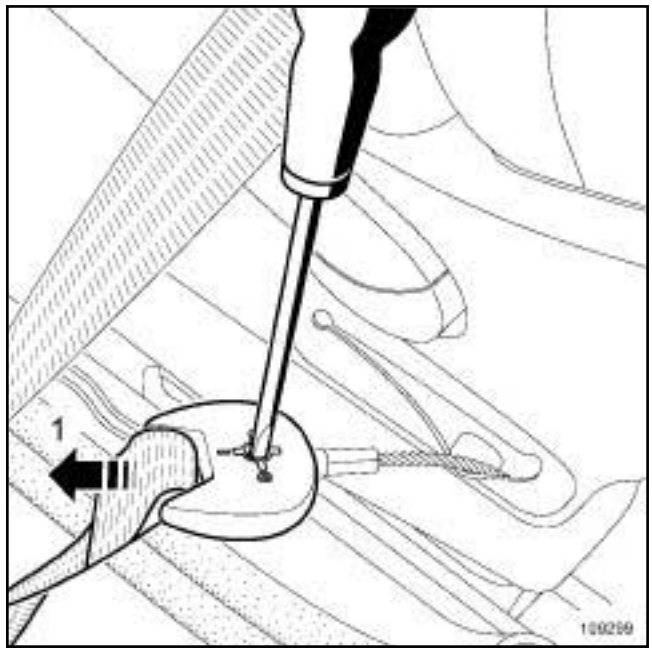
When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

❑ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (MR 394, 88C, Airbags and pretensioners).

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

B85 or K85



109299

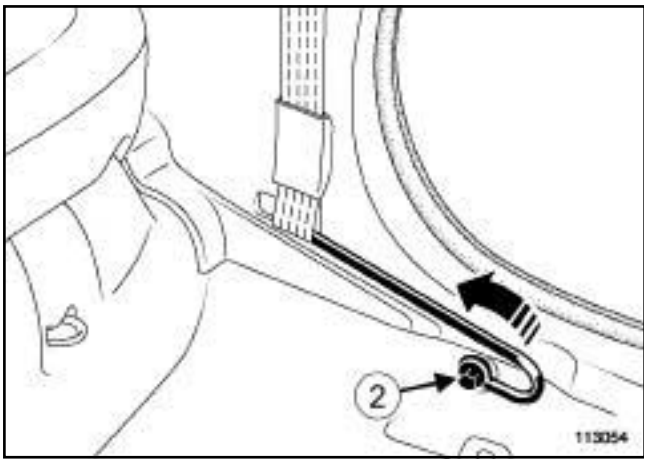
❑ Detach the seat belt strap (**1**) by turning the screw (one quarter of a turn).

❑ Remove the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Partially remove:

- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear door sill lining (see **Rear door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85 or S85



113054

❏ Remove the mounting bolt (**2**) .

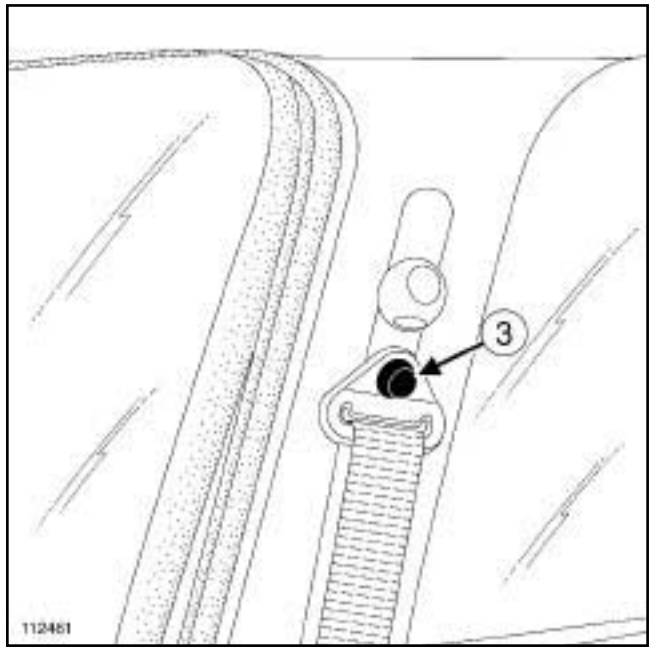
❏ Withdraw the lower seat belt mounting bracket.

❏ Remove:

- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear bench seat (see **Single unit rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- the rear panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

B85 or K85

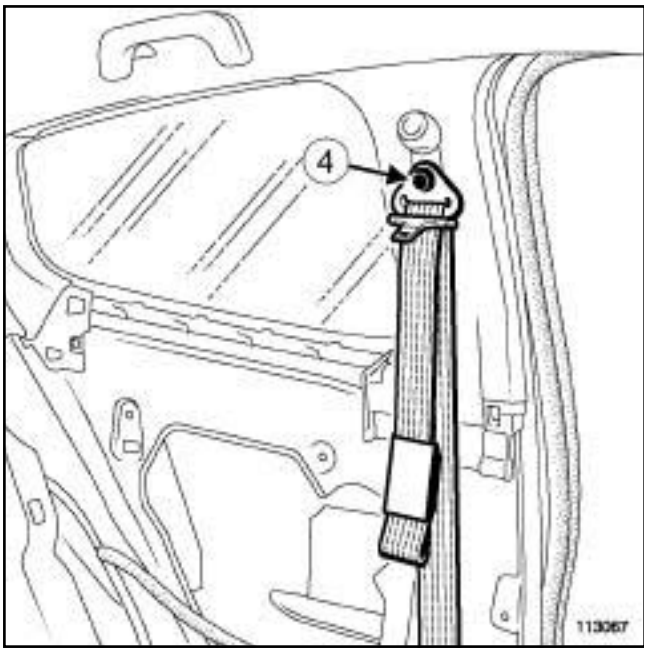


112461

❏ Remove:

- the blanking cover (**3**) ,
- the seat belt upper mounting.

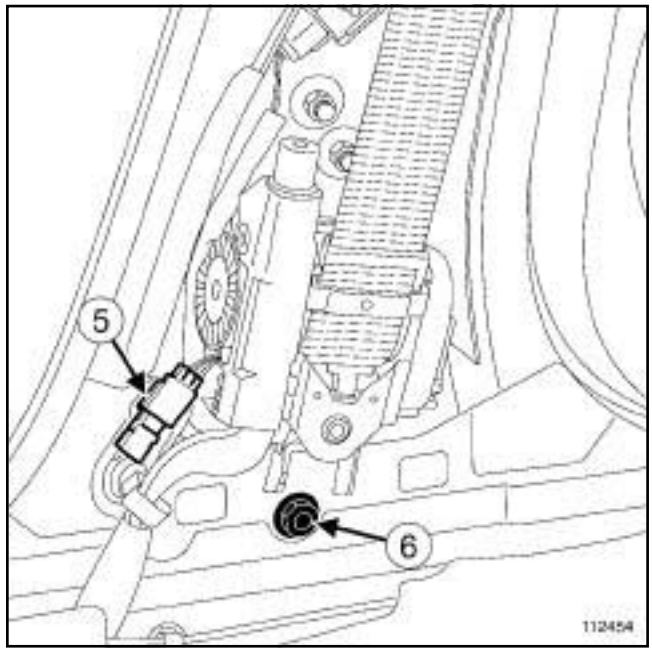
C85 or S85



113067

❑ Remove:

- the blanking cover (**4**) ,
- the seat belt upper mounting.



112454

❑ Always disconnect the connector (**5**) before removing the pyrotechnic inertia reel.

❑ Remove:

- the mounting bolt (**6**) from the inertia reel,
- the pyrotechnic inertia reel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the seat belt height adjustment mechanism.
- the reel mounting bolts.

❑

IMPORTANT
After a seat belt pyrotechnic component is triggered, it is essential to replace certain parts.

(see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Replace the seat belt height adjustment mechanism (see **Seat height adjustment system: Removal - Refitting**) (MR393, 59A, Seat belt height adjustment system).

❑ It is imperative to refit the seat belt inertia reel before reconnecting the connector.

❑ Torque tighten the **inertia reel mounting bolt (23 Nm)**.

❑ Connect the inertia reel connector.

❑ Torque tighten the **seatbelt upper mounting bolt (23 Nm)**.

III - FINAL OPERATION.

B85 or K85

❑ Refit:

- the rear door sill lining (see **Rear door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the B-pillar lower trim (see **B-pillar trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85 or S85

❑ Refit:

- the rear panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the rear bench seat (see **Single unit rear bench seat base: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners),
- the front door sill lining (see **Front door sill lining: Removal - Refitting**) (MR 393, 71A, Body internal trim),
- the seat belt lower mounting.

❑ Torque tighten the **seatbelt lower mounting bolt (23 Nm)**.

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❑ If all is correct, unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

To eliminate the risk of any accident, do not reuse pyrotechnic components.

It is essential to destroy pretensioners or airbags before scrapping a vehicle or a part only.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Rear pyrotechnic inertia reel: Removal - Refitting

B85 or C85 or K85

Equipment required
Diagnostic tool

Tightening torques ▽	
inertia reel mounting bolt	**21 Nm**
seat belt upper mounting bolt	**21 Nm**
seat belt lower mounting bolt	**21 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is lit continuously (ignition on).

IMPORTANT
Handling pyrotechnic systems (airbags or pretensioners) near to a source of heat or flame is not permitted: there is a risk of triggering the airbags or pretensioners.

❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

B85 or K85

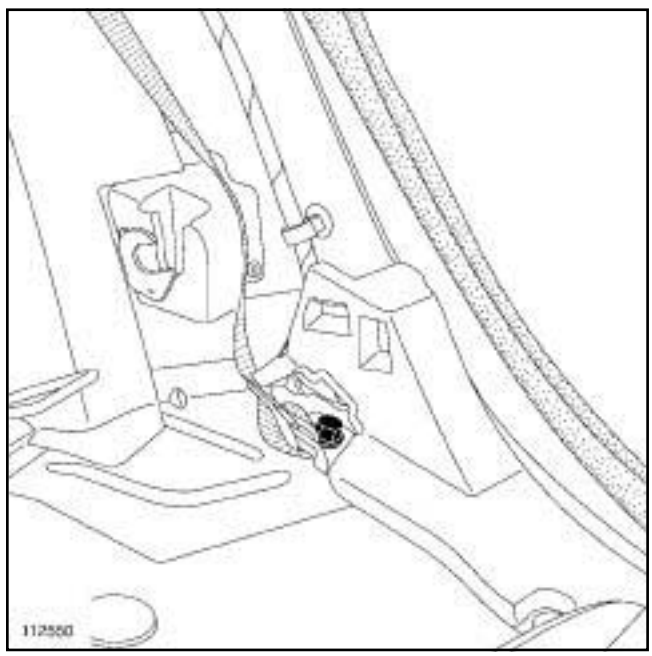
❑ Remove the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85

❑ Remove the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Remove the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

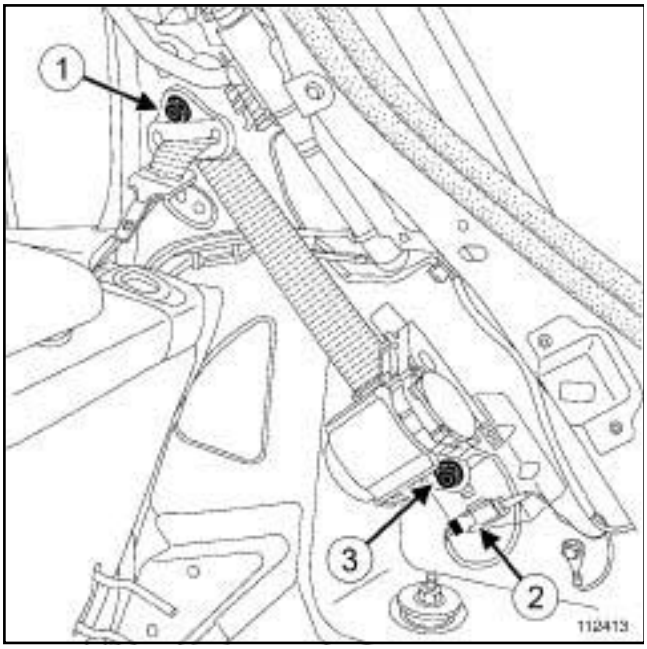


112550

❑ Remove the belt's lower mounting bolt.

Rear pyrotechnic inertia reel: Removal - Refitting

B85 or C85 or K85



112413

❑ Remove the seat belt upper mounting bolt (**1**) .

❑ Disconnect the connector (**2**) from the pyrotechnic inertia reel.

❑ Remove:

- the mounting bolt (**3**) from the inertia reel,
- the pyrotechnic inertia reel.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the mounting bolt for the pyrotechnic inertia reel.

❑

IMPORTANT

After a seat belt pyrotechnic component is triggered, it is essential to replace certain parts.

(see **Airbag and pretensioners: Precautions for repair) (88C, Airbags and pretensioners**).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the reel.

❑ Torque tighten the **inertia reel mounting bolt (21 Nm)**.

❑ Connect the inertia reel connector.

❑ Torque tighten the **seat belt upper mounting bolt (21 Nm)**.

❑ Torque tighten the **seat belt lower mounting bolt (21 Nm)**.

III - FINAL OPERATION.

❑ Refit the rear quarter panel trim (see **Quarter panel trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

B85 or K85

❑ Refit the rear door sill upper lining (see **Rear inner sill upper trim: Removal - Refitting**) (MR 393, 71A, Body internal trim).

C85

❑ Refit the rear wing panel trim (see **Rear panel lining: Removal - Refitting**) (MR 393, 71A, Body internal trim).

❑ Refit the rear bench seat (see **Single unit rear bench seatback: Removal - Refitting**) or (see **1/3 and 2/3 rear bench seatback: Removal - Refitting**) (MR 393, 76A, Rear seat frames and runners).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the accidental triggering of the airbags.

❑ If all is correct, unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Equipment required
Diagnostic tool

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the triggering lines are inhibited and the airbag warning light on the instrument panel is continuously lit (ignition on). Locking the airbag computer also unlocks the steering column lock.

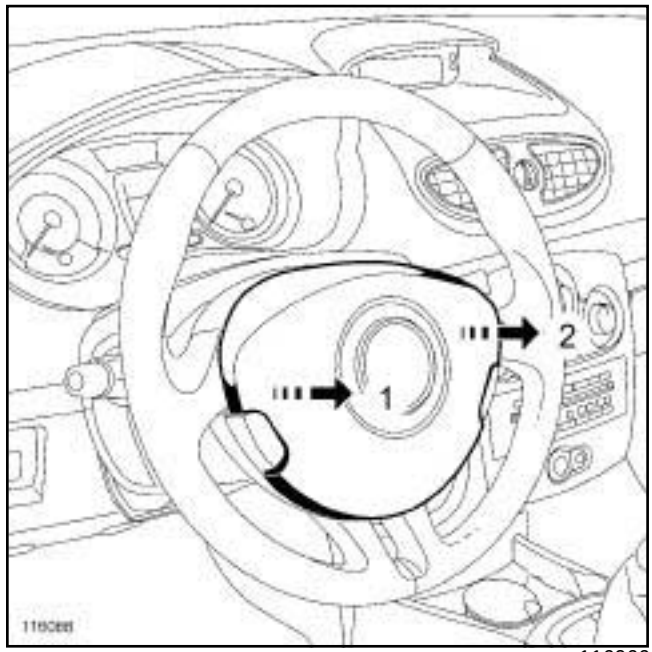
IMPORTANT
The pyrotechnic systems (airbags and pretensioners) must not be exposed to a heat source or naked flame when being handled; there is a risk of triggering the airbags and pretensioners.

❑ Ensure that the vehicle wheels are set straight ahead.

❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

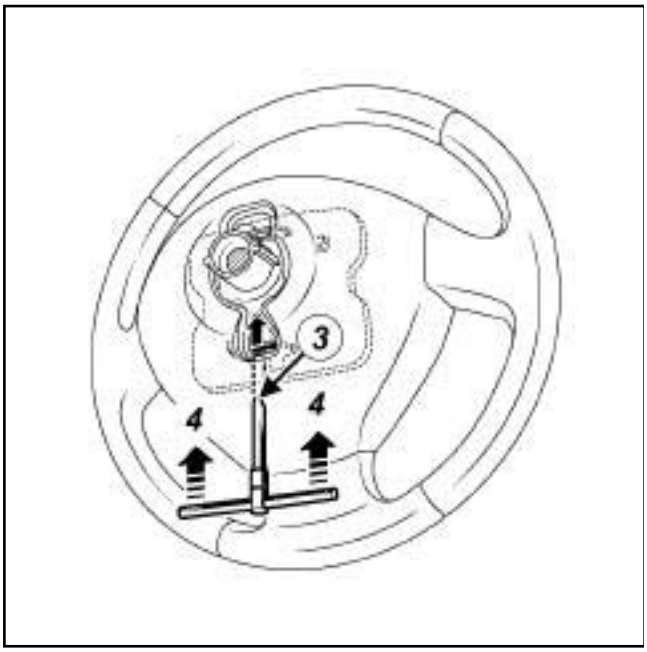
❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



116066

❑ Without removing it, unclip the airbag module partially at (**1**) then (**2**) without pressing on the steering wheel switches.

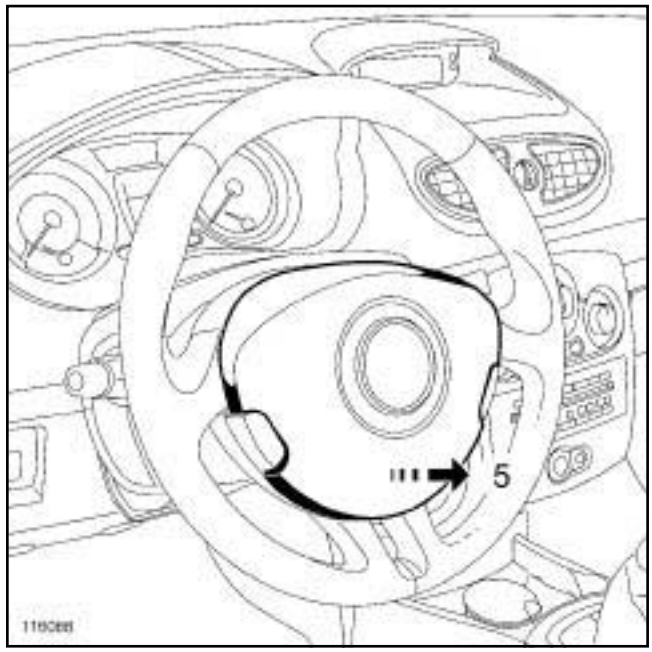


107755

❏ Insert a T-bar with an extension **8 mm** in diameter (e.g.: junior ratchet set, cylindrical tip) into the hole (3) located behind the steering wheel (the seal must be pierced the first time it is removed).

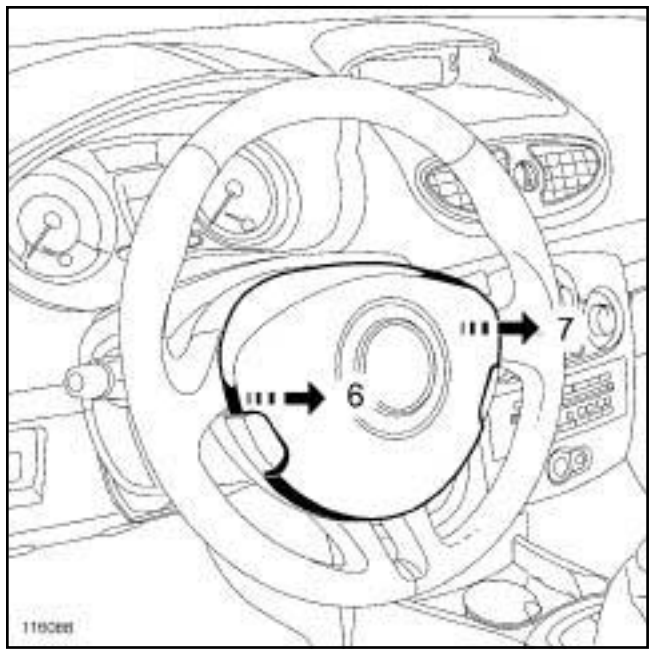
WARNING

To ensure the airbag is not damaged during removal, do not use a tool with a point or a sharp edge.



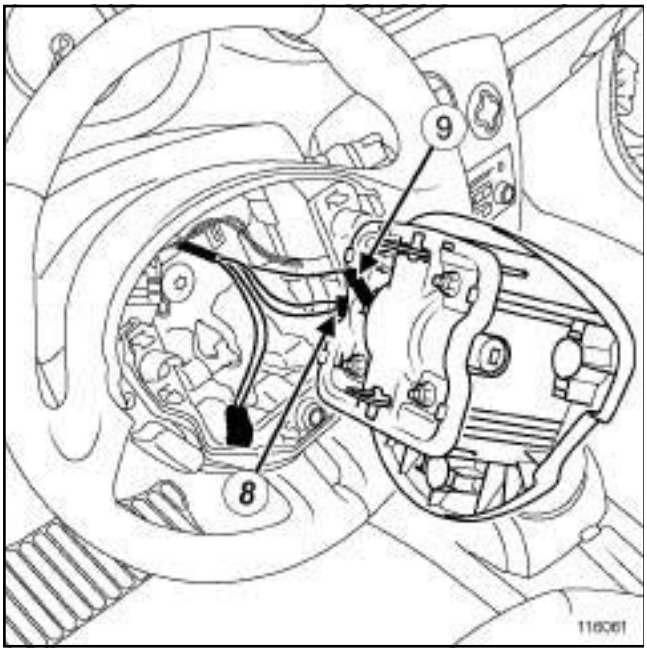
116066

❏ Apply pressure (4) on the clip using the T-bar with the extension, whilst slowly pulling the airbag module towards you (**5**) to unclip the lower section of the airbag.

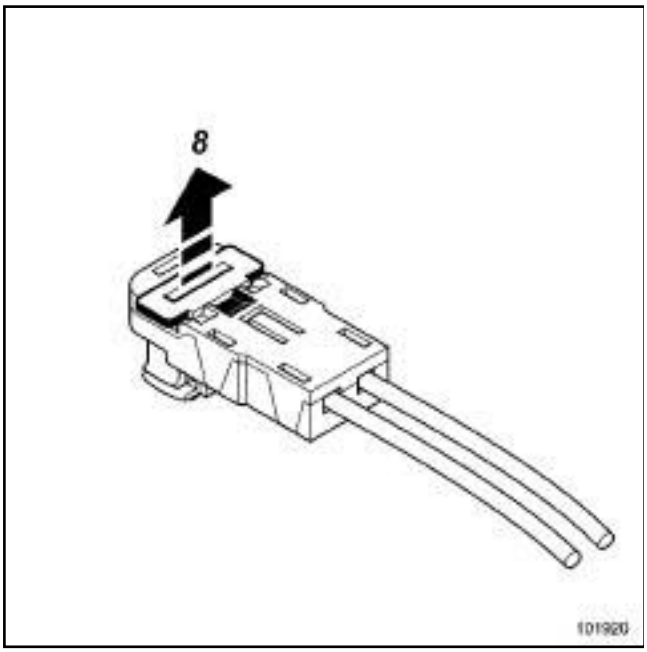


116066

❏ Unclip the airbag module connector at (**6**) and (**7**) .



116061



101920

❑ Disconnect:

- the airbag module connectors by unclipping the safety devices (**8**) ,
- the earth terminal (**9**) .

Note:

The airbag has a connector which short circuits if disconnected, to prevent accidental triggering.

❑ Remove the driver's front airbag.

IMPORTANT

Always fit the airbag with the cushion facing upwards.

REFITTING

I - REFITTING PREPARATIONS OPERATION

❑

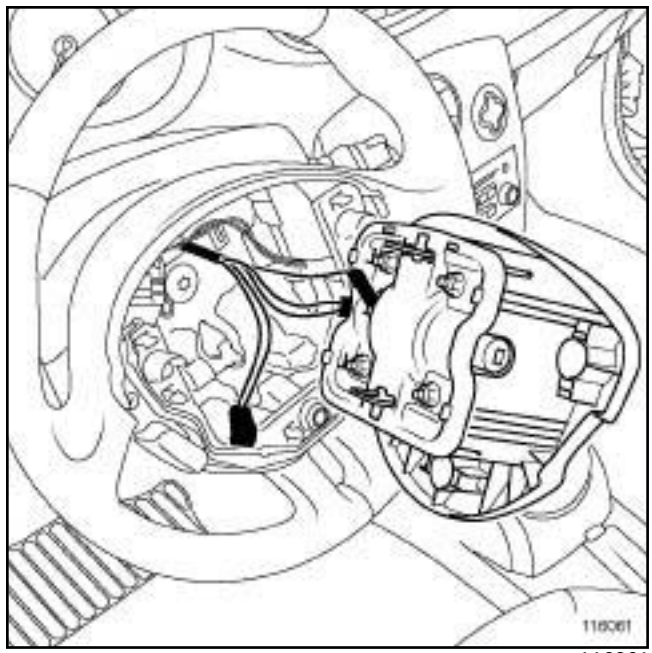
IMPORTANT

After a pyrotechnic component has been triggered, certain parts must be replaced (see 88C Airbags and pretensioners, Airbags and pretensioners: Precautions during repair).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Connect:

- the earth terminal,
- the airbag module connectors.



116061

❑ Refit the airbag module.

WARNING

It is essential to observe the wiring harness routing to prevent it being damaged during refitting.

❑ Clip the airbag module in place.

III - FINAL OPERATION.

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ Unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Equipment required
Diagnostic tool

Tightening torques ▽	
airbag module mounting bolts	**6 Nm**
module mounting bolts on the pillar	**8 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ The passenger airbag is mounted beneath the dashboard facing the front passenger.

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on). Locking the airbag computer also allows the electric steering column lock to be unlocked.

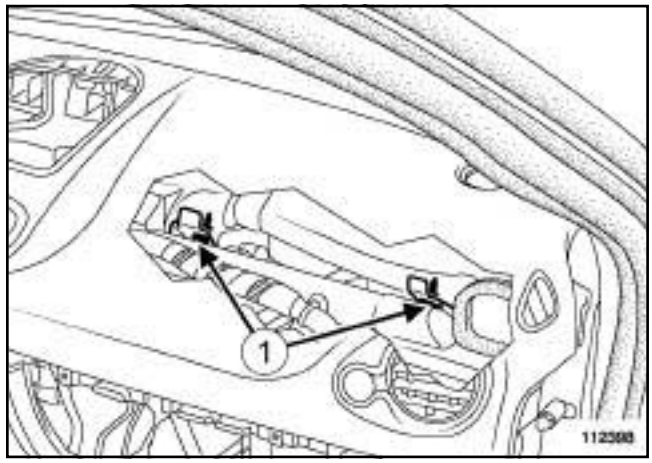
IMPORTANT
Handling pyrotechnic systems (airbags or pretensioners) near to a source of heat or flame is not permitted: there is a risk of triggering the airbags or pretensioners.

❏ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

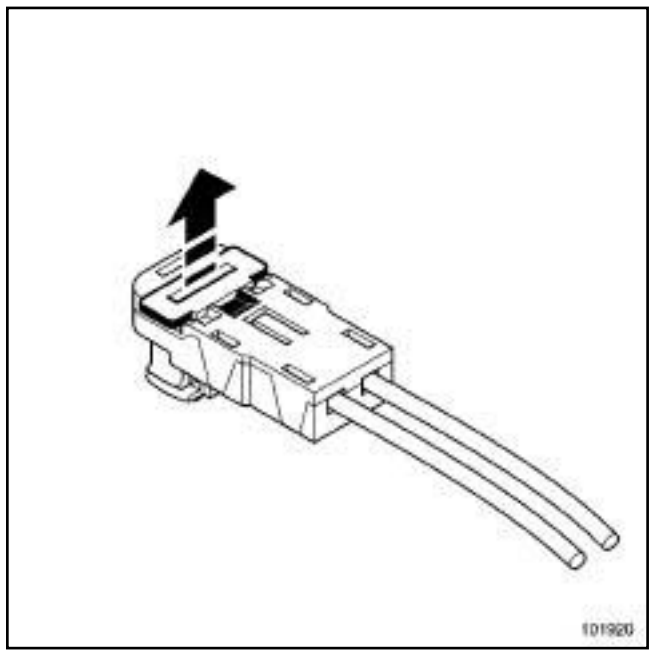
❏ Remove the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112398

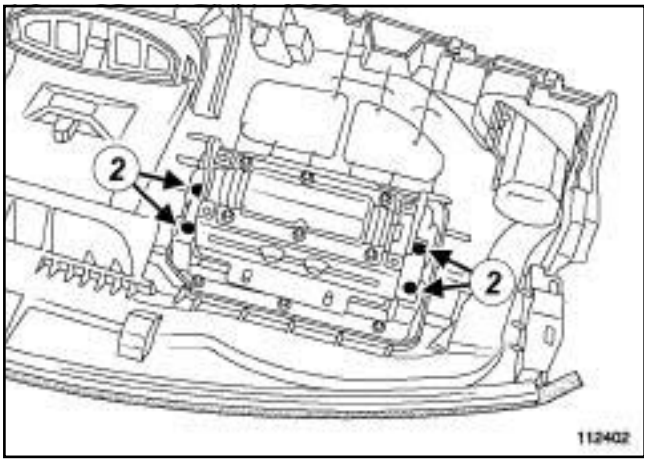
❏ Remove the bolts (**1**) attaching the airbag module to the beam.



101920

❏ Disconnect:

- the airbag module connectors by unclipping the safety devices,
- the earth terminal.



112402

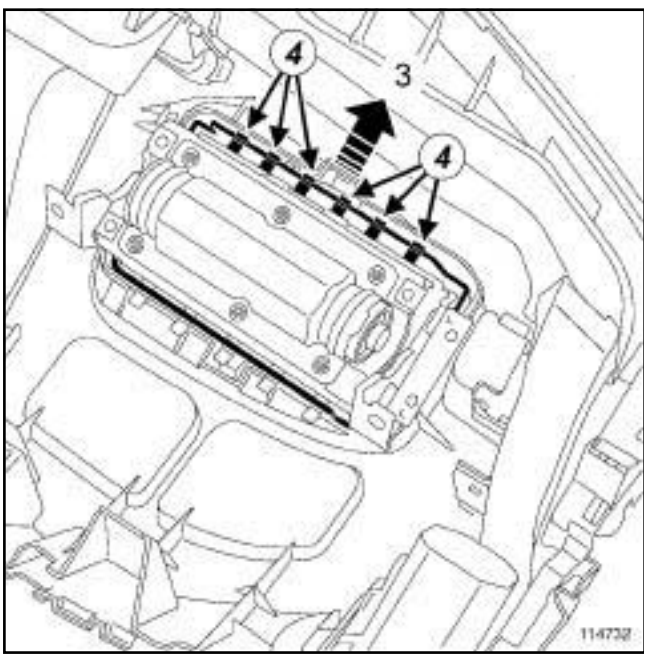
❑ Remove the bolts (**2**) attaching the airbag module to the support.

Note:

The airbag has a connector which short circuits if it is disconnected to prevent accidental triggering.

Note:

Depending on the vehicle's equipment level, the airbag module may be attached to the top of the dashboard with clips (entry level version).



114732

❑ Move the airbag module support (**3**) to detach clips (**4**) .

❑ Remove the support module.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Replace the parts required, (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

IMPORTANT

When the passenger airbag module is triggered, the consequent damage caused to the attachments always requires the dashboard to be replaced. Do not forget to affix the label forbidding the installation of a rear-facing child seat on the passenger seat to the side of the new dashboard.

II - REFITTING OPERATION FOR PART CONCERNED

❑

IMPORTANT

Whenever the passenger airbag module is removed, it is essential to replace the nuts or bolts that hold the module to the dashboard with new ones.

❑ Torque tighten the **airbag module mounting bolts (6 Nm)**.

III - FINAL OPERATION.

❑ Refit the dashboard (see **Dashboard: Removal - Refitting**) (MR 393, 57A, Interior equipment).

❑ Torque tighten the **module mounting bolts on the pillar (8 Nm)**.

❑ Connect:

- the earth terminal,

- the airbag module connectors.

❑ Check that the connectors are locked correctly.

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ Unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Equipment required
Diagnostic tool

The front chest level side air bag is mounted on the back of each front seat at the door side.

When it inflates, the airbag tears open the cover of the module and the foam and unclips the seat cover.

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the triggering lines are inhibited and the airbag warning light on the instrument panel is continuously lit (ignition on). Locking the airbag computer also unlocks the steering column lock.

IMPORTANT
The pyrotechnic systems (airbags and pretensioners) must not be exposed to a heat source or naked flame when being handled; there is a risk of triggering the airbags and pretensioners.

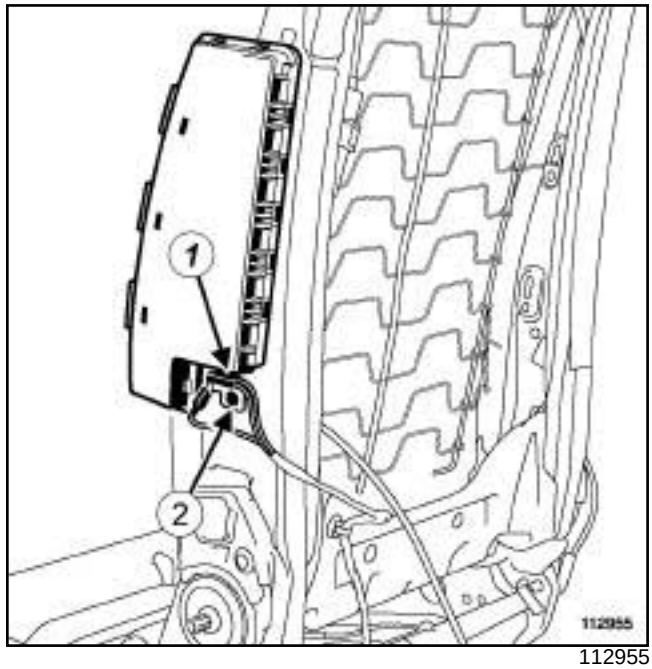
❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

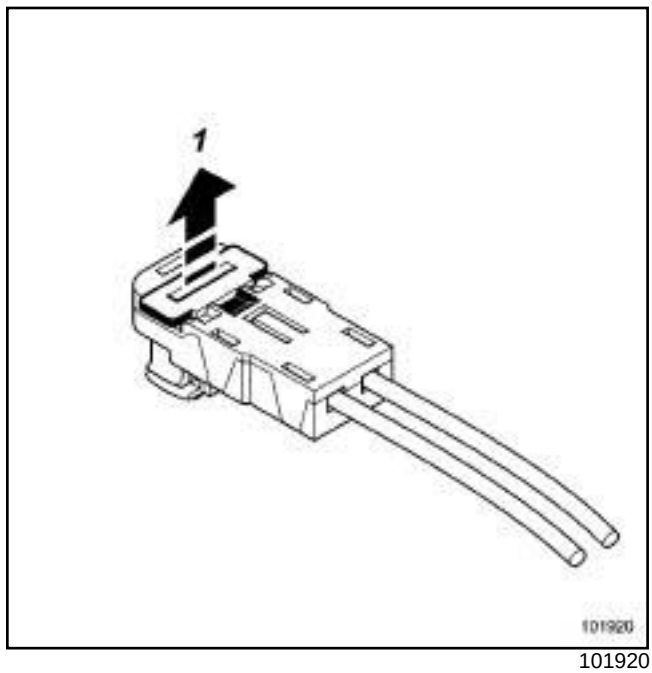
❑ Remove:

- the seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),
- the seatback trim (see **Front seatback trim: Removal - Refitting**) (MR 393, 77A, Front seat trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112955



101920

❑ Disconnect:

- the airbag module connector by unclipping the safety device (**1**) ,
- the earth terminal.

❑ Remove:

- the mounting rivet (**2**) ,
- the airbag module.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Replace the parts required (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

IMPORTANT
Every time a side thorax airbag is removed it must be replaced.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit a new front side thorax airbag onto the seatback frame.

❑ Attach the airbag to the frame with a rivet (part number: **77 01 060 538**).

❑ Connect:

- the earth terminal,
- the airbag module connector.

❑ Check that the connector is locked correctly.

III - FINAL OPERATION.

❑ Recover the backrest observing the recommendations (see **Front seatback trim: Removal - Refitting**) (MR 393, 77A, Front seat trim).

❑ Refit the seat to the vehicle (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT
Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ Unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT
Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

FRONT SIDE + CURTAIN AIRBAG

Equipment required
Diagnostic tool

Tightening torques ▽	
side curtain airbag mountings	8 Nm

The curtain airbag is mounted behind the headlining and the quarter panel trim.

The airbag detaches the headlining when it inflates.

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Air-bag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

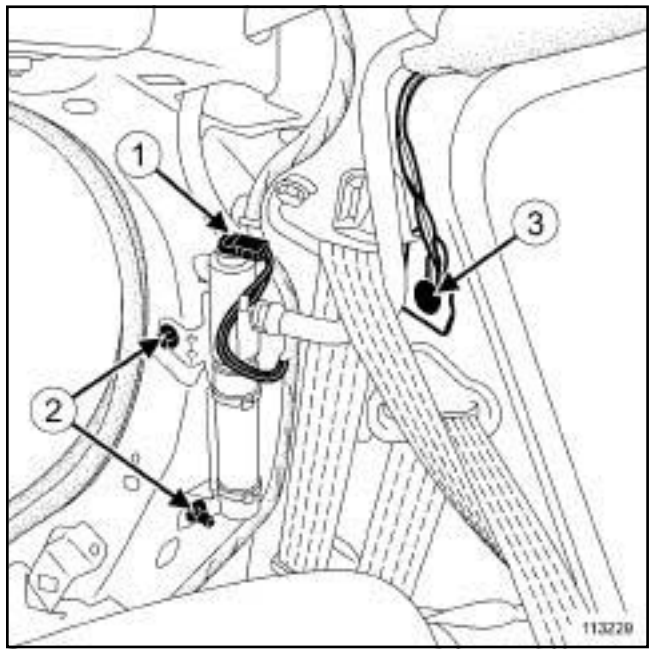
IMPORTANT
Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

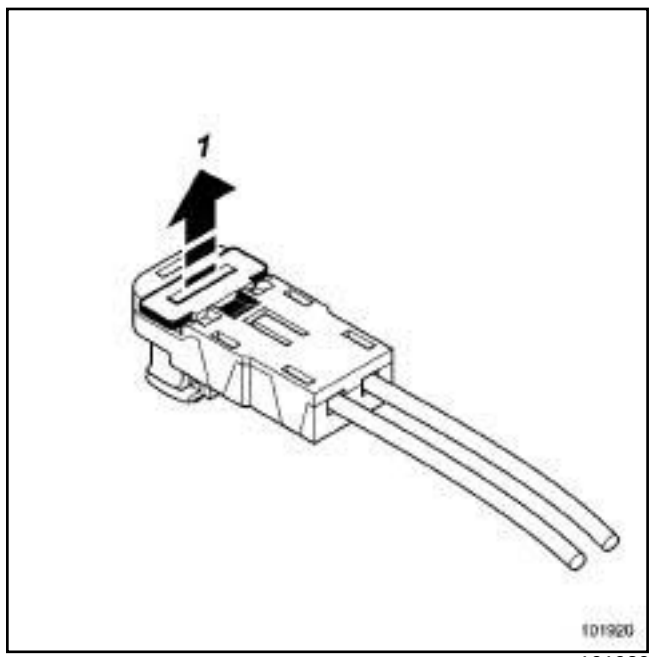
❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the headlining (see **Headlining: Removal - Refitting**) (71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



113229



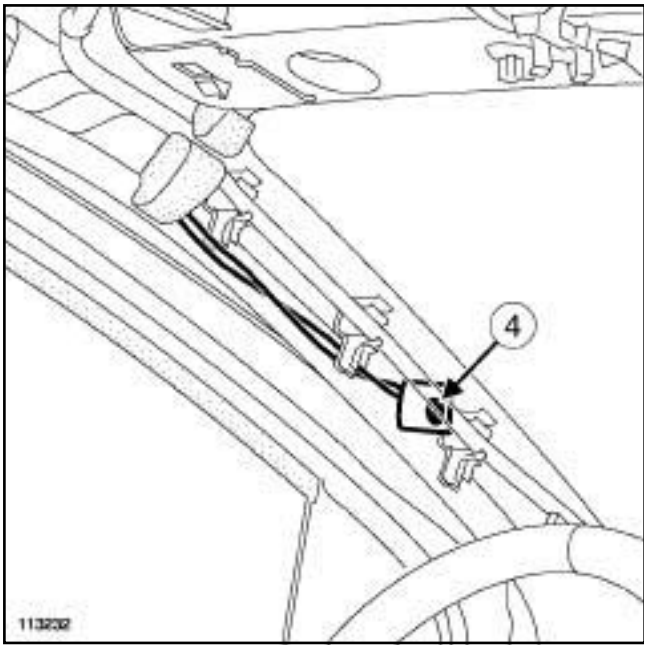
101920

❏ Disconnect the airbag connector by unclipping the safety (**1**) .

❏ Remove the mounting bolts (**2**) from the airbag module.

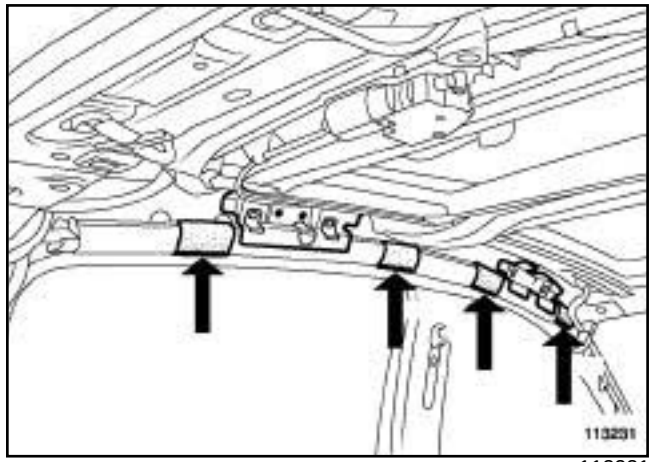
❏ Remove the rear retaining pin (**3**) .

FRONT SIDE + CURTAIN AIRBAG

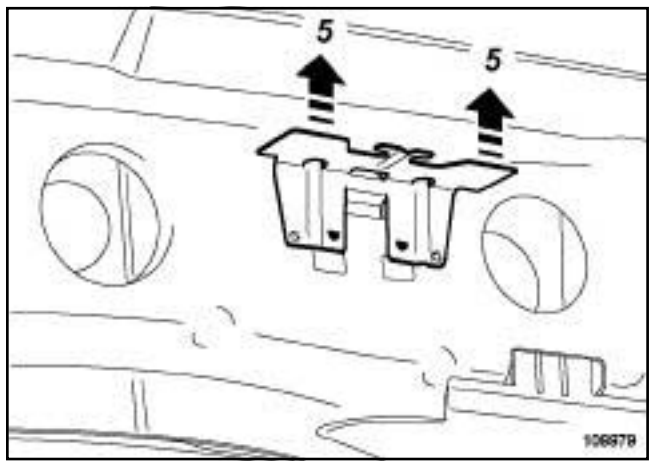


113232

❏ Remove the front retaining pin (**4**) .



113231



109979

❏ The curtain section is clipped to the body at several points.

❏ Remove clips (**5**) .

❏ Remove the curtain airbag.

REFITTING

I - REFITTING PREPARATION OPERATION

❏

IMPORTANT

After a seat belt pyrotechnic component is triggered, it is essential to replace certain parts.

(see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

IMPORTANT

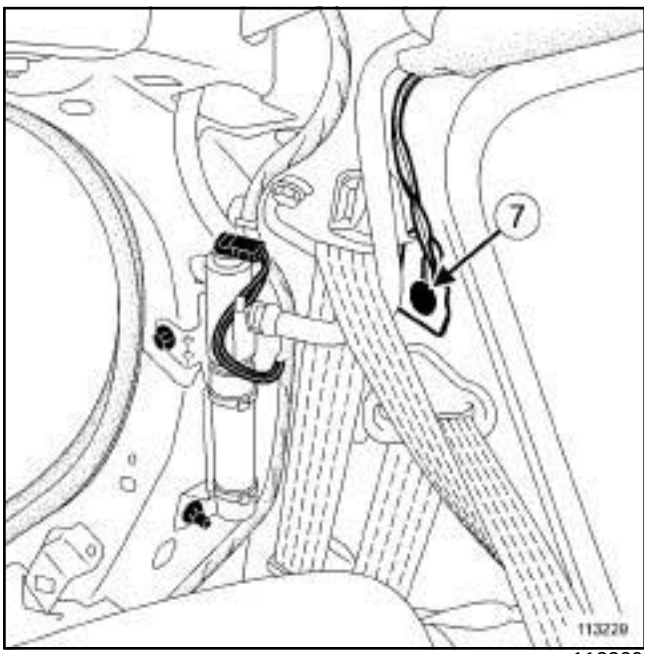
In order to ensure the side curtain airbag clips hold, never refit a side curtain airbag which has been removed.

FRONT SIDE + CURTAIN AIRBAG

❏ Always replace the side curtain airbag.

II - REFITTING OPERATION FOR PART CONCERNED

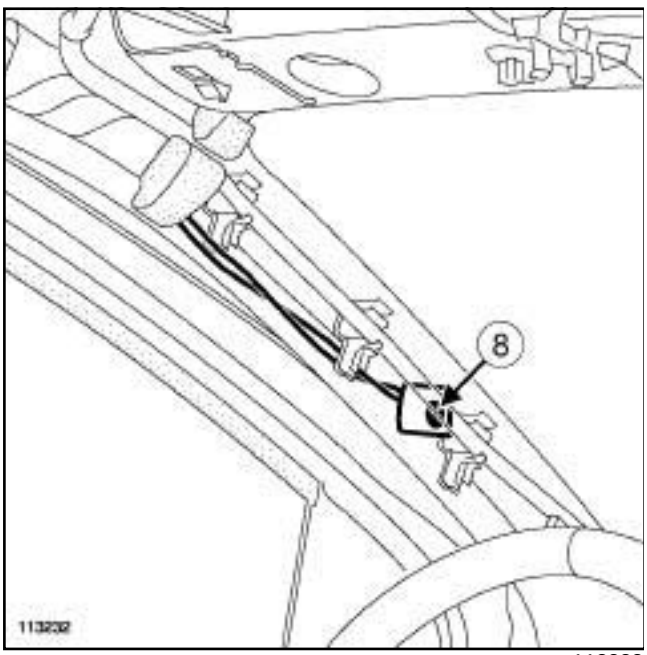
❏ Fit the new side curtain airbag without tightening the mountings.



113229

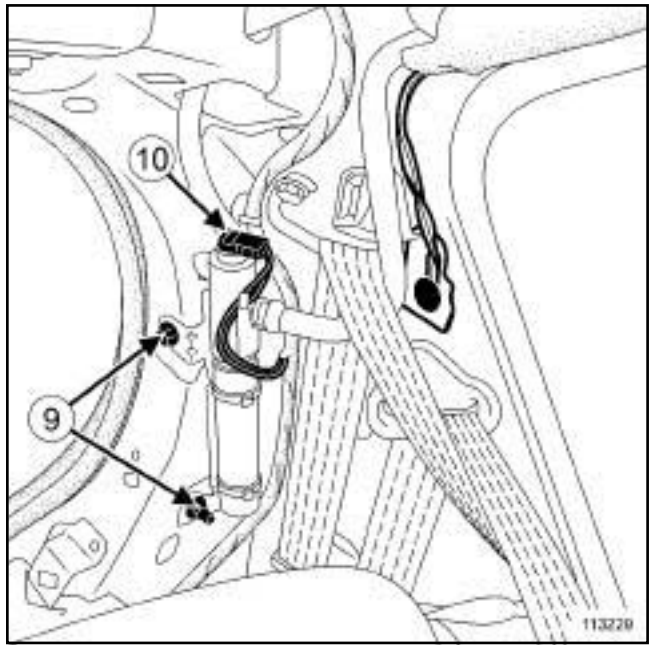
❏ Fit all the clips, working from the rear of the vehicle to the front.

❏ Fit the rear retaining pin (**7**) .



113232

❏ Fit the front retaining pin (**8**) .



113229

❏ Torque tighten the **side curtain airbag mountings (8 Nm)** (**9**) .

❏ Connect the side curtain airbag connector (**10**) , checking that it is correctly locked.

III - FINAL OPERATION.

❏ Refit the headlining (see **Headlining: Removal - Refitting**) (71A, Body internal trim).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

IMPORTANT

To eliminate the risk of any accident, do not reuse pyrotechnic components.

It is essential to destroy pretensioners or airbags before scrapping a vehicle or a part only.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

Anti-submarining airbag: Removal - Refitting

C85

Equipment required
Diagnostic tool

Tightening torques ▽	
anti-submarining airbag mounting bolts	**21 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑

IMPORTANT
It is essential to lock the airbag computer using the **Diagnostic tool** before starting the removal. When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel is continuously lit (with the ignition on).

IMPORTANT
Handling pyrotechnic systems (airbags or pretensioners) near to a source of heat or flame is not permitted: there is a risk of triggering the airbags or pretensioners.

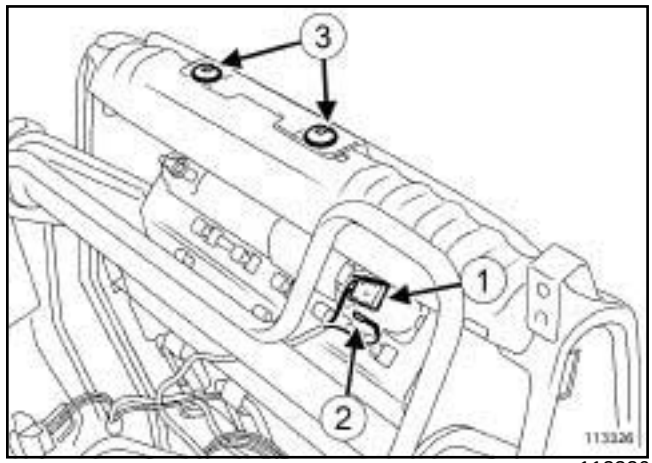
❑ Lock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

❑ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❑ Remove:

- the seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners),
- the seat base trim (see **Front seat base trim: Removal - Refitting**) (MR 393, 77A, Front seat trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED

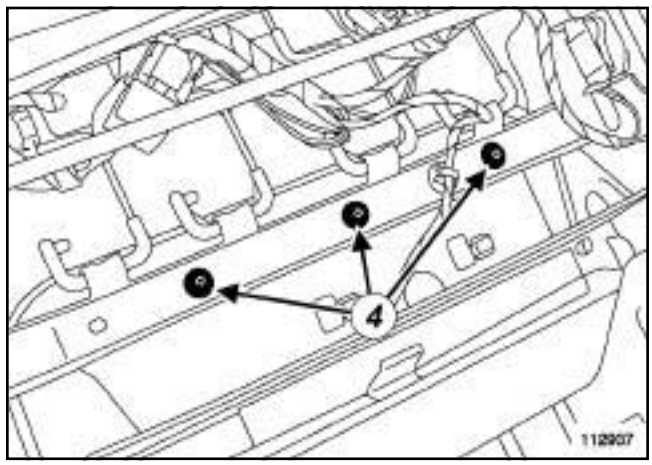


113326

❑ Disconnect:

- the airbag module connector (**1**) ,
- the earth terminal (**2**) .

❑ Remove the airbag module mounting bolts (**3**) .



112937

❑ Remove:

- the airbag module (**4**) mounting bolts,
- the airbag module.

REFITTING

I - REMOVAL PREPARATION OPERATION

❑ Replace the parts required (see **88C**, **Air bag and Pretensioners**, **Airbag and pretensioners: Precautions for the repair**, page **88C-6**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the anti-submarining airbag.

C85

❑ Torque tighten the **anti-submarining airbag mounting bolts (21 Nm)** starting with bolts ***(3)*** and ***(4)*** .

❑ Connect:

- the earth terminal,
- the airbag module connector, checking that it is locked correctly.

III - FINAL OPERATION.

❑ Refit:

- the seat base trim (see **Front seat base trim: Removal - Refitting**) (MR 393, 77A, Front seat trim),
- the seat (see **Complete front seat: Removal - Refitting**) (MR 393, 75A, Front seat frames and runners).

❑ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

Check the airbag computer using the **Diagnostic tool**. Any failure to follow these instructions may lead to system malfunctions, or even result in the incorrect triggering of the airbags.

❑ Unlock the airbag computer (see **Fault finding - Replacement of components**)(MR 394, 88C, Airbags and seat belt pretensioners).

IMPORTANT

Do not reuse the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

(see **88C**, **Air bag and Pretensioners**, **Airbags and pretensioners: Recycling - Destruction**, page **88C-7**) .

FRONT SIDE AIRBAG or FRONT SIDE + CURTAIN AIRBAG

Equipment required
Diagnostic tool

Tightening torques ▽	
side impact sensor bolt	**8 Nm**

IMPORTANT
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **88C**, **Air bag and Pretensioners**, **Air-bag and pretensioners: Precautions for the repair**, page **88C-6**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏

IMPORTANT
To avoid any risk of triggering when working on or near a pyrotechnic component (airbags or pretensioners), lock the airbag computer using the diagnostic tool.

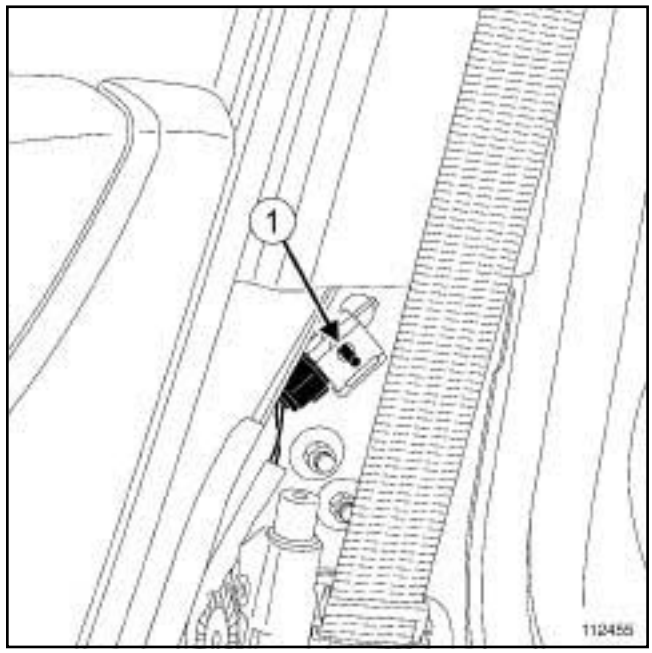
When this function is activated, all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

❏ Lock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

❏ Disconnect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

❏ Remove the lower B-pillar trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



112455

❏ Disconnect the connector.

❏ Undo the sensor bolt (**1**) .

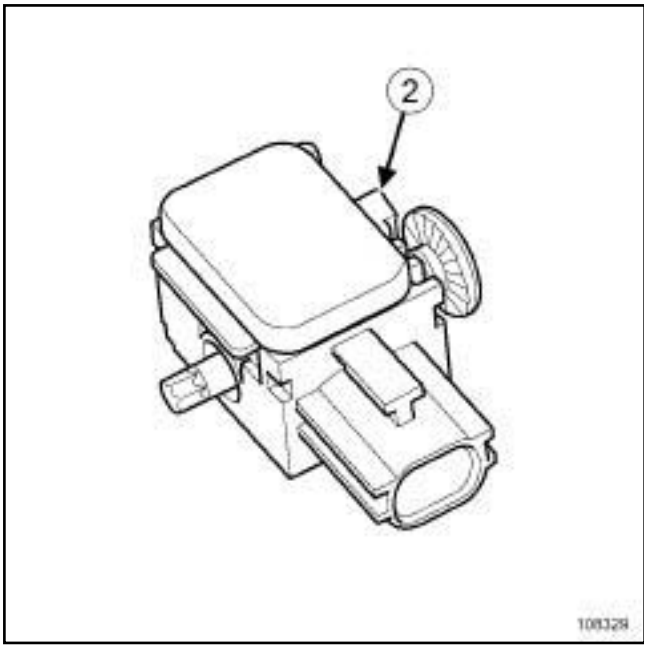
❏ Remove the sensor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Always replace the side impact sensors.

FRONT SIDE AIRBAG or FRONT SIDE + CURTAIN AIRBAG



108329

❏ Position the sensor using its positioning pin (**2**) .

❏ Torque tighten the **side impact sensor bolt (8 Nm)**.

❏ Connect the connector.

II - FINAL OPERATION.

❏ Refit the B-pillar trim (see **B-pillar trim: Removal - Refitting**) (71A, Body internal trim).

❏ Connect the battery (see **80A**, **Battery**, **Battery: Removal - Refitting**, page **80A-1**) .

IMPORTANT

To avoid a fault with or even triggering of pyrotechnic components (airbags or pretensioners), check the airbag computer using the diagnostic tool.

❏ Unlock the airbag computer using the **Diagnostic tool** (see **Fault finding - Replacement of components**) (88C, Airbags and pretensioners).

Note:

These sensors do not require programming with the **Diagnostic tool**.

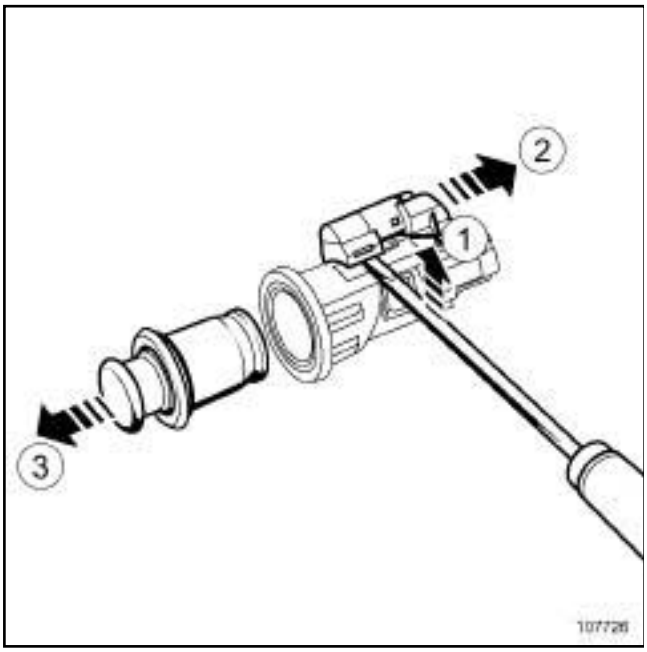
WITH SMOKING ACCESSORIES

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).

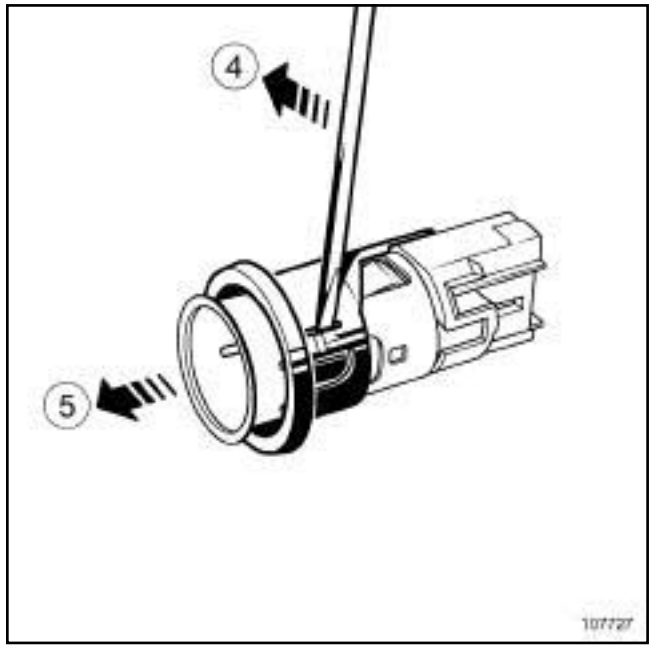
II - OPERATION FOR REMOVAL OF PART CONCERNED



107726

❏ Unclip the bulb holder using a flat-blade screwdriver at (**1**) and (**2**) .

❏ Remove the cigarette lighter (**3**) .



107727

❏ Keep the plastic support unlocked at (**4**) .

❏ Pull the cigarette lighter support at (**5**) .

❏ Unclip the plastic support from the console.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Clip the plastic support into the console.

❏ Refit the cigarette lighter support.

❏ Refit the cigarette lighter.

❏ Clip the bulb support onto the cigarette lighter.

II - FINAL OPERATION.

❏ Refit the centre console (see **Centre console: Removal - Refitting**) (MR 393, 57A, Interior equipment).