RENAULT

# 2 Transmission

## 20A CLUTCH

## 21A MANUAL GEARBOX

## 23A AUTOMATIC GEARBOX

## 26A REAR AXLE

## 29A DRIVESHAFTS

***X45***

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

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

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# KOLEOS - Section 2

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# Clutch: Precautions for repair

| Essential special tooling | |
|---|---|
| **Emb. 1780** | Set of clutch disc 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 following:**

Check the direction of the clutch plate.

Centre the clutch plate using the tool **(Emb. 1780)**

Gradually torque tighten the clutch pressure plate bolts.

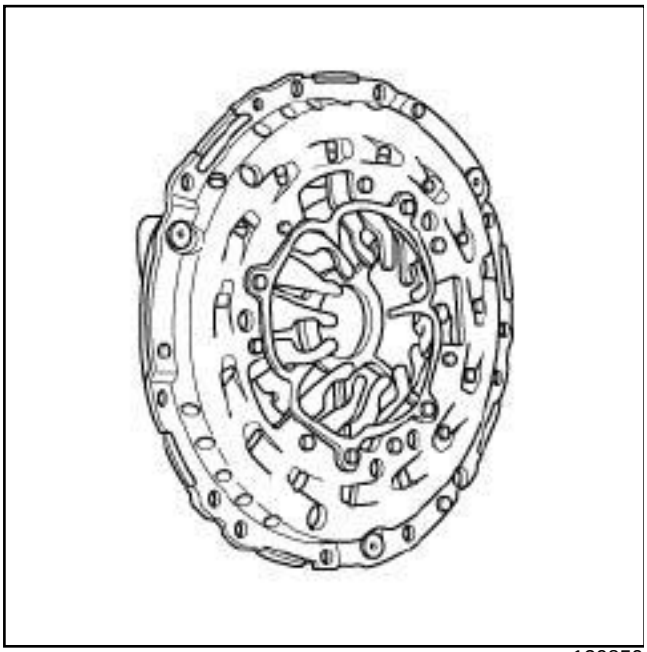
**After refitting, check:**

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

6 SPEED MANUAL GBOX

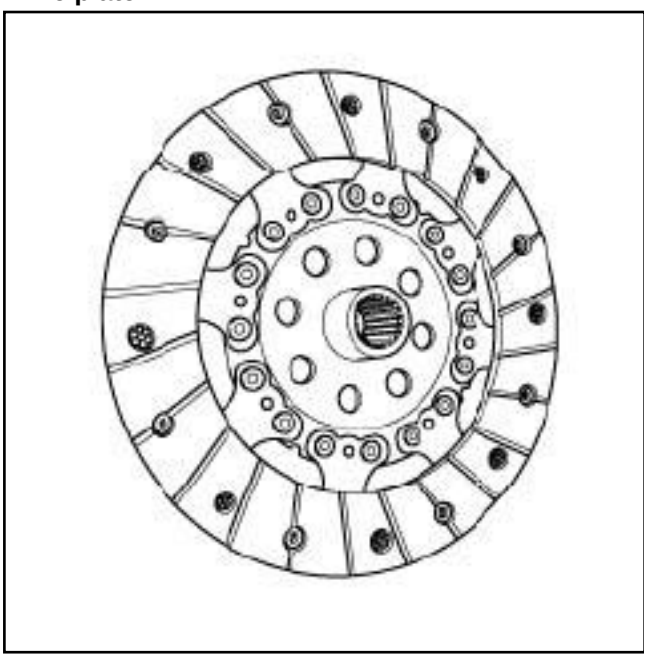
M9R

**Pressure plate**



129850

**Drive plate**



129851

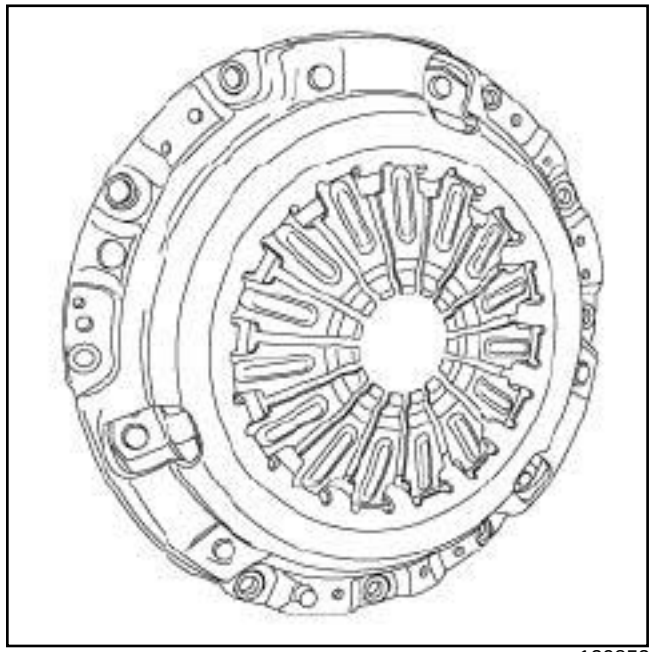
Outer diameter of plate: **250 mm**

Plate thickness: **7.8 mm**

Number of splines: **21**

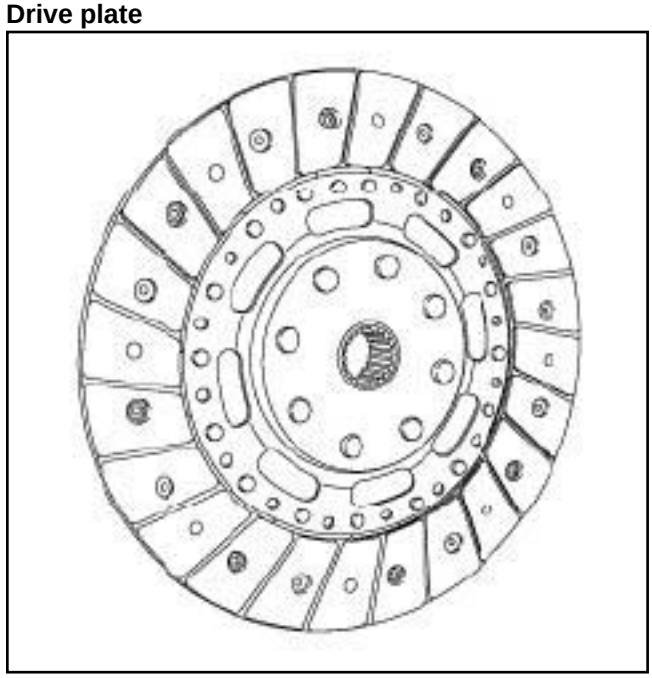
2TR

**Pressure plate**



129852

**Drive plate**



129853

Outer diameter of plate: **240 mm**

Plate thickness: **6.7 mm**

Number of splines: **21**

M9R, and 6 SPEED MANUAL GBOX

| Essential special tooling | |
|---|---|
| **Emb. 1604** | Clutch compression tool for resetting retrofit system. |
| **Mot. 1431** | Flywheel locking tool. |
| **Emb. 1780** | Set of clutch disc centring mandrels. |

| Tightening torques ▽ | |
|---|---|
| pressure plate bolts | **25 N.m** |

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

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

## REMOVAL

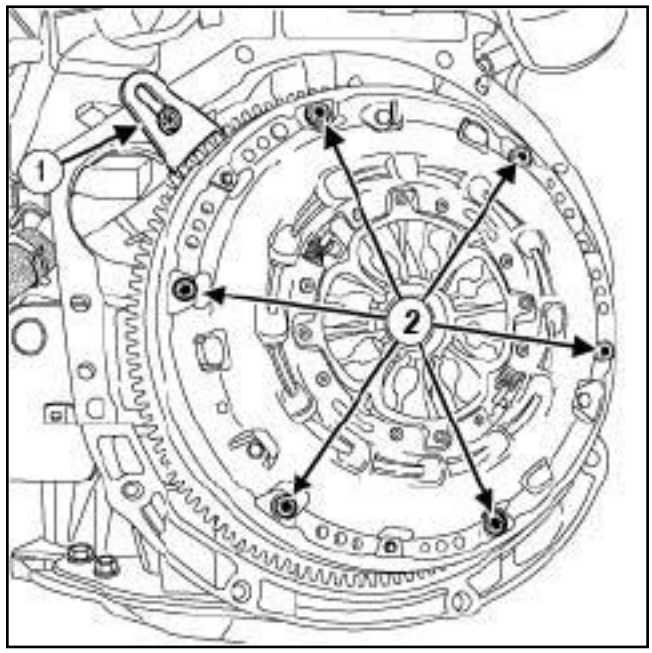
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



129854

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

❏ Remove:

- The mechanism bolts ***(2)*** ,
- the clutch plate and pressure plate.

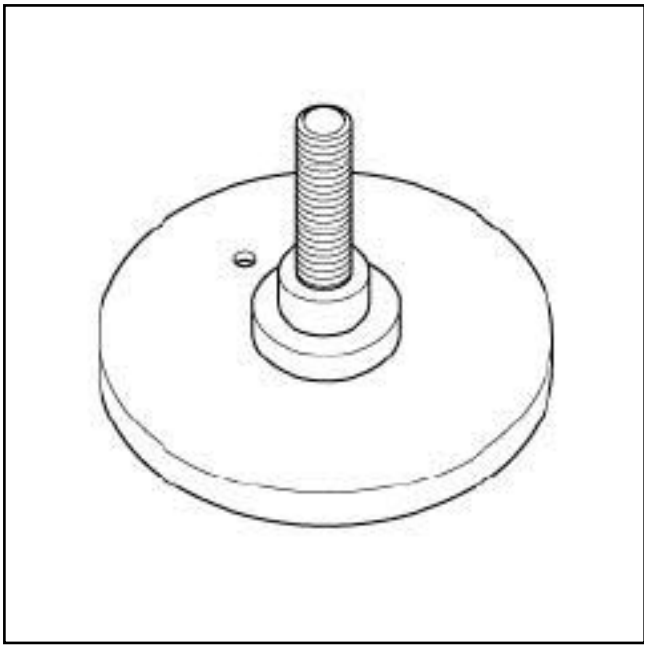
## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Degrease the flywheel friction face with **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❏ Clean the clutch plate splines.

❏ Apply grease to the splines of the clutch plate hub and to the splines of the input shaft.



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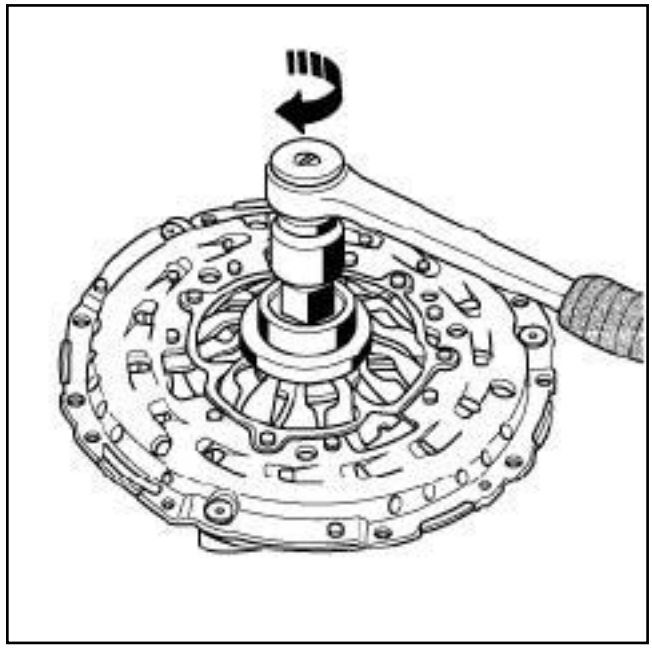
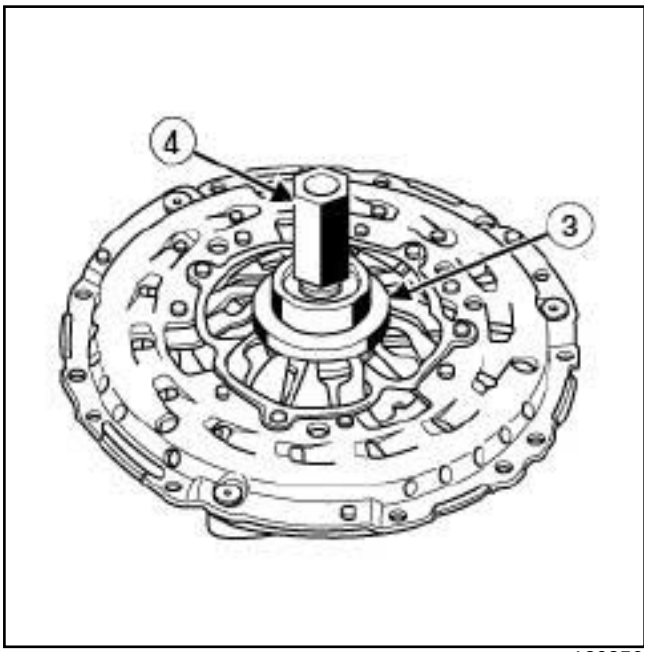
❏ Place the base of tool **(Emb. 1604)** in a vice.



129857

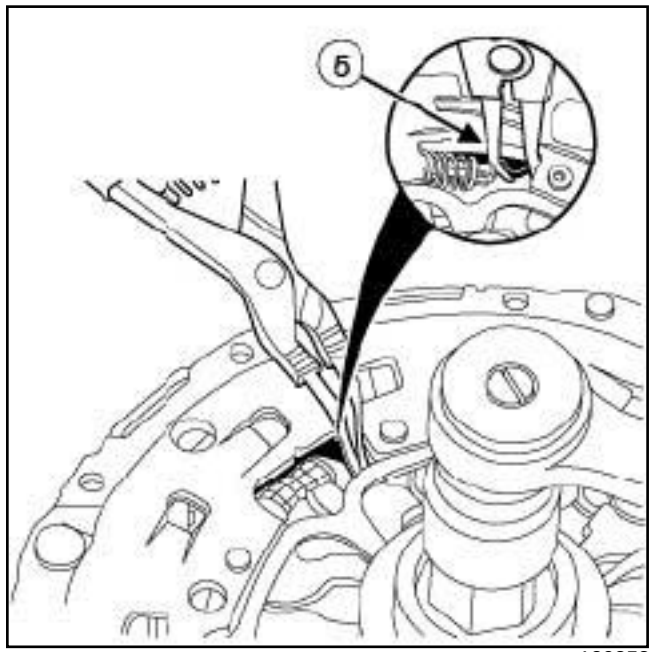
❏ Tighten the nut ***(4)*** until it locks.




129856

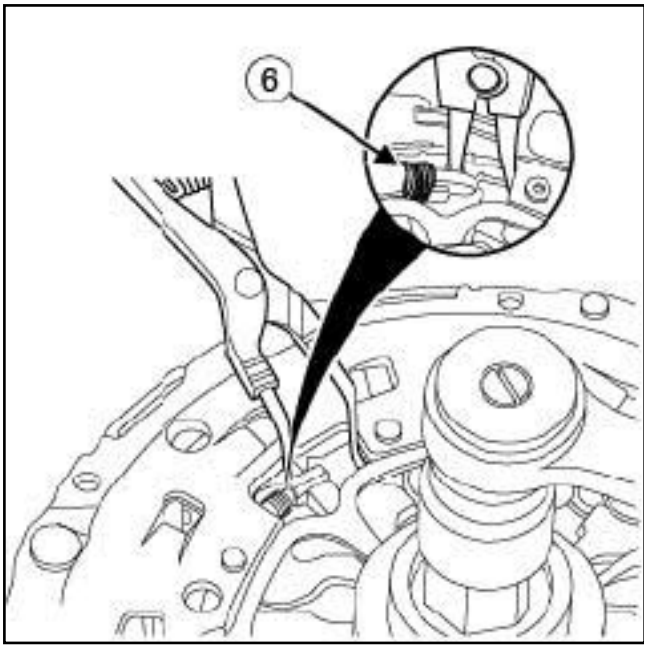
❏ Fit:

- the pressure plate on the base plate,
- the clutch thrust bearing (**3**) ,
- the nut (**4**) .




129858

❏ Fit a circlip clamp at (**5**) .



129859

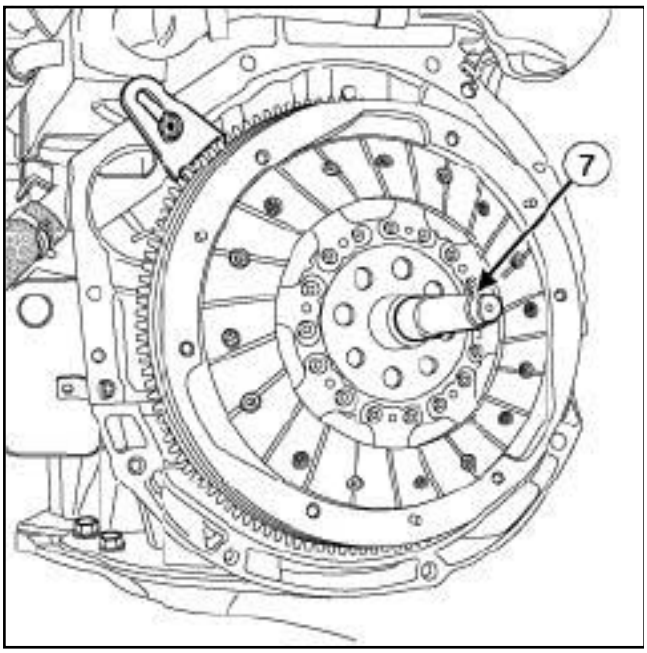
❏ Compress the spring (**6**) with circlip pliers.

❏ Remove:

- the nut ***(4)*** ,
- the clutch thrust bearing ***(3)*** ,
- the base plate pressure plate.

❏ Check that the springs are correctly compressed.

**II - REFITTING OPERATION FOR PART CONCERNED**



129860

❏ Position the clutch driven plate.

❏ Centre the clutch plate using the **(Emb. 1780)** ***(7)*** .

❏ Refit:

- the pressure plate,
- the pressure plate bolts.

❏ Gradually tighten the new pressure plate mounting bolts.

❏ Torque tighten the **pressure plate bolts (25 N.m)**.

**III - FINAL OPERATION.**

❏ Remove the **(Mot. 1431)** then the **(Emb. 1780)**.

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

2TR, and 6 SPEED MANUAL GBOX

| Essential special tooling | |
|---|---|
| **Mot. 1431** | Flywheel locking tool. |
| **Emb. 1780** | Set of clutch disc centring mandrels. |

| Tightening torques ▽ | |
|---|---|
| new pressure plate bolts | **25 N.m** |

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

## REMOVAL

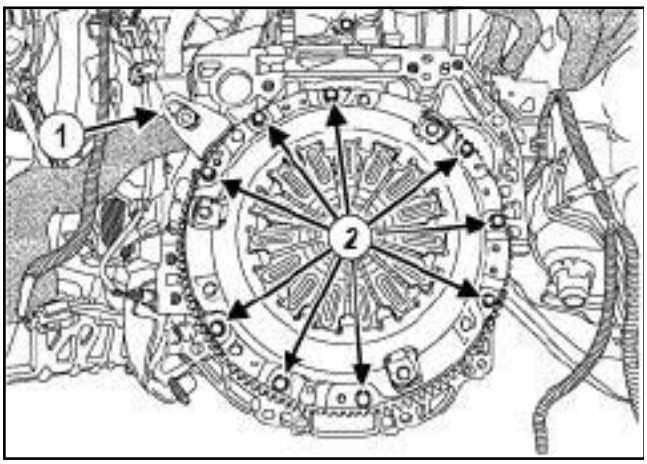
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



129862

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

❏ Remove:

- The mechanism bolts ***(2)*** ,
- the clutch plate and pressure plate.

## REFITTING

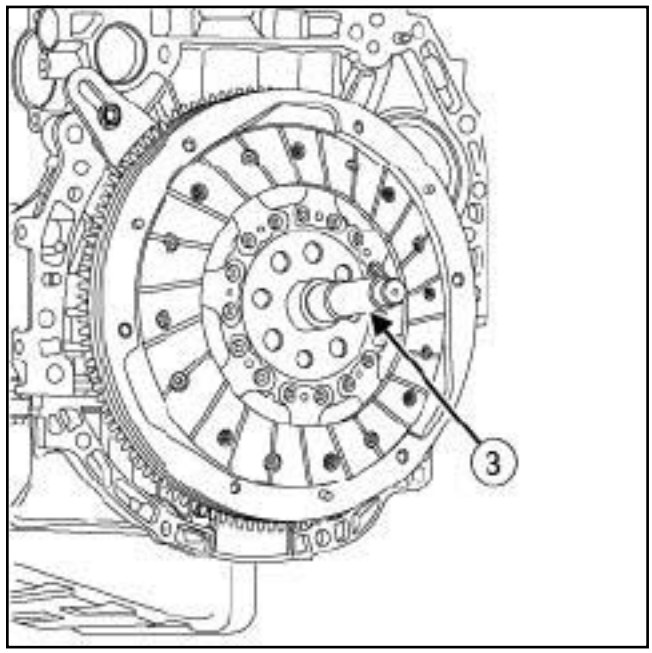
### I - REFITTING PREPARATION OPERATION

❏ Degrease the flywheel friction face with **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❏ Clean the clutch plate splines.

❏ Apply grease to the splines of the clutch plate hub and to the splines of the input shaft.

### II - REFITTING OPERATION FOR PART CONCERNED



129861

❏ Position the clutch driven plate.

❏ Centre the clutch drive plate using the **(Emb. 1780)** ***(3)*** .

❏ Refit:

- the pressure plate,
- the pressure plate bolts.

❏ Torque tighten the **new pressure plate bolts (25 N.m)** gradually in a radial pattern.

### III - FINAL OPERATION.

❏ Remove the **(Mot. 1431)** then the **(Emb. 1780)**.

2TR, and 6 SPEED MANUAL GBOX

❑ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

| Tightening torques ▽ | |
|---|---|
| clutch thrust bearing bolts | **21 N.m** |

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

## REFITTING

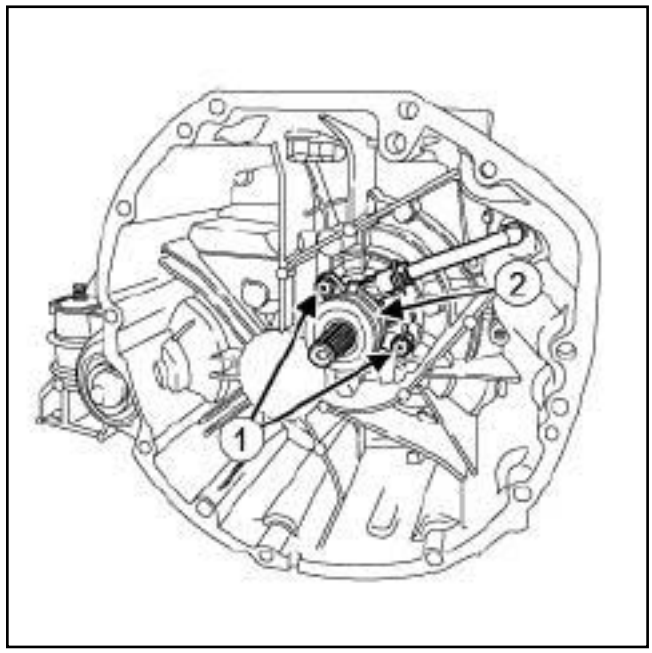
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



129863

❏ Remove:

- the bolts (**1**) from the clutch thrust bearing,
- the clutch thrust bearing (**2**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the clutch thrust bearing bolts.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the new clutch thrust bearing,
- the new clutch thrust bearing bolts.

❏ Torque tighten the **clutch thrust bearing bolts (21 N.m)**.

### III - FINAL OPERATION.

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-9**) .

6 SPEED MANUAL GBOX

## SAFETY

### General information

This method provides information which will allow you to:

- acquire good knowledge of the component on which you will be working,
- benefit from the best repair conditions,
- obtain optimum component operation and meet customer requirements,
- optimise component repair time.

It is worth taking the time to read this method as you will gain time later on during the repairs.

#### *a - General recommendations*

Observe basic principles of vehicle repair.

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

Carry out the operation on the component on a clean working area.

To ensure good repair:

- use the recommended consumables (see **Vehicle: Parts and ingredients for the repairwork**) ,
- use the recommended tools,
- observe the tightening torques,
- observe the recommendations for parts that should always be replaced after removal, refitting or replacement operations,
- clean and degrease the sections to be bonded, to ensure they bond correctly.

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

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

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

**WARNING**
Applying excess sealant could cause it to be squeezed out when parts are tightened. A mixture of sealant and fluid may cause damage to some components.

Observe the chronological order of the steps:

- remove the component,
- clean the component before repairing,
- remove the part(s) concerned
- check the part(s) removed,
- replace faulty part(s) with new part(s),
- perform the necessary adjustments and/or settings so that the component operates correctly,
- observe the tightening torques.

Note:
Ensure you use the correct type of bearing for the gearbox. There are three types of bearing for different gearbox suffixes (**NTN - SNR - TIMKEN**). They are not interchangeable.

Note:
Ensure sure that the parts removed match up and ensure that they are refitted in the correct order.

#### *b - Special tooling*

Use suitable tools which are in good condition (use of « multi-purpose » tools, such as adjustable pliers, etc., should be avoided wherever possible).

For good quality repairs and for working in safe conditions, use only special tooling.

#### *c - Safety*

Equipment risks:

- The "Note" heading used in the description of the method indicates that particular care should be taken for the operation described.
- The "Important" heading used in the description of the method indicates that there is a risk of damage to the component.

Working safely:

- The "Warning" heading used in the description of the method indicates that particular care should be taken for the operation described and that there is a human risk,
- use supports and adopt a correct posture when performing heavy work or raising loads,
- check that the working area is clean and tidy during the operation,
- use personal protection (gloves, goggles, work shoes, masks, skin protection, etc.),
- do not use harmful products in unventilated rooms,
- do not ingest any chemicals (brake fluid, coolant, etc.).

Respecting the environment:

- sort waste according to its particular qualities,
- do not burn discarded products (tyres, etc.).

***d - Conclusion***

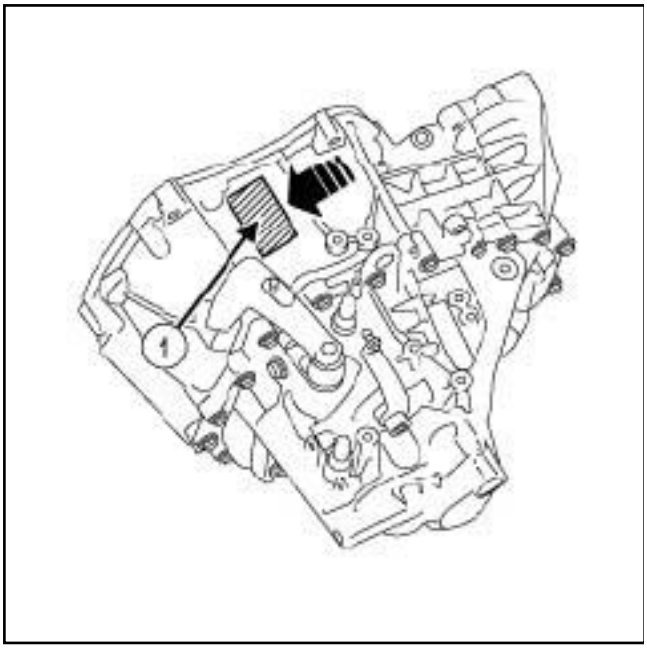
Respecting the recommended methods will guarantee the best performance and reliability of the component.

6 SPEED MANUAL GBOX

| Type | Packaging | Part no. | Component |
|---|---|---|---|
| **GEARBOX OIL** | | | Immerse all parts |
| **SILICONE ADHESIVE SEAL** | 100g cartridge | **77 11 236 172** | Housing assembly |
| **SEALING RESIN** | 25g cartridge | **77 11 237 640** | Switch threading |

Parts always to be replaced when they have been removed:

- lock rings,
- differential outlet seals,
- input shaft inlet seal,
- pins.
- the engagement clips,
- the clutch thrust bearing,
- the gear lever seal,
- the gear selector lever seal,
- the blanking cover,
- the seal,
- the guide bolts.




131201

The gearbox is identified by a mark (**1**) engraved on the top of the gearbox.

| Tightening torques ▽ | |
|---|---|
| drain plug | **35 N.m** |
| filler cap | **35 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## DRAINING

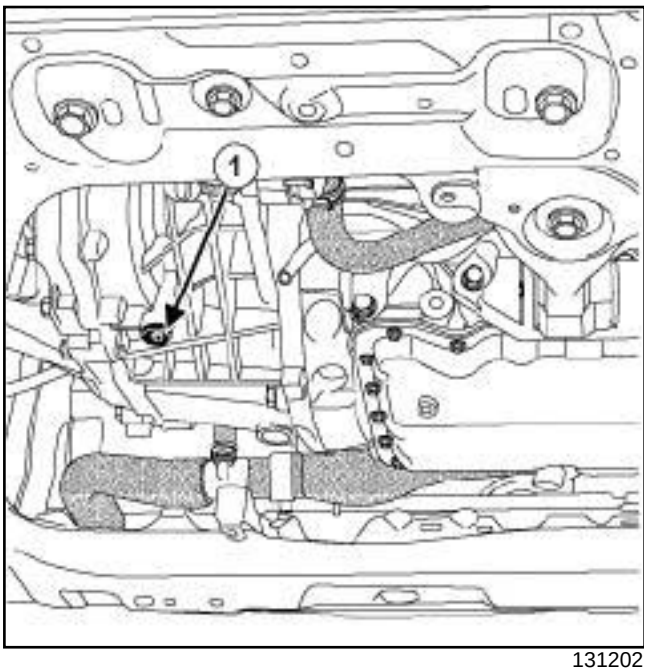
### I - DRAINING PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.

### II - DRAINING OPERATION



131202

❏ Remove:

- the drain plug (**1**) ,
- the drain plug seal.

❏ Drain the manual gearbox.

## FILLING

### I - FILLING PREPARATION OPERATION

❏ Always replace the seal.

### II - FILLING OPERATION

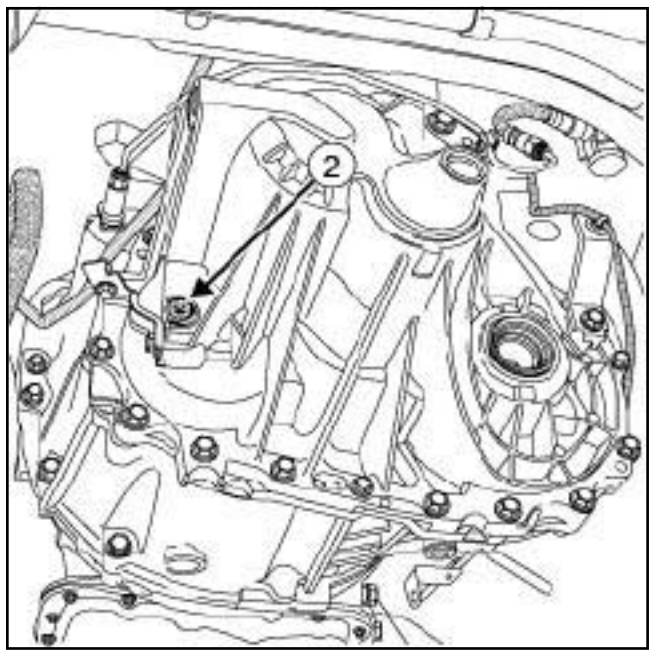
❏ Refit:

- the new drain plug seal,
- the drain plug.

❏ Torque tighten the **drain plug (35 N.m)**.

❏ Remove:

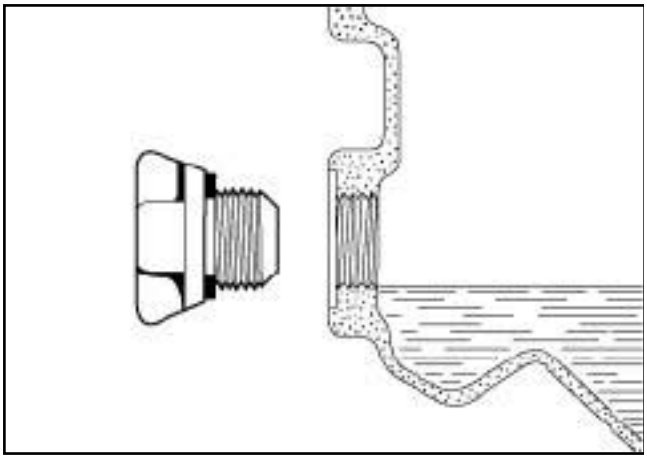
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior Protection).



131203

❏ Remove:

- the filler cap (**2**) ,
- the filler cap seal.



131204

❑ Fill up to the level of the opening.

❑ Refit:

- the new filler cap seal,
- the filler cap.

❑ Torque tighten the **filler cap (35 N.m)**.

**III - FINAL OPERATION.**

❑ Refit:

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

| Essential special tooling | |
|---|---|
| **Bvi. 1689** | Differential output seal fitting tool. |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

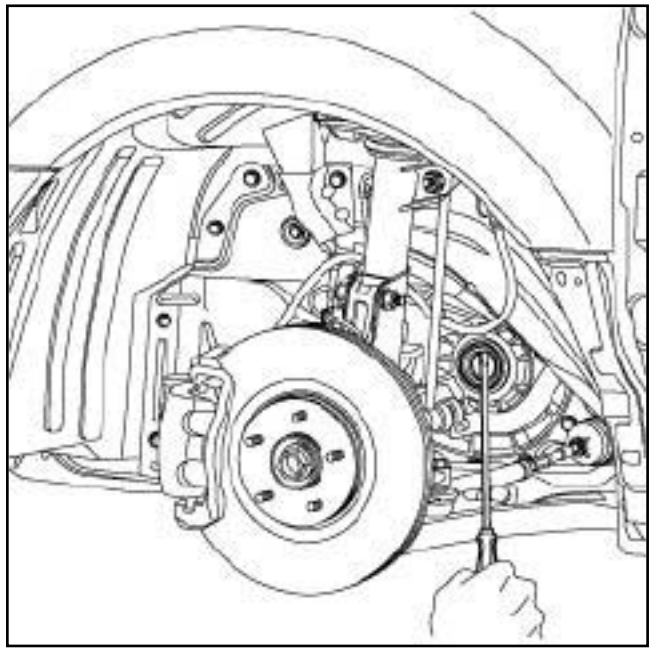
❏ Remove the engine undertray.

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❏ Remove:

- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED

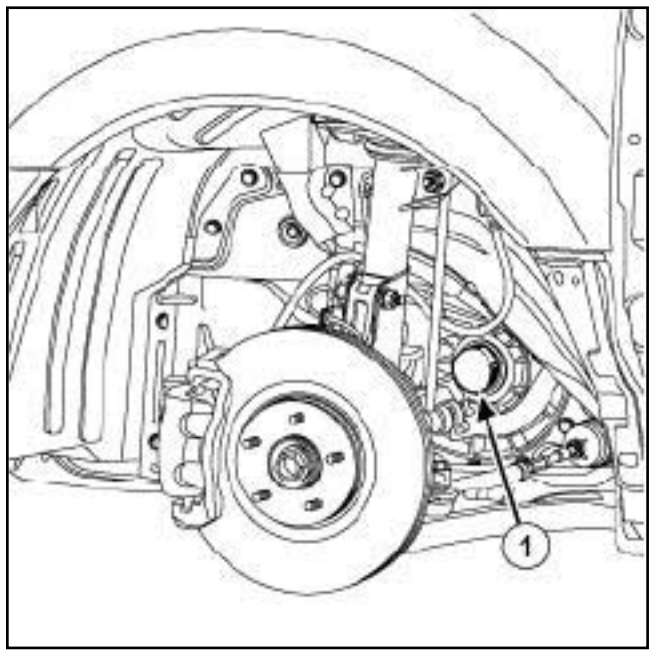


131205

❏ Remove the differential output seal on the side concerned using a screwdriver.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED




131206

❏ Refit the differential output seal on the side concerned using the tool **(Bvi. 1689)** (**1**) .

**II - FINAL OPERATION**

❏ Refit the driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .

❏ Fill the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❏ Refit:

- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

M9R, and 6 SPEED MANUAL GBOX

| Essential special tooling | |
|---|---|
| **Mot. 1453** | Multiple-adjusting engine mounting support with retaining straps. |

| Tightening torques ▽ | |
|---|---|
| clutch pipe bracket bolt | **14 N.m** |
| heater matrix coolant pipe bracket bolts | **25 N.m** |
| gear lever cable bracket bolts | **17 N.m** |
| gear selector cable bracket bolts | **17 N.m** |
| left-hand suspended engine mounting bolts | **45 N.m** |
| earth strap bracket bolt | **25 N.m** |
| switch wiring bracket bolt14 | **N.m** |
| gearbox lower bolts | **48 N.m** |
| gearbox side bolts | **48 N.m** |
| gearbox mounting studs | **20 N.m** |
| gearbox nuts | **48 Nm** |
| left-hand suspended engine mounting bolt A | **110 N.m** |
| left-hand suspended engine mounting bolt B | **110 N.m** |
| air filter unit bracket bolts | **10 N.m** |
| diesel fuel drainage pipe bolts | **25 N.m** |
| earth strap bolt | **14 N.m** |
| heater matrix water inlet pipe bolt | **25 N.m** |
| heater matrix water outlet pipe bolt | **25 N.m** |
| wiring harness channel bolts | **5 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine undertray.

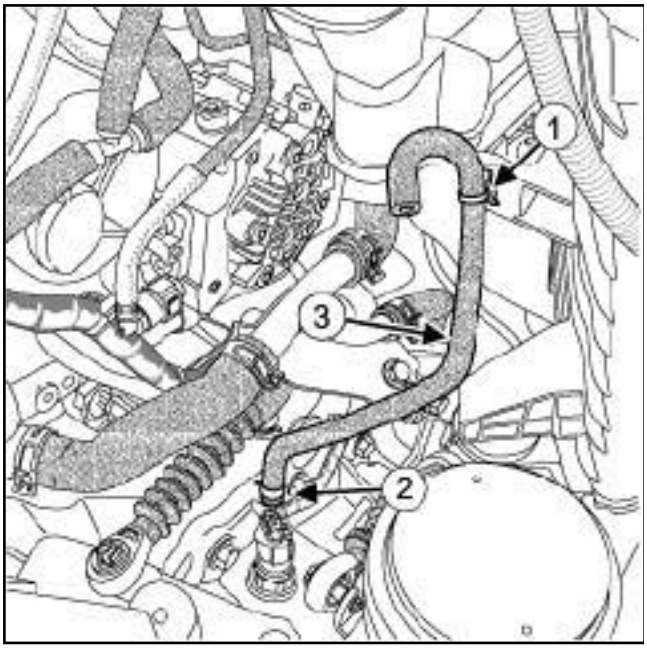
❑ Drain:

- the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling system),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❑ Remove:

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

M9R, and 6 SPEED MANUAL GBOX

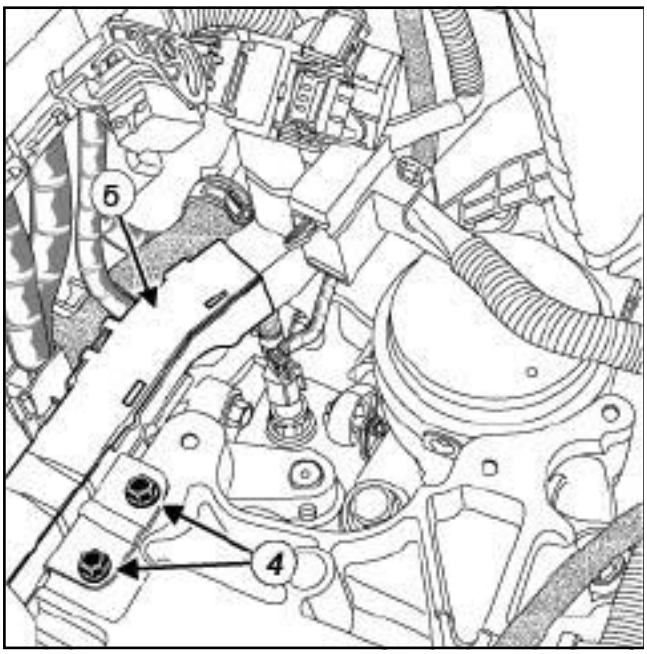



131207

❏ Unclip the breather hose clip (**1**) from the air filter.

❏ Remove:

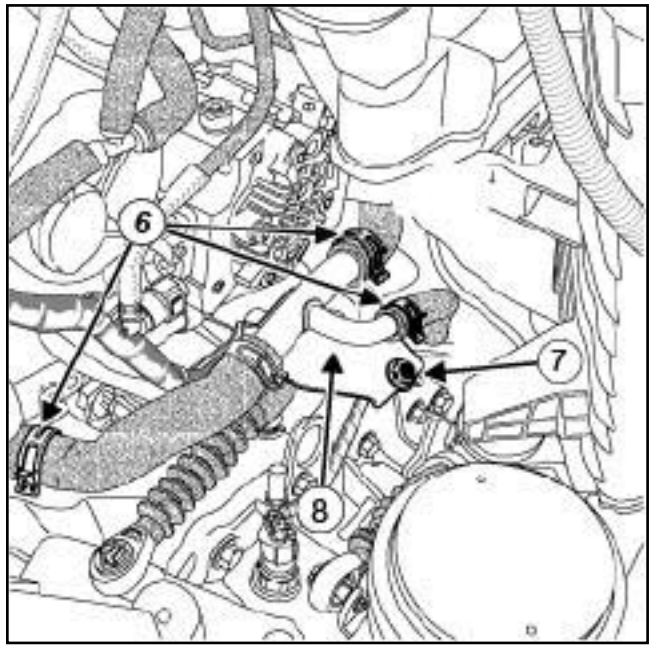
- the breather hose clip (**2**) ,
- the breather hose (**3**) ,
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).




131208

❏ Remove the bolts (**4**) from the engine wiring harness channel.

❏ Remove the wiring harness channel (**5**) .




131209

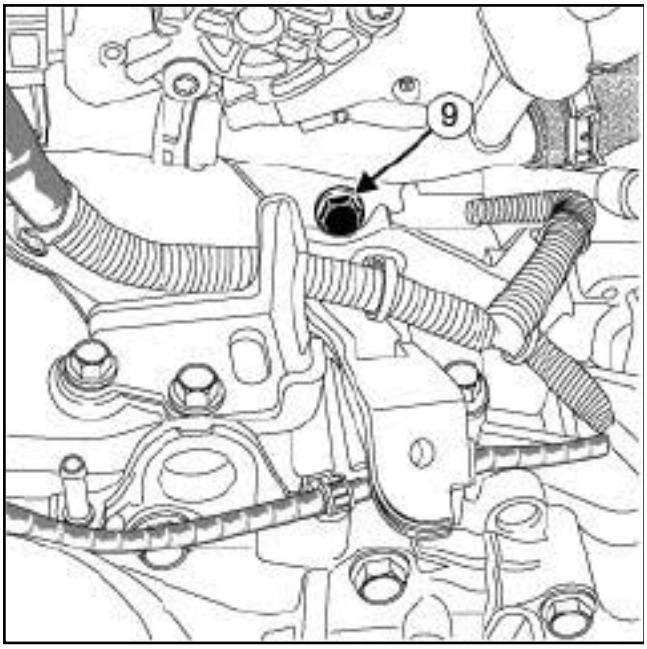
❏ Remove:

- the heater matrix coolant hose clips (**6**) ,
- the bolt (**7**) from the heater matrix water outlet pipe,
- the heater matrix coolant outlet pipe (**8**) .

❏ Disconnect:

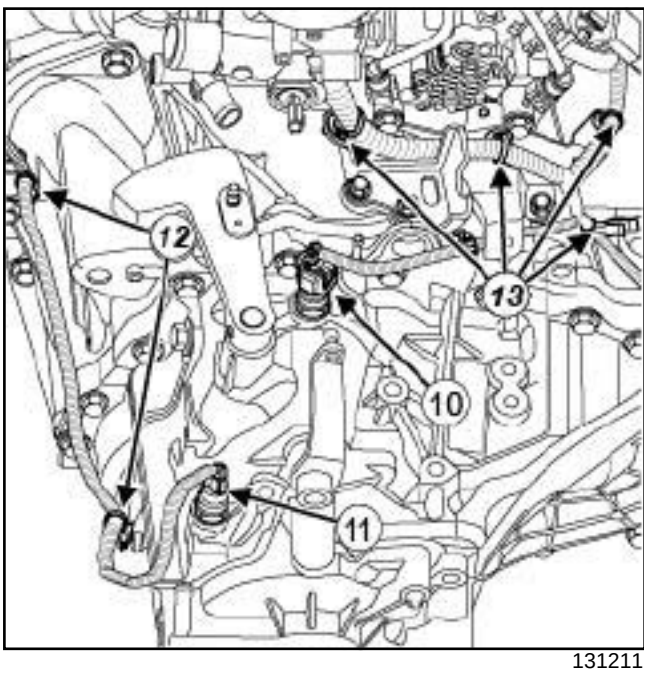
- the selector cable (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls),
- the gear lever cable (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

M9R, and 6 SPEED MANUAL GBOX




131210

❏ Remove the bolt (**9**) from the heater matrix inlet pipe.




131211

❏ Disconnect:

- the neutral switch (**10**) ,
- the reverse gear switch (**11**) .

❏ Unclip:

- the reverse gear switch wiring clips (**12**) ,
- the gearbox wiring clips (**13**) .

❏ Remove:

- the front wheels (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 front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the particle filter (see **Particle filter: Removal - Refitting**) (19A, Exhaust),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) 31A, Front axle components).

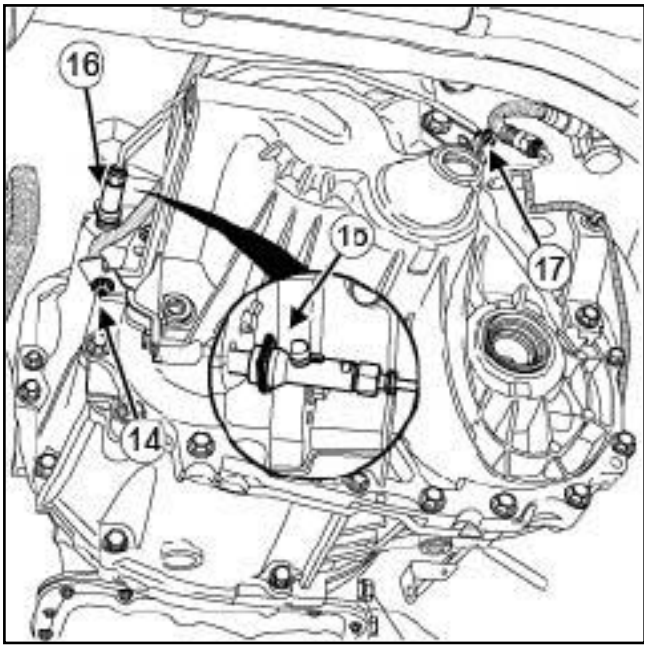
4X4 TRANSMISSION

❏ Disconnect the propshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❏ Secure the longitudinal driveshaft to the control cable bracket using a cord.

❏ Remove the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) .

M9R, and 6 SPEED MANUAL GBOX




131212

❏ Remove:

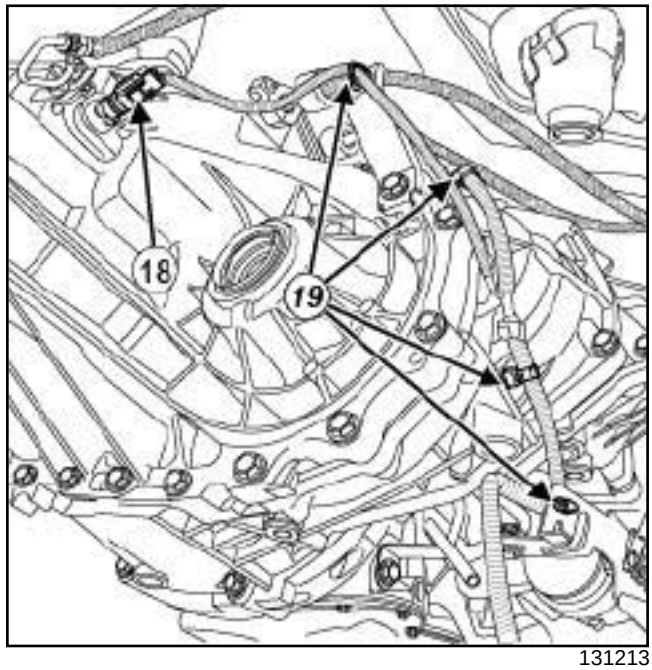
- the earth strap bolt (**14**) ,
- the clip (**15**) from the clutch pipe.

❏ Disconnect:

- the clutch control pipe (**16**) from the manual gearbox,
- the clutch control pipe (**16**) from the clip (**17**) .

❏ Drain the clutch oil.

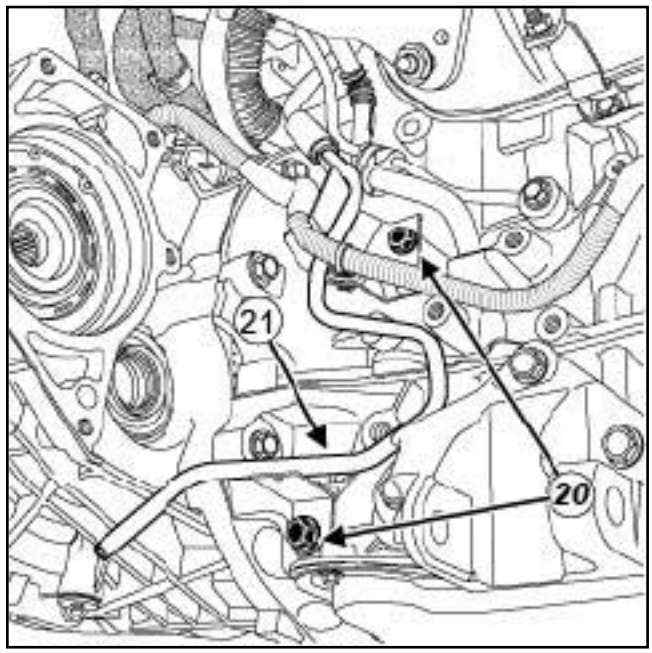
4X4 TRANSMISSION




131213

❏ Unclip:

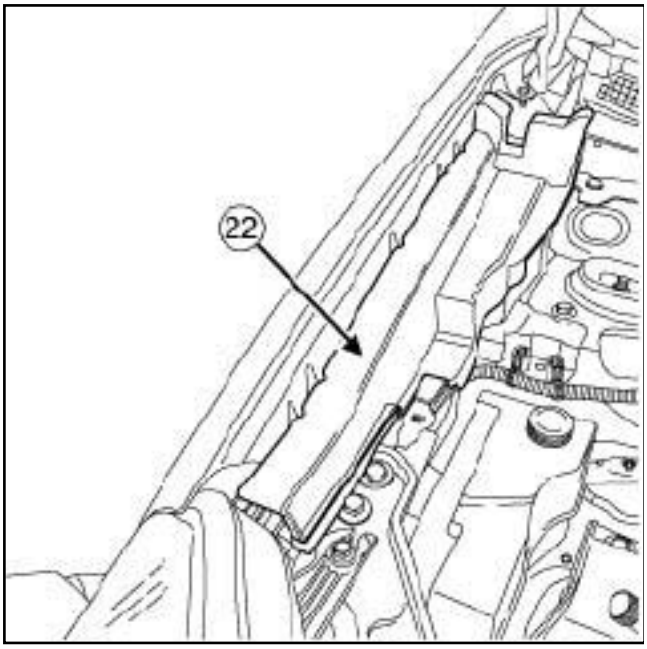
- the 1st gear switch (**18**) ,
- the 1st gear switch wiring clips (**19**) .




131214

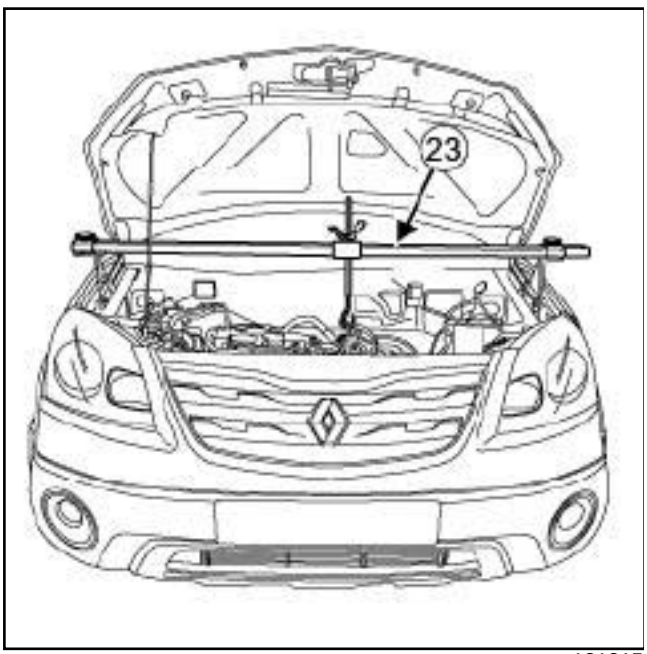
❏ Remove:

- the diesel fuel drainage pipe bolts (**20**) ,
- the diesel fuel drainage pipe (**21**) .



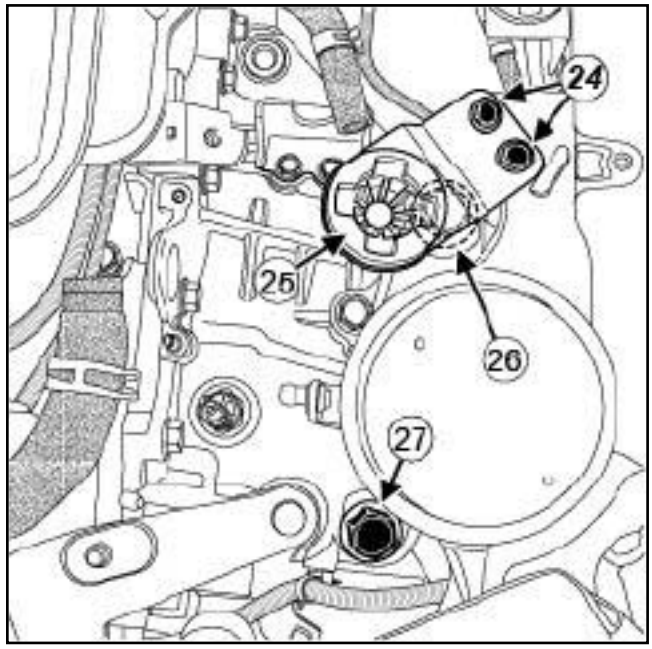

131231

❑ Remove the hood seals (**22**) .




131215

❑ Fit the **(Mot. 1453)** (**23**) .

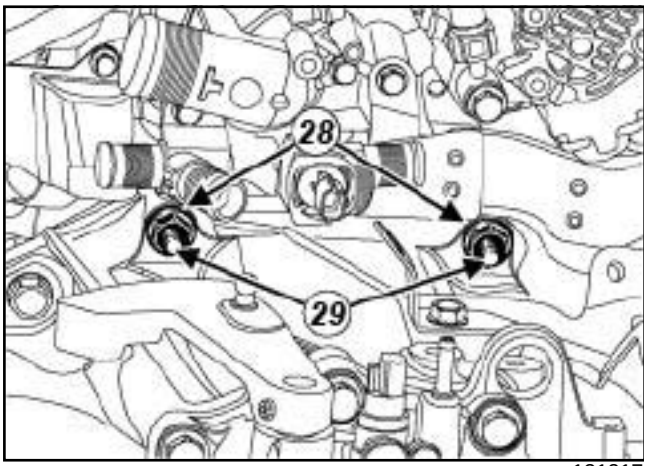



131216

❑ Remove:

- the air filter unit bracket bolts (**24**) ,
- the air filter unit support (**25**) ,
- the left-hand suspended engine mounting bolt A (**26**) ,
- the left-hand suspended engine mounting bolt B (**27**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),

**II - OPERATION FOR REMOVAL OF PART CONCERNED**

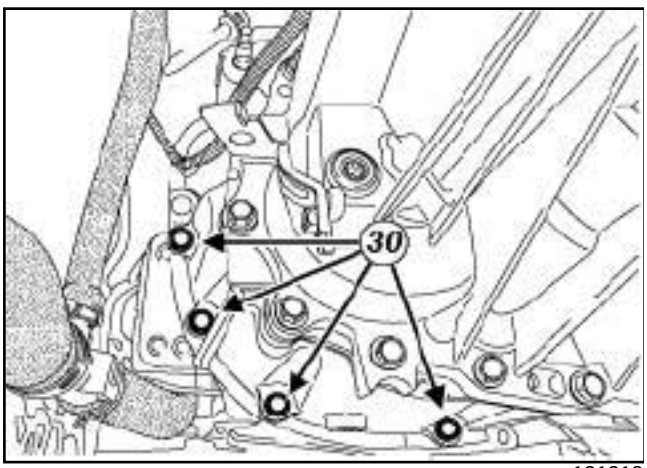


131217

❏ Remove:

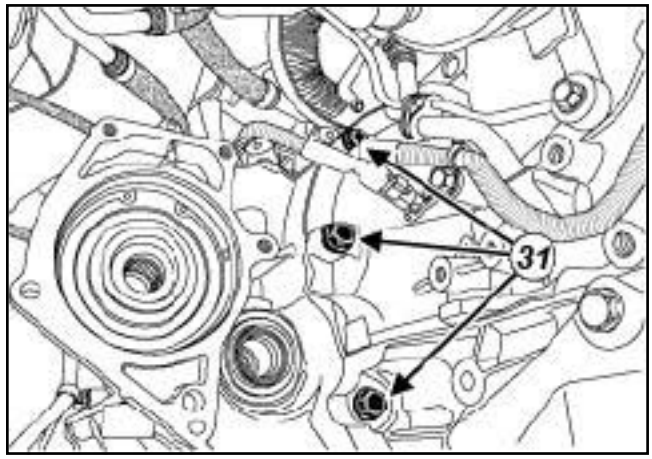
- the gearbox nuts (**28**) ,
- the gearbox support studs (**29**) .

❏ Fit the component jack underneath the gearbox.



131218

❏ Remove the lower bolts (**30**) from the gearbox.



131219

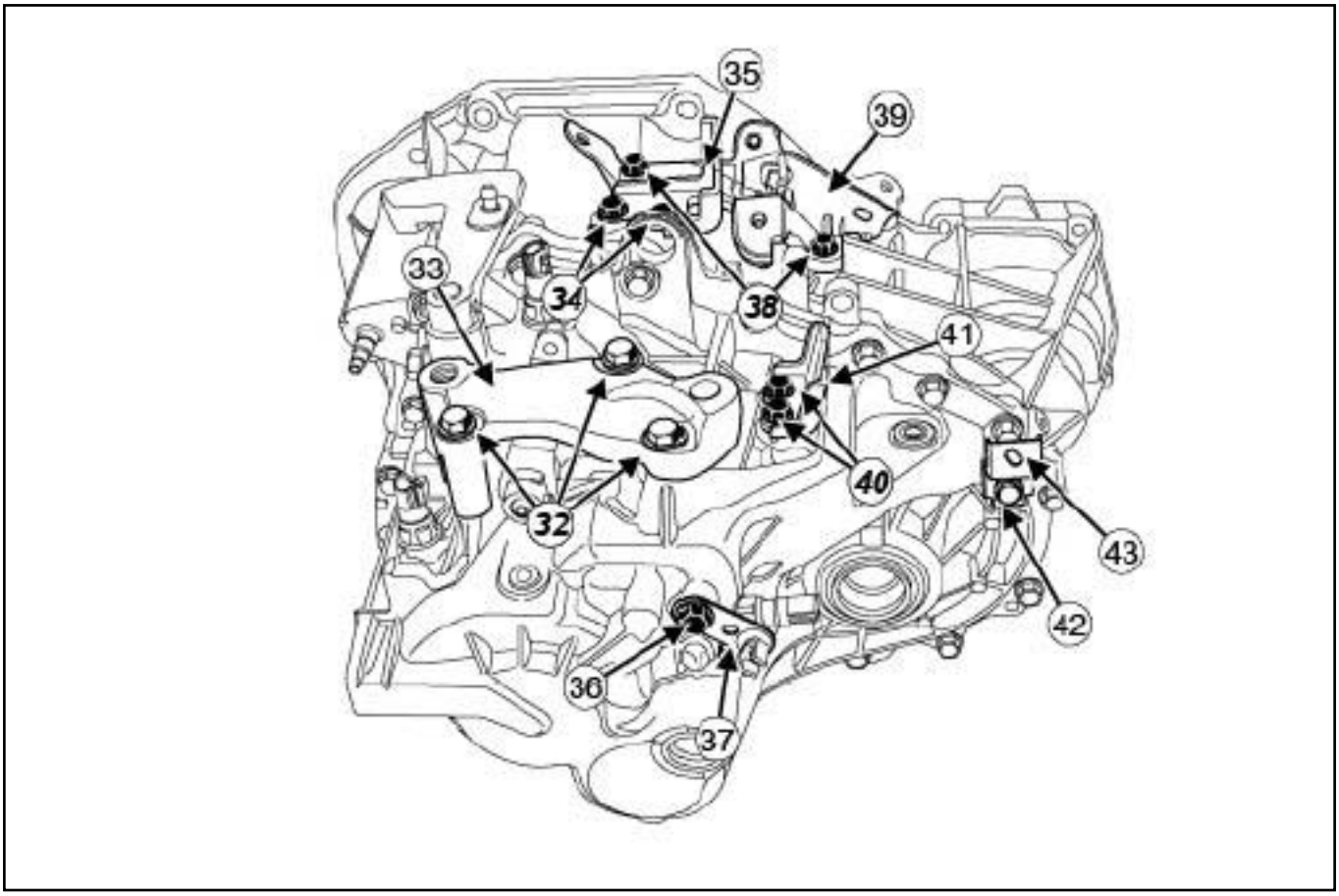
❏ Remove:

- the gearbox side bolts (**31**) ,
- the manual gearbox.

**III - FINAL REMOVAL OPERATION**

❏ Remove the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-8**) .

M9R, and 6 SPEED MANUAL GBOX




131220

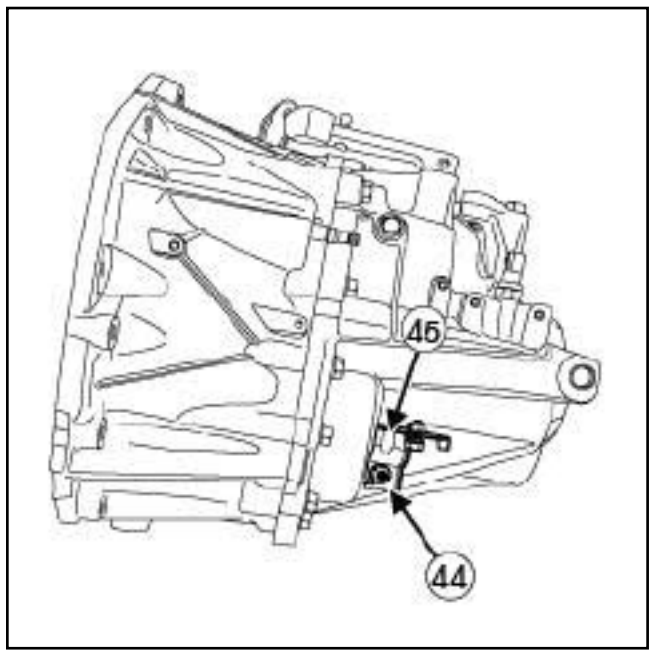
❑ Remove:

- the left-hand suspended engine mounting bolts (**32**) ,
- the left-hand suspended engine mounting (**33**)
- the selector cable bracket bolts (**34**) ,
- the selector cable bracket (**35**) ,
- the gear lever cable bracket bolts (**36**) ,
- the gear lever cable bracket (**37**) ,
- the heater matrix coolant pipe bracket bolts (**38**) ,
- the heater matrix coolant pipe bracket (**39**) ,
- the clutch pipe bracket bolt (**40**) ,
- the clutch pipe bracket (**41**) .

4X4 TRANSMISSION

❑ Remove:

- the switch wiring bracket bolt ***(42)*** ,
- the switch wiring bracket ***(43)*** .




131236

❑ Remove:

- the earth strap bracket bolt (**44**) ,
- the earth strap bracket (**45**) .

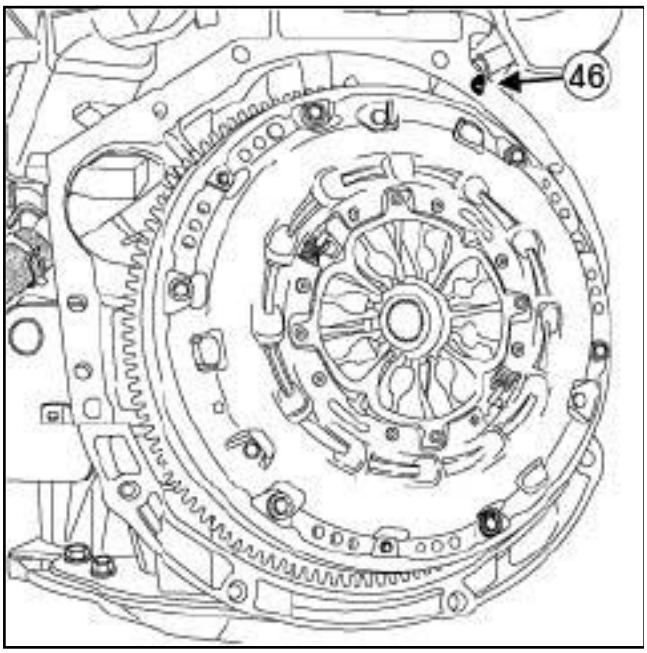
M9R, and 6 SPEED MANUAL GBOX

## REFITTING

### I - REFITTING PREPARATION OPERATION

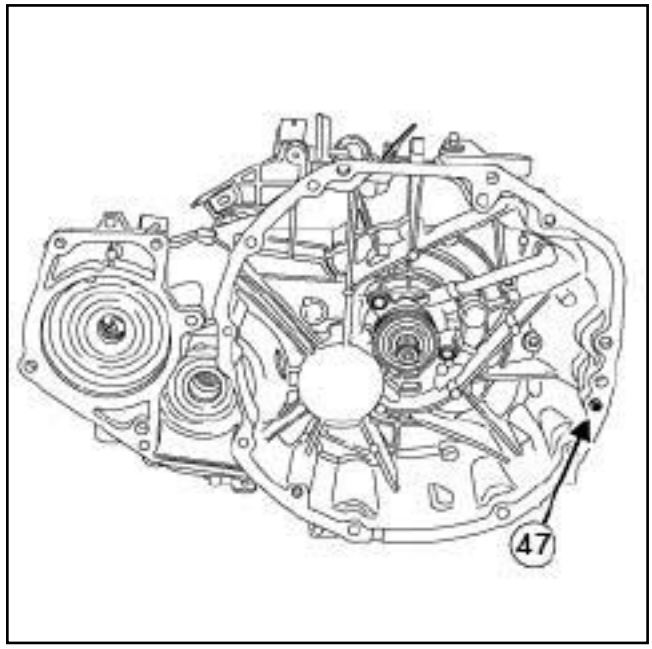
❏ Always replace the clutch thrust bearing.

❏ Refit the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-8**) .




131222

❏ Check that the centring dowel (**46**) is in position.




131223

❏ Check that the centring dowel (**47**) is in position.

❏ Refit:

- the clutch pipe bracket,
- the clutch pipe bracket bolt,
- the heater matrix coolant pipe bracket,
- the heater matrix coolant pipe bracket bolts,
- the gear lever cable bracket,
- the gear lever cable bracket bolts,
- the selector cable bracket,
- the selector cable bracket bolts,
- the left-hand suspended engine mounting,
- the left-hand suspended engine mounting bolts,
- the earth bracket,
- the earth strap bolt.

❏ Torque tighten:

- the **clutch pipe bracket bolt (14 N.m)**,
- the **heater matrix coolant pipe bracket bolts (25 N.m)**,
- the **gear lever cable bracket bolts (17 N.m)**,
- the **gear selector cable bracket bolts (17 N.m)**,
- the **left-hand suspended engine mounting bolts (45 N.m)**,
- the **earth strap bracket bolt (25 N.m)**.

4X4 TRANSMISSION

❑ Refit:

- the switch wiring bracket,
- the switch wiring bracket bolt.

❑ Torque tighten the **switch wiring bracket bolt14 (N.m)**.

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

❑ Refit:

- the manual gearbox,
- the gearbox lower bolts,
- the gearbox side bolts,
- the gearbox mounting studs,
- the gearbox nuts.

❑ Torque tighten:

- the **gearbox lower bolts (48 N.m)**,
- the **gearbox side bolts (48 N.m)**,
- the **gearbox mounting studs (20 N.m)**,
- the **gearbox nuts (48 Nm)**.

**III - FINAL OPERATION**

❑ Refit and tighten to torque:

- the **left-hand suspended engine mounting bolt A (110 N.m)**,
- the **left-hand suspended engine mounting bolt B (110 N.m)**,

❑ Refit:

- the air filter box mounting,
- the air filter unit bracket bolts.

❑ Torque tighten the **air filter unit bracket bolts (10 N.m)**.

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

❑ Remove the tool **(Mot. 1453)**.

❑ Refit:

- the hood seals,
- the diesel drain pipe,
- the diesel fuel drainage pipe bolts.

❑ Torque tighten the **diesel fuel drainage pipe bolts (25 N.m)**.

❑ Connect:

- the neutral switch,
- the reverse gear switch.

❑ Clip:

- the reverse gear switch wiring clips,
- the gearbox wiring clips.

4X4 TRANSMISSION

❑ Connect the 1st gear switch.

❑ Clip on the 1st gear switch wiring clips.

❑ Refit:

- the earth strap,
- the earth strap bolt.

❑ Torque tighten the **earth strap bolt (14 N.m)**.

❑ Connect:

- the clutch control pipe to the manual gearbox,
- the clutch control pipe onto the clip.

❑ Refit the clutch control pipe clip.

4X4 TRANSMISSION

❑ Refit:

- the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) ,
- the propshaft (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

M9R, and 6 SPEED MANUAL GBOX

❏ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) 31A, Front axle components),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the particle filter (see **Particle filter: Removal - Refitting**) (19A, Exhaust).

❏ Torque tighten the **heater matrix water inlet pipe bolt (25 N.m)**.

❏ Connect:

- the selector cable (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls),
- the gear lever cable (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

❏ Refit:

- the heater matrix water outlet pipe,
- the heater matrix coolant outlet pipe bolt,
- the heater matrix coolant hose clip.

❏ Torque tighten the **heater matrix water outlet pipe bolt (25 N.m)**.

❏ Refit:

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

❏ Clip on the breather hose clip.

❏ Refit:

- the wiring channel,
- the wiring channel bolts.

❏ Torque tighten the **wiring harness channel bolts (5 N.m)**.

❏ Refit:

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

❏ Refill:

- the brake fluid,
- the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .
- the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling system),

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

❏ Refit:

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

2TR, and 6 SPEED MANUAL GBOX

| Essential special tooling | |
|---|---|
| **Mot. 1453** | Multiple-adjusting engine mounting support with retaining straps. |

| Tightening torques ▽ | |
|---|---|
| lifting eye bolts | **28 N.m** |
| clutch pipe bracket bolt | **14 N.m** |
| gear lever cable bracket bolts | **17 N.m** |
| selector cable bracket bolts | **17 N.m** |
| earth strap bracket bolt | **25 N.m** |
| switch wiring bracket bolt14 | **N.m** |
| gearbox mounting bolt A | **35 N.m** |
| gearbox mounting bolt B | **75 N.m** |
| gearbox mounting bolt C | **75 N.m** |
| gearbox bolt D | **43 N.m** |
| gearbox bolt E | **43 N.m** |
| engine wiring harness nuts | **10 N.m** |
| earth strap bolt | **14 N.m** |
| battery tray bracket bolts | **28 N.m** |
| wiring bracket bolts28 | **N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

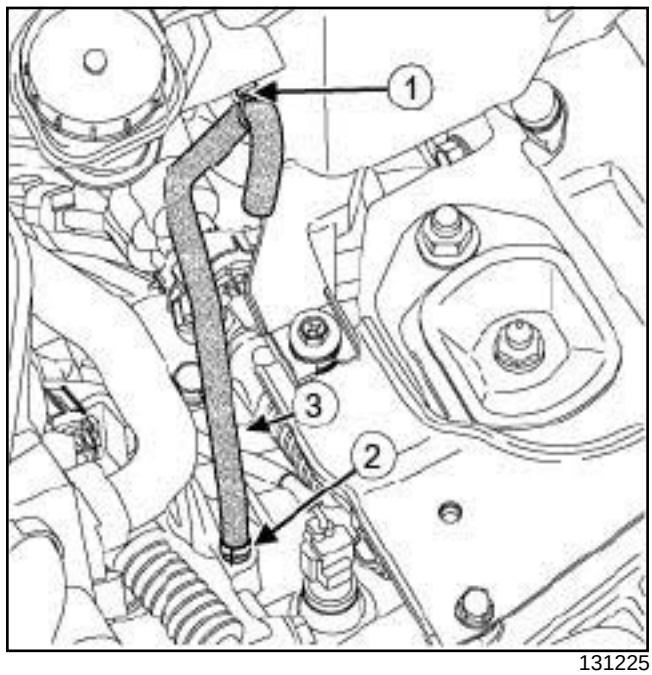
**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine undertray.

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❑ Remove:

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



131225

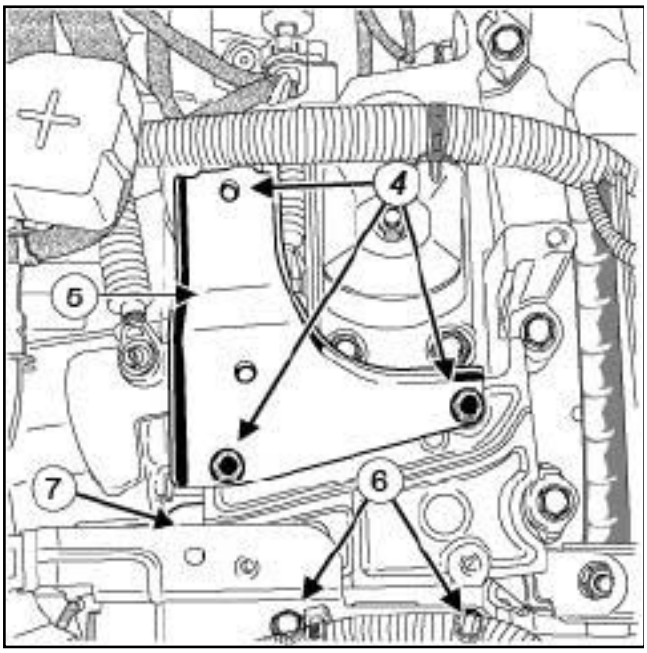
❑ Unclip the breather hose clip (**1**) .

❑ Remove:

- the breather hose clip (**2**) ,
- the breather hose (**3**) ,
- the engine cover,
- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the air resonator,

2TR, and 6 SPEED MANUAL GBOX

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



131226

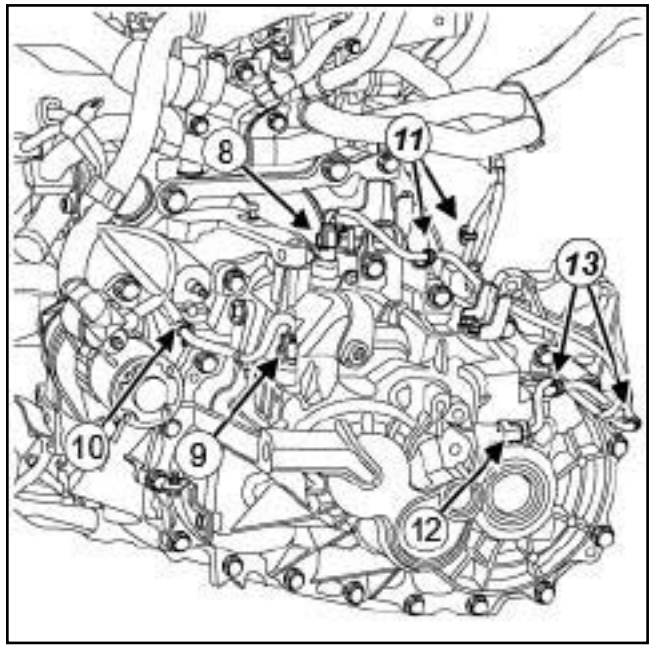
❏ Remove:

- the bolts (**4**) from the battery tray bracket,
- the battery tray bracket (**5**) ,
- the bolts (**5**) from the wiring harness channel.

❏ Remove the wiring harness channel (**7**) .

❏ Disconnect:

- the selector cable (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls),
- the gear lever cable (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).



131227

❏ Disconnect:

- the neutral switch (**8**) ,
- the reverse gear switch (**9**) .

❏ Unclip:

- the clip (**10**) from the reverse gear switch wiring,
- the gearbox wiring clips (**11**) .

ESP 2 or ESP

❏ Disconnect the 1st gear position switch ***(12)*** .

❏ Unclip the clips from the 1st gear position switch wiring ***(13)*** .

❏ Remove:

- 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 front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the intermediate pipe (see **Connector pipe: Removal - Refitting**) (19A, Exhaust),

2TR, and 6 SPEED MANUAL GBOX

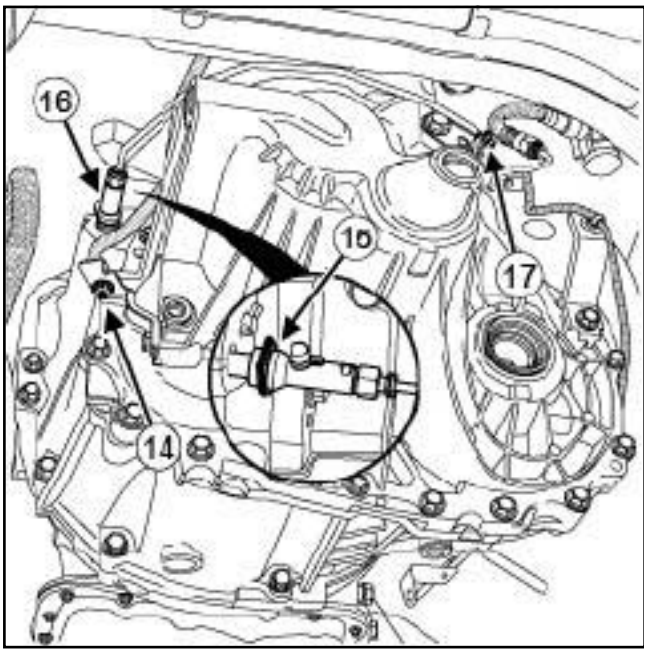
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) 31A, Front axle components).

4X4 TRANSMISSION

❏ Disconnect the propshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❏ Secure the propshaft to the control cable bracket using a strap.

❏ Remove the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) .




131212

❏ Remove:

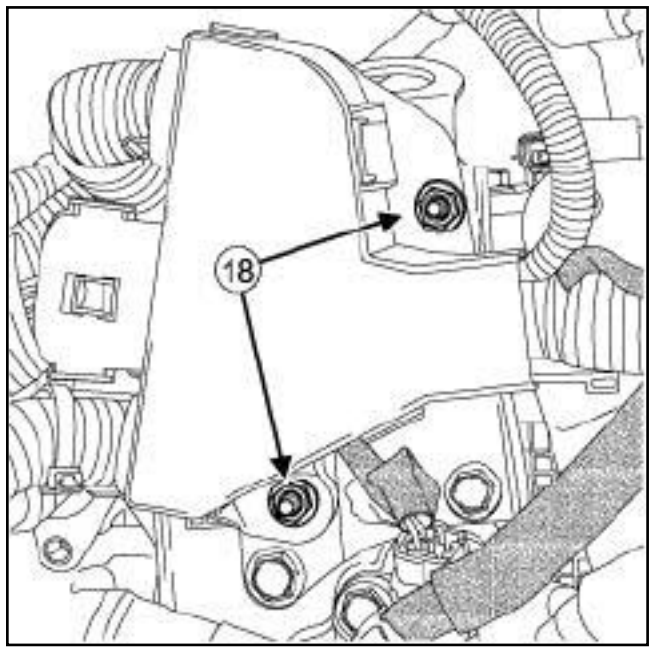
- the earth strap bolt (**14**) ,
- the clip (**15**) from the clutch pipe.

❏ Disconnect:

- the clutch control pipe (**16**) from the manual gearbox,
- the clutch control pipe (**16**) from the clip (**17**) .

❏ Drain the clutch oil.

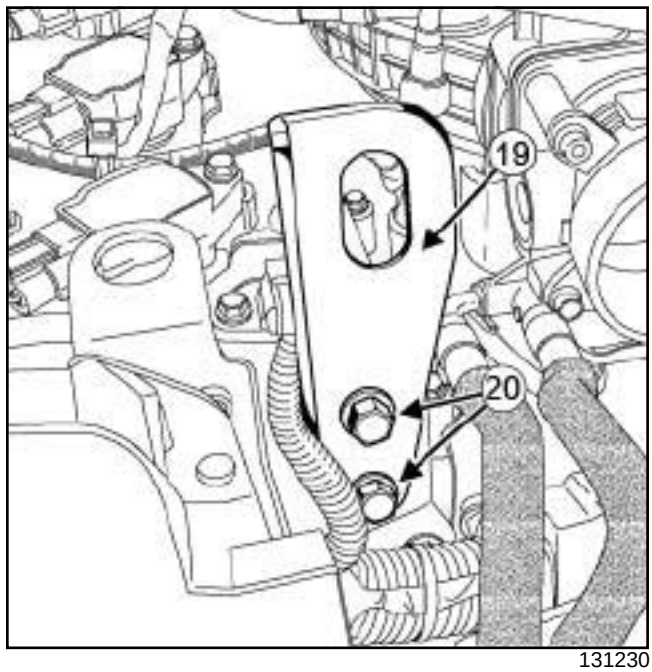
❏ Remove the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).




131229

❏ Remove the engine wiring harness nuts (**18**) .

❏ Move the engine wiring to one side.

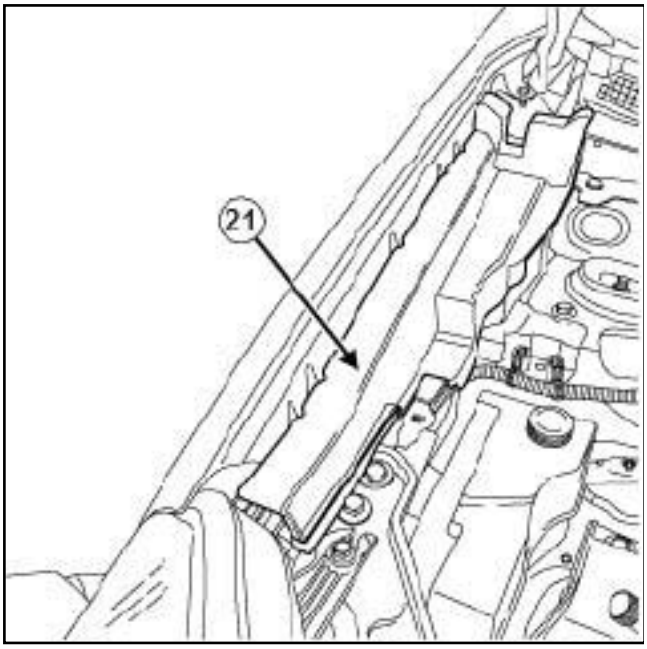



131230

❏ Fit:

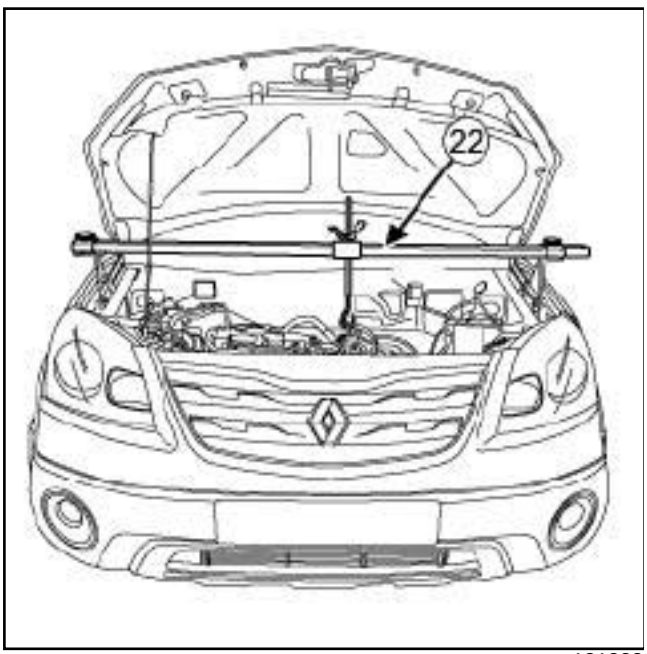
- the lifting eye (**19**) ,
- the lifting eye bolts (**20**) .

❏ Torque tighten the **lifting eye bolts (28 N.m)**.




131231

❏ Remove the hood seals (**21**) .

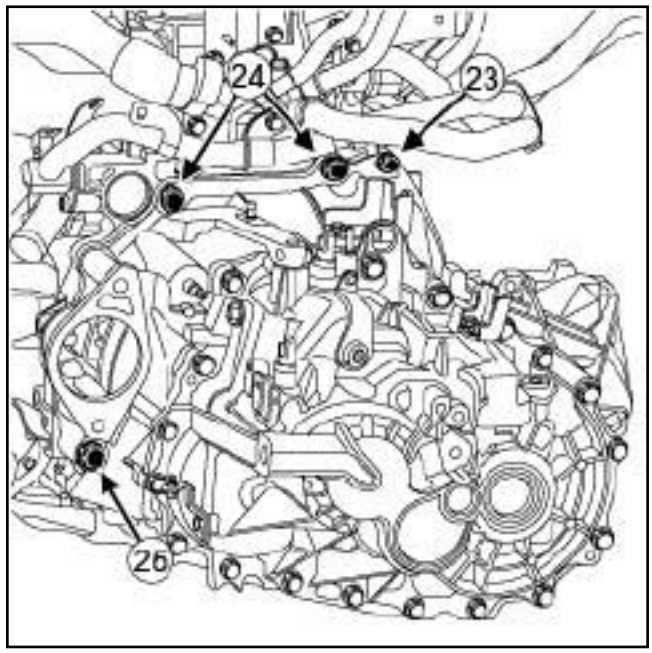



131232

❏ Fit the **(Mot. 1453)** (**22**) .

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

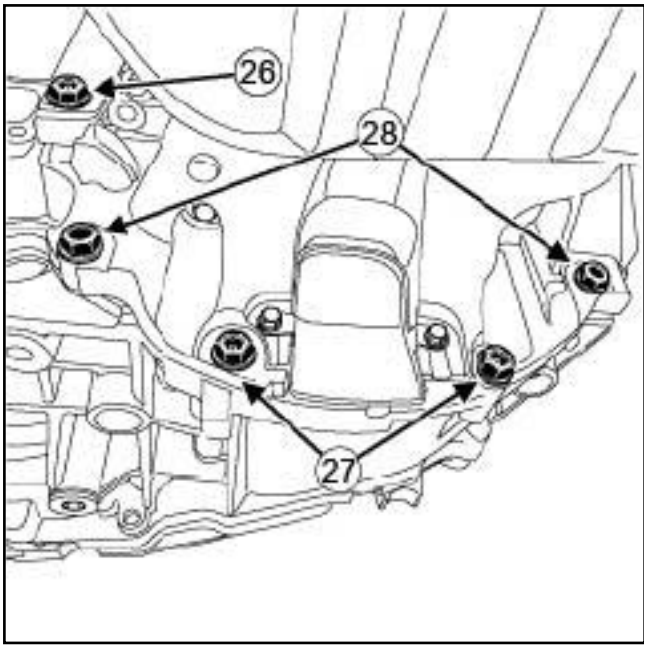
**II - OPERATION FOR REMOVAL OF PART CONCERNED**




131233

❏ Remove:

- the gearbox mounting bolt A (**23**) ,
- the gearbox mounting bolts B (**24**) ,
- the gearbox mounting bolt C (**25**) .




131234

❏ Remove:

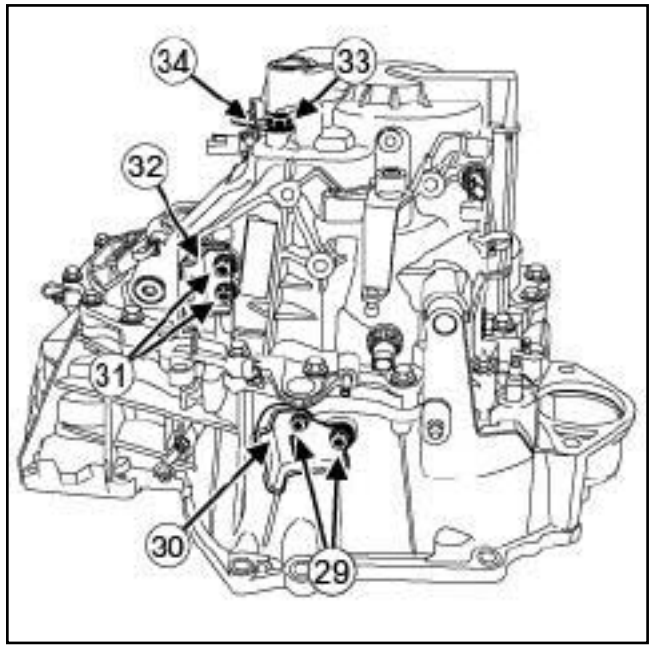
- the gearbox mounting bolt B (**26**) ,
- the gearbox mounting bolts D (**27**) ,
- the gearbox mounting bolts E (**28**) .

❏ Fit the component jack underneath the manual gearbox.

❏ Remove the manual gearbox.

**III - FINAL OPERATION**

❏ Remove the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-8**) .

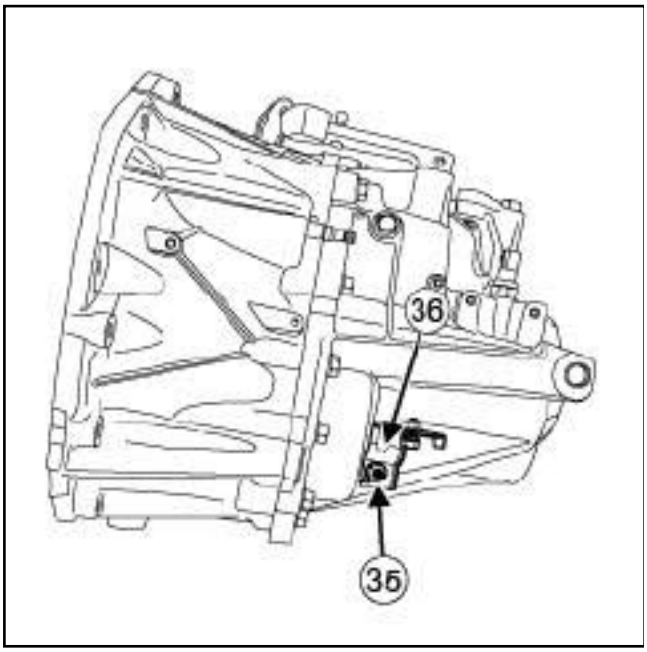



131235

❏ Remove:

- the selector cable bracket bolts (**29**) ,
- the selector cable bracket (**30**) ,
- the gear lever cable bracket bolts (**31**) ,
- the gear lever cable bracket (**32**) ,
- the clutch pipe bracket bolt (**33**) ,
- the clutch pipe bracket (**34**) .

ESP 2 or ESP




131236

❏ Remove:

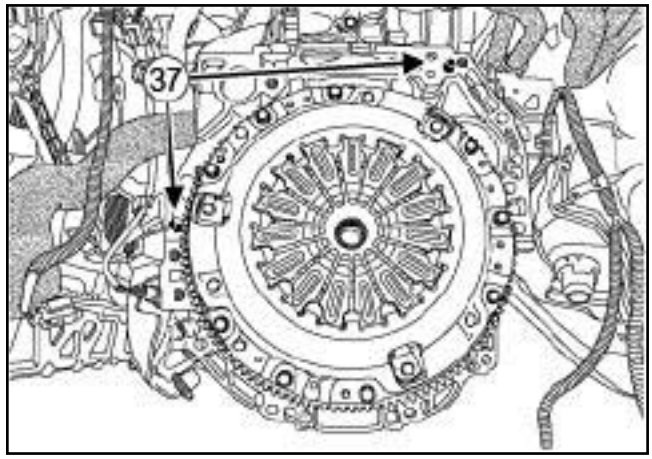
- the switch wiring bolt (**35**) ,
- the switch wiring bracket (**36**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the clutch thrust bearing.

❏ Refit the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-8**) .




131237

❏ Check that the centring dowels (**37**) are in place.

❏ Refit:

- the clutch pipe bracket,
- the clutch pipe bracket bolt,
- the gear lever cable bracket,
- the gear lever cable bracket bolts,
- the selector cable bracket,
- the selector cable bracket bolts,
- the earth bracket,
- the earth strap bolt.

❏ Torque tighten:

- the **clutch pipe bracket bolt (14 N.m)**,
- the **gear lever cable bracket bolts (17 N.m)**,

the **selector cable bracket bolts (17 N.m)**,

the **earth strap bracket bolt (25 N.m)**.

ESP 2 or ESP

❏ Refit:

- the switch wiring bracket,
- the switch wiring bracket bolt.

❏ Torque tighten the **switch wiring bracket bolt14 (N.m)**.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the manual gearbox,

2TR, and 6 SPEED MANUAL GBOX

- the gearbox mounting bolt A,
- the gearbox mounting bolt B,
- the gearbox mounting bolt C,
- the gearbox mounting bolt D,
- the gearbox mounting bolt E.

❏ Torque tighten:

- the **gearbox mounting bolt A (35 N.m)**,
- the **gearbox mounting bolt B (75 N.m)**,
- the **gearbox mounting bolt C (75 N.m)**,
- the **gearbox bolt D (43 N.m)**,
- the **gearbox bolt E (43 N.m)**.

**III - FINAL OPERATION**

❏ Refit the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) .

❏ Remove:

- tool **(Mot. 1453)**
- the lifting eye bolts,
- the lifting eye.

❏ Torque tighten the **engine wiring harness nuts (10 N.m)**.

❏ Refit the bonnet seals.

4X4 TRANSMISSION

❏ Refit:

- the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) ,
- the propshaft (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❏ Refit:

- the earth strap,
- the earth strap bolt.

❏ Torque tighten the **earth strap bolt (14 N.m)**.

❏ Refit:

- the clutch control pipe,
- the clutch control pipe clip,
- the starter (see **Starter: Removal - Refitting**) .

❏ Connect:

- the neutral switch,
- the reverse gear position switch.

❏ Clip:

- the reverse gear position switch wiring clip,
- the neutral switch wiring clips.

4X4 TRANSMISSION

❏ Connect the 1st gear position switch.

❏ Clip on the 1st gear position switch wiring clips.

2TR, and 6 SPEED MANUAL GBOX

❏ Refit:

- the intermediate pipe (see **Connector pipe: Removal - Refitting**) (19A, Exhaust).
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) 31A, Front axle components),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),

❏ Connect:

- the selector cable (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls),
- the gear lever cable (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls)

❏ Refit:

- the battery tray bracket,
- the battery tray bracket bolts,
- the wiring bracket,
- the wiring bracket bolts.

❏ Torque tighten:

- the **battery tray bracket bolts (28 N.m)**,
- the **wiring bracket bolts28 (N.m)**.

❏ Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the air resonator,
- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine cover,
- the breather hose,
- the breather hose clip.

❏ Clip on the breather hose clip.

❏ Refit:

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

❏ Refill:

- the brake fluid,
- the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

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

❏ Refit:

- 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),
- the engine undertray.

2TR, and 6 SPEED MANUAL GBOX

| Tightening torques ▽ | |
|---|---|
| reverse gear switch | **28 N.m** |
| wiring bracket bolts | **28 N.m** |

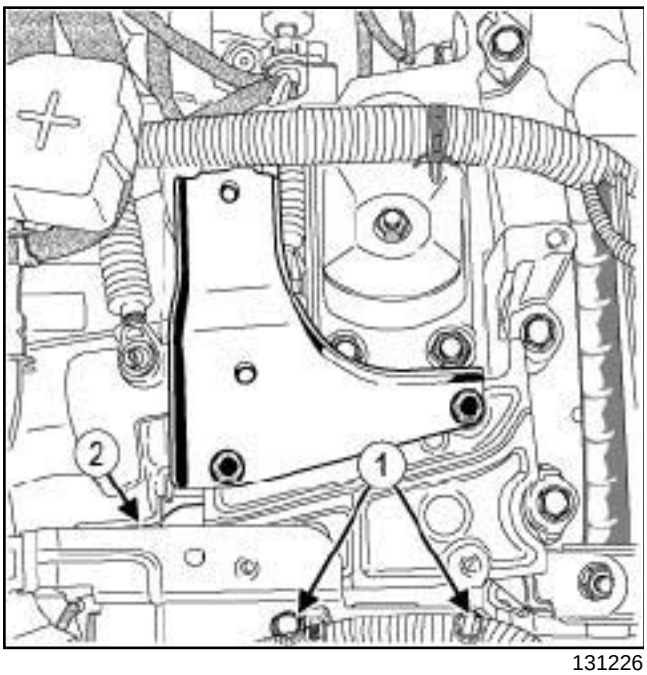
**IMPORTANT**
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❏ Remove:

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

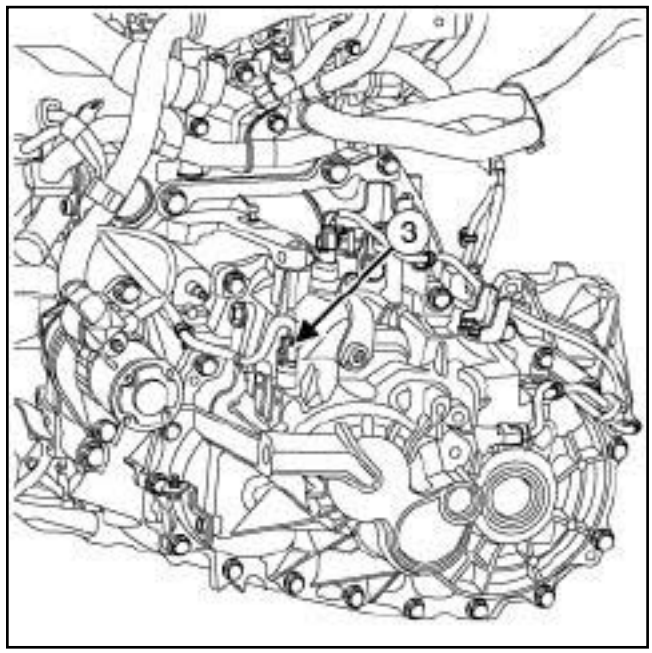


131226

❏ Remove the bolts (**1**) from the wiring bracket.

❏ Move aside the wiring bracket (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



131227

❏ Disconnect the connector (**3**) from the reverse gear switch.

❏ Remove the reverse gear switch.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the reverse gear switch **(blue)** coated with **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for repair**) 04B, Consumables - Products).

❏ Torque tighten the **reverse gear switch (28 N.m)**.

❏ Connect the reverse gear switch connector.

### II - FINAL OPERATION.

❏ Refit:

- the wiring bracket,
- the wiring bracket bolts.

❏ Torque tighten the **wiring bracket bolts (28 N.m)**.

❏ Refit:

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

M9R, and 6 SPEED MANUAL GBOX

| Tightening torques ▽ | |
|---|---|
| reverse gear switch | **28 N.m** |
| wiring harness channel bolts | **5 N.m** |

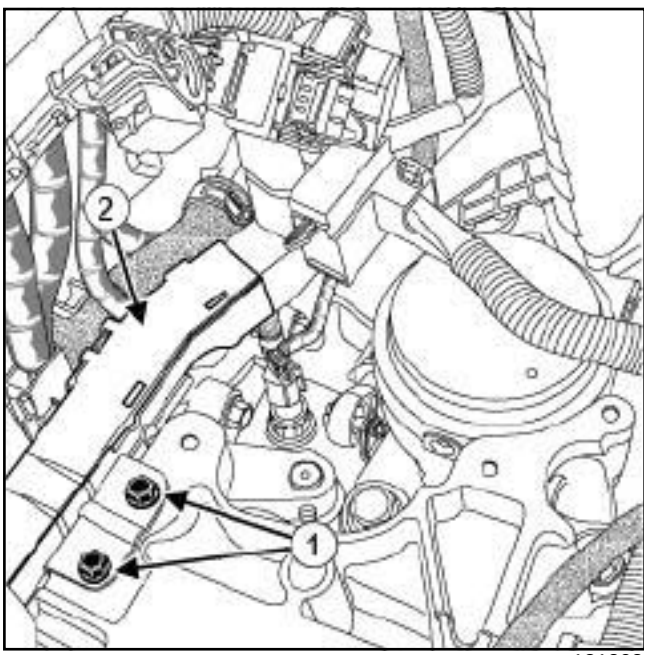
**IMPORTANT**
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❑ Remove:

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

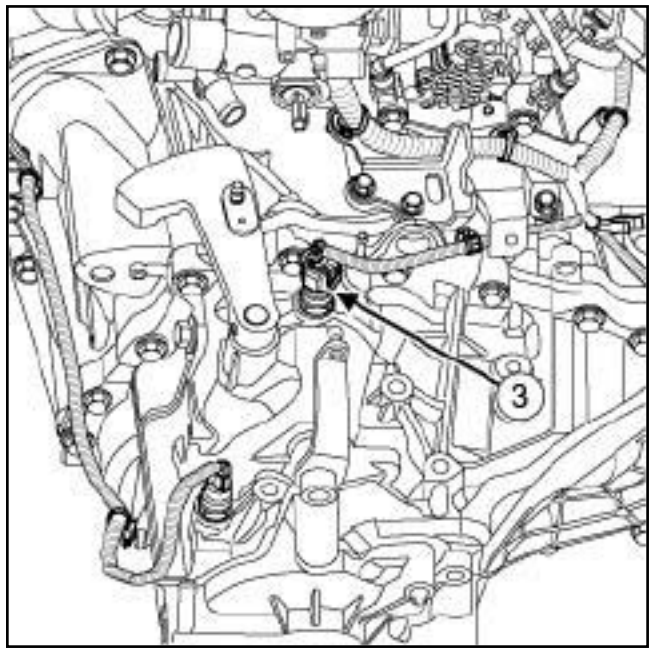


131208

❑ Remove the bolts (**1**) from the engine wiring harness channel.

❑ Move aside the wiring harness channel (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



131211

❑ Disconnect the connector (**3**) from the reverse gear switch.

❑ Remove the reverse gear switch.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the reverse gear switch **(blue)** smeared with **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for repair**) 04B, Consumables - Products).

❑ Torque tighten the **reverse gear switch (28 N.m)**.

❑ Connect the reverse gear switch connector.

### II - FINAL OPERATION.

❑ Refit:

- the engine wiring harness channel,
- the engine wiring harness channel bolts.

❑ Torque tighten the **wiring harness channel bolts (5 N.m)**.

❑ Refit:

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

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

2TR, and 6 SPEED MANUAL GBOX

| Tightening torques ▽ | |
|---|---|
| neutral switch | **28 N.m** |
| battery tray bracket mounting bolts | **28 N.m** |

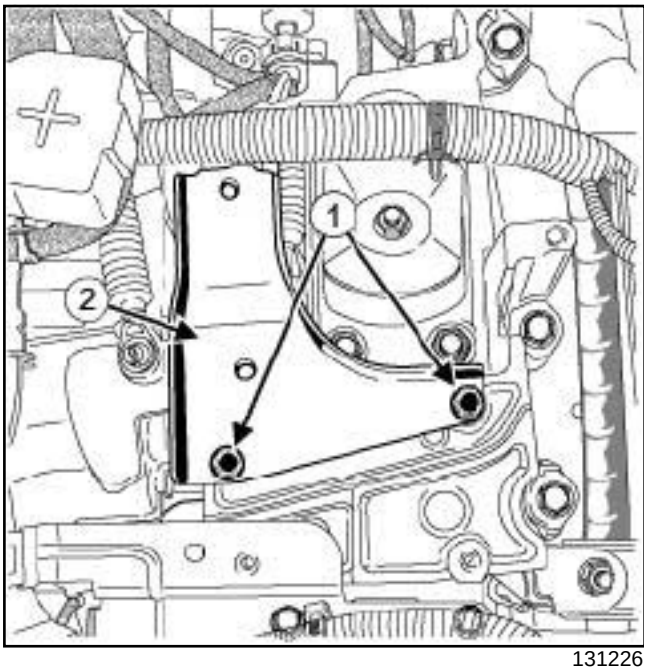
**IMPORTANT**
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❑ Remove:

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

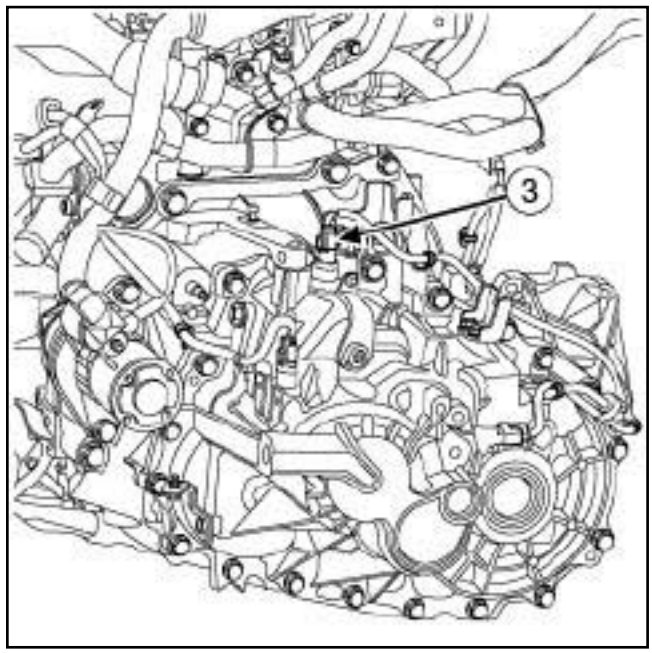


131226

❑ Remove:

- the bolts (**1**) from the battery tray mounting.
- the battery tray mounting (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



131227

❑ Disconnect the connector (**3**) for the neutral switch.

❑ Remove the neutral switch.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the neutral switch **(black)** coated with **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for repair**) (04B, Consumables - Products).

❑ Torque tighten the **neutral switch (28 N.m)**.

❑ Connect the connector for the neutral switch.

### II - FINAL OPERATION.

❑ Refit:

- the battery tray bracket,
- the battery tray bracket bolts.

❑ Tighten to torque the **battery tray bracket mounting bolts (28 N.m)**.

❑ Refit:

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

M9R, and 6 SPEED MANUAL GBOX

| Tightening torques ▽ | |
|---|---|
| neutral switch | **28 N.m** |
| wiring harness channel bolts | **5 N.m** |

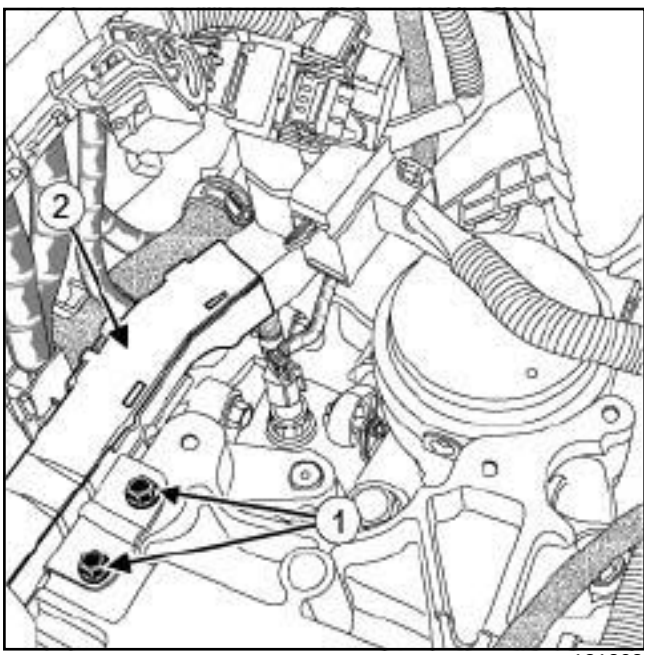
**IMPORTANT**
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❏ Remove:

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

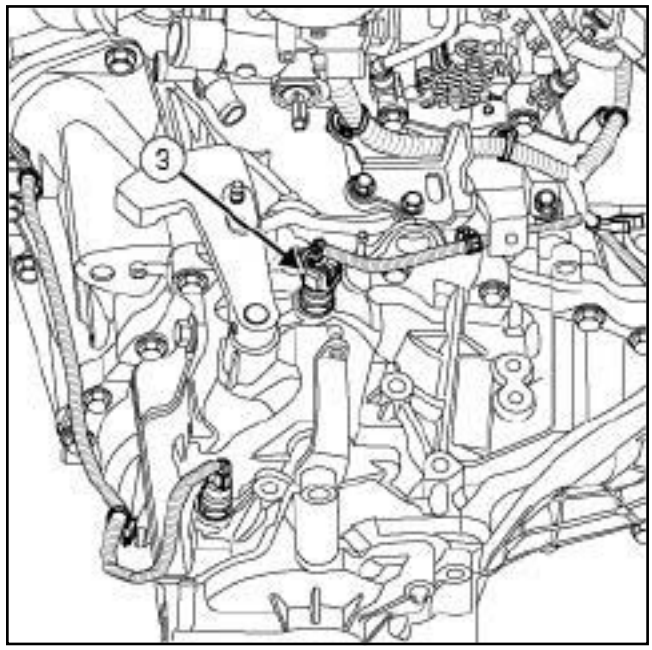


131208

❏ Remove the bolts (**1**) from the engine wiring harness channel.

❏ Remove the wiring harness channel (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



131211

❏ Disconnect the connector (**3**) for the neutral switch.

❏ Remove the neutral switch.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the neutral switch **(black)** smeared with **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for repair**) (04B, Consumables - Products).

❏ Torque tighten the **neutral switch (28 N.m)**.

❏ Connect the connector for the neutral switch.

### II - FINAL OPERATION.

❏ Refit:

- the engine wiring harness channel,
- the engine wiring harness channel bolts.

❏ Torque tighten the **wiring harness channel bolts (5 N.m)**.

❏ Refit:

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

| Tightening torques ▽ | |
|---|---|
| first gear switch | **28 N.m** |

**IMPORTANT**
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **21A**, **Manual gearbox**, **Manual gearbox: Precautions for repair**, page **21A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

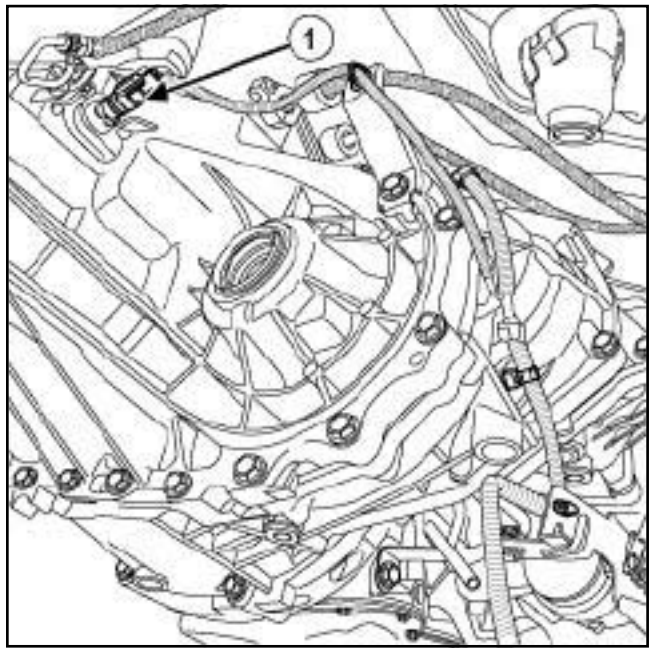
**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

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

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior Protection).

### II - OPERATION FOR REMOVAL OF PART CONCERNED



131213

❏ Disconnect the connector (**1**) for the first gear switch.

❏ Remove the first gear switch.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the first gear switch coated with **RESIN ADHESIVE** (see **Vehicle: Parts and consumables for repair**) (04B, Consumables - Products).

❏ Torque tighten the **first gear switch (28 N.m)**.

❏ Connect the connector for the first gear switch.

### II - FINAL OPERATION.

❏ Refit:

- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

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

6 SPEED AUTO GBOX

| Gearbox type | Gear ratio | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 5th | 6th | Reverse gear |
| AJ0<br>AJ8 | 4.199 | 2.405 | 1.583 | 1.161 | 0.855 | 0.685 | 3.457 |

6 SPEED AUTO GBOX

**PARTS ALWAYS TO BE REPLACED**

Parts to be replaced with new ones if removed:

- differential outlet seals,
- the converter seal,
- the converter nuts,
- O-rings,
- the hydraulic distributor metal housing seal.

FK0 or FK8

**PARTS ALWAYS TO BE REPLACED**

Parts to be replaced with new ones if removed:

- differential outlet seals,
- the converter seal,
- the converter nuts,
- the seal.

6 SPEED AUTO GBOX

## I - SPECIFICATIONS

Weight:

- AJ0: **100 kg**,

- AJ8: **106.8 kg**.

The **AJ0** and **AJ8** gearboxes are equipped with "Shift Lock" and "Lock Up" systems.

"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 enough 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

116357

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

FK0 or FK8

Note:

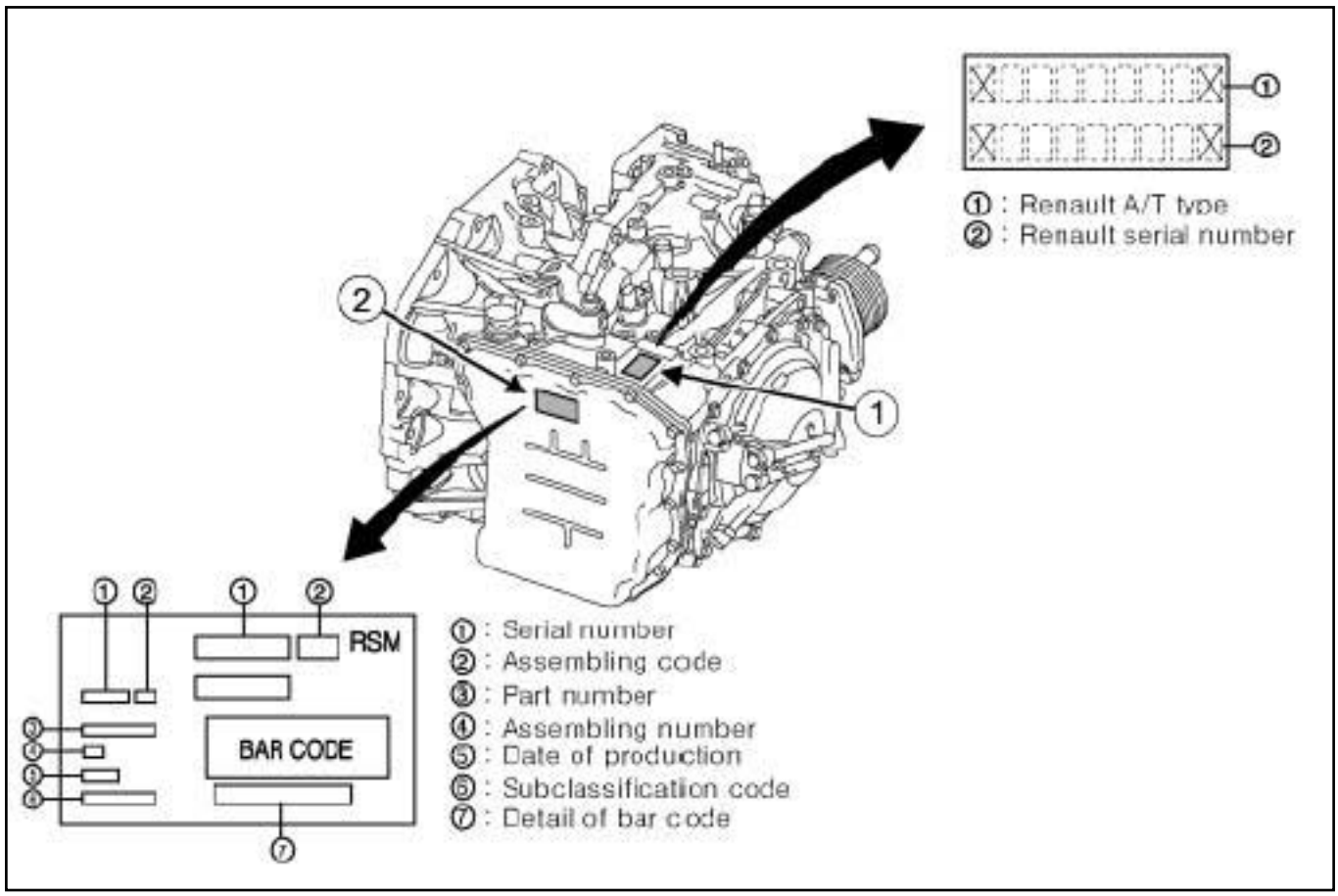
Do not overhaul the automatic gearbox.

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 enough 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).

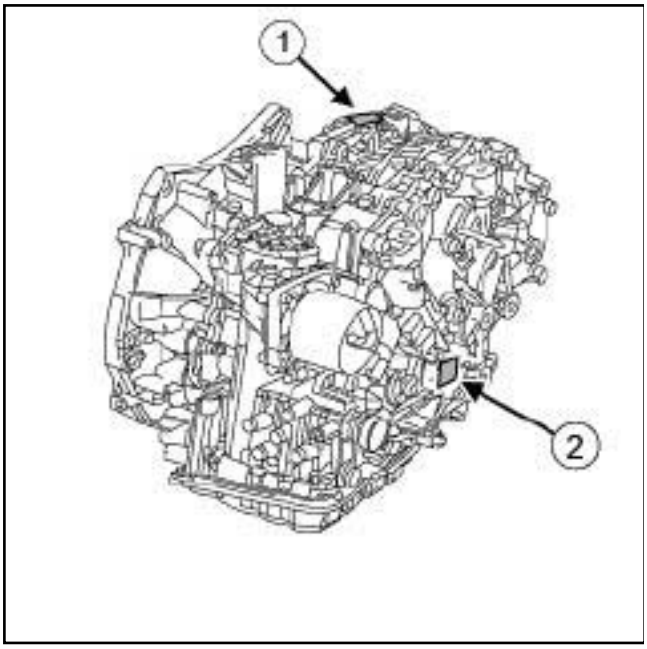
In addition, the vehicle is only under traction if the engine is running. It is therefore impossible to start the engine of a vehicle with an automatic gearbox by pushing the vehicle.




129974

The gearbox is identified by an engraved marking (**1**) located on the top of the gearbox and by a self-adhesive label (**2**) on the hydraulic distributor housing.

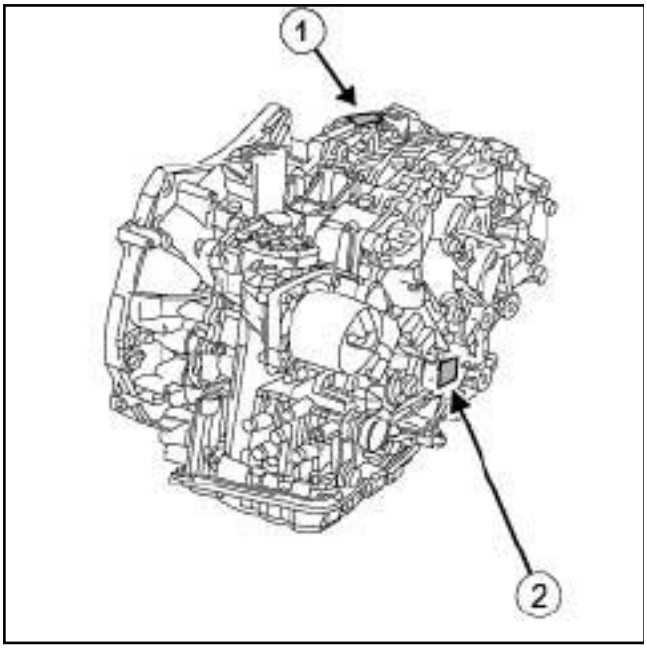
FK0 or FK8




129975

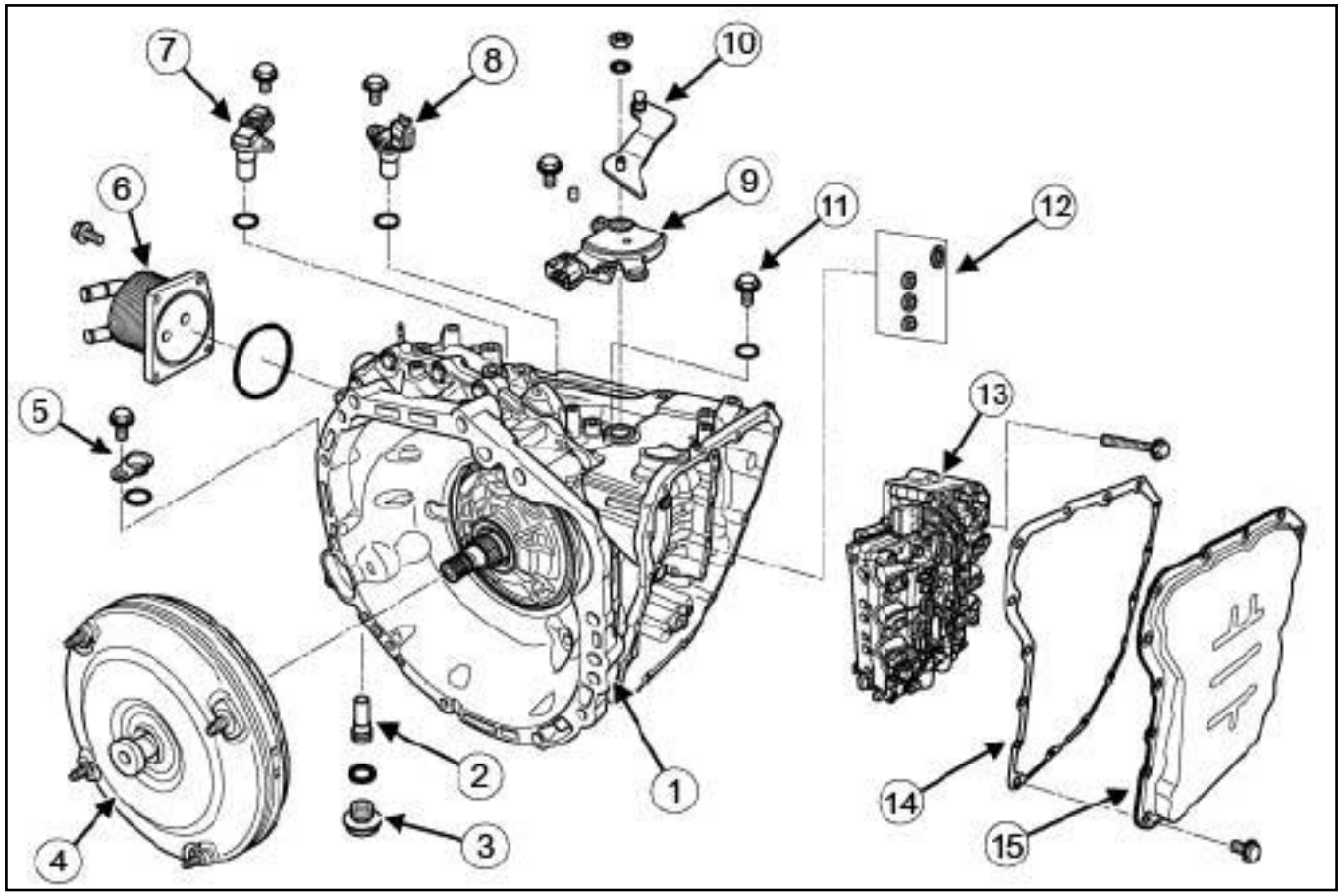
The gearbox is identified by an engraved marking (**1**) located on the top of the gearbox and by a self-adhesive label (**2**) affixed to the side of the gearbox.

FK0 or FK8




129975

The gearbox is identified by an engraved marking (**1**) located on the top of the gearbox and by a self-adhesive label (**2**) affixed to the side of the gearbox.




129976

| | |
|---|---|
| (**1**) | Automatic gearbox |
| (**2**) | Oil overflow pipe (8 N.m) |
| (**3**) | Level-setting plug (8 N.m) |
| (**4**) | Converter |
| (**5**) | Filler pipe closure panel (6 N.m) |
| (**6**) | Oil cooler (4.5 N.m) |
| (**7**) | Output speed sensor (6 N.m) |
| (**8**) | Input speed sensor (6 N.m) |
| (**9**) | Multifunction switch (6 N.m) |
| (**10**) | Control lever (17 N.m) |
| (**11**) | Hydraulic pressure measurement plug (8 N.m) |
| (**12**) | Hydraulic distributor O-rings |
| (**13**) | Hydraulic distributor (8 N.m) |
| (**14**) | Hydraulic distributor casing seal |
| (**15**) | Hydraulic distributor housing (8 N.m) |

6 SPEED AUTO GBOX orVARIABLE 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 |

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 RENAULTMA-TIC D2 | DEXRON II D | **77 01 402 037** (2 litres) |
| ELF RENAULTMA-TIC D3 SYN | DEXRON III | May be ordered from ELF |
| CLIP oil | - | **77 11 218 368** (2 litres) |
| 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) |

| Essential equipment |
|---|
| diagnostic tool |

| Tightening torques ▽ | |
|---|---|
| oil overflow pipe | **8 N.m** |
| level-setting plug | **8 N.m** |
| level-setting plug | **8 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

Note:
When draining, filling or checking the oil level, always shift the gear lever to the **Park** position.

Note:
The oil level must be checked at a temperature of **40˚C ± 2**.

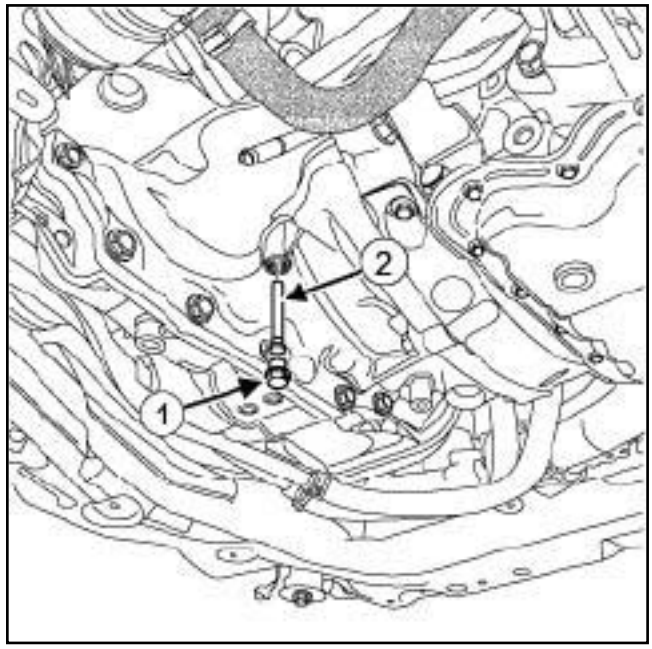
Note:
The automatic transmission oil should preferably be changed when the oil is warm (approximately **60˚C** maximum) in order to remove as many impurities as possible.

## DRAINING

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.



129977

❏ Remove:
- the level-setting plug (**1**) ,
- the oil overflow pipe (**2**) .

❏ Drain the automatic gearbox.

❏ 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)**.

## FILLING

❏ Remove:
- the battery (see **Battery : Removal - Refitting**) (80A, Battery)
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery tray),
- the input speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-24**) .

❏ Top up the automatic gearbox with **3.2 litres** of new oil in the input speed sensor mounting hole.

❏ Refit:
- the input speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-24**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery tray),

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

❏ 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 only the level-setting plug, leaving the engine running.

❏ If the oil does not flow out or the quantity collected is below **0.1 litres** :

- Switch off the engine,
- refit the level-setting plug,
- add **0.5 litre** of oil,
- allow the automatic gearbox oil to 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-setting plug.

❏ Repeat these operations until more than **0.1 litres** of oil is recovered in the container.

❏ Remove the O-ring from the level-setting plug.

❏ Refit:

- the new O-ring on the level-setting plug,
- the level-setting plug.

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

❏ Refit the engine undertray.

FK0 or FK8

| Essential equipment |
|---|
| diagnostic tool |

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

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

Note:
When draining, filling or checking the oil level, always shift the gear lever to the **Park** position.

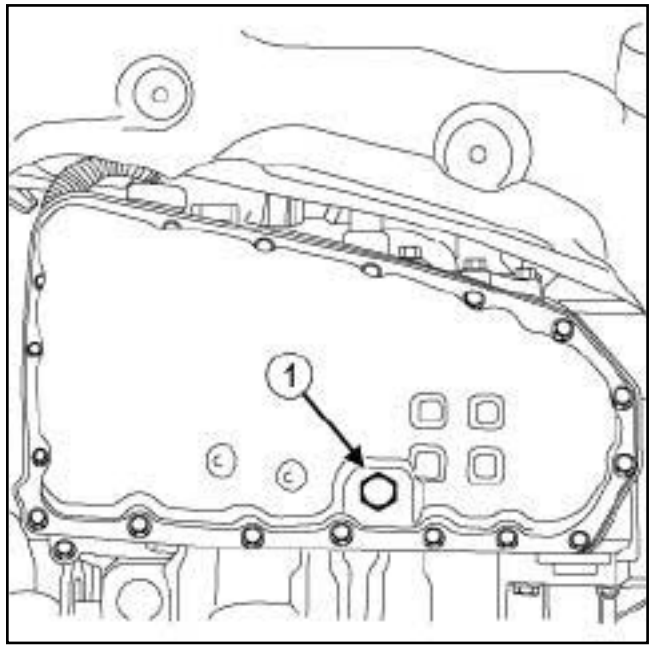
Note:
The oil level must be checked at a temperature between **50˚C** and **80˚C**.

## DRAINING

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.



129978

❏ Remove:
- the drain plug (**1**) ,
- the O-ring from the drain plug.

❏ Drain the automatic gearbox .

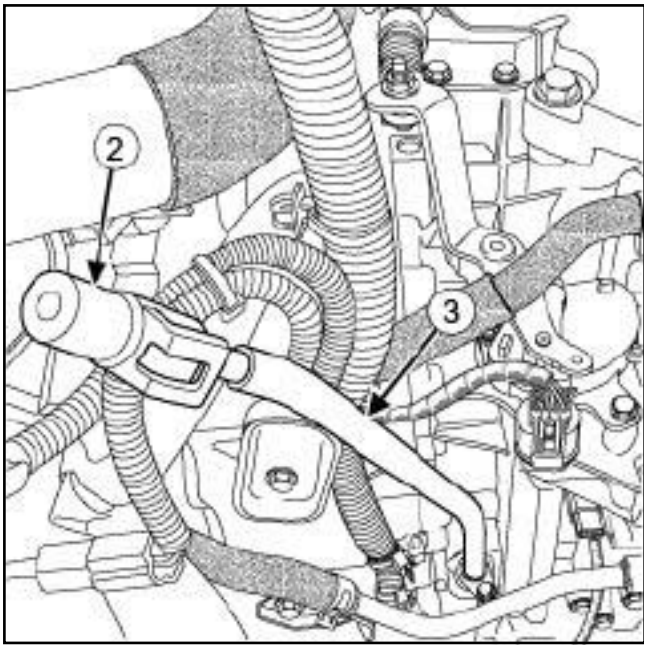
❏ Refit:
- the new O-ring on the drain plug,
- the drain plug.

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

## FILLING

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

FK0 or FK8




129979

❏ Remove the oil level gauge (**2**) from the automatic variable gearbox.

❏ Top up the automatic gearbox oil to the specified level using the oil charging pipe ***(3)*** .

❏ Check the oil level using the automatic gearbox oil level gauge ***(2)*** after heating the automatic gearbox oil to a temperature between **50˚C** and **80˚C**.

❏ Refit:

- the oil level gauge,
- the engine undertray.

❏ Connect the **diagnostic tool**. For programming procedures (see **Fault finding - Replacement of components** (23A, Automatic gearbox).

| Tightening torques ▽ | |
|---|---|
| hydraulic distributor bolts | **8 Nm** |
| hydraulic distributor housing bolts | **8 Nm** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

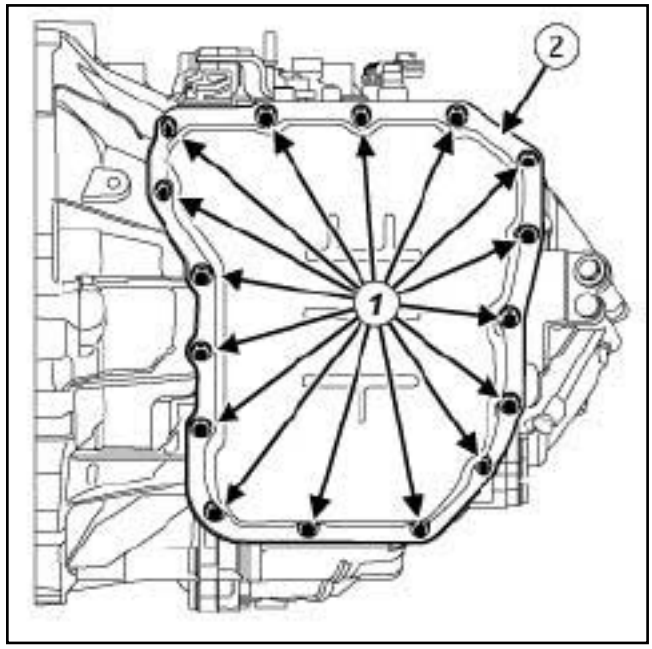
## REMOVAL

### REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

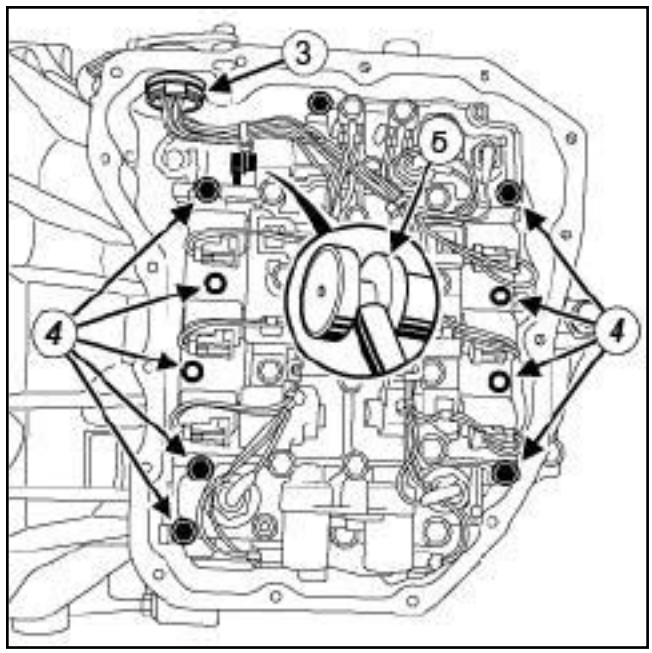
❏ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**)



129980

❏ Remove:

- the hydraulic distributor housing bolts (**1**) ,
- the hydraulic distributor housing (**2**) ,
- the hydraulic distributor housing seal.



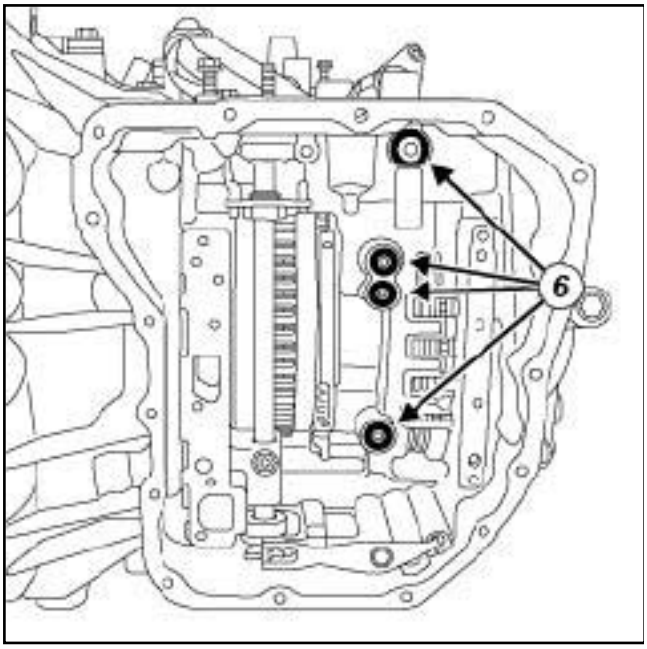
129981

❏ Unclip the internal wiring connector (**3**) .

❏ Remove the hydraulic distributor bolts ***(4)*** .

❏ Disconnect the automatic gear lever ***(5)*** by tilting the hydraulic distributor slightly.

❏ Remove the hydraulic distributor.




129982

❏ Remove the O-rings (**6**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the hydraulic distributor housing seal.
- the O-ring.

❏ Clean the joint faces usingsurface cleaner (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.

❏ Refit the new O-rings.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the hydraulic distributor.

❏ Connect the automatic gear lever by tilting the hydraulic distributor slightly.

❏ Refit the hydraulic distributor bolts.

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

❏ Clip the internal wiring connector.

❏ Refit:

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

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

### III - FINAL OPERATION.

❏ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

| Essential special tooling | |
|---|---|
| **Bvi. 1804** | Kit for fitting differential and converter seals (AJ0). |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

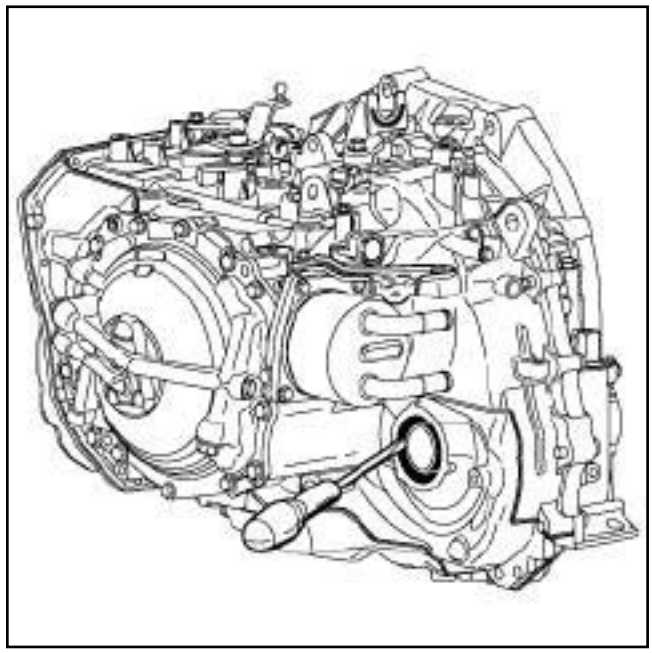
❏ Remove the engine undertray.

❏ Drain the automatic transmission oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❏ Remove:

- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



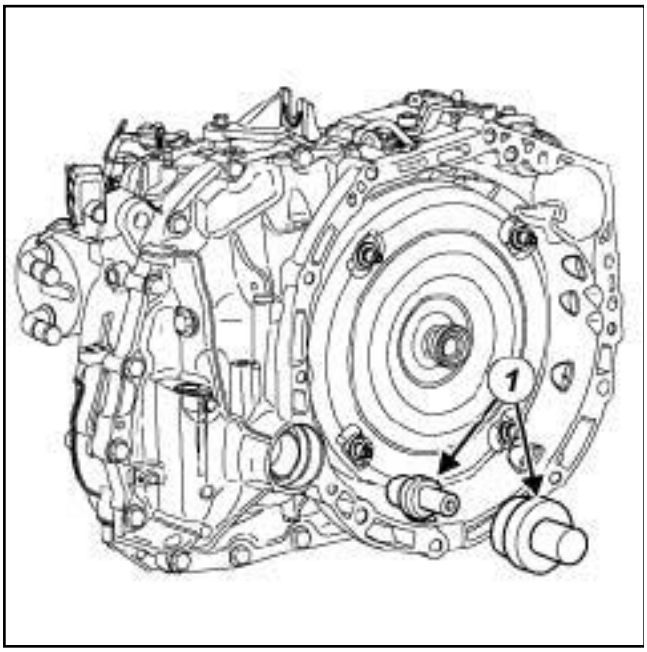
129983

❏ Remove the differential output seal on the side concerned using a screwdriver, without scratching the contact surfaces.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

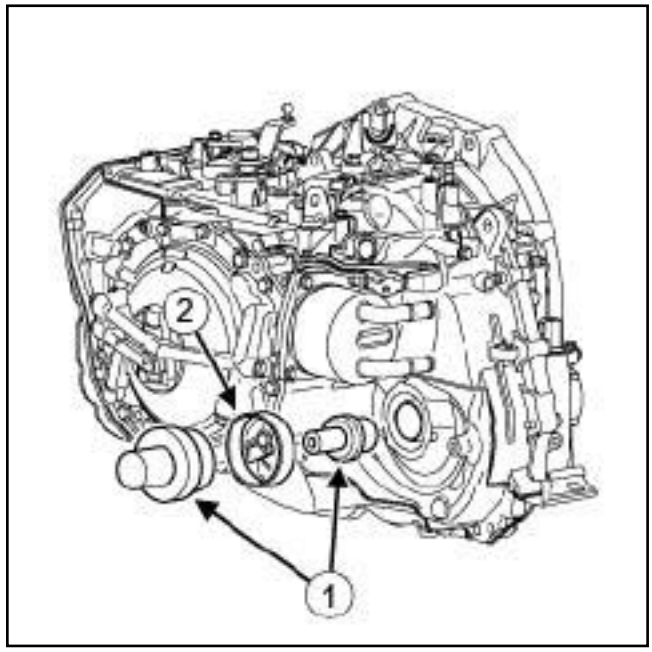
#### 1 - Right-hand differential output seal




129984

❏ Refit the right-hand differential output seal using the tool **(Bvi. 1804)** (**1**) .

#### 2 - Left-hand differential output seal




129985

❏ Refit the left-hand differential output seal using the tool **(Bvi. 1804)** (**1**) and spacer (**2**) .

### II - FINAL OPERATION.

❏ Refit:

- the front wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .
- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Top up the automatic transmission oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❏ Refit the engine undertray.

# Differential output seal: Removal - Refitting



FK0 or FK8

| Essential special tooling | |
|---|---|
| **Bvi. 1856** | Tool for fitting CVT converter and differential seals |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

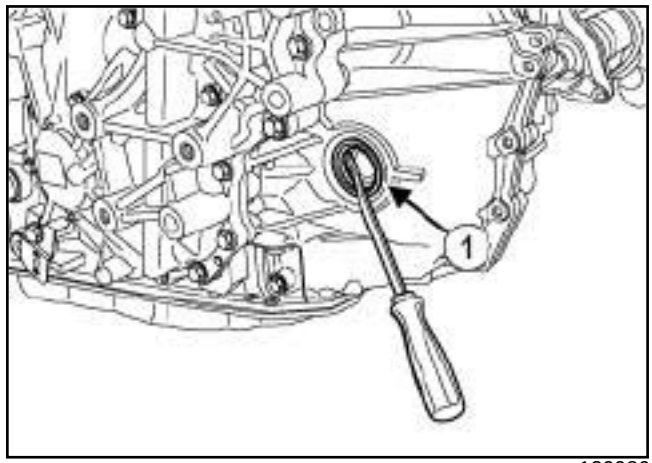
❏ Remove the engine undertray.

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❏ Remove:

- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED

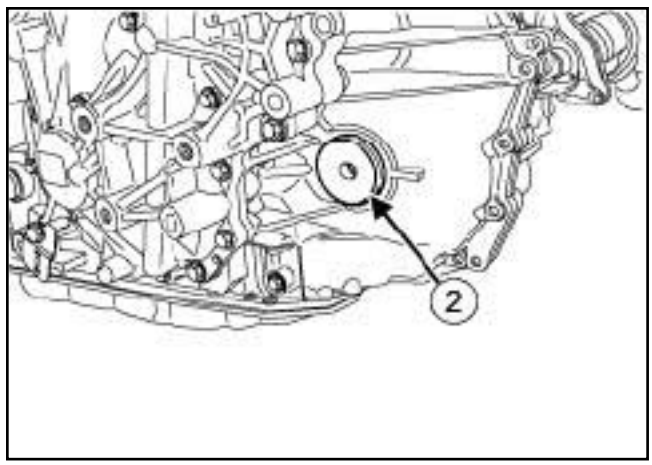



129986

❏ Remove the differential output seal (**1**) on the side concerned using a screwdriver, without scratching the contact surfaces.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED




129987

❏ Refit the differential output seal on the side concerned using the tool **(Bvi. 1856)** (**2**) .

### II - FINAL OPERATION

❏ Refit:

- the front wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

FK0 or FK8

- ❑ Top up the automatic transmission oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .
- ❑ Refit the engine undertray.

| Tightening torques ▽ | |
|---|---|
| multifunction switch bolts | **6 Nm** |
| control cable nut | **14 N.m** |
| wiring harness channel bolts | **5 N.m** |

**IMPORTANT**

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

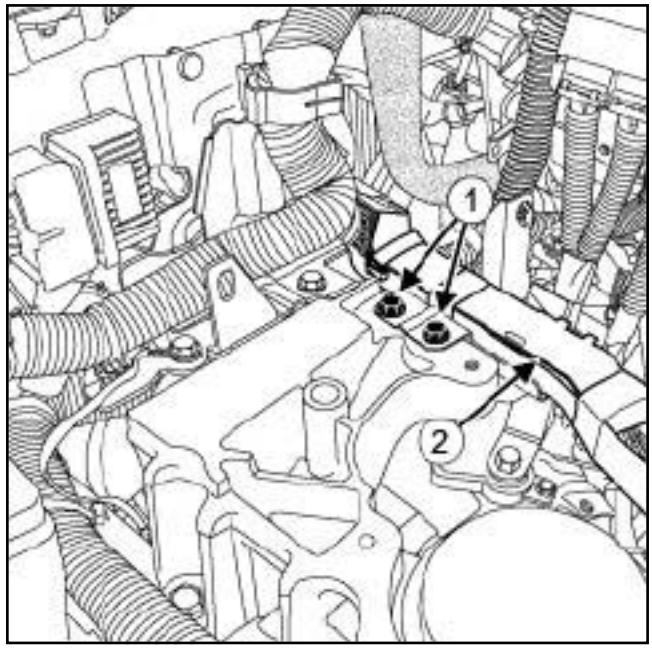
## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❏ Shift the gear lever to **Neutral**.

❏ Remove:

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

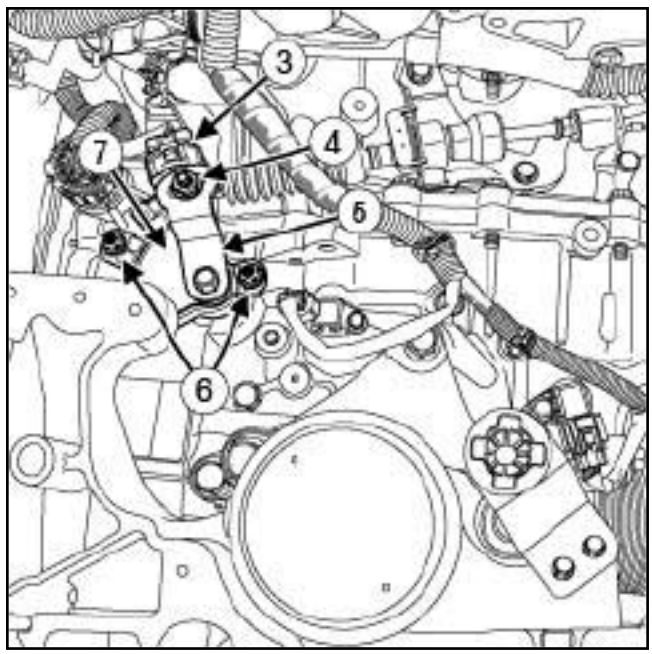



129988

❏ Remove the bolts (**1**) from the engine wiring harness channel.

❏ Remove the wiring harness channel ***(2)*** .

### II - OPERATION FOR REMOVAL OF PART CONCERNED




129989

❏ Disconnect the multifunction switch connector (**3**) .

❏ Remove the nut ***(4)*** from the control cable.

❏ Disconnect the control cable from the multifunction switch control lever ***(5)*** .

❑ Remove:

- the multifunction switch bolts ***(6)*** ,
- the multifunction switch ***(7)*** .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the multifunction switch,
- the multifunction switch bolts.

❑ Adjust the multifunction switch (see **23A**, **Automatic gearbox**, **Multifunction switch: Adjusting**, page **23A-54**) .

❑ Torque tighten the **multifunction switch bolts (6 Nm)**.

❑ Connect the multifunction switch connector.

❑ Refit:

- the control cable on the multifunction switch control lever,
- the control cable nut.

❑ Torque tighten the **control cable nut (14 N.m)**.

### II - FINAL OPERATION.

❑ Refit:

- the engine wiring harness channel,
- the engine wiring harness channel bolts.

❑ Torque tighten the **wiring harness channel bolts (5 N.m)**.

❑ Refit:

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

FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| multifunction switch bolts | **6 Nm** |
| control cable nut | **14 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

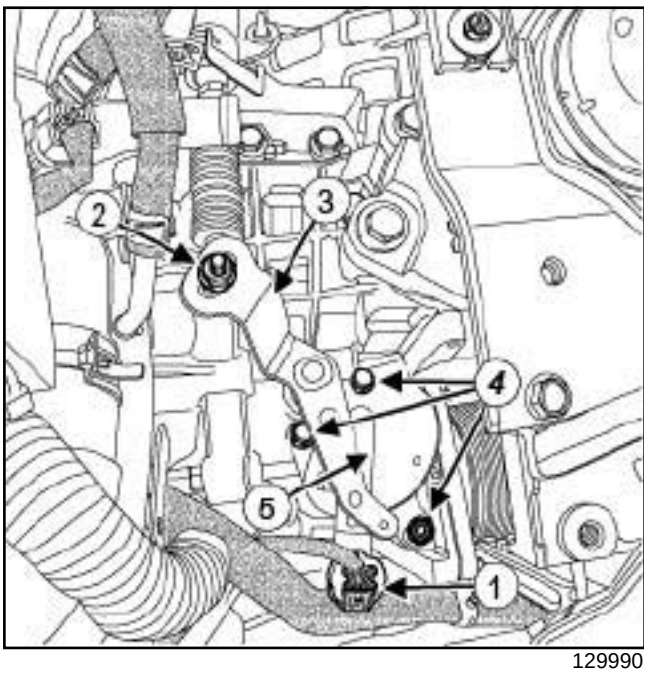
### I - REMOVAL PREPARATION OPERATION

❏ Shift the gear lever to **Neutral**.

❏ Remove:

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

### II - OPERATION FOR REMOVAL OF PART CONCERNED



129990

❏ Disconnect the multifunction switch connector (**1**) .

❏ Remove the nut ***(2)*** from the control cable.

❏ Disconnect the control cable from the multifunction switch control lever ***(3)*** .

❏ Remove:

- the multifunction switch bolts ***(4)*** ,
- the multifunction switch ***(5)*** .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the multifunction switch,
- the multifunction switch bolts.

❏ Adjust the multifunction switch (see **23A**, **Automatic gearbox**, **Multifunction switch: Adjusting**, page **23A-54**) .

❏ Torque tighten the **multifunction switch bolts (6 Nm)**.

❏ Connect the multifunction switch connector.

❏ Refit:

- the control cable on the multifunction switch control lever,
- the control cable nut.

❏ Torque tighten the **control cable nut (14 N.m)**.

### II - FINAL OPERATION.

❏ Refit:

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

| Tightening torques ▽ | |
|---|---|
| input speed sensor bolt | **6 N.m** |
| output speed sensor bolt | **6 N.m** |
| wiring harness channel bolts | **5 N.m** |

**IMPORTANT**

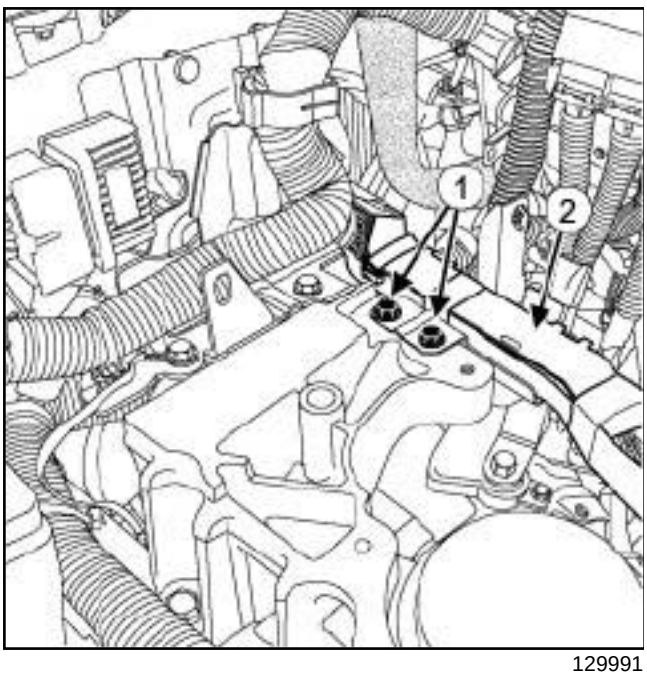
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❏ Remove:

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



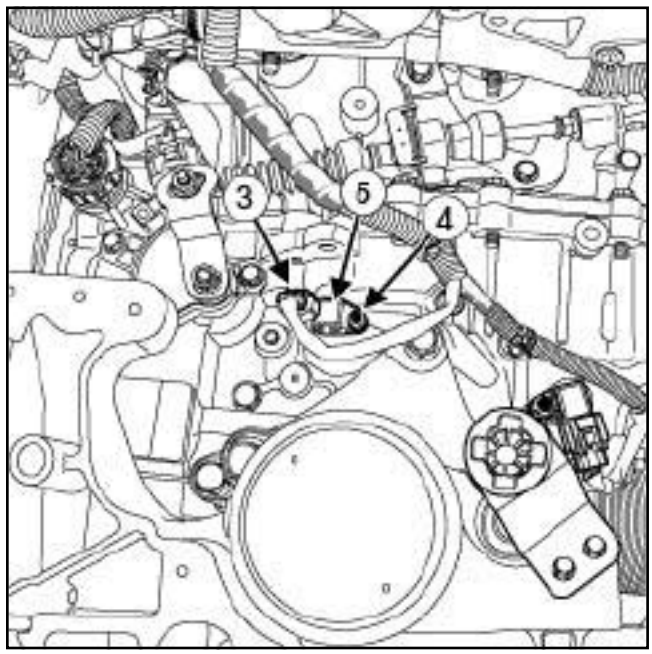

129991

❏ Remove the bolts (**1**) from the engine wiring harness channel.

❏ Remove the wiring harness channel ***(2)*** .

### II - OPERATION FOR REMOVAL OF PART CONCERNED

#### 1 - Input speed sensor



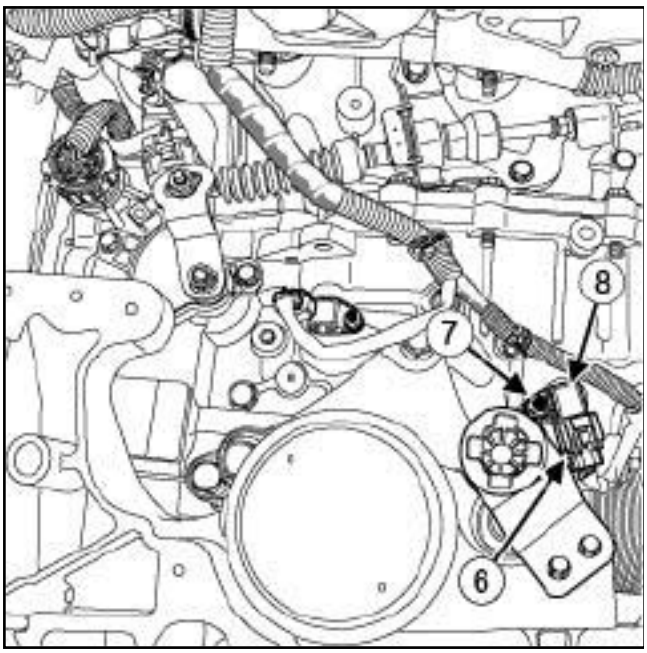

129992

❏ Disconnect the input speed sensor connector (**3**) .

❏ Remove:

- the input speed sensor bolt ***(4)*** ,
- the input speed sensor ***(5)*** ,
- the O-ring from the input speed sensor.

**2 - Output speed sensor**



129992

❏ Disconnect the output speed sensor connector (**6**) .

❏ Remove:

- the output speed sensor bolt ***(7)*** ,
- the output speed sensor ***(8)*** ,
- the O-ring from the output speed sensor.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the O-ring.

### II - REFITTING OPERATION FOR PART CONCERNED

**1 - Input speed sensor**

❏ Refit:

- the new O-ring on the input speed sensor,
- the input speed sensor,
- the input speed sensor bolt.

❏ Torque tighten the **input speed sensor bolt (6 N.m)**.

❏ Connect the input speed sensor connector.

**2 - Output speed sensor**

❏ Refit:

- the new O-ring on the output speed sensor,
- the output speed sensor,
- the output speed sensor bolt.

❏ Torque tighten the **output speed sensor bolt (6 N.m)**.

❏ Connect the output speed sensor connector.

### III - FINAL OPERATION.

❏ Refit:

- the engine wiring harness channel,
- the engine wiring harness channel bolts.

❏ Torque tighten the **wiring harness channel bolts (5 N.m)**.

❏ Remove:

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

FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| input speed sensor bolt | **6 N.m** |
| output speed sensor bolt | **6 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

**1 - Input speed sensor**

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

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

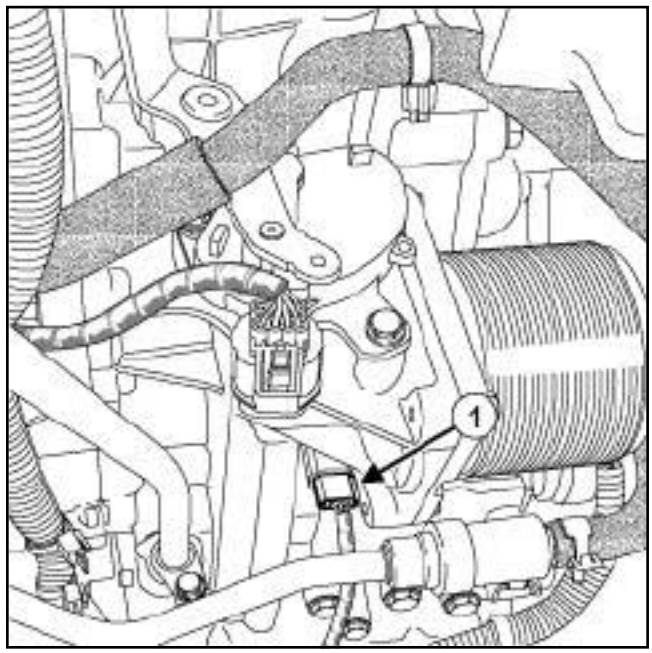
**2 - Output speed sensor**

❏ Remove:

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

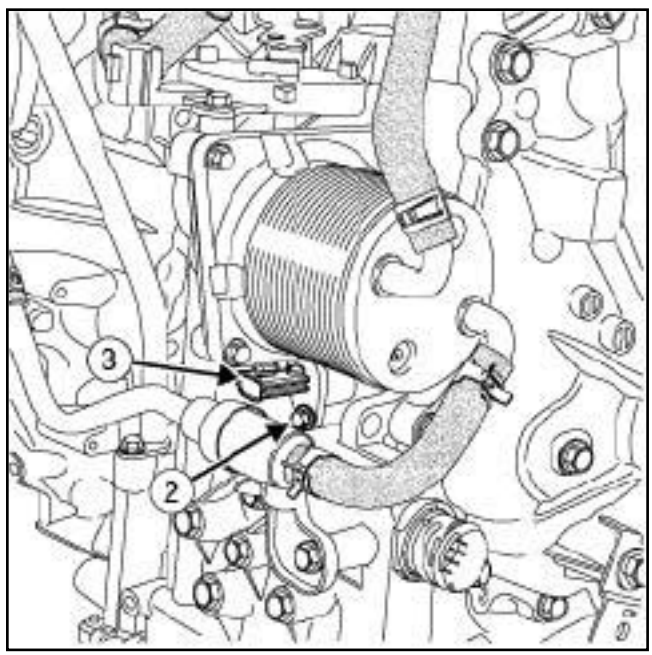
### II - OPERATION FOR REMOVAL OF PART CONCERNED

**1 - Input speed sensor**



129993

❏ Disconnect the input speed sensor connector (**1**) .



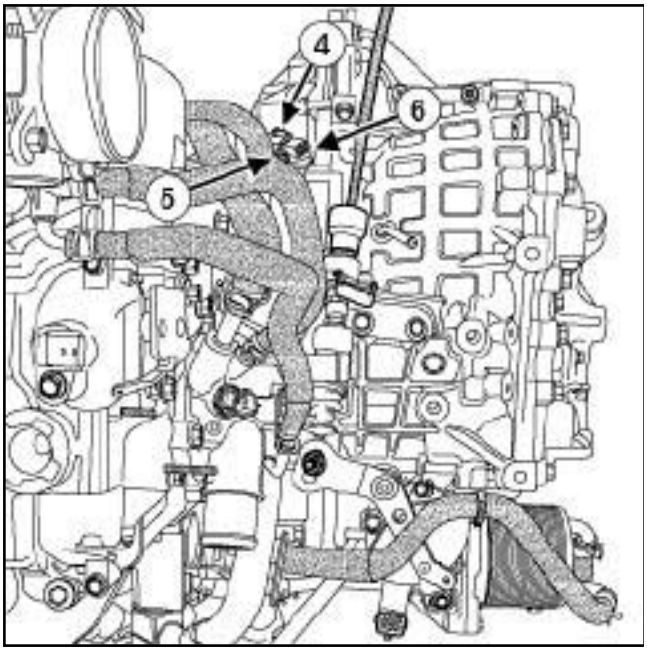
129994

❏ Remove:

- the input speed sensor bolt (**2**) ,
- the input speed sensor (**3**) ,
- the O-ring from the input speed sensor.

FK0 or FK8

**2 - Output speed sensor**




129995

❏ Disconnect the output speed sensor connector (**4**) .

❏ Remove:

- the output speed sensor bolt ***(5)*** ,
- the output speed sensor ***(6)*** ,
- the O-ring from the output speed sensor.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the O-ring.

### II - REFITTING OPERATION FOR PART CONCERNED

**1 - Input speed sensor**

❏ Refit:

- the new O-ring on the input speed sensor,
- the input speed sensor,
- the input speed sensor bolt.

❏ Torque tighten the **input speed sensor bolt (6 N.m)**.

❏ Connect the input speed sensor connector.

**2 - Output speed sensor**

❏ Refit:

- the new O-ring on the output speed sensor,
- the output speed sensor,
- the output speed sensor bolt.

❏ Torque tighten the **output speed sensor bolt (6 N.m)**.

❏ Connect the output speed sensor connector.

### III - FINAL OPERATION.

**1 - Input speed sensor**

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

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

**2 - Output speed sensor**

❏ Refit:

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

| Tightening torques ▽ | |
|---|---|
| oil temperature sensor bolt | **8 N.m** |
| earth bolts | **8 N.m** |
| hydraulic distributor housing bolts | **8 Nm** |

**IMPORTANT**

Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

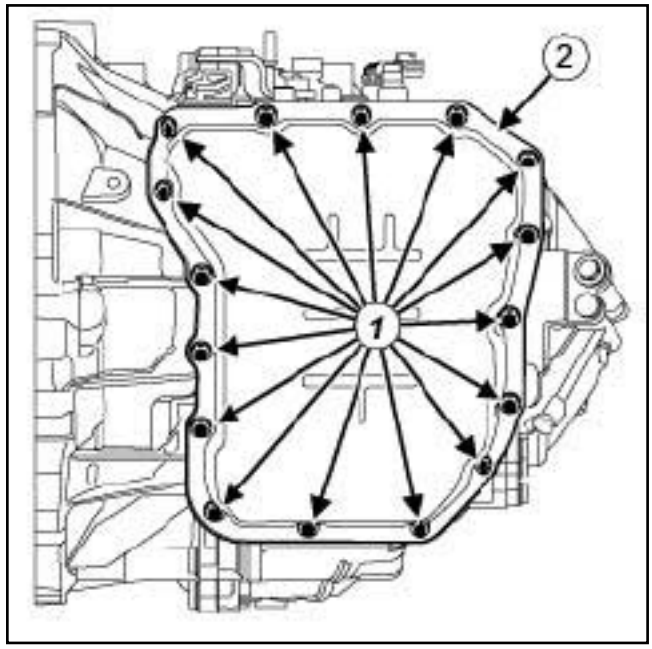
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**

To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

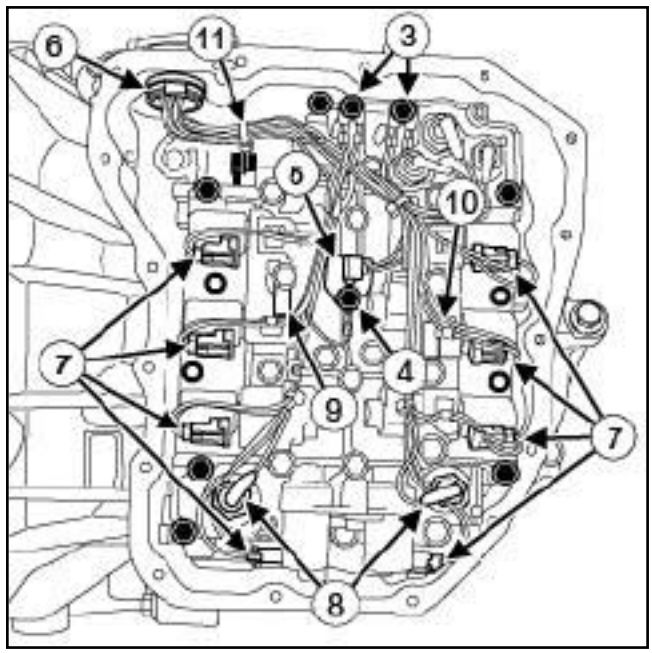



129996

❏ Remove:

- the hydraulic distributor housing bolts (**1**) ,
- the hydraulic distributor housing (**2**) ,
- the hydraulic distributor housing seal.

### II - OPERATION FOR REMOVAL OF PART CONCERNED




129997

❏ Remove:

- the earth bolts (**3**) ,
- the bolt (**4**) from the oil temperature sensor,

- the oil temperature sensor bracket (**5**) .

❏ Disconnect:

- the internal wiring connector ***(6)*** ,
- the solenoid connectors ***(7)*** ,
- the hydraulic distributor wiring connectors ***(8)*** ,
- The hydraulic distributor oil temperature sensor ***(9)*** .

❏ Unclip the hydraulic distributor wiring from the wiring retainer ***(10)*** .

❏ Remove the wiring from the hydraulic distributor ***(11)*** .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the hydraulic distributor housing seal.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the hydraulic distributor wiring.

❏ Connect:

- the oil temperature sensor on the hydraulic distributor,
- the hydraulic distributor wiring connectors.
- the solenoid connectors,
- the internal wiring connector.

❏ Clip the hydraulic distributor wiring on the wiring retainer.

❏ Refit:

- the oil temperature sensor bracket,
- the bolt on the oil temperature sensor,
- the earth bolts.

❏ Torque tighten:

- the **oil temperature sensor bolt (8 N.m)**,
- the **earth bolts (8 N.m)**.

### III - FINAL OPERATION.

❏ Refit:

- the new hydraulic distributor housing seal on the hydraulic distributor housing,
- the hydraulic distributor housing,
- the hydraulic distributor casing bolts.

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

❏ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

6 SPEED AUTO GBOX

| Essential special tooling | |
|---|---|
| **Mot. 1390** | Support for removing/refitting the engine - gearbox assembly. |

| Essential equipment |
|---|
| refrigerant charging station |

| Tightening torques ▽ | |
|---|---|
| left-hand suspended engine mounting bolts | **75 N.m** |
| earth strap bracket bolt | **25 N.m** |
| control cable bracket bolts | **14 N.m** |
| gearbox side bolts | **48 N.m** |
| gearbox lower bolts | **48 N.m** |
| gearbox studs | **20 N.m** |
| gearbox nuts | **48 Nm** |
| converter nuts | **57 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

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

❑ Drain the refrigerant circuit using the **refrigerant charging station** (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning).

❑ Remove the engine undertray.

❑ Drain:

- the cooling circuit (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ 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 left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the particle filter (see **Particle filter: Removal - Refitting**) (19B, Exhaust),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

4X4 TRANSMISSION

❑ Disconnect the propshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❑ Secure the propshaft to the control cable using a string.

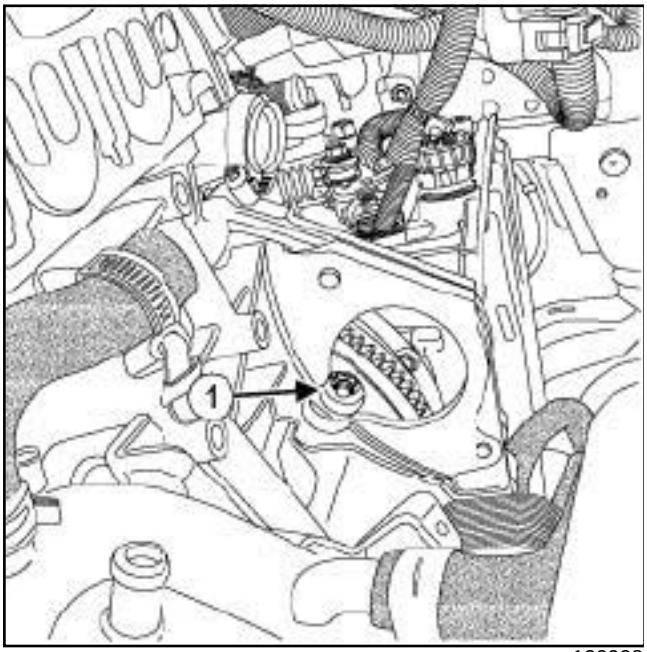
❑ Remove the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) .

❑ Remove:

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

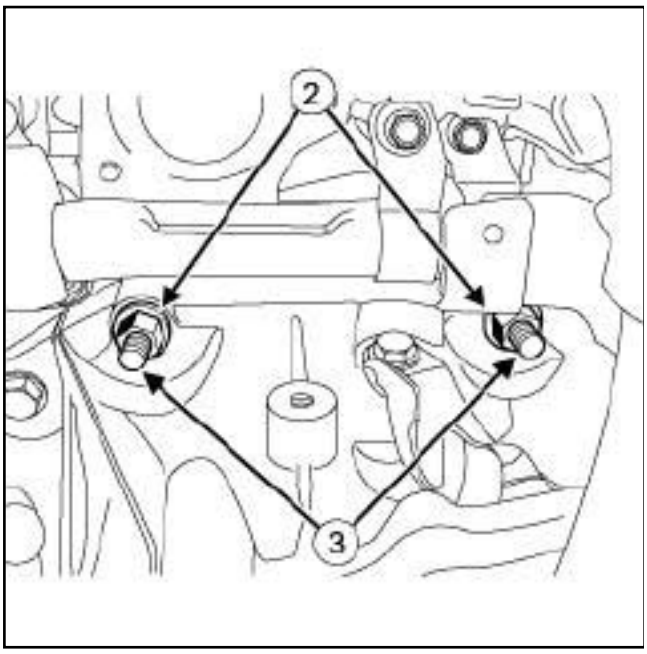
- the engine - gearbox assembly from the tool **(Mot. 1390)** using a **workshop hoist**,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

**II - OPERATION FOR REMOVAL OF PART CONCERNED**




129998

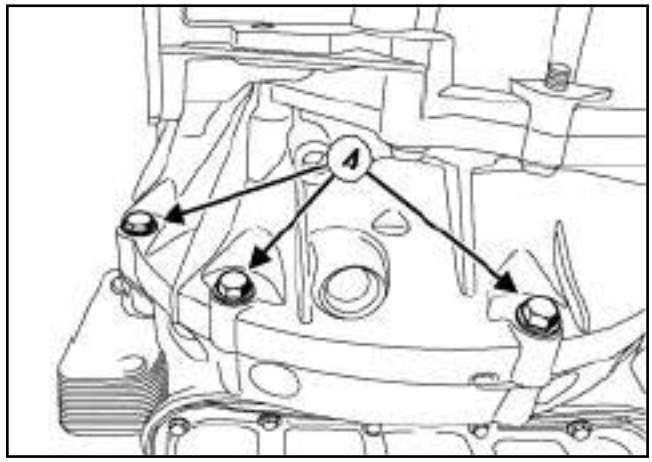
❏ Remove the four nuts (**1**) from the torque converter by rotating the crankshaft clockwise.




129999

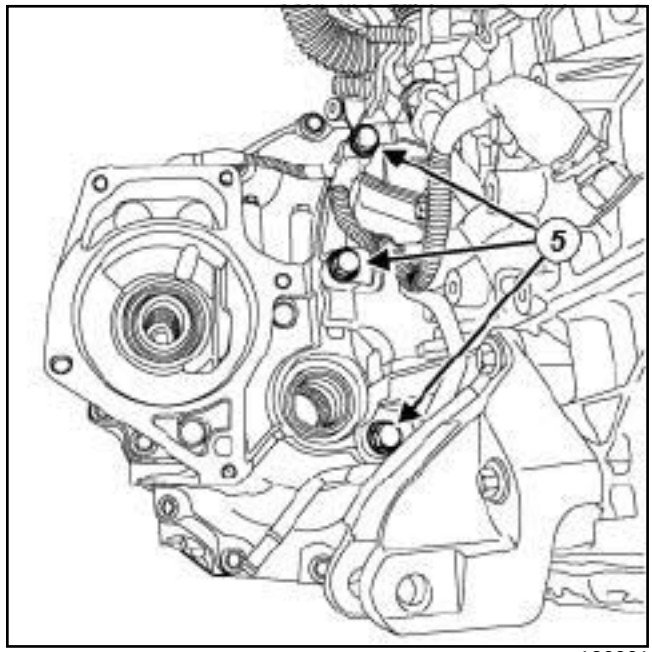
❏ Remove:

- the gearbox nuts (**2**) ,
- the gearbox studs (**3**) .




130000

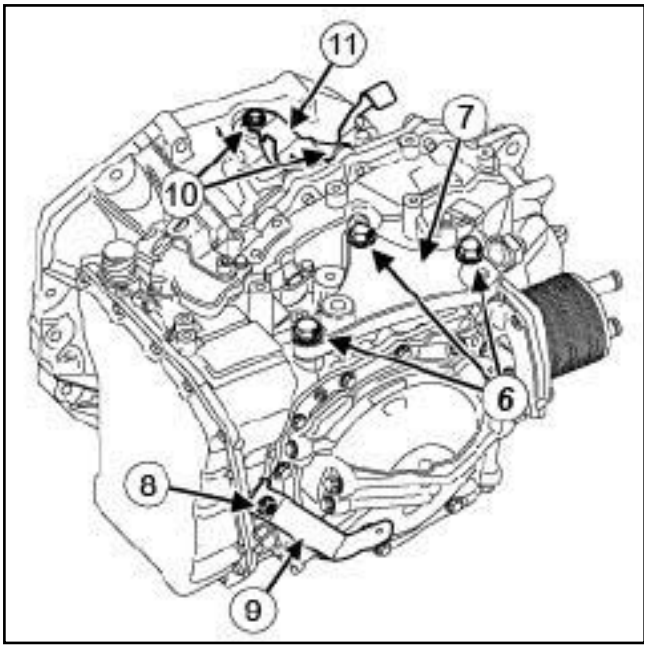
❏ Remove the gearbox lower bolts (**4**) .




130001

❏ Remove:

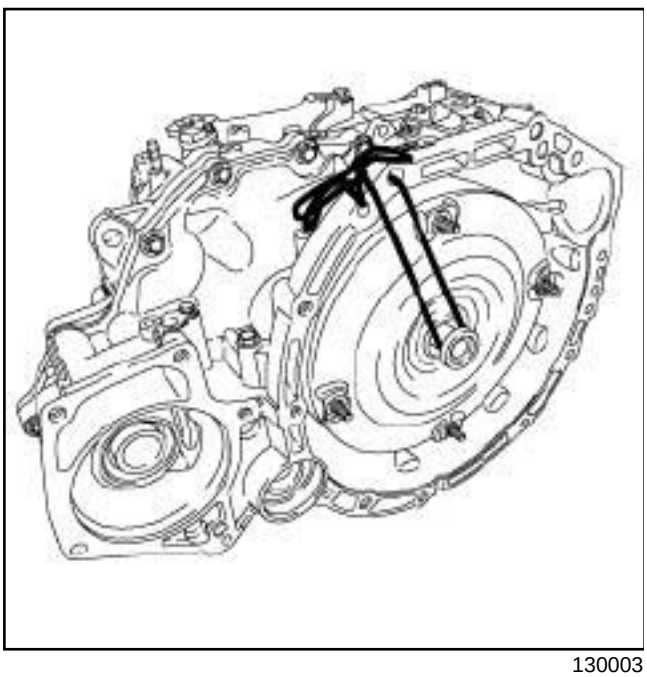
- the gearbox side bolts (**5**) ,
- the automatic gearbox.




130002

❑ Remove:

- the left-hand suspended engine mounting bolts (**6**) ,
- the left-hand suspended engine mounting (**7**) ,
- the earth strap bracket bolt (**8**) ,
- the earth strap bracket (**9**) ,
- the control cable bracket bolts (**10**) ,
- - the control cable bracket (**11**) .



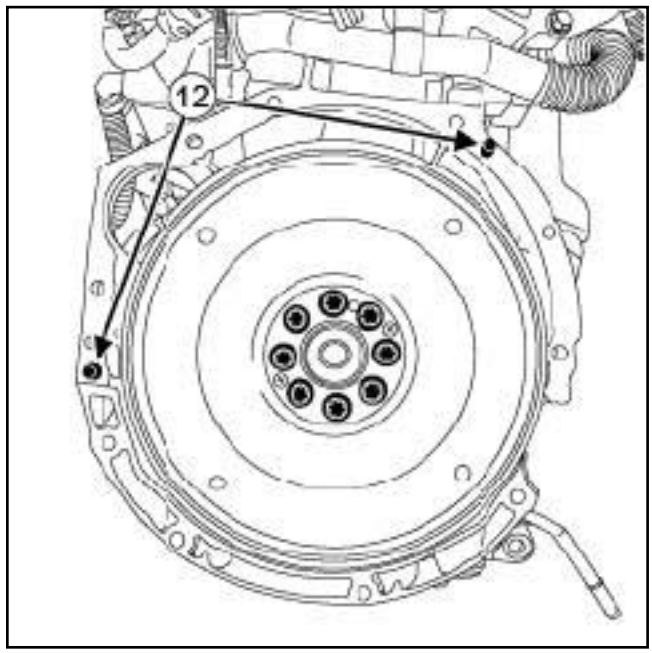
130003

❑ Secure the converter with string to prevent it from being dislodged.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❑ Always replace the converter nuts.

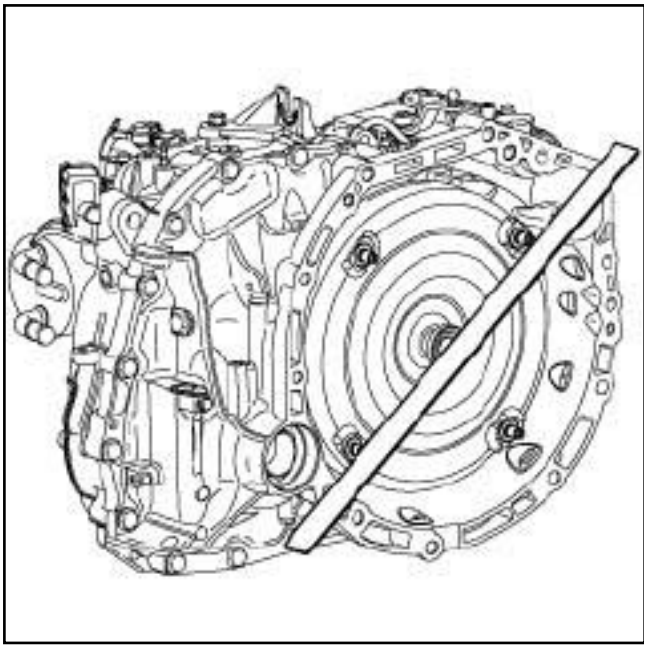



130004

❑ Check:

- that the centring dowels are in place (**12**) ,
- that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

6 SPEED AUTO GBOX



130005

❑ Check that the converter is correctly coupled to the automatic gearbox using a rule and a straightedge. The distance (**X**) between the converter retaining bolt bead and the housing must be at least **20.4 mm**.

❑ Refit:

- the left-hand suspended engine mounting bracket on the automatic gearbox,
- the left-hand suspended engine mounting bolts,
- the earth strap bolt on the automatic transmission,
- the earth strap bracket bolt,
- the control cable bracket,
- the control cable bracket bolts.

❑ Torque tighten:

- the **left-hand suspended engine mounting bolts (75 N.m)**,
- the **earth strap bracket bolt (25 N.m)**,
- the **control cable bracket bolts (14 N.m)**.

**II - REFITTING OPERATION FOR PART CONCERNED**

❑ Refit:

- the automatic gearbox,
- the gearbox side bolts,
- the gearbox lower bolts,
- the gearbox studs ***(3)*** ,
- the gearbox nuts ***(2)*** .

❑ Torque tighten:

- the **gearbox side bolts (48 N.m)**,
- the **gearbox lower bolts (48 N.m)**,
- the **gearbox studs (20 N.m)**,
- the **gearbox nuts (48 Nm)**.

❑ Refit the new converter nuts by rotating the crankshaft clockwise.

❑ Torque tighten the **converter nuts (57 N.m)**.

**III - FINAL OPERATION.**

❑ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the engine - gearbox assembly on the **(Mot. 1390)** using a **workshop hoist**,
- the engine - gearbox assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals).

4X4 TRANSMISSION

❑ Refit:

- the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) ,
- the propshaft on the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❑ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the particle filter (see **Particle filter: Removal - Refitting**) (19B, Exhaust),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting).

6 SPEED AUTO GBOX

❑ Perform the following operations:

- top up and bleed the cooling circuit (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- top up the oil in the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) (23A, Automatic gearbox),
- top up the refrigerant circuit using the **refrigerant charging station** (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning).

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

FK0 or FK8

| Essential special tooling | |
|---|---|
| **Mot. 1453** | Multiple-adjusting engine mounting support with retaining straps. |

| Essential equipment |
|---|
| component jack |

| Tightening torques ▽ | |
|---|---|
| lifting eye bolts | **28 N.m** |
| control cable bracket bolts | **14 N.m** |
| gearbox mounting bolts D | **60 N.m** |
| gearbox mounting bolts C | **43 N.m** |
| gearbox mounting bolts B | **75 N.m** |
| gearbox mounting bolt A | **35 N.m** |
| converter nuts | **51 N.m** |
| converter cover bolts | **7 N.m** |
| left-hand suspended engine mounting bolt D | **50 N.m** |
| left-hand suspended engine mounting bolt C | **50 N.m** |
| left-hand suspended engine mounting bolt B | **50 N.m** |
| left-hand suspended engine mounting bolt A | **50 N.m** |
| engine wiring harness nuts | **10 N.m** |
| battery tray bracket mounting bolts | **28 N.m** |
| earth strap bolt | **25 N.m** |
| automatic gearbox oil charging pipe bolt | **10 N.m** |
| wiring harness channel bolts | **28 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

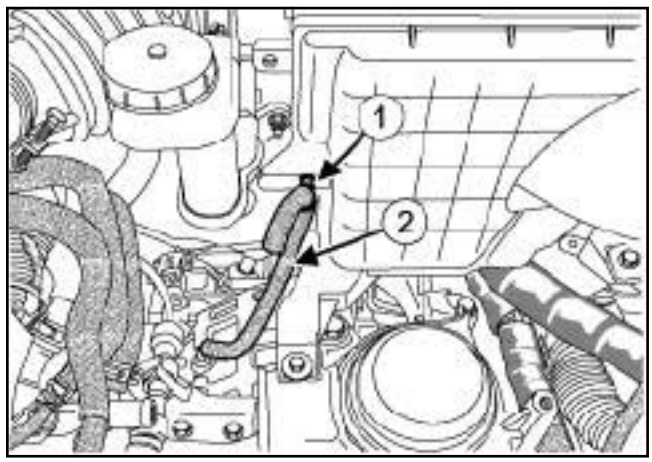
❑ Remove the engine undertray.

❑ Drain:

- the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

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



130006

❑ Unclip the breather hose clip (**1**) .

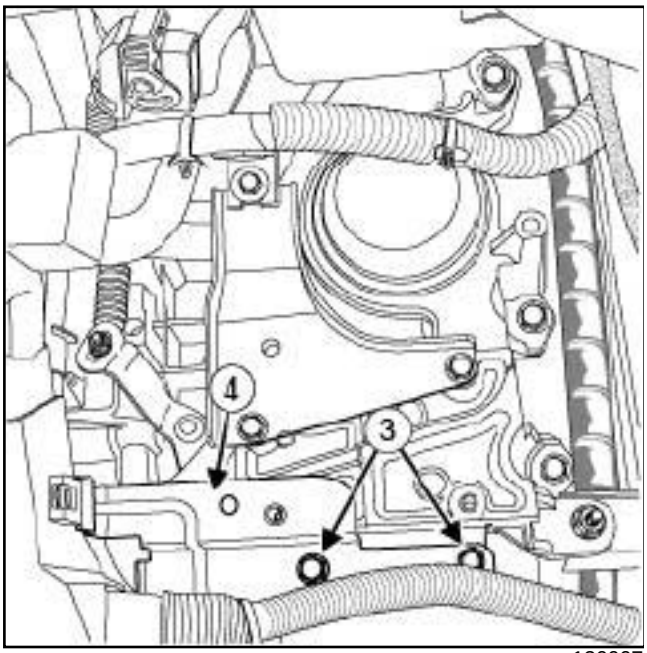
❑ Remove the breather hose ***(2)*** .

❑ Remove:

- the engine cover,

FK0 or FK8

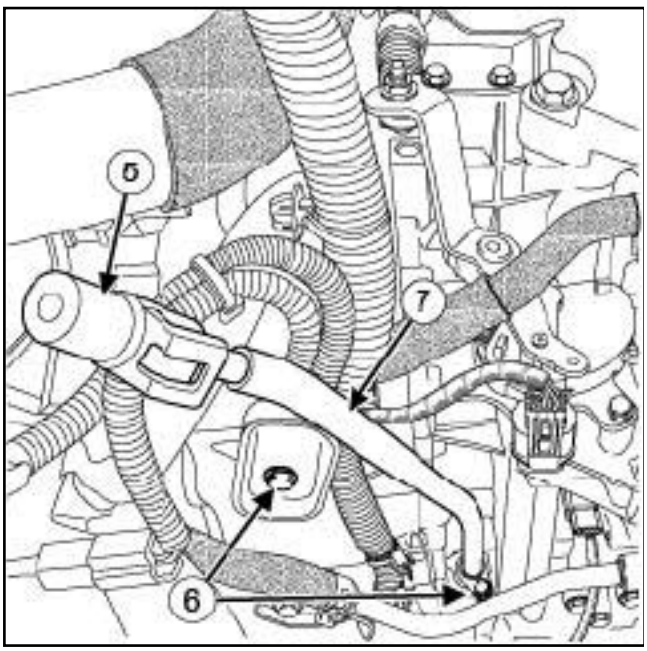
- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



130007

❏ Remove the bolts (**3**) from the engine wiring harness channel.

❏ Remove the wiring harness channel ***(4)*** .



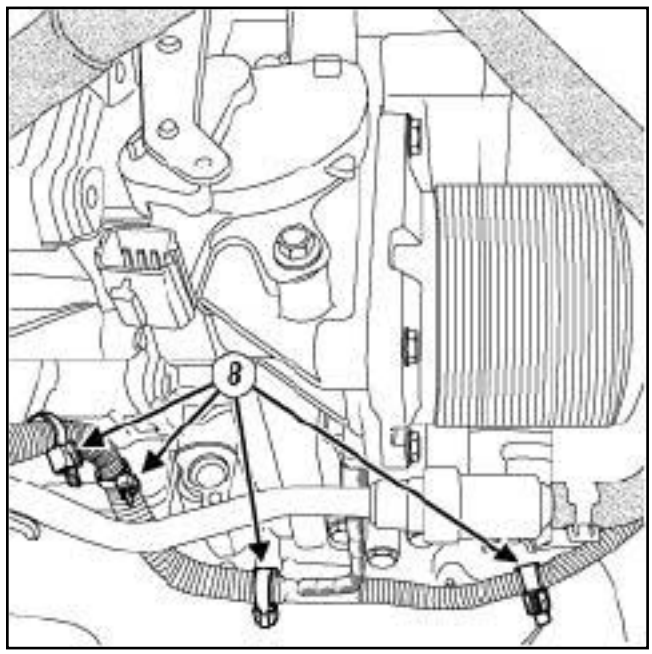
130008

❏ Remove:

- the oil level gauge (**5**) from the automatic gearbox,
- the automatic gearbox oil charging pipe bolts (**6**) ,
- the automatic gearbox oil charging pipe (**7**) ,
- the O-ring from the automatic gearbox oil charging pipe.

❏ Disconnect:

- the speed sensor connectors (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-24**) ,
- the multifunction switch connector (see **23A**, **Automatic gearbox**, **Multifunction switch: Removal - Refitting**, page **23A-21**) ,
- the automatic gearbox control cable (see **Automatic gear control cable: Removal - Refitting**) (37A, Mechanical component controls).



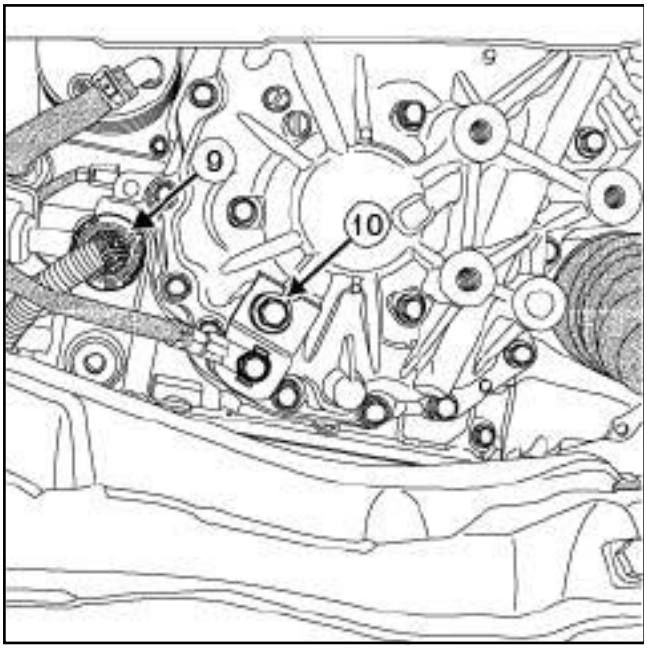
130009

❏ Unclip the automatic gearbox wiring clips (**8**) .

❏ 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).

FK0 or FK8




130010

❑ Disconnect the automatic transmission connector (**9**) .

❑ Remove:

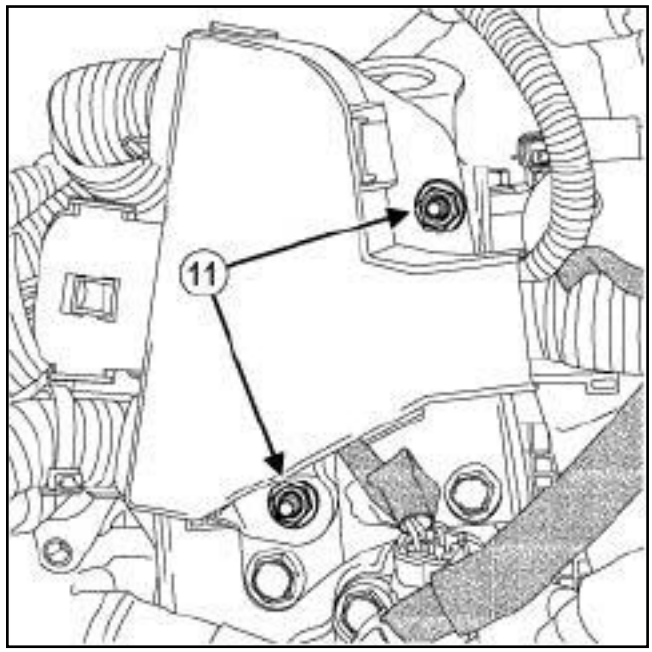
- the earth strap bolt ***(10)*** ,
- the automatic gearbox cooling hoses (see **23A**, **Automatic gearbox**, **Gearbox oil coolant pipe: Removal - Refitting**, page **23A-56**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the connector pipe (see **Connector pipe: Removal - Refitting**) (19B, Exhaust).

FK8

❑ Remove the propshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❑ Secure the propshaft to the control cable bracket using a string.

❑ Remove the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) .

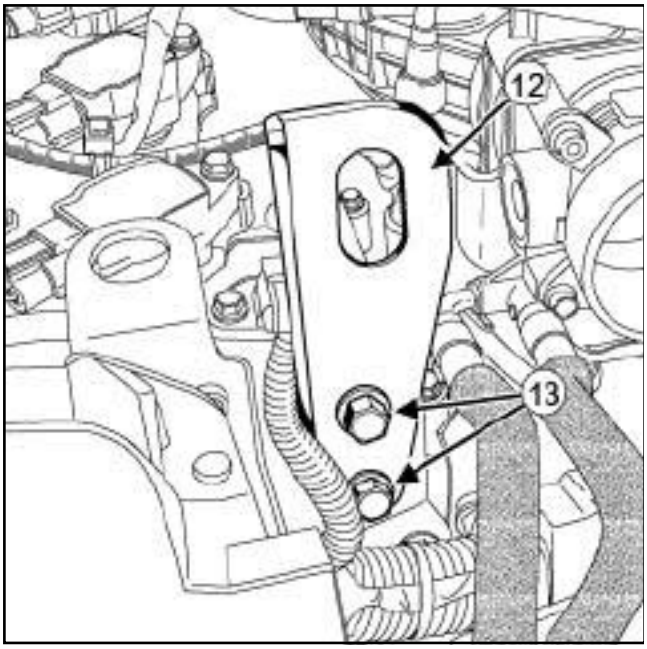



130011

❑ Remove the engine wiring harness nuts (**11**) .

❑ Move the wiring harness to one side.

FK0 or FK8

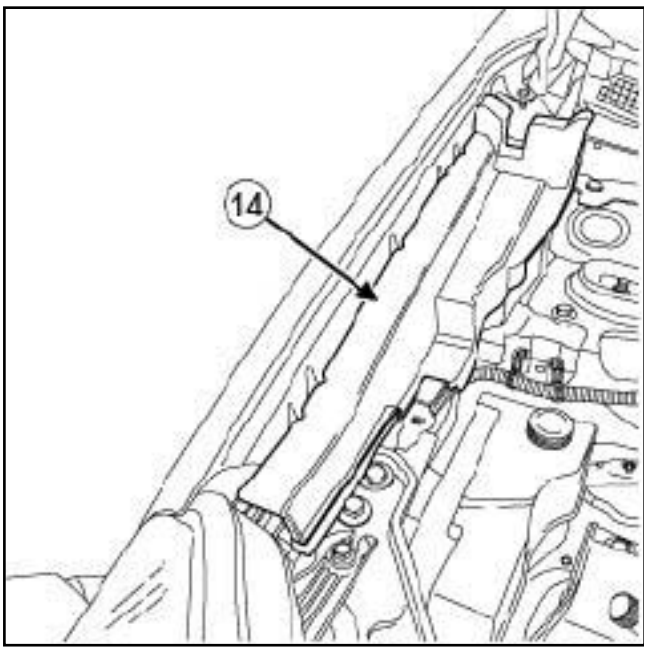



129808

❏ Fit:

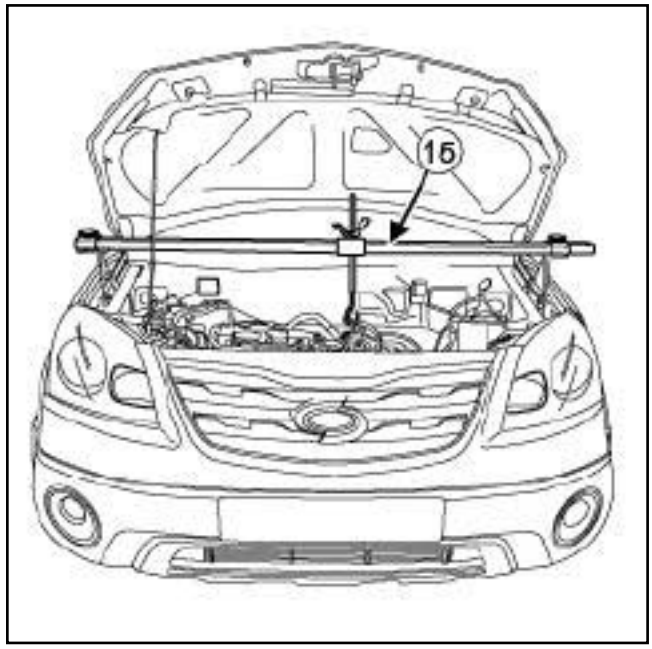
- the lifting eye (**12**) ,
- the lifting eye bolts (**13**) .

❏ Torque tighten the **lifting eye bolts (28 N.m)**.



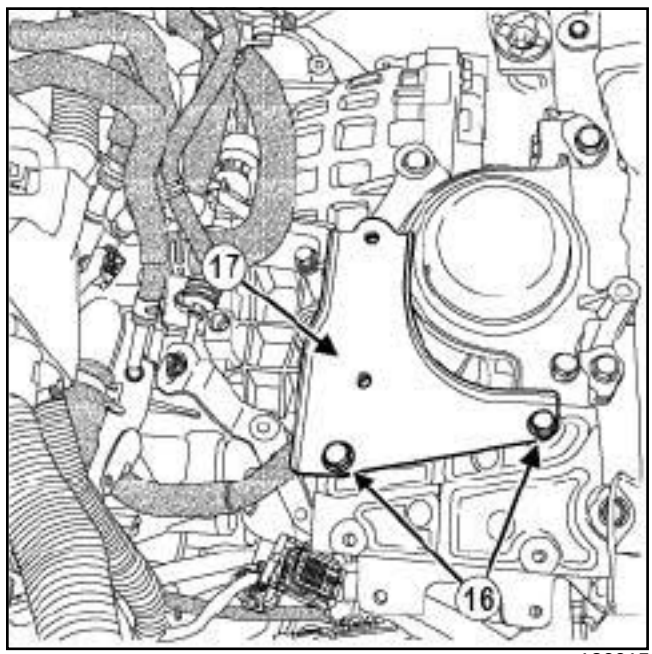

130013

❏ Remove the hood seals (**14**) .




130014

❏ Position the **(Mot. 1453)** (**15**) .

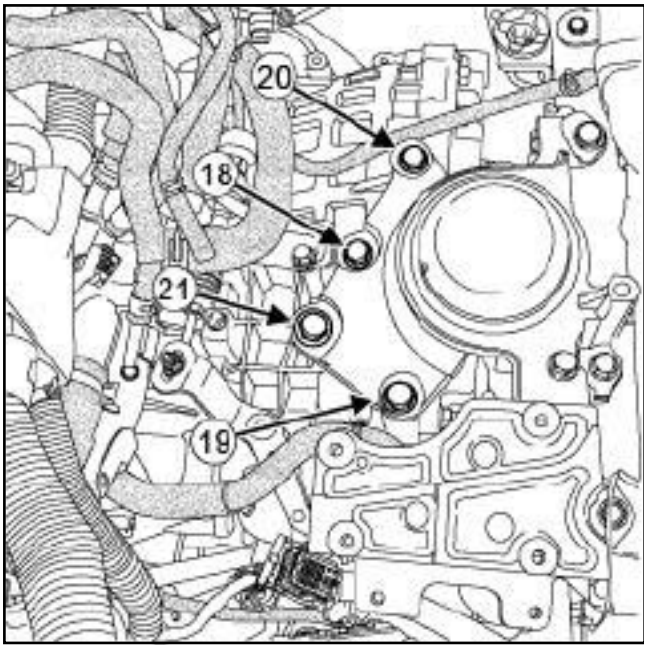



130015

❏ Remove:

- the bolts (**16**) from the battery tray bracket,
- the battery tray bracket (**17**) .

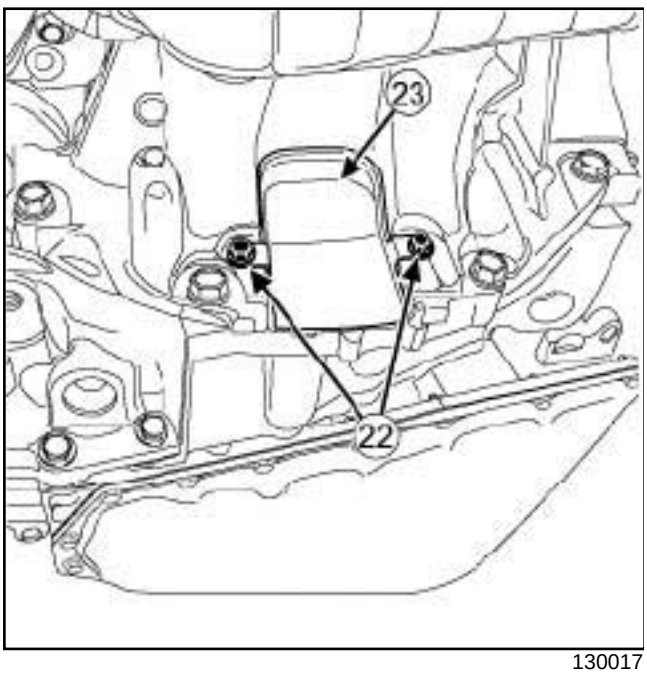
FK0 or FK8




130016

❏ Remove in the following order:

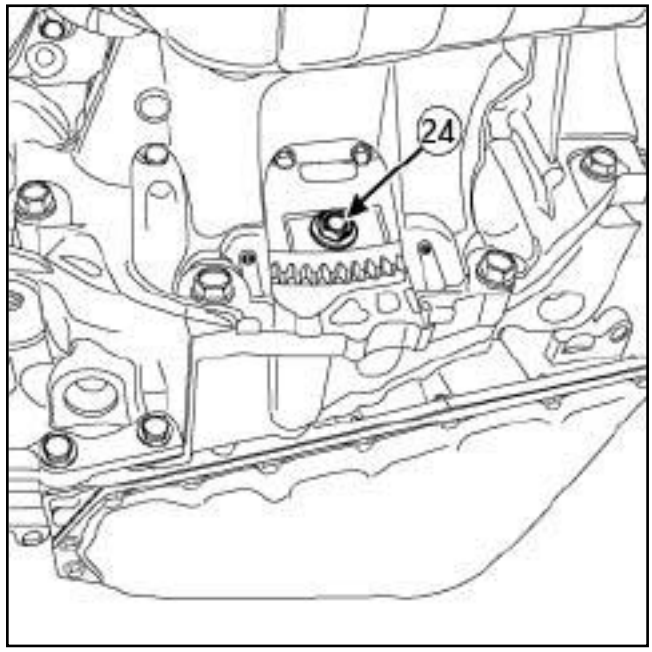
- the left-hand suspended engine mounting bolt A (**18**) ,
- the left-hand suspended engine mounting bolt B (**19**) ,
- the left-hand suspended engine mounting bolt C (**20**) ,
- the left-hand suspended engine mounting bolt D (**21**) .




130017

❏ Remove:

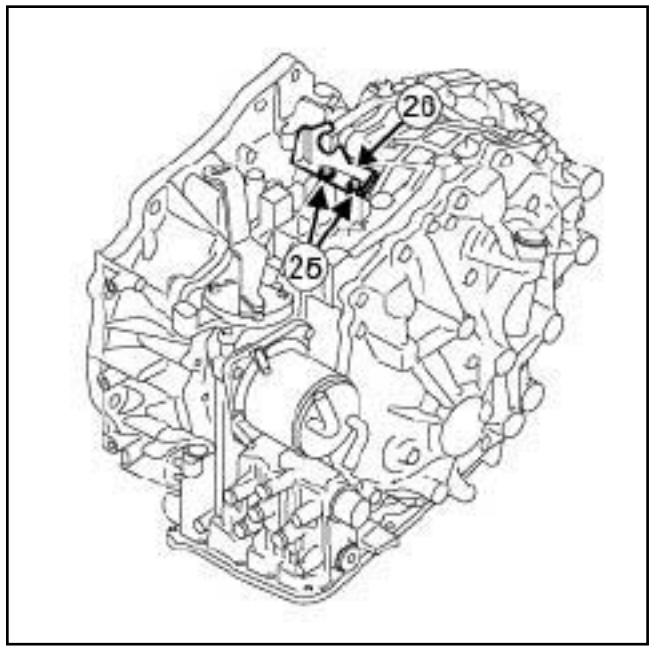
- the converter cover bolts (**22**) ,
- the converter cover (**23**) .




130018

❏ Remove the four nuts (**24**) from the torque converter by rotating the crankshaft clockwise.

❏ Place the **component jack** underneath the gearbox.



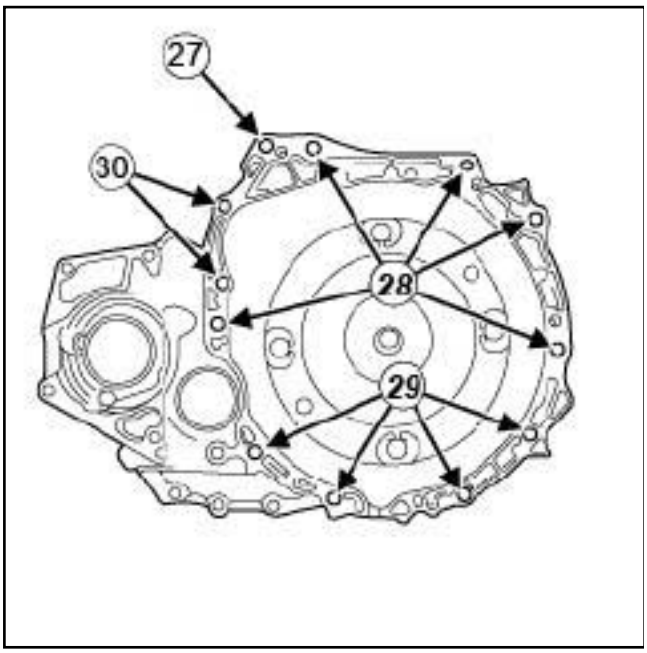

130019

❏ Remove:

- the control cable bracket bolts (**25**) ,
- - the control cable bracket (**26**) .

FK0 or FK8

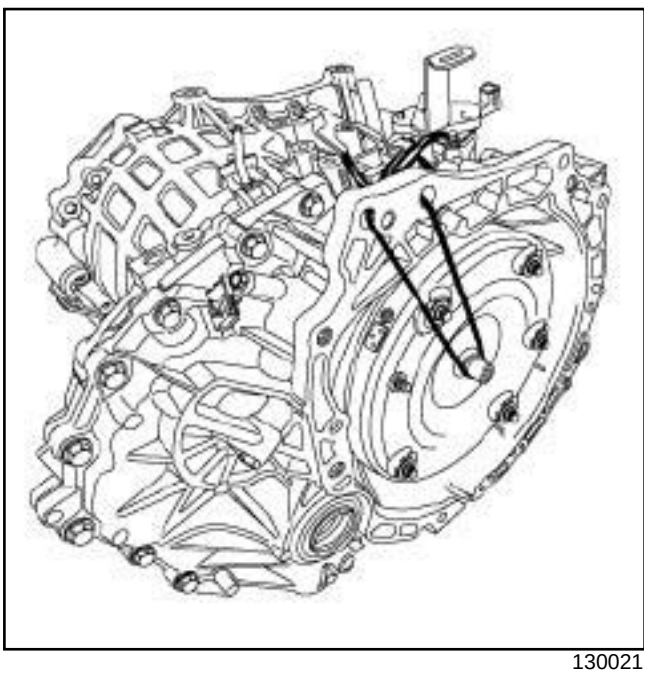
### II - OPERATION FOR REMOVAL OF PART CONCERNED




130020

❑ Remove:

- the gearbox mounting bolt A (**27**) ,
- the gearbox mounting bolts B (**28**) ,
- the gearbox mounting bolts C (**29**) ,
- the gearbox mounting bolts D (**30**) ,
- the automatic gearbox.



130021

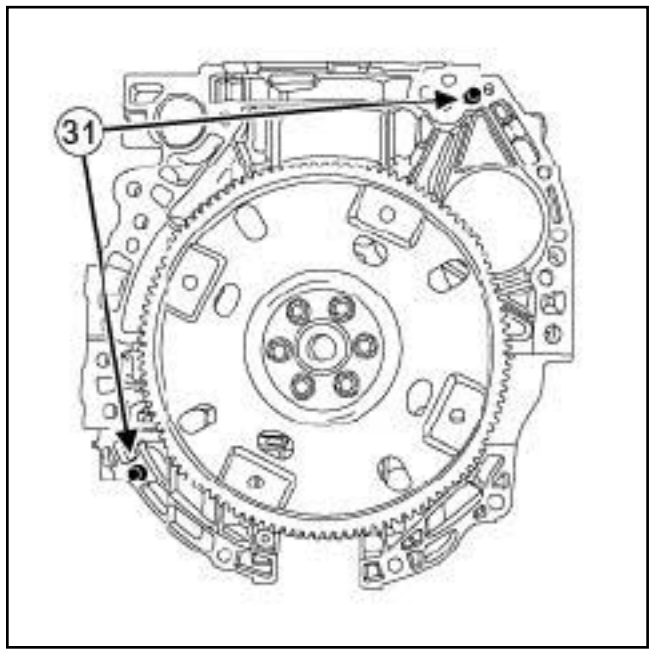
❑ Secure the converter with string to prevent it from being dislodged.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❑ Always replace:

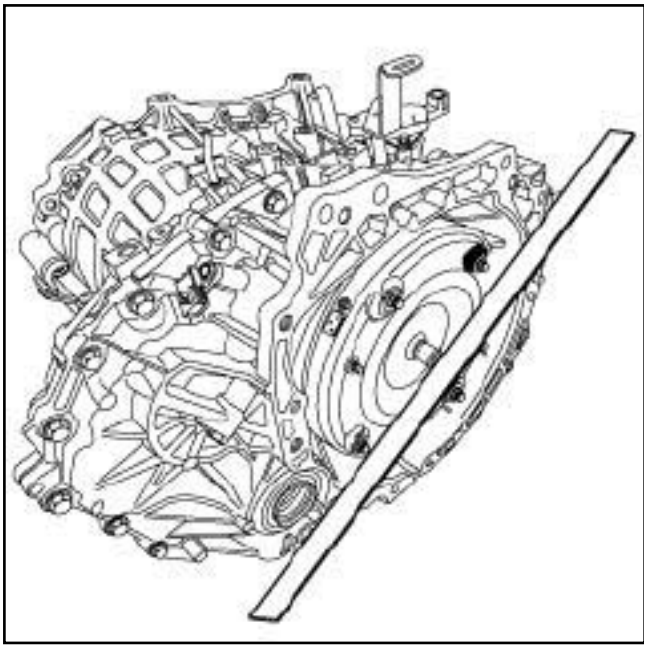
- the converter nuts,
- the O-ring.




130022

❑ Check that the centring dowels (**31**) are in place.

FK0 or FK8



130023

❑ Check that torque converter is correctly coupled to the continuously variable gearbox using a rule and a straightedge. The distance (**X**) between the converter retaining bolt bead and the housing must be at least **14.4 mm**.

❑ Refit:

- the control cable bracket,
- the control cable bracket bolts.

❑ Torque tighten the **control cable bracket bolts (14 N.m)**.

**II - REFITTING OPERATION FOR PART CONCERNED**

❑ Refit:

- the automatic gearbox,
- the gearbox mounting bolts D,
- the gearbox mounting bolts C,
- the gearbox mounting bolts B,
- the gearbox mounting bolt A,

❑ Torque tighten:

- the **gearbox mounting bolts D (60 N.m)**,
- the **gearbox mounting bolts C (43 N.m)**,
- the **gearbox mounting bolts B (75 N.m)**,
- the **gearbox mounting bolt A (35 N.m)**.

**III - FINAL OPERATION.**

❑ Refit the new converter nuts by rotating the crankshaft clockwise.

❑ Torque tighten the **converter nuts (51 N.m)**.

❑ Refit:

- the converter cover,
- the converter cover bolts.

❑ Torque tighten the **converter cover bolts (7 N.m)**.

❑ Refit and tighten to torque and in order:

- the **left-hand suspended engine mounting bolt D (50 N.m)**,
- the **left-hand suspended engine mounting bolt C (50 N.m)**,
- the **left-hand suspended engine mounting bolt B (50 N.m)**,
- the **left-hand suspended engine mounting bolt A (50 N.m)**.

❑ Remove:

- the **(Mot. 1453)**,
- the lifting eye bolts,
- the lifting eye.

❑ Refit:

- the hood seals,
- the engine wiring harness,
- the engine wiring harness nuts.

❑ Torque tighten the **engine wiring harness nuts (10 N.m)**.

❑ Refit:

- the battery tray bracket,
- the battery tray bracket bolts.

❑ Tighten to torque the **battery tray bracket mounting bolts (28 N.m)**.

❑ Refit:

- the automatic gearbox cooling hoses (see **23A**, **Automatic gearbox**, **Gearbox oil coolant pipe: Removal - Refitting**, page **23A-56**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the connector pipe (see **Connector pipe: Removal - Refitting**) (19B, Exhaust),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),

FK0 or FK8

- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .
- the earth strap bolt.

❏ Torque tighten the **earth strap bolt (25 N.m)**.

FK8

❏ Refit the transfer box (see **29A**, **Driveshafts**, **Transfer box: Removal - Refitting**, page **29A-41**) .

❏ Refit the propshaft on the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❏ Connect:

- the automatic gearbox connector,
- the speed sensor connectors (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-24**) ,
- the multifunction switch connector (see **23A**, **Automatic gearbox**, **Multifunction switch: Removal - Refitting**, page **23A-21**) ,
- the automatic gearbox control cable (see **Automatic gear control cable: Removal - Refitting**) (37A, Mechanical component controls).

❏ Clip the automatic gearbox wiring clips.

❏ 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).

❏ Refit:

- the new O-ring on the automatic gearbox oil charging pipe,
- the automatic gearbox oil charging pipe,
- the automatic gearbox oil charging pipe bolts,
- the oil level gauge on the automatic gearbox.

❏ Torque tighten the **automatic gearbox oil charging pipe bolt (10 N.m)**.

❏ Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine cover,
- the breather hose,
- the engine wiring harness channel,
- the engine wiring harness channel bolts.

❏ Torque tighten the **wiring harness channel bolts (28 N.m)**.

❏ Refit:

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

❏ Refill:

- the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) ,
- the cooling circuit (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).

❏ Bleed the cooling circuit (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).

❏ Refit the engine undertray.

FK0 or FK8

| Essential special tooling | |
|---|---|
| **Bvi. 1856** | Tool for fitting CVT converter and differential seals |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

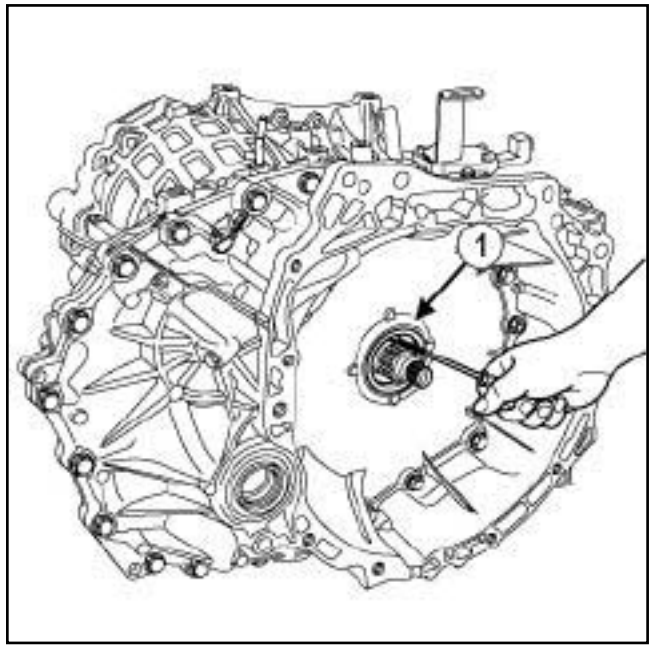
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**)

### II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the converter.

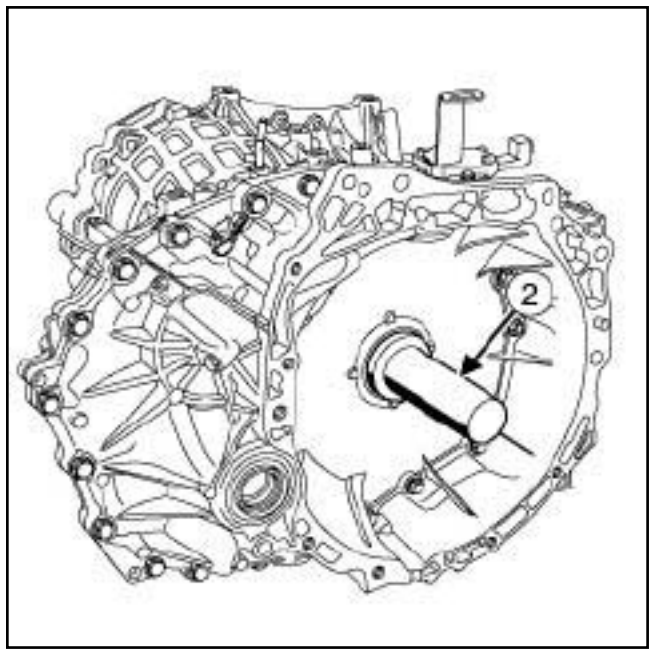



130027

❏ Remove the converter seal (**1**) using a screwdriver, taking care not to scratch the contact surfaces.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED



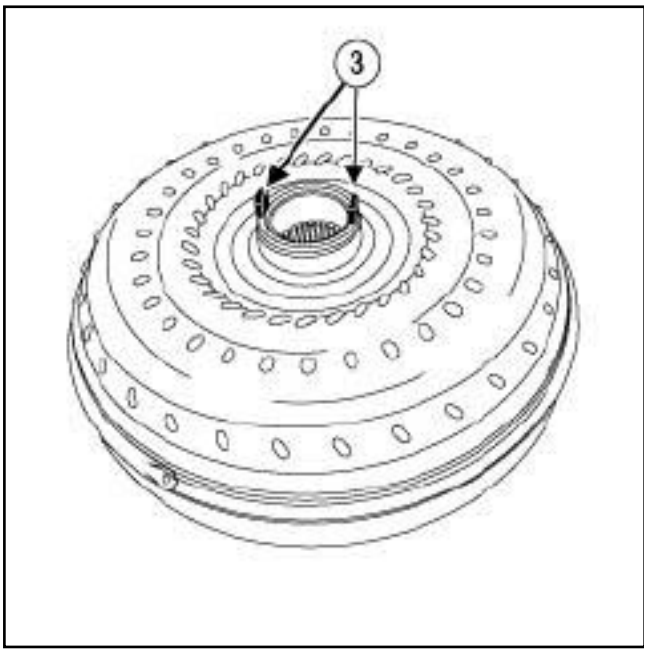

130028

❏ Refit the converter seal using the tool **(Bvi. 1856)** (**2**) .

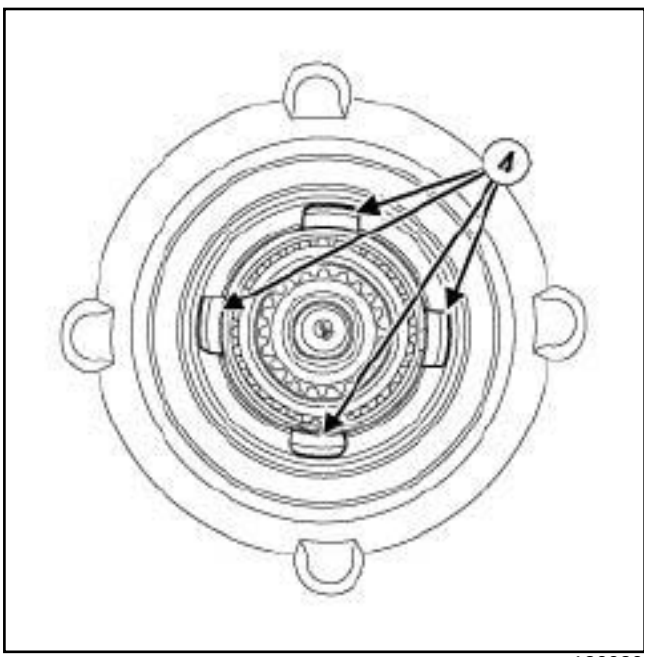
FK0 or FK8

**II - FINAL OPERATION.**

❑ Refit the converter.




130029




130030

❑ Check that the converter lugs (**3**) are engaged in the drive sprocket holes (**4**) .

❑ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

| Essential special tooling | |
|---|---|
| **Bvi. 1804** | Kit for fitting differential and converter seals (AJ0). |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

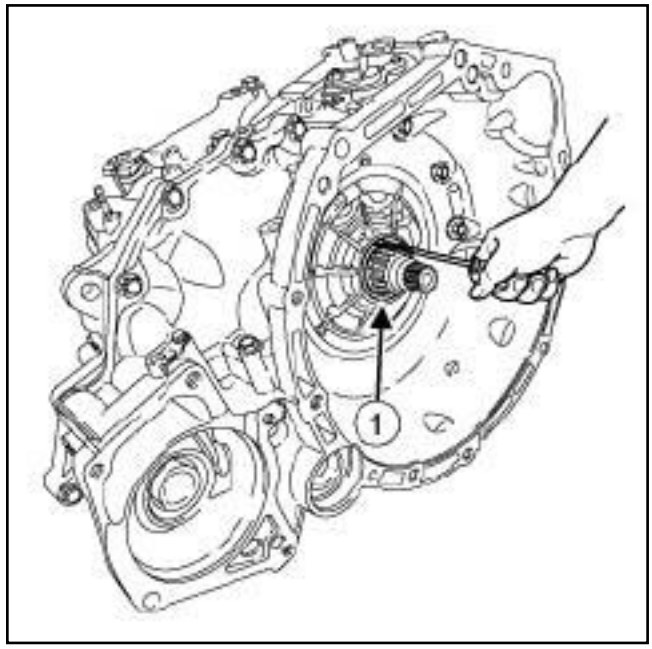
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**)

### II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the converter.

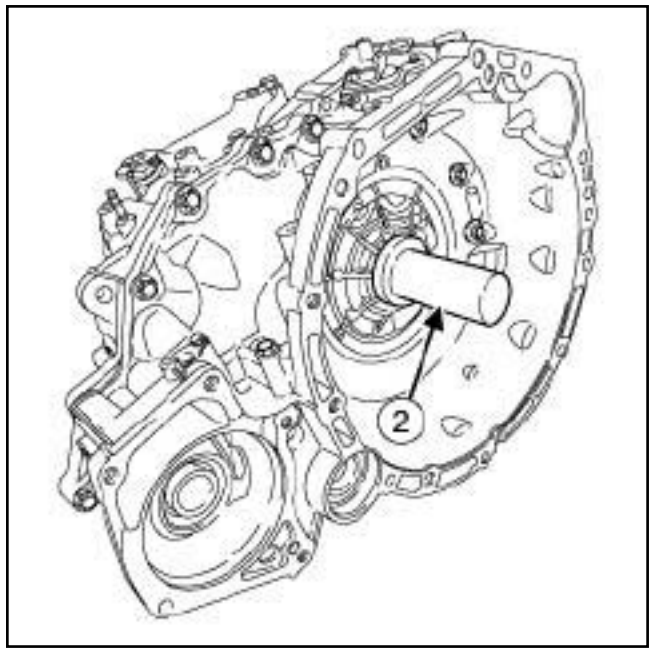



130024

❑ Remove the converter seal (**1**) using a screwdriver, taking care not to scratch the contact surfaces.

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

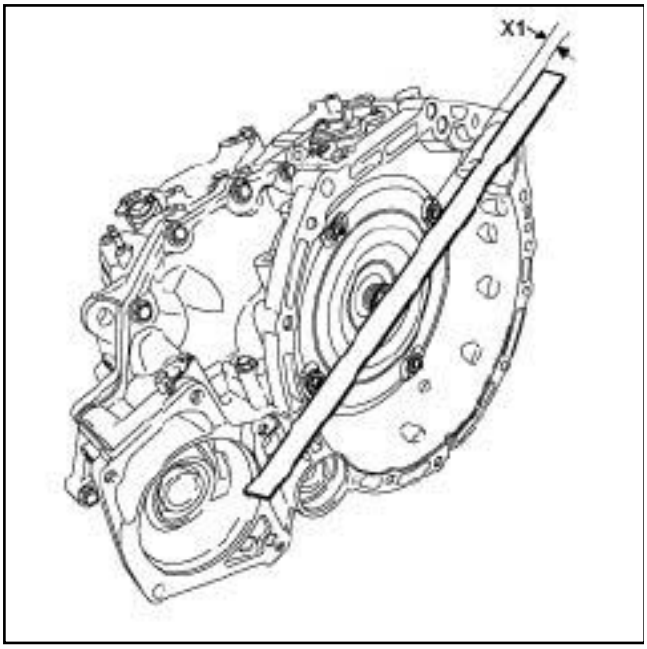



130025

❑ Refit the converter seal using tool **(Bvi. 1804)** (**2**) .

### II - FINAL OPERATION.

❑ Refit the converter.




130026

❏ Check:

- that the converter correctly is inserted using a rule and a straightedge,
- that the distance (**X1**) between the mating face and the rule is at least **20.4 mm**.

❏ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

| Essential special tooling | |
|---|---|
| **Mot. 1431** | Flywheel locking tool. |

| Tightening torques ▽ | |
|---|---|
| drive plate bolts | **35 N.m + 40° ± 5°** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

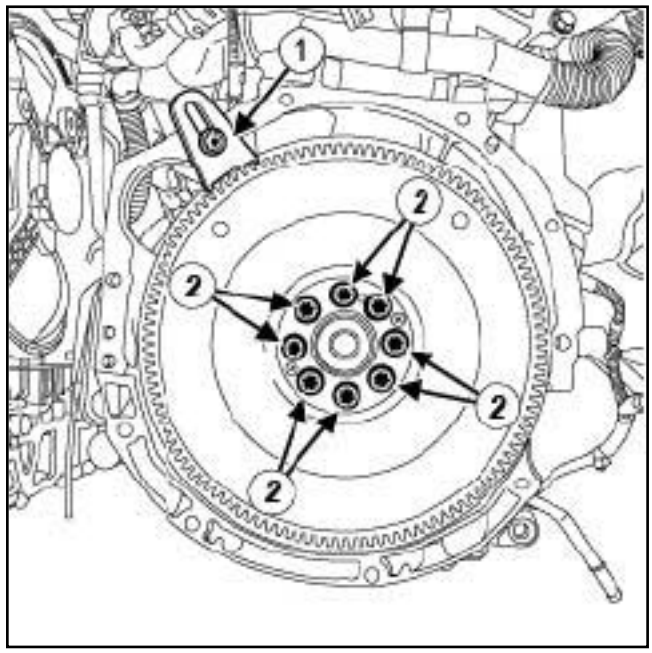
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**)

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130031

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

❏ Remove:

- the drive plate bolts ***(2)*** ,
- the drive plate,
- the **(Mot. 1431)**.

## REFITTING

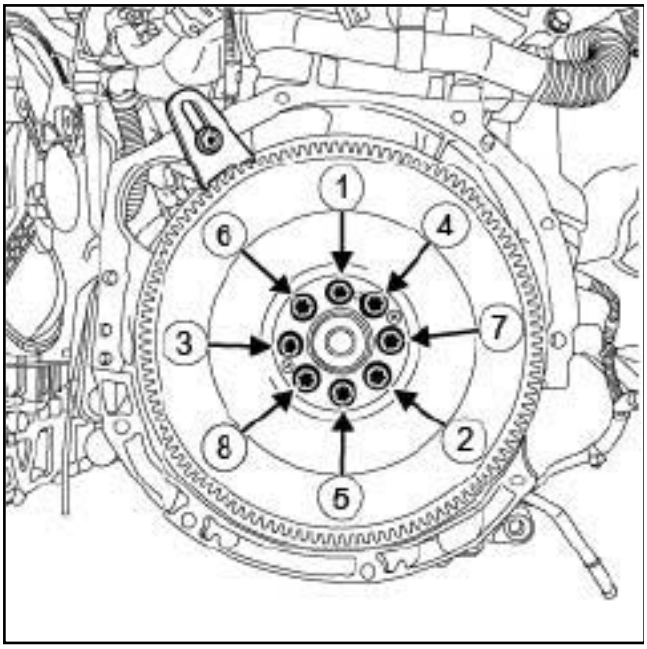
### I - REFITTING PREPARATION OPERATION

❏ Systematically replace the drive plate bolts.

❏ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the drive plate, ensuring it is correctly positioned in relation to the centring pins.




130031

- ❑ Refit the new drive plate bolts.
- ❑ Position the **(Mot. 1431)**.
- ❑ Tighten to torque, to angle and in order the **drive plate bolts (35 N.m + 40° ± 5°)**.
- ❑ Remove the **(Mot. 1431)**.

**III - FINAL OPERATION.**

- ❑ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

FK0 or FK8

| Essential special tooling | |
|---|---|
| **Mot. 1431** | Flywheel locking tool. |

| Tightening torques ▽ | |
|---|---|
| drive plate bolts | **108 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

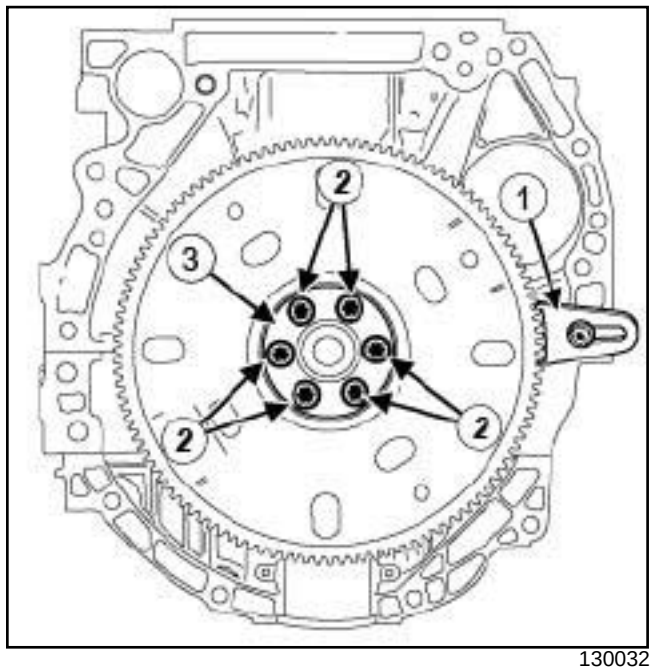
### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**)

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130032

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

❏ Remove:

- the drive plate bolts ***(2)*** ,
- the **(Mot. 1431)**,
- the stiffener plate ***(3)*** ,
- the drive plate.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Systematically replace the drive plate bolts.

❏ Check that the drive plate is not damaged (run-out tolerance of **0.2 mm** on the outer diameter).

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the drive plate,
- the stiffener plate,
- the drive plate bolts,
- the **(Mot. 1431)**.

❏ Torque tighten the **drive plate bolts (108 N.m)**.

❏ Remove the **(Mot. 1431)**.

FK0 or FK8

**III - FINAL OPERATION.**

❑ Refit the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-30**) .

| Tightening torques ▽ | |
|---|---|
| automatic transmission computer nuts | 6 N.m |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

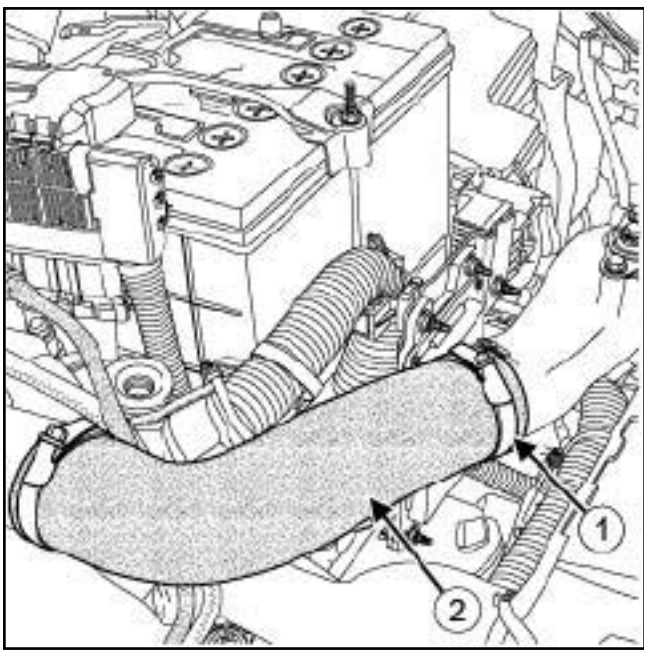
### I - REMOVAL PREPARATION OPERATION

❏ Shift the gear lever to **Neutral**.

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

❏ Remove:

- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) ,
- the engine cover.

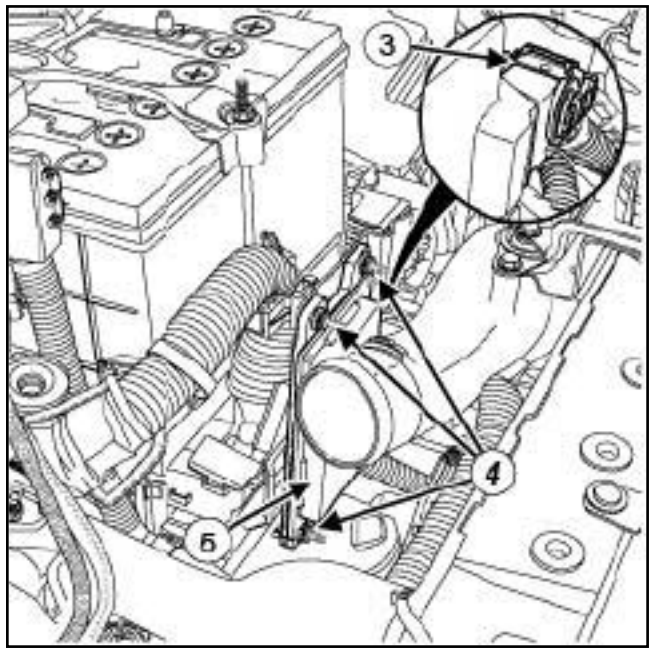


130033

❏ Remove the turbocharger hose clip (**1**) .

❏ Disconnect the turbocharger hose (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130034

❏ Disconnect the automatic transmission computer connector (**3**) .

❏ Remove:

- the automatic transmission computer nuts ***(4)*** ,
- the automatic transmission computer ***(5)*** .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the automatic transmission computer,
- the automatic transmission computer nuts.

❏ Torque tighten the **automatic transmission computer nuts (6 N.m)**.

❏ Connect the automatic transmission computer connector.

### II - FINAL OPERATION

❏ Refit:

- the turbocharger hose,
- the turbocharger hose clip,
- the engine cover,
- the air inlet sleeve (see **Air filter unit: Removal - Refitting**) .

6 SPEED AUTO GBOX

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

FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| automatic transmission computer bolt | **6 N.m** |
| automatic transmission computer nut | **6 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

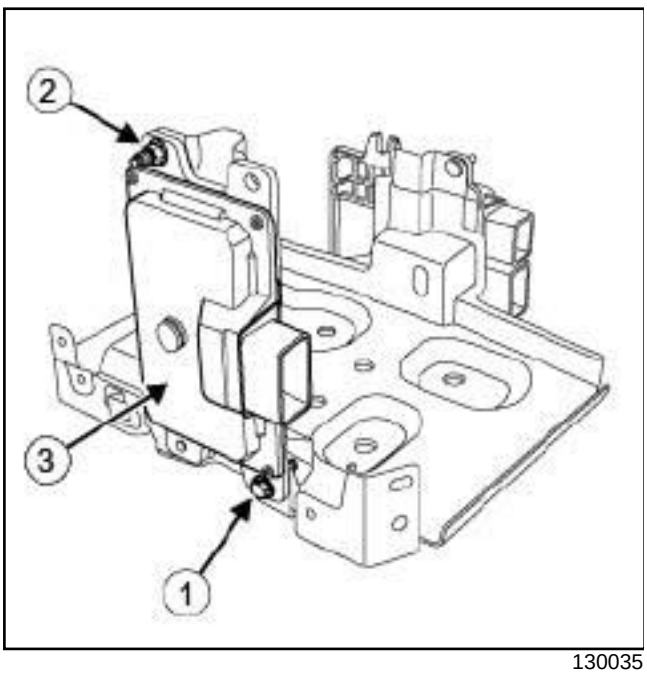
### I - REMOVAL PREPARATION OPERATION

❏ Shift the gear lever to **Neutral**.

❏ Remove:

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

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130035

❏ Remove:

- the automatic transmission computer bolt (**1**) ,
- the automatic transmission computer nut (**2**) ,
- the automatic transmission computer (**3**) .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the automatic transmission computer,
- the automatic transmission computer bolt,
- the automatic transmission computer nut.

❏ Torque tighten:

- the **automatic transmission computer bolt (6 N.m)**,
- the **automatic transmission computer nut (6 N.m)**.

### II - FINAL OPERATION.

❏ Refit:

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

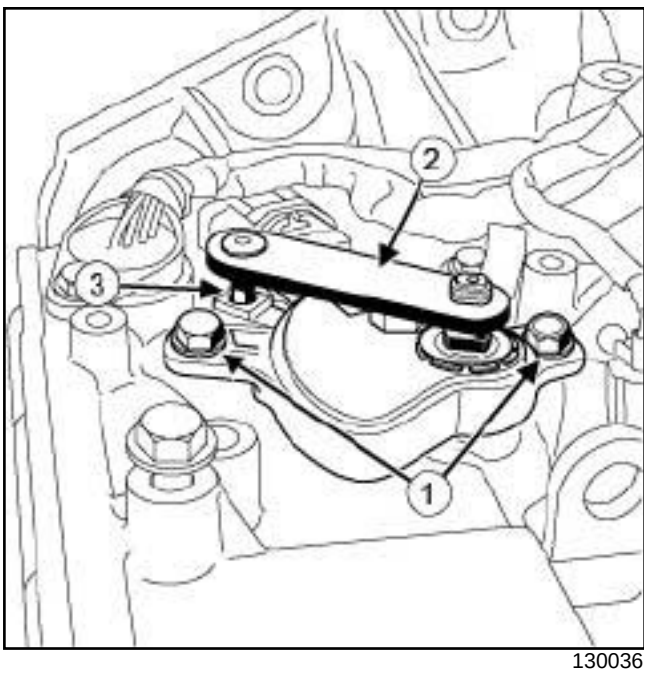
| Essential special tooling | |
|---|---|
| **Bvi. 1805** | Multifunction switch adjustment lever (AJ0) |

| Tightening torques ▽ | |
|---|---|
| multifunction switch bolts | **6 Nm** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

Adjust the multifunction switch using the **(Bvi. 1805)** when removing and refitting the multifunction switch (see **23A**, **Automatic gearbox**, **Multifunction switch: Removal - Refitting**, page **23A-21**) or during fault finding.

## ADJUSTMENT



130036

- ❏ Loosen the multifunction switch bolts (**1**) .
- ❏ Position the tool **(Bvi. 1805)** ***(2)*** on the control lever and align the shaft of the tool opposite the relevant hole on the multifunction switch ***(3)*** .
- ❏ Torque tighten the **multifunction switch bolts (6 Nm)**.
- ❏ Remove the **(Bvi. 1805)**.

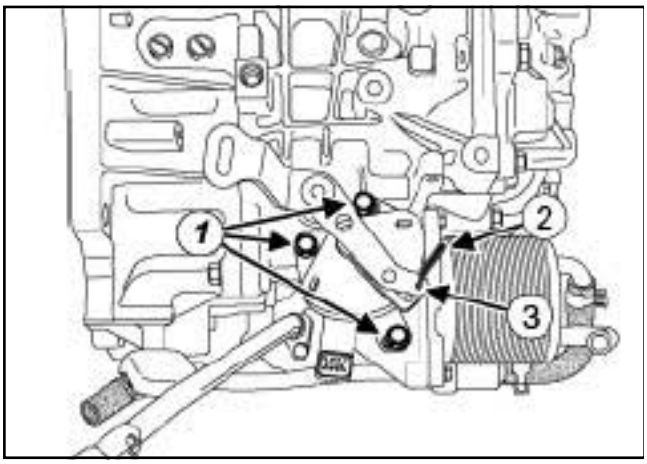
FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| multifunction switch bolts | **6 Nm** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

Adjust the multifunction switch using a **3 mm** offset wrench when removing and refitting the multifunction switch (see **23A**, **Automatic gearbox**, **Multifunction switch: Removal - Refitting**, page **23A-21**) or during fault finding.

## ADJUSTMENT



130037

- ❏ Loosen the multifunction switch bolts (**1**) .
- ❏ Position a **3 mm** ***(2)*** Allen key on the control lever and align the shaft of the tool opposite the relevant hole on the multifunction switch ***(3)*** .
- ❏ Torque tighten the **multifunction switch bolts (6 Nm)**.
- ❏ Remove the Allen key ***(2)*** .

FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| cooling hose bolts | **25 N.m** |
| wiring harness channel bolts | **28 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **Engine cooling: Precautions for repair**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

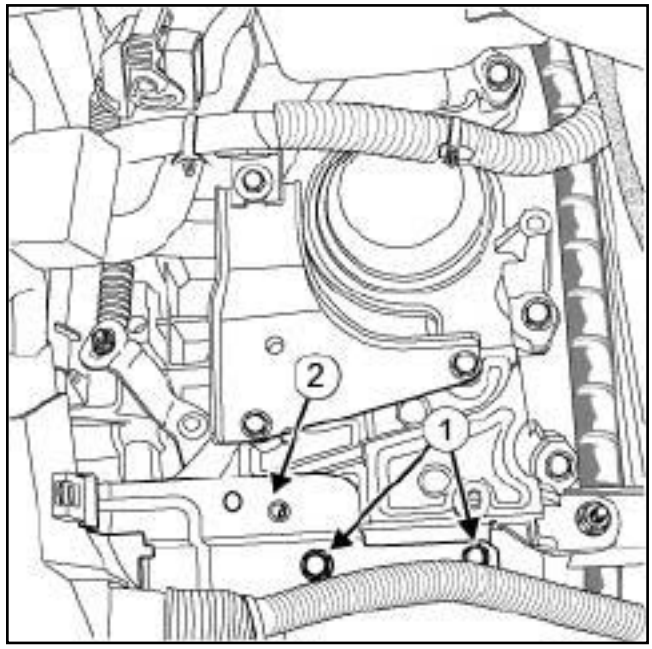
**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.

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

❏ Remove:

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

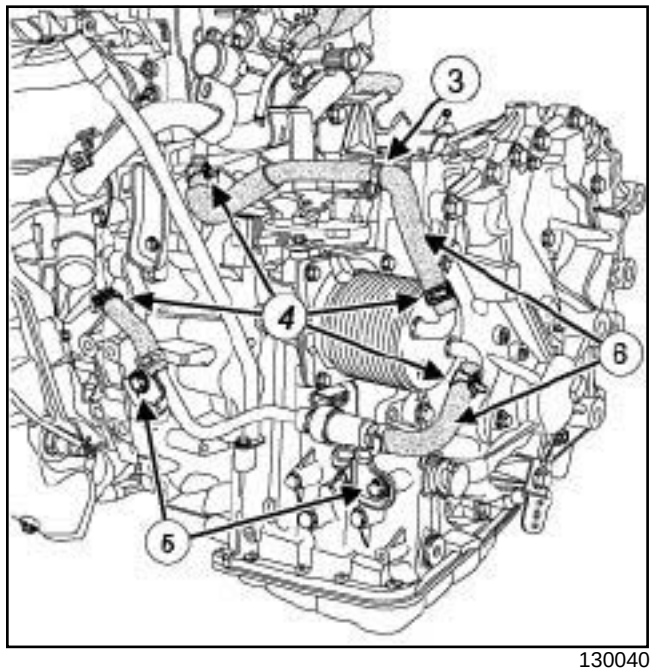


130039

❏ Remove the bolts (**1**) from the engine wiring harness channel.

❏ Remove the wiring harness channel ***(2)*** .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130040

❏ Unclip the cooling hose (**3**) .

❏ Remove:

- the cooling hose clips ***(4)*** ,
- the cooling hose bolts ***(5)*** ,

FK0 or FK8

- the cooling hoses ***(6)*** .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the cooling hoses,
- the cooling hose bolts,
- the cooling hose clips.

❑ Torque tighten the **cooling hose bolts (25 N.m)**.

❑ Clip the cooling hose at ***(3)*** .

### II - FINAL OPERATION.

❑ Refit:

- the wiring harness channel,
- the engine wiring harness channel bolts.

❑ Torque tighten the **wiring harness channel bolts (28 N.m)**.

❑ Refit:

- the air inlet sleeve (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 the cooling circuit (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).

❑ Refit the engine undertray.

FK0 or FK8

| Tightening torques ▽ | |
|---|---|
| oil sump bolts | **8 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-4**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

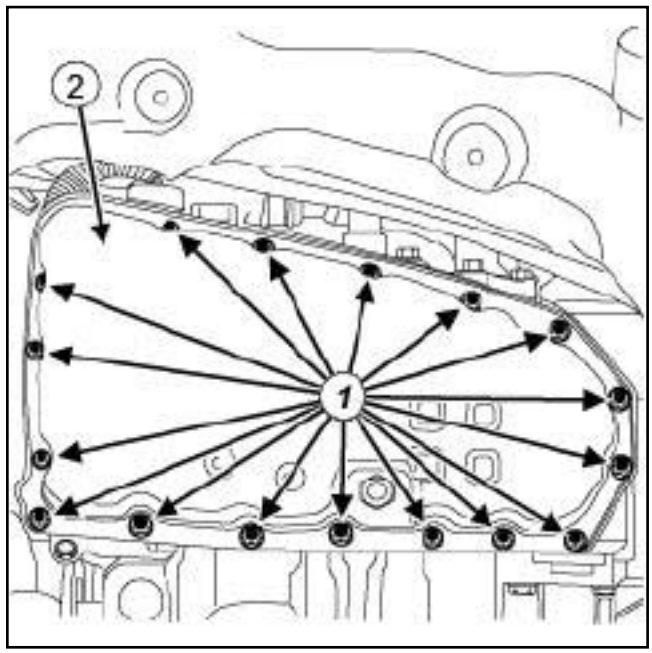
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130041

❏ Remove:

- the sump bolts (**1**) ,
- the sump (**2**) ,
- the sump seal,
- the sump magnets.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the sump bolts,
- the sump seal.

❏ Clean the magnets.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the sump magnets,
- the new seal on the sump,
- the sump,
- the sump bolts,

❏ Torque tighten the **oil sump bolts (8 N.m)**.

FK0 or FK8

**III - FINAL OPERATION.**

- ❑ Top up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .
- ❑ Refit the engine undertray.

# Rear axle assembly: Precautions for repair



4X4 TRANSMISSION

Check the condition of the installation before removal or dismantling. If position marks are required, check that they do not interfere with the operation of the parts where they are applied.

Check the appearance of the components removed, looking for any deformation and unusual wear. Replace the components as required.

The static seals, sealing rings and "O" rings must be replaced every time the unit is disassembled.

As a rule, tighten the bolts or the nuts gradually several times, working in a diagonal pattern from the inside outwards.

Do not damage the sliding faces or the mating faces.

During assembly, observe the recommended tightening torque and apply oil for new gears or universal grease in accordance with the recommendations for the vehicle being reassembled, as required.

4X4 TRANSMISSION

| Type of final drive | Gear ratio | Type of drive pinion adjusting spacer | Pinion gear number |
|---|---|---|---|
| R145 (Origin: Nissan) | 37:15 | Telescopic | 2 |

| Essential equipment |
|---|
| component jack |

| Tightening torques ▽ | |
|---|---|
| rear final drive nut | **78 N.m** |
| rear final drive bolts | **63 N.m** |

**IMPORTANT**

Consult the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **26A**, **Rear axle**, **Rear axle assembly: Precautions for repair**, page **26A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**

To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

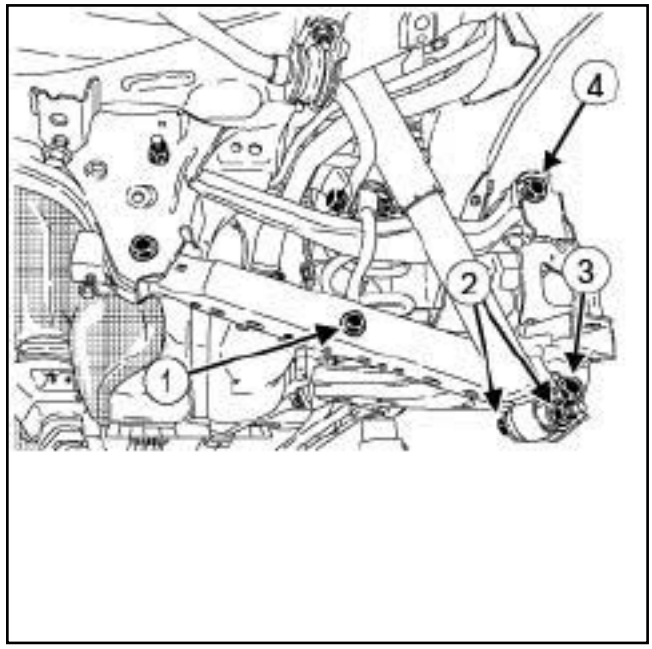
❏ Drain the oil from the rear final drive (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

❏ Remove:

- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the rear wheel driveshafts (see **29A**, **Driveshafts**, **Rear wheel driveshaft: Removal - Refitting**, page **29A-9**) .

❏ Disconnect the longitudinal driveshaft from the rear final drive (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

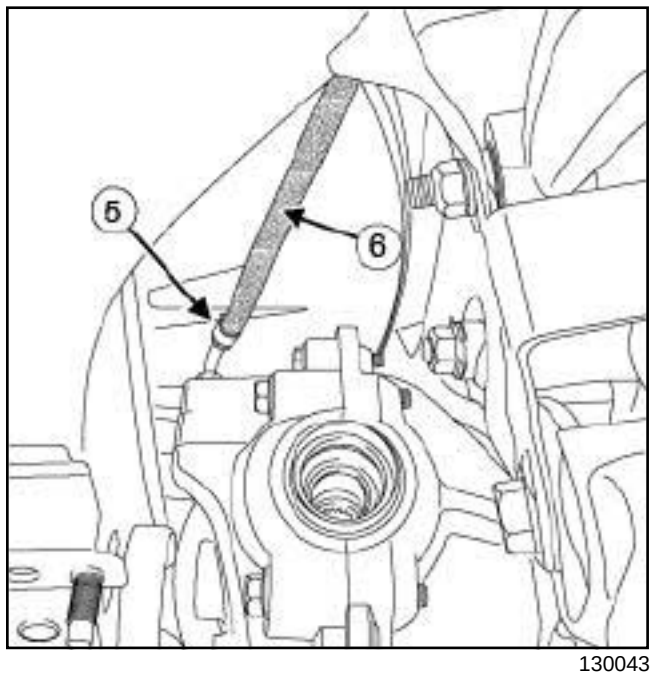
❏ Use a strap to attach the longitudinal driveshaft to the parking brake cable.




130042

❏ Remove:

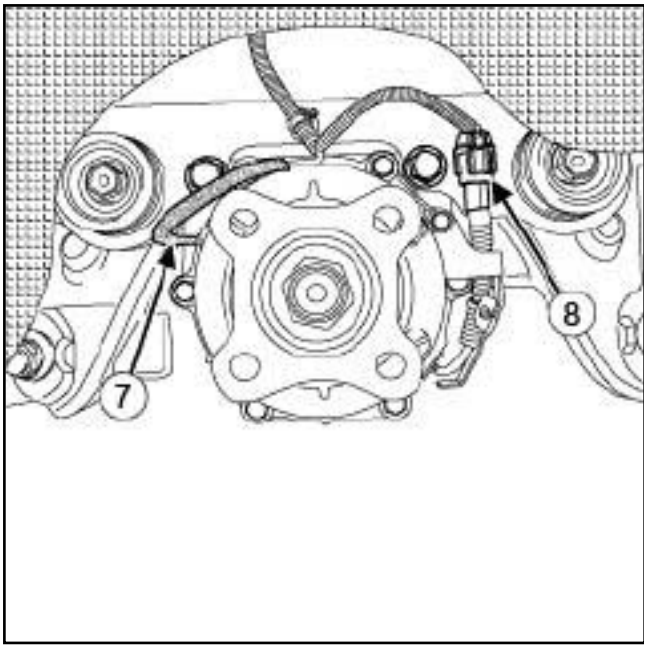
- the rear anti-roll bar tie rod lower bolt and nut (**1**) ,
- the rear shock absorber lower bolt and nut (**2**) ,
- the rear stub axle carrier lower trailing link bolt and nut (**3**) ,
- the upper arm bolt and nut (**4**) of the rear stub axle carrier.




130043

❏ Remove the breather hose clip (**5**) from the rear final drive.

❏ Disconnect the breather hose (**6**) from the rear final drive.



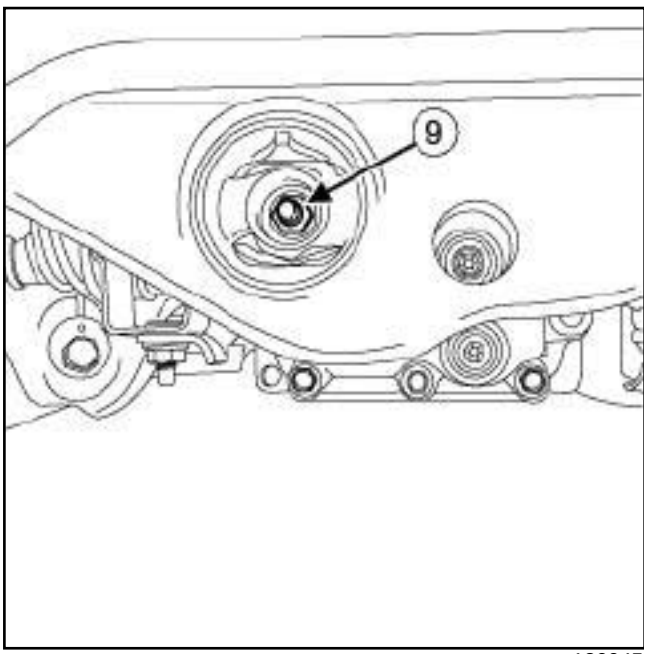

130044

❏ Disconnect:

- the rear final drive breather hose (**7**) from the electric coupler,
- the electric coupler connector (**8**) .

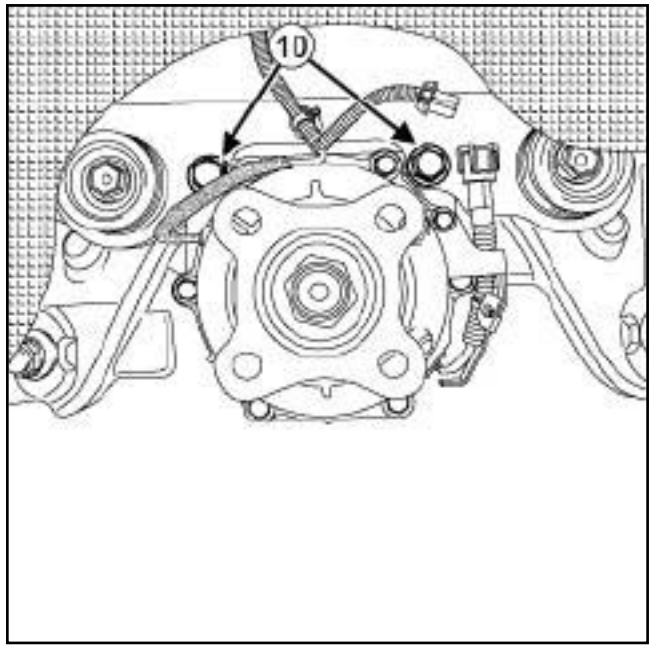
**II - OPERATION FOR REMOVAL OF PART CONCERNED**

❏ Fit the **component jack** under the rear final drive.




130045

❏ Remove the nut (**9**) from the rear final drive.




130046

❏ Remove:

- the bolts and the nut (**10**) from the rear final drive,
- the rear final drive.

## REFITTING

**I - REFITTING OPERATION FOR PART CONCERNED**

❏ Refit:

- the rear final drive,
- the rear final drive nut,
- the rear final drive bolts and nut.

❏ Torque tighten:

- the **rear final drive nut (78 N.m)**,
- the **rear final drive bolts (63 N.m)**.

**II - FINAL OPERATION.**

❏ Connect:

- the electric coupler connector,
- the rear final drive breather hose to the electric coupler,
- the rear final drive breather hose to the rear final drive.

❏ Refit the rear final drive breather hose clip.

❏ Refit:

- the rear anti-roll bar tie rod lower bolt and nut,

4X4 TRANSMISSION

- the rear shock absorber lower bolt and nut,
- the rear stub axle carrier lower trailing link bolt and nut,
- the rear stub axle carrier upper arm bolt and nut.

❑ Refit:

- the rear wheel driveshafts (see **29A**, **Driveshafts**, **Rear wheel driveshaft: Removal - Refitting**, page **29A-9**) ,
- the rear wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill the rear final drive with oil (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

XENON BULBS

❑ Adjust:

- the headlights (see **Front headlight: Adjusting**) (80B, Headlights).
- the headlight beam adjustment rear sensor (see **Fault Finding - Programming**) (80C, Xenon bulbs).

❑ Adjust:

- the rear axle geometry (see **Rear axle: Adjusting**) (30A, General information)
- the neutral steering wheel position (see **Fault finding - Programming**)(80B, Headlights).

4X4 TRANSMISSION

| Essential special tooling | |
|---|---|
| **Rou. 604-01** | Hub locking tool. |
| **Bvi. 1855** | Tools for fitting H45 rear final drive and transfer box seals |

| Tightening torques ▽ | |
|---|---|
| rear final drive flange nut | **140 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **26A**, **Rear axle**, **Rear axle assembly: Precautions for repair**, page **26A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

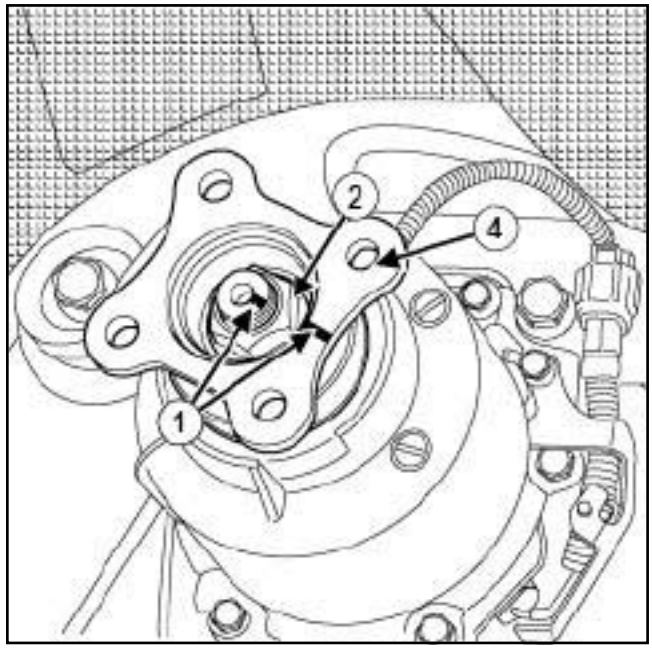
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

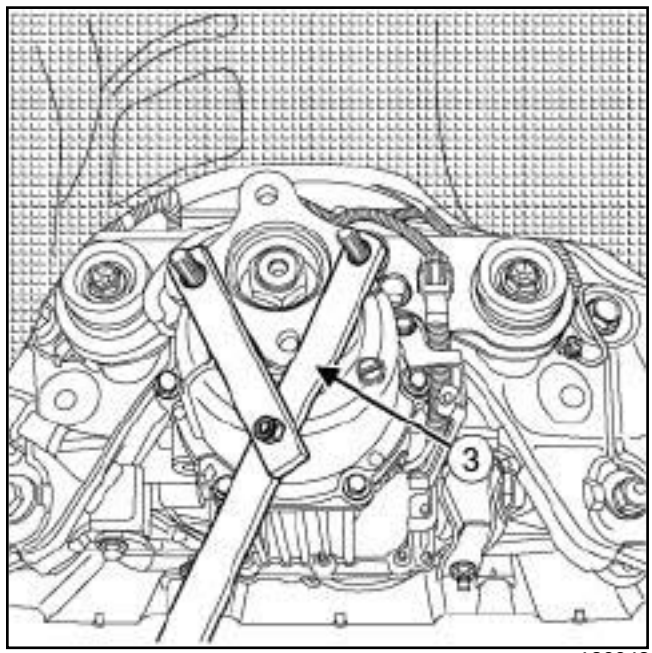
❏ Drain the rear final drive oil (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) (26A, Rear final drive).

❏ Disconnect the longitudinal driveshaft from the rear final drive (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❏ Use a strap to attach the longitudinal driveshaft to the parking brake cable.



130047



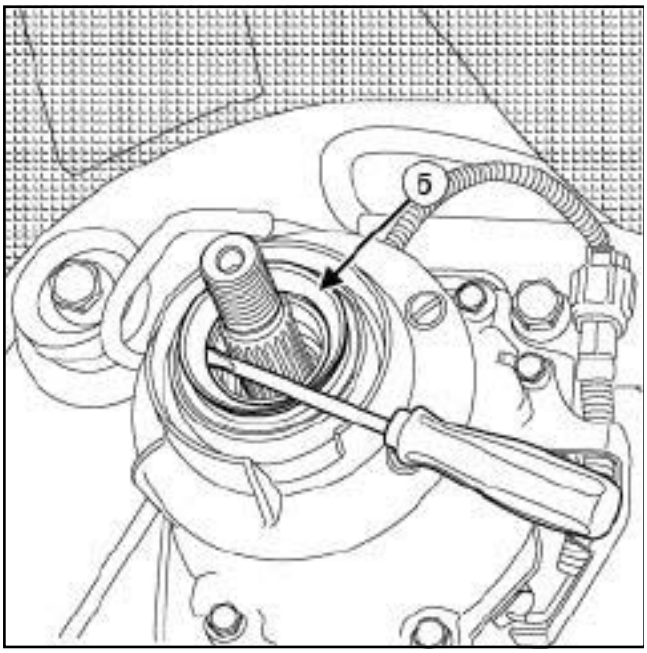
130048

❏ Mark the position (**1**) of the rear final drive flange in relation to the rear final drive primary shaft.

❏ Remove:

- the nut (**2**) from the rear final drive flange using the tool **(Rou. 604-01)** (**3**) ,
- the flange (**4**) from the rear final drive.

**II - OPERATION FOR REMOVAL OF PART CONCERNED**




130049

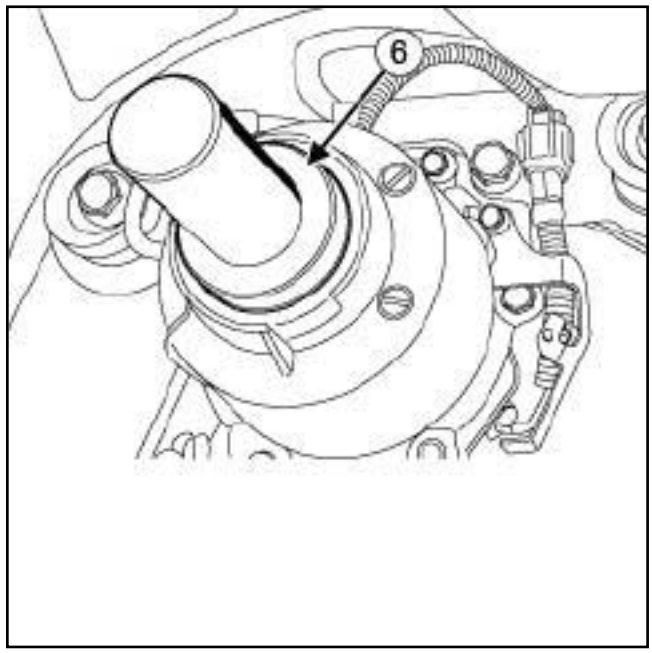
❑ Remove the longitudinal driveshaft input seal (**5**) using a screwdriver, without scratching the mating surface.

## REFITTING

**I - REFITTING PREPARATION OPERATION**

❑ Always replace the rear final drive flange nut.

**II - REFITTING OPERATION FOR PART CONCERNED**




130050

❑ Refit the longitudinal driveshaft input seal using the tool **(Bvi. 1855)** (**6**) .

**III - FINAL OPERATION.**

❑ Refit:

- the rear final drive flange at the position marked during removal,
- the new rear final drive flange nut.

❑ Torque tighten the **rear final drive flange nut (140 N.m)** using the tool **(Rou. 604-01)**.

❑ Refit the longitudinal driveshaft (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) .

❑ Fill the rear final drive with oil (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

| Essential special tooling | |
|---|---|
| **Bvi. 1855** | Tools for fitting H45 rear final drive and transfer box seals |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **26A**, **Rear axle**, **Rear axle assembly: Precautions for repair**, page **26A-1**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

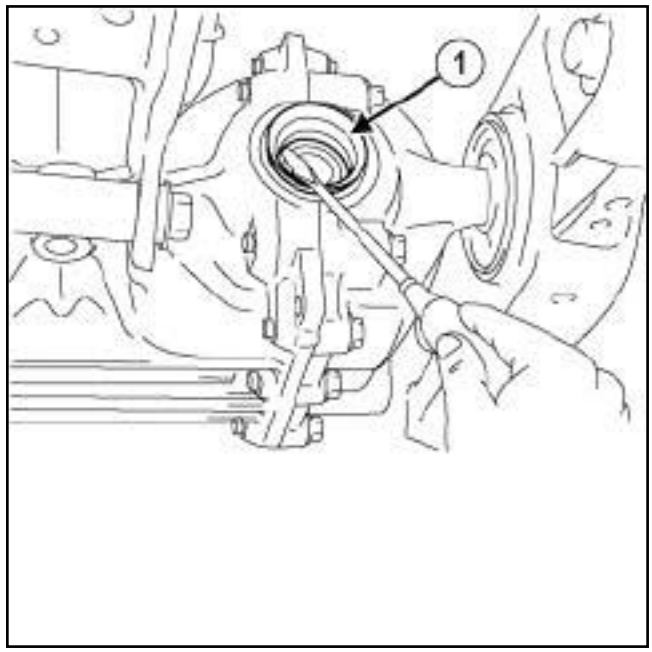
**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Drain the oil from the rear final drive (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

❏ Remove:

- the rear wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the rear wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Rear wheel driveshaft: Removal - Refitting**, page **29A-9**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED

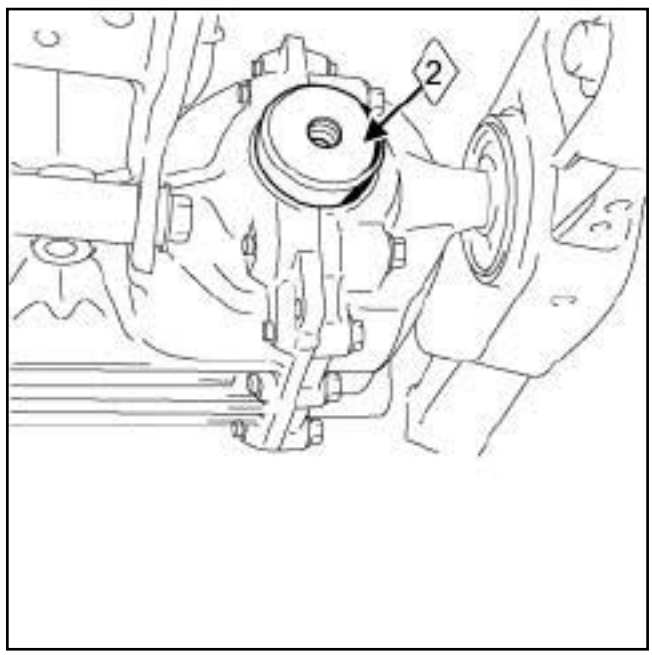



130051

❏ Remove the differential output seal (**1**) from the side concerned using a screwdriver, without scratching the mating surface.

## REFITTING

### I - REFITTING OPERATION FOR THE PART CONCERNED




130052

❏ Refit the differential output seal using the tool **(Bvi. 1855)** (**2**) .

**II - FINAL OPERATION.**

❑ Refit:

- the rear wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Rear wheel driveshaft: Removal - Refitting**, page **29A-9**) ,
- the rear wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill the rear final drive with oil (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

**I - FINAL DRIVE TYPE/OIL TYPE CORRELATIONS:**

| TYPE OF FINAL DRIVE | TYPE OF FINAL DRIVE OIL |
|---|---|
| AD4<br>AD8<br>AR4<br>OT2 | TRANSELF TRX<br>75W80<br>or<br>TRANSELF NFP 75W80 |
| OH1<br>SD1<br>OT1<br>R145<br>DANA final drive | TRANSELF<br>UNIVERSAL<br>FE 80W90 |

Note: DANA final drive:

FE 80W90 oil is equivalent to 75W90 oil (100% compatible)

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

| DESIGNA-TION | STANDARD | PART NUMBER |
|---|---|---|
| TRANSELF<br>TRX 75W80<br>or<br>TRANSELF<br>NFP 75W80 | APIGL4,<br>MIL-L-2105<br>C or D | **77 11 143 534**<br>(5 litres) |
| TRANSELF<br>UNIVERSAL<br>FE 80W90 | APIGL5,<br>MIL-L-2105<br>C or D | May be ordered from ELF |

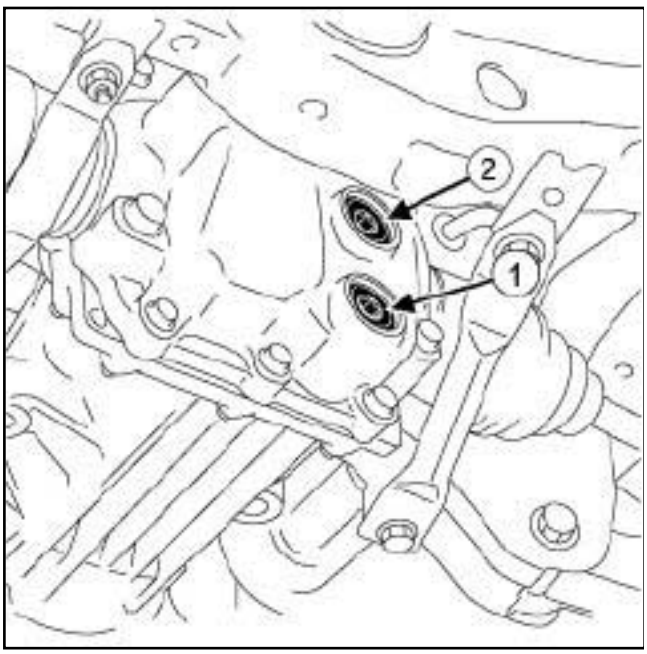
| Tightening torques ▽ | |
|---|---|
| drain plug | **35 N.m** |
| filler cap | **35 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **26A**, **Rear axle**, **Rear axle assembly: Precautions for repair**, page **26A-1**) .

**I - DRAINING**

❏ Position the vehicle on a two-post lift (see **Position of the attachment points**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.



130053

❏ Remove the drain plug (**1**) .

❏ Drain the oil.

❏ Remove the drain plug seal.

**II - FILLING**

❏ Always replace the seals of the drain plug and filler cap.

❏ Clean the drain plug.

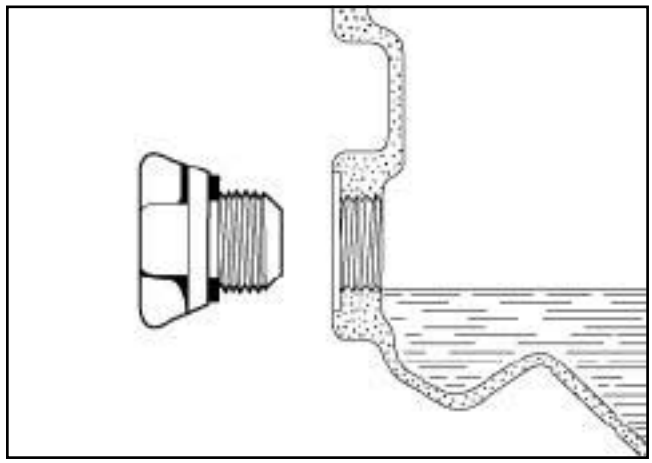
❏ Refit:

- the new drain plug seal,
- the drain plug.

❏ Torque tighten the **drain plug (35 N.m)**.

❏ Remove:

- the filler cap ***(2)*** ,
- the filler cap seal.


131204

❏ Fill the rear final drive with oil up to the level of the opening.

❏ Refit:

- the new filler cap seal,
- the filler cap.

❏ Torque tighten the **filler cap (35 N.m)**.

| Essential special tooling | |
|---|---|
| **Rou. 604-01** | Hub locking tool. |
| **Bvi. 1855** | Tools for fitting H45 rear final drive and transfer box seals |

| Tightening torques ▽ | |
|---|---|
| electric coupler cover centring bolts | **16 N.m** |
| electric coupler cover bolts | **16 N.m** |
| electric coupler connector bracket bolt | **6 N.m** |
| rear final drive flange nut | **140 N.m** |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

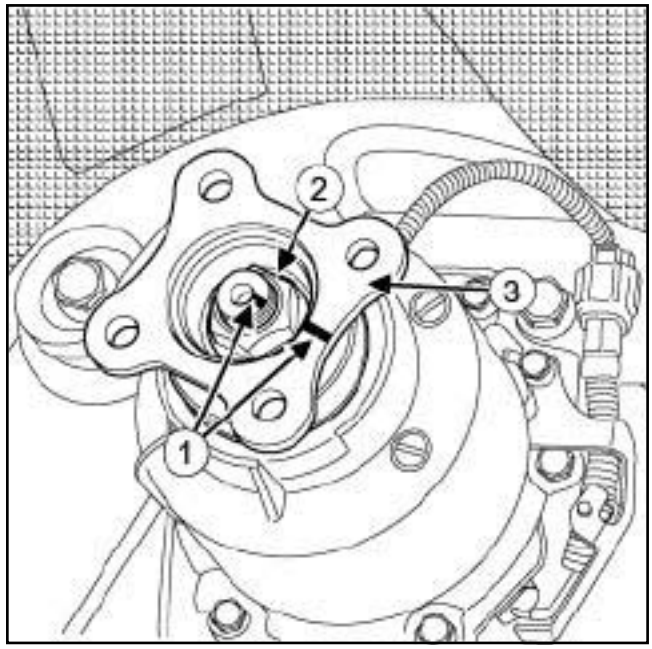
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

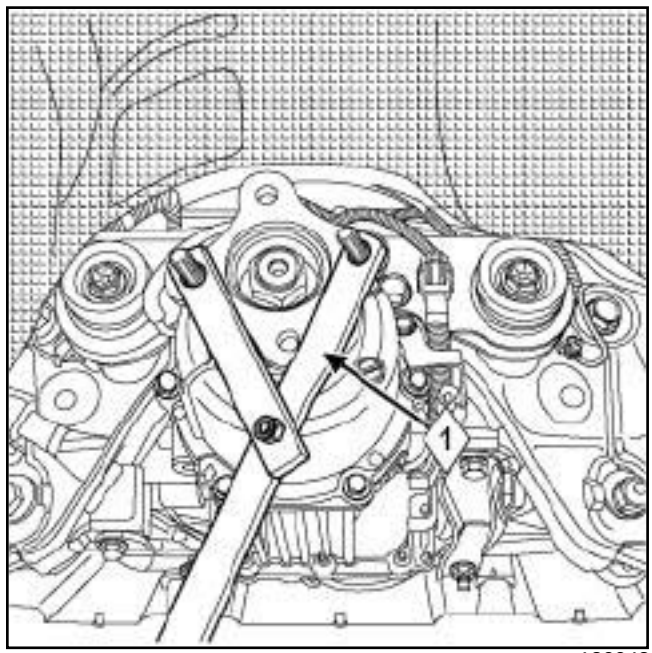
❏ Drain the oil from the rear final drive (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

❏ Disconnect the longitudinal driveshaft from the rear final drive (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) (29A, Driveshafts).

❏ Use a strap to attach the longitudinal driveshaft to the parking brake cable.



130047

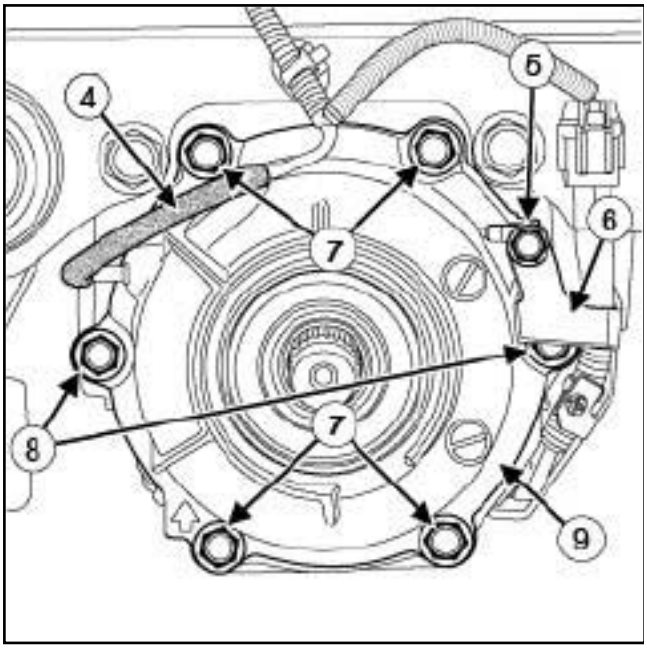


130048

❏ Mark the position (**1**) of the rear final drive flange in relation to the rear final drive primary shaft.

❏ Remove:

- the nut ***(2)*** from the rear final drive flange using the tool **(Rou. 604-01)** ***(1)*** ,
- the rear final drive flange ***(3)*** .




130056

❏ Disconnect the breather hose (**4**) from the electric coupler.

❏ Remove the bolt (**5**) from the electric coupler connector bracket.

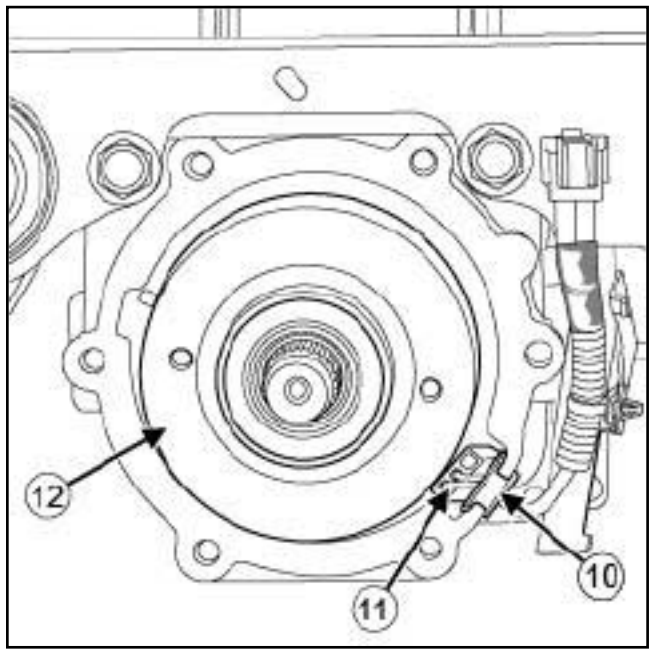
❏ Remove the electric coupler connector bracket (**6**) .

❏ Remove:

- the electric coupler cover bolts (**7**) ,
- the centring bolts (**8**) of the electric coupler cover,
- the cover (**9**) from the electric coupler.

❏ Clean the electric coupler cover and the body of the rear final drive.

**II - OPERATION FOR REMOVAL OF PART CONCERNED**



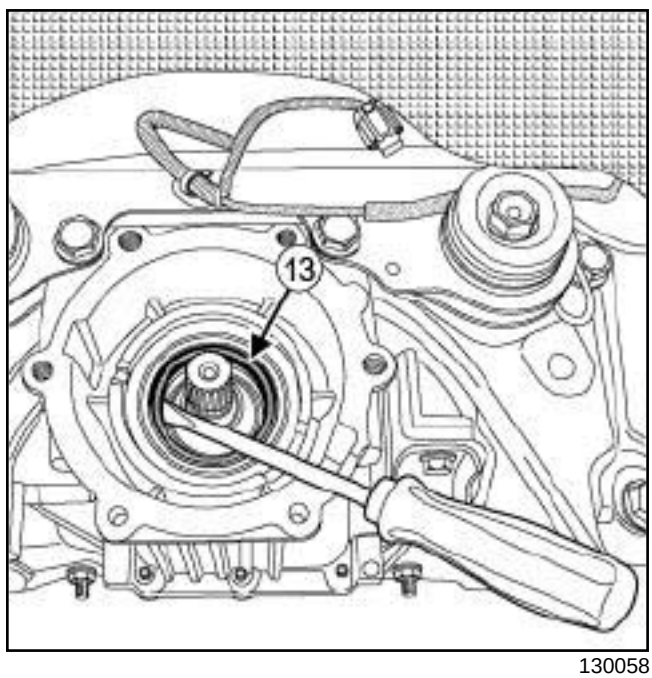

130057

❏ Unclip the clip (**10**) of the electric coupler wiring.

❏ Disconnect the connector (**11**) from the electric coupler.

❏ Remove the electric coupler (**12**) .

❏ Remove the longitudinal driveshaft input seal (see **26A**, **Rear axle**, **Longitudinal driveshaft input seal: Removal - Refitting**, page **26A-6**) .




130058

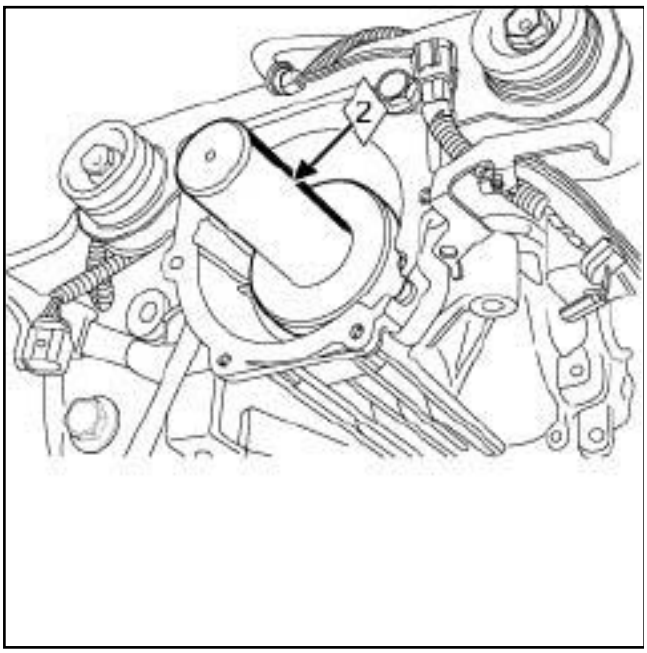
❏ Remove the differential cover seal (**13**) from the final drive using a screwdriver.

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the longitudinal driveshaft input seal,
- the final drive differential cover seal,
- the rear final drive flange nut.




130059

❏ Refit the new seal of the final drive differential cover using the tool **(Bvi. 1855)** (**2**) .

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the electric coupler.

❏ Clip:

- the electric coupler connector,
- the electric coupler wiring clip.

### III - FINAL OPERATION.

❏ Coat the mating face of the electric coupler cover with a liquid sealing product.

❏ Refit:

- the electric coupler cover,
- the electric coupler cover centring bolts,
- the electric coupler cover bolts.

❏ Torque tighten:

- the **electric coupler cover centring bolts (16 N.m)**,
- the **electric coupler cover bolts (16 N.m)**.

❏ Refit:

- the electric coupler connector bracket,
- the bolt for the electric coupler connector bracket.

❏ Torque tighten the **electric coupler connector bracket bolt (6 N.m)**.

❏ Clip on the electric coupler breather hose.

❏ Refit:

- the new longitudinal driveshaft input seal (see **26A**, **Rear axle**, **Longitudinal driveshaft input seal: Removal - Refitting**, page **26A-6**) ,
- the rear final drive flange at the position marked during removal,
- the new rear final drive flange nut.

❏ Torque tighten the **rear final drive flange nut (140 N.m)** using the tool **(Rou. 604-01)**.

❏ Refit the longitudinal driveshaft (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) (29A, Driveshafts).

❏ Fill the rear final drive with oil (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

| Tightening torques ▽ | |
|---|---|
| electric coupler computer bolts | **10N.m** |

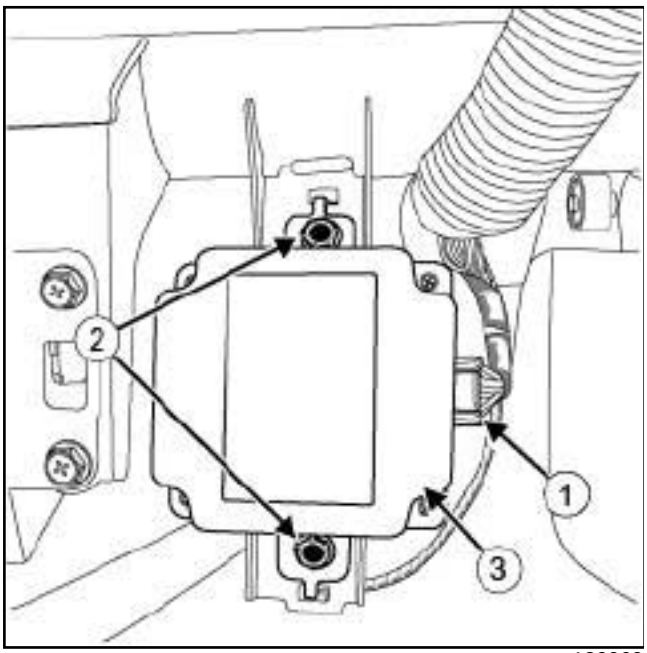
## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

❏ Remove the glovebox (see **Glovebox: Removal - Refitting**) (57A, Interior equipment).

### II - OPERATION FOR REMOVAL OF PART CONCERNED



130060

❏ Disconnect the connector (**1**) from the electric coupler computer.

❏ Remove:

- the bolts (**2**) from the electric coupler computer,
- the electric coupler computer (**3**) .

## REFITTING

### I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the electric coupler computer,
- the bolts of the electric coupler computer.

❏ Torque tighten the **electric coupler computer bolts (10N.m)**.

❏ Connect the connector to the electric coupler computer.

### II - FINAL OPERATION.

❏ Refit the glovebox (see **Glovebox: Removal - Refitting**) (57A, Interior equipment).

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

| Essential special tooling | |
|---|---|
| **Rou. 604-01** | Hub locking tool. |
| **Tav. 476** | Ball joint extractor. |
| **Tav. 1420-01** | Screw jack for tools Tav. 1420, Tav.1050-04 , Tar. 1454, Tar. 1850. |
| **Tav. 1050-04** | Universal driveshaft pusher tool (back-plate and claws, without jack). |
| **Tav. 1862** | Tool for removing clipped driveshafts |

| Tightening torques ▽ | |
|---|---|
| lower arm ball joint nut | **63 N.m** |
| hub nut | **125 N.m** |
| track rod ball joint nut | **34 N.m** |
| anti-roll tie-rod nut | **84 N.m** |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine undertray.

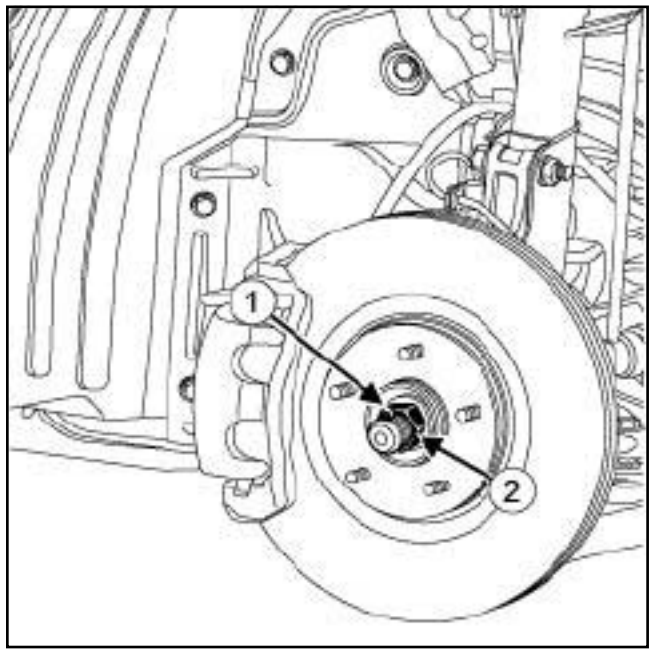
6 SPEED MANUAL GBOX

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

FK0 or FK8

❑ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

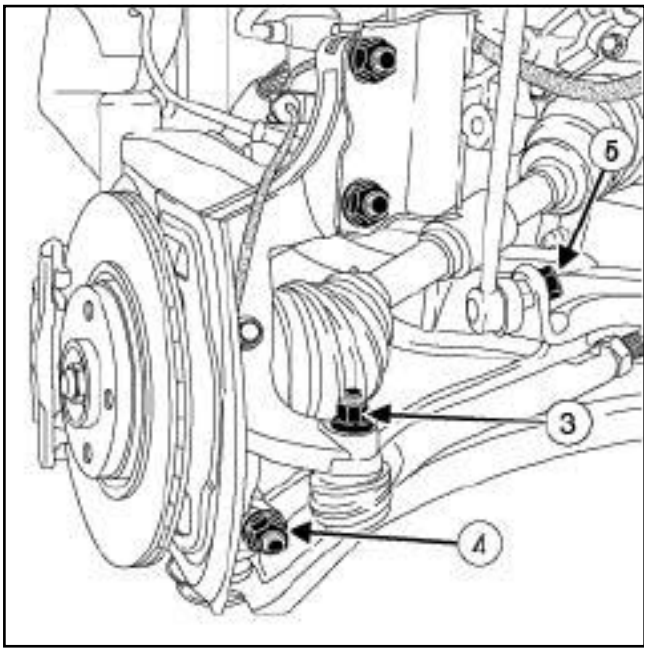
❑ Remove the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



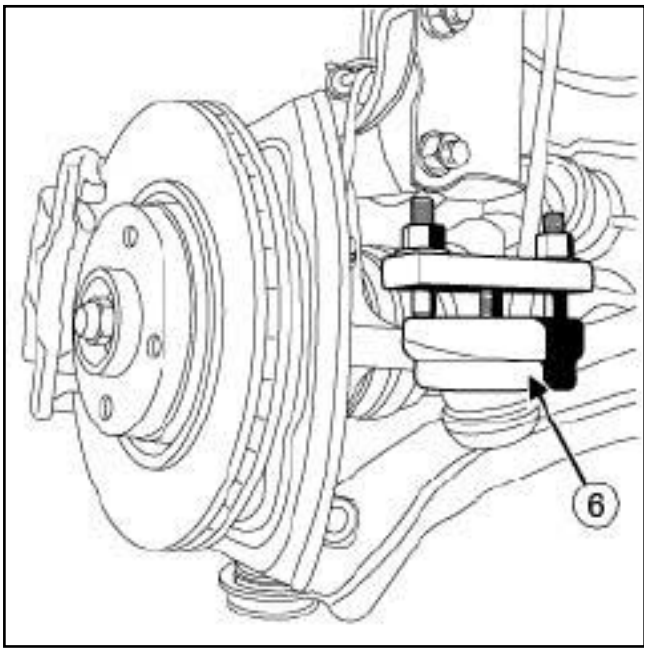
130061

❑ Remove:

- the cotter pin (**1**) ,
- the hub nut (**2**) using the **(Rou. 604-01)**.




130062

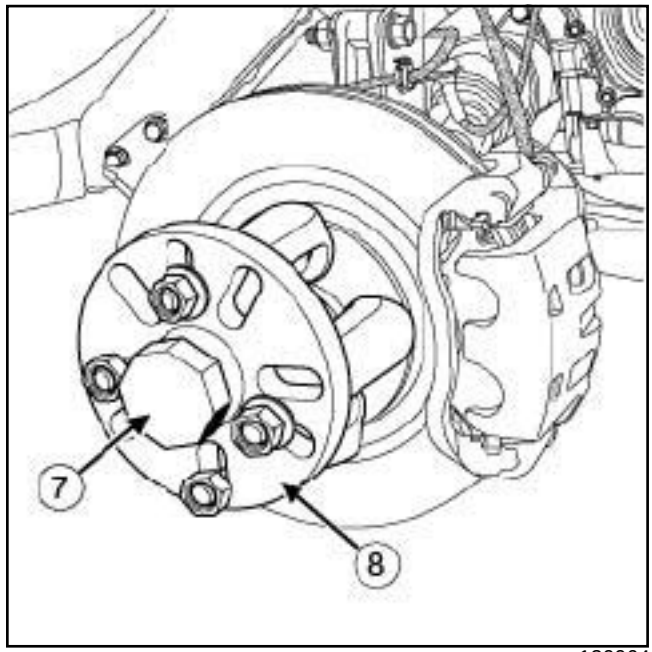



130063

❑ Remove:

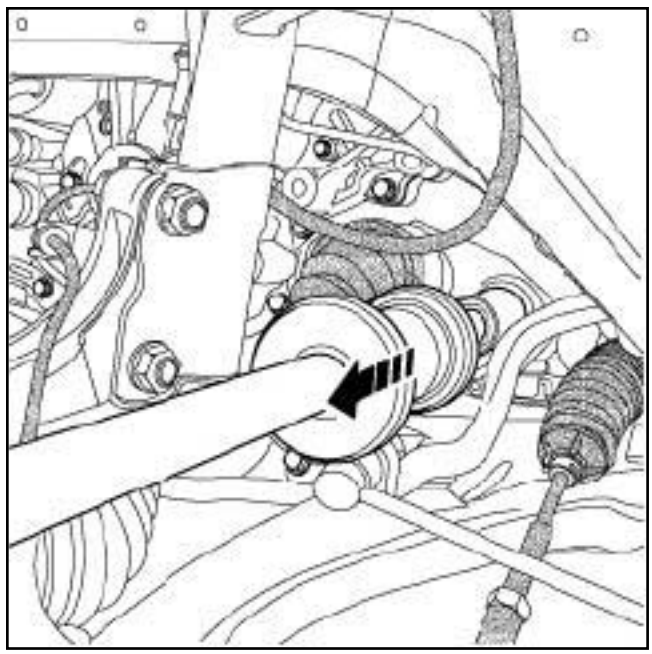
- the track rod nut (**3**) ,
- the ball joint from the left-hand track rod using the tool **(Tav. 476)** (**6**) .
- the lower arm ball joint nut (**4**) ,
- the anti-roll tie-rod nut (**5**) ,
- the lower arm ball joint.

**II - OPERATION FOR REMOVAL OF PART CONCERNED**



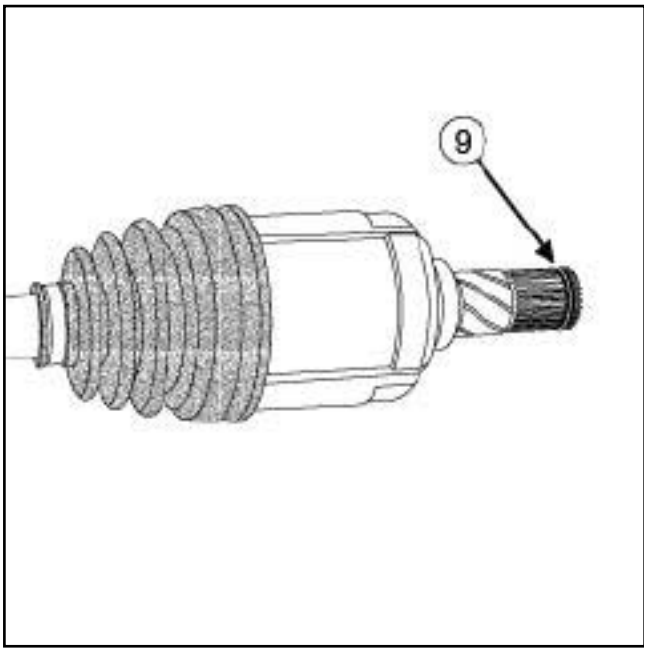

130064

❑ Separate the front left-hand driveshaft from the hub carrier using the tools **(Tav. 1420-01)** (**7**) and **(Tav. 1050-04)** (**8**) .



130065

❑ Remove the front left-hand driveshaft using the tool **(Tav. 1862)** and the inertia extractor.



130066

❑ Remove the locking ring (**9**) from the driveshaft.

6 SPEED MANUAL GBOX

❑ Remove the differential output seal on the left-hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Remove the differential output seal on the left-hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the differential output seal,
- the driveshaft locking ring.
- the cotter pin.

❑ Refit the new driveshaft locking ring.

6 SPEED MANUAL GBOX

❑ Refit the differential output seal on the left-hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Refit the differential output seal on the left-hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

### II - REFITTING OPERATION FOR PART CONCERNED

❑ Insert:

- the driveshaft splines into the differential grooves,
- the driveshaft splines in the hub carrier grooves.

### III - FINAL OPERATION

❑ Refit:

- the lower arm ball joint,
- the lower arm ball joint nut,
- the left-hand track rod ball joint nut,
- the anti-roll tie-rod nut,
- the hub nut,
- the new cotter pin.

❑ Torque tighten:

- the **lower arm ball joint nut (63 N.m)**,
- the **hub nut (125 N.m)**, using the tool **(Rou. 604-01)**,
- the **track rod ball joint nut (34 N.m)**,
- the **anti-roll tie-rod nut (84 N.m)**.

6 SPEED MANUAL GBOX

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

❏ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

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

FK0 or FK8

❏ Fill the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❏ Refit:

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

| Essential special tooling | |
|---|---|
| **Rou. 604-01** | Hub locking tool. |
| **Tav. 476** | Ball joint extractor. |
| **Tav. 1420-01** | Screw jack for tools Tav. 1420, Tav.1050-04 , Tar. 1454, Tar. 1850. |
| **Tav. 1050-04** | Universal driveshaft pusher tool (back-plate and claws, without jack). |

| Tightening torques ▽ | |
|---|---|
| driveshaft relay bearing plate bolts | **25 N.m** |
| driveshaft relay bearing support bolts | **48 N.m** |
| lower arm ball joint nut | **63 N.m** |
| hub nut | **125 N.m** |
| track rod ball joint nut | **34 N.m** |
| anti-roll tie-rod nut | **84 N.m** |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove the engine undertray.

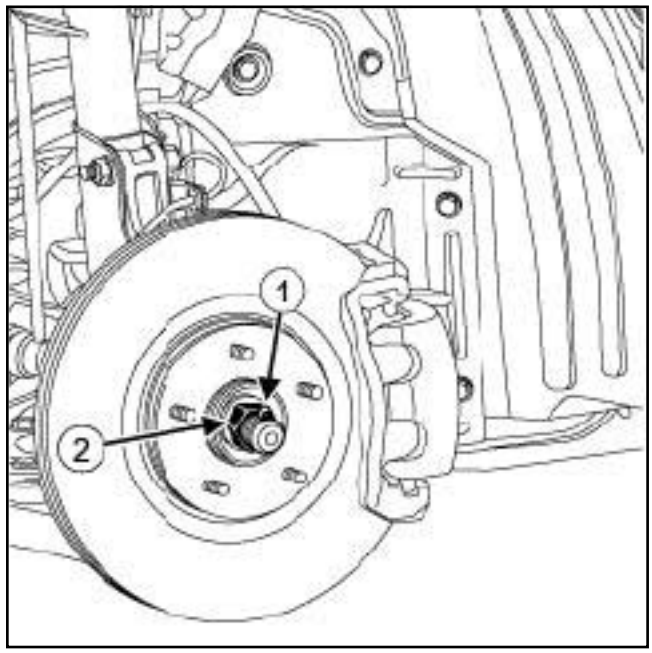
6 SPEED MANUAL GBOX

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

FK0 or FK8

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

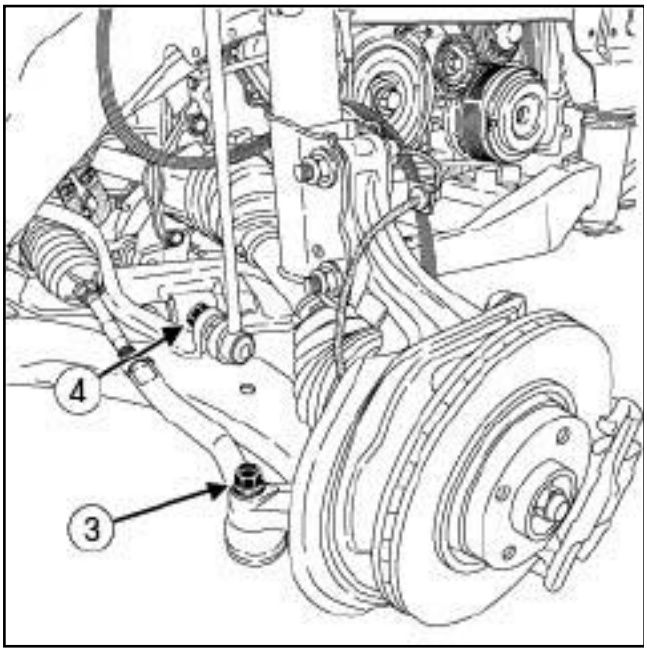
❏ Remove the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



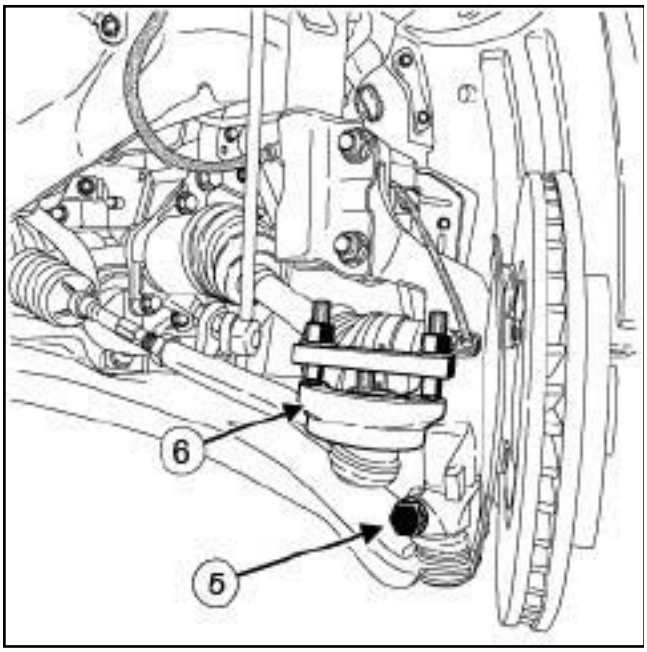
130067

❏ Remove:

- the cotter pin (**1**) ,
- the hub nut (**2**) using the **(Rou. 604-01)**.




130068

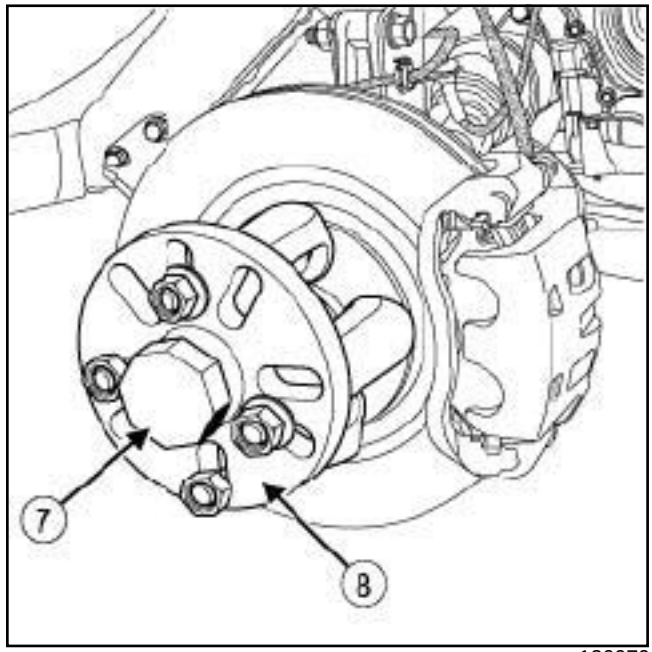



130069

❑ Remove:

- the lower arm ball joint bolt (**5**) ,
- the anti-roll bar tie-rod nut (**4**) ,
- the right-hand track rod ball joint nut (**3**) ,
- the ball joint from the right-hand track rod using the tool **(Tav. 476)** (**6**) .

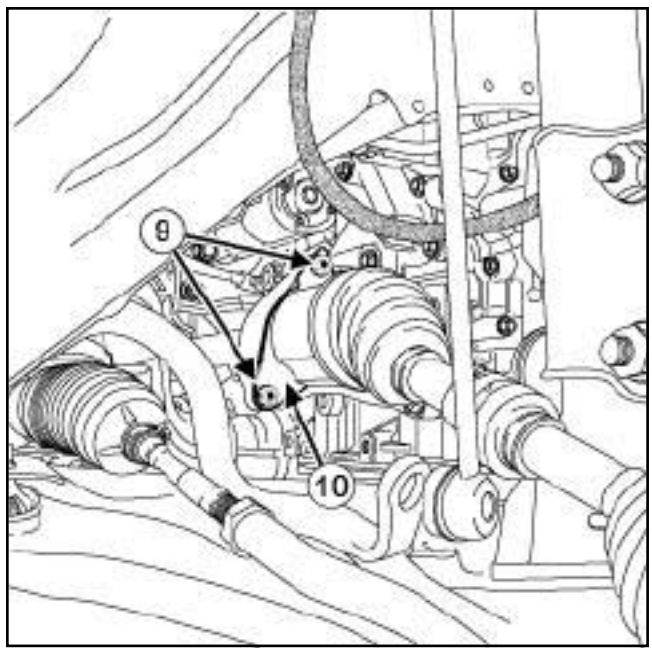
**II - OPERATION FOR REMOVAL OF PART CONCERNED**




130070

❑ Separate the front right-hand driveshaft from the hub carrier using the tools **(Tav. 1420-01)** (**7**) and **(Tav. 1050-04)** (**8**) .

2TR



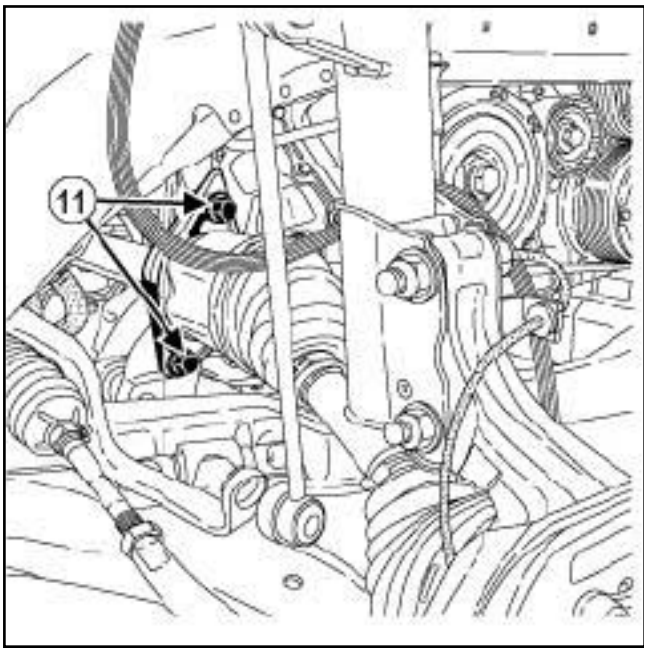

130071

❑ Remove:

- the front right-hand driveshaft relay bearing bracket bolts (**9**) ,
- the front right-hand driveshaft relay bearing bracket (**10**) ,

- the front right-hand driveshaft.

M9R




130072

❑ Remove:

- the bolts (**11**) from the front right-hand driveshaft relay bearing support,
- the front right-hand driveshaft.

6 SPEED MANUAL GBOX

❑ Remove the differential output seal on the right hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Remove the differential output seal on the right hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the differential output seal,
- the front right-hand driveshaft relay bearing bracket bolts,
- the front right-hand driveshaft relay bearing support bolts,
- the cotter pin.

6 SPEED MANUAL GBOX

❑ Refit the differential output seal on the right hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Refit the differential output seal on the right hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

### II - REFITTING OPERATION FOR PART CONCERNED

❑ Insert:

- the driveshaft splines into the differential grooves,
- the driveshaft splines in the hub carrier grooves.

2TR

❑ Refit:

- the driveshaft relay bearing bracket,
- the driveshaft relay bearing bracket new bolts.

❑ Torque tighten the **driveshaft relay bearing plate bolts (25 N.m)**.

M9R

❑ Refit the new driveshaft relay bearing support bolts.

❑ Torque tighten the **driveshaft relay bearing support bolts (48 N.m)**.

**III - FINAL OPERATION**

❑ Refit:

- the lower arm ball joint,
- the lower arm ball joint bolt,
- the right-hand track rod ball joint nut,
- the anti-roll tie-rod nut,
- the hub nut,
- the new cotter pin.

❑ Torque tighten:

- the **lower arm ball joint nut (63 N.m)**,
- the **hub nut (125 N.m)**, using the tool **(Rou. 604-01)**,
- the **track rod ball joint nut (34 N.m)**,
- the **anti-roll tie-rod nut (84 N.m)**.

❑ Refit the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

6 SPEED MANUAL GBOX

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❑ Refit:

- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

FK0 or FK8

❑ Fill the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❑ Refit the engine undertray.

| Essential special tooling | |
|---|---|
| **Rou. 604-01** | Hub locking tool. |
| **Tar. 1879** | Fork for extracting rear final drive shafts |

| Tightening torques ▽ | |
|---|---|
| rear axle subframe engine tie-bar bolt on the right-hand side | **50 N.m** |
| rear axle subframe engine tie-bar nut on the right-hand side | **50 N.m** |
| rear axle subframe engine tie-bar bolt on the left-hand side | **50 N.m** |
| rear axle subframe engine tie-bar nut on the left-hand side | **50 N.m** |
| hub nut | **125 N.m** |

## REMOVAL

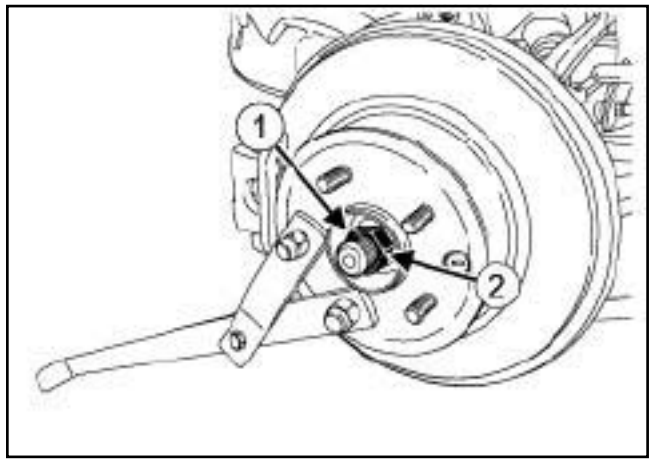
### I - REMOVAL PREPARATION OPERATION

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

> **IMPORTANT**
> To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Drain the oil from the rear final drive (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**) .

❏ Remove the rear wheels on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



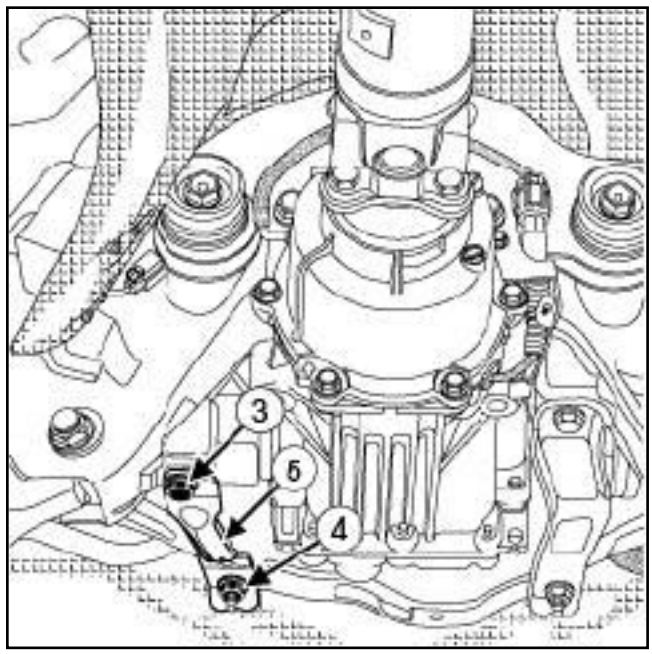
130073

❏ Remove:

- the cotter pin (**1**) ,
- the nut (**2**) from the hub carrier using the tool **(Rou. 604-01)**.

### II - OPERATION FOR REMOVAL OF PART CONCERNED

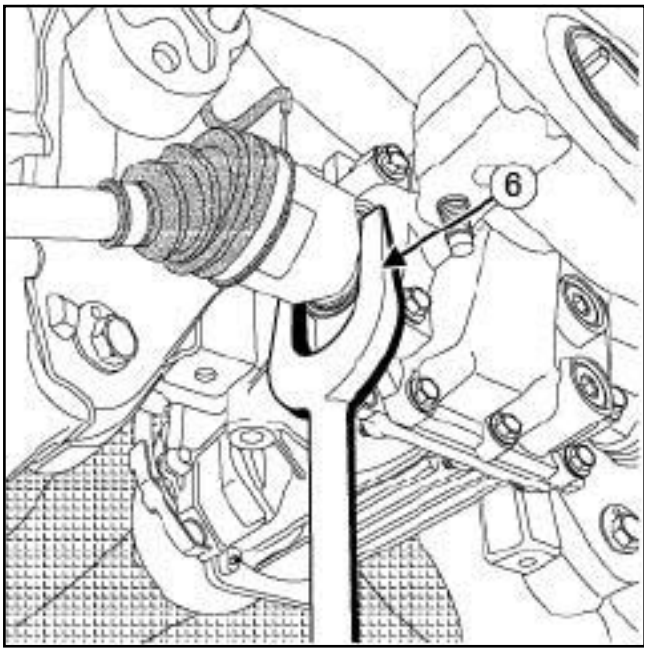
#### 1 - Rear right-hand driveshaft



130074

❏ Remove:

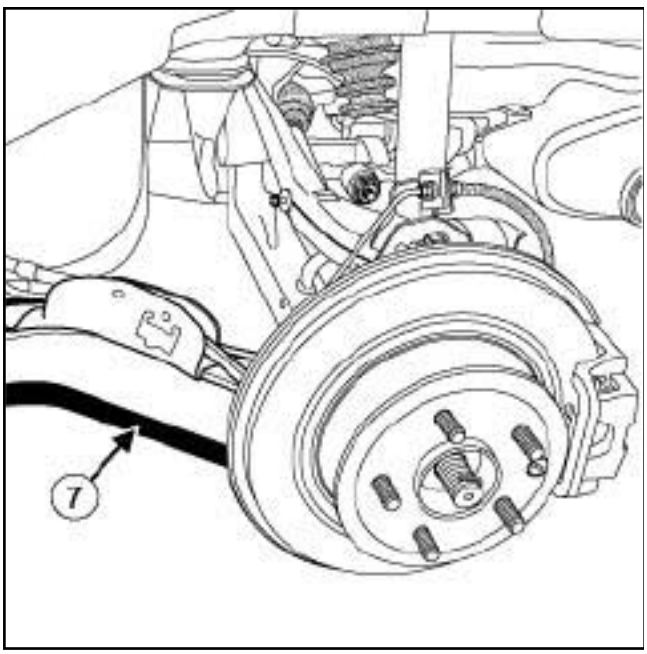
- the engine tie-bar bolt (**3**) from the rear axle subframe on the right-hand side,
- the engine tie-bar nut (**4**) from the rear axle subframe on the right-hand side,
- the engine tie-bar (**5**) from the rear axle subframe on the right-hand side.



130075

❏ Disconnect the rear right-hand driveshaft using the tool **(Tar. 1879)** (**6**) .

❏ Remove the rear right-hand suspension spring (see **Rear suspension spring: Removal - Refitting**) (33A, Rear axle components).

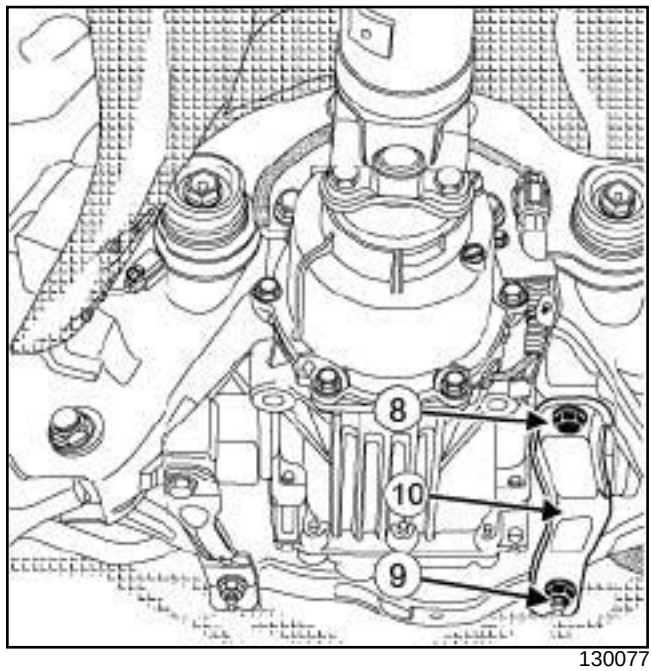


130076

❏ Move aside the rear stub axle carrier (**7**) .

❏ Remove the rear right-hand driveshaft.

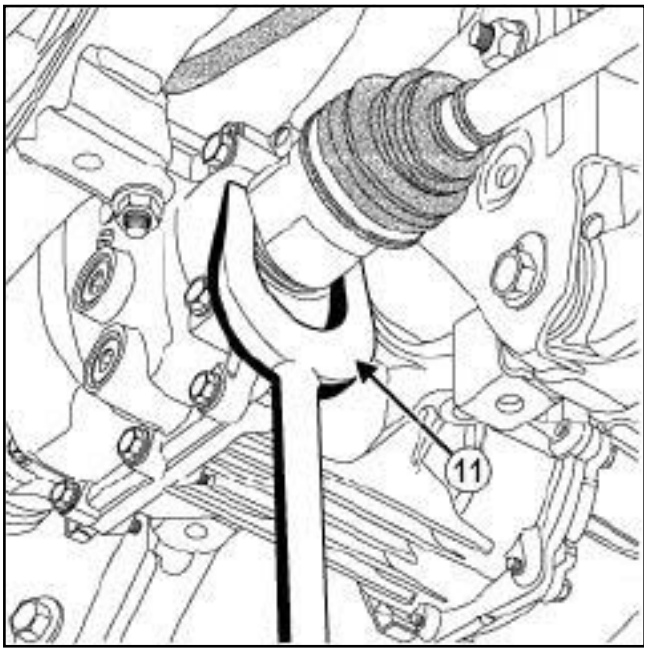
**2 - Rear left-hand driveshaft**



130077

❏ Remove:

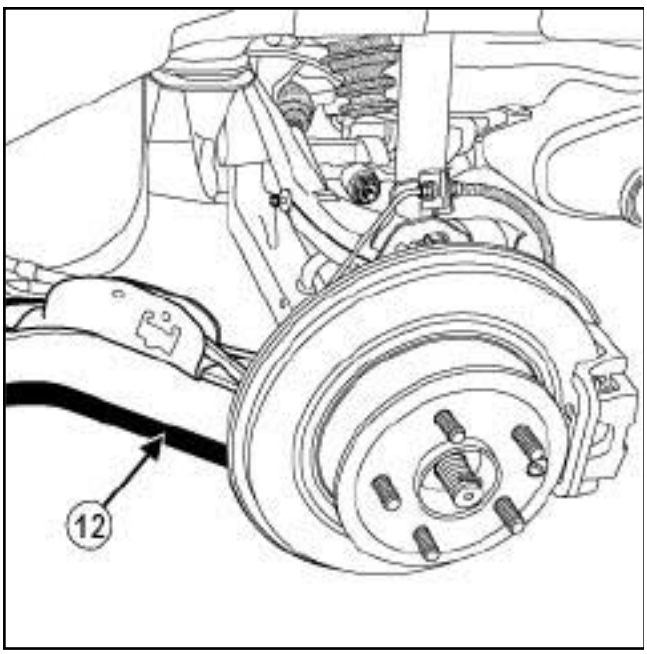
- the silencer (see **Silencer: Removal - Refitting**) (19B, Exhaust).
- the engine tie-bar bolt (**8**) from the rear axle subframe on the left-hand side,
- the engine tie-bar nut (**9**) from the rear axle subframe on the left-hand side,
- the engine tie-bar (**10**) from the rear axle subframe on the left-hand side.




130078

❏ Disconnect the rear left-hand driveshaft using the tool **(Tar. 1879)** (**11**) .

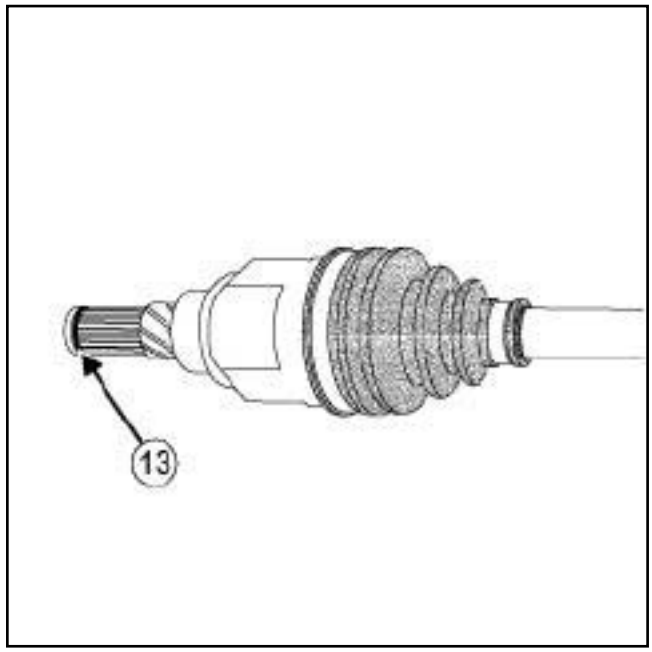
❏ Remove the rear left-hand suspension spring (see **Rear suspension spring: Removal - Refitting**) (33A, Rear axle components).




130076

❏ Move aside the rear stub axle carrier (**12**) .

❏ Remove the rear left-hand driveshaft.




130079

❏ Remove the rear left-hand driveshaft locking ring (**13**) .

6 SPEED MANUAL GBOX

❏ Remove the differential output seal on the right-hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ Remove the differential output seal on the right-hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the rear left-hand driveshaft locking ring,
- the differential output seal,
- the cotter pin.

❏ Refit the new rear driveshaft locking ring.

6 SPEED MANUAL GBOX

❑ Refit the differential output seal on the right-hand side (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Refit the differential output seal on the right-hand side (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

**II - REFITTING OPERATION FOR PART CONCERNED**

**1 - Rear right-hand driveshaft**

❑ Refit:

- the rear right-hand driveshaft,
- the engine tie-bar on the rear axle subframe on the right-hand side,
- the engine tie-bar bolt on the rear axle subframe on the right-hand side,
- the engine tie-bar nut on the rear axle subframe on the right-hand side

❑ Torque tighten:

- the **rear axle subframe engine tie-bar bolt on the right-hand side (50 N.m)**,
- the **rear axle subframe engine tie-bar nut on the right-hand side (50 N.m)**.

❑ Refit the rear right-hand suspension spring (see **Rear suspension spring: Removal - Refitting**) (33A, Rear axle components).

**2 - Rear left-hand driveshaft**

❑ Refit:

- the rear left-hand driveshaft,
- the engine tie-bar on the rear axle subframe on the left-hand side,
- the engine tie-bar bolt on the rear axle subframe on the left-hand side,
- the engine tie-bar nut on the rear axle subframe on the left-hand side.

❑ Torque tighten:

- the **rear axle subframe engine tie-bar bolt on the left-hand side (50 N.m)**,
- the **rear axle subframe engine tie-bar nut on the left-hand side (50 N.m)**.

❑ Refit:

- the rear left-hand suspension spring (see **Rear suspension spring: Removal - Refitting**) (33A, Rear axle components).
- the silencer (see **Silencer: Removal - Refitting**) (19B, Exhaust).

**III - FINAL OPERATION.**

❑ Refit the hub nut on the side concerned.

❑ Torque tighten the **hub nut (125 N.m)** using the tool **(Rou. 604-01)** on the side concerned.

❑ Refit:

- the new cotter pin,
- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill the rear final drive (see **26A**, **Rear axle**, **Rear axle oil: Draining - Refilling**, page **26A-11**)

XENON BULBS

❑ Adjust:

- the headlights (see **Front headlight: Adjusting**) (80B, Headlights).
- the headlight beam adjustment rear sensor (see **Fault Finding - Programming**) (80C, Discharge bulbs).

❑ Adjust:

- the wheel geometry (see **Rear axle: Adjusting**) (30A, General information).
- the neutral position of the steering wheel sensor (see **Fault finding - Programming**) (80B, Headlights).

| Tightening torques ▽ | |
|---|---|
| relay bearing nuts | **45 N.m** |
| rear final drive | **- longitudinal driveshaft connection bolts50N.m** |
| bolts between the transfer box and the longitudinal driveshaft | **49N.m** |
| bolts between the transfer box and the longitudinal driveshaft | **49 N.m** |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Release the parking brake.

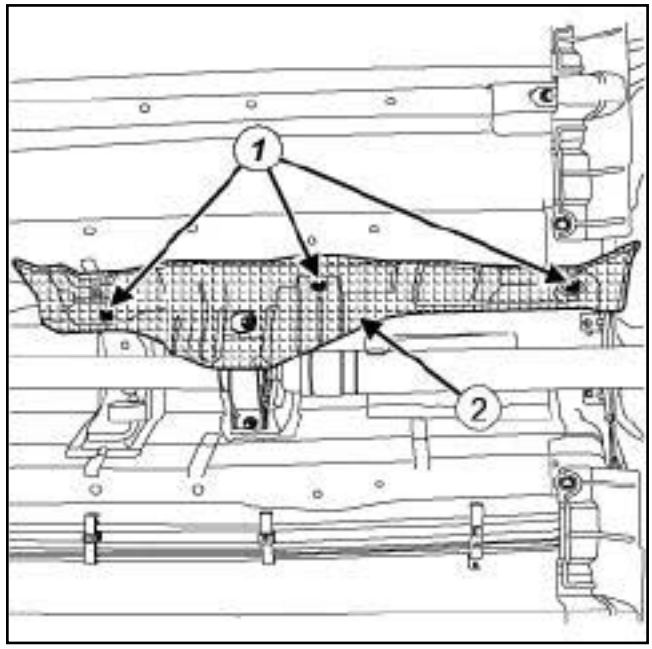
M9R

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

2TR

❏ Remove the catalytic converter (see **Catalytic converter: Removal - Refitting**) (19B, Exhaust).

❏ Remove the silencer (see **Silencer: Removal - Refitting**) (19B, Exhaust).

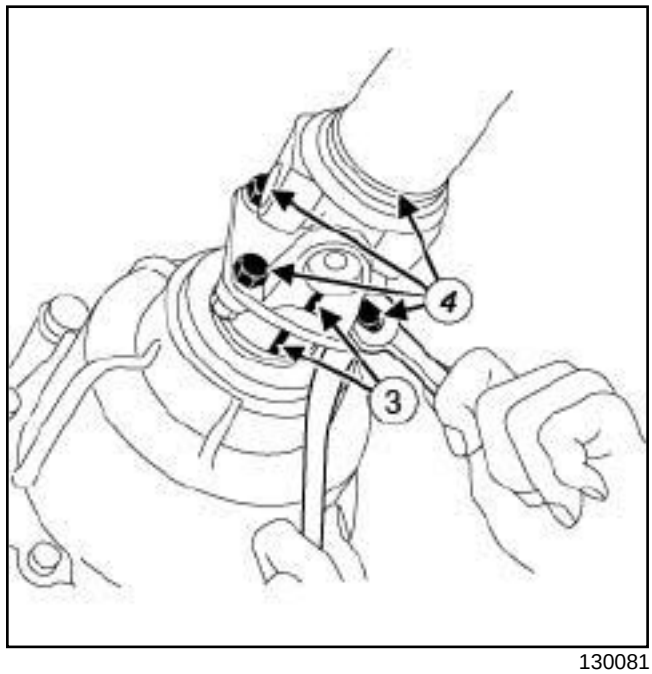


130080

❏ Remove:

- the nuts (**1**) from the heat shield,
- the heat shield (**2**) .

### II - OPERATION FOR REMOVAL OF PART CONCERNED



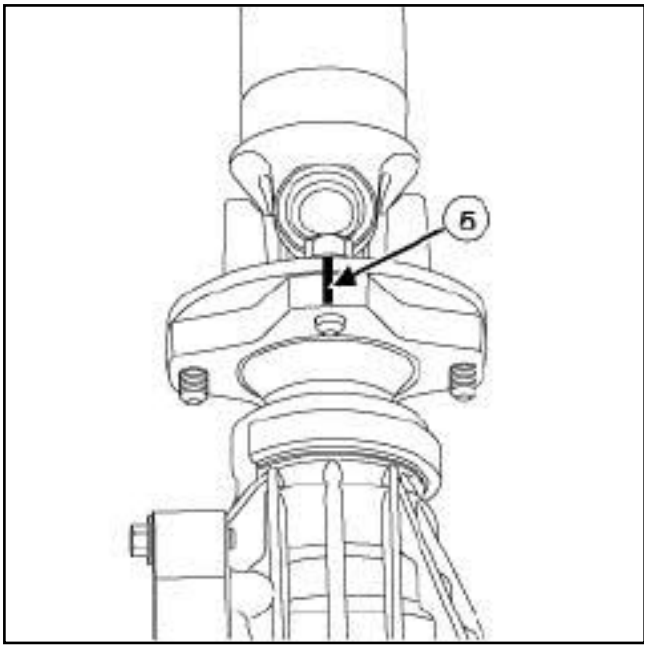
130081

❏ Mark the position (**3**) of the rear final drive and longitudinal driveshaft in relation to the flange.

❏ Remove the bolts and the nuts (**4**) from the rear final drive - longitudinal driveshaft connection.

❏ Uncouple the rear final drive longitudinal driveshaft.

4X4 TRANSMISSION




130082

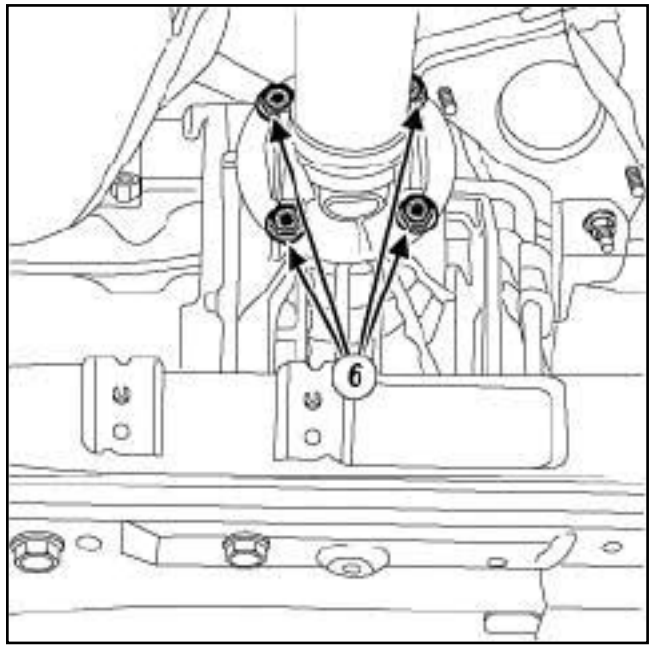
❏ Mark the position (**5**) of the transfer box and longitudinal driveshaft in relation to the flange.

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ On the automatic gearbox, put the gear lever in position **P**.

6 SPEED MANUAL GBOX

❏ On the manual gearbox, put the gear lever in **1st**.




130083

❏ Remove the bolts (**6**) between the transfer box and the longitudinal driveshaft.

6 SPEED MANUAL GBOX

❏ On the manual gearbox, put the gear lever in **neutral**.

❏ Rotate the longitudinal driveshaft **$180^0$** clockwise.

❏ On the manual gearbox, put the gear lever in **1st**.

FK0 or FK8, and 6 SPEED AUTO GBOX

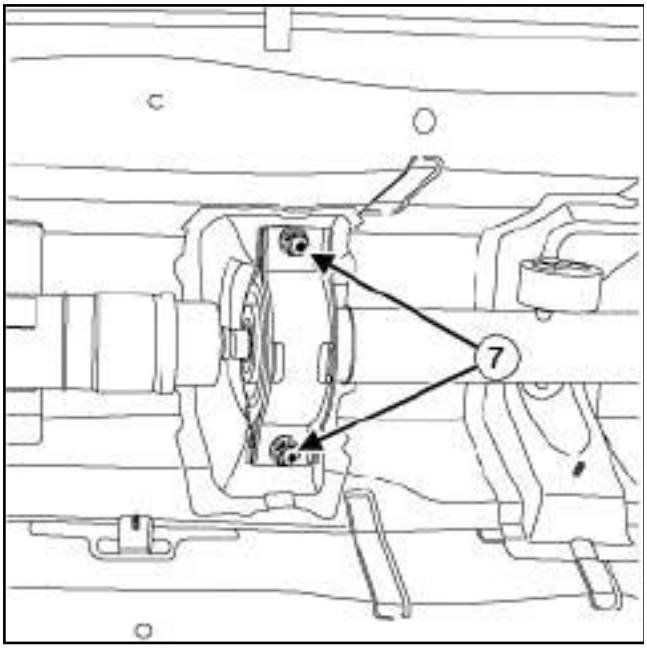
❏ On the automatic gearbox, put the gear lever in **neutral**.

❏ Rotate the longitudinal driveshaft **$180^0$** clockwise.

❏ On the automatic gearbox, put the gear lever in position **P**.

❏ Remove the bolts between the transfer box and the longitudinal driveshaft.

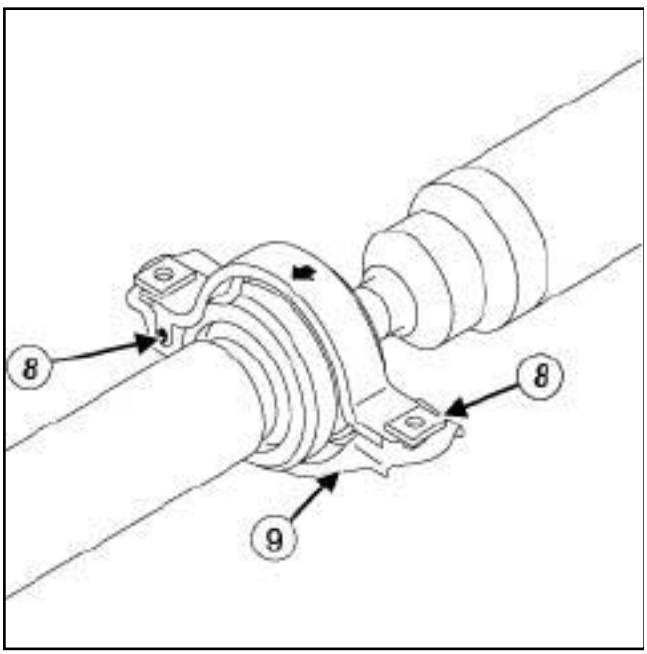
❏ Disconnect the longitudinal driveshaft from the transfer box.




130084

❏ Remove:

- the nuts (**7**) from the longitudinal driveshaft relay bearing,
- the longitudinal driveshaft using an operator.




130085

❏ Refit:

- the clips (**8**) from the longitudinal driveshaft relay bearing,
- the longitudinal driveshaft relay bearing (**9**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

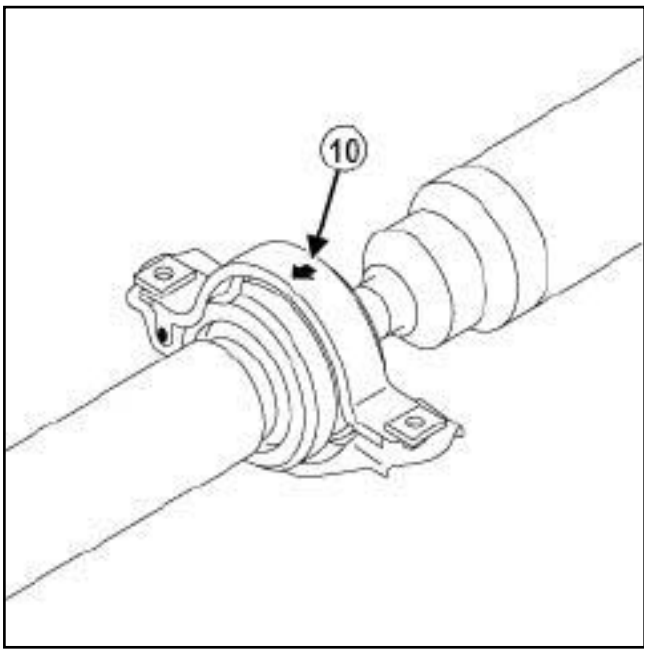
❏ Always replace:

- the longitudinal driveshaft relay bearing clips,
- the longitudinal driveshaft relay bearing nuts,
- the bolts between the transfer box and the longitudinal driveshaft.
- the rear final drive - longitudinal driveshaft connection bolts and nuts.

❏ Refit:

- the longitudinal driveshaft relay bearing,
- the longitudinal driveshaft relay bearing clips.

**II - REMOVAL OPERATION FOR PART CONCERNED**




130085

❏ Refit:

- the longitudinal driveshaft using an operator,with the arrow facing upwards (**10**) .
- the new longitudinal driveshaft relay bearing nuts,

❏ Torque tighten the **relay bearing nuts (45 N.m)** of the longitudinal driveshaft.

❏ Refit:

- the bolts between the transfer box and the longitudinal driveshaft.
- the bolts and nuts of the rear final drive - longitudinal driveshaft connection

❏ Torque tighten

- the **rear final drive (- longitudinal driveshaft connection bolts50N.m)**,
- the **bolts between the transfer box and the longitudinal driveshaft (49N.m)**.

6 SPEED MANUAL GBOX

❏ On the manual gearbox, put the gear lever in **neutral**.

❏ Rotate the longitudinal driveshaft **$180^0$** clockwise.

❏ On the manual gearbox, put the gear lever in **1st**.

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ On the automatic gearbox, put the gear lever in **neutral**.

❏ Rotate the longitudinal driveshaft **$180^0$** clockwise.

❏ On the automatic gearbox, put the gear lever in position **P**.

❏ Torque tighten the **bolts between the transfer box and the longitudinal driveshaft (49 N.m)**.

**III - FINAL OPERATION.**

❏ Refit:

- the heat shield,
- the heat shield nuts,
- the silencer (see **Silencer: Removal - Refitting**) (19B, Exhaust),

M9R

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

2TR

❏ Refit the catalytic converter (see **Catalytic converter: Removal - Refitting**) (19B, Exhaust).

# Relay shaft bearing: Removal - Refitting

M9R

| Essential special tooling | |
|---|---|
| **Tav. 1168** | Thermoplastic driveshaft gaiter clip fitting tool. |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

6 SPEED AUTO GBOX

❑ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

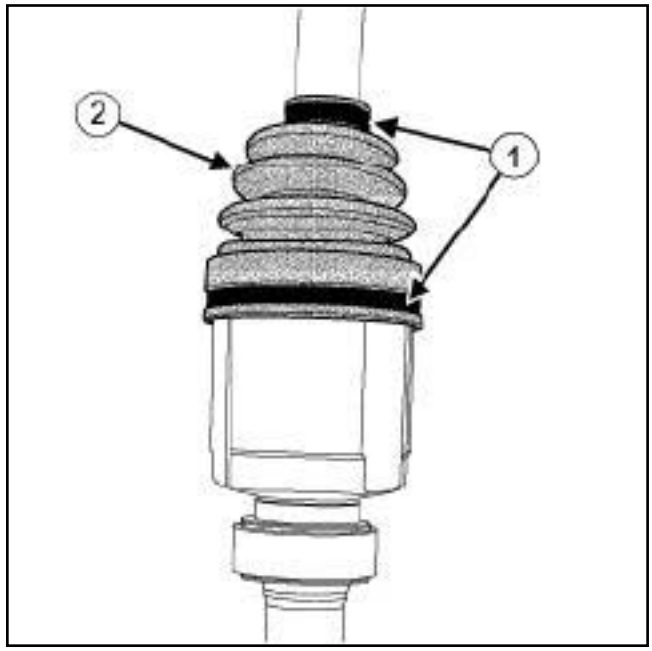
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .

6 SPEED MANUAL GBOX

❑ Remove the right-hand side differential outlet seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

6 SPEED AUTO GBOX

❑ Remove the right-hand side differential outlet seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

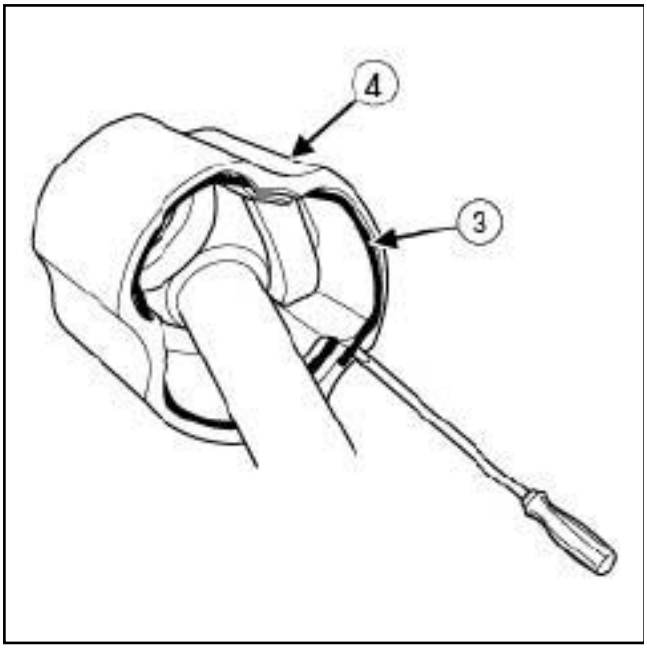



130589

❑ Cut the clips (**1**) .

❑ Move aside the front right-hand driveshaft gaiter (**2**) .

M9R

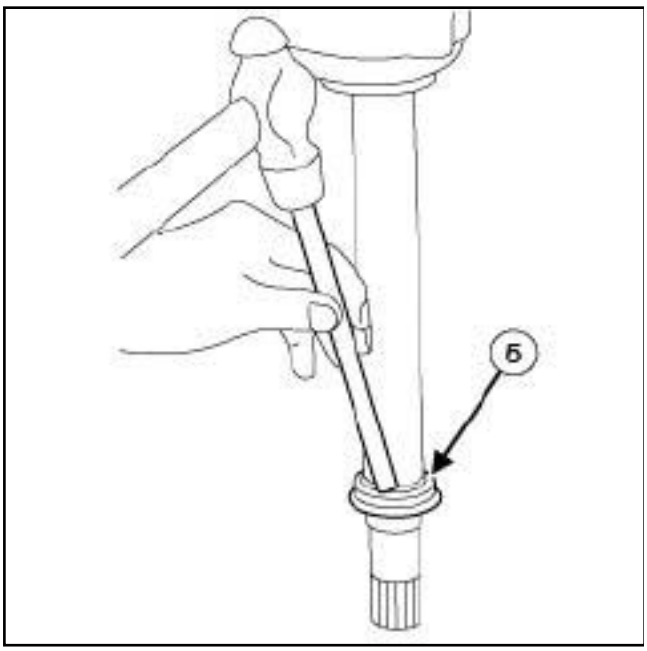



130590

❑ Remove:

- the locking spring ring (**3**) using a screwdriver,
- the yoke sleeve (**4**) .

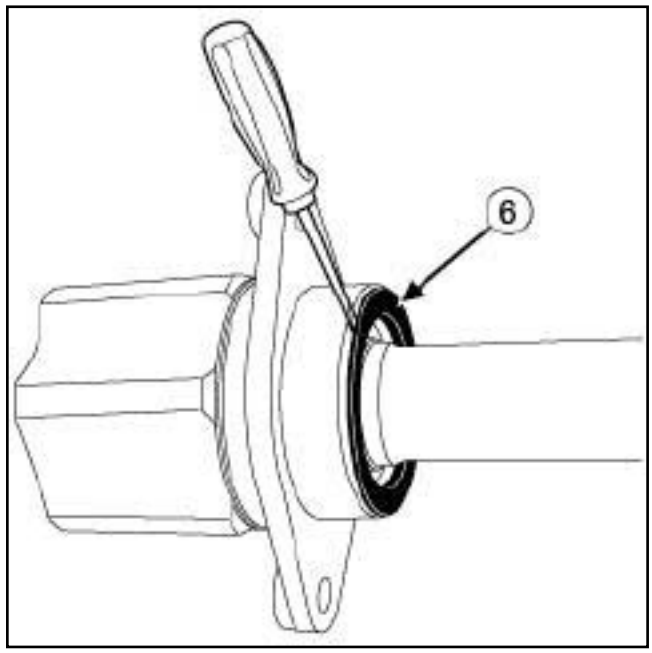
❑ Remove as much grease as possible.




130591

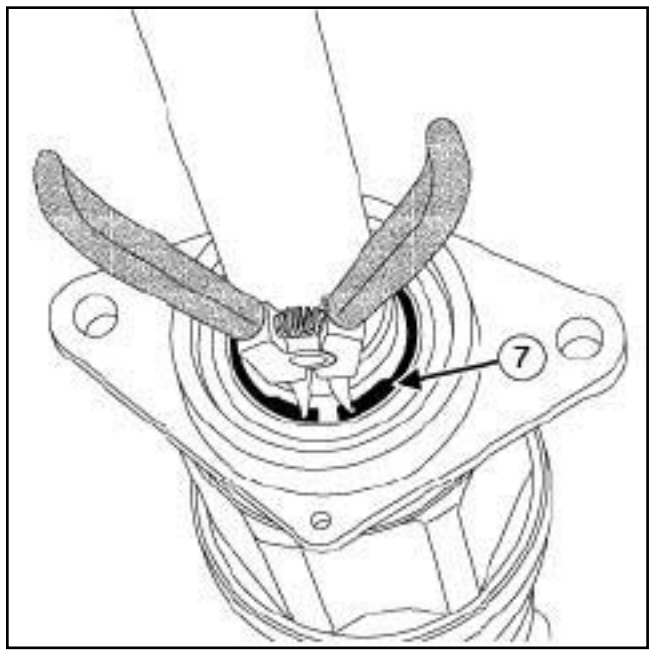
❑ Remove the deflector (**5**) using a screwdriver and a hammer.

**II - OPERATION FOR REMOVAL OF PART CONCERNED**




130596

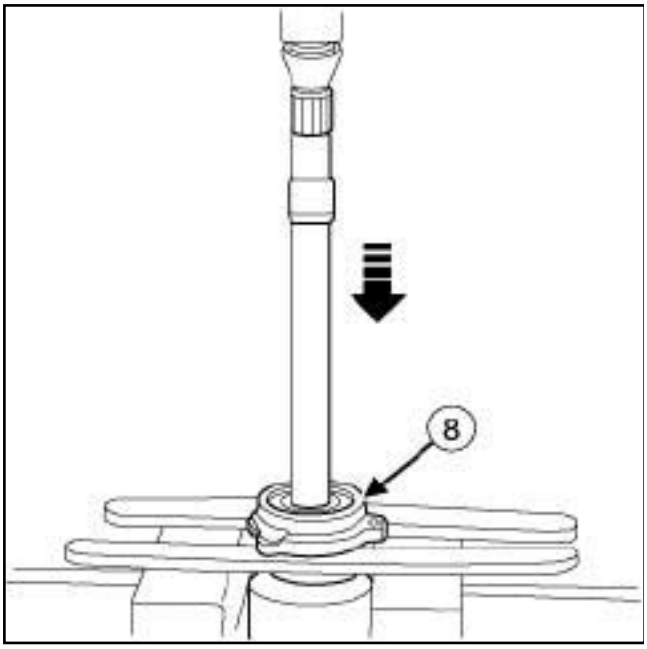
❑ Remove the deflector (**6**) using a screwdriver.




130599

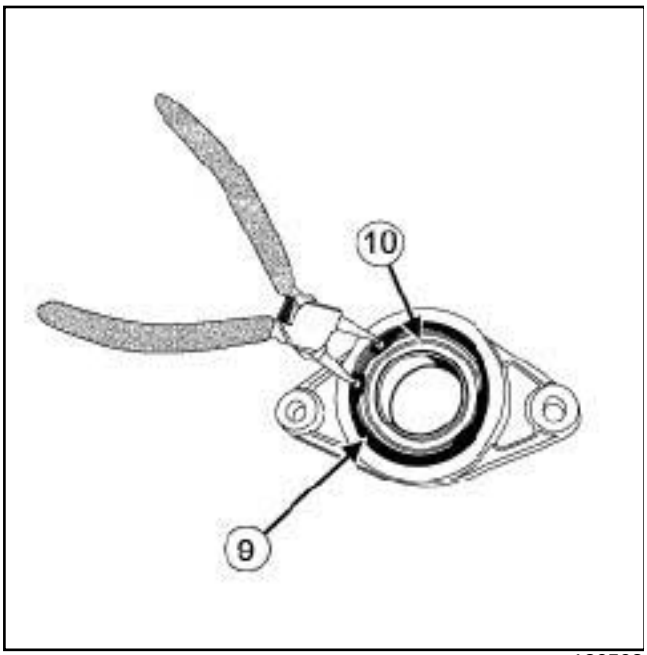
❑ Remove the circlip (**7**) using circlip pliers.

M9R




130597

❏ Remove the relay shaft bearing bracket (**8**) and the deflector using a press.




130598

❏ Remove:

- the circlip (**9**) using circlip pliers,
- the relay shaft bearing (**10**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the driveshaft gaiter,
- the differential output seal,
- clips,
- the locking spring ring,
- the circlip,
- the deflectors.

❏ Lubricate the relay shaft mating face into which the bearing is inserted.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the relay shaft bearing on the relay shaft bearing bracket,
- the new circlip on the relay shaft bearing bracket,
- the new deflector,
- the relay shaft bearing bracket using a press,
- the circlip,

### III - FINAL OPERATION.

6 SPEED MANUAL GBOX

❏ Refit the new right-hand side differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

6 SPEED AUTO GBOX

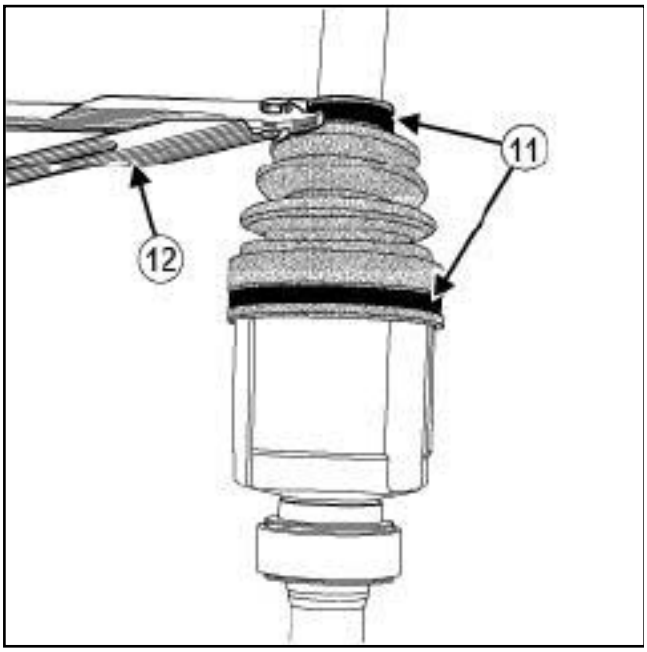
❏ Refit the new right-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

❏ Refit:

- the driveshaft yoke sleeve,
- the new locking spring ring,
- the new front right-hand driveshaft gaiter on the gearbox side,

M9R

❑ Divide the quantity of grease between the gaiter and the driveshaft yoke sleeve.




130606

❑ Place the gaiter lips in the grooves of the driveshaft yoke sleeve and the driveshaft.

❑ Refit new clips on the front driveshaft gaiter on the gearbox side.

❑ Tighten the clips (**11**) using the tool **(Tav. 1168)** (**12**) .

❑ Refit the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .

6 SPEED MANUAL GBOX

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Fill the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❑ Refit:

- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

6 SPEED AUTO GBOX

❑ Fill the automatic transmission with oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❑ Refit:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the engine undertray,
- the engine undertray bolts.

2TR

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

> **IMPORTANT**
> To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

6 SPEED MANUAL GBOX

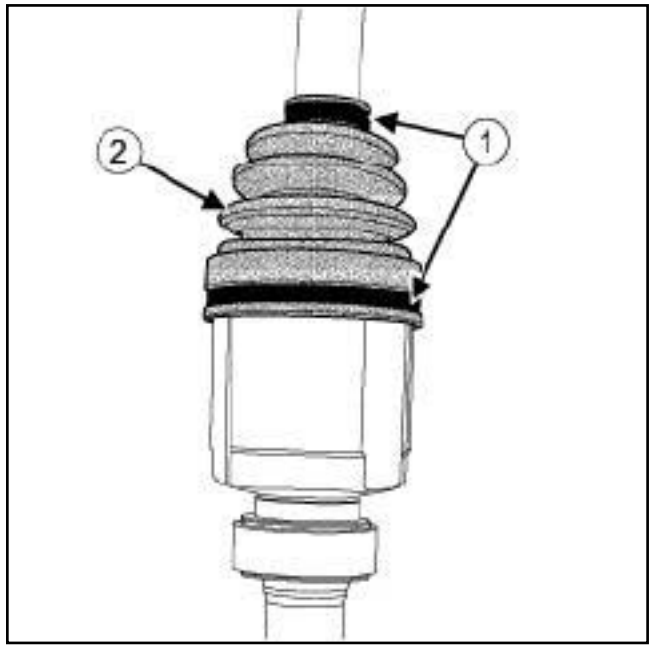
❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

6 SPEED AUTO GBOX

❑ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

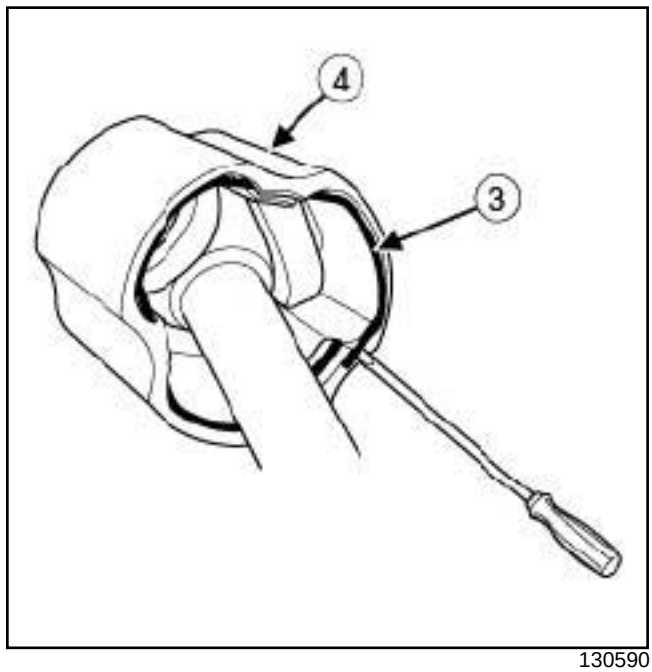
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .
- the right-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**)




130589

❑ Cut the clips (**1**) .

❑ Move aside the front right-hand driveshaft gaiter (**2**) .

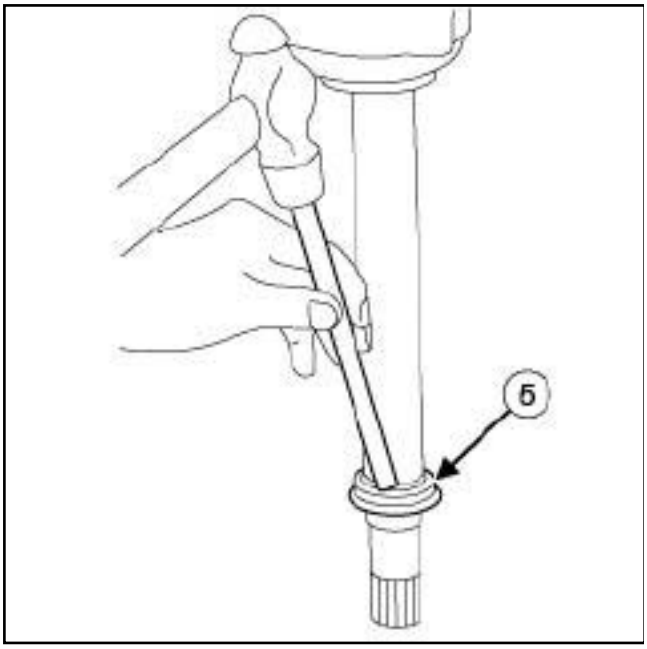



130590

❑ Remove:

- the locking spring ring (**3**) using a screwdriver,
- the front right-hand driveshaft yoke sleeve (**4**) .

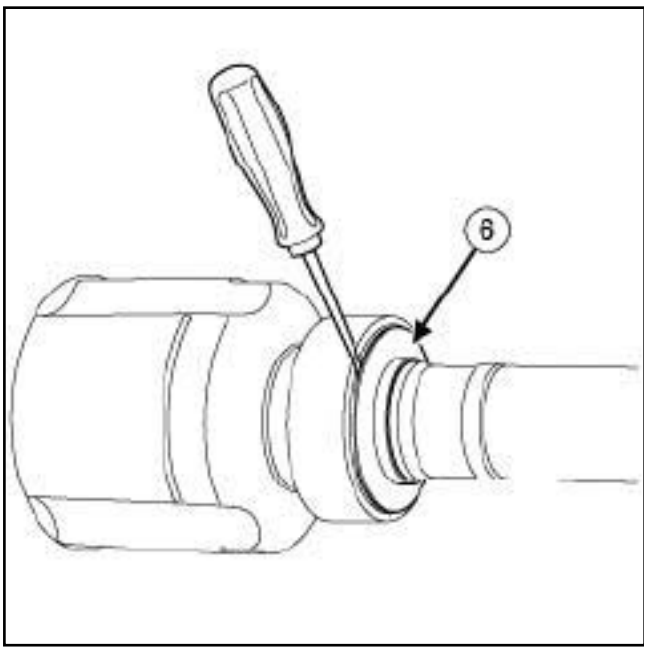
❑ Remove as much grease as possible.




130591

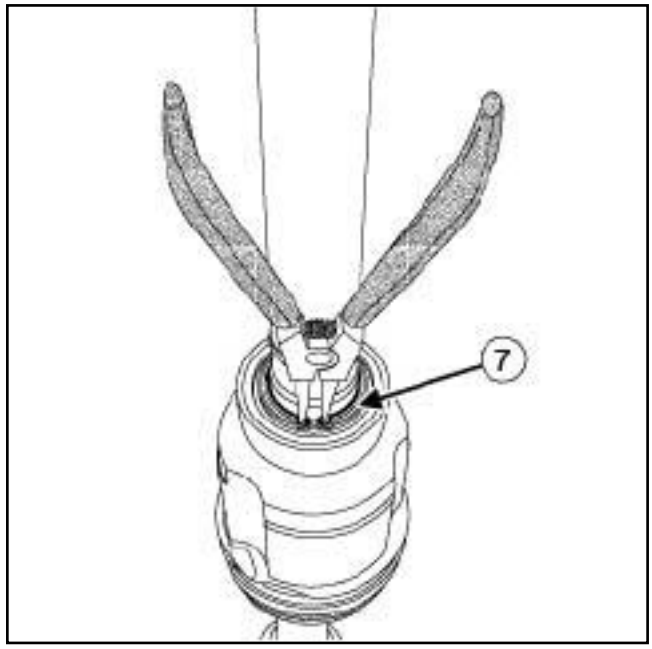
❏ Remove the deflector (**5**) using a screwdriver and a hammer.

**II - OPERATION FOR REMOVAL OF PART CONCERNED**



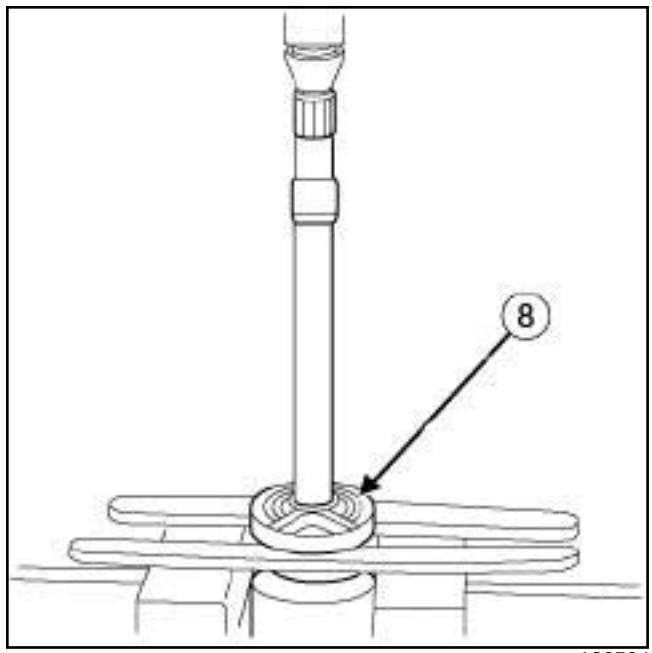

130592

❏ Remove the deflector (**6**) using a screwdriver.




130593

❏ Remove the circlip (**7**) using circlip pliers.




130594

❏ Using a press, remove:

- the relay shaft bearing (**8**) ,
- the relay shaft bearing deflector.

## REFITTING

**I - REFITTING PREPARATION OPERATION**

❏ Always replace:

- the driveshaft gaiter,

2TR

- clips,
- the locking spring ring,
- the circlip,
- the deflectors.

❏ Lubricate the relay shaft mating face into which the bearing is inserted.

**II - REFITTING OPERATION FOR PART CONCERNED**

❏ Refit:

- the new deflectors,
- the relay shaft bearing using a press,
- the circlip.

**III - FINAL OPERATION.**

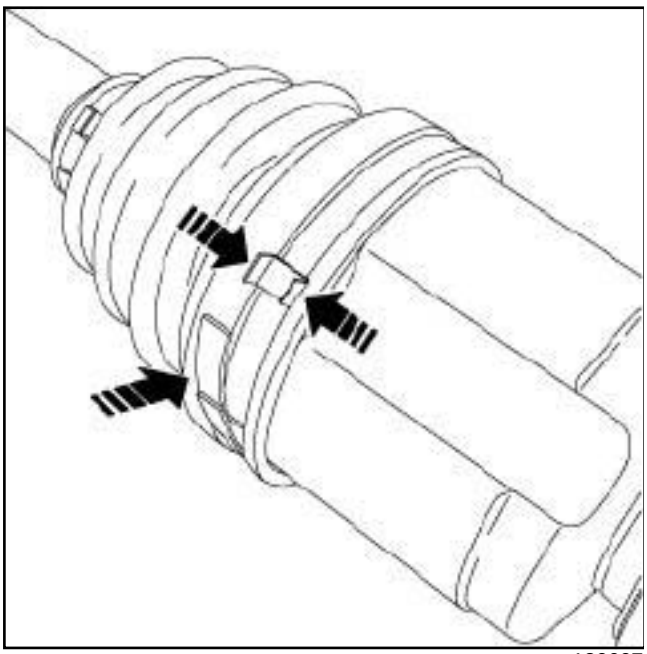
❏ Refit:

- the driveshaft yoke sleeve,
- the new locking spring ring,
- the new front right-hand driveshaft gaiter on the gearbox side.

❏ Divide the quantity of grease between the gaiter and the driveshaft yoke sleeve.

❏ Place the gaiter lips in the grooves of the yoke sleeve and the driveshaft.

❏ Refit new clips on the front driveshaft gaiter on the gearbox side.



130607

❏ Tighten the clips using a screwdriver.

❏ Refit:

- the right-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**)
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

6 SPEED MANUAL GBOX

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❏ Fill the gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❏ Refit:

- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior Protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

FK0 or FK8

❏ Fill the automatic transmission with oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❏ Refit:

- the engine undertray,
- the engine undertray bolts.

| Essential special tooling | |
|---|---|
| **Tav. 1168** | Thermoplastic driveshaft gaiter clip fitting tool. |

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

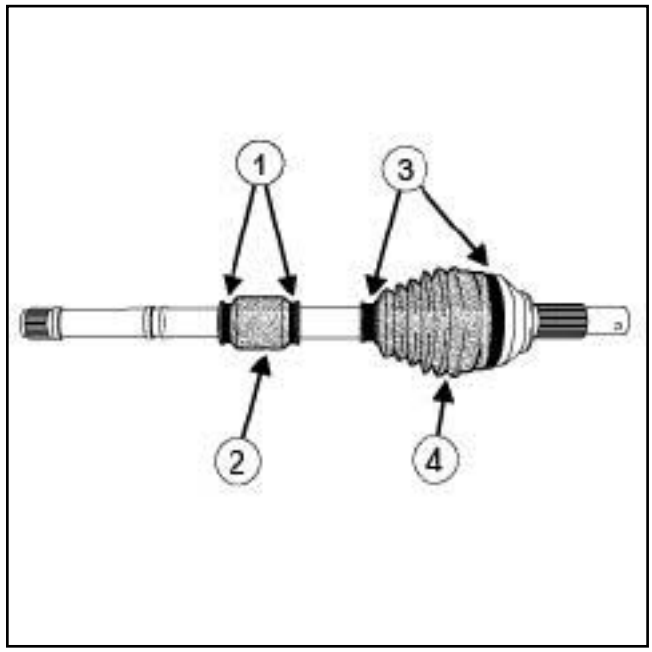
❑ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .
- the front right-hand driveshaft gaiter on the gearbox side (see **29A**, **Driveshafts**, **Front right-hand driveshaft gaiter on gearbox side: Removal - Refitting**, page **29A-27**) or the front left-hand driveshaft gaiter on the gearbox side (see **29A**, **Driveshafts**, **Front left-hand driveshaft gaiter on gearbox side: Removal - Refitting**, page **29A-31**)

### II - OPERATION FOR REMOVAL OF PART CONCERNED

**1 - Front left-hand driveshaft**



130600

❑ Cut the clips (**1**) .

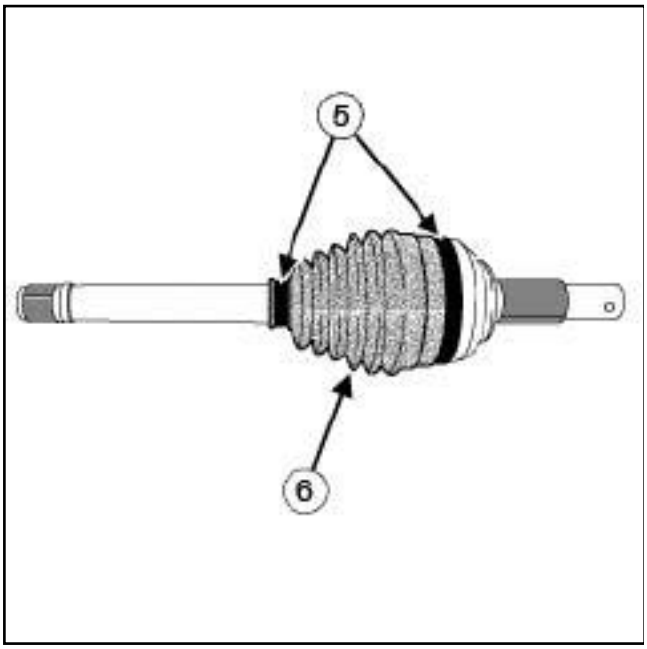
❑ Remove the driveshaft shock absorber (**2**) .

❑ Cut the clips (**3**) .

❑ Remove the front left-hand driveshaft gaiter (**4**) on the wheel side.

❑ Remove as much grease as possible.

**2 - Front right-hand driveshaft**




130602

❏ Cut the clips (**5**) .

❏ Remove the front left-hand driveshaft gaiter ***(6)*** on the wheel side.

❏ Remove as much grease as possible.

6 SPEED MANUAL GBOX

❏ Remove the differential output seal on the side concerned (see **Differential output seal: Removal - Refitting**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ Remove the differential output seal on the side concerned (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the differential output seal,
- the clips.

FK0 or FK8, and 6 SPEED AUTO GBOX

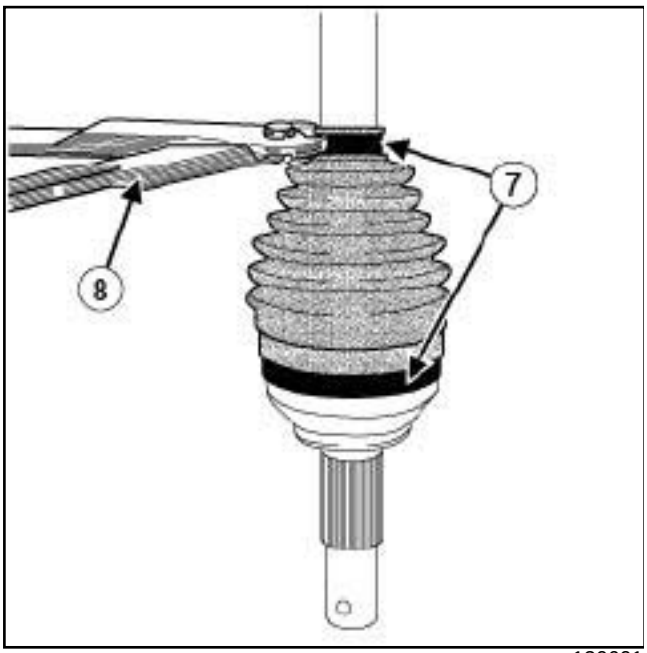
❏ Refit the differential output seal on the side concerned (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

6 SPEED MANUAL GBOX

❏ Refit the differential output seal on the side concerned (see **Differential output seal: Removal - Refitting**) .

**II - REFITTING OPERATION FOR PART CONCERNED**

**1 - Front left-hand driveshaft**



130601

❑ Refit the front driveshaft gaiter on the wheel side.

❑ Spread the quantity of grease around the gaiter and the stub axle bowl.

❑ Insert the lips of the gaiter into the grooves of the stub axle bowl and driveshaft.

❑ Refit new clips (**7**) to the front driveshaft gaiter on the wheel side.

❑ Tighten the clips (**7**) using the tool **(Tav. 1168)** (**8**) .

❑ Refit:

- the shock absorber ***(2)*** ,
- new clips ***(1)*** on the shock absorber.

M9R

❑ Tighten the clips ***(1)*** using the tool **(Tav. 1168)**.

2TR

❑ Tighten the clips ***(1)*** using a screwdriver.

**2 - Front right-hand driveshaft**

❑ Refit the front driveshaft gaiter on the wheel side.

❑ Spread the quantity of grease around the gaiter and the stub axle bowl.

❑ Insert the lip of the gaiter into the grooves of the stub axle bowl and driveshaft.

❑ Refit the clips on the gaiter of the stub axle bowl and on the driveshaft.

❑ Refit new clips ***(7)*** to the front driveshaft gaiter on the wheel side.

❑ Tighten the clips ***(7)*** using the tool **(Tav. 1168)** ***(8)*** .

**III - FINAL OPERATION.**

❑ Refit:

- the front right-hand driveshaft gaiter on the gearbox side (see **29A**, **Driveshafts**, **Front right-hand driveshaft gaiter on gearbox side: Removal - Refitting**, page **29A-27**) or the front left-hand driveshaft gaiter on the gearbox side (see **29A**, **Driveshafts**, **Front left-hand driveshaft gaiter on gearbox side: Removal - Refitting**, page **29A-31**)
- the front driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) or the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-1**) .

M9R

❑

❑ Fill the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

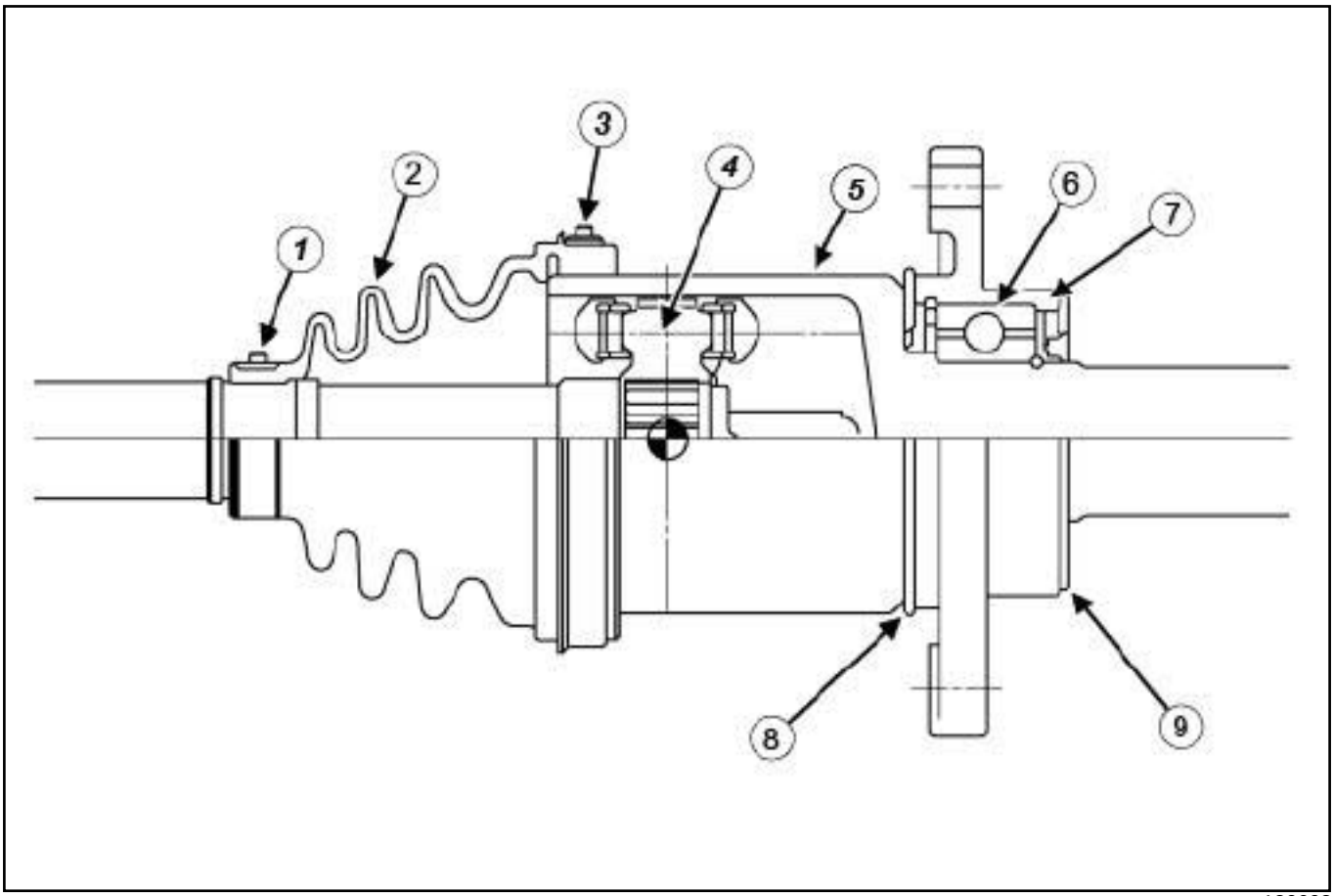
FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Fill the automatic gearbox with oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Refit:

- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the engine undertray bolts.

| Essential special tooling | |
|---|---|
| **Tav. 1168** | Thermoplastic driveshaft gaiter clip fitting tool. |




130603

(**1**) Small clip
(**2**) Driveshaft gaiter
(**3**) Big clip
(**4**) Spider
(**5**) Driveshaft yoke sleeve
(**6**) Relay shaft bearing
(**7**) Relay shaft bearing bracket
(**8**) Deflector
(**9**) Deflector

## REMOVAL

### I - OPERATION FOR REMOVAL OF PART CONCERNED

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

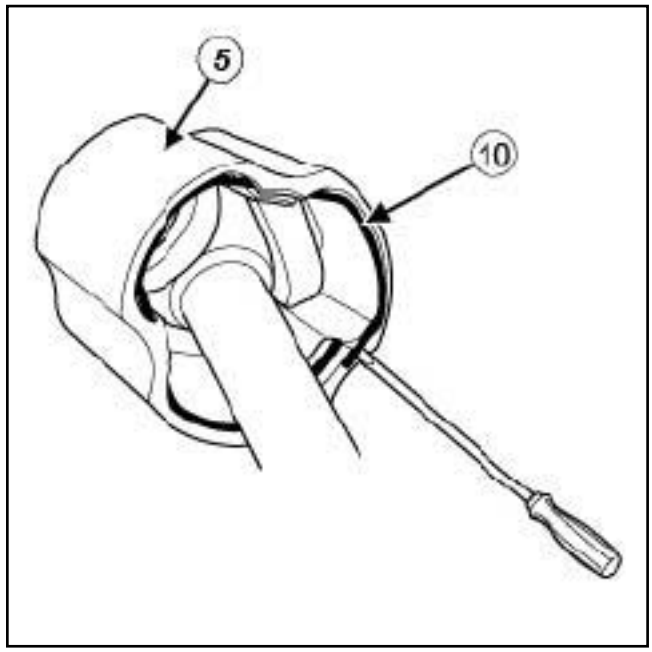
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .

**II - OPERATION FOR REMOVAL OF PART CONCERNED**

❑ Cut:

- the small clip,
- the big clip.

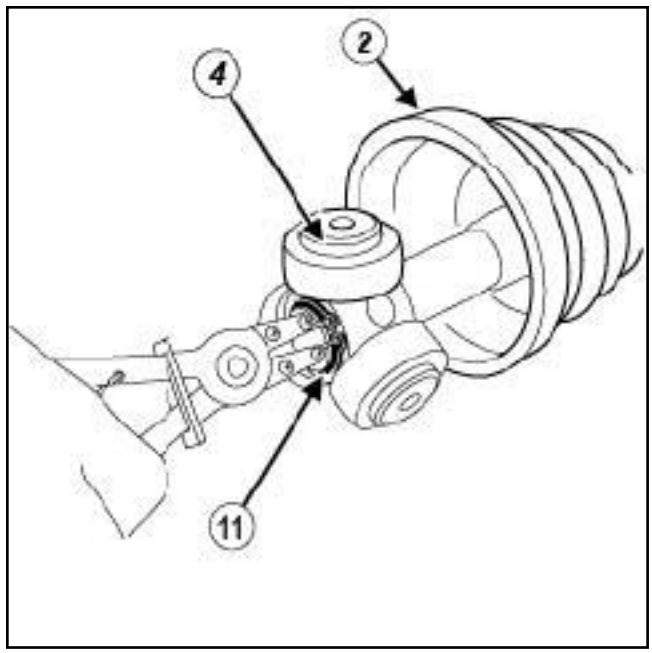
❑ Move aside the front right-hand driveshaft gaiter on the gearbox side.




130604

❑ Remove:

- the locking spring ring (**10**) using a screwdriver,
- the driveshaft yoke sleeve (**5**) .




130605

❑ Remove:

- the circlip (**11**) using circlip pliers,
- the spider (**4**) ,
- the driveshaft gaiter (**2**) .

❏

Note:

Mark the position of the spider and driveshaft before extracting the spider.

❏ Remove as much grease as possible.

6 SPEED MANUAL GBOX

❏ Remove the right-hand side differential output seal (see **Differential output seal: Removal - Refitting**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ Remove the right-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace:

- clips,
- the circlip,
- the locking spring ring,
- the differential output seal.

6 SPEED MANUAL GBOX

❏ Refit the right-hand side differential output seal (see **Differential output seal: Removal - Refitting**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ Refit the right-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

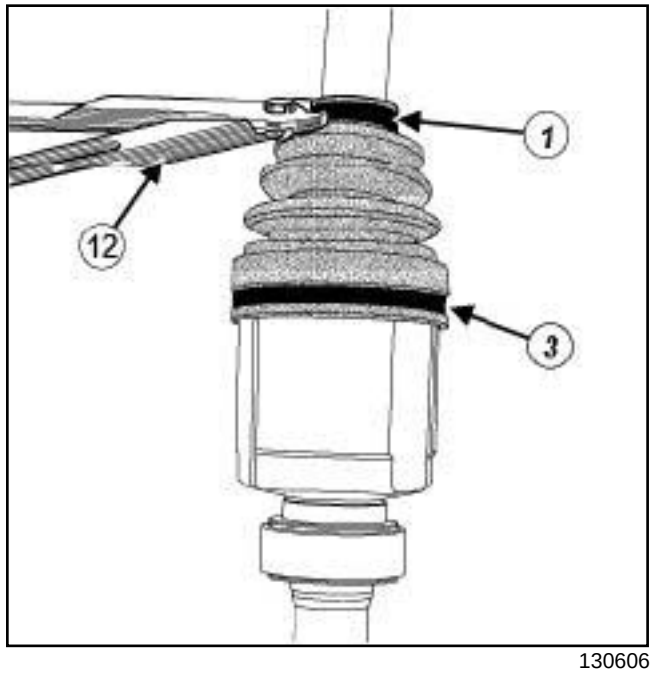
- the small new clip,
- the driveshaft gaiter,
- the spider in the position marked during removal,
- the circlip,
- the driveshaft yoke sleeve,
- the big clip,
- the locking spring ring.

❏ Divide the quantity of grease between the gaiter and the yoke sleeve.

❏ Position the lips of the gaiter in the grooves of the yoke sleeve and the driveshaft.

❏ Refit the big clip.

M9R

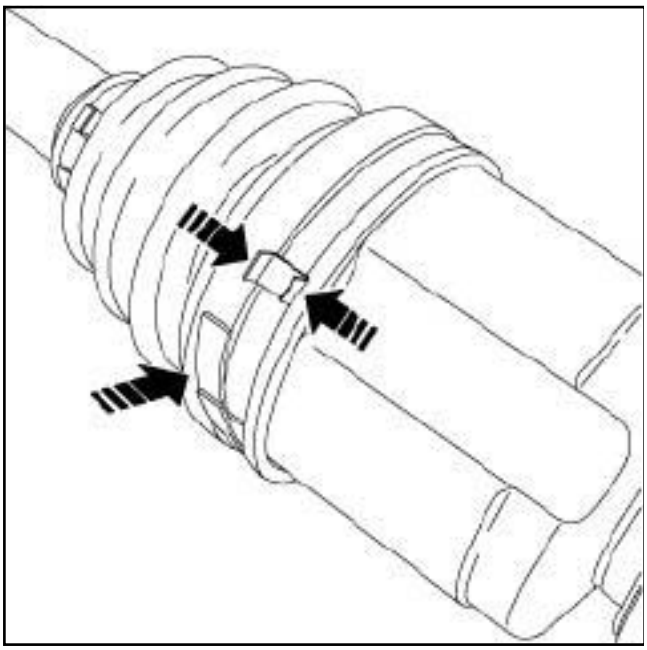



130606

❏ Tighten:

- the small clip (**1**) using the tool **(Tav. 1168)** (**12**) ,
- the big clip (**3**) using the tool **(Tav. 1168)** (**12**) .

6 SPEED MANUAL GBOX



130607

❑ Tighten:

- the small clip using a screwdriver,
- the big clip using a screwdriver.

**III - FINAL OPERATION.**

6 SPEED MANUAL GBOX

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior Protection).

❑ Fill the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

❑ Refit:

- the front left-hand splash guard (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

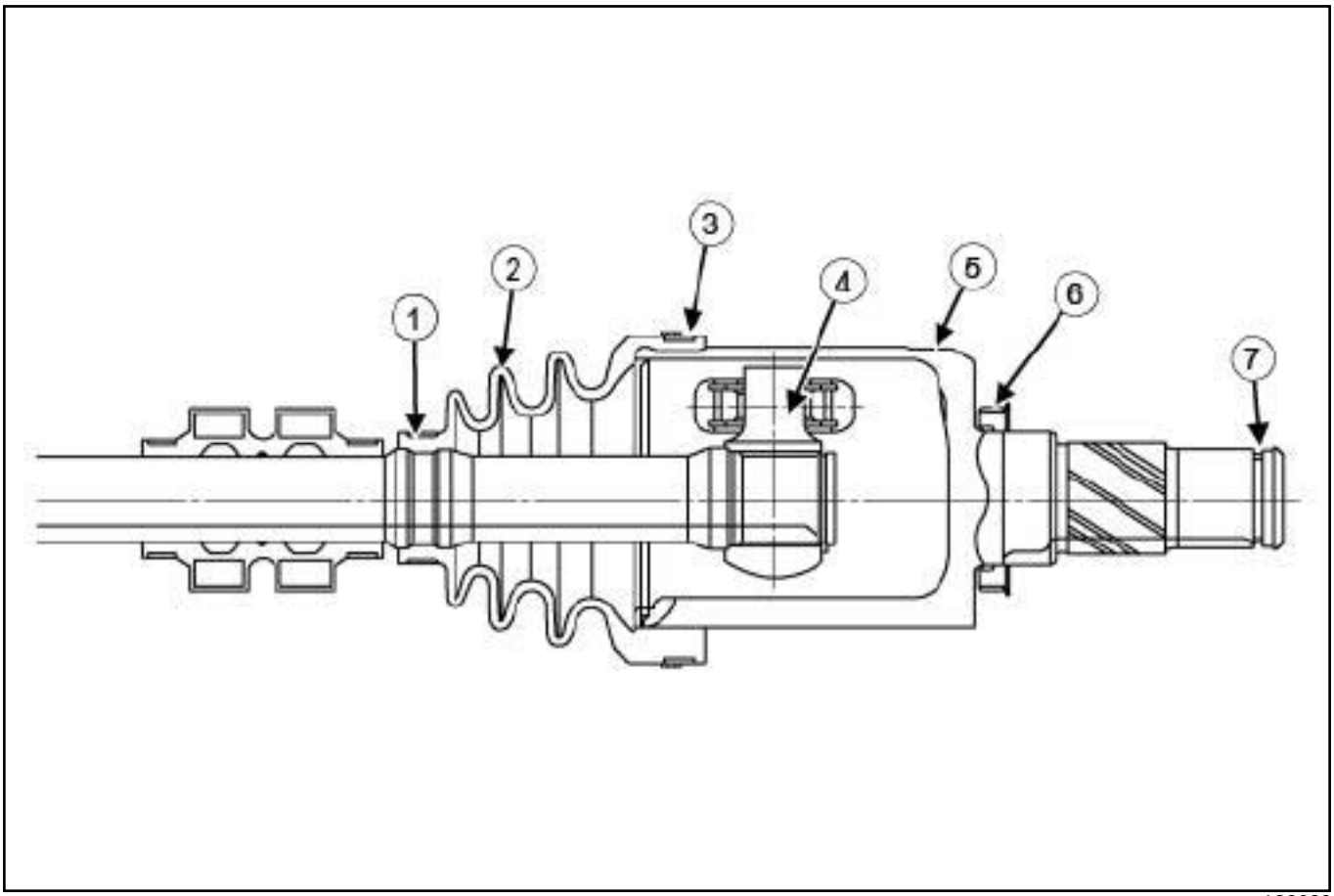
FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Fill the automatic transmission with oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .
- the front right-hand wheel (see **Wheel: Removal - Refitting**) , (35A, Wheels and tyres),
- the engine undertray.

| Essential special tooling | |
|---|---|
| **Tav. 1168** | Thermoplastic driveshaft gaiter clip fitting tool. |




130609

(**1**) Small clip
(**2**) Driveshaft gaiter
(**3**) Big clip
(**4**) Spider
(**5**) Driveshaft yoke sleeve
(**6**) Deflector
(**7**) Lock ring

## REMOVAL

### I - OPERATION FOR REMOVAL OF PART CONCERNED

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❑ Remove:

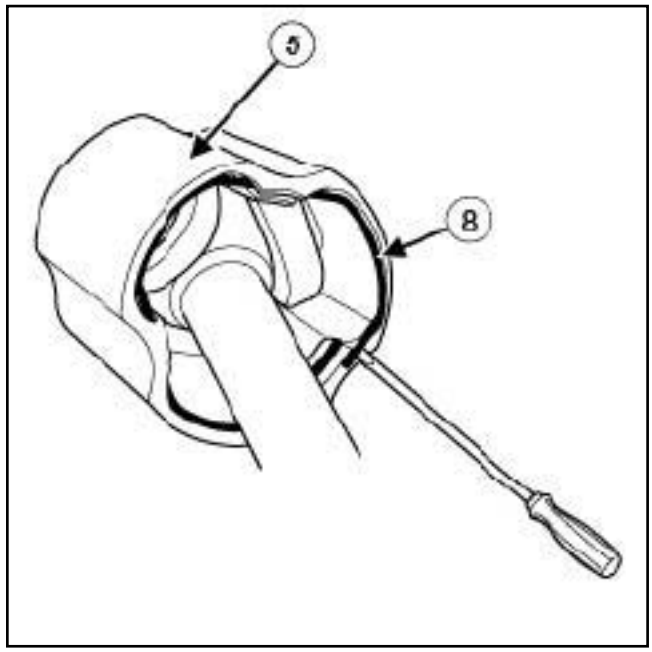
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) .

**II - REMOVAL OPERATION FOR PART CONCERNED**

❑ Cut:

- the small clip (**1**) ,
- the big clip (**3**) .

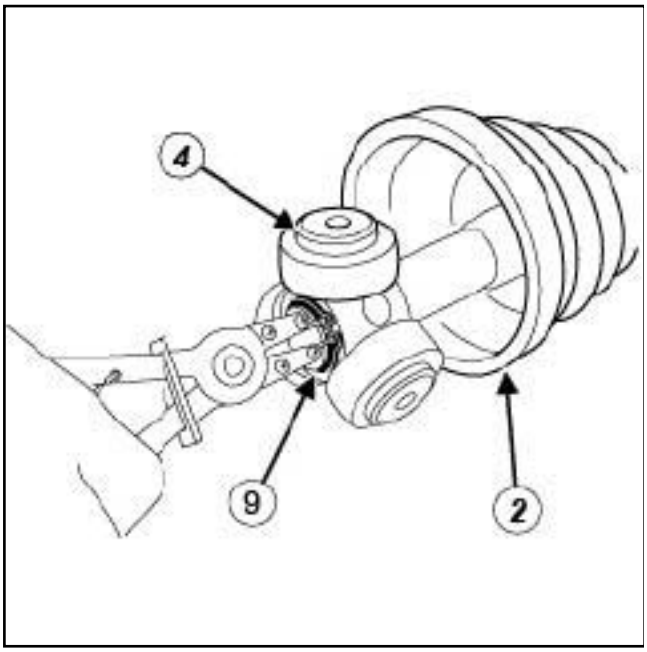
❑ Move aside the front left-hand driveshaft gaiter (**2**) on the gearbox side.



130610

❑ Remove:

- the locking spring ring (**8**) using a screwdriver,
- the driveshaft yoke sleeve (**5**) .




130611

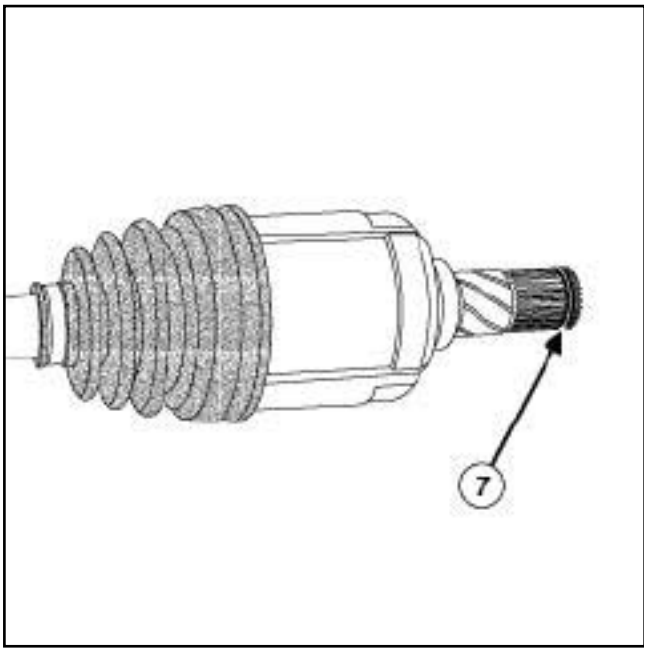
❑ Remove:

- the circlip (**9**) using circlip pliers,
- the spider (**4**) ,
- the driveshaft gaiter (**2**) .

Note:

Mark the position of the spider and driveshaft before extracting the spider.

❑ Remove as much grease as possible.




130612

❑ Remove the lock ring (**7**) .

6 SPEED MANUAL GBOX

❑ Remove the left-hand side differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Remove the left-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❑ Always replace:

- clips,
- the locking ring,
- the locking spring ring,
- the differential output seal.

6 SPEED MANUAL GBOX

❑ Refit the left-hand side differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) .

FK0 or FK8, and 6 SPEED AUTO GBOX

❑ Refit the left-hand side differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-17**) .

### II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the new small clip;
- the driveshaft gaiter,
- the spider in the position marked during removal,

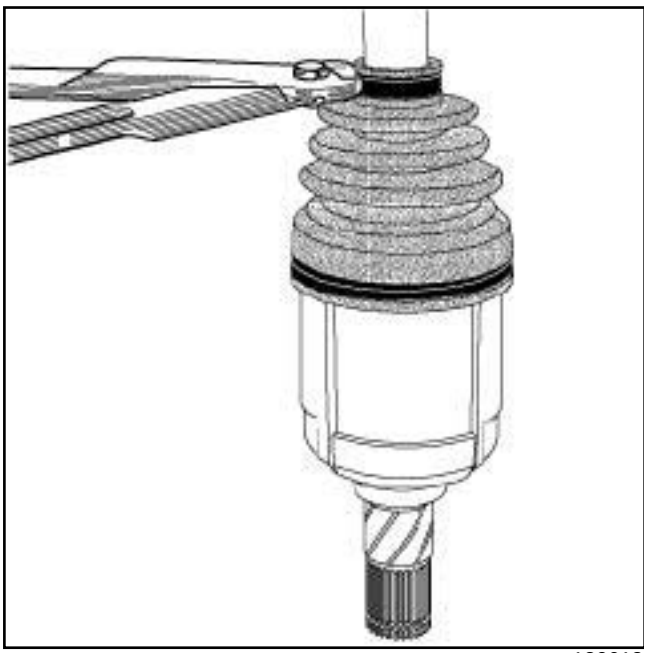
- the new circlip,
- the driveshaft sleeve,
- the locking spring ring.

❏ Divide the quantity of grease between the gaiter and the yoke sleeve.

❏ Position the lips of the gaiter in the grooves of the yoke sleeve and the driveshaft.

❏ Refit the big clip.

M9R

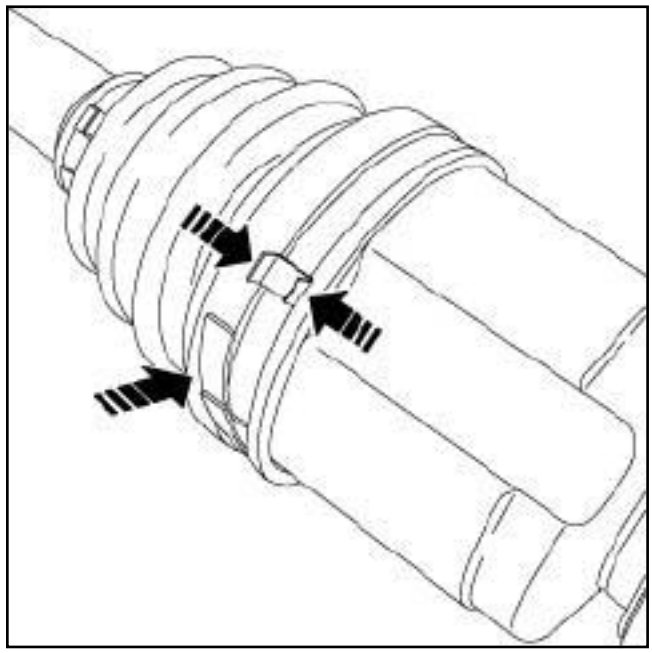


130613

❏ Tighten:

- the small clip using the tool **(Tav. 1168)**,
- the big clip using the tool **(Tav. 1168)**.

4X2 TRANSMISSION



130608

❏ Tighten:

- the small clip using a screwdriver,
- the big clip using a screwdriver.

**III - FINAL OPERATION.**

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

6 SPEED MANUAL GBOX

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

❏ Fill the manual gearbox with oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

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

FK0 or FK8, and 6 SPEED AUTO GBOX

❏ Fill the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**) .

❏ Refit:

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

Check the oil level or replace the oil only when the vehicle is parked on a flat surface.

When removing or refitting, protect the interior of the transfer box from dust or contamination.

Check the installation status before removal. If position marks are required, check that they do not interfere with part operation where they are applied.

Check the appearance of the removed components by looking for damage, deformation and unusual wear; replace them with new components if necessary.

As a rule, torque tighten the bolts or the nuts gradually (in several stages), progressively and diagonally from the interior towards the exterior.

If a tightening order is specified, make sure that it is followed.

| Tightening torques ▽ | |
|---|---|
| drain plug | **35 N.m** |
| electric coolant pump bracket bolt | **85 N.m** |
| filler cap | **35 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **29A**, **Driveshafts**, **Transfer box: Precautions for repair**, page **29A-36**) .

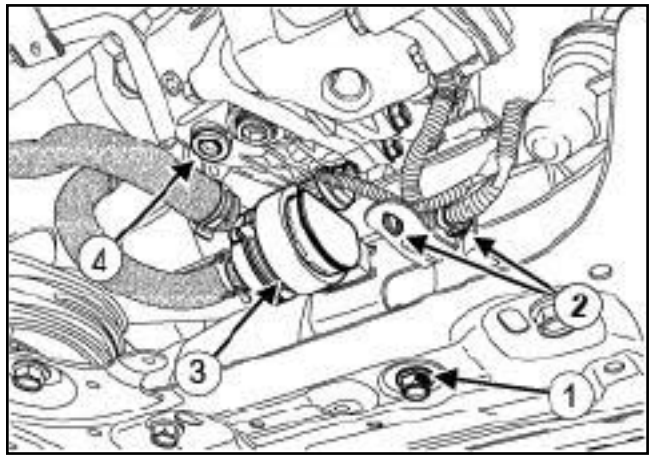
## DRAINING

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove:

- the engine undertray,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



131385

❏ Remove the bolt (**1**) from the bracket of the electric coolant pump.

❏ Unclip the wiring clips (**2**) .

❏ Move aside the electric coolant pump (**3**) .

❏ Remove:

- the drain plug (**4**) ,
- the drain plug seal.

❏ Drain the oil from the transfer box.

## FILLING

❏ Always replace the drain plug seal.

❏ Refit:

- the new drain plug seal,
- the drain plug.

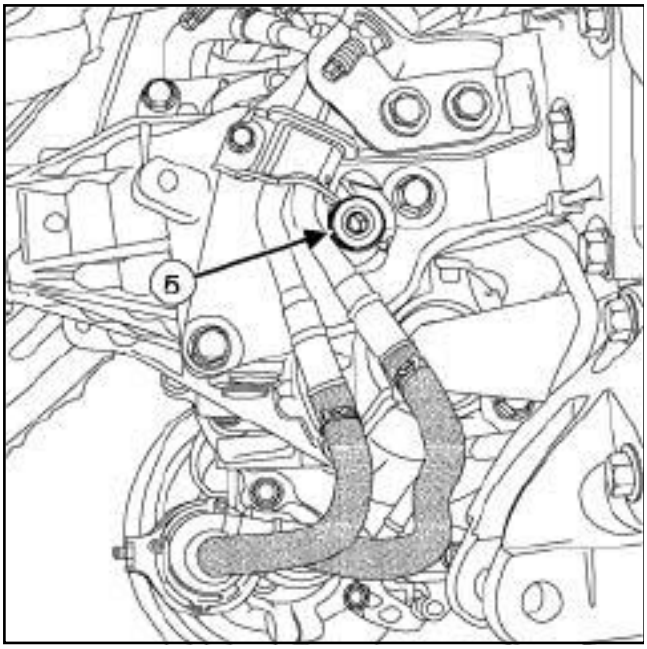
❏ Torque tighten the **drain plug (35 N.m)**.

❏ Refit:

- the electric water pump,
- the bolt of the electric coolant pump bracket.

❏ Torque tighten the **electric coolant pump bracket bolt (85 N.m)**.

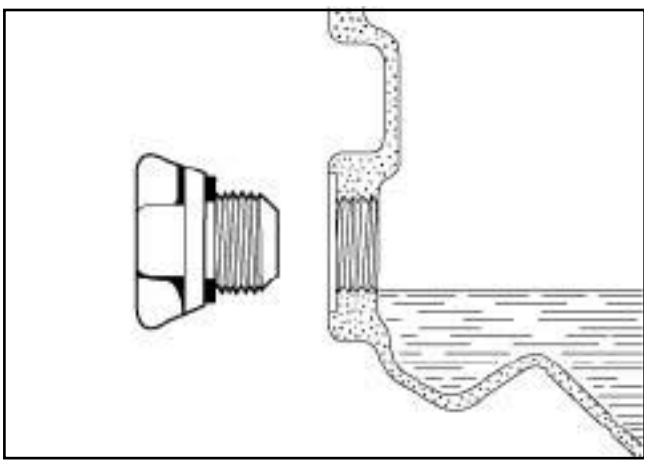
❏ Clip on the wiring clips.



131386

❑ Remove:

- the filler cap (**5**) ,
- the filler cap seal.


131390

❑ Fill the transfer box with oil to the level of the opening.

❑ Refit:

- the new filler cap seal,
- the filler cap.

❑ Torque tighten the **filler cap (35 N.m)**.

❑ Refit:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray.

| Tightening torques ▽ | |
|---|---|
| drain plug | **35 N.m** |
| filler cap | **35 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **29A**, **Driveshafts**, **Transfer box: Precautions for repair**, page **29A-36**) .

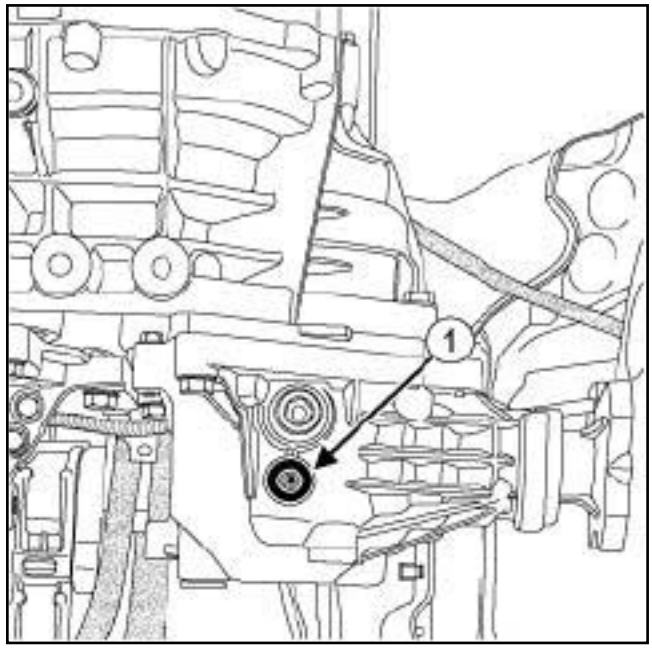
## DRAINING

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❏ Remove:

- the engine undertray,
- the connector pipe (see **Connector pipe: Removal - Refitting**) (19B, Exhaust).



131388

❏ Remove:

- the drain plug (**1**) ,
- the drain plug seal.

❏ Drain the oil from the transfer box.

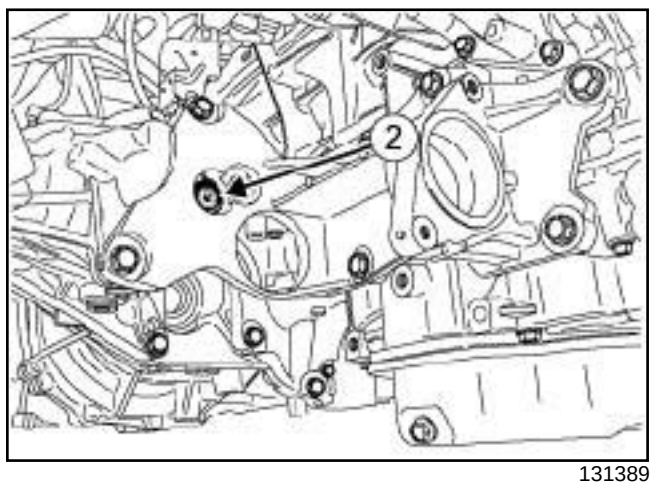
## FILLING

❏ Always replace the drain plug seal.

❏ Refit:

- the new drain plug seal,
- the drain plug.

❏ Torque tighten the **drain plug (35 N.m)**.

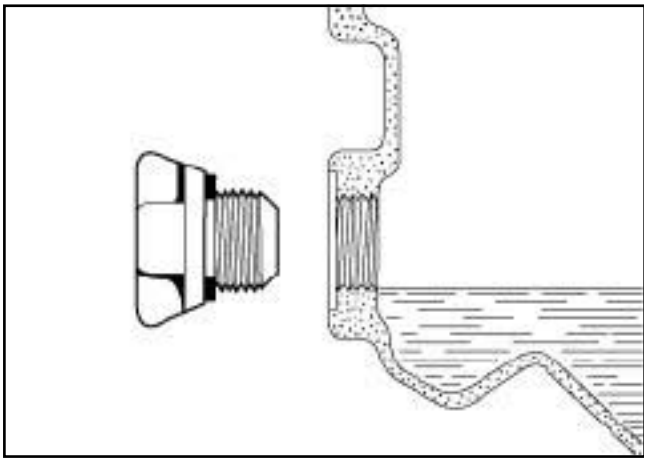


131389

❏ Remove:

- the filler cap (**2**) ,

- the filler cap seal.



131390

❏ Fill the transfer box with oil to the level of the opening.

❏ Refit:

- the new filler cap seal,
- the filler cap.

❏ Torque tighten the **filler cap (35 N.m)**.

❏ Refit:

- the connector pipe (see **Connector pipe: Removal - Refitting**) (19B, Exhaust),
- the engine undertray.

| Tightening torques ▽ | |
|---|---|
| transfer box bolts | **44 N.m** |
| transfer box mounting bolts A | **48 N.m** |
| transfer box mounting bolts | **B50 N.m** |
| turbocharger cooling pipe bolts | **10 N.m** |
| catalytic converter insulation bolts | **6 N.m** |
| catalytic converter bracket bolts | **50 N.m** |
| catalytic converter bracket nut | **50 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **29A**, **Driveshafts**, **Transfer box: Precautions for repair**, page **29A-36**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**)

6 SPEED AUTO GBOX

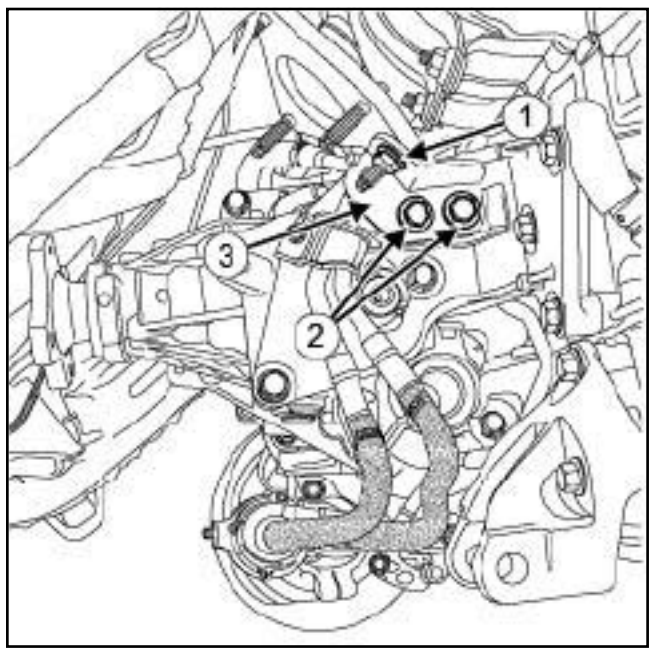
❑ Drain the gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❑ Remove:

- the particle filter (see **Particle filter: Removal - Refitting**) (19B, Exhaust),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting).
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

❑ Uncouple the longitudinal driveshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) (29A, Driveshafts).

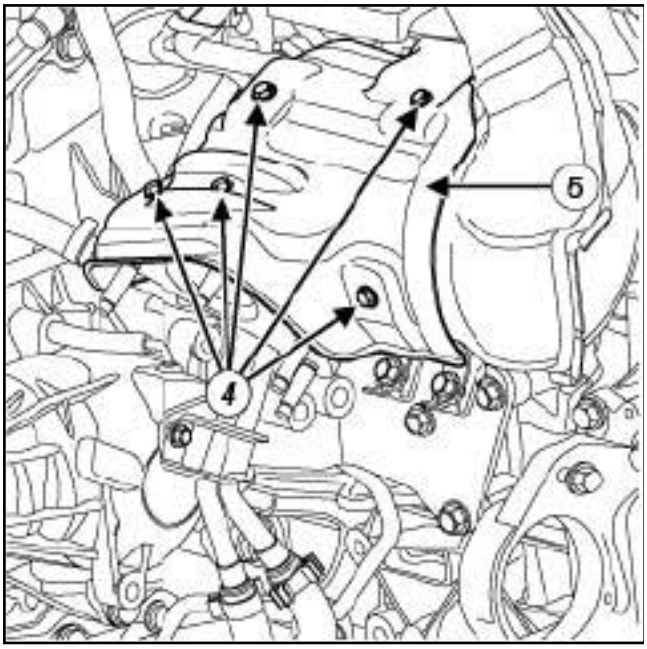
❑ Secure the longitudinal driveshaft to the bracket of the control cable using a strap.



131391

❑ Remove:

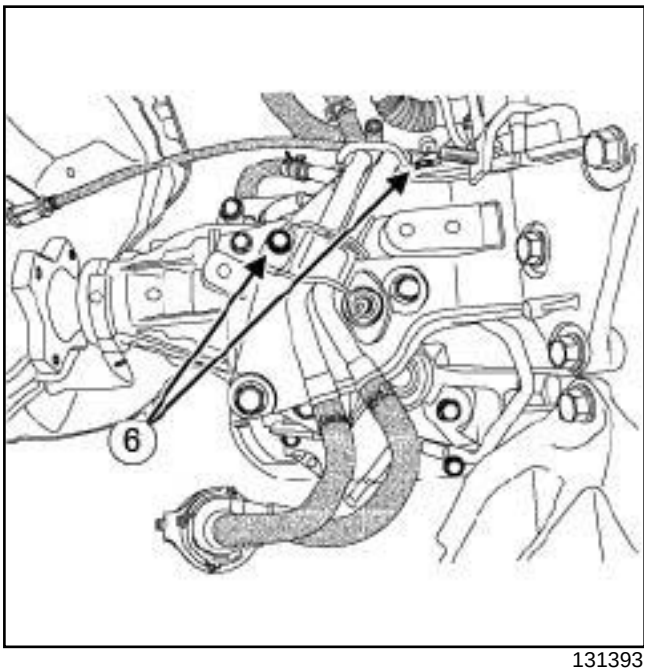
- the catalytic converter bracket nut (**1**) ,
- the catalytic converter bracket bolts (**2**) ,
- the catalytic converter bracket (**3**) .




131392

❏ Remove:

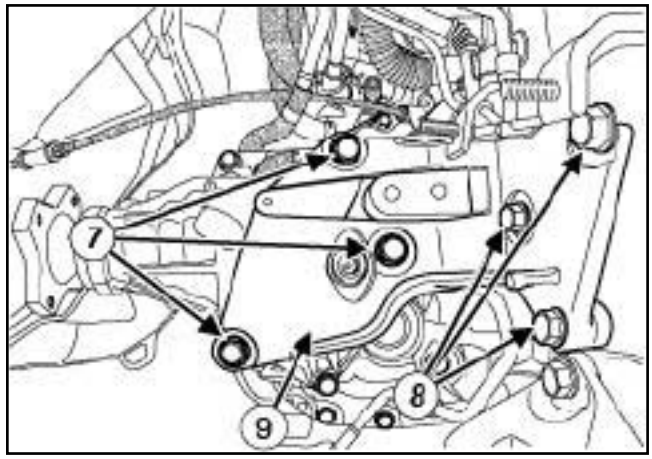
- the catalytic converter insulation bolts (**4**) ,
- the catalytic converter insulation (**5**) .




131393

❏ Remove the bolts (**6**) from the turbocharger cooling pipe.

❏ Move aside the turbocharger cooling pipe.

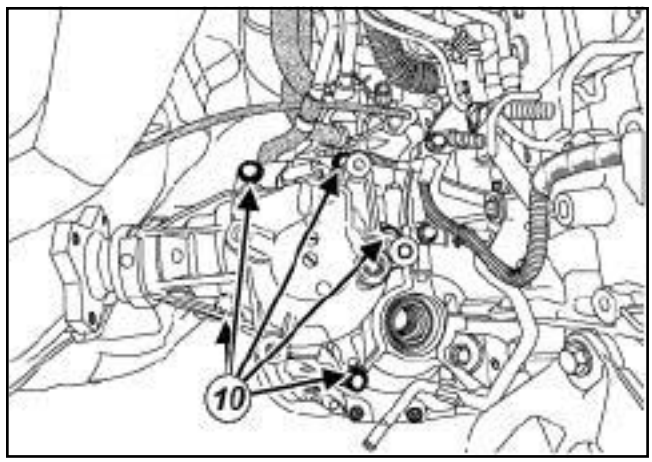



131394

❏ Remove:

- the transfer box support bolts A (**7**) ,
- the transfer box support bolts B (**8**) ,
- the transfer box support (**9**) .

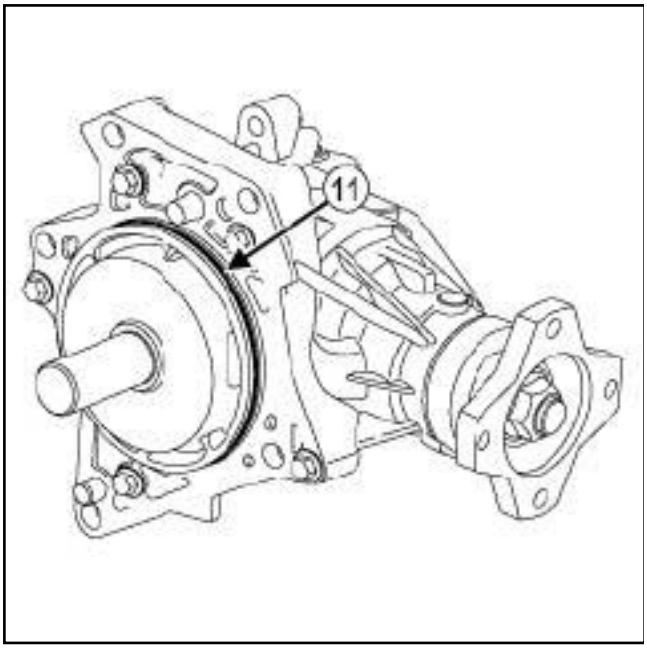
**II - OPERATION FOR REMOVAL OF PART CONCERNED**




131395

❏ Remove:

- the transfer box bolts (**10**) ,
- the transfer box.



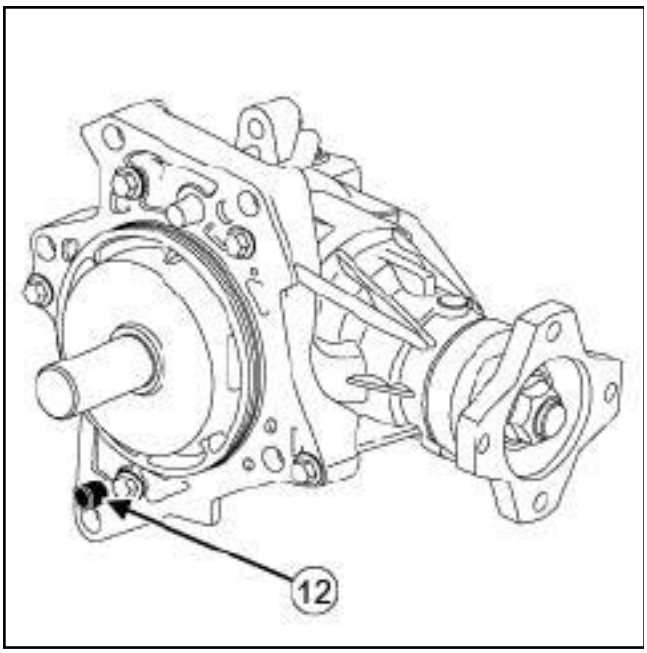

131396

❏ Remove the O-ring (**11**) .

## REFITTING

### I - REFITTING PREPARATION OPERATION

❏ Always replace the O-ring.




131397

❏ Check that the centring dowel (**12**) is in position.

### II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- the transfer box,
- the transfer box bolts.

❏ Torque tighten the **transfer box bolts (44 N.m)**.

### III - FINAL OPERATION.

❏ Refit:

- the transfer box support.
- the transfer box support bolts A,
- the transfer box support bolts B,

❏ Torque tighten:

- the **transfer box mounting bolts A (48 N.m)**,
- the **transfer box mounting bolts (B50 N.m)**,

❏ Refit:

- the turbocharger cooling pipe,
- the turbocharger cooling pipe bolts.

❏ Torque tighten the **turbocharger cooling pipe bolts (10 N.m)**.

❏ Refit:

- the catalytic converter insulation.
- the catalytic converter insulation bolts.

❏ Torque tighten the **catalytic converter insulation bolts (6 N.m)**.

❏ Refit:

- the catalytic converter bracket,
- the catalytic converter bracket bolts,
- the catalytic converter bracket nut.

❏ Torque tighten:

- the **catalytic converter bracket bolts (50 N.m)**,
- the **catalytic converter bracket nut (50 N.m)**.

6 SPEED MANUAL GBOX

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

❑ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**)

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

6 SPEED AUTO GBOX

❑ Fill the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❑ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the particle filter (see **Particle filter: Removal - Refitting**) (19B, Exhaust),
- the engine undertray.

2TR, and 4X4 TRANSMISSION

| Tightening torques ▽ | |
|---|---|
| transfer box bolts | **44 N.m** |
| transfer box support bolts | **48 N.m** |

**IMPORTANT**
Consult the safety and cleanliness advice and operation recommendations before carrying out any repair (see **29A**, **Driveshafts**, **Transfer box: Precautions for repair**, page **29A-36**) .

## REMOVAL

### I - REMOVAL PREPARATION OPERATION

❑

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

**IMPORTANT**
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

❑ Remove the engine undertray.

6 SPEED MANUAL GBOX

❑ Drain the gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**)

FK0 or FK8

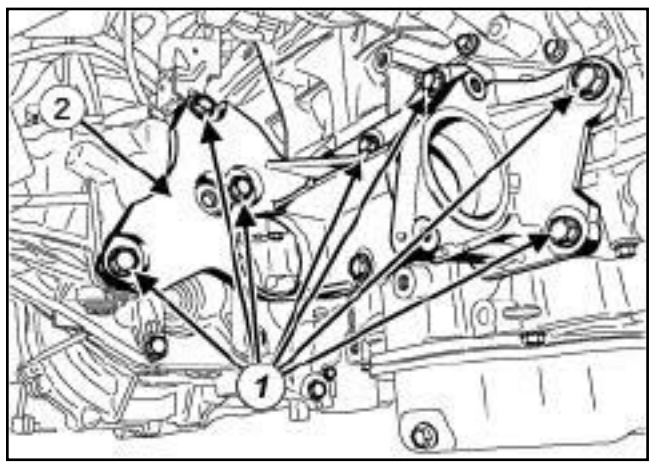
❑ Drain the gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)

❑ 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 wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the connector pipe (see **Connector pipe: Removal - Refitting**) ,
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting).
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

❑ Disconnect the longitudinal driveshaft from the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) (29A, Driveshafts).

❑ Secure the longitudinal driveshaft to the bracket of the control cable using a strap.

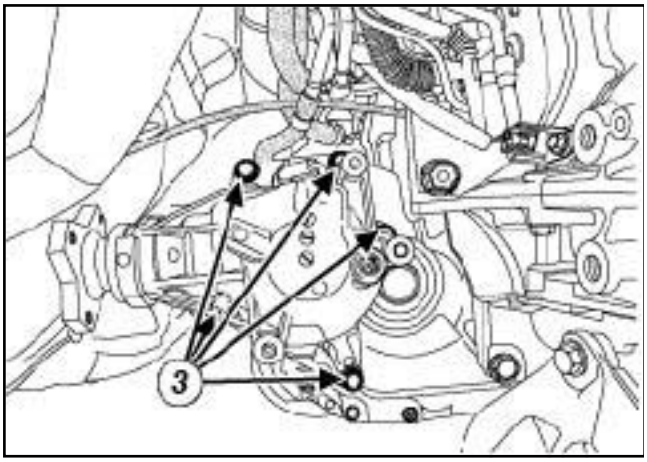


131398

❑ Remove:

- the bolts (**1**) from the transfer box support,
- the transfer box support (**2**) .

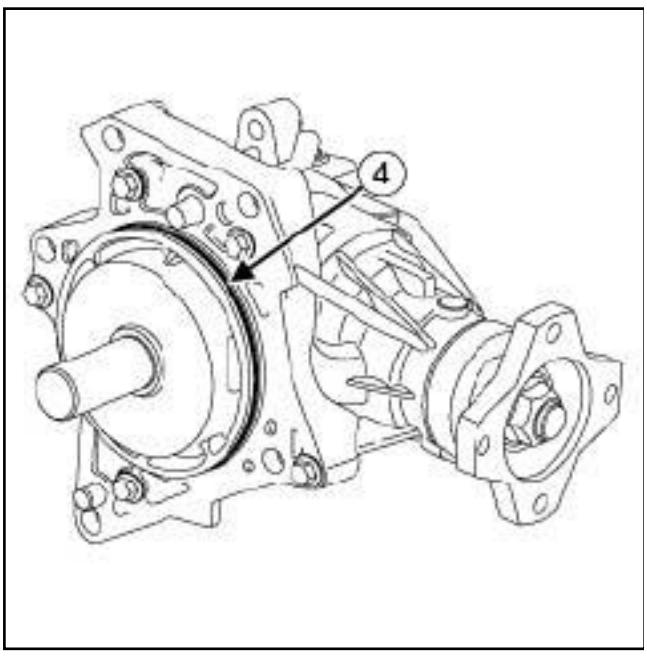
**II - OPERATION FOR REMOVAL OF PART CONCERNED**




131399

❑ Remove:

- the transfer box bolts (**3**) ,
- the transfer box.




131400

❑ Remove the O-ring (**4**) .

6 SPEED MANUAL GBOX

❑ Remove the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) (21A, Manual gearbox).

FK0 or FK8

❑ Remove the right-hand differential output seal (see **Differential seal Removal - Refitting**) (23A, Automatic gearbox).

## REFITTING

**I - REFITTING PREPARATION OPERATION**

❑ Always replace:

- the O-ring,
- the differential output seal.

6 SPEED MANUAL GBOX

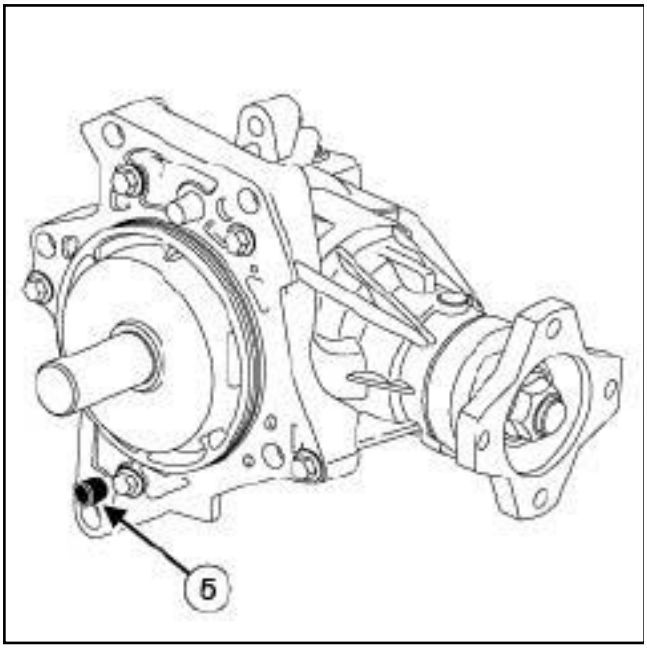
❑ Refit the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-7**) (21A, Manual gearbox).

FK0 or FK8

❑ Refit the right-hand differential output seal (see **Differential seal Removal - Refitting**) (23A, Automatic gearbox).

❑ Refit the new O-ring.

2TR, and 4X4 TRANSMISSION




131401

❑ Check that the centring dowel (**5**) is in position.

**II - REFITTING OPERATION FOR PART CONCERNED**

❑ Refit:

- the transfer box,
- the transfer box bolts.

❑ Torque tighten the **transfer box bolts (44 N.m)**.

**III - FINAL OPERATION.**

❑ Refit:

- the transfer box support.
- the transfer box support bolts.

❑ Torque tighten the **transfer box support bolts (48 N.m)**.

❑ Refit:

- the longitudinal driveshaft to the transfer box (see **29A**, **Driveshafts**, **Propshaft: Removal - Refitting**, page **29A-13**) (29A, Driveshafts),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the connector pipe (see **Connector pipe: Removal - Refitting**) ,
- the rear suspended engine mounting (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-5**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

6 SPEED MANUAL GBOX

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

❑ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-5**) .

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

FK0 or FK8

❑ Fill the gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-11**)