

RENAULT

2 Transmission

20A CLUTCH

21A MANUAL GEARBOX

23A AUTOMATIC GEARBOX

29A DRIVESHAFTS

X91

AUGUST 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".

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Special tooling required	
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 thrust bearing guide and the 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 tool (**Emb. 1780**)

Gradually torque tighten the clutch pressure plate bolts.

After refitting, check:

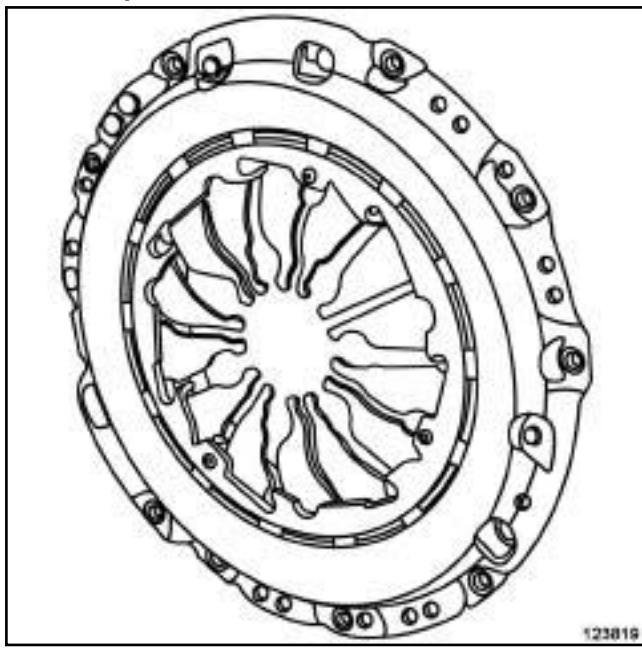
- The clutch play (for a cable operated vehicle),
- Bleeding of the hydraulic circuit (for vehicles with hydraulic controls).

CLUTCH
Clutch: Specifications

20A

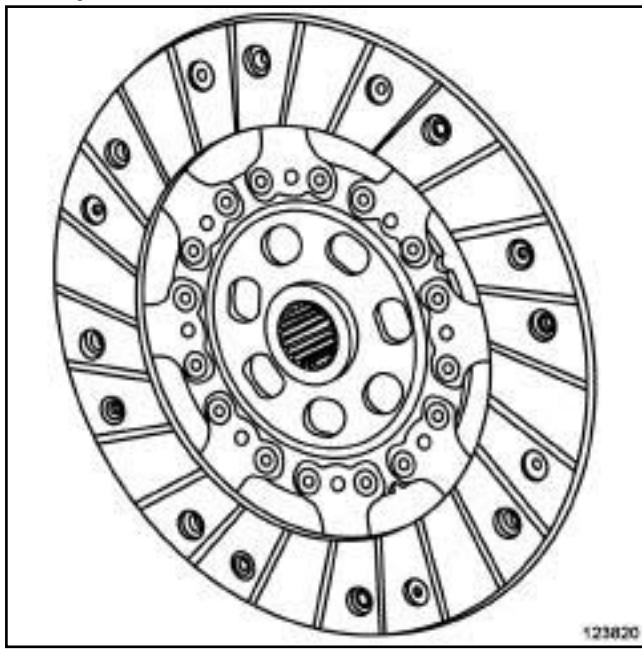
TL4

Pressure plate



123819
123819

Drive plate



123820
123820

Number of splines: **21**

Plate thickness: **6.9 mm**

Plate outer diameter: **225 mm**

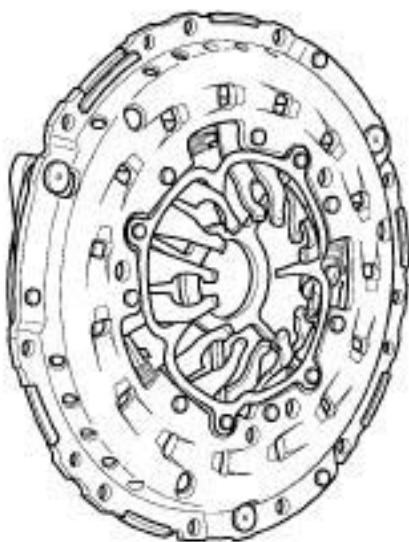
CLUTCH

Clutch: Specifications

20A

PK4

Clutch pressure plate



22428
22428

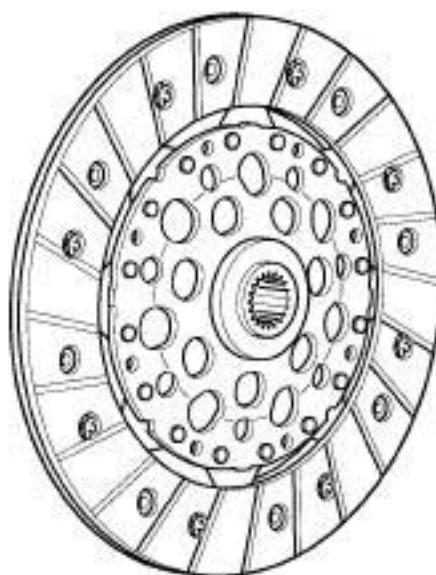
F4R

Clutch plate outer diameter: **240 mm**

Clutch plate thickness: **8.3 mm**

Number of splines: **21**

Clutch friction plate



22429
22429

M9R

Clutch plate outer diameter: **250 mm**

Clutch plate thickness: **8.3 mm**

Number of splines: **21**

TL4

Special tooling required	
Mot. 582	Flywheel locking tool.
Mot. 1677	Flywheel locking tool.
Emb. 1780	Set of clutch plate centring mandrels.

Tightening torques 	
new bolts of the mechanism	12 N.m

IMPORTANT

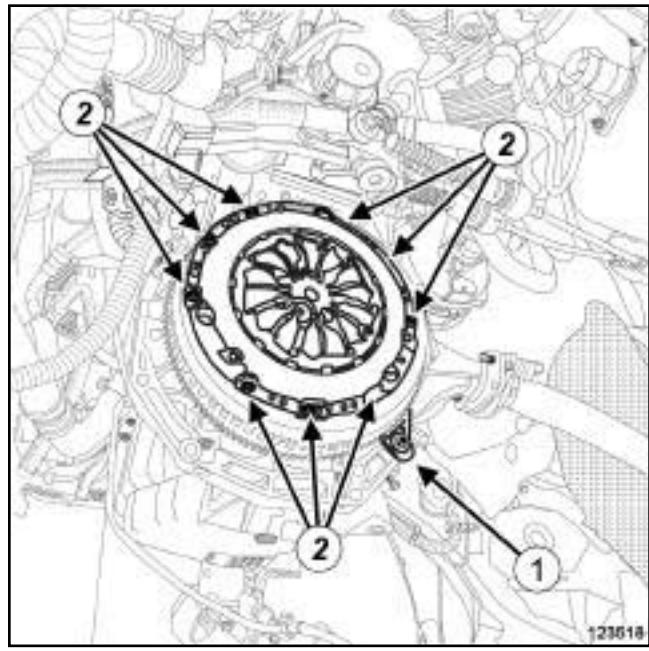
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **20A, Clutch, Clutch: Precautions for the repair**, page **20A-1**).

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 tray: Removal - Refitting**) (80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
 - 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 engine undertray bolts,
 - the engine undertray.
- Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

- Remove:

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure)),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**).

II - OPERATION FOR REMOVAL OF PART CONCERNED

123518

- Lock the engine flywheel with the tool (**Mot. 582**) or (**Mot. 1677**) (1).
- Remove:
 - the bolts (2) from the « pressure plate - driven plate » assembly,
 - the « pressure plate - driven plate » assembly.

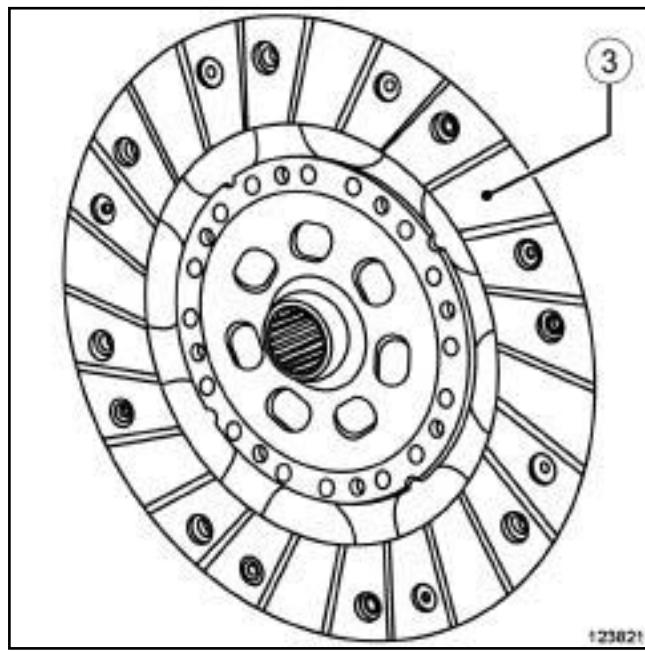
TL4

REFITTING

I - REFITTING PREPARATION OPERATION

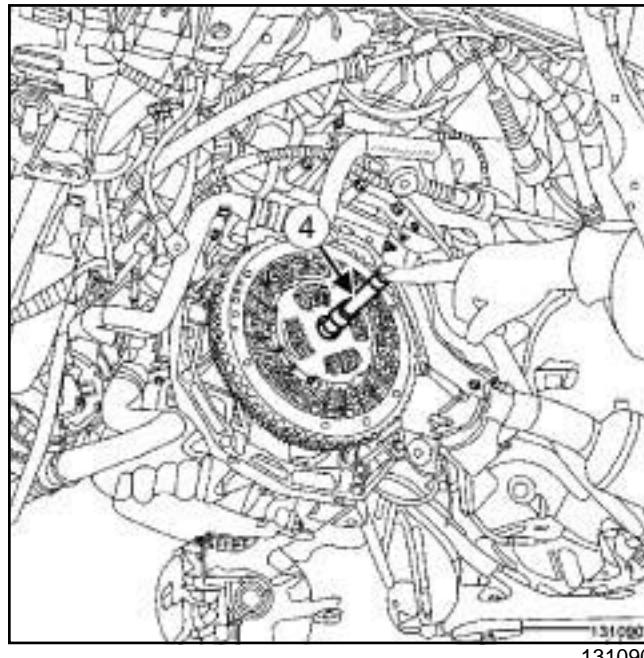
- Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease:
- the flywheel friction face,
 - the clutch shaft splines.

II - REFITTING OPERATION FOR PART CONCERNED



123821

- Position the clutch plate with the face (3) against the flywheel.



131090

- Centre the clutch plate using the **(Emb. 1780)** (4) .
- Refit the clutch mechanism.
- Torque tighten the **new bolts of the mechanism (12 N.m)** gradually in a radial pattern.
- Remove the tools **(Emb. 1780)** and **(Mot. 582)** or **(Mot. 1677)**.

III - FINAL OPERATION.

- Refit:
 - the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**),
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

TL4

- Bleed the hydraulic clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).
- Adjust the gearbox control cables (see **Gear control unit: Removal - Refitting**) (37A, Mechanical component controls).
- Refit:
 - 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 starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery).

PK4

Special tooling required	
Mot. 1431	Flywheel locking tool.
Emb. 1604	Clutch compression tool for rearming the compensation system.
Emb. 1780	Set of clutch plate centring mandrels.

Tightening torques 	
clutch pressure plate bolts	12 N.m

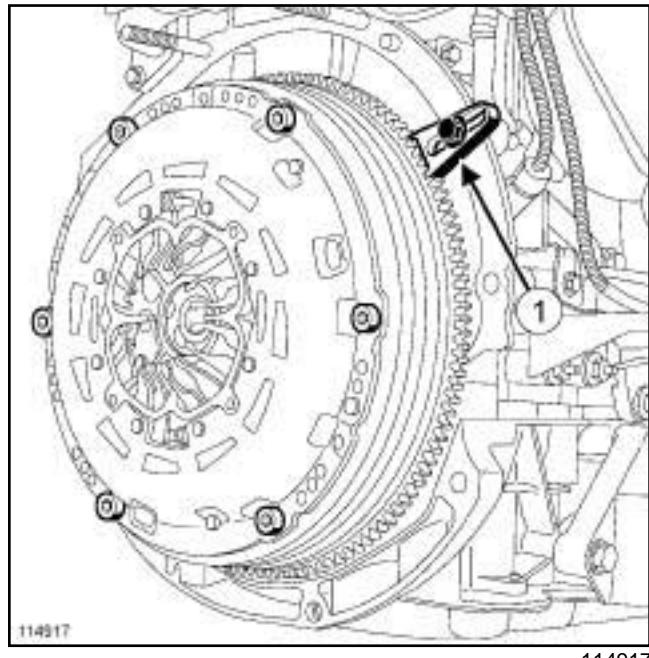
REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray,
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Remove:
 - the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**),
 - the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**),

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 415, 31A, Front axle components),
- the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**).

II - OPERATION FOR REMOVAL OF PART CONCERNED



114917

- Position the (1) (**Mot. 1431**).

- Remove:

- the clutch pressure plate bolts,
- the clutch pressure plate,
- the clutch plate.

REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace the clutch pressure plate bolts.
- Clean the clutch shaft splines using a **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 415, 04B, Consumables - Products).

PK4

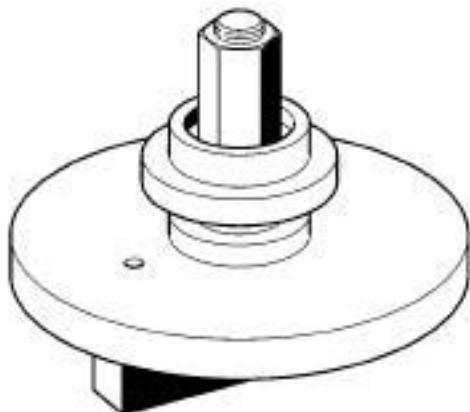
- Degrease the friction face of the flywheel using a **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 415, 04B, Consumables - Products).

Note:

The following operations must only be considered if the old pressure plate is being refitted.

The aim is to return the automatic compensation system to its original position.

If the old pressure plate is being refitted, apply the following procedure

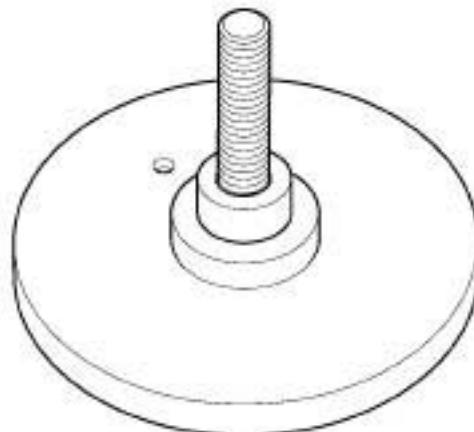


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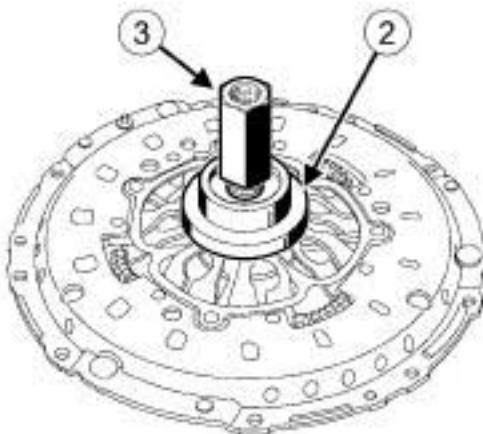
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Note:

For automatic wear compensation mechanisms, compress the clutch pressure plate using tool (**Emb. 1604**).

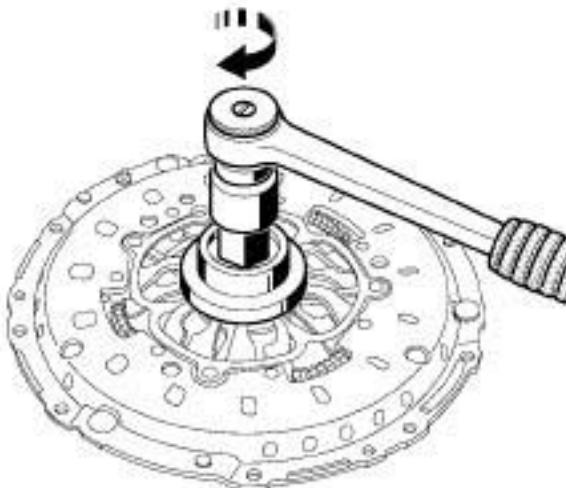
20754
20754

- Place the base of tool (**Emb. 1604**) in a vice.

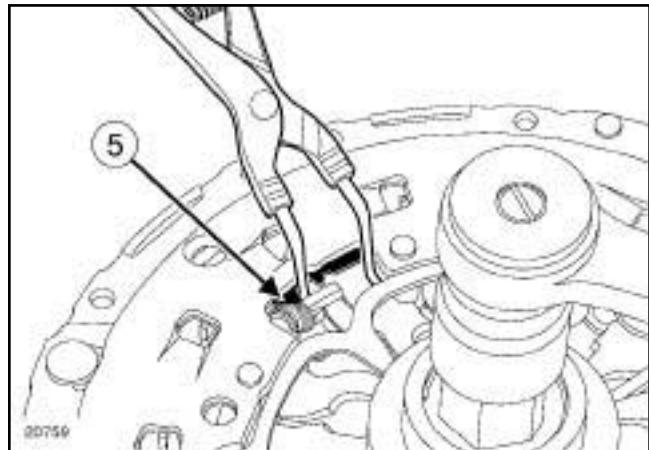
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20755

- Fit the pressure plate on the base, then the thrust ball bearing or the copper ring (2) and the nut (3) .

PK4



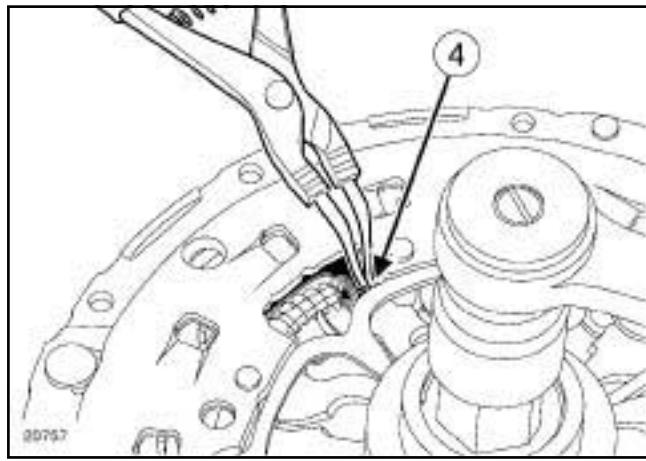
20756



20759

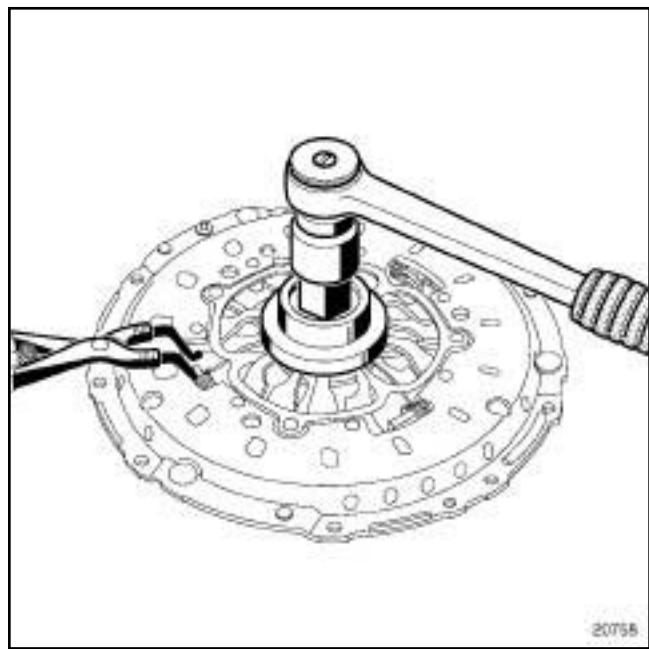
- Compress the spring (5) to reprime the automatic wear compensation.
- Slacken off the nut (3) completely (springs compressed).
- Release the pressure plate.

- Tighten the nut (3) fully.



20757

- Fit the circlip pliers at (4) .

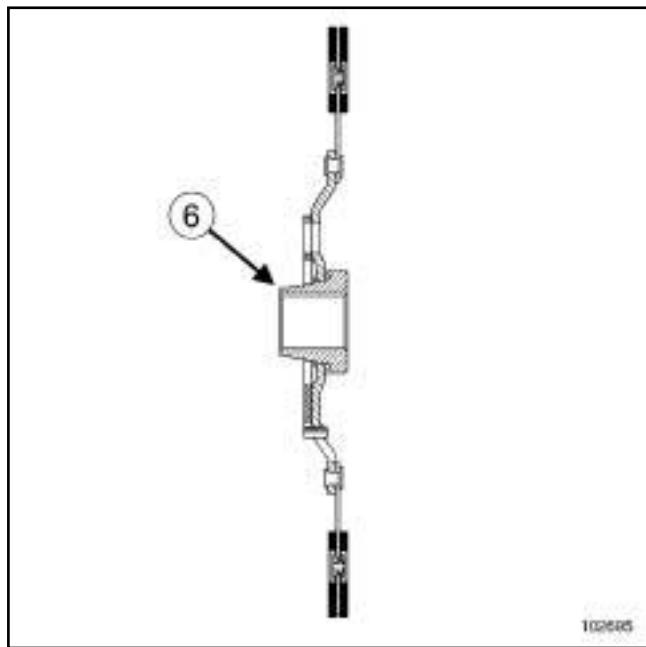


20758

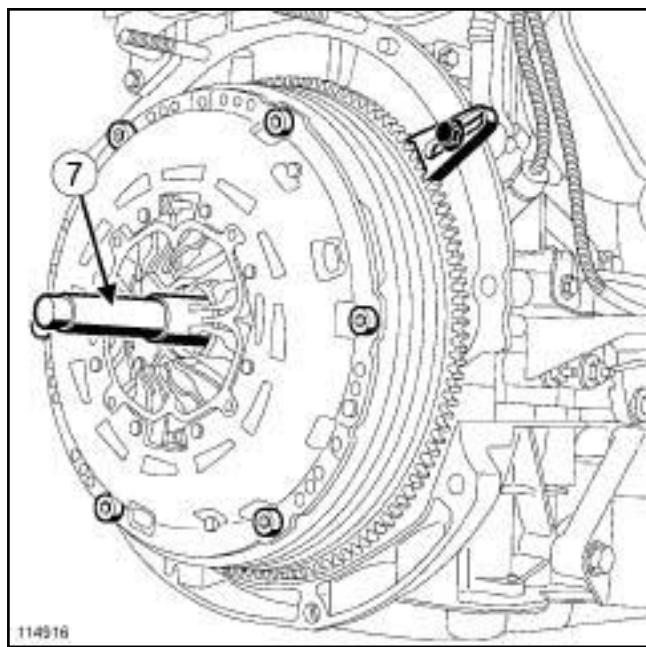
- Remove the pressure plate from the base plate (checking that the springs are properly compressed).

PK4

II - REFITTING OPERATION FOR PART CONCERNED



- Fit the friction plate (with the small diameter of the hub at the flywheel end (6)).



- Centre the clutch plate using the (Emb. 1780) (7) .
- Refit the clutch pressure plate on the flywheel.
- Torque tighten the **clutch pressure plate bolts** (12 N.m).
- Remove the (Emb. 1780).
- Remove the (Mot. 1431).

III - FINAL OPERATION.

Refit:

- the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**) ,
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 415, 31A, Front axle components),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) ,
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) ,

Fill the gearbox and check the level (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**)

Refit:

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

TL4

IMPORTANT

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **20A, Clutch, Clutch: Precautions for the repair**, page **20A-1**).

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

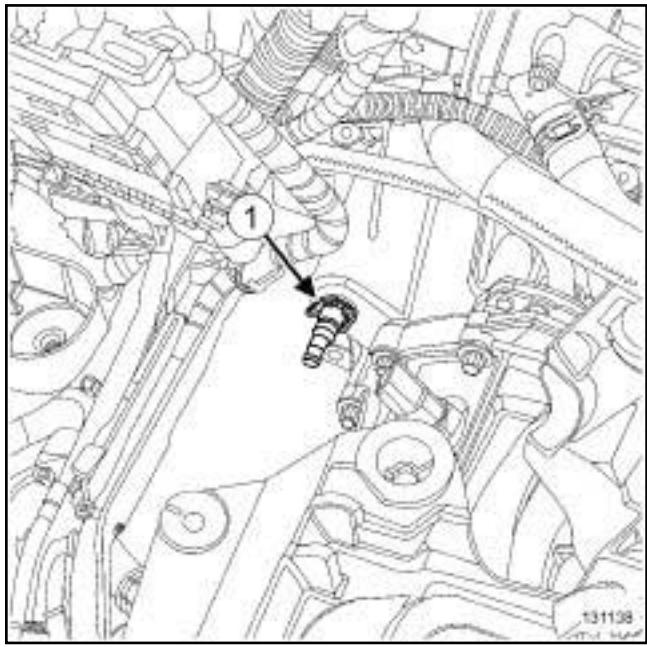
 Remove:

- the battery (see **Battery: Removal - Refitting** (80A, Battery))
- the battery tray (see **Battery tray: Removal - Refitting** (80A, Battery)),
- the air filter box (see **Air filter unit: Removal - Refitting** (12A, Fuel mixture)),
- the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)),
- 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)).

- Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

 Remove:

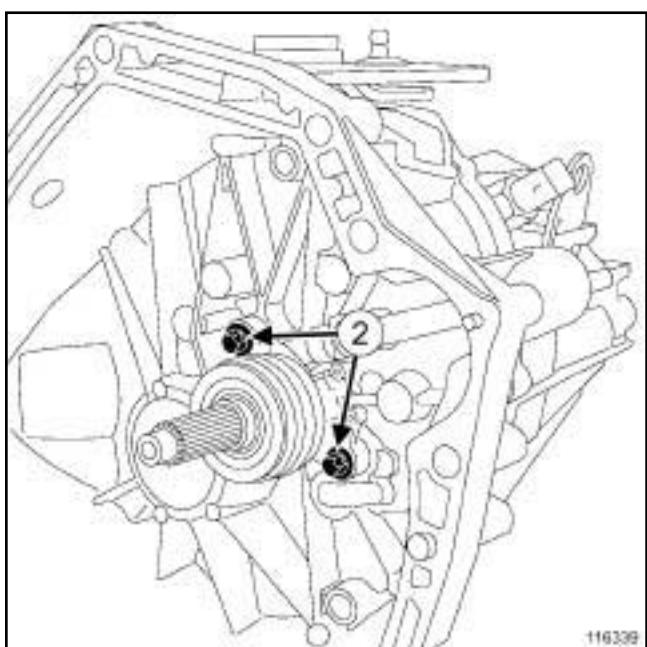
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure)),
- the front axle subframe (see **Front axle subframe: Removal - Refitting** (31A, Front axle components)).



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 Remove:

- the clip (1) from the clutch thrust bearing if it is fitted with one,
- the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**).

II - OPERATION FOR REMOVAL OF PART CONCERNED

116339

 Remove:

- the bolts (2) from the clutch thrust bearing,
- the clutch thrust bearing.

TL4

REFITTING**I - REFITTING PREPARATION OPERATION**

- Always replace the clutch thrust bearing.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit a new clutch thrust bearing.

III - FINAL OPERATION

- Refit the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**).

- Fit the clip on the clutch thrust bearing if it is fitted with one.

- Refit:

- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),

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

- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**),

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).

- Fill in the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

- Bleed the hydraulic clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

- Adjust the gearbox control cables (see **Gear control unit: Removal - Refitting**) (37A, Mechanical component controls).

- Refit:

- 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 starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),

- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),

- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),

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

MANUAL GEARBOX

Manual gearbox oil: Specifications

21A

6-SPEED MANUAL GEARBOX

I - VEHICLE/GEARBOX TYPE/OIL TYPE CORRELATIONS:

GEARBOX TYPE	TYPE OF OIL FOR GEARBOX
JBX	TRANSELF TRJ 75W80
JCX	or
JRX	TRANSELF NFJ 75W80
JHX	
NDX	
TL4	
PKX	TRANSELF TRX 75W80
PFX	or
VMX	TRANSELF NFP 75W80
NEX	
NGX	
NOX	
UNX	
ZFX	TRANSELF LD 75W80

III - IDENTIFICATION OF OIL FOR STANDARD EXCHANGE PK1 GEARBOXES:

Note:

For standard exchange PK1 gearboxes, the oil type (TRZ or TRP) is shown on a label.

These two oils are replaced by TRX 75W80 or NFP 75W80.

II - STANDARDS AND PART NUMBERS OF THE VARIOUS RECOMMENDED OILS:

DESIGNATION	STANDARD	PART NUMBER
TRANSELF TRX 75W80 or TRANSELF NFP 75W80	APIGL4, MIL-L-2105 C or D	77 11 143 534 (5 litres)
TRANSELF TRJ 75W80 or TRANSELF NFJ 75W80	APIGL4, MIL-L-2105 C or D	May be ordered from ELF
TRANSELF LD 75W80	APIGL4, MIL-L-2105	May be ordered from ELF

MANUAL GEARBOX

Manual gearbox oils: Draining - Filling

21A

TL4

Special tooling required

Mot. 1018 8 mm square engine drain plug spanner.

Equipment required

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

Tightening torques

drain plug **24 N.m**

CAPACITY

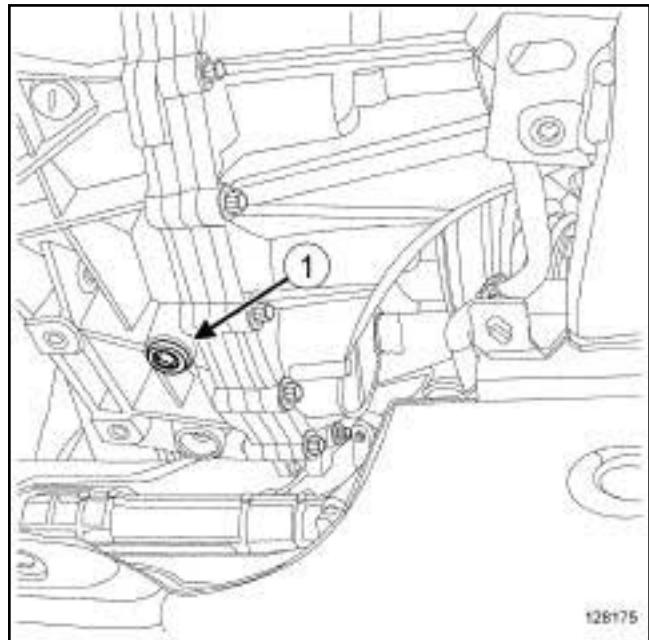
Gearbox	Capacity (litres)
TL4	2

I - PARTS AND CONSUMABLES FOR THE REPAIR

- Part for repair:
 - the manual gearbox drain plug seal.
- Consumables for repair:
 - gearbox oil (see **21A, Manual gearbox, Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants).

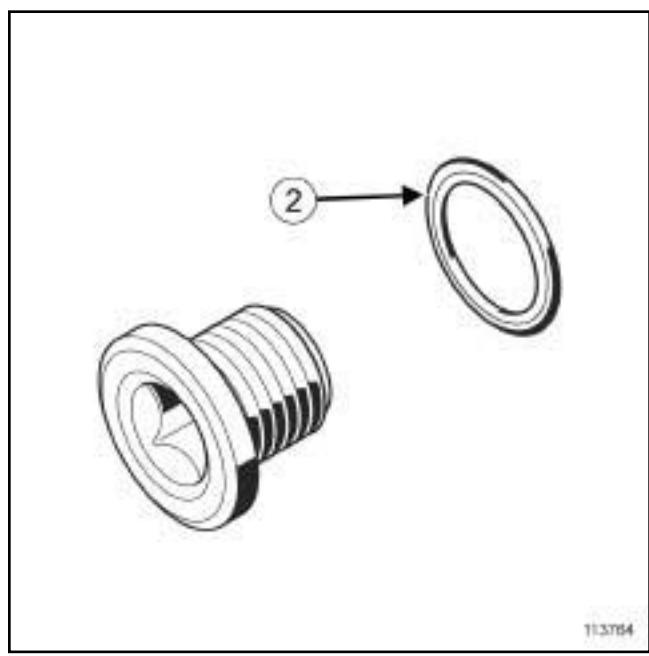
II - DRAINING OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine undertray bolts,
 - the engine undertray.
- Position the **oil recovery tray** under the gearbox



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128175

- Undo the drain plug (1) using the (**Mot. 1018**).
- Let the oil flow out of the gearbox in the **oil recovery tray**.



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113764

- Refit a new seal on the drain plug with the groove (2) facing the plug.
- Refit the drain plug fitted with its new seal.
- Torque tighten the **drain plug (24 N.m)** using a **torque wrench** fitted with a **oil change end piece with an 8 mm square drive**.

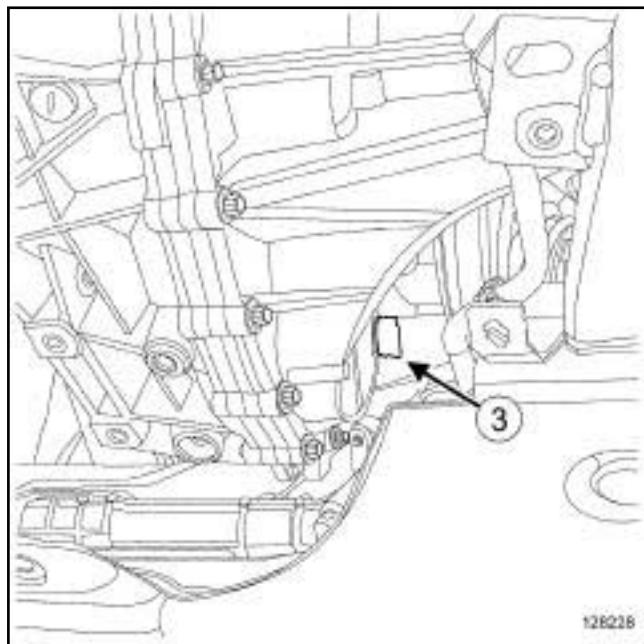
MANUAL GEARBOX

Manual gearbox oils: Draining - Filling

21A

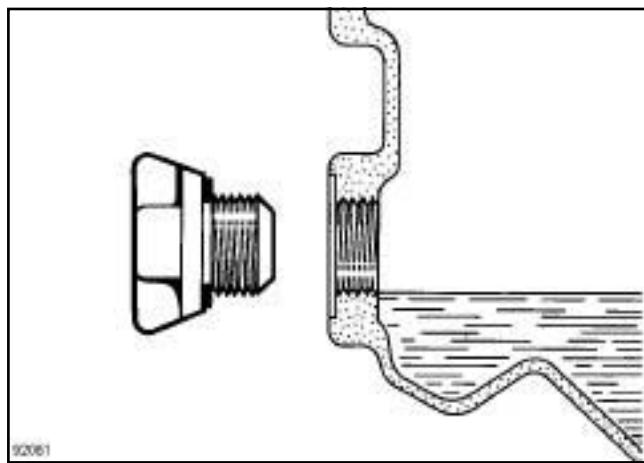
TL4

FILLING



128228

- Undo the filler cap (3) .



92081

92081

- Fill the gearbox using a syringe containing recommended oil (see 21A, **Manual gearbox, Manual gearbox oil: Specifications**, page 21A-1) (04A, Lubricants) until the oil overflows out of the filler cap hole.
- Refit the filler plug.
- Wipe any oil run-off with a cloth.
- Remove the **oil recovery tray**.
- Refit the engine undertray.

MANUAL GEARBOX

Manual gearbox oils: Draining - Filling

21A

PK4

Special tooling required

Mot. 1018	8 mm square engine drain plug spanner.
-----------	--

Equipment required

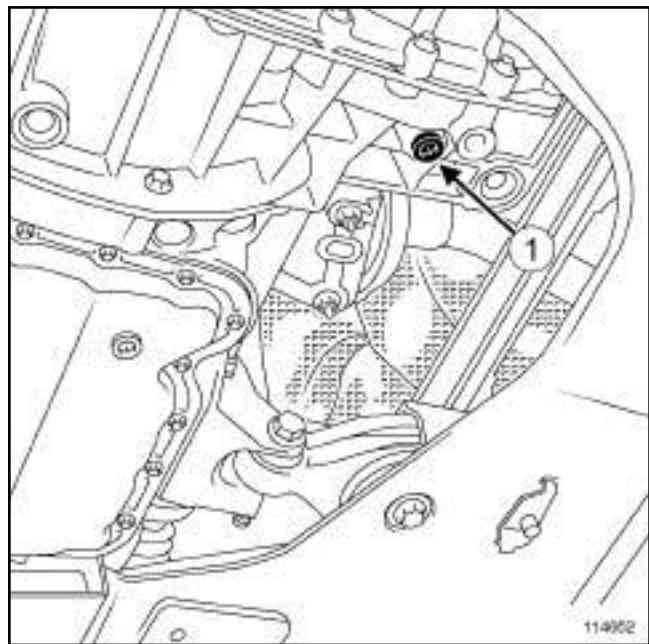
oil recovery tray

Tightening torques

drain plug	24 Nm
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CAPACITY

Gearbox type	Capacity in litres
PK4	2.4



114652

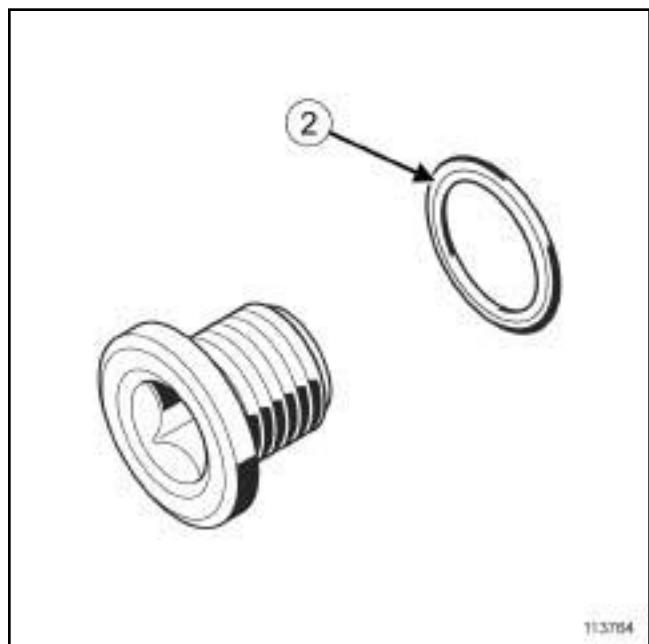
I - PARTS AND CONSUMABLES FOR THE REPAIR

- Part for repair:
 - the manual gearbox drain plug seal.
- Consumables for repair:
 - gearbox oil (see **21A, Manual gearbox, Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants).

II - DRAINING OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove the engine undertray.
- Position the **oil recovery tray** under the gearbox

- Unscrew the drain plug (1) using the (**Mot. 1018**).
- Let the oil flow into the **oil recovery tray**.



113764

- Refit the new drain plug seal, positioning the groove (2) towards the cap.
- Refit the drain plug fitted with its new seal.
- Torque tighten the **drain plug (24 Nm)**.

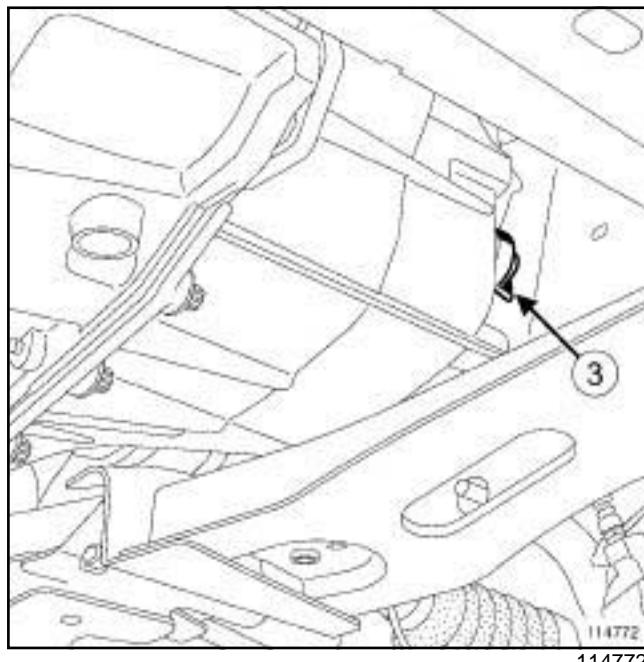
MANUAL GEARBOX

Manual gearbox oils: Draining - Filling

21A

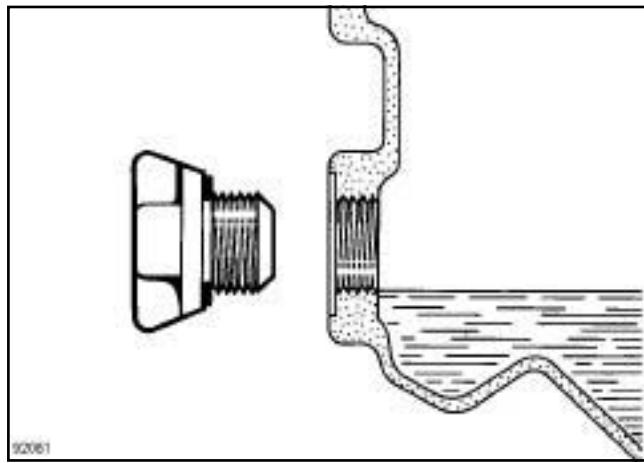
PK4

III - FILLING



114772

- Undo the filler cap (3).



92081

92081

- Fill the gearbox using a syringe containing recommended oil (see 21A, **Manual gearbox, Manual gearbox oil: Specifications**, page 21A-1) until the oil overflows from the fuel filler cap opening.
- Refit the filler cap.
- Wipe any oil run-off with a cloth.
- Refit:
 - the engine undertray,
 - the engine undertray bolts.

PK4

Special tooling required	
Bvi. 1719	Tool for fitting the left-hand side differential outlet seal
Bvi. 1419	Tool for fitting the bearing cage into the housing.
Bvi. 1774	Tool for fitting the right-hand driveshaft seal.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

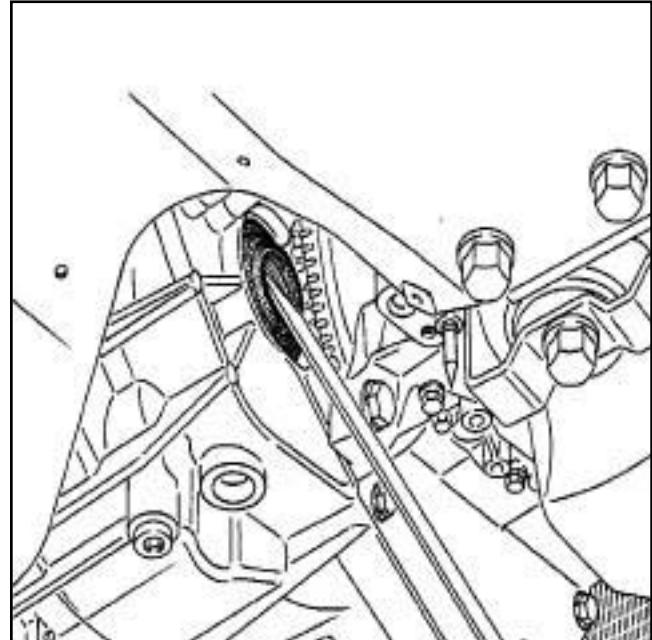
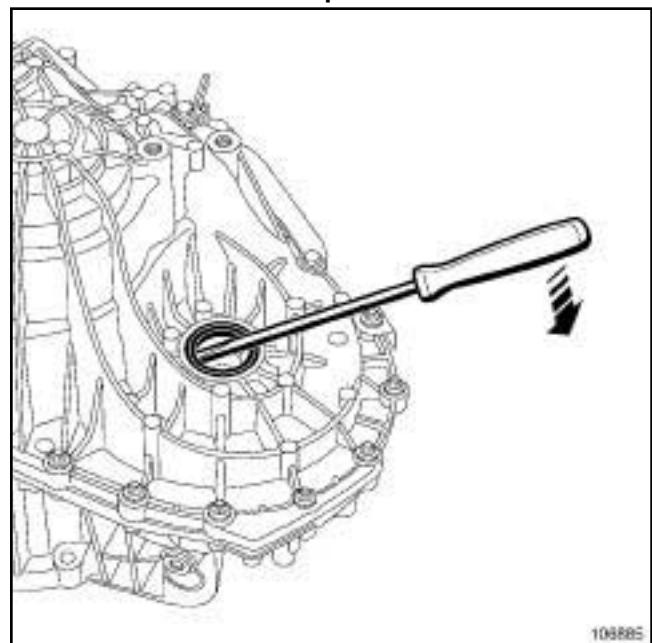
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove the engine undertray.
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

1 - To replace the differential output seal on the left-hand side

- Remove:
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).

2 - To replace the differential output seal on the right-hand side

- Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).

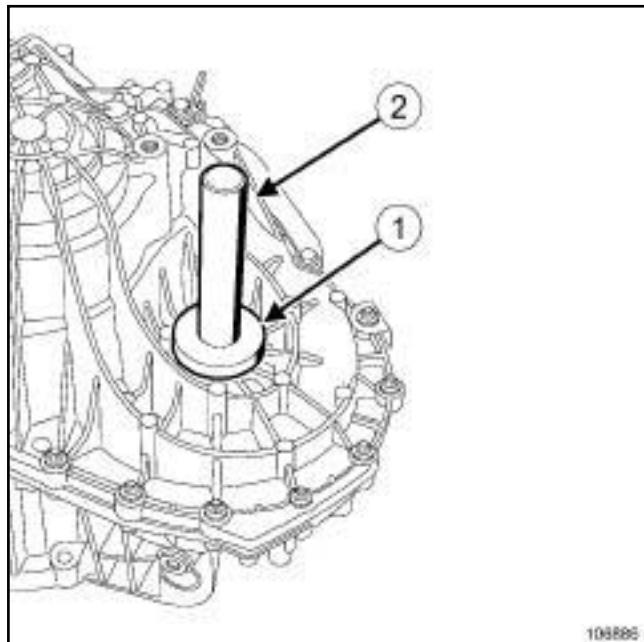
II - REMOVAL OF PART CONCERNED**Right-hand differential outlet seal****Left-hand differential output seal**

- Remove the seal with a screwdriver, taking care not to damage the housing.

PK4

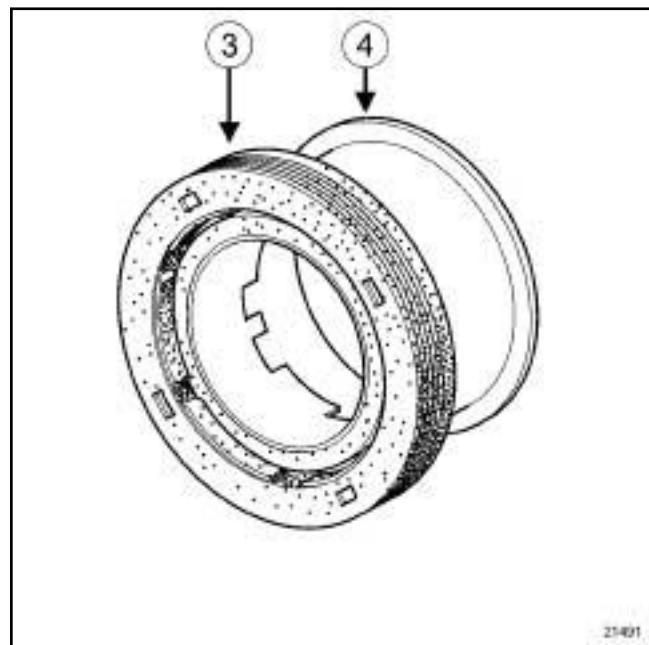
REFITTING**I - REFITTING PREPARATIONS OPERATION**

- Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 415, 04B, Consumables - Products) to clean:
- the differential output seal mating faces,
 - the propeller shaft.

II - REFITTING OPERATION FOR PART CONCERNED**1 - Refitting the differential output seal on the left-hand side**

106886

- Refit the left-hand differential output seal using the (**Bvi. 1719**) (1) and (**Bvi. 1419**) (2) .

2 - Refitting the differential output seal on the right-hand side

21491

- The right-hand side differential outlet seal is made up of:
- a seal (3) ,
 - a deflector-protector (4) .

Note:

The seal (3) cannot be separated from the deflector-protector (4) .

Note:

The seal is fitted with the deflector-protector. They will only be separated when the driveshaft is in place.

PK4

III - FINAL OPERATION.

1 - Refitting the driveshaft on the right-hand side

- Fit the relay bearing seal.

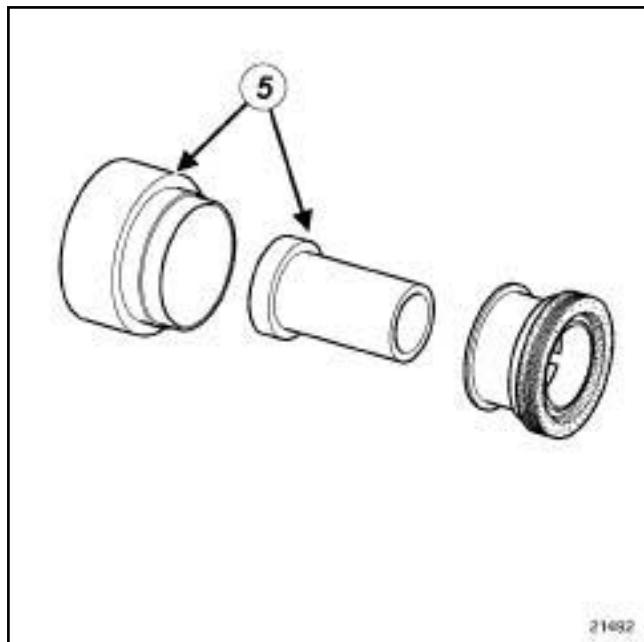
Note:

Check that the seal is fully inserted into its groove.

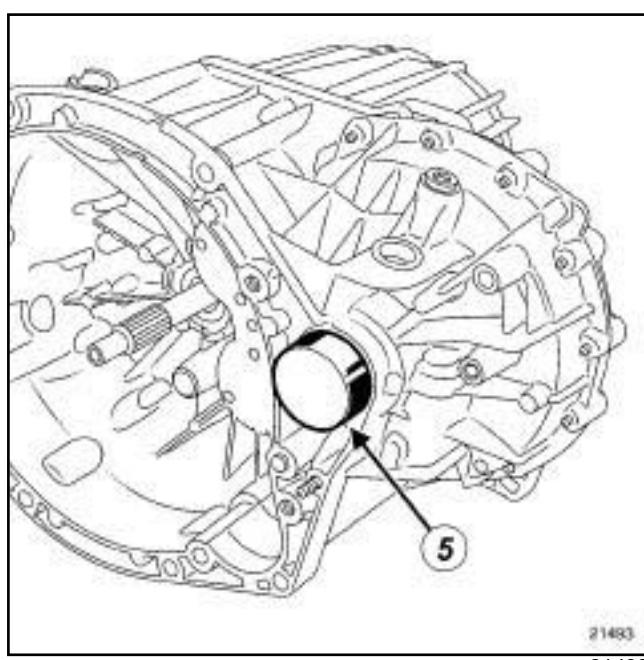
- Refit the transmission (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).

Note:

Make sure that the O-ring is correctly positioned in the base of the relay bearing, if the bearing has one.



21492



21493

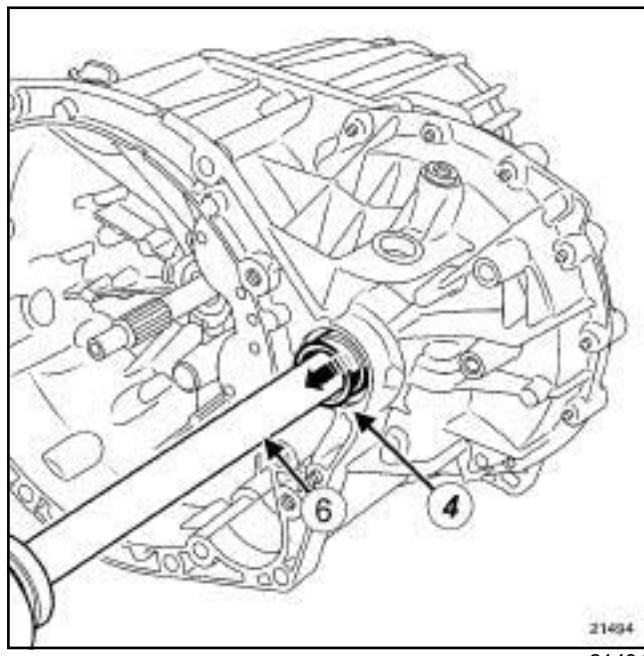
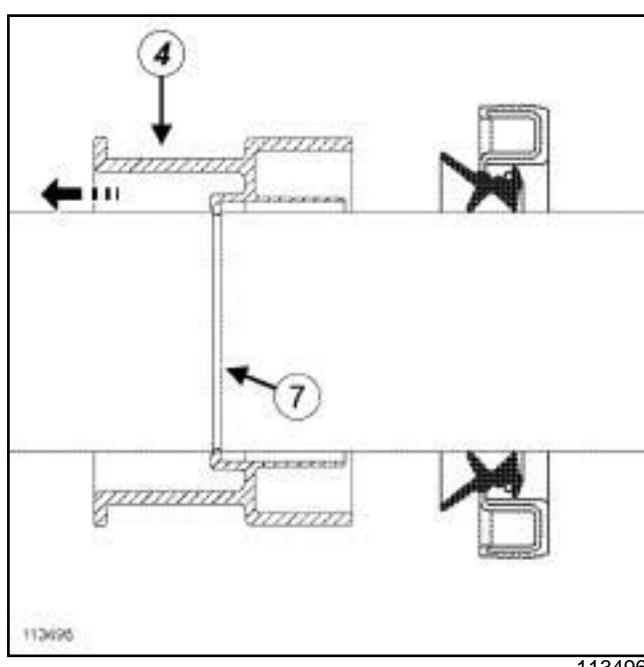
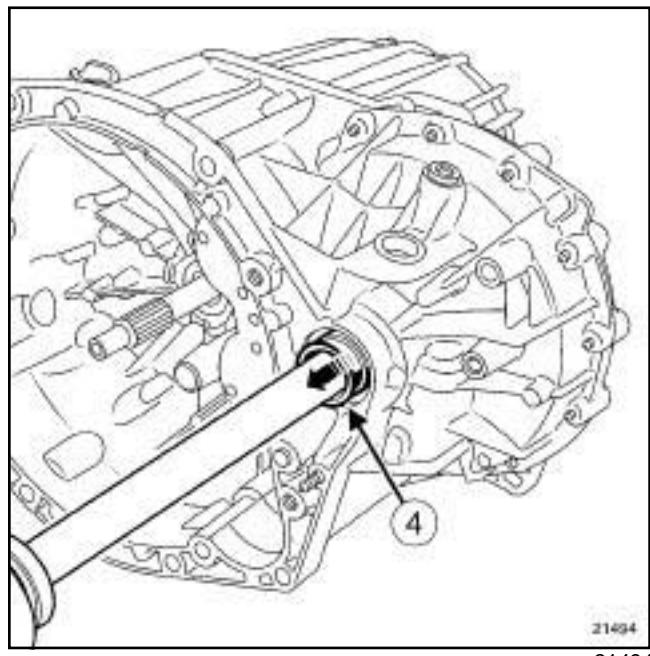
- Fit a new seal (seal pressed onto the deflector-protector) using tool (**Bvi. 1774**) (5).

Note:

Do not lubricate the seal when fitting it.

With the new seal fitted, leave the deflector-protector pressed into the seal. The deflector-protector protects the seal lips when the driveshaft is refitted.

PK4

a - Driveshaft WITH CLIP GROOVE*b - Driveshaft WITHOUT CLIPPING GROOVE*

- Pull the deflector-protector (4) .
- Clip the deflector-protector into the clipping groove (7) .

WARNING

If you do not pull the deflector-protector, the seal lips do not make contact with the driveshaft and a correct seal cannot be guaranteed.

- Pull the deflector-protector (4) .

- Remove the deflector-protector by cutting it.

2 - Refitting the driveshaft on the left-hand side

- Refit the front left-hand driveshaft (see 29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting, page 29A-1) .

3 - Final operation

- Top up the gearbox oil (see 21A, Manual gearbox, Manual gearbox oils: Draining - Filling, page 21A-2) .

□ Refit:

- the engine undertray,
- the front wheels (see Wheel: Removal - Refitting (MR 415, 35A, Wheels and tyres)).

TL4

Special tooling required

Bvi. 1854 Differential output seal fitting tool TL4

Equipment required

roll pin punch

REMOVAL**I - REMOVAL PREPARATION OPERATION**

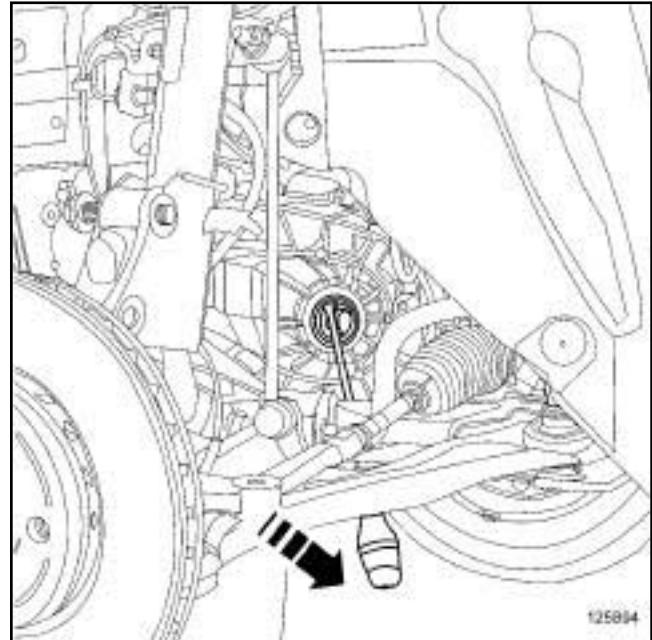
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine undertray bolts,
 - the engine undertray.
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2).

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-1) .

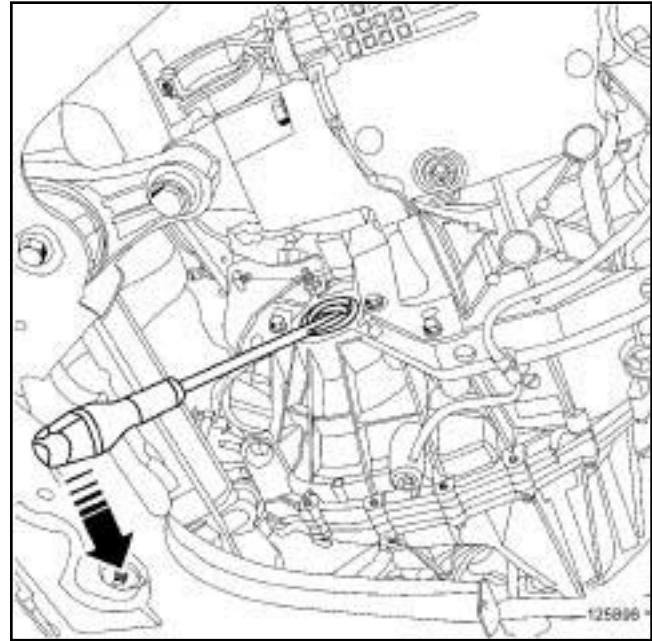
2 - When replacing the differential output seal on the right-hand side

- 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-7) .

II - REMOVAL OPERATION FOR THE DIFFERENTIAL OUTPUT SEAL**Left-hand differential output seal**

125894

125894

Right-hand differential output seal

125896

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.

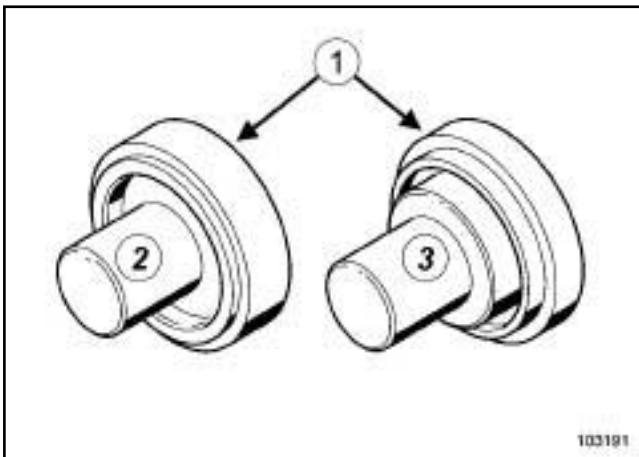
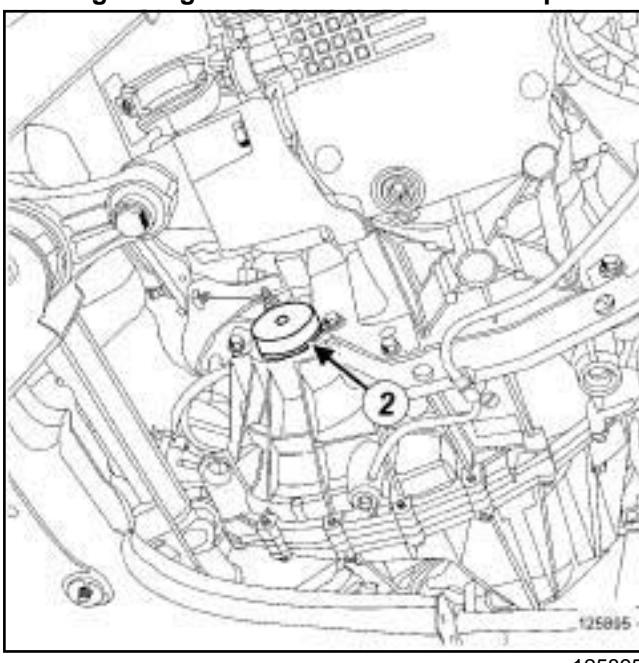
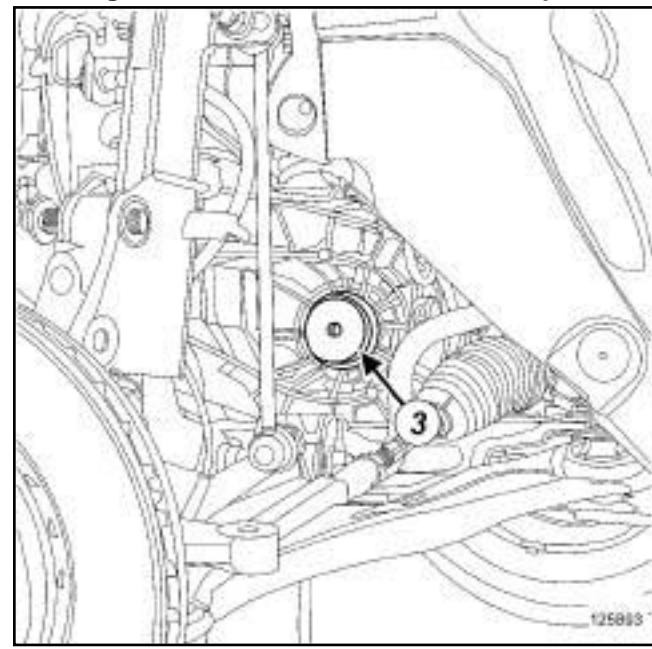
TL4

REFITTING

I - REFITTING PREPARATION OPERATION

- parts always to be replaced: Differential output seal (12,01,05,10).

TL4

II - REFITTING OPERATION FOR THE DIFFERENTIAL OUTPUT SEAL

Refitting the right-hand side differential output seal

Refitting the left-hand side differential output seal.


- 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-1**) ,
- 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-7**) ,

MANUAL GEARBOX

Differential output seal: Removal - Refitting

21A

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-2**).
- Refit the engine undertray.

M9R, and PK4

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

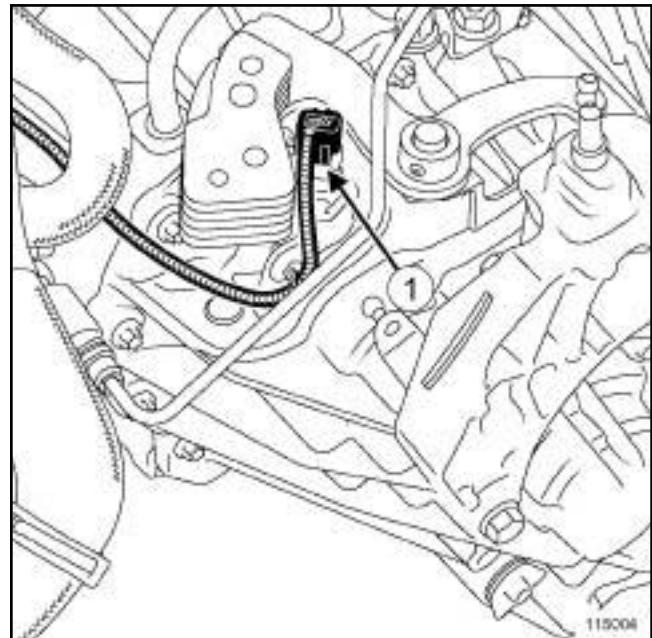
Equipment required	
component support	

Tightening torques 	
gearbox bolts	44 Nm
upper nuts on the gearbox	44 N.m
gearbox support bolts	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 battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



115004

- Disconnect the reverse gear sensor connector (1) .
- Unclip the wiring from the reverse gear sensor.
- Fit the tool (**Ms. 583**) on the rigid clutch pipe at the outlet of the brake fluid reservoir
- Unclip the rigid clutch pipe from the gearbox.
- Remove:
 - the engine undertray bolts,
 - the engine undertray
- Disconnect the rigid clutch pipe from the clutch thrust bearing.
- Fit blanking plugs onto the end of the clutch pipe and at the inlet of the clutch thrust bearing.

Note:

Remove the gear control cables using an open-jawed spanner.

- Unclip:
 - the gear control cables from the selector ball joints using an open-jawed spanner,
 - the gear control cables from their support.
 - the oil vapour pipe from the gearbox.

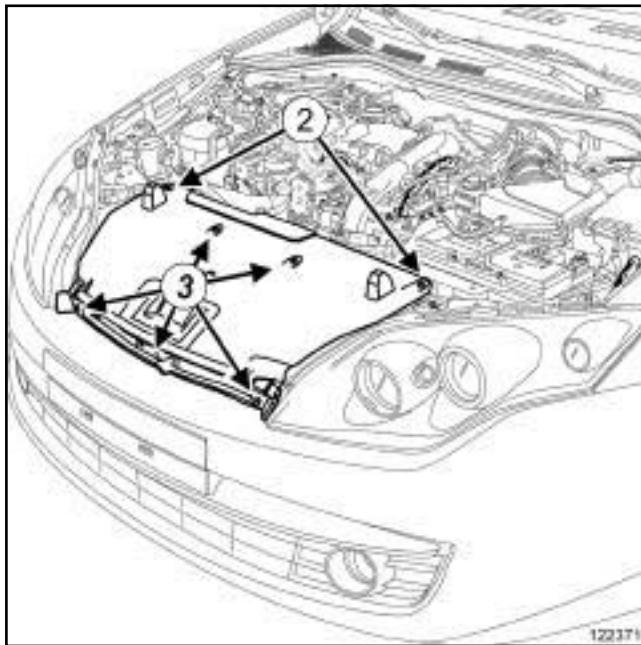
Note:

Do not deform the rigid clutch pipe to avoid any leaks.

M9R, and PK4

 Remove:

- the gear control cables,
- the rigid clutch pipe.

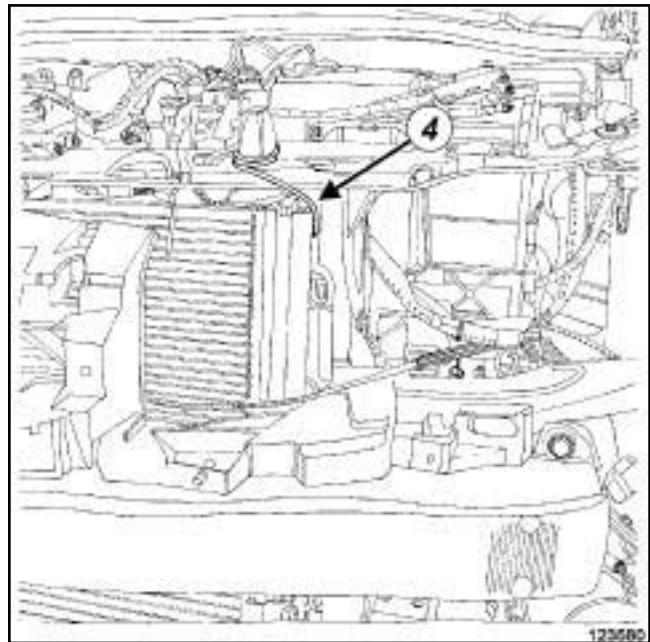


122371

 Remove the cooling assembly protector bolts (2) .

Note:

To remove the clips (3) , undo the head of the bolt head on the clip by a quarter of a turn then lift it slightly as far as the stop and remove the clip.

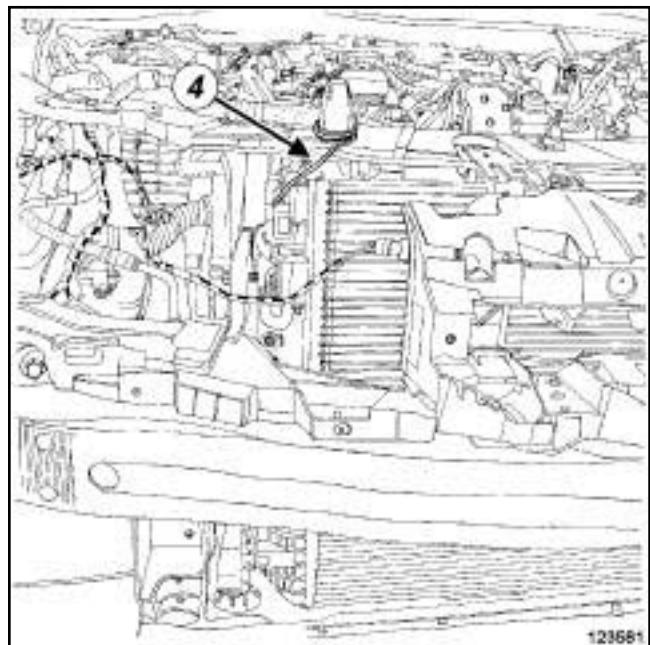


123580

123580

 Remove:

- the cooling assembly protector clips (3) ,
- the cooling assembly protector.



123581

123581

Attach the cooling assembly to the upper cross member.

Remove the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)).

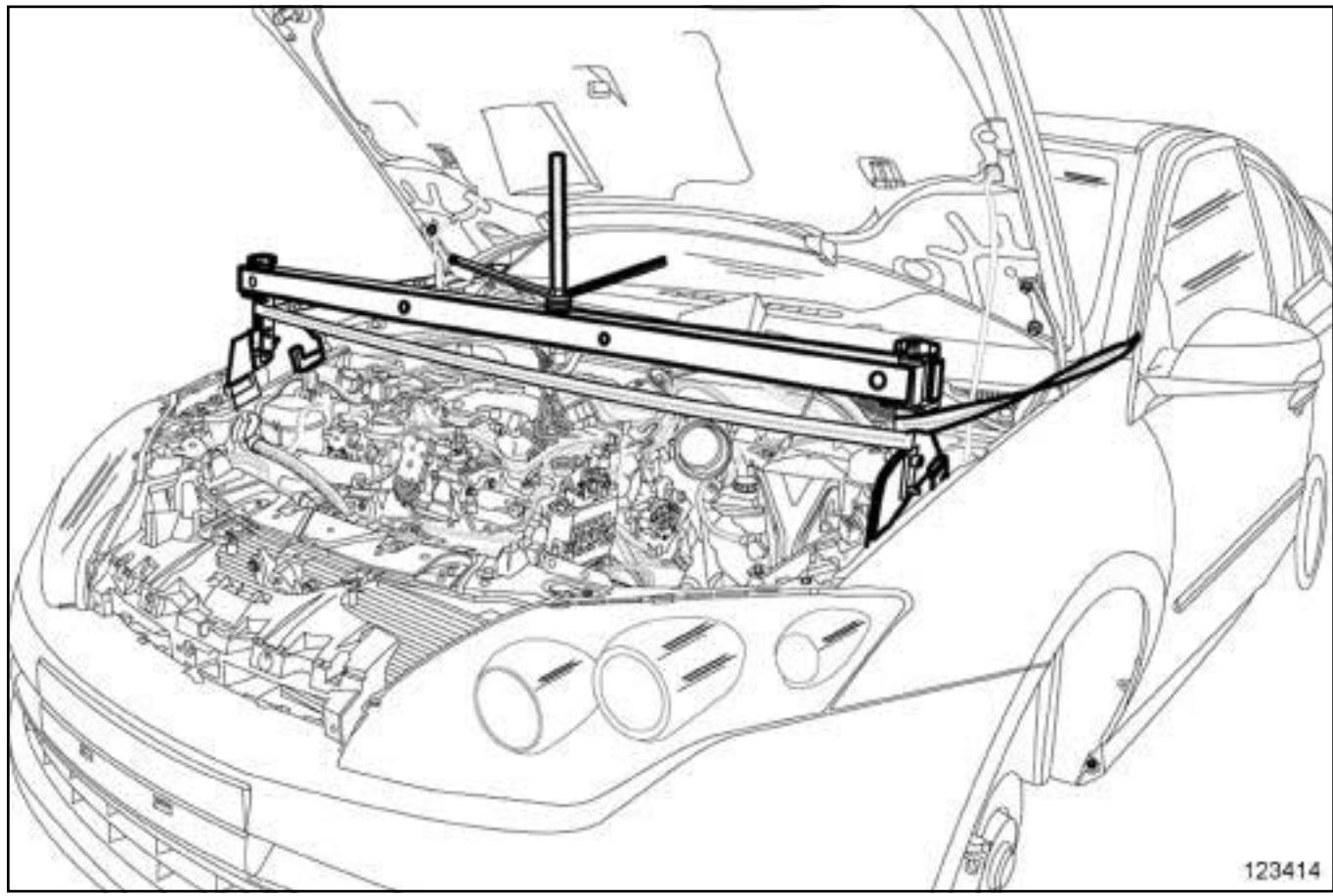
Drain the gearbox (see **21A, Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page 21A-2) .

Remove:

- the front wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres)),

M9R, and PK4

- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting** (55A, Exterior protection)),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure),
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting** (19D, Engine mounting),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).



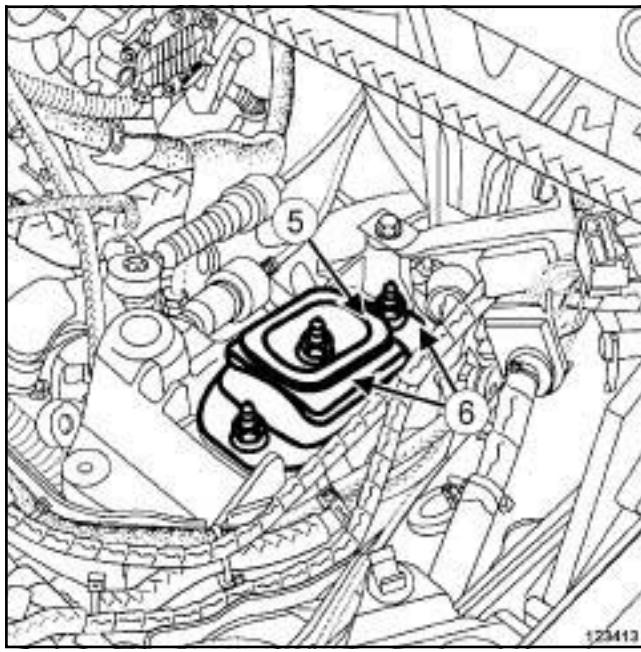
Fit the tools (**Mot. 1453**) and tool (**Mot. 1453-01**).

|

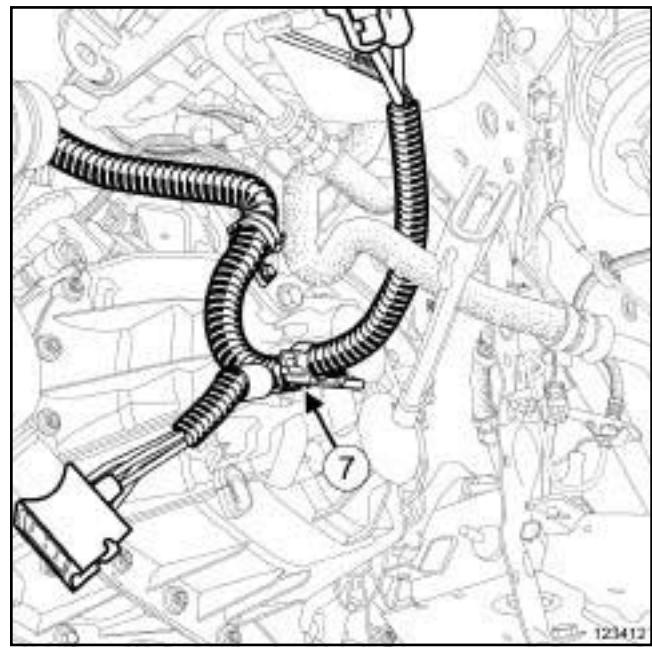
123414

123414

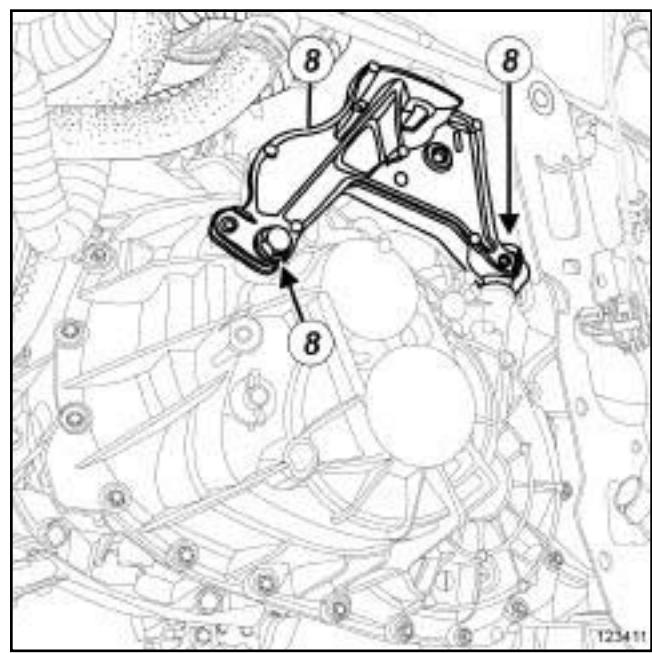
M9R, and PK4

II - OPERATION FOR REMOVAL OF PART CONCERNED


- Remove the nut (5) from the left-hand suspended engine mounting rubber pad shaft.
- Detach the left-hand suspended engine mounting rubber pad shaft.
- Remove:
 - the bolts (6) from the rubber pad of the left-hand suspended engine mounting,
 - the left-hand suspended engine mounting rubber pad.
- Tilt the engine using the tool (**Mot. 1453-01**).

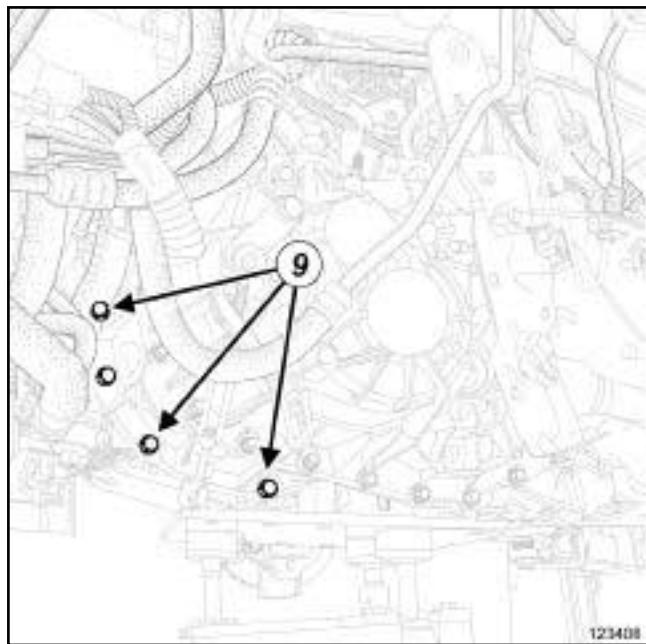


- Remove the bolt (7) from the wiring on the gearbox support.

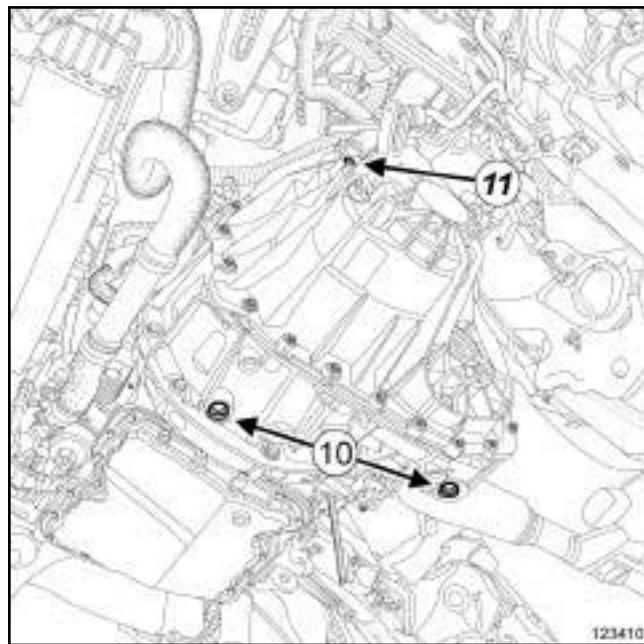


- Remove:
 - the bolts (8) securing the gearbox support.
 - the gearbox support.
- Remove the upper nuts from the gearbox.
- Unclip the pipes of the heater matrix on the retaining bracket on the gearbox.
- Remove the retaining bracket from the heater matrix pipes.

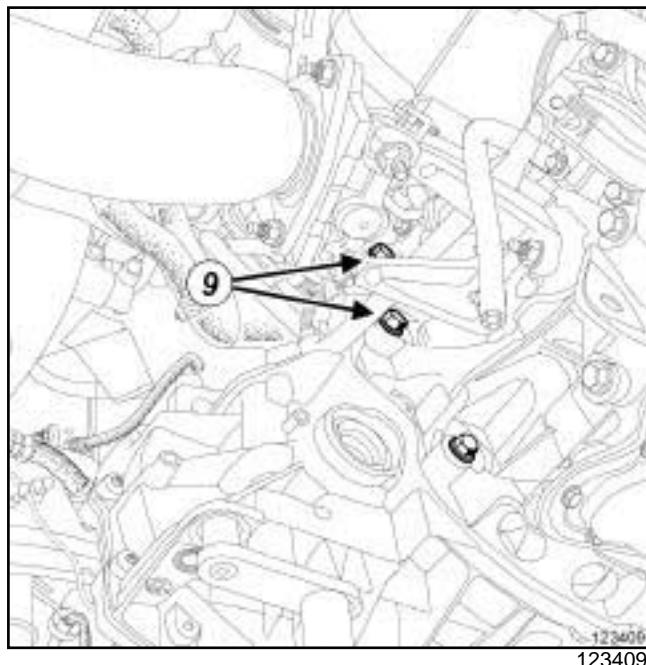
M9R, and PK4



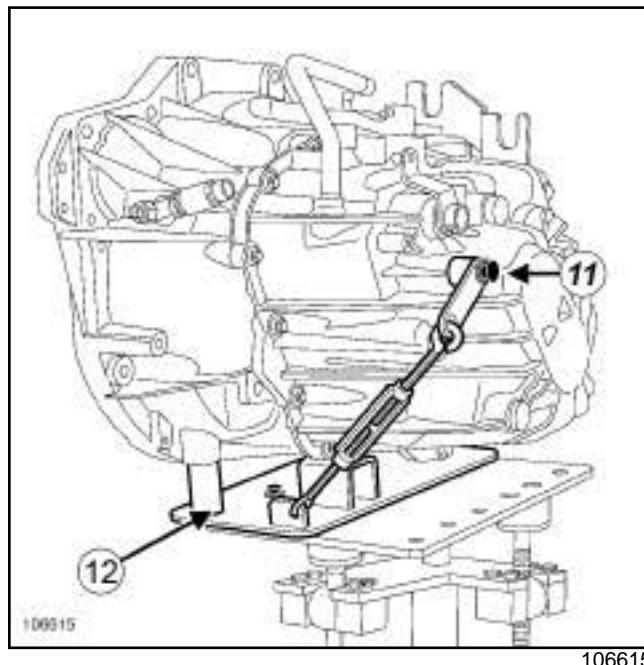
123408



123410



123409



106615

- Remove the gearbox bolts (9) while leaving two retaining bolts.

- Fit the tool **component support** equipped with the tool (Bvi. 1718) (12) on the contact points (10) and bolt the tool (Bvi. 1718) bolt (11).

M9R, and PK4

REFITTING

I - REFITTING PREPARATION OPERATION



WARNING

To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

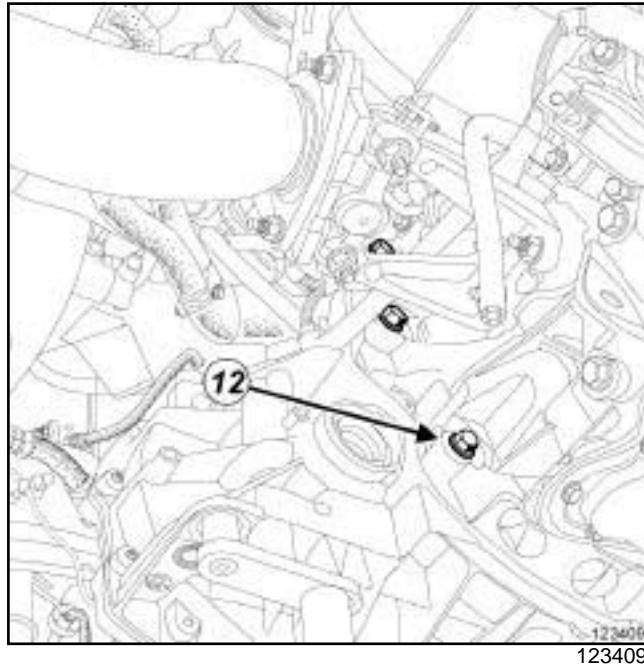
WARNING

Do not grease the clutch shaft splines.

WARNING

To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

II - REFITTING OPERATION FOR PART CONCERNED



Remove:

- the gearbox bolts (12) ,
- the gearbox.



Position the component jack.

Refit:

- the gearbox,
- the gearbox bolts.

Remove the **component support** fitted with the tool (Bvi. 1718).

Torque tighten the **gearbox bolts (44 Nm)**.

Refit:

- the retaining bracket for the heater matrix pipes,

M9R, and PK4

- the upper nuts on the gearbox.
- Torque tighten the **upper nuts on the gearbox (44 N.m)**.
- Clip the heater matrix pipes on the heater matrix retaining bracket.
- Refit:
 - the gearbox support,
 - the gearbox support bolts.
- Torque tighten the **gearbox support bolts (105 N.m)**.

III - FINAL OPERATION.

- Fit the wiring on the gearbox support.
- Refit the wiring bolt on the gearbox support.
- Tighten the wiring bolt on the gearbox support.
- Refit:
 - the left-hand suspended engine mounting rubber pad,
 - the bolts on left-hand suspended engine mounting rubber pad.
- Tighten the left-hand suspended engine mounting rubber pad nuts.
- Refit the left-hand suspended engine mounting shaft nut.
- Tighten the left-hand suspended engine mounting shaft nut.
- Remove the (**Mot. 1453**) and (**Mot. 1453-01**).
- Refit:
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
 - the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**),
 - the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**),

- the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**),
- the front wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres)),
- the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)),
- Top up the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Remove the retaining belt from the cooling assembly.
- Refit the cooling assembly protector.
- Clip:
 - the gearbox control cables on their support,
 - the gear control cables onto the gear selector ball joints,
 - the clutch pipe,
 - the oil vapour pipe.
- Adjust the gear control cables (see **Gear control unit: Adjustment**).
- Connect the rigid clutch pipe to the clutch thrust bearing.
- Remove the tool (**Ms. 583**) from the brake fluid reservoir outlet pipe.
- Bleed the clutch control circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).
- Refit:
 - the engine undertray,
 - the engine undertray bolts.
- Clip the wiring on the reverse gear sensor.
- Connect the reverse gear sensor connector.
- Refit:
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting** (80A, Battery)).

K9K, 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.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.
Equipment required	
safety strap(s)	
component jack	

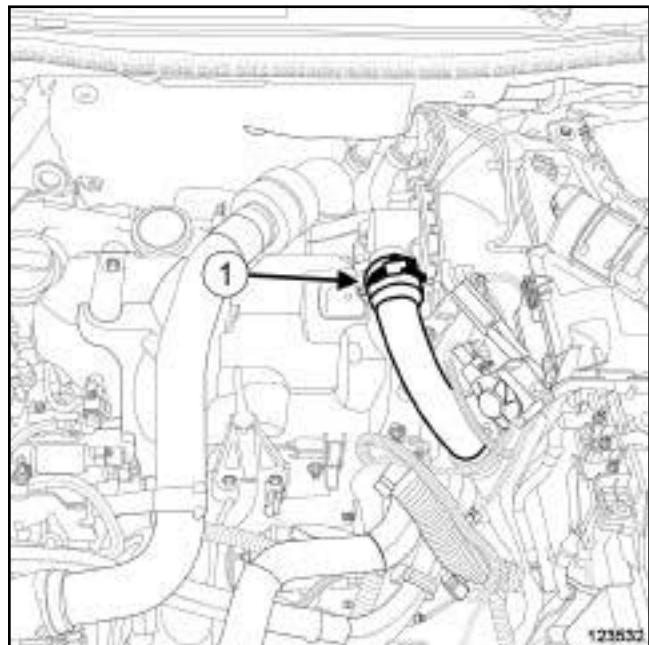
Tightening torques 	
reverse gear switch	23 N.m
manual gearbox studs	7 N.m
nuts on the manual gearbox	44 N.m
lower bolts on the manual gearbox	44 N.m
bolts of the manual gearbox	44 N.m
bolts for the suspended engine mounting on the gearbox	62 N.m
upper engine tie-bar bolt on the body	115 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

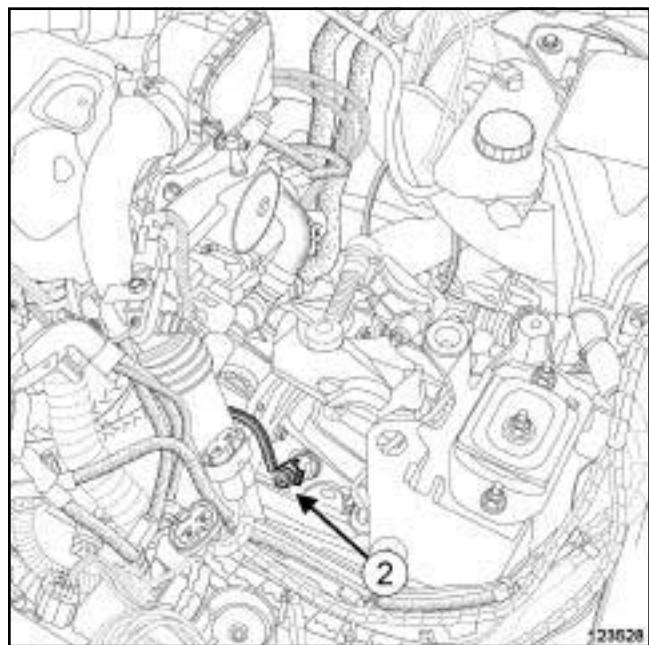
- Position the vehicle on a lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine cover,
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),

- the air filter box (see **Air filter unit: Removal - Re-fitting**) (12A, Fuel mixture).



123532

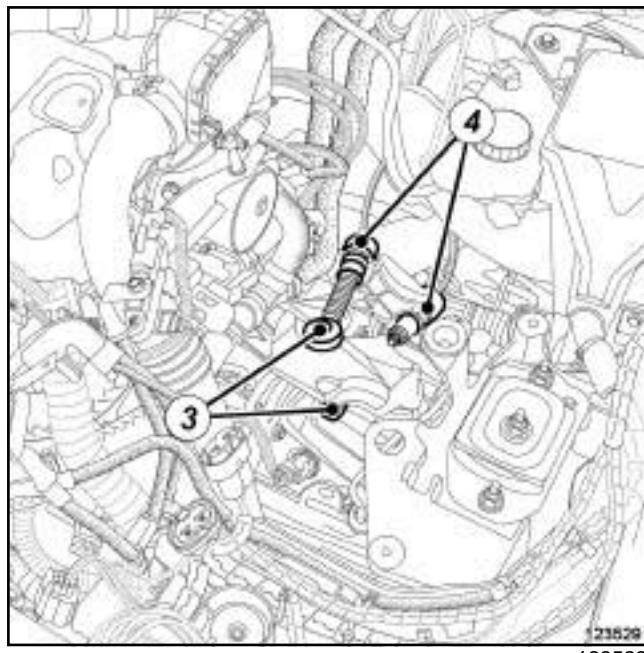
- Loosen the clip (1) on the intercooler outlet air pipe.
- Disconnect the intercooler outlet air pipe from the damper valve.
- Move the intercooler outlet air pipe to one side.



123628

- Disconnect the connector (2) from the reverse gear switch.

K9K, and TL4



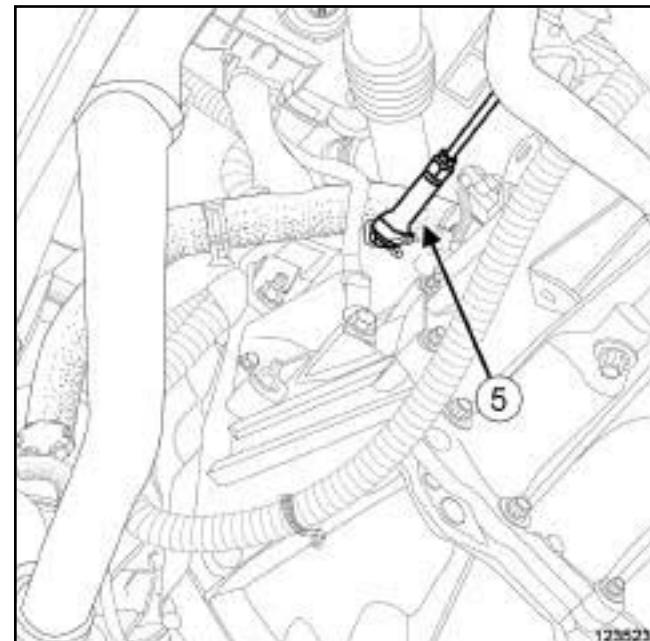
123529

 Remove:

- the engine undertray bolts,
- the engine undertray.

WARNING

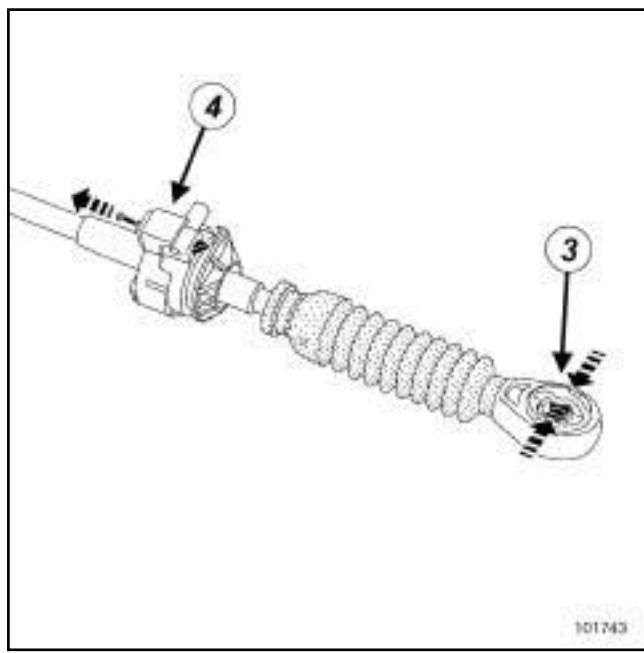
Prepare for the flow of fluid, and protect the surrounding components.



123523

Disconnect the hydraulic clutch pipe (5) by pressing on the clip.

Fit blanking plugs to the hydraulic clutch control pipe openings.



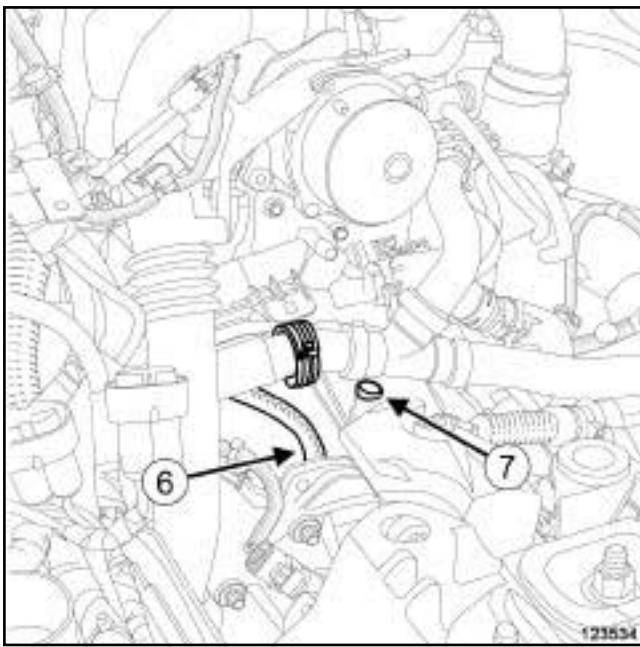
101743

Unclip the manual gearbox control cables:

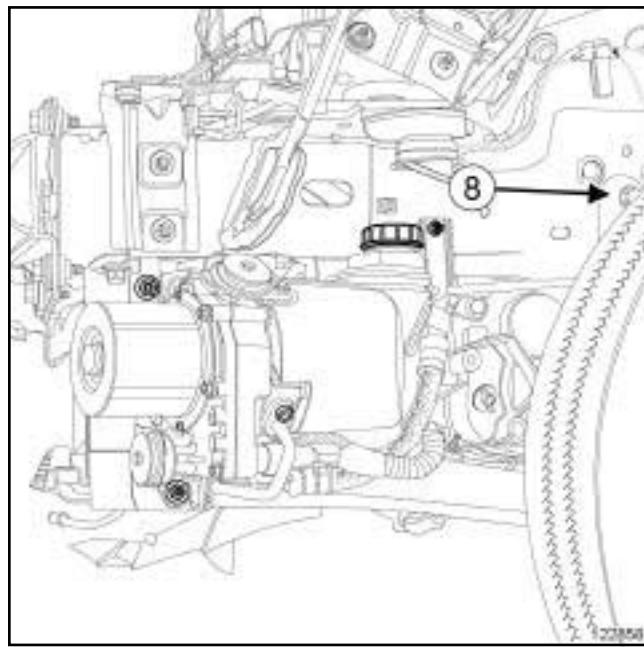
- from the anchoring ball joints at (3),
- from the cable sleeve stops at (4).

Move the gearbox control cables to one side.

K9K, and TL4



123534



122858

Unclip from the gearbox:

- the breather pipe (6) ,
- the engine wiring harness channel (7) .

Remove:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**) .

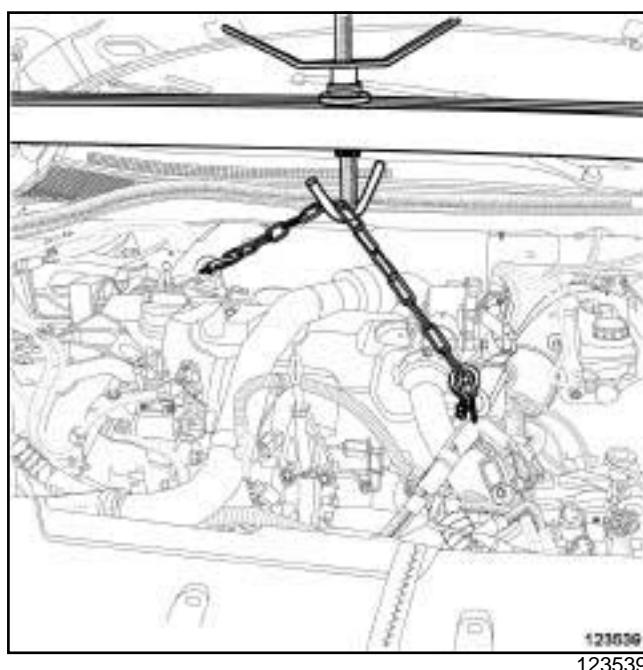
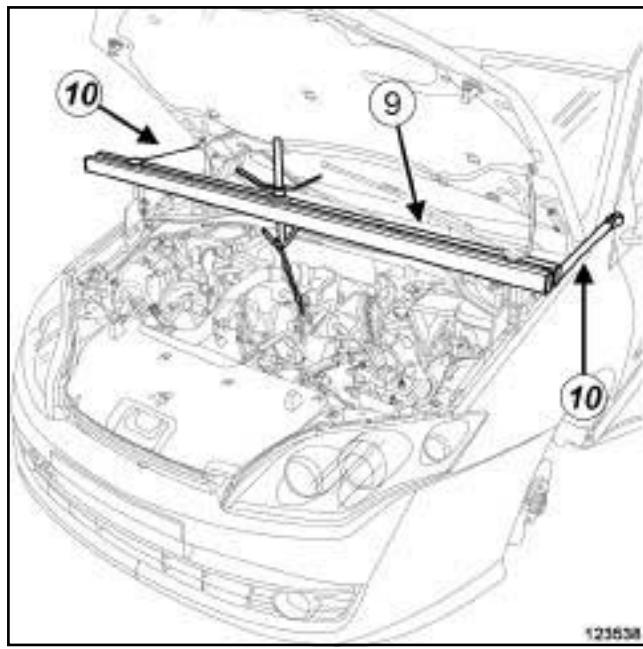
Remove:

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) .
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).

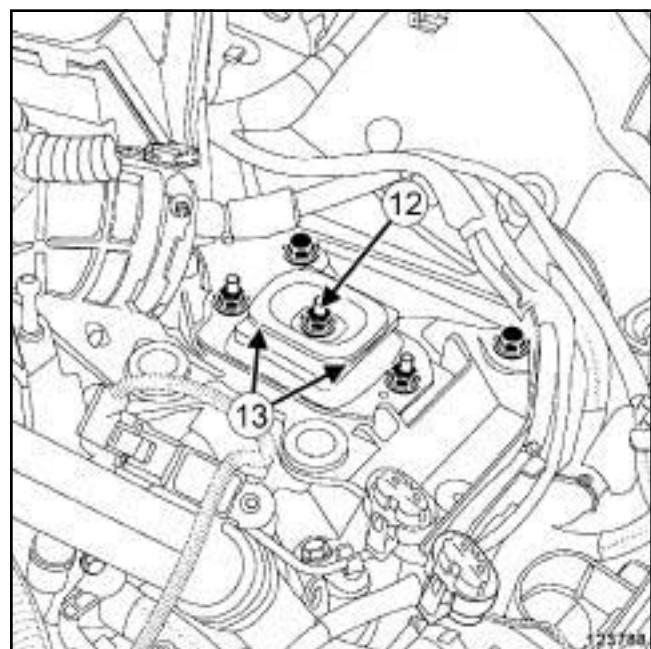
Remove:

- the upper bolt (8) of the left-hand tie-rod from the front axle subframe,
- the nut of the power-assisted steering pipe from the front axle subframe left-hand tie-rod.
- Disconnect the connector on the front axle subframe left-hand tie-rod.
- Unclip the wiring from the front axle subframe left-hand tie-rod.
- Unclip the rigid brake pipe from the front left-hand side member.
- Unclip the power-assisted steering low pressure pipe from the front axle subframe.
- Remove the nut from the power-assisted steering pipe bracket.
- Move the power-assisted steering pipe to one side.
- Remove the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).

K9K, and TL4



- Fit the **(Mot. 1453)** fitted with **(Mot. 1453-01)** **(9)** and safety strap(s) **(10)**.

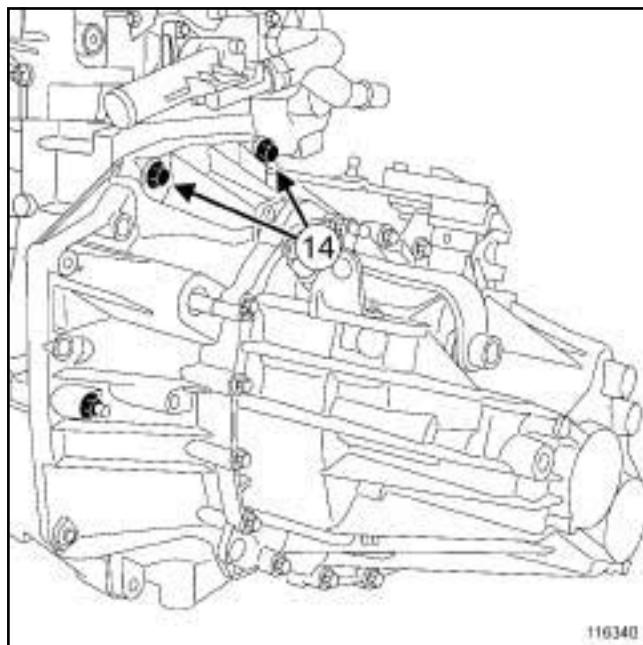


- Remove the left-hand suspended engine mounting shaft nut **(12)**.
- Detach the left-hand suspended engine mounting shaft from the rubber pad using a copper hammer.
- Remove:
 - the left-hand suspended engine mounting rubber pad nuts **(13)**,

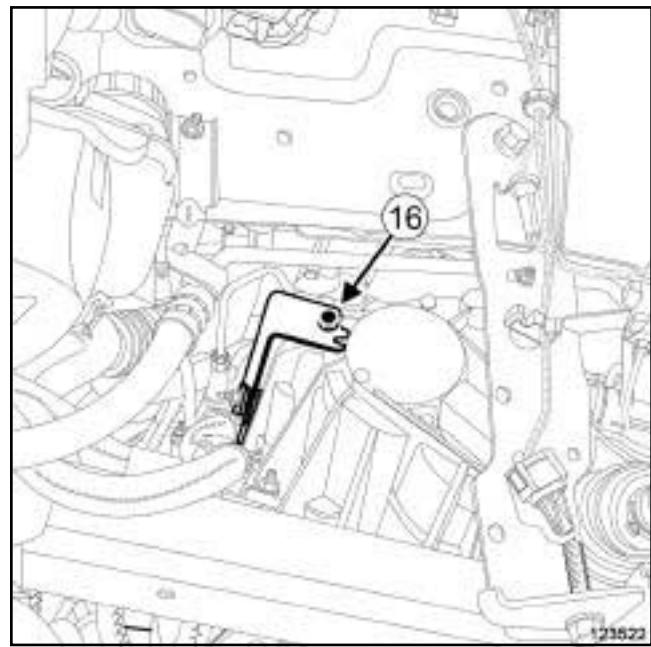
K9K, and TL4

- the rubber pad from the left-hand suspended engine mounting

II - OPERATION FOR REMOVAL OF PART CONCERNED

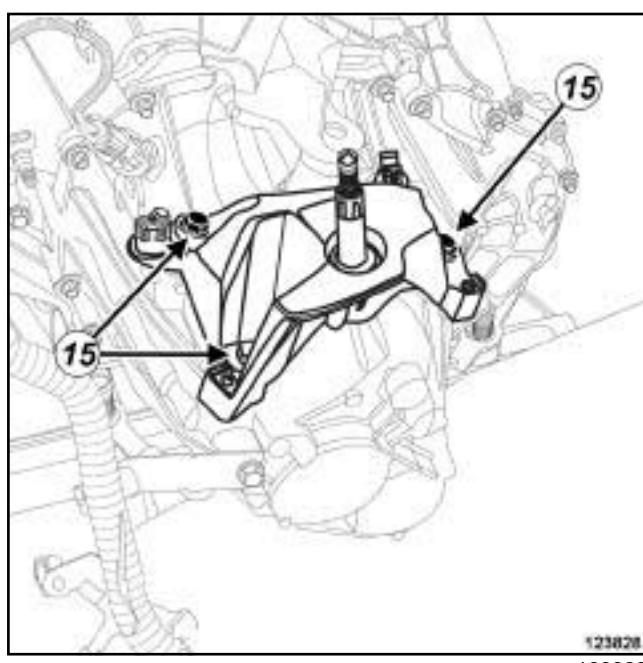


116340



123522

- Remove the bolt (16) from the power-assisted steering pump wiring on the manual gearbox.

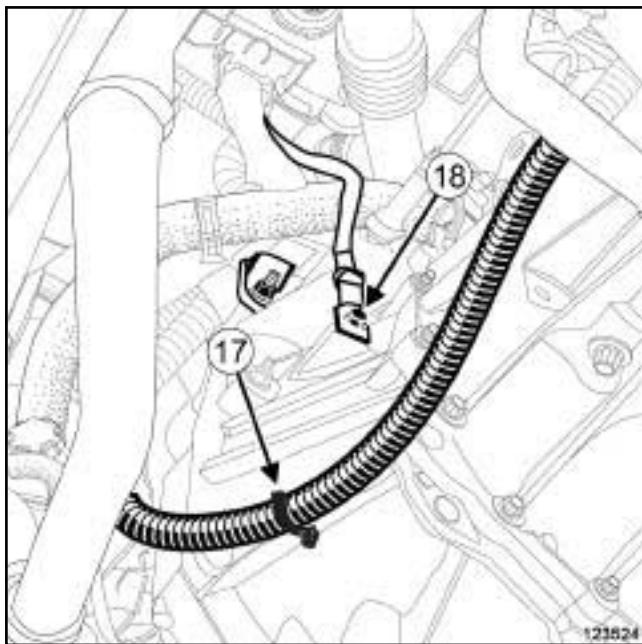


123828

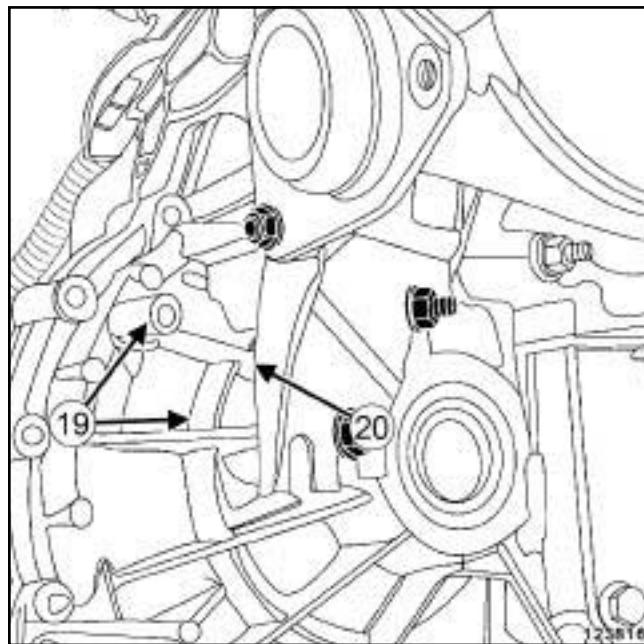
Remove:

- the upper bolts (14) from the manual gearbox.
- the left-hand suspended engine mounting shaft bolts (15) from the manual gearbox,
- the left-hand suspended engine mounting shaft from the manual gearbox.

K9K, and TL4



123524



123816

- Unclip (17) the wiring from the power-assisted steering pump of the manual gearbox.

Note:

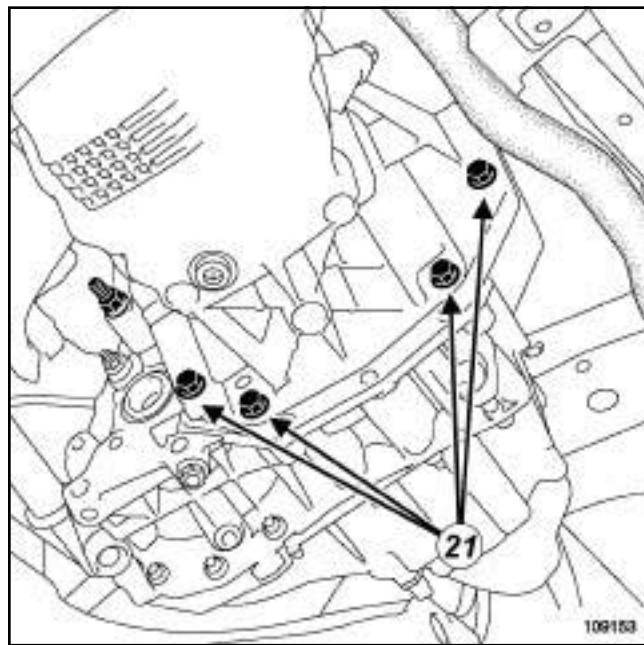
Before removing the earth terminal, mark its position using an indelible marker by drawing a line on the earth terminal and on the gearbox casing.

When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.

- Remove the bolt (18) from the earth wiring on the manual gearbox.
- Unclip the drain pipe from the manual gearbox rail protector.

Remove:

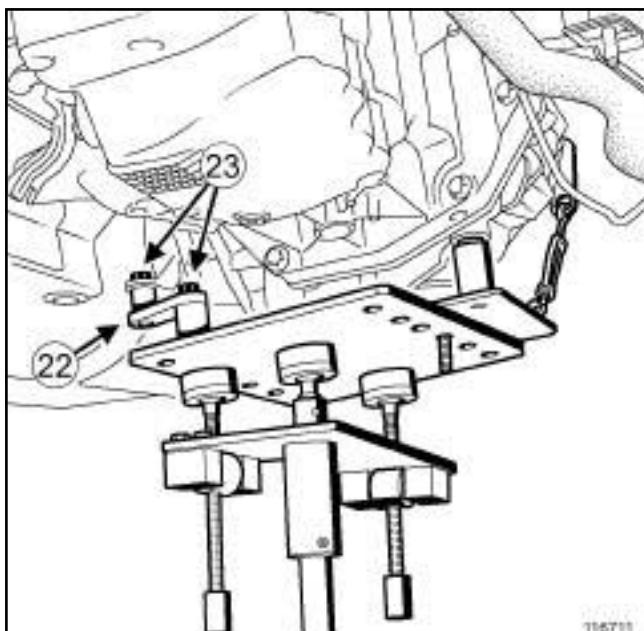
- the catalytic converter downstream strut bolts (19) ,
- the catalytic converter downstream strut nut (20) ,
- the catalytic converter downstream strut,



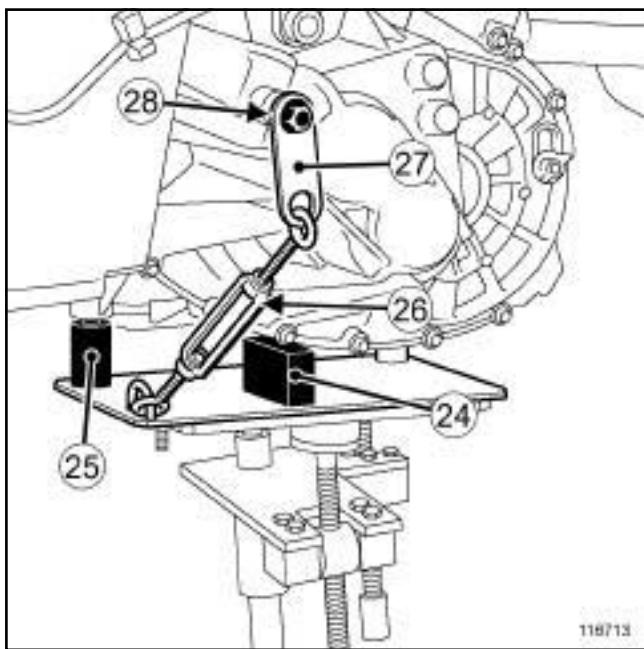
109153

- Remove the lower bolts (21) from the manual gearbox.

K9K, and TL4



116711



116713

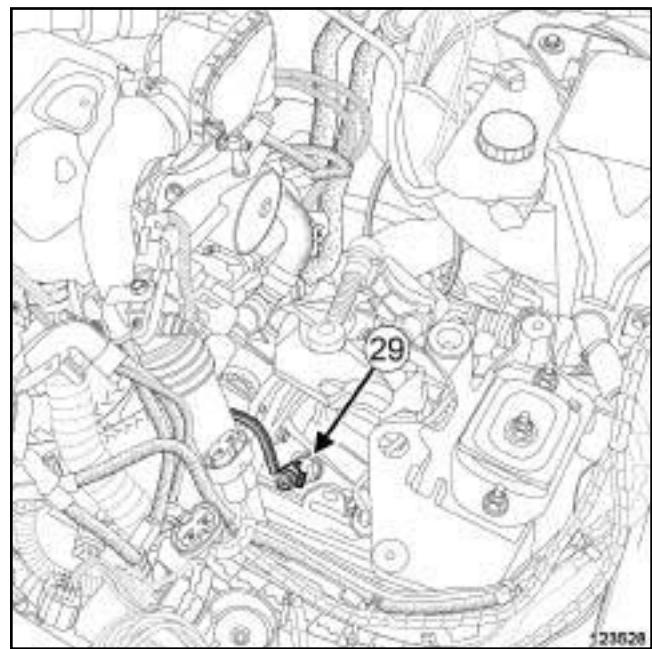
 Fit:

- the (Bvi. 1718) to a **component jack**,
 - the tool (Bvi. 1718) and the **component jack** under the manual gearbox,
 - the bracket (22) using the nuts (23) ,
 - the support (24) ,
 - the pin (25) ,
 - the rod (26) using the bracket (27) and the bolt (28)
- Tighten the rod anti-clockwise in order to avoid tilting

the manual gearbox.

 Remove:

- the nuts from the manual gearbox,
- the manual gearbox using the **component jack** and tool (Bvi. 1718),
- the studs from the manual gearbox.



123528

- If replacing, remove the following from the manual gearbox:
- the reverse gear switch (29) ,
 - the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection).

REFITTING**I - REFITTING PREPARATION OPERATION**

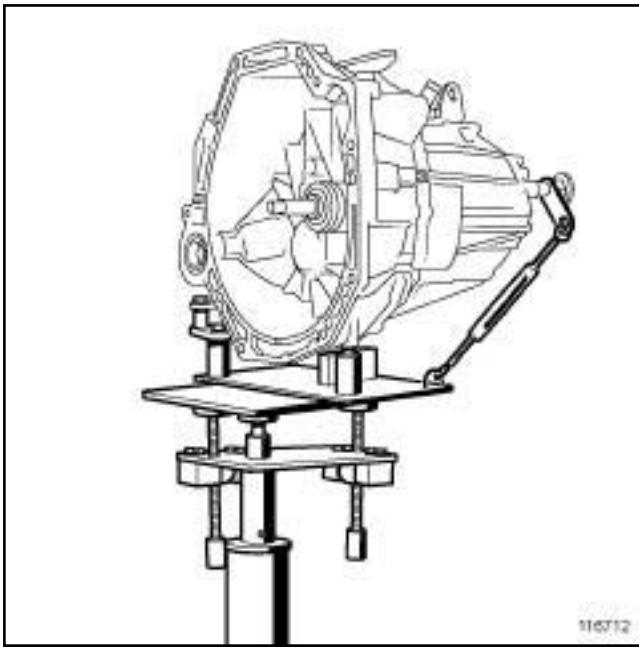
- Always replace the differential output seals.
- Check for the presence of the centring rings on the manual gearbox.

Replacing the gearbox

- Refit on the manual gearbox:
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
 - the reverse gear switch.
- Torque tighten the **reverse gear switch (23 N.m)** on the manual gearbox.

K9K, and TL4

- Refit the new differential output seals (see 21A, **Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6).



-

Note:

To fit the tool on the new gearbox, follow the same steps as for the removal operation.

- Fit the new manual gearbox on the (**Bvi. 1718**).

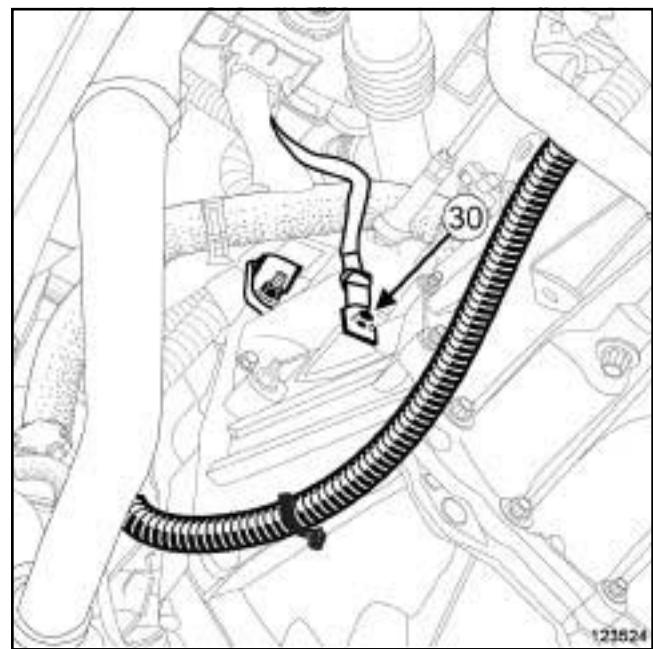
II - REFITTING OPERATION FOR PART CONCERNED

- Position the manual gearbox using the **component jack** and tool (**Bvi. 1718**).
- Refit the manual gearbox studs.
- Torque tighten the **manual gearbox studs** (7 N.m).
- Refit the manual gearbox nuts.
- Torque tighten the **nuts on the manual gearbox** (44 N.m).
- Remove tool (**Bvi. 1718**) :
 - from the manual gearbox,
 - of the **component jack**.
- Refit the lower bolts on the manual gearbox.
- Torque tighten the **lower bolts on the manual gearbox** (44 N.m).
- Refit:
 - the catalytic converter downstream strut,

- the bolts on the catalytic converter downstream strut,
- the catalytic converter downstream strut nut.

- Tighten:
 - the bolts on the catalytic converter downstream strut,
 - the catalytic converter downstream strut nut.

- Clip the drain pipe of the rail protector on the manual gearbox.



-

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 (30) to the manual gearbox.
- Tighten the earth wiring bolt (30) on the manual gearbox.
- Clip the wiring of the power-assisted steering pump on the manual gearbox.
- Refit the wiring bracket bolt of the power-assisted steering pump on the manual gearbox.
- Tighten the wiring bracket bolt of the power-assisted steering pump on the manual gearbox.

K9K, and TL4

- Screw on without tightening the upper bolts of the manual gearbox.
- Torque tighten the upper **bolts of the manual gearbox (44 N.m)**.
- Fit the left-hand suspended engine mounting shaft onto the manual gearbox.
- Screw on without tightening the bolts for the suspended engine mounting on the gearbox.
- Torque tighten the **bolts for the suspended engine mounting on the gearbox (62 N.m)**.

III - FINAL OPERATION.

- Raise the engine using the tool (**Mot. 1453**) fitted with the tool (**Mot. 1453-01**).
- Refit:
 - the rubber pad on the left-hand suspended engine mounting,
 - the nuts of the rubber pad on the left-hand suspended engine mounting.
- Bond the left-hand suspended engine mounting shaft to the left-hand suspended engine mounting rubber pad using the tool (**Mot. 1453**) fitted with the tool (**Mot. 1453-01**).
- Refit the left-hand suspended engine mounting shaft nut.
- Tighten the left-hand suspended engine mounting shaft nut.
- Refit:
 - the upper engine tie-bar,
 - the upper engine tie-bar bolts.
- Tighten the upper engine tie-bar bolt on the engine.
- Torque tighten the **upper engine tie-bar bolt on the body (115 Nm)**.
- Remove the (**Mot. 1453**) then the (**Mot. 1453-01**).
- Refit the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).
- Fit the power-assisted steering pipe.
- Refit the nut of the power-assisted steering pipe bracket.
- Tighten the nut of the power-assisted steering pipe bracket.
- Clip:
 - the low pressure pipe on the front axle subframe,

- the rigid brake pipe on the front left-hand side member,
- the wiring on the left tie rod of the front axle subframe.
- Connect the connector on the left-hand tie rod of the front axle subframe.
- Refit:
 - the nut of the power-assisted steering pipe of the left-hand tie rod on the front axle subframe,
 - the upper bolt of the left-hand tie-rod on the front axle subframe.
- Tighten:
 - the upper bolt of the left-hand tie-rod on the front axle subframe,
 - the nut of the power-assisted steering pipe from the front axle subframe left-hand tie-rod.
- Refit:
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Refit:
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres)),
 - the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)).
- Clip on the gearbox:
 - the breather pipe,
 - the engine wiring harness channel.
- Remove the blanking plugs from the hydraulic clutch control pipe openings.
- Connect the hydraulic clutch pipe.
- Bleed the hydraulic clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

K9K, and TL4

Refit:

- the engine undertray,
- the engine undertray bolts.

Fit the gearbox control cables.

Clip the gearbox control cables:

- on the cable sleeve stops,
- on the anchoring ball joints.

Adjust the gearbox control cables (see **Gear control unit: Adjustment**).

Connect:

- the revers gear connector,
- the intercooler outlet air pipe on the damper valve.

Tighten the clip on the intercooler outlet pipe.

Refit:

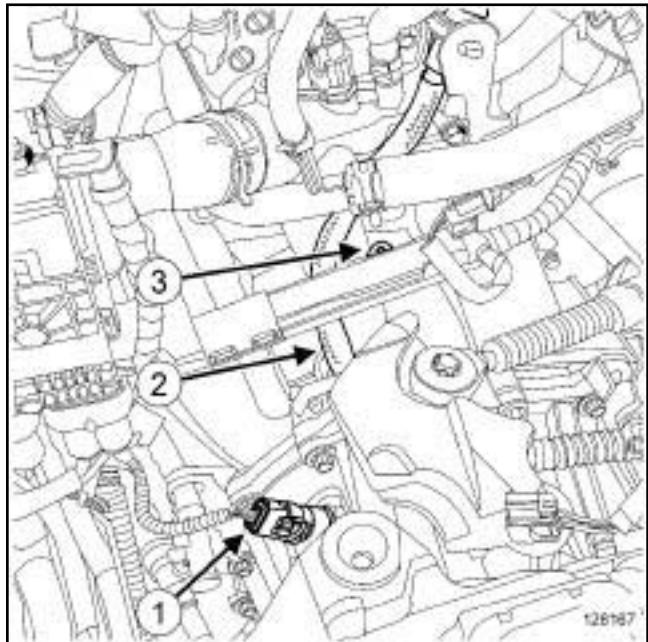
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery)
- the engine cover.

M4R, 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.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.
Equipment required	
safety strap(s)	
component jack	

Tightening torques 	
the reverse gear switch	23 N.m
manual gearbox studs	7 N.m
bolts of the manual gearbox	62 N.m
nuts on the manual gearbox	62 N.m

- the engine undertray,
- the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)).



128167

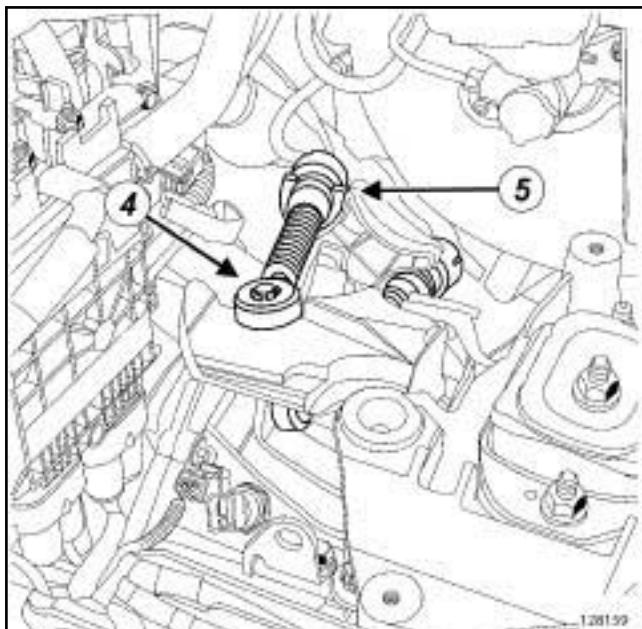
- Disconnect the connector (1) from the reverse gear switch.
- Unclip from the gearbox:
 - the breather pipe (2) ,
 - the engine wiring harness channel (3) .

REMOVAL

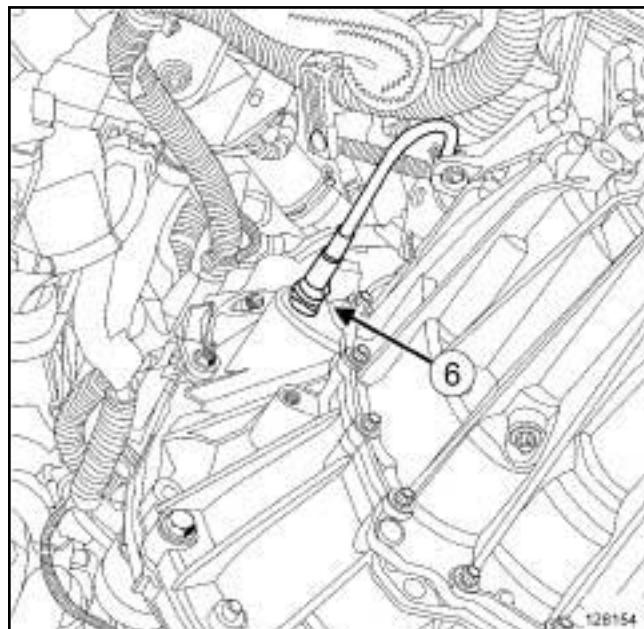
I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine cover,
 - the battery (see **Battery: Removal - Refitting** (80A, Battery))
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the 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 engine undertray bolts,

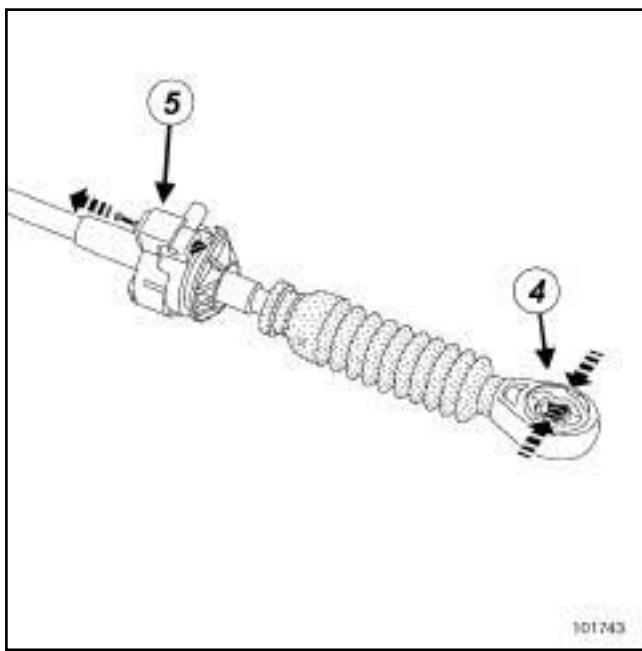
M4R, and TL4



128159



128154



101743

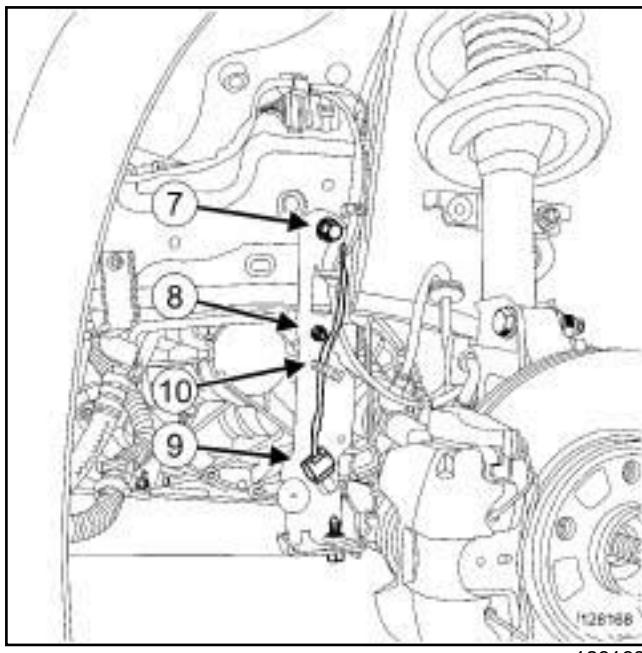
WARNING

Prepare for the flow of fluid, and protect the surrounding components.

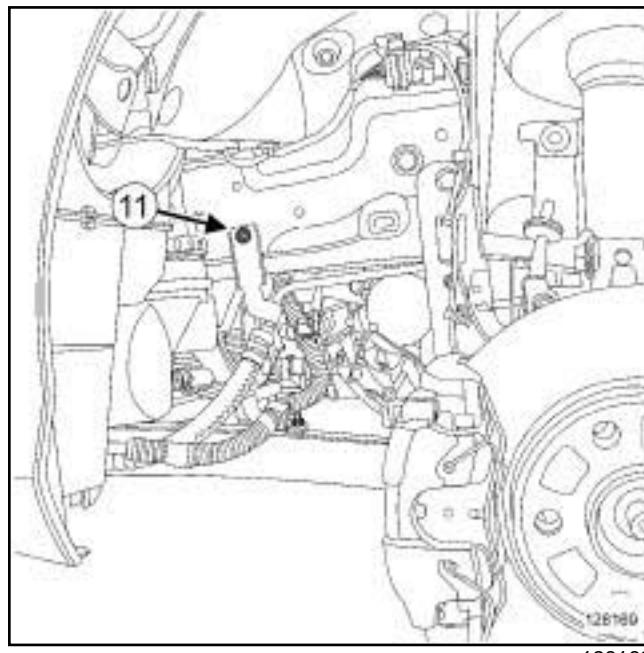
- Disconnect the hydraulic clutch pipe (6) by pressing on the clip.
- Fit blanking plugs on the hydraulic clutch pipe openings.
- Drain the manual gearbox oil (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling, page 21A-2**).
- Remove:
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting, page 29A-1**).
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting, page 29A-7**).
 - differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting, page 21A-6**),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting (41A, Front lower structure)**).

- Unclip the manual gearbox control cables:
 - the anchoring ball joints (4) ,
 - the cable sleeve stops (5) .
- Move the gearbox control cables to one side.

M4R, and TL4



128168



128169

Remove:

- the upper bolt (7) from the front axle subframe left-hand tie-rod,
- the power assisted steering pipe nut (8) from the front axle subframe left tie-rod.

Disconnect the connector (9) on the front axle subframe left-hand tie-rod.

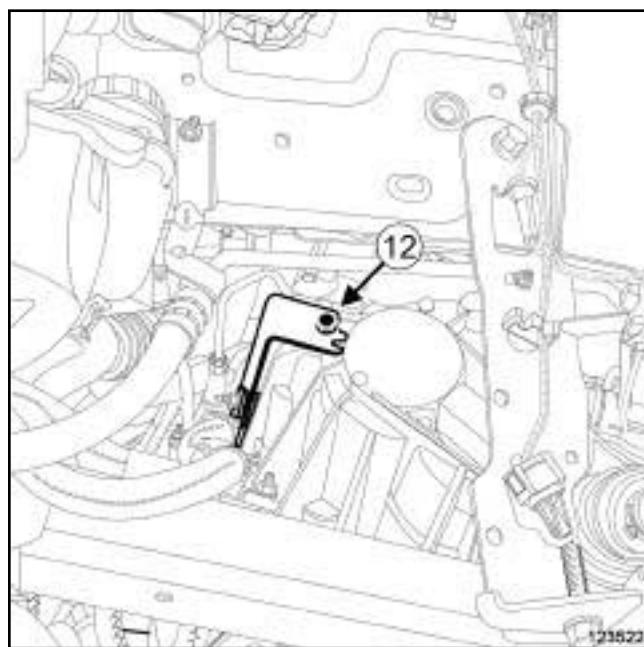
Unclip:

- the wiring (10) from the front axle subframe left-hand tie-rod,
- the rigid brake pipe from the front left-hand side member,
- the power-assisted steering low pressure pipe from the front axle subframe.

Remove the nut (11) from the power-assisted steering pipe bracket.

Move the power-assisted steering pipe to one side.

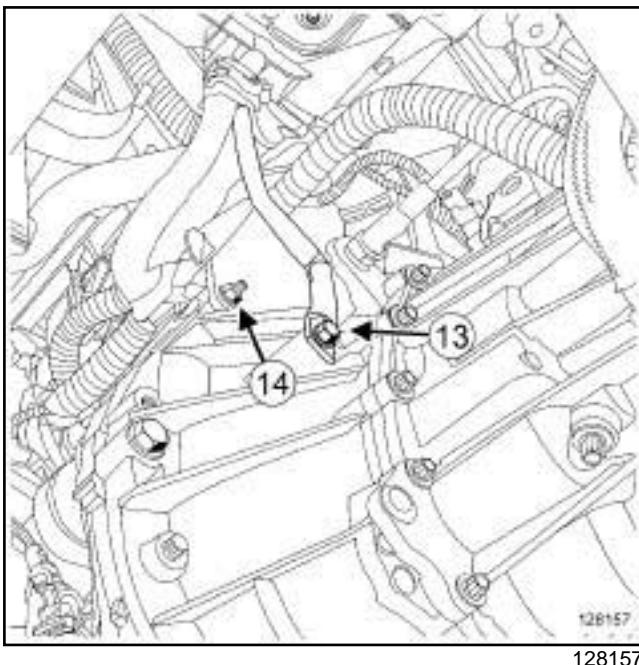
Remove the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).



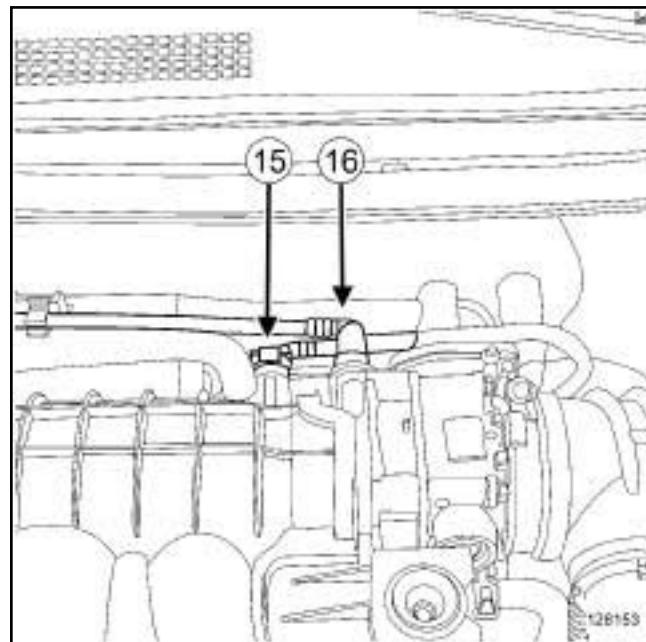
123522

Remove the bolt (12) from the power-assisted steering pump wiring on the manual gearbox.

M4R, and TL4



128157



128153

**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.

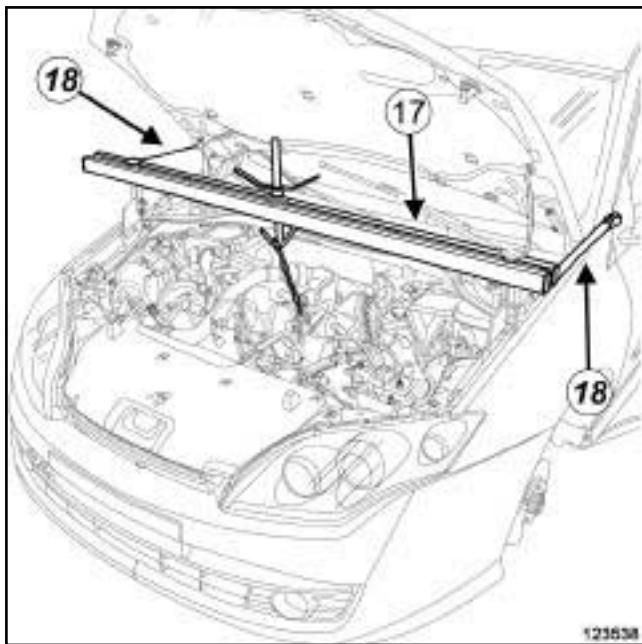
 Remove:

- the earth wiring bolt (13) on the manual gearbox,
- the nut (14) from the engine wiring harness channel.

 Disconnect:

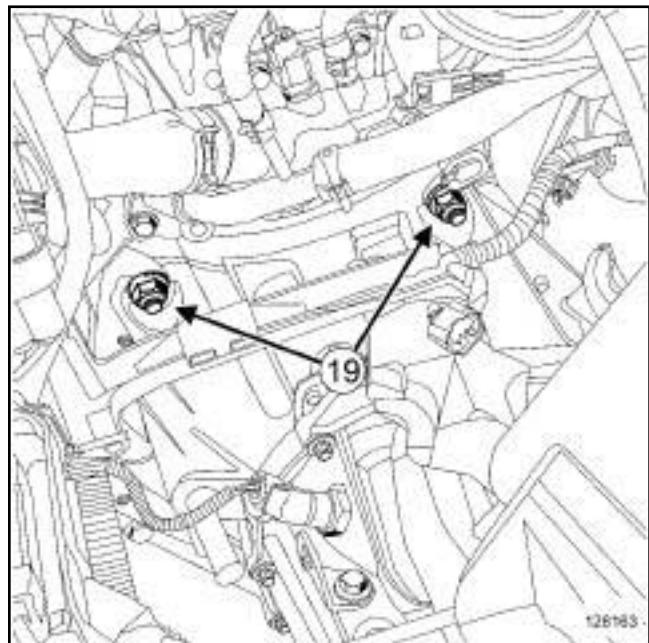
- the brake servo pipe union (15) on the braking distributor,
- the petrol vapour rebreather pipe union (16) .

M4R, and TL4



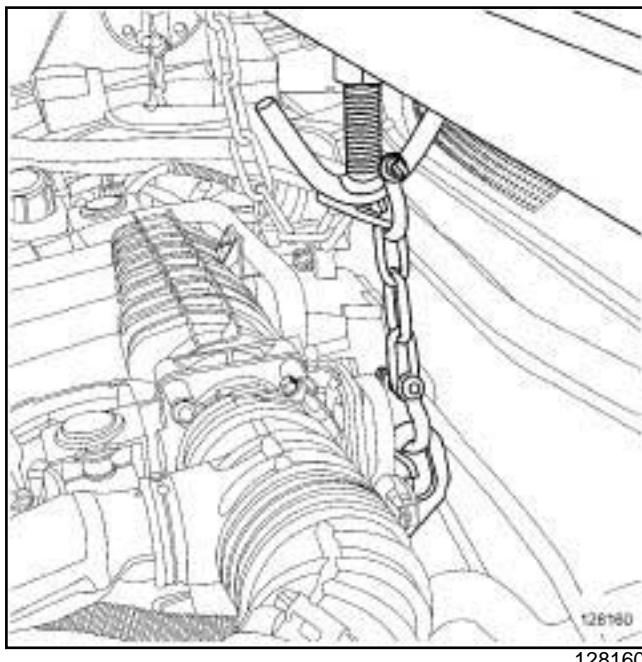
123538

II - OPERATION FOR REMOVAL OF PART CONCERNED



128163

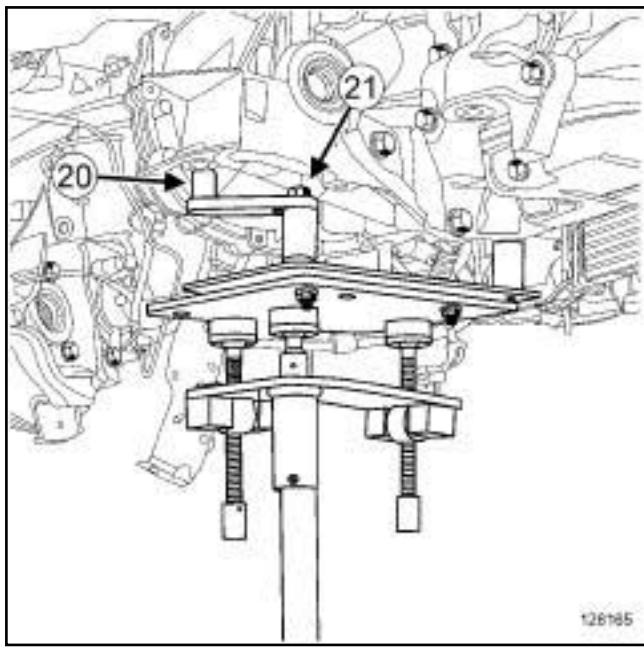
- Remove the upper nuts (19) on the manual gearbox.



128160

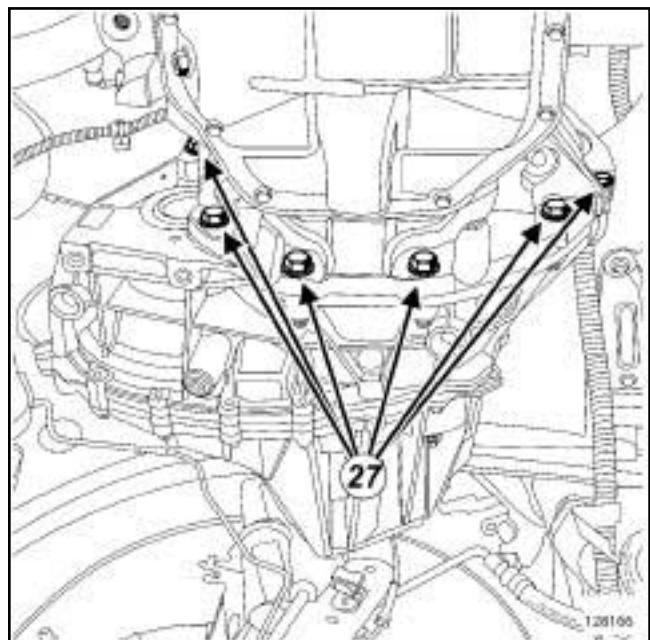
- Fit the (Mot. 1453) fitted with (Mot. 1453-01) (17) and safety strap(s) (18).
- Remove the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

M4R, and TL4

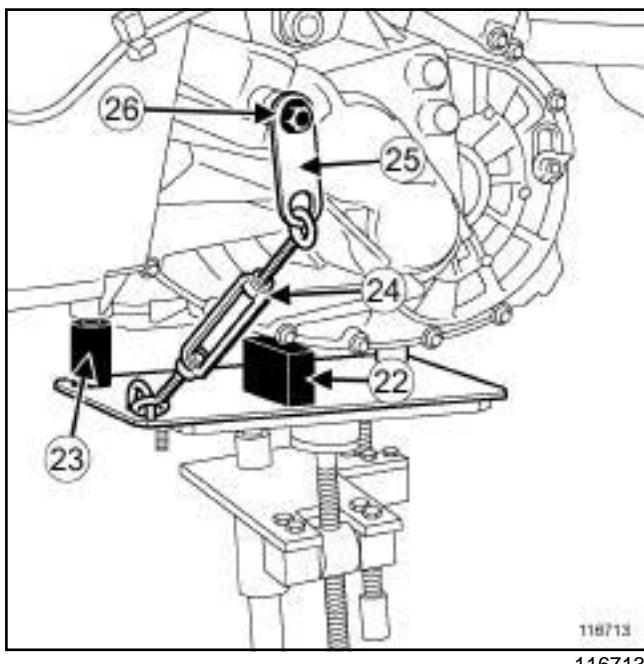


128165

the manual gearbox.



128166



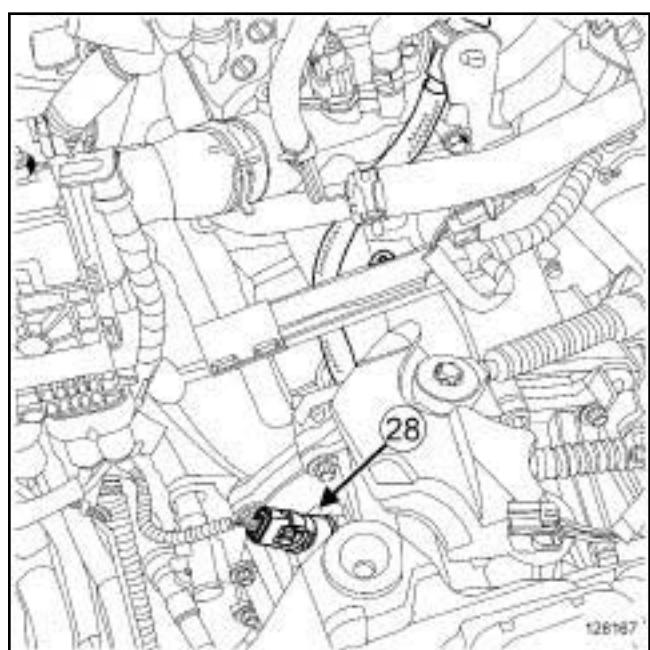
116713

 Fit:

- the **(Bvi. 1718)** to a **component jack**,
- the tool **(Bvi. 1718)** and **component jack** under the manual gearbox,
- the bracket **(20)** using the nuts **(21)**,
- the support **(22)**,
- the pin **(23)**,
- the rod **(24)** using the bracket **(25)** and the bolt **(26)**

 Tighten the rod anti-clockwise in order to avoid tilting Remove:

- the lower bolts **(27)** from the manual gearbox,
- the manual gearbox using the **component jack** and tool **(Bvi. 1718)**,
- the manual gearbox studs.



128167

 If replacing, remove from the manual gearbox:

- the reverse gear switch **(28)**,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),

M4R, and TL4

- the clutch thrust bearing from the manual gearbox (see **20A, Clutch, Clutch thrust bearing: Removal - Refitting**, page **20A-11**) .

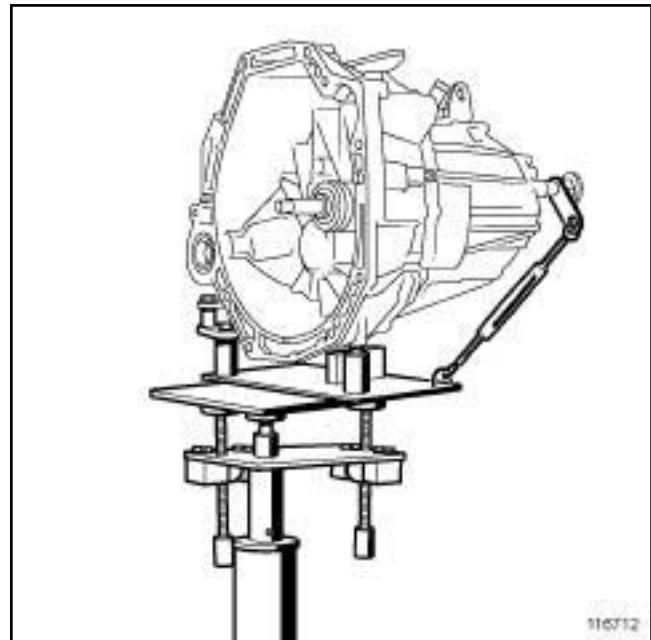
REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace:
 - differential outlet seals,
 - the clutch thrust bearing from the manual gearbox.
- Check for the presence of the centring rings on the manual gearbox.

Replacing the gearbox

- Refit on the manual gearbox:
 - the manual gearbox clutch thrust bearing (see **20A, Clutch, Clutch thrust bearing: Removal - Refitting**, page **20A-11**) ,
 - the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting** (17B, Petrol injection)),
 - the reverse gear switch.
- Torque tighten the reverse gear switch (**23 N.m**) on the manual gearbox.
- Refit the new differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) .

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116712

Note:

To fit the tool on the new manual gearbox, follow the same steps as for the removal operation.

- Fit the new manual gearbox on the tool (**Bvi. 1718**).

II - REFITTING OPERATION FOR PART CONCERNED

- Fit the manual gearbox using the component jack and the tool (**Bvi. 1718**).
- Refit the manual gearbox studs.
- Torque tighten the **manual gearbox studs** (**7 N.m**).
- Refit the lower bolts on the manual gearbox.
- Remove tool (**Bvi. 1718**):
 - from the manual gearbox,
 - from the **component jack**.
- Torque tighten the lower **bolts of the manual gearbox** (**62 N.m**).
- Refit the manual gearbox nuts.
- Torque tighten the **nuts on the manual gearbox** (**62 N.m**).

III - FINAL OPERATION.

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

M4R, and TL4

- Remove the (**Mot. 1453**) then the (**Mot. 1453-01**).
- Connect:
 - the petrol vapour rebreather pipe union,
 - the brake servo pipe union on the braking distributor.

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.

- Refit the earth wiring.
- Tighten the earth wiring bolt on the manual gearbox.
- Refit:
 - the power-assisted steering pump wiring on the manual gearbox,
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).
- Fit the power-assisted steering pipe.
- Refit the nut on the power-assisted steering pipe bracket.
- Clip:
 - the power-assisted steering low pressure pipe onto the front axle subframe,
 - the rigid brake pipe from the front left-hand side member,
 - the wiring on the left-hand tie rod of the front axle subframe.
- Connect the connector on the left-hand tie rod of the front axle subframe.
- Refit:
 - the power-assisted steering pipe nut onto the front axle subframe left-hand tie-rod,
 - the upper bolt of the front axle subframe left-hand tie-rod.
- Refit:
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .

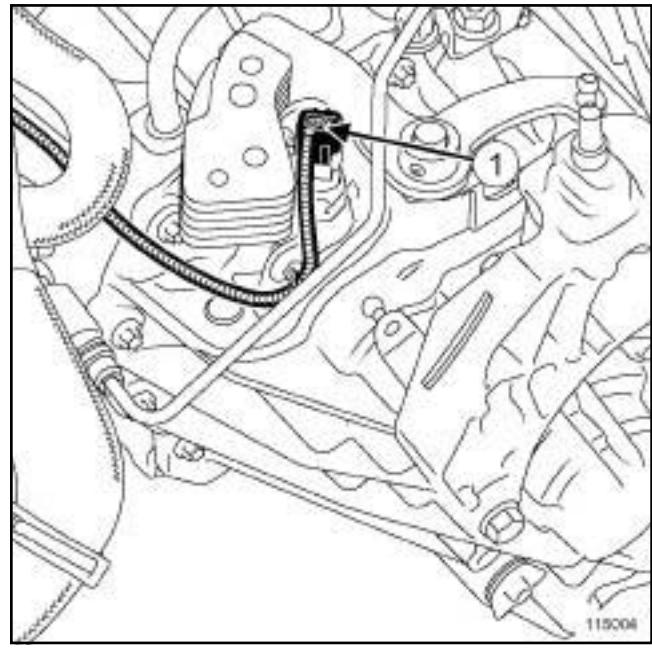
- the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) .
- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2) .
- Remove the blanking plugs from the hydraulic clutch pipe openings.
- Connect the hydraulic clutch pipe.
- Fit the gearbox control cables.
- Clip the manual gearbox control cables:
 - on the cable sleeve stops,
 - on the anchoring ball joints.
- Clip on the gearbox:
 - the engine wiring harness channel,
 - the breather pipe.
- Connect the reverse gear switch connector.
- Refit:
 - the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
 - the engine undertray,
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the engine cover.
- Bleed the hydraulic clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

F4R, and PK4

Special tooling required	
Ms. 583	Pipe clamps.
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.
Mot. 1453-01	Additional handle nut for engine lifting support tool Mot. 1453.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required	
safety strap(s)	
component support	

Tightening torques 	
gearbox bolts	44 Nm
gearbox nuts	44 Nm
bolts of the suspended engine mounting rubber pad shaft on the gear- box	105 N.m



115004

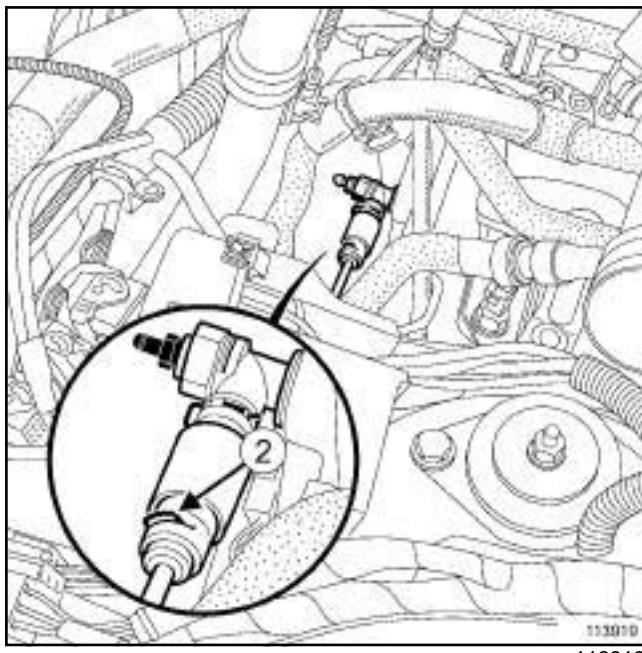
- Disconnect the reverse gear sensor connector (1) .
- Unclip the wiring from the reverse gear sensor.
- Fit the tool (**Ms. 583**) on the rigid clutch pipe at the outlet of the brake fluid reservoir.
- Unclip the rigid clutch pipe from the gearbox.
- Remove:
 - the engine undertray bolts,
 - the engine undertray.

REMOVAL

I - REMOVAL PREPARATION OPERATION

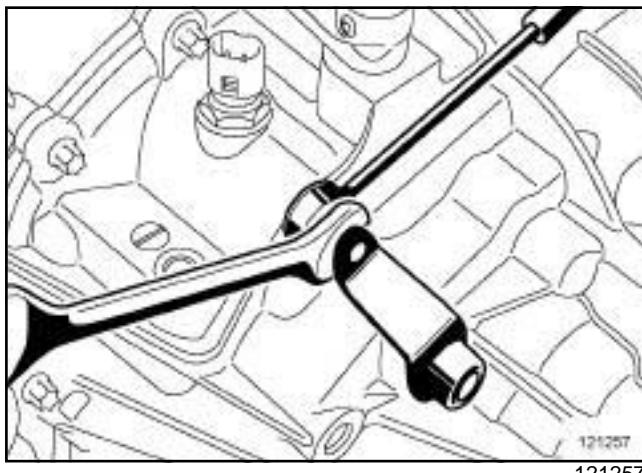
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine cover,
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).

F4R, and PK4



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- Disconnect the rigid clutch pipe from the clutch thrust bearing by lifting the retaining clip.
- Fit the blanking plugs to the end of the clutch pipe and on the receiver.



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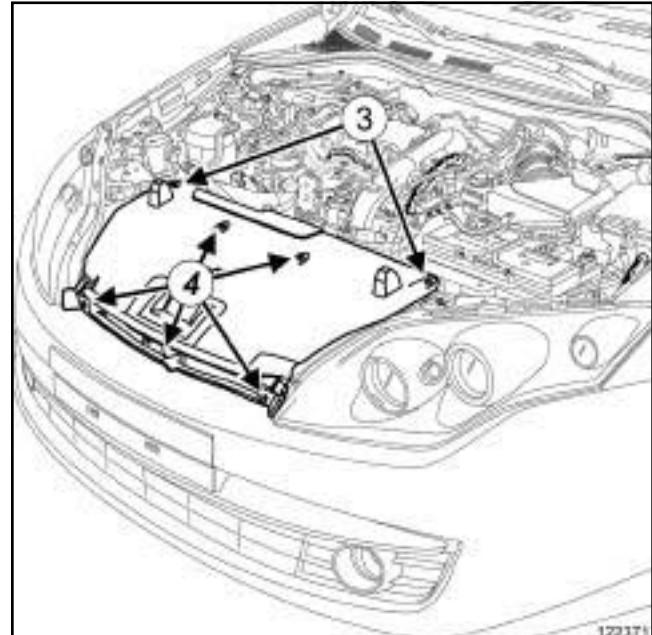
- Unclip:
 - the gear control cables from the gear selector ball joints using an open-jawed spanner,
 - the gear control cables from their support,
 - the oil vapour pipe from the gearbox.

Note:

Do not damage the rigid clutch pipe in order to avoid any leaks.

 Remove:

- the gear control cables,
- the rigid clutch pipe.



122371

- Remove the cooling assembly protector bolts (3) .

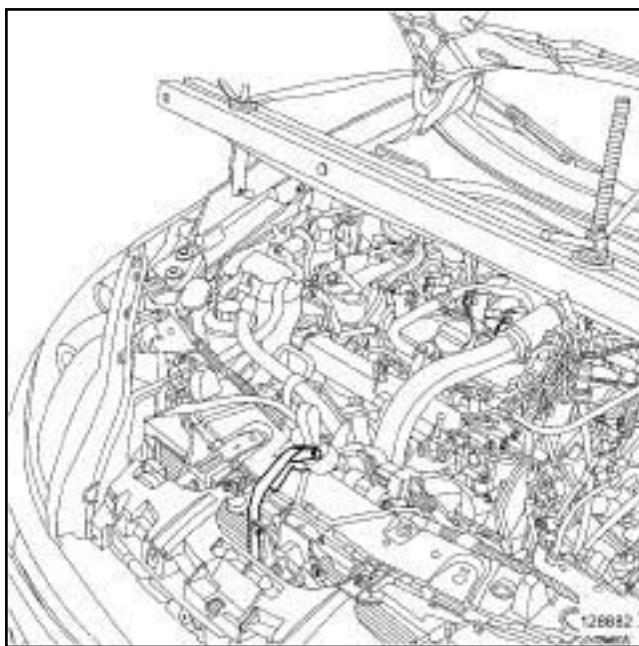
Note:

To remove the clips (4) , unscrew the clip bolt head a quarter of a turn, then lift it lightly as far as the stop and remove the clip.

 Remove:

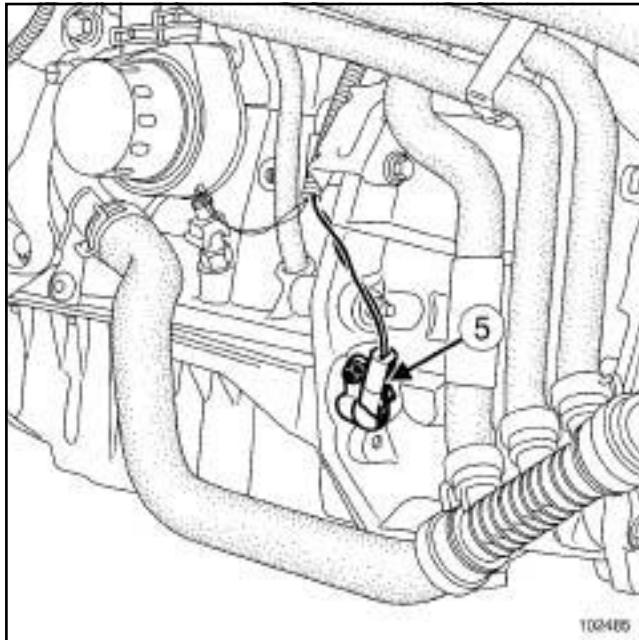
- the cooling assembly protector clips (4) ,
- the cooling assembly protector.

F4R, and PK4



128682

- Fit the cooling assembly to the upper cross member using **safety strap(s)**.
- Remove the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).



102485

- Disconnect the crankshaft position sensor connector (5).

Remove:

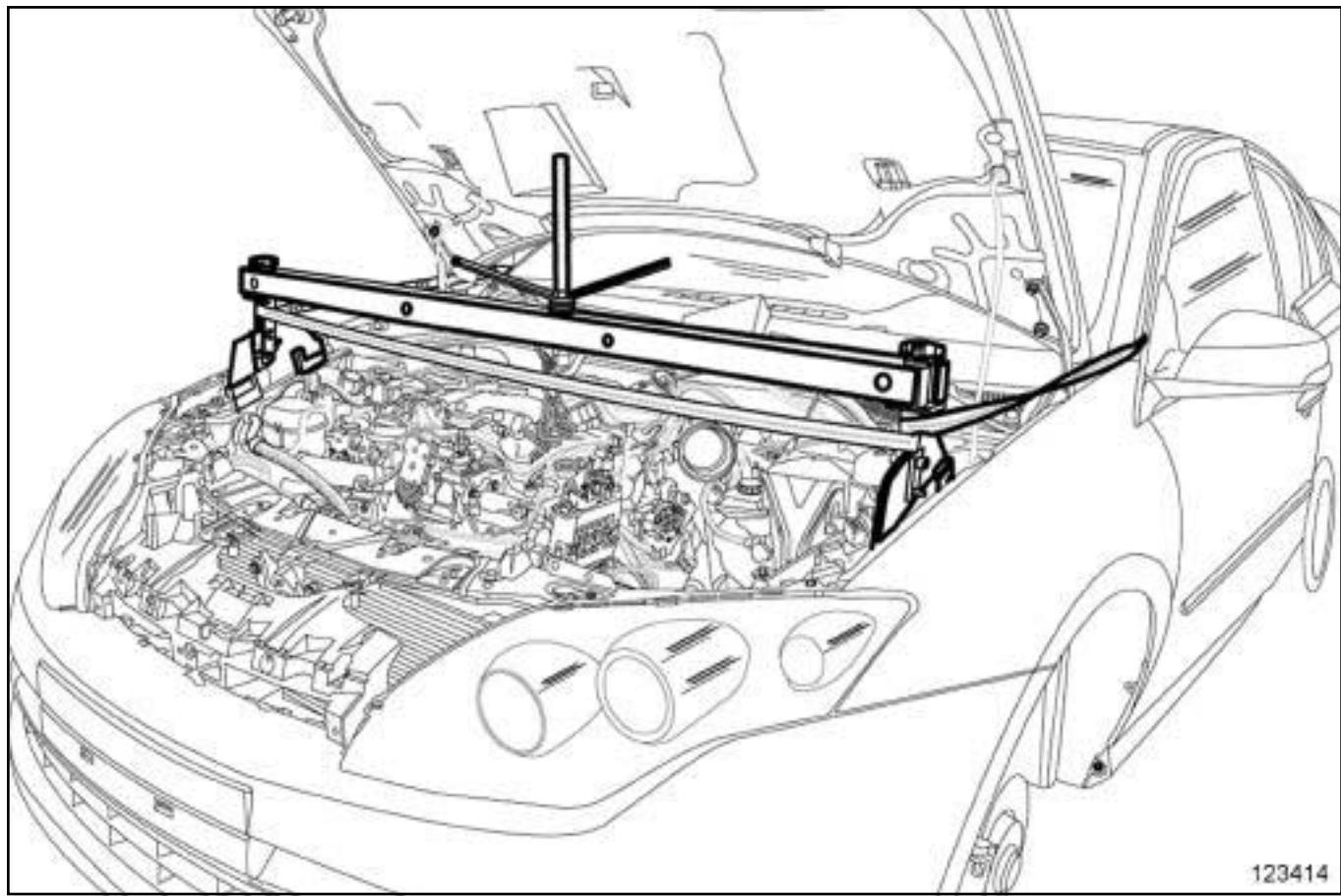
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).

MANUAL GEARBOX

Manual gearbox: Removal - Refitting

21A

F4R, and PK4

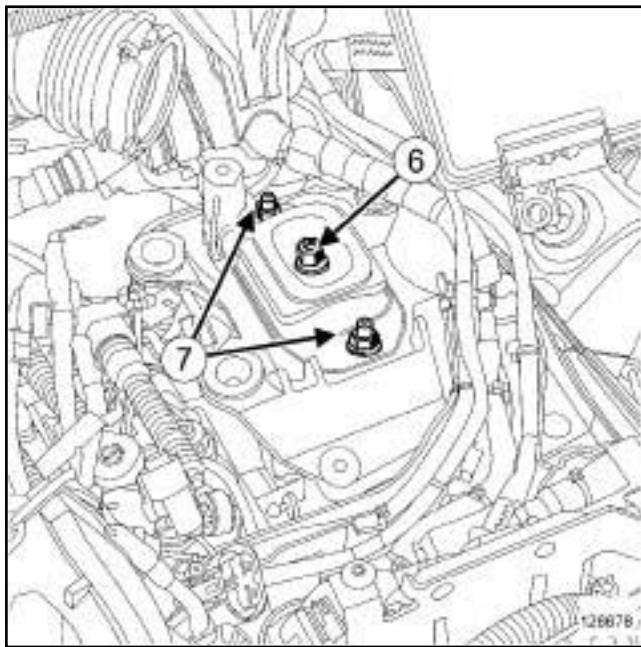


- Position the **(Mot. 1453)** and **(Mot. 1453-01)**.

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123414

F4R, and PK4

II - OPERATION FOR REMOVAL OF PART CONCERNED


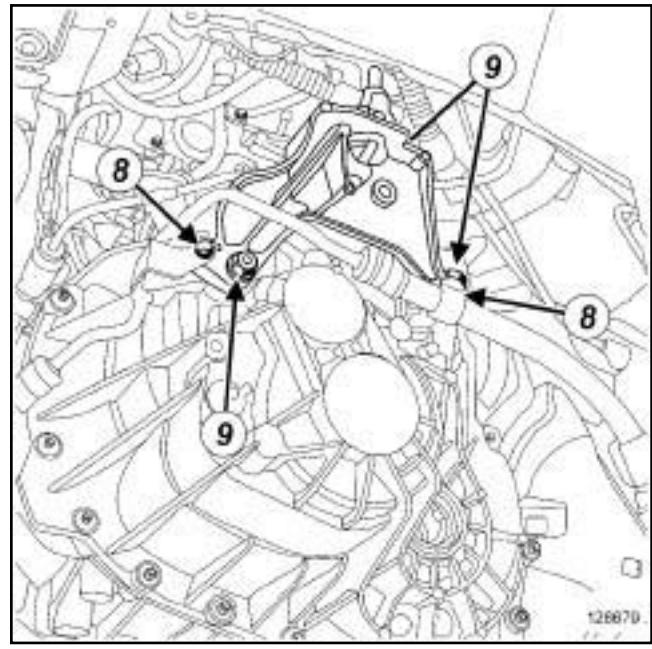
Remove the nut (6) from the suspended engine mounting rubber pad shaft on the gearbox.

Detach the suspended engine mounting rubber pad shaft from the gearbox.

Remove:

- the nuts (7) from the suspended engine mounting rubber pad on the gearbox,
- the suspended engine mounting rubber pad from the gearbox.

Tilt the engine using the tool (**Mot. 1453-01**).



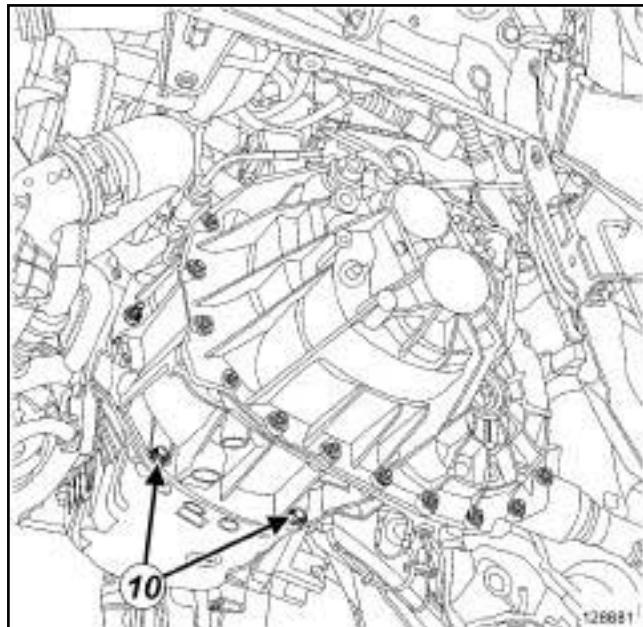
Remove:

- the power-assisted steering pipe bolts (8),
- the bolts (9) from the suspended engine mounting rubber pad shaft on the gearbox,
- the suspended engine mounting rubber pad shaft from the gearbox,
- the gearbox upper bolts.

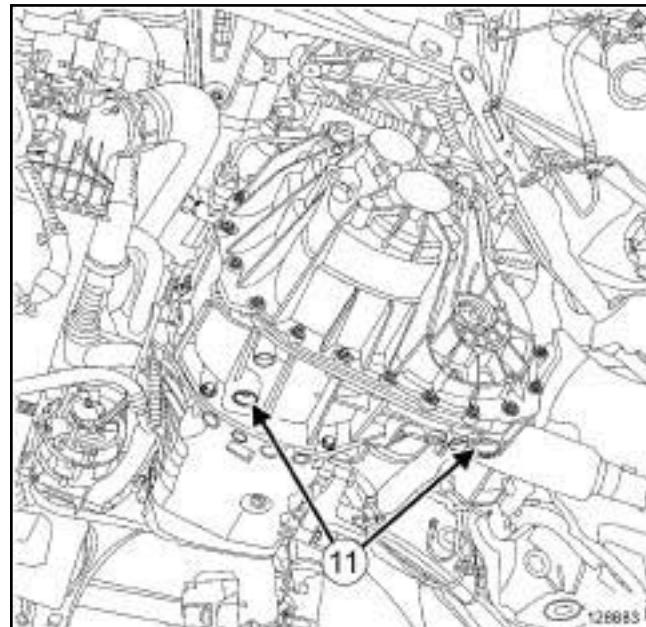
Unclip the heater matrix pipes on the retaining bracket on the gearbox.

Remove the retaining bracket from the heater matrix pipes.

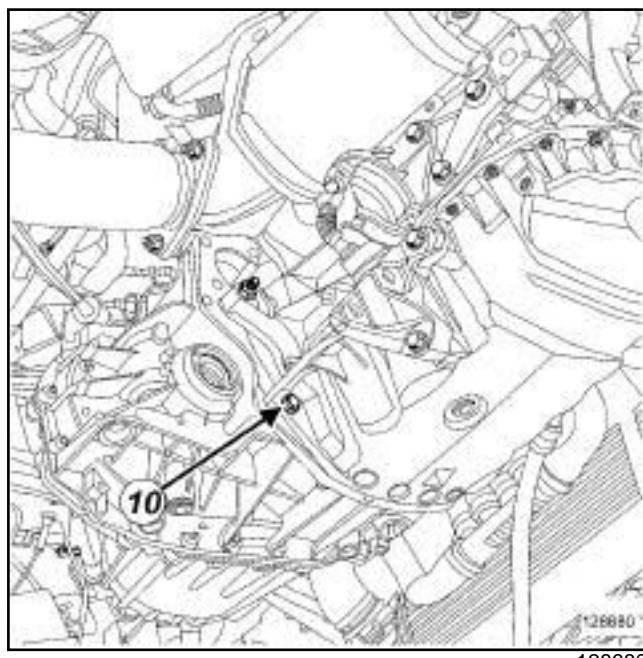
F4R, and PK4



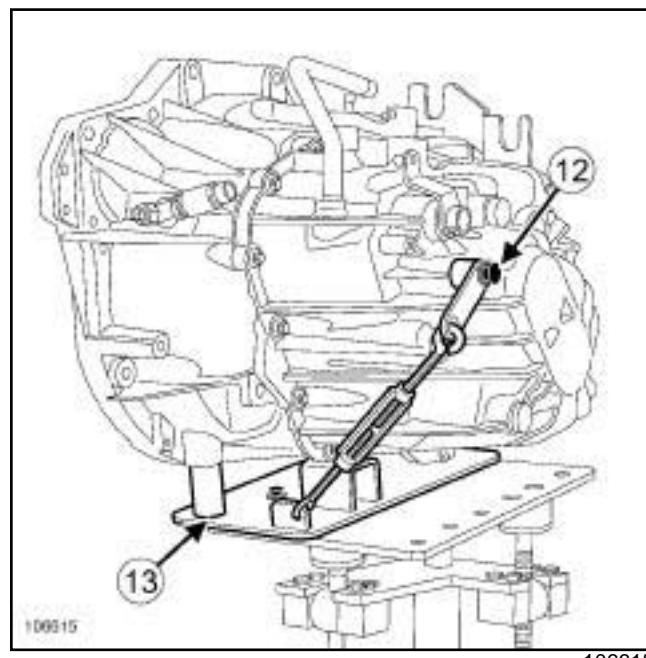
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128683



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Remove the bolts (10) from the gearbox.

Fit the tool **component support** equipped with the tool (Bvi. 1718) (13) on the contact points (11) and screw the bolt (Bvi. 1718) of the tool (12) .

F4R, and PK4

REFITTING

I - REFITTING PREPARATION OPERATION



WARNING

To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

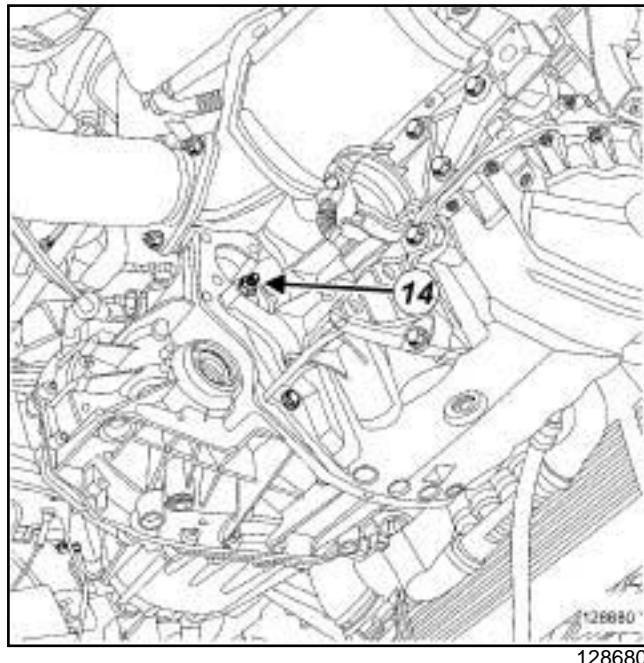
WARNING

Do not grease the clutch shaft splines.

WARNING

To prevent leaks, replace the slave cylinder after replacing the clutch pressure plate.

II - REFITTING OPERATION FOR PART CONCERNED



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123407

123407

 Remove:

- the gearbox nuts (14) ,
- the gearbox.

 Fit the **component support**. Refit the gearbox. Remove the **component support** fitted with the tool (Bvi. 1718). Tighten to torque:

- the **gearbox bolts** (44 Nm),
- the **gearbox nuts** (44 Nm).

 Refit the retaining bracket on the heater matrix pipes.

F4R, and PK4

- Clip the heater matrix pipes on the heater matrix retaining bracket.
- Refit the suspended engine mounting rubber pad shaft on the gearbox.
- Torque tighten the **bolts of the suspended engine mounting rubber pad shaft on the gearbox (105 N.m)**.
- Fit the power-assisted steering pipe.
- Refit the suspended engine mounting rubber pad on the gearbox.

III - FINAL OPERATION.

- Remove the tools (**Mot. 1453**) and (**Mot. 1453-01**)
- Refit:
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
 - the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
 - 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).
- Connect the crankshaft position sensor connector.
- Top up the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Refit the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).
- Remove the **safety strap(s)**.
- Refit the cooling assembly protector.
- Clip:
 - the gearbox oil vapour pipe,
 - the gear control cables onto their support,
 - the gear control cables onto the ball joints,
 - the rigid clutch pipe.

- Remove the blanking plugs.
- Connect the rigid clutch pipe to the clutch thrust bearing.
- Remove the tool (**Ms. 583**) from the rigid clutch pipe at the outlet of the brake fluid reservoir.
- Bleed the clutch control circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).
- Connect the reverse gear sensor connector.
- Refit:
 - the engine undertray,
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the engine cover.

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.
Bvi. 1718	Component support plate for removal - refitting of gearboxes.

Equipment required	
safety strap(s)	
component jack	

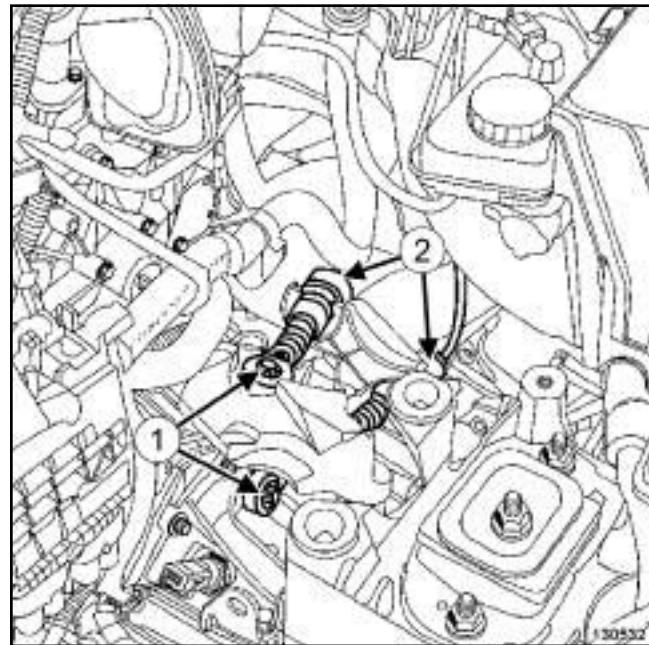
Tightening torques 	
crankshaft position sensor bolt	8 N.m
reverse gear switch	23 N.m
nuts on the manual gearbox	44 N.m
lower bolts of the manual gearbox	44 N.m
rear suspended engine mounting bolt on the subframe	180 N.m
rear suspended engine mounting bolt on the rear suspended engine mounting support	180 N.m
upper bolts of the manual gearbox	44 N.m
bolts of the left-hand suspended engine mounting on the gearbox	62 N.m

Tightening torques 	
nuts on the left-hand suspended engine mounting rubber pad of the manual gearbox	105 N.m
nut of the left-hand suspended engine mounting shaft of the manual gearbox	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 engine cover,
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery)
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



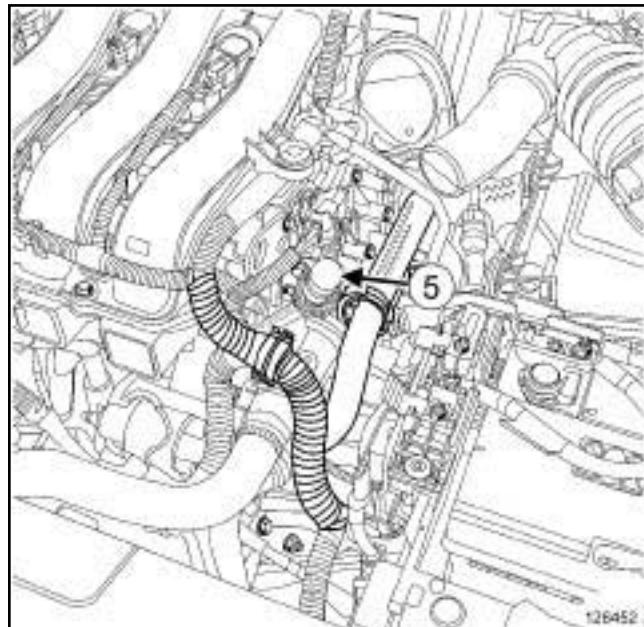
130532

- Unclip the manual gearbox control cables:
 - from the anchoring ball joints at (1) ,
 - from the cable sleeve stops at (2) .
- Move the gearbox control cables to one side.

K4M, and TL4



130531



128452

Disconnect:

- the connector (3) from the reverse gear switch,
- the hydraulic clutch pipe (4) by:
 - pressing on the clip,
 - pulling on the hydraulic clutch pipe.

WARNING

Prepare for the flow of fluid, and protect the surrounding components.

Fit blanking plugs on the hydraulic clutch pipe openings.

Unclip the breather pipe (5) from the gearbox.

Remove:

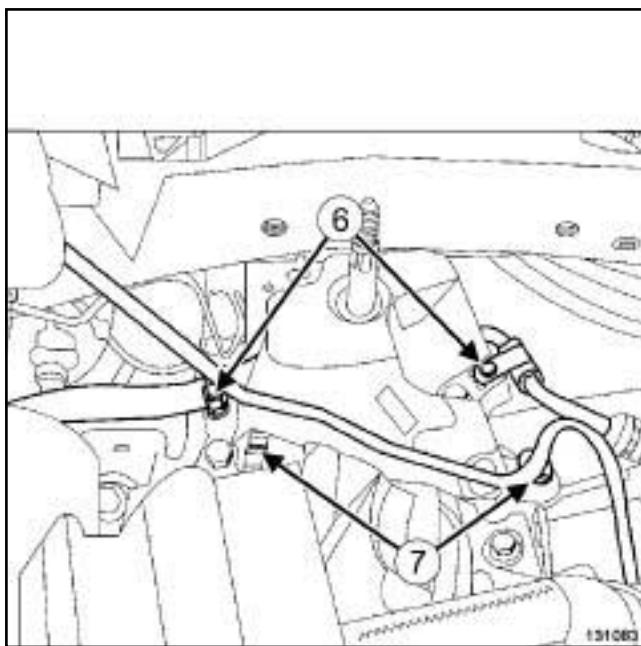
- the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging)),
- the wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres)),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray.

Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2) .

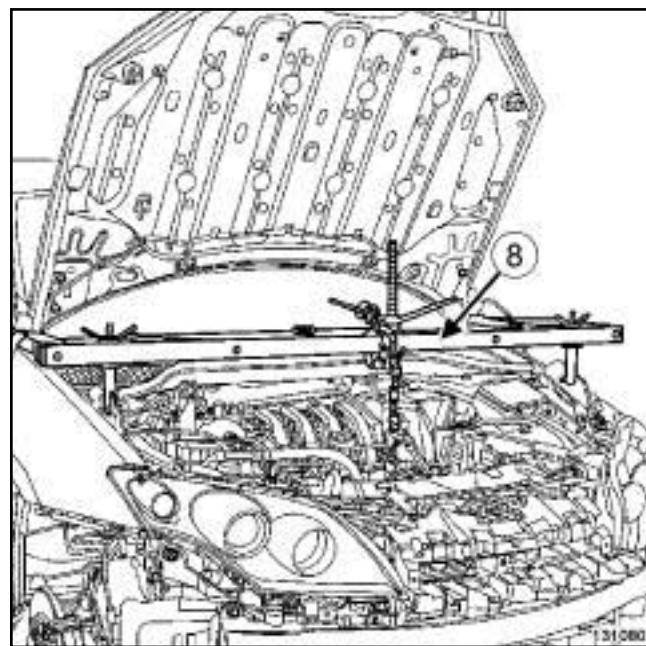
Remove:

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) .
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure)).

K4M, and TL4



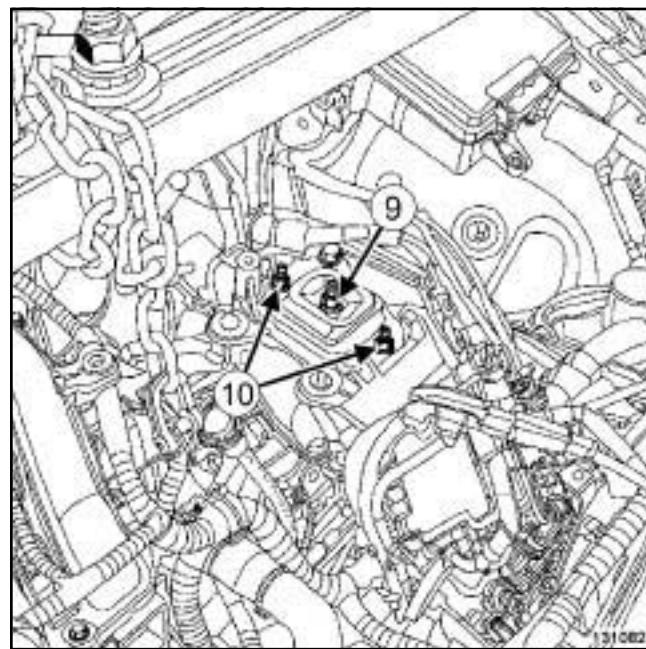
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- Remove the bolt from each bracket of the power-assisted steering pump high pressure pipe.
- Move the power-assisted steering pump high pressure hose to one side.
- Unclip the hydraulic clutch pipe (7) from the left-hand suspended engine mounting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

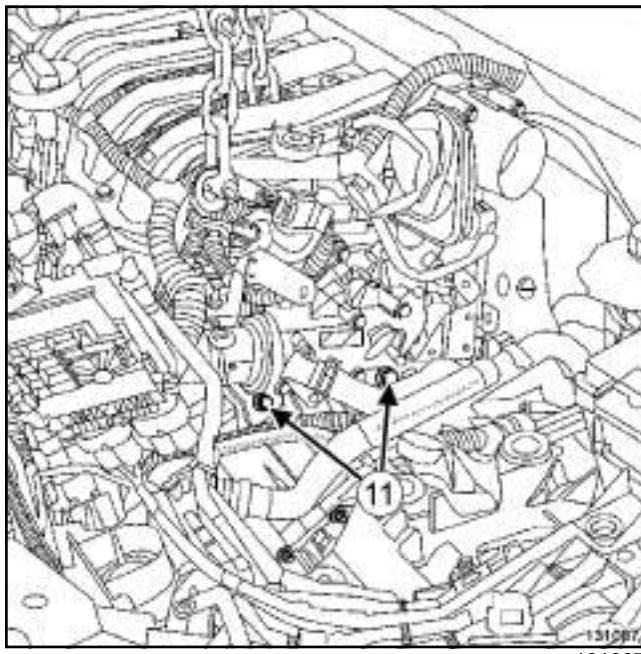
- Fit the (**Mot. 1453**) (8) fitted with (**Mot. 1453-01**) and **safety strap(s)**.



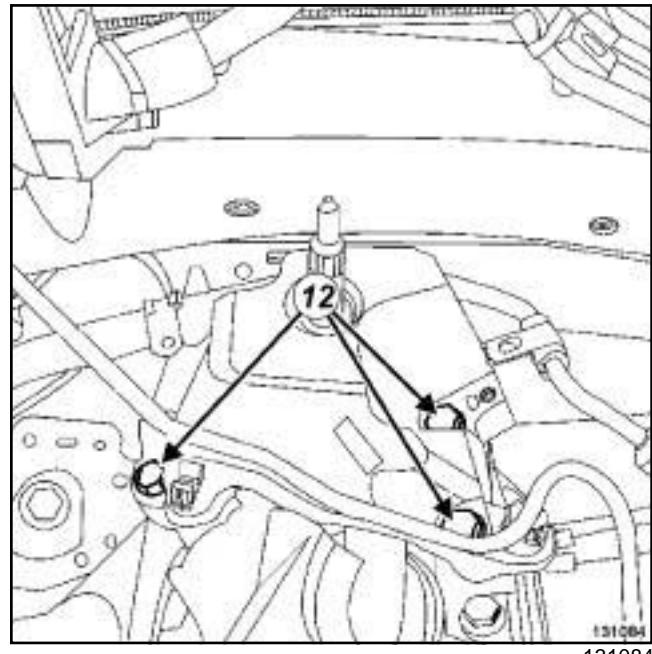
131082

- 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.

K4M, and TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED


- Remove the manual gearbox upper bolts (11).



Remove:

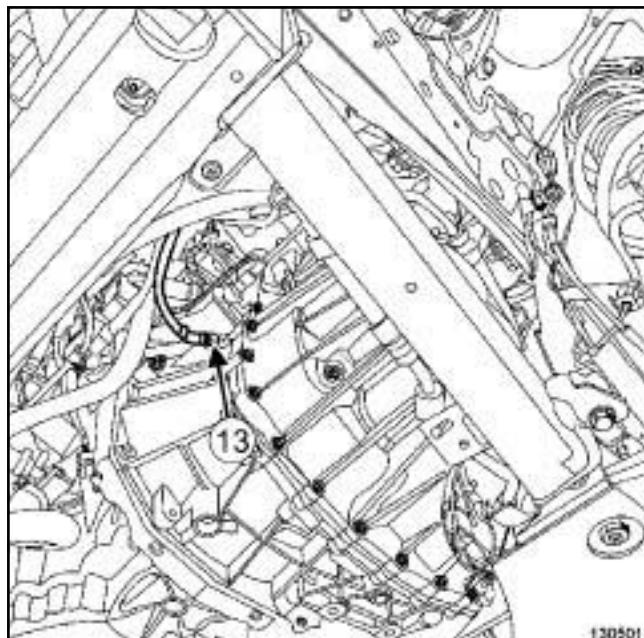
- the bolts (12) from the left-hand suspended engine mounting shaft on the manual gearbox,
- the left-hand suspended engine mounting shaft from the manual gearbox.

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.

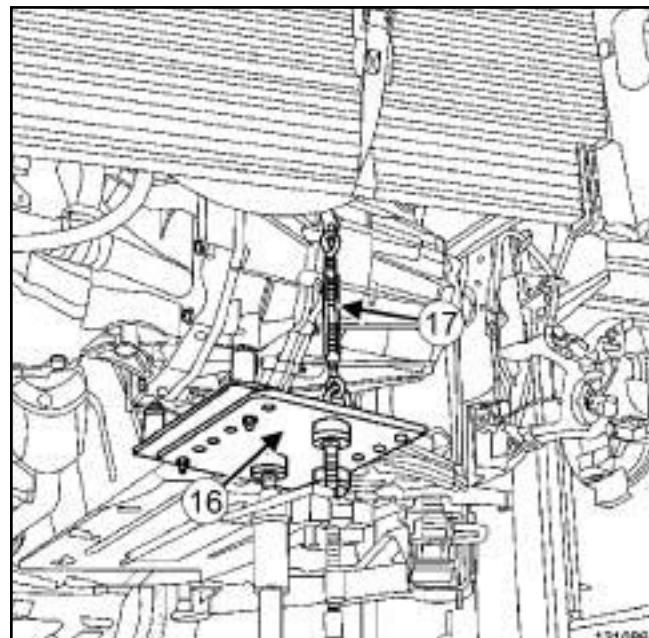
When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wire.

K4M, and TL4



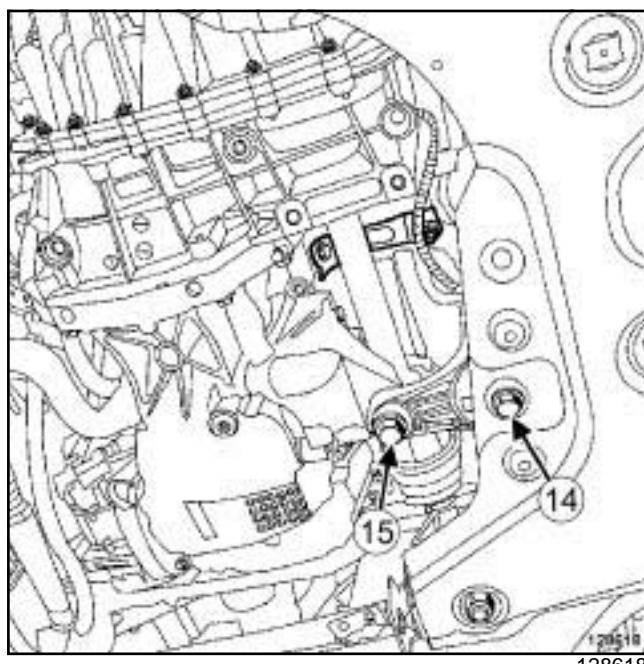
130501

- Remove the earth wire bolt (13) on the manual gearbox.



131086

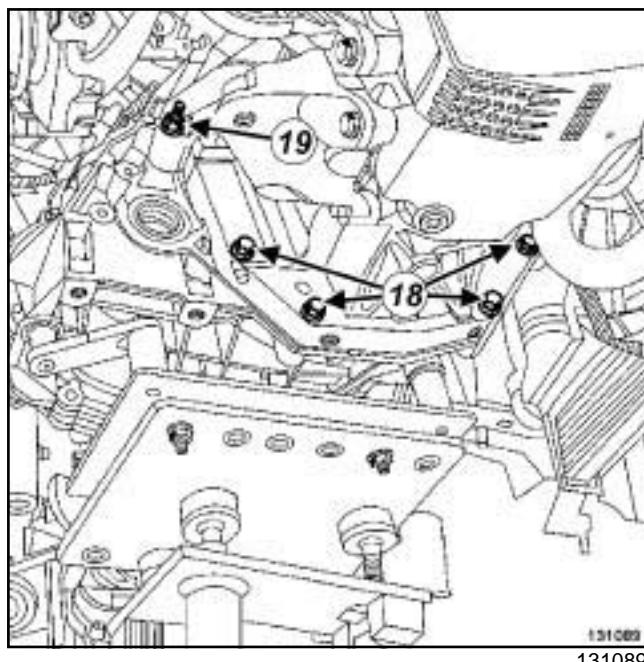
- Fit:
- the (Bvi. 1718) to a **component jack**,
 - the (Bvi. 1718) (16) and the **component jack** under the manual gearbox.
- Tighten the rod (17) anti-clockwise in order to avoid tilting the manual gearbox.



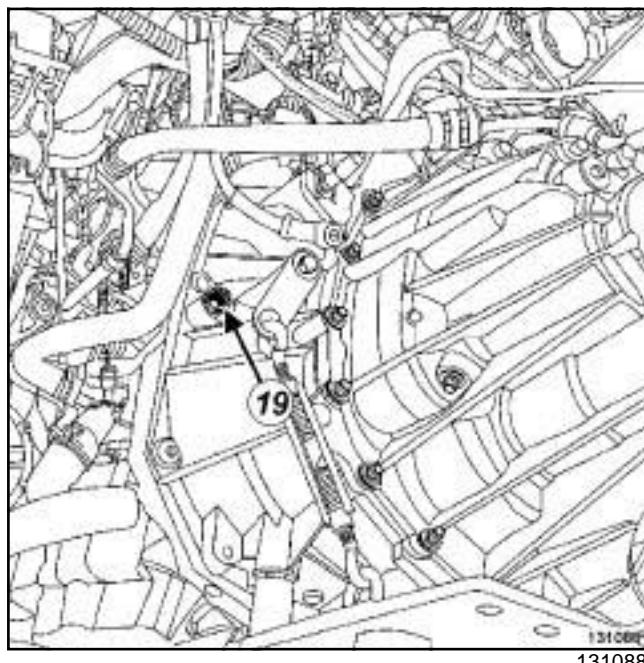
128618

- Remove:
- the rear suspended engine mounting bolt (14) from the subframe,
 - the rear suspended engine mounting bolt (15) from the rear suspended engine mounting support,
 - the rear suspended engine mounting.

K4M, and TL4



131089



131088

Remove:

- the manual gearbox lower bolts (18) ,
 - the manual gearbox nuts (19) ,
 - the manual gearbox using the **component jack** and (**Bvi. 1718**).
- If replacing, remove from the manual gearbox:
- the reverse gear switch,
 - the crankshaft position sensor bolt,
 - the crankshaft position sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

- Check for the presence of the centring rings on the manual gearbox.

Replacing the gearbox

- Refit the crankshaft position sensor on the manual gearbox.
- Torque tighten the **crankshaft position sensor bolt (8 N.m)**.
- Refit the reverse gear switch wiring on the manual gearbox.
- Torque tighten the **reverse gear switch (23 N.m)** on the manual gearbox.

Note:

To fit the tool (**Bvi. 1718**) on the new manual gearbox, follow the same steps as for the removal operation.

- Fit the new manual gearbox on the (**Bvi. 1718**).

II - REFITTING OPERATION FOR PART CONCERNED

- Position the manual gearbox using the **component jack** and (**Bvi. 1718**).
- Torque tighten the **nuts on the manual gearbox (44 N.m)**.
- Remove the (**Bvi. 1718**) :
 - from the manual gearbox,
 - from the **component jack**.
- Torque tighten the **lower bolts of the manual gearbox (44 N.m)**.
- Refit the rear suspended engine mounting.

K4M, and TL4

 Tighten to torque:

- the **rear suspended engine mounting bolt on the subframe (180 N.m)**,
- the **rear suspended engine mounting bolt on the rear suspended engine mounting support (180 N.m)**.

Note:

Refit the earth terminal, aligning the marks made during removal, on the gearbox cover.

When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.

- Always refit the earth wiring while observing the marks made during disassembly.
- Torque tighten the **upper bolts of the manual gearbox (44 N.m)**.
- Fit the left-hand suspended engine mounting shaft onto the manual gearbox.
- Torque tighten the **bolts of the left-hand suspended engine mounting on the gearbox (62 N.m)**.

III - FINAL OPERATION.

- Raise the engine using the tool (**Mot. 1453**) fitted with the tool (**Mot. 1453-01**).
- Refit the left-hand suspended engine mounting rubber pad on the gearbox.
- Tighten to torque:
 - the **nuts on the left-hand suspended engine mounting rubber pad of the manual gearbox (105 N.m)**,
 - The **nut of the left-hand suspended engine mounting shaft of the manual gearbox (62 N.m)**.
- Remove the (**Mot. 1453**) fitted with the (**Mot. 1453-01**).
- Refit the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).
- Refit the power-assisted steering pump high pressure hose.
- Fit the hydraulic clutch pipe.
- Clip the hydraulic clutch pipe on the shaft of the left-hand suspended engine mounting of the manual gearbox.

 Refit:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) ,
- the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) .
- the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

 Fill up the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**) . Refit:

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres),
- the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging),

 Clip the breather pipe on the gearbox. Remove the blanking plugs from the hydraulic clutch pipe openings. Connect the hydraulic clutch pipe. Bleed the hydraulic clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls). Refit the engine undertray. Fit the gearbox control cables. Clip on the gearbox control cables:

- on the cable sleeve stops,
- on the anchoring ball joints.

 Adjust the gear control cables (see **Gear control unit: Adjustment**) (37A, Mechanical component controls). Connect the reverse gear connector. Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting** (80A, Battery)

MANUAL GEARBOX
Manual gearbox: Removal - Refitting

21A

K4M, and TL4

- the engine cover.

|

MANUAL GEARBOX

Input shaft lip seal: Removal - Refitting

21A

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-14) ,
- 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.



Fit a bolt in seal (1) .

Extract the seal (1) using pliers.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



18061

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-14) .

MANUAL GEARBOX

Input shaft lip seal: Removal - Refitting

21A

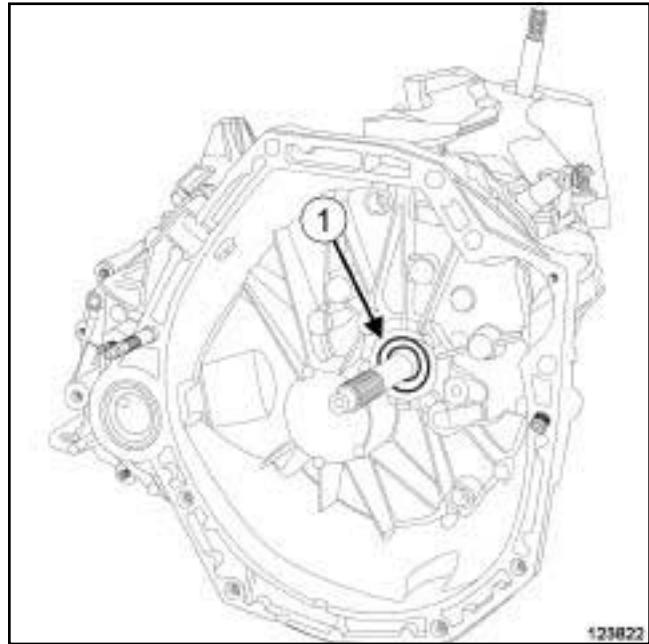
TL4

REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the starter (see **Starter: Removal - Refitting**) (MR 415, 16A, Starting - Charging),
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 415, 55A, Exterior protection).
- Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Remove:
 - the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**).
 - the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 415, 31A, Front axle components),
 - the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page **21A-14**),
 - the clutch thrust bearing (see **20A, Clutch, Clutch thrust bearing: Removal - Refitting**, page **20A-11**).

II - REMOVAL OPERATION FOR PART CONCERNED



123822



Note:

Do not drill too deeply as this risks damaging the deflector positioned behind the input shaft lip seal.

- Drill a hole in the input shaft lip seal (1) , using a drill bit with a diameter of **2.5 mm**.
- Fit a bolt in the input shaft lip seal (1) .
- Remove the input shaft lip seal (1) with a pair of pliers.

REFITTING

I - REFITTING PREPARATIONS OPERATION



Note:

When refitting the input shaft lip seal, take care not to damage either the shaft or the contact surface of the lip seal.

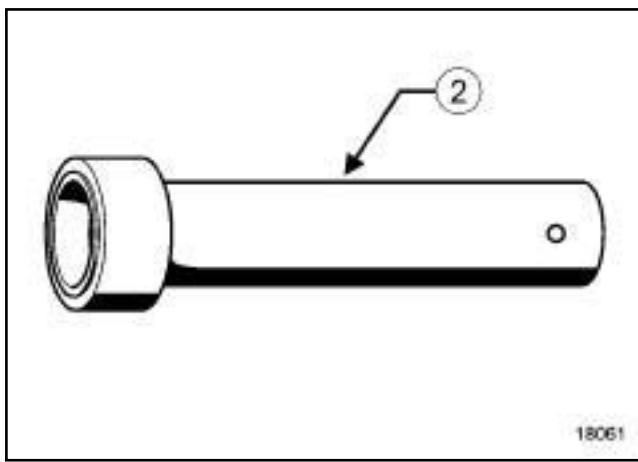
MANUAL GEARBOX

Input shaft lip seal: Removal - Refitting

21A

TL4

II - REFITTING OPERATION FOR PART CONCERNED



- the front wheels (see **Wheel: Removal - Refitting** (MR 415, 35A, Wheels and tyres),
- the starter (see **Starter: Removal - Refitting** (MR 415, 16A, Starting - Charging),
- the air filter box (see **Air filter unit: Removal - Refitting** (MR 415, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting** (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting** (MR 415, 80A, Battery).

- Fit a new input shaft lip seal, fitted with its protector, using the (2) .
- Remove the protector from the new input shaft lip seal.
- Insert the and tap it gently with a rubber mallet to ensure it is inserted fully.

III - 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-14) ,
 - the front axle subframe (see **Front axle subframe: Removal - Refitting** (MR 415, 31A, Front axle components),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (MR 416, 41A, Front lower structure),
 - the front right-hand driveshaft (see **29A, Drive-shafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .
 - the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) .
- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2) .
- Refit:
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting** (MR 415, 55A, Exterior protection),

PK4

REMOVAL**I - REMOVAL PREPARATION OPERATION**

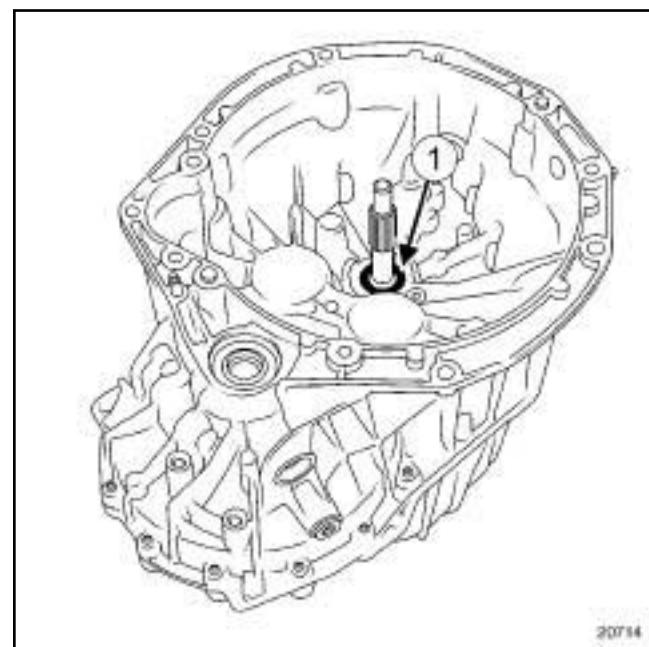
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the starter (see **Starter: Removal - Refitting**) (MR 415, 16A, Starting - Charging),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,
 - differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) ,
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
 - the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 415, 31A, Front axle components),
 - the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page 21A-14) ,
 - the clutch thrust bearing (see **20A, Clutch, Clutch thrust bearing: Removal - Refitting**, page 20A-11) .

II - REMOVAL OPERATION FOR PART CONCERNED

- Use a drill bit with a diameter of **2.5 mm**, to drill a hole in the lip seal on the input shaft.

Note:

Do not drill too deeply as this risks damaging the deflector positioned behind the input shaft lip seal.



20714

20714

- Fit a bolt in the input shaft lip seal (1) .
- Remove the input shaft lip seal (1) with a pair of pliers.

REFITTING**I - REFITTING PREPARATIONS OPERATION**

-

Note:

When refitting the input shaft lip seal, take care not to damage either the shaft or the contact surface of the lip seal.

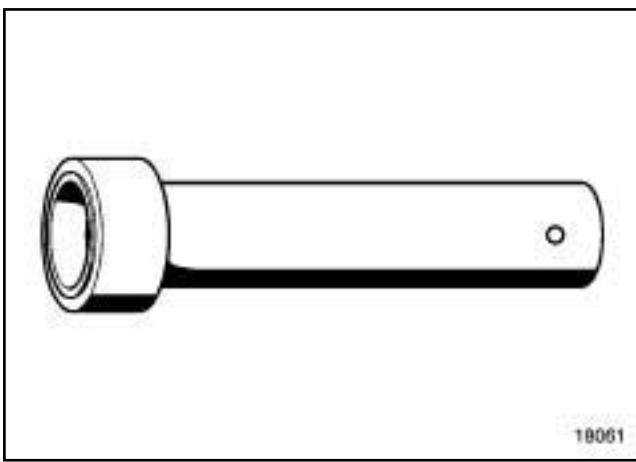
MANUAL GEARBOX

Input shaft lip seal: Removal - Refitting

21A

PK4

II - REFITTING OPERATION FOR PART CONCERNED



18061

18061

- the starter (see **Starter: Removal - Refitting**) (MR 415, 16A, Starting - Charging),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

- Fit a new input shaft lip seal, fitted with its protector, using the.
- Remove the protector.
- Insert the and tap it gently with a rubber mallet to ensure it is inserted fully.

III - FINAL OPERATION.

- Refit:
 - the gearbox (see **21A, Manual gearbox, Manual gearbox: Removal - Refitting**, page 21A-14) ,
 - the front axle subframe (see **Front axle subframe: Removal - Refitting**) (MR 416, 31A, Front axle components),
 - the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - differential output seals (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) ,
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),

AJ0

I - SPECIFICATIONS

Weight: **100 kg**

The **AJ0** is fitted with systems known as: "Shift Lock" and "Lock Up".

"Shift Lock" inhibits movement of the gear selector lever unless the brake pedal is depressed simultaneously. **To unlock the lever when the battery is faulty and carry out repair operations, refer to the Driver's Handbook.**

The aim of converter Lock Up is to connect the automatic gearbox directly to the engine. This function is carried out by a "mini clutch" in the converter. Lock Up is controlled by the automatic gearbox computer.

As the automatic gearbox is lubricated under pressure, lubrication is only provided when the engine is running.

As a result of this fact, and to avoid serious damage, it is essential to comply with the following instructions:

- never allow the vehicle to coast with the ignition switched off (e.g. when going down a hill); we cannot stress too strongly the harm that this may cause,
- never push the vehicle (e.g. to get to a petrol station, unless the recommended precautions have been taken (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

In addition, the vehicle is only under traction if the engine is running. It is therefore impossible to start the engine of a vehicle with an automatic gearbox by pushing the vehicle.

II - STORING REMOVED PARTS

Store removed parts in storage containers so as not to damage or misplace them.

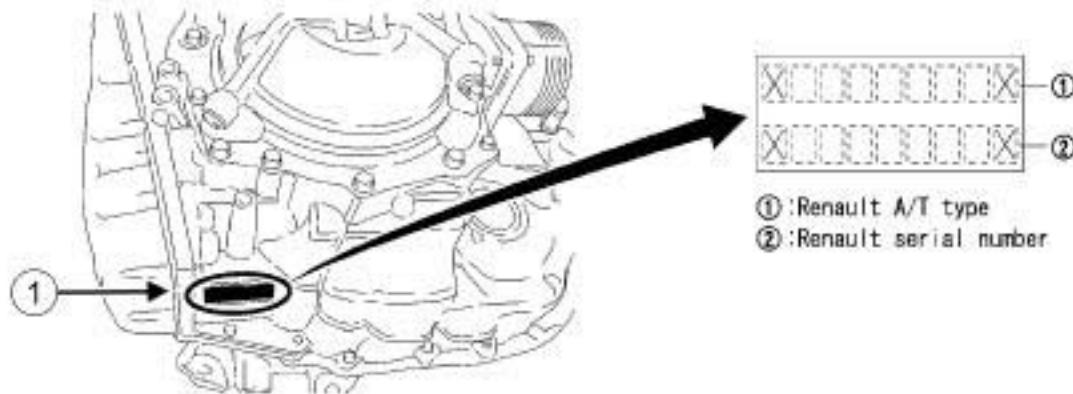
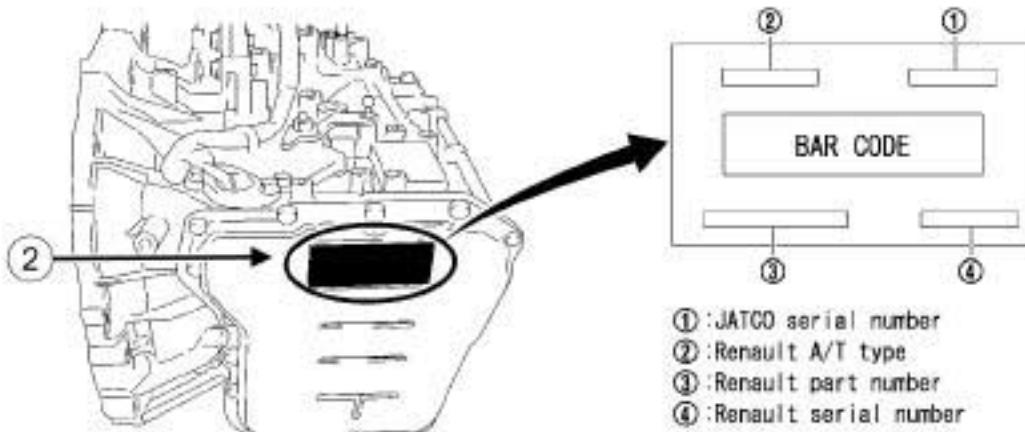
III - CHECKING LEVELS

Always move the control level to the **Park** position when checking levels.



116357

AJ0



117777

117777

The automatic gearbox is identified by an engraved marking (1) located underneath the automatic gearbox as well as by a self-adhesive label (2) on the hydraulic distributor housing.

AUTOMATIC GEARBOX

Automatic gearbox: Specifications

23A

AJ0

Gearbox	Suffix
AJ0	004
	005
	006
	007
	018

Gear ratios (epicyclic gear train output)

1st	2nd	3rd	4th	5th	6th	Reverse gear
4.2	2.405	1.583	1.161	0.856	0.686	3.457

AUTOMATIC GEARBOX

Automatic gearbox: Parts and consumables for the repair

23A

AJ0

I - PARTS ALWAYS TO BE REPLACED

Parts to be replaced with new ones if removed:

- the self-locking nuts,
- the differential output seals,
- the converter seal,
- O-rings,
- the four hydraulic distributor O-rings,
- the converter nuts,
- the hydraulic distributor metal casing seal,
- the level-setting plug seal.

II - CONSUMABLES FOR REPAIR

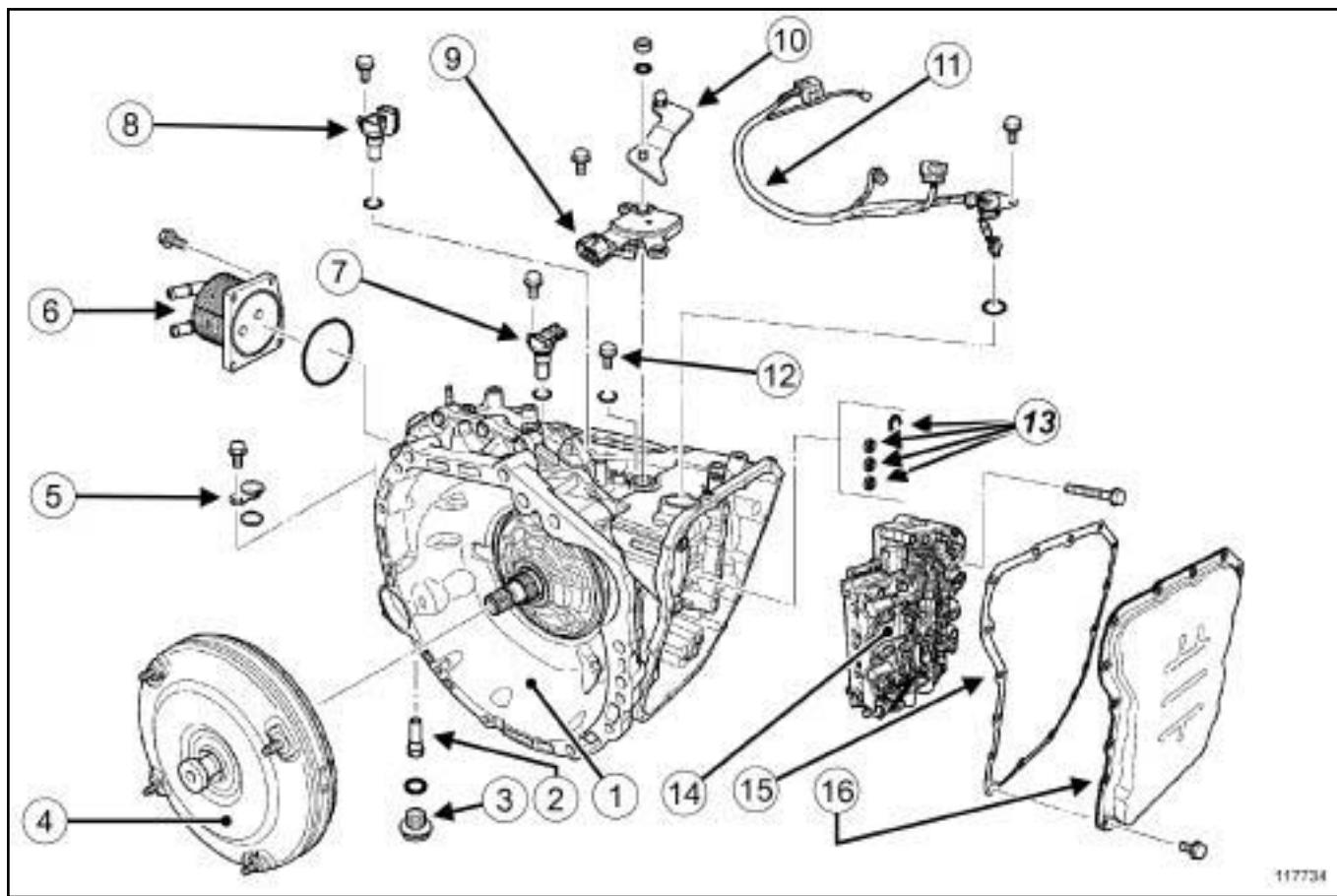
Description	Component	Part no.
BR2 + grease	Converter centring fitting	77 01 421 145

AUTOMATIC GEARBOX

Automatic gearbox: List and location of components

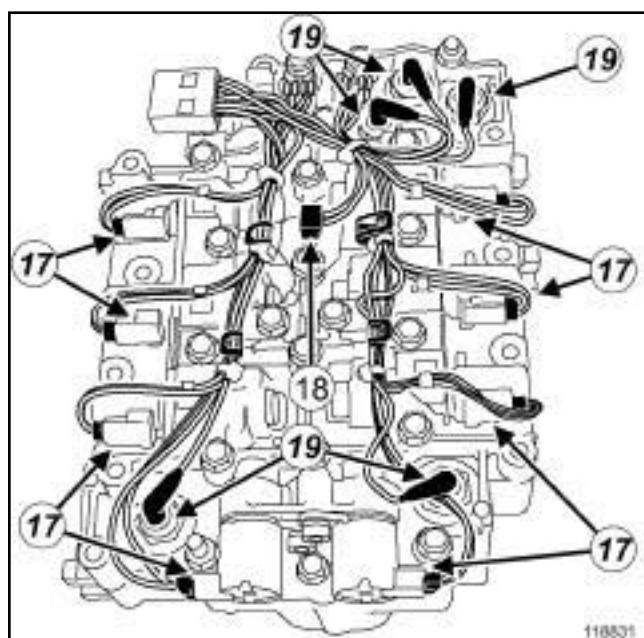
23A

AJ0



117734

- (1) AJ0 gearbox
- (2) Oil overflow pipe
- (3) Level-setting plug
- (4) Torque converter
- (5) Filler pipe closure panel
- (6) Oil cooler
- (7) Output speed sensor
- (8) Input speed sensor
- (9) Multifunction switch
- (10) Control lever
- (11) Electrical wiring
- (12) Hydraulic pressure measurement plug
- (13) Hydraulic distributor O-rings
- (14) Hydraulic distributor
- (15) Hydraulic distributor casing seal
- (16) Hydraulic distributor housing



118831

- (17) Solenoid valves
- (18) Gearbox oil temperature sensor
- (19) Pressure sensors

M9R, and AJ0

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required	
workshop hoist	
Diagnostic tool	

Tightening torques 	
gearbox bell housing nuts and bolts	44 Nm
converter nuts	44 Nm
starter bolts	44 Nm
starter earth cable bolt	21 Nm
nut on the positive terminal of the starter	8 Nm
nut on the excitation terminal of the starter	5 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the engine cover,
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the engine undertray bolts,
 - the engine undertray,
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Front upper structure),
- the particle filter (see **Particle filter: Removal - Refitting**) (MR 415, 19B, Exhaust).

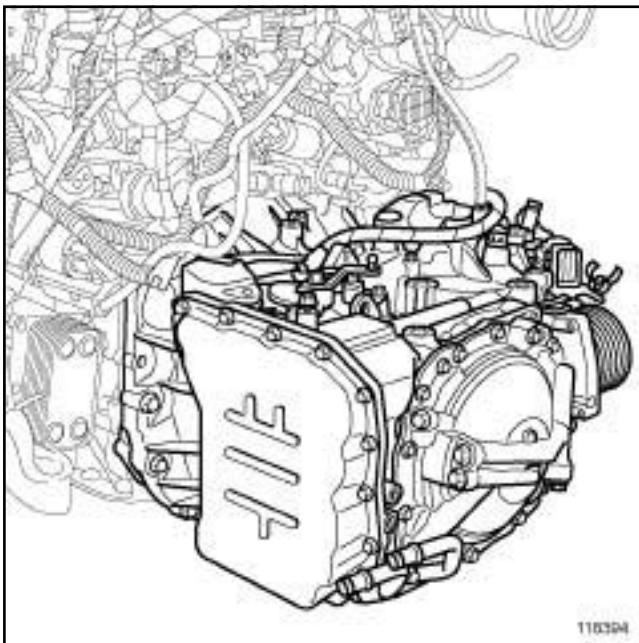
Drain:

- the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling),
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**),
- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning).

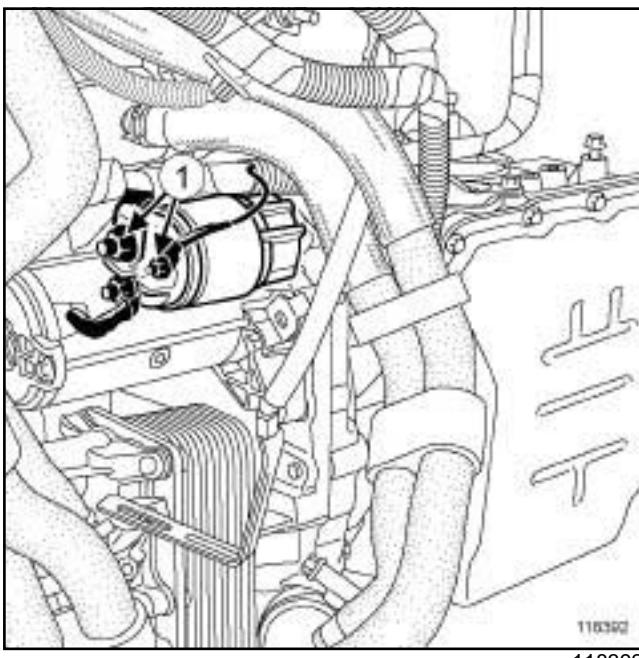
Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals).

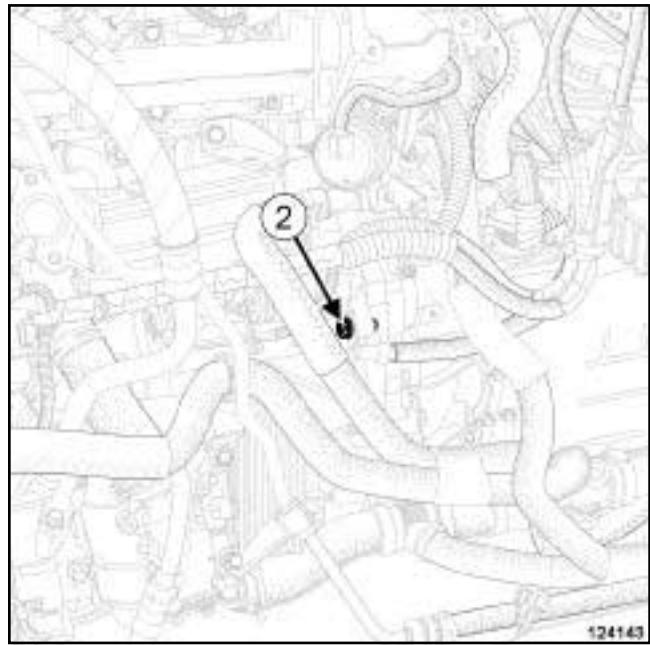
M9R, and AJ0

II - REMOVAL OPERATION FOR PART CONCERNED


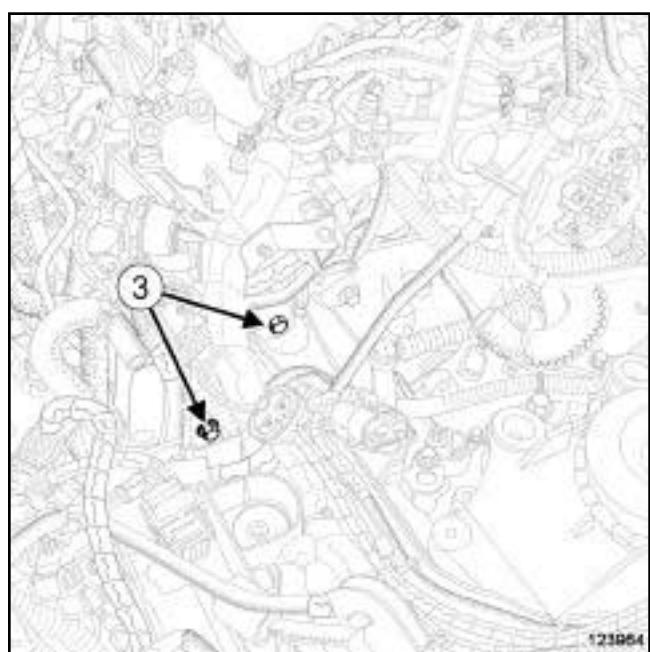
- Remove the hoses and wiring fitted to the automatic transmission bell housing.



- Remove the starter wiring nuts (1) .
- Remove the starter wiring.

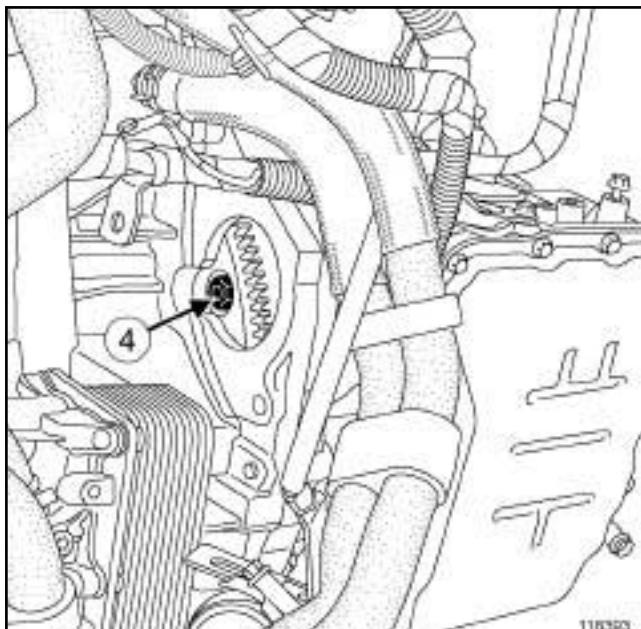


- Remove the bolt (2) from the starter earth cable.



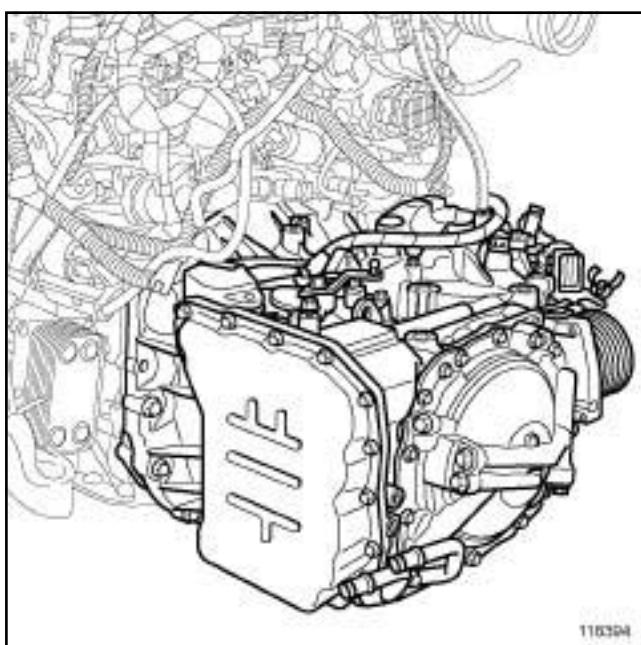
- Remove:
 - the starter bolts (3) ,
 - the starter.

M9R, and AJ0



118393

- Remove the converter nuts (4) via the starter opening.
- Remove the engine - gearbox assembly from the (**Mot. 1390**) using a **workshop hoist**.

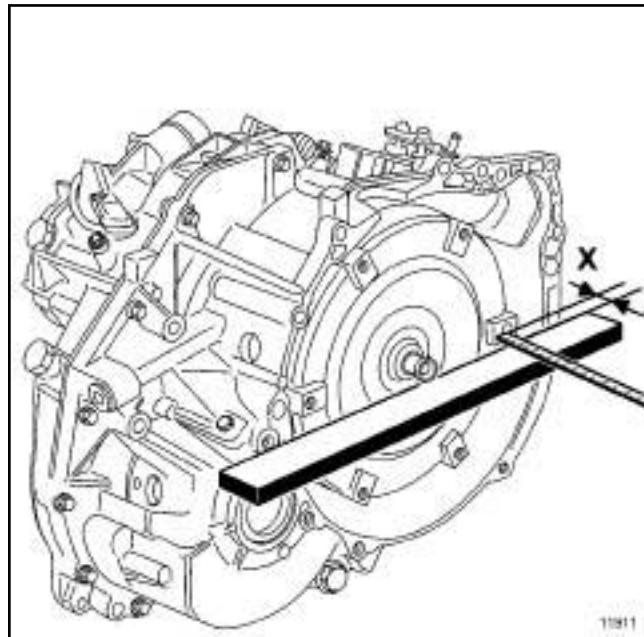


118394

- Remove:
 - the automatic transmission bell housing nuts and bolts,
 - the automatic transmission using another **workshop hoist**.

REFITTING

I - REFITTING PREPARATIONS OPERATION



11811

- Check:

- the distance **X** with a ruler. The distance must be a minimum of **20.5 mm**,
- the condition of the drive plate and crown wheel visually.

II - REFITTING OPERATION FOR PART CONCERNED

-

Note:

Before fitting the gearbox to the engine, position the converter bolts opposite the holes on the drive plate.

- Refit:

- the gearbox to the engine,
- the gearbox bell housing nuts and bolts,
- the converter nuts,
- the engine - gearbox assembly on the (**Mot. 1390**).

- Torque tighten:

- the **gearbox bell housing nuts and bolts (44 Nm)**,
- the **converter nuts (44 Nm)**.

M9R, and AJ0

 Refit:

- the starter,
- the starter bolts,
- the starter earth cable,
- the starter earth cable bolt,
- the starter wiring,
- the starter wiring nuts.

 Torque tighten:

- the **starter bolts (44 Nm)**,
- the **starter earth cable bolt (21 Nm)**,
- the **nut on the positive terminal of the starter (8 Nm)**,
- the **nut on the excitation terminal of the starter (5 Nm)**.

 Refit the hoses and wiring fitted to the automatic transmission bell housing.**III - FINAL OPERATION.** Refit:

- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the particle filter (see **Particle filter: Removal - Refitting**) (MR 415, 19B, Exhaust),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Front upper structure),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) ,

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) ,

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),

- the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),

- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),

- the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),

- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

 Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling). Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning),

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**) .

 Apply the after repair procedure using the **Diagnostic tool** : Connect the **Diagnostic tool**

Select gearbox computer

Go to repair mode

Display the gearbox computer «Before/after repair » procedure

Carry out the operations described in the « After repair procedure » section.

 Refit:

- the engine undertray,
- the engine undertray bolts,
- the engine cover.

F4R, and AJ0

Special tooling required	
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required	
workshop hoist	
Diagnostic tool	

Tightening torques 	
gearbox bell housing bolts and nuts	44 N.m
converter nuts (pre-tightening)	22N.m
converter nuts (tightening)	32N.m
converter nuts (tightening)	44N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the engine cover,
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the engine undertray bolts,
 - the engine undertray,
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) ,
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Upper front stucture),
- the catalytic converter (see **Catalytic converter: Removal - Refitting**) (MR 415, 19B, Exhaust).

Drain:

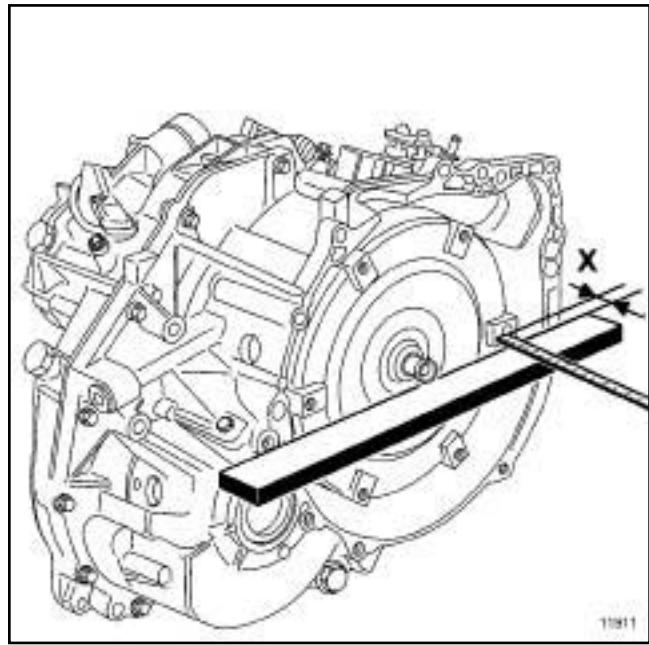
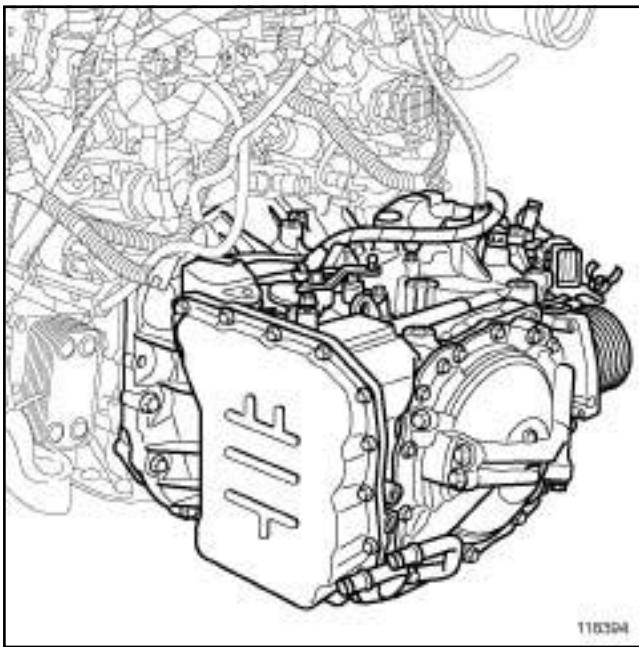
- the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling),
- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning).

Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals).

F4R, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Remove the hoses and the wiring fitted to the automatic gearbox bell housing.
- Remove the nuts from the starter wiring.
- Remove the starter (see **Starter: Removal - Refitting**) (MR 415, 16A, Starting - Charging)
- Remove the nuts from the converter through the starter opening.
- Remove the gearbox bell housing bolts and nuts.
- Disconnect the "engine - gearbox" assembly from the (**Mot. 1390**) using a **workshop hoist**.

REFITTING

I - REFITTING PREPARATION OPERATION

- Parts always to be replaced:
 - the self-locking nuts,
 - the differential output seals,
 - the converter nuts,
 - the level-setting plug seal.
- Refit:
 - the gearbox on the engine,
 - the gearbox bell housing nuts and bolts
 - the converter nuts,
 - the engine - gearbox assembly on the (**Mot. 1390**).
- Torque tighten the **gearbox bell housing bolts and nuts (44 N.m)**.

Check:

- the distance **X** with a ruler. This distance must be a minimum of **20.5 mm**,
- the condition of the drive plate and crown wheel visually.

II - REFITTING OPERATION FOR PART CONCERNED

Note:

Before fitting the gearbox to the engine, position the converter bolts opposite the holes on the drive plate.

Refit:

- the gearbox on the engine,
- the gearbox bell housing nuts and bolts
- the converter nuts,
- the engine - gearbox assembly on the (**Mot. 1390**).

Torque tighten the **gearbox bell housing bolts and nuts (44 N.m)**.

F4R, and AJ0

F4R, and AJ0, and 007

- Pre-tighten to torque the **converter nuts (pre-tightening)** (22N.m).
- Torque tighten the **converter nuts (tightening)** (32N.m).

F4R, and AJ0, and 018

- Torque tighten the **converter nuts (tightening)** (44N.m).

- Refit the starter (see **Starter: Removal - Refitting**) (MR 415, 16A, Starting - Charging)
- Refit the hoses and the wiring fitted to the automatic gearbox bell housing.

III - FINAL OPERATION

Refit:

- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the catalytic converter (see **Catalytic converter: Removal - Refitting**) (MR 415, 19B, Exhaust).
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Upper front structure),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,

- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),

- the front wheels (see **Wheel: Removal - Refitting** (MR 415, 35A, Wheels and tyres),

- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),

- the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),

- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),

- the battery (see **Battery: Removal - Refitting** (MR 415, 80A, Battery)).

Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling).

Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning),

Apply the after repair procedure using the **Diagnostic tool** :

Connect the **Diagnostic tool**

Select the gearbox computer

Go to repair mode

Display the « Before/after repair » procedure for the gearbox computer

Carry out the operations described in the « After repair procedure » section.

Refit:

- the engine undertray,
- the engine undertray bolts,
- the engine cover.

V4Y, and AJ0

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	
workshop hoist	
Diagnostic tool	

Tightening torques 	
mountings of the gearbox bell housing (1)	44 N.m
mountings of the gearbox bell housing (2)	62 N.m
converter nuts	32 N.m
protection plate bolt	7 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 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 engine undertray bolts,
 - the engine undertray,
 - the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),

- the bonnet catch (see **Bonnet lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the audible warning (see **Audible warning: Removal - Refitting**) (82B, Horn),
- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).

Drain:

- the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).

WARNING

Consult the device's operating manual to avoid incorrect use.

Drain the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

WARNING

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

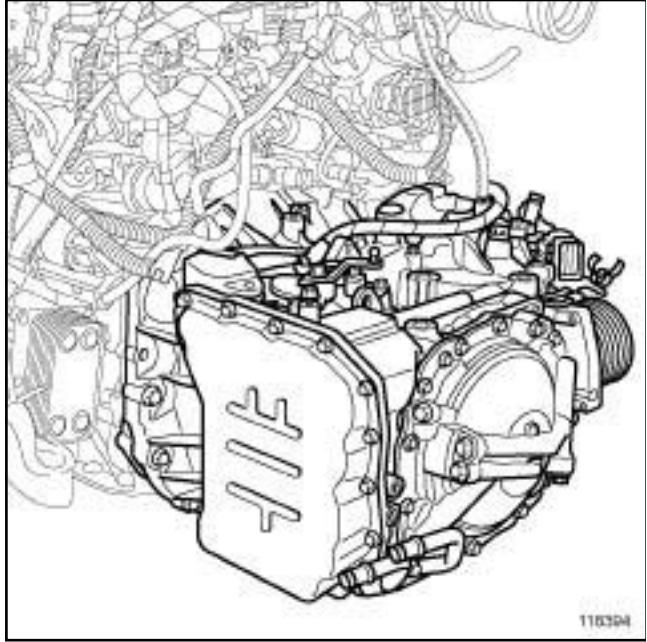
Remove:

- the « cooling radiator - condenser - fan assembly » assembly (see **Cooling radiator: Removal - Refitting**) (19A Cooling),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**),
- the battery disconnection unit (see **Battery disconnection unit: Removal - Refitting**) (80A, Battery),
- the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),

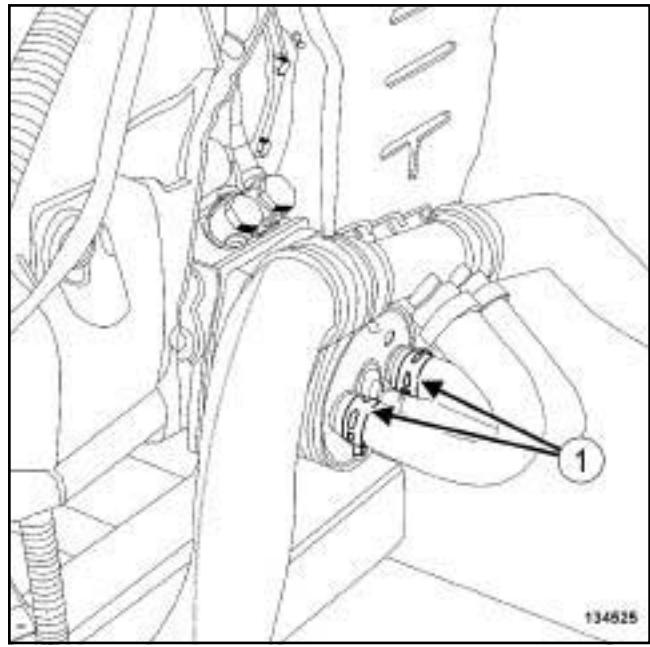
V4Y, and AJ0

- the inlet manifold (see **Inlet distributor: Removal - Refitting**) (12A, Fuel mixture),
- the front row upstream oxygen sensor (see **Oxygen sensors: Removal - Refitting**) (17B, Petrol injection),
- the front catalytic pre-converter (see **Front catalytic pre-converter: Removal - Refitting**) (19B, Exhaust),
- the rear catalytic pre-converter (see **Rear catalytic pre-converter: Removal - Refitting**) (19B, Exhaust),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals).

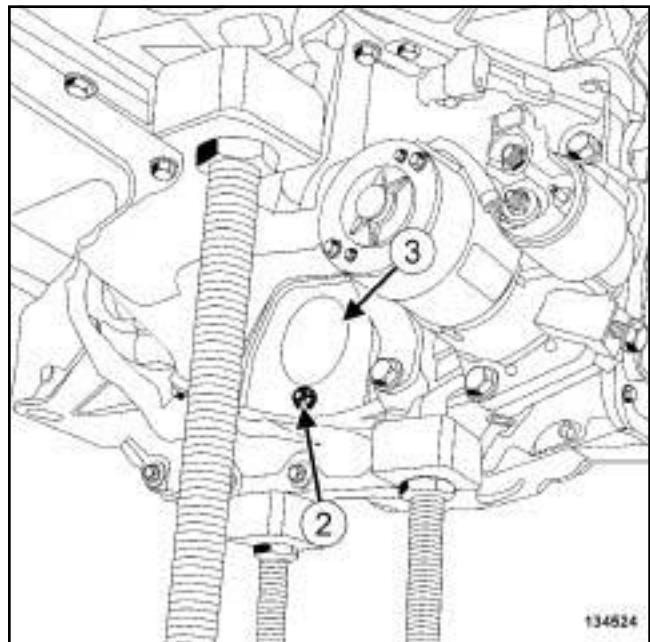
II - OPERATION FOR REMOVAL OF PART CONCERNED



- Separate the wiring attached to the automatic gearbox bell housing.

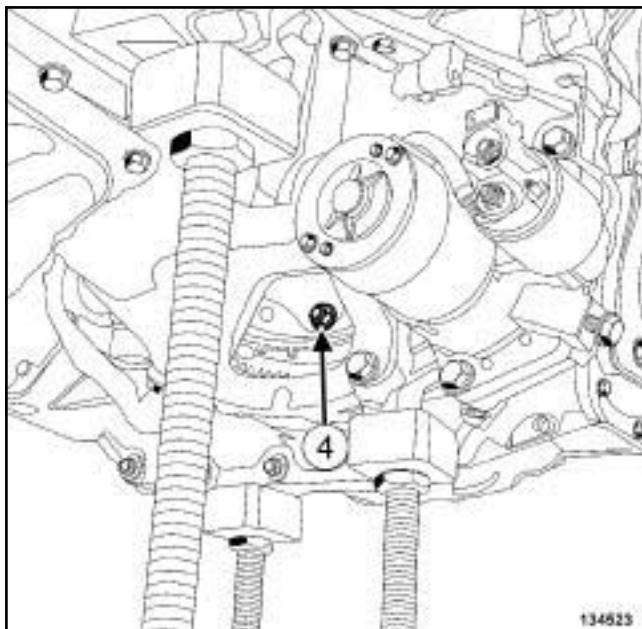


- Separate the clips (1) on the gearbox oil cooler cooling hoses using the tool (**Mot. 1448**).
- Disconnect the gearbox oil cooler cooling hoses.
- Remove the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

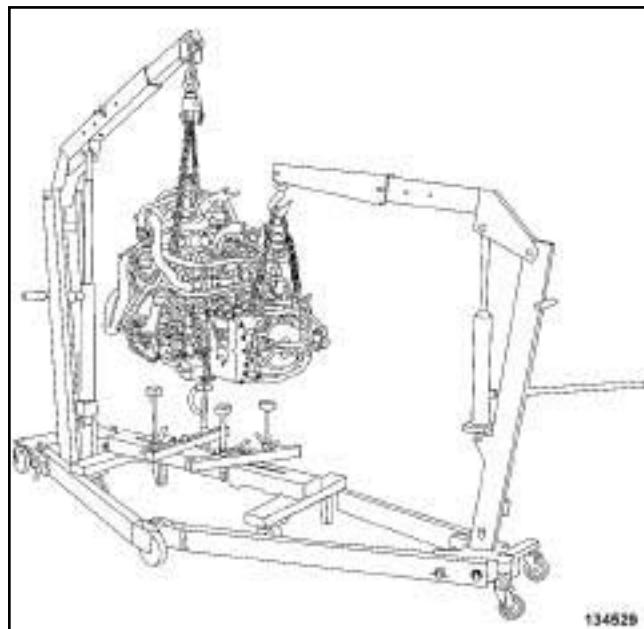


- Remove:
 - the protection plate bolt (2) ,
 - the protection plate (3) .

V4Y, and AJ0



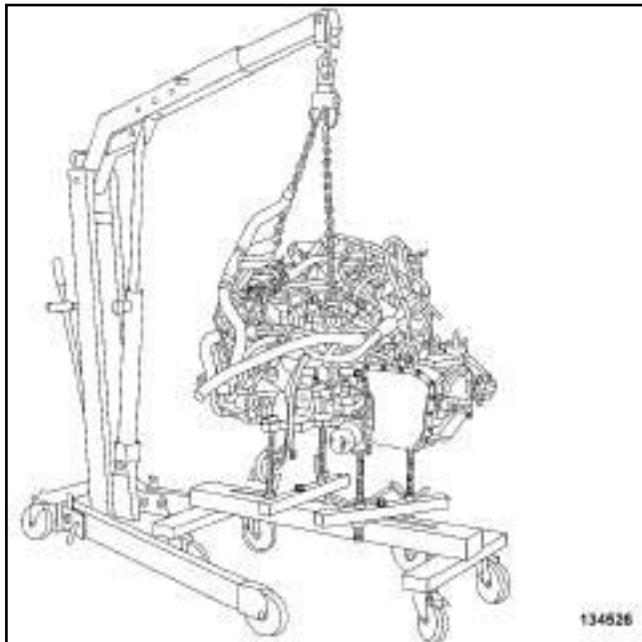
134523



134529

 Remove:

- the converter nuts (**4**) via the protection plate hole,
 - the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection).
- Fit the lifting eye on the timing cover (see **Lifting eyes: Removal - Refitting**) (11A, Top and front of engine).



134526

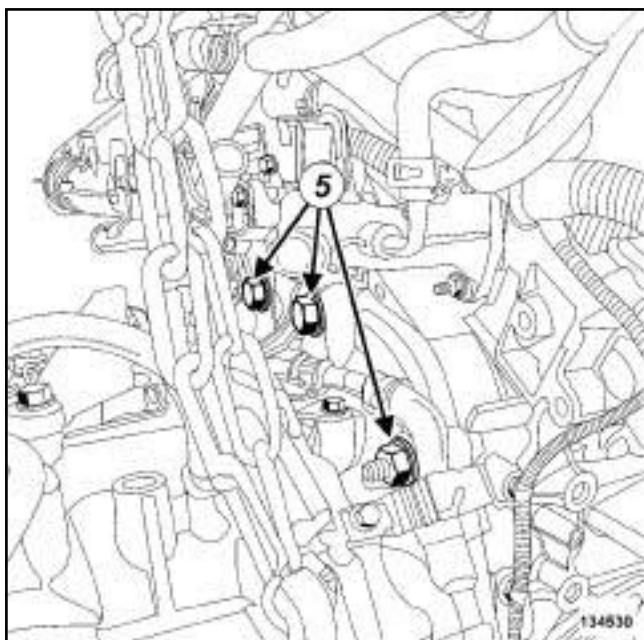
- Raise the engine - gearbox assembly using a **workshop hoist**.

AUTOMATIC GEARBOX

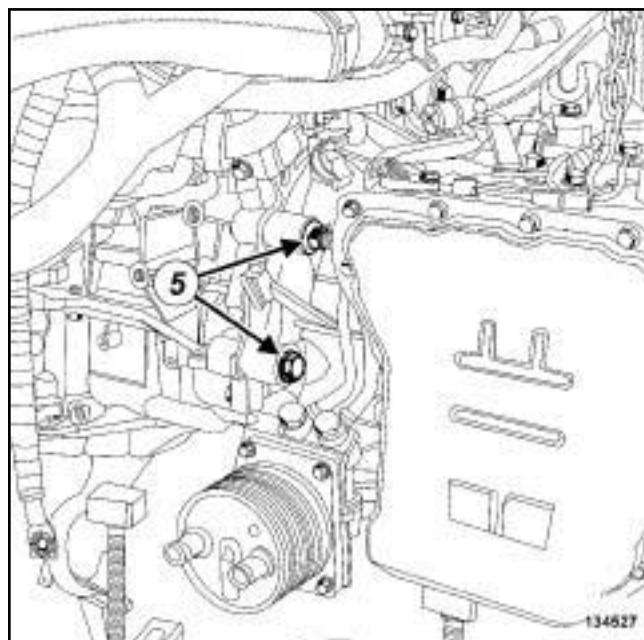
Automatic gearbox: Removal - Refitting

23A

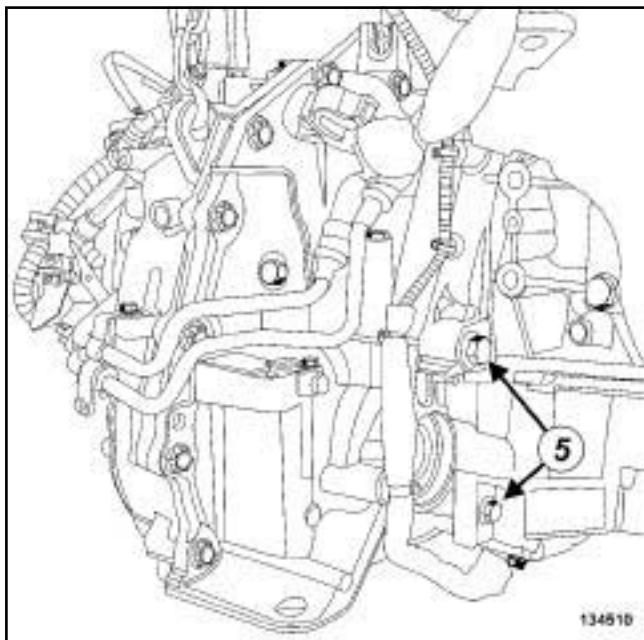
V4Y, and AJ0



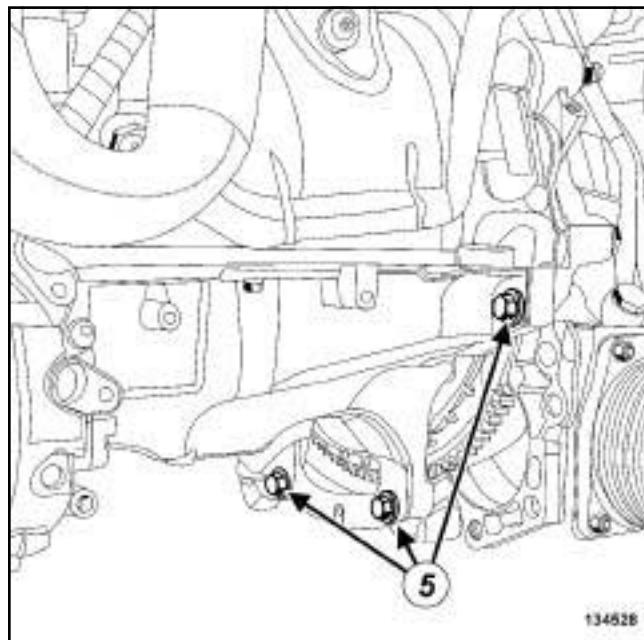
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134527



134510

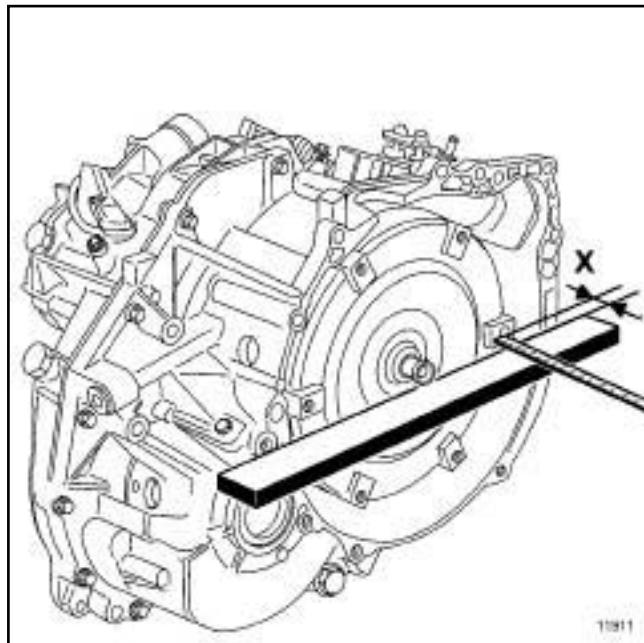


134528

Remove:

- the gearbox bell housing mountings (5) ,
- the gearbox.

V4Y, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

11911

 Check:

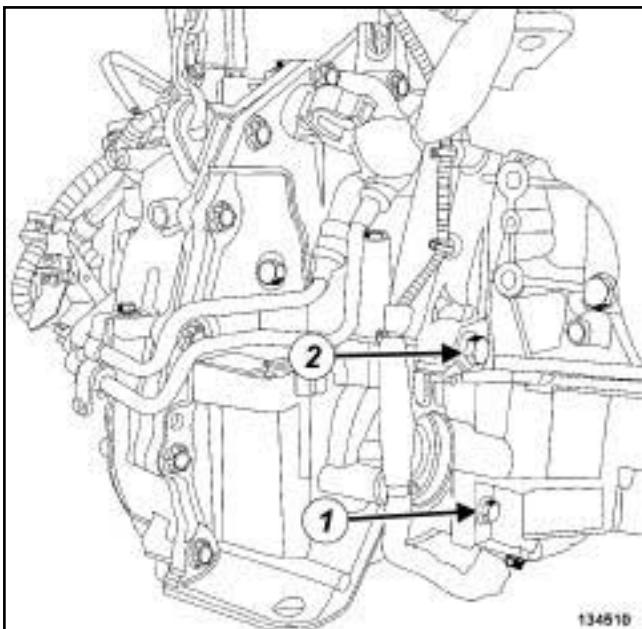
- the distance **X** with a ruler. This distance must be a minimum of **20.5 mm**,
- the condition of the drive plate and crown wheel visually.

II - REFITTING OPERATION FOR PART CONCERNED Refit the gearbox on the engine.

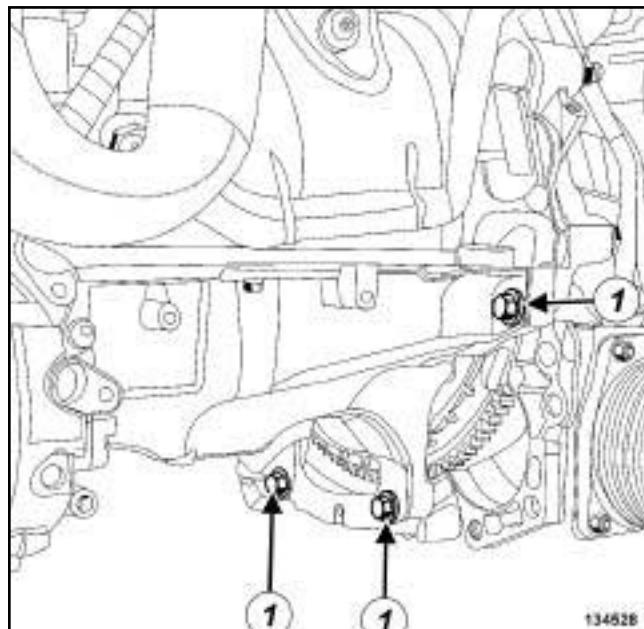
Note:

Before coupling the gearbox to the engine, position the converter bolts opposite the holes on the drive plate.

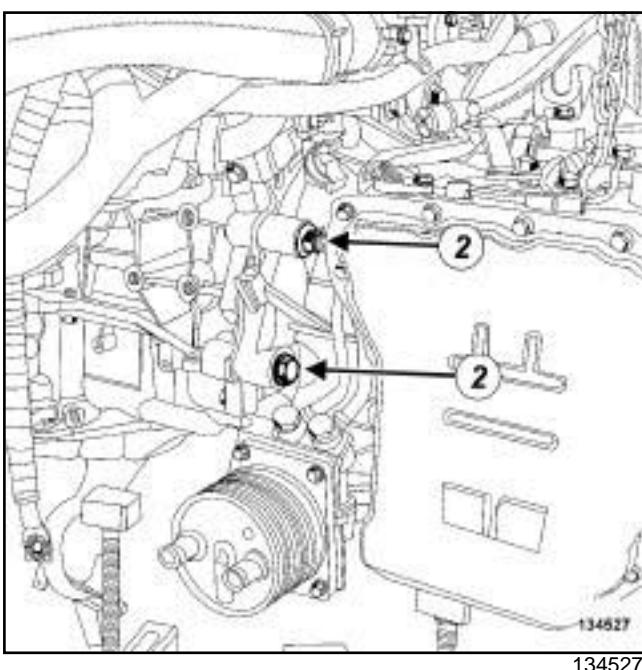
V4Y, and AJ0



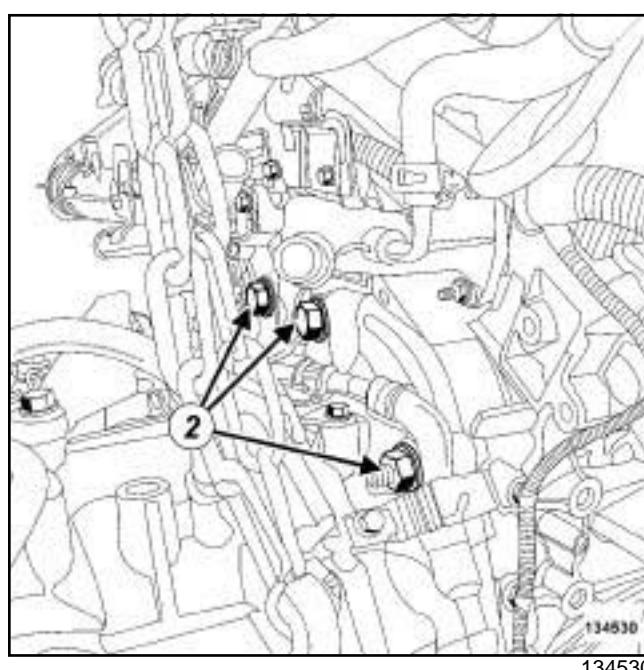
134510



134526



134527



134530

- Tighten to torque:
 - the **mountings of the gearbox bell housing (1) (44 N.m)**,
 - the **mountings of the gearbox bell housing (2) (62 N.m)**,
 - the **converter nuts (32 N.m)**.
- Refit the engine - gearbox assembly on the (**Mot. 1390**).
- Remove the lifting eye from the timing cover (see **Lifting eyes: Removal - Refitting**) (11A, Top and front of engine).

V4Y, and AJ0

 Refit:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the protection plate.

 Torque tighten the **protection plate bolt (7 N.m)**.

- Connect the cooling hoses to the gearbox oil cooler.
- Fit the cooling hose clips to the gearbox oil cooler using the tool (**Mot. 1448**).

III - FINAL OPERATION Refit:

- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the rear catalytic pre-converter (see **Rear catalytic pre-converter: Removal - Refitting**) (19B, Exhaust),
- the front catalytic pre-converter (see **Front catalytic pre-converter: Removal - Refitting**) (19B, Exhaust),
- the front row upstream oxygen sensor (see **Oxygen sensors: Removal - Refitting**) (17B, Petrol injection),
- the inlet manifold (see **Inlet distributor: Removal - Refitting**) (12A, Fuel mixture),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
- the battery disconnection unit (see **Battery disconnection unit: Removal - Refitting**) (80A, Battery),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1),

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,

- the « cooling radiator - condenser - fan assembly » assembly (see **Cooling radiator: Removal - Refitting**) (19A Cooling),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection).

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

- fill up the gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29) ,
- fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling),
- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- a leak test (see **Air conditioning: Check**) (62A, Air conditioning).

 Refit:

- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the audible warning (see **Audible warning: Removal - Refitting**) (82B, Horn),
- the bonnet catch (see **Bonnet lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- the engine undertray,
- 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 cover.

 Adjust the headlight beams (see **Headlight: Adjustment**) (80B, Headlights). Apply the after repair procedure using the **Diagnostic tool** :

- connect the **Diagnostic tool**,

V4Y, and AJ0

- select « Gearbox computer » ,
- 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.

V9X, and AJ0

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	
workshop hoist	
Diagnostic tool	

Tightening torques 	
gearbox bell housing bolts and nuts	44 N.m
converter nuts	44 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 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 headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the audible warning (see **Audible warning: Removal - Refitting**) (82B, Horn),
- the bonnet catch (see **Bonnet lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the engine cooling fan assembly (see **Engine cooling fan assembly: Removal - Refitting**) (19A, Cooling).

WARNING

Consult the device's operating manual to avoid incorrect use.

V9X, and AJ0

 Drain:

- the refrigerant circuit using a **refrigerant charging station** (62A, Air conditioning),
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**) ,
- the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

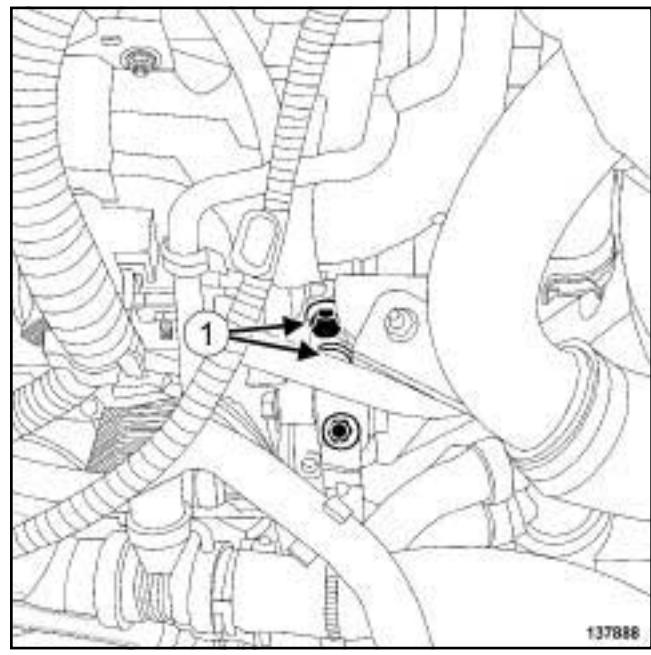
WARNING

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

 Remove:

- the « radiator - condenser - intercooler » assembly (see **Cooling radiator: Removal - Refitting**) (19A, Cooling),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the pre-postheating unit (see **Pre-postheating unit: Removal - Refitting**) (13C, Preheating),
- the electric coolant pump of the intercooler (see **Electric coolant pump: Removal - Refitting**) (19A, Cooling),
- the additional radiator (see **Additional radiator: Removal - Refitting**) (19A, Cooling),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
- the battery disconnection unit (see **Battery disconnection unit: Removal - Refitting**) (80A, Battery),
- the electric coolant pump from the turbocharger (see **Electric coolant pump: Removal - Refitting**) (19A, Cooling),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the lower engine tie-bars (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),

- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the « engine - gearbox » assembly (see **Engine - gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the oil filter (see **Oil filter: Removal - Refitting**) (10A, Engine and peripherals),
- the oil pressure sensor (see **Oil pressure sensor: Removal - Refitting**) (10A, Engine and peripherals),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

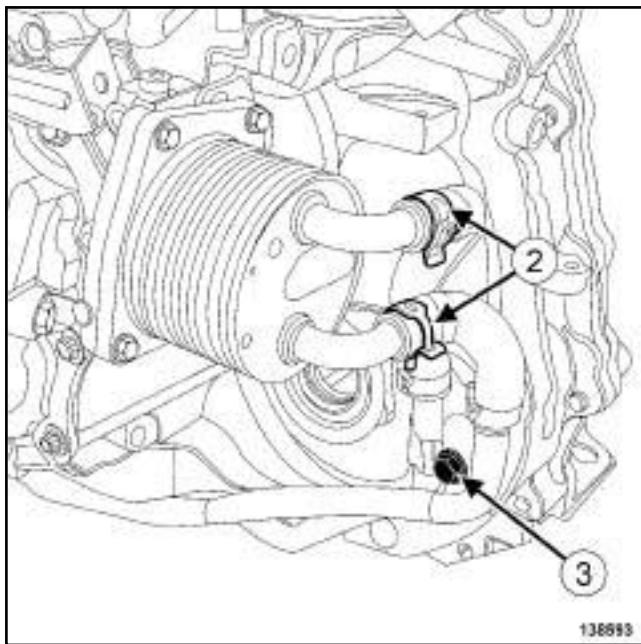


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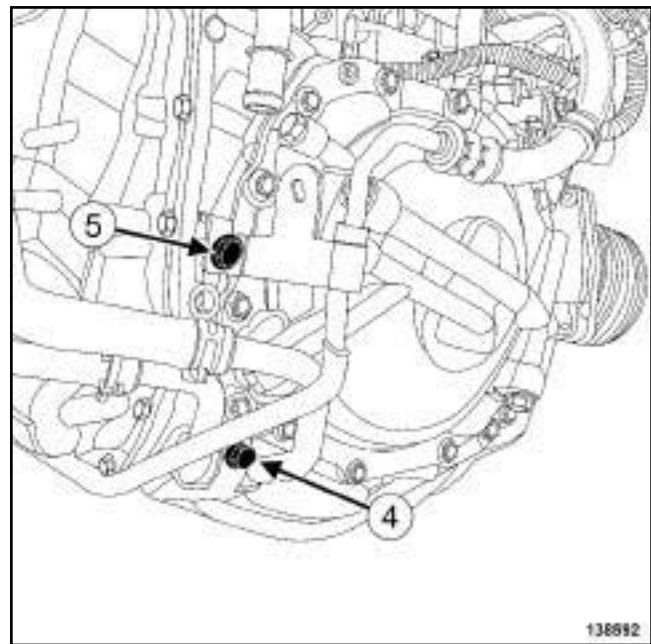
137889

- Remove the bolts (1) from the air pipe support at the turbocharger outlet.
- Move aside the turbocharger air outlet pipe support.
- Remove the catalytic pre-converter (see **Catalytic pre-converter: Removal - Refitting**) (19B, Exhaust).

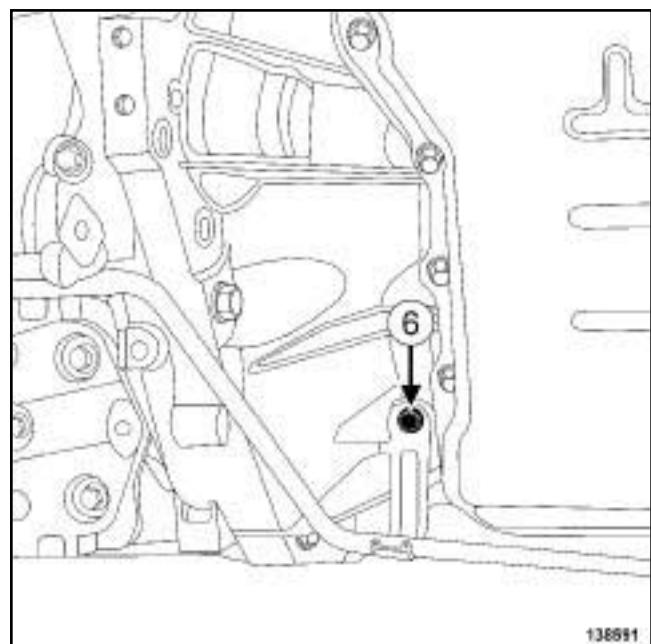
V9X, and AJ0



- Separate the cooling hose clips (2) at the inlet and outlet of the gearbox oil - coolant heat exchanger using the tool (**Mot. 1448**).
- Disconnect the cooling hoses at the inlet and outlet of the gearbox oil - coolant heat exchanger.
- Remove the bolt (3) from the rigid cooling pipes at the inlet and outlet of the gearbox oil - coolant heat exchanger.

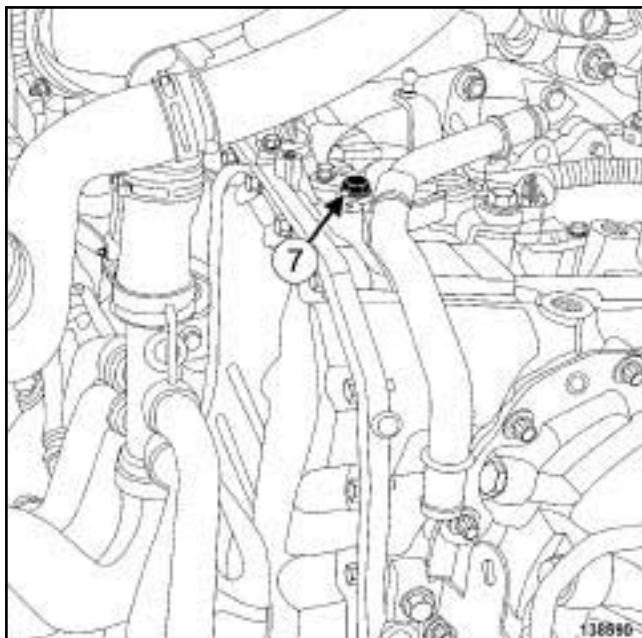


- Remove:
 - the bolt (4) from the rigid cooling pipes at the inlet and outlet of the gearbox oil - coolant heat exchanger,
 - the power-assisted steering rigid pipe bolt (5) .
- Separate the rigid cooling pipes at the inlet and outlet of the gearbox oil-coolant heat exchanger.



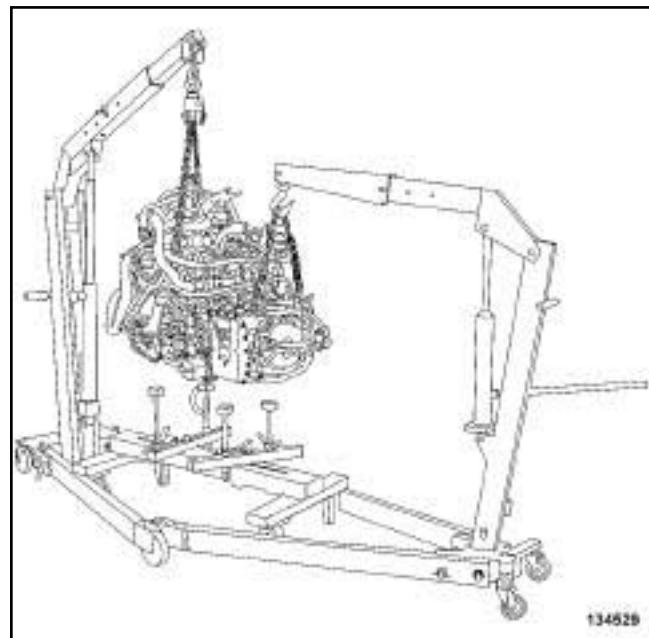
- Remove the bolt (6) from the power-assisted steering rigid pipe.
- Remove the power-assisted steering rigid pipe.

V9X, and AJ0



Remove:

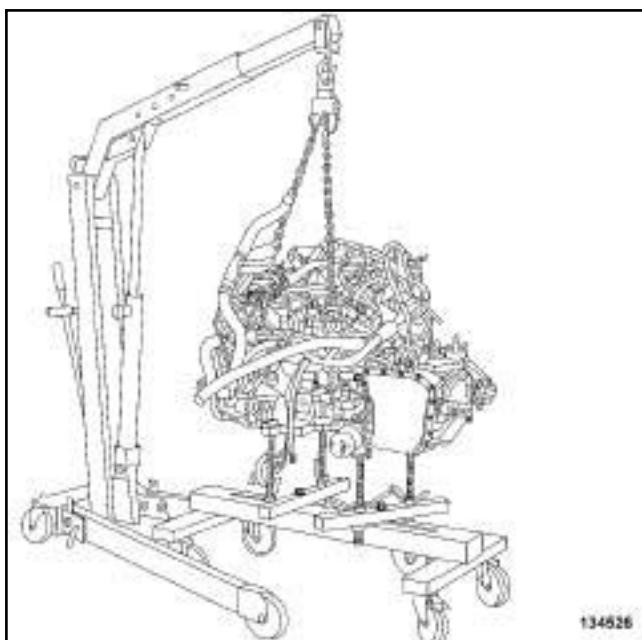
- the bolt (7) from the rigid cooling pipe,
- the rigid cooling pipe.



Raise the gearbox using a **workshop hoist**.

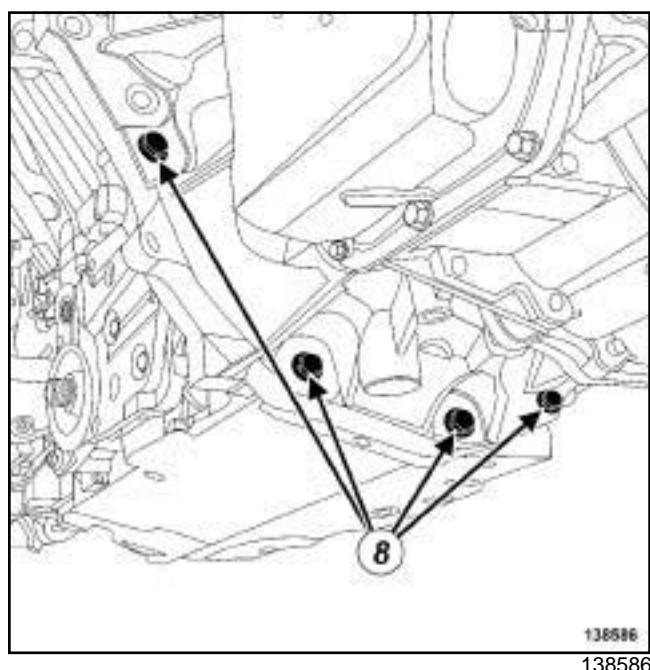
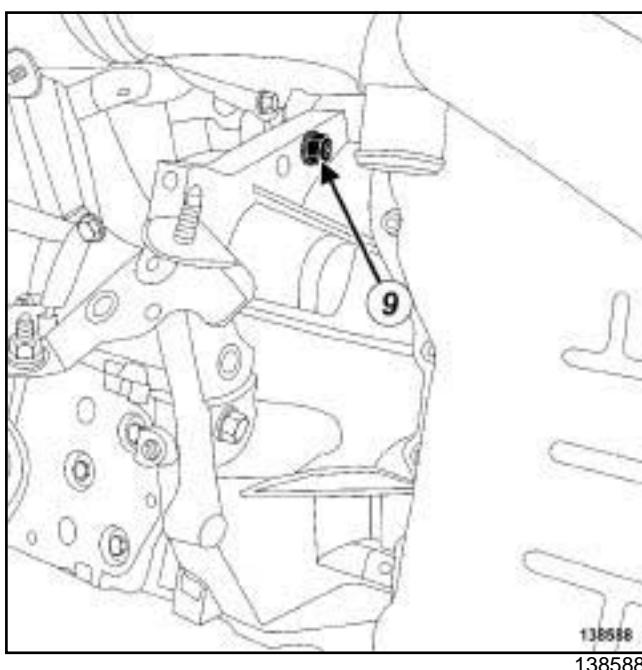
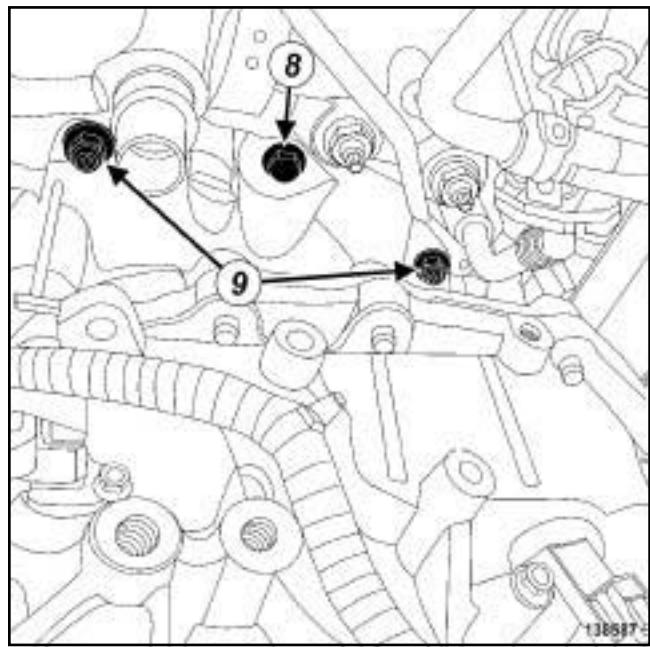
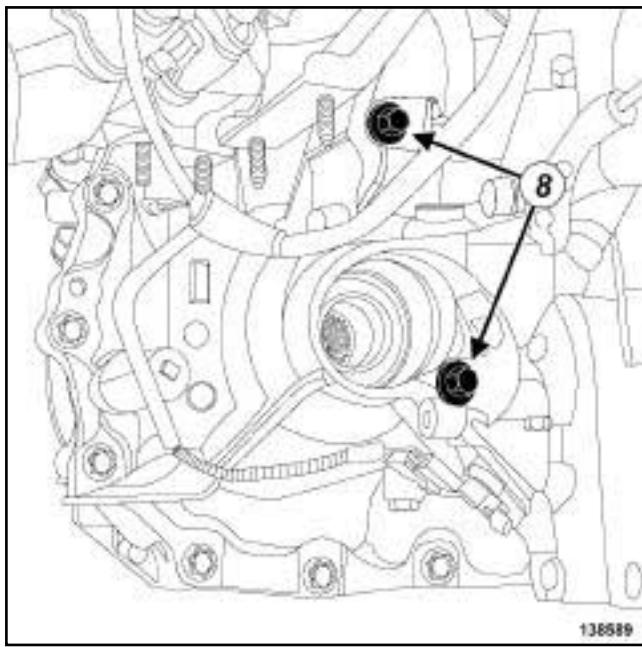
II - OPERATION FOR REMOVAL OF PART CONCERNED

Remove the nuts from the converter through the starter opening.



Raise the « engine - gearbox » assembly using a **workshop hoist**.

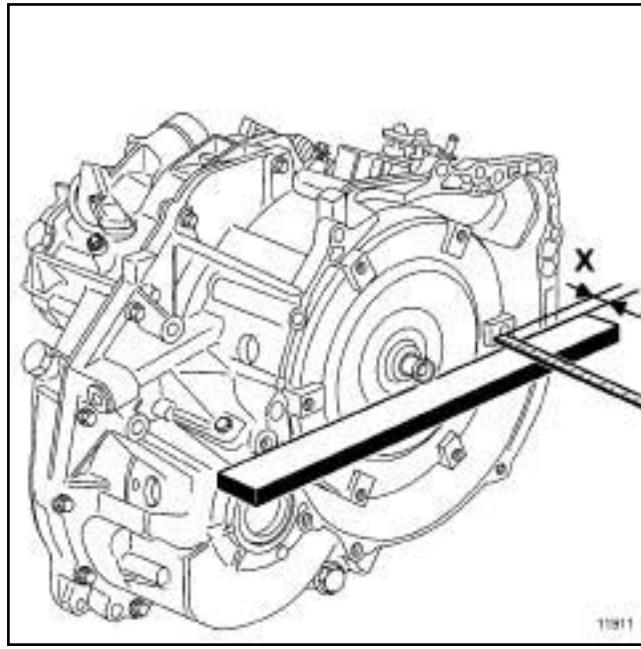
V9X, and AJ0



□ Remove:

- the gearbox bell housing bolts (8) ,
- the gearbox bell housing nuts (9) ,
- the gearbox.

V9X, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION** Check:

- the distance **X** with a ruler. This distance must be a minimum of **20.5 mm**,
- the condition of the drive plate and crown wheel visually.

II - REFITTING OPERATION FOR PART CONCERNED Refit the gearbox on the engine.

Note:

Before coupling the gearbox to the engine, position the converter bolts opposite the holes on the drive plate.

 Tighten to torque:

- the **gearbox bell housing bolts and nuts (44 N.m)**,
- the **converter nuts (44 N.m)**.

 Refit the engine - gearbox assembly on the (**Mot. 1390**).**III - FINAL OPERATION**

- Refit the rigid cooling pipe.
- Fit the power-assisted steering rigid pipe.

- Refit the power-assisted steering rigid pipe bolt.
- Fit the rigid cooling pipes at the inlet and outlet of the gearbox oil - coolant heat exchanger.
- Refit:
 - the power-assisted steering rigid pipe bolt,
 - the bolt of the rigid cooling pipes at the inlet and outlet of the gearbox oil - coolant heat exchanger,
 - the bolt of the rigid cooling pipes at the inlet and outlet of the gearbox oil - coolant heat exchanger.
- Connect the cooling hoses at the inlet and outlet of the gearbox oil - coolant heat exchanger.
- Fit the cooling hose clips (**Mot. 1448**) at the inlet and outlet of the gearbox oil - coolant heat exchanger using the tool.
- Refit the catalytic pre-converter (see **Catalytic pre-converter: Removal - Refitting**) (19B, Exhaust).
- Fit the turbocharger air outlet pipe mounting.
- Refit the turbocharger air outlet pipe support bolts.
- Refit:
 - the starter (see **Starter: Removal - Refitting** (16A, Starting - Charging),
 - the oil pressure sensor (see **Oil pressure sensor: Removal - Refitting**) (10A, Engine and peripherals),
 - the oil filter (see **Oil filter: Removal - Refitting** (10A, Engine and peripherals),
 - the « engine - gearbox » assembly (see **Engine - gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
 - the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
 - the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
 - the lower engine tie-bars (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
 - the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
 - the electric coolant pump from the turbocharger (see **Electric coolant pump: Removal - Refitting**) (19A, Cooling),
 - the battery disconnection unit (see **Battery disconnection unit: Removal - Refitting**) (80A, Battery),

Automatic gearbox: Removal - Refitting

23A

V9X, and AJ0

- the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the additional radiator (see **Additional radiator: Removal - Refitting**) (19A, Cooling),
- the electric coolant pump of the intercooler (see **Electric coolant pump: Removal - Refitting**) (19A, Cooling),
- the pre-postheating unit (see **Pre-postheating unit: Removal - Refitting**) (13C, Preheating),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the « radiator - condenser - intercooler » assembly (see **Cooling radiator: Removal - Refitting**) (19A, Cooling),
- the engine cooling fan assembly (see **Engine cooling fan assembly: Removal - Refitting**) (19A, Cooling),
- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the bonnet catch (see **Bonnet lock: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the audible warning (see **Audible warning: Removal - Refitting**) (82B, Horn),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1),
- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights).

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

Perform the following operations:

- fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling),
- fill up the gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),

- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).

- fill and bleed the power-assisted steering circuit (see **Power-assisted steering circuit: Bleeding**) (36B, Power-assisted steering),
- a leak test (see **Refrigerant circuit: Check**) (62A, Air conditioning).

Check that the air conditioning is working correctly (see **Air conditioning: Check**) (62A, Air conditioning).

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 engine undertray.

Adjust the headlight beams (see **Headlight: Adjustment**) (80B, Headlights).

Refit the engine cover.

Apply the after repair procedure using the **Diagnostic tool** :

- connect the **Diagnostic tool**,
- select « Gearbox computer » ,
- 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.

AUTOMATIC GEARBOX

Automatic gearbox oil: Specifications

23A

6-SPEED AUTOMATIC GEARBOX

I - GEARBOX TYPE/OIL TYPE CORRELATIONS:

GEARBOX TYPE	TYPE OF OIL FOR GEARBOX
DP0/RWX	ELF RENAULTMATIC D3 SYN
MBX/AD4/AD8/AR4	ELF RENAULTMATIC D2
LM0	ESSO ATF LT 71141
SU0/SU1/SU4	CLIP oil
AJX	ELF MATIC S6
FKX CKX	ELF MATIC CVT

ELF MATIC S6	-	May be ordered from ELF (7.6 litres)
ELF MATIC CVT	-	May be ordered from ELF (1 litre)
ESSO ATF LT 71141	-	77 11 172 226 (2 litres)

Note:

ELF RENAULTMATIC D3 SYN oil is not a substitute for ELF RENAULTMATIC D2.

II - STANDARDS AND PART NUMBERS OF THE VARIOUS RECOMMENDED OILS:

DESIGNATION	STANDARD	PART NUMBER
ELF RENAULT-MATIC D2	DEXRON II D	77 01 402 037 (2 litres)
ELF RENAULT-MATIC D3 SYN	DEXRON III	May be ordered from ELF
CLIP oil	-	77 11 218 368 (2 litres)

AJ0

Equipment required

oil recovery tray

Diagnostic tool

Tightening torques oil overflow pipe **8 N.m**level-setting plug **8 N.m**air filter box air outlet
pipe clips **6 N.m**filler pipe closure panel
bolt **6 N.m****Note:**

The control lever must be in the **Park** position when draining, filling or checking the level.

Note:

The level must be checked at a temperature of **40°C ± 2.**

Note:

The automatic transmission oil should preferably be changed when the oil is warm (approximately **60°C** maximum) in order to remove as many impurities as possible.

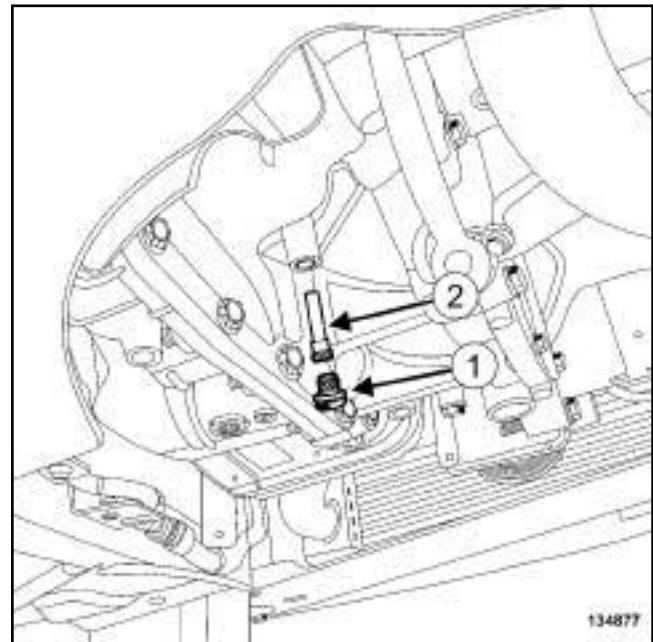
	total capacity	capacity after draining
litres	7.6	3.5

DRAINING**I - DRAINING PREPARATION OPERATION**

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- The control lever must be in the **Park** position when draining, filling or checking the level.

 Remove:

- the engine undertray bolts,
- the engine undertray.

 Fit a **oil recovery tray** under the gearbox.**II - DRAINING OPERATION**

134877

 Remove:

- the level plug (1),
- the oil overflow pipe (2) using a **5 mm** Allen key.

 Let the oil flow out of the gearbox into the **oil recovery tray**. Refit the oil overflow pipe. Torque tighten the **oil overflow pipe (8 N.m)**. Refit the level-setting plug. Torque tighten the **level-setting plug (8 N.m)**.

AJ0

FILLING**I - FILLING PREPARATION OPERATION**

V4Y

- Remove the oil vapour rebreathing pipe.
- Disconnect the vacuum pipe from the brake servo.
- Undo the clips on the air outlet pipe of the air filter unit.
- Unclip the wiring at the gearbox.

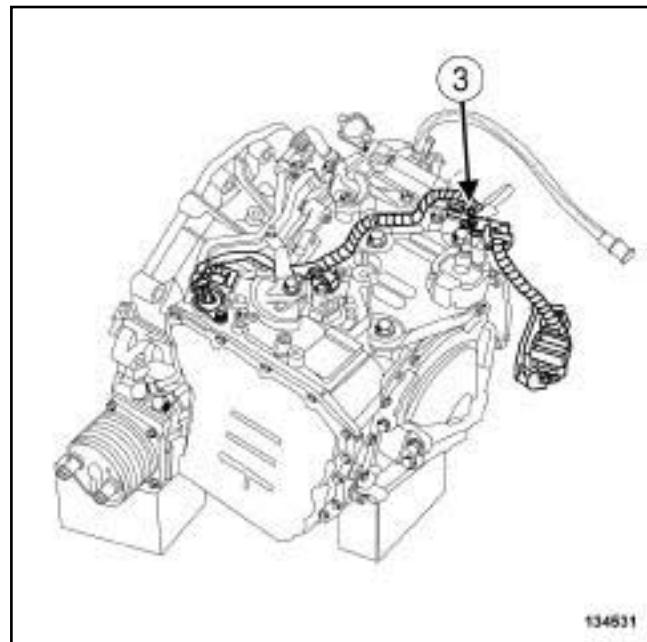
V9X, and AJ0, and 006

-

Note:

The gearbox is filled via the speed sensor located close to the gearbox wiring connector.

- Remove the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



134531

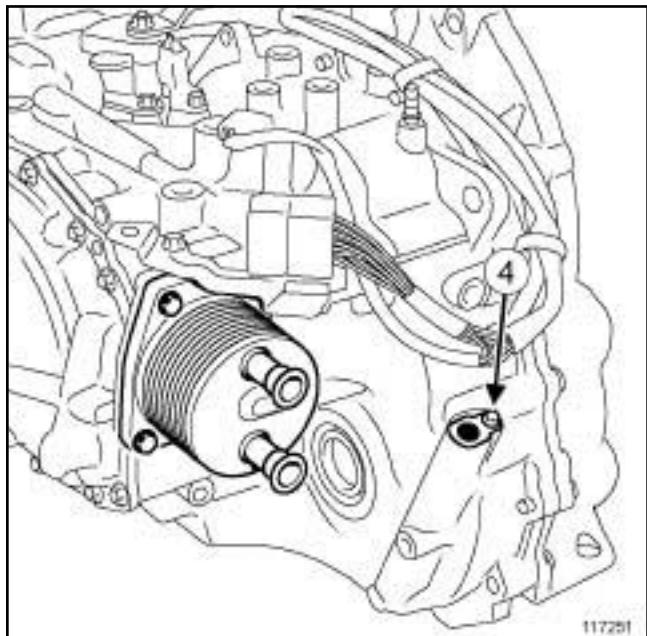
- Disconnect the speed sensor connector (3).

- Remove:

- the speed sensor bolt,
- the speed sensor,

- the speed sensor seal.

AJ0, and 004 or 005 or 007 or 018

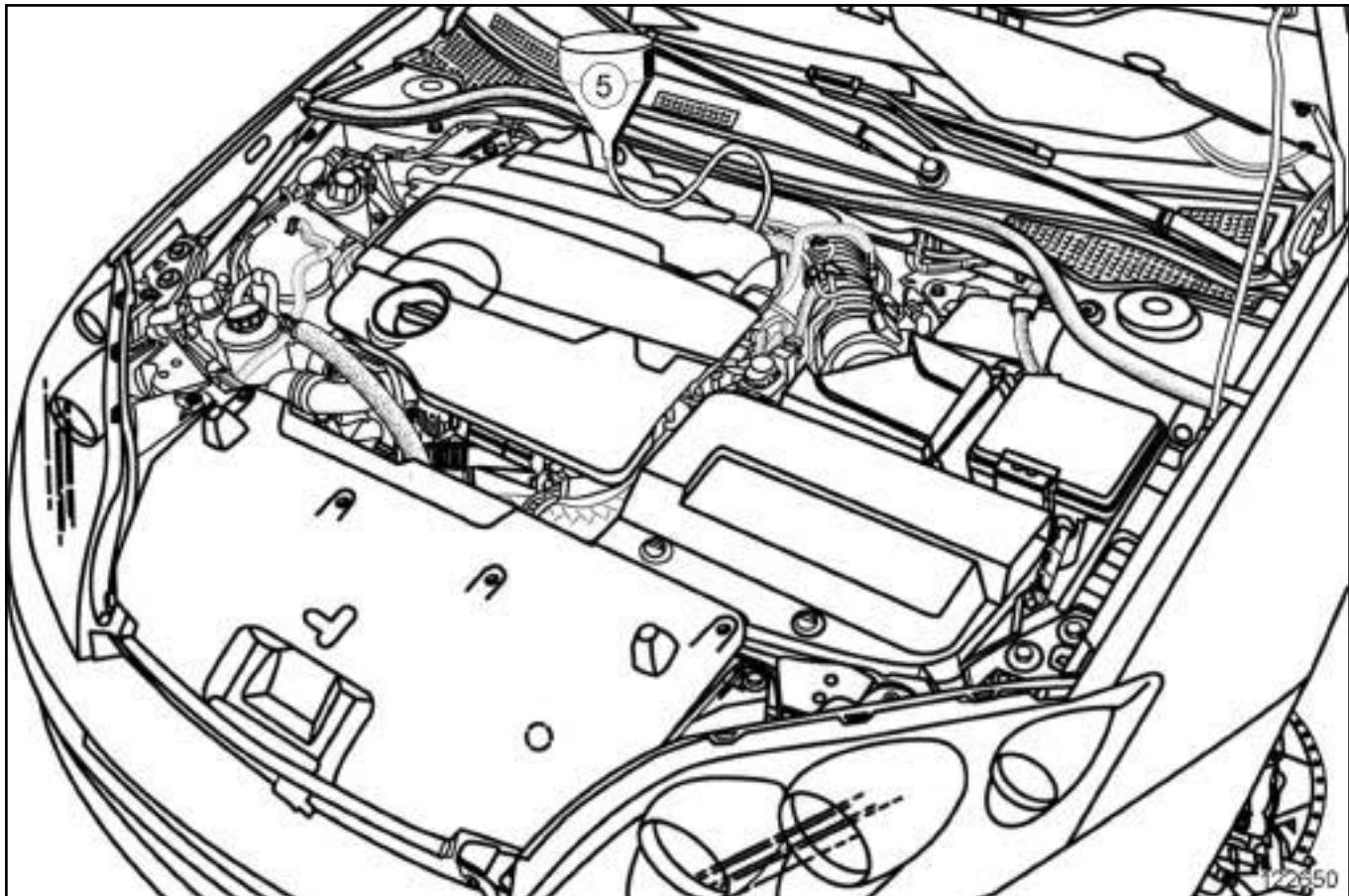


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- Remove:

- the bolt (4) from the gearbox filling hole closure panel,
- the gearbox filling hole closure panel.

AJ0



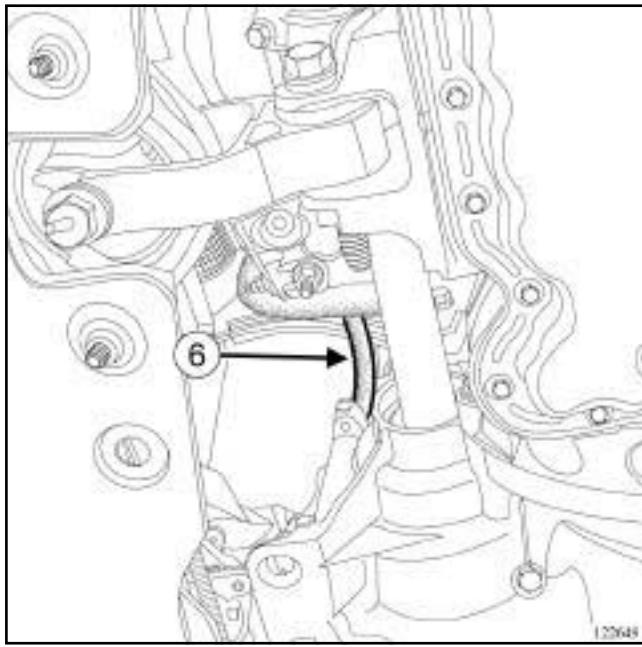
122650

II - FILLING OPERATION

- It is essential to shift the selector lever to the **Park** position.
- Fill the automatic gearbox with **3.2 litres** of new oil (see **23A, Automatic gearbox, Automatic gearbox oil: Specifications**, page **23A-28**) (Technical Note 6012A, 04A, Lubricants).

V9X, and AJ0, and 006

- Refit:
 - a new speed sensor seal,
 - the speed sensor.
- Connect the speed sensor connector.
- Refit the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



122649

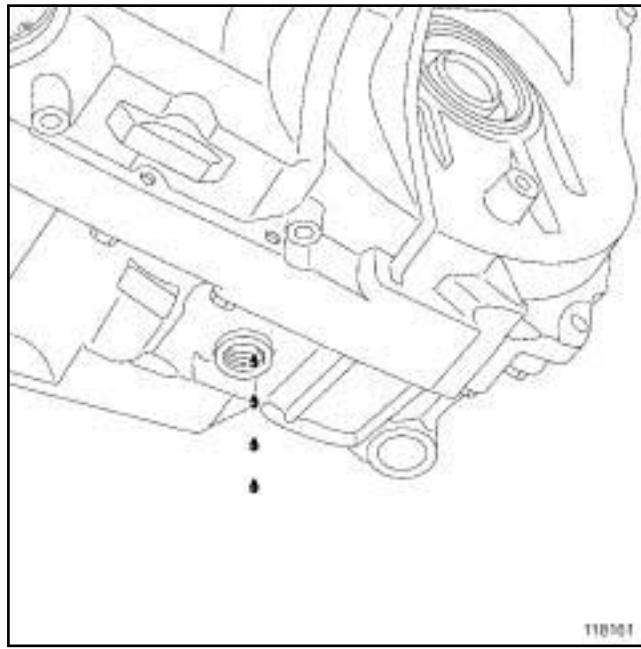
- Use a flexible pipe fitted with a funnel (with a 1:100filter) (5) and connect it to the filling pipe (6).

AJ0

V4Y

- Fasten the wiring at the gearbox.
- Refit the air outlet pipe onto the air filter unit.
- Torque tighten the **air filter box air outlet pipe clips (6 N.m)**.
- Connect the brake servo vacuum pipe.
- Fit the oil vapour rebreathing pipe.

- Run the engine at idle speed.
- Connect the **Diagnostic tool**.
- Establish dialogue with the automatic transmission computer.
- Monitor the automatic transmission oil temperature parameter.
- Wait for the temperature to reach **40°C ± 2**.
- Place a container under the level-setting plug.



- Remove the level plug, leaving the engine running.
- Measure the quantity of oil collected.
- If there was no oil flow or if the quantity collected is less than **0.1 L** :
 - Switch off the engine,
 - refit the level plug,
 - add **0.5 L** of oil,
 - let the automatic transmission cool to **30°C**,

- run the engine at idle speed,

- wait for the automatic gearbox oil temperature to reach **40°C ± 2**,
- place a container under the level-setting plug,
- remove the level plug.
- Repeat these operations until there is more than **0.1 L** of oil in the container.
- Refit the level-setting plug.
- Torque tighten the **level-setting plug (8 N.m)**.

III - FINAL OPERATION

AJ0, and 004 or 005 or 007 or 018

- Refit the filler pipe closure panel.
- Torque tighten the **filler pipe closure panel bolt (6 N.m)**.
- Refit the engine undertray.

IV - CHECKING THE LEVEL OUTSIDE OIL CHANGE OPERATIONS

- Remove:

- the engine undertray bolts,
- the engine undertray.

- It is essential to shift the selector lever to the **Park** position.

AJ0, and 004 or 005 or 007 or 018

- Remove:

- the bolt from the gearbox filling hole closure panel,
- the gearbox filling hole closure panel.

V4Y

- Remove the oil vapour rebreathing pipe.
- Disconnect the vacuum pipe from the brake servo.
- Undo the clips on the air outlet pipe of the air filter unit.
- Unclip the wiring at the gearbox.

AJ0

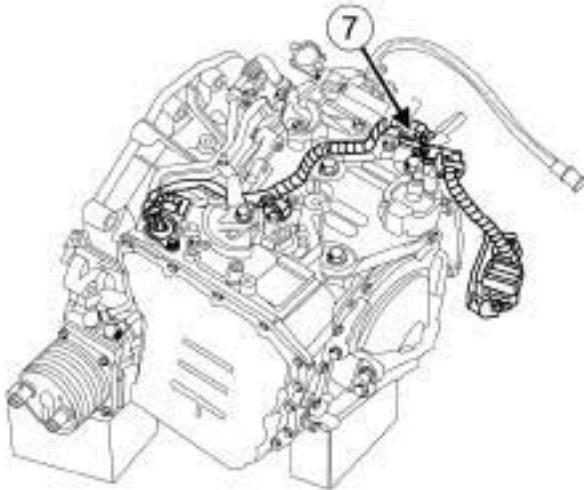
V9X, and AJ0, and 006



Note:

The gearbox is filled via the speed sensor located close to the gearbox wiring connector.

- Remove the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



134531

134531

- Disconnect the speed sensor connector (7).

Remove:

- the speed sensor bolt,
- the speed sensor,
- the speed sensor seal.

- Add **0.5 L** of oil to the automatic gearbox.

V9X, and AJ0, and 006

- Refit:

- a new speed sensor seal,
- the speed sensor.

- Connect the speed sensor connector.

- Refit the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).

V4Y

- Fasten the wiring at the gearbox.

- Refit the air outlet pipe onto the air filter unit.

- Torque tighten the **air filter unit air outlet pipe clips 6 N.m.**

- Connect the brake servo vacuum pipe.

- Fit the oil vapour rebreathing pipe.

- Run the engine at idle speed.

- Connect the **Diagnostic tool**.

- Monitor the automatic transmission oil temperature parameter.

- Wait for the temperature to reach **40°C ± 2**.

- Place a container under the level-setting plug.

- Remove the level plug, leaving the engine running.

- Measure the quantity of oil collected.

- If there was no oil flow or if the quantity collected is less than **0.1 L** :

- Switch off the engine,

- refit the level plug,

- add **0.5 L** of oil,

- let the automatic transmission cool to **30°C**,

- run the engine at idle speed,

- wait for the automatic gearbox oil temperature to reach **40°C ± 2**,

- place a container under the level-setting plug,

- remove the level plug.

- Repeat these operations until there is more than **0.1 L** of oil in the container.

AJ0

- Refit the level-setting plug.
- Torque tighten the **level-setting plug (8 N.m)**.

AJ0, and 004 or 005 or 007 or 018

- Refit the filler pipe closure panel.
- Torque tighten the **filling pipe closure panel bolt (6 N.m)**.

- Refit the engine undertray.

M9R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

tweezers

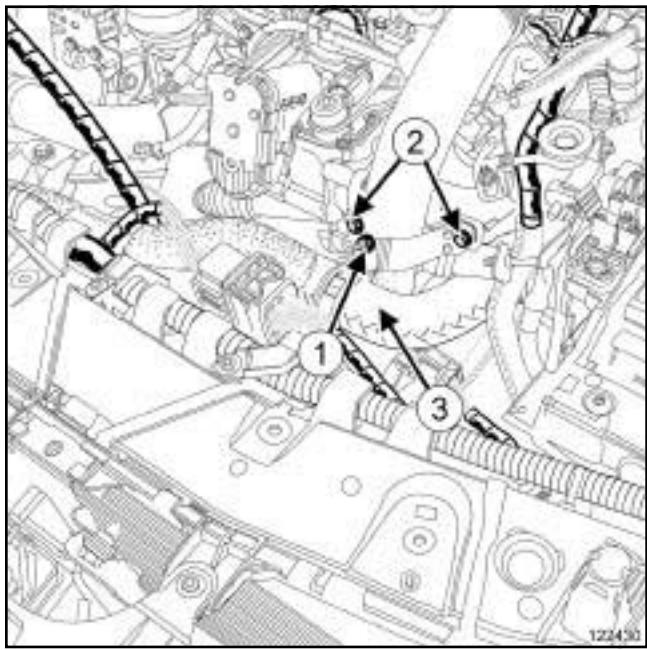
Diagnostic tool

Tightening torques 

hydraulic distributor bolts **8 Nm**

hydraulic distributor housing bolts **8 Nm**

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



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122430

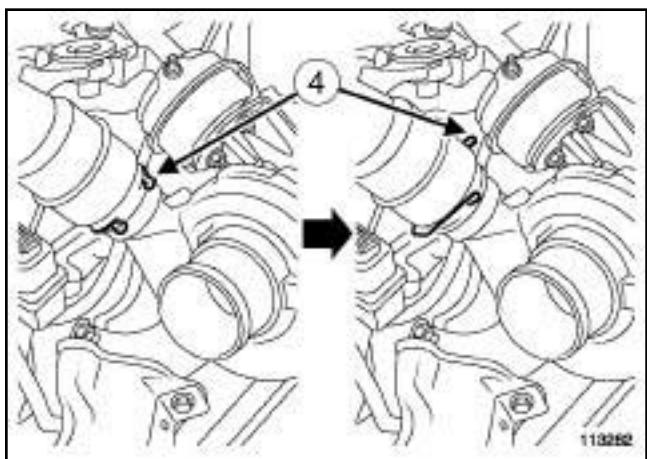
REMOVAL**I - REMOVAL PREPARATION OPERATION**

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray,
 - 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 end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

 Drain:

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),

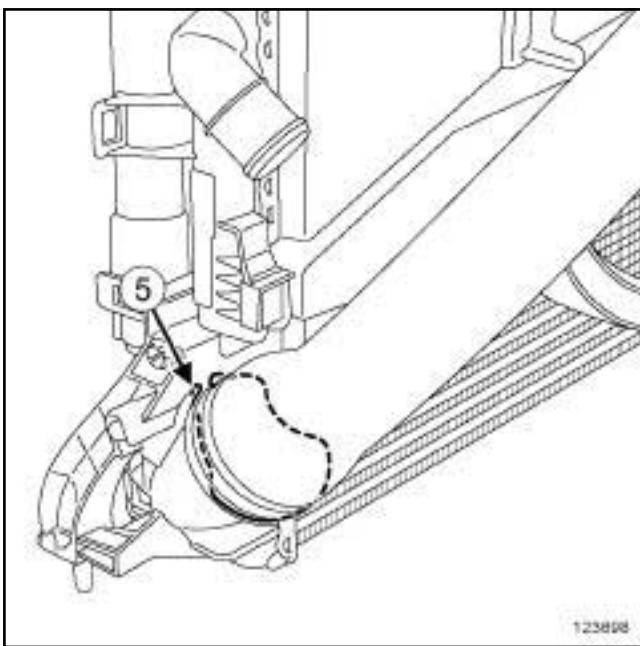
- Remove the nut (1) from the cooling hose.
- Separate the cooling hose (3).
- Remove the air pipe bolts (2) at the intercooler inlet.



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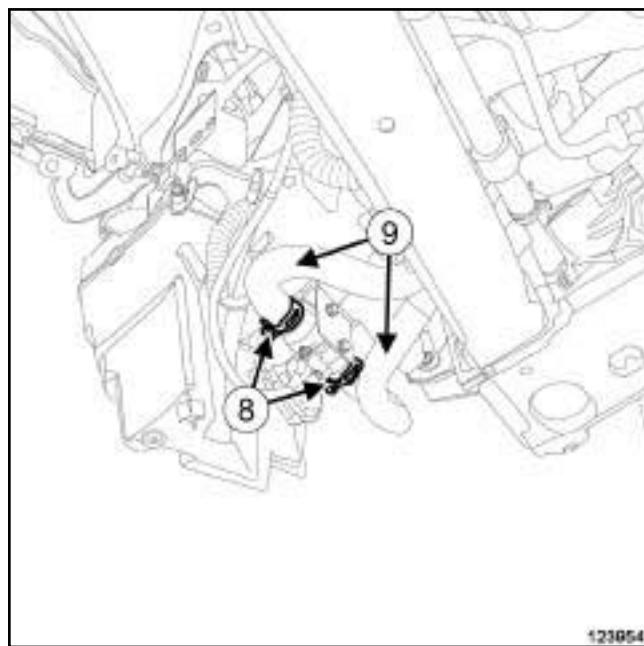
- Turn the intercooler air inlet pipe clip (4) at the turbocharger.

M9R, and AJ0



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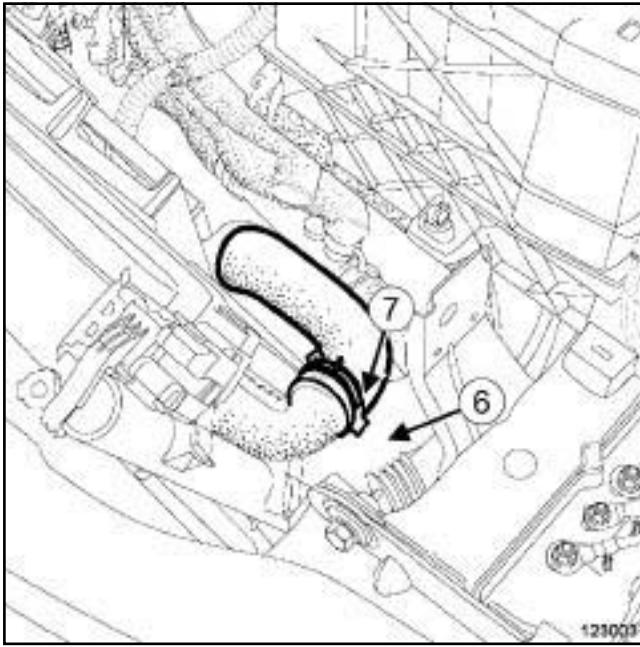


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123954

- Turn the intercooler air inlet pipe clip (5) at the intercooler.
- Remove the air pipe at the intercooler inlet.

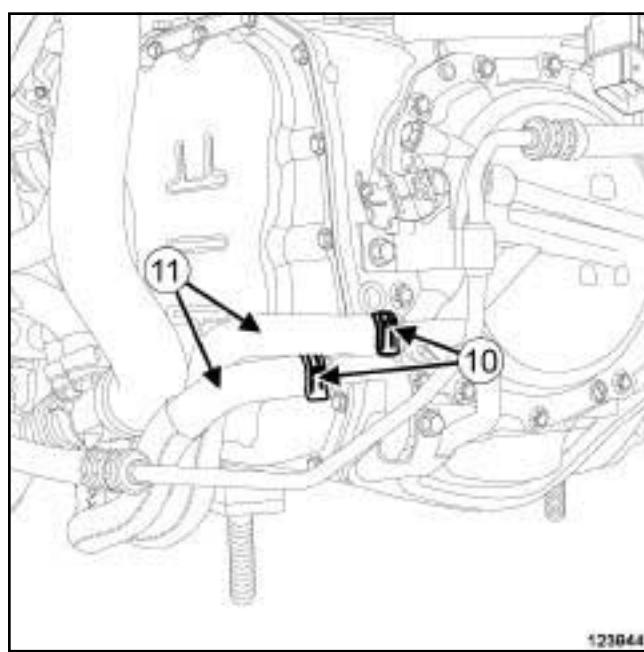
- Release the clips (8) on the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Disconnect the hoses (9) from the thermoplunger unit.



121003

121003

- Remove the clip (6) from the radiator lower hose using the tool (**Mot. 1448**).
- Disconnect the radiator lower hose (7) .

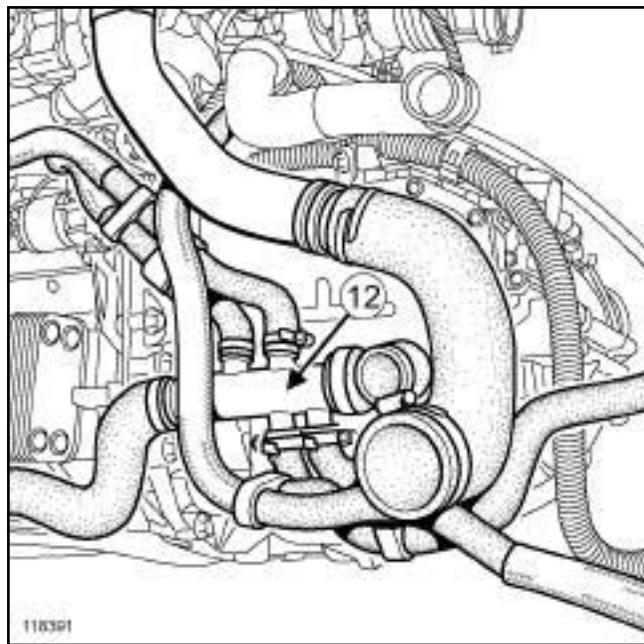


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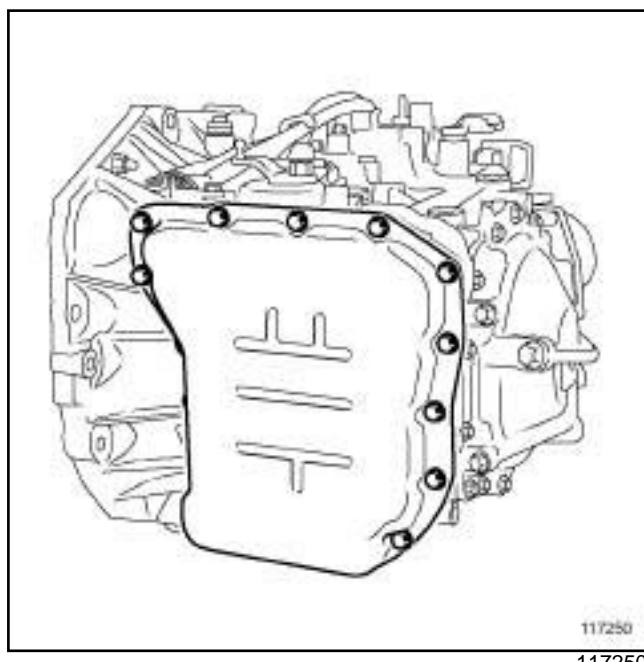
123944

- Separate the clips (10) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Disconnect the oil cooler hoses (11) from the automatic gearbox.

M9R, and AJ0

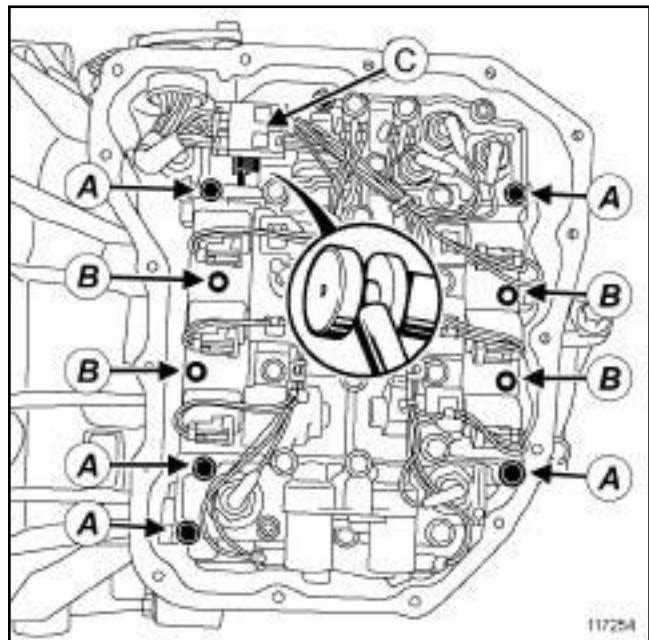


- Move aside the cooling hose assembly (12).

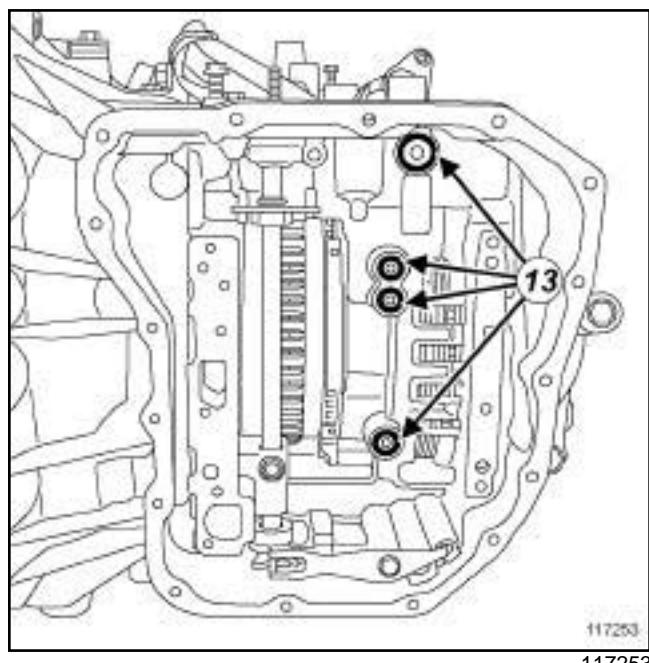


- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Loosen the hydraulic distributor bolts (A) and (B).
- Disconnect the internal wiring connector (C).
- Remove:
 - the hydraulic distributor bolts (A) and (B),
 - the hydraulic distributor.



- Remove the hydraulic distributor O-rings (13).

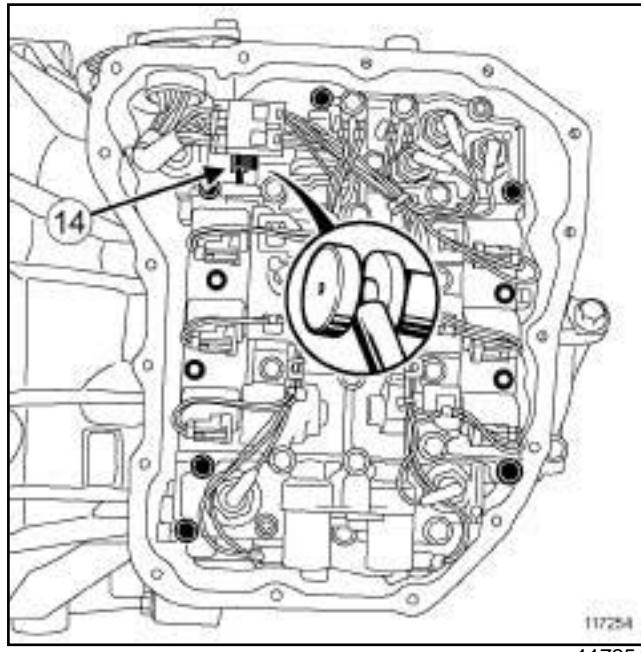
M9R, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor O-rings,
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seals.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the new hydraulic distributor O-rings.



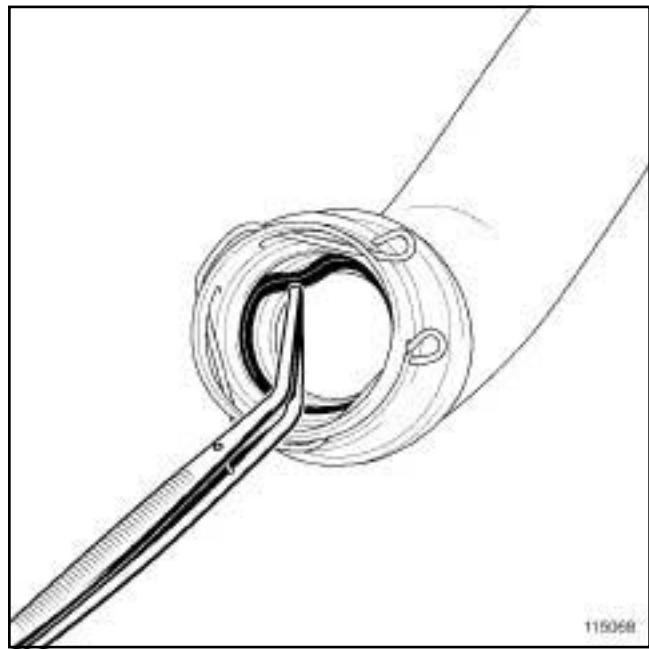
117254

- Tilt the hydraulic distributor slightly when refitting it in order to engage it with the automatic gearbox lever (14).
- Connect the internal wiring connector.
- Torque tighten the **hydraulic distributor bolts (8 Nm)**.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.

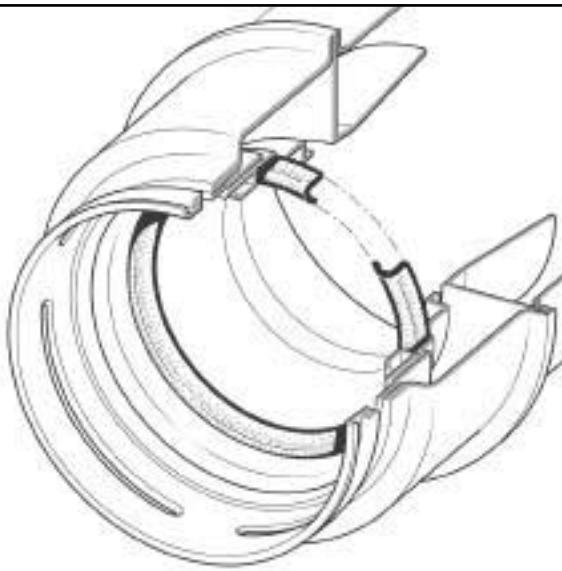
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Fit the cooling hose assembly in place.
- Connect the oil cooler hoses to the automatic gearbox.
- Refit the clips for the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Connect the thermoplunger unit hoses.
- Refit the clips for the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Connect the radiator lower hose.
- Refit the clip for the radiator lower hose using the tool (**Mot. 1448**).



115068

- Remove the intercooler air inlet pipe seals using a **tweezers**.

M9R, and AJ0

115069
115069**Note:**

Check to ensure that the seals for the intercooler air inlet pipe are fitted in their groove the right way round.

- Refit new joints to the intercooler air inlet pipe.
- Turn the intercooler air inlet pipe clips until they are refitted in their groove.

**Note:**

The intercooler air inlet pipe is correctly clipped onto the turbocharger and the intercooler when the clips are engaged in the groove of the turbocharger and the intercooler.

- Clip the intercooler air inlet pipe onto the turbocharger and the intercooler.
- Refit the bolts on the intercooler air inlet pipe.
- Tighten the bolts on the intercooler air inlet pipe.
- Fit the cooling hose onto the intercooler air inlet pipe.
- Refit the nut for the cooling hose onto the intercooler air inlet pipe.
- Tighten the nut for the cooling hose on the intercooler air inlet pipe.
- Refit:
 - the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),

- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- 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 battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

- Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Fill the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Refit the engine undertray.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

F4R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

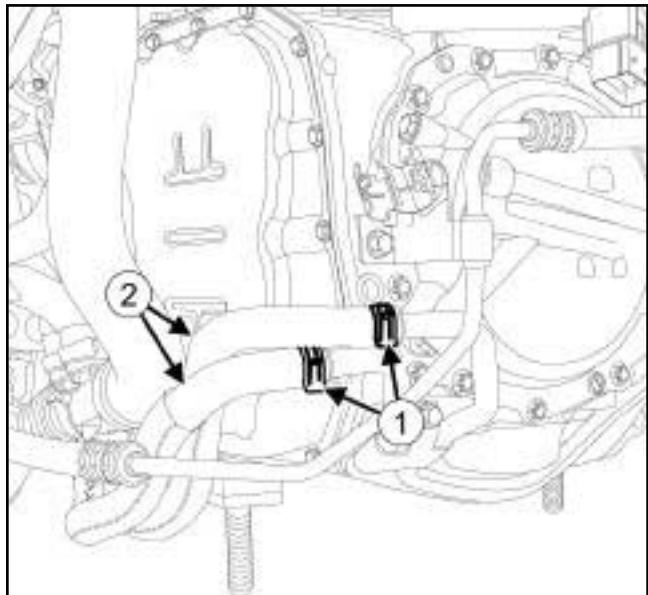
tweezers

Diagnostic tool

Tightening torques 

hydraulic distributor bolts **8 Nm**

hydraulic distributor housing bolts **8 Nm**

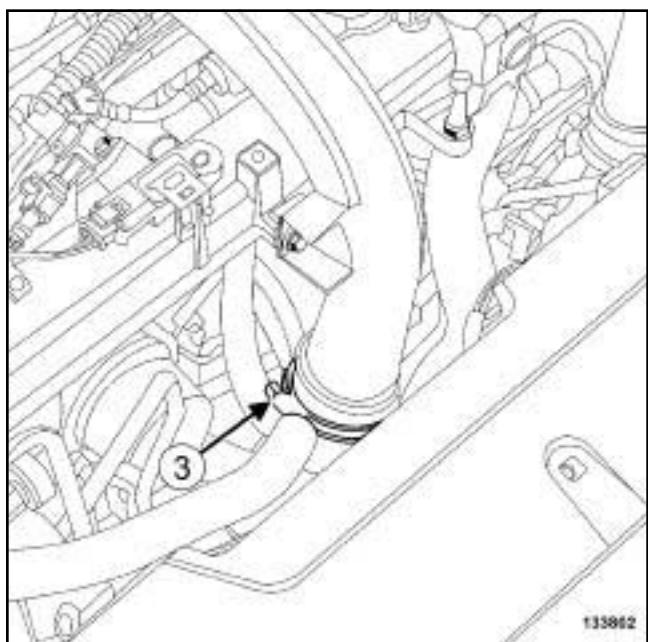


123844

123944

Remove the clips (1) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).

Disconnect the oil cooler hoses (2) from the automatic gearbox.



133862

133802

Loosen the clip (3) of the intercooler air inlet pipe at the intercooler intermediate air inlet pipe.

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 tray: Removal - Refitting**) (80A, Battery),

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

- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

- the engine undertray bolts,

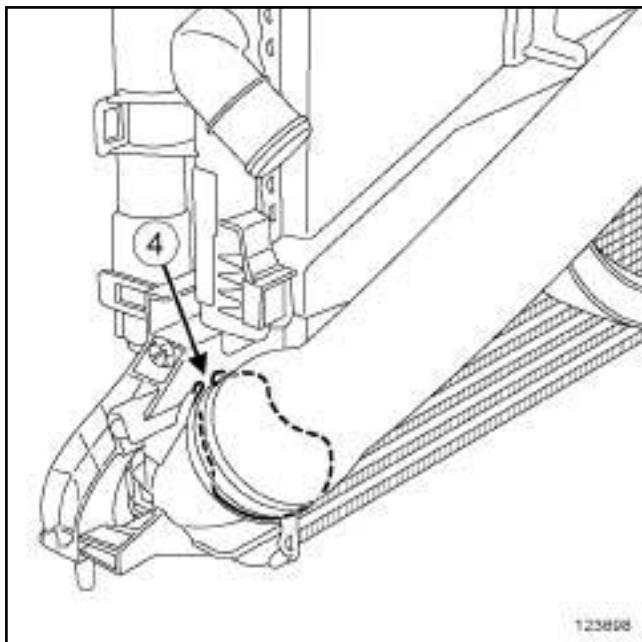
- the engine undertray.

Drain:

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),

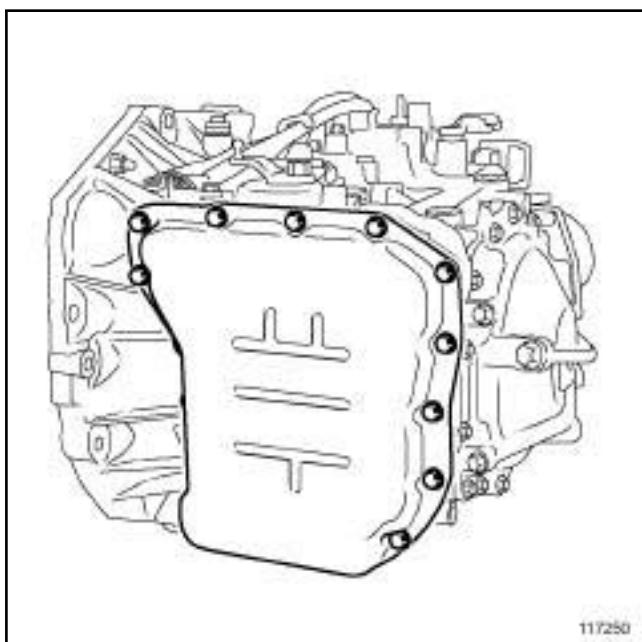
- the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

F4R, and AJ0



123698

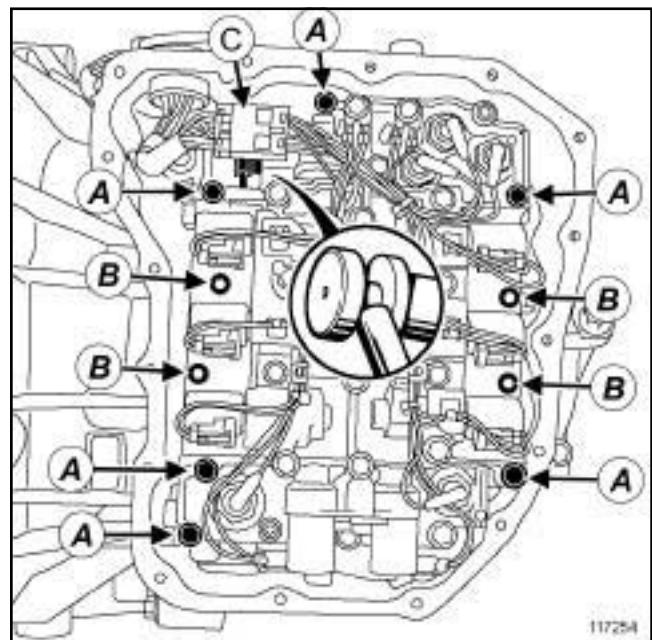
- Turn the clip (4) of the intercooler air inlet pipe at the intercooler.
- Remove the air pipe at the intercooler inlet.



117250

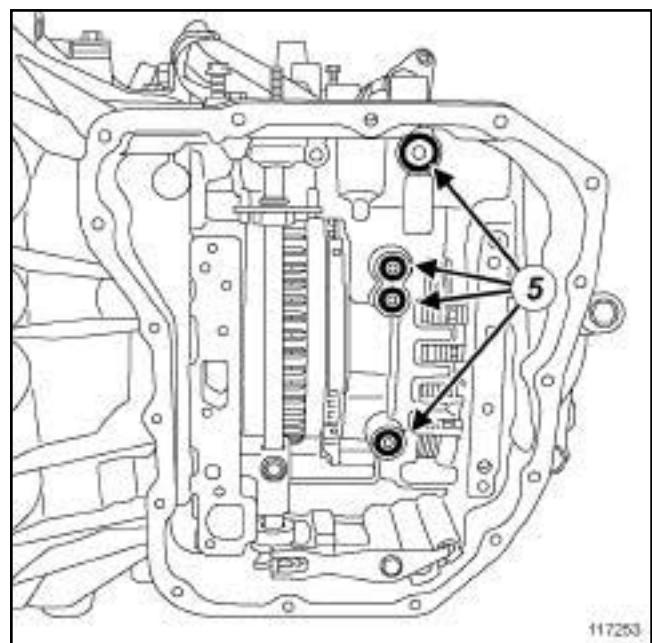
- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



117254

- Loosen the hydraulic distributor bolts (A) and (B) .
- Disconnect the internal wiring connector (C) .
- Remove:
 - the hydraulic distributor bolts (A) and (B) ,
 - the hydraulic distributor.



117253

- Remove the hydraulic distributor O-rings (5) .

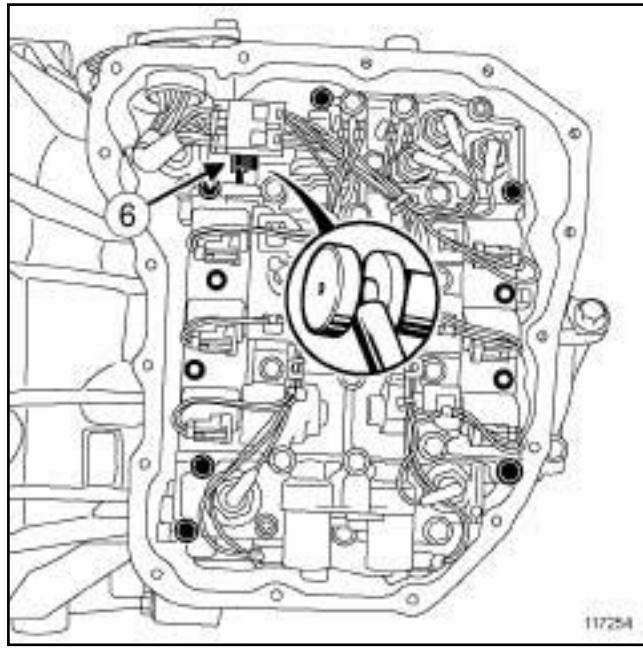
F4R, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor O-rings,
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seal.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the new hydraulic distributor O-rings.



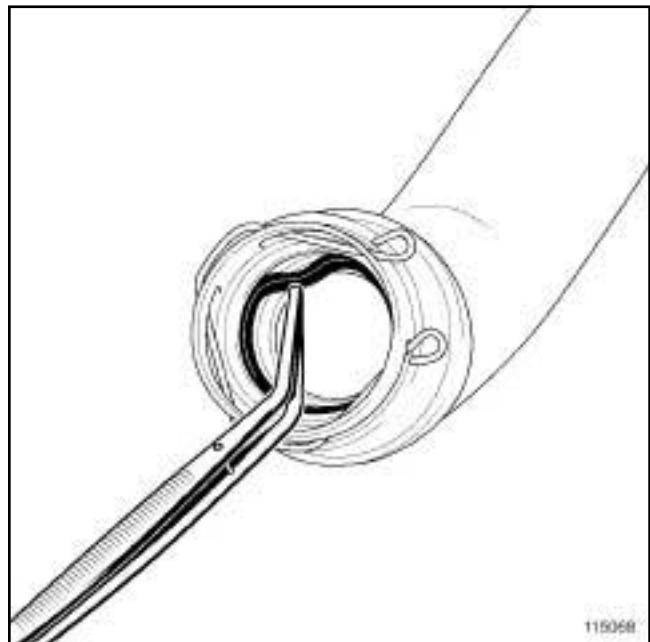
117254

- Tilt the hydraulic distributor slightly when refitting it in order to engage it with the automatic gearbox lever (6).
- Connect the internal wiring connector.
- Torque tighten the **hydraulic distributor bolts (8 Nm)**.

III - FINAL OPERATION

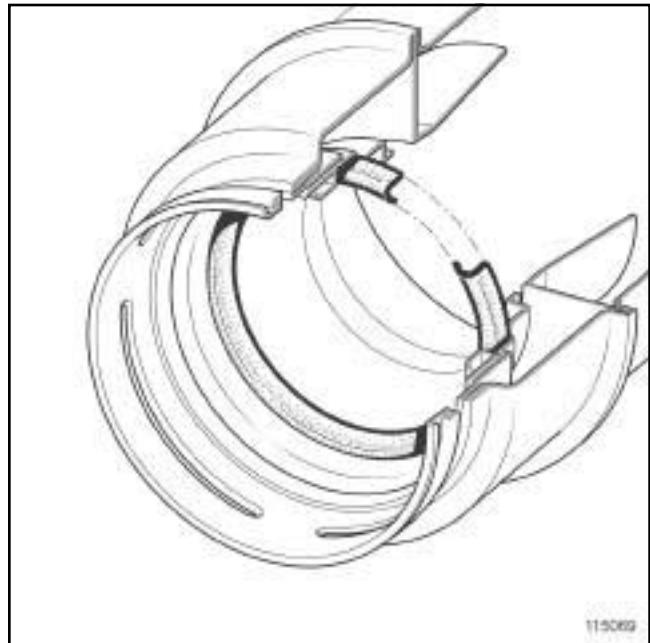
- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.

- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.



115068

- Remove the air inlet pipe seal of the intercooler using a **tweezers**.



115069

-

Note:

Check that the intercooler air inlet pipe seal is fitted in its groove the right way round.

- Refit a new seal to the intercooler air inlet pipe.

F4R, and AJ0

- Turn the clip for the intercooler air inlet pipe in order to refit it in its groove.

Note:

the intercooler air inlet pipe is securely clipped onto the intercooler when the clip is fitted into the groove of the intercooler.

- Clip the intercooler air inlet pipe onto the intercooler.
- Connect the automatic gearbox oil cooler hoses.
- Fit the clips onto the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- Fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Fill the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**)
- Refit the engine undertray.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

V4Y, and AJ0

Equipment required

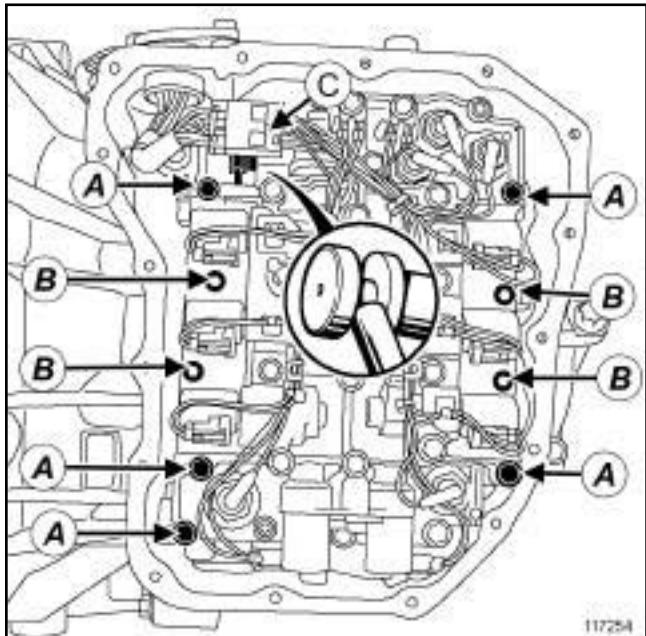
Diagnostic tool

Tightening torques 

hydraulic distributor bolts	8 Nm
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hydraulic distributor housing bolts	8 Nm
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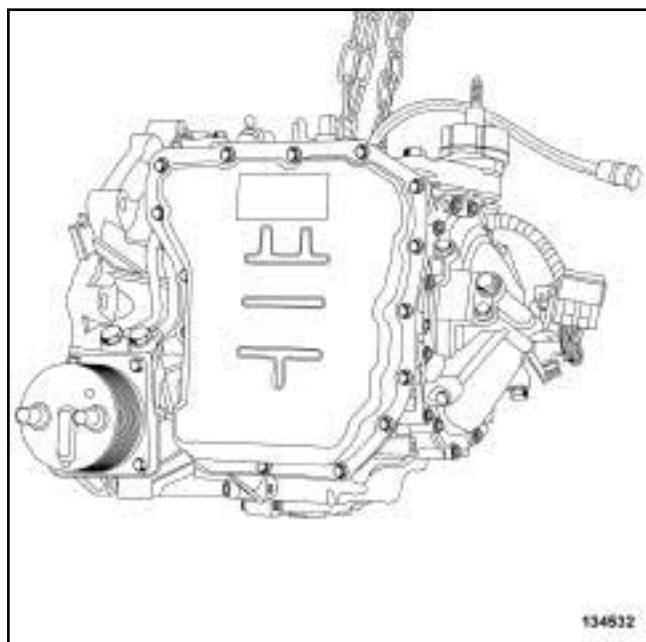
- the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED

117254

REMOVAL**I - REMOVAL PREPARATION OPERATION**

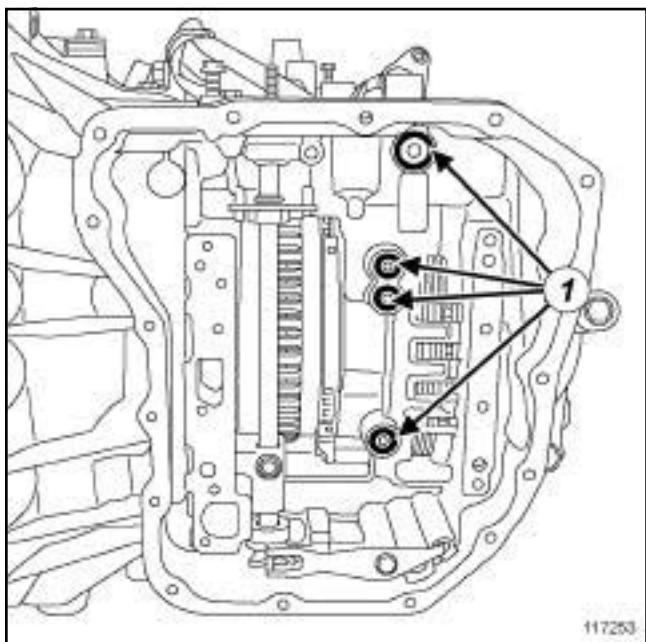
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting** (02A, Lifting equipment)).
- Disconnect the battery (see **Battery: Removal - Re-fitting** (80A, Battery)).
- Remove:
 - the engine undertray bolts,
 - the engine undertray.
- Drain the automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).



134532

- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,

- Loosen the hydraulic distributor bolts (**A**) and (**B**).
- Disconnect the internal wiring connector (**C**).
- Remove:
 - the hydraulic distributor bolts (**A**) and (**B**),
 - the hydraulic distributor.



117253

- Remove the hydraulic distributor O-rings (**1**).

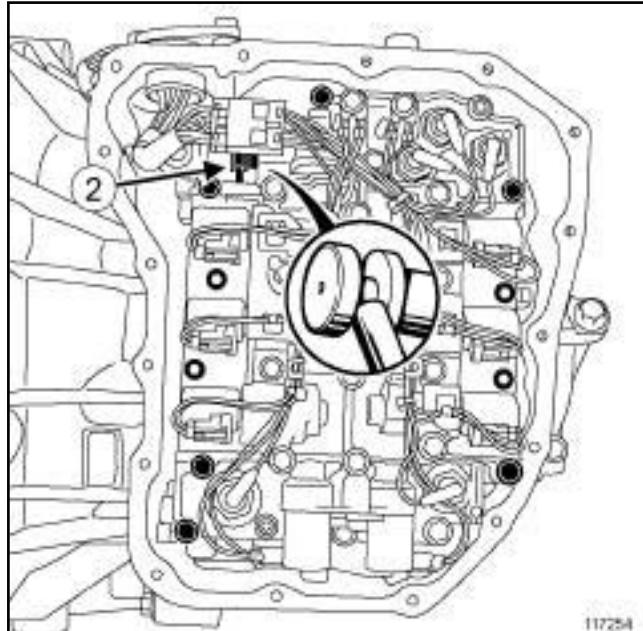
V4Y, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

- Always replace:
 - the hydraulic distributor O-rings,
 - the hydraulic distributor housing seal.
- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the new hydraulic distributor O-rings.



117254

- Tilt the hydraulic distributor slightly when refitting it in order to engage it with the automatic gearbox lever (2).
- Torque tighten the **hydraulic distributor bolts (8 Nm)**.
- Connect the internal wiring connector.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.

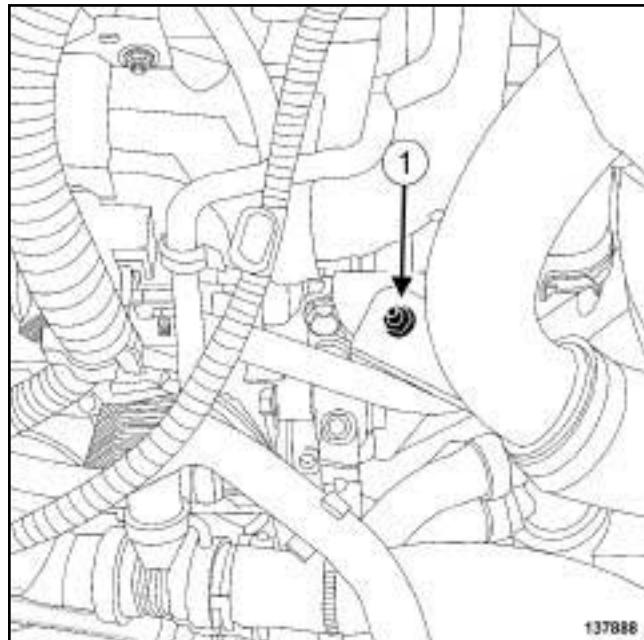
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.
- Refit the engine undertray.

V9X, and AJ0

Equipment required

tweezers

Diagnostic tool

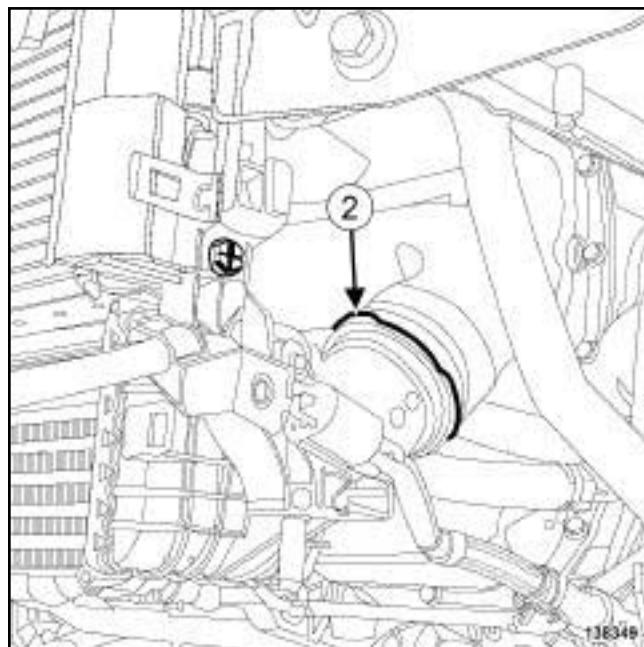
Tightening torques hydraulic distributor bolts **8 Nm**hydraulic distributor housing bolts **8 Nm**

137888

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 automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29) .

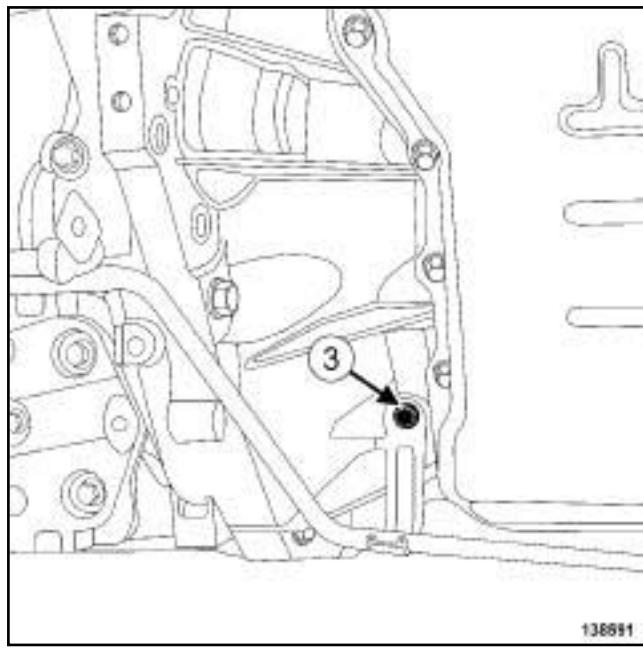
- Remove the nut (1) from the turbocharger air outlet pipe.
- Move aside the turbocharger air outlet pipe.
- Loosen the clip for the air pipe between the rigid pipe and the hose at the turbocharger outlet.
- Loosen the air pipe between the rigid pipe and the hose at the turbocharger outlet.



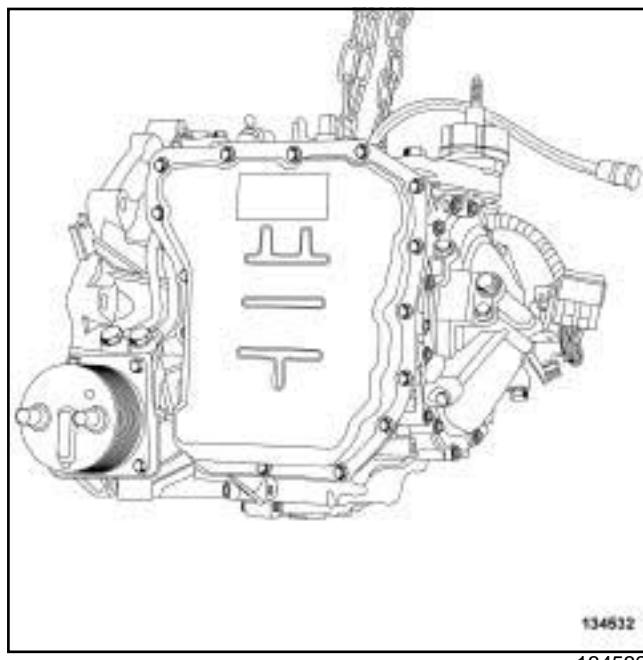
138349

- Turn the clip (2) of the intercooler air inlet pipe on the intercooler.
- Remove the air inlet pipe from the intercooler.

V9X, and AJ0

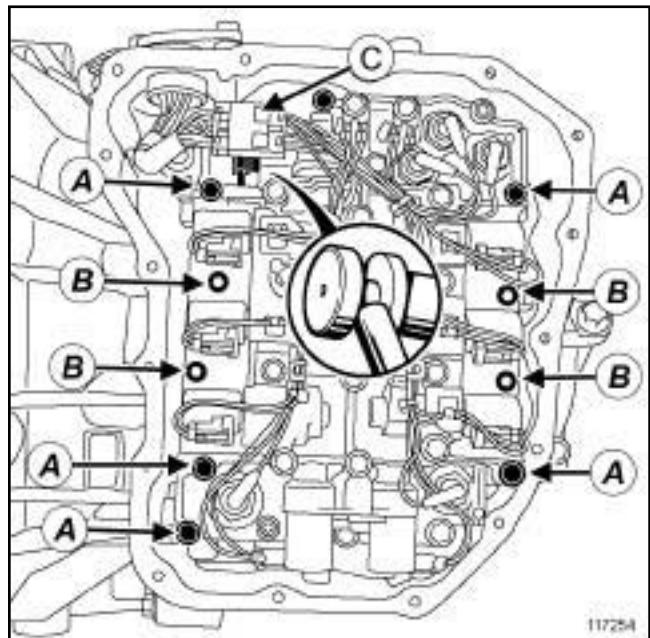


- Remove the bolt (3) from the power-assisted steering pipe.

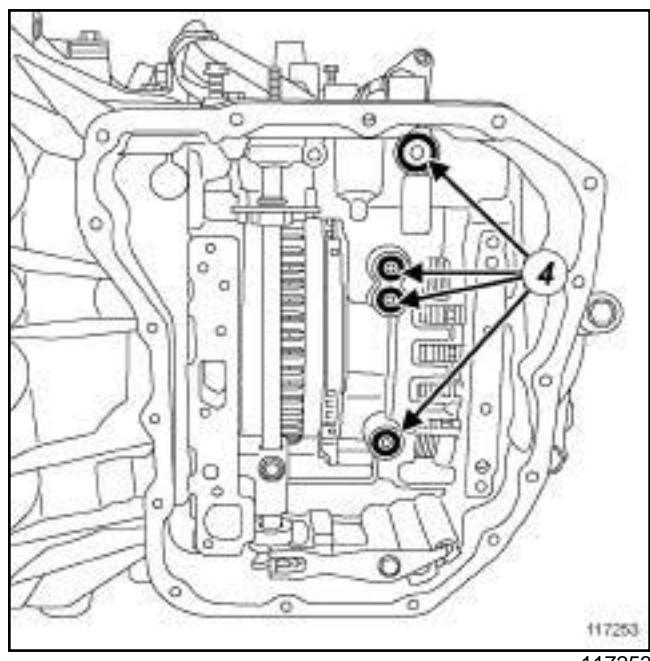


- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Loosen the hydraulic distributor bolts (A) and (B) .
- Disconnect the internal wiring connector (C) .
- Remove:
 - the hydraulic distributor bolts (A) and (B) ,
 - the hydraulic distributor.

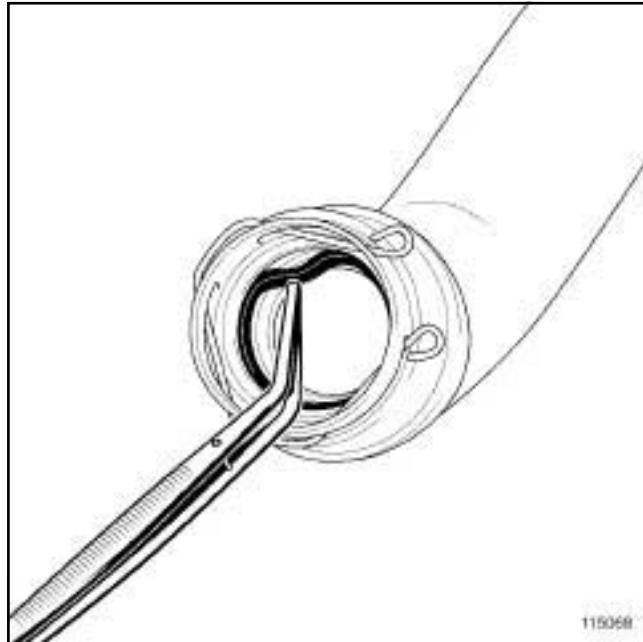


- Remove the hydraulic distributor O-rings (4) .

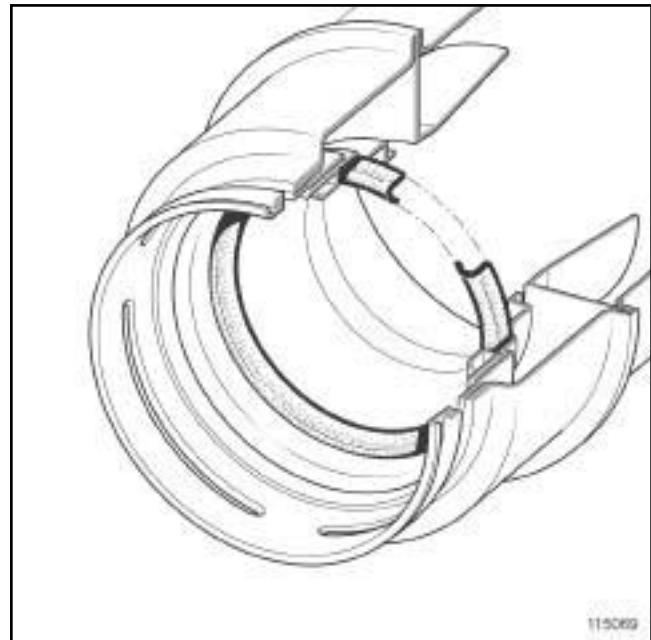
V9X, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

- Always replace:
 - the hydraulic distributor O-rings,
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seal.
- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.



- Remove the intercooler air inlet pipe seal on the intercooler side using a **tweezers**.



-

Note:

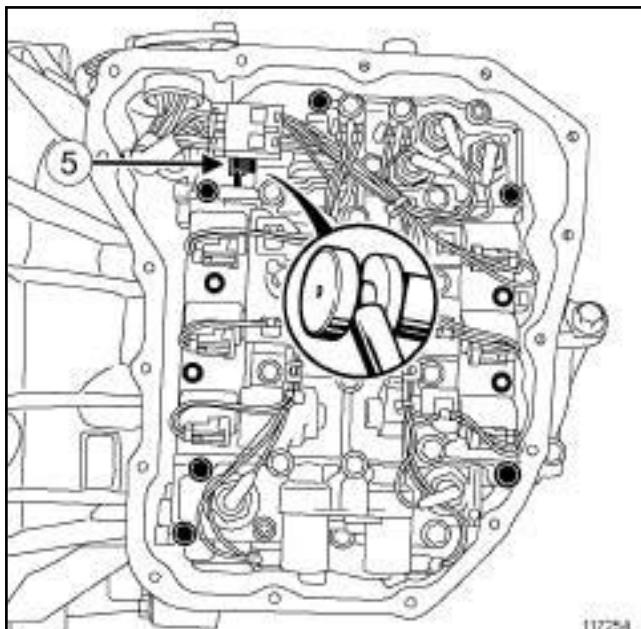
Check that the seal of the intercooler air inlet pipe on the intercooler side is fitted the right way round.

- Refit a new seal to the intercooler air inlet pipe on the intercooler side.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the new hydraulic distributor O-rings.

V9X, and AJ0



117254

- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**) .
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.
- Refit the engine undertray.

- Tilt the hydraulic distributor slightly when refitting it in order to engage it with the automatic gearbox lever (5) .
- Torque tighten the **hydraulic distributor bolts (8 Nm)**.
- Connect the internal wiring connector.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Refit:
 - the power-assisted steering pipe bolt,
 - the intercooler air inlet pipe.
- Fit the clip for the intercooler air inlet pipe to the intercooler.
- Connect the air pipe between the rigid pipe and the hose at the turbocharger outlet.
- Tighten the clip for the air pipe between the rigid pipe and the hose at the turbocharger outlet.
- Refit the nut for the turbocharger air outlet pipe.
- Fit the turbocharger air outlet pipe.
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M9R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

tweezers

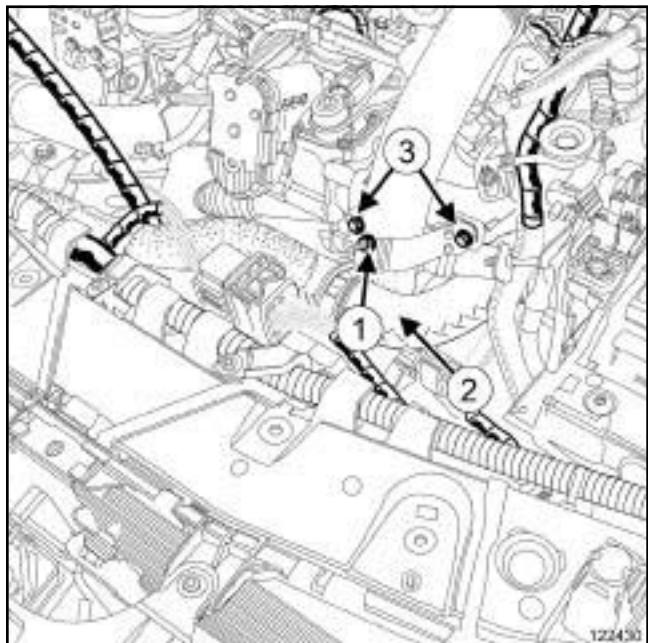
Diagnostic tool

Tightening torques 

wiring routing retainer bolt **7 N.m**

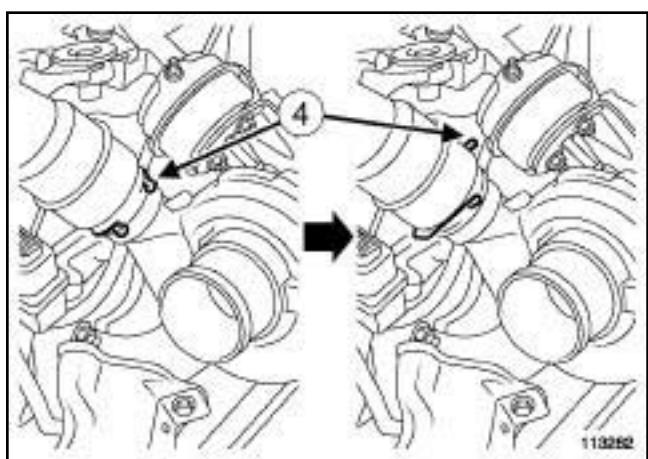
hydraulic distributor housing bolts **8 Nm**

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



122430

- Remove the nut (1) from the cooling hose.
- Move aside the cooling hose (2).
- Remove the air pipe bolts (3) at the intercooler inlet.



113282

- Turn the intercooler air inlet pipe clip (4) at the turbocharger.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

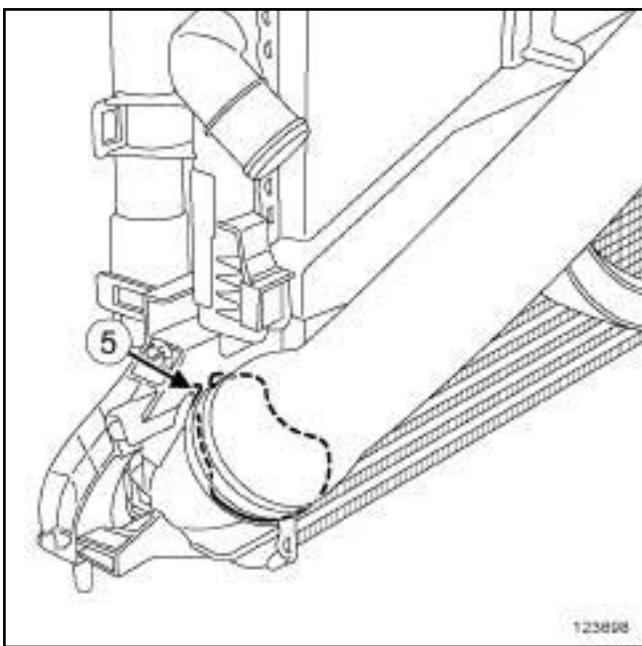
Remove:

- the battery (see **Battery: Removal - Refitting** (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting** (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray bolts,
- the engine undertray,
- 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 end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

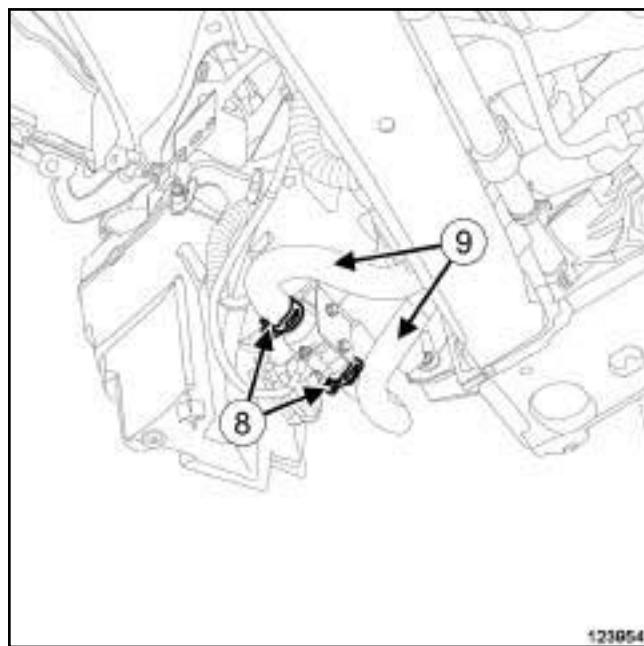
Drain:

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),

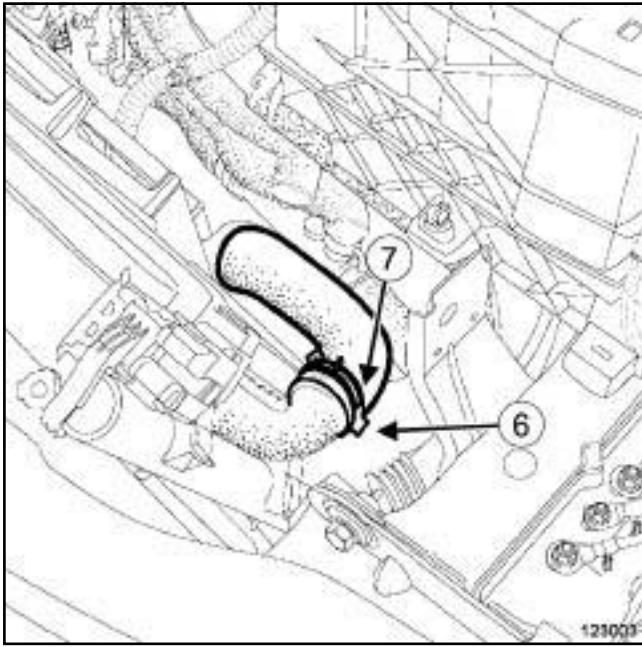
M9R, and AJ0

123698
123694

- Move aside the intercooler air inlet pipe clip (5) at the intercooler.
- Remove the air pipe at the intercooler inlet.

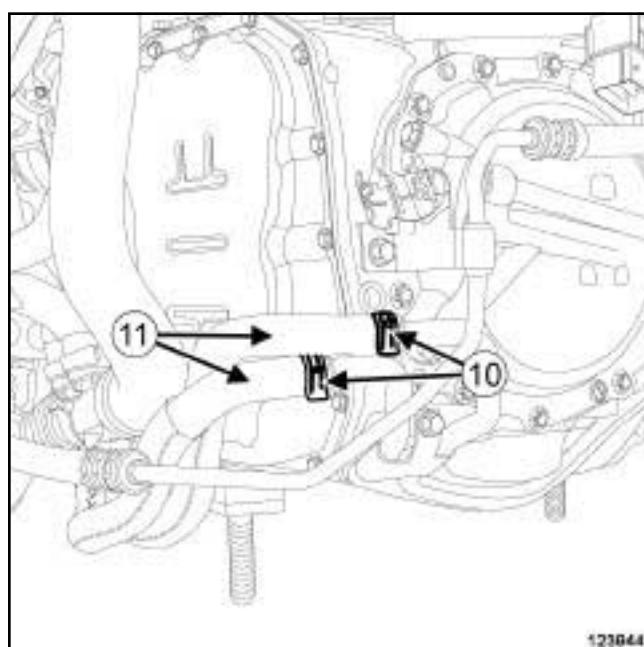
123654
123954

- Release the clips (8) on the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Disconnect the hoses (9) from the thermoplunger unit.



121003

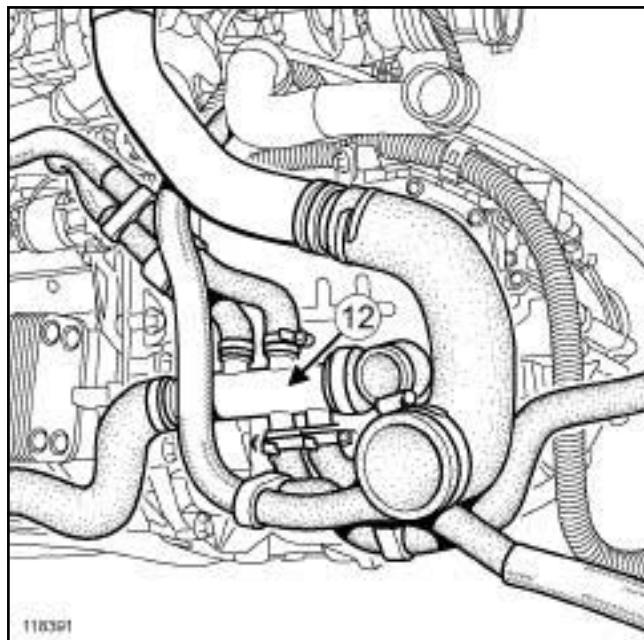
- Remove the clip (6) from the radiator lower hose using the tool (**Mot. 1448**).
- Disconnect the radiator lower hose (7) from the radiator.



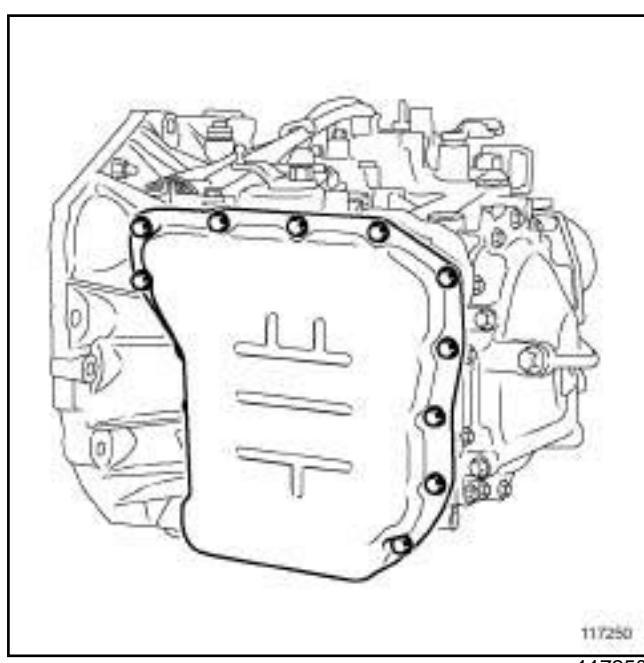
123844

- Remove the clips (10) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Disconnect the oil cooler hoses (11) from the automatic gearbox.

M9R, and AJ0



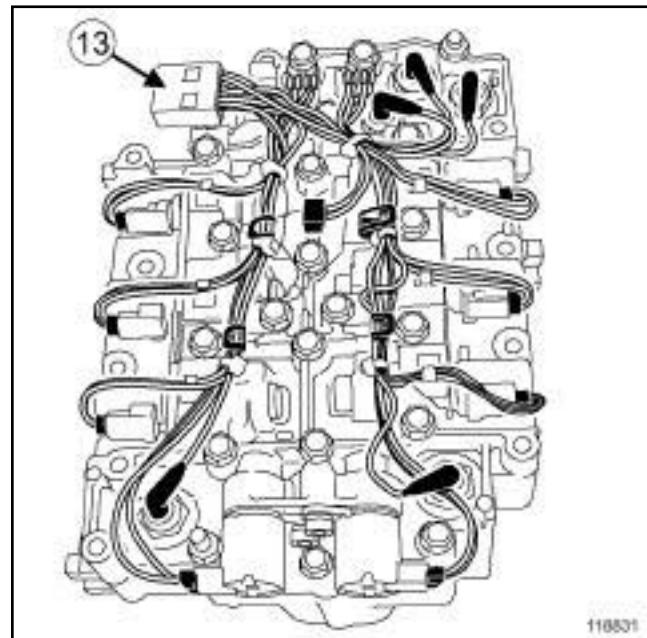
Move aside the cooling hose assembly (12) .



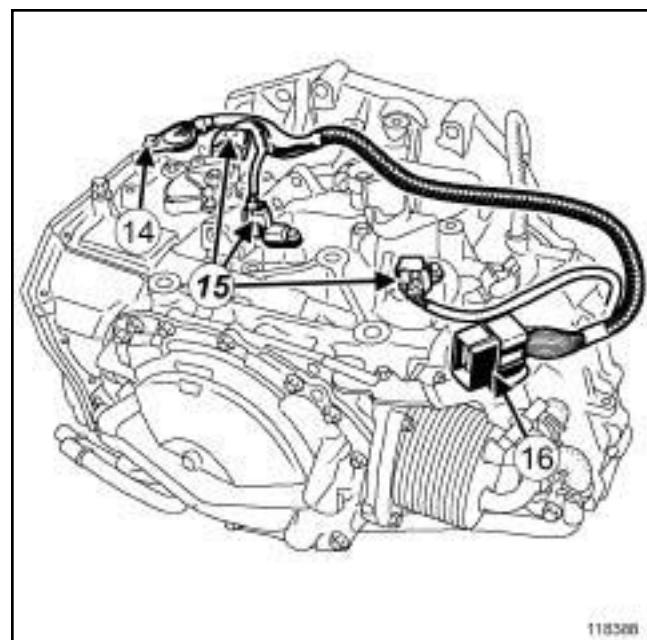
Remove:

- the hydraulic distributor housing bolts,
- the hydraulic distributor housing,
- the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



Disconnect the internal wiring connector (13) .



Remove the wiring routing retaining bolt (14) .

Disconnect the connectors (15) .

Unclip the main connector (16) from its support.

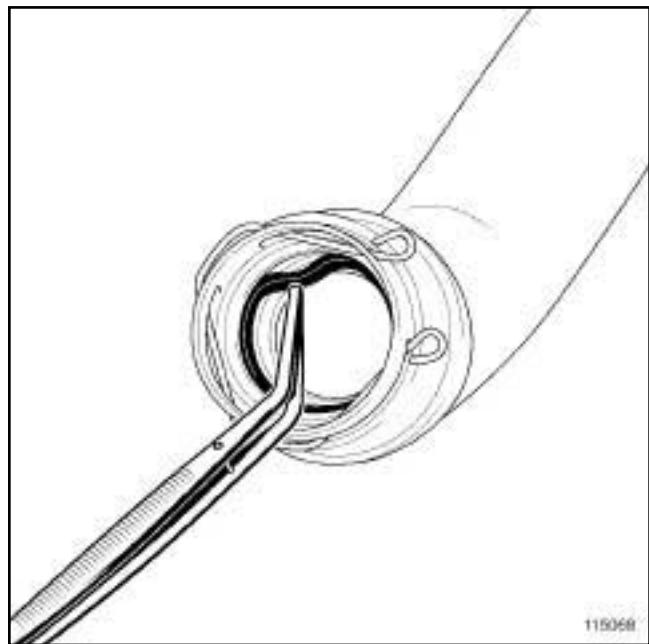
Disconnect the main connector (16) .

Remove the hydraulic distributor wiring.

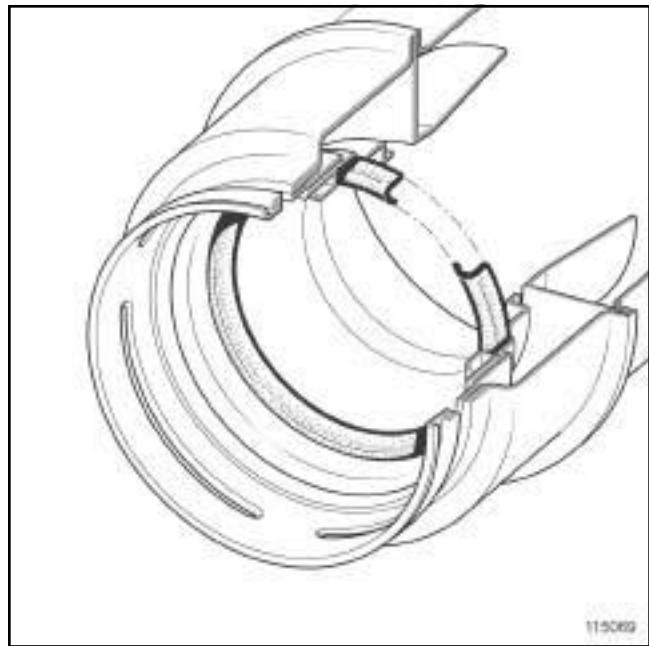
M9R, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seals.

115068
115068**II - REFITTING OPERATION FOR PART CONCERNED**

- Refit the hydraulic distributor wiring.
- Connect the main connector.
- Clip the main connector onto its support.
- Connect:
 - the automatic gearbox connectors,
 - the internal wiring connector,
- Refit the wiring routing retaining bolt.
- Torque tighten the **wiring routing retainer bolt** (7 N.m).

115069
115069**III - FINAL OPERATION**

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing,
 - the hydraulic distributor casing bolts.
- Torque tighten the **hydraulic distributor housing bolts** (8 Nm).
- Fit the cooling hose assembly in place.
- Connect the oil cooler hoses to the automatic gearbox.
- Refit the clips on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Connect the thermoplunger unit hoses.
- Refit the clips for the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Connect the radiator lower hose.
- Refit the clip for the radiator lower hose using the tool (**Mot. 1448**).

Note:

Check to ensure that the seals for the intercooler air inlet pipe are fitted in their groove the right way round.

- Refit new seals to the intercooler air inlet pipe.
- Turn the intercooler air inlet pipe clips so that they are refitted in their groove.

M9R, and AJ0



Note:

The intercooler air inlet pipe is correctly clipped onto the turbocharger and the intercooler when the clips are engaged in the groove of the turbocharger and the intercooler.

- Clip the intercooler air inlet pipe onto the turbocharger and the intercooler.
- Refit the bolts on the intercooler air inlet pipe.
- Tighten the bolts on the intercooler air inlet pipe.
- Fit the cooling hose onto the intercooler air inlet pipe.
- Refit the nut for the cooling hose onto the intercooler air inlet pipe.
- Tighten the nut for the cooling hose on the intercooler air inlet pipe.
- Refit:
 - the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).
 - the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
 - 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 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 **Battery: Removal - Refitting**) (80A, Battery).
- Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Fill the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Refit the engine undertray.
- Apply the after repair procedure using the **Diagnostic tool**:

- connect the **Diagnostic tool**

select « Gearbox computer »,
go to repair mode,
display the « Before/after repair » procedure for the gearbox computer,
select « Hydraulic distributor » in the section « List of components controlled by this computer »
carry out the operations described in the « After repair procedure » section.

F4R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

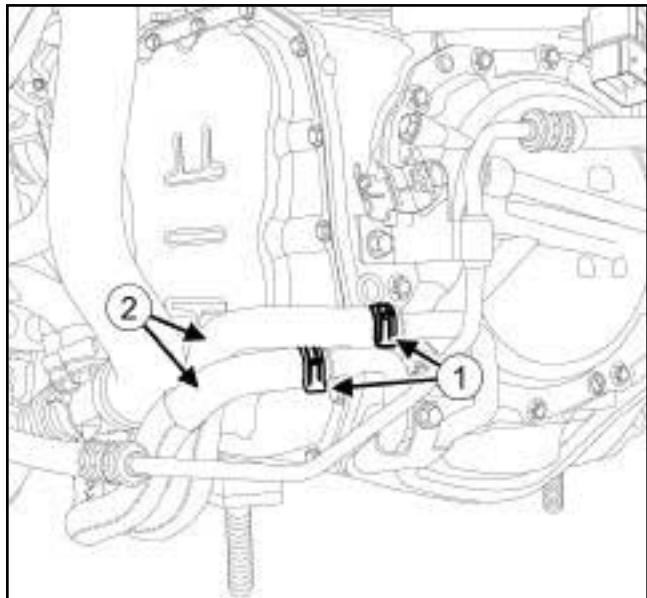
tweezers

Diagnostic tool

Tightening torques 

wire routing retaining bolt **7 N.m**

hydraulic distributor housing bolts **8 N.m**

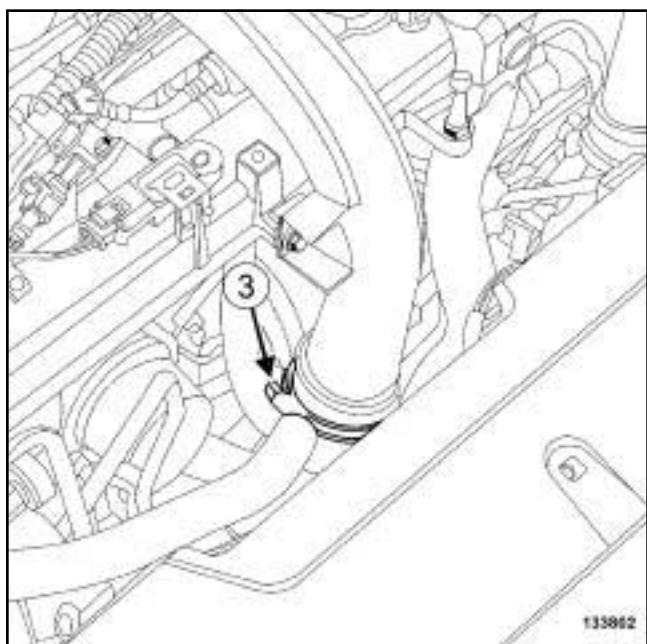


123844

123944

Remove the clips (1) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).

Disconnect the oil cooler hoses (2) from the automatic gearbox.



133862

133802

Loosen the clip (3) of the intercooler air inlet pipe at the intercooler intermediate air inlet pipe.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

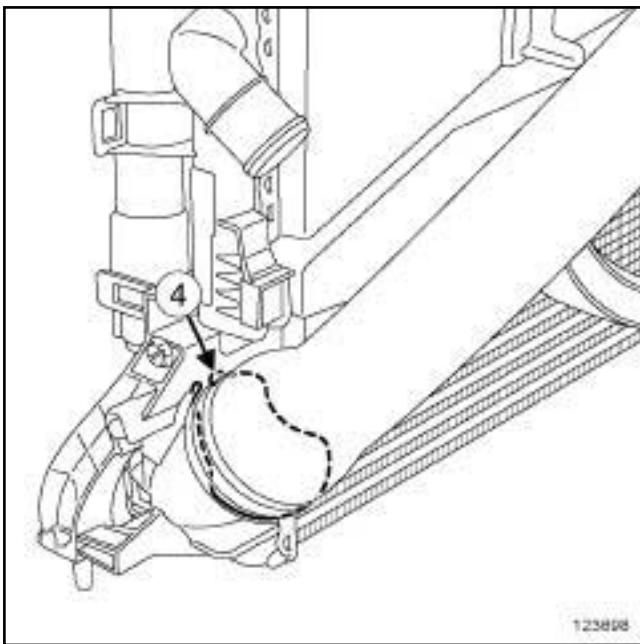
Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray.

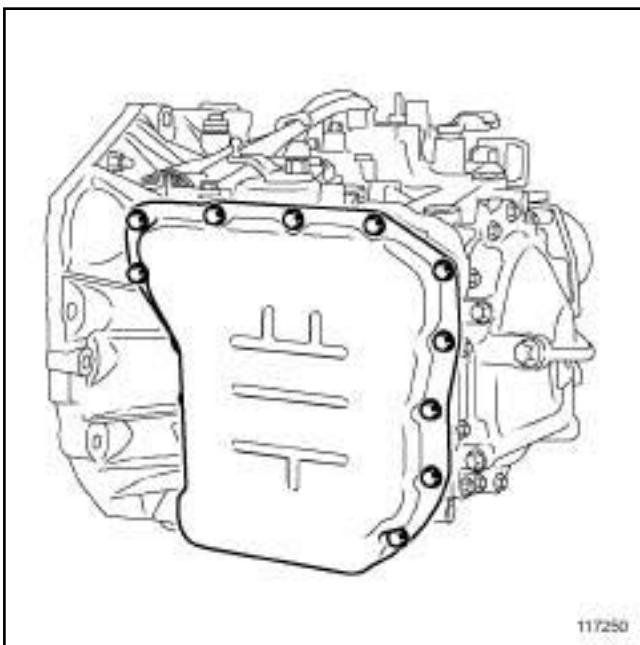
Drain:

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),
- the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

F4R, and AJ0

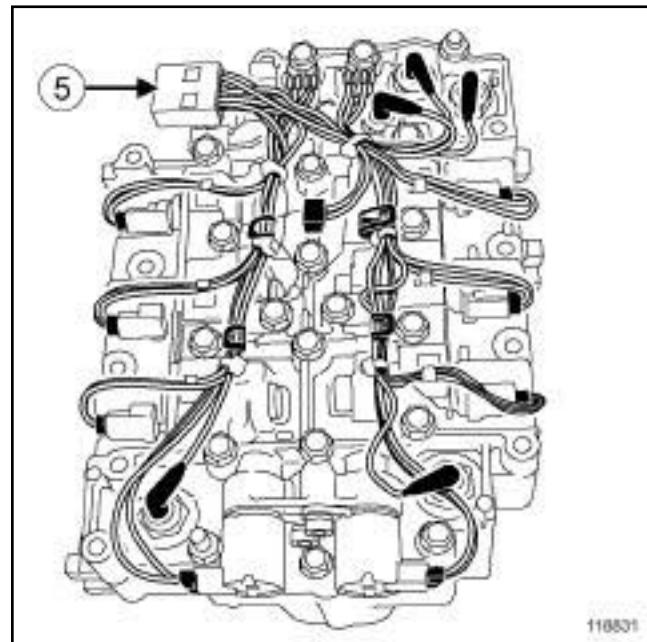


- Turn the clip (4) of the intercooler air inlet pipe at the intercooler.
- Remove the intercooler air inlet pipe.

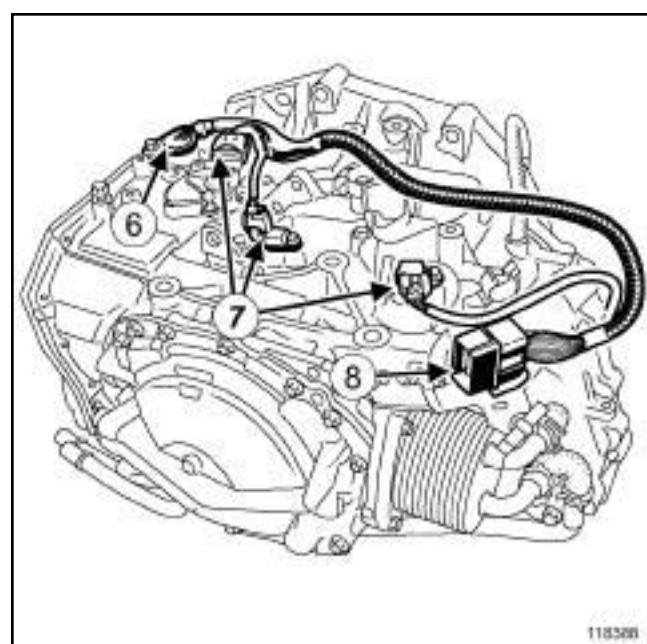


- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Disconnect the internal wiring connector (5).

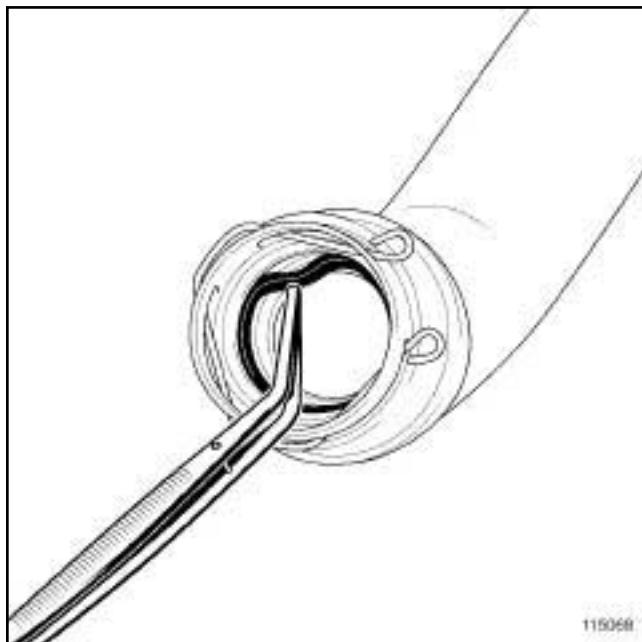


- Remove the wiring routing retaining bolt (6).
- Disconnect the connectors (7).
- Unclip the main connector (8) from its support.
- Disconnect the main connector (8).
- Remove the hydraulic distributor wiring.

F4R, and AJ0

REFITTING**I - REFITTING PREPARATION OPERATION**

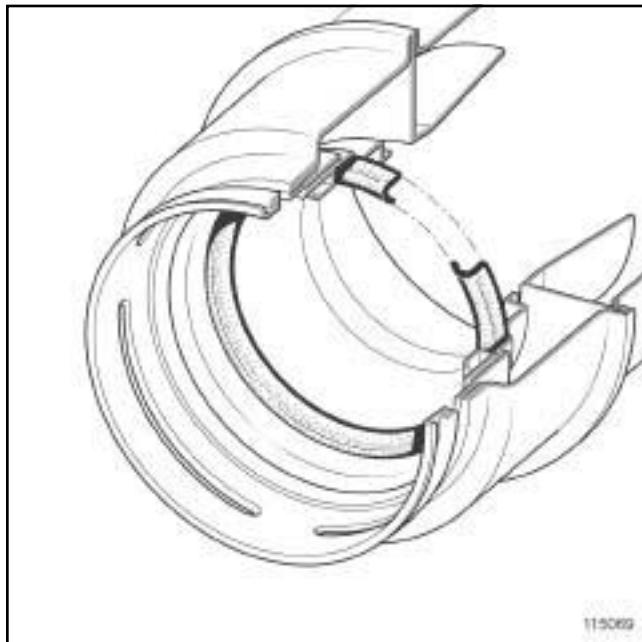
- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seal,
 - the hydraulic distributor O-rings.

**II - REFITTING OPERATION FOR PART CONCERNED**

- Refit the hydraulic distributor wiring.
- Connect the main connector.
- Clip the main connector onto its support.
- Connect:
 - the automatic gearbox connectors,
 - the internal wiring connector,
- Refit the wiring routing retaining bolt.
- Torque tighten the **wire routing retaining bolt (7 N.m)**.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 N.m)**.



-

Note:

Check that the intercooler air inlet pipe seal is fitted in its groove the right way round.

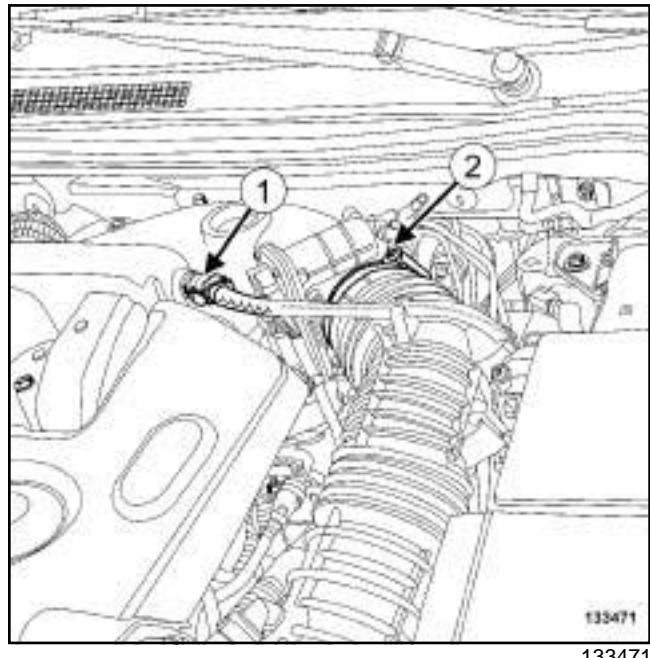
- Refit a new seal to the intercooler air inlet pipe at the intercooler.
- Refit the intercooler air inlet pipe.
- Connect the automatic gearbox oil cooler hoses.

F4R, and AJ0

- Fit the clips onto the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- Fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Refit the engine undertray.
- Apply the After repair procedure using the **Diagnostic tool** :
 - connect the diagnostic tool,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

V4Y, and AJ0

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Equipment required	
Diagnostic tool	
Tightening torques 	
wire routing retaining bolt	7 N.m
hydraulic distributor housing bolts	8 Nm
clips for the air filter unit air outlet pipe and the clip at the inlet of the throttle valve	5.5 N.m



133471

133471

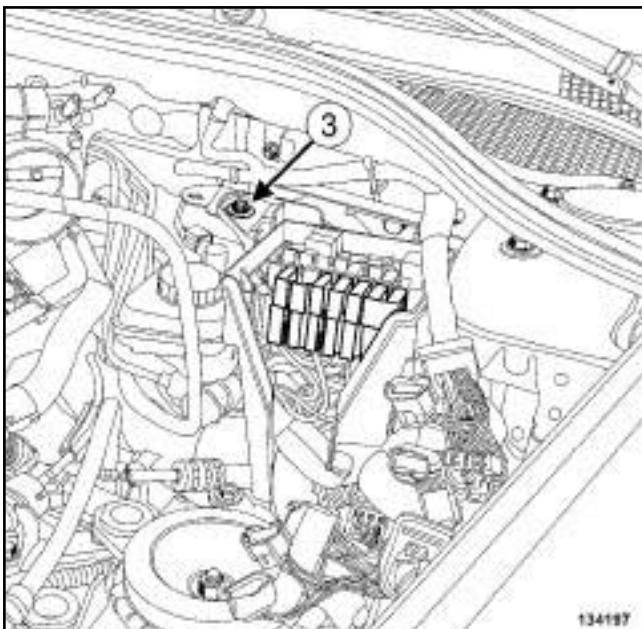
REMOVAL

I - REMOVAL PREPARATION OPERATION

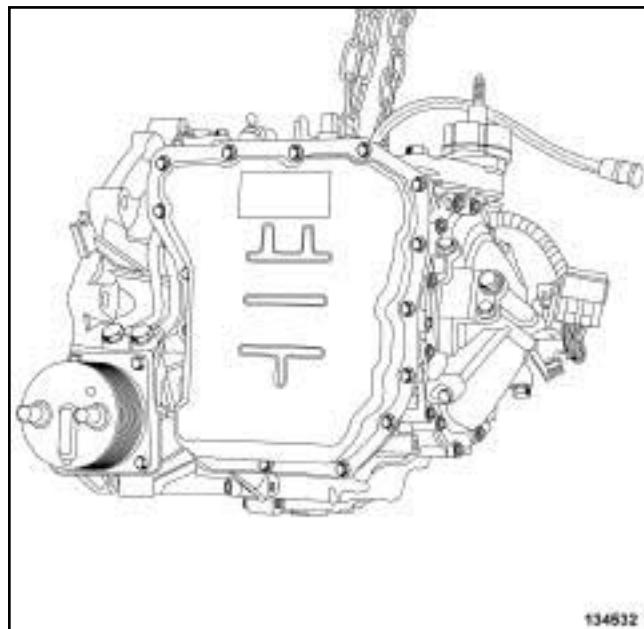
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Remove the front engine cover.

- Disconnect the vacuum pipe from the brake servo (1).
- Move the brake servo vacuum pipe to one side.
- Undo:
 - the clip (2) for the throttle valve air inlet pipe,
 - the clip for the air filter unit air outlet pipe.
- Remove the clip from the oil vapour rebreathing pipe using the tool (**Mot. 1448**).
- Disconnect the oil vapour rebreathing pipe.
- Remove:
 - the air outlet pipe to the air filter unit,
 - the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
 - the engine undertray bolts,
 - the engine undertray,
 - the max fuse box cover.
- Unclip the max fuse box from its support.

V4Y, and AJ0



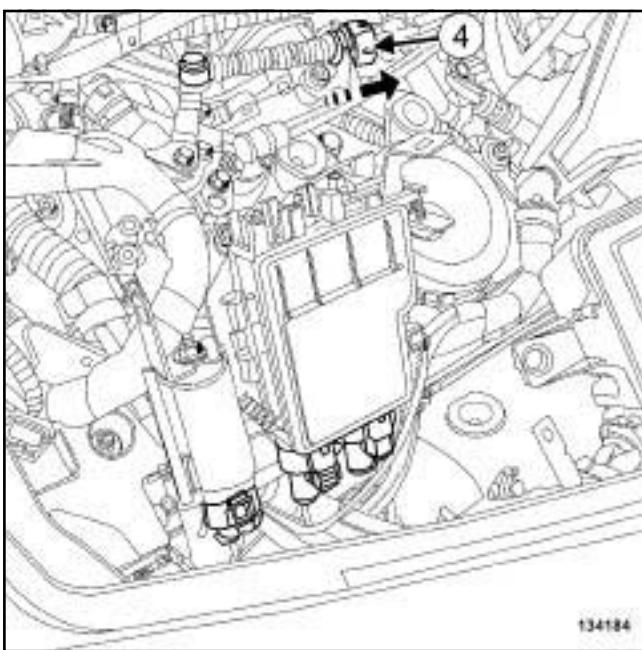
134197



134532

 Remove:

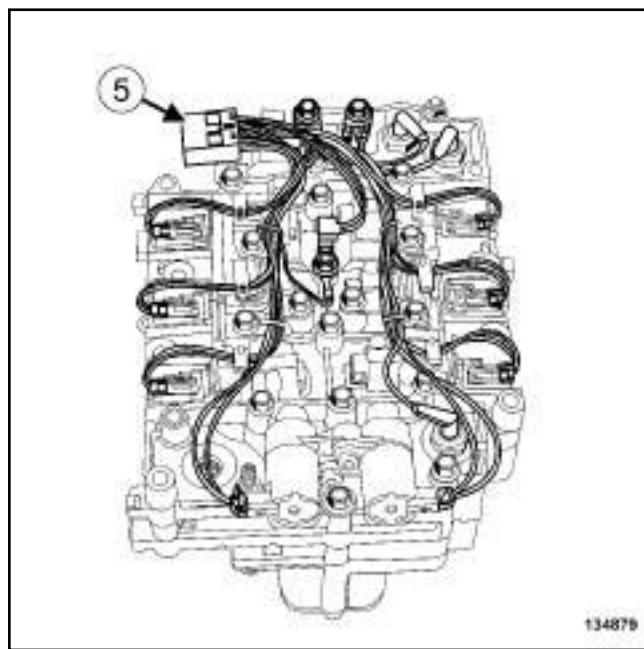
- the bolt (3) from the max fuse box support,
- the max fuse box support.

 Drain the automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling, page 23A-29**).

134184

 Move aside the gearbox control cable (4) by pushing on the bracket. Remove:

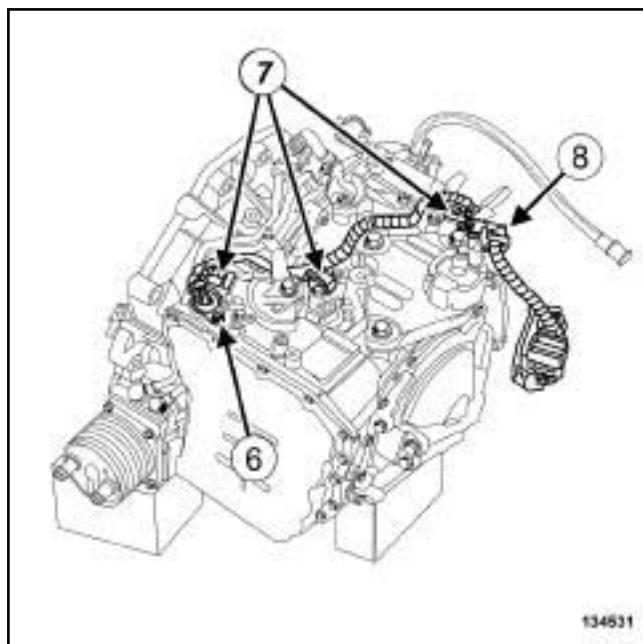
- the hydraulic distributor housing bolts,
- the hydraulic distributor housing,
- the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED

134879

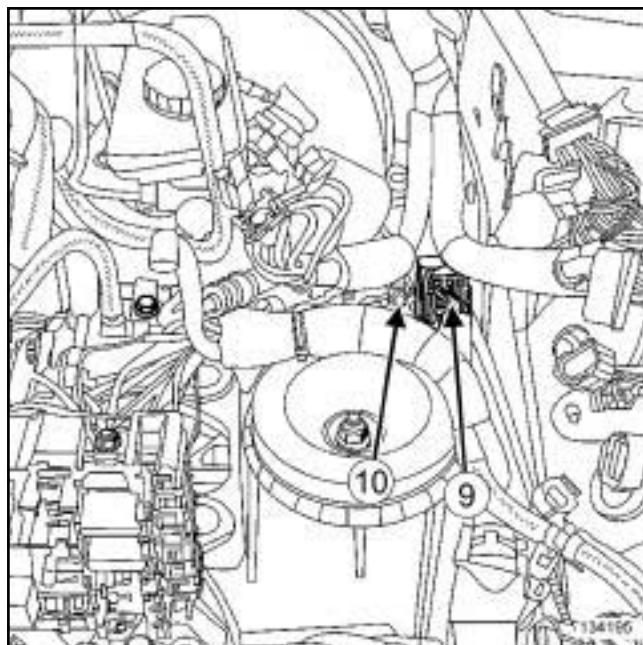
 Disconnect the internal wiring connector (5).

V4Y, and AJ0



134531

- Remove:
 - the wire routing retaining bolt (6) ,
 - the gearbox wiring guide bolt.
- Disconnect the connectors (7) .
- Unclip the wiring from the gearbox (8) .



134195

- Disconnect the gearbox connector (9) .
- Remove the bolt (10) from the gearbox connector support.
- Unclip the bonnet release cable from the gearbox connector support.

- Remove the hydraulic distributor wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

- Always replace the hydraulic distributor housing seal.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the hydraulic distributor wiring.
- Clip the bonnet release cable onto the gearbox connector support.
- Refit the gearbox connector support.
- Connect the gearbox connector.
- Clip on the gearbox wiring.
- Connect:
 - the automatic gearbox connectors,
 - the internal wiring connector.
- Refit:
 - the gearbox wiring guide,
 - the wire routing retaining bolt.
- Torque tighten the **wire routing retaining bolt (7 N.m)**.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Fit the gearbox control cable.
- Refit the max fuse box support.
- Clip the max fuse box onto its support.
- Refit:
 - the max fuse box cover,
 - the engine undertray,

V4Y, and AJ0

- the protection and switching unit (see **Protection and Switching Unit: Removal - Refitting**) (87G, Engine compartment connection unit),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the air outlet pipe of the air filter unit.

- Connect the oil vapour rebreathing pipe.
- Refit the oil vapour rebreathing pipe clip using the tool (**Mot. 1448**).
- Torque tighten the **clips for the air filter unit air outlet pipe and the clip at the inlet of the throttle valve (5.5 N.m)**.
- Refit the brake servo vacuum pipe.
- Connect:
 - brake servo vacuum pipe ,
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor wiring » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

V9X, and AJ0

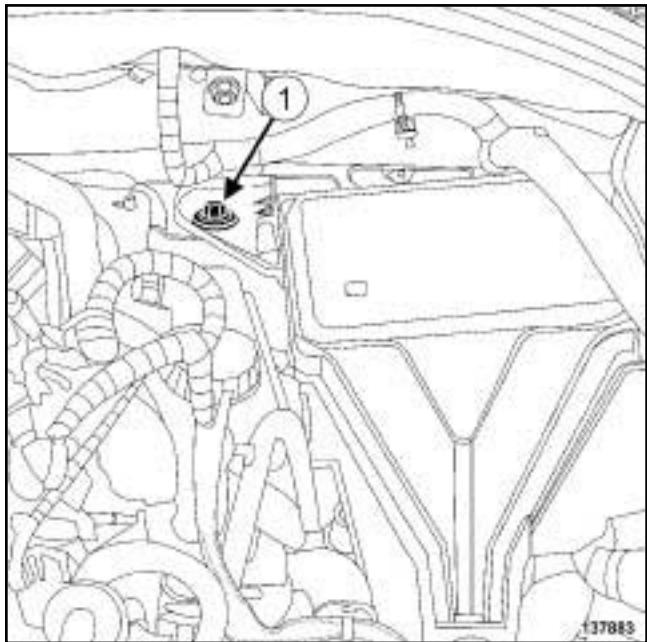
Equipment required

Diagnostic tool

Tightening torques 

wire routing retaining bolt	7 N.m
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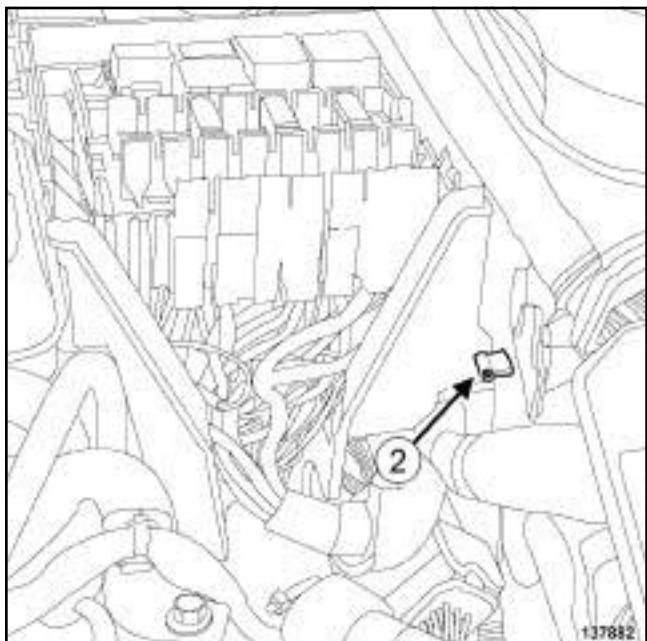
hydraulic distributor housing bolts	8 Nm
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**REMOVAL****I - REMOVAL PREPARATION OPERATION**

- 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 bolts,
 - the engine undertray,
 - the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - 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).
- Drain:
 - the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
 - the gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29).

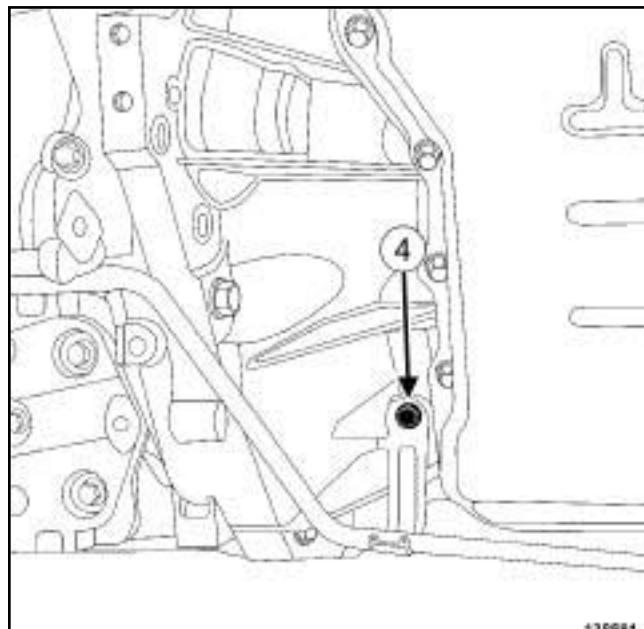
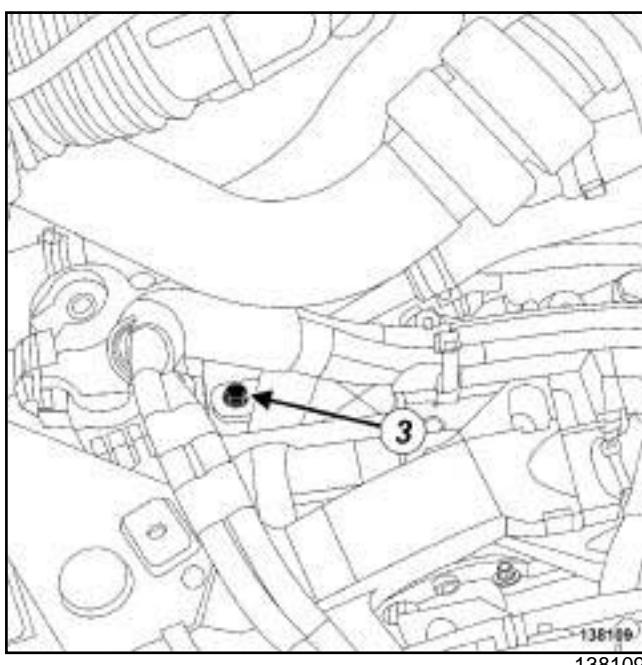
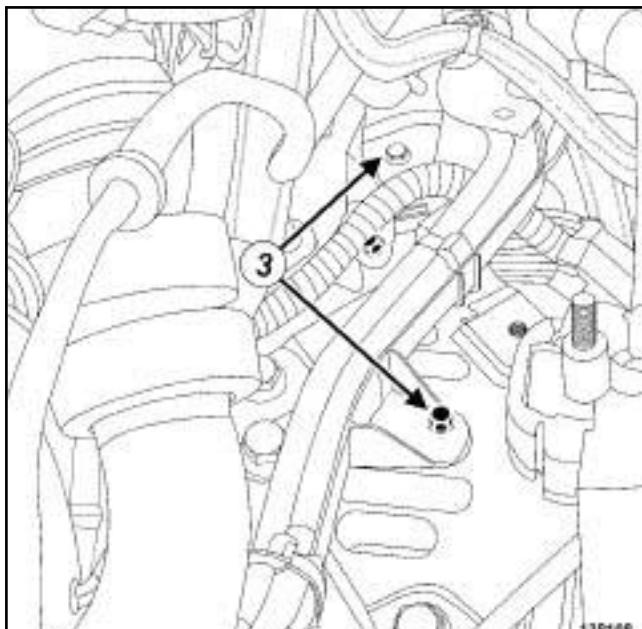
 Remove:

- the max fuse box cover,
- the bolt (1) from the support for the max fuse box.

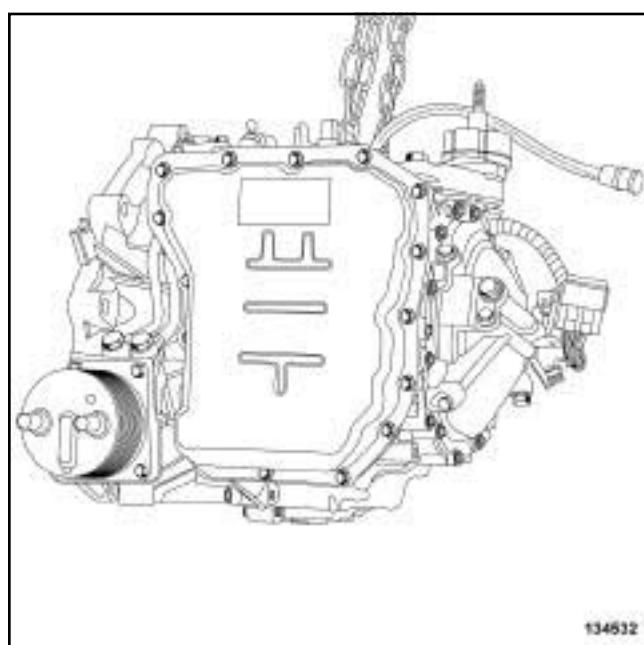


- Remove the clip (2) from the max fuse box.
- Unclip the max fuse box from its support.
- Remove the max fuse box support.
- Move the max fuse box to one side.
- Remove the coolant pipe outlet unit (see **Water chamber: Removal - Refitting**) (19A, Cooling).

V9X, and AJ0



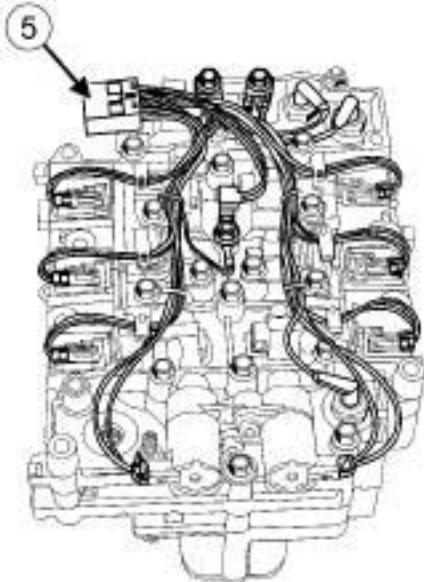
- Remove the bolt (4) from the power-assisted steering pipe.



- Remove the bolts (3) from the wiring channel protective cover of the battery disconnection unit power supply wiring.
- Remove the wiring channel protective cover of the battery disconnection unit power supply wiring.

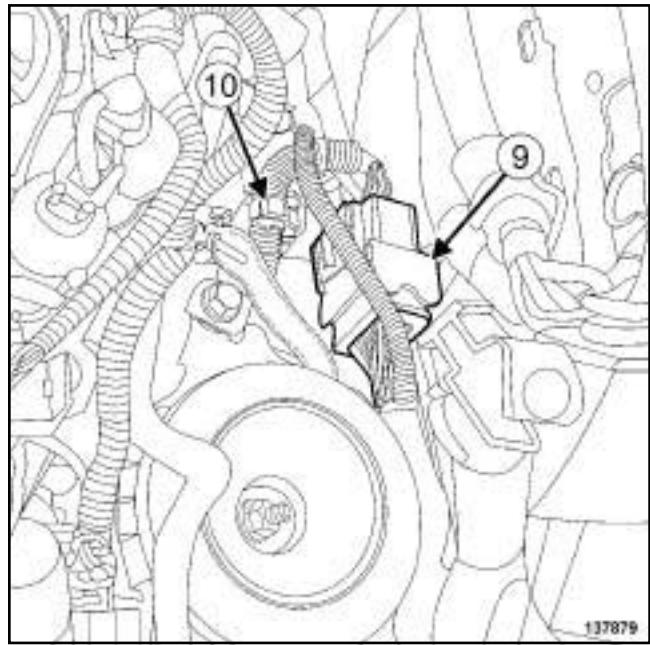
- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

V9X, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED


134879

- Disconnect the internal wiring connector (5) .



137879

- Disconnect the gearbox connector (9) .

Unclip:

- the gearbox connector,
- the wiring from the gearbox at (10) .

- Remove the hydraulic distributor wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace the hydraulic distributor housing seal.
- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair** (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

II - REFITTING OPERATION FOR PART CONCERNED

- Remove:
- the cable routing retaining bolt (6) ,
 - the gearbox wiring guide bolt.
- Disconnect the connectors (7) .
- Unclip the wiring from the gearbox (8) .

- Refit the hydraulic distributor wiring.
- Clip on:
- the gearbox wiring,
 - the gearbox connector.
- Connect the gearbox connector.
- Clip on the gearbox wiring.
- Connect the gearbox connectors.

134531

134531

V9X, and AJ0

- Refit:
 - the gearbox wiring guide,
 - the wire routing retaining bolt.
- Torque tighten the **wire routing retaining bolt (7 N.m)**.
- Connect the internal wiring connector.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Refit the power-assisted steering pipe bolt.
- Fit the wiring channel protective cover of the battery disconnection unit power supply wiring.
- Refit:
 - the bolts for the wiring channel protective cover of the battery disconnection unit power supply wiring,
 - the coolant pipe outlet unit (see **Water chamber: Removal - Refitting**) (19A, Cooling).
- Fit the max fuse box.
- Refit the max fuse box support.
- Clip the max fuse box onto its support.
- Refit:
 - the max fuse box clip,
 - the max fuse box bolt.
 - the max fuse box cover,
 - 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 air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Perform the following operations:
 - fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling),

- fill up the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).

- Refit:
 - the engine undertray,
 - the engine cover.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor wiring » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

M9R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

tweezers

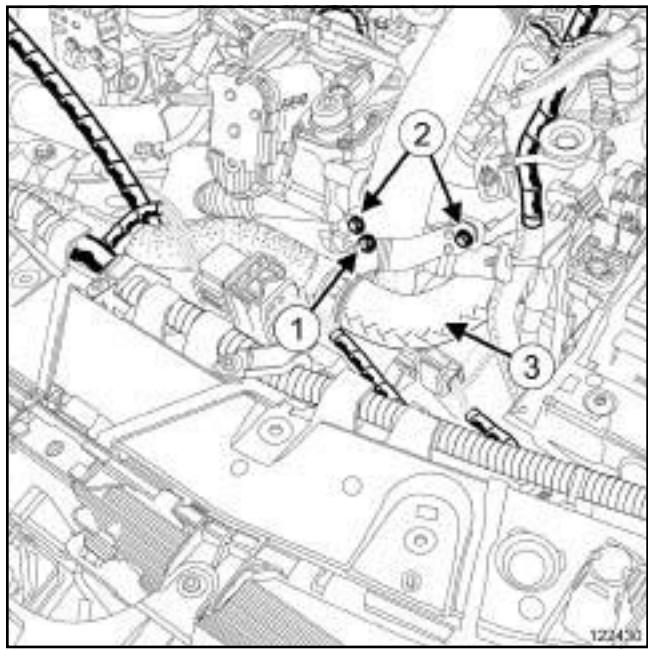
Diagnostic tool

Tightening torques 

internal wiring earth bolts and the temperature sensor bolt **8 N.m**

hydraulic distributor housing bolts **8 Nm**

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



122430

122430

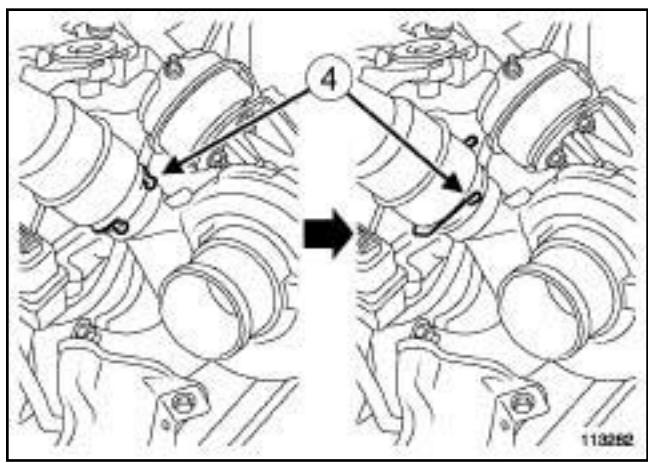
- Remove the nut (1) from the cooling hose.
- Move aside the cooling hose (3).
- Remove the air pipe bolts (2) at the intercooler inlet.

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 tray: Removal - Refitting**) (80A, Battery),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray,
 - 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 end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

- Drain:

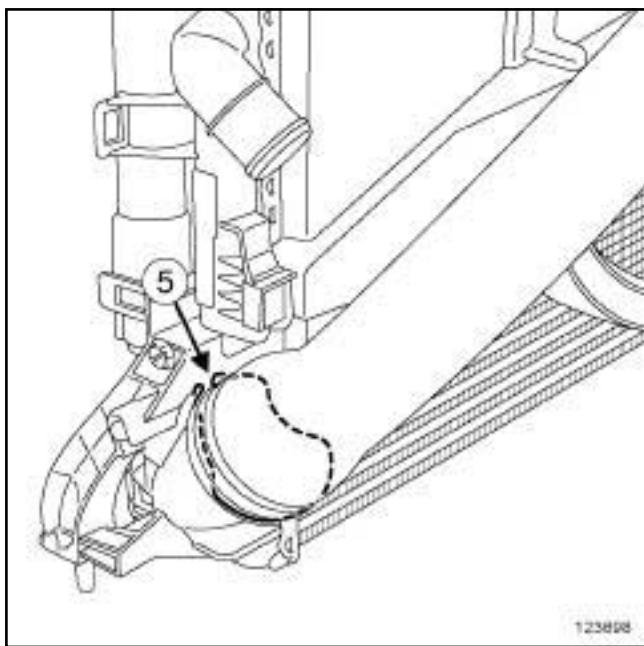
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),



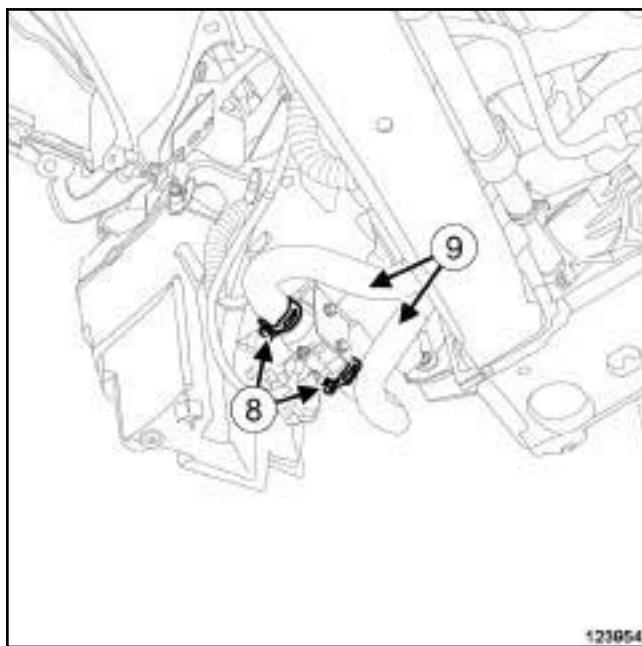
113282

- Turn the intercooler air inlet pipe clip (4) at the turbocharger.

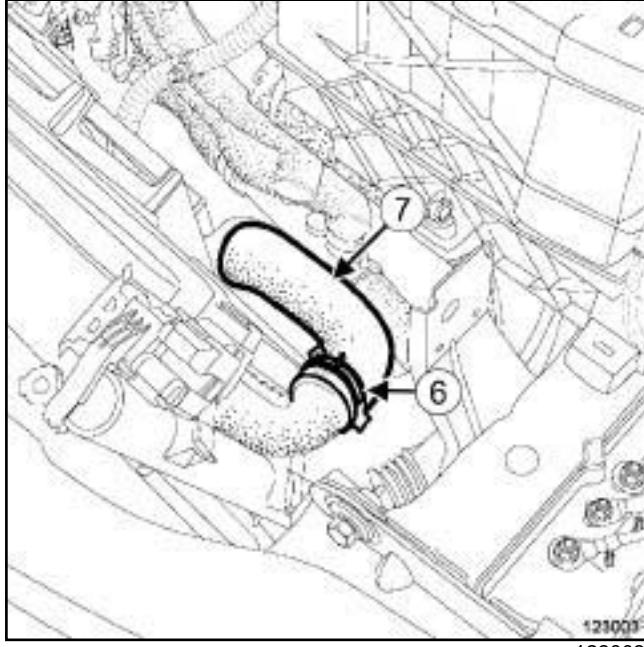
M9R, and AJ0



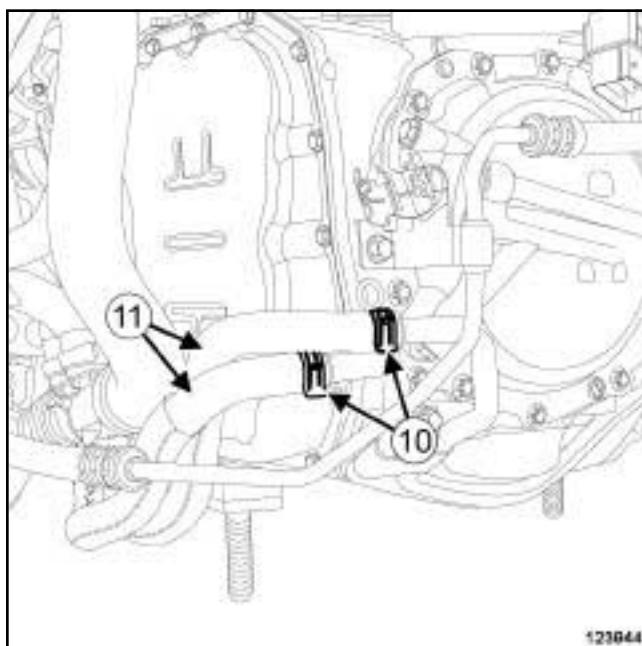
- Turn the clip (5) of the intercooler air inlet pipe at the intercooler.
- Remove the air pipe at the intercooler inlet.



- Release the clips (8) on the thermoplunger unit hoses using the (**Mot. 1448**).
- Disconnect the hoses (9) from the thermoplunger unit.

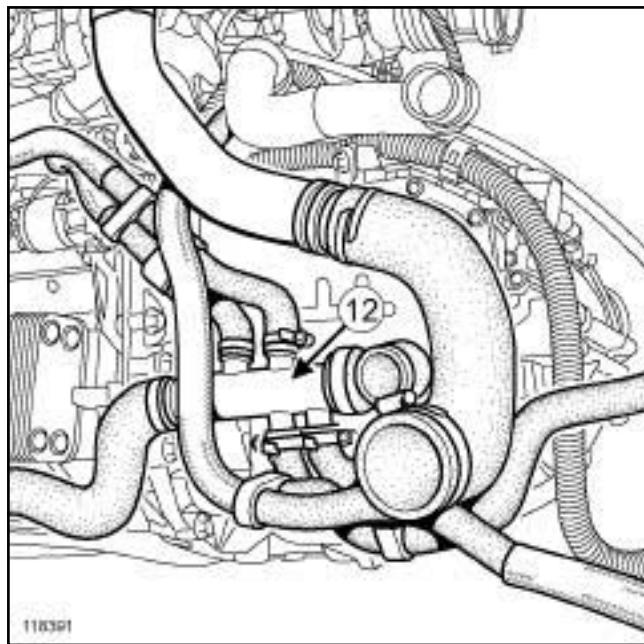


- Remove the clip (6) from the radiator lower hose using the tool (**Mot. 1448**).
- Remove the radiator lower hose (7) .

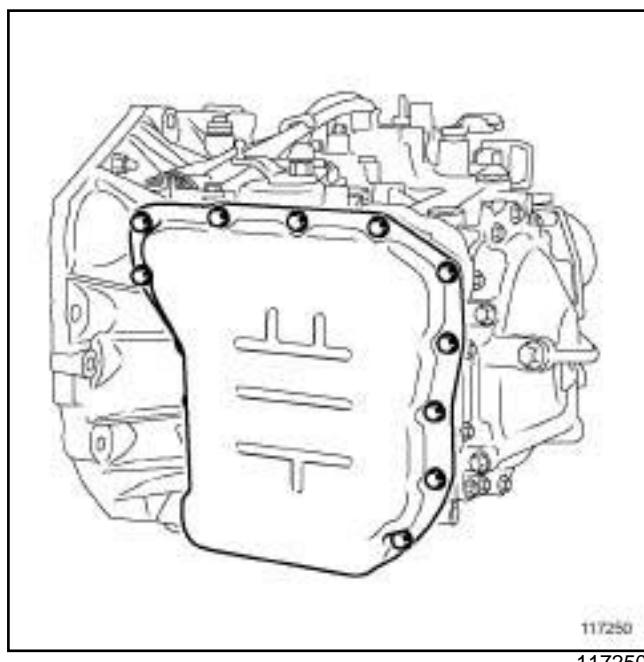


- Remove the clips (10) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Disconnect the oil cooler hoses (11) from the automatic gearbox.

M9R, and AJ0

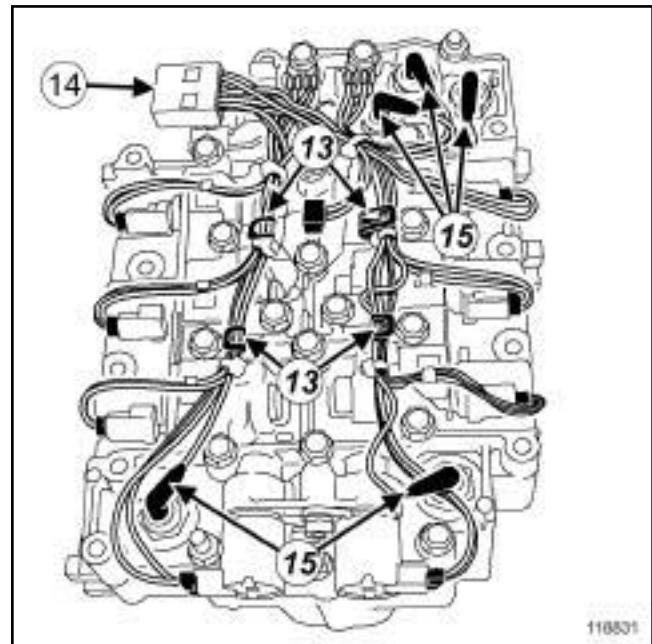


- Move aside the cooling hose assembly (12).



- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

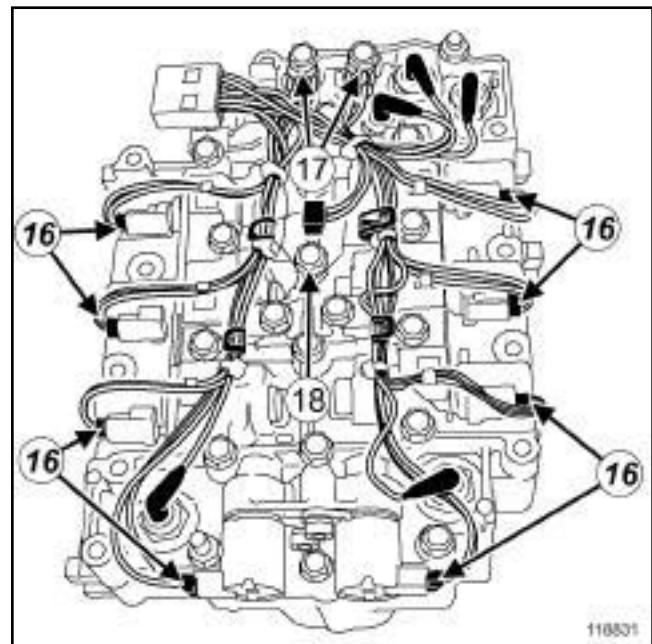
II - OPERATION FOR REMOVAL OF PART CONCERNED



- Lift the internal wiring retaining clips (13).

Disconnect:

- the connector (14) for the external wiring,
- the pressure sensor connectors (15).



- Disconnect the solenoid valve connectors (16).

Remove:

- the bolts (17) to the earths,
- the bolt (18) from the temperature sensor,

M9R, and AJ0

- the temperature sensor retaining plate,
- the earth,
- the wiring.

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 faces:
 - on the automatic gearbox,
 - on the hydraulic distributor casing.

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

- Refit:
 - the wiring,
 - the earth terminal,
 - the temperature sensor retaining plate.

Note:

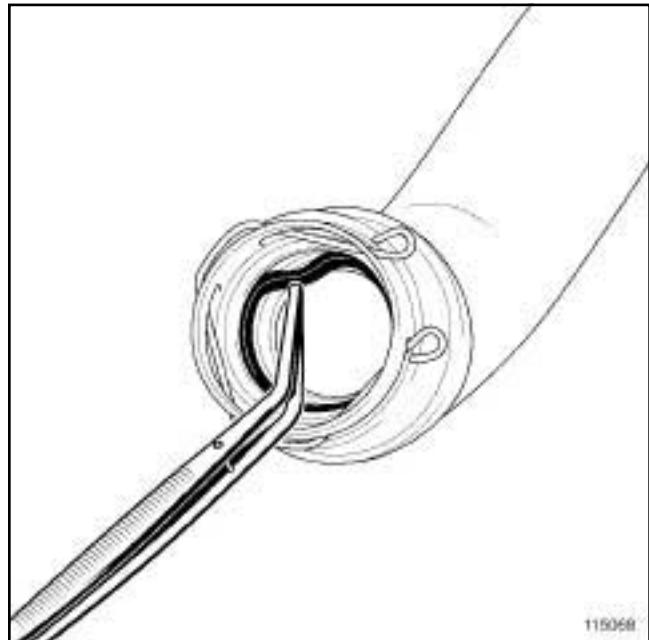
The earth terminal **(18)** should be positioned between the distributor and the temperature sensor retaining plate so that the earth terminal does not break when the bolt is tightened.

- Torque tighten the **internal wiring earth bolts and the temperature sensor bolt (8 N.m) (17)** and **(18)**
- .
- Connect:
 - the connectors for the solenoid valves,
 - the connector to the external wiring,
 - the pressure sensor connectors.
- Push back the internal wiring retaining clips.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.

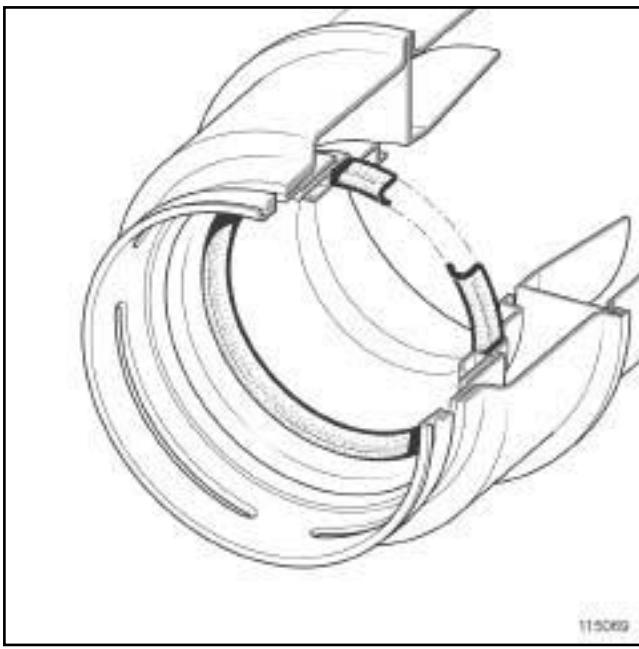
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Fit the cooling hose assembly in place.
- Connect the oil cooler hoses to the automatic gearbox.
- Refit the clips to the gearbox oil cooler hoses using the tool **(Mot. 1448)**.
- Connect the thermoplunger unit hoses.
- Refit the clips for the thermoplunger unit hoses using the tool **(Mot. 1448)**.
- Connect the radiator lower hose.
- Refit the clip for the radiator lower hose using the tool **(Mot. 1448)**.



115068

- Remove the intercooler air inlet pipe seals using a **tweezers**.

M9R, and AJ0



115069

115069

**Note:**

Check that the seals for the intercooler air inlet pipe are fitted in their groove the right way round.

- Refit new joints to the intercooler air inlet pipe.
- Turn the intercooler air inlet pipe clips until they are refitted in their groove.

Note:

The intercooler air inlet pipe is correctly clipped onto the turbocharger and the intercooler when the clips are engaged in the groove of the turbocharger and the intercooler.

- Clip the intercooler air inlet pipe onto the turbocharger and the intercooler.
- Refit the cooling hose onto the intercooler air inlet pipe.

Refit:

- the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure),
- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- 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 battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),

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

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

Fill the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).

Refit the engine undertray.

Apply the after repair procedure using the **Diagnostic tool** :

- connect the **Diagnostic tool**,

- select « Gearbox computer » ,

- go to repair mode,

- display the « Before/after repair procedure » for the computer selected,

- select « Hydraulic distributor » in the section « List of components controlled by this computer » ,

- carry out the operations described in the « After repair procedure » section.

F4R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

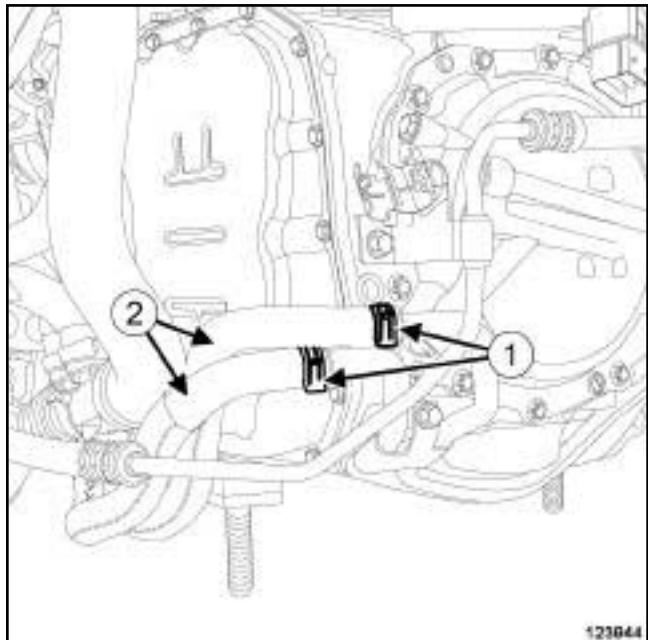
tweezers

Diagnostic tool

Tightening torques 

internal wiring earth bolts and the temperature sensor retaining bolt **8 N.m**

hydraulic distributor housing bolts **8 Nm**

**REMOVAL****I - REMOVAL PREPARATION OPERATION**

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

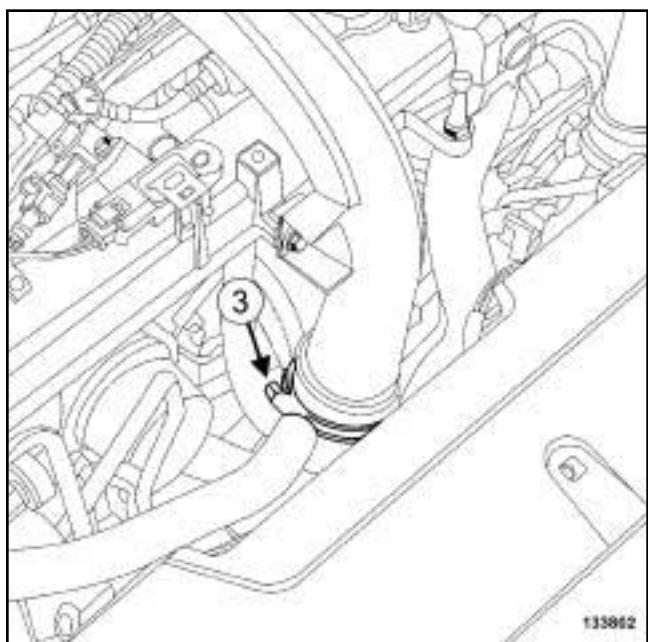
Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray.

Drain:

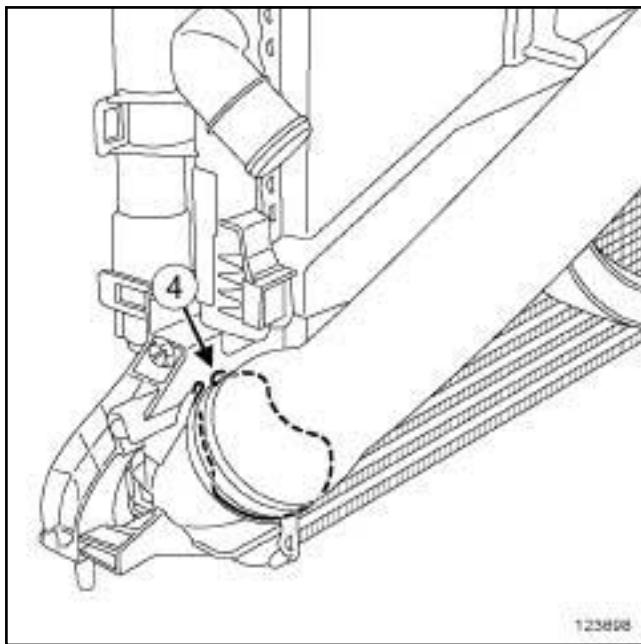
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),
- the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

- Remove the clips (1) for the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Disconnect the automatic gearbox oil cooler hoses (2).



- Loosen the clip (3) of the intercooler air inlet pipe at the intercooler intermediate air inlet pipe.

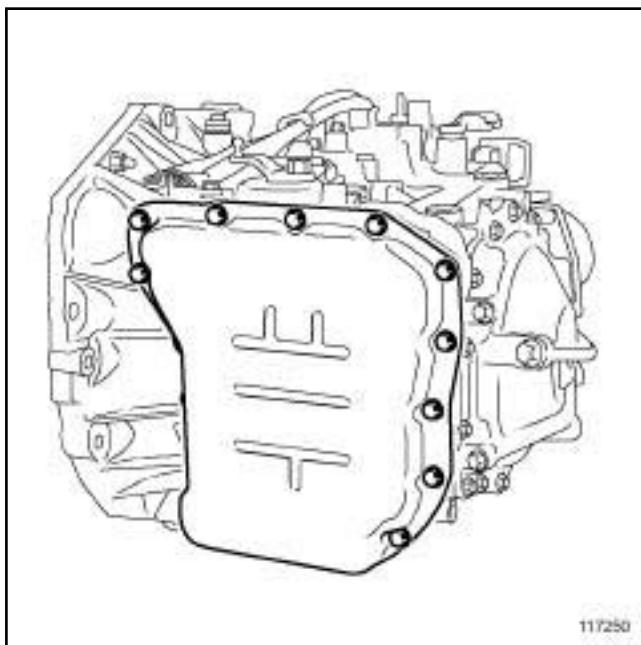
F4R, and AJ0



123698

123699

- Turn the clip (4) of the intercooler air inlet pipe at the intercooler.
- Remove the air pipe at the intercooler inlet.

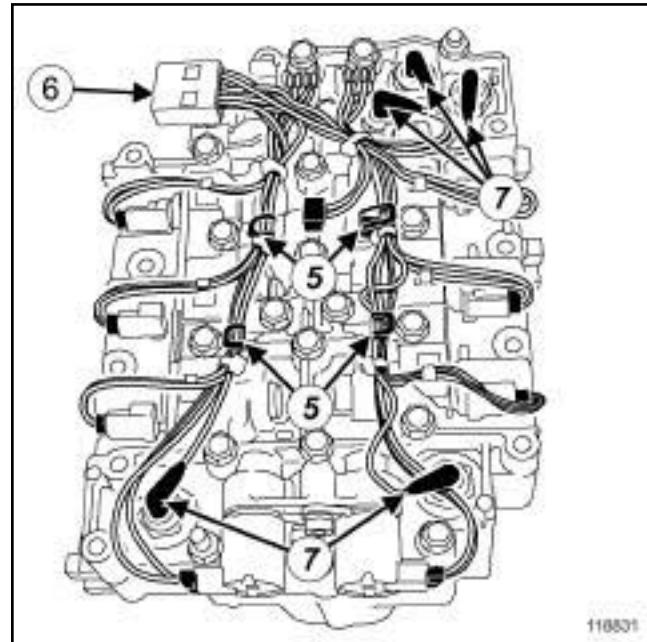


117250

117250

- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

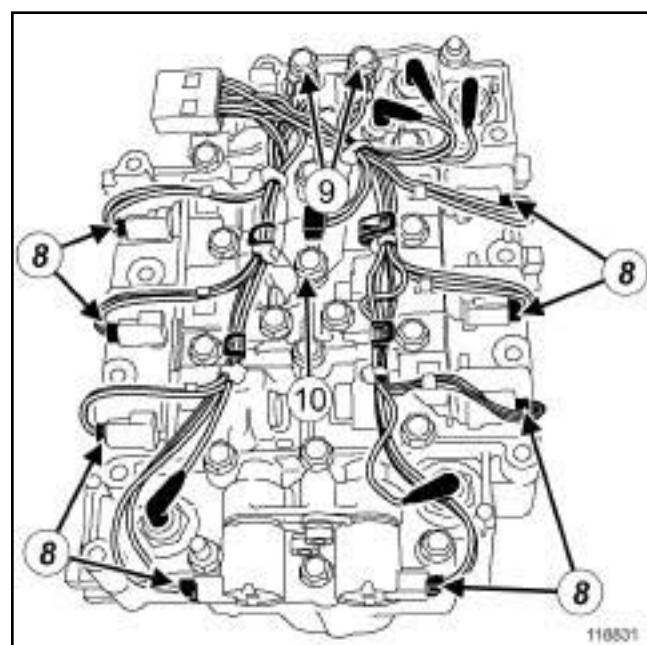
II - OPERATION FOR REMOVAL OF PART CONCERNED



118831

118831

- Lift the internal wiring retaining clips (5).
- Disconnect:
 - the connector (6) for the external wiring,
 - the connectors (7) from the pressure sensors.



118831

118831

- Disconnect the solenoid valve connectors (8).
- Remove:
 - the earth bolts (9).
 - the bolt (10) from the temperature sensor,

F4R, and AJ0

- the temperature sensor retaining plate,
- the earth,
- the wiring.

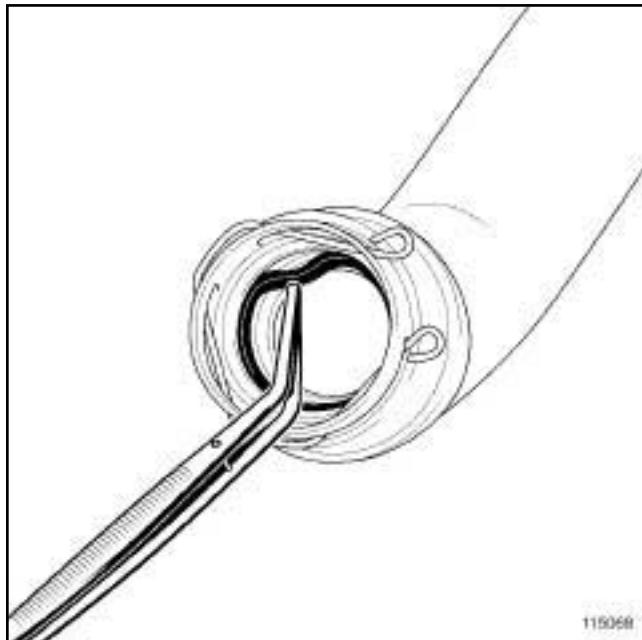
REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

- Always replace:

- the hydraulic distributor housing seal,
- the intercooler air inlet pipe seal.



115068

II - REFITTING OPERATION FOR PART CONCERNED

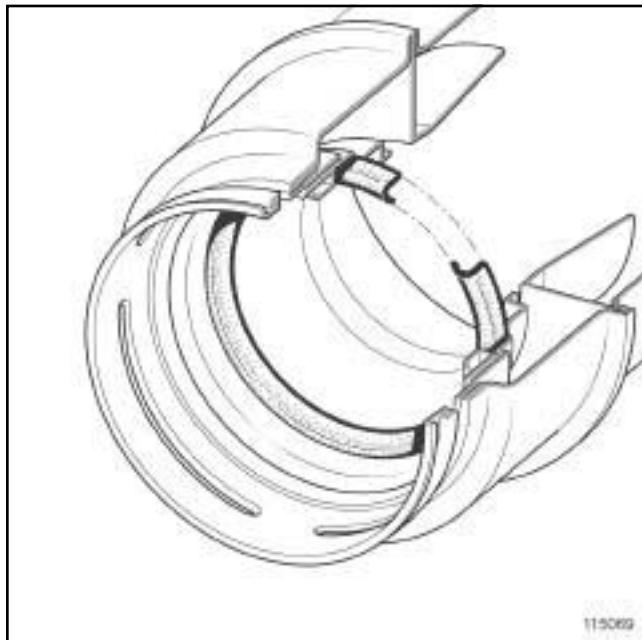
- Refit:

- the wiring,
- the earth terminal,
- the temperature sensor retaining plate.

Note:

The earth terminal (**10**) should be positioned between the distributor and the temperature sensor retaining plate so that the earth terminal does not break when the bolt is tightened.

- Remove the air inlet pipe seal of the intercooler using a **tweezers**.



115069

- Torque tighten the **internal wiring earth bolts and the temperature sensor retaining bolt (8 N.m)** (**9**) and (**10**).

- Connect:

- the connectors for the solenoid valves,
- the connector to the external wiring,
- the pressure sensor connectors.

- Push back the internal wiring retaining clips.

III - FINAL OPERATION

- Refit:

- a new seal on the hydraulic distributor housing,
- the hydraulic distributor housing.

- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.

-

Note:

Check that the intercooler air inlet pipe seal is fitted in its groove the right way round.

- Refit a new seal to the intercooler air inlet pipe at the intercooler
- Refit the intercooler air inlet pipe.
- Connect the automatic gearbox oil cooler hoses.

F4R, and AJ0

- Fit the clips to the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- Fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Refit the engine undertray.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the diagnostic tool,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.

V4Y, and AJ0

Equipment required

Diagnostic tool

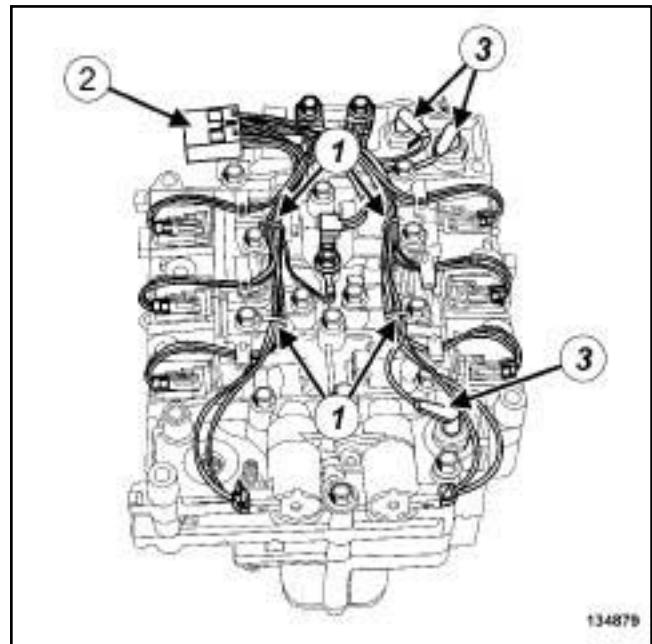
Tightening torques temperature sensor retaining bolt **8 N.m**internal wiring earth bolts **8 N.m**

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 automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29).
- Remove the hydraulic distributor (see **23A, Automatic gearbox, Hydraulic distributor: Removal - Refitting**, page 23A-35).

II - OPERATION FOR REMOVAL OF PART CONCERNED



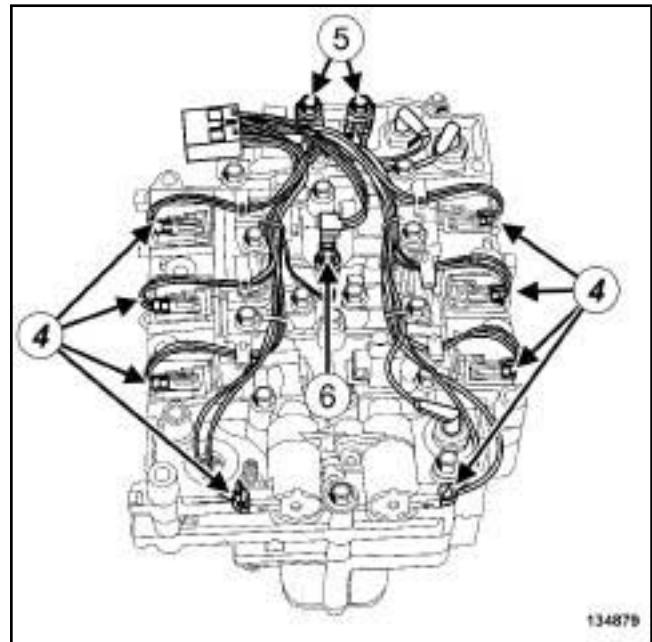
134879

134879

- Lift the internal wiring retaining clips (1).

- Disconnect:

- the internal wiring connector (2),
- the connectors (3) from the pressure sensors.



134879

134879

- Disconnect the solenoid valve connectors (4).

- Remove:

- the earth bolts (5),
- the bolt (6) from the temperature sensor,

V4Y, and AJ0

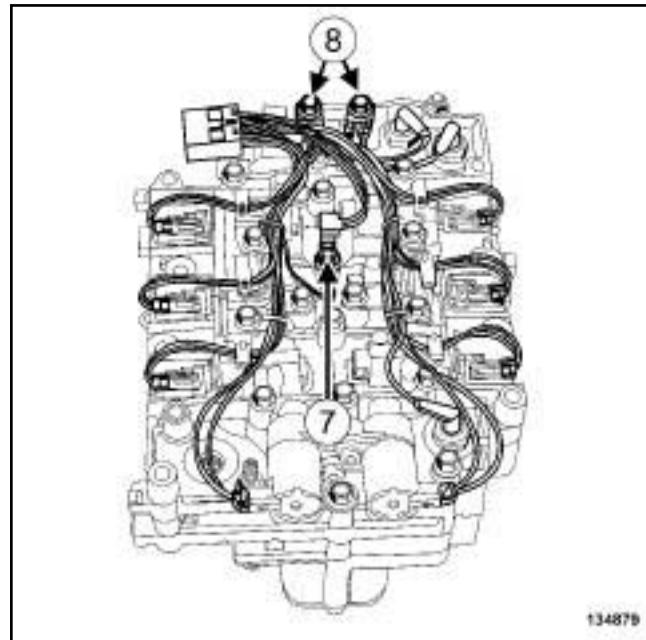
- the temperature sensor retaining plate,
- the earth terminal,
- the wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint face on the automatic gearbox and on the hydraulic distributor casing using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) taking care not to damage the contact surfaces.

II - REFITTING OPERATION FOR PART CONCERNED



134879

134879

Refit:

- the wiring,
- the earth terminal,
- the temperature sensor retaining plate,
- the temperature sensor bolt (7) ,
- the earth bolts (8) .

Note:

The earth terminal at (7) should be positioned between the distributor and the temperature sensor retaining plate so that the earth terminal does not break when the bolt is tightened.

Tighten to torque:

- the **temperature sensor retaining bolt (8 N.m)** (7) ,
- the **internal wiring earth bolts (8 N.m)** (8) .

Connect:

- the connectors for the solenoid valves,
- the pressure sensor connectors,
- the internal wiring connector.

Push back the internal wiring retaining clips.

V4Y, and AJ0

III - FINAL OPERATION

- Refit the hydraulic distributor (see **23A, Automatic gearbox, Hydraulic distributor: Removal - Refitting**, page **23A-35**).
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.
- Refit the engine undertray.

V9X, and AJ0

Equipment required

Diagnostic tool

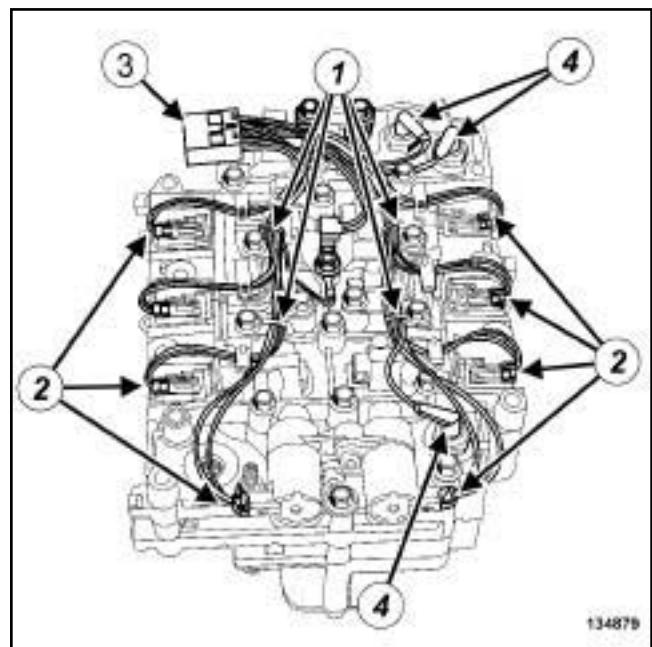
Tightening torques 

retaining bolt for the temperature sensor **8 N.m**

internal wiring earth bolts **8 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 automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29).
- Remove the hydraulic distributor (see **23A, Automatic gearbox, Hydraulic distributor: Removal - Refitting**, page 23A-35).

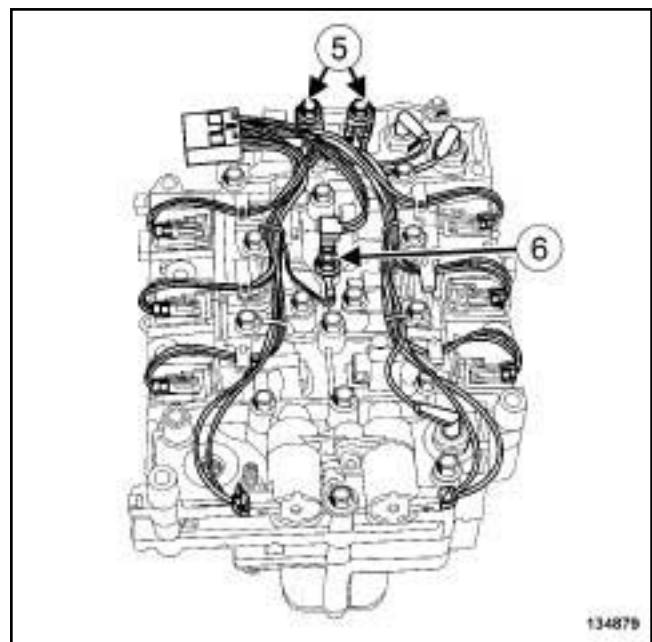
II - OPERATION FOR REMOVAL OF PART CONCERNED

134879

- Lift the internal wiring retaining clips (1).

 Disconnect:

- the connectors (2) for the solenoid valves,
- the internal wiring connector (3),
- the connectors (4) from the pressure sensors.



134879

- Remove:

- the earth bolts (5),
- the bolt (6) from the temperature sensor,

V9X, and AJ0

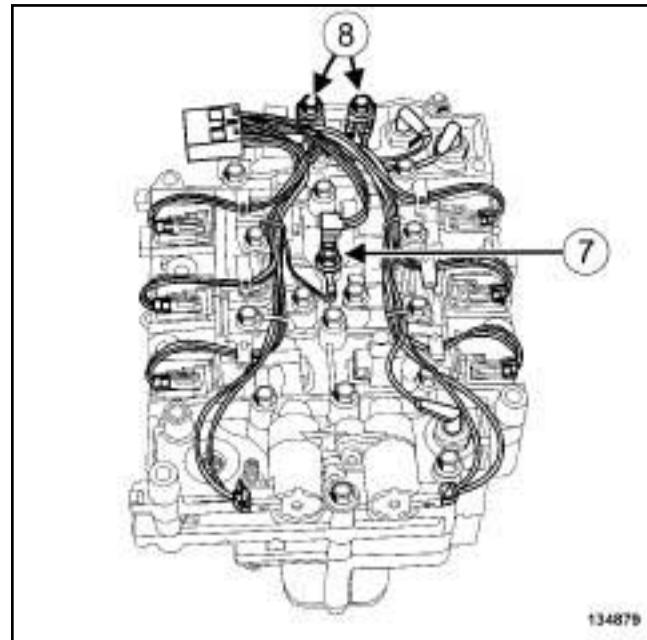
- the temperature sensor retaining plate,
- the earth terminal,
- the wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint face on the automatic gearbox and on the hydraulic distributor casing using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) taking care not to damage the contact surfaces.

II - REFITTING OPERATION FOR PART CONCERNED



134879

Refit:

- the wiring,
- the earth terminal,
- the temperature sensor retaining plate,
- the temperature sensor bolt (7) ,
- the earth bolts (8) .

Note:

The earth terminal at (7) should be positioned between the distributor and the temperature sensor retaining plate so that the earth terminal does not break when the bolt is tightened.

Tighten to torque:

- the retaining bolt for the temperature sensor (8 N.m) (7) ,
- the internal wiring earth bolts (8 N.m) (8) .

Connect:

- the connectors for the solenoid valves,
- the pressure sensor connectors,
- the internal wiring connector.

Push back the internal wiring retaining clips.

V9X, and AJ0

III - FINAL OPERATION

- Refit the hydraulic distributor (see **23A, Automatic gearbox, Hydraulic distributor: Removal - Refitting**, page **23A-35**).
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the section « List of components controlled by this computer » ,
 - carry out the operations described in the « After repair procedure » section.
- Refit the engine undertray.

AJ0

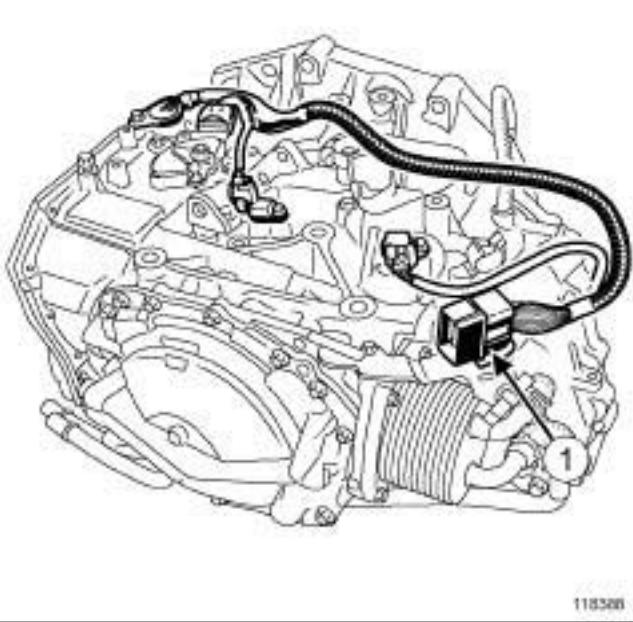
Special tooling required

Ms. 583 Pipe clamps.

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

Diagnostic tool

Tightening torques automatic transmission
oil cooler bolts **4 Nm**main automatic trans-
mission connector
mounting bolts **6 Nm**

118388

118388

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

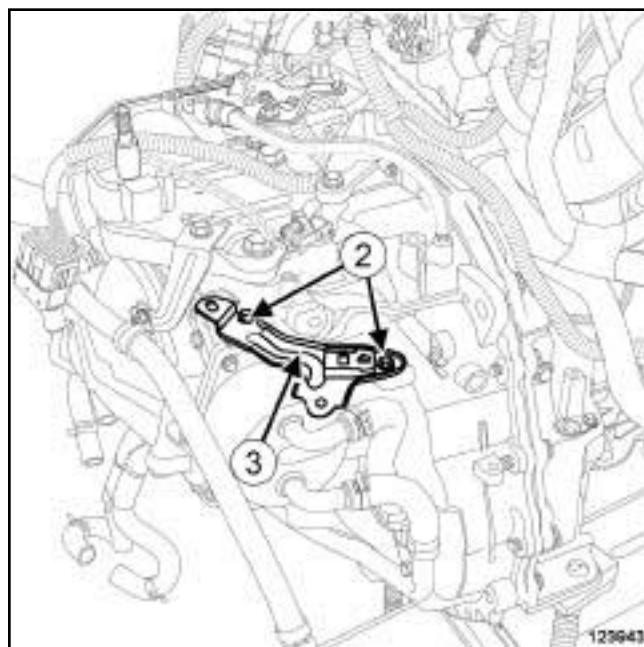
Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1).

Drain the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29)

Unclip the main automatic transmission connector (1) from its mounting.

Disconnect the main automatic transmission connector.



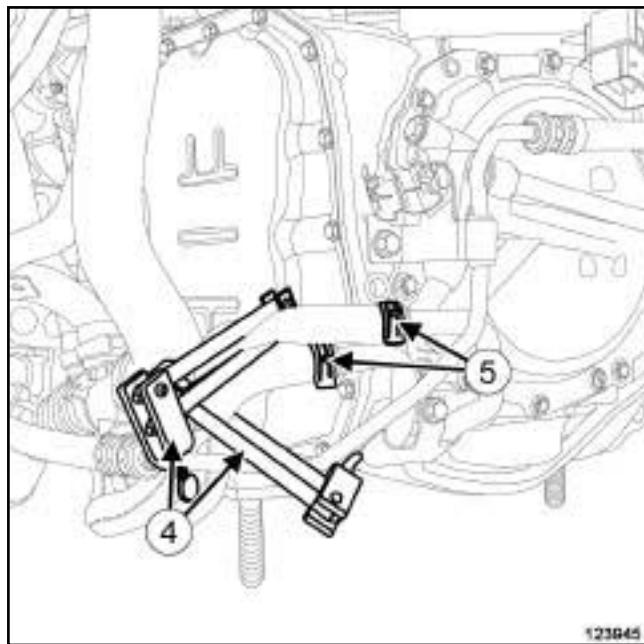
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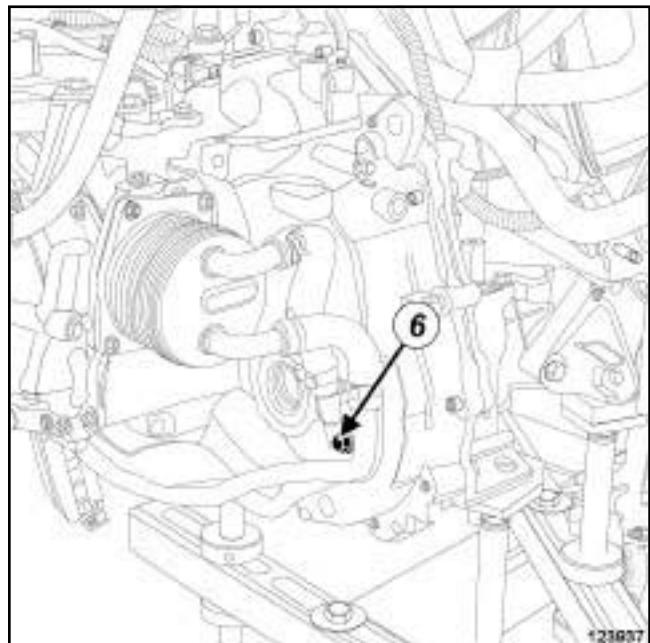
Remove:

- the bolts (2) from the automatic transmission main connector mounting,
- the automatic transmission main connector mounting (3).

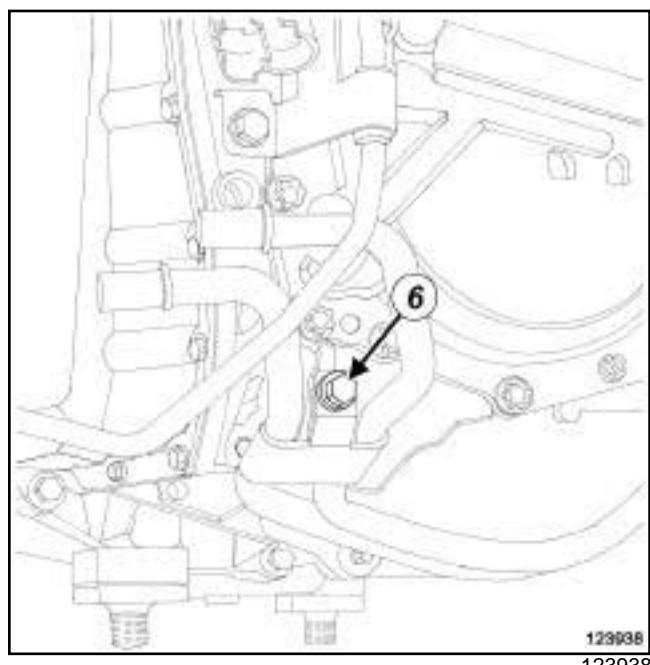
AJ0



II - REMOVAL OPERATION FOR PART CONCERNED

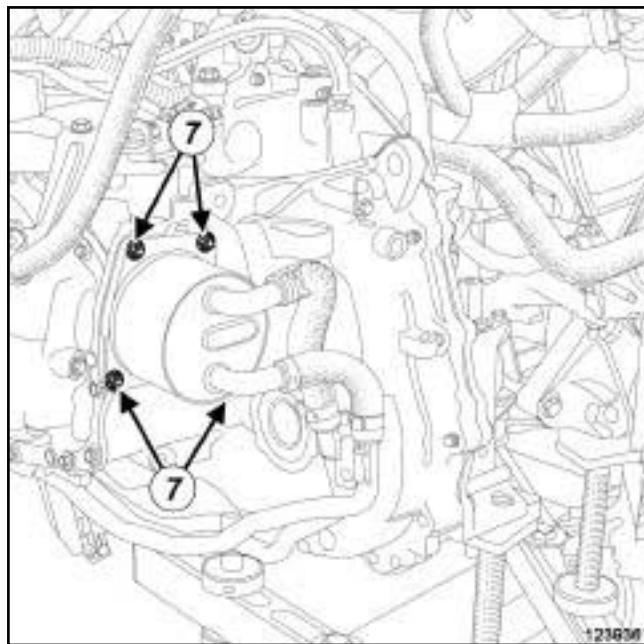


- Fit the (**Ms. 583**) (4) to the automatic transmission oil cooler hoses.
- Remove the clips (5) from the automatic transmission oil cooler pipe hoses using the (**Mot. 1448**).
- Disconnect the automatic transmission oil cooler pipe hoses.



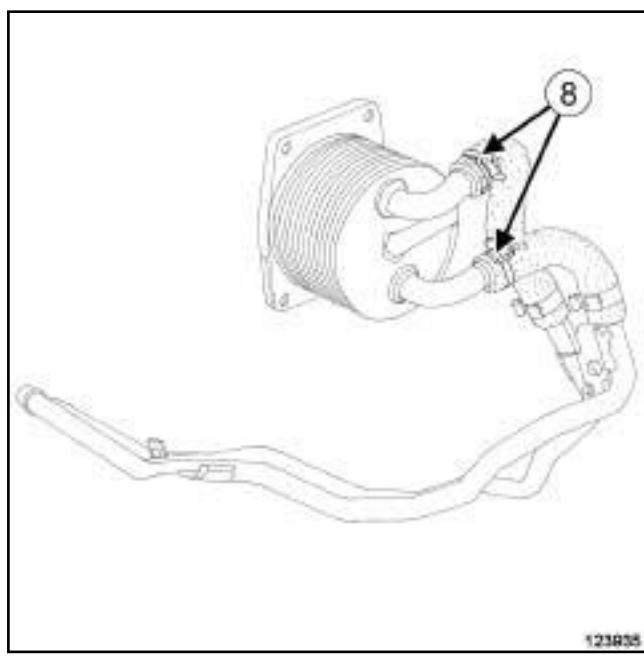
- Remove the automatic transmission oil cooler pipe bolts (6) .

AJ0



123936

- Remove:
- the automatic transmission oil cooler bolts (7) ,
 - the oil cooler and its pipes,
 - the automatic transmission oil cooler seal.



123935

- Remove the clips (8) from the automatic transmission oil cooler hoses using the (**Mot. 1448**).
- Disconnect the automatic transmission oil cooler hoses.
- Remove the automatic transmission oil cooler pipes.

REFITTING

I - REFITTING PREPARATIONS OPERATION

- Clean the joint faces with **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 415, 04B, Consumables - Products).
- Always replace the automatic transmission oil cooler seal.

II - REFITTING OPERATION FOR PART CONCERNED

- Connect the automatic transmission oil cooler cooling hoses.
- Refit:
 - the automatic transmission oil cooler cooling hose clips using the (**Mot. 1448**),
 - the new automatic transmission oil cooler seal,
 - the oil cooler and its pipes,
 - the automatic transmission oil cooler bolts,
- Torque tighten the **automatic transmission oil cooler bolts** (4 Nm).
- Refit the automatic transmission oil cooler pipe bolts.
- Tighten the automatic transmission oil cooler pipe bolts.

III - FINAL OPERATION.

- Connecting the automatic transmission oil cooler pipe hoses.
- Refit the automatic transmission oil cooler pipe clips using the (**Mot. 1448**).
- Remove the (**Ms. 583**) from the gearbox oil cooler pipe hoses.
- Refit:
 - the main automatic transmission connector mounting,
 - the main automatic transmission connector mounting bolts.
- Torque tighten the **main automatic transmission connector mounting bolts** (6 Nm).
- Connect the main automatic transmission connector.
- Clip the main automatic transmission connector onto its mounting.

AJ0

 Refit:

- the front left-hand driveshaft (see **29A, Drive-shafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),

 Bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling). Fill the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**) . Apply the after repair procedure using the **Diagnostic tool** : Connect the **Diagnostic tool**

Select gearbox computer

Go to repair mode

Display the gearbox computer «Before/after repair » procedure

Carry out the operations described in the « After repair procedure » section.

 Refit:

- the engine undertray,
- the engine undertray bolts.

AJ0

Special tooling required

Bvi. 1804 Kit for fitting differential seals and AJ0 converter

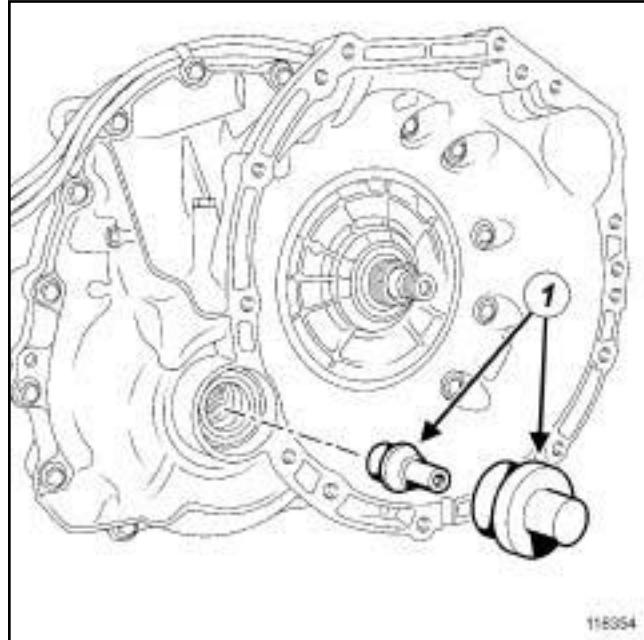
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

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 engine undertray bolts,
 - the engine undertray.
- Drain the automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29) .
- Remove:
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) .

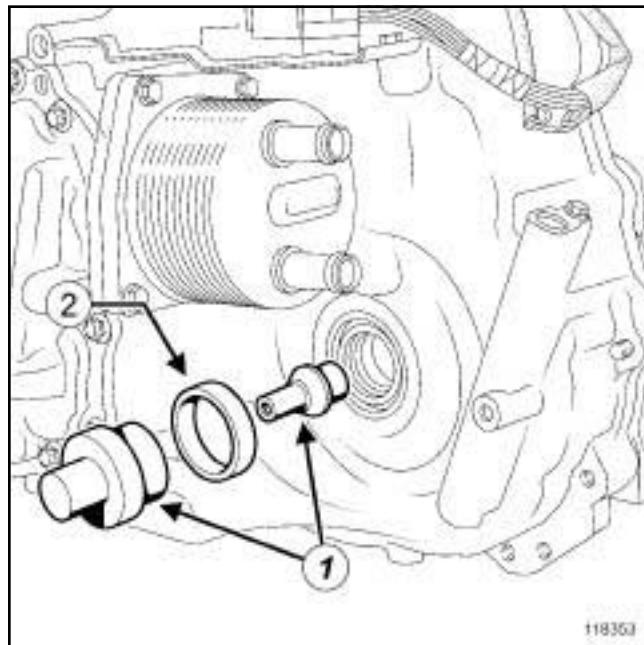


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II - OPERATION FOR REMOVAL OF PART CONCERNED

- Remove:
 - the right-hand differential output seal using a screwdriver, without scratching the contact surfaces,
 - the left-hand differential output seal using a screwdriver, without scratching the contact surfaces.



118353

118353

- Refit:

- the right-hand differential output seal using the tools (1) from the kit (**Bvi. 1804**),
- the left-hand differential output seal using the tools (1) and the spacer (2) from the kit (**Bvi. 1804**).

AJ0

II - FINAL OPERATION

Refit:

- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**) ,
- the front wheels (see **Wheel: Removal - Refitting** (35A, Wheels and tyres),

Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**) .

AJ0

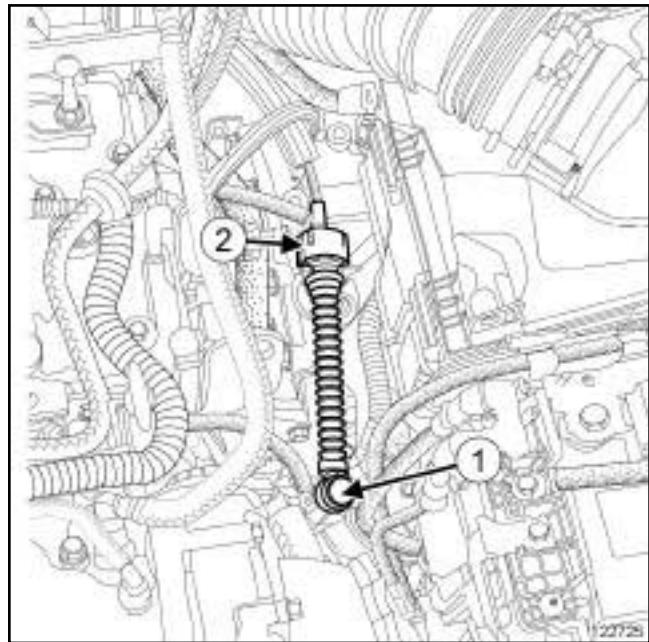
Special tooling required

Bvi. 1805 Multifunction switch adjusting lever AJ0

Tightening torques 

multifunction switch bolts **6 Nm**

multifunction switch control lever nut **17 Nm**



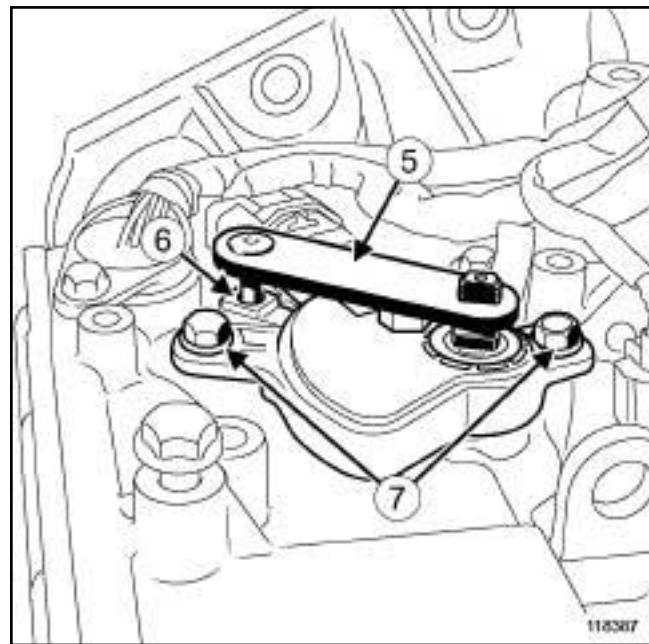
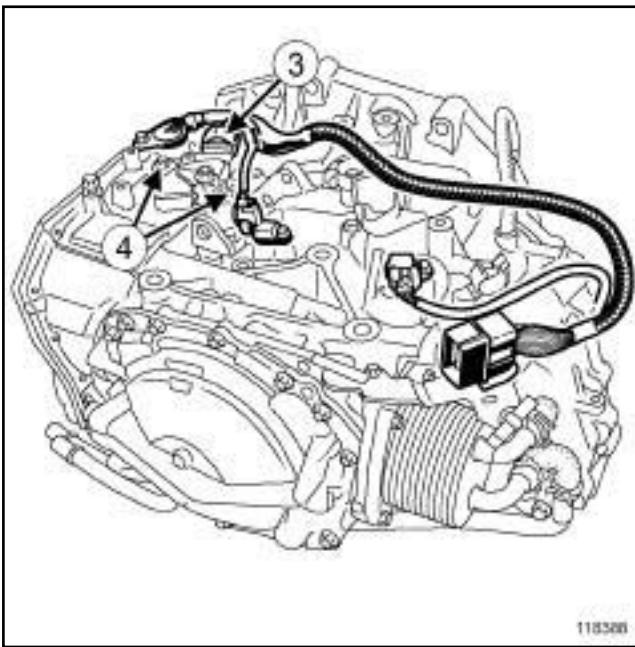
122725

REMOVAL**I - REMOVAL PREPARATION OPERATION**

- Position the gear selector in N.
- Remove:
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture).

- Unclip the ball joint (1) from the cable on the multifunction switch using an open-jawed spanner.
- Unlock and detach the cable sleeve stop (2) from its mounting.
- Remove:
 - the multifunction switch control lever nut,
 - the multifunction switch control lever.

AJ0

II - REMOVAL OPERATION FOR PART CONCERNED


- Disconnect the multifunction switch connector (3) .
- Remove:
 - the multifunction switch bolts (4) ,
 - the multifunction switch.

REFITTING
I - REFITTING OPERATION FOR PART CONCERNED

- Position the multifunction switch in the **N** position.
- Refit:
 - the multifunction switch,
 - the multifunction switch bolts.
- Without tightening, fit the multifunction switch bolts.

- Set up the (**Bvi. 1805**) (5) .
- Align the shaft of the tool with the relevant hole (6) on the multifunction switch.
- Torque tighten the **multifunction switch bolts** (6 Nm).
- Remove the (**Bvi. 1805**).
- Connect the multifunction switch connector.

II - FINAL OPERATION.

- Refit:
 - the multifunction switch control lever,
 - the multifunction switch control lever nut.
- Torque tighten the **multifunction switch control lever nut** (17 Nm).
- Fit and lock the cable sleeve stop on its mounting.
- Clip the cable ball joint onto the multifunction switch.
- Refit:
 - the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

AJ0

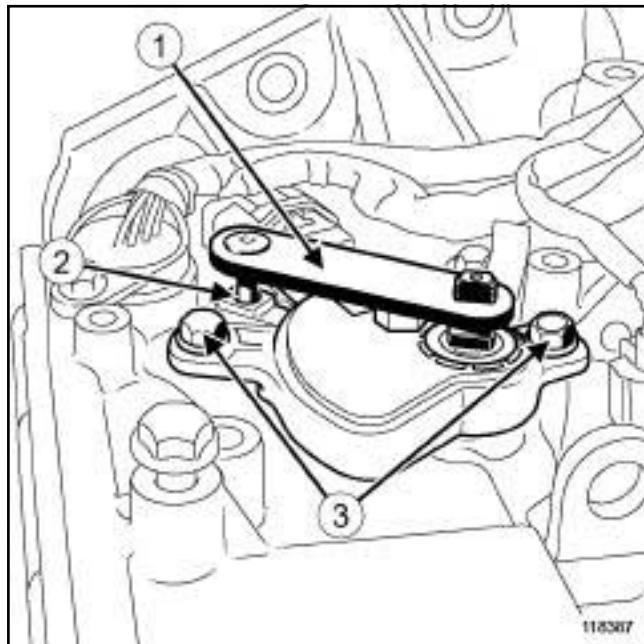
Special tooling required

Bvi. 1805 Multifunction switch adjusting lever AJ0

Tightening torques 

multifunction switch bolts	6 Nm
----------------------------	-------------

Adjust the multifunction switch using the tool (**Bvi. 1805**) when removing and refitting the multifunction switch or during fault finding.



118387

- With the multifunction switch loosened and in position "N", place the tool (**Bvi. 1805**) (1) on the control lever and align the shaft of the tool opposite the relevant hole on the multifunction switch (2).
- Torque tighten the **multifunction switch bolts (6 Nm)** (3).
- Remove the.

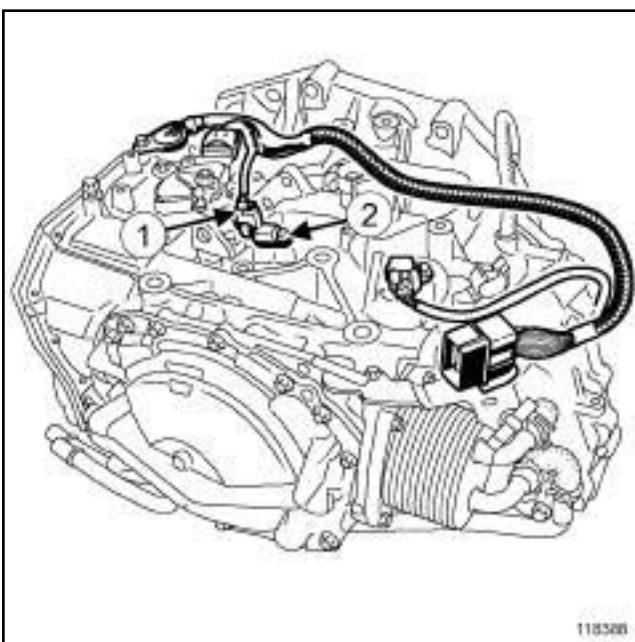
AJ0

Tightening torques

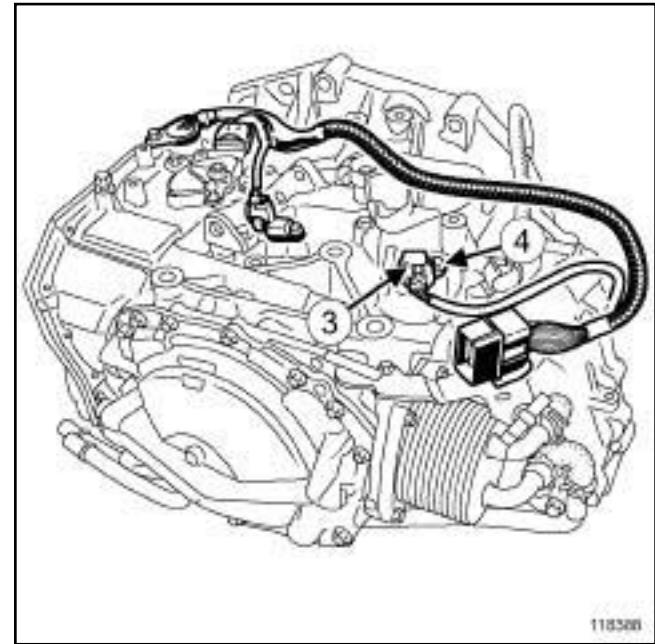
input sensor bolt	6 Nm
output sensor bolt	6 Nm

REMOVAL**I - REMOVAL PREPARATION OPERATION** Remove:

- the battery (see **Battery: Removal - Refitting** (MR 415, 80A, Battery)),
- the battery tray (see **Battery tray: Removal - Refitting** (MR 415, 80A, Battery)),
- the air filter box (see **Air filter unit: Removal - Refitting** (MR 415, 12A, Fuel mixture)).

II - REMOVAL OPERATION FOR PART CONCERNED**1 - Input speed sensor:**

- Disconnect the input speed sensor connector (1).
- Remove:
- the input speed sensor bolt (2),
 - the input speed sensor.

2 - Output speed sensor:

- Disconnect the output speed sensor connector (3).
- Remove:
- the output speed sensor bolt (4),
 - the output speed sensor.

REFITTING**I - REFITTING OPERATION FOR PART CONCERNED****1 - Input speed sensor:**

- Refit:
- the input speed sensor,
 - the input speed sensor bolt.
- Torque tighten the **input sensor bolt (6 Nm)**.
- Connect the input speed sensor connector.

2 - Output speed sensor:

- Refit:
- the output speed sensor,
 - the output speed sensor bolt.
- Torque tighten the **output sensor bolt (6 Nm)**.
- Connect the output speed sensor connector.

AUTOMATIC GEARBOX
Speed sensor: Removal - Refitting

23A

AJ0

II - FINAL OPERATION.

Refit:

- the air filter box (see **Air filter unit: Removal - Re-fitting**) (MR 415, 12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Re-fitting**) (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

M9R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

tweezers

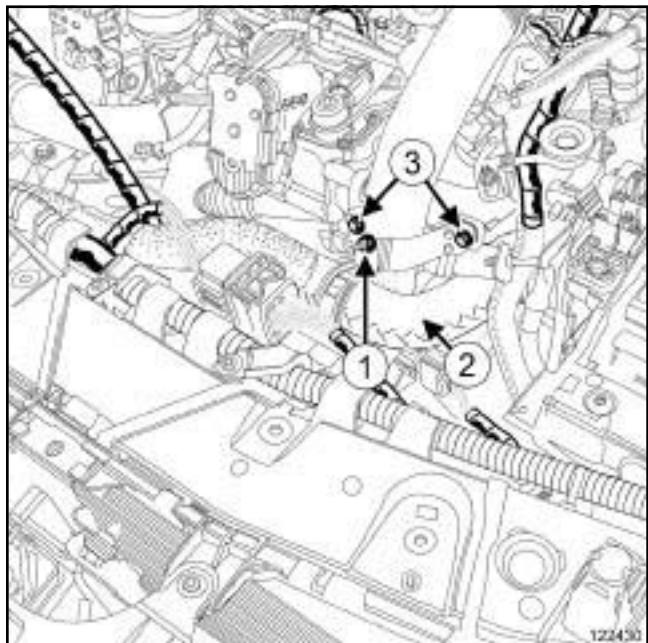
Diagnostic tool

Tightening torques 

oil pressure switch **4.4 N.m**

hydraulic distributor
housing bolts **8 N.m**

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



122430

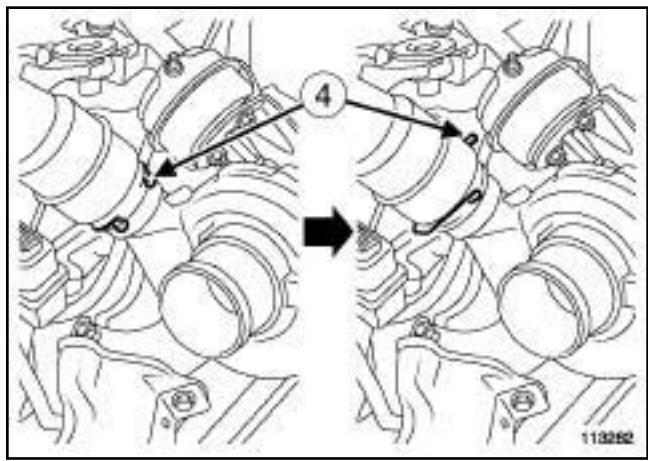
REMOVAL**I - REMOVAL PREPARATION OPERATION**

- 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 tray: Removal - Refitting**) (80A, Battery),
 - the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray,
 - 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 end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

- Drain:

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),

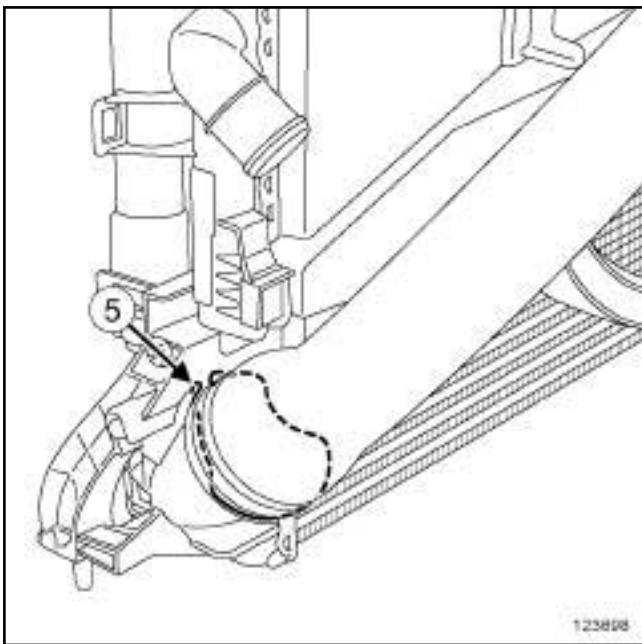
- Remove the nut (1) from the cooling hose.
- Move the cooling hose aside (2).
- Remove the air pipe bolts (3) at the intercooler inlet.



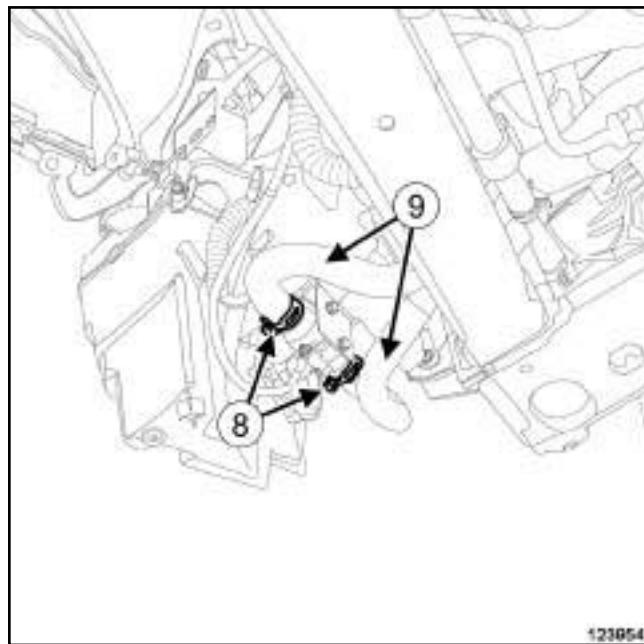
113282

- Rotate the intercooler air inlet pipe clip (4) on the turbocharger.

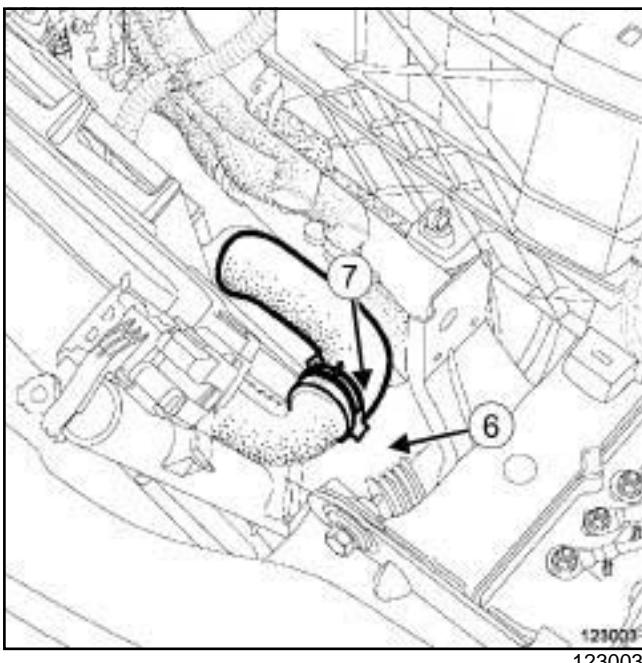
M9R, and AJ0



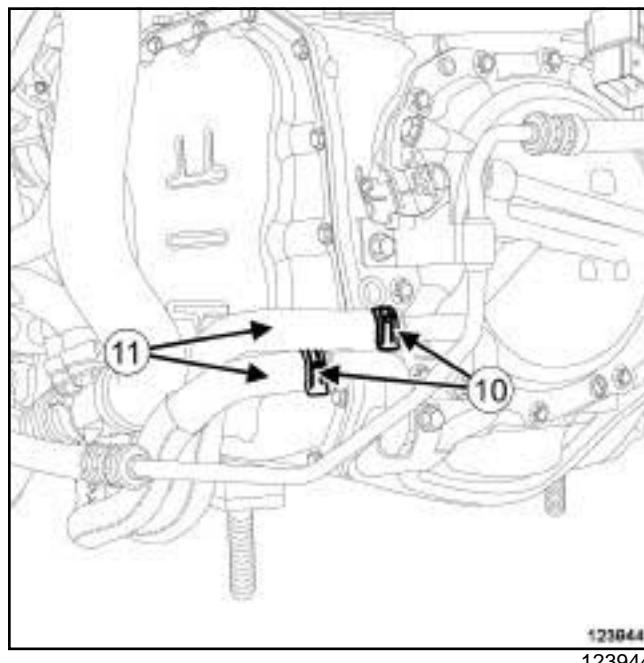
- Move aside the intercooler air inlet pipe clip (5) at the intercooler.
- Remove the air pipe at the intercooler inlet.



- Release the clips (8) on the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Disconnect the thermoplunger unit hoses (9) .

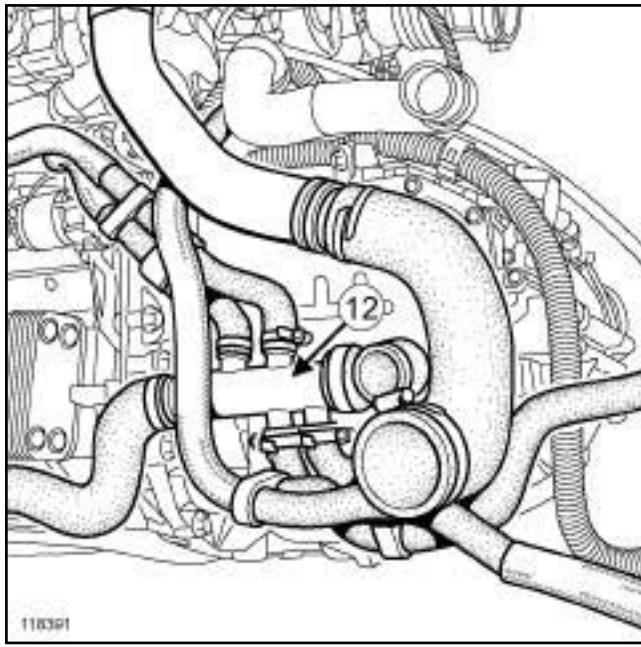


- Remove the clip (6) from the radiator lower hose using the tool (**Mot. 1448**).
- Disconnect the lower hose (7) from the radiator.



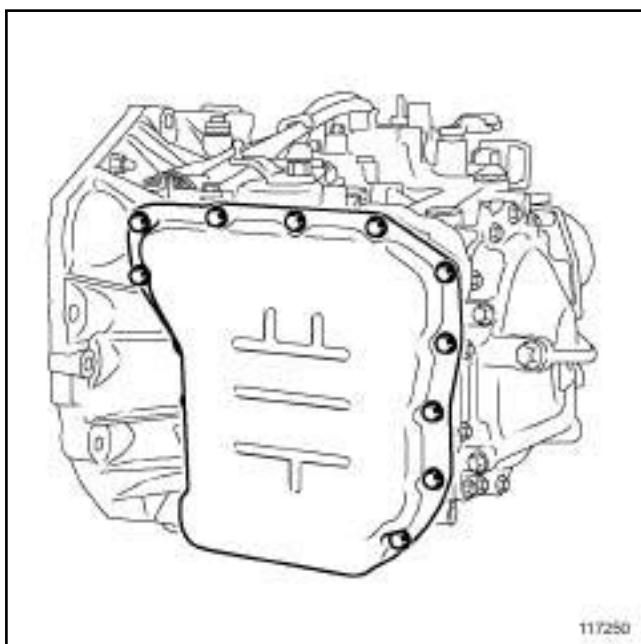
- Separate the clips (10) of the automatic gearbox oil cooler pipe hoses using the tool (**Mot. 1448**).
- Disconnect the hoses (11) from the automatic gearbox oil cooler pipes.

M9R, and AJ0



118391

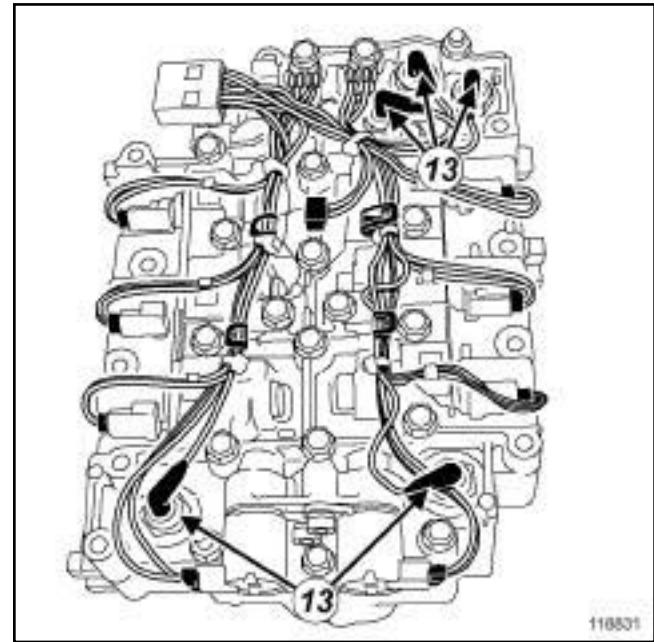
- Move aside the cooling hose assembly (12).



117250

- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118831

- Disconnect the oil pressure switch connector (13).
- Remove the oil pressure switch concerned.

REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair** (04B, Consumables - Products)) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seals.

II - REFITTING OPERATION FOR PART CONCERNED

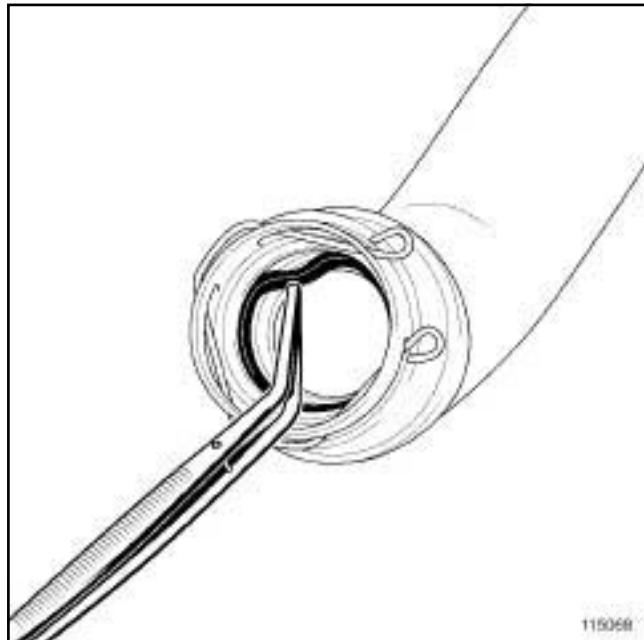
- Refit the oil pressure switch concerned.
- Torque tighten the **oil pressure switch** (4.4 N.m).
- Connect the oil pressure switch connector.

III - FINAL OPERATION

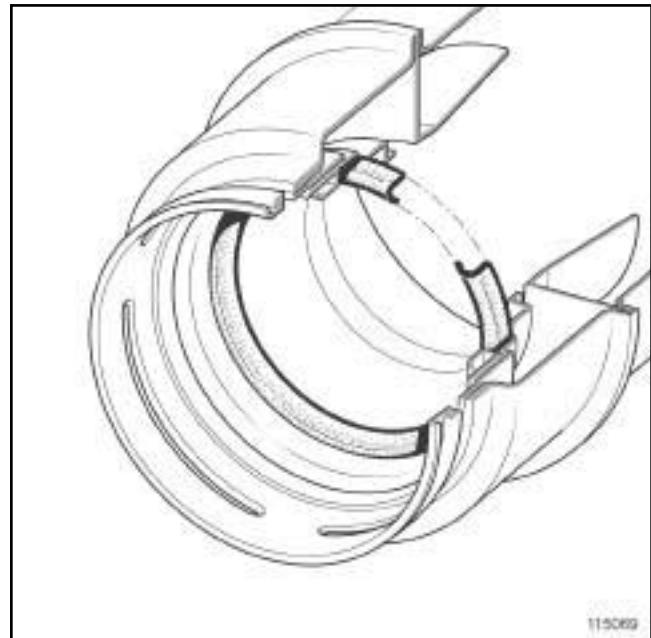
- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing,

M9R, and AJ0

- Torque tighten the **hydraulic distributor housing bolts (8 N.m)**.
- Fit the cooling hose assembly.
- Connect the oil cooler cooling hoses of the automatic gearbox.
- Refit the clips on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Connect the thermoplunger unit hoses.
- Refit the clips on the thermoplunger unit hoses using the tool (**Mot. 1448**).
- Connect the radiator lower hose.
- Refit the radiator lower hose clip using the tool (**Mot. 1448**).



- Remove the air inlet pipe seals of the intercooler using a **tweezers**.



-

Note:

Check that the seals of the intercooler air inlet pipe are fitted in their groove the right way round.

- Refit new seals on the air inlet pipe of the intercooler.
- Rotate the clips of the intercooler air inlet pipe until they are replaced in their groove.

Note:

The intercooler air inlet pipe is correctly clipped on the turbocharger and the intercooler when the clips are engaged in the turbocharger and intercooler groove.

- Clip the air inlet pipe of the intercooler onto the turbocharger and the intercooler.
- Refit the bolts on the intercooler air inlet pipe.
- Tighten the intercooler air inlet pipe bolts.
- Fit the cooling hose on the intercooler air inlet pipe.
- Refit the cooling hose nut on the intercooler air inlet pipe.
- Tighten the cooling hose nut on the intercooler air inlet pipe.
- Refit:
 - the front end panel (see **Front end panel: Removal - Refitting**) (42A, Upper front structure).

M9R, and AJ0

- the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
- 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 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 **Battery: Removal - Refitting**) (80A, Battery).

- Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Fill the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).

Refit the engine undertray.

Apply the after repair procedure using the **Diagnostic tool** :

- connect the **Diagnostic tool**,
- select « Gearbox computer » ,
- go to repair mode,
- display the « before/after repair procedure » for the computer selected,
- select « Hydraulic Distributor » in the « List of components controlled by this computer » section,
- carry out the operations described in the « After repair procedure » section.

F4R, and AJ0

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Equipment required

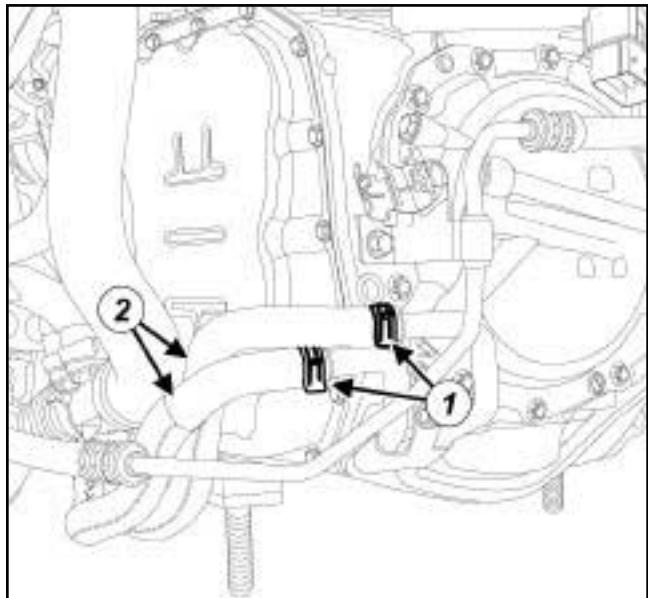
tweezers

Diagnostic tool

Tightening torques 

oil pressure switch **4.4 N.m**

hydraulic distributor
housing bolts **8 Nm**



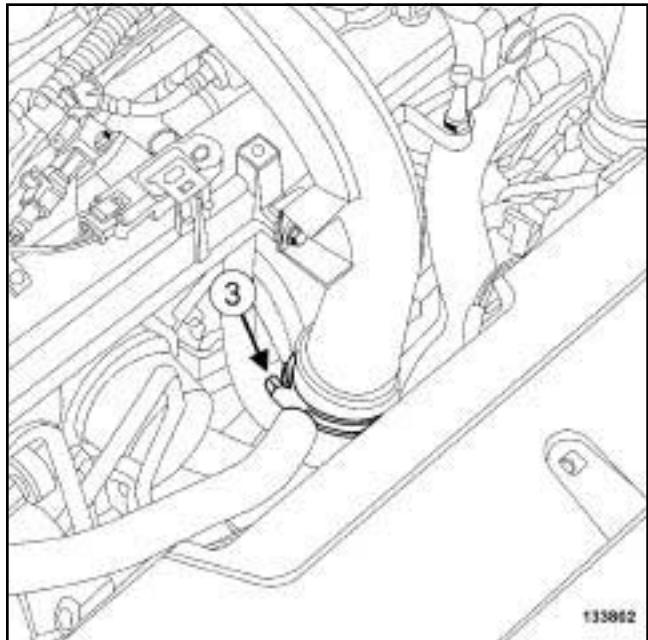
123844

123944

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 tray: Removal - Refitting**) (80A, Battery),
 - the engine undertray bolts,
 - the engine undertray,
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).
- Drain:
 - the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29),
 - the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).

- Separate the clips (1) on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Disconnect the automatic gearbox oil cooler hoses (2).

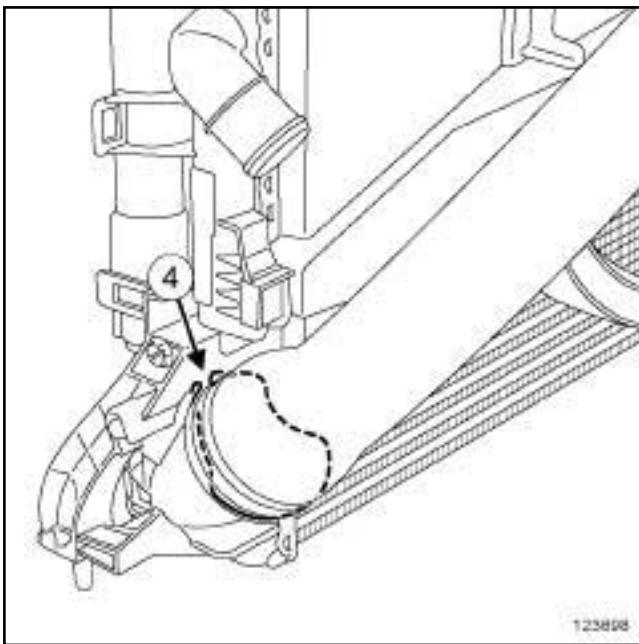


133862

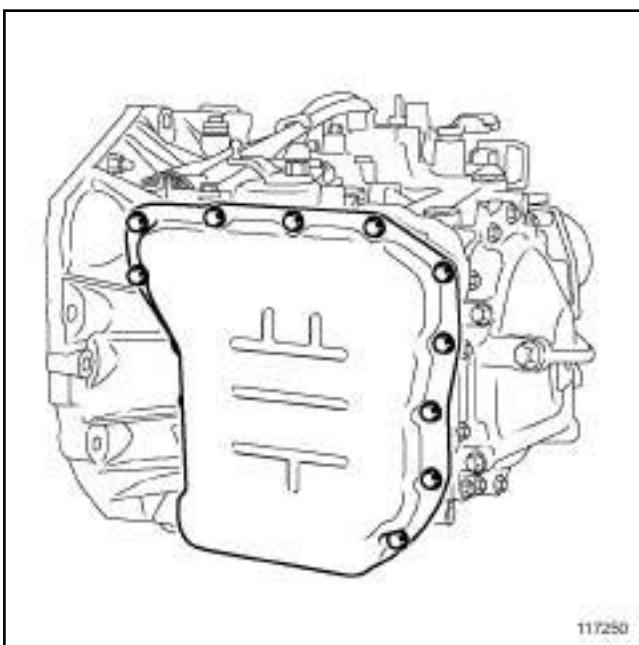
133802

- Loosen the clip (3) of the air inlet pipe of the intercooler at the intercooler air inlet intermediate pipe.

F4R, and AJ0

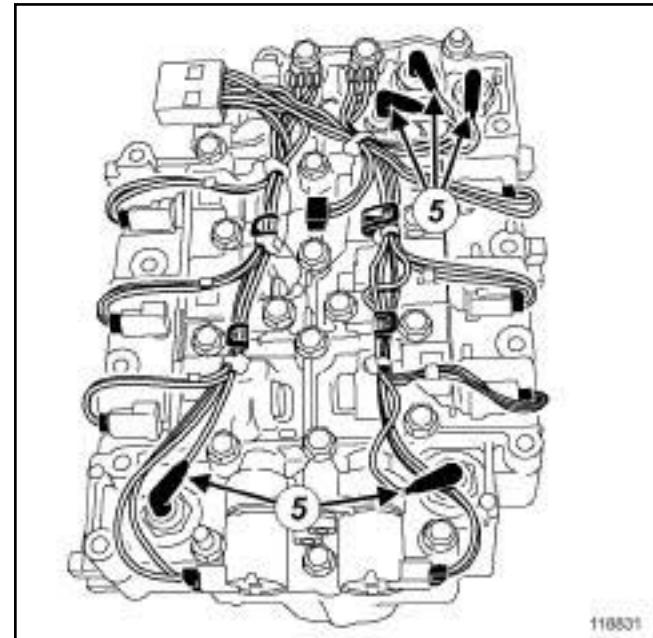


- Rotate the intercooler air outlet pipe clip (4) at the intercooler.
- Remove the air pipe at the intercooler inlet.



- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Disconnect the oil pressure switch connector (5).
- Remove the oil pressure switch concerned.

REFITTING

I - REFITTING PREPARATION OPERATION

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair** (04B, Consumables - Products)) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace:
 - the hydraulic distributor housing seal,
 - the intercooler air inlet pipe seal.

II - REFITTING OPERATION FOR PART CONCERNED

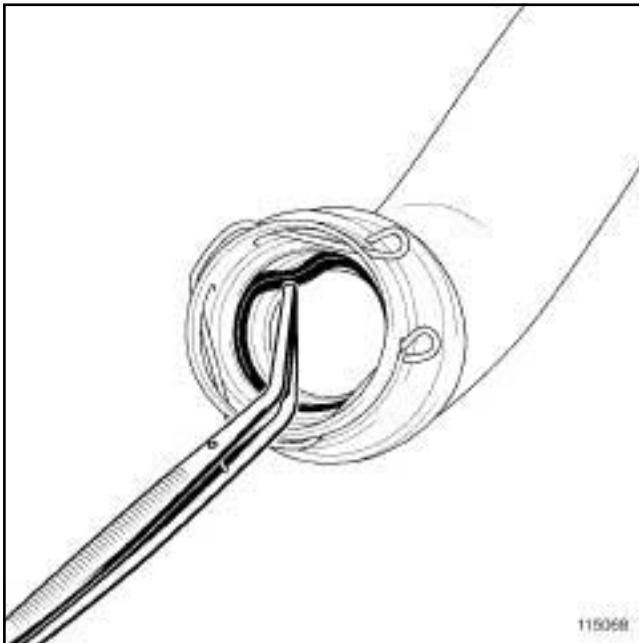
- Refit the oil pressure switch concerned.
- Torque tighten the **oil pressure switch** (4.4 N.m).
- Connect the oil pressure switch connector.

III - FINAL OPERATION

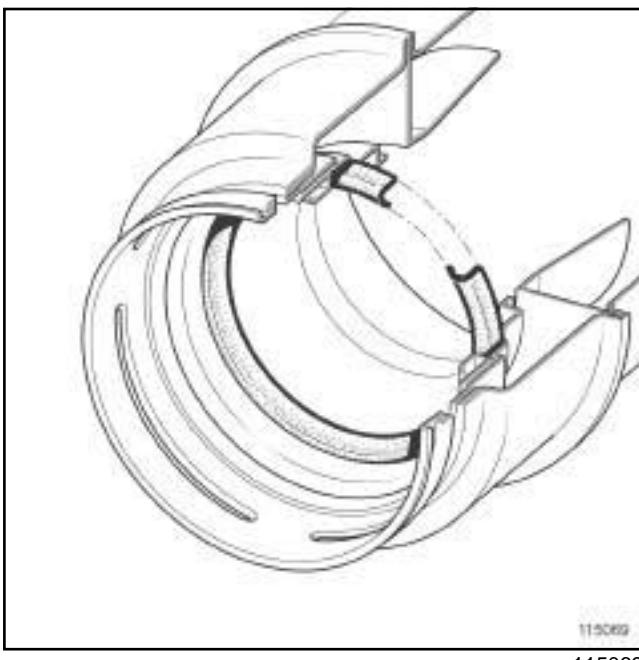
- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.

F4R, and AJ0

- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.



- Remove the air inlet pipe seal of the intercooler using a **tweezers**.



-

Note:

Check that the intercooler air inlet pipe seal is fitted in its groove the right way round.

- Refit a new seal on the intercooler air inlet pipe.

- Rotate the clips of the intercooler air inlet pipe in order to replace them in their groove.

Note:

The intercooler air inlet pipe is correctly clipped onto the turbocharger and the intercooler when the clips are engaged in the turbocharger and intercooler groove.

- Clip the intercooler air inlet pipe onto the intercooler.
- Connect the automatic gearbox oil cooler hoses.
- Fit the clips on the automatic gearbox oil cooler hoses using the tool (**Mot. 1448**).
- Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- Fill up and bleed the cooling system (see **Cooling system: Draining - Refilling**) (19A, Cooling).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29).
- Refit the engine undertray.
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « Before/After repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the « List of components controlled by this computer » section,
 - carry out the operations described in the « After repair procedure » section.

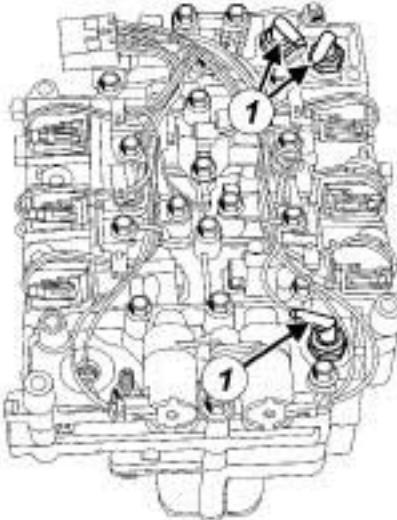
V4Y, and AJ0

Equipment required

Diagnostic tool

Tightening torques oil pressure switch **4.4 N.m**hydraulic distributor
housing bolts **8 Nm**

- the hydraulic distributor housing seal.

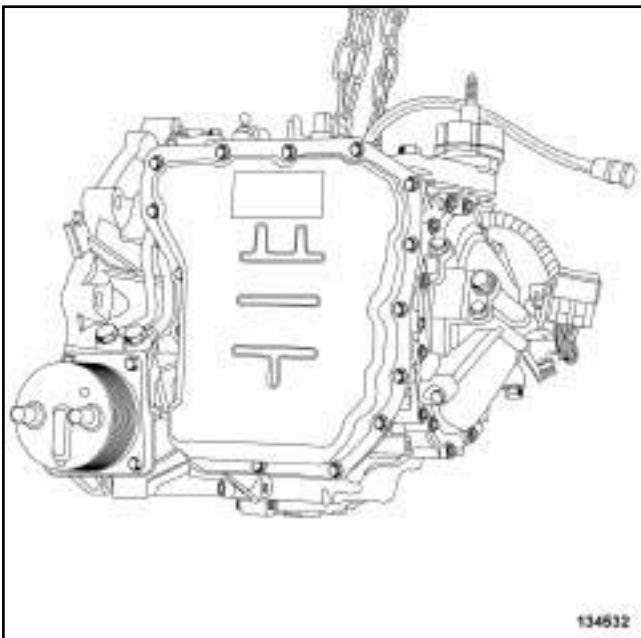
II - OPERATION FOR REMOVAL OF PART CONCERNED

134880

134880

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 automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).



134832

134532

- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,

- Disconnect the oil pressure switch connector (1).

- Remove the oil pressure switch concerned.

REFITTING**I - REFITTING PREPARATION OPERATION**

- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair** (04B, Consumables - Products)) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.
- Always replace the hydraulic distributor housing seal.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the oil pressure switch concerned.
- Torque tighten the **oil pressure switch (4.4 N.m)**.
- Connect the oil pressure switch connector.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,

V4Y, and AJ0

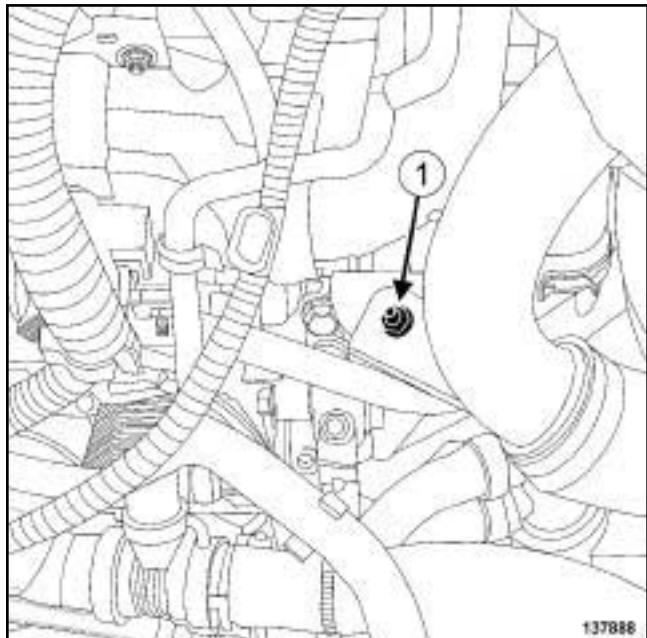
- the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - 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.
- Refit the engine undertray.

V9X, and AJ0

Equipment required

tweezers

Diagnostic tool

Tightening torques oil pressure switch **4.4 Nm**hydraulic distributor
housing bolts **8 Nm**

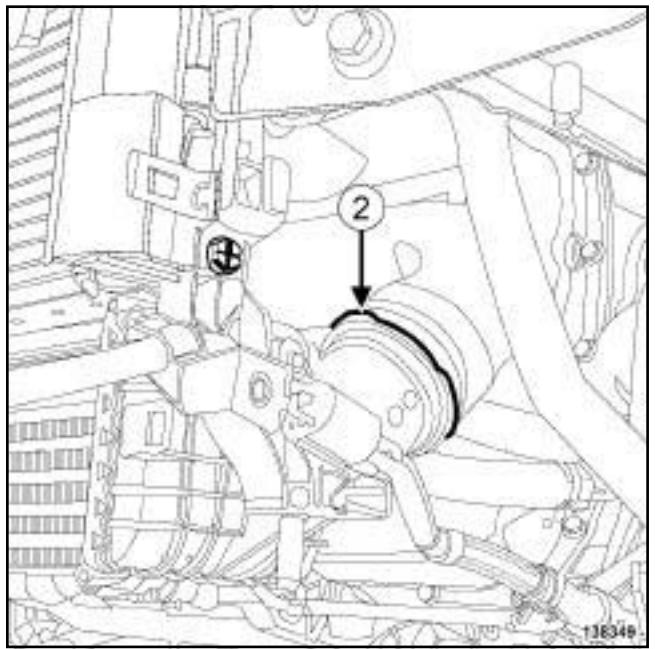
137888

137888

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 - Re-fitting**) (80A, Battery).
- Remove:
 - the engine undertray bolts,
 - the engine undertray.
- Drain the automatic gearbox oil (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29) .

- Remove the turbocharger outlet air pipe nut (1) .
- Move aside the turbocharger air outlet pipe.
- Loosen the clip of the air pipe between the rigid pipe and the outlet hose of the turbocharger.
- Disconnect the air pipe between the rigid pipe and the outlet hose of the turbocharger.

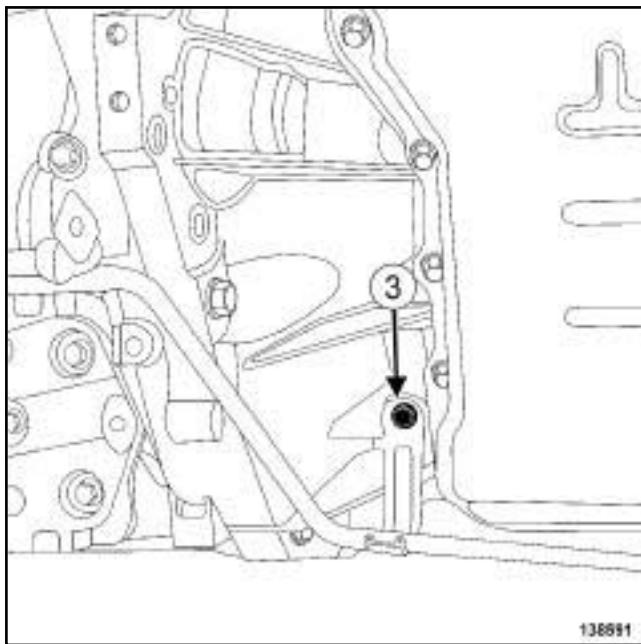


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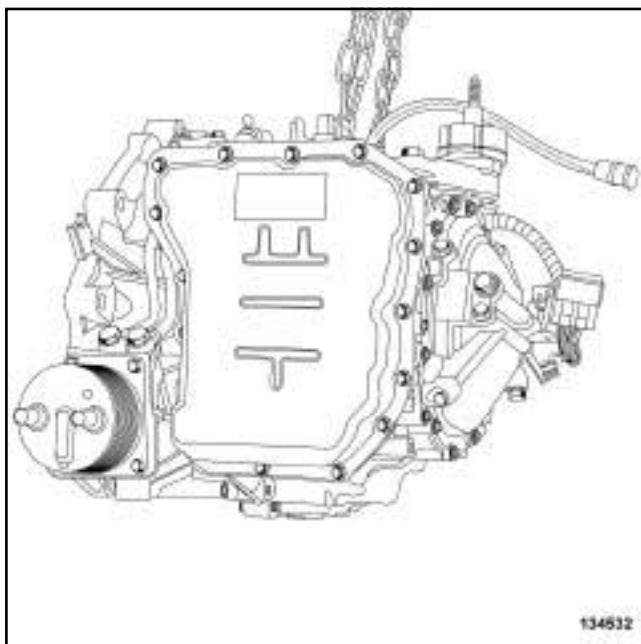
138349

- Rotate the intercooler air inlet pipe clip (2) on the intercooler.
- Remove the inlet pipe from the intercooler.

V9X, and AJ0

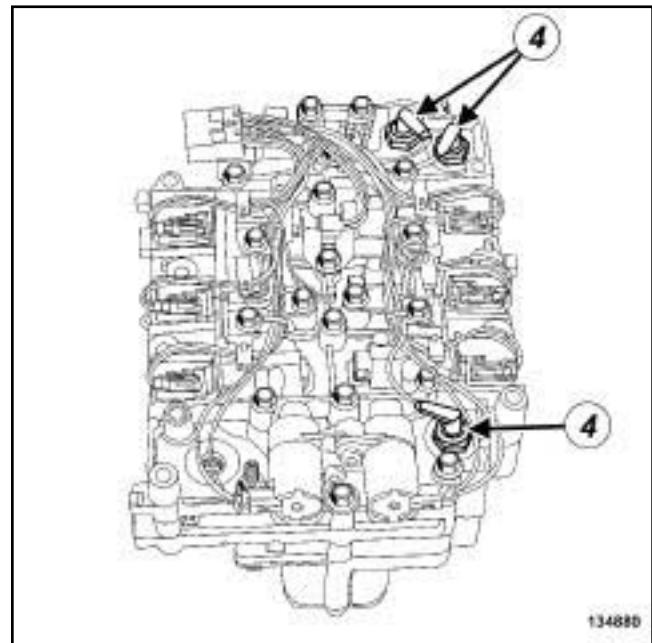


- Remove the bolt (3) from the power-assisted steering pipe.



- Remove:
 - the hydraulic distributor housing bolts,
 - the hydraulic distributor housing,
 - the hydraulic distributor housing seal.

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Disconnect the oil pressure switch connector (4).
- Remove the oil pressure switch concerned.

REFITTING

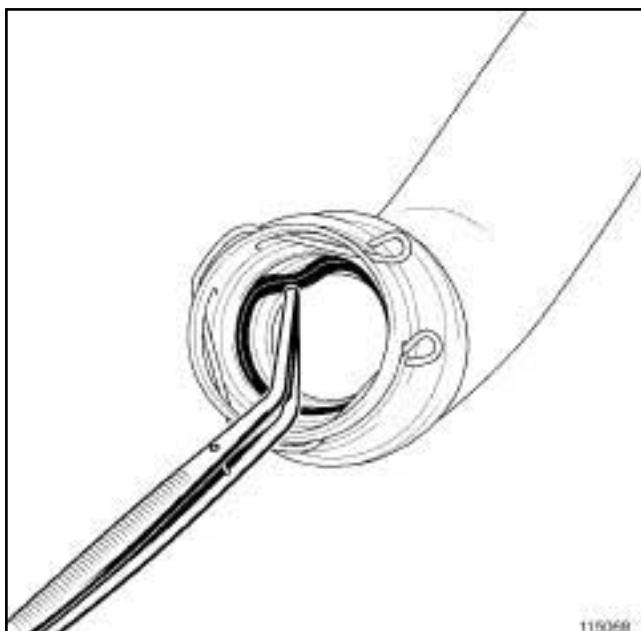
I - REFITTING PREPARATION OPERATION

- Always replace:
 - the hydraulic distributor housing seal.
 - the seal from the intercooler air inlet pipe.
- Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair** (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

134532

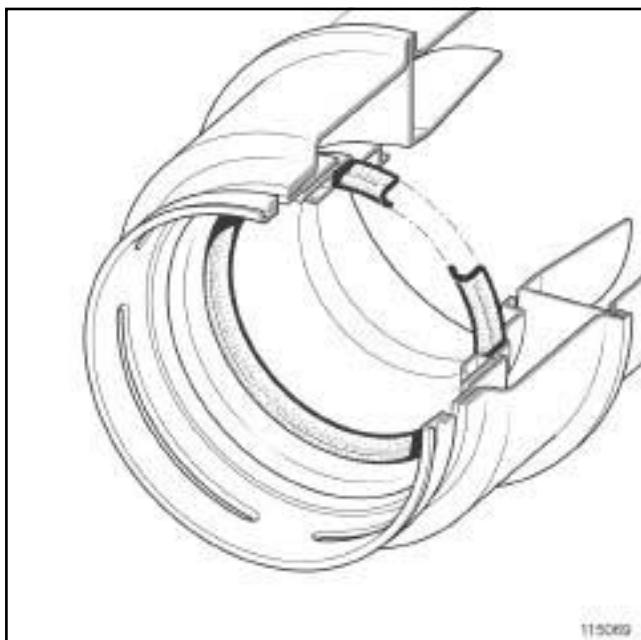
134532

V9X, and AJ0



115068

- Remove the air inlet pipe seal of the intercooler using a **tweezers**.



115069

-

Note:

Check that the seal of the intercooler air inlet pipe is fitted the correct way round.

- Refit a new seal on the intercooler air inlet pipe.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the oil pressure switch concerned.
- Torque tighten the **oil pressure switch (4.4 N.m)**.
- Connect the oil pressure switch connector.

III - FINAL OPERATION

- Refit:
 - a new hydraulic distributor housing seal,
 - the hydraulic distributor housing.
- Torque tighten the **hydraulic distributor housing bolts (8 Nm)**.
- Refit:
 - the power-assisted steering pipe bolt,
 - the intercooler air inlet pipe.
- Fit the intercooler air inlet pipe clip on the intercooler.
- Connect the air pipe between the rigid pipe and the outlet hose of the turbocharger.
- Tighten the clip of the air pipe between the rigid pipe and the outlet hose of the turbocharger.
- Refit the turbocharger air outlet pipe nut.
- Fit the turbocharger air outlet pipe.
- Connect the battery (see **Battery: Removal - Refitting** (80A, Battery)).
- Top up the automatic transmission (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page 23A-29).
- Apply the after repair procedure using the **Diagnostic tool** :
 - connect the **Diagnostic tool**,
 - select « Gearbox computer » ,
 - go to repair mode,
 - display the « before/after repair procedure » for the computer selected,
 - select « Hydraulic distributor » in the « List of components controlled by this computer » section,
 - carry out the operations described in the « After repair procedure » section.
- Refit the engine undertray.

Automatic gearbox converter: Removal - Refitting

23A

AJ0

- The removal-refitting method for the automatic gearbox converter is included in the method for removing the converter seal (see **23A, Automatic gearbox, Converter seal: Removal - Refitting**, page **23A-107**) .

AJ0

Special tooling required

Bvi. 1804 Kit for fitting differential seals and AJ0 converter

Equipment required

Diagnostic tool

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

 Remove:

- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Front upper structure),

- the particle filter (see **Particle filter: Removal - Refitting**) (MR 415, 19B, Exhaust).

 Drain:

- the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling),

- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**),

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning).

 Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),

- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),

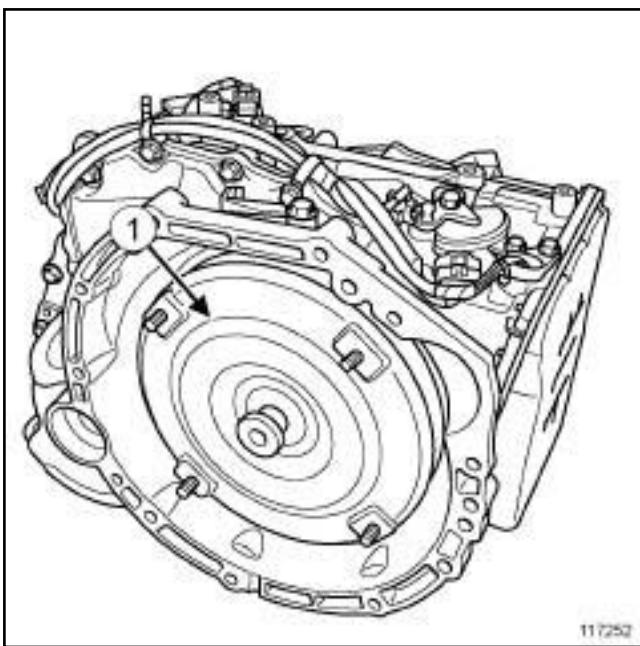
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),

- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),

- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals),

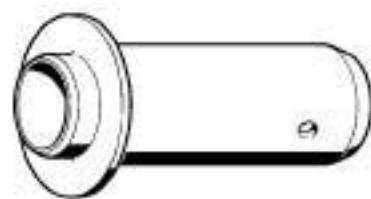
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox: Removal - Refitting**, page **23A-6**).

AJ0



- Check and clean the converter seal mating face on the gearbox.

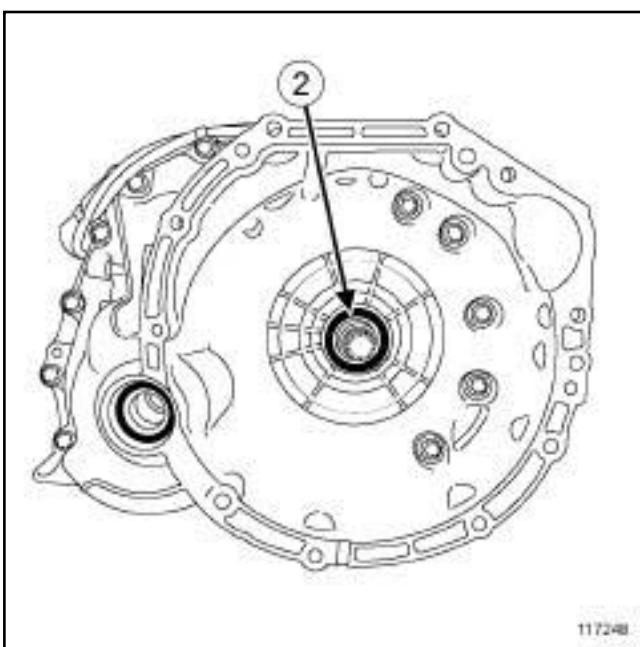
II - REFITTING OPERATION FOR PART CONCERNED



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- Remove the converter (1).

II - REMOVAL OPERATION FOR PART CONCERNED



- Remove the converter seal (2) using a screwdriver, taking care not to scratch the input shaft splines.

REFITTING

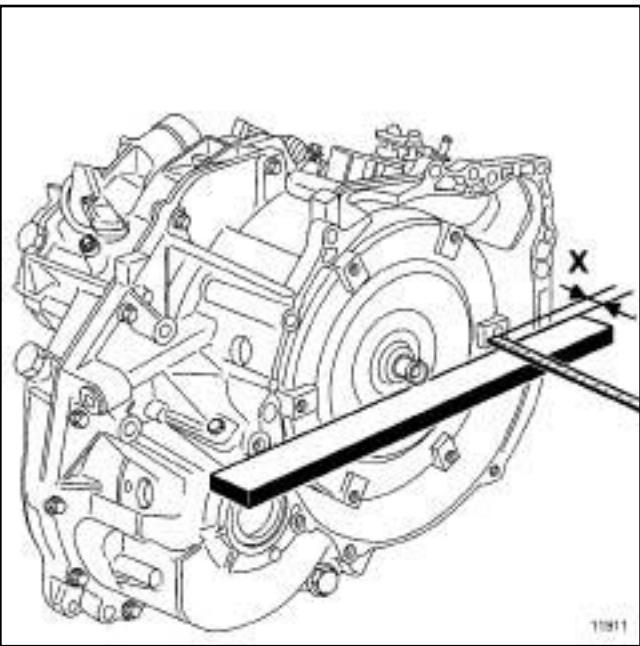
I - REFITTING PREPARATIONS OPERATION

- Always replace the converter seal with a new seal.

- Refit the new converter seal using the tool from the kit (Bvi. 1804).

III - FINAL OPERATION.

- Refit the converter.



- Check the distance X using a ruler. The distance must be a minimum of 20.5 mm.

- Refit:

- the automatic gearbox (see 23A, Automatic gearbox, Automatic gearbox: Removal - Refitting, page 23A-6),

AJ0

- the engine - gearbox assembly (see **Engine - gearbox assembly: Removal - Refitting**) (MR 415, 10A, Engine and peripherals),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (MR 415, 19D, Engine mounting),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 416, 41A, Front lower structure),
- the particle filter (see **Particle filter: Removal - Refitting**) (MR 415, 19B, Exhaust),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 416, 42A, Front upper structure),
- the headlights (see **Headlight: Removal - Refitting**) (MR 415, 80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) ,
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
- the air filter box (see **Air filter unit: Removal - Refitting**) (MR 415, 12A, Fuel mixture),
- the injection computer (see **Diesel injection computer: Removal - Refitting**) (MR 415, 13B, Diesel injection) or (see **Petrol injection computer: Removal - Refitting**) (MR 415, 17B, Petrol injection),
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 415, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

- Fill and bleed the cooling system (see **Cooling system: Draining - Refilling**) (MR 415, 19A, Cooling).

Refill:

- the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 415, 62A, Air conditioning),
- the automatic gearbox (see **23A, Automatic gearbox, Automatic gearbox oil: Draining - Filling**, page **23A-29**).

Apply the after repair procedure using the **Diagnostic tool** :

Connect the **Diagnostic tool**

Select gearbox computer

Go to repair mode

Display the gearbox computer «Before/after repair » procedure

Carry out the operations described in the « After repair procedure » section.

Refit:

- the engine undertray,
- the engine undertray bolts,
- the engine cover.

AJ0

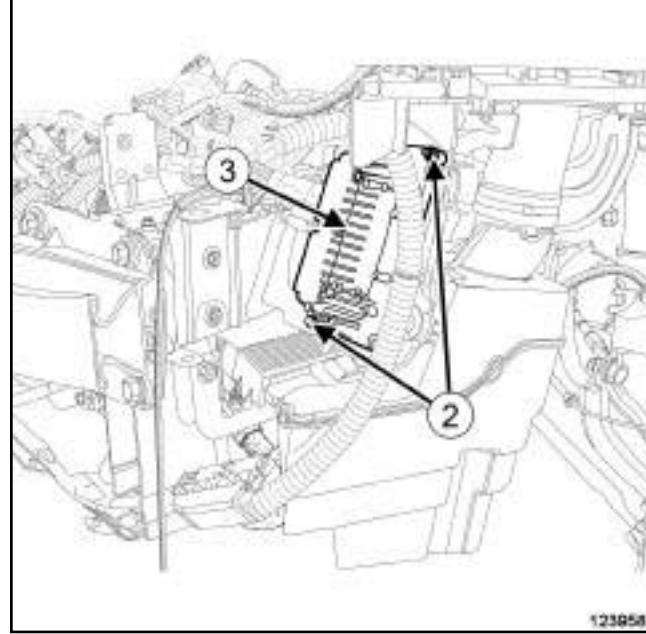
Equipment required

Diagnostic tool

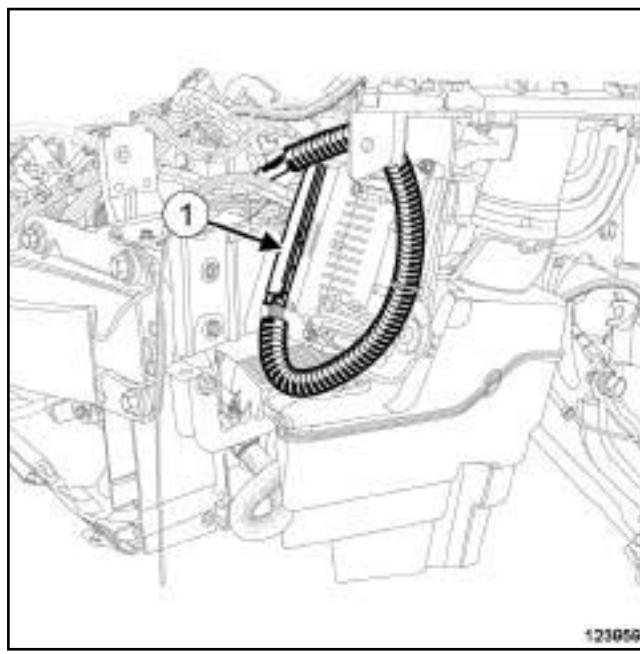
REMOVAL

I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Disconnect the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).
- Remove:
 - the engine undertray bolts,
 - the engine undertray,
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection).



II - REMOVAL OPERATION FOR PART CONCERNED



- Disconnect the connector (1) from the automatic transmission computer.

- Remove:
 - the mountings (2) from the automatic transmission computer,
 - the automatic transmission computer (3) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- Refit:
 - the automatic transmission computer,
 - the automatic transmission computer mountings.
- Tighten the automatic transmission computer mountings.
- Connect the automatic transmission computer connector.

II - FINAL OPERATION.

-
- Refit:
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 416, 55A, Exterior protection),
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),

Automatic gearbox converter: Removal - Refitting

23A

AJ0

- the engine undertray,
- the engine undertray bolts.

Apply the after repair procedure using the **Diagnostic tool** :

Connect the **Diagnostic tool**

Select gearbox computer

Go to repair mode

Display the gearbox computer «Before/after repair » procedure

Carry out the operations described in the « After repair procedure » section.

Connect the battery (see **Battery: Removal - Refitting**) (MR 415, 80A, Battery).

AJ0

Special tooling required

Rou. 604-01 Hub locking tool.

Tav. 476 Ball joint extractor.

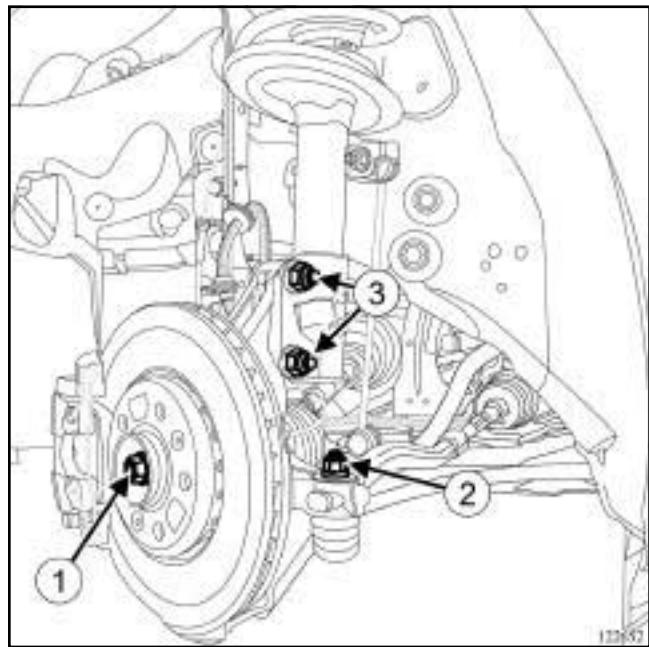
Tightening torques 

shock absorber base bolts 180 Nm

track rod end nut 37 Nm

hub nut 105 Nm

II - OPERATION FOR REMOVAL OF PART CONCERNED



122652

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 left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

Unclip:

- the wheel speed sensor wiring harness,
- the brake hose.

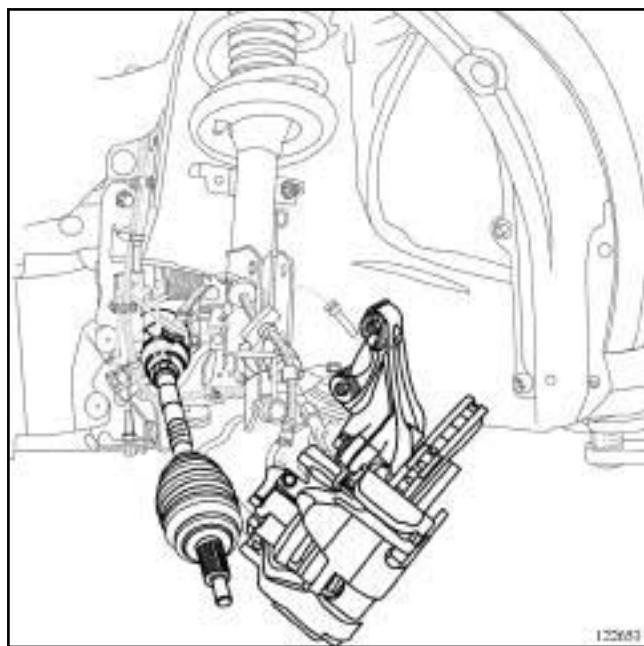
Remove:

- the hub nut (1) using the (**Rou. 604-01**),
- the track rod end nut (2) .

Detach the track rod end using the (**Tav. 476**).

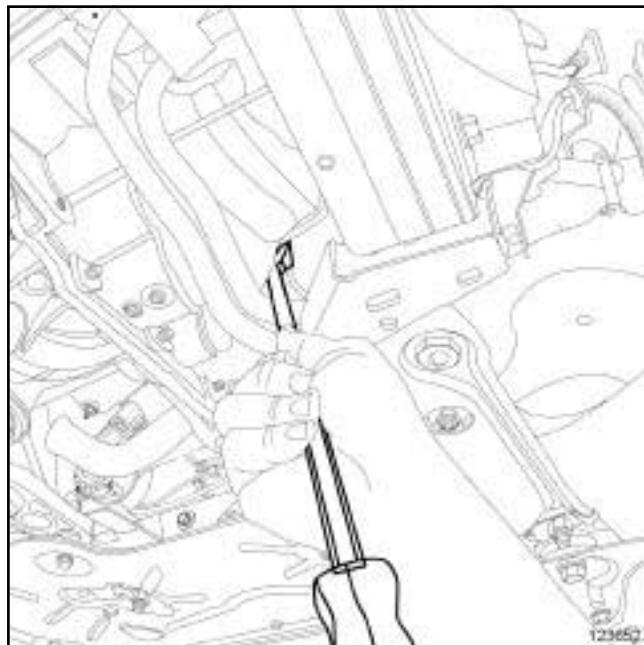
Remove the shock absorber base bolts (3) .

AJ0



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- Push the stub-axle carrier driveshaft by rotating the latter.



123652

-

Note:

Do not apply pressure to the gearbox oil/water temperature exchanger pipes.

- Remove the driveshaft from the gearbox using a lever.
- Remove the front left-hand driveshaft.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- Fit the driveshaft into the gearbox as horizontally as possible.

Note:

The driveshaft must fit freely in the stub axle carrier until it protrudes enough for the hub nut to be fitted.

- Engage the driveshaft into the stub axle carrier.

Refit:

- the shock absorber base bolts,
- the track rod end nut,
- the hub nut using tool (**Rou. 604-01**).

Tighten to torque:

- the **shock absorber base bolts (180 Nm)**,
- the **track rod end nut (37 Nm)**,
- the **hub nut (105 Nm)**.

Clip:

- the brake hose,
- the wheel speed sensor wiring harness.

II - FINAL OPERATION.

Refit:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

Front left-hand driveshaft: Removal - Refitting

PK4

Special tooling required

Rou. 604-01 Hub locking tool.

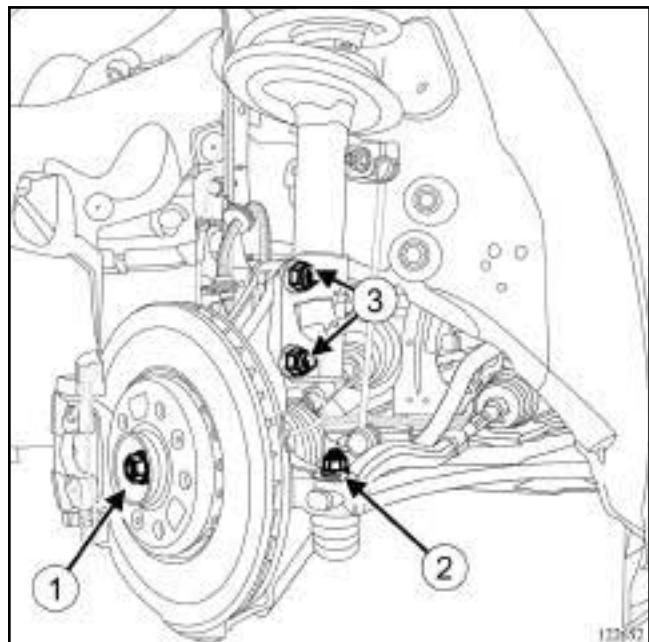
Tav. 476 Ball joint extractor.

Tightening torques 

shock absorber base nuts 180 Nm

track rod end nut 37 Nm

hub nut 105 Nm



122652

REMOVAL**I - REMOVAL PREPARATION OPERATION**

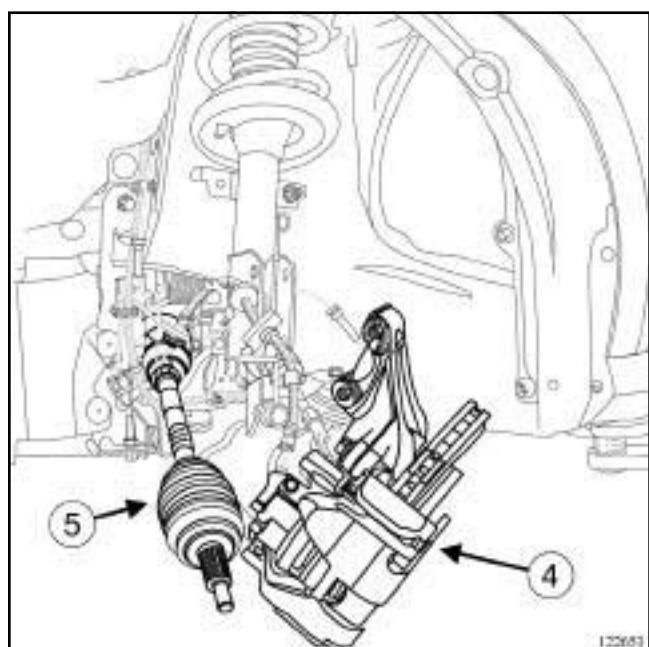
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray.
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2).

II - REMOVAL OPERATION FOR PART CONCERNED

- Unclip:
 - the wheel speed sensor wiring,
 - the brake hose.

 Remove:

- the nut (1) from the hub, immobilising the hub using the (**Rou. 604-01**),
- the track rod end nut (2) .
- Detach the track rod end using the (**Tav. 476**).
- Remove the shock absorber base bolts (3) .



122653

- Push the driveshaft (5) away from the stub axle carrier (4) by rotating the latter.
- Remove the front left-hand driveshaft.

PK4

REFITTING**I - REFITTING PREPARATIONS OPERATION**

- Part always to be replaced:
 - differential output seal (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) .
- Consumables for repair:
 - gearbox oil (see **21A, Manual gearbox, Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants).

II - REFITTING OPERATION FOR PART CONCERNED

- Fit the driveshaft into the gearbox as horizontally as possible.
- Engage the driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

- Refit:
 - the shock absorber base bolts,
 - the shock absorber base nuts.
- Torque tighten the **shock absorber base nuts (180 Nm)**.
- Position the track rod.
- Torque tighten the **track rod end nut (37 Nm)**.
- Refit the hub nut.
- Torque tighten the **hub nut (105 Nm)** immobilising the hub with the (Rou. 604-01).
- Clip:
 - the brake hose,
 - the wheel speed sensor wiring.

III - FINAL OPERATION.

- Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres).
- Fill the gearbox and check the level (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Refit:
 - the engine undertray,
 - the engine undertray bolts.

TL4

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.
Emb. 880	Pin extractor tool.
Tav. 1813	Extraction claw for clip secured type driveshafts

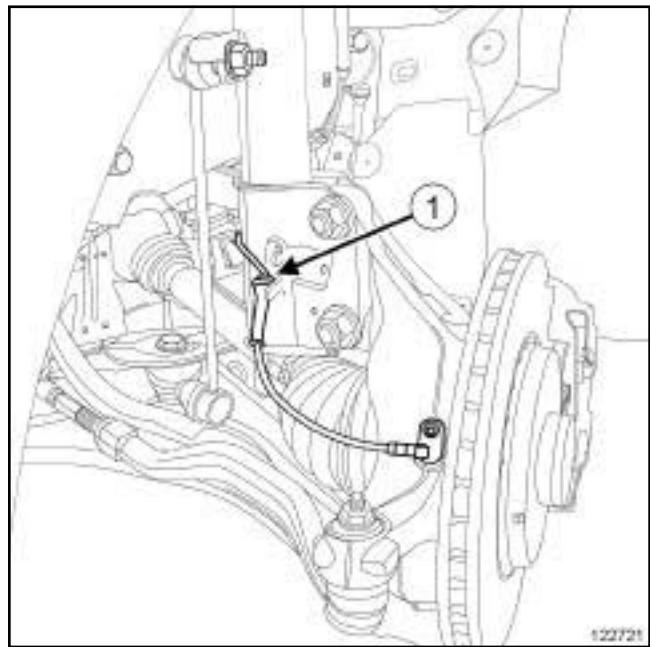
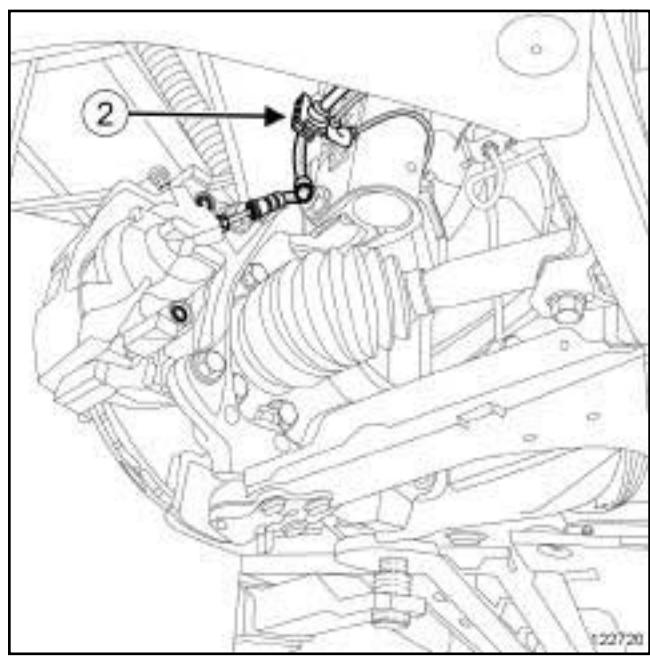
Tightening torques 	
shock absorber base bolts	180 Nm
track rod end nut	37 Nm
hub nut	280 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

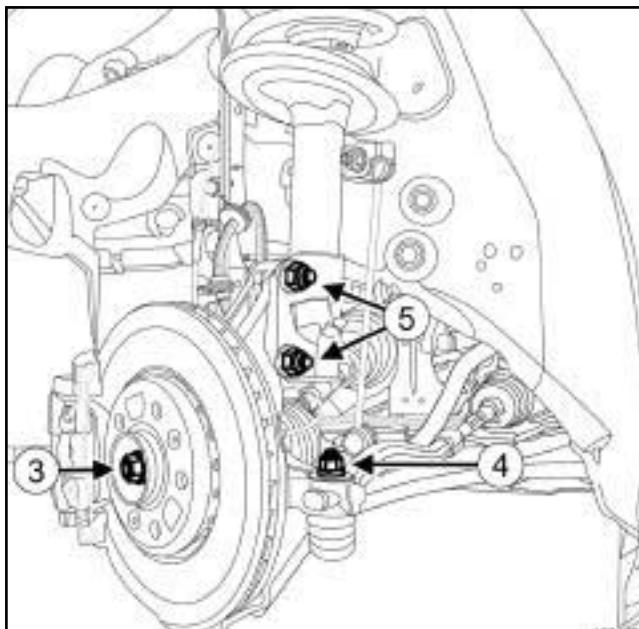
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray.
- Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

II - REMOVAL OPERATION FOR PART CONCERNED

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122721122720
122720

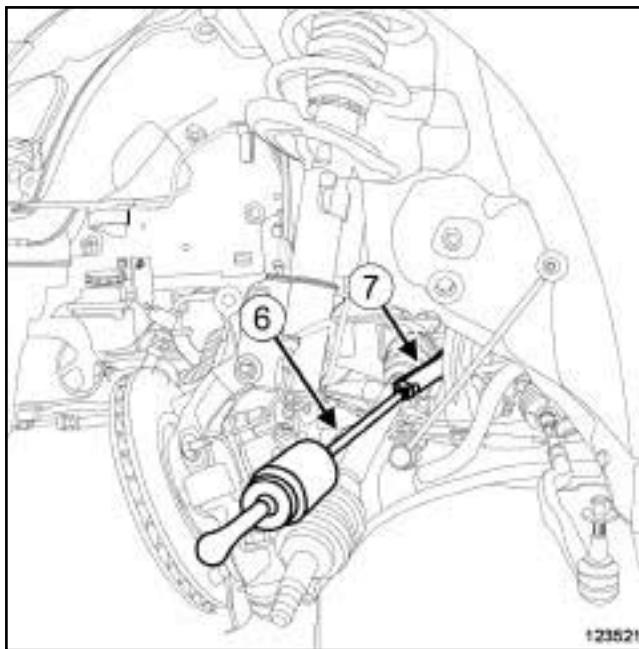
- Unclip, from the base of the shock absorber:
 - the wheel speed sensor wiring (1) ,
 - the brake hose (2) .

TL4



122652

- Remove:
 - the hub nut (3) using the **(Rou. 604-01)**,
 - the track rod end nut (4) .
- Extract the track rod end using the **(Tav. 476)**.
- Remove the shock absorber base bolts (5) .
- Push the front left-hand wheel driveshaft from the hub carrier by rotating the hub carrier.



123521

- Remove the front left-hand wheel driveshaft from the manual gearbox using the **(Emb. 880)** (6) fitted with the **(Tav. 1813)** (7) .

- Remove the front left-hand driveshaft.

REFITTING

I - REFITTING PREPARATIONS OPERATION

- Always replace the left-hand differential output seal.

II - REFITTING OPERATION FOR PART CONCERNED

- Refit the new left-hand differential output seal (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) .
- Engage the front left-hand wheel driveshaft into:
 - the manual gearbox as horizontally as possible,
 - the hub carrier.

Refit:

- the shock absorber base bolts,
- the track rod end nut,
- the hub nut.

Torque tighten:

- the **shock absorber base bolts (180 Nm)**,
- the **track rod end nut (37 Nm)**,
- the **hub nut (280 Nm)**, using the **(Rou. 604-01)**.

- Clip the following onto the base of the shock absorber:
 - the brake hose,
 - the wheel speed sensor wiring.

III - FINAL OPERATION.

- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**) .
- Refit:
 - the engine undertray,
 - the engine undertray bolts,
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres).

AJ0

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

Tightening torques 	
relay bearing bolt	21 Nm
shock absorber base bolts	180 Nm
track rod end nut	37 Nm
hub nut	105 Nm

REMOVAL

I - RECOMMENDATIONS FOR REPAIR



Note:

Every time the right-hand driveshaft is removed, always replace the relay bearing self-threading bolt with an ISO bolt (except if the entire relay bearing is replaced in which case it is supplied with its self-threading bolt)

II - PARTS AND CONSUMABLES FOR THE REPAIR

Parts always to be replaced:

- the relay bearing bolt

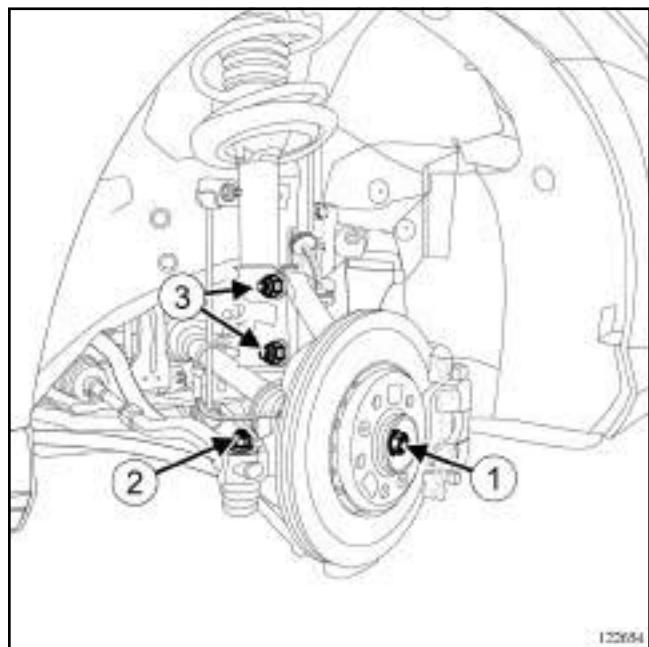
III - REMOVAL PREPARATION OPERATION

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

Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres).

IV - OPERATION FOR REMOVAL OF PART CONCERNED



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Unclip:

- the wheel speed sensor wiring harness,
- the brake hose.

Remove:

- the hub nut (1) using the (**Rou. 604-01**),
- the track rod end nut (2) .

Detach the track rod end using the (**Tav. 476**).

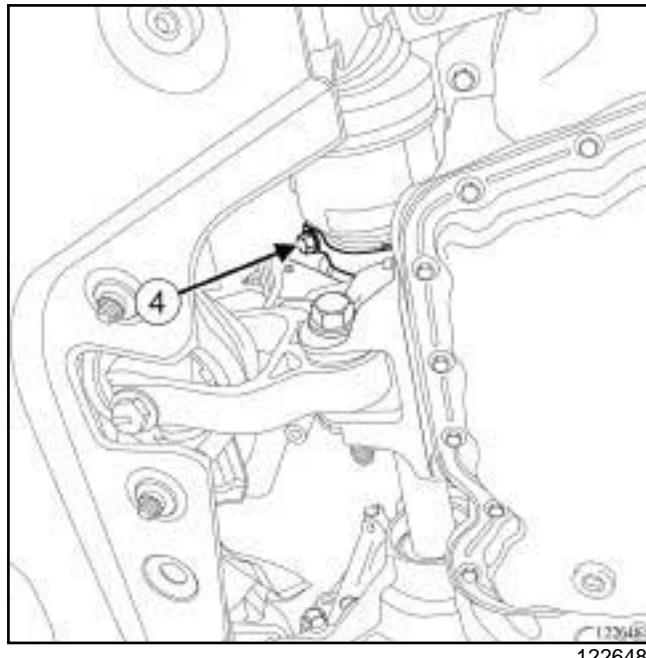
Remove the shock absorber base bolts (3) .

AJ0

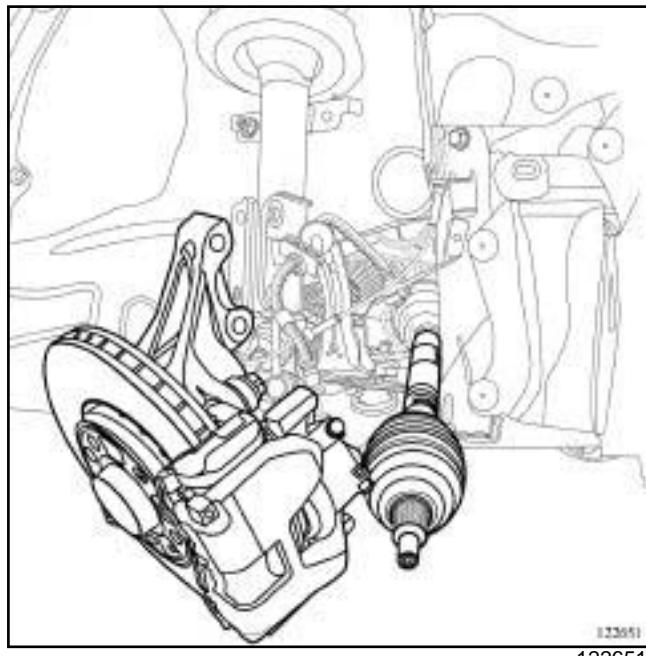
REFITTING

I - REFITTING PREPARATIONS OPERATION

- Clean and grease the driveshaft relay bearing hole into which the bearing is inserted (see **Vehicle: Parts and consumables for the repair**) (MR 415, 04B, Consumables - products).



- Remove the driveshaft relay bearing bolt (4) .



- Push the stub-axle carrier driveshaft by rotating the latter.
 Remove the front right-hand driveshaft.

II - REFITTING OPERATION FOR PART CONCERNED

- Position and insert the driveshaft into the gearbox.
 Refit:
 - the driveshaft into the relay bearing,
 - the relay bearing bolt. Torque tighten the **relay bearing bolt (21 Nm)**.
 Insert the driveshaft into the stub-axle carrier.

Note:

The driveshaft must fit freely in the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

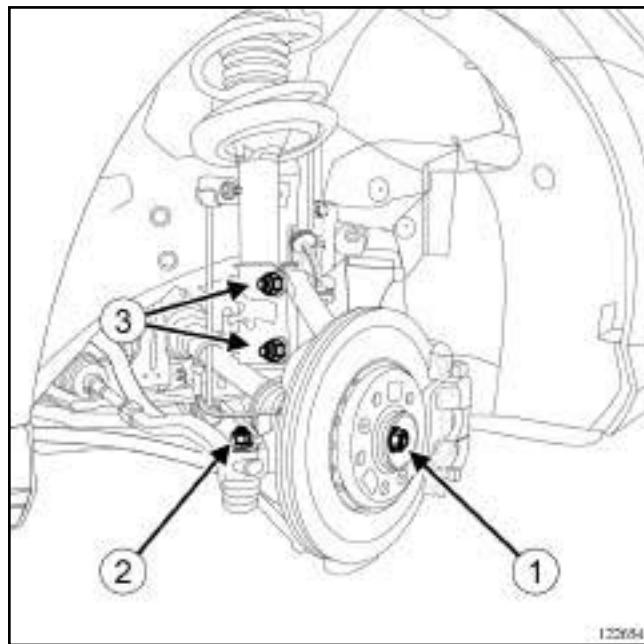
- Refit:
 - the shock absorber base bolts,
 - the track rod end nut,
 - the hub nut using tool (**Rou. 604-01**). Torque tighten:
 - the **shock absorber base bolts (180 Nm)**,
 - the **track rod end nut (37 Nm)**,
 - the **hub nut (105 Nm)**.

- Clip:
 - the brake hose,
 - unclip the wheel speed sensor harness.

III - FINAL OPERATION.

- Refit:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the engine undertray.

PK4

Special tooling required**Rou. 604-01** Hub locking tool.**Tav. 476** Ball joint extractor.**Tightening torques** the relay bearing bolt **44 N.m.**shock absorber base nuts **180 Nm**track rod end nut **37 Nm**hub nut **105 N.m**

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REMOVAL**I - REMOVAL PREPARATION OPERATION**

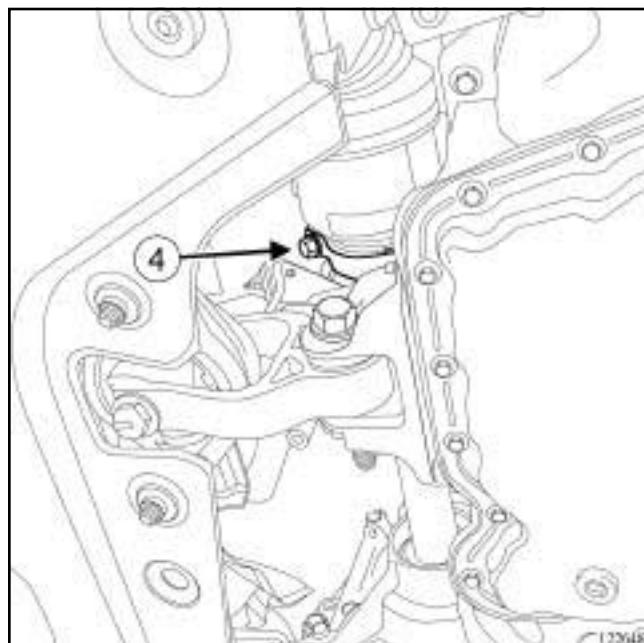
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray.
- Drain the gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2).

II - OPERATION FOR REMOVAL OF PART CONCERNED

- Unclip:
 - the wheel speed sensor wiring,
 - the brake hose.

 Remove:

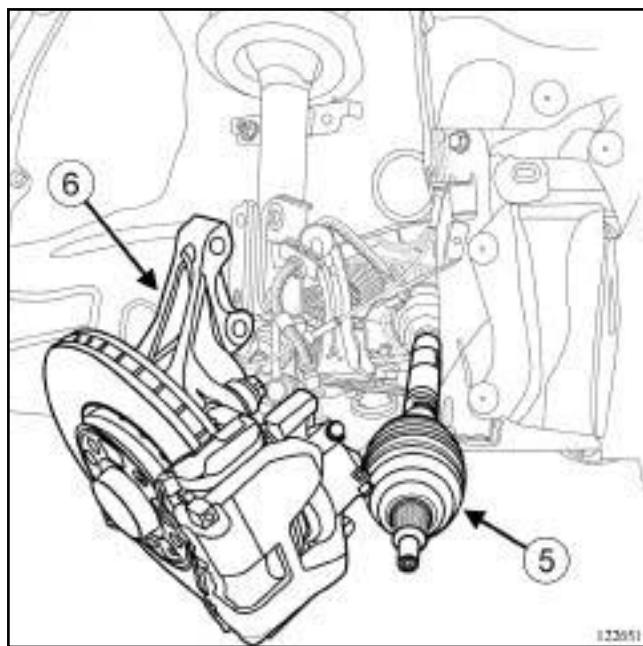
- the hub nut (1) by immobilising the hub using the tool (**Rou. 604-01**)
- the track rod end nut (2) .
- Detach the track rod end using the (**Tav. 476**).
- Remove the shock absorber base bolts (3) .



122648

- Remove the driveshaft relay bearing bolt (4) .

PK4



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- Push the stub-axle carrier (6) driveshaft (5) by rotating the latter.
- Remove the front right-hand driveshaft.

REFITTING

I - REFITTING PREPARATION OPERATION

- Parts always to be replaced:
 - the differential output seal (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page **21A-6**) ,
 - the relay bearing bolt.

Note:

Always replace the relay bearing self-threading bolt with a classic tapered-end bolt or a cylindrical-pilot bolt after each removal of the right driveshaft (except if the entire relay bearing is replaced, in which case it is supplied with a self-threading bolt).

- Clean and grease the driveshaft relay bearing bore which will receive the bearing with **BR2 +GREASE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

- Position and insert the driveshaft into the gearbox.

Refit:

- the driveshaft into the relay bearing,
- the new relay bearing bolt.

Torque tighten **the relay bearing bolt (44 N.m.)**

- Engage the driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely in the stub axle carrier until it protrudes enough for the hub nut to be fitted.

Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

Torque tighten the **shock absorber base nuts (180 Nm)**.

- Position the track rod.

Torque tighten the **track rod end nut (37 Nm)**.

- Refit the hub nut.

Torque tighten the **hub nut (105 N.m)** while immobilising the hub using the tool (**Rou. 604-01**).

Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION.

- Refit the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

- Fill the gearbox and check the level (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).

Refit:

- the engine undertray bolts,
- the engine undertray.

TL4

Special tooling required	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

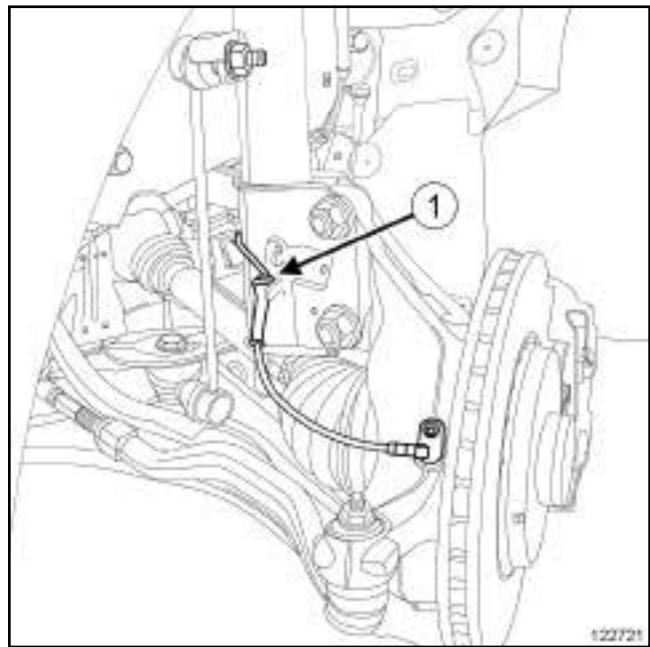
Tightening torques 	
relay bearing bolt	21 N.m
shock absorber base nuts	180 Nm
track rod end nut	37 Nm
hub nut	280 N.m

REMOVAL

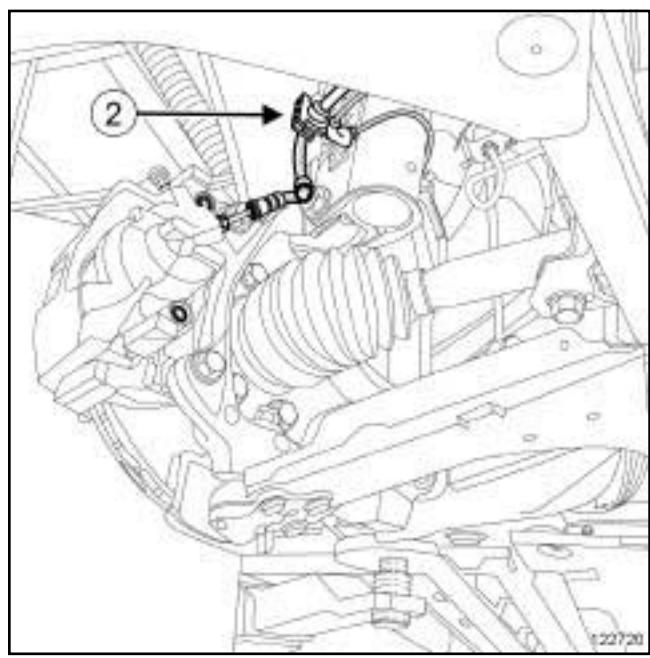
I - REMOVAL PREPARATION OPERATION

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the engine undertray bolts,
 - the engine undertray.
- Drain the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



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- Unclip from the base of the shock absorber:
 - the wiring (1) from the wheel speed sensor.
 - the brake hose (2) .

TL4

REFITTING

I - REFITTING PREPARATION OPERATION

Parts always to be replaced:

- the differential output seal (see 21A, **Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) ,

- the relay bearing bolt.

Note:

Always replace the relay bearing self-threading bolt with a classic tapered-end bolt or a cylindrical-pilot bolt every time the right-hand driveshaft is removed (except if the entire relay bearing is replaced, in which case it is supplied with a self-threading bolt).

Clean and grease the driveshaft relay bearing bore which receive the bearing with **BR2 +GREASE** (see **Vehicle: Parts and consumables for the repair**) (04B, **Consumables - Products**).

Refit a new right-hand differential output seal (see 21A, **Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6) .

Remove:

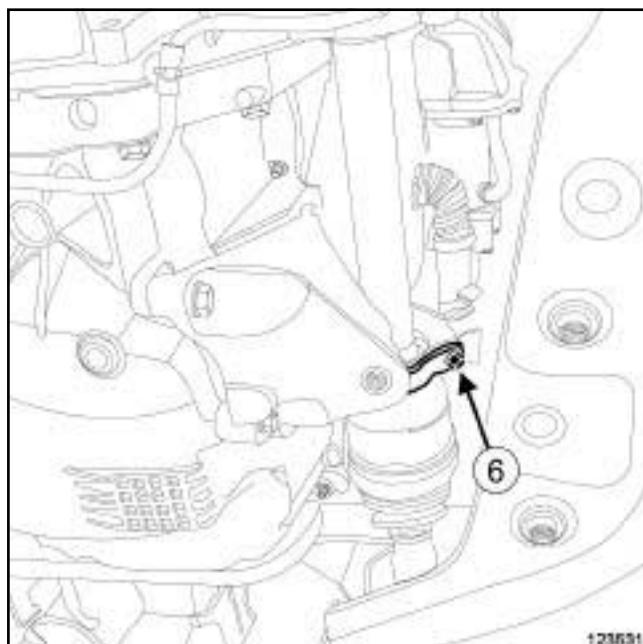
- the hub nut (3) using the (**Rou. 604-01**),

- the track rod end nut (4) .

Extract the track rod end using the (**Tav. 476**).

Remove the shock absorber base bolts (5) .

Push the front right-hand wheel driveshaft from the hub carrier by pivoting the hub carrier.



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Remove:

- the relay bearing cap bolt (6) ,

- the front right-hand wheel driveshaft.

II - REFITTING OPERATION FOR PART CONCERNED

Position and insert the driveshaft into the gearbox.

Refit:

- the driveshaft into the relay bearing,
- the new relay bearing bolt.

Torque tighten the **relay bearing bolt (21 N.m)**.

Engage the driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely in the stub axle carrier until it protrudes enough for the hub nut to be fitted.

Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

Torque tighten the **shock absorber base nuts (180 Nm)**.

Position the track rod.

Torque tighten the **track rod end nut (37 Nm)**.

TL4

- Refit the hub nut.
- Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool (**Rou. 604-01**).
- Clip:
 - the brake hose,
 - the wheel speed sensor wiring.

III - FINAL OPERATION.

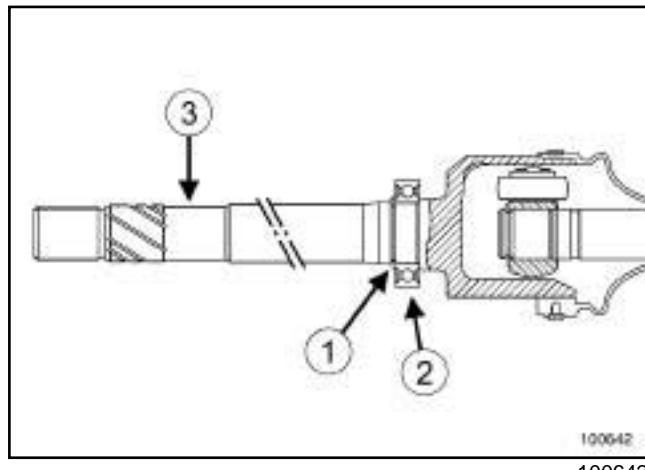
- Fill the manual gearbox (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page **21A-2**).
- Refit:
 - the engine undertray,
 - the engine undertray bolts,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

Relay shaft bearing: Removal - Refitting

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REMOVAL**I - REMOVAL PREPARATION OPERATION**

- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 415, 02A, Lifting equipment).
- Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

- Remove:
 - the relay shaft bearing lock ring (1) ,
 - the relay shaft bearing (2) using a press and an extractor.
- Take care not to scratch the lip seal mating face on the relay shaft (3) .

REFITTING**I - REFITTING PREPARATIONS OPERATION**

- Lubricate the relay shaft mating face into which the bearing is inserted.
- Always replace the lock ring.

II - REFITTING OPERATION FOR PART CONCERNED

- Fit the new relay shaft bearing.

- Fit the relay shaft bearing until it is fully inserted using a tube and taking hold of the relay shaft inner bearing ring.
- Refit a new lock ring.

III - FINAL OPERATION.

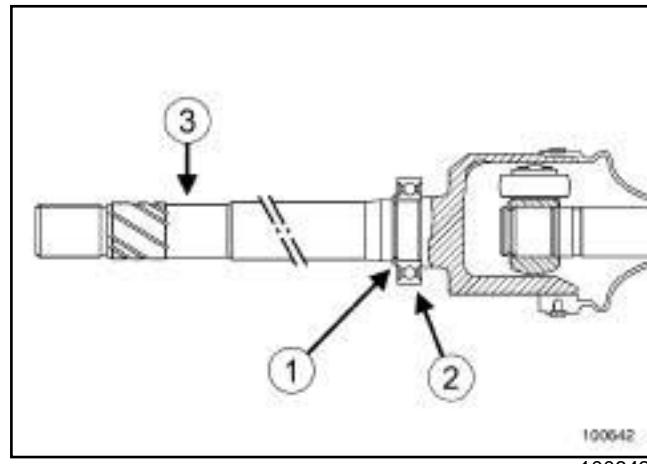
- Refit:
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 415, 35A, Wheels and tyres).

Relay shaft bearing: Removal - Refitting

TL4

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 right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

- Remove:
 - the relay shaft bearing lock ring (1) ,
 - the relay shaft bearing (2) using a press and an extractor.
- Take care not to scratch the lip seal mating face on the relay shaft (3) .

REFITTING**I - REFITTING PREPARATION OPERATION**

- Lubricate the relay shaft mating face into which the bearing is inserted.
- Always replace the lock ring.

II - REFITTING OPERATION FOR PART CONCERNED

- Fit the new relay shaft bearing.

- Fit the relay shaft bearing until it is fully inserted using a tube and taking hold of the relay shaft inner bearing ring.
- Refit a new lock ring.

III - FINAL OPERATION.

- Refit:
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) ,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

Relay shaft bearing: Removal - Refitting

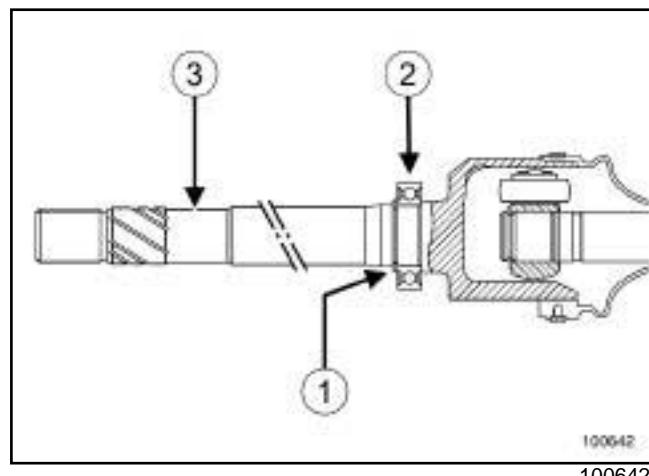
PK4

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-2).
- Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7).
 - the differential output seal (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6).

II - OPERATION FOR REMOVAL OF PART CONCERNED



- Remove the lock ring (1) from the bearing (2).

Note:

Do not scratch the contact surface of the lip seal on the relay shaft (3).

REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace:
 - the relay shaft bearing,
 - the relay shaft bearing lock ring,
- Lubricate the relay shaft mating face into which the bearing is inserted.

II - REFITTING OPERATION FOR PART CONCERNED

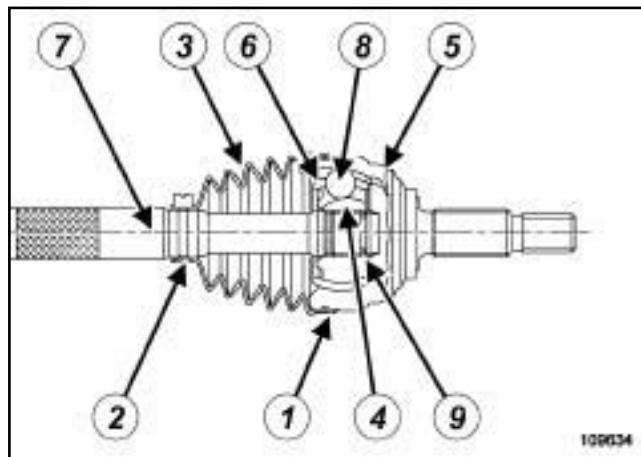
- Fit a new bearing on the relay shaft.
- Fit the bearing to the end using a tube, so that it rests on the inner bearing race.
- Refit a new lock ring.
- Using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products), clean and degrease the relay bearing bore.

III - FINAL OPERATION.

- Refit:
 - the differential output seal (see **21A, Manual gearbox, Differential output seal: Removal - Refitting**, page 21A-6),
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7).
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- Fill the gearbox and check the level (see **21A, Manual gearbox, Manual gearbox oils: Draining - Filling**, page 21A-2).
- Refit the engine undertray.

- Extract the relay shaft bearing (2) using a press and an extractor.

Special tooling required	
Tav. 1168	"Clic" type clip pliers for driveshafts with a thermoplastic gaiter.
Tav. 1784	Pliers for the driveshaft gaiter collar.
Equipment required	
steel inertia hammer	
roll pin punch	
parts washer	



- (1) Big securing clip
 (2) Small securing clip
 (3) Driveshaft gaiter
 (4) Ball hub
 (5) Stub axle bowl
 (6) Ball race
 (7) Driveshaft
 (8) Balls
 (9) Locking spring ring

IMPORTANT

Wear leaktight gloves (nitrile type) for this operation.

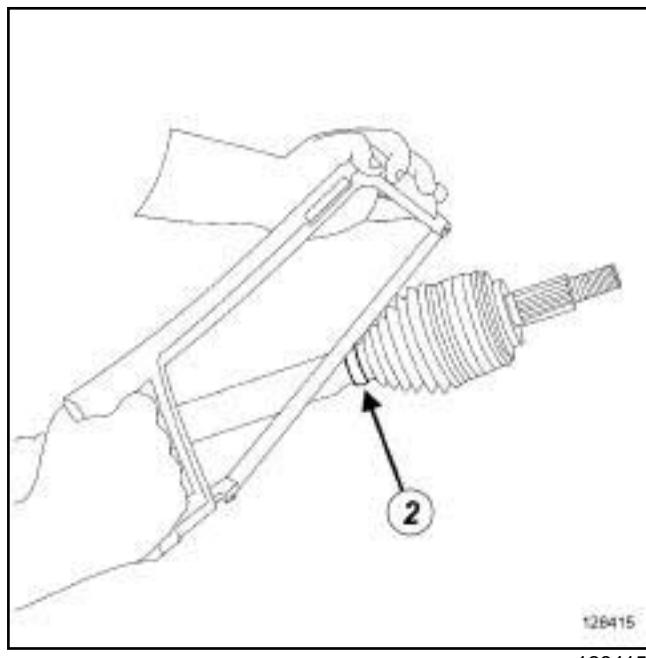
 Remove:

- the engine undertray bolts,
- the engine undertray,
- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the driveshaft on the side concerned (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page 29A-1) or (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7) .

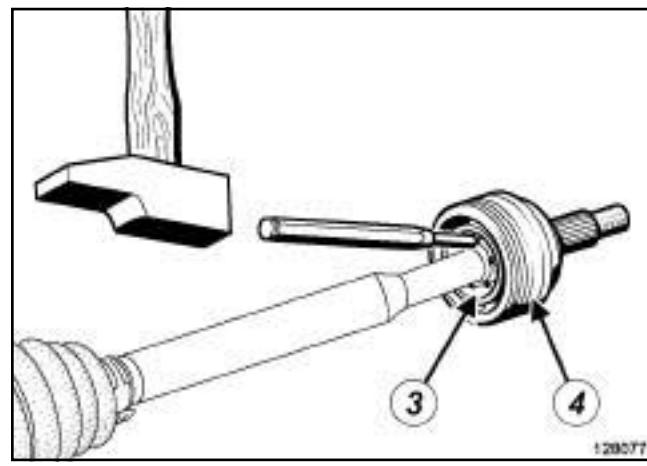
REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

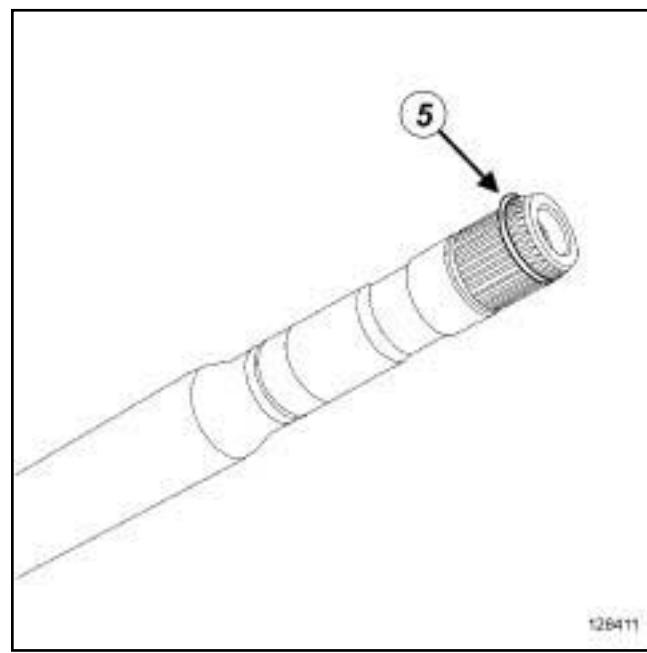
II - OPERATION FOR REMOVAL OF PART CONCERNED



- Cut the big securing clip (1) and the small securing clip (2) using side cutters or a metal saw, taking care not to damage the stub axle bowl and the driveshaft.
- Push back the gaiter to release the stub axle bowl.
- Cut off the driveshaft gaiter.
- Remove as much grease as possible.



- Using a **steel inertia hammer** and a **roll pin punch**, hit the ball hub (3) a few times to detach the stub axle bowl (4) from the driveshaft.



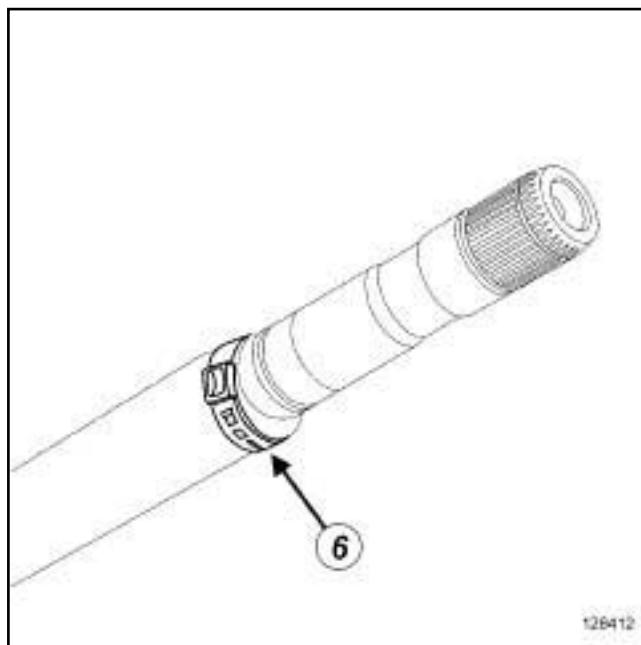
- Remove the locking spring ring (5) .

REFITTING

I - REFITTING PREPARATION OPERATION

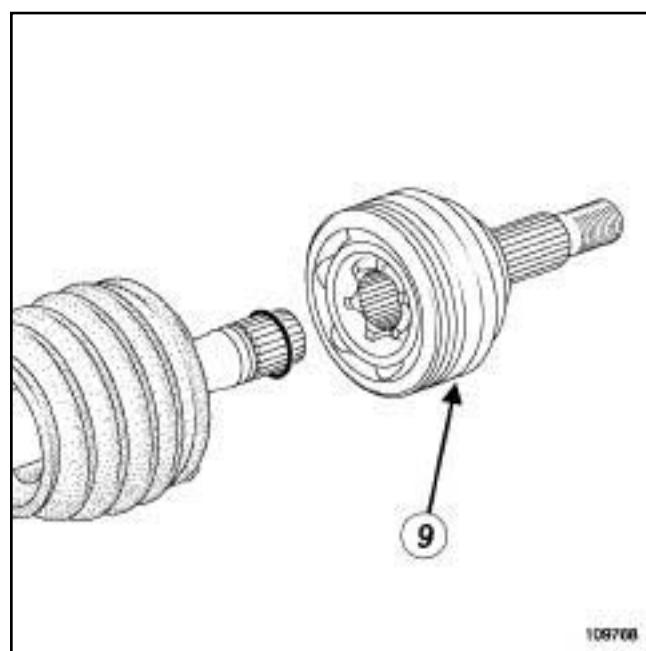
- Always replace:
 - the driveshaft gaiter,
 - the big securing clip,
 - the small securing clip,
 - the locking spring ring.
- Using a **parts washer**, clean the driveshaft and the stub axle bowl.

II - REFITTING OPERATION FOR PART CONCERNED

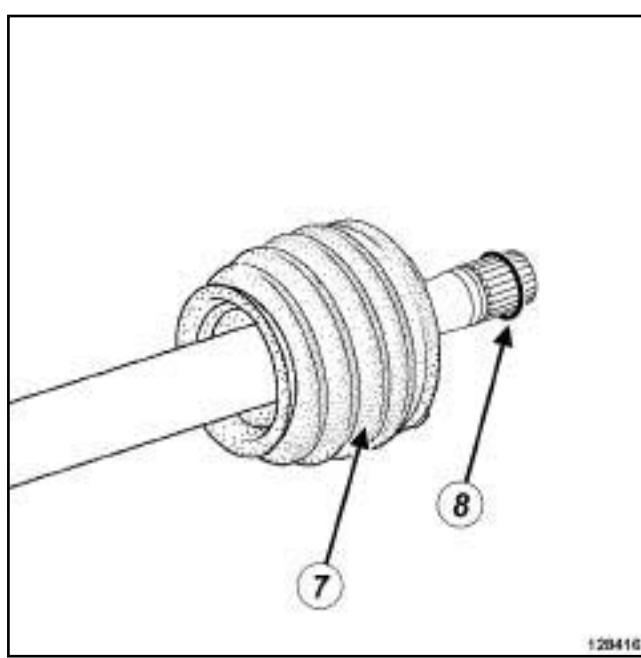


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- Fit the small securing clip (6) onto the driveshaft.
- Lightly lubricate the driveshaft using the grease supplied with the gaiter to facilitate its fitting.

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- Refit the stub axle bowl (9) on the driveshaft by striking the stub axle bowl with a brass drift until the locking spring ring clicks into place behind the ball hub.
- Insert the gaiter lip into the groove of the stub axle bowl.



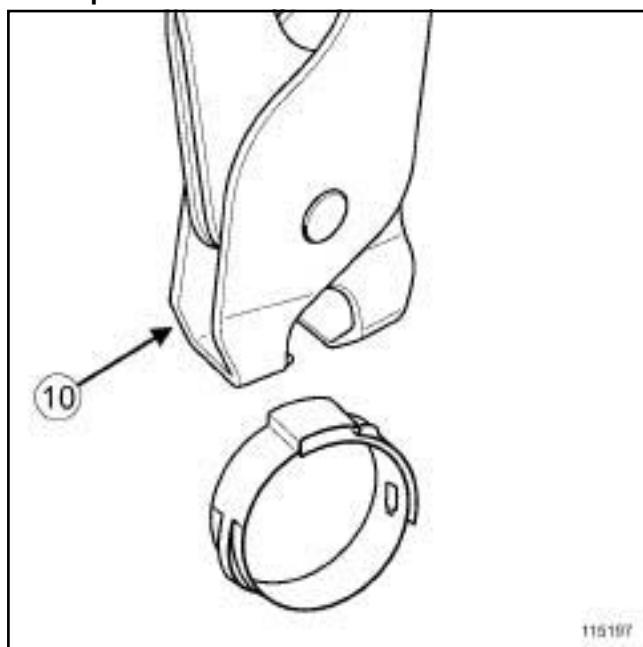
128416

- Refit the gaiter (7) onto the driveshaft.
- Insert the gaiter lip into the groove of the driveshaft.
- Refit the locking spring ring (8).
- Spread the quantity of grease around the gaiter and the stub axle bowl.

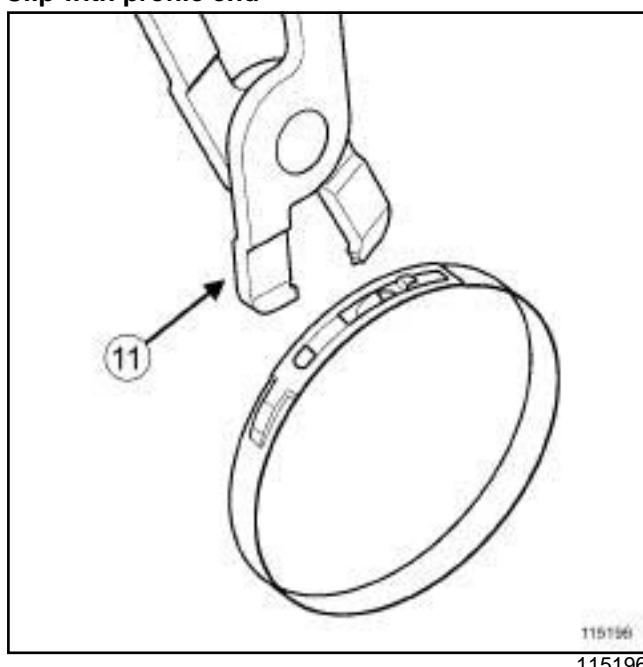
Note:

Check that the gaiter lip is correctly positioned in the groove of the driveshaft

- Fit the small securing clip on the driveshaft gaiter.
- Refit the big securing clip on the driveshaft gaiter.

Clic clip

- the removed wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

Clip with profile end

- Tighten the clips using the tool (**Tav. 1168**) (10) for clic clips or the tool (**Tav. 1784**) (11) for profile end clips.

III - FINAL OPERATION. Refit:

- the removed driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) or (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).

DRIVESHAFTS

Front right-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A

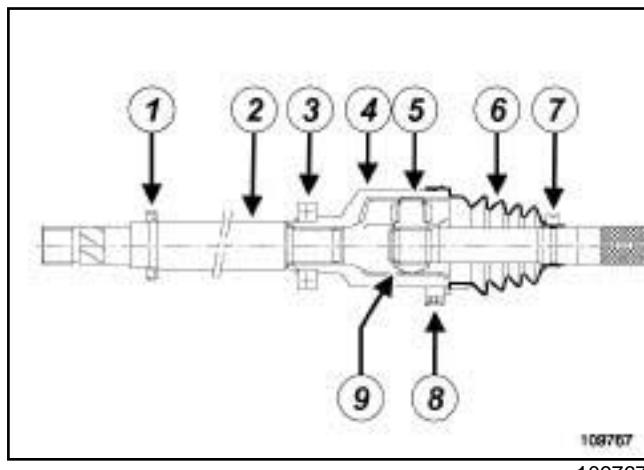
Special tooling required

Tav. 1168	"Clic" type clip pliers for driveshafts with a thermoplastic gaiter.
Tav. 1784	Pliers for the driveshaft gaiter collar.

Equipment required

parts washer

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page **29A-7**).



- (1) Deflector
(2) Driveshaft
(3) Ball bearing
(4) Driveshaft yoke sleeve
(5) Spider
(6) Driveshaft gaiter
(7) Small tightening clip
(8) Large tightening clip
(9) Locking ring

IMPORTANT

Wear leaktight gloves (nitrile type) for this operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

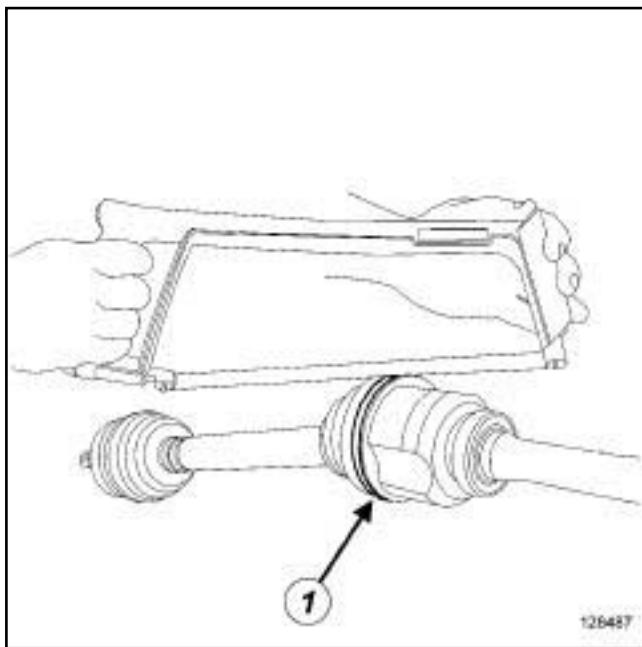
- Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- Remove:
 - the engine undertray bolts,

DRIVESHAFTS

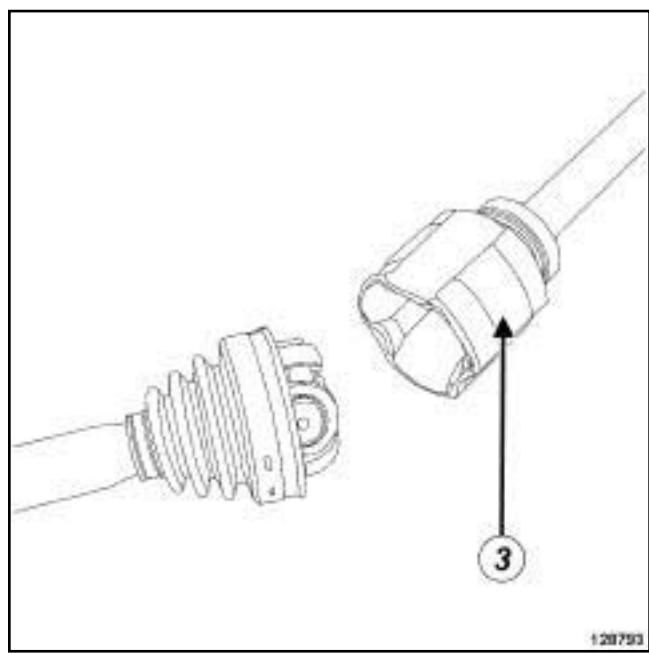
Front right-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A

II - OPERATION FOR REMOVAL OF PART CONCERNED

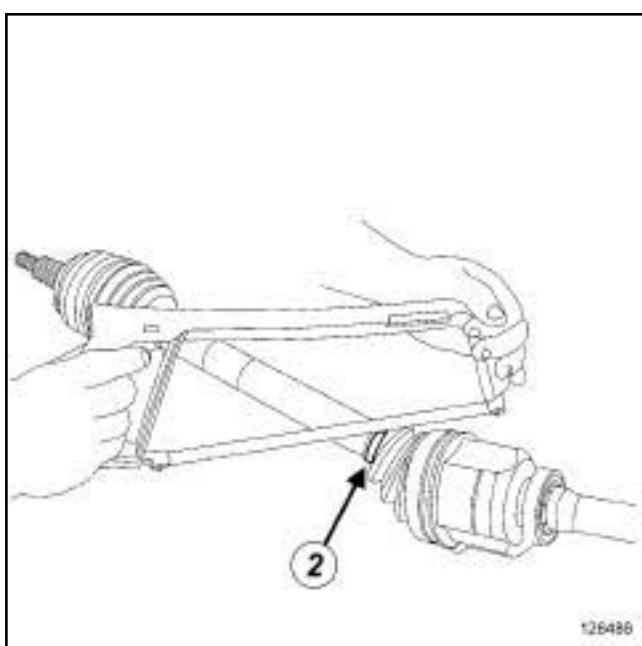


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- Remove the yoke sleeve (3).



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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.

- Remove as much grease as possible from the yoke sleeve.

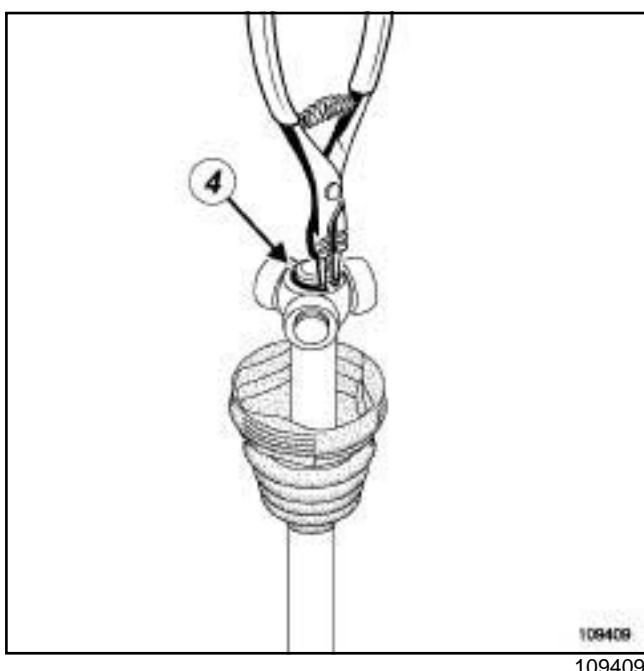
- Cut the large tightening clip (1) and the small tightening clip (2) using cutting pliers or a hacksaw, taking care not to damage the yoke sleeve and the propeller shaft.
- Push back the gaiter to release the driveshaft yoke sleeve.

REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace:
 - the driveshaft gaiter,
 - the locking ring,
 - the large tightening clip,
 - the small tightening clip.
- Clean the propeller shaft, the spider and the yoke sleeve using a **parts washer**.

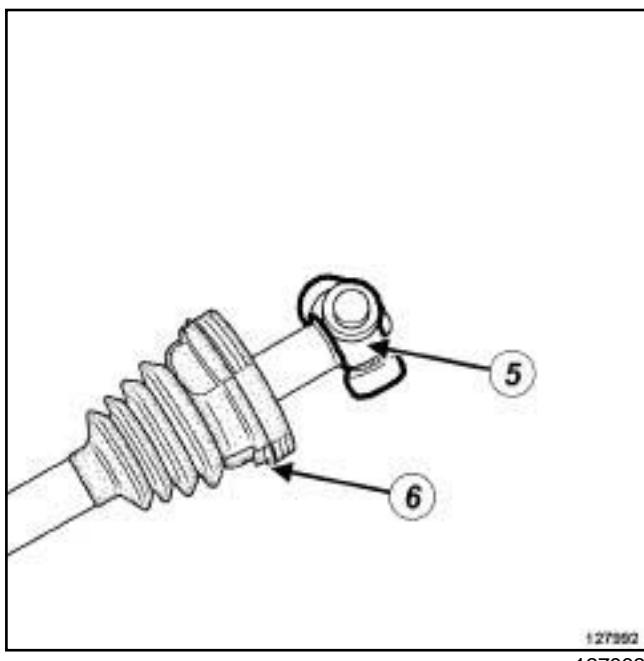
II - REFITTING OPERATION FOR PART CONCERNED



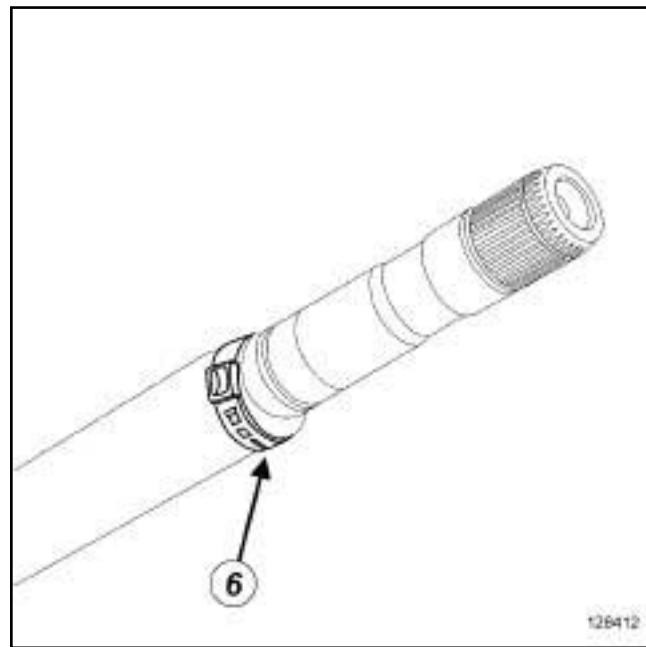
- Remove the lock ring (4).

Note:

Mark the position of the spider before extracting it.



- Remove:
 - the spider (5),
 - the driveshaft gaiter (6) from the propeller shaft.

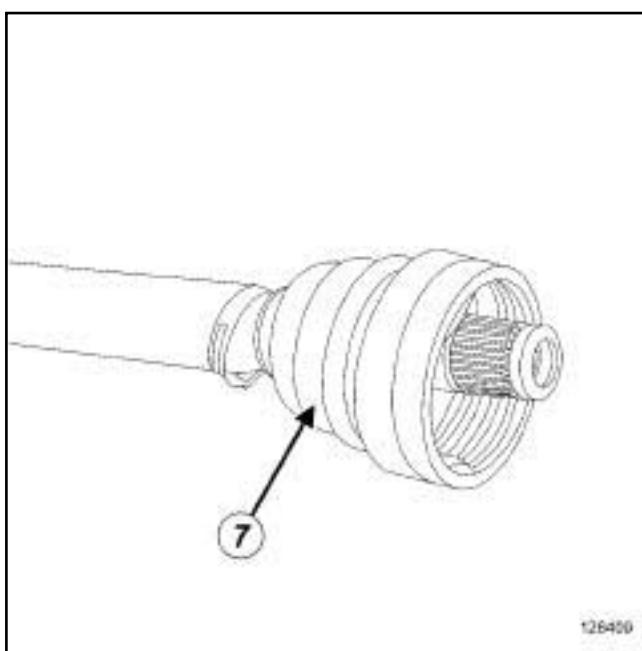


- Fit the small tightening clip (6) on the propeller shaft.
- Lightly lubricate the propeller shaft using the grease supplied with the gaiter to facilitate its fitting.

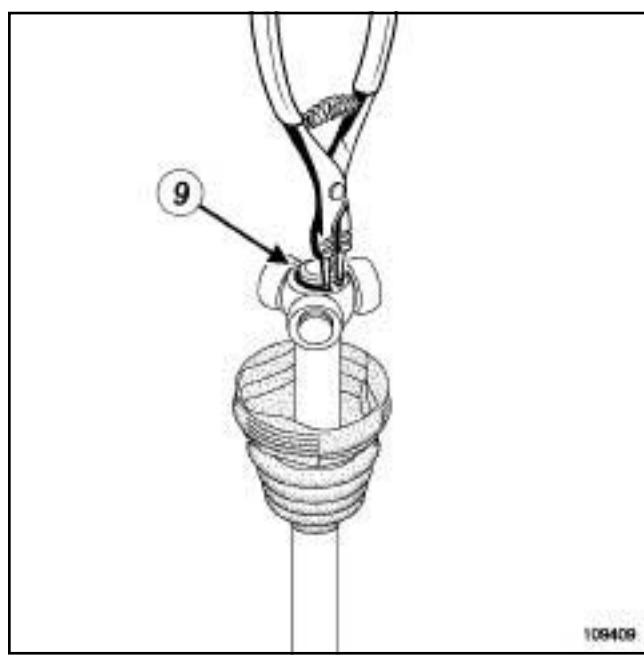
DRIVESHAFTS

Front right-hand driveshaft gaiter, gearbox side: Removal - Refitting

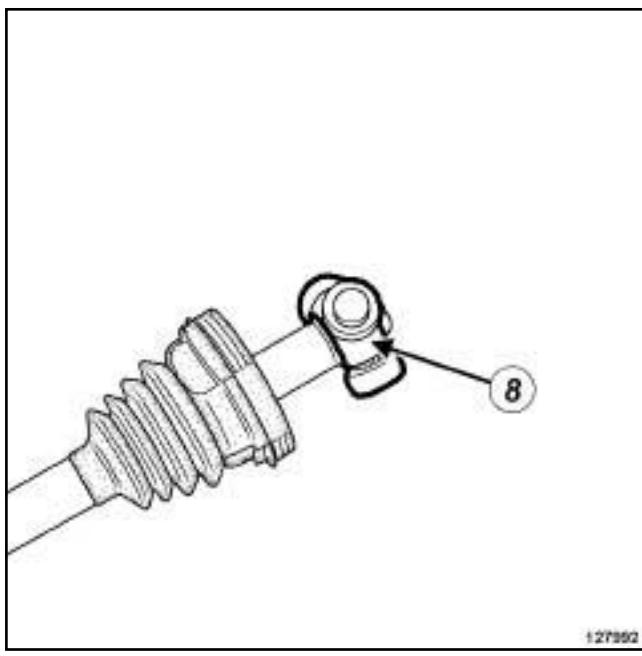
29A



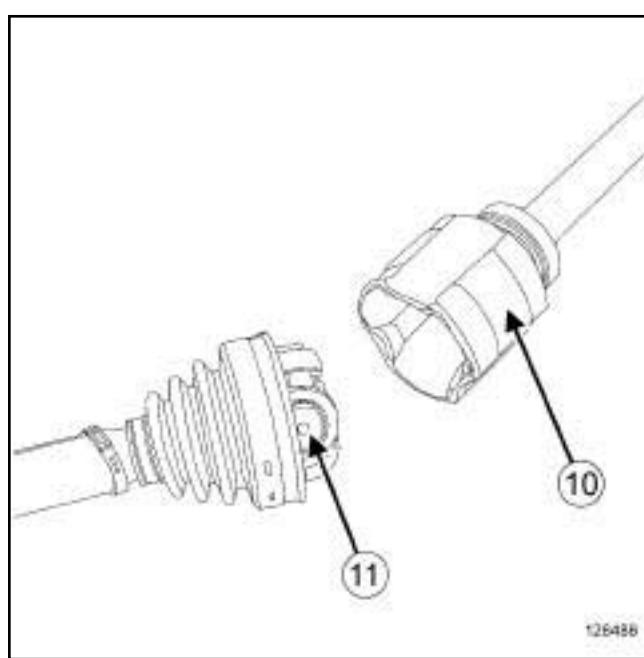
- Refit the driveshaft gaiter (7) on the propeller shaft.
- Position the lip of the driveshaft gaiter in the neck of the propeller shaft.



- Refit the lock ring (9).



- Refit the spider (8) in the position marked during removal.



- Divide the quantity of grease between the gaiter and the yoke sleeve.
- Fit the yoke sleeve (10) onto the spider (11).
- Position the lip of the gaiter in the neck of the yoke sleeve.

Note:

Check that the lip of the gaiter is correctly positioned in the neck of the propeller shaft.

- Fit the small tightening clip on the driveshaft gaiter.

DRIVESHAFTS

Front right-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A

- Refit the large tightening clip on the driveshaft gaiter.

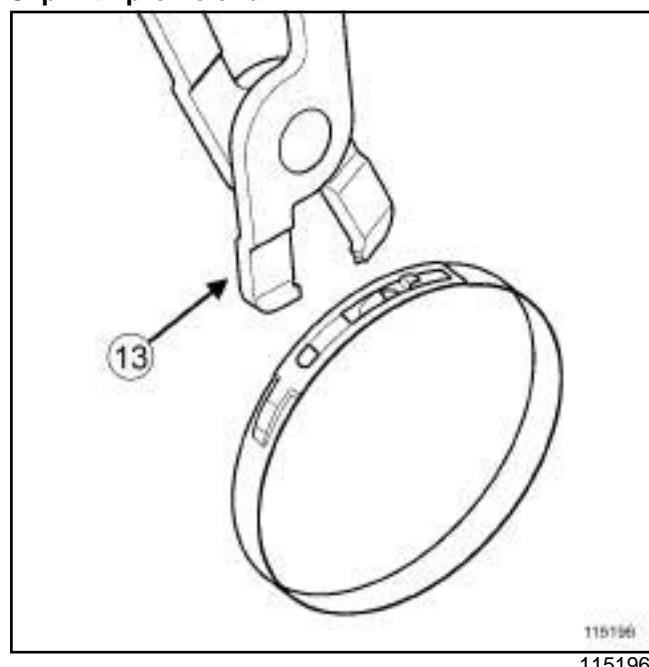
Clic clip



- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

- the engine undertray.

Clip with profile end



- Tighten the clips using the tool (**Tav. 1168**) (12) for Clic clips or the tool (**Tav. 1784**) (13) for clips with profile end.

III - FINAL OPERATION.

□ Refit:

- the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**, page 29A-7),

DRIVESHAFTS

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A

Special tooling required

Tav. 1168 "Clic" type clip pliers for driveshafts with a thermoplastic gaiter.

Tav. 1784 Pliers for the driveshaft gaiter collar.

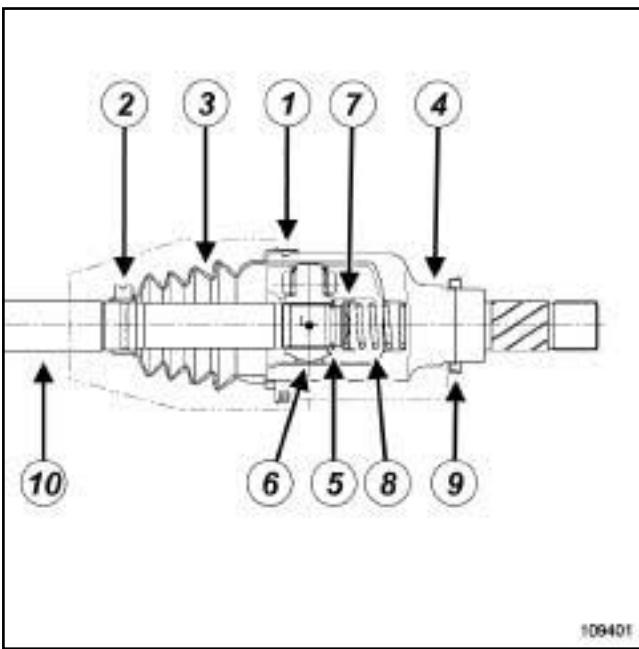
Equipment required

parts washer

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 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-1) .



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- (1) Big securing clip
- (2) Small securing clip
- (3) Driveshaft gaiter
- (4) Yoke sleeve
- (5) Locking ring
- (6) Spider
- (7) Cup
- (8) Cup spring
- (9) Deflector
- (10) Driveshaft

IMPORTANT

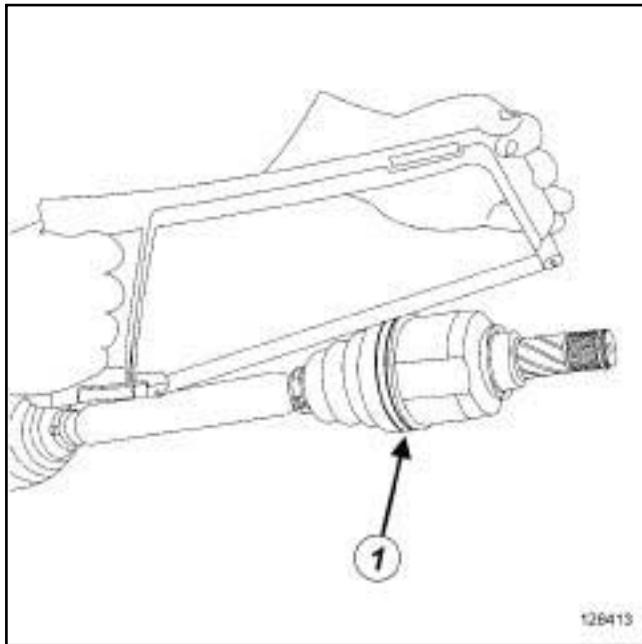
Wear leaktight gloves (nitrile type) for this operation.

DRIVESHAFTS

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

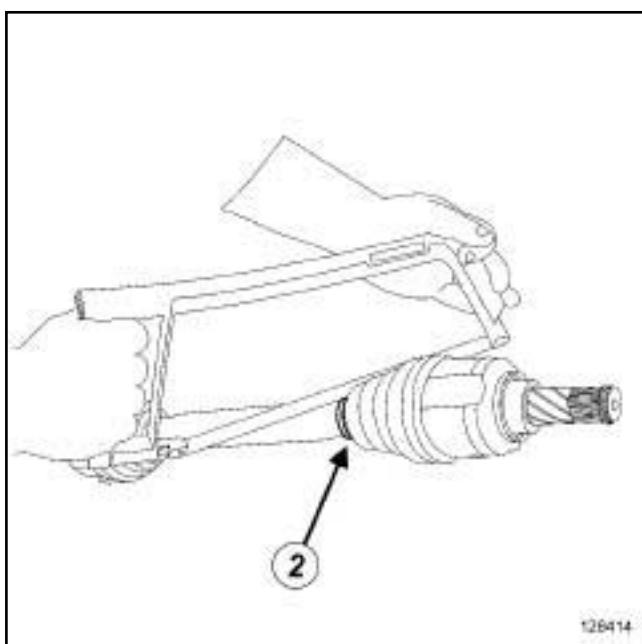
29A

II - OPERATION FOR REMOVAL OF PART CONCERNED



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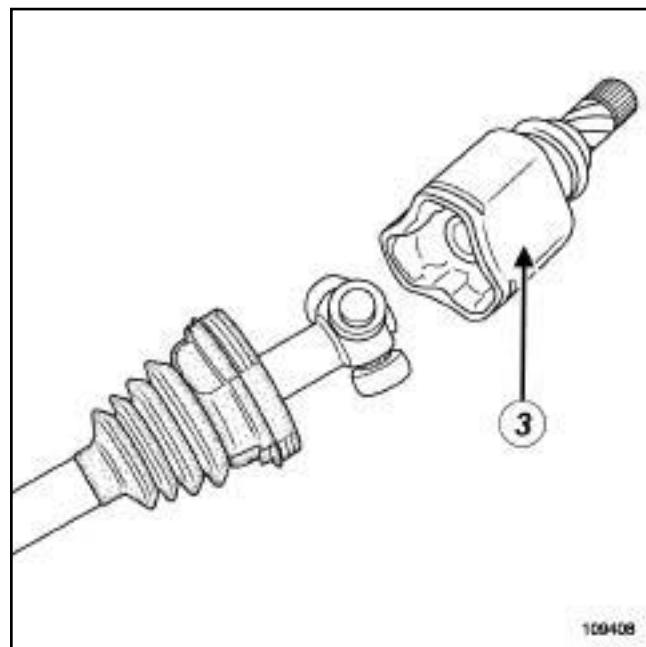
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- Cut the big securing clip (1) and the small securing clip (2) using side cutters or a metal saw, taking care not to damage the yoke sleeve and the driveshaft.
- Push back the driveshaft gaiter to release the yoke sleeve.



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- Remove the 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.

- Remove as much grease as possible from the yoke sleeve.

DRIVESHAFTS

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

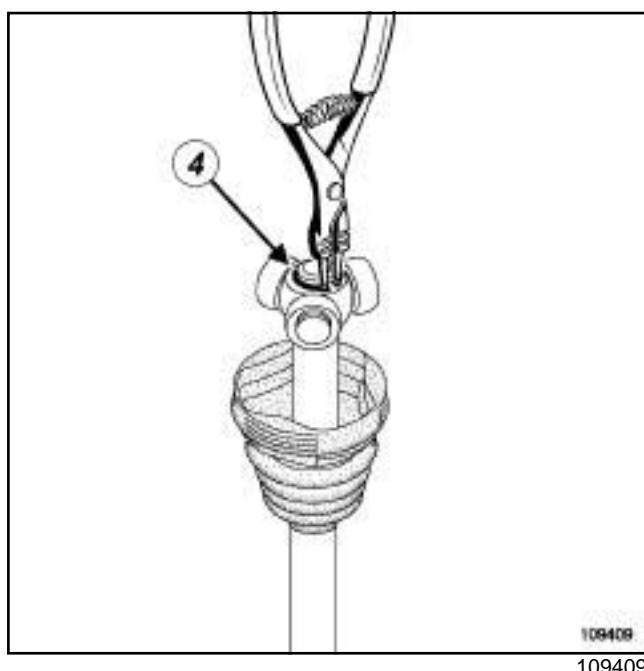
29A

REFITTING

I - REFITTING PREPARATION OPERATION

- Always replace:
 - the cup,
 - the cup spring,
 - the driveshaft gaiter,
 - the locking ring,
 - the big securing clip,
 - the small securing clip.
- Using a **parts washer**, clean the driveshaft, the spider and the yoke sleeve.

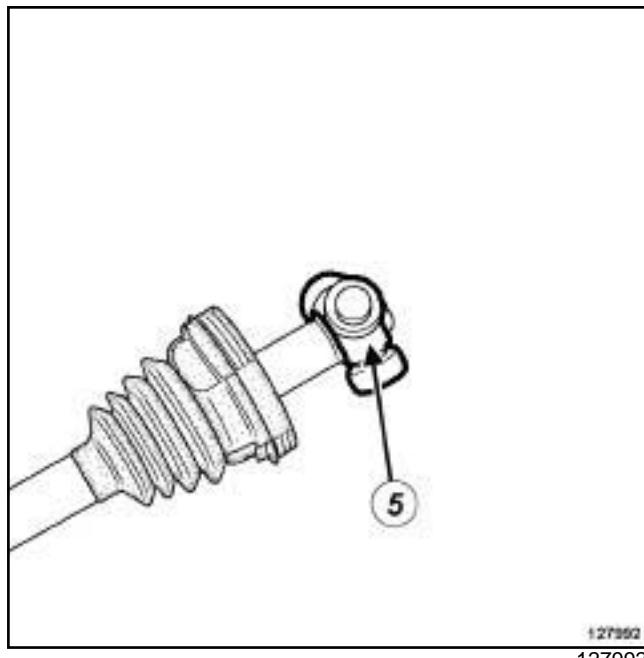
II - REFITTING OPERATION FOR PART CONCERNED



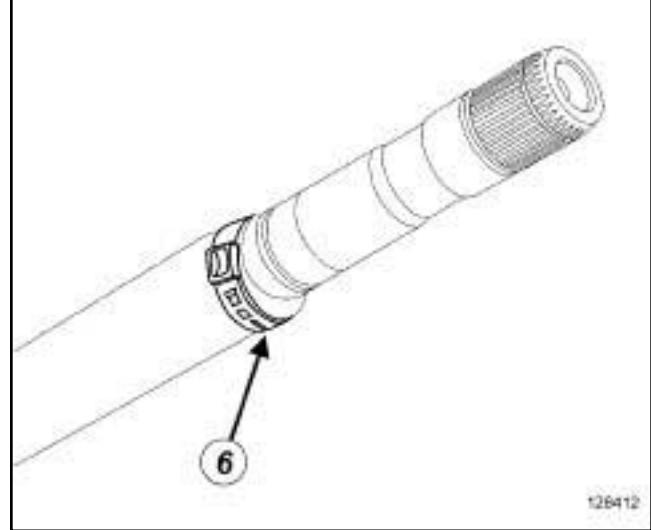
- Remove the lock ring (4).

Note:

Mark the position of the spider before extracting it.



- Remove:
 - the spider (5),
 - the gaiter from the driveshaft,
 - the cup equipped with the cup spring.

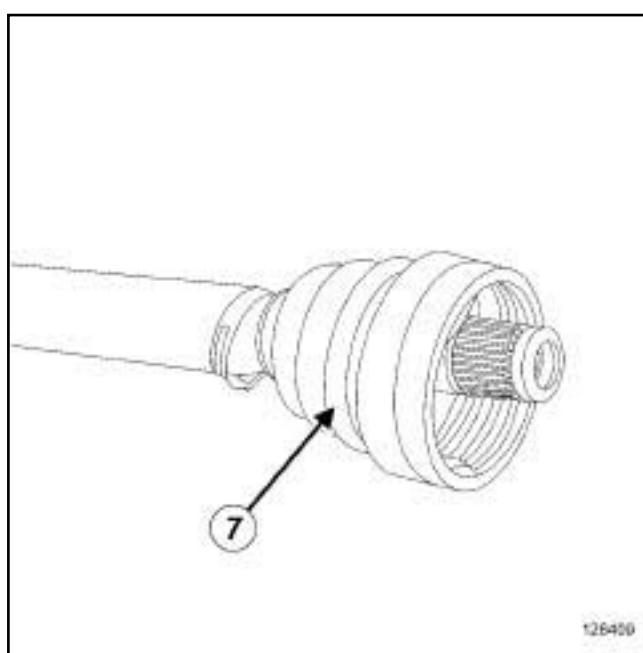


- Fit the small securing clip (6) onto the driveshaft.
- Lightly lubricate the driveshaft using the grease supplied with the gaiter to facilitate its fitting.

DRIVESHAFTS

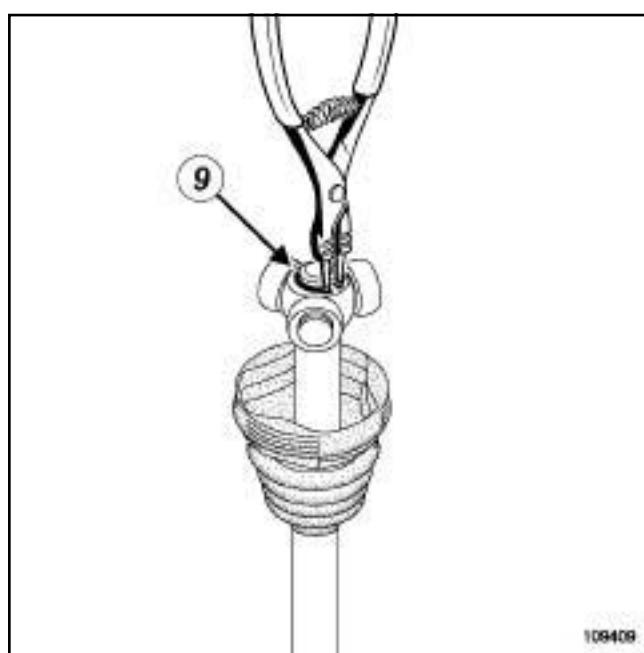
Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A



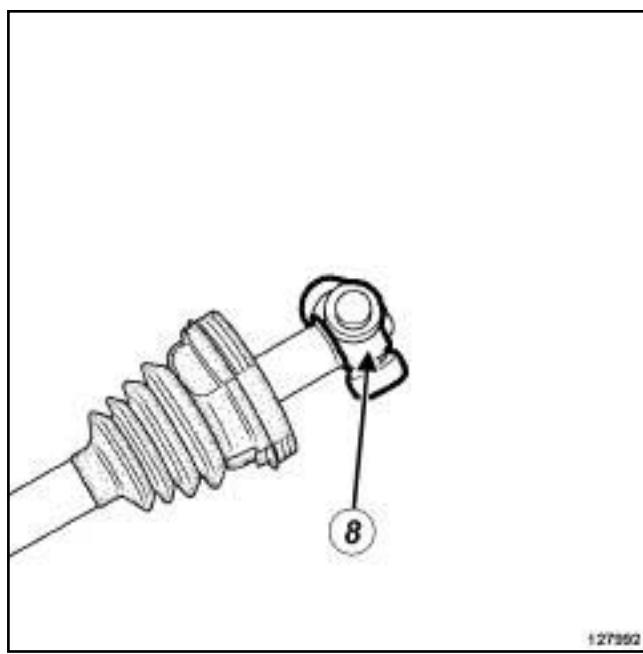
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- Refit the gaiter (7) onto the driveshaft.
- Insert the gaiter lip into the groove of the driveshaft.



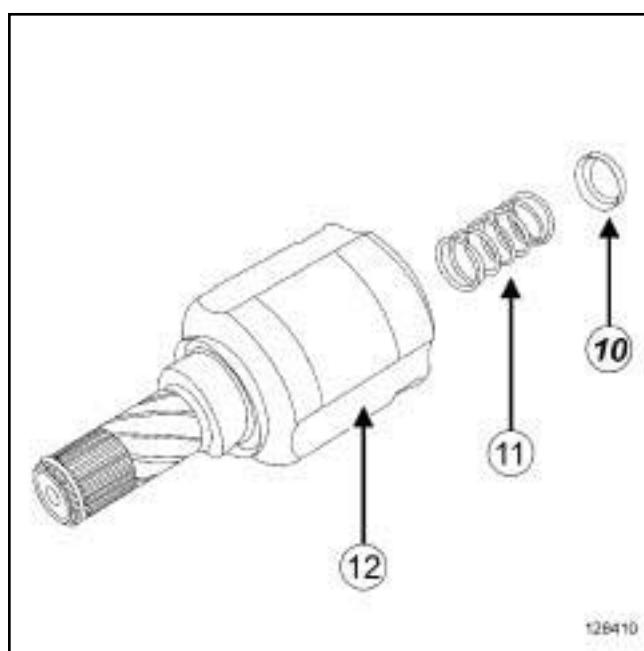
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- Refit the lock ring (9).



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- Refit the spider (8) in the position marked during removal.



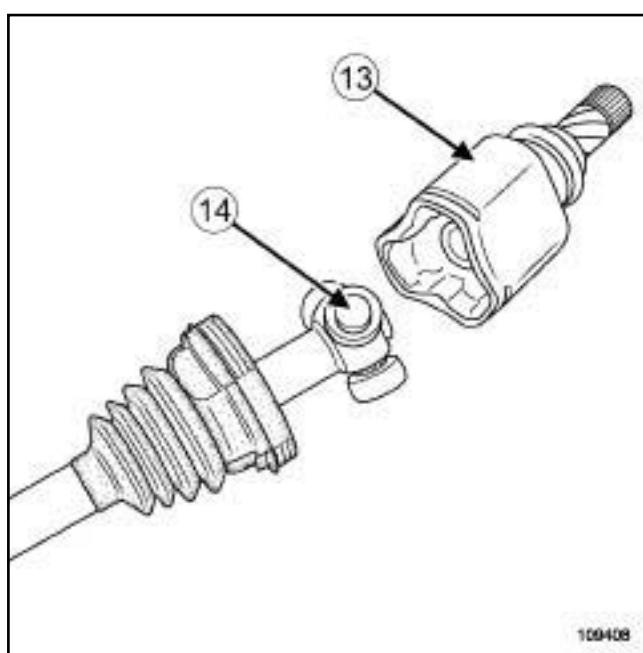
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- Refit:
 - the cup (10) onto the cup spring (11),
 - the cup spring equipped with the cup into the yoke sleeve (12).

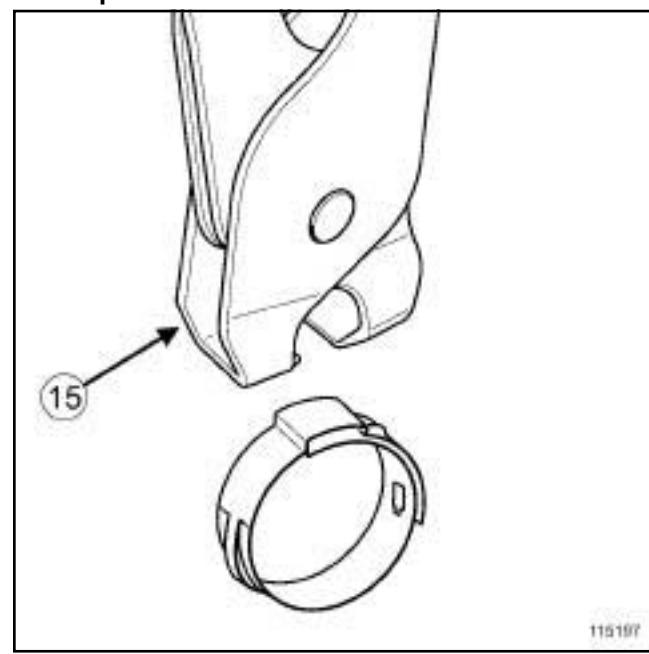
DRIVESHAFTS

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A



Clic clip



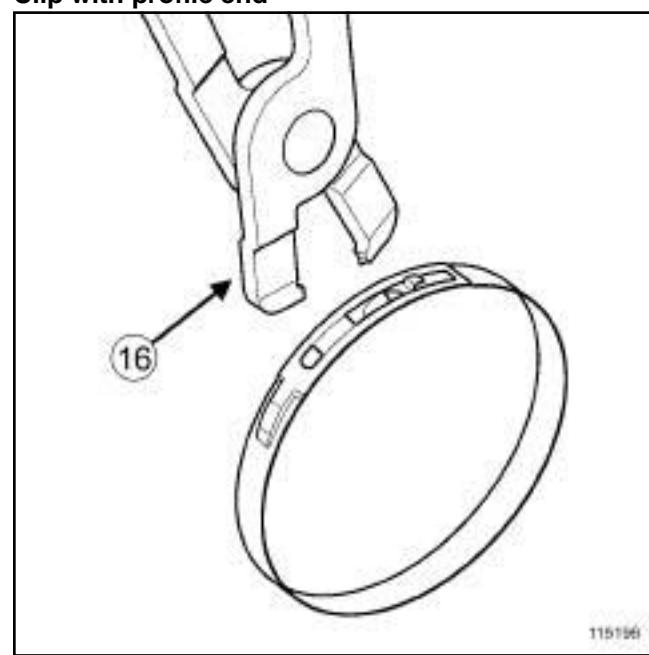
- Spread the quantity of grease around the gaiter and the yoke sleeve.
- Fit the yoke sleeve (13) onto the spider (14).
- Insert the gaiter lip into the groove of the yoke sleeve.

Note:

Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

- Fit the small securing clip on the driveshaft gaiter.
- Refit the big securing clip on the driveshaft gaiter.

Clip with profile end



- Tighten the clips using the (Tav. 1168) (15) for clic clips or the (Tav. 1784) (16) for profile end clips.

III - FINAL OPERATION.

- Refit:
 - the front left-hand driveshaft (see **29A, Driveshafts, Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) ,
 - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

DRIVESHAFTS

Front left-hand driveshaft gaiter, gearbox side: Removal - Refitting

29A

- the engine undertray.

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