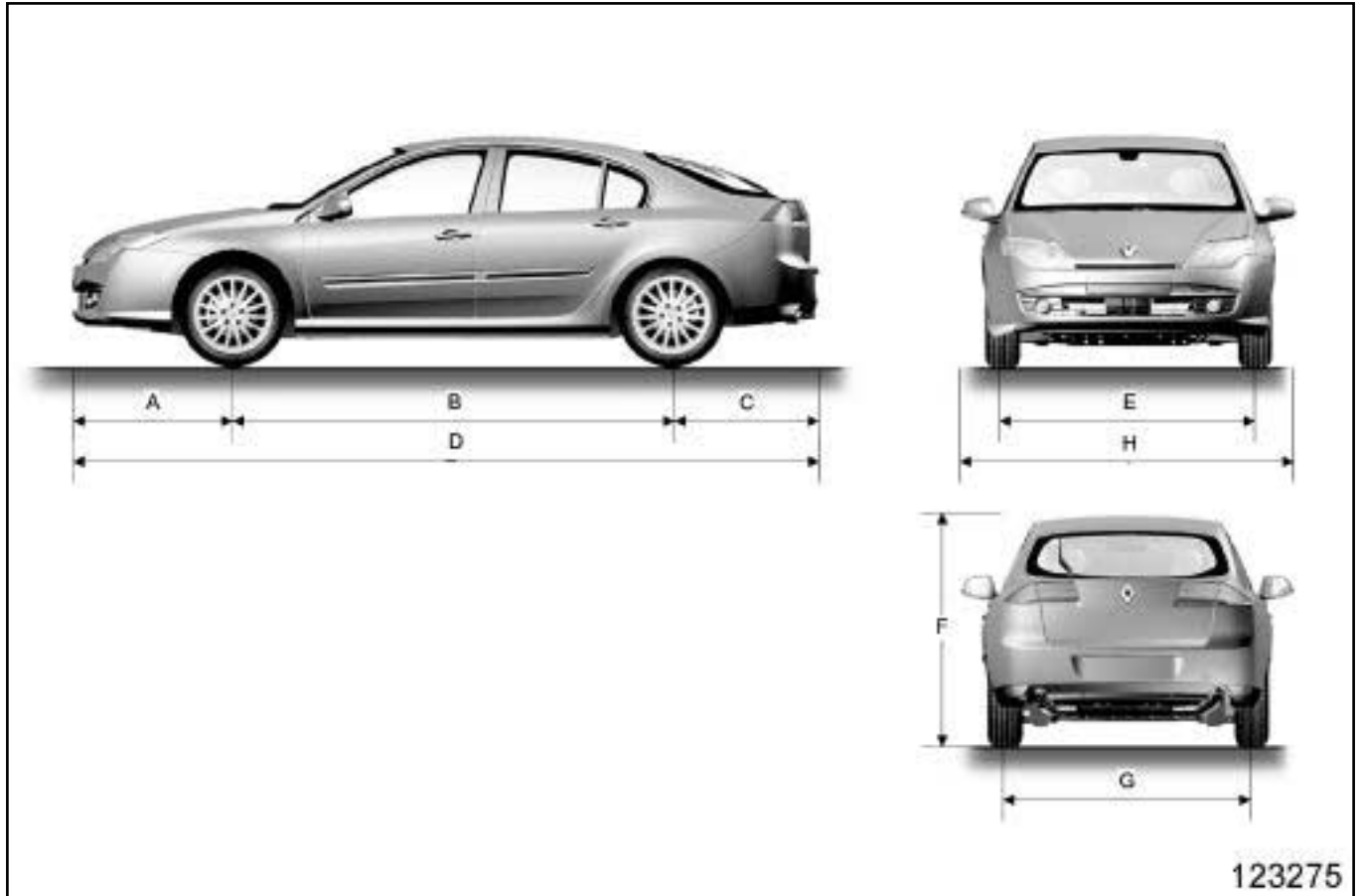


B91

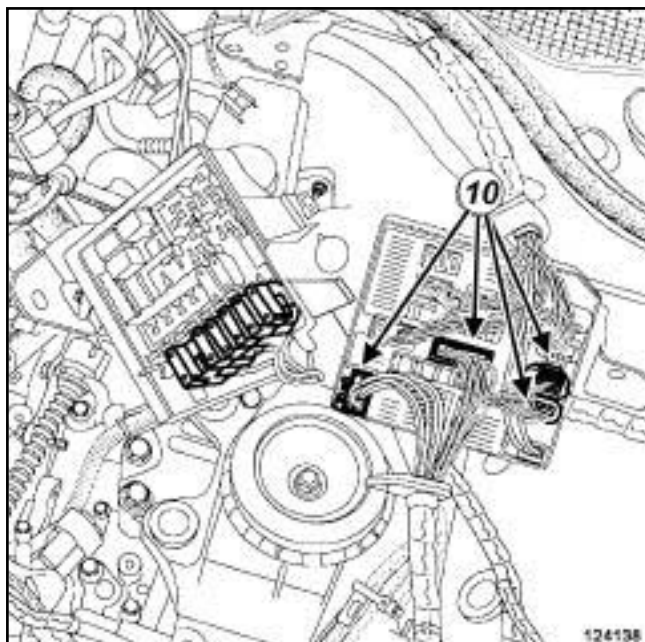


123275

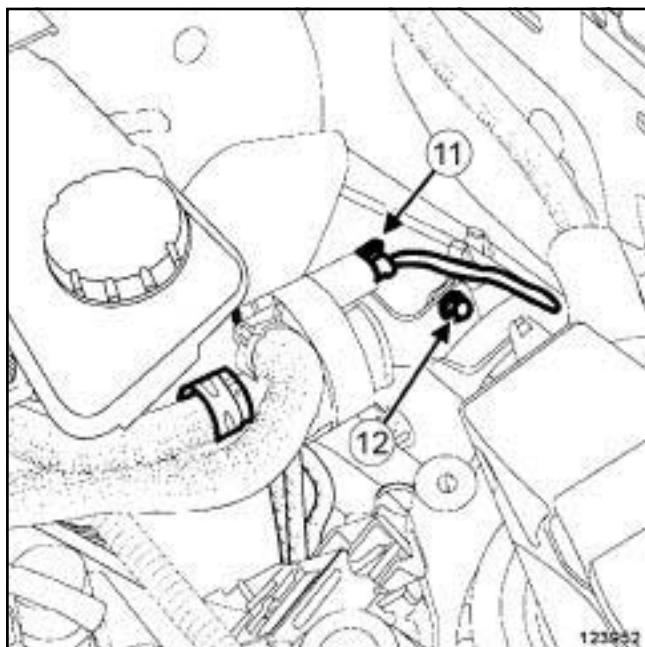
Dimensions in metres:

(A)	1.014
(B)	2.756
(C)	0.925
(D)	4.695
(E)	1.557
(F) (unladen)	1.445
(G)	1.512
(H)	1.811

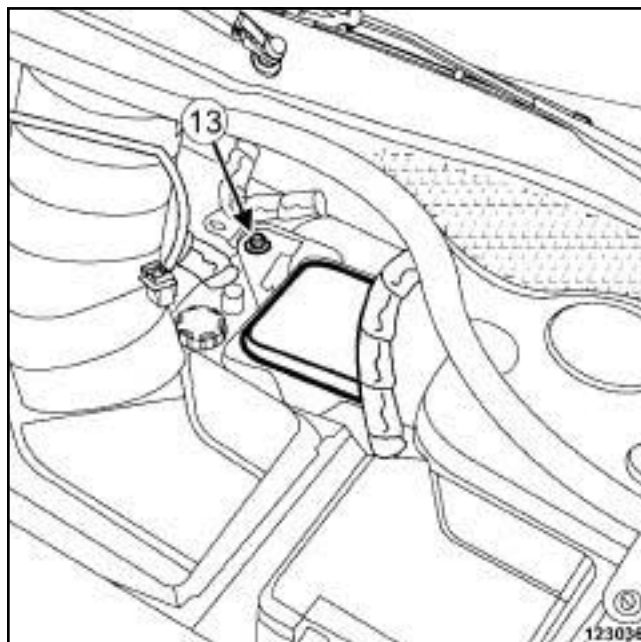
F4R



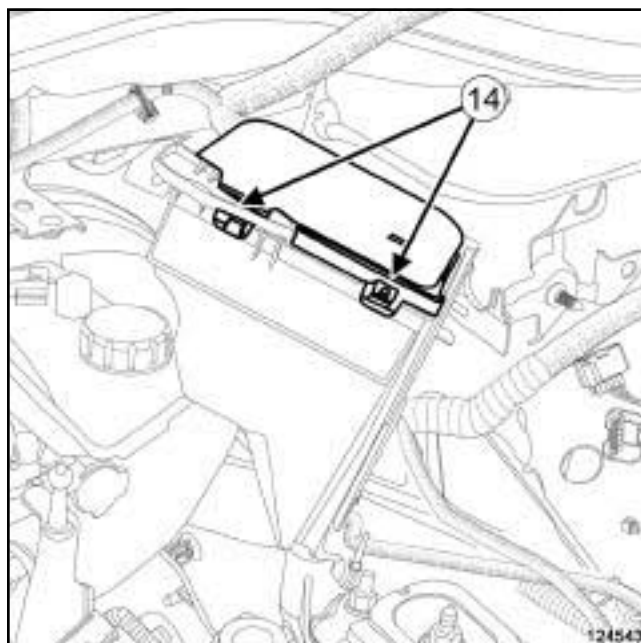
- ❑ Disconnect the connectors (10) from the Protection and Switching Unit.



- ❑ Disconnect the connector (11) from the electric coolant pump.
- ❑ Remove the bolt (12) from the electric coolant pump on the body.

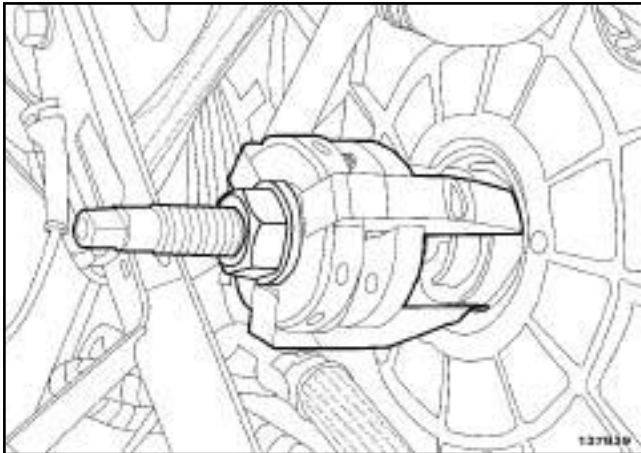


- ❑ Remove the bolt (13) from the max fuse box.
- ❑ Move the max fuse box to one side.

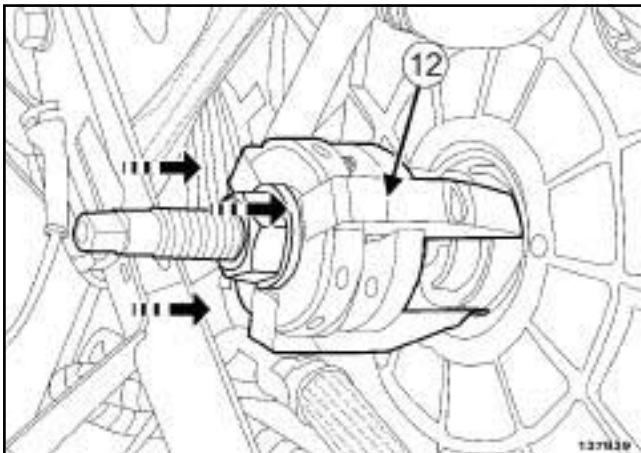


- ❑ Remove the cover (14) from the max fuse box.

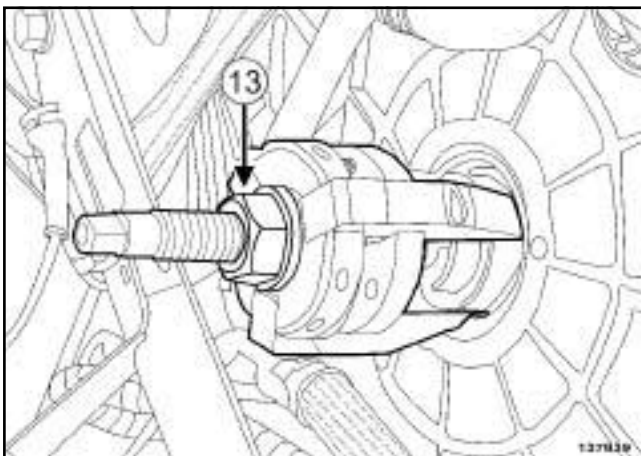
V9X



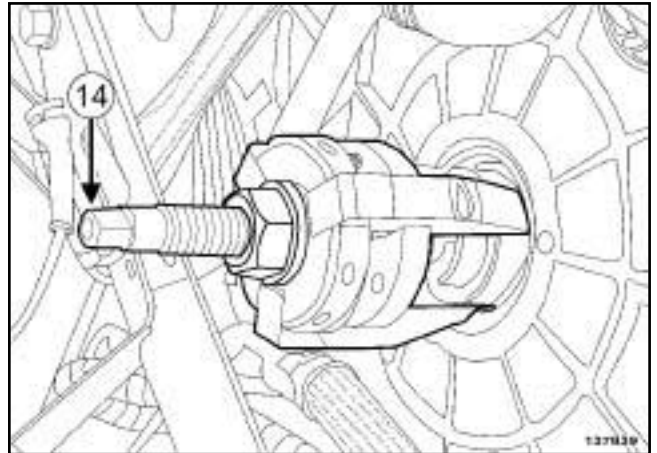
- ❑ Position the claws of the tool (**Mot. 1577**) on the inner face of the seal.



- ❑ Push on the claws following the arrows to position the tool as at (12) .



- ❑ Tighten the nut (13) to separate the tool claws and grip the seal.



- ❑ Extract the crankshaft seal by screwing the threaded rod (14) of the tool.

III - REFITTING PREPARATION OPERATION

- ❑ **parts always to be replaced: Crankshaft seal on timing end (10,03,03,04).**

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 **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease the mating face of the seal on the timing sprocket and the lower timing cover.

K9K

Special tooling required

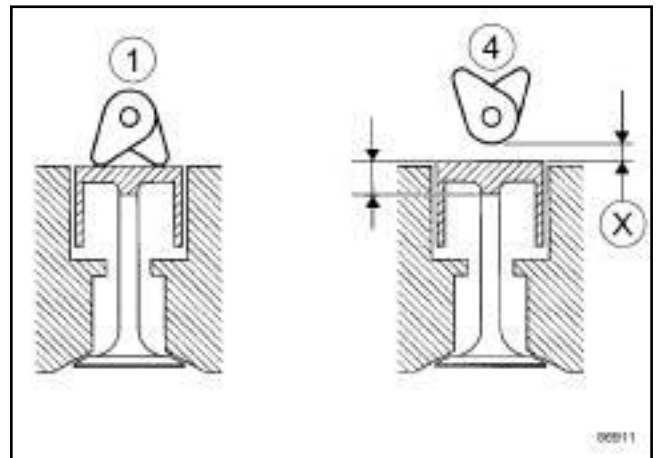
Mot. 856-02	Dial gauge support.
Mot. 252-01	Pressure plate for measuring piston liner protrusion.

Equipment required

indelible pencil
Dial gauge
magnetic holder

ADJUSTMENT**I - ADJUSTMENT PREPARATION STAGE**

- Disconnect the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).
- Remove:
 - the engine cover,
 - the damper valve (see **12A, Fuel mixture, Damper valve: Removal - Refitting**, page **12A-39**),
 - the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-51**),
 - the diesel injector fuel return rail (see **13B, Diesel injection, Diesel injector fuel return rail: Removal - Refitting**, page **13B-108**),
 - the rocker cover (see **11A, Top and front of engine, Rocker cover: Removal - Refitting**, page **11A-139**).

II - ADJUSTMENT OPERATION

86911

- Set the cylinder valves (1) in the end of exhaust, beginning of inlet position.
- Check the valve clearance (X) of the cylinder (4) using a set of feeler gauges:
 - inlet valve clearance of **0.20 mm**,
 - exhaust valve clearance of **0.40 mm**.
- Note the clearance values.
- Repeat the previous operation on the other cylinders.
 - position cylinder n°3 at TDC and adjust cylinder n°2 clearance,
 - position cylinder n°2 at TDC and adjust cylinder n°3 clearance,
 - position cylinder n°4 at TDC and adjust cylinder n°1 clearance.
- Compare the values noted with the specified values.
- Remove:
 - the camshaft (see **11A, Top and front of engine, Camshaft: Removal - Refitting**, page **11A-245**),
 - the valve tappet(s) which are outside the permitted tolerance values by marking their position using an **indelible pencil**.

DIESEL INJECTION

Diesel injector: Removal - Refitting

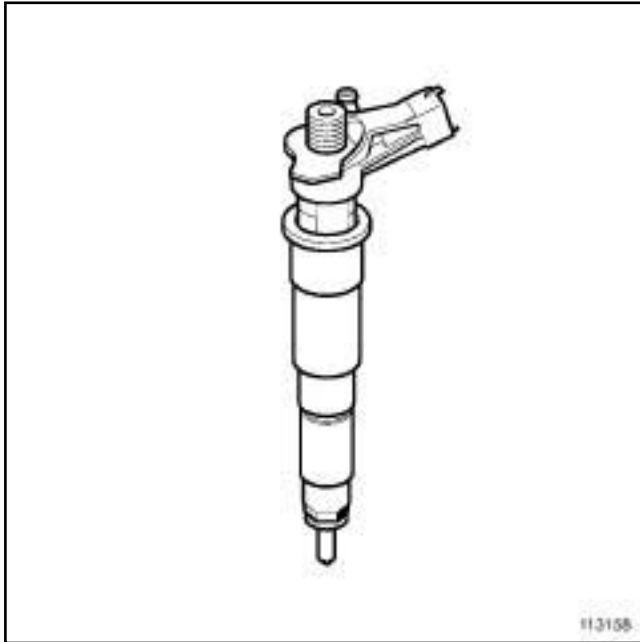
13B

V9X

REFITTING THE FRONT ROW INJECTORS

I - REFITTING PREPARATION OPERATION

Cleaning parts



113158

- Always replace the heat protection washers.

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 cloth soaked in **INJECTOR CLEANER** or **BRAKE CLEANER**,
 - if necessary, leave the injector nozzle to soak in **INJECTOR CLEANER**,
 - 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) .

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.

II - REFITTING OPERATION FOR PART CONCERNED

- When replacing an injector, note the IMA code of the new injector and the number of the corresponding cylinder.

Note:

IMA codes are from X1 to XN.

After connecting the battery, program the injectors using the **Diagnostic tool**.

- Position the new heat protection washers on the injectors.
- Refit:
 - the injectors following the marks made when they were removed,
 - the injector clamps.
- Torque tighten the **injector clamp bolts (35 N.m)**.
- Connect the injector connectors.
- Remove the blanking plugs from the injectors.
- Position the fuel return rail on the injectors.
- Connect the fuel return rail to the injectors.
- Clip the fuel return rail unions onto the injectors.

III - FINAL OPERATION

- Refit the high pressure pipes between the rail and the injectors (see **13B, Diesel injection, High pressure pipe between rail and injector: Removal - Refitting**, page 13B-161) .
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Prime the diesel circuit using the manual priming pump.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select the « injection computer » ,

Thermoplunger unit: Removal - Refitting

K9K, and 782

Special tooling required

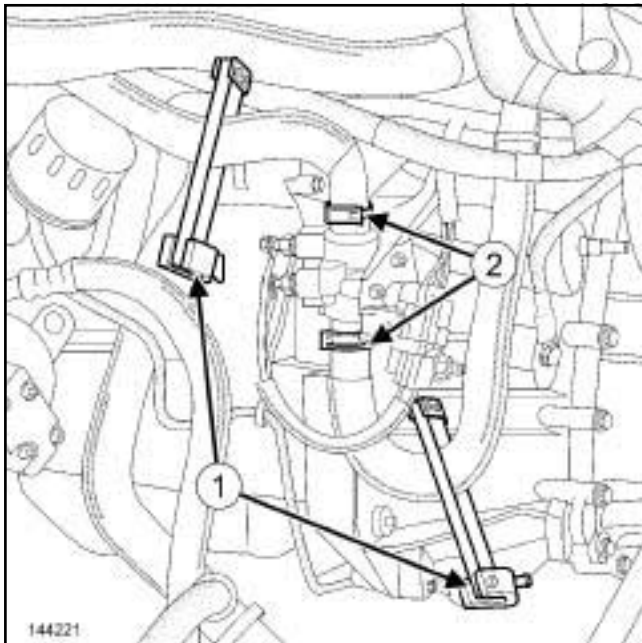
Ms. 583	Pipe clamps.
Mot. 1448	Remote operation pliers for hose clips.

REMOVAL

I - REMOVAL PREPARATION OPERATION

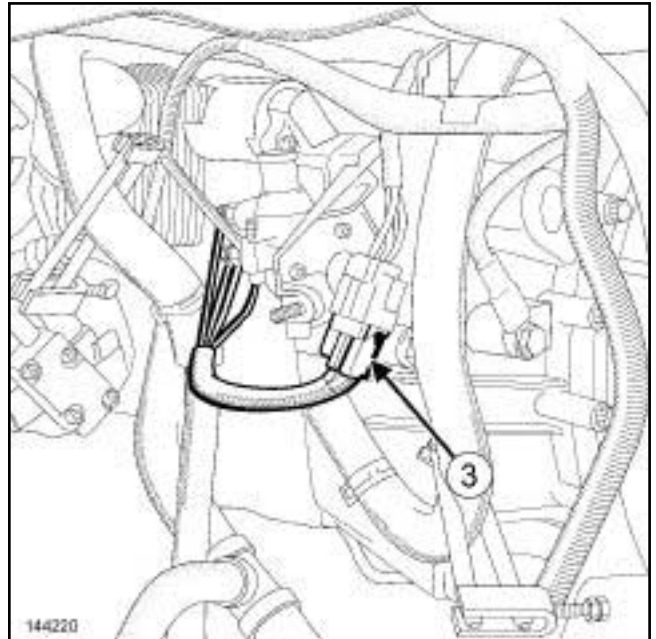
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



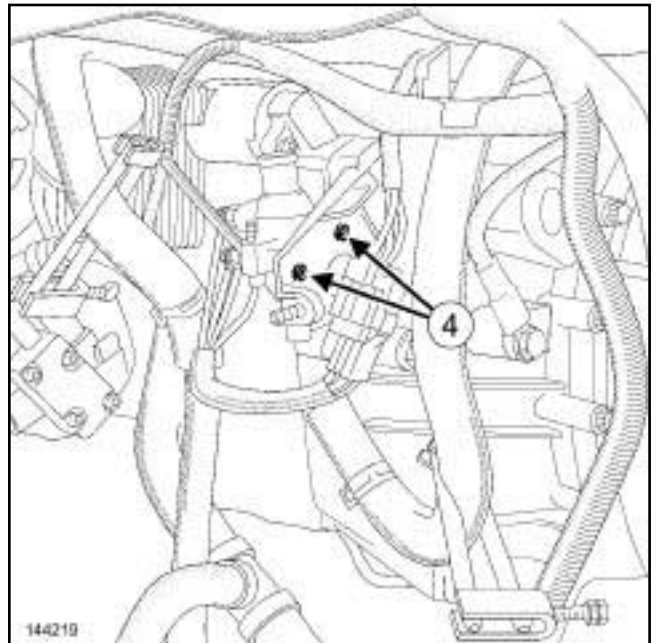
144221

- Pinch the pipes of the thermoplunger unit using the tools (**Ms. 583**) (1) .
- Separate the clips (**2**) on the thermoplunger unit pipes using the tool (**Mot. 1448**).
- Disconnect the pipes from the thermoplunger unit.



144220

- Disconnect the connector (**3**) from the thermoplunger unit.



144219

- Remove:
 - the thermoplunger unit bolts (**4**) ,
 - the thermoplunger unit.

TANK

Fuel tank: Removal - Refitting

19C

K9K or M9R or V9X

Equipment required

component support

Tightening torques

four wheel drive actuator's new nuts	84 N.m
earth strap nut	8 N.m
fuel tank bolts	21 N.m
electronic parking brake control unit mounting bolts	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 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.

WARNING

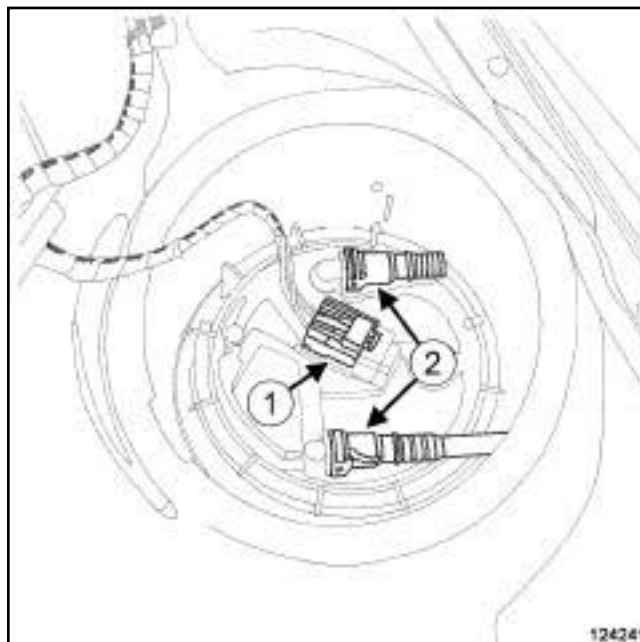
To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- 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).
- Drain the fuel tank (see **19C, Tank, Fuel tank: Draining**, page 19C-7) .
- Raise the rear bench seat.
- Open the access flap for the fuel level sensor module.

K9K or M9R



124241
124241

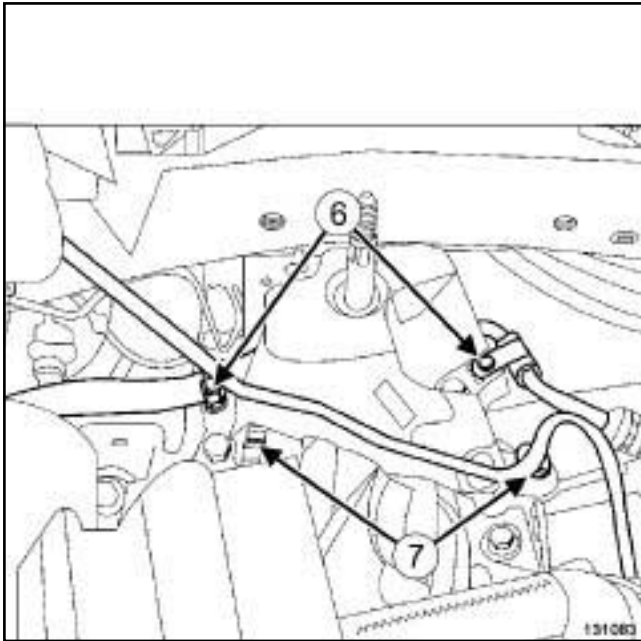
- Disconnect:
 - the fuel level sensor module connector (1) ,
 - the fuel pipe unions (2) from the fuel level sensor module.
- Fit blanking plugs on the fuel pipe unions.
- Remove the silencer (see **19B, Exhaust, Silencer: Removal - Refitting**, page 19B-64) .

MANUAL GEARBOX

Manual gearbox: Removal - Refitting

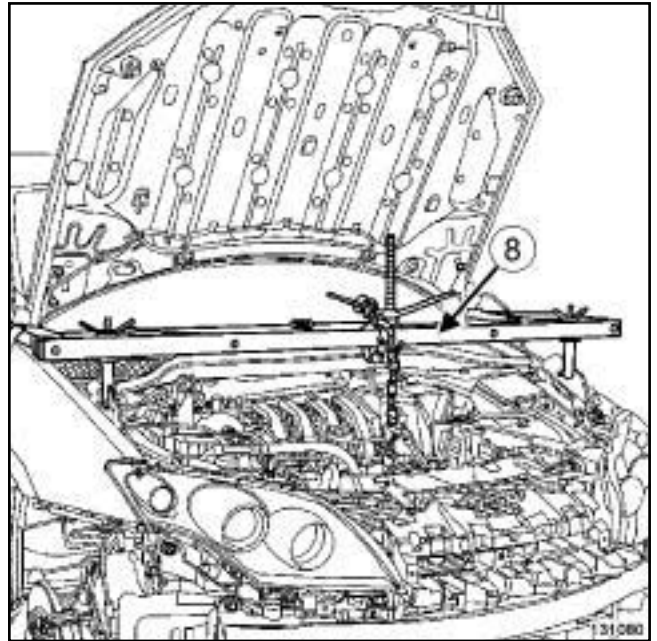
21A

K4M, and TL4



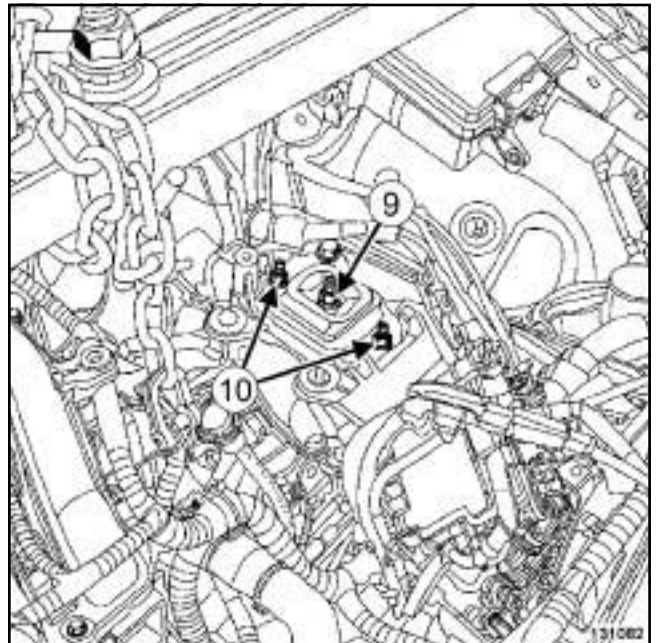
131083

- Remove the bolt from each bracket of the power-assisted steering pump high pressure pipe.
- Move the power-assisted steering pump high pressure hose to one side.
- Unclip the hydraulic clutch pipe (7) from the left-hand suspended engine mounting shaft.
- Move the hydraulic clutch pipe to one side.
- Remove the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).



131080

- Fit the **(Mot. 1453)** (8) fitted with **(Mot. 1453-01)** and **safety strap(s)**.



131082

- Remove the nut (9) from the left-hand suspended engine mounting shaft on the manual gearbox.
- Slightly lower the manual gearbox.
- Remove:
 - the nuts (10) from the suspended engine mounting rubber pad on the manual gearbox,
 - the rubber pad from the left-hand suspended engine mounting on the manual gearbox.

Front hub carrier bearing: Removal - Refitting

K4M or K9K

Equipment required

Diagnostic tool

Tightening torques

brake calliper mounting bolts	105 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 **31A, Front axle components, Front axle components: Precautions for the repair, page 31A-1**).

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.

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

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).

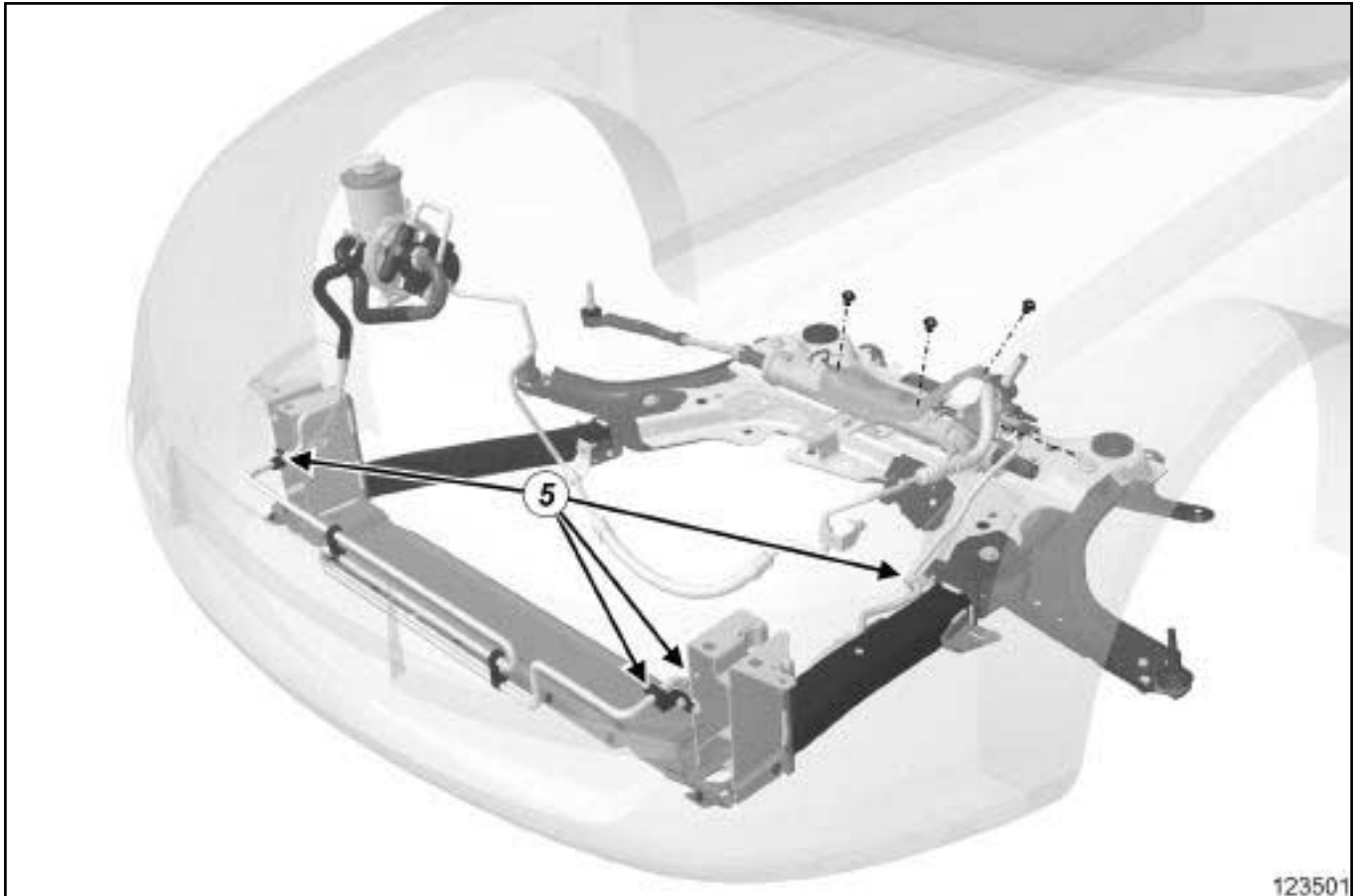
Note:

it is necessary to lock the airbag computer in order to unlock the steering column.

- Apply the before repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select the airbag computer,
 - go to repair mode,
 - apply the "Before repair procedure".
- Remove the front wheel (see **35A, Wheels and tyres, Wheel: Removal - Refitting, page 35A-1**).

Power-assisted steering pipes: Removal - Refitting

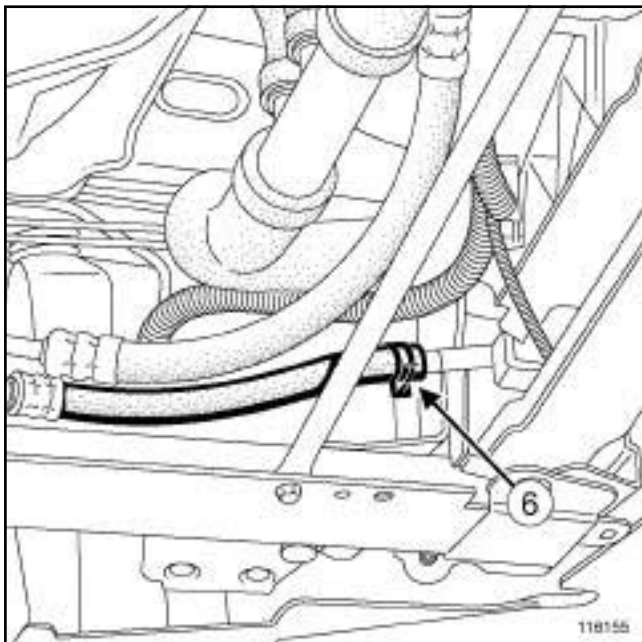
F4R, and LEFT-HAND DRIVE – M9R, and 802 or 805, and LEFT-HAND DRIVE



123501

123501

- ❑ Unclip the low pressure pipe at (5) .



116155

116155

- ❑ Remove:
 - the clip (6) using the (Mot. 1448),
 - the low pressure pipe.

3 - High pressure pipe between the power-assisted steering pump and the steering box

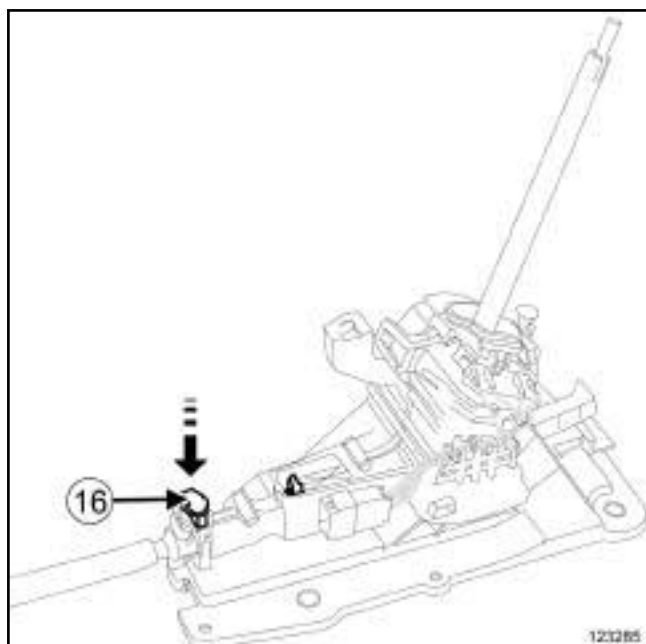
- ❑ Remove the front left-hand wheel (see 35A, **Wheels and tyres, Wheel: Removal - Refitting**, page 35A-1) .

MECHANICAL COMPONENT CONTROLS

Automatic gear control cable: Removal - Refitting

37A

D91, and AJ0, and RIGHT-HAND DRIVE



123285

- Press the clip (16) .
- Adjust the control unit (see **37A, Mechanical component controls, Gear control unit: Adjustment**, page **37A-109**) .
- Check that the system and gear selection are working correctly.

III - FINAL OPERATION

- Clip on the left-hand air duct.
- Refit the airbag computer protector.
- Clip the wiring onto the airbag computer protector.
- Refit the control unit soundproofing.
- Clip the wiring onto the control unit.
- Clip the carpet at the cutting point.
- Place the gear selector in position **R**.
- Refit:
 - the middle air duct (see **Rear air distribution duct: Removal - Refitting**) (61A, Heating system),
 - the central console (see **Centre console: Removal - Refitting**) (57A, Interior equipment),
 - the gear lever knob.
- Turn the ring on the gear lever knob a sixteenth of a turn.

V4Y

- Refit the air filter unit air outlet pipe on the throttle valve.
- Torque tighten the **air filter unit air outlet pipe clip on the throttle valve (5.5 N.m)**.
- Connect the non-return valve pipe on the intake distributor.
- Clip the non-return valve pipe onto the air filter unit air outlet pipe.
- Refit the engine cover.

V9X

- Refit:
 - the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
 - the air outlet pipe of the air filter unit.
- Torque tighten the **clip of the air filter unit air outlet pipe (6 N.m)**.
- Connect the oil vapour rebreathing pipe.
- Clip the vacuum pipes onto the air filter unit air outlet pipe.

AIR CONDITIONING

62A

Compressor - condenser connecting pipe: Removal - Refitting

F4R or K4M or K9K or M4R or M9R, and AIR CONDITIONING 01 or AIR CONDITIONING 02

Equipment required

refrigerant charging station

Tightening torques

bolt securing the bracket of the compressor - condenser connecting pipe to the compressor	8 N.m
---	-------

nut securing the bracket of the compressor - condenser connecting pipe to the condenser	8 N.m
---	-------

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:

Use blanking plugs for the fuel circuits with part numbers **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.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

WARNING

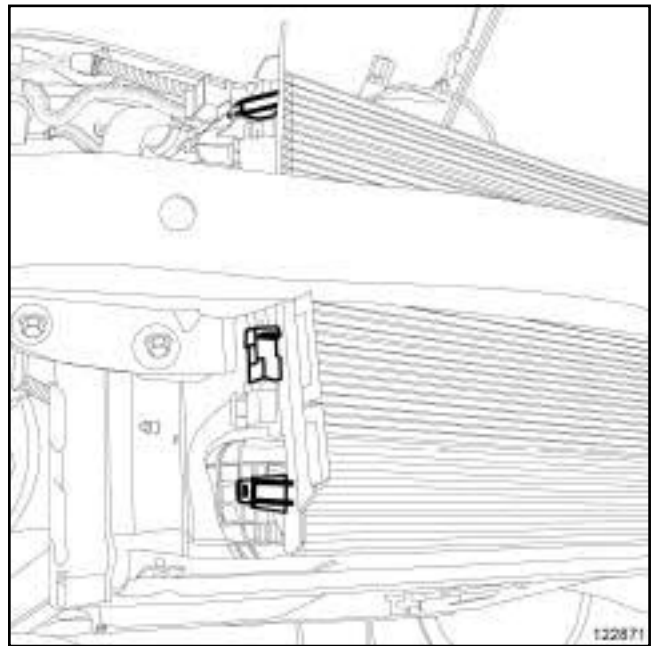
In order to avoid any refrigerant leaks, do not damage (deform, twist, etc.) the pipe.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).

- Drain the refrigerant circuit using the **refrigerant charging station** (see **62A, Air conditioning, Refrigerant circuit: Draining - Filling**, page 62A-7) .
- Remove the engine undertray.
- Disconnect the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).
- Remove:
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - the right-hand headlight (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights).



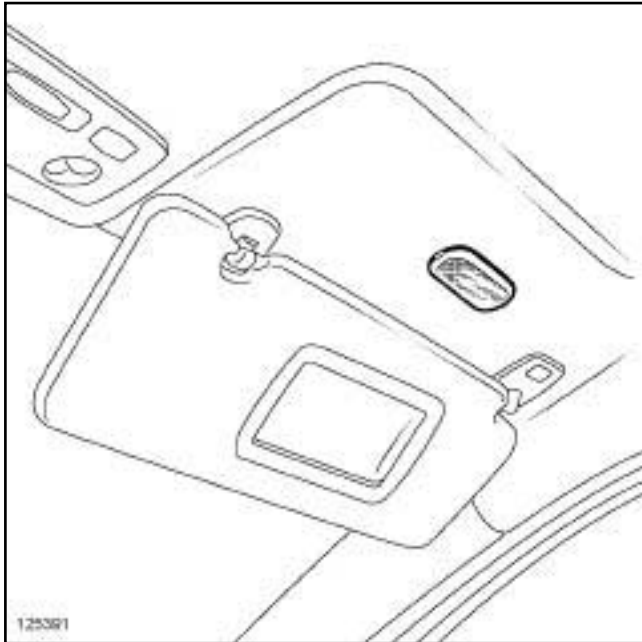
- Unclip the front right-hand air deflector.

INTERIOR LIGHTING

Interior lighting: List and location of components

81B

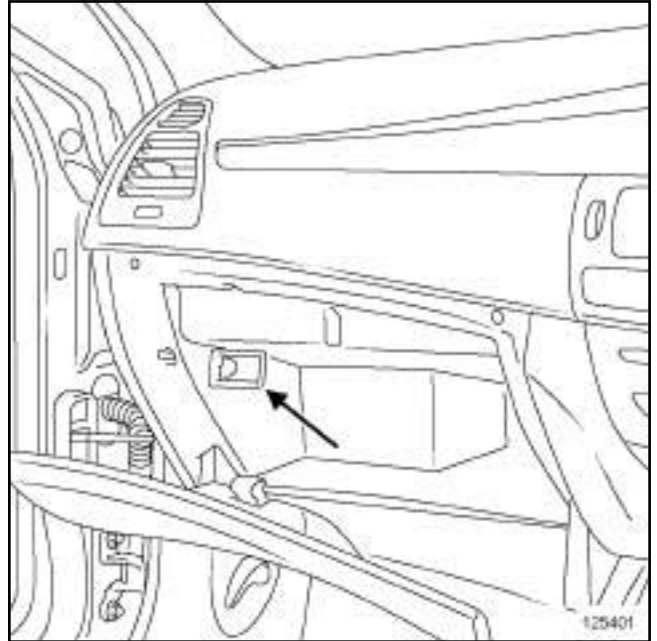
Courtesy light



125391

RIGHT-HAND DRIVE

Glovebox light



125401

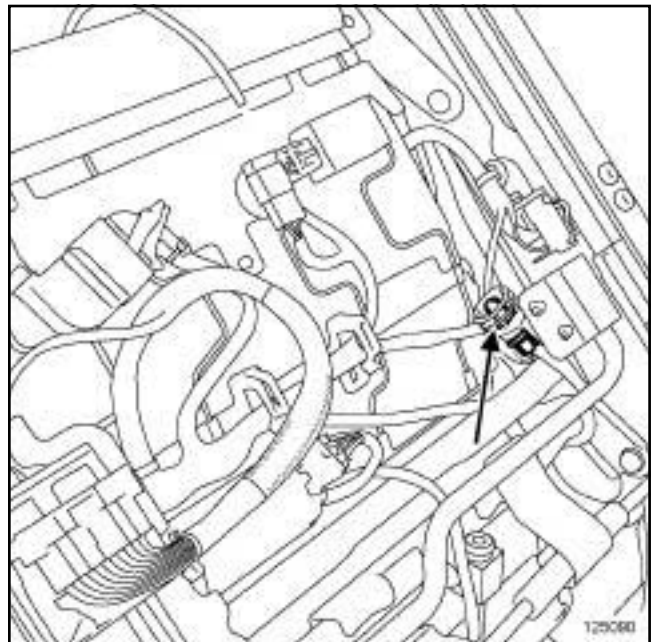
LEFT-HAND DRIVE

Glovebox light



125398

Under-front seat lights



125090

Electric window motor: Removal - Refitting

Equipment required

Diagnostic tool

REMOVAL

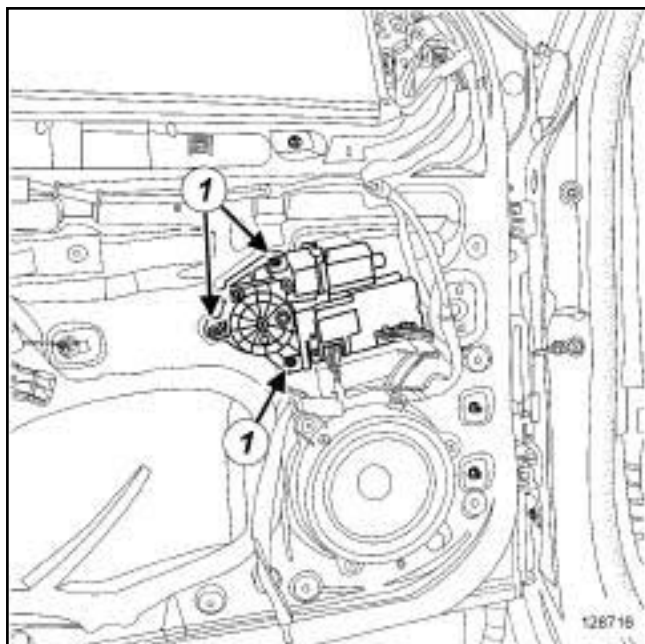
I - REMOVAL PREPARATION OPERATION

- Switch off the ignition.
- Remove the front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

REAR ANTI-PINCH ELECTRIC WINDOW

- Remove the rear side door trim (see **Rear side door trim: Removal - Refitting**) (72A, Side opening element trim).

II - OPERATION FOR REMOVAL OF PART CONCERNED



128716

- Disconnect the electric window motor connectors.
- Remove:
 - the electric window motor bolts (1) ,
 - the electric window motor.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- When replacing the electric window mechanism, activate the motor with no load.

Note:

Activating with no load deinitialises the electric window motor, so that the motor then operates in stepping mode.

If the electric window motor has been activated with no load, it must be initialised after repair.

- Refit the electric window motor.

Note:

It may be necessary to activate the motor with no load in order to couple the motor pulley and the electric window mechanism crownwheel.

- Connect the electric window motor connectors.

II - FINAL OPERATION.

- Refit the front side door trim (see **Front side door trim: Removal - Refitting**) (72A, Side opening element trim).

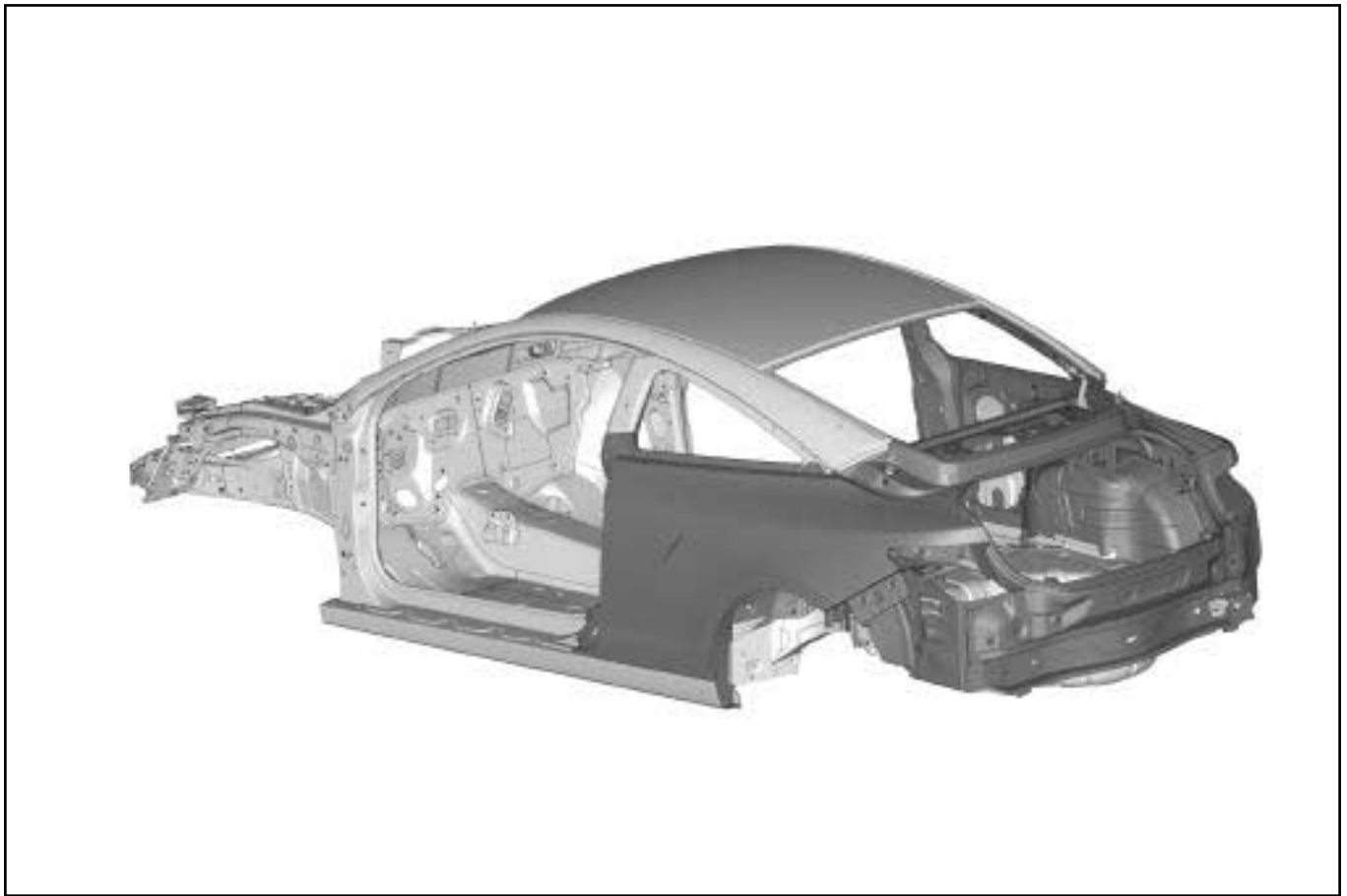
REAR ANTI-PINCH ELECTRIC WINDOW

- Refit the rear side door trim (see **Rear side door trim: Removal - Refitting**) (72A, Side opening element trim).

- When replacing a front electric window motor, apply the after repair procedure using the **Diagnostic tool** :
 - connect the diagnostic tool,
 - select « Driver's door electric window computer » if the motor is fitted on the driver's side front door,
 - select « Passenger door electric window computer » if the engine is fitted on the passenger side front door,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - carry out the operations described in the « After repair procedure » section.

Vehicle involved in a rear impact: Description

D91



134769

D91

1st Degree



134774