RENAULT

2 Transmission

20A CLUTCH

21A MANUAL GEARBOX

23A AUTOMATIC GEARBOX

29A DRIVESHAFTS

X95

APRIL 2009 **Edition Anglaise**

MEGANE III - Section 2

Contents

Contents

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F4R or F9Q or K4M or K9K

K4M, and 848

Pressure plate

132330

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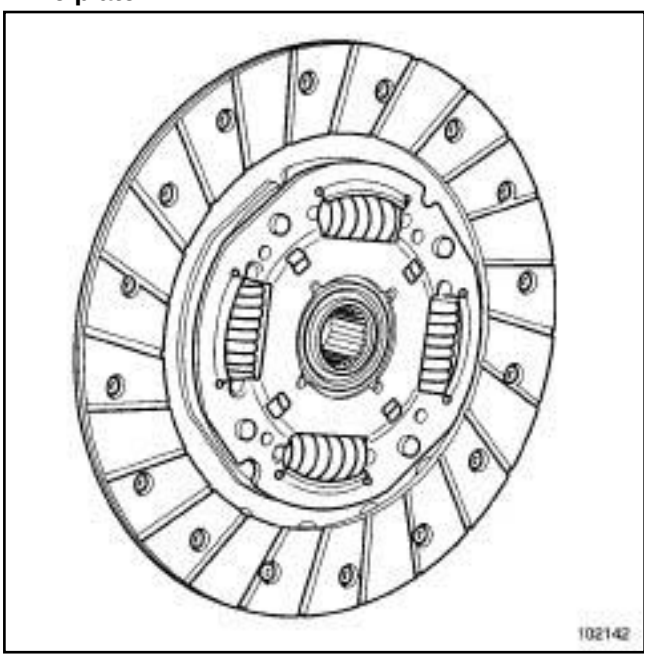


102142

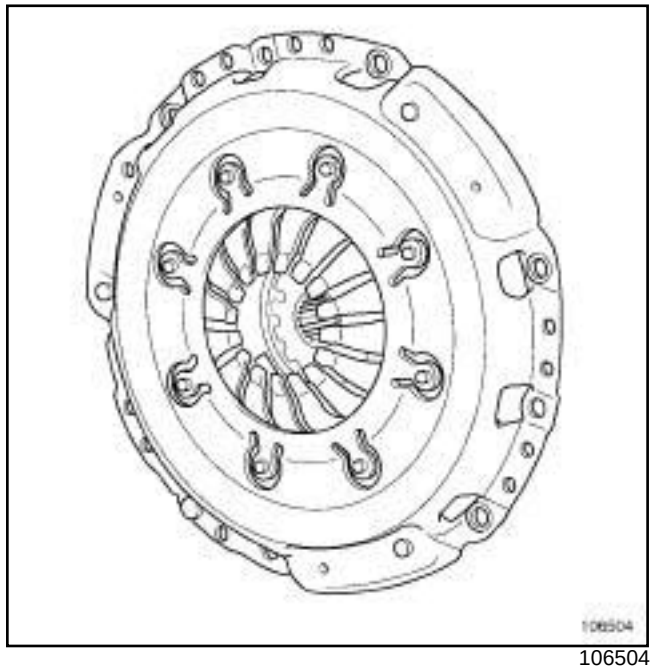
Plate outer diameter: **216 mm**

Plate thickness: **6.9 mm**

Number of grooves: **24**

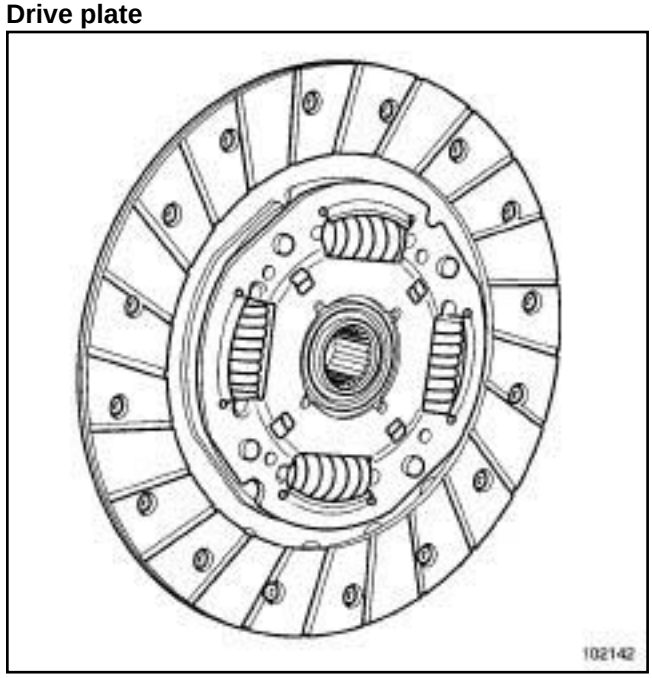
K4M, and 858

Pressure plate



106504

Drive plate



102142

Plate outer diameter: **216 mm**

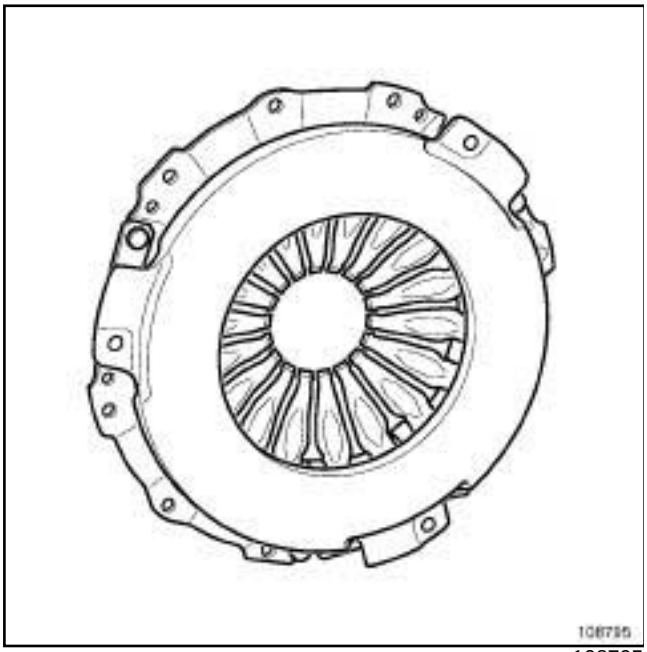
Plate thickness: **7.0 mm**

Number of grooves: **24**

F4R or F9Q or K4M or K9K

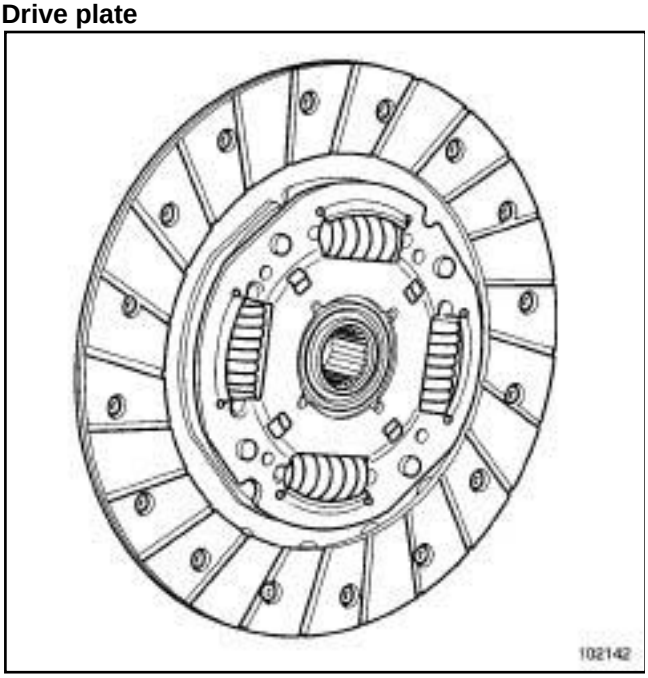
K9K, and 830 or 834

Pressure plate



108795

Drive plate



102142

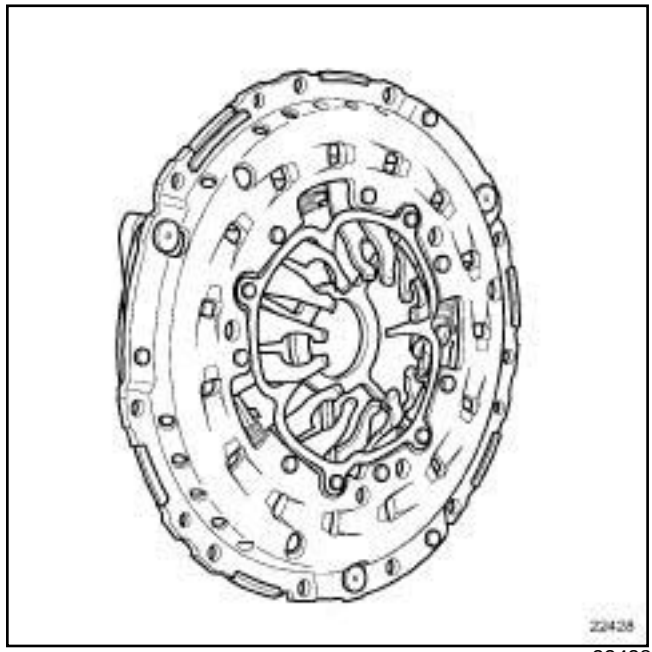
Plate outer diameter: **216 mm**

Plate thickness: **7.0 mm**

Number of grooves: **24**

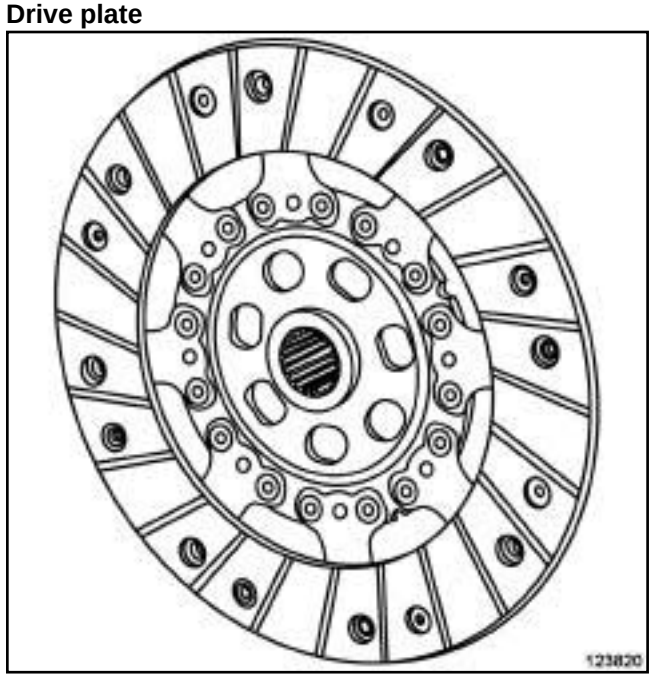
K9K, and 832 or 836

Pressure plate



22428

Drive plate



123820

Plate outer diameter: **225 mm**

Plate thickness: **6.9 mm**

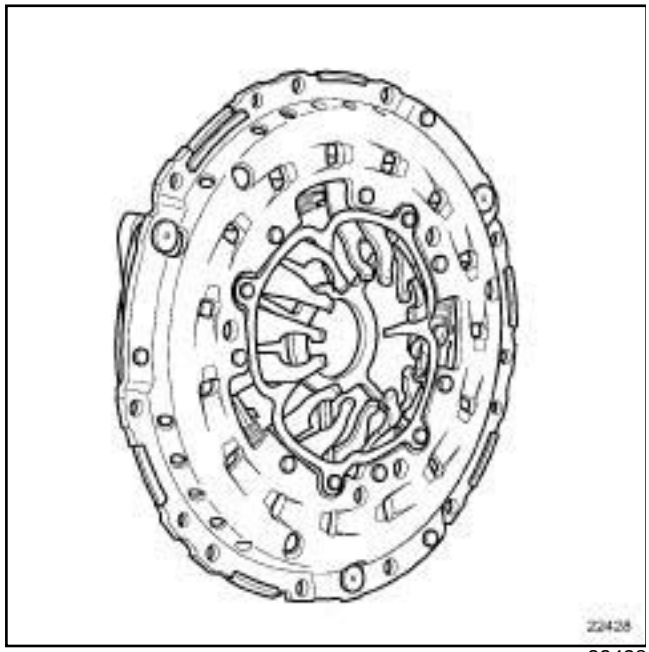
Number of grooves: **24**

Clutch: Specifications

F4R or F9Q or K4M or K9K

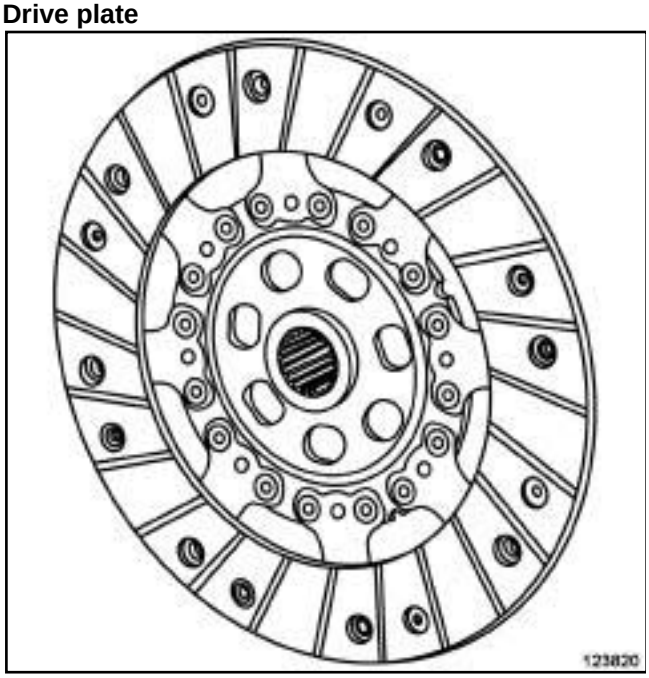
F4R, and 870

Pressure plate



22428

Drive plate



123820

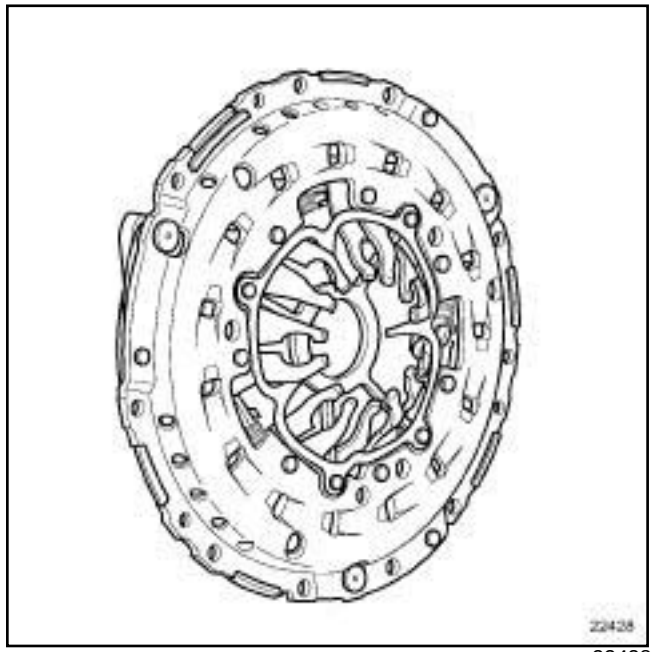
Plate outer diameter: **239 mm**

Plate thickness: **8.3 mm**

Number of grooves: **24**

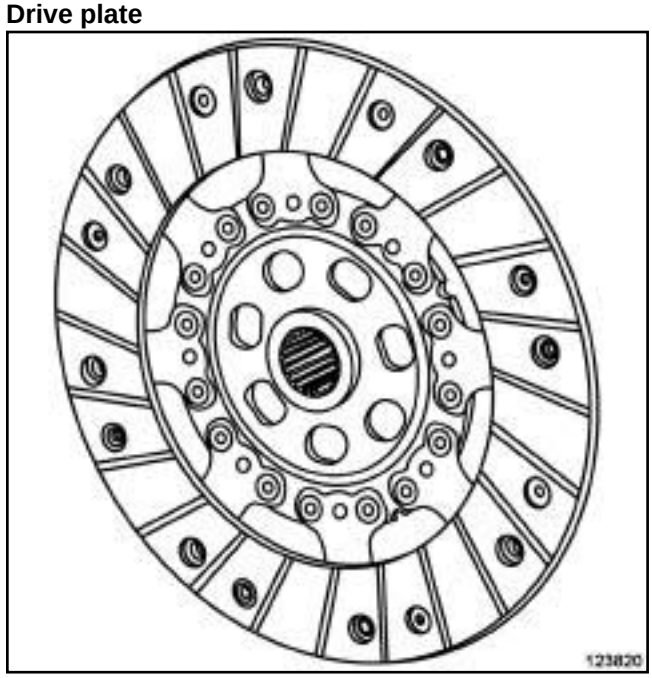
F4R, and 874

Pressure plate



22428

Drive plate



123820

Plate outer diameter: **239 mm**

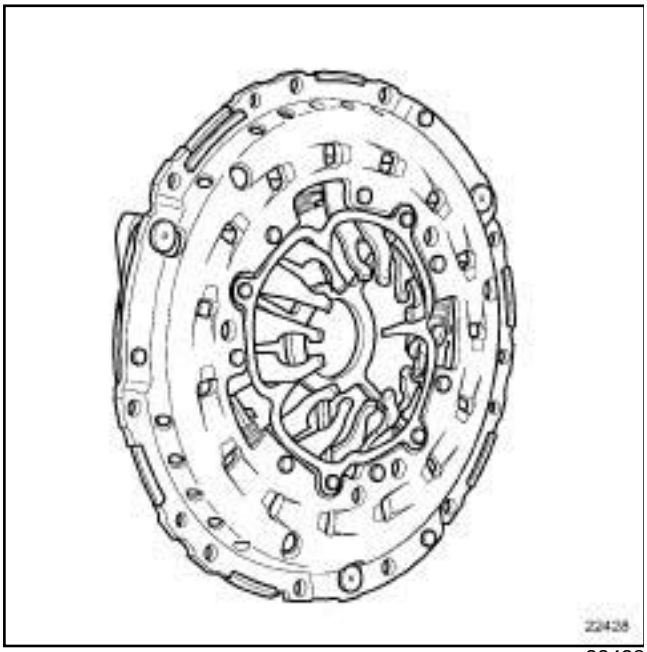
Plate thickness: **7.9 mm**

Number of grooves: **24**

F4R or F9Q or K4M or K9K

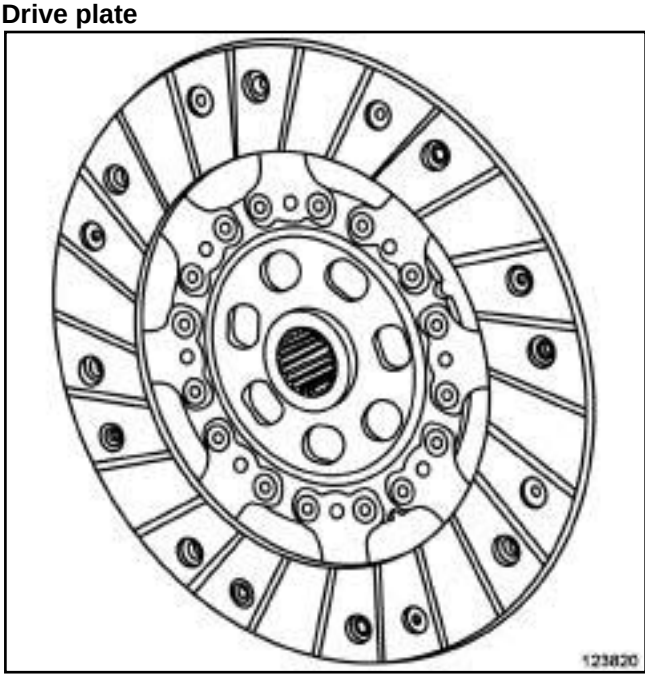
F9Q

Pressure plate



22428

Drive plate



123820

Plate outer diameter: **239 mm**

Plate thickness: **7.8 mm**

Number of grooves: **24**

ND4 or PK4

Essential special tooling	
Mot. 1431	Flywheel locking tool.
Emb. 1761	Clutch pressure plate removal/refitting kit
Emb. 1604	Clutch compression tool for resetting retrofit system.
Emb. 1780	Set of clutch disc centring mandrels.
Mot. 1677	Flywheel locking tool.

Tightening torques ▽	
clutch pressure plate bolts	**12 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 **Clutch: Precautions for repair**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine cover,
- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),

❏ Disconnect the clutch hydraulic pipe from the slave cylinder (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Unclip the control cables from the gearbox (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

❏ Remove:

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

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

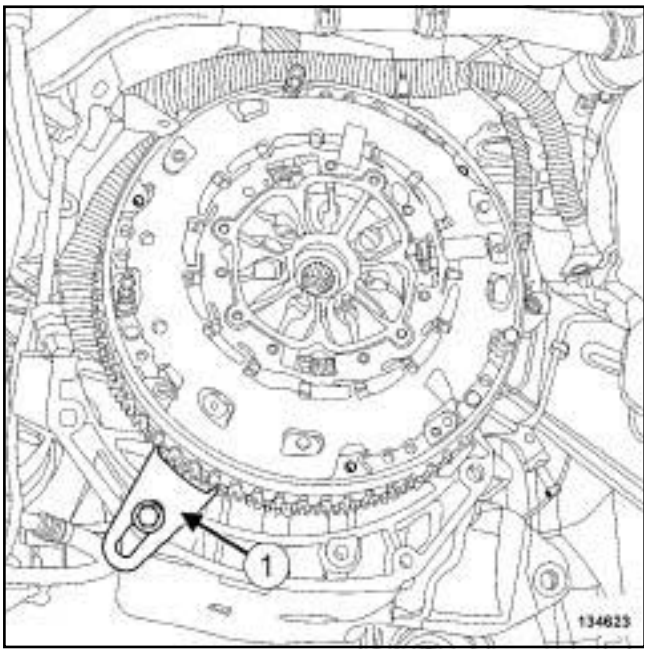
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (41A, Front lower structure),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) .

ND4 or PK4

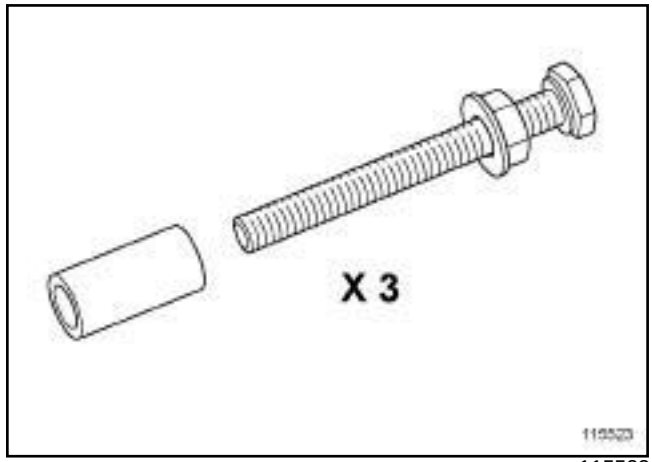
II - OPERATION FOR REMOVAL OF PART CONCERNED



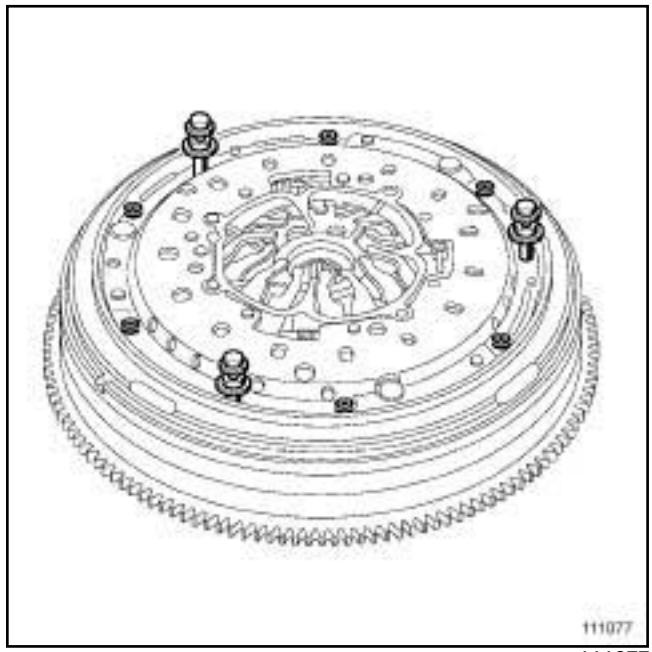
134623

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

❏ Remove three pressure plate retaining bolts at **120°** intervals.



115523



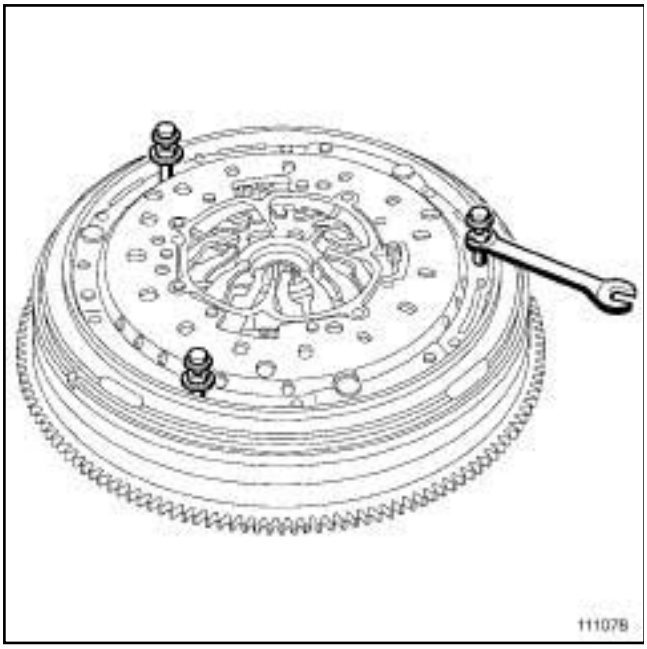
111077

❏ Replace these three bolts by the **(Emb. 1761)** comprising: an assembly of three bolts, three spacers and three nuts to hold the pressure plate in place.

❏ Place the three spacers in contact using the nuts.

❏ Gradually remove the six remaining bolts.

ND4 or PK4



111078

❑

Note:

These instructions must be respected to prevent twisting the plate.

❑ Unscrew and gradually remove by quarter turns the three nuts of tool **(Emb. 1761)**, one by one.

❑ Remove:

- the clutch pressure plate,
- the clutch plate.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the clutch pressure plate bolts.

❑ Clean the clutch shaft splines with **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

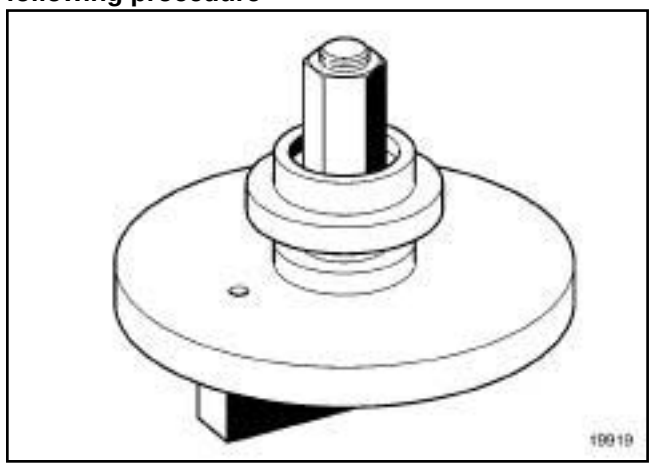
❑ Degrease the flywheel friction face with **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

Note:

The following procedure is to be used only if refitting the old pressure plate.

The automatic compensation must be repositioned at its starting point.

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



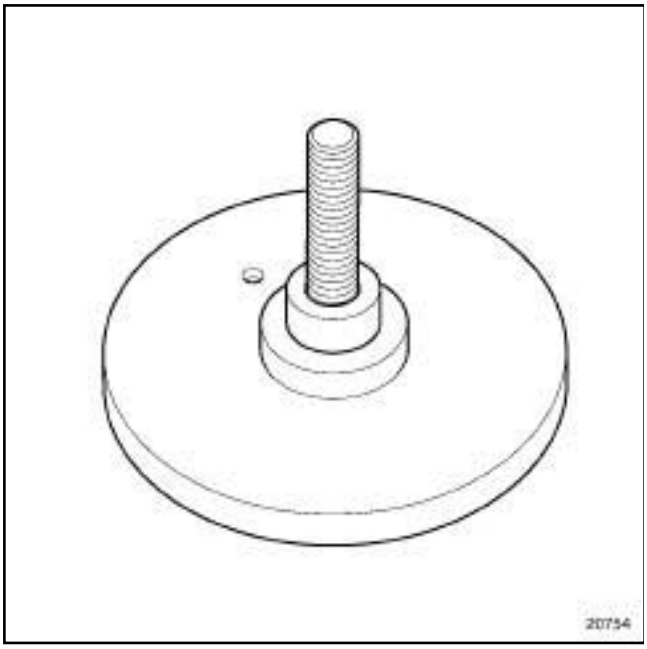
19919

❑

Note:

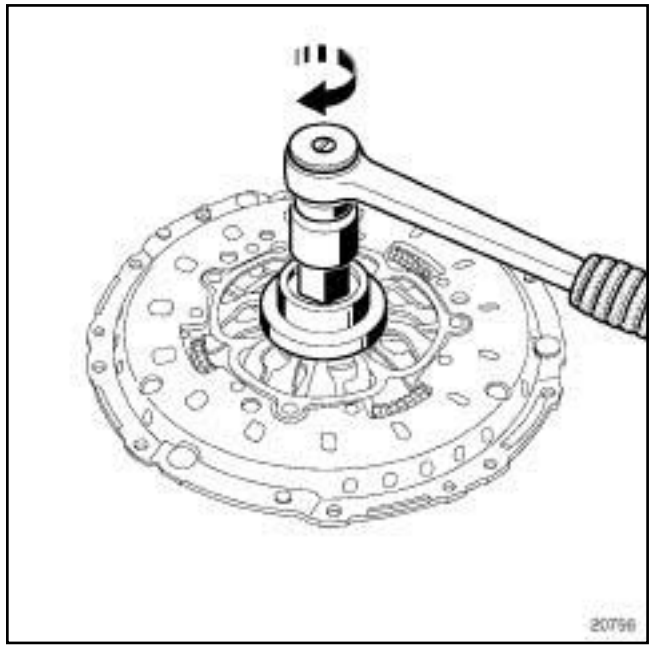
For automatic wear compensation mechanisms, compress the clutch pressure plate using tool **(Emb. 1604)**.

ND4 or PK4



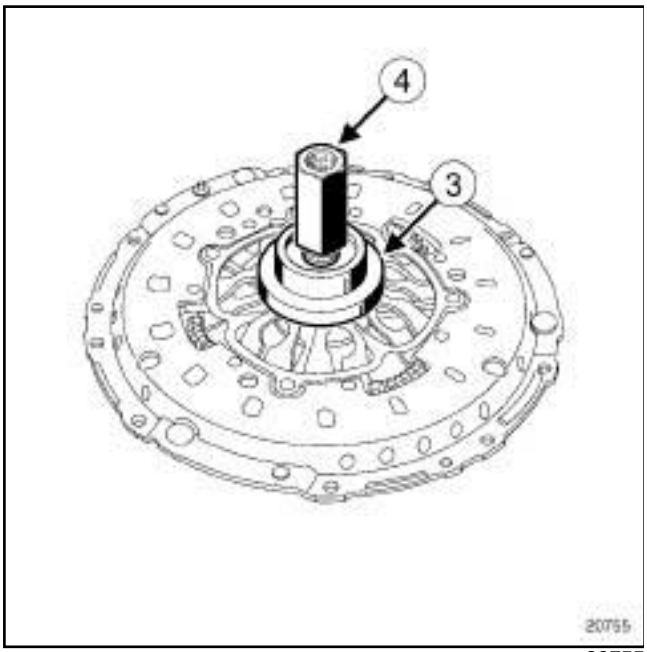
20754

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



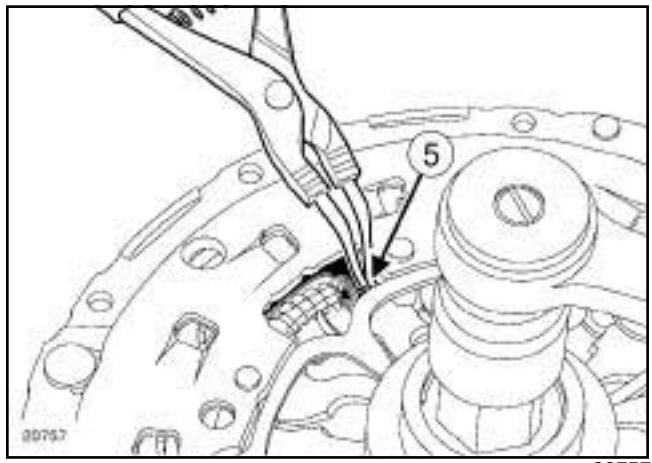
20756

❏ Tighten the nut ***(4)*** fully.



20755

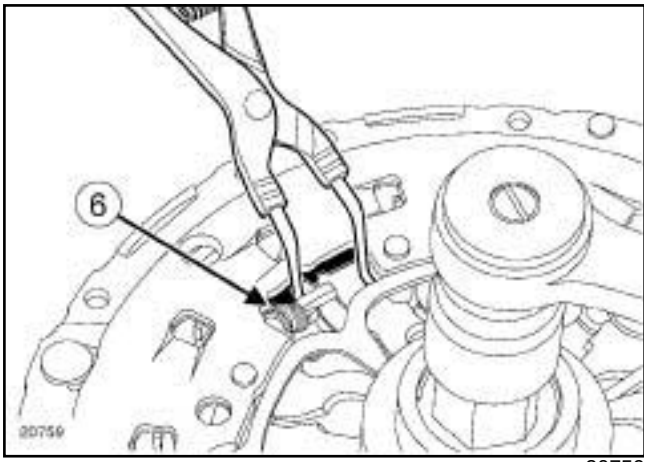
❏ Fit the pressure plate onto the base plate then the thrust ball bearing or bronze ring (**3**) and the nut (**4**) .



20757

❏ Fit a circlip clamp at (**5**) .

ND4 or PK4

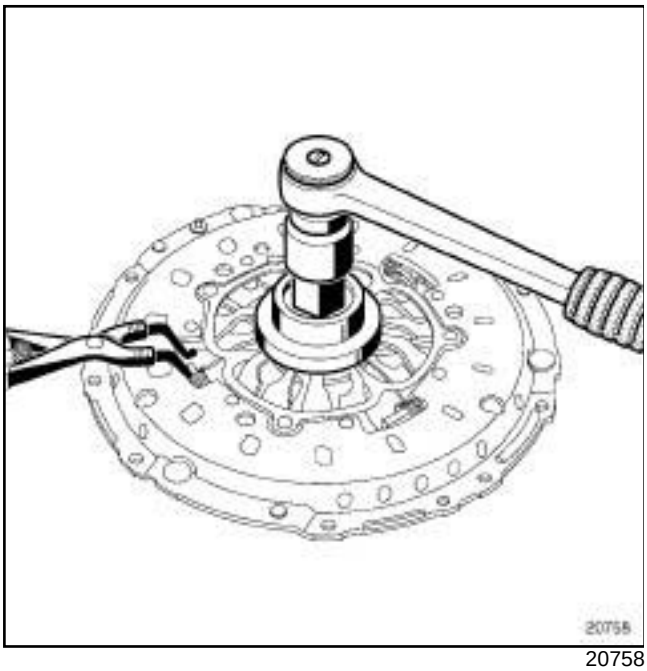


20759

❏ Compress the spring (**6**) to reprime the automatic compensation.

❏ Slacken off the nut ***(4)*** completely (springs compressed).

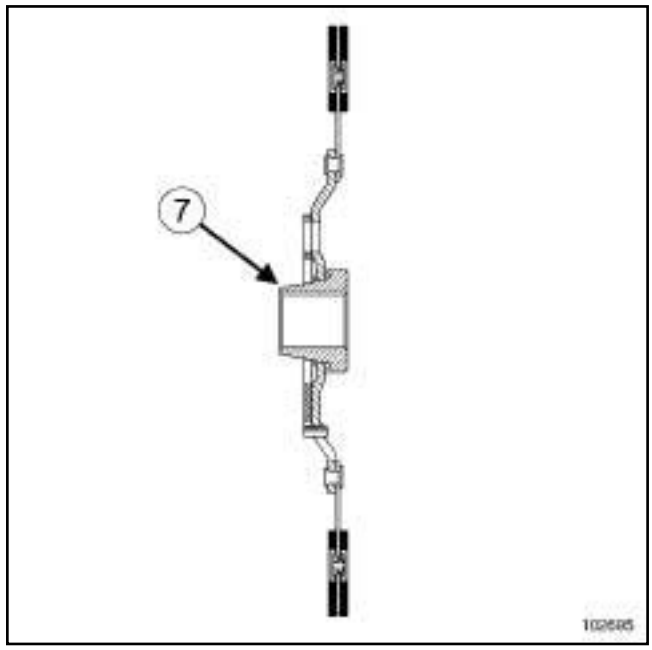
❏ Release the pressure plate.



20758

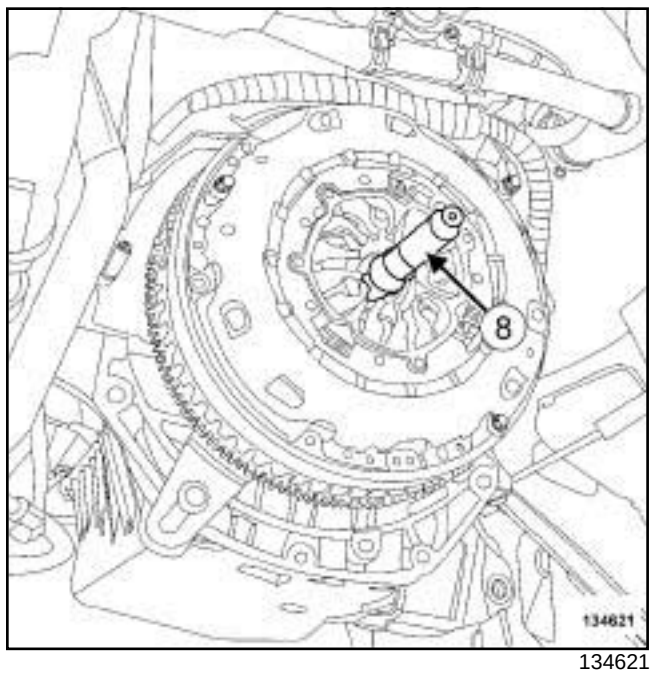
❏ Remove the pressure plate from the base plate (making sure that the springs are correctly compressed).

II - REFITTING OPERATION FOR PART CONCERNED



102695

❏ Fit the friction plate (with the small diameter of the hub at the flywheel end (**7**)).



134621

❏ Centre the clutch plate using the **(Emb. 1780)** (**8**) .

❏ Refit the clutch mechanism to the flywheel.

❏ Torque tighten the **clutch pressure plate bolts (12 N.m)**.

❏ Remove:

- the **(Emb. 1780)**,
- the **(Mot. 1677)**.

ND4 or PK4

III - FINAL OPERATION

❑ Refit:

- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (41A, Front lower structure),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

❑ Connect the clutch hydraulic pipe to the slave cylinder (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

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

❑ Clip the control cables onto the gearbox (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

❑ Adjust the gearbox control cables (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls).

❑ Refit:

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

❑ Fill the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

- the engine undertray,
- the engine cover.

JH3 or JR5 or TL4

Essential special tooling	
Mot. 1677	Flywheel locking tool.
Emb. 1780	Set of clutch disc centring mandrels.

Tightening torques ▽	
clutch pressure plate bolts	**12 N.m**
clutch pressure plate bolts	**15 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 **Clutch: Precautions for repair**) .

Note:
When fitting the clutch plate, the "RENAULT part number" should be visible when the plate is in position.

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),

❑ Disconnect the clutch hydraulic pipe from the slave cylinder (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❑ Unclip the control cables from the gearbox (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

❑ Remove:

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

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Remove:

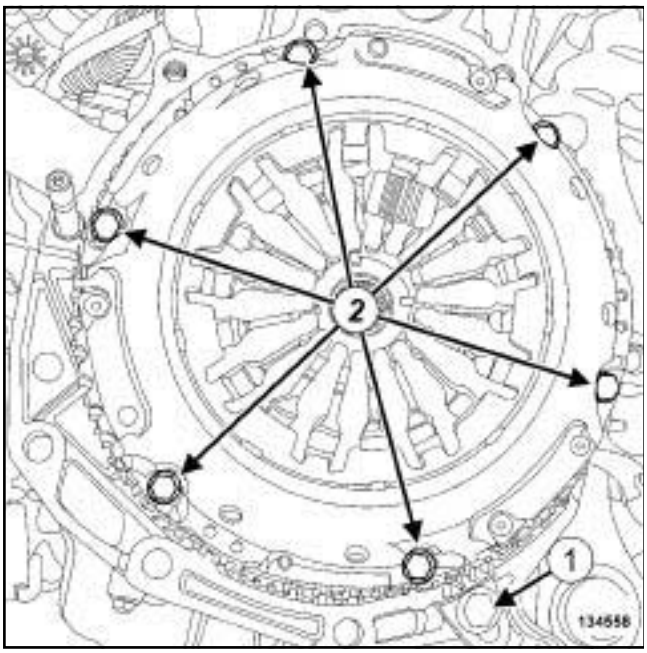
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),

JH3 or JR5 or TL4

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

JH3 or JR5



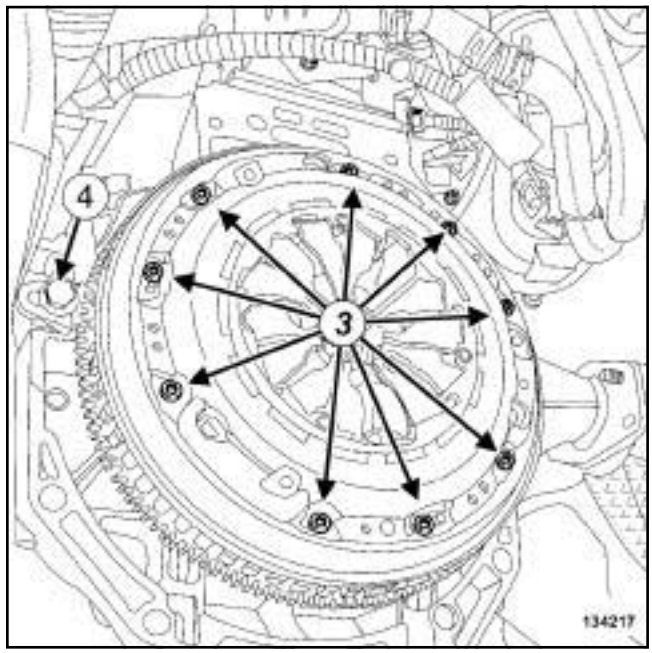
134558

❏ Lock the flywheel using tool **(Mot. 1677)** (**1**) .

❏ Remove:

- the bolts (**2**) from the « mechanism - disc » assembly,
- the « pressure plate - disc » assembly.

K9K, and TL4



134217

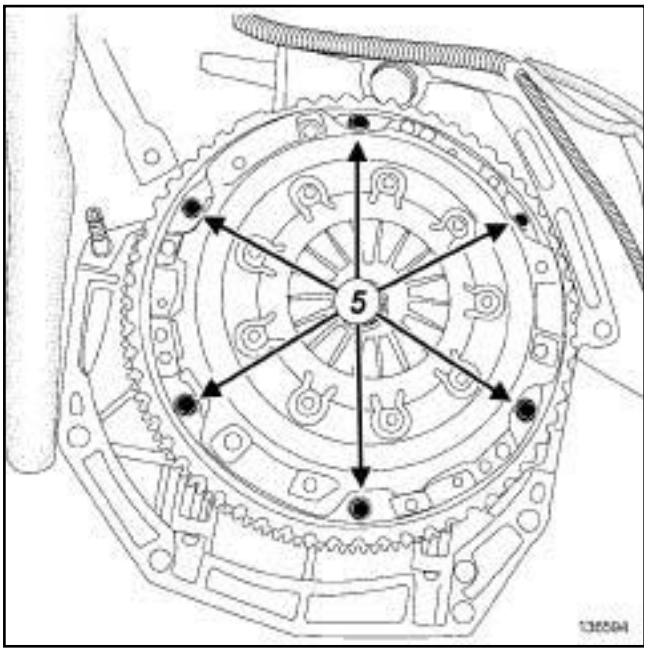
❏ Lock the flywheel using tool **(Mot. 1677)** (**4**) .

❏ Remove:

- the bolts (**3**) from the « mechanism - disc » assembly,
- the « pressure plate - disc » assembly.

JH3 or JR5 or TL4

K4M, and TL4



136594

❑ Lock the flywheel using tool **(Mot. 1677)**.

❑ Remove:

- the bolts (**5**) from the « mechanism - disc » assembly,
- the « pressure plate - disc » assembly.

REFITTING

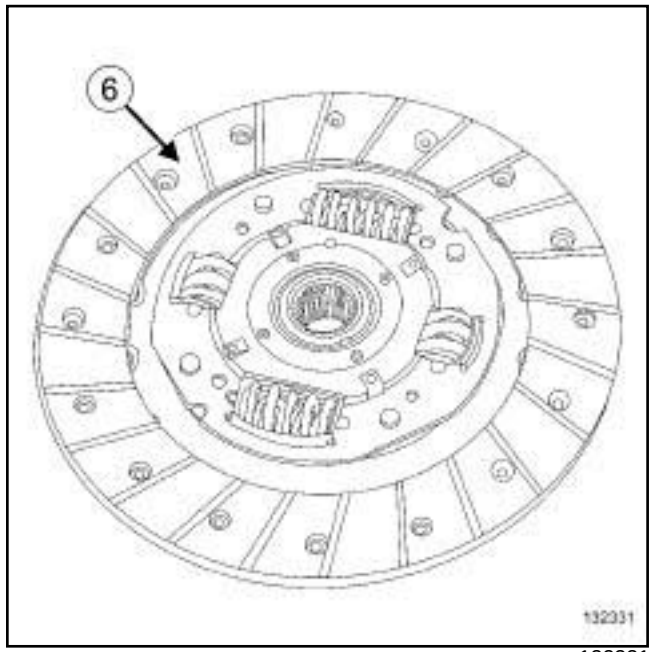
I - REFITTING PREPARATION OPERATION

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean and degrease:

- the flywheel friction face,
- the clutch shaft splines.

WARNING
Do not grease the clutch shaft splines.

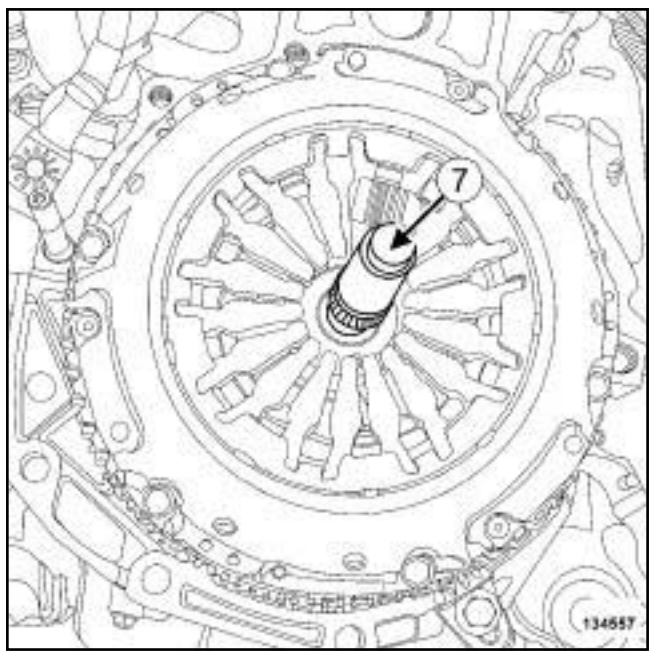
II - REFITTING OPERATION FOR PART CONCERNED



132331

❑ Fit the clutch plate, with the face (**6**) to the clutch pressure plate end.

JH3 or JR5

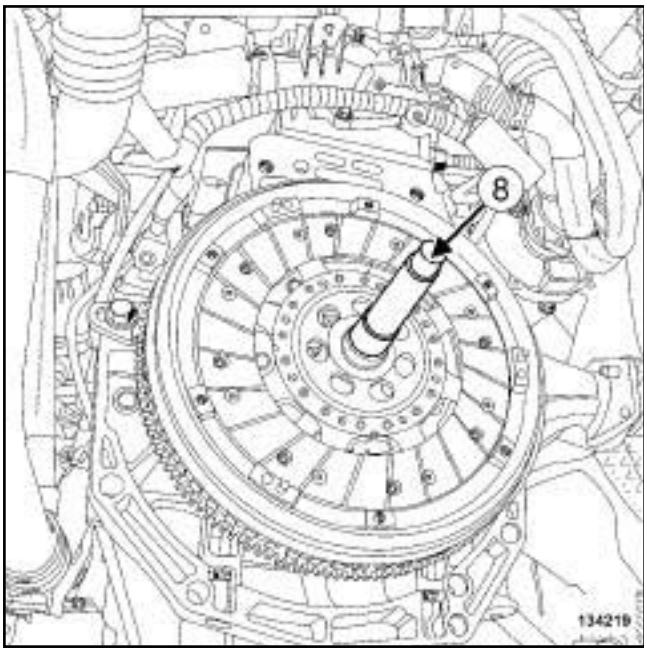


134557

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

JH3 or JR5 or TL4

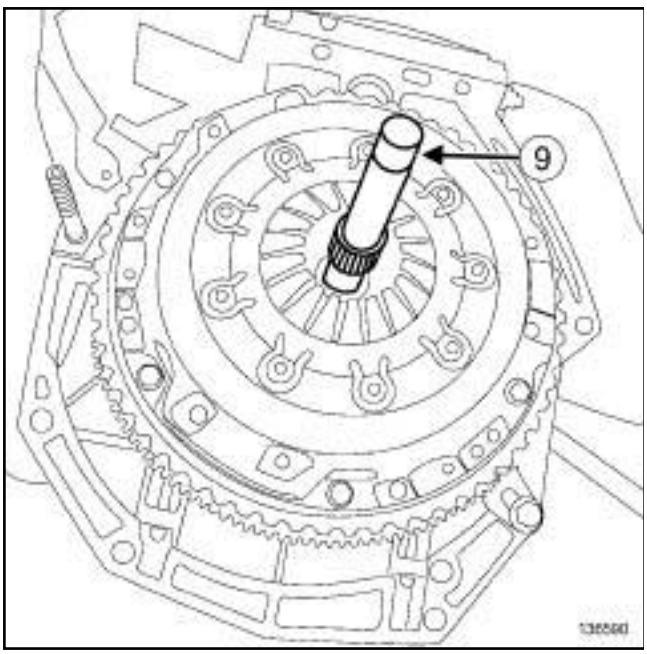
K9K, and TL4



134219

❑ Centre the clutch plate using the **(Emb. 1780)** (**8**) .

K4M, and TL4



136590

❑ Centre the clutch plate using the **(Emb. 1780)** (**9**) .

❑ Refit the clutch mechanism.

TL4

❑ Torque tighten the **clutch pressure plate bolts (12 N.m)** gradually in a radial pattern.

JH3 or JR5

❑ Torque tighten the **clutch pressure plate bolts (15 N.m)** gradually in a radial pattern.

❑ Remove the **(Emb. 1780)** and **(Mot. 1677)**.

III - FINAL OPERATION

❑ Refit:

- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting).
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),

JH3 or JR5 or TL4

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

❏ Connect the clutch hydraulic pipe to the slave cylinder (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

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

❏ Clip the control cables onto the gearbox (see **Manual gearbox selector cable: Removal - Refitting**) (37A, Mechanical component controls).

❏ Adjust the gearbox control cables (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls).

❏ Refit:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.

M9R, and PK4

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

Tightening torques ▽	
clutch pressure plate bolts	**12 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 **Clutch: 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 cover,
- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

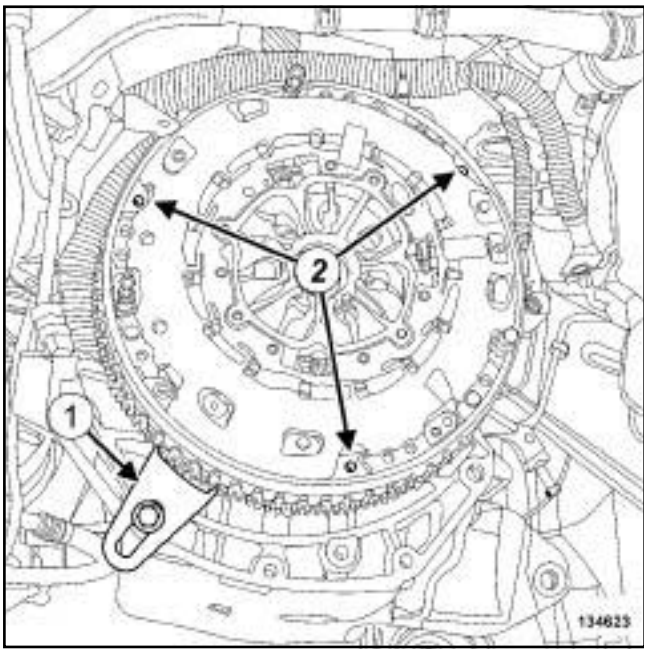
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (41A, Front lower structure),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) .

M9R, and PK4

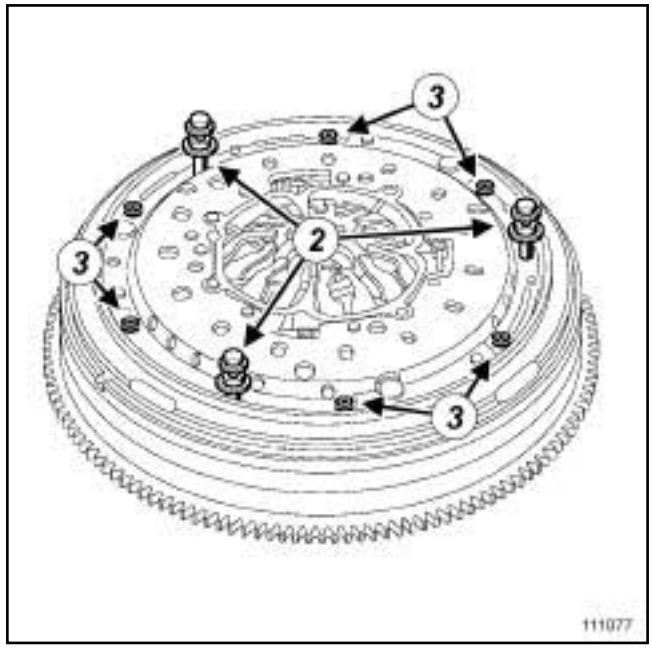
II - OPERATION FOR REMOVAL OF PART CONCERNED



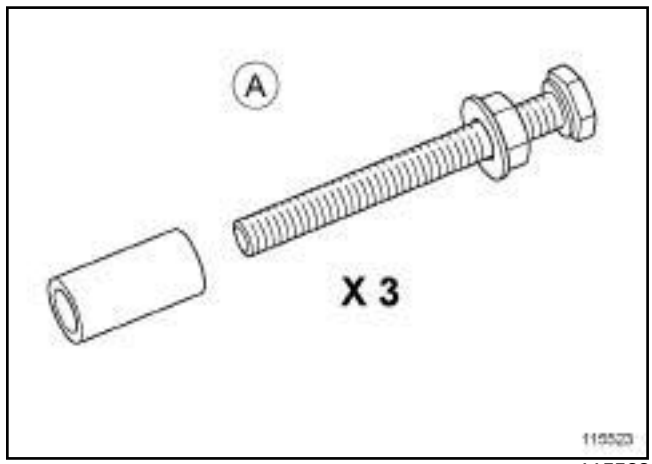
134623

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

❏ Remove the clutch pressure plate bolts (**2**) .



111077



115523

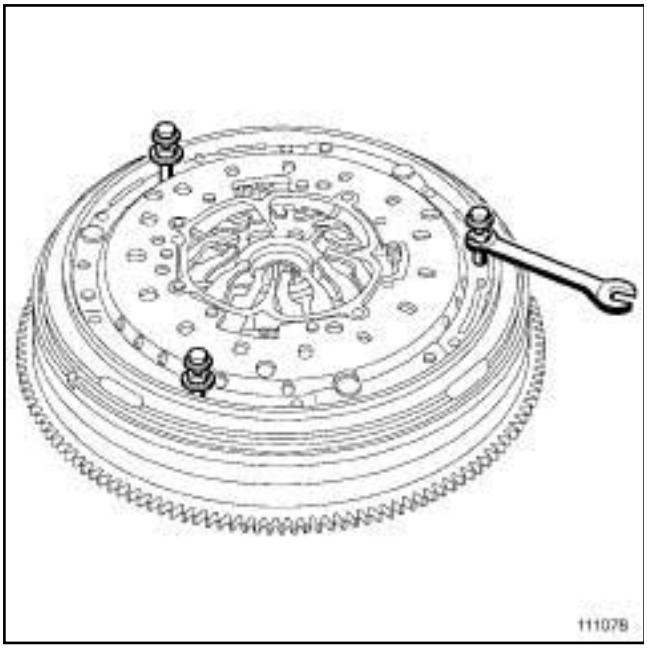
❏ Replace the three bolts (**2**) using the tool (**A**) including:

- three bolts,
- three nuts,
- three spacers.

❏ Place the three spacers in contact using the nuts.

❏ Gradually remove the six remaining bolts (**3**) .

M9R, and PK4



111078

❑

Note:

These instructions must be respected to prevent twisting the plate.

❑ Gradually unscrew by quarter turns the three nuts of the tool, one by one.

❑ Remove:

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

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the clutch pressure plate bolts.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean and degrease:

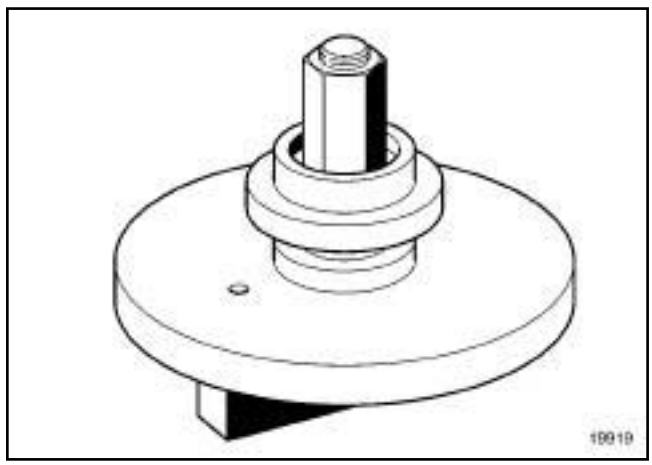
- the clutch shaft splines,
- the flywheel friction face.

Note:

The following procedure is to be used only if refitting the old pressure plate.

The automatic compensation must be repositioned at its starting point

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



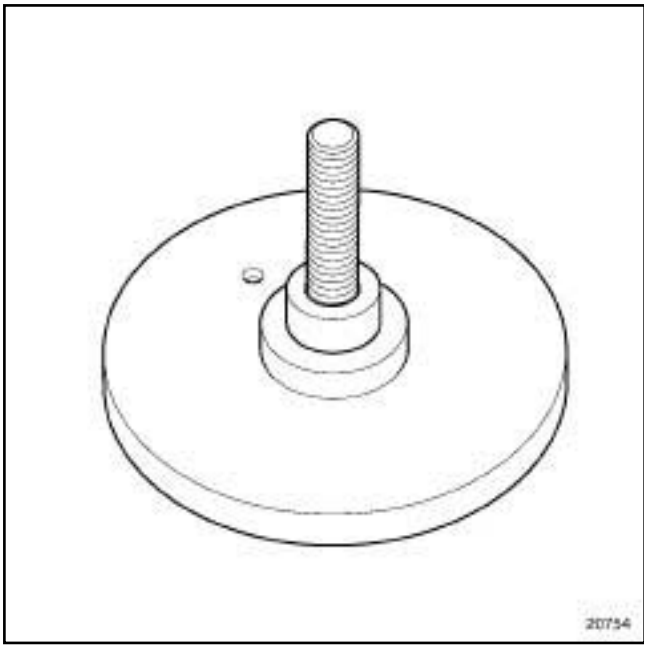
19919

❑

Note:

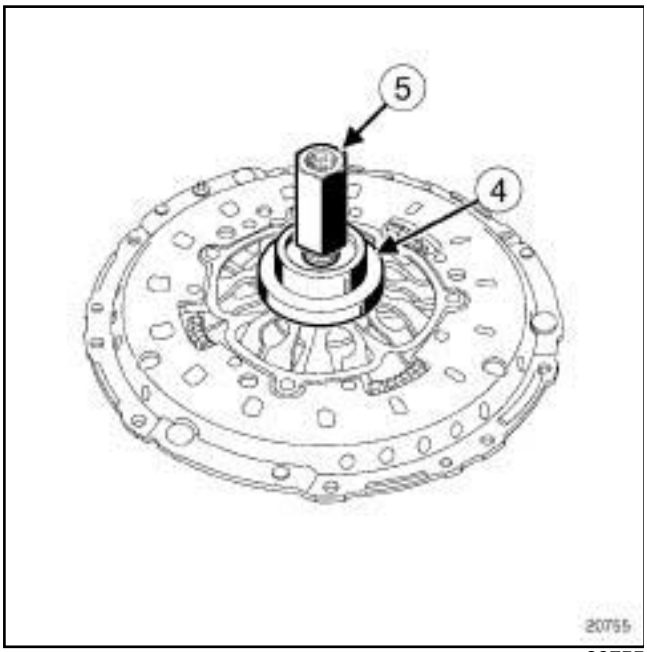
For automatic wear compensation mechanisms, compress the clutch pressure plate using tool.

M9R, and PK4



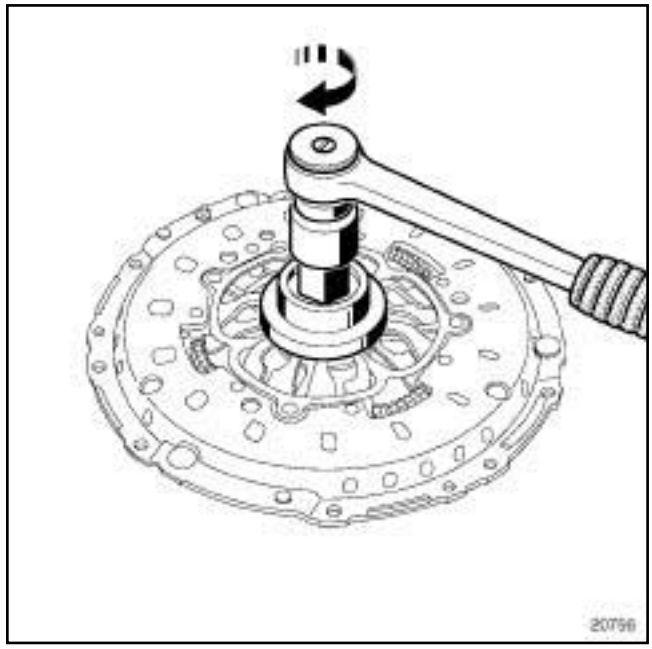
20754

❏ Place the base of toolin a vice.



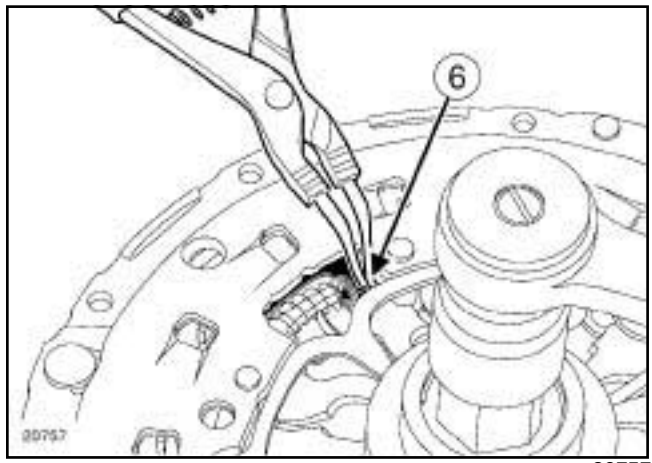
20755

❏ Fit the pressure plate onto the base plate then the thrust ball bearing or bronze ring (**4**) and the nut (**5**) .



20756

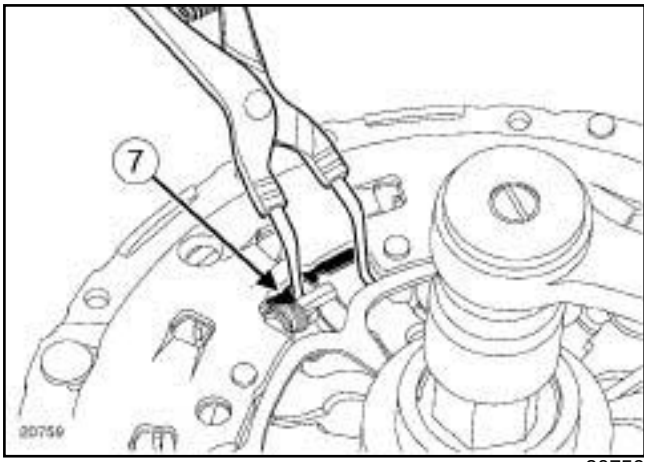
❏ Tighten the nut ***(4)*** fully.



20757

❏ Fit a circlip clamp at (**6**) .

M9R, and PK4

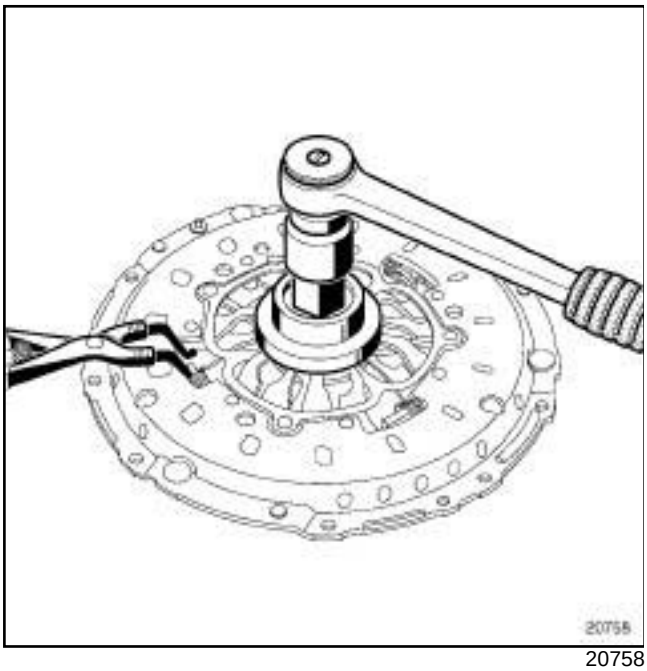


20759

❏ Compress the spring (**7**) to reprime the automatic compensation.

❏ Slacken off the nut ***(4)*** completely (springs compressed).

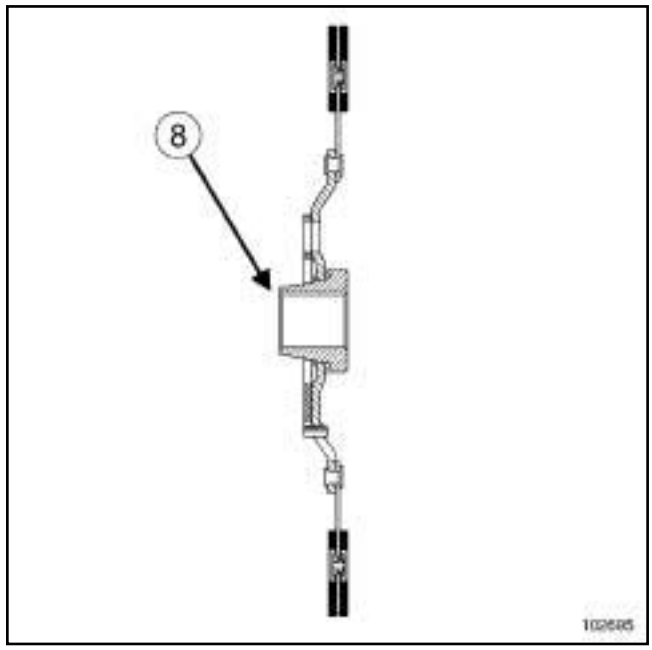
❏ Release the pressure plate.



20758

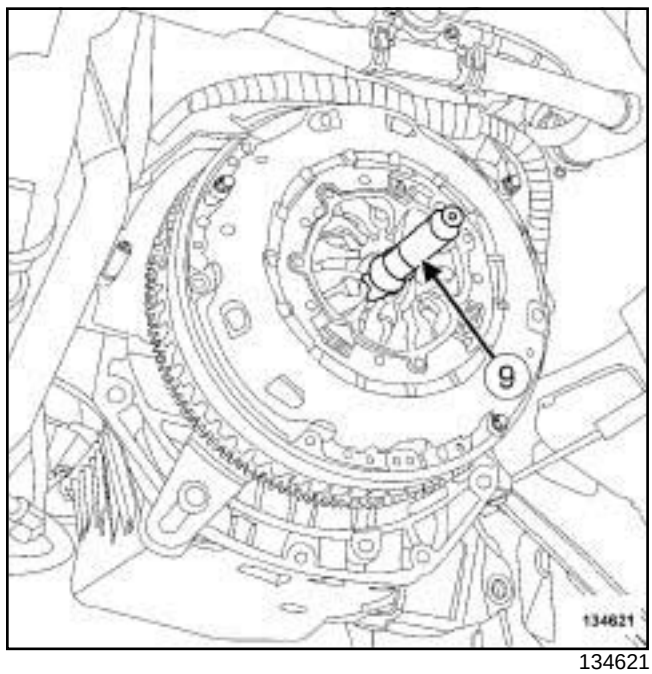
❏ Remove the pressure plate from the base plate, making sure that the springs are correctly compressed.

II - REFITTING OPERATION FOR PART CONCERNED



102695

❏ Fit the friction plate (with the small diameter of the hub at the flywheel end (**8**)).



134621

❏ Centre the clutch plate using the **(Emb. 1780)** (**9**) .

❏ Refit the clutch pressure plate to the flywheel.

❏ Torque tighten the **clutch pressure plate bolts (12 N.m)**.

❏ Remove:

- the **(Emb. 1780)**,
- the.

M9R, and PK4

III - FINAL OPERATION

❑ Refit:

- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (41A, Front lower structure),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

- the engine undertray,
- the engine cover.

Clutch thrust bearing: Removal - Refitting

JH3 or JR5 or ND4 or PK4 or TL4

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

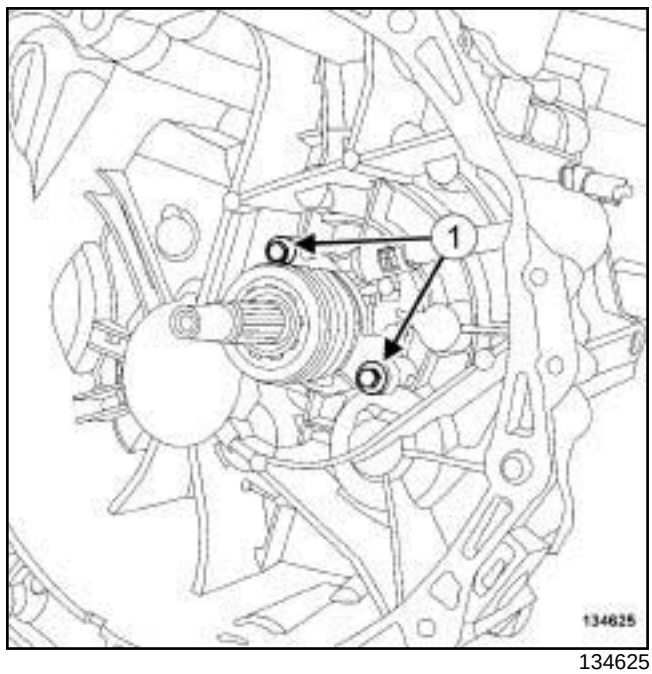
- the engine cover,
- the engine undertray bolts,
- the engine undertray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (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 left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



134625

❏ Remove:

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

JH3 or JR5 or ND4 or PK4 or TL4

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the clutch thrust bearing.

> Note:
>
> To obtain optimum bleeding, pre-fill the clutch thrust bearing when refitting the thrust bearing.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit a new clutch thrust bearing.

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

III - FINAL OPERATION

❏ Refit:

- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

❏ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),

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

❏ Refit:

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

5 SPEED MANUAL GBOX or 6 SPEED MANUAL GBOX

I - VEHICLE/GEARBOX TYPE/OIL TYPE CORRELATIONS:

GEARBOX TYPE	TYPE OF OIL FOR GEARBOX
JBX JCX JRX JHX NDX TL4	TRANSELF TRJ 75W80 or TRANSELF NFJ 75W80
PKX PFX VMX NEX NGX N0X UNX	TRANSELF TRX 75W80 or TRANSELF NFP 75W80
ZFX	TRANSELF LD 75W80

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

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

III - IDENTIFICATION OF OIL FOR STANDARD EXCHANGE PK1 GEARBOXES:

Note:

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

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

JH3 or JR5

Essential special tooling	
Mot. 1018	Sump plug tool.

Essential equipment
oil recovery container
torque wrench
8 mm square drain plug socket

Tightening torques ▽	
drain plug	**25 N.m**

Gearbox type	Capacity (litres)
JH3	2.7
JR5	2.4

I - PARTS AND CONSUMABLES FOR THE REPAIR

❏ Part for repair:

- the manual gearbox drain plug seal.

❏ Consumables for repair:

- Manual gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04B, Lubricants).

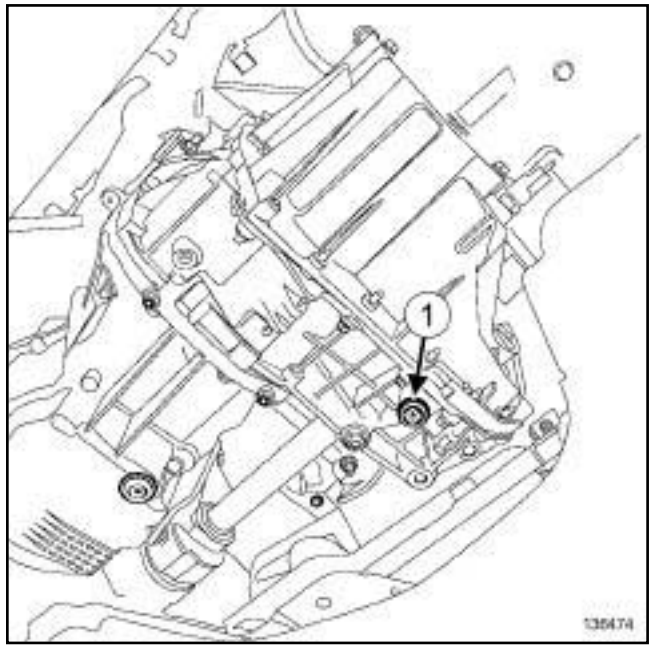
II - DRAINING OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

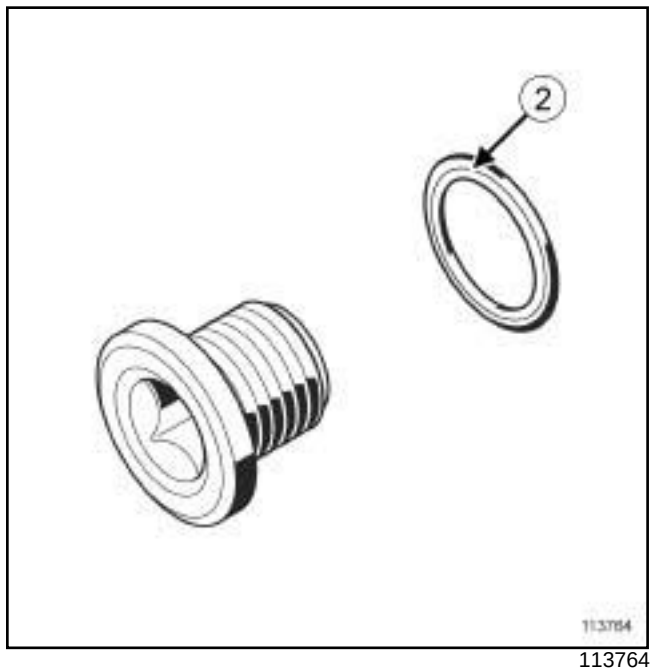
❏ Position the **oil recovery container** under the gearbox.



136474

❏ Remove the drain plug (**1**) using the **(Mot. 1018)**.

❏ Let the oil run into the **oil recovery container**.



113764

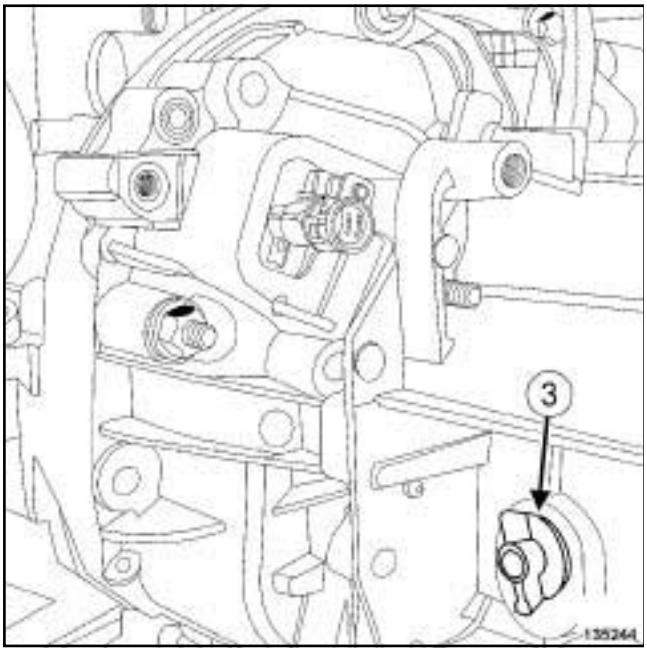
❏ Refit a new seal on the drain plug with the groove (**2**) facing the plug.

❏ Refit the drain plug fitted with its new seal.

❏ Torque tighten the **drain plug (25 N.m)** using a **torque wrench** fitted with a **8 mm square drain plug socket**.

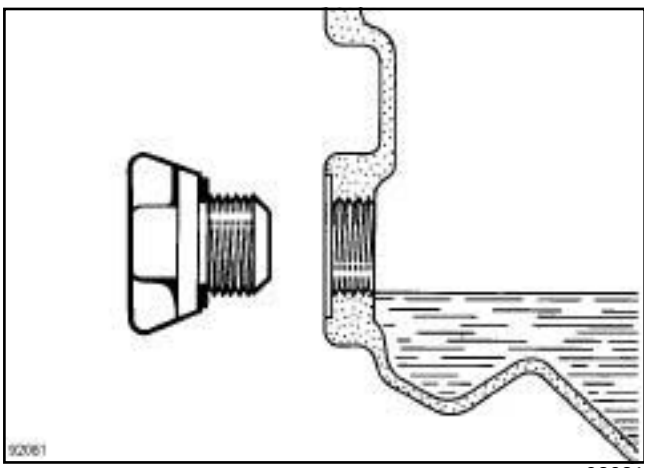
JH3 or JR5

III - FILLING



135244

❏ Undo the filler cap (**3**) .



92081

❏ Fill the gearbox using a syringe containing recommended oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (04A, Lubricants) until the oil overflows out of the filler cap hole.

❏ Refit the filler cap.

❏ Wipe any oil run-off with a cloth.

❏ Remove the **oil recovery container**.

❏ Refit the engine undertray.

ND4

Essential special tooling	
Mot. 1018	Sump plug tool.

Essential equipment
oil recovery container
torque wrench
8 mm square drain plug socket

Tightening torques ▽	
drain plug	**24 N.m**

CAPACITY

Type	Capacity (litres)
ND4	2.1 l

I - PARTS AND CONSUMABLES FOR THE REPAIR

❏ Part for repair:

- the manual gearbox drain plug seal.

❏ Consumables for repair:

- gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) (Technical Note 6012A, 04A, Lubricants).

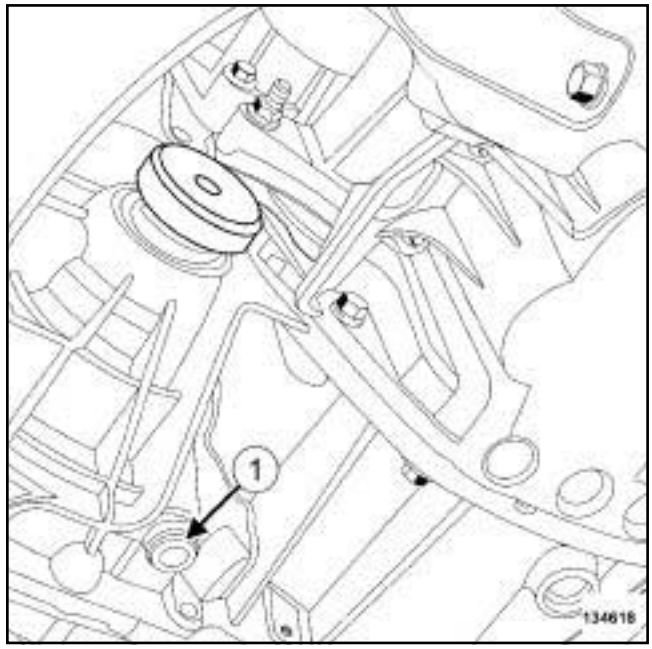
II - DRAINING OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

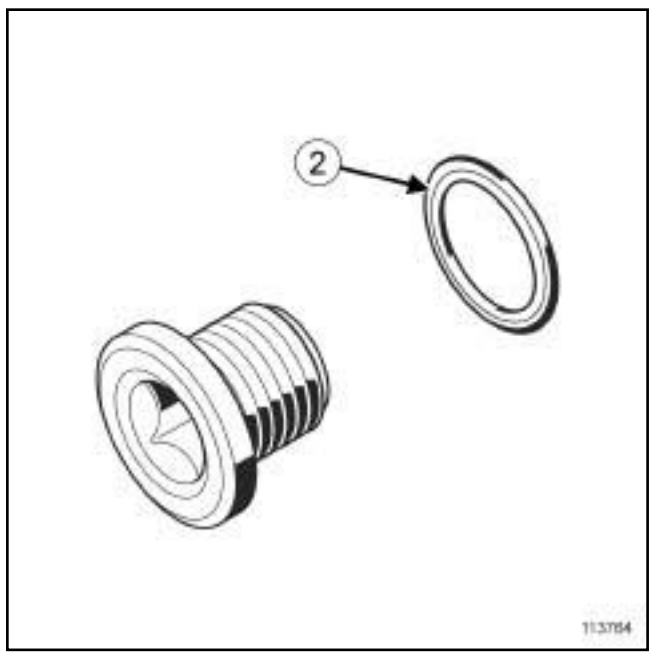
❏ Fit the **oil recovery container** under the manual gearbox.



134618

❏ Unscrew the drain plug (**1**) using the **(Mot. 1018)**.

❏ Let the oil flow out of the gearbox in the **oil recovery container**.



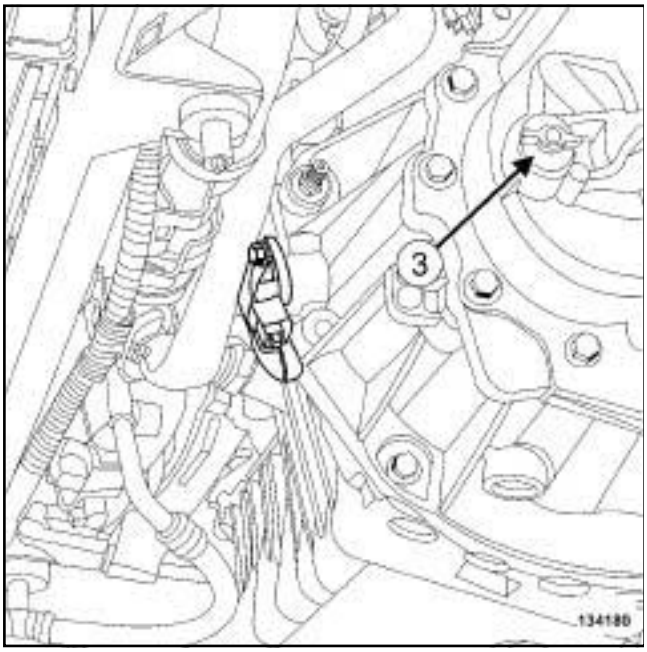
113764

❏ Refit a new seal on the drain plug with the groove (**2**) facing the plug.

❏ Refit the drain plug fitted with its new seal.

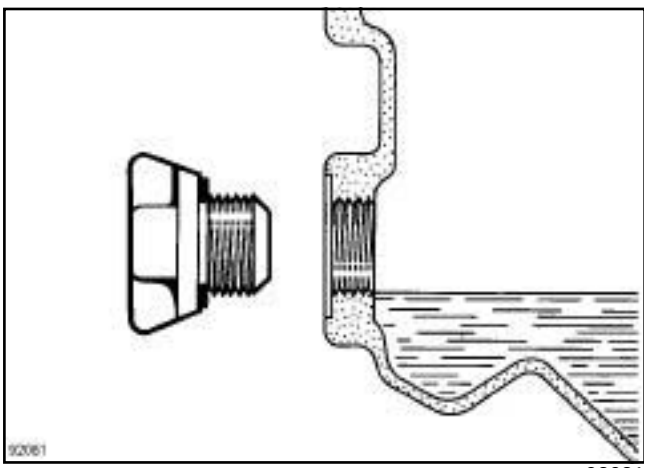
❏ Torque tighten the **drain plug (24 N.m)** using a **torque wrench** fitted with a **8 mm square drain plug socket**.

III - FILLING



134180

❏ Undo the filler cap (**3**) .



92081

❏ Fill the gearbox using a syringe containing recommended oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) (04A, Lubricants) until the oil overflows out of the filler cap hole.

❏ Refit the filler cap.

❏ Wipe any oil run-off with a cloth.

❏ Remove the **oil recovery container**.

❏ Refit the engine undertray.

TL4

Essential special tooling	
Mot. 1018	Sump plug tool.

Essential equipment
oil recovery container
torque wrench
8 mm square drain plug socket

Tightening torques ▽	
drain plug	**24 N.m**

CAPACITY

Gearbox type	Capacity (litres)
TL4	1.9

I - PARTS AND CONSUMABLES FOR THE REPAIR

❏ Part for repair:

- the manual gearbox drain plug seal.

❏ Consumables for repair:

- Gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants).

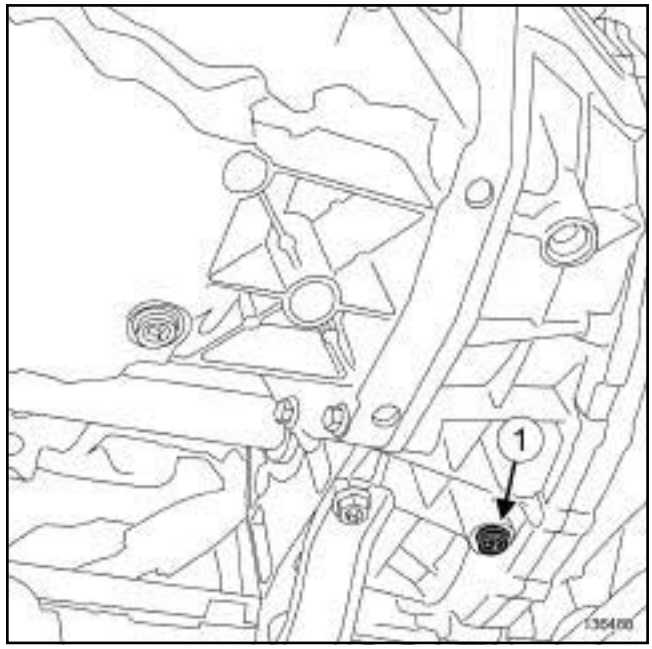
II - DRAINING OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

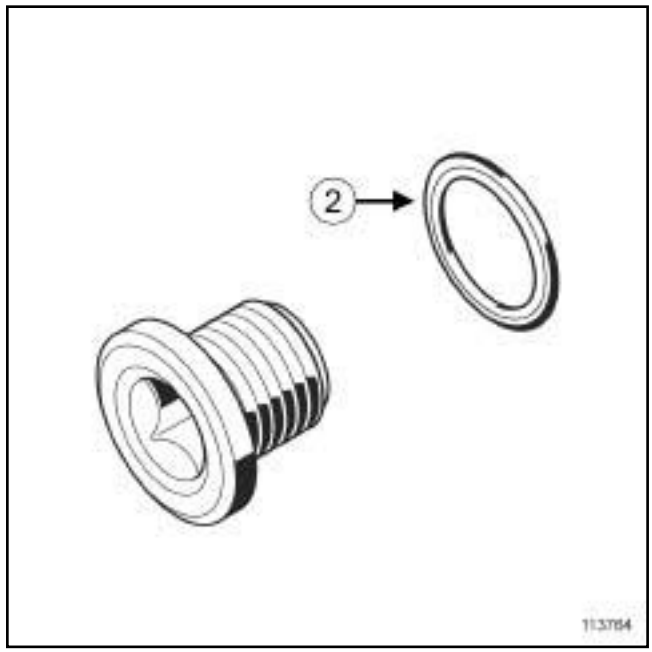
❏ Position the **oil recovery container** under the gearbox.



136488

❏ Remove the drain plug (**1**) using the **(Mot. 1018)**.

❏ Let the oil flow out of the gearbox in the **oil recovery container**.



113764

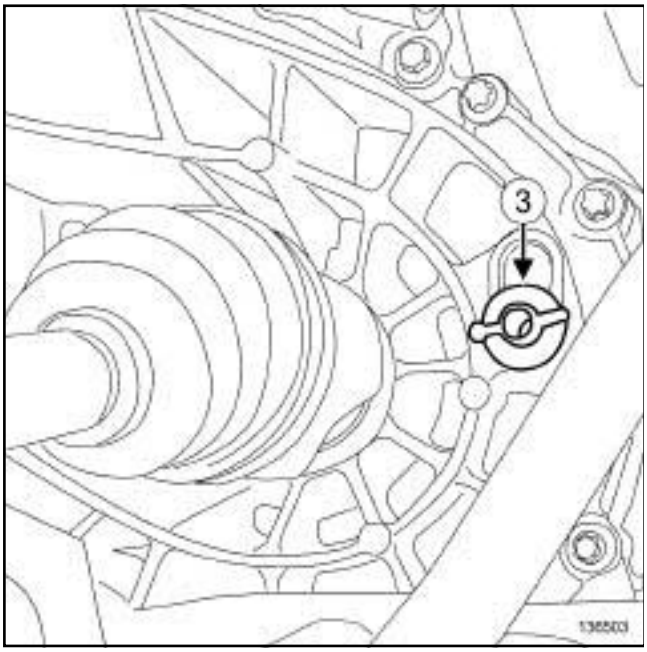
❏ Refit a new seal on the drain plug with the groove (**2**) facing the plug.

❏ Refit the drain plug fitted with its new seal.

❏ Torque tighten the **drain plug (24 N.m)** using a **torque wrench** fitted with a **8 mm square drain plug socket**.

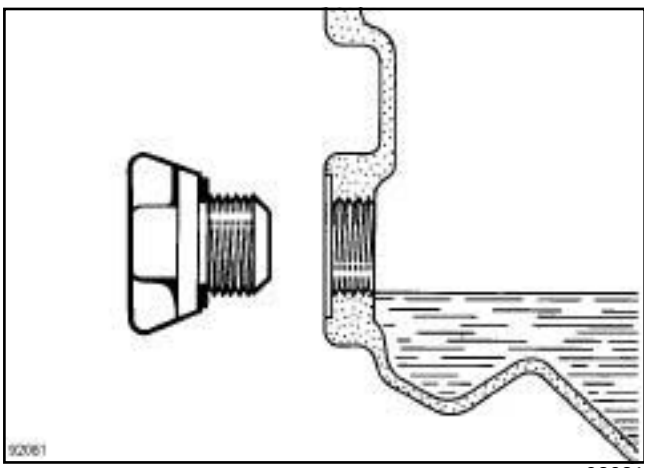
TL4

III - FILLING



136503

❏ Undo the filler cap (**3**) .



92081

❏ Fill the gearbox using a syringe containing recommended oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (04A, Lubricants) until the oil overflows out of the filler cap hole.

❏ Refit the filler cap.

❏ Wipe any oil run-off with a cloth.

❏ Remove the **oil recovery container**.

❏ Refit the engine undertray.

PK4

Essential special tooling	
Mot. 1018	Sump plug tool.

Essential equipment
oil recovery container

Tightening torques ▽	
drain plug	**24 N.m**

CAPACITY

Gearbox type	Capacity in litres
PK4	**2.4**

PARTS AND INGREDIENTS FOR THE REPAIRWORK

❏ Part for repair:

- the manual gearbox drain plug seal.

❏ Consumables for the repair:

- gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants).

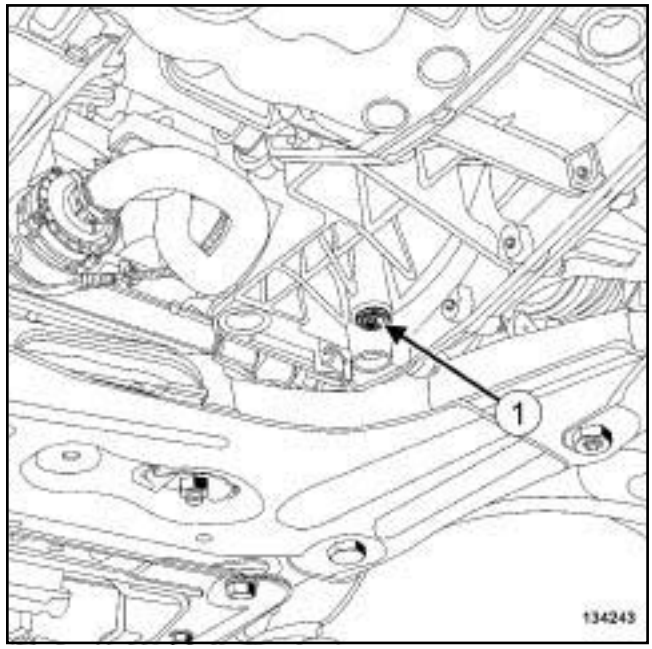
I - DRAINING OPERATION

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

❏ Remove:

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

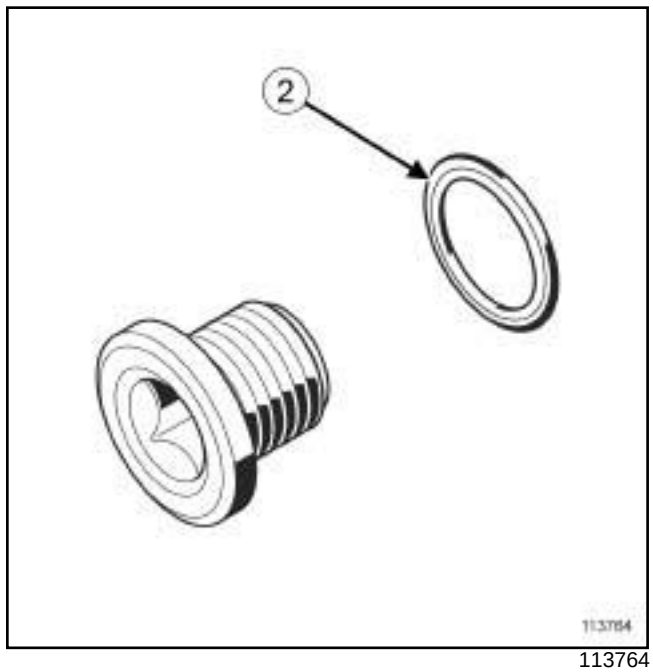
❏ Position the **oil recovery container** under the gearbox.



134243

❏ Unscrew the drain plug (**1**) using the **(Mot. 1018)**.

❏ Let the oil run into the **oil recovery container**.



113764

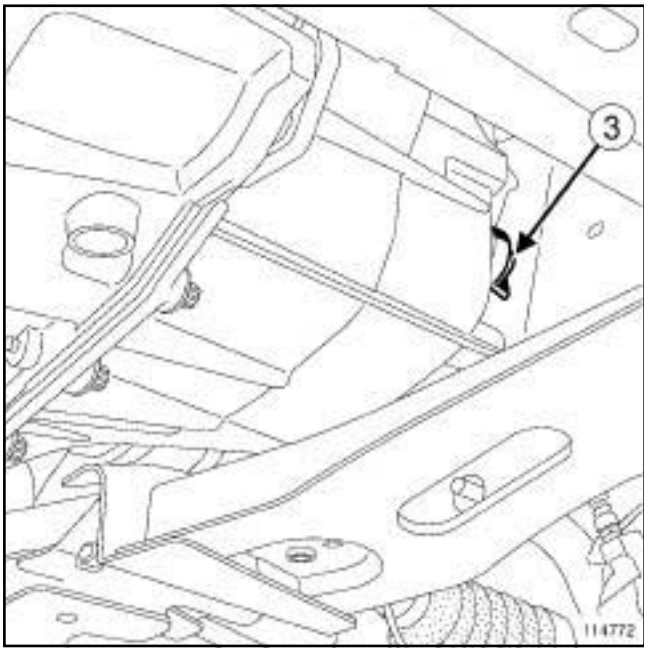
❏ Refit:

- the new seal on the drain plug, positioning the groove (**2**) towards the cap,
- the drain plug fitted with its new seal.

❏ Torque tighten the **drain plug (24 N.m)**.

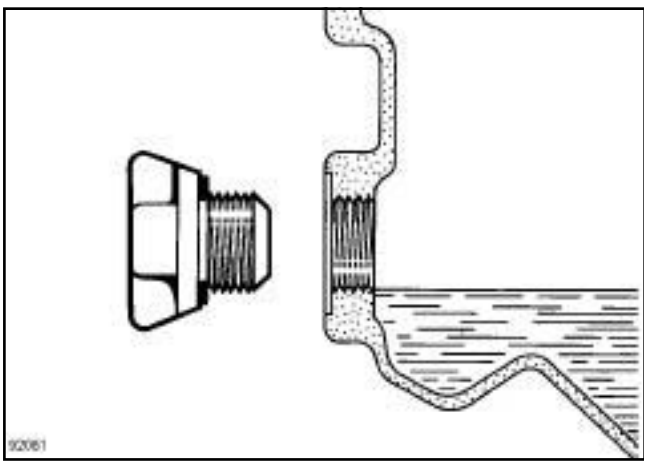
PK4

II - FILLING



114772

❏ Undo the filler cap (**3**) .



92081

❏ Fill the gearbox using a syringe containing recommended oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Specifications**, page **21A-1**) (Technical Note 6012A, 04A, Lubricants) until the oil overflows out of the filler cap hole.

❏ Refit the filler cap.

❏ Wipe any oil run-off with a cloth.

❏ Refit:

- the engine undertray,

- the engine cover.

JH3 or JR5

Essential special tooling	
Bvi. 1666	Tool for fitting differential seals.

Essential equipment
roll pin punch

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

1 - When replacing the differential output seal on the left-hand side

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

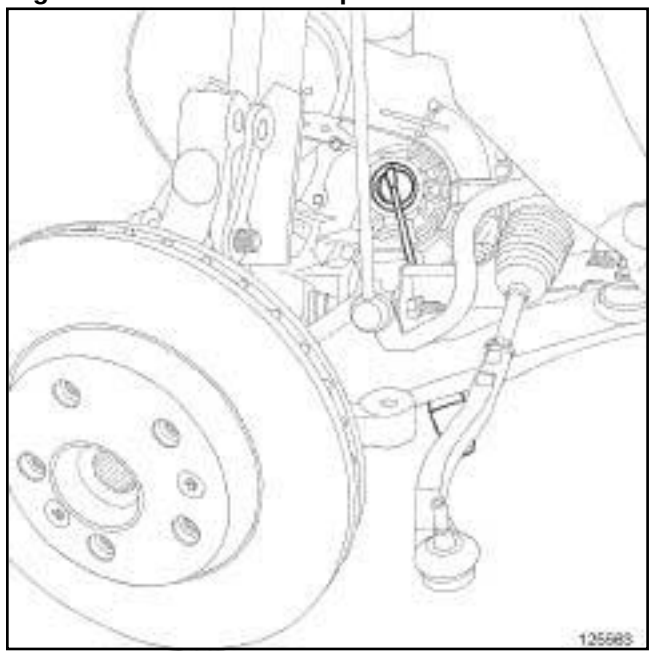
2 - When replacing the differential output seal on the right-hand side

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

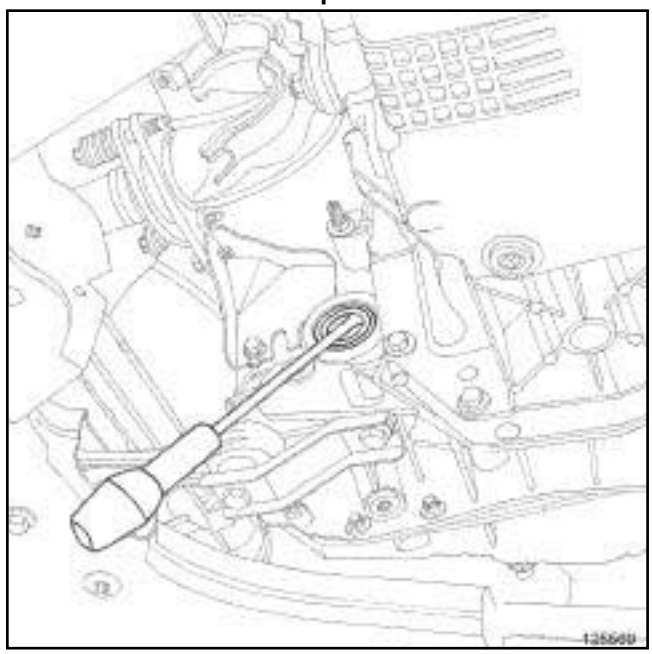
II - OPERATION FOR REMOVAL OF PART CONCERNED

Right-hand differential output seal



125563

Left-hand differential output seal



125569

❏ Tap the base of the differential output seal using a **roll pin punch** and a small hammer to detach it and rotate it in its housing.

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

JH3 or JR5

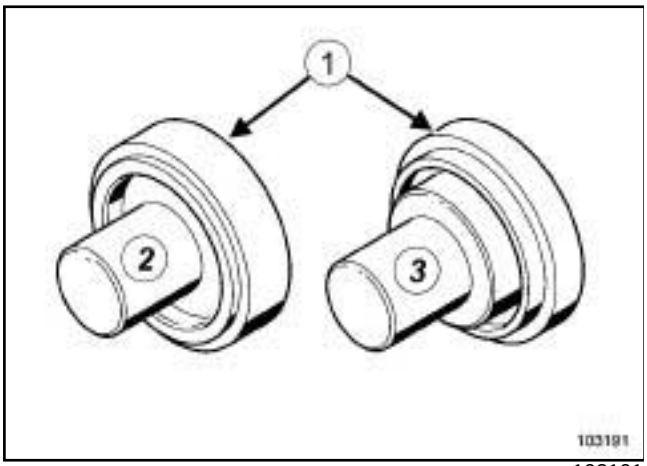
REFITTING

I - REFITTING PREPARATION OPERATION

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

JH3 or JR5

II - REFITTING OPERATION FOR PART CONCERNED

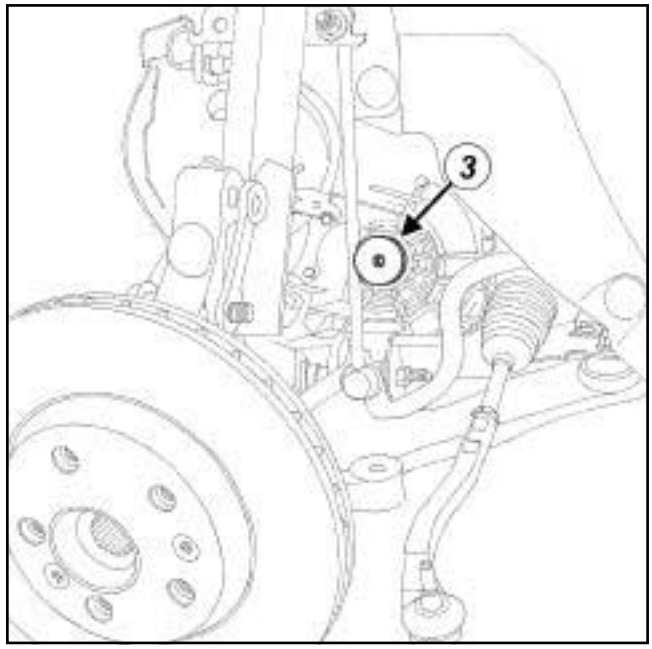


103191

Refitting the right-hand side differential output seal

125570

Refitting the left-hand side differential output seal.



125562

❑ Refit a new differential output seal using the tool **(Bvi. 1666)** (**1**) composed of:

- a mandrel (**2**) for the right-hand side,

- a mandrel (**3**) for the left-hand side.

❑ Lubricate the internal surface of the differential output seal.

❑ Fit:

- a differential output seal on the gearbox,

- the mandrel (**2**) or (**3**) of the tool **(Bvi. 1666)** on the new differential output seal.

❑ Tap the tool **(Bvi. 1666)** (**1**) with a copper hammer to fit the new differential output seal fully.

III - FINAL OPERATION

1 - When replacing the differential output seal on the left-hand side

❑ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,

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

JH3 or JR5

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

❑ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit the engine undertray.

ND4

Essential special tooling	
Bvi. 1689	Differential output seal fitting tool.

Essential equipment
roll pin punch

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

1 - When replacing a differential output seal on the left-hand side

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

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

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Tap the base of the differential output seal using a **roll pin punch** and a small hammer to rotate it in its housing.

❏ Remove the differential output seal using pliers, taking care not to damage the splines on the sunwheel.

REFITTING

I - REFITTING PREPARATION OPERATION

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

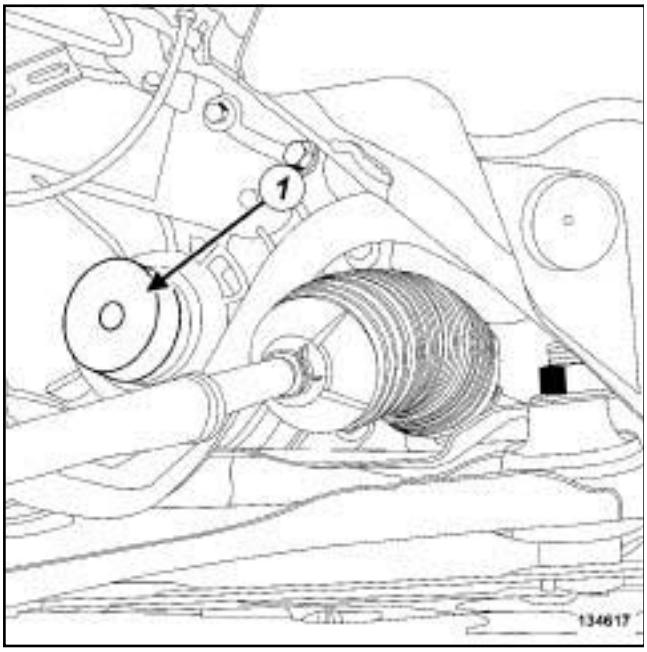
❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean:

- the mating face of the differential output seal,
- the propeller shaft.

ND4

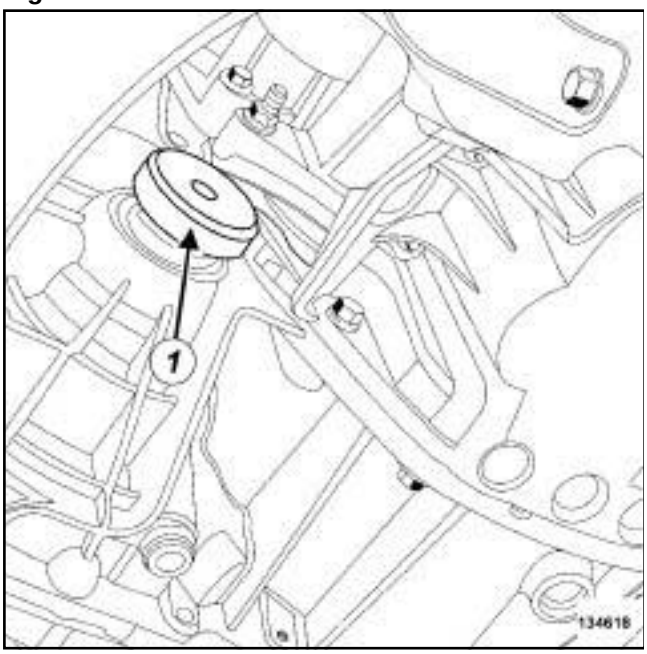
II - REFITTING OPERATION FOR PART CONCERNED

Left-hand side



134617

Right-hand side



134618

❏ Lubricate the differential output seal before inserting it onto the splined part of the sunwheel.

❏ Refit a new differential output seal using the tool **(Bvi. 1689)**.

III - FINAL OPERATION

1 - When replacing a differential output seal on the left-hand side

❏ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.

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

❏ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.

TL4

Essential special tooling	
Bvi. 1854	Differential output seal fitting tool TL4

Essential equipment
roll pin punch

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

1 - When replacing the differential output seal on the left-hand side

❏ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

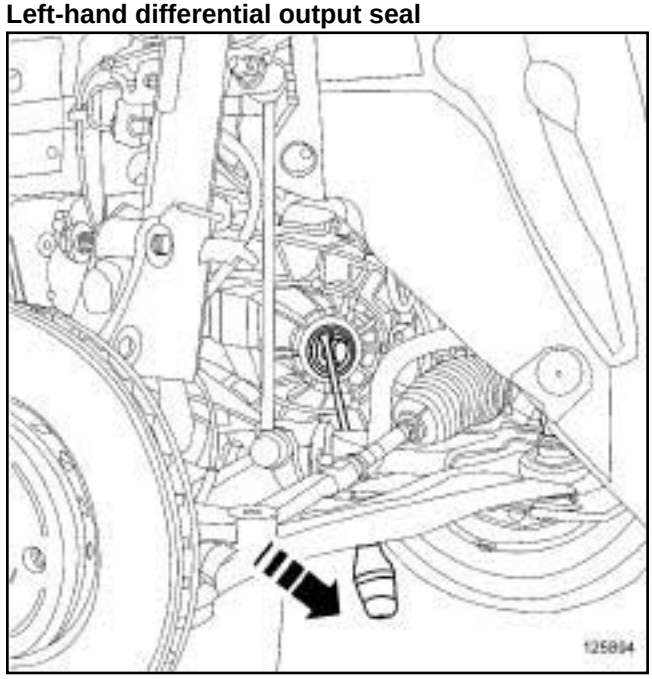
2 - When replacing the differential output seal on the right-hand side

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

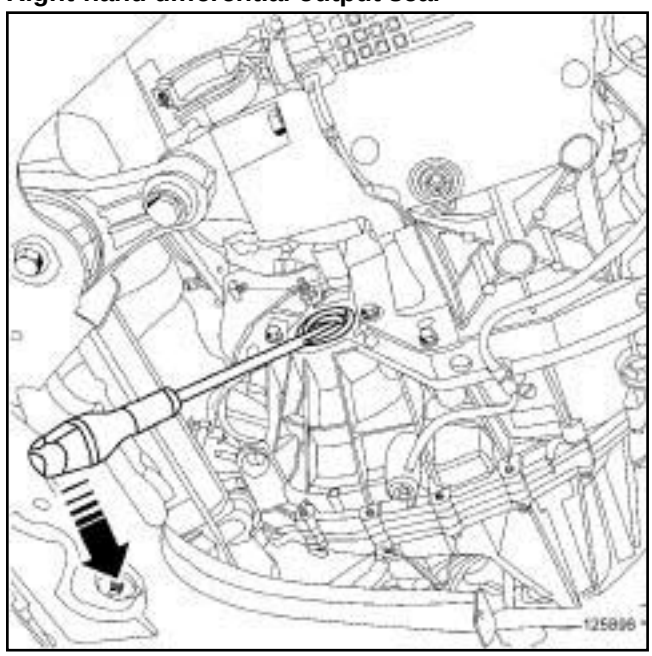
II - OPERATION FOR REMOVAL OF PART CONCERNED

Left-hand differential output seal



125894

Right-hand differential output seal



125896

❏ Tap the base of the lip seal using a **roll pin punch** and a small hammer to release it and make it turn in its housing.

❏ Remove the lip seal using a large screwdriver, taking care not to damage the differential housing.

TL4

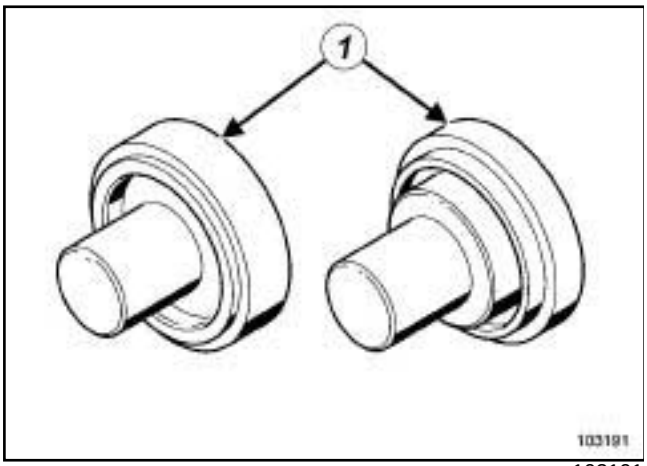
REFITTING

I - REFITTING PREPARATION OPERATION

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

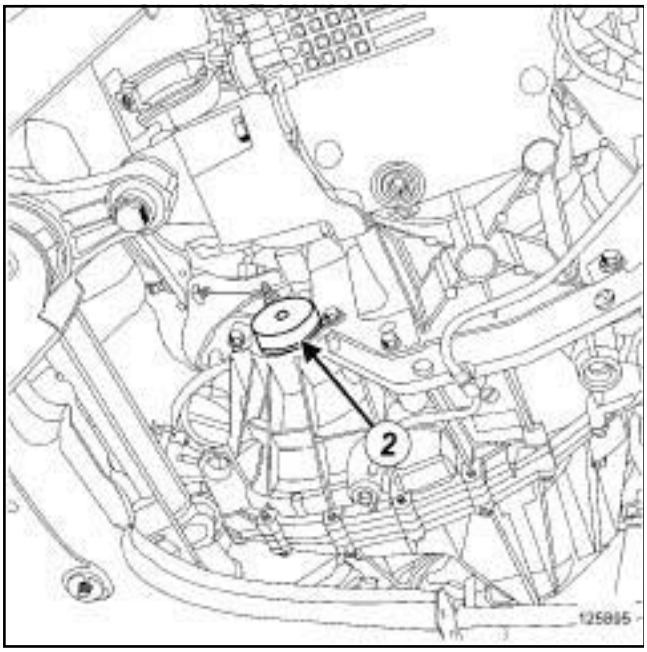
TL4

II - REFITTING OPERATION FOR PART CONCERNED



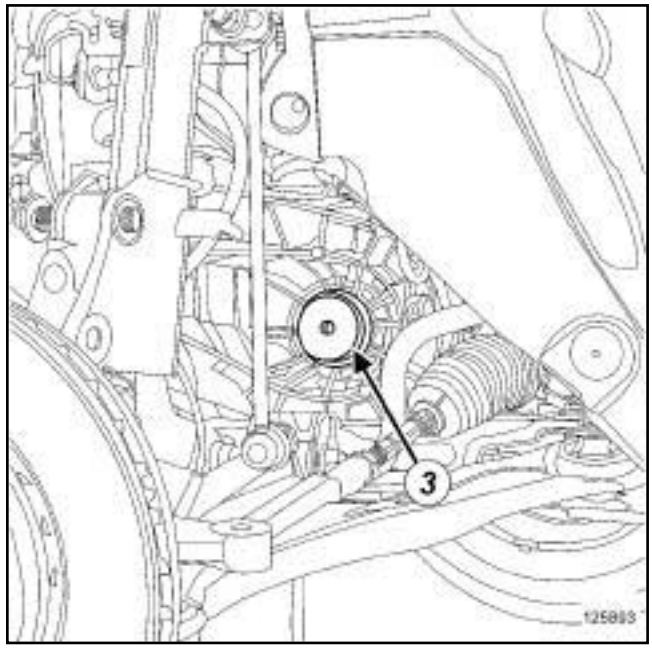
103191

Refitting the right-hand side differential output seal



125895

Refitting the left-hand side differential output seal.



125893

❑ The new differential output seal is refitted using the tool **(Bvi. 1854)** (**1**) consisting of:

- a mandrel (**2**) for the right-hand side,
- a mandrel (**3**) for the left-hand side.

❑ Oil the internal surface of the new differential output seal.

❑ Fit:

- the new differential output seal on the gearbox,
- the mandrel (**2**) or (**3**) of the tool **(Bvi. 1854)** on the new differential output seal.

❑ Tap the tool (**1**) with a copper hammer to fit the new differential output seal fully.

III - FINAL OPERATION

1 - Refitting the left-hand driveshaft

❑ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

2 - Refitting the right-hand driveshaft

❑ Refit:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,

TL4

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

3 - Final operation

❑ Fill the manual gearbox oil and check the level (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit the engine undertray.

PK4

Essential special tooling	
Bvi. 1719	Left-hand side differential oil seal fitting tool
Bvi. 1419	Bearing cage positioning tool.
Bvi. 1774	Right-hand transmission seal fitting tool.

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove the engine undertray.

❑ Drain the manual gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

1 - When replacing the differential output seal on the left-hand side

❑ Remove:

- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

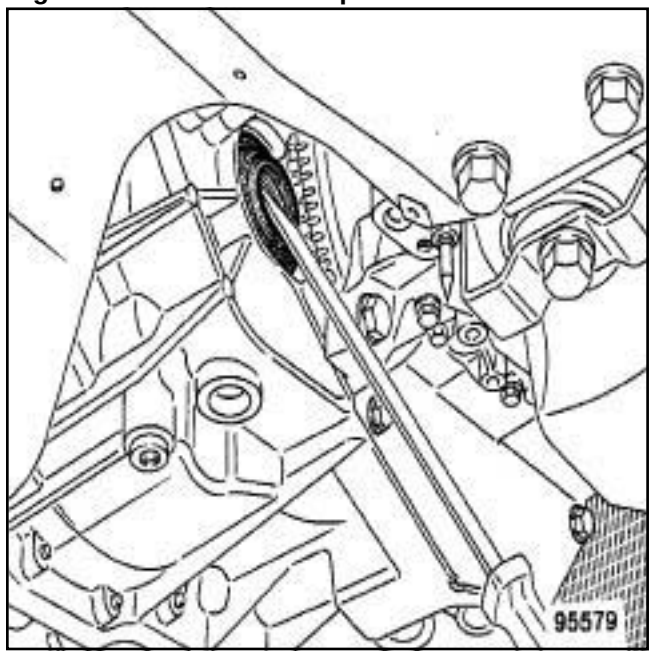
2 - When replacing the differential output seal on the right-hand side

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

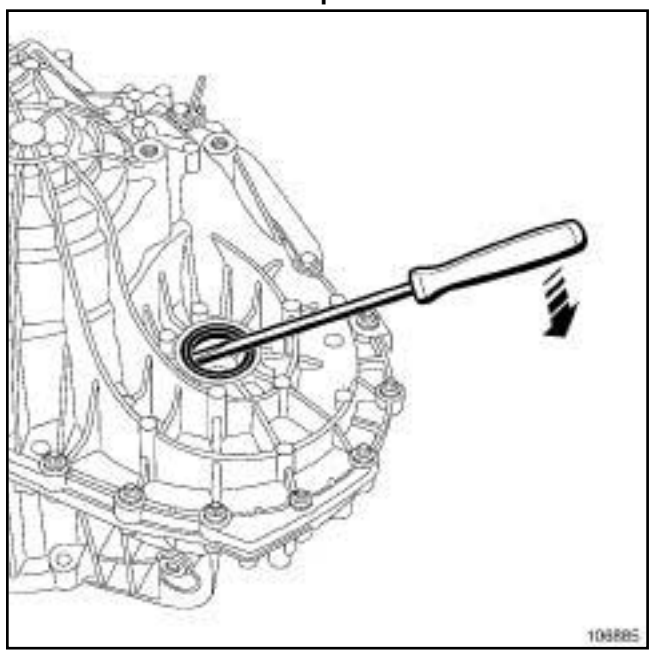
II - OPERATION FOR REMOVAL OF PART CONCERNED

Right-hand differential output seal



95579

Left-hand differential output seal



106885

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

PK4

REFITTING

I - REFITTING PREPARATION OPERATION

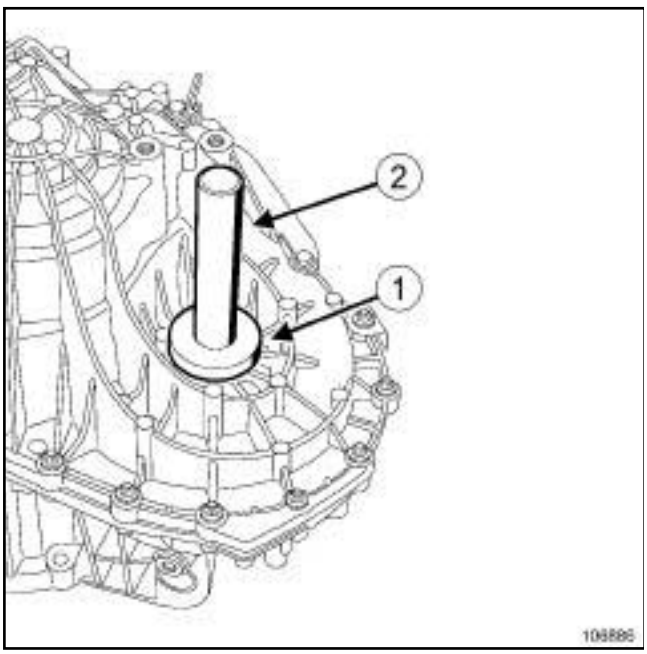
❑ **parts always to be replaced: Differential output seal (12,01,05,10)**.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean:

- the differential output seal mating faces,
- the propeller shaft.

II - REFITTING OPERATION FOR PART CONCERNED

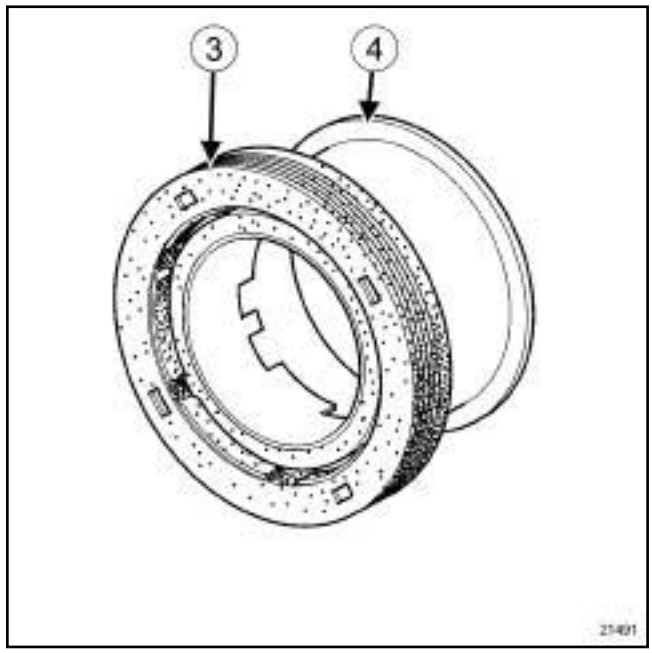
1 - Refitting the left-hand side differential output seal.



106886

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

2 - Refitting the right-hand side differential output seal



21491

❑ The right-hand side differential output seal is made up of:

- a seal (**3**) ,
- a deflector-protector (**4**) .

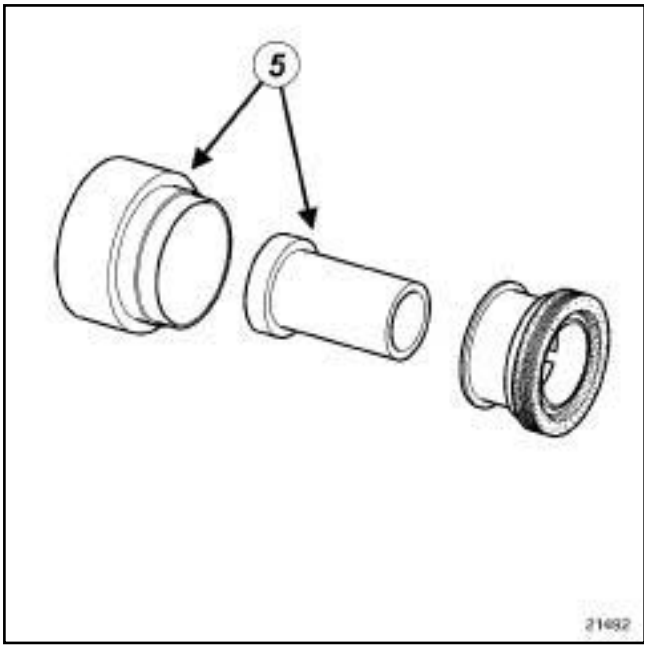
Note:

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

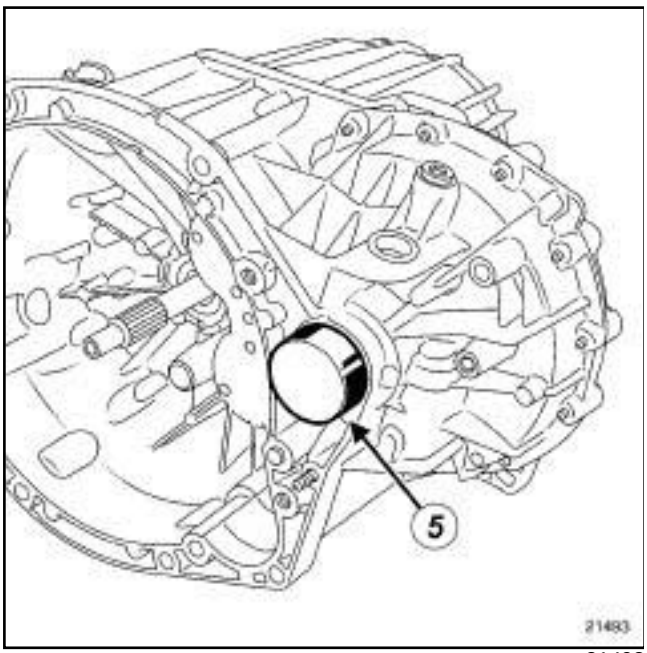
Note:

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

PK4



21492



21493

❑ Fit a new right-hand differential output seal (seal pressed onto the deflector-protector) using the tool **(Bvi. 1774)** (**5**) .

Note:

Do not lubricate the seal when fitting it.

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

III - FINAL OPERATION

1 - Refitting the right-hand driveshaft

❑ Fit the relay bearing seal.

Note:

Check that the seal is fully inserted into its groove.

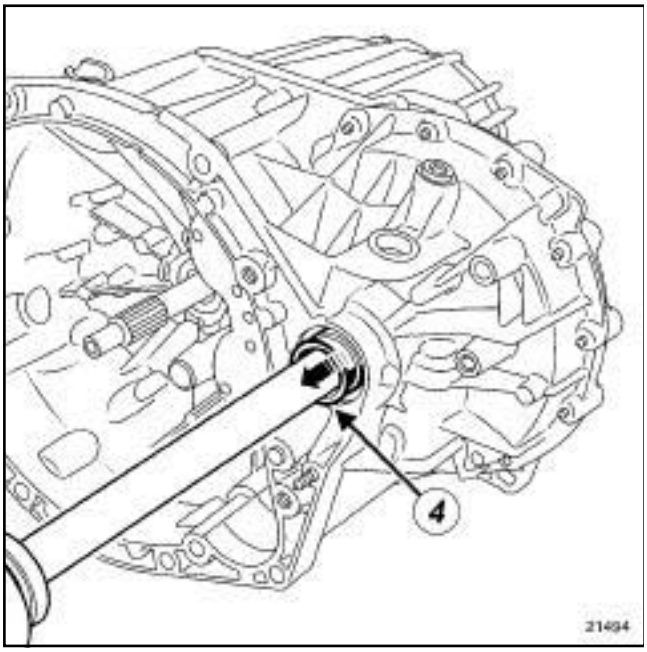
❑ Refit the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

Note:

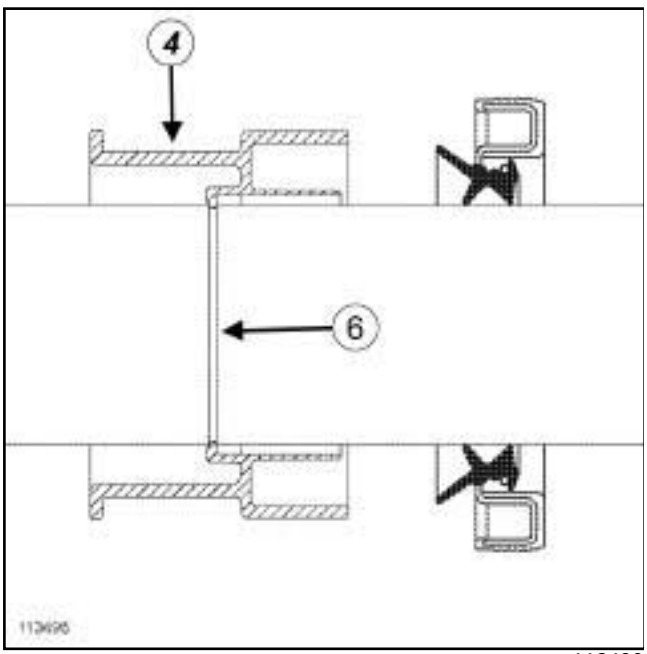
Make sure that the O-ring is correctly positioned in the base of the relay bearing, if the bearing has one.

PK4

a - Driveshaft WITH CLIP GROOVE



21494



113496

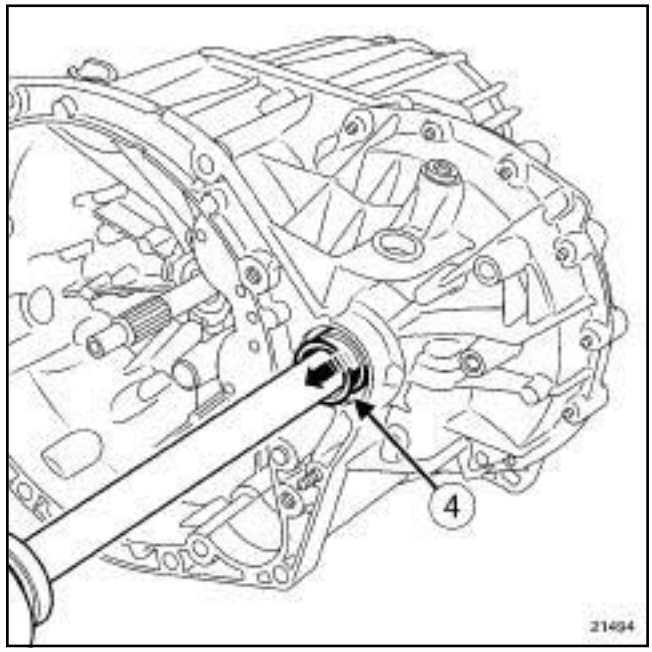
❏ Pull the deflector-protector (**4**) .

❏ Clip the deflector-protector into the clipping groove (**6**) .

Note:

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

b - Driveshaft WITHOUT CLIPPING GROOVE



21494

❏ Pull the deflector-protector (**4**) .

❏ Remove the deflector-protector by cutting it.

2 - Refitting the left-hand driveshaft

❏ Refit the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

3 - Final operation

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

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

K4M, and JH3

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1453	Multiple-adjusting engine mounting support with retaining straps.
Mot. 1453-01	Additional winder nut on engine lift support Mot. 1453.
Bvi. 1718	Support plate for the gearbox removal/refitting tool.

Essential equipment
safety strap(s)
indelible pencil
component jack

Tightening torques ▽	
stud on the engine	**7 N.m**
stud on the gearbox	**7 N.m**
manual gearbox nuts	**44 N.m**
manual gearbox lower bolts	**44 N.m**
manual gearbox earth cable bolt	**24 N.m**
manual gearbox upper bolts	**44 N.m**
left-hand suspended engine mounting cover bolts on the manual gearbox	**62 N.m**
left-hand suspended engine mounting rubber pad mounting bolt	**62 N.m**
air filter unit air inlet pipe clip	**6 N.m**

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

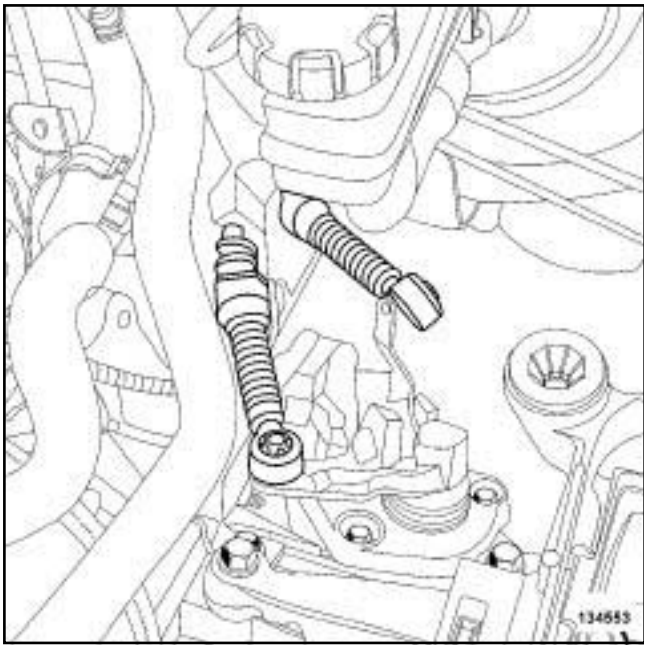
- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).

❑ Loosen the clip on the throttle valve air inlet pipe.

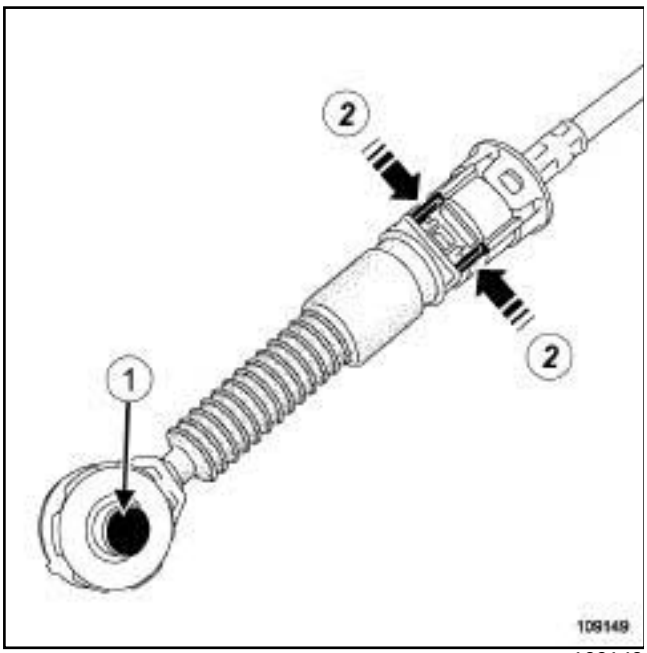
❑ Disconnect the air outlet pipe from the air filter unit.

❑ Remove the air outlet pipe from the air filter box.

K4M, and JH3



134553

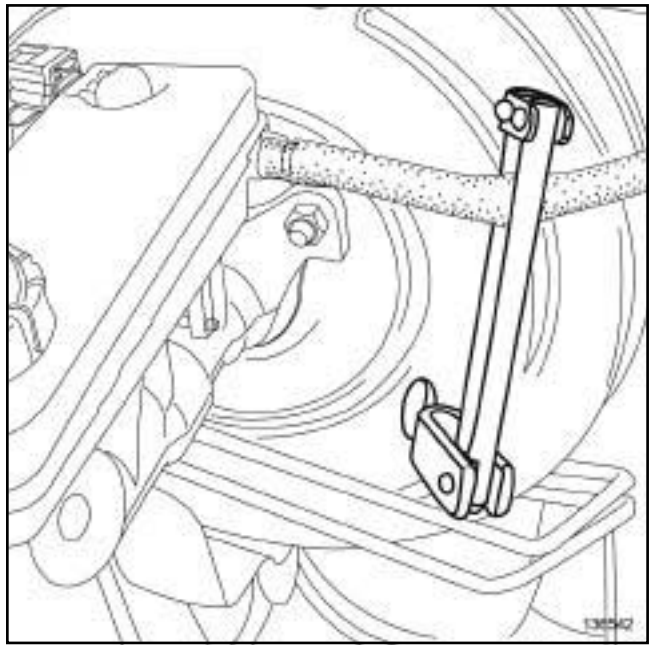


109149

❏ Unclip:

- the gear selector cables on the manual gearbox by pushing at (**1**) ,
- the control cables by pushing at (**2**) .

❏ Move the manual gearbox selector cables aside.



136542

❏ Fit the tool **(Ms. 583)** on the hydraulic clutch supply pipe at the outlet of the brake fluid reservoir.

WARNING

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

❏ Remove the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Disconnect the reverse gear switch connector.

❏ Remove:

- the manual gearbox breather pipe,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

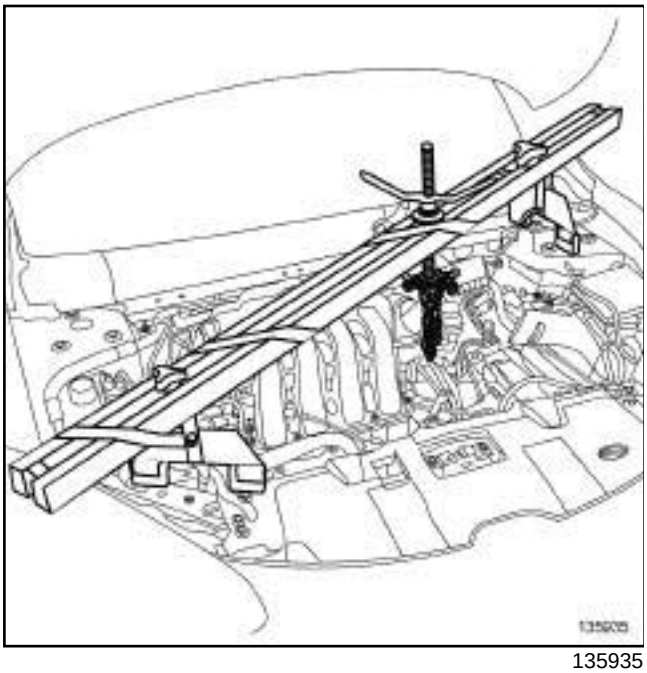
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

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

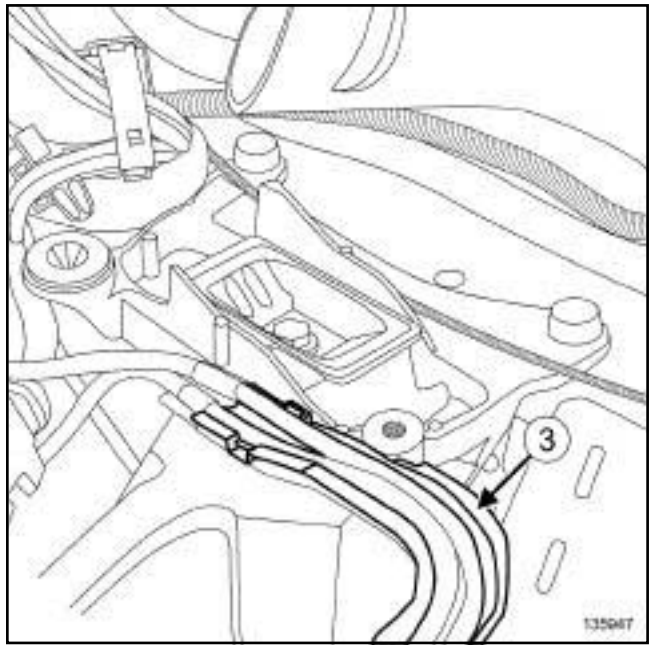
K4M, and JH3

- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).



135935

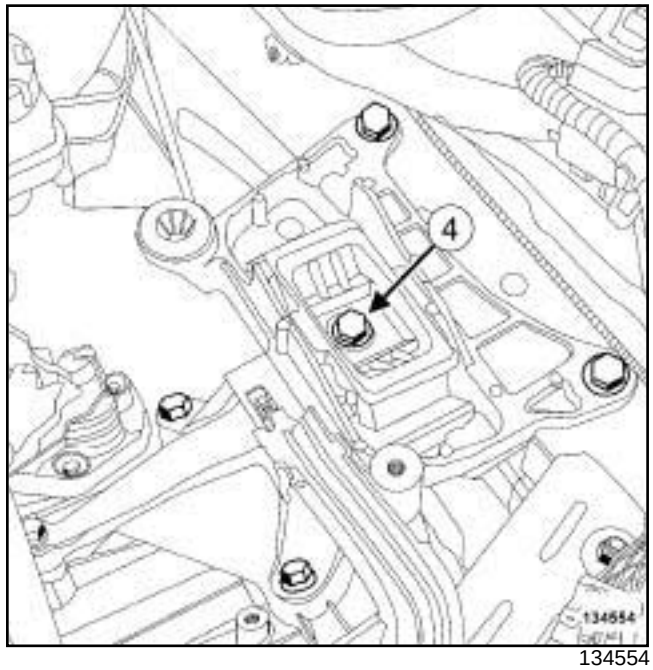
❑ Fit the **(Mot. 1453)** fitted with the **(Mot. 1453-01)** with a **safety strap(s)**.



135947

❑ Unclip the battery wiring channel at (**3**) .

❑ Move aside the battery wiring channel.



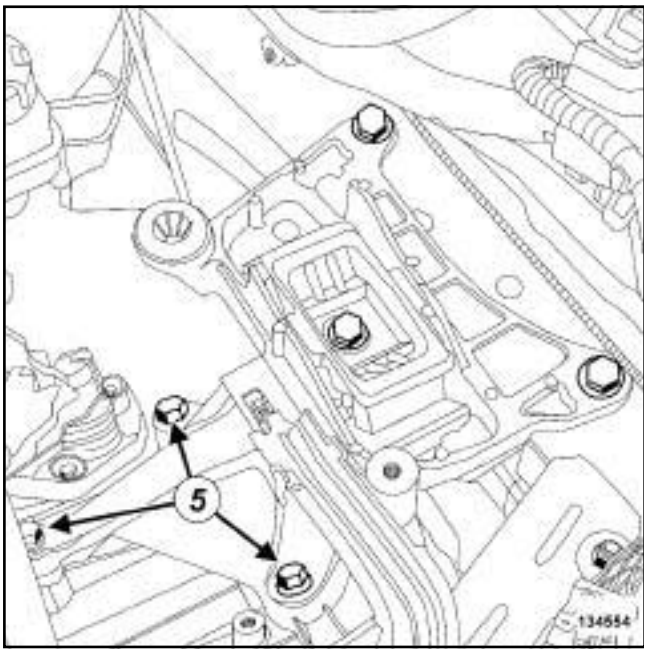
134554

❑ Remove the bolt (**4**) of the rubber pad mounting from the left-hand suspended engine mounting on the manual gearbox.

❑ Slightly lower the manual gearbox.

K4M, and JH3

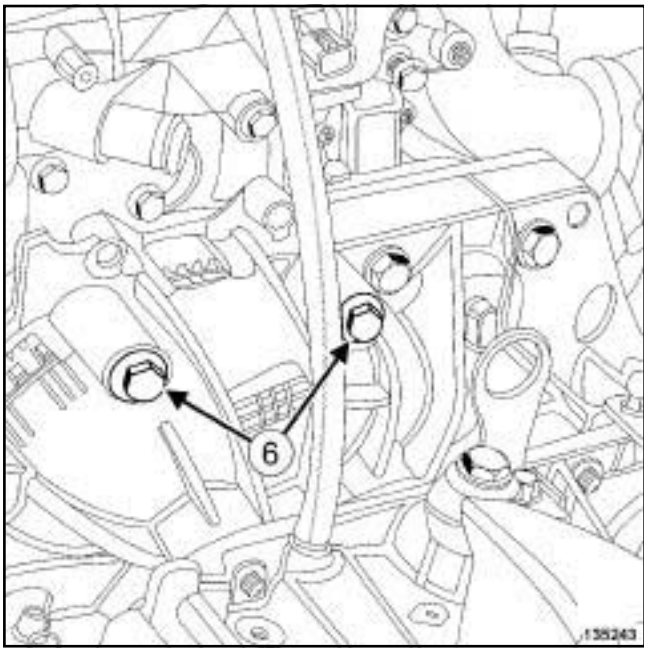
II - OPERATION FOR REMOVAL OF PART CONCERNED



134554

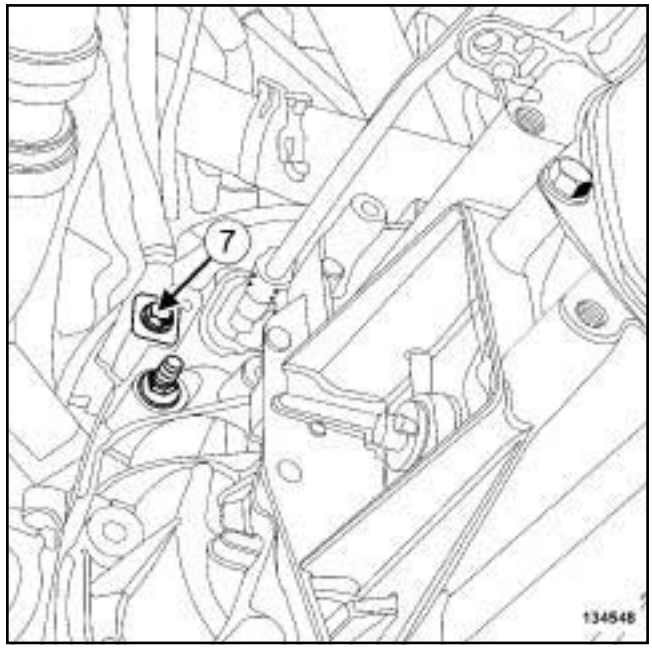
❏ Remove:

- the bolts (**5**) of the left-hand suspended engine mounting rubber pad cover on the manual gearbox,
- the left-hand suspended engine mounting cover on the manual gearbox.



135243

❏ Remove the manual gearbox upper bolts (**6**) .



134548

❏

Note:

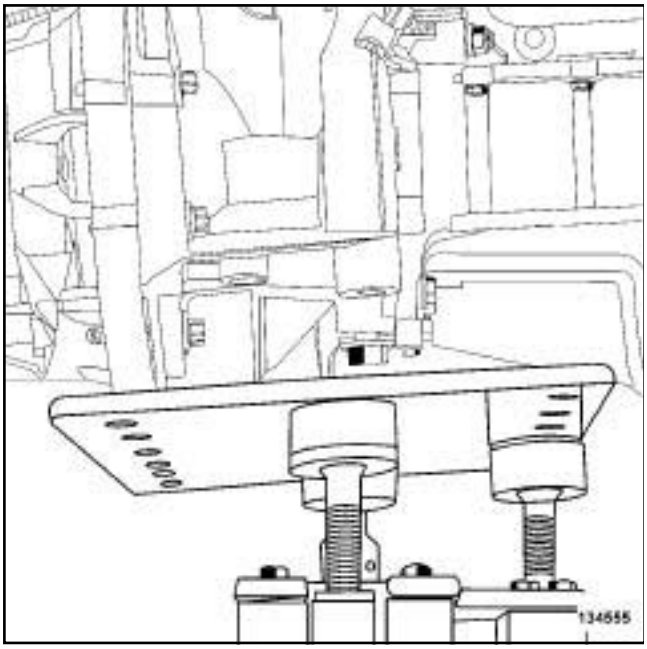
Before removing the earth terminal, mark its position using a **indelible pencil** by drawing a line on the earth terminal and on the gearbox casing.

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

❏ Remove the manual gearbox earth cable bolt (**7**) .

❏ Remove the earth cable from the manual gearbox.

K4M, and JH3

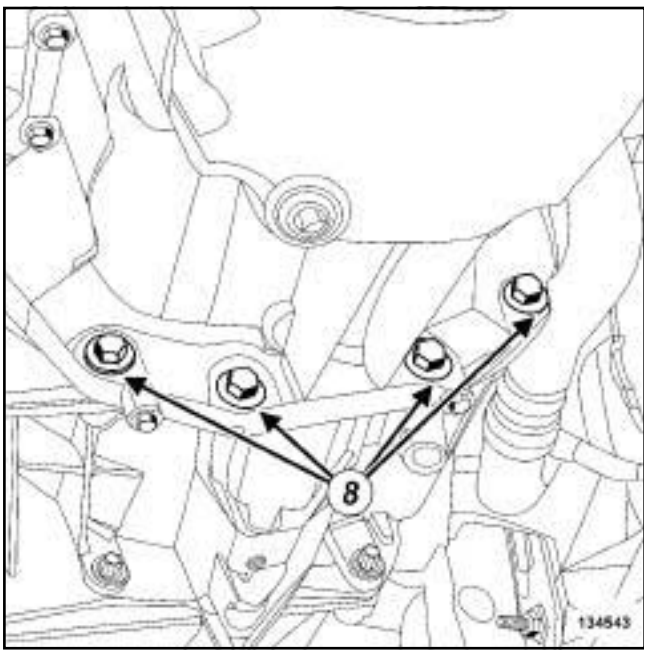


134555

❑ Fit:

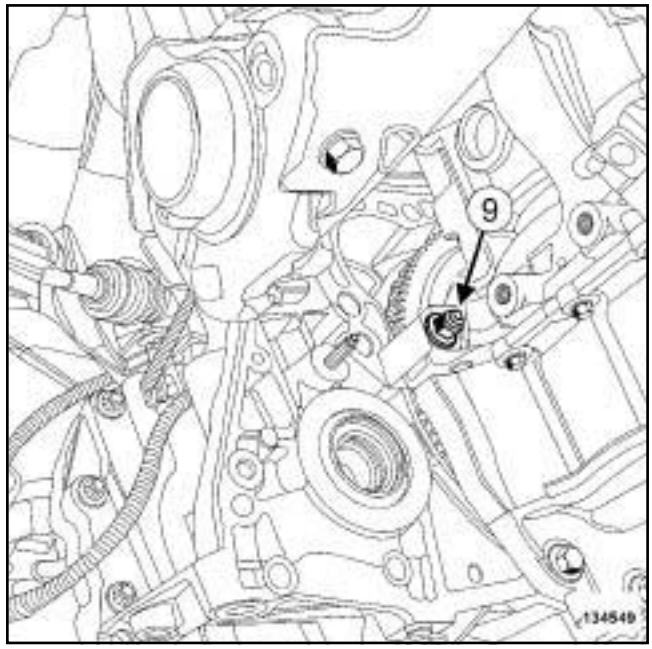
- the **(Bvi. 1718)** to a **component jack**,
- the **(Bvi. 1718)** and the **component jack** under the manual gearbox.

❑ Tighten the rod anti-clockwise to avoid tilting the manual gearbox.

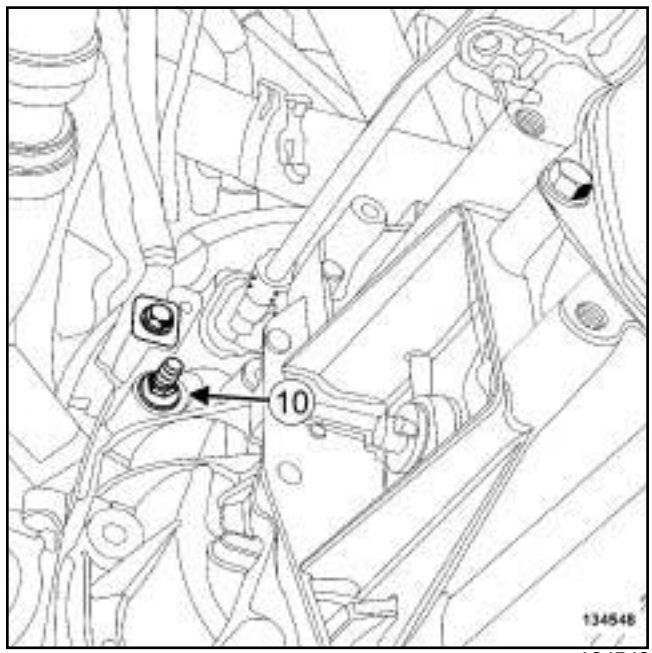


134543

❑ Remove the lower bolts (**8**) from the manual gearbox.



134549



134548

❑ Remove:

- the manual gearbox nuts (**9**) and (**10**) ,
- the manual gearbox using the **component jack** and **(Bvi. 1718)**.

❑ When replacing the manual gearbox, remove the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

K4M, and JH3

REFITTING

I - REFITTING PREPARATION OPERATION

❑

Note:

If a stud loosens during this operation, coat it with **FRENETANCHE**.

Tighten to torque:

- the **stud on the engine (7 N.m)**,

- the **stud on the gearbox (7 N.m)**.

Replacing the manual gearbox

❑ Refit the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

Note:

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

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

II - REFITTING OPERATION FOR PART CONCERNED

❑ Ensure that the « engine - gearbox » centring rings are in place and correctly positioned.

❑ Fit the manual gearbox using the **component jack** and the **(Bvi. 1718)**.

❑ Refit the manual gearbox nuts.

❑ Torque tighten the **manual gearbox nuts (44 N.m)**.

❑ Remove the tool **(Bvi. 1718)** :

- from the manual gearbox,

- from the **component jack**.

❑ Refit the manual gearbox lower bolts.

❑ Torque tighten the **manual gearbox lower bolts (44 N.m)**.

❑ It is essential to refit the earth cable respecting the marks made during disassembly.

❑ Refit the earth cable bolt on the manual gearbox.

❑ Torque tighten the **manual gearbox earth cable bolt (24 N.m)**.

❑ Refit the manual gearbox upper bolts.

❑ Torque tighten the **manual gearbox upper bolts (44 N.m)**.

❑ Refit the left-hand suspended engine mounting cover on the manual gearbox.

❑ Torque tighten the **left-hand suspended engine mounting cover bolts on the manual gearbox (62 N.m)**.

III - FINAL OPERATION

❑ Bring into contact the left-hand suspended engine mounting cover on the left-hand suspended engine mounting rubber pad using the tool **(Mot. 1453)** fitted with the tool **(Mot. 1453-01)**.

❑ Refit the bolt of the left-hand suspended engine mounting rubber pad mounting on the manual gearbox.

❑ Torque tighten the **left-hand suspended engine mounting rubber pad mounting bolt (62 N.m)**.

❑ Fit the battery wiring channel.

❑ Clip on the battery wiring channel.

❑ Remove the tool **(Mot. 1453)** fitted with the tool **(Mot. 1453-01)** using the **safety strap(s)**.

❑ Refit:

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

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

- the new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,

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

- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),

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

K4M, and JH3

❑ Fill the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the manual gearbox breather pipe,
- the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),

❑ Remove the tool **(Ms. 583)** from the hydraulic clutch supply pipe at the outlet of the brake fluid reservoir.

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

❑ Fit the manual gearbox gear selector cables.

❑ Clip on the manual gearbox gear selector cables.

❑ Adjust the manual gearbox gear selector cables (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls).

❑ Connect the reverse gear switch connector.

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

❑ Connect the air outlet pipe of the air filter unit.

❑ Torque tighten the **air filter unit air inlet pipe clip (6 N.m)**.

❑ Refit:

- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.

K9K, and TL4

Essential special tooling	
Bvi. 1718	Support plate for the gearbox removal/refitting tool.

Essential equipment
indelible pencil
component jack

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox bolts	**44 N.m**
manual gearbox earth cable bolt	**24 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

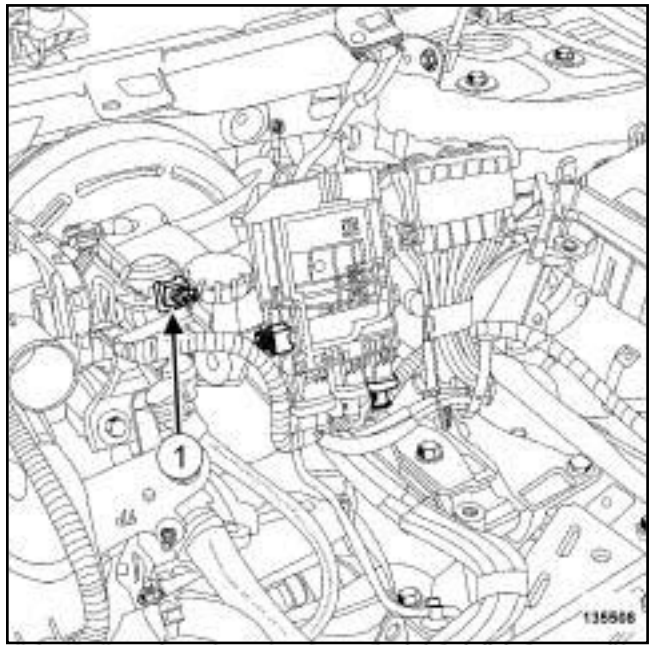
- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

J95

❑ Remove:

- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

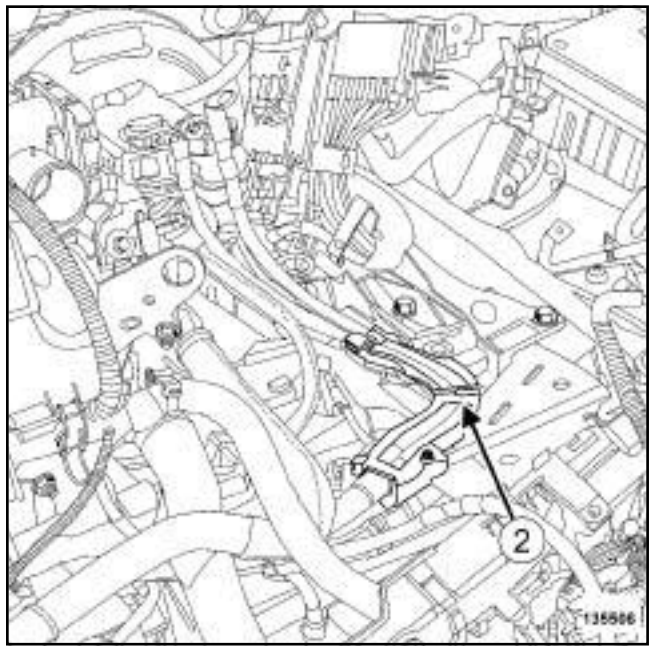
❑ Remove the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture).



135508

❑ Disconnect the connector (**1**) from the turbocharging pressure regulation solenoid valve.

❑ Move aside the turbocharging pressure regulation solenoid valve wiring.

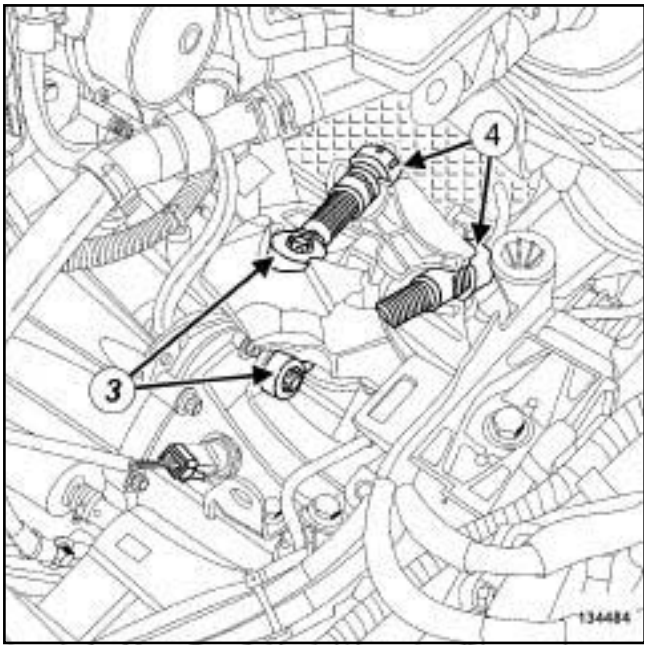


135506

❑ Unclip the battery wiring channel (**2**) from the left-hand suspended engine mounting.

❑ Move the battery wiring channel away from the left-hand suspended engine mounting.

K9K, and TL4



134484

❏ Unclip:

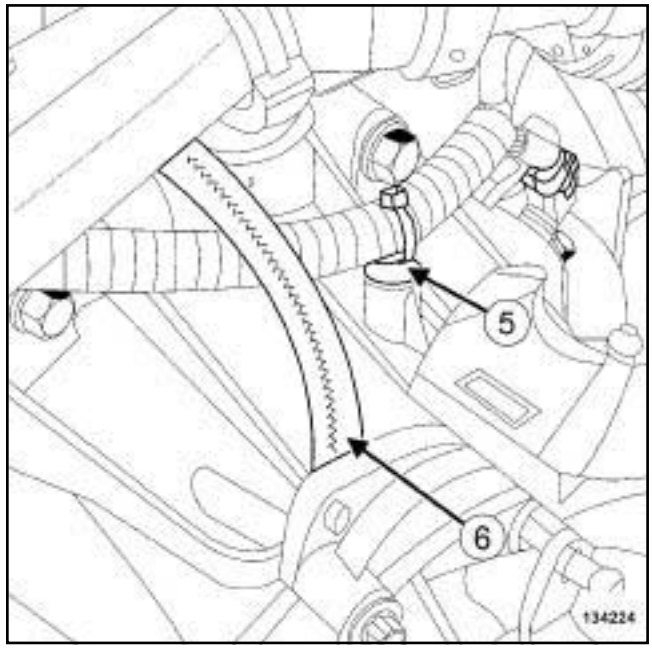
- the gear control cables (**3**) from the selector ball joints using an open-jawed spanner,
- the gear control cables (**4**) from their support,

❏ Move aside the manual gear selector cables.

❏ Disconnect the reverse gear switch connector.

❏ Remove:

- the engine undertray bolts,
- the engine undertray,
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection).

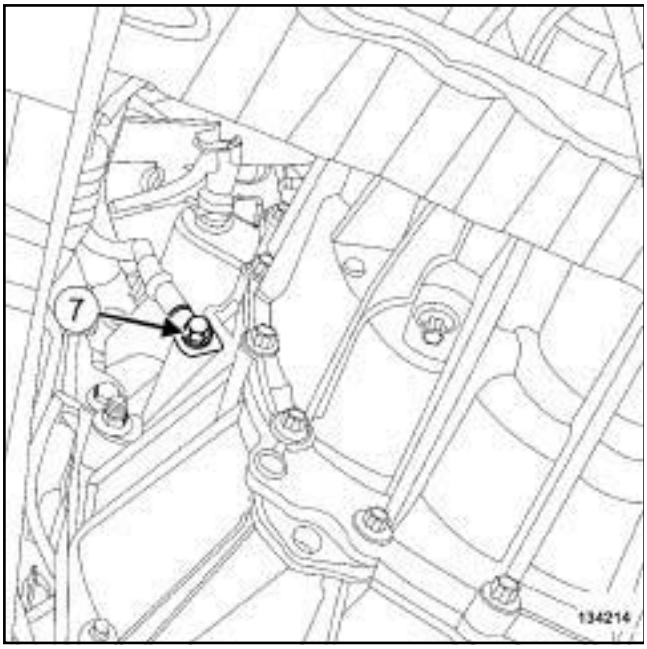


134224

❏ Unclip the following from the manual gearbox:

- the engine wiring channel (**5**) ,
- the manual gearbox breather pipe (**6**) .

K9K, and TL4



134214

❑

Note:

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

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

❑ Remove the earth cable bolt (**7**) from the manual gearbox.

❑ Remove:

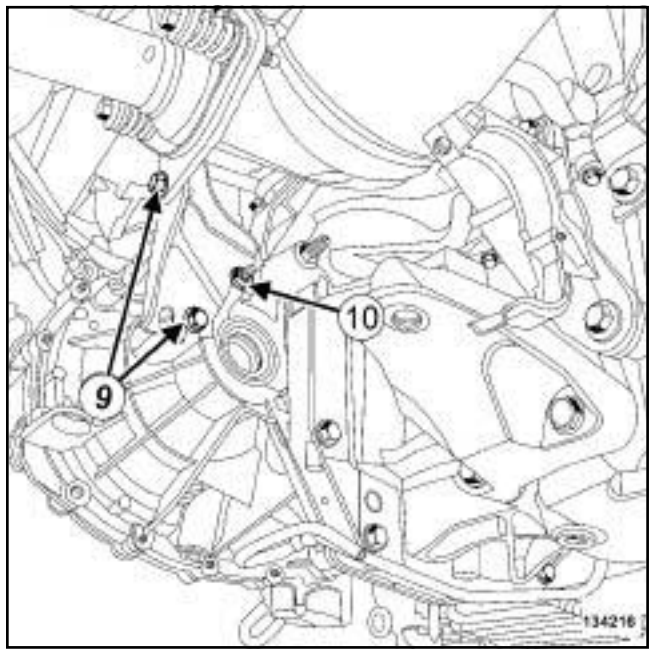
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

K9K, and 830 or 832



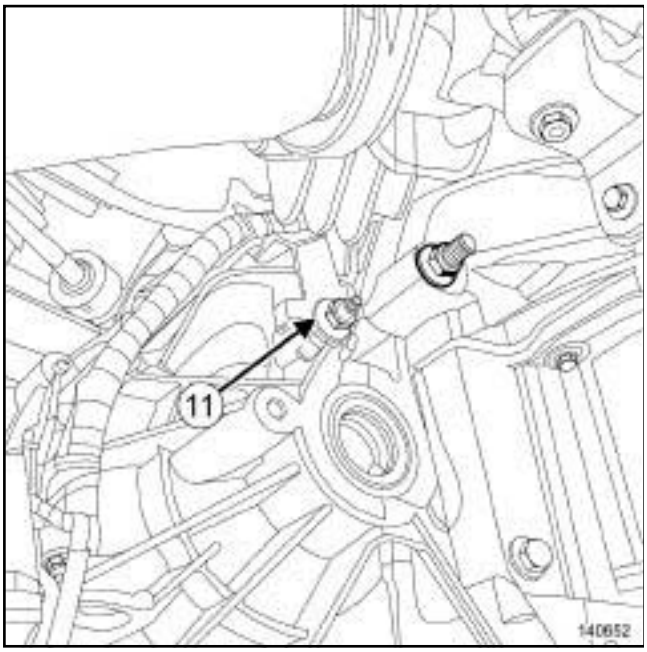
134216

❑ Remove:

- the catalytic converter downstream strut bolts (**9**) ,
- the nut (**10**) from the catalytic converter downstream strut,
- the catalytic converter downstream strut.

K9K, and TL4

K9K, and 836



140652

❏ Remove the nut (**11**) of the particle filter temperature sensor wiring bracket.

❏ Move aside the particle filter temperature sensor wiring.

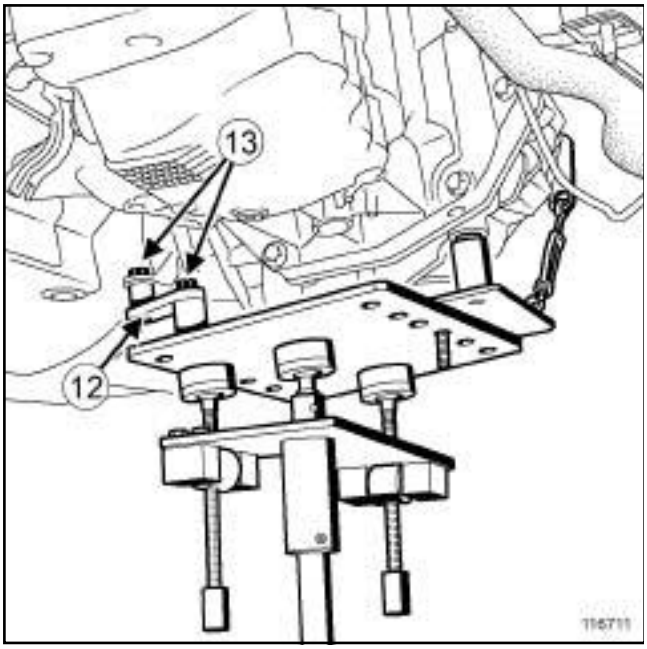
❏ Unclip the rail protector drain pipe from the manual gearbox.

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

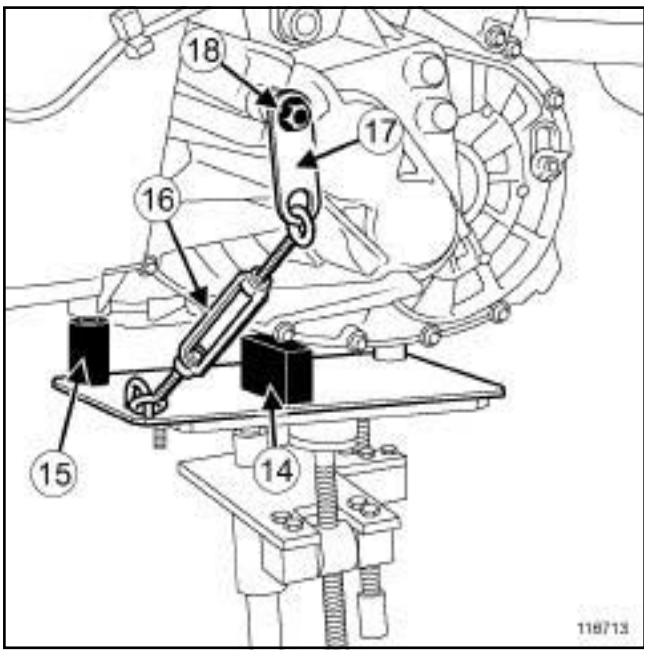
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove the manual gearbox bell housing bolts.

K9K, and TL4



116711



116713

❑ Fit:

- the **(Bvi. 1718)** to a **component jack**,
- the **component jack** fitted with the **(Bvi. 1718)** under the mechanical gearbox,
- the bracket (**12**) using the nuts (**13**) ,
- the support (**14**) ,
- the pin (**15**) ,
- the rod (**16**) using the bracket (**17**) and the bolt (**18**) .

❑ Tighten the rod (**16**) anti-clockwise in order to avoid tilting the manual gearbox.

❑ Remove:

- the nuts from the manual gearbox,
- the manual gearbox using the component jack and the **(Bvi. 1718)**,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing (12,03,01,04)**.

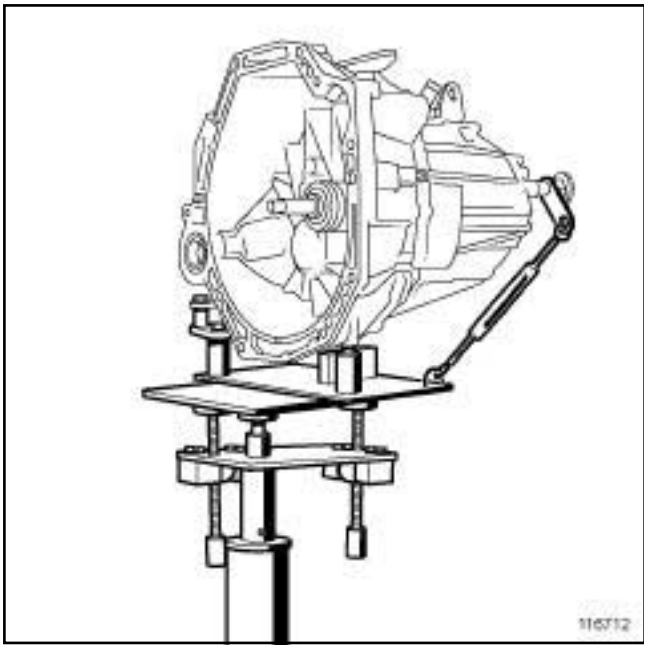
WARNING
To avoid damaging the slave cylinder, do not coat the gearbox output shaft with grease.

WARNING
Do not grease the clutch shaft splines.

❑ Check that the centring dowelsare in place.

K9K, and TL4

If replacing the manual gearbox



116712

❑

Note:

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

❑ Fit the new manual gearbox on the **component jack** fitted with the **(Bvi. 1718)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox using the **component jack** and **(Bvi. 1718)**.

❑ Remove the **component jack** fitted with the **(Bvi. 1718)** from the manual gearbox.

❑ Torque tighten:

- the **manual gearbox nuts (44 N.m)**,
- the **manual gearbox bolts (44 N.m)**.

III - FINAL OPERATION

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

❑ Clip the rail protector drain pipe onto the manual gearbox.

K9K, and 836

❑ Fit the particle filter temperature sensor wiring.

❑ Refit the nut of the particle filter temperature sensor wiring bracket.

K9K, and 830 or 832

❑ Refit:

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

❑ Connect the reverse gear switch connector.

❑ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

K9K, and TL4

❑ Refit:

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

Note:

Refit the earth terminal, aligning the indelible marks on the gearbox casing.

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

❑ Torque tighten the **manual gearbox earth cable bolt (24 N.m)**.

❑ Clip the following on the manual gearbox:

- the manual gearbox breather pipe,
- the engine harness channel.

❑ Refit:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

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

❑ Refit the engine undertray.

❑ Fit the manual gear selector cables.

❑ Clip:

- the gear selector cables onto their mounting,
- the gear selector cables onto the gear selector ball joints.

❑ Fit the battery wiring channel on the left-hand suspended engine mounting.

❑ Fit the turbocharging pressure regulation solenoid valve wiring.

❑ Connect the turbocharging pressure regulation solenoid valve connector.

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

J95

❑ Refit:

- the centre section of the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Refit:

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

F4R, and PK4

Essential special tooling	
Bvi. 1718	Support plate for the gearbox removal/refitting tool.
Mot. 1453	Multiple-adjusting engine mounting support with retaining straps.
Mot. 1453-01	Additional winder nut on engine lift support Mot. 1453.

Essential equipment
component support
component jack
safety strap(s)

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox lower bolts	**44 N.m**
manual gearbox upper bolts	**44 N.m**
earth strap bolt on the gearbox	**24 N.m**

REMOVAL

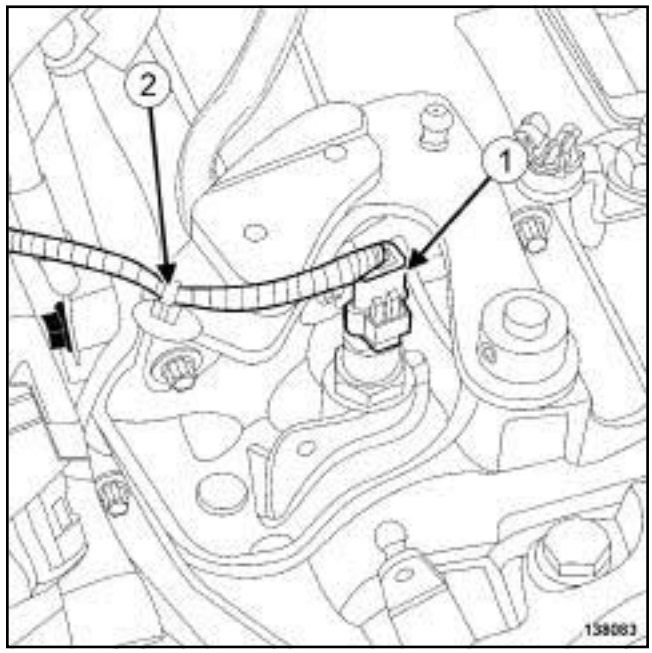
I - REMOVAL PREPARATION OPERATION

❏ 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:

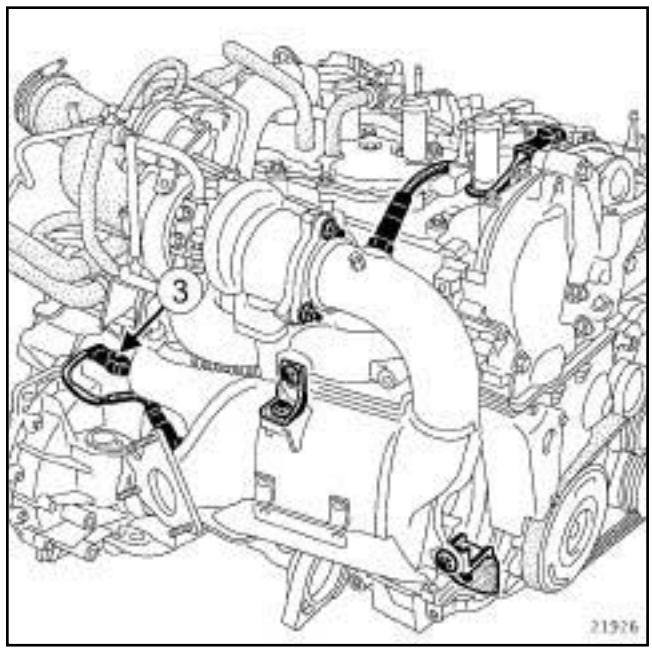
- the engine undertray bolts,
- the engine undertray,
- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel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



138083

❏ Disconnect the connector (**1**) from the reverse gear switch.

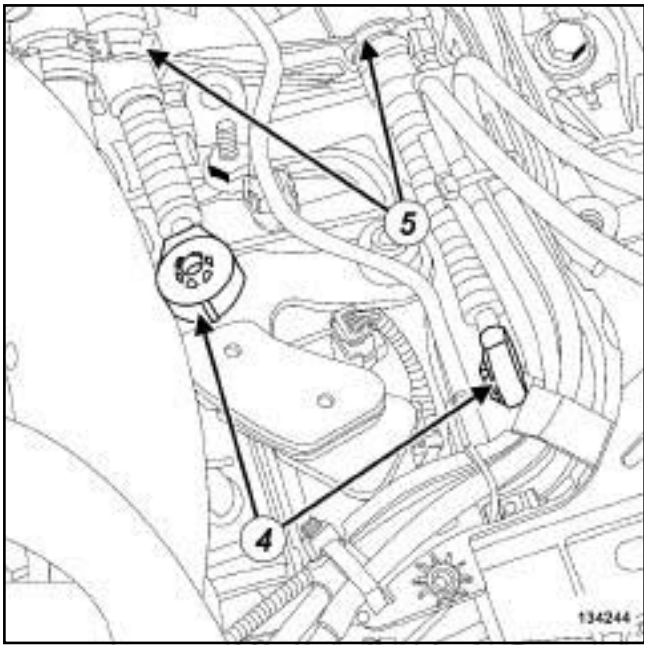
❏ Unclip the wiring (**2**) from the reverse gear connector.



21926

❏ Disconnect the downstream oxygen sensor connector (**3**) .

F4R, and PK4



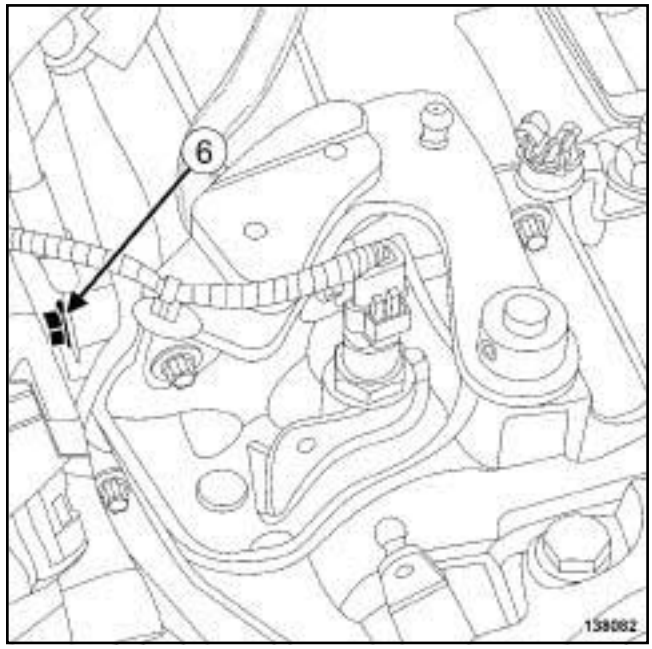
134244

❏ Unclip:

- the gear selector cables from the selector ball joints (**4**) using an open-jawed spanner,
- the gear selector cables from their mounting (**5**) ,
- the manual gearbox breather pipe.

❏ Remove:

- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).



138082

❏

Note:

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

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

❏ Remove the bolt (**6**) from the earth strap on the gearbox.

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) (21A, Manual gearbox).

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,

F4R, and PK4

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the lower engine tie-bar (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 starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),

❑ Remove:

- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting)

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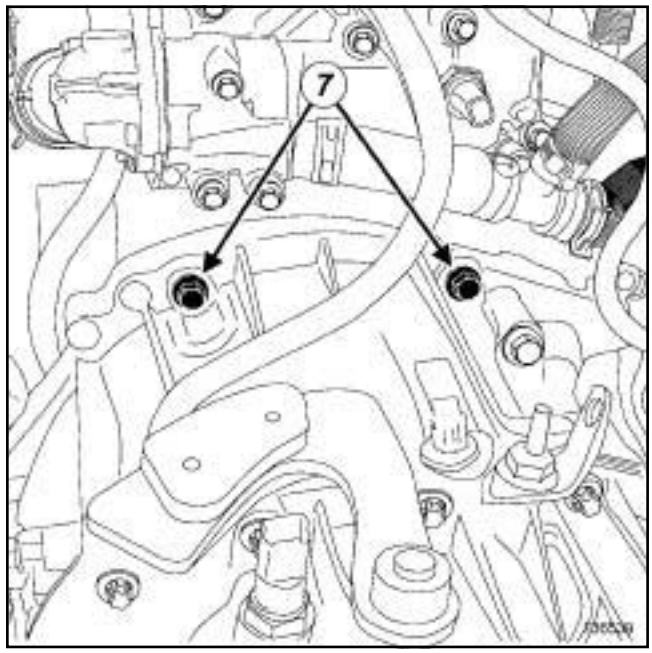
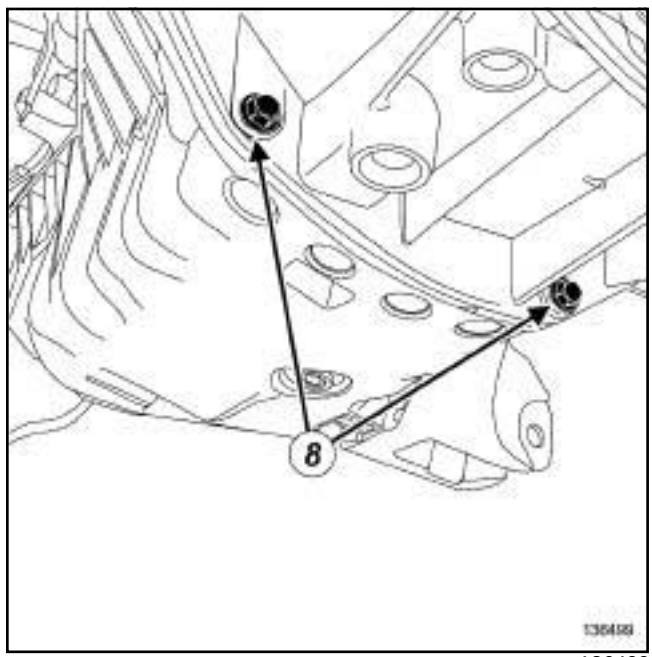
II - OPERATION FOR REMOVAL OF PART CONCERNED



136539

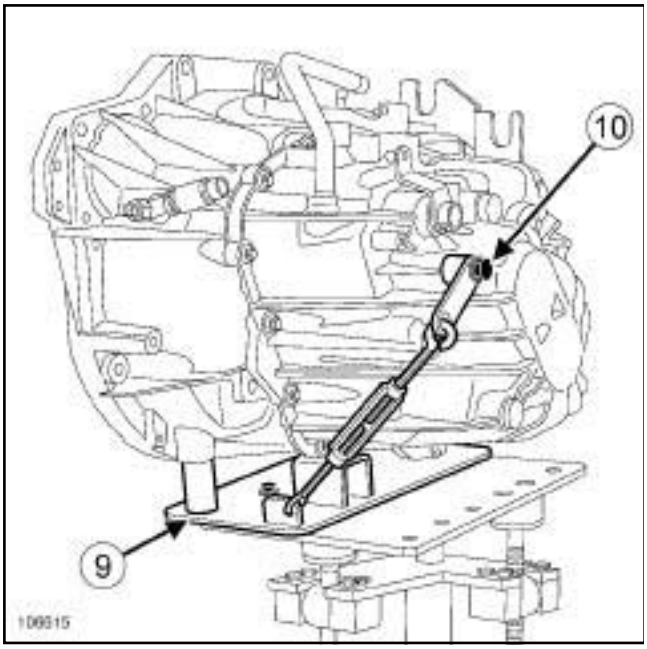


136499

❑ Remove:

- the upper bolts (**7**) from the manual gearbox,
- the lower bolts (**8**) from the manual gearbox.

F4R, and PK4



106615

❑ Fit the **component support** fitted with the tool **(Bvi. 1718)** (**9**) on the contact pins and tighten the bolt **(Bvi. 1718)** of the tool (**10**) .

❑ Remove:

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

❑ In the event of a replacement, remove the following from the manual gearbox:

- the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) ,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑

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

WARNING
Do not grease the clutch shaft splines.

❑ Check that there are centring rings in place on the manual gearbox.

Replacing the manual gearbox

❑ Refit:

- the crankshaft position sensor on the manual gearbox (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the reverse gear switch on the manual gearbox (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

❑

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

❑ Fit the manual gearbox using the **component jack** and the tool **(Bvi. 1718)**.

II - REFITTING OPERATION FOR PART CONCERNED

123407

❑ Fit the manual gearbox using the **component support** and the **(Bvi. 1718)**.

❑ Refit the gearbox nuts.

❑ Torque tighten the **manual gearbox nuts (44 N.m)**.

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

❑ Refit the manual gearbox lower bolts.

❑ Torque tighten the **manual gearbox lower bolts (44 N.m)**.

F4R, and PK4

III - FINAL OPERATION

❑ Refit:

- the front left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) ,
- the manual gearbox upper bolts.

❑ Torque tighten the **manual gearbox upper bolts (44 N.m)**.

❑ Remove the tool **(Mot. 1453)** fitted with the tool **(Mot. 1453-01)** using the **safety strap(s)**.

❑ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**)
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**)
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing).

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),
- the earth strap bolt on the gearbox.

❑ Torque tighten the **earth strap bolt on the gearbox (24 N.m)**.

❑ Clip:

- the manual gearbox breather pipe,
- the gearbox selector cables on their mounting and on the gearbox selector ball joints,
- the reverse gear switch wiring,

❑ Connect:

- the reverse gear switch connector,
- the downstream oxygen sensor connector.

❑ Refit:

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

F9Q, and ND4

Essential equipment
component support

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox bolts	**44 N.m**

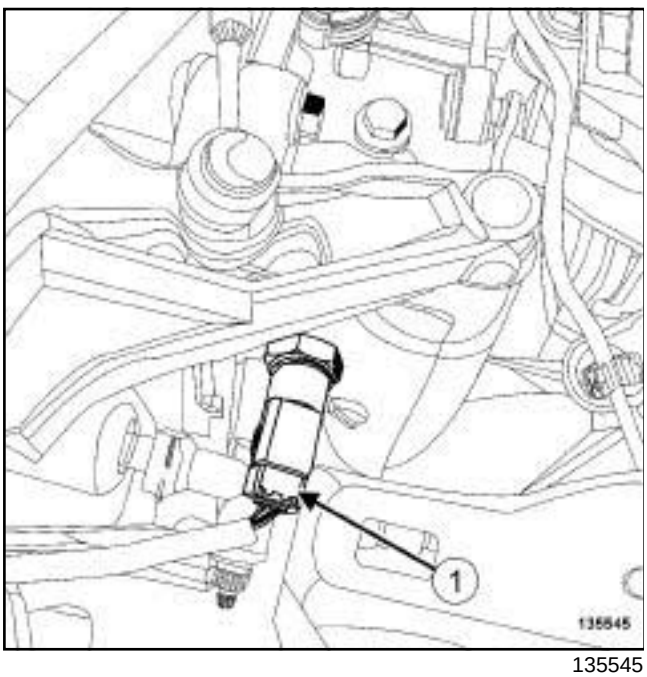
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

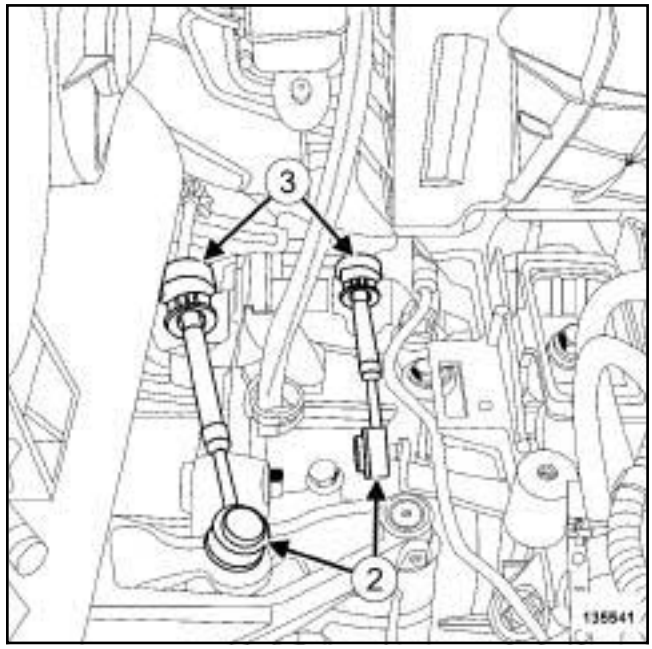
❏ Remove:

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



135545

❏ Disconnect the connector (**1**) from the reverse gear switch.



135541

❏ Unclip:

- the gear selector cables (**2**) from the gear selector ball joints using an open-jawed spanner,
- the gear control cables (**3**) from their support.

❏ Remove:

- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

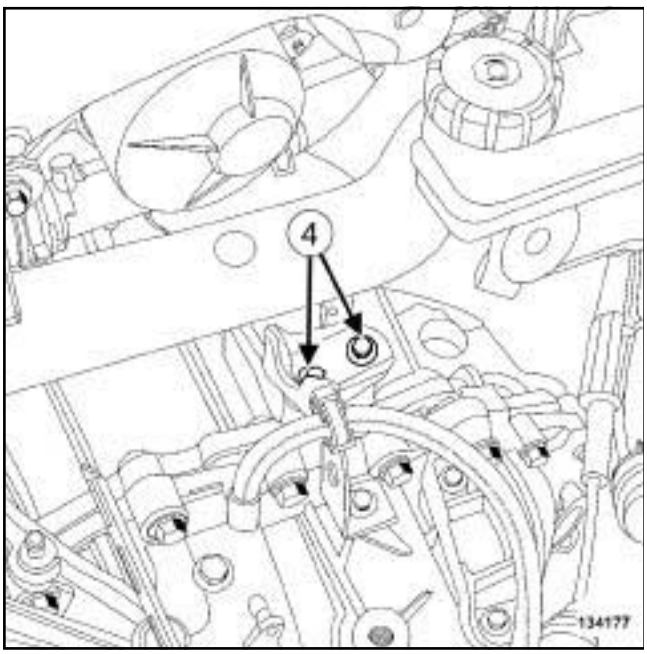
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ 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-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,

F9Q, and ND4

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (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 left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).



134177

❑ Remove:

- the bolts (**4**) from the manual gearbox control mounting,
- the manual gearbox control mounting.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the manual gearbox bell housing bolts.

❑ Fit a **component support** beneath the manual gearbox.

❑ Remove the manual gearbox nuts.

❑ Remove:

- the manual gearbox using the **component support**,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing (12,03,01,04)**

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

WARNING
Do not grease the clutch shaft splines.

❑ Check that the centring dowelsare in place.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox using the **component support**.

❑ Tighten to torque:

- the **manual gearbox nuts (44 N.m)**,
- the **manual gearbox bolts (44 N.m)**.

❑ Remove the **component support**.

III - FINAL OPERATION

❑ Refit:

- the manual gearbox control mounting,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),

F9Q, and ND4

- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Clip:

- the gear selector cables onto their mounting,
- the gear selector cables onto the gear selector ball joints.

❏ Connect the reverse gear switch connector.

❏ Refit:

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

K4M, and TL4

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1672	Lower engine support.
Mot. 1720	Engine stand.
Bvi. 1718	Support plate for the gearbox removal/refitting tool.
Mot. 1453	Multiple-adjusting engine mounting support with retaining straps.
Mot. 1453-01	Additional winder nut on engine lift support Mot. 1453.

Essential equipment
indelible pencil
component jack
safety strap(s)

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox lower bolts	**44 N.m**
manual gearbox earth cable bolt	**24 N.m**
manual gearbox upper bolts	**44 N.m**
bolts of the left-hand suspended engine mounting support on the gearbox	**62 N.m**
left-hand suspended engine mounting rubber pad mounting bolt	**62 N.m**
clip on the throttle valve air inlet pipe	**6 N.m**

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

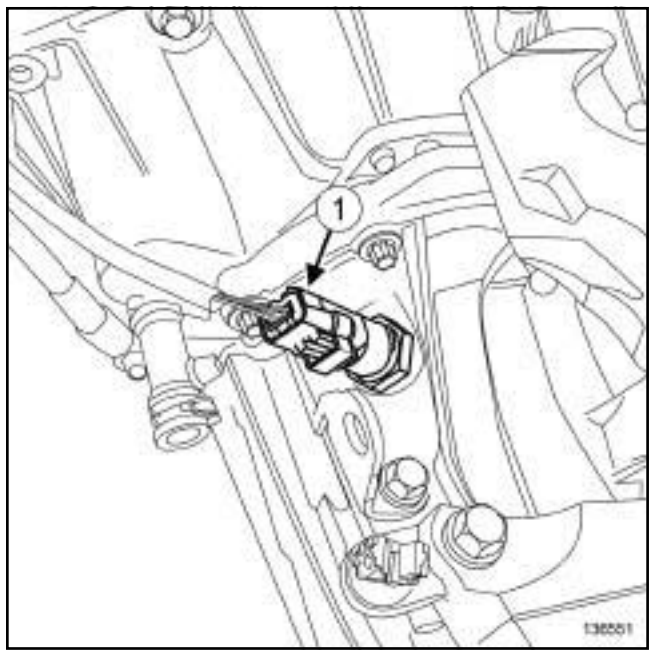
❑ Remove:

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

❑ Loosen the clip of the air filter unit air outlet pipe at the throttle valve.

❑ Disconnect the air filter unit air outlet pipe at the throttle valve.

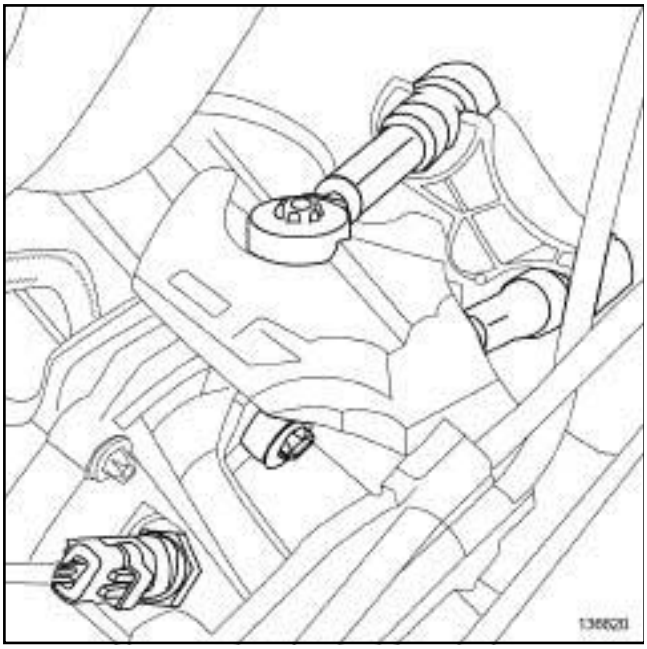
❑ Remove the air filter unit air outlet pipe at the throttle valve.



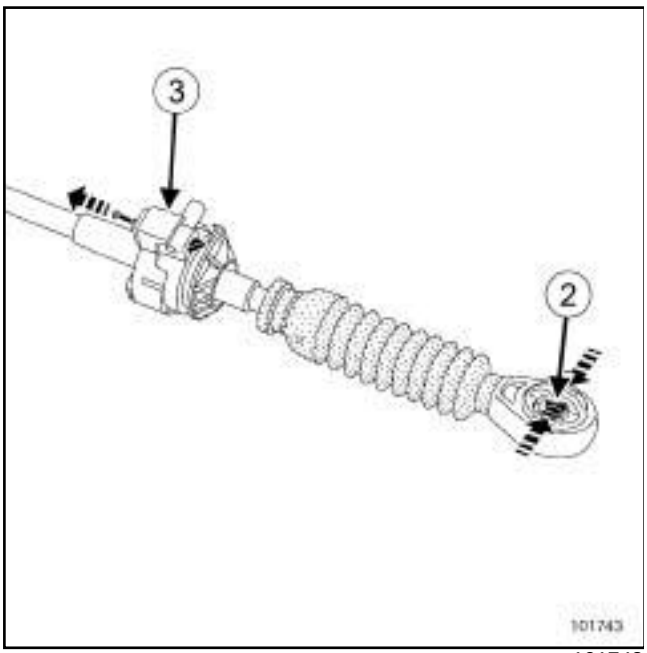
136551

❑ Disconnect the connector (**1**) from the reverse gear switch.

K4M, and TL4



136620



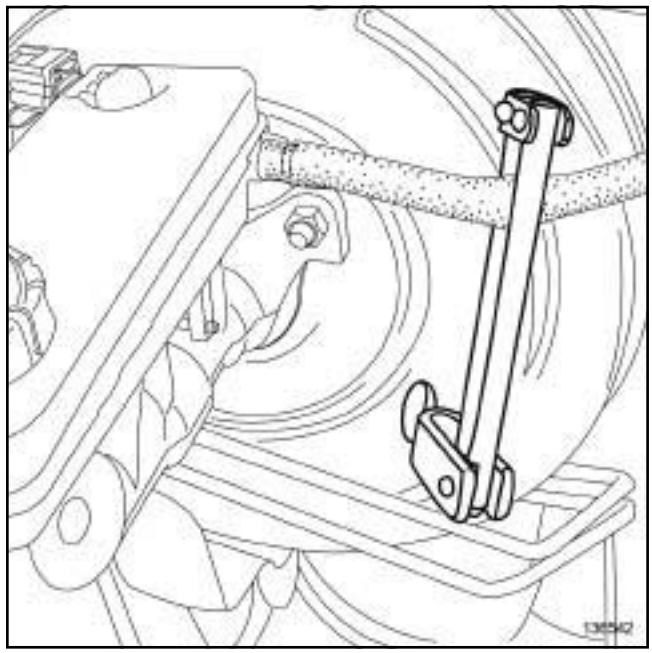
101743

❏ Unclip:

- the gear selector cables from the manual gearbox by pushing at (**2**) ,
- the gear selector cables from the manual gearbox by pulling at (**3**) .

❏ Move the manual gearbox selector cables aside.

B95 or D95



136542

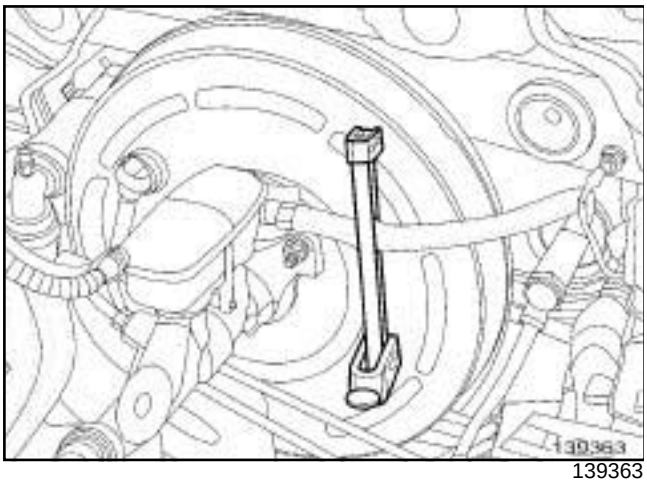
❏ Fit the tool **(Ms. 583)** on the hydraulic clutch master cylinder supply pipe at the outlet of the brake fluid reservoir.

WARNING

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

K4M, and TL4

J95


139363

❑ Fit the tool **(Ms. 583)** on the hydraulic clutch master cylinder supply pipe at the outlet of the brake fluid reservoir.

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

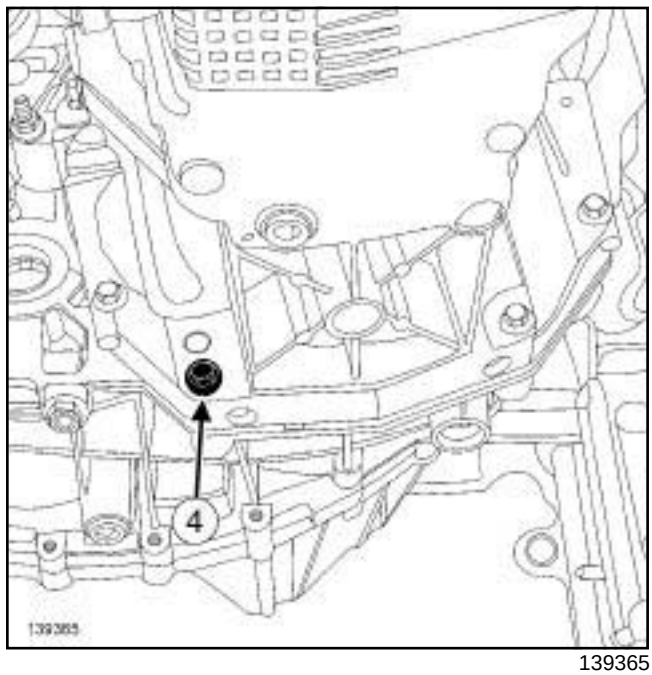
❑ Remove:

- the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),
- the manual gearbox breather pipe,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Remove:

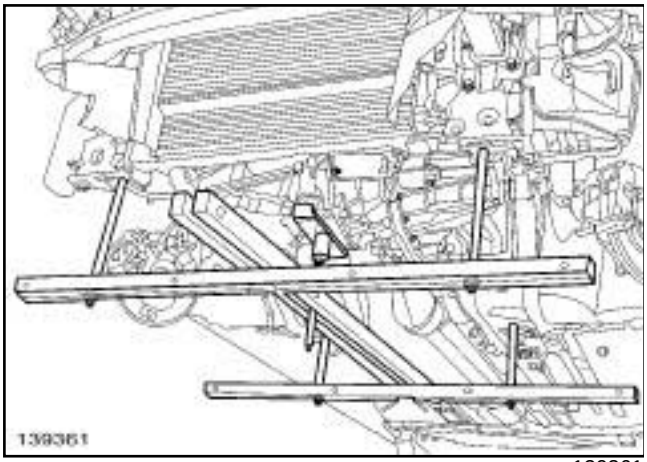
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection).
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).



139365

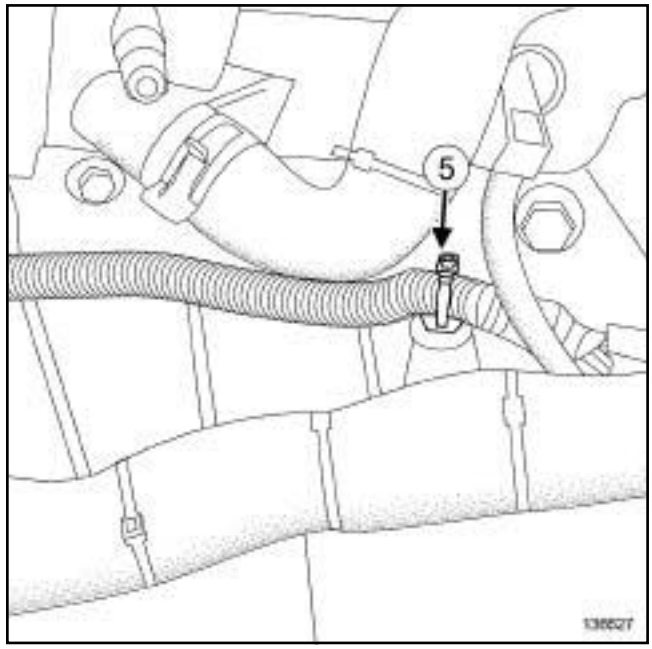
❑ Remove the lower bolt (**4**) from the manual gearbox.

K4M, and TL4

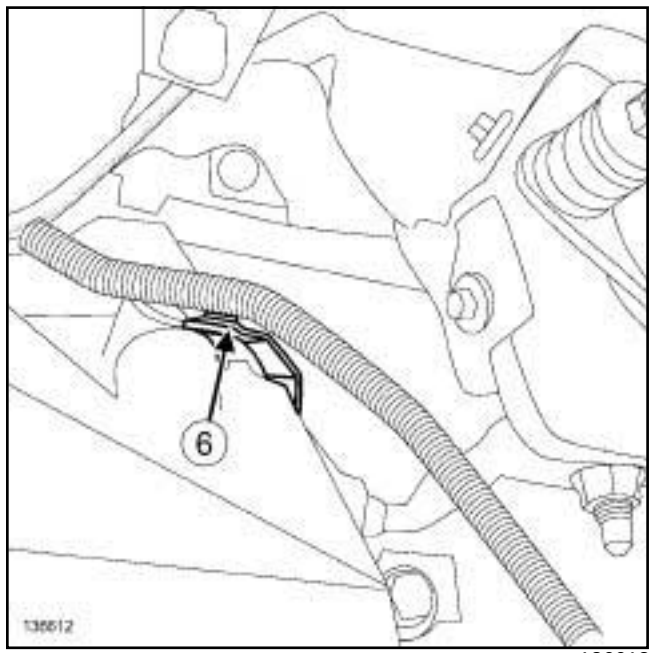


139361

❑ Fit the **(Mot. 1672)** fitted with the **(Mot. 1720)**.



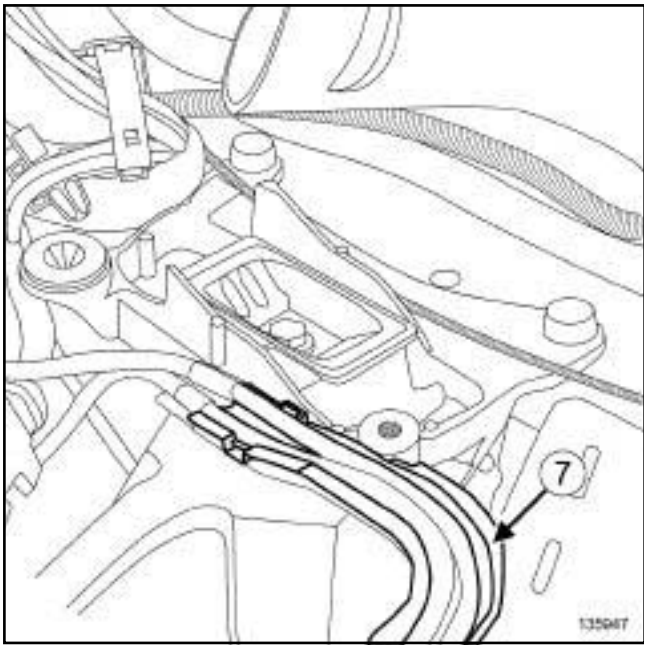
136627



136612

❑ Unclip the downstream oxygen sensor wiring from the manual gearbox at (**5**) and (**6**) .

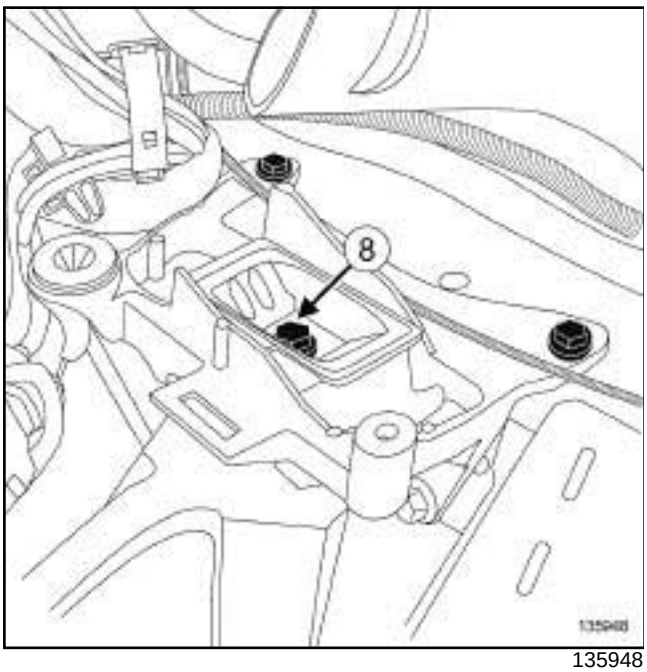
K4M, and TL4



135947

❏ Unclip the battery wiring channel at (**7**) .

❏ Move aside the battery wiring channel.

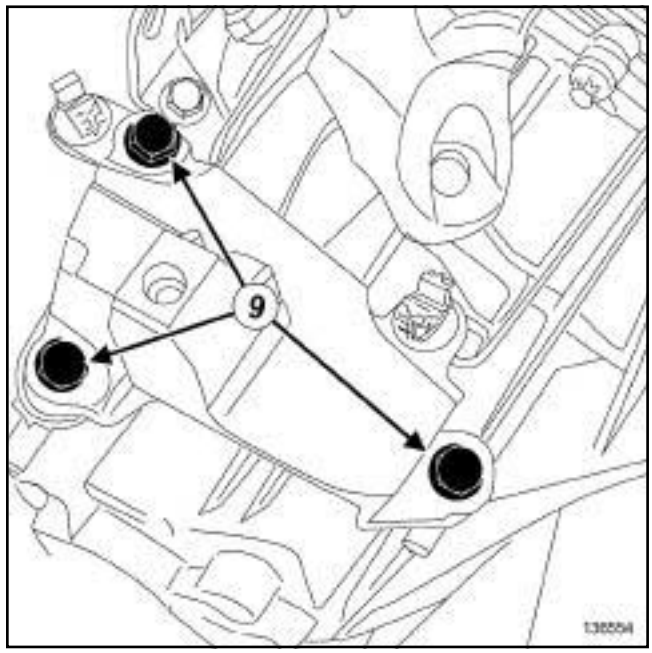


135948

❏ Remove the bolt (**8**) of the left-hand suspended engine mounting rubber pad on the manual gearbox.

❏ Slightly lower the manual gearbox.

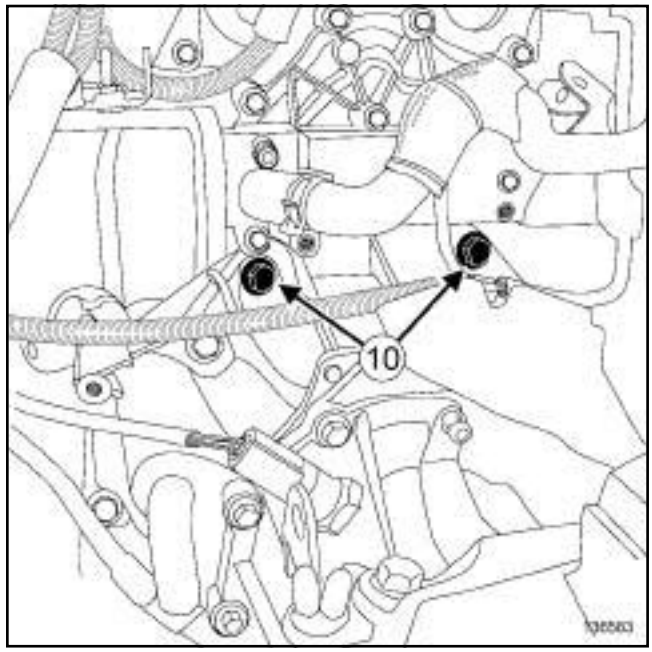
II - OPERATION FOR REMOVAL OF PART CONCERNED



136554

❏ Remove:

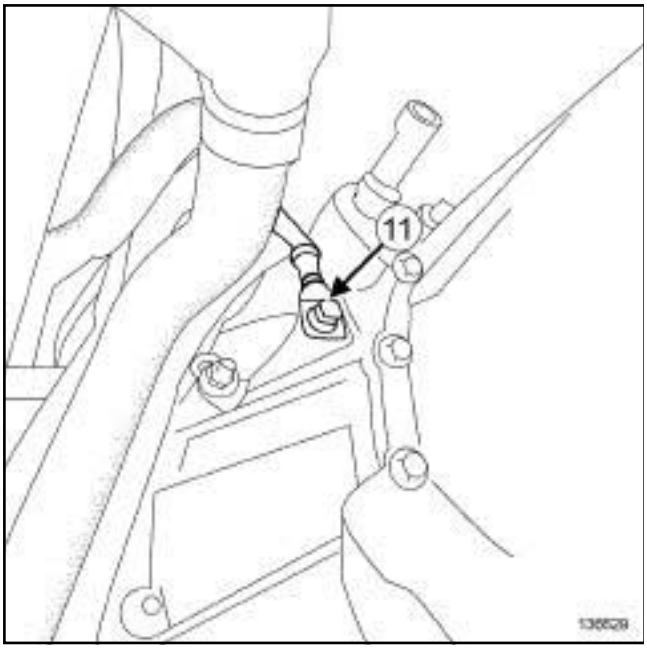
- the left-hand suspended engine mounting support bolts (**9**) on the manual gearbox,
- the left-hand suspended engine mounting support on the manual gearbox.



136583

❏ Remove the manual gearbox upper bolts (**10**) .

K4M, and TL4



136629

❑

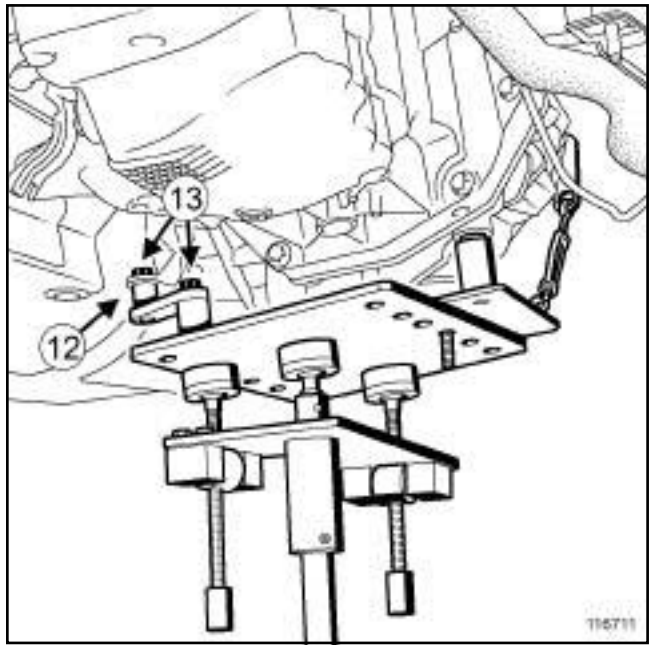
Note:

Before removing the earth terminal, mark its position using a **indelible pencil** by drawing a line on the earth terminal and on the gearbox housing.

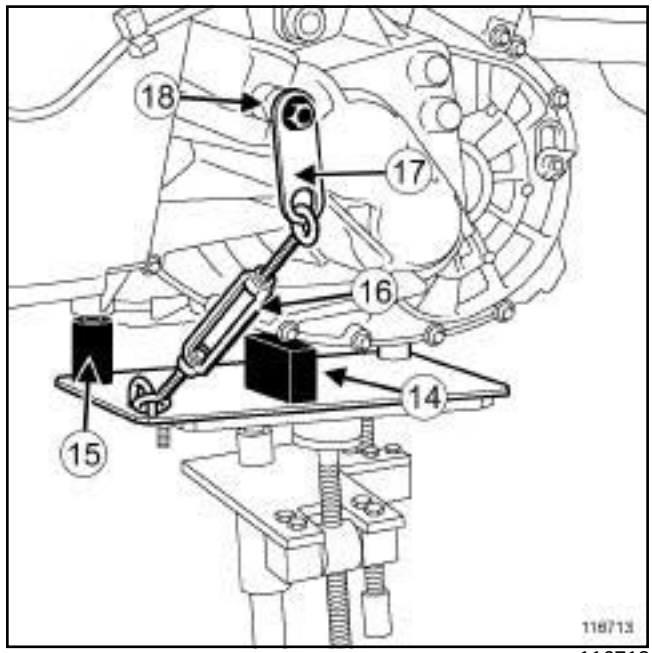
When reassembling, improper positioning of the earth terminal on the gearbox casing could result in damage to the earth terminal or earth wiring.

❑ Remove the earth wire bolt (**11**) on the manual gearbox.

❑ Remove the earth cable from the manual gearbox.



116711



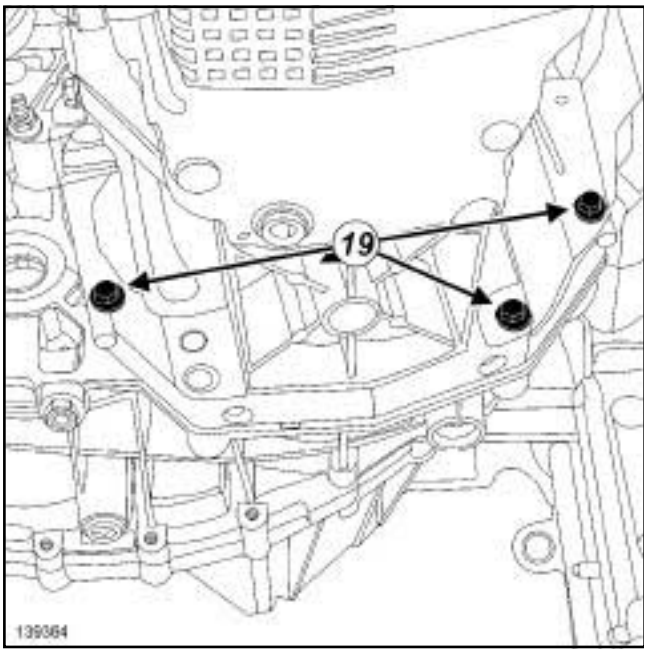
116713

❑ Fit:

- the **(Bvi. 1718)** to a **component jack**,
- the **(Bvi. 1718)** and the **component jack** under the manual gearbox,
- the bracket (**12**) using the nuts (**13**) ,
- the support (**14**) ,
- the pin (**15**) ,
- the rod (**16**) using the bracket (**17**) and the bolt (**18**) .

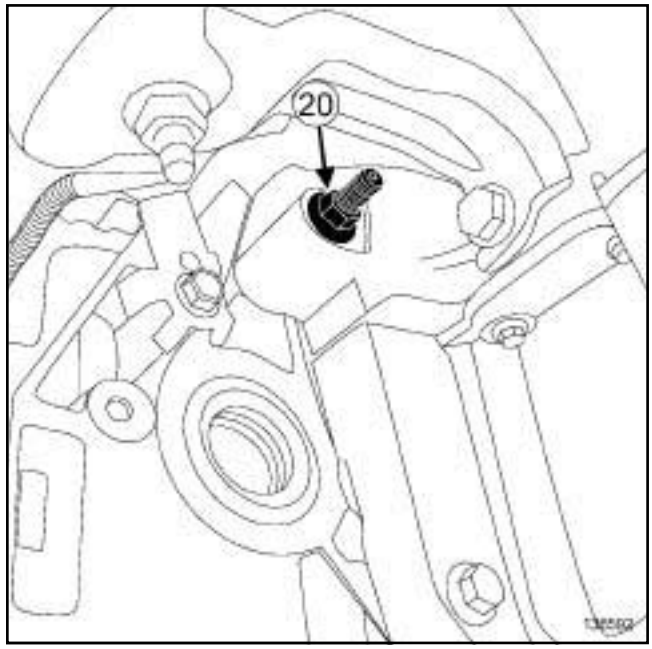
K4M, and TL4

❏ Tighten the rod anti-clockwise in order to avoid tilting the manual gearbox.

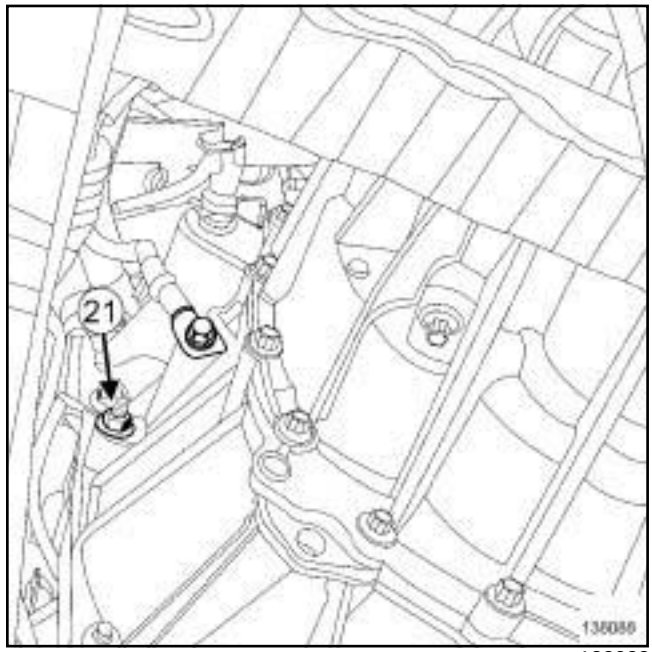


139364

❏ Remove the lower bolts (**19**) from the manual gearbox.



136592



138088

❏ Remove:

- the manual gearbox nuts (**20**) and (**21**) ,
- the manual gearbox using the **component jack** and **(Bvi. 1718)**.

❏ The clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

❏ When replacing the manual gearbox, remove the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

K4M, and TL4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing (12,03,01,04)**

❑

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

> **WARNING**
> Do not grease the clutch shaft splines.

❑ Refit the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

❑ Check that the centring dowelsare in place.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

❑ Fit the manual gearbox using the **component jack** and the **(Bvi. 1718)**.

❑ Refit the manual gearbox nuts.

❑ Torque tighten the **manual gearbox nuts (44 N.m)**.

❑ Remove the tool **(Bvi. 1718)** :

- the manual gearbox,
- from the **component jack**.

❑ Refit the manual gearbox lower bolts.

❑ Torque tighten the **manual gearbox lower bolts (44 N.m)**.

❑ It is essential to refit the earth cable respecting the marks made during disassembly.

❑ Refit the earth cable bolt on the manual gearbox.

❑ Torque tighten the **manual gearbox earth cable bolt (24 N.m)**.

❑ Refit the manual gearbox upper bolts.

❑ Torque tighten the **manual gearbox upper bolts (44 N.m)**.

❑ Refit the left-hand suspended engine mounting support on the gearbox.

❑ Torque tighten the **bolts of the left-hand suspended engine mounting support on the gearbox (62 N.m)**.

III - FINAL OPERATION

❑ Bring the left-hand suspended engine mounting support on the gearbox into contact with the left-hand suspended engine mounting rubber pad using the **(Mot. 1453)** equipped with the **(Mot. 1453-01)**.

❑ Refit the bolt of the left-hand suspended engine mounting rubber pad on the manual gearbox.

❑ Torque tighten the **left-hand suspended engine mounting rubber pad mounting bolt (62 N.m)**.

❑ Fit the battery wiring channel.

❑ Clip:

- the battery wiring channel,
- the downstream oxygen sensor wiring onto the mechanical gearbox.

❑ Remove the tool **(Mot. 1453)** fitted with the tool **(Mot. 1453-01)** using the **safety strap(s)**.

❑ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

K4M, and TL4

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the manual gearbox breather pipe,
- the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Remove the tool **(Ms. 583)** on the hydraulic clutch supply pipe at the outlet of the brake fluid reservoir.

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

❏ Fit the manual gearbox gear selector cables.

❏ Clip on the manual gearbox gear selector cables.

❏ Adjust the gear control cables (see **Mechanical gear control cable: Adjustment**) (37A, Mechanical component controls).

❏ Connect the reverse gear switch connector.

❏ Connect the air filter unit air outlet pipe to the throttle valve.

❏ Torque tighten the **clip on the throttle valve air inlet pipe (6 N.m)**.

❏ Refit:

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

K9K, and JR5

Essential special tooling	
Emb. 1797	24 mm socket for removing and refitting clutch master cylinder

Essential equipment
indelible pencil
component jack

Tightening torques ▽	
reverse gear switch	**23 N.m**
manual gearbox studs	**6.5 N.m**
manual gearbox nuts	**44 N.m**
manual gearbox lower bolts	**44 N.m**
manual gearbox upper bolts	**44 N.m**
manual gearbox earth cable bolt	**24 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

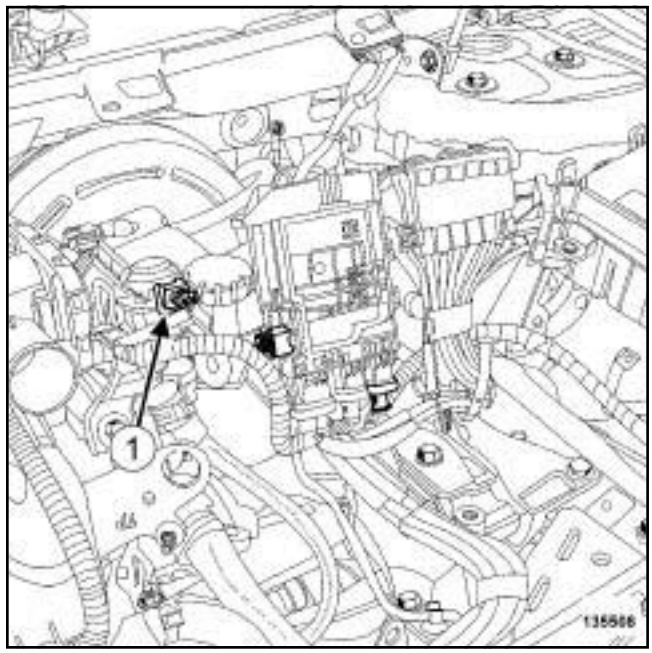
- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

J95

❑ Remove:

- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

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

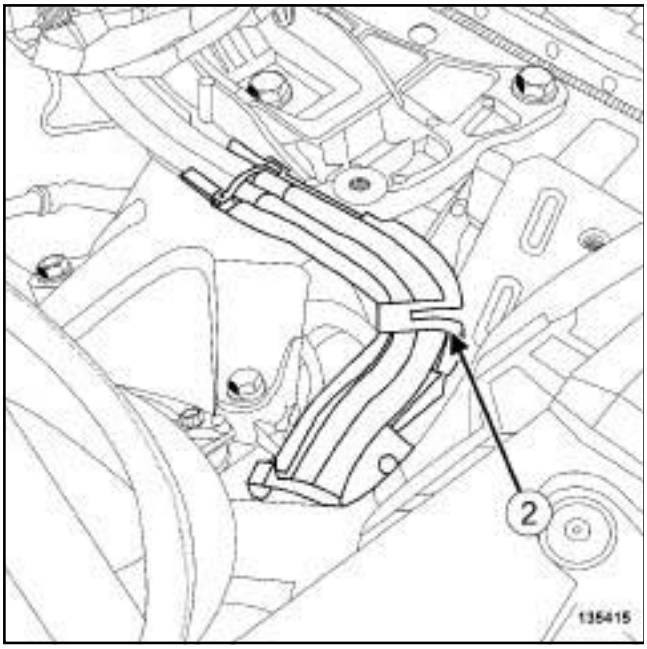


135508

❑ Disconnect the connector from the turbocharging pressure regulation solenoid valve (**1**) .

❑ Move aside the turbocharging pressure regulation solenoid valve wiring.

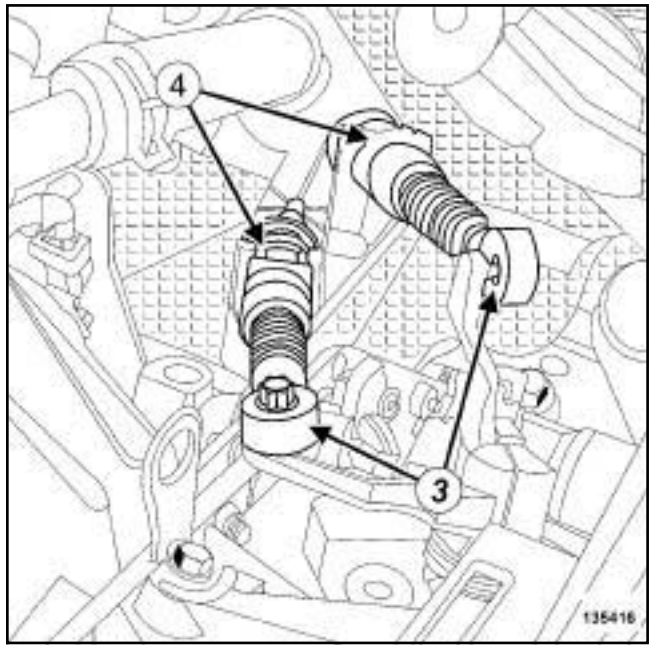
K9K, and JR5



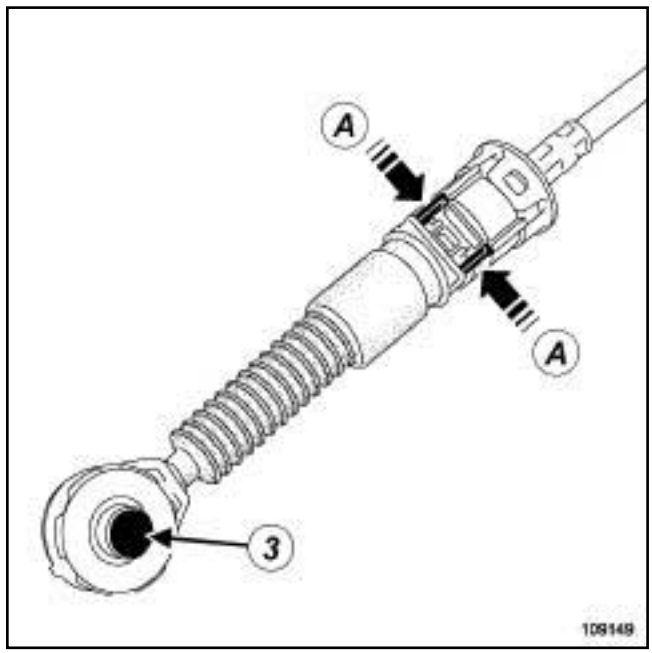
135415

❏ Unclip the battery wiring channel from the left-hand suspended engine mounting (**2**) .

❏ Remove the battery wiring channel from the left-hand suspended engine mounting.



135416



109149

❏ Unclip the manual gear selector cables by:

- unclipping the anchoring ball joints (**3**) from the manual gear selector,
- pinching the manual gear selector at (**A**) ,
- lifting the manual gear selector (**4**) from the manual gear selector mounting.

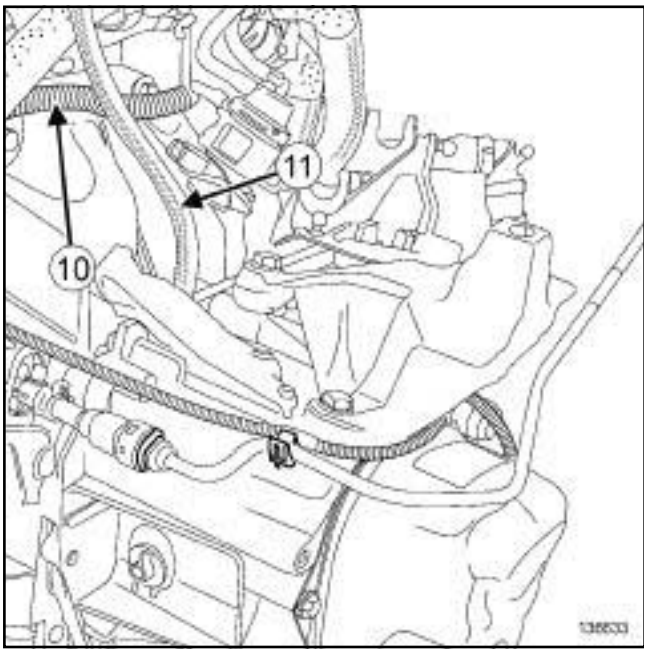
❏ Move aside the manual gear selector cables.

❏ Remove:

- the engine undertray bolts,
- the engine undertray,

K9K, and JR5

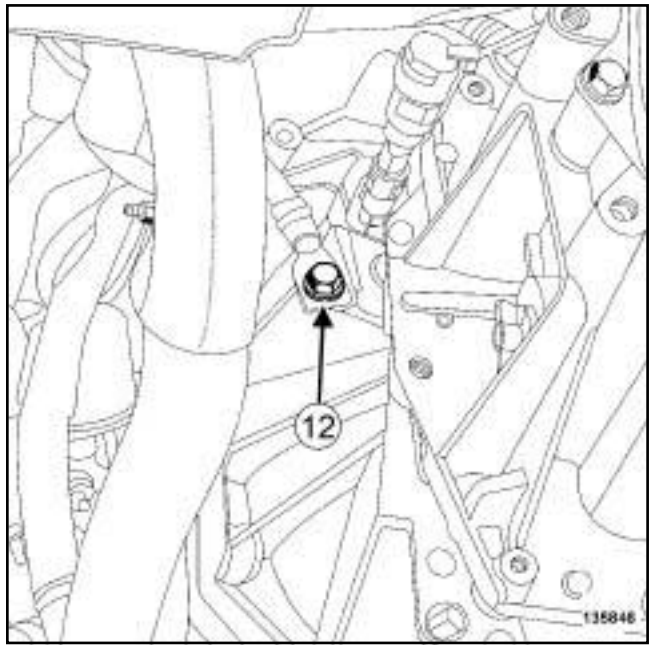
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection).



136633

❏ Unclip the following from the manual gearbox:

- the engine wiring channel (**10**) ,
- the manual gearbox breather pipe (**11**) .



135846

❏

Note:

Before removing the earth terminal, mark its position using a **indelible pencil** by drawing a line on the earth terminal and on the gearbox housing.

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

❏ Remove the earth cable bolt (**12**) from the gearbox housing.

❏ Remove:

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

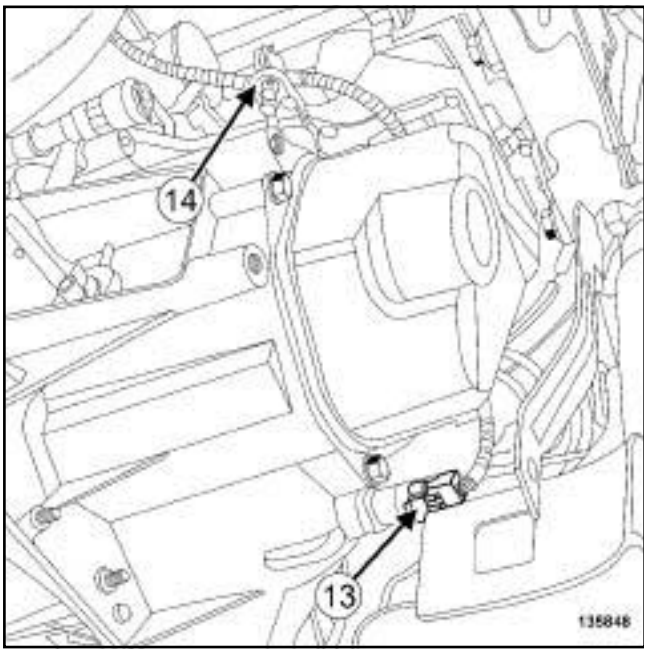
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,

K9K, and JR5

- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

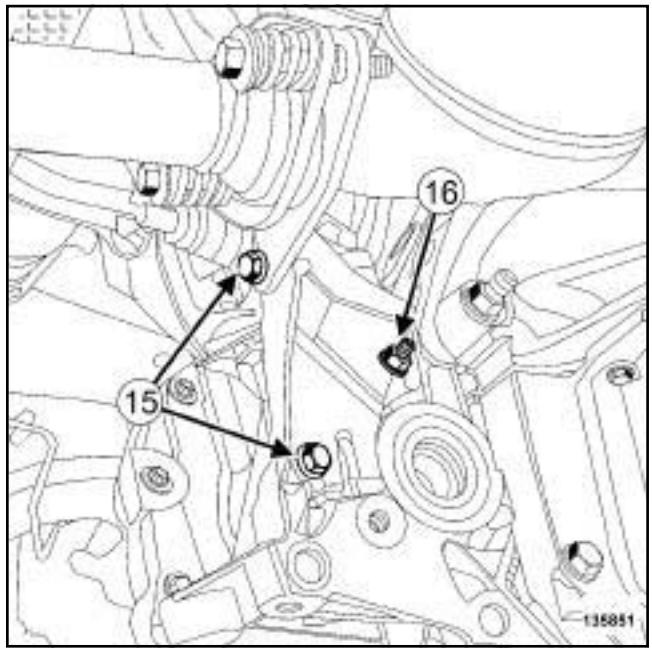


135848

❏ Disconnect the connector (**13**) from the reverse gear switch.

❏ Unclip the reverse gear switch wiring from the manual gearbox at (**14**) .

K9K, and 830



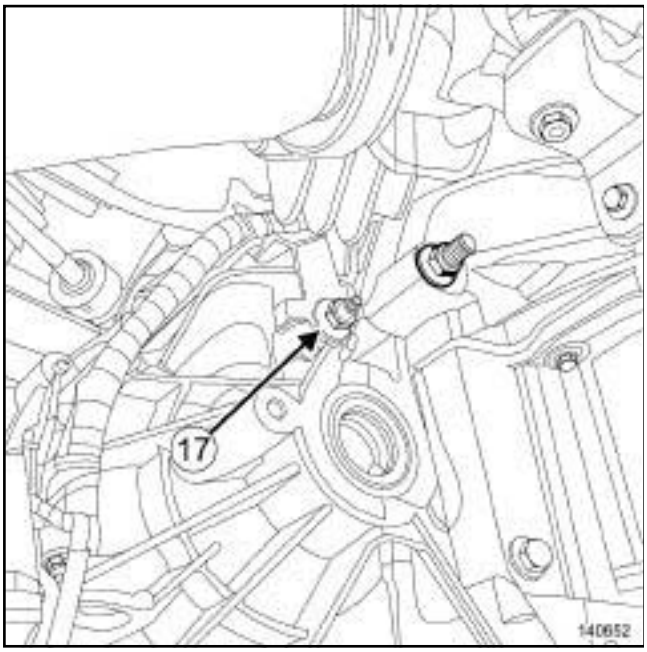
135851

❏ Remove:

- the catalytic converter downstream strut bolts (**15**) ,
- the nut (**16**) from the catalytic converter downstream strut,
- the catalytic converter downstream strut.

K9K, and JR5

K9K, and 834



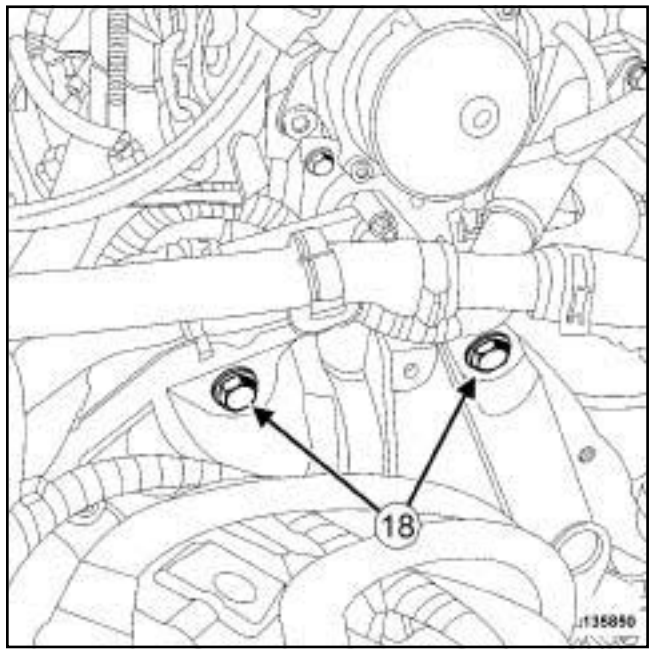
140652

❑ Remove the nut (**17**) of the particle filter temperature sensor wiring bracket.

❑ Move aside the particle filter temperature sensor wiring.

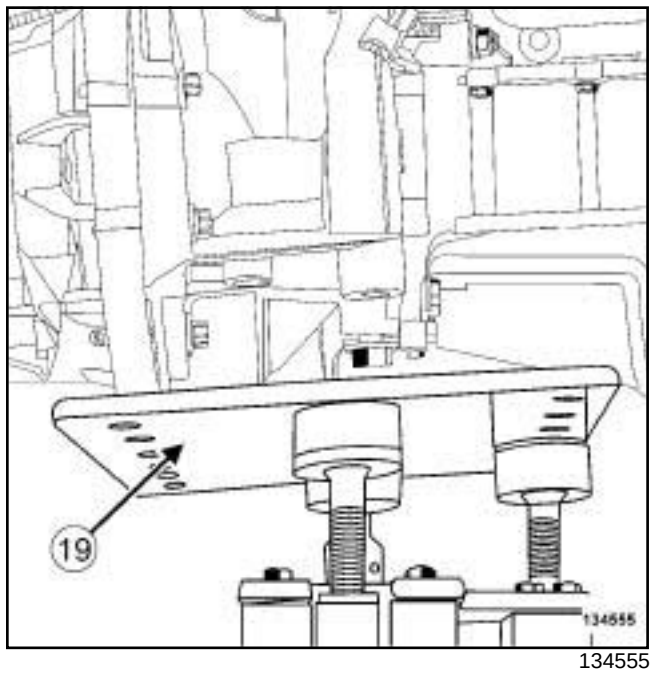
❑ Remove the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting).

II - OPERATION FOR REMOVAL OF PART CONCERNED



135850

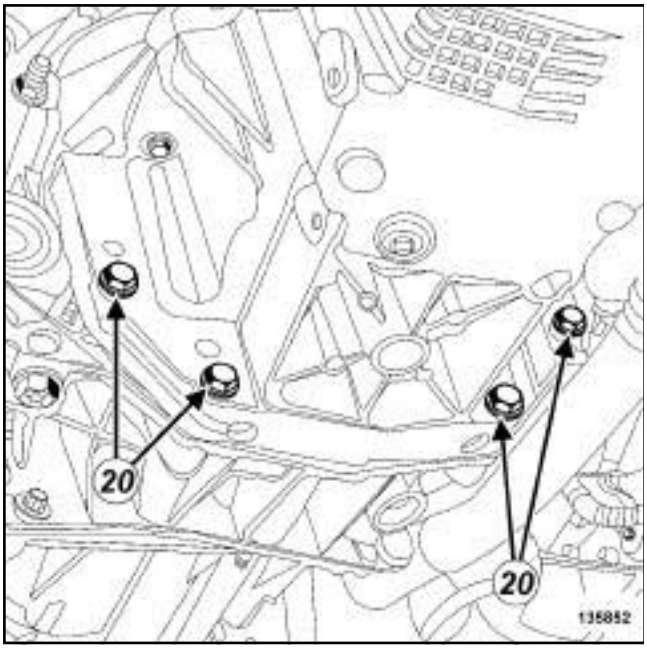
❑ Remove the manual gearbox upper bolts (**18**) .



134555

❑ Fit a **component jack** (**19**) beneath the manual gearbox.

K9K, and JR5



135852

❑ Remove:

- the lower bolts (**20**) from the manual gearbox,
- the nuts from the manual gearbox,
- the manual gearbox using the **component jack**,
- the manual gearbox studs,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing (12,03,01,04)**.

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

WARNING
Do not grease the clutch shaft splines.

❑ Check that there are centring rings in place on the new manual gearbox.

Replacing the manual gearbox

❑ When replacing the manual gearbox, remove the reverse gear switch from the gearbox using the tool **(Emb. 1797)**.

❑ Refit the reverse gear switch on the new manual gearbox.

❑ Torque tighten the **reverse gear switch (23 N.m)** using the **(Emb. 1797)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

❑ Fit the new manual gearbox using the **component jack**.

❑ Refit the manual gearbox studs.

❑ Torque tighten the **manual gearbox studs (6.5 N.m)**.

❑ Refit the manual gearbox nuts.

❑ Torque tighten the **manual gearbox nuts (44 N.m)**.

❑ Refit the manual gearbox lower bolts.

❑ Torque tighten the **manual gearbox lower bolts (44 N.m)**.

❑ Remove the **component jack** from the manual gearbox.

❑ Refit the manual gearbox upper bolts.

❑ Torque tighten the **manual gearbox upper bolts (44 N.m)**.

III - FINAL OPERATION

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

K9K, and 834

❑ Fit the particle filter temperature sensor wiring.

❑ Refit the nut of the particle filter temperature sensor wiring bracket.

K9K, and 830

❑ Refit:

- the catalytic converter downstream strut,

K9K, and JR5

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

❏ Clip the reverse gear switch wiring on the manual gearbox.

❏ Connect the reverse gear switch connector.

❏ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) .

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

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

Note:

Refit the earth terminal, at the mark made by the **indelible pencil** on the gearbox casing.

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

❏ Torque tighten the **manual gearbox earth cable bolt (24 N.m)**.

❏ Clip the following on the manual gearbox:

- the manual gearbox breather pipe,
- the engine wiring channel.

❏ Refit:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

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

❏ Refit the engine undertray.

❏ Fit the manual gear selector cables.

❏ Clip the manual gear selector cables:

- on the sheath stop,
- on the anchoring ball joints.

❏ Fit the battery wiring channel on the left-hand suspended engine mounting.

❏ Fit the turbocharging pressure regulation solenoid valve wiring.

❏ Connect the turbocharging pressure regulation solenoid valve connector.

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

J95

❏ Refit:

- the centre section of the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❏ Refit:

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

M9R, and PK4

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

Essential equipment
refrigerant charging station

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox lower bolts	**44 N.m**
manual gearbox upper bolts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove the front engine cover.

J95

❑ Remove:

- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights).

B95 or D95

❑ Remove the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❑ Remove:

- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

❑ Drain:

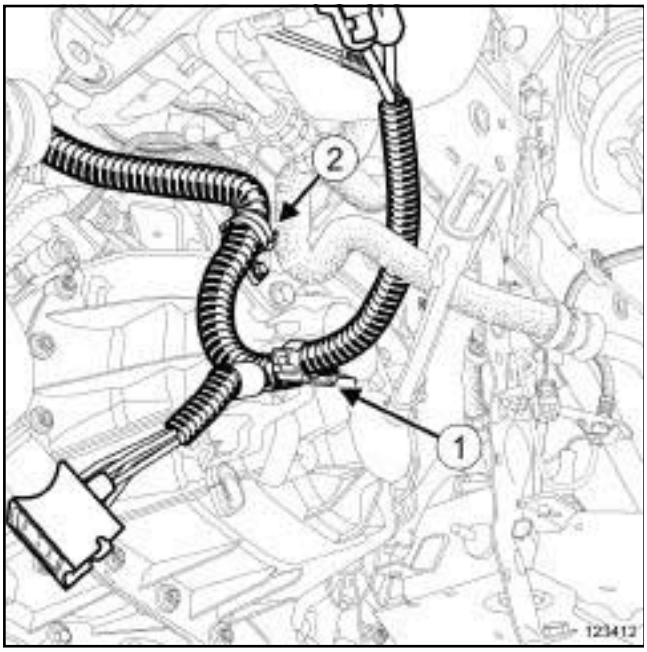
- the refrigerant circuit using a **refrigerant charging station** (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) ,
- the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).
- the engine oil (if necessary) (see **Engine oil: Draining - Refilling**) (10A, Engine and peripherals).

❑ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,

M9R, and PK4

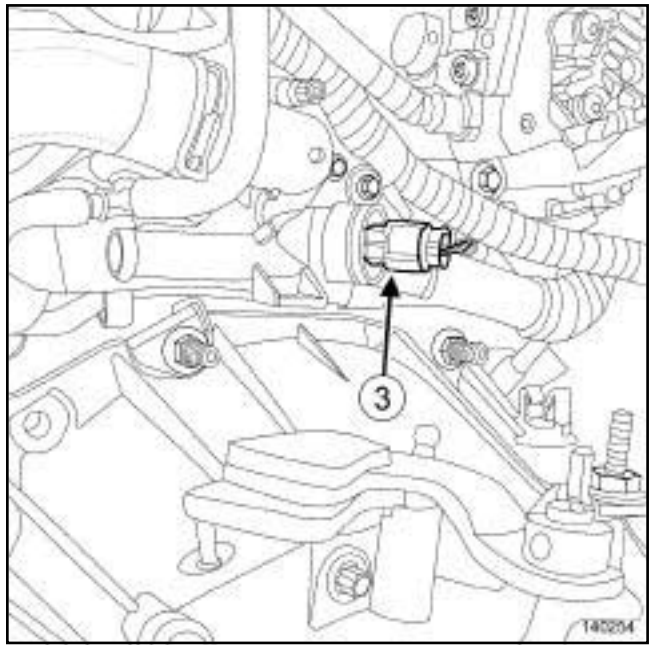
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).



123412

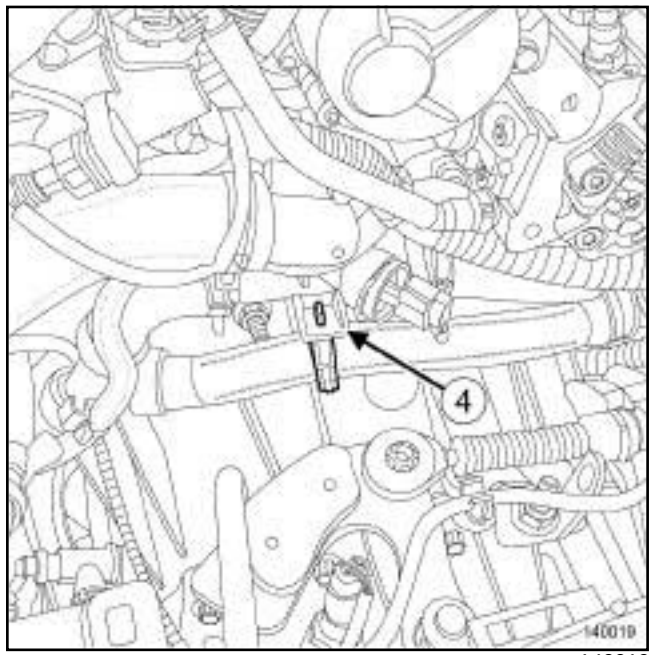
❏ Remove the bolt (**1**) from the wiring on the manual gearbox mounting.

❏ Unclip the engine wiring from the manual gearbox at (**2**) .



140254

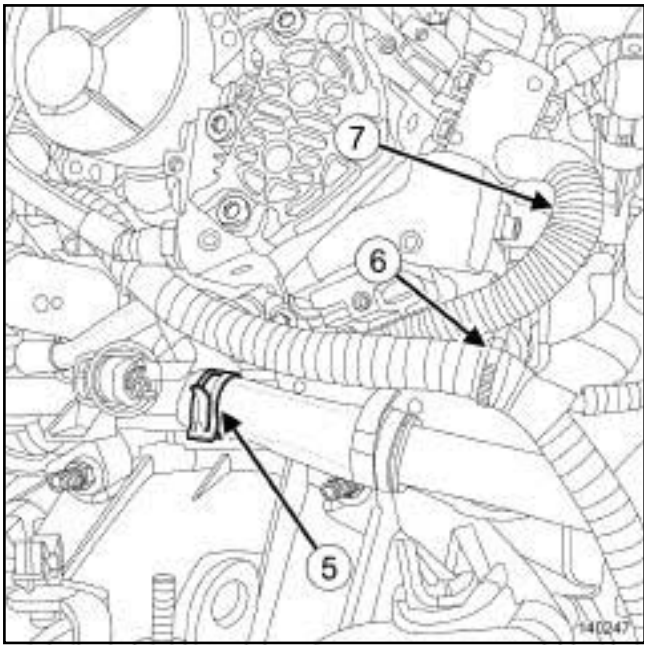
❏ Disconnect the coolant temperature sensor connector (**3**) .



140019

❏ Unclip the cooling hose (**4**) from the water chamber.

M9R, and PK4



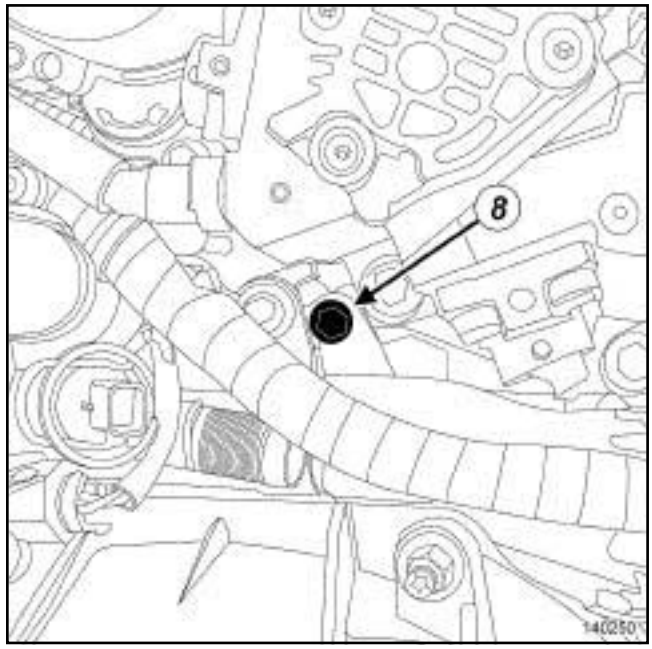
140247

❑ Separate the clip (**5**) of the water chamber hose using the tool **(Mot. 1448)**.

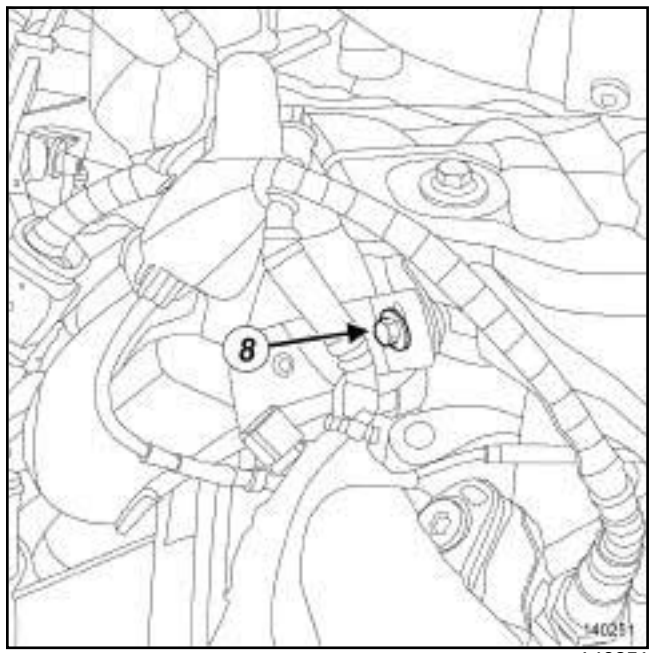
❑ Disconnect the hose from the water chamber.

❑ Unclip the engine wiring at (**6**) .

❑ Disconnect the leak return pipe from the high pressure pump (**7**) .



140250



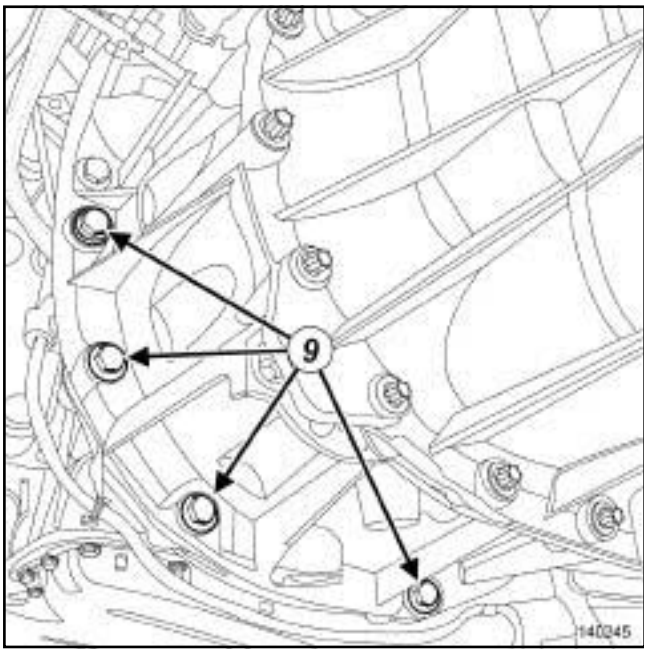
140251

❑ Remove:

- the bolts (**8**) from the exhaust gas recirculation pipe heat shield,
- the exhaust gas recirculation pipe heat shield,
- the manual gearbox breather pipe.

M9R, and PK4

II - OPERATION FOR REMOVAL OF PART CONCERNED

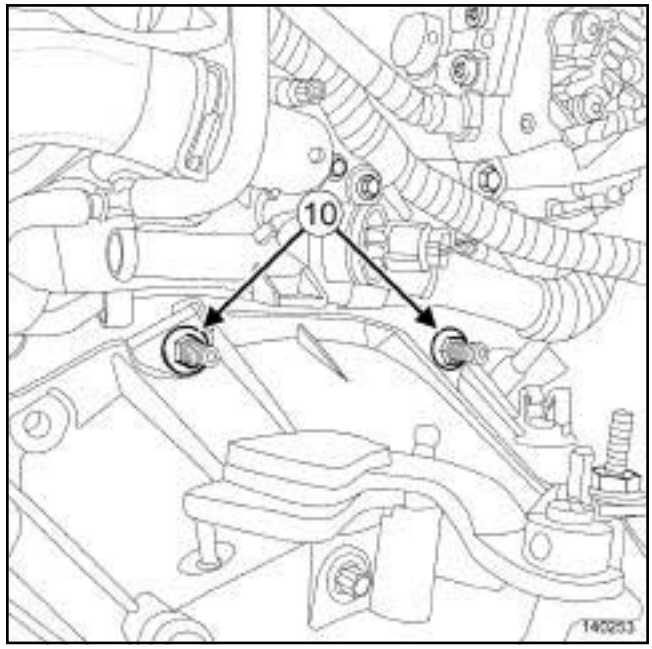


140245

140244

❑ Remove:

- the lower bolts (**9**) from the manual gearbox,
- the lower bolts (**9**) from the manual gearbox.



140253

❑ Remove the upper nuts (**10**) on the manual gearbox.

❑ When replacing the manual gearbox, remove the reverse gear switch (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑

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

WARNING
Do not grease the clutch shaft splines.

❑ Check that there are centring rings in place on the manual gearbox.

If replacing the manual gearbox

❑ Refit the reverse gear switch on the manual gearbox (see **21A**, **Manual gearbox**, **Reverse gear switch: Removal - Refitting**, page **21A-87**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the manual gearbox nuts.

❑ Torque tighten the **manual gearbox nuts (44 N.m)**.

M9R, and PK4

❏ Refit:

- the manual gearbox lower bolts,
- the manual gearbox upper bolts.

❏ Tighten to torque:

- the **manual gearbox lower bolts (44 N.m)**,
- the **manual gearbox upper bolts (44 N.m)**.

III - FINAL OPERATION

❏ Refit:

- the manual gearbox breather pipe,
- the exhaust gas recirculation pipe heat shield.

❏ Connect the leak return pipe to the high pressure pump.

❏ Clip on the engine wiring.

❏ Connect the hose to the water chamber.

❏ Fit the clip on the water chamber hose using the tool **(Mot. 1448)**.

❏ Clip the cooling hose onto the water chamber.

❏ Connect the coolant temperature sensor connector.

❏ Clip the engine wiring on the manual gearbox.

❏ Refit:

- the wiring on the manual gearbox mounting,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn).

B95 or D95

❏ Refit the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❏ Refit:

- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M9R, and PK4

J95

❑ Refit:

- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Perform the following operations:

- fill the engine oil (if necessary) (see **Engine oil: Draining - Refilling**) (10A, Engine and peripherals),
- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) ,
- fill the refrigerant circuit using a **refrigerant charging station** (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning).

❑ Refit the engine cover.

H4J, and TL4

Essential special tooling	
Mot. 1720	Engine stand.
Mot. 1672	Lower engine support.
Mot. 1913	Conversion support stud for Mot. 1720 tool

Essential equipment
indelible pencil
component jack
rivet gun

Tightening torques ▽	
manual gearbox nuts	**44 N.m**
manual gearbox bolts	**44 N.m**
manual gearbox earth cable bolt	**24 N.m**
bolts for the left-hand suspended engine mounting rubber pad cover	**62 N.m**
central bolt for the left-hand suspended engine mounting rubber pad support	**62 N.m**
lower engine tie-bar bolt on the front axle sub-frame	**180 N.m**
lower engine tie-bar bolt on the lower engine tie-bar support	**180 N.m**

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove the front engine cover.

J95

❏ Remove:

- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),

- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

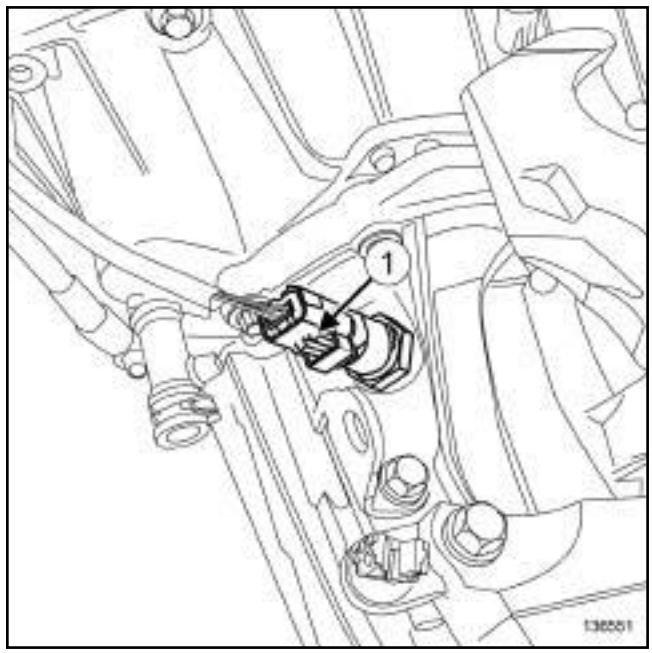
❏ Remove:

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

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

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

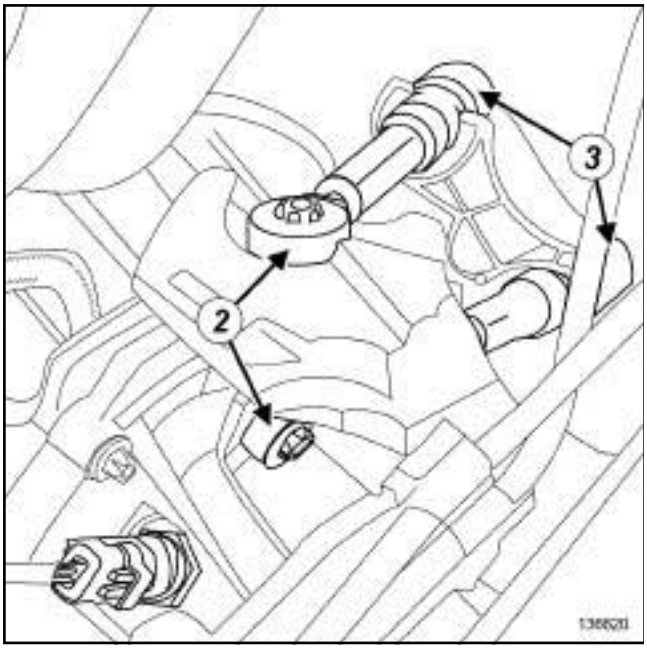
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).



136551

❏ Disconnect the connector (**1**) from the reverse gear switch.

H4J, and TL4



136620

❏ Unclip:

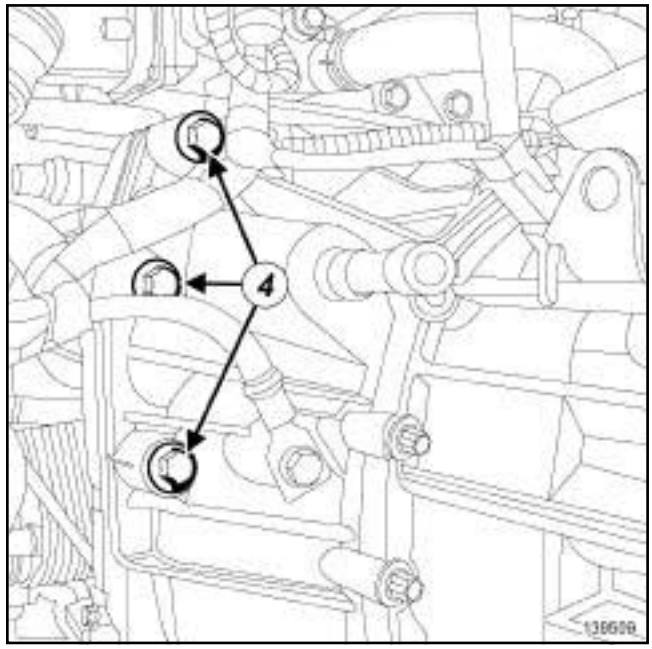
- the gear control cables (**2**) from the selector ball joints using an open-jawed spanner,
- the gear control cables (**3**) from their support.

❏ Move the gear control cables away from the manual gearbox.

❏ Remove:

- the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

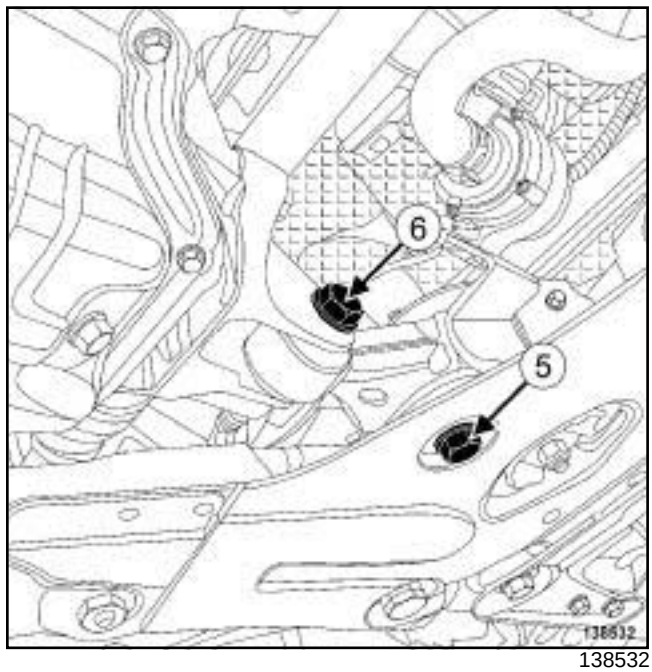
❏ Drain the manual gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .



139509

❏ Remove the bolts (**4**) from the starter.

❏ Remove the starter.



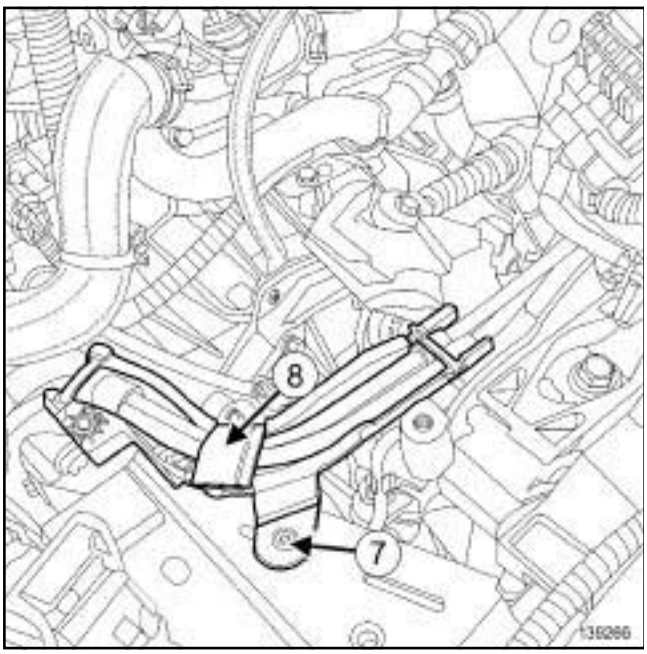
138532

❏ Remove:

- the bolt (**5**) for the lower engine tie-bar from the front axle subframe,
- the bolt (**6**) for the lower engine tie-bar from the lower engine tie-bar support,
- the lower engine tie-bar,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),

H4J, and TL4

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components).

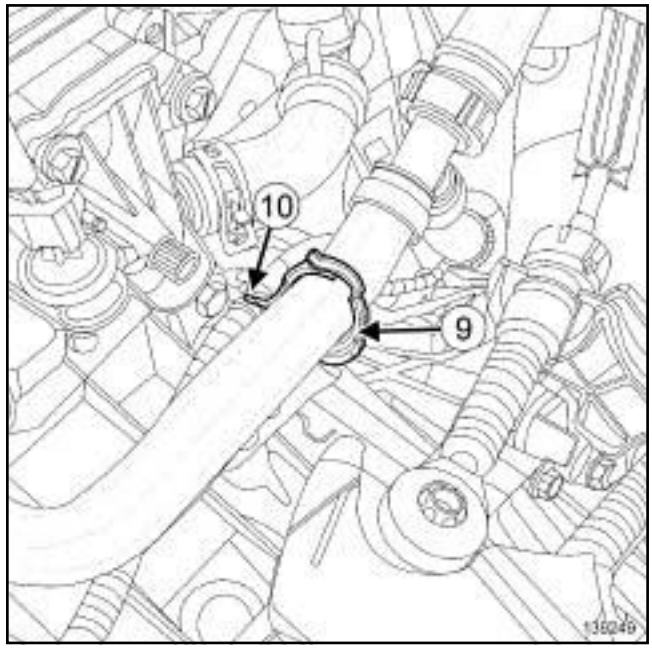


139266

❏ Drill out the rivet (**7**) on the battery wiring channel.

❏ Unclip the battery wiring channel (**8**) .

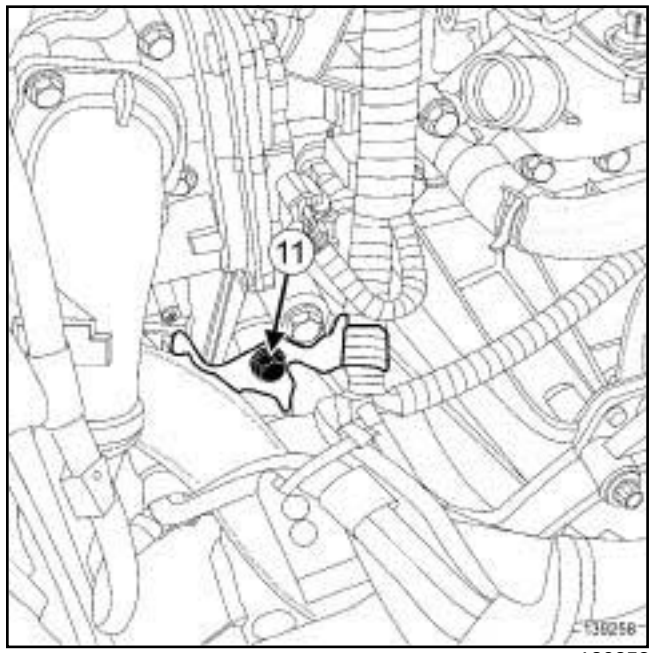
❏ Move aside the battery wiring channel.



139249

❏ Unclip the following from the manual gearbox mounting:

- the hose (**9**) between the water chamber and the electric coolant pump,
- the electric coolant pump wiring (**10**) .

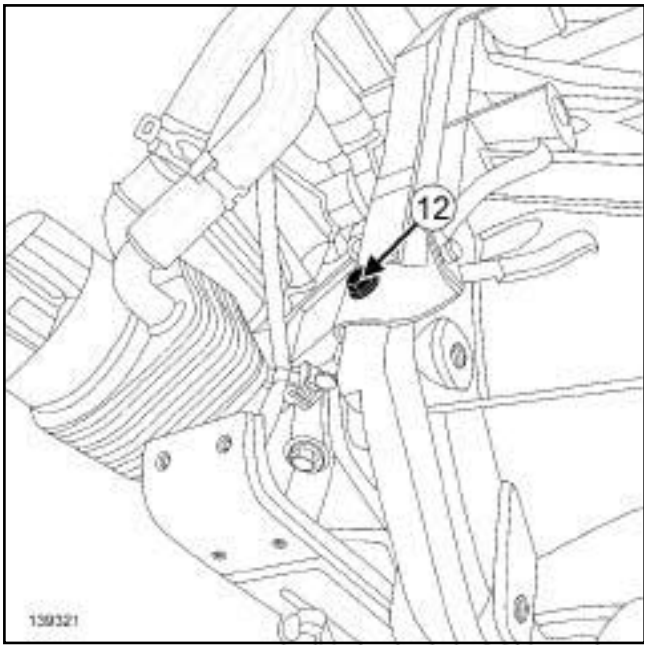


139258

❏ Remove the bolt (**11**) from the power and injection wiring support on the manual gearbox.

❏ Move the power and injection wiring support away from the manual gearbox.

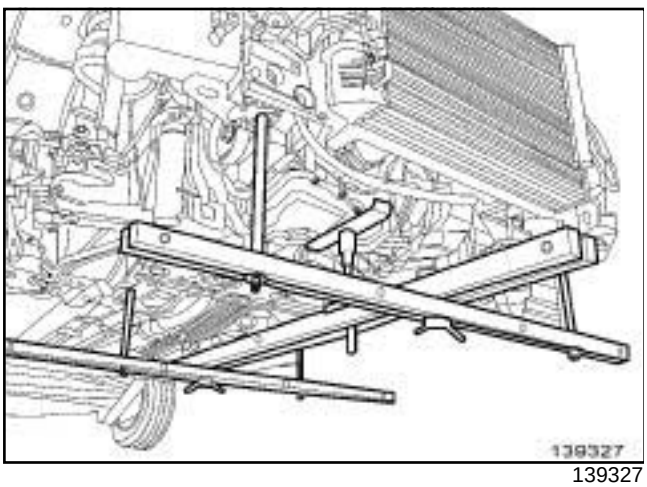
H4J, and TL4



139321

❏ Remove:

- the bolt (**12**) of the intercooler air outlet pipe retaining bracket,
- the intercooler air outlet pipe retaining bracket from the cylinder block.



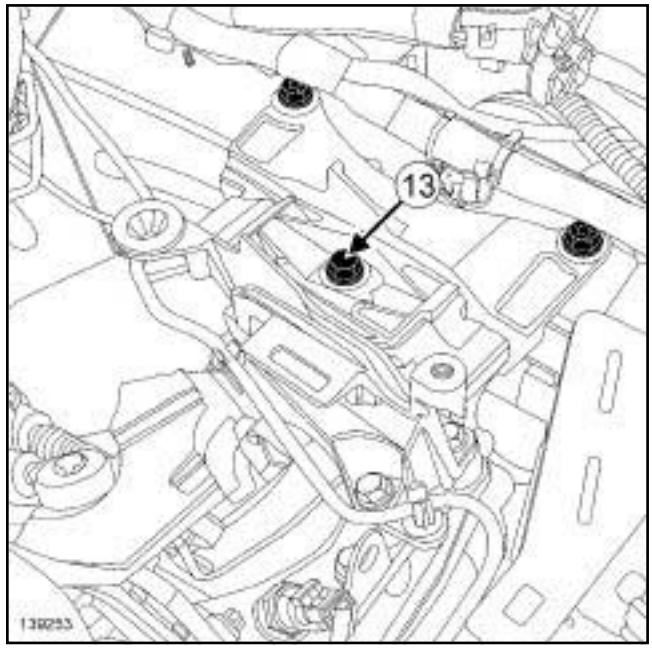
139327

❏ Fit the tool **(Mot. 1720)** equipped with the **(Mot. 1672)** and **(Mot. 1913)**.

WARNING

It is strictly forbidden to apply any pressure to the engine oil sump. Damage to the sump will irreparably damage the engine by:

- blocking the strainer,
- raising the oil level above maximum, with a risk of engine racing.

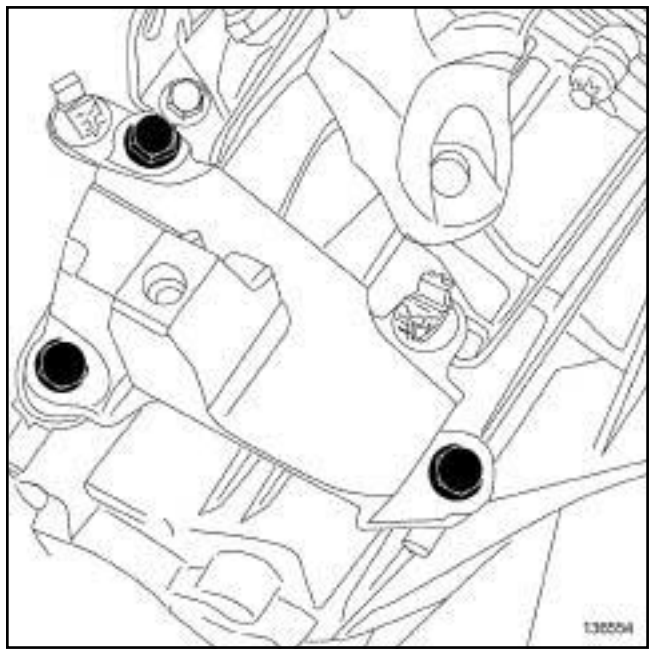


139253

❏ Remove the bolt (**13**) of the left-hand suspended engine mounting rubber pad support from the left-hand suspended engine mounting cover.

❏ Slightly lower the manual gearbox.

II - OPERATION FOR REMOVAL OF PART CONCERNED



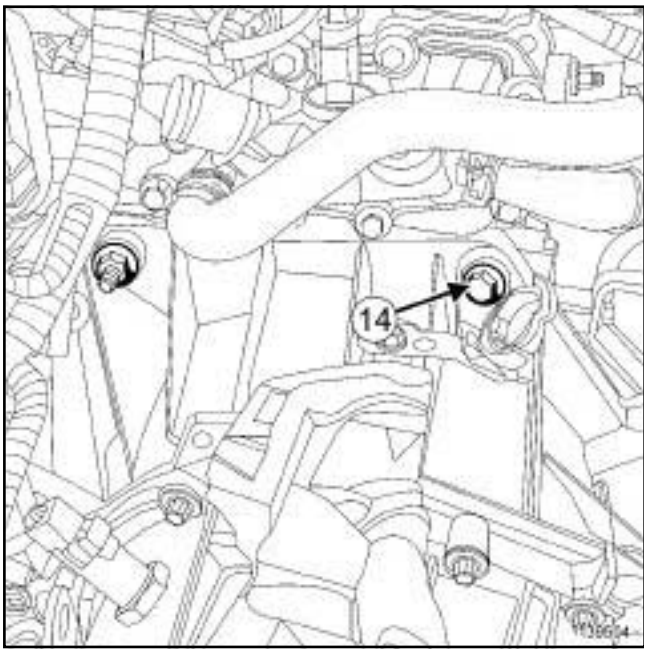
136554

❏ Remove:

- the bolts for the left-hand suspended engine mounting rubber pad cover,

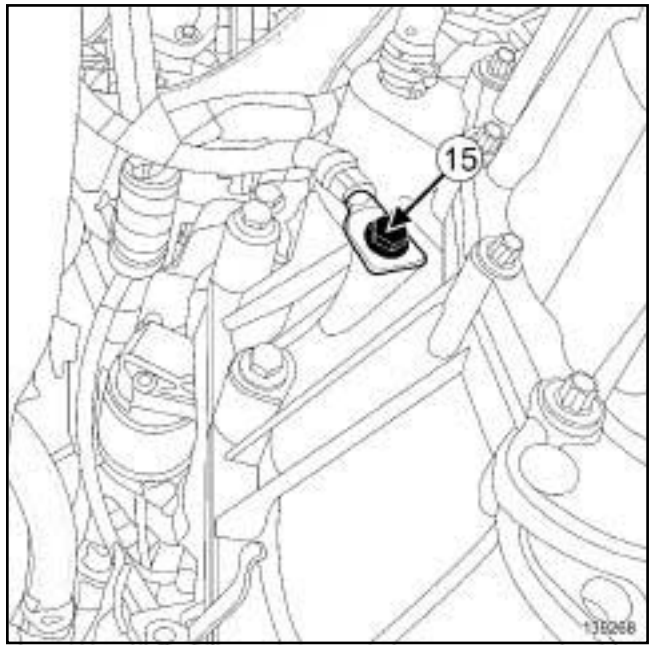
H4J, and TL4

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



139504

❏ Remove the upper bolt (**14**) from the manual gearbox.



139268

❏

Note:

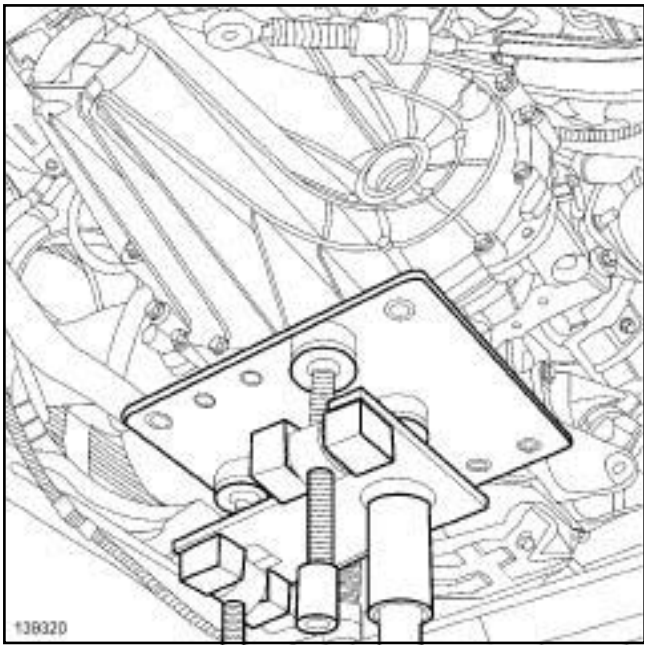
Before removing the earth terminal, mark its position using a **indelible pencil** by drawing a line on the earth terminal and on the gearbox casing.

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

❏ Remove the manual gearbox earth cable bolt (**15**) .

❏ Remove the earth cable from the manual gearbox.

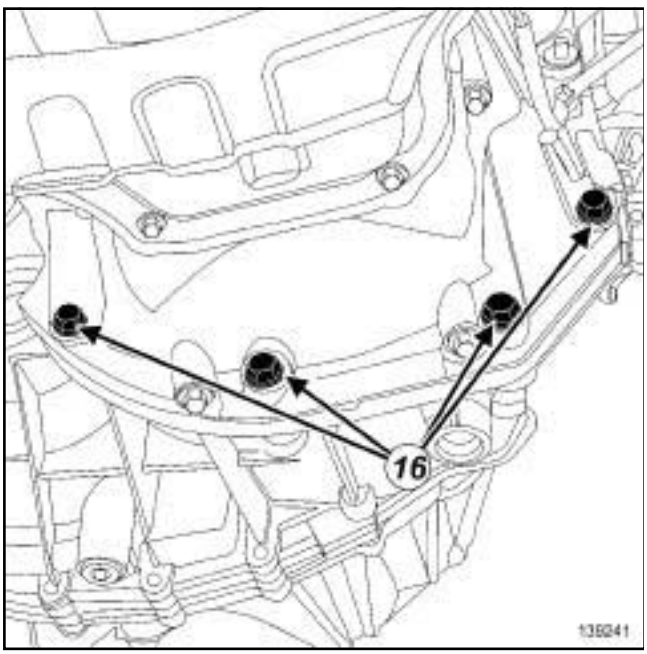
H4J, and TL4



139320

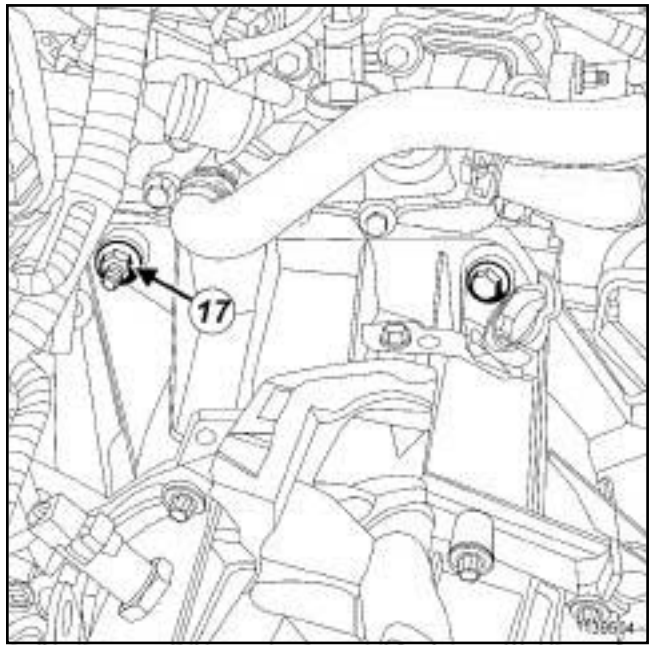
❏ Fit a **component jack** beneath the manual gearbox.

❏ Tighten the rod anti-clockwise to avoid tilting the manual gearbox.

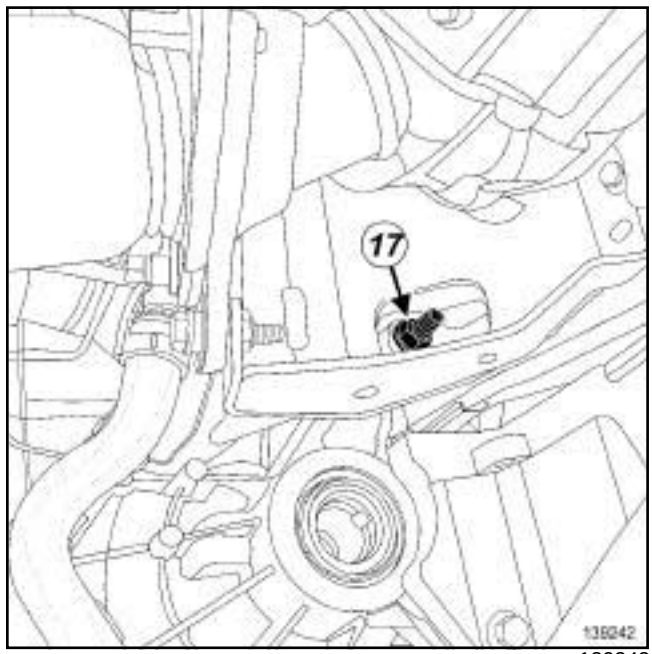


139241

❏ Remove the lower bolts (**16**) from the manual gearbox.



139504



139242

❏ Remove:

- the manual gearbox nuts (**17**) ,
- the manual gearbox using the **component jack**,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

If replacing the gearbox

❏ Remove:

- the bolt of the electric coolant pump hose and electric coolant pump wiring support,

- the electric coolant pump hose and electric coolant pump wiring support.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Clutch thrust bearing (12,03,01,04)**.

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

WARNING
Do not grease the clutch shaft splines.

❑ Check that the centring dowelsare in place.

If replacing the gearbox

❑ Refit the electric coolant pump hose and electric coolant pump wiring support.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox using the **component jack**.

❑ Remove the **component jack** from the manual gearbox.

❑ Tighten to torque:

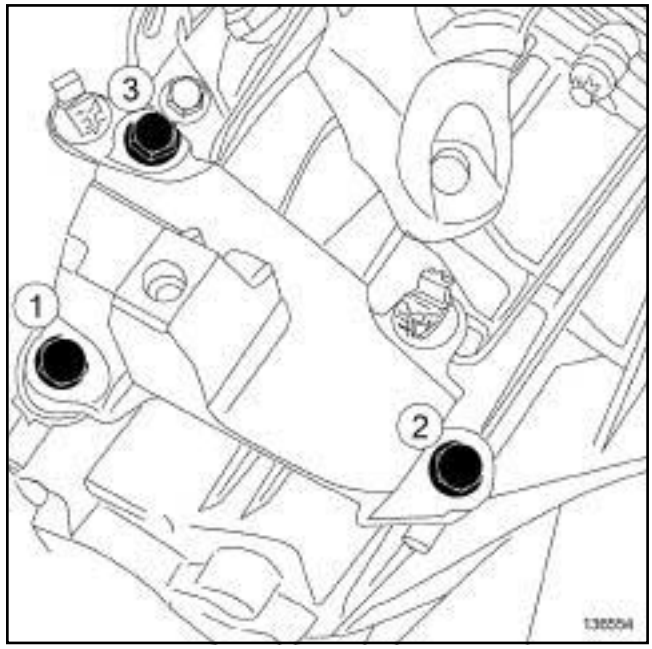
- the **manual gearbox nuts (44 N.m)**,
- the **manual gearbox bolts (44 N.m)**

❑ It is essential to refit the earth cable respecting the marks made during disassembly.

❑ Refit the earth cable bolt on the manual gearbox.

❑ Torque tighten the **manual gearbox earth cable bolt (24 N.m)**.

❑ Refit the left-hand suspended engine mounting rubber pad cover on the manual gearbox.



136554

❑ Torque tighten in order the **bolts for the left-hand suspended engine mounting rubber pad cover (62 N.m)**.

III - FINAL OPERATION

❑ Bring the left-hand suspended engine mounting rubber pad cover into contact on the left-hand suspended engine mounting rubber pad using the tool **(Mot. 1720)** equipped with the **(Mot. 1672)** and **(Mot. 1913)**.

❑ Refit the central bolt of the left-hand suspended engine mounting rubber pad support on the left-hand suspended engine mounting rubber pad cover.

❑ Torque tighten the **central bolt for the left-hand suspended engine mounting rubber pad support (62 N.m)**.

❑ Remove the tool **(Mot. 1720)** equipped with the **(Mot. 1672)** and **(Mot. 1913)**.

❑ Refit the intercooler air outlet pipe retaining bracket on the cylinder block.

❑ Fit the power and injection wiring support on the manual gearbox.

❑ Refit the bolt of the power and injection wiring support on the manual gearbox.

❑ Clip the following on the mounting on the manual gearbox:

- the hose between the water chamber and the electric coolant pump,
- the electric coolant pump wiring.

H4J, and TL4

❏ Fit the battery wiring channel.

❏ Clip on the battery wiring channel.

❏ Fit a new rivet on the battery wiring channel using a **rivet gun**.

❏ Refit:

- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection),
- the lower engine tie-bar.

❏ Tighten to torque:

- the **lower engine tie-bar bolt on the front axle sub-frame (180 N.m)**,
- the **lower engine tie-bar bolt on the lower engine tie-bar support (180 N.m)**.

❏ Fit the starter.

❏ Refit:

- the starter bolts,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the hydraulic clutch pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Fit the control cables on the manual gearbox.

❏ Clip on the gear control cables.

❏ Connect the reverse gear switch connector.

❏ Refit:

- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

J95

❏ Refit:

- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❏ Perform the following operations:

- fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) ,
- bleed the clutch control circuit (see **Clutch circuit: Bleeding**) (37A, Mechanical component controls).

❏ Refit the engine cover.

Input shaft lip seal: Removal - Refitting

JH3 or JR5

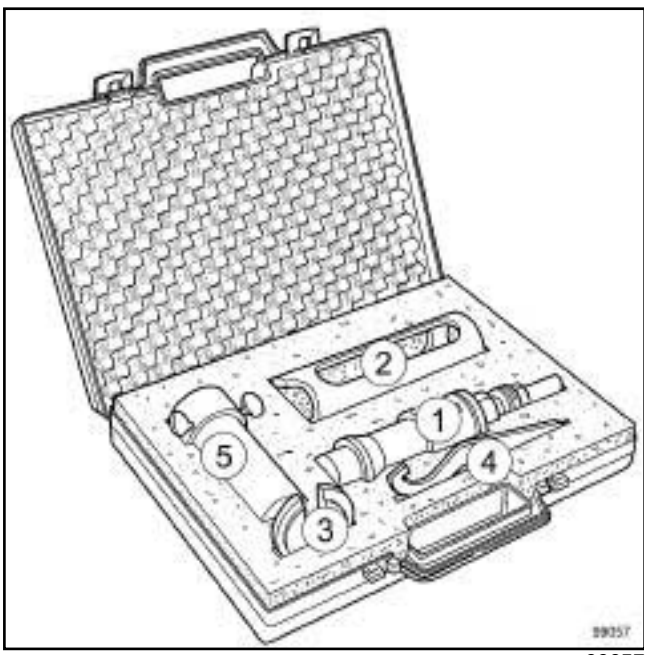
Essential special tooling	
Bvi. 1445	Tool for extracting and fitting JB gearbox guide tube.
Bvi. 1828	Rivet set and plate for removing/refitting JH1 gearbox guide tube

Tightening torques ▽	
clip on the throttle valve air inlet pipe	**6 N.m**

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

Note:
The lip seal and the primary shaft bearing are built into the thrust bearing guide tube.

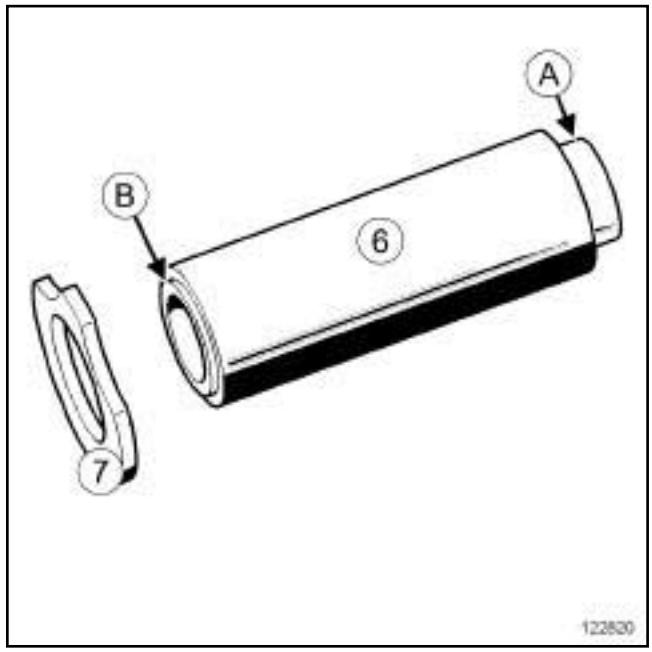
Bvi. 1445



99057

(**1**) Tightening clamp
(**2**) Sleeve
(**3**) Split ring
(**4**) Key
(**5**) Sender

Bvi. 1828



122820

(**6**) Snap rivet
(**7**) Pressure plate

❑ The thrust pad guide tube is removed using the **(Bvi. 1445)** and **(Bvi. 1828)**.

Note:
The gauge ***(5)*** is not used for the JH gearbox.

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine cover,
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),

JH3 or JR5

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

❏ Loosen the clip on the throttle valve air inlet pipe.

❏ Disconnect the air outlet pipe from the air filter unit.

❏ Remove:

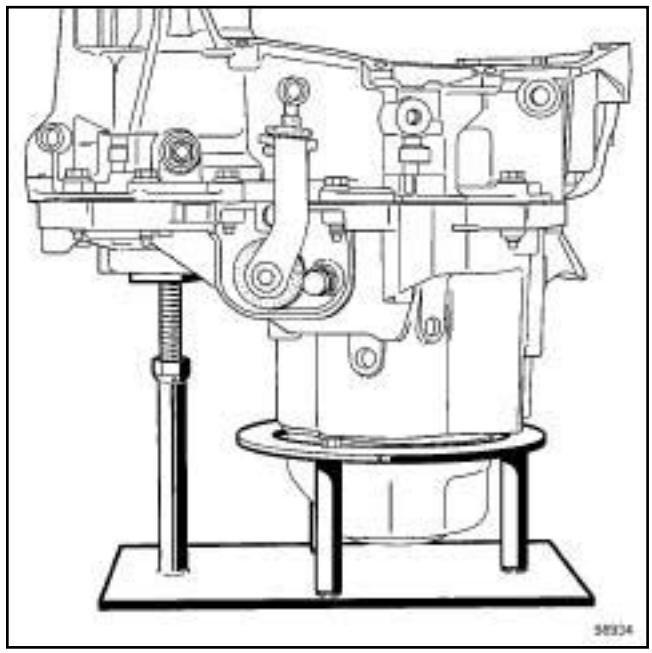
- the air outlet pipe to the air filter unit,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

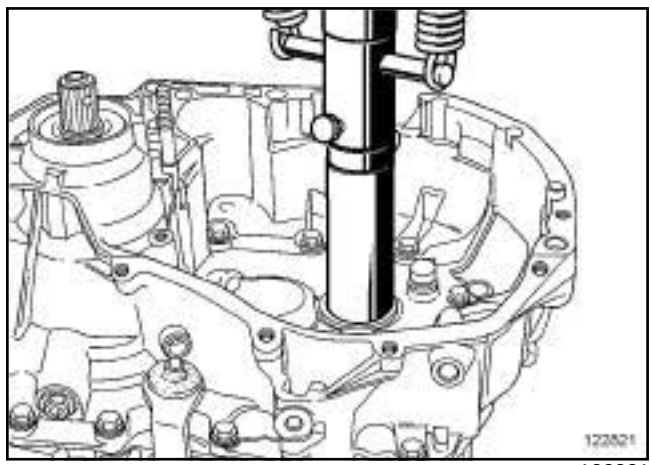
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection).
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED


98934

❏ Position the manual gearbox on the support.

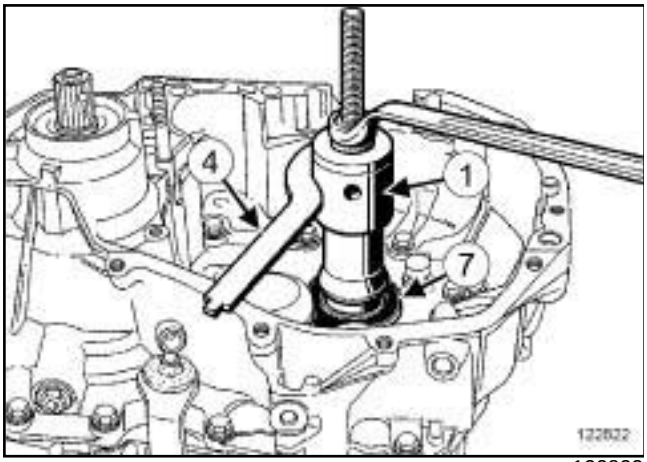
❏ Adjust the adjustable support if necessary.


122821

❏ Gently remove the guide tube with a press using the snap rivet ***(6)*** , section ***(A)*** of the **(Bvi. 1828)** on the guide tube end.

❏ Degrease the guide tube.

JH3 or JR5



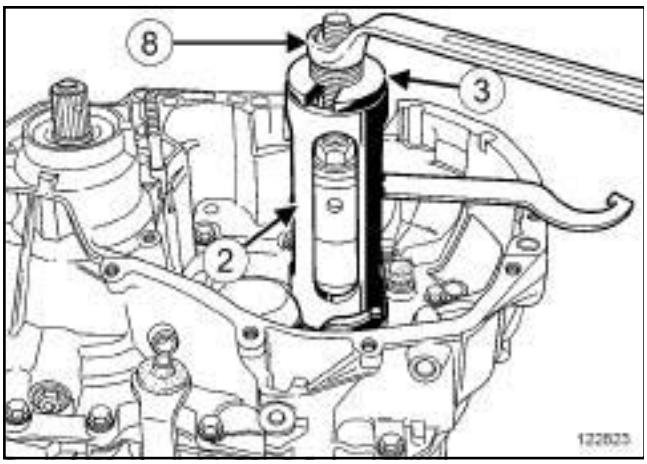
122822

❏ In order, fit the following on the guide tube:

- the pressure plate (**7**) of the **(Bvi. 1828)**,
- the tightening clamp (**1**) of the **(Bvi. 1445)**.

❏ Immobilise the tightening clamp using the key (**4**) of the **(Bvi. 1445)**.

❏ Tighten the nut firmly.



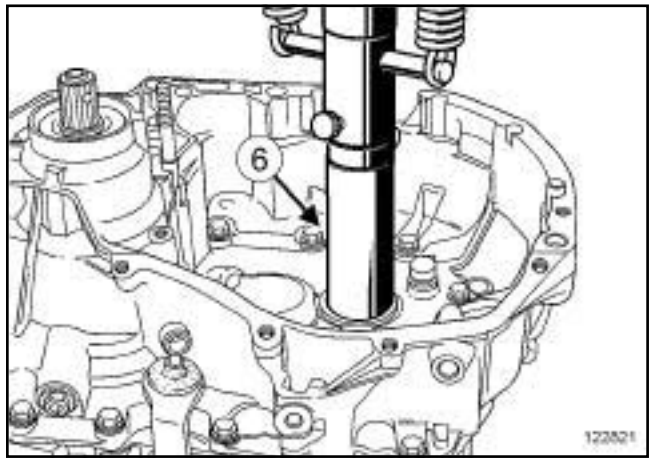
122823

❏ Position the sleeve (**2**) and the split ring in place (**3**) with the **(Bvi. 1445)**.

❏ Gently remove the guide tube by moving the upper nut (**8**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



122821

❏ Refit the new guide tube with a press until the snap rivet is flush (**6**) on the **(Bvi. 1445)** with the housing, on the guide tube section side ***(B)*** .

II - FINAL OPERATION

❏ Refit:

- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (17B, Petrol injection).

JH3 or JR5

- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the air outlet pipe from the air filter unit.

❏ Connect the air outlet pipe of the air filter unit.

❏ Torque tighten the **clip on the throttle valve air inlet pipe (6 N.m)**.

❏ Refit:

- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the engine cover.

Input shaft lip seal: Removal - Refitting

ND4

❑ Replace the lip seal after opening the gearbox (see **Clutch housing: Removal - Refitting**) .

Input shaft lip seal: Removal - Refitting

TL4

Essential special tooling	
Bvi. 1601	Primary shaft oil seal fitting tool.

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

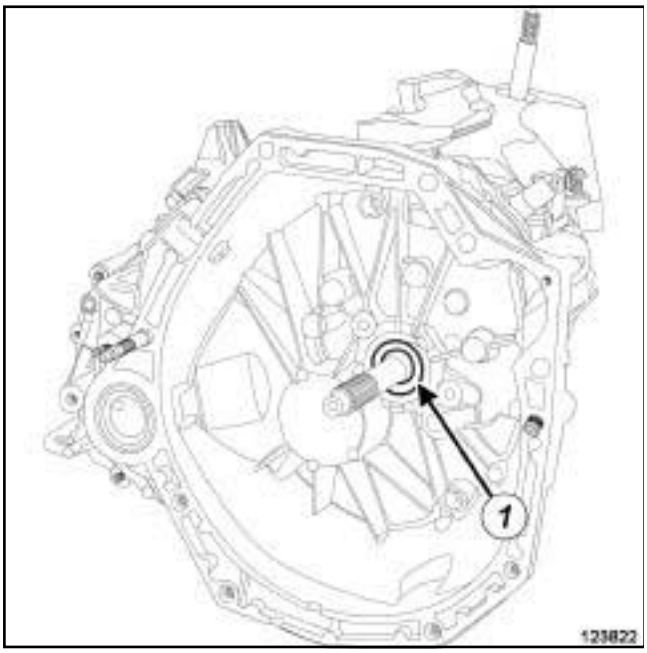
❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the hydraulic clutch release bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED



123822

❑

Note:

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

❑ Drill a hole in the input shaft lip seal (**1**) , using a drill bit with a diameter of **2.5 mm**.

❑ Fit a bolt in the input shaft lip seal (**1**) .

❑ Remove the input shaft lip seal (**1**) with a pair of pliers.

REFITTING

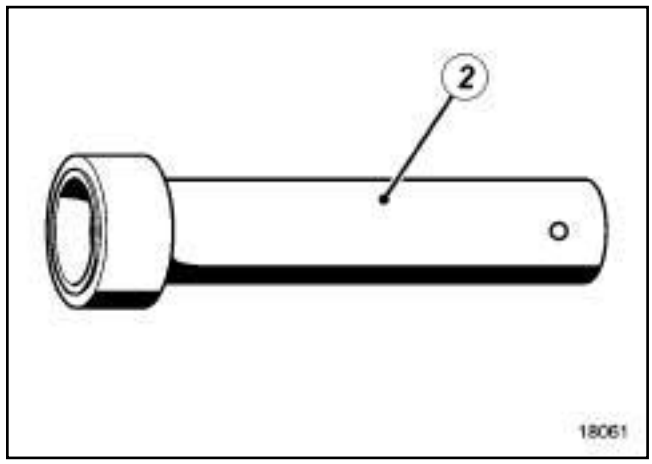
I - REFITTING PREPARATION OPERATION

❑

Note:

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

II - REFITTING OPERATION FOR PART CONCERNED



18061

❑ Fit a new input shaft lip seal, fitted with its protector, using the (**2**) .

❑ Remove the protector from the new input shaft lip seal.

❑ Insert the **(Bvi. 1601)** and tap it gently with a rubber mallet to ensure it is inserted fully.

III - FINAL OPERATION

❑ Refit:

- the hydraulic clutch release bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) ,
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),

TL4

- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

❑ Perform the following operations:

- fill and check the gearbox oil level (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) ,
- bleed the clutch control circuit (see **Clutch circuit: Bleeding**) (37A, Mechanical component controls).

❑ Refit:

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
- the engine undertray,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the engine cover.

PK4

Essential special tooling	
Bvi. 1236	Primary shaft oil seal 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,
- the engine cover,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

❏ Drain the manual gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

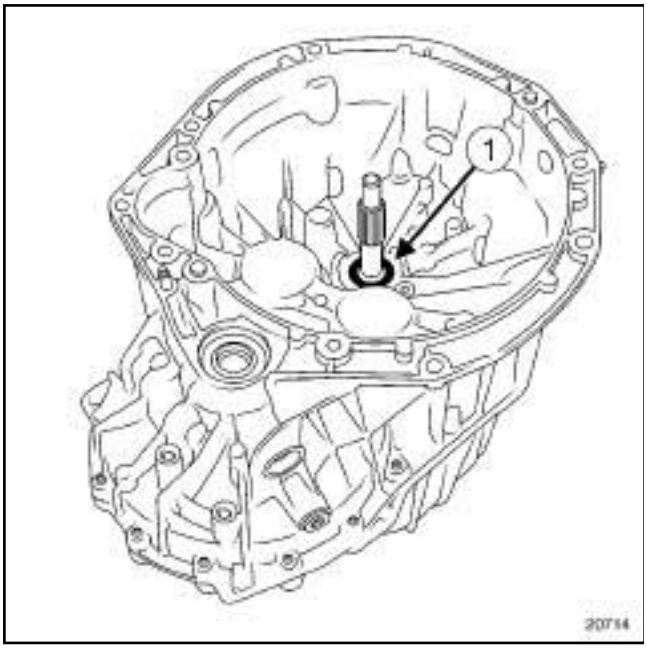
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the lower engine tie-bar (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 starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

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

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

PK4



20714

❏ Fit a bolt in the input shaft lip seal (**1**) .

❏ Remove the input shaft lip seal (**1**) with a pair of pliers.

REFITTING

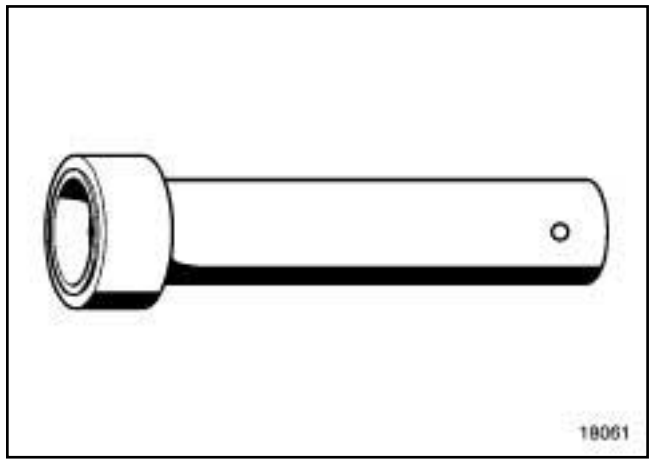
I - REFITTING PREPARATION OPERATION

❏

Note:

When refitting the input shaft lip seal, take care not to damage either the shaft or the input shaft lip seal mating face.

II - REFITTING OPERATION FOR PART CONCERNED



18061

❏ Fit a new input shaft lip seal, fitted with its protector, using the **(Bvi. 1236)**.

❏ Remove the protector.

❏ Insert the **(Bvi. 1236)** and tap it gently with a rubber mallet to ensure it is inserted fully.

III - FINAL OPERATION

❏ Refit:

- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-22**) ,
- the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-24**) ,
- the left-hand suspended engine mounting (see **Left-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the scoop under the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the windscreen wiper arms (see **Windscreen wiper arm: Removal - Refitting**) (85A, Wiping - Washing),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front axle subframe (see **Front axle sub-frame: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),

- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

- the hydraulic clutch control pipe (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls),
- the air filter box (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the engine cover,
- the engine undertray.

JH3 or JR5

Tightening torques ▽	
reverse gear switch	**23 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

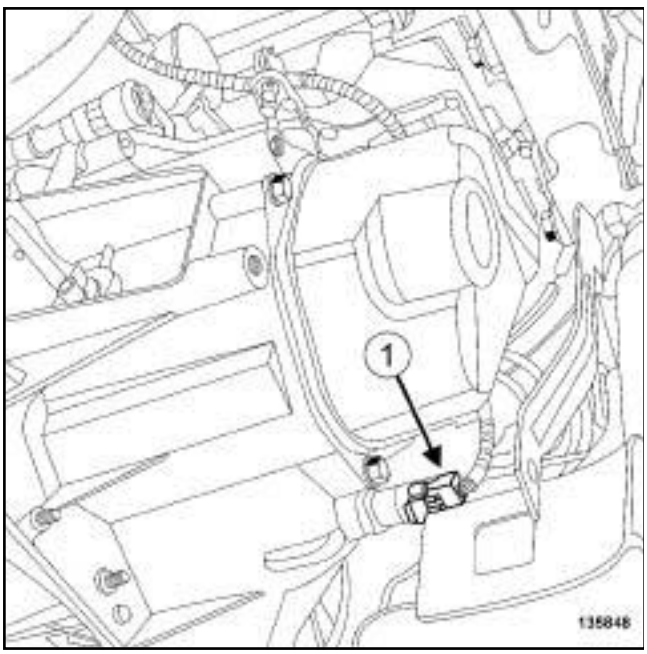
❏ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



135848

❏ Disconnect the connector (**1**) from the reverse gear switch.

❏ Remove the reverse gear switch.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Apply some **SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to the threading of the reverse gear switch.

❏ Refit the reverse gear switch.

❏ Torque tighten the **reverse gear switch (23 N.m)**.

❏ Connect the reverse gear switch connector.

II - FINAL OPERATION

❏ Top up the manual gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.

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

ND4

REMOVAL

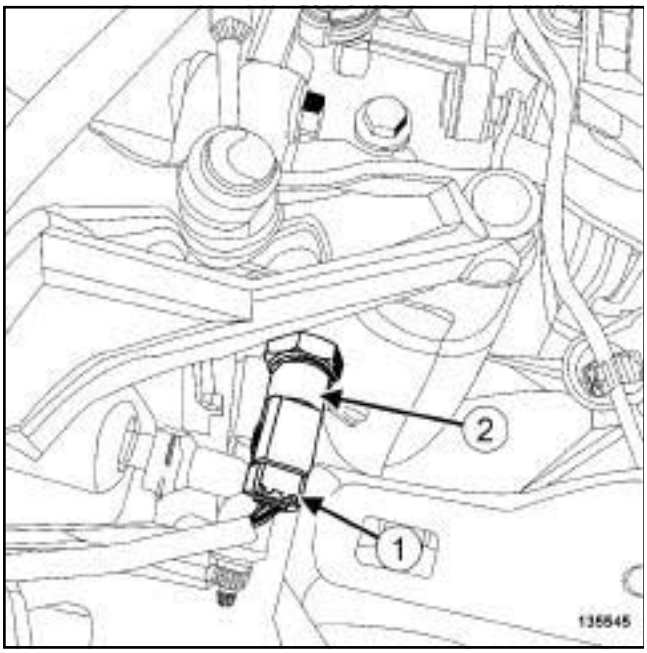
I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



135545

❏ Disconnect the connector (**1**) from the reverse gear switch.

❏ Remove the reverse gear switch (**2**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Apply **RESIN ADHESIVE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to the threading of the reverse gear switch.

❏ Refit the reverse gear switch.

❏ Connect the reverse gear switch connector.

II - FINAL OPERATION

❏ Refit the engine undertray.

TL4

Essential special tooling	
Emb. 1797	24 mm socket for removing and refitting clutch master cylinder

Tightening torques ▽	
reverse gear switch	**23 N.m**

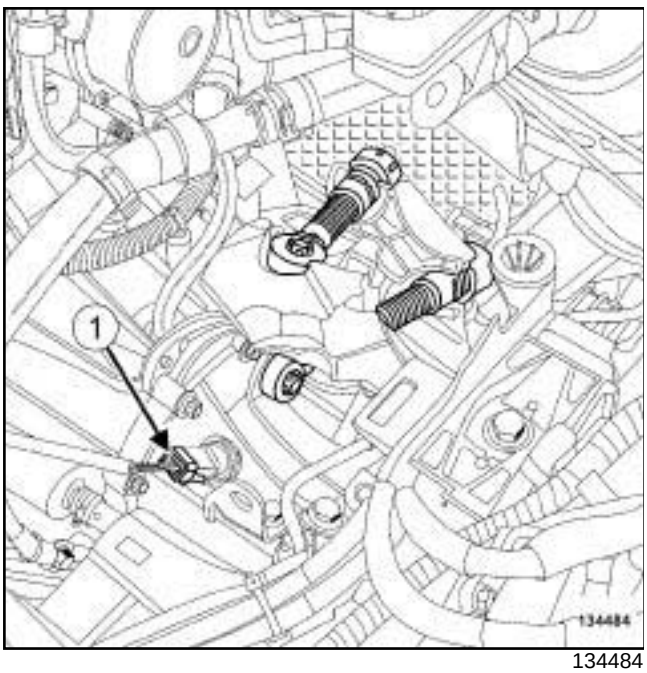
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

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

II - OPERATION FOR REMOVAL OF PART CONCERNED



134484

❑ Disconnect the connector (**1**) from the reverse gear switch.

❑ Remove the reverse gear switch using the tool **(Emb. 1797)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the reverse gear switch.

❑ Torque tighten the **reverse gear switch (23 N.m)** using the tool **(Emb. 1797)**.

❑ Connect the reverse gear switch connector.

II - FINAL OPERATION

❑ Refit:

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

PK4

Essential special tooling	
Emb. 1797	24 mm socket for removing and refitting clutch master cylinder

Tightening torques ▽	
reverse gear switch	**23 N.m**

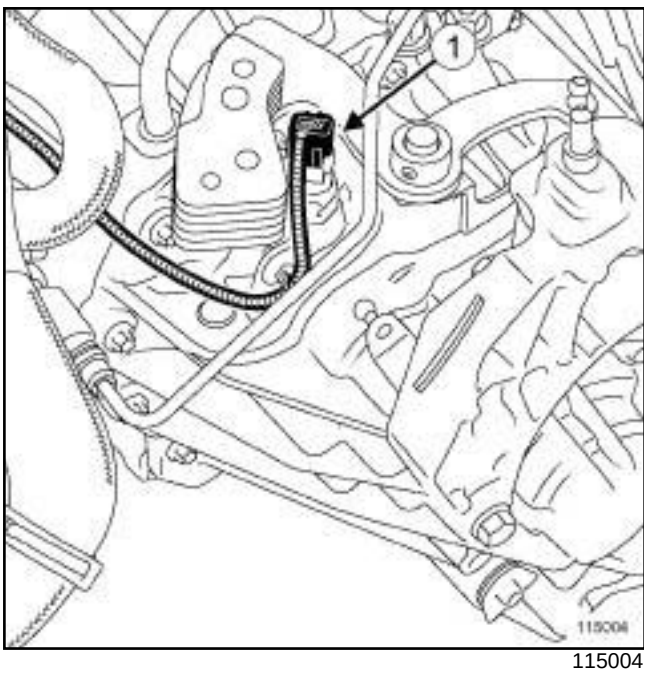
REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Remove:

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

II - OPERATION FOR REMOVAL OF PART CONCERNED



115004

❑ Disconnect the connector (**1**) from the reverse gear switch.

❑ Remove the reverse gear switch using the tool **(Emb. 1797)**.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the reverse gear switch.

❑ Torque tighten the **reverse gear switch (23 N.m)** using the tool **(Emb. 1797)**.

❑ Connect the reverse gear switch connector.

II - FINAL OPERATION

❑ Refit:

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

Automatic gearbox: Precautions for repair

FK0

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.

Always use the recommended CVT oil (see **Automatic gearbox oil: Specifications**) (**Technical Note 6012**, 04A, Lubricants).

Removal must always be carried out in a clean and dust-free environment.

Do not use a cotton (or fabric) cloth, always use lint-free paper.

Before removal:

- always clean the outside of the CVT before any operation,
- mark the position of the components to ensure they are refitted correctly.

Operations on the CVT must be carried out with bare hands or wearing vinyl gloves.

When removing internal components from the CVT, make sure you have clean hands.

AJ0

I - SPECIFICATIONS

Weight: **100 kg**

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

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

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

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

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

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

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

II - STORING REMOVED PARTS

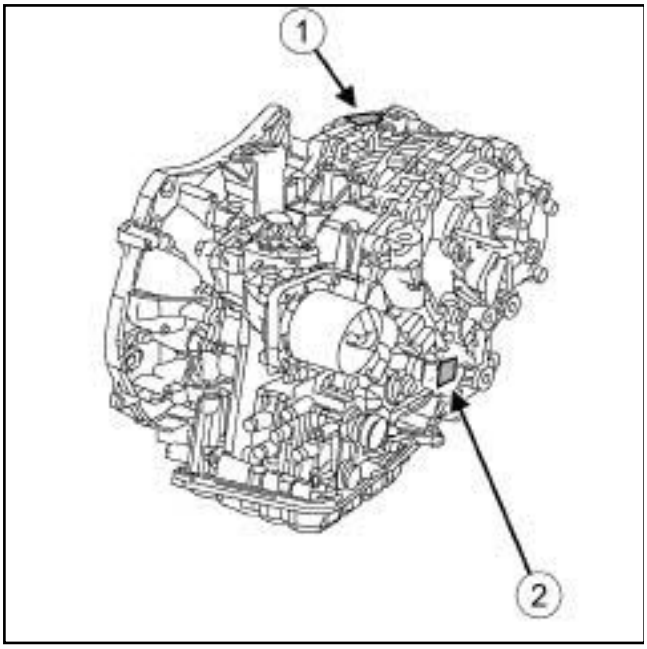
116357

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

III - CHECKING LEVELS

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

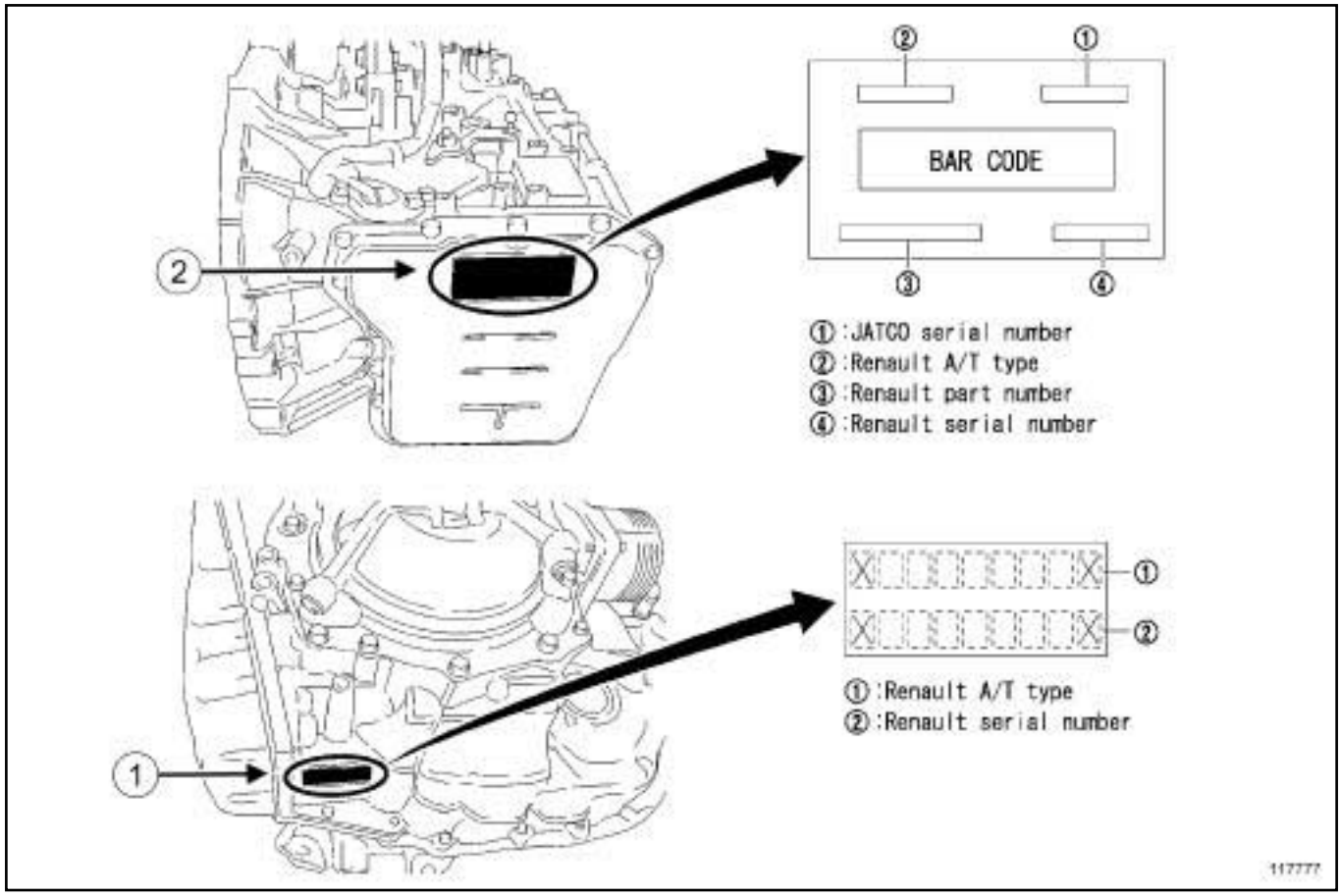
FK0



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.

AJ0



117777

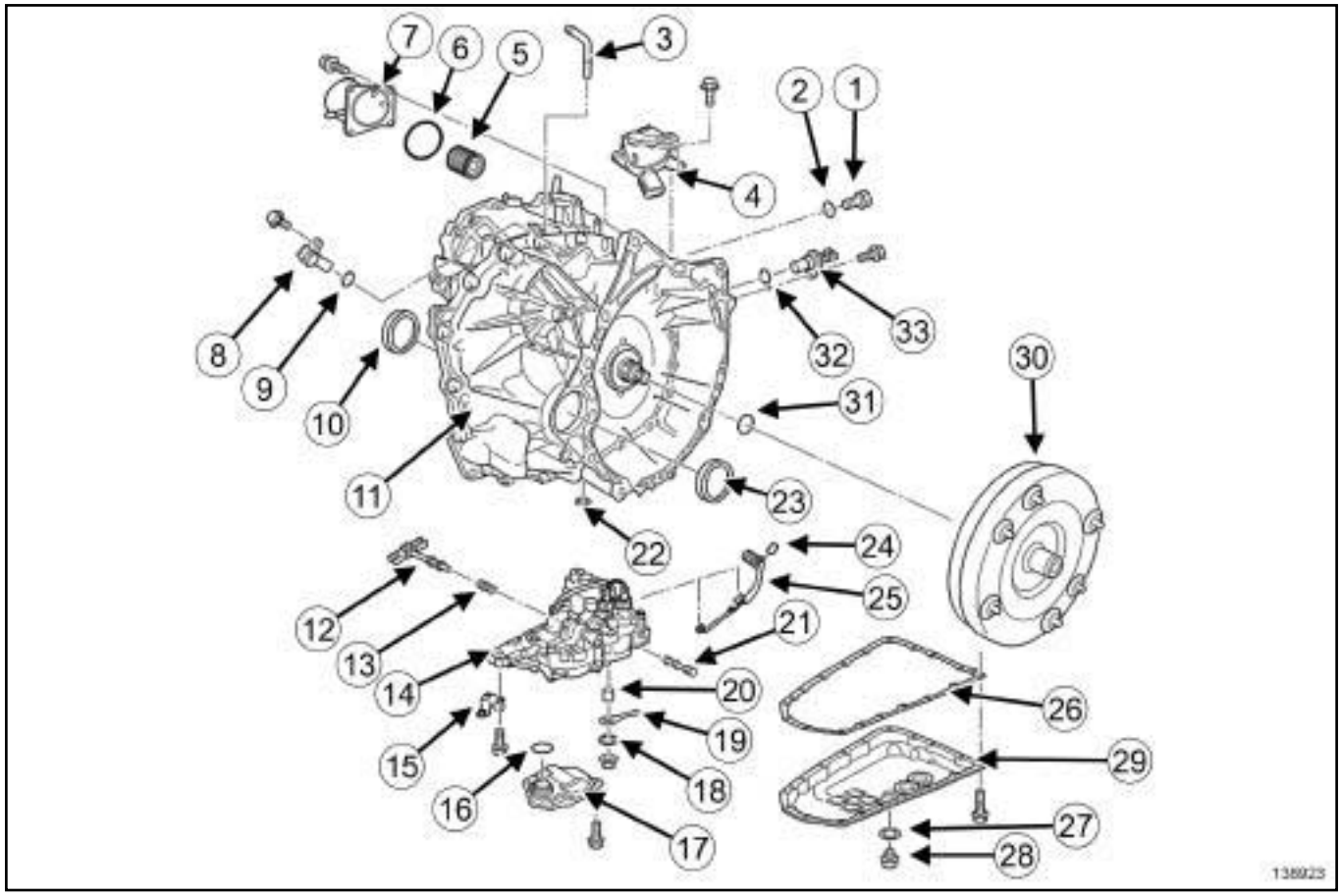
The automatic gearbox is identified by an engraved marking (**1**) located underneath the automatic gearbox as well as by a self-adhesive label (**2**) on the hydraulic distributor housing.

AJ0

Gearbox	Suffix
AJ0	008
	012
	015

Gear ratios (epicyclic gear train output)						
1st	2nd	3rd	4th	5th	6th	Reverse gear
4.2	2.405	1.583	1.161	0.855	0.685	3.457

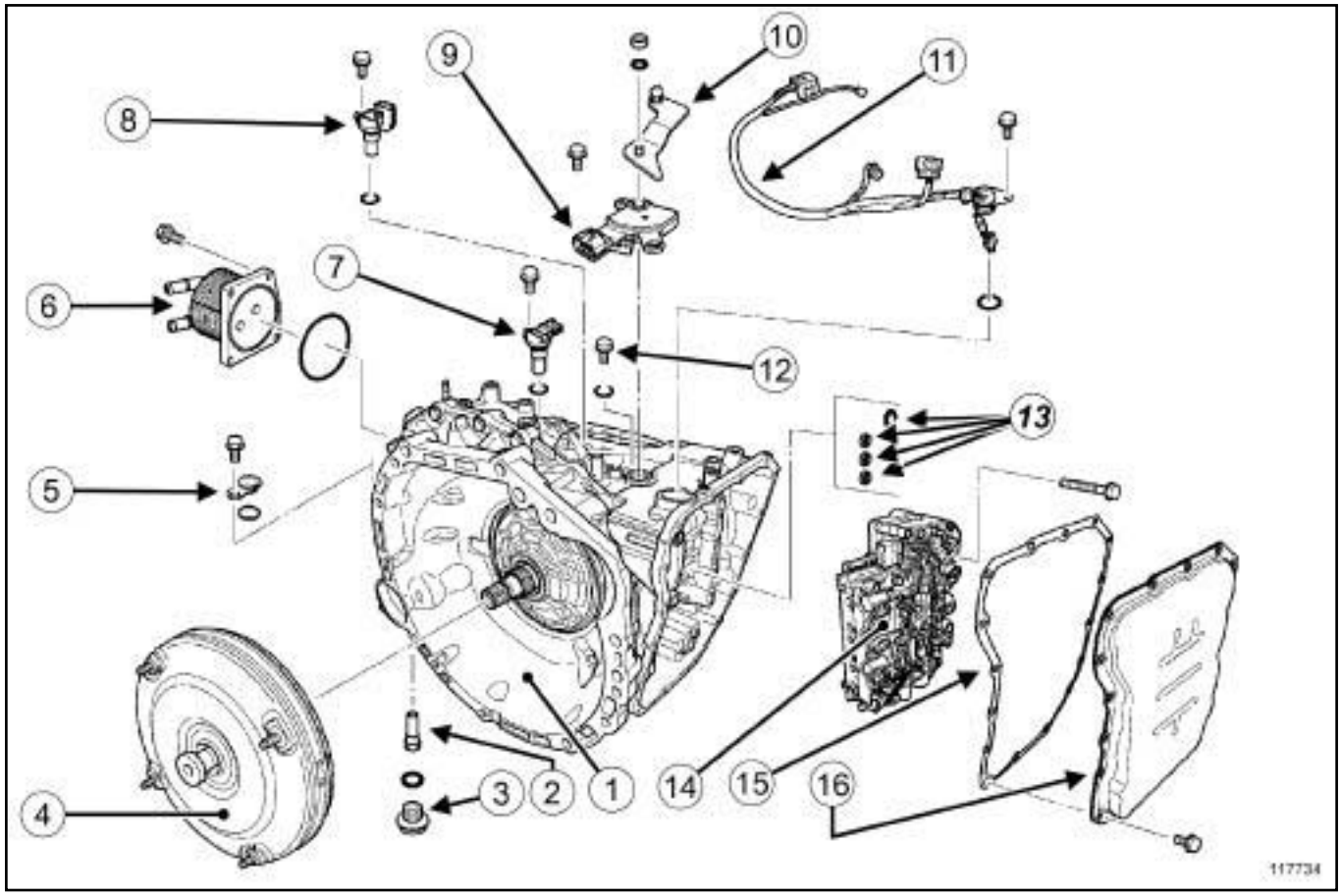
FK0



138923

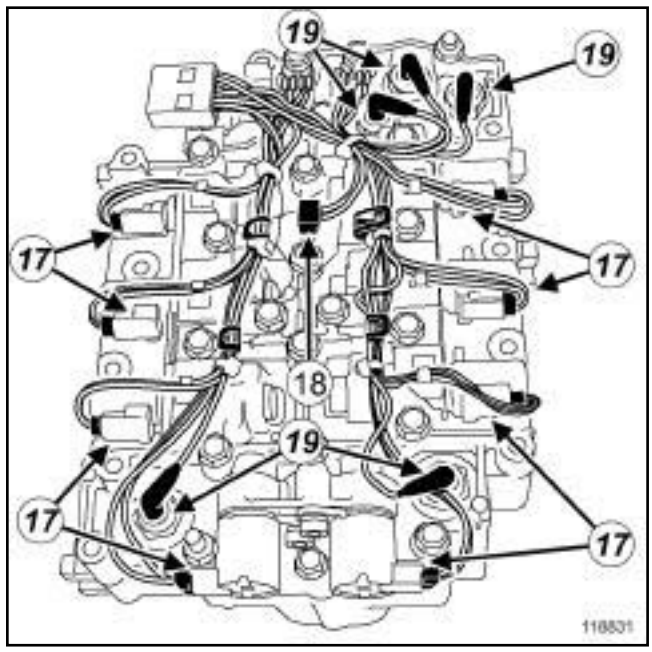
(**1**) Cap
(**2**) Seal
(**3**) Breather pipe
(**4**) Multifunction switch
(**5**) Gearbox oil filter
(**6**) Seal
(**7**) Gearbox oil cooler
(**8**) Output speed sensor
(**9**) Output speed sensor seal
(**10**) Front left-hand differential output seal
(**11**) Gearbox
(**12**) Pulley ratio linkage
(**13**) Pulley ratio linkage spring
(**14**) Hydraulic distributor
(**15**) Oil strainer retaining bracket
(**16**) Seal
(**17**) Oil strainer
(**18**) Lock washer
(**19**) Control lever
(**20**) Selector shaft ring
(**21**) Manual slide valve
(**22**) Timing seal
(**23**) Front left-hand differential output seal
(**24**) Hydraulic distributor wiring retaining clip
(**25**) Hydraulic distributor wiring
(**26**) Lower housing seal
(**27**) Drain plug seal
(**28**) Drain plug
(**29**) Lower cover
(**30**) Converter
(**31**) Converter seal
(**32**) Input speed sensor seal
(**33**) Input speed sensor

AJ0



117734

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



118831

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

FK0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.
Mot. 1390	Support for removing/refitting the engine - gearbox assembly.

Essential equipment
workshop hoist

Tightening torques ▽	
automatic gearbox bell housing bolts	**62 N.m**
converter nuts	**44 N.m**

IMPORTANT

During this operation, be sure to:

- refrain from smoking or bringing red hot objects close to the working area,
- be careful of fuel splashes when disconnecting the union.

IMPORTANT

Wear goggles with side protectors for this operation.

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

WARNING

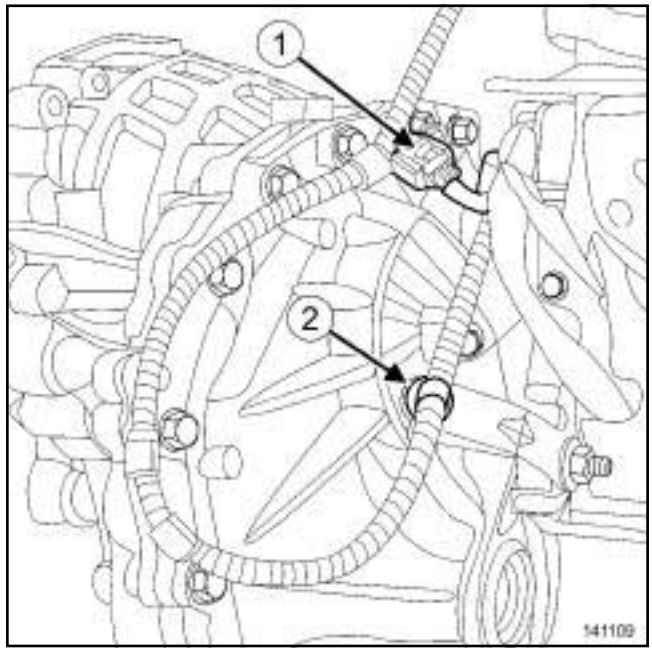
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove the « engine - automatic gearbox » assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and cylinder block assembly).

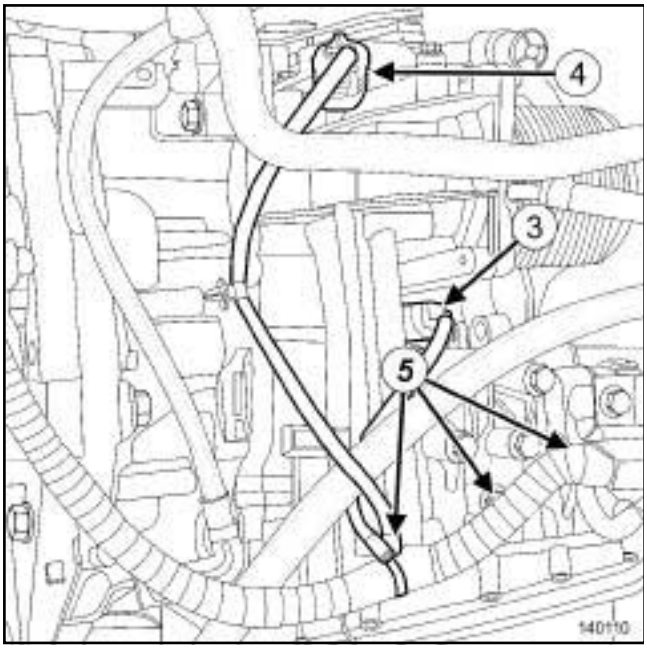


141109

❏ Disconnect the output speed sensor connector (**1**) from the automatic gearbox.

❏ Unclip the wiring at (**2**) .

FK0

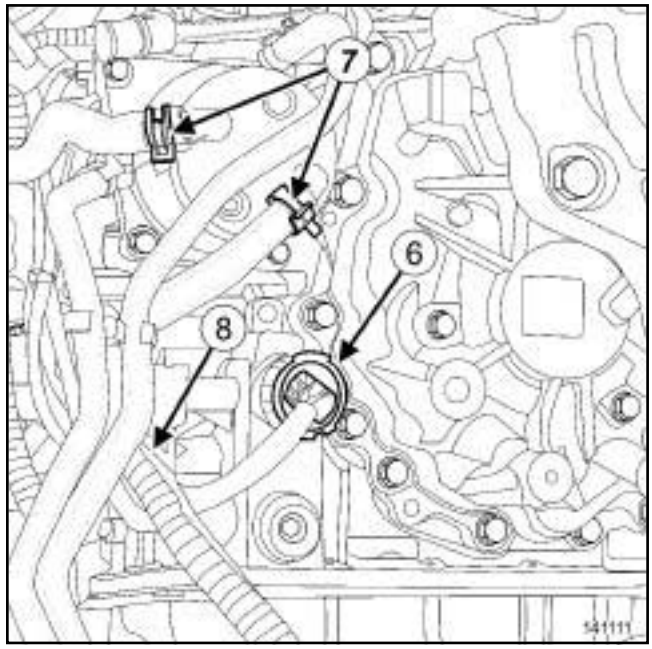


141110

❏ Disconnect:

- the input speed sensor connector (**3**) from the automatic gearbox,
- the multifunction switch connector (**4**) .

❏ Unclip the automatic gearbox wiring at (**5**) .



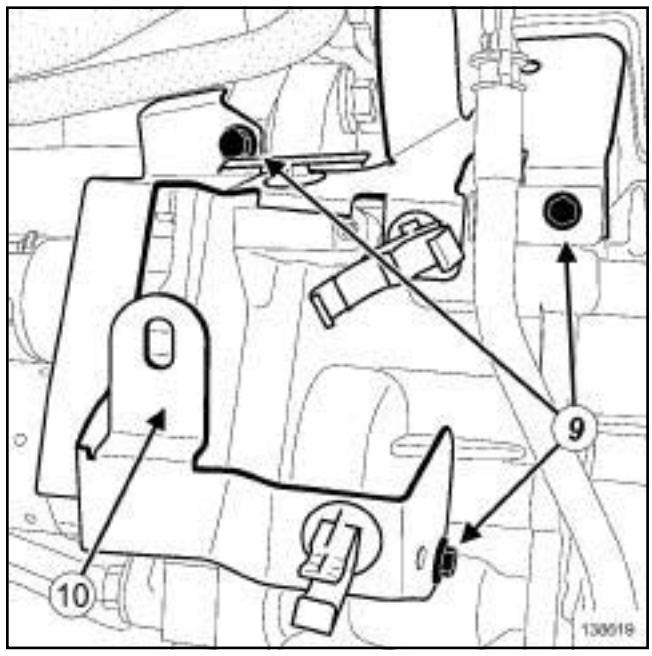
141111

❏ Disconnect the automatic gearbox hydraulic distributor connector (**6**) .

❏ Remove:

- the automatic gearbox electrical wiring at (**8**) ,
- the automatic gearbox oil cooler hose clips (**7**) using the **(Mot. 1448)**.

❏ Disconnect the coolant hoses from the automatic gearbox oil cooler.

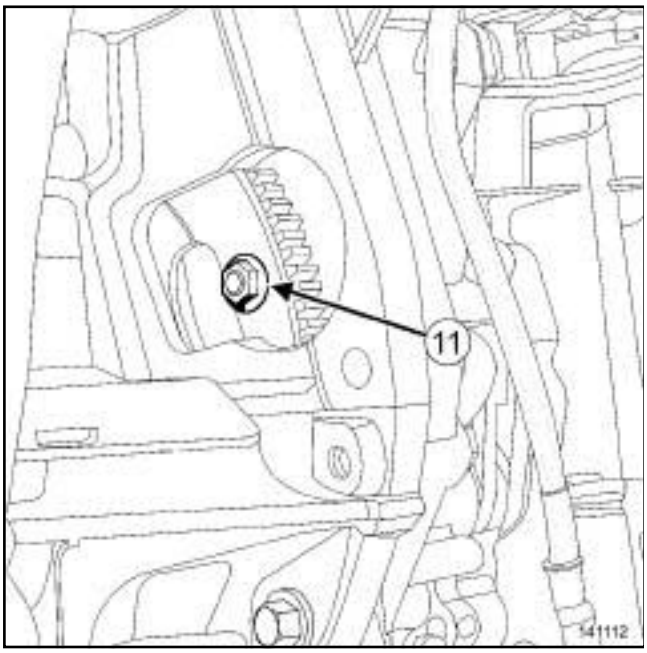


138619

❏ Remove:

- the bolts (**9**) from the automatic gearbox oil cooler hose mounting,

- the automatic gearbox oil cooler hose mounting (**10**) ,
- the automatic gearbox oil gauge,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).



141112

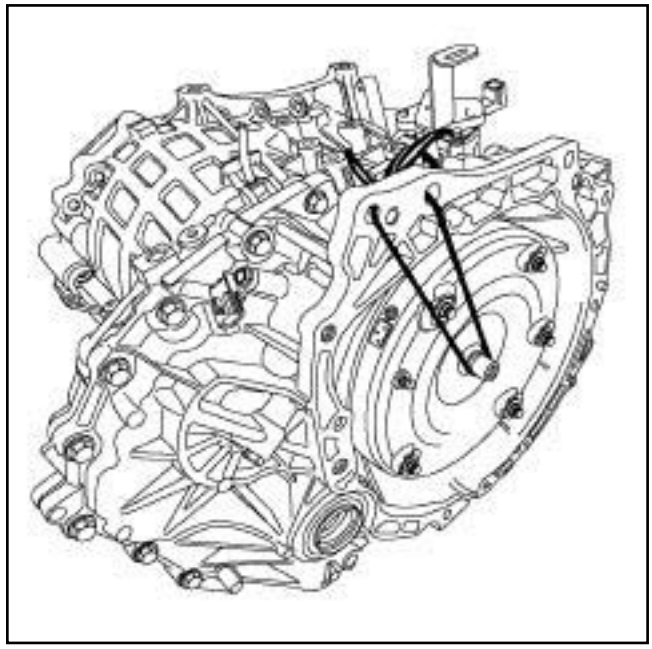
❑ Remove:

- the converter nuts (**11**) by rotating the crankshaft clockwise,
- the « engine - automatic gearbox » assembly from the **(Mot. 1390)** using a **workshop hoist**.

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove:

- the automatic gearbox bell housing bolts,
- the automatic gearbox.



130021

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

REFITTING

I - REFITTING PREPARATION OPERATION

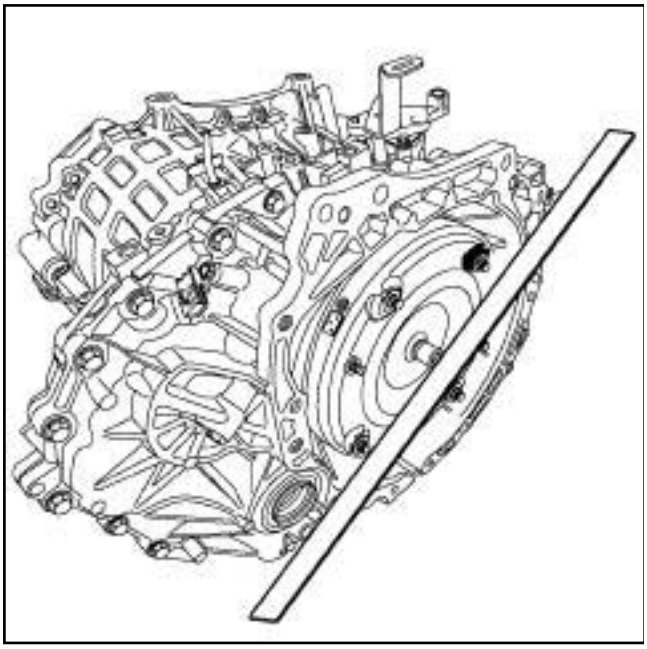
❑ Check that the drive plate is not damaged or runout (**0.2 mm** permitted runout).

❑ Always replace the converter nuts.

❑ Check that the centring dowelsare in place.

❑ Remove the string immobilising the converter.

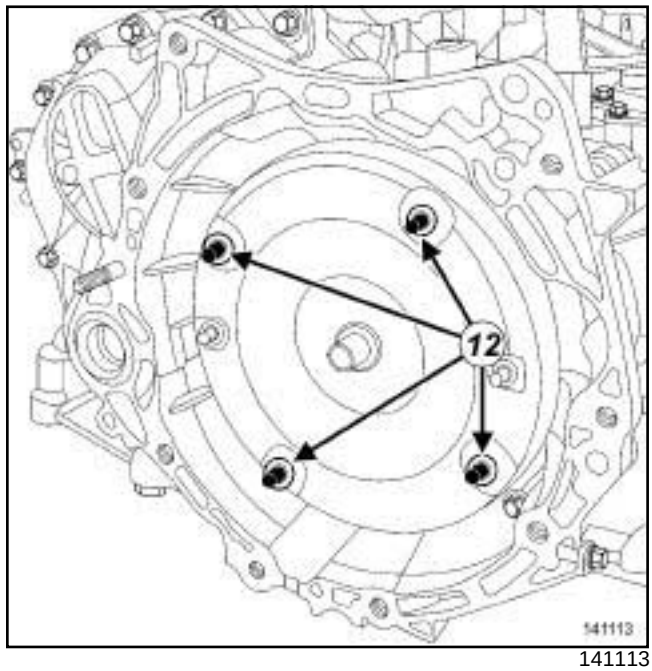
FK0



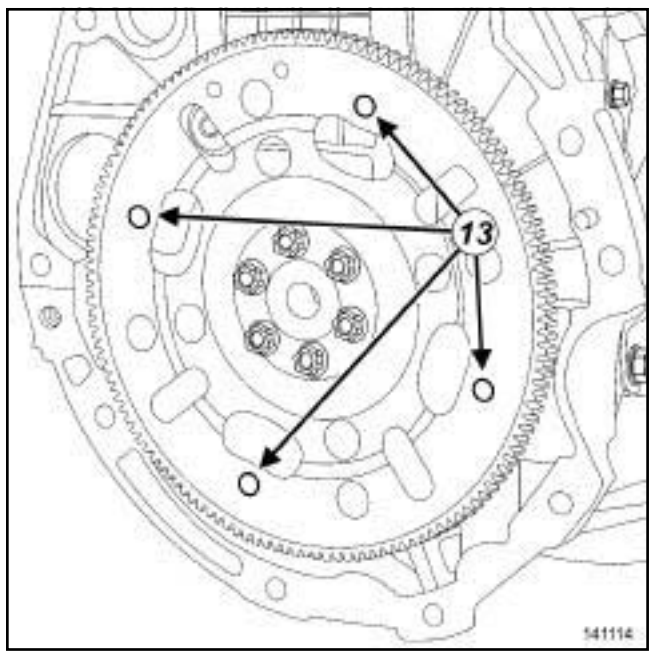
130023

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

II - REFITTING OPERATION FOR PART CONCERNED



141113



141114

❑ Position the converter bolts (**12**) opposite the holes (**13**) in the drive plate.

❑ Refit:

- the automatic gearbox,

- the automatic gearbox bell housing bolts.

❑ Torque tighten the **automatic gearbox bell housing bolts (62 N.m)**.

FK0

III - FINAL OPERATION

❑ Refit:

- the « engine - automatic gearbox » assembly on the **(Mot. 1390)** using a **workshop hoist**,
- the new converter nuts by rotating the crankshaft clockwise.

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

❑ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the automatic gearbox oil cooler hose mounting,
- the automatic gearbox oil gauge.

❑ Clip the coolant hoses on the automatic gearbox oil cooler hose mounting.

❑ Connect the coolant hoses to the automatic gearbox oil cooler.

❑ Fit the cooling hose clips on the automatic gearbox oil cooler using the **(Mot. 1448)**.

❑ Connect the automatic gearbox hydraulic distributor connector.

❑ Clip the automatic gearbox wiring in place.

❑ Connect:

- the multifunction switch connector,
- the input speed sensor connector to the automatic gearbox,
- the output speed sensor connector to the automatic gearbox.

❑ Refit the « engine - automatic gearbox » assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and cylinder block assembly).

M9R, and AJ0

Essential equipment
refrigerant charging station
workshop hoist
load balancer

Tightening torques ▽	
automatic gearbox bell housing bolts and nuts	**44 N.m**
converter retaining nuts	**44 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove the front engine cover.

J95

❑ Remove:

- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Remove:

- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights).

B95 or D95

❑ Remove the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❑ Remove:

- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

❑ Drain:

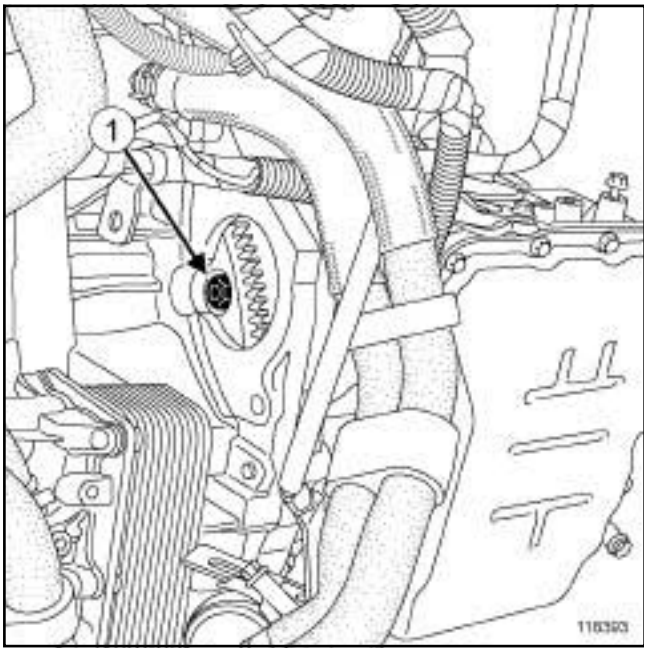
- the refrigerant circuit using a **refrigerant charging station** (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning),
- the engine cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❑ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),

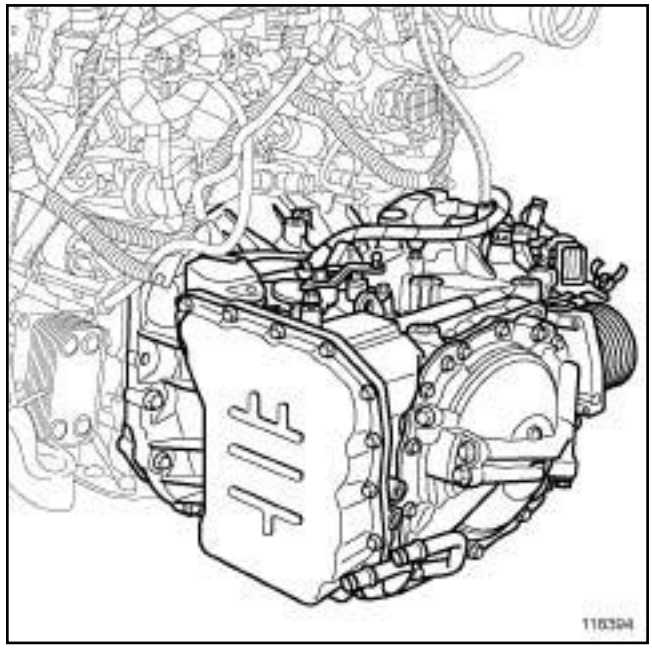
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

II - OPERATION FOR REMOVAL OF PART CONCERNED



118393

❏ Remove the retaining nuts from the converter (**1**) via the starter opening.



118394

❏ Remove all hoses and wiring fitted on the automatic gearbox bell housing.

❏ Support:

- the « engine - gearbox » assembly using a **workshop hoist** and a **load balancer**,
- the gearbox using an additional **workshop hoist** fitted with a **load balancer**.

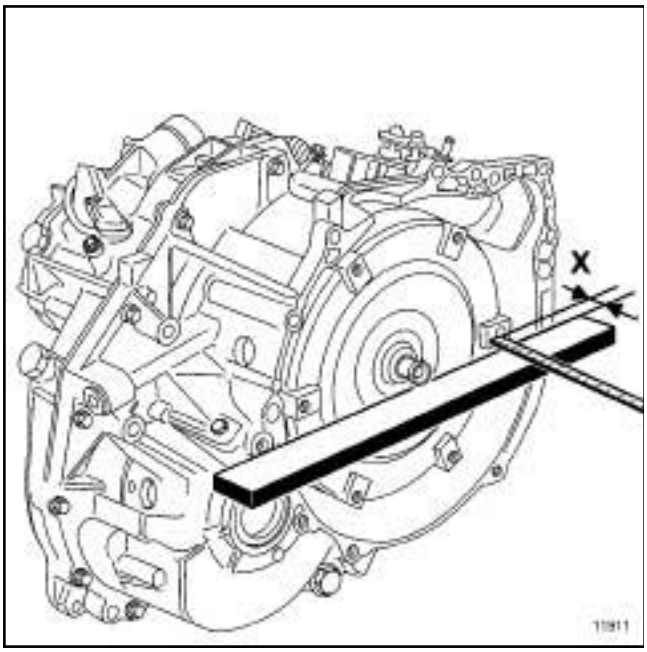
❏ Remove:

- the bolts and nuts from the automatic gearbox bell housing,
- the automatic gearbox using the **workshop hoist** fitted with the **load balancer**.

M9R, and AJ0

REFITTING

I - REFITTING PREPARATION OPERATION



11911

❏ Check:

- the distance **(X)** using a ruler. This distance must be **20.4 ± 0.5 mm**,
- the drive plate (see **Drive plate: Removal - Refitting**) (10A, Engine and cylinder block assembly).

II - REFITTING OPERATION FOR PART CONCERNED

❏

Note:

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

❏ Refit the automatic gearbox on the engine using two **workshop hoist** and two **load balancer**.

❏ Torque tighten:

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

III - FINAL OPERATION

❏ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the lower engine tie-bar (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-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn).

B95 or D95

❏ Refit the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❏ Refit:

- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

M9R, and AJ0

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

J95

❑ Remove

- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

❑ Perform the following operations:

- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- fill the refrigerant circuit (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning),
- fill up the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) (23A, Automatic gearbox).

❑ Refit the engine cover.

M4R, and FK0

Essential equipment
oil recovery container
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-1**) .

Note:

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

Perform the operation on a flat surface.

Note:

The oil level must be checked at a temperature between **70°C** and **80°C**.

Capacity (litres)	Oil specified:
7.6 (1) **4.7 (2)** **0.7 (3)**	**See Technical Note 6012A**

- (1): Total gearbox capacity.

- (2): Filling value after draining.

- (3): Filling value after removal of universal joint without draining.

I - DRAINING PREPARATION OPERATION

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

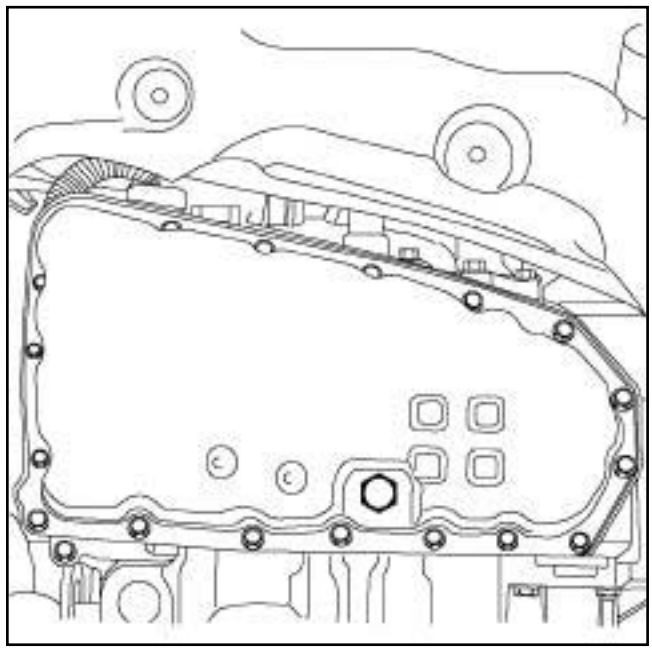
❑ Remove:

- the engine undertray bolts,

- the engine undertray.

❑ Fit a **oil recovery container** under the gearbox.

II - DRAINING STAGE



129978

❑ Remove:

- the drain plug,

- the drain plug seal.

❑ Let the oil flow out of the gearbox into the **oil recovery container**.

❑ Refit:

- the new drain plug seal,

- the drain plug.

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

❑ Refit:

- the engine undertray.

- the engine undertray bolts,

❑ Remove the **oil recovery container** from under the gearbox.

FILLING OPERATION

❑ Remove the oil level dipstick from the gearbox.

M4R, and FK0

- ❏ Use a flexible pipe fitted to a funnel (with a 1/100 filter)and connect it to the gearbox dipstick guide tube.
- ❏ Fill the automatic gearbox with **4 litres of oil**.

> Note:
>
> The dipstick includes two possible checks: a cold oil level check and a hot oil level check.
>
> The level check is performed with the dipstick clipped on.

> Note:
>
> Use lint-free paper to wipe the gauge.

- ❏ Check by clipping the dipstick that the oil level is between the minimum and maximum on the cold side with the engine switched off.
- ❏ Set the level between the minimum and maximum on the cold side.
- ❏ Run the engine at idle speed.
- ❏ Firmly apply the parking brake.
- ❏ Slowly pass the gear lever once through all of its positions **P/R/N/D**.
- ❏ Connect the **diagnostic tool**.
- ❏ Establish dialogue with the automatic transmission computer.
- ❏ Monitor the automatic transmission oil temperature parameter.
- ❏ Wait until the temperature is between **70˚C and 80˚C**.
- ❏ Check by clipping the dipstick that the oil level is between the minimum and maximum on the hot side.
- ❏ Top up the oil level if necessary.
- ❏ Clip on the oil level dipstick.
- ❏ Disconnect the **diagnostic tool**.

M9R, and AJ0

Essential equipment
oil recovery container
diagnostic tool

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

WARNING
To ensure that the gearbox oil level is correct, the gear lever must be in the Park position during the draining and filling operations.

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

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

Capacity (litres)	Oil specified:
7.6(1) 3.5(2)	(see **Automatic gearbox oil: Specifications**) (Technical Note 6012A, 04A, Lubricants).

- (1): Total capacity
- (2): Capacity after oil draining

DRAINING

I - DRAINING PREPARATION OPERATION

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

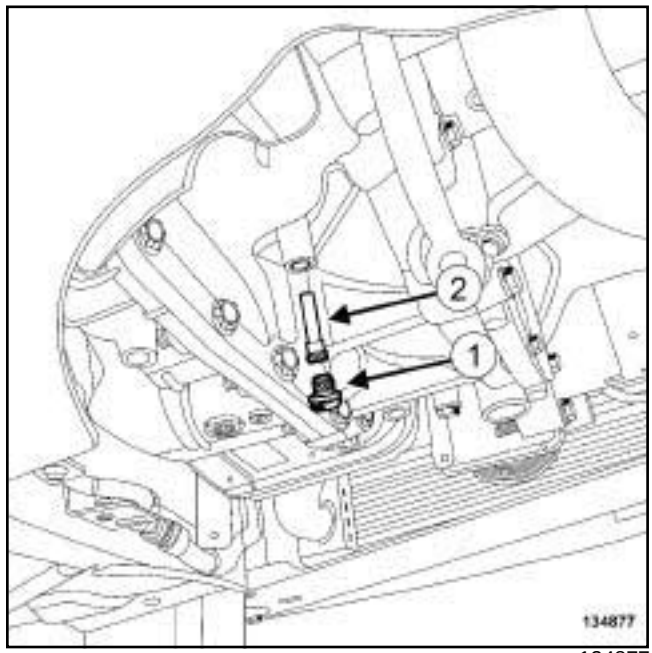
❏ The control lever must be in the **Park** position when draining, filling or checking the level.

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

❏ Fit a **oil recovery container** under the gearbox.

II - DRAINING OPERATION



134877

❏ Remove:

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

❏ Let the oil flow out of the gearbox into the **oil recovery container**.

❏ 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

I - FILLING PREPARATION OPERATION

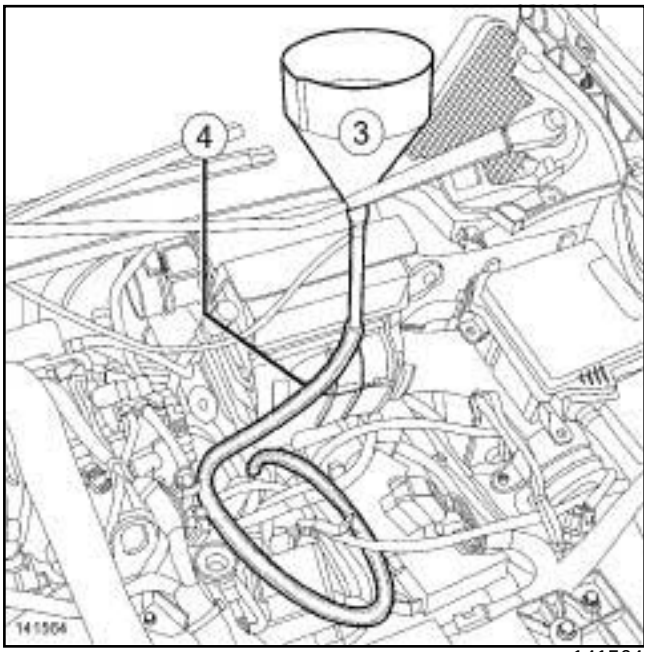
❏

Note:
The gearbox is filled via the output speed sensor, which is located near to the automatic gearbox wiring connector.

M9R, and AJ0

❏ Remove:

- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) .



141564

❏ Use a flexible pipe fitted with a funnel (with a 1:100filter) (**3**) and connect it to the filling pipe (**4**) .

II - FILLING OPERATION

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

❏ Fill the automatic gearbox with **3.2 L** of new oil.

❏ Refit:

- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Run the engine at idle speed.

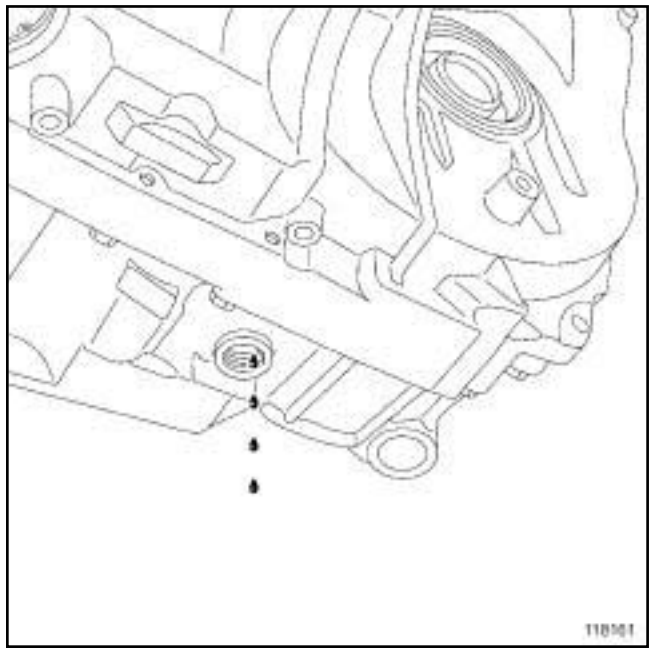
❏ Connect the **diagnostic tool**.

❏ 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.


118161

❏ Remove the level plug, leaving the engine running.

❏ Measure the quantity of oil collected.

If there was no oil flow or if the quantity collected is less than 0.1 l

❏ Switch off the engine.

❏ Refit the level plug.

❏ Remove:

- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) .

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

❏ Refit:

- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

M9R, and AJ0

❏ Let the automatic gearbox cool to **30˚C**.

❏ Run the engine at idle speed.

❏ Wait for the automatic gearbox oil temperature to reach **40˚C ± 2**.

❏ Place a container under the level-setting plug.

❏ Remove the level plug, leaving the engine running.

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

❏ Refit the level-setting plug.

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

III - FINAL OPERATION

❏ Refit the engine undertray.

IV - CHECKING THE LEVEL OUTSIDE OIL CHANGE OPERATIONS

❏ Remove:

- the engine undertray bolts,
- the engine undertray.

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

Note:

The gearbox is filled via the output speed sensor, which is located near to the automatic gearbox wiring connector.

❏ Remove:

- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) .

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

❏ Refit:

- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Run the engine at idle speed.

❏ Connect the **diagnostic tool**.

❏ Monitor the automatic transmission oil temperature parameter.

❏ Wait for the temperature to reach **40˚C ± 2**.

❏ Place a container under the level-setting plug.

❏ Remove the level plug, leaving the engine running.

❏ Measure the quantity of oil collected.

If there was no oil flow or if the quantity collected is less than 0.1 l

❏ Switch off the engine.

❏ Refit the level plug.

❏ Remove:

- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) .

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

❏ Refit:

- the output speed sensor (see **23A**, **Automatic gearbox**, **Speed sensor: Removal - Refitting**, page **23A-73**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Let the automatic gearbox cool to **30˚C**.

❏ Run the engine at idle speed.

❏ Wait for the automatic gearbox oil temperature to reach **40˚C ± 2**.

❏ Place a container under the level-setting plug.

❏ Remove the level plug, leaving the engine running.

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

❏ Refit the level-setting plug.

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

❏ Refit the engine undertray.

FK0

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-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

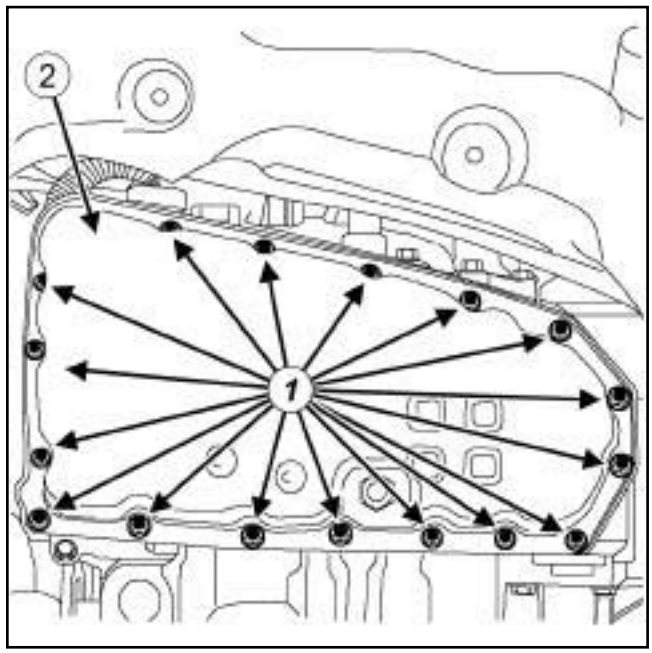
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

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

❏ Remove the engine undertray.

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

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

III - FINAL OPERATION

- ❑ Top up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .
- ❑ Refit the engine undertray.

FK0

Tightening torques ▽	
hydraulic distributor bolts	**8 Nm**
control lever nut	**22 N.m**
mounting bracket bolts on the control valve unit	**8 N.m**
bolts of the oil strainer	**8 N.m**

IMPORTANT
To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair (see **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

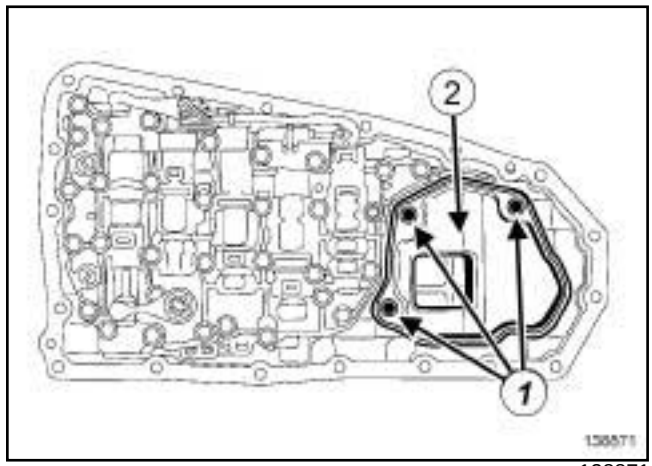
❏ Remove:

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

❏ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Remove the gearbox oil sump (see **23A**, **Automatic gearbox**, **Gearbox oil sump: Removal - Refitting**, page **23A-22**) .

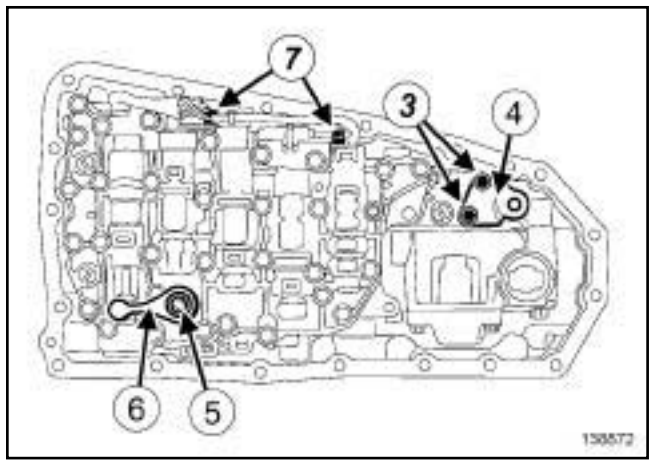
II - OPERATION FOR REMOVAL OF PART CONCERNED



138871

❏ Remove:

- the bolts (**1**) from the oil strainer,
- the oil strainer (**2**) ,
- the oil strainer O-ring.

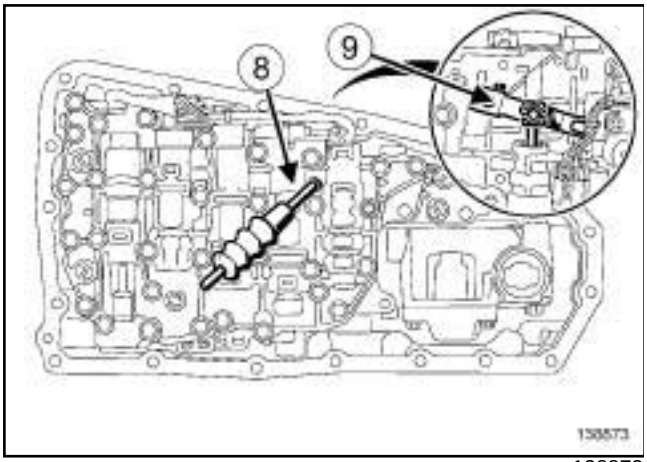


138872

❏ Remove:

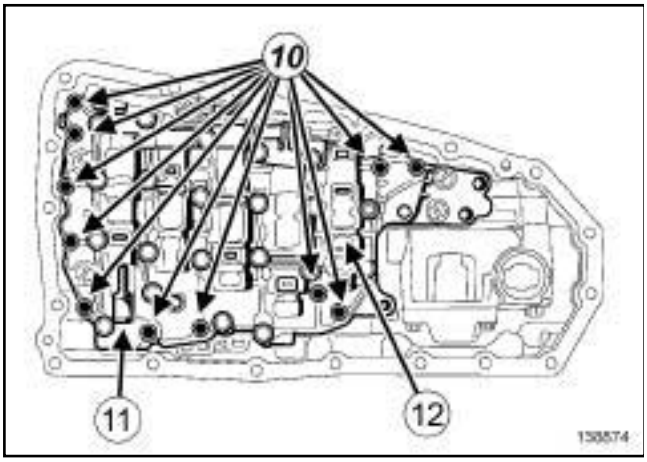
- the mounting bracket bolts (**3**) from the control valve unit,
- the mounting bracket (**4**) from the control valve unit,
- the control lever nut (**5**) ,
- the control lever (**6**) .

❏ Disconnect the connectors (**7**) .



138873

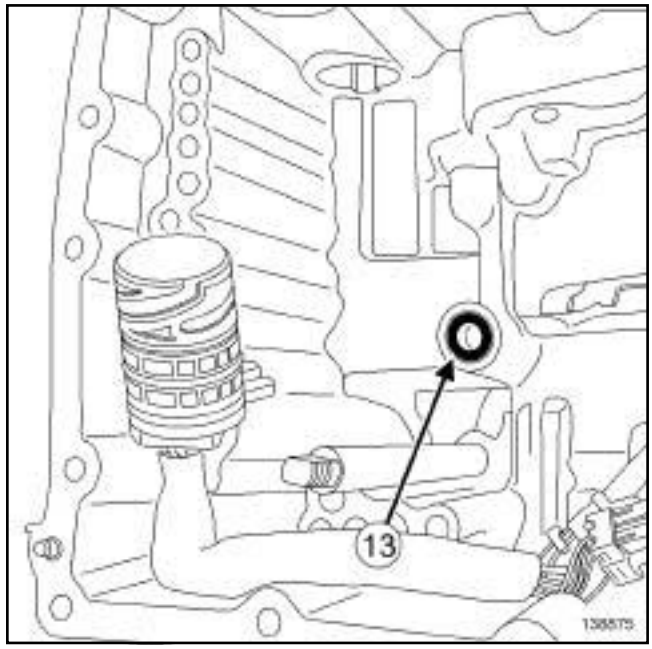
❏ Fit a round rod (**8**) with a **3 mm** diameter (minimum length **55 mm**) in the stop hole of the control valve unit linkage to immobilise the pulley ratio linkage (**9**) .



138874

❏ Remove:

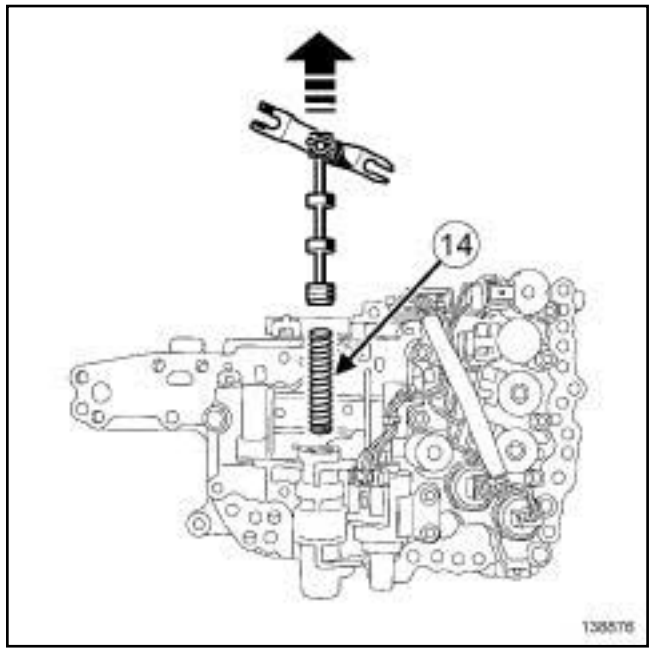
- the hydraulic distributor bolts (**10**) ,
- the hydraulic distributor (**11**) ,
- the selector shaft ring,
- the slide valve (**12**) .



138875

❏ Remove:

- the seal (**13**) between the housing and the hydraulic distributor,
- the round rod with a **3 mm** diameter (minimum length **55 mm**) from the stop hole of the control valve unit linkage.



138876

❏ Remove:

- the control valve unit linkage by lifting it upwards,
- the return spring (**14**) in the valve unit.

FK0

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the joint faces using **SURFACE 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.

❏ Always replace:

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

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the hydraulic distributor internal wiring (see **23A**, **Automatic gearbox**, **Hydraulic distributor internal wiring: Removal - Refitting**, page **23A-39**)

❏ Refit:

- the return spring in the valve unit,
- the control valve unit linkage.

❏ Fit a round rod with a **3 mm** diameter (minimum length **55 mm**) in the stop hole of the control valve unit linkage to immobilise the pulley ratio linkage.

❏ Refit:

- the seal between the housing and the hydraulic distributor,
- the slide valve,
- the hydraulic distributor,
- the hydraulic distributor bolts.

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

❏ Connect the connectors.

❏ Refit:

- the selector shaft ring,
- the control lever,
- the control lever nut.

❏ Torque tighten the **control lever nut (22 N.m)**.

❏ Refit:

- the mounting bracket on the control valve unit,
- the mounting bracket bolts on the control valve unit.

❏ Torque tighten the **mounting bracket bolts on the control valve unit (8 N.m)**.

❏ Refit:

- the new oil strainer O-ring,
- the oil strainer,
- the bolts of the oil strainer.

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

❏ Remove the round rod with a **3 mm** diameter (minimum length **55 mm**) from the stop hole of the control valve unit linkage.

III - FINAL OPERATION

❏ Refit:

- the gearbox oil sump (see **23A**, **Automatic gearbox**, **Gearbox oil sump: Removal - Refitting**, page **23A-22**) ,
- 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.

M9R, and AJ0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽		
hydraulic distributor bolts		**8 N.m**
hydraulic distributor panel bolts		**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

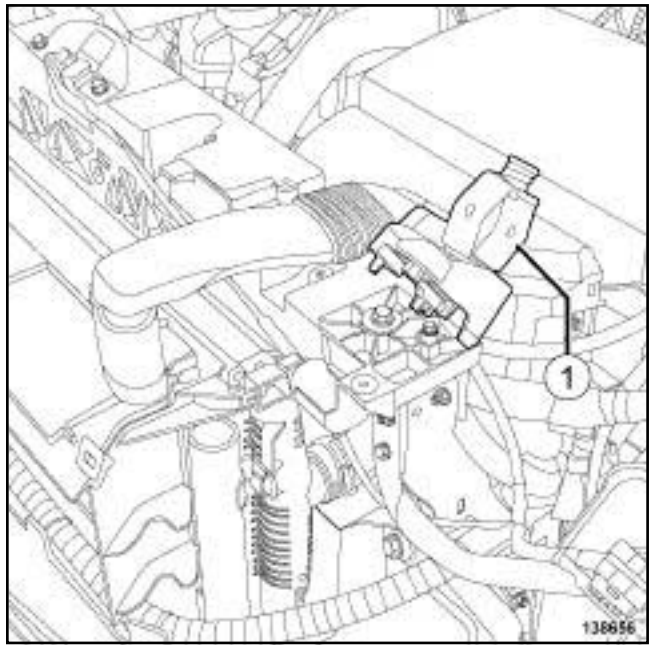
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging).

❑ 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-17**) .

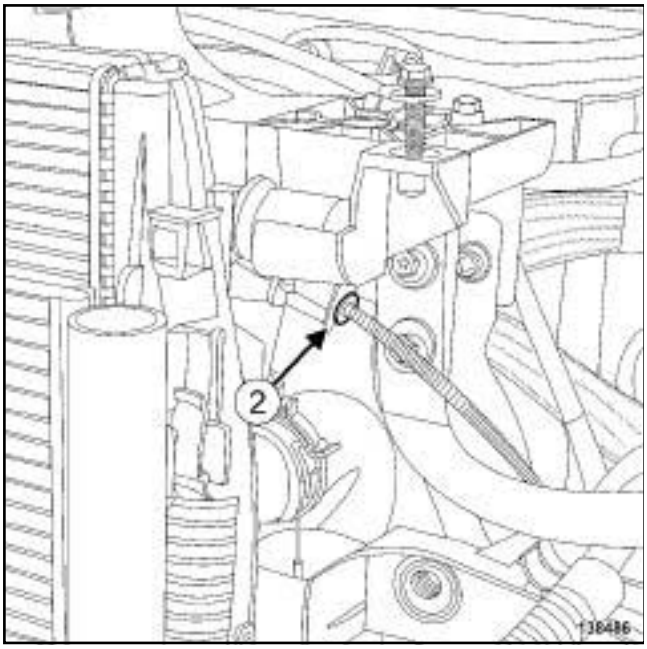


138656

❑ Remove:

- the bonnet supports (**1**) ,
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

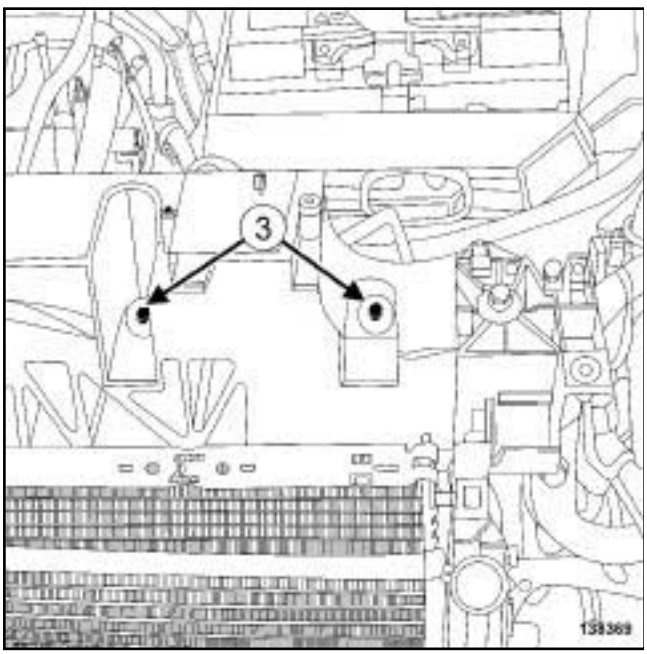
M9R, and AJ0



138486

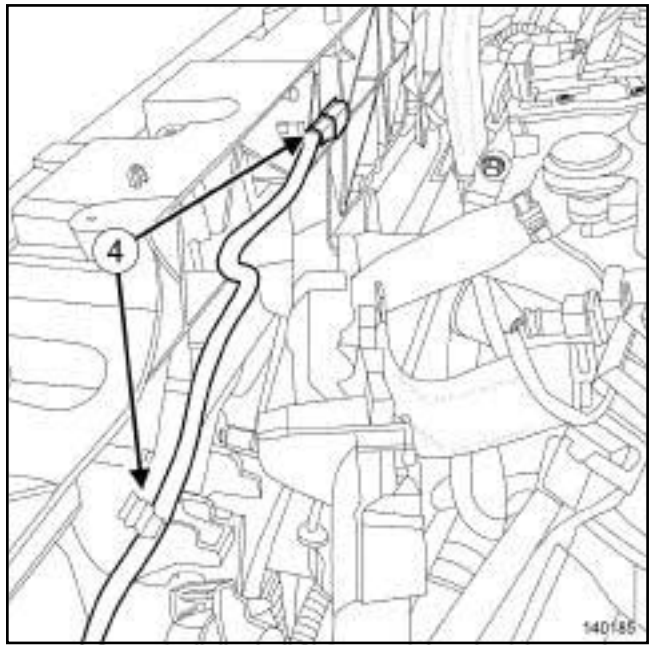
❏ Unclip the bonnet catch cable (**2**) on the front end panel.

❏ Move aside the bonnet catch wiring.



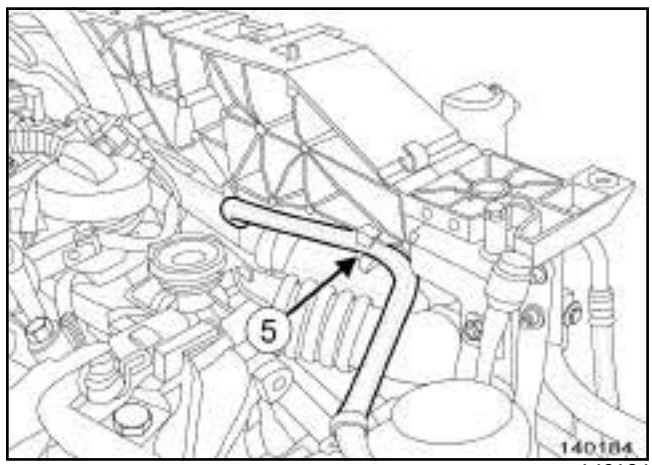
138369

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



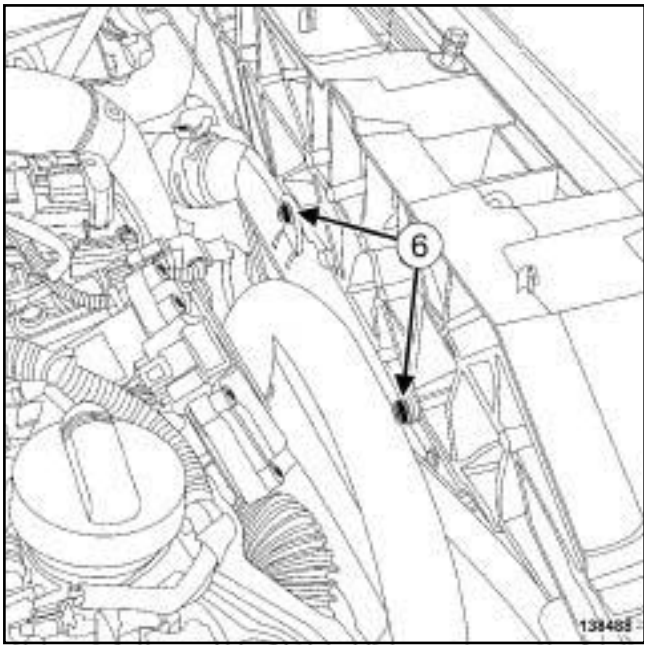
140185

❏ Unclip the connector (**4**) from the front end panel.



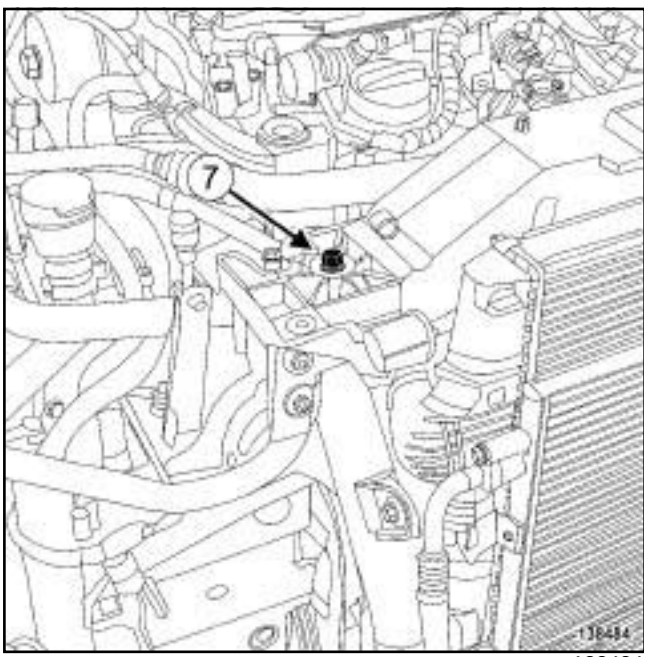
140184

❏ Unclip the degassing hose (**5**) from the front end panel.



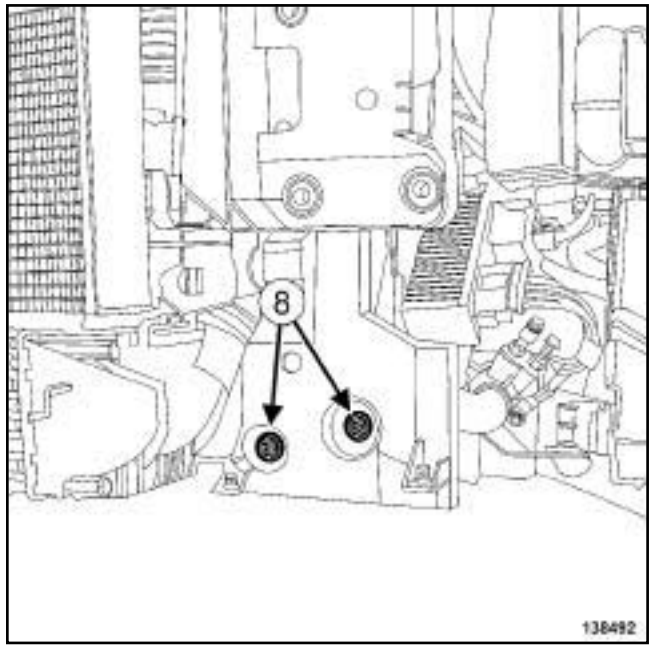
138488

❏ Remove the rigid cooling hose bolts (**6**) from the front end panel.



138484

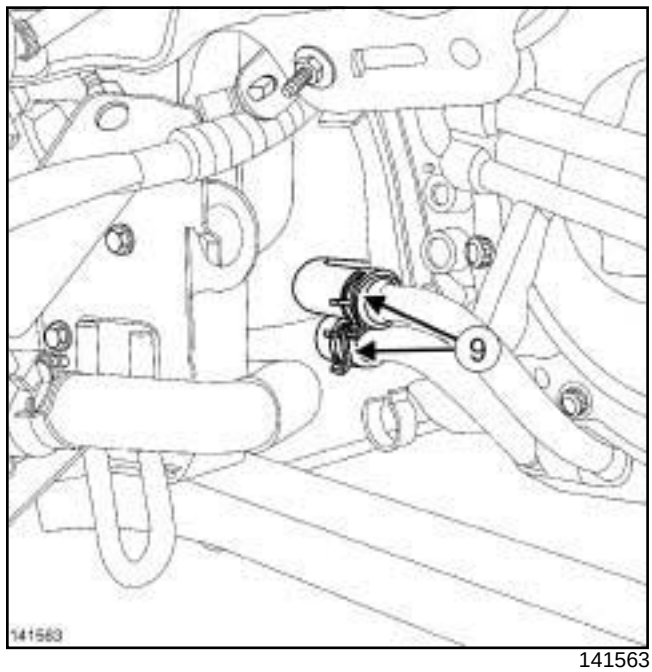
❏ Remove the upper bolts (**7**) from the front end panel.



138492

❏ Remove the lower bolts (**8**) from the front end panel.

❏ Move aside the front end panel.

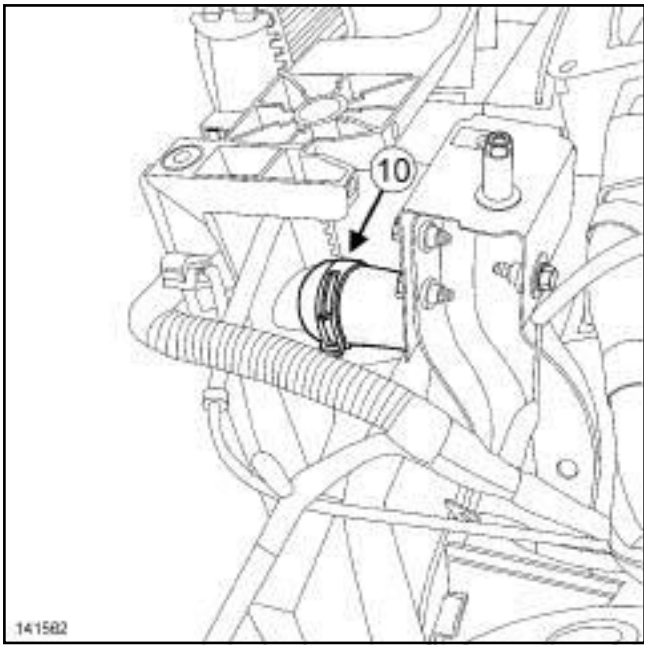


141563

❏ Remove the gearbox oil coolant pipe hose clips (**9**) using the **(Mot. 1448)**.

❏ Disconnect the hoses from the gearbox oil coolant pipes.

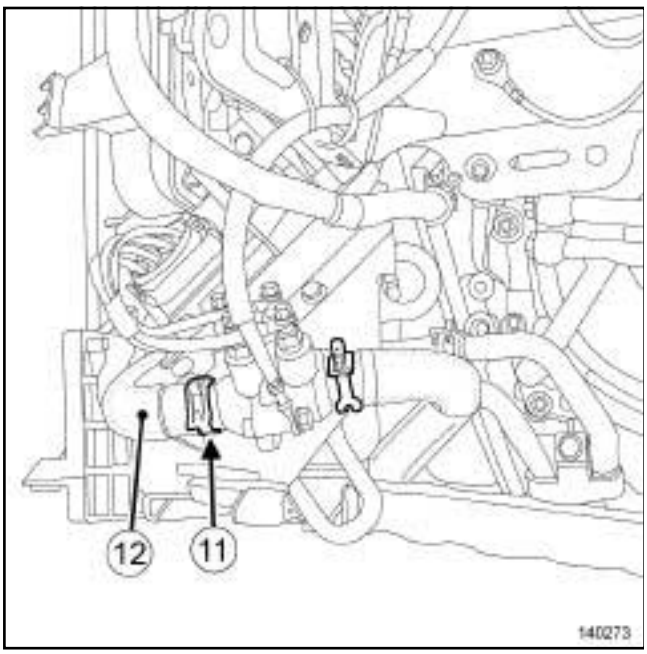
M9R, and AJ0



141562

❏ Remove the cooling radiator bottom hose clip (**10**) using the tool **(Mot. 1448)**.

❏ Disconnect the bottom hose from the cooling radiator.



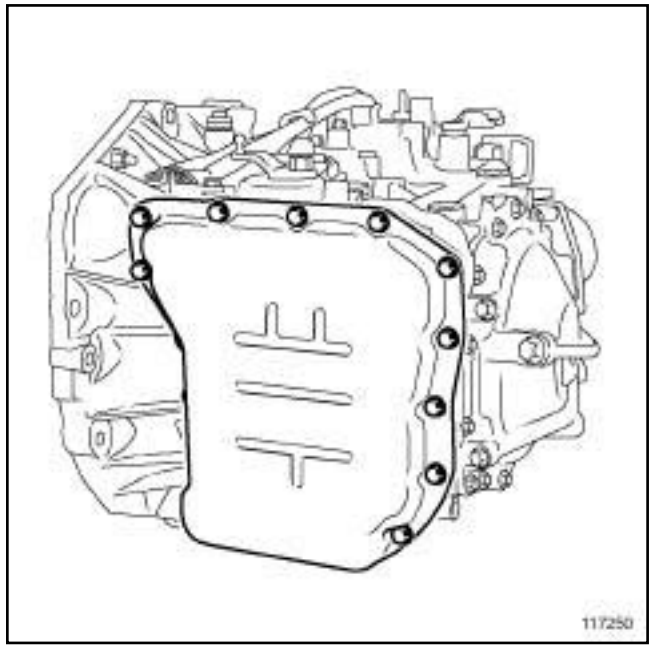
140273

❏ Remove the clip (**11**) from the thermoplunger unit hose using the **(Mot. 1448)**.

❏ Disconnect the hose (**12**) from the thermoplunger unit.

❏ Unclip all of the cooling hoses.

❏ Move aside all of the cooling hoses to facilitate access to the hydraulic distributor panel.



117250

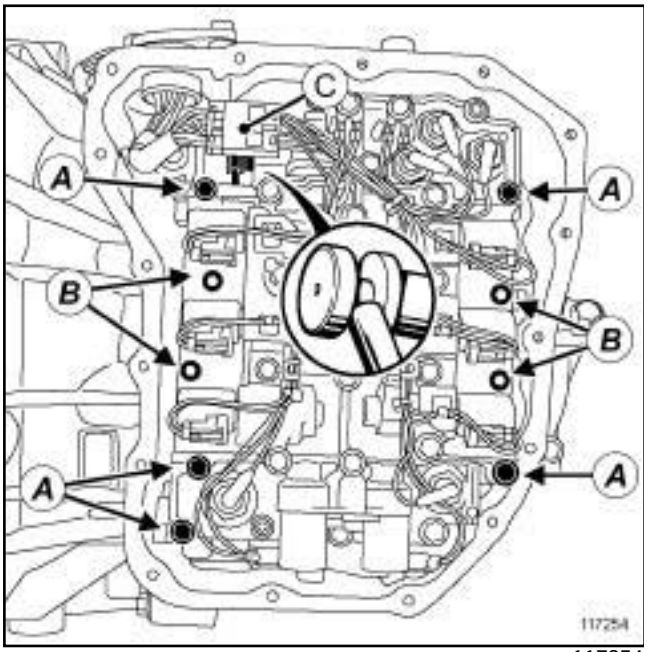
❏ Place a container under the automatic gearbox to collect the oil.

❏ Remove:

- the bolts from the hydraulic distributor panel,
- the hydraulic distributor panel,
- the seal on the hydraulic distributor panel.

M9R, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED



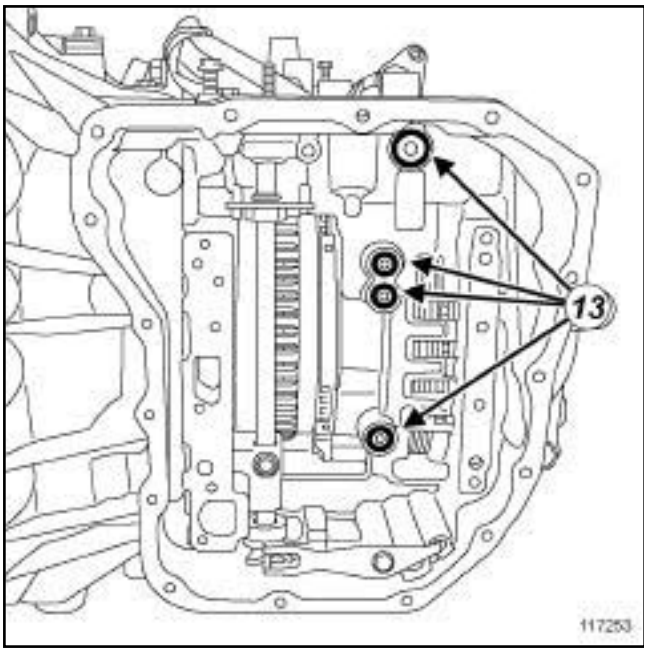
117254

❏ Loosen the hydraulic distributor bolts (**A**) and (**B**) .

❏ Disconnect the connector (**C**) between the hydraulic distributor internal wiring and the hydraulic distributor wiring.

❏ Remove:

- the hydraulic distributor bolts (**A**) and (**B**) ,
- the hydraulic distributor.



117253

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

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean the hydraulic distributor panel joint faces:

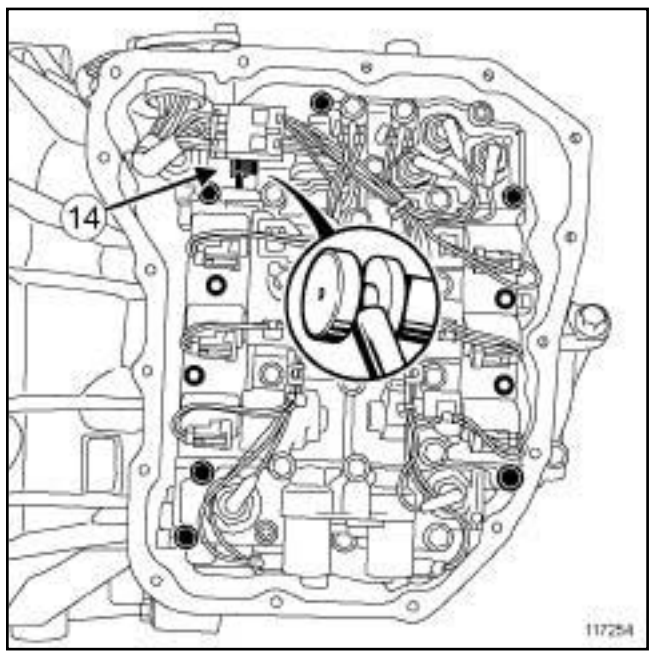
- on the automatic gearbox,
- on the hydraulic distributor panel.

❏ Always replace:

- the hydraulic distributor O-rings,
- the hydraulic distributor panel casing seal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the new hydraulic distributor O-rings.



117254

❏ Tilt the hydraulic distributor slightly when refitting it in order to engage it with the automatic gearbox lever (**14**) .

❏ Connect the internal wiring connector.

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

III - FINAL OPERATION

❏ Refit:

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

M9R, and AJ0

❏ Torque tighten the **hydraulic distributor panel bolts (8 N.m)**.

❏ Clip on all of the thermoplunger unit hoses.

❏ Connect the hose to the thermoplunger unit.

❏ Refit the hose clip on the thermoplunger unit using the **(Mot. 1448)**.

❏ Connect the cooling radiator bottom hose.

❏ Refit the cooling radiator bottom hose clip using the **(Mot. 1448)**.

❏ Connect the gearbox oil coolant pipe hoses.

❏ Refit the gearbox oil coolant pipe hose clips using the **(Mot. 1448)**.

❏ Fit the front end panel.

❏ Refit:

- the lower bolts from the front end panel,
- the front end panel upper bolts,
- the rigid cooling hose bolts on the front end panel.

❏ Clip:

- the degassing hose on the front end panel,
- the connector on the front end panel.

❏ Refit the bolts of the engine wiring channel.

❏ Fit the bonnet catch cable.

❏ Clip the bonnet catch cable on the front end panel.

❏ Refit:

- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) ,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the bonnet supports,
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- fill up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Refit the engine cover.

M9R, and AJ0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽		
hydraulic panel bolts	distributor	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

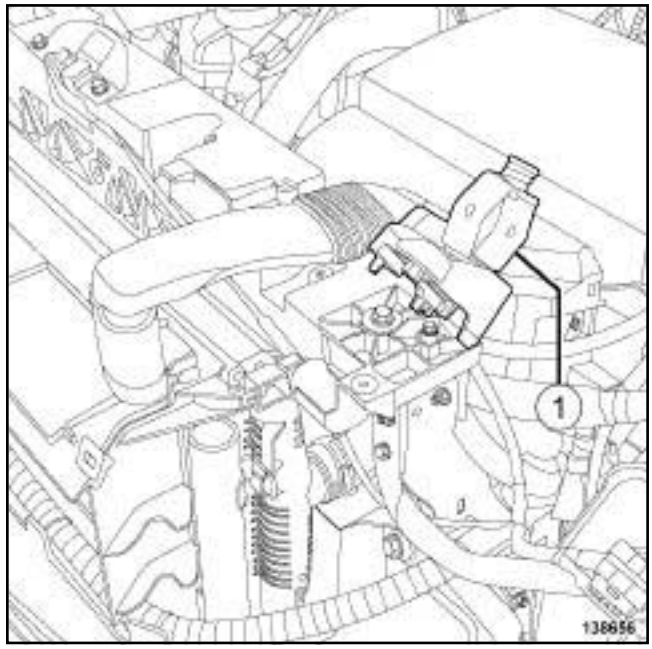
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging).

❑ 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-17**) .

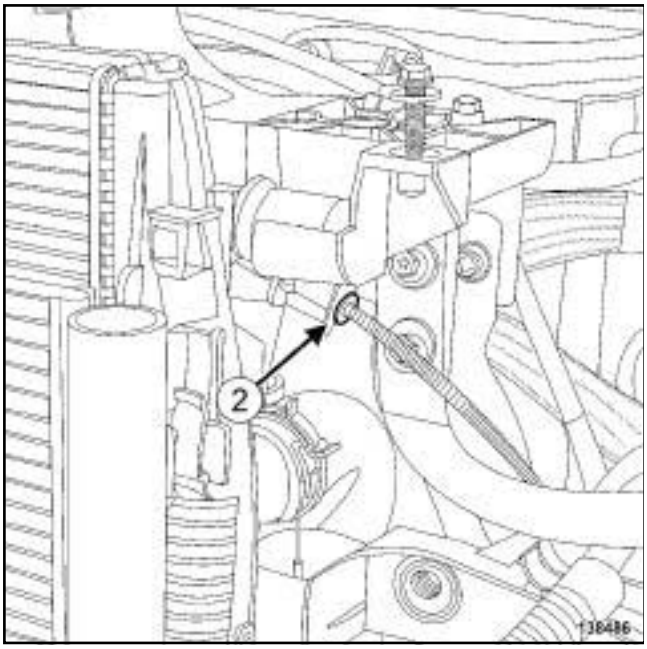


138656

❑ Remove:

- the bonnet supports (**1**) ,
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

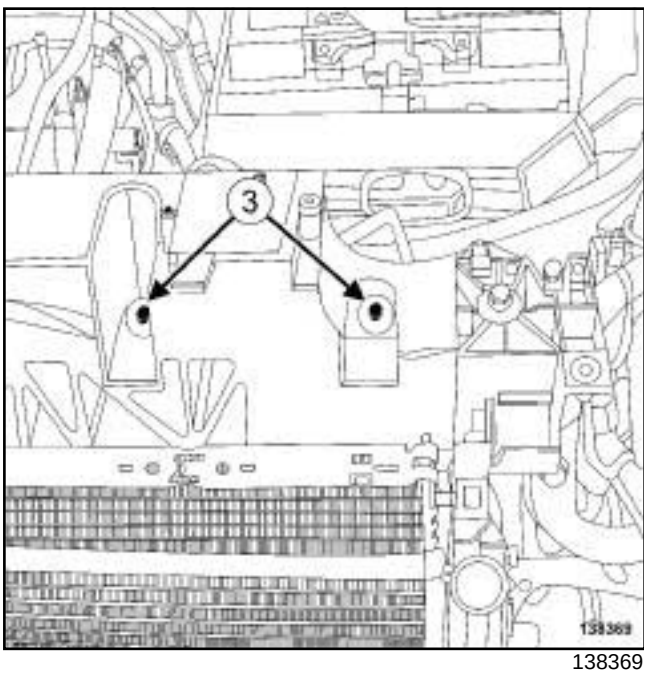
M9R, and AJ0



138486

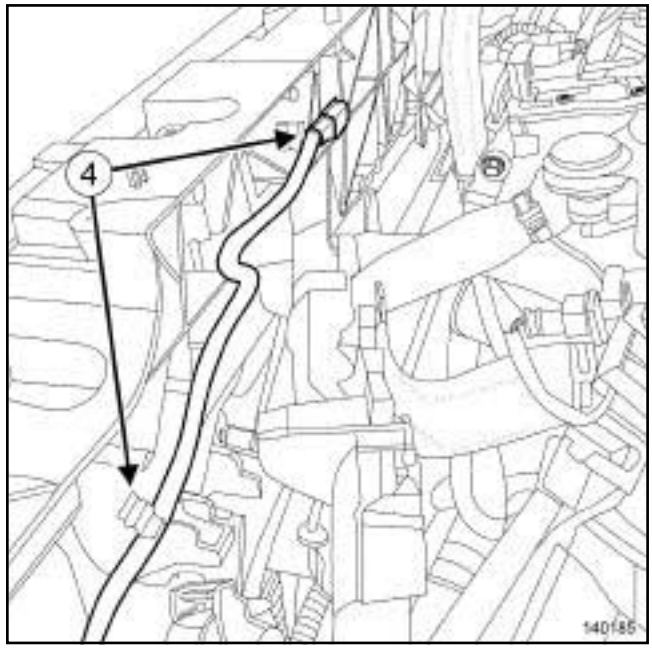
❏ Unclip the bonnet catch cable (**2**) on the front end panel.

❏ Move aside the bonnet catch wiring.



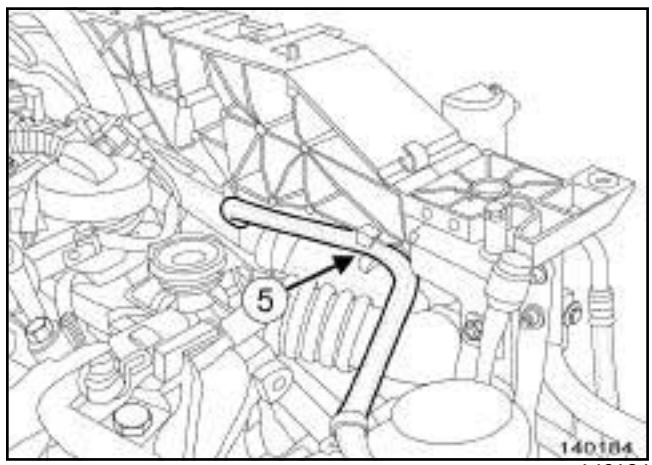
138369

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



140185

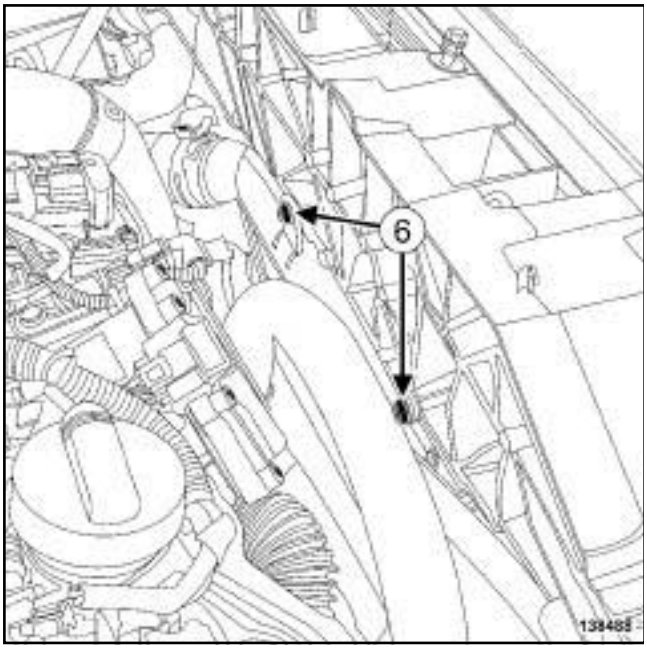
❏ Unclip the connector (**4**) from the front end panel.



140184

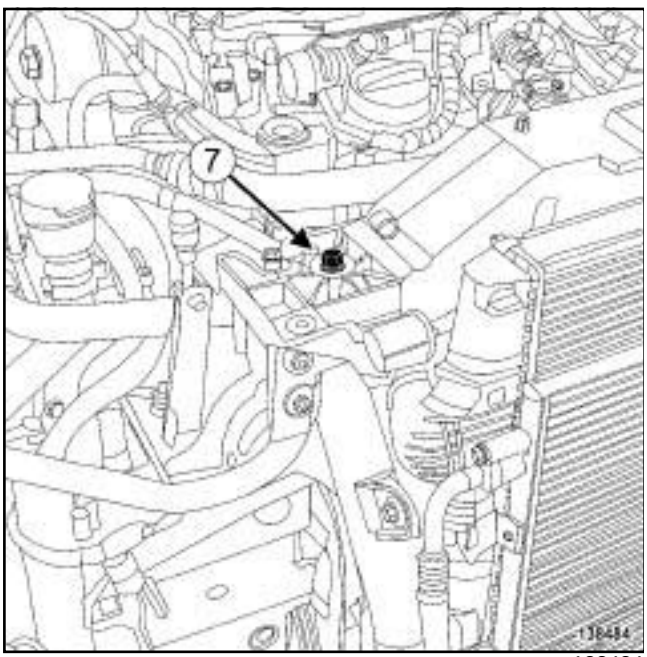
❏ Unclip the degassing hose (**5**) from the front end panel.

M9R, and AJ0



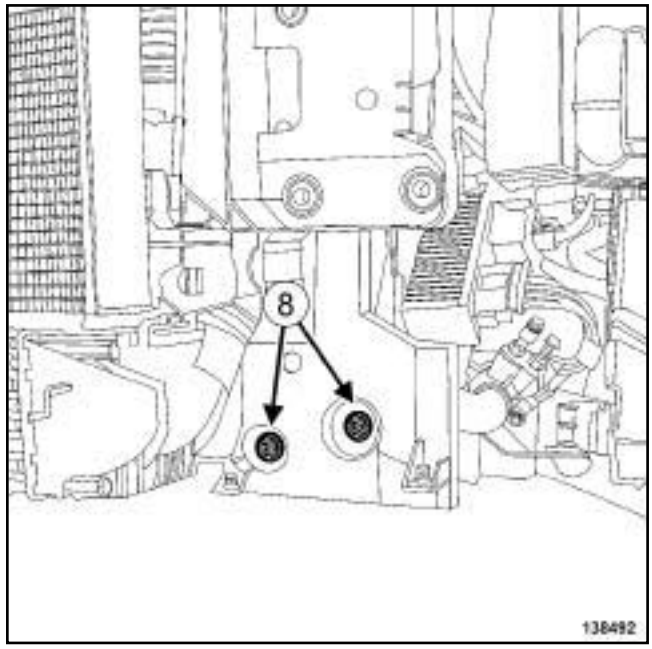
138488

❏ Remove the rigid cooling hose bolts (**6**) from the front end panel.



138484

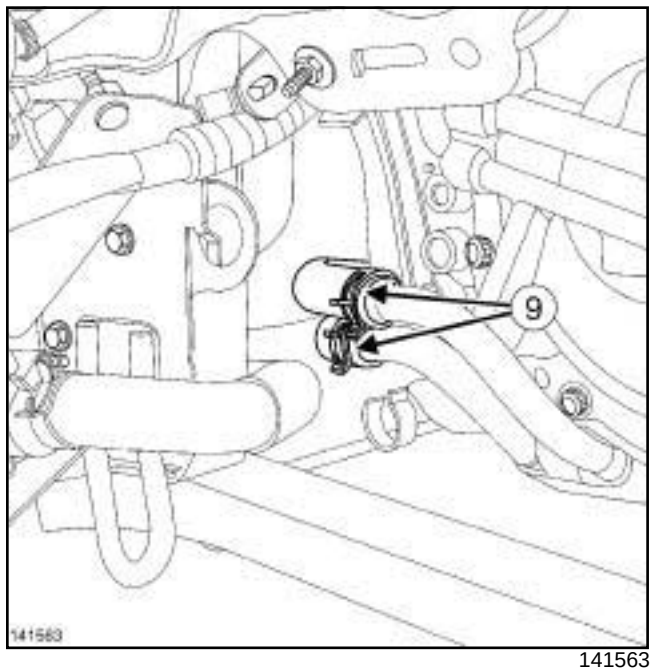
❏ Remove the upper bolts (**7**) from the front end panel.



138492

❏ Remove the lower bolts (**8**) from the front end panel.

❏ Move aside the front end panel.

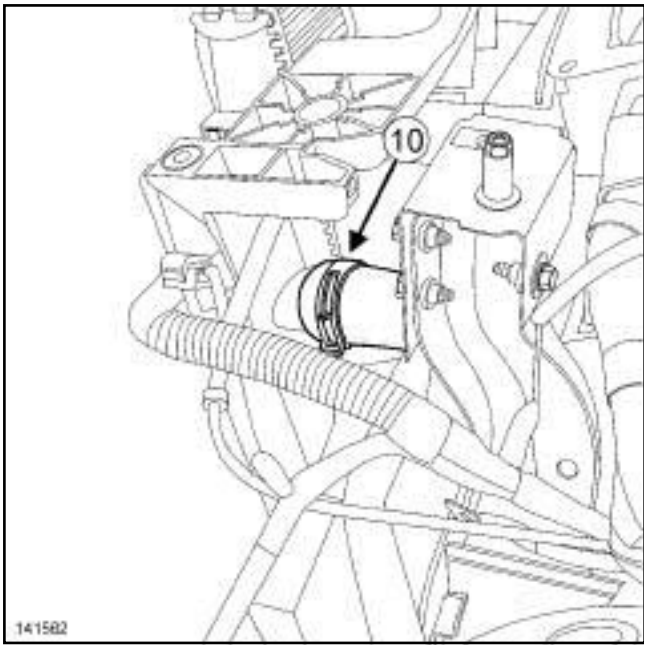


141563

❏ Remove the gearbox oil coolant pipe hose clips (**9**) using the **(Mot. 1448)**.

❏ Disconnect the hoses from the gearbox oil coolant pipes.

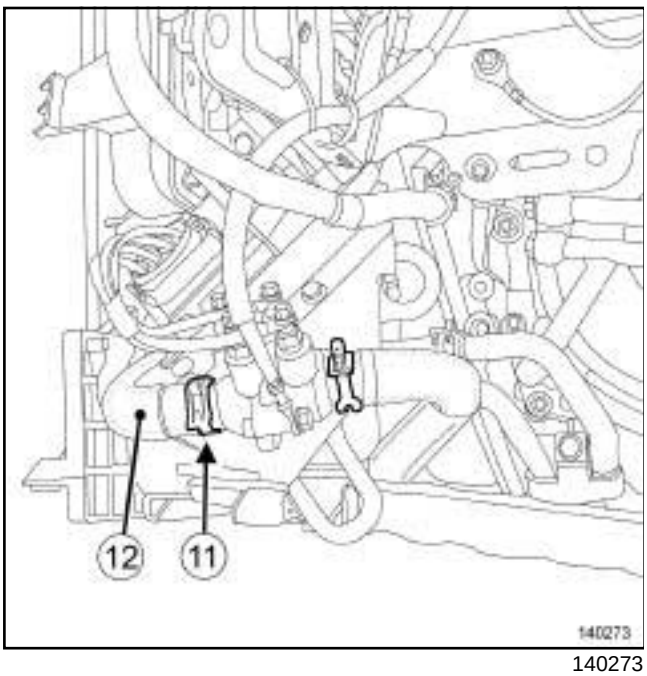
M9R, and AJ0



141562

❏ Remove the cooling radiator bottom hose clip (**10**) using the **(Mot. 1448)**.

❏ Disconnect the bottom hose from the cooling radiator.



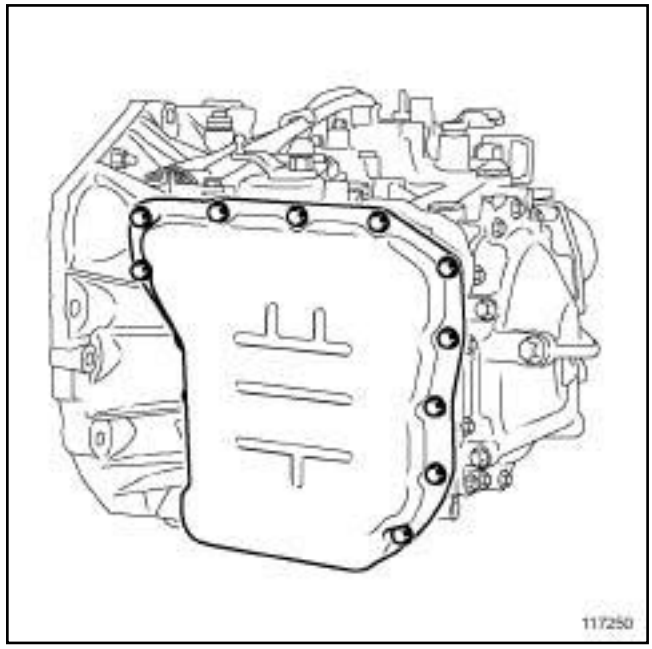
140273

❏ Remove the clip (**11**) from the thermoplunger unit hose using the **(Mot. 1448)**.

❏ Disconnect the hose (**12**) from the thermoplunger unit.

❏ Unclip all of the cooling hoses.

❏ Move aside all of the cooling hoses to facilitate access to the hydraulic distributor panel.

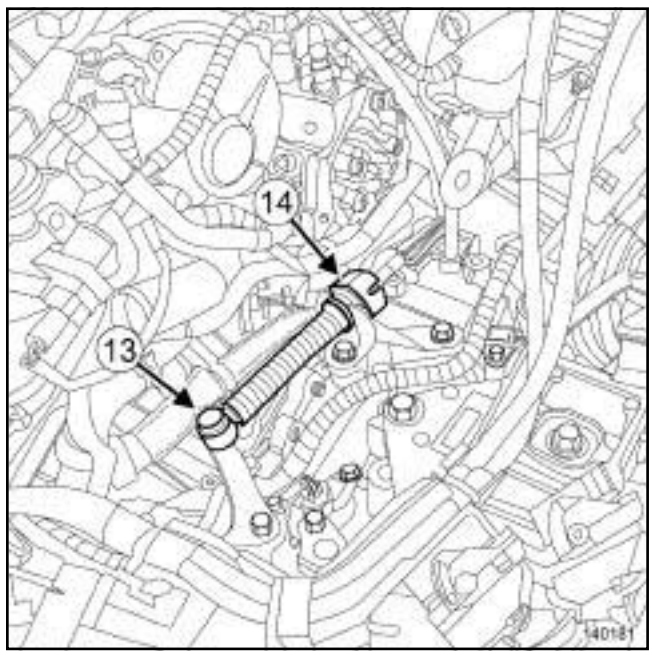


117250

❏ Place a container under the automatic gearbox to collect the oil.

❏ Remove:

- the bolts from the hydraulic distributor panel,
- the hydraulic distributor panel,
- the seal on the hydraulic distributor panel.



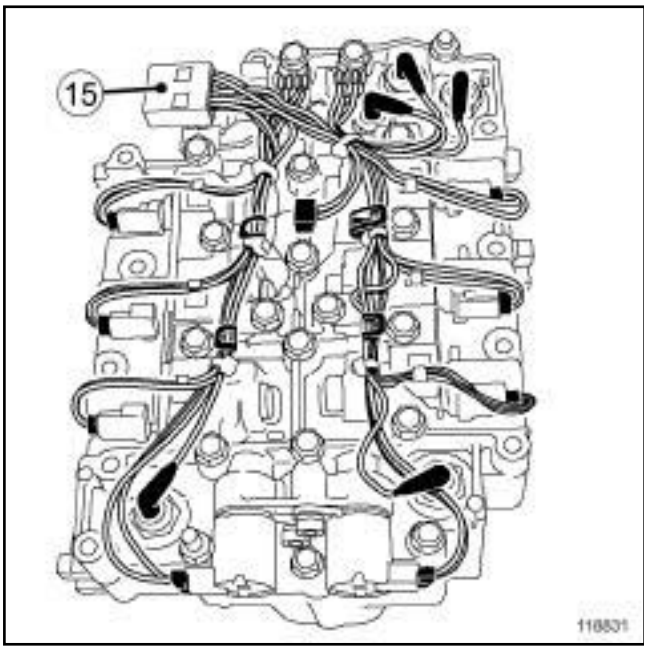
140181

❏ Unclip the ball joint (**13**) of the cable on the multifunction switch using an open-jawed spanner.

❏ Unlock and detach the cable sleeve stop (**14**) from its mounting.

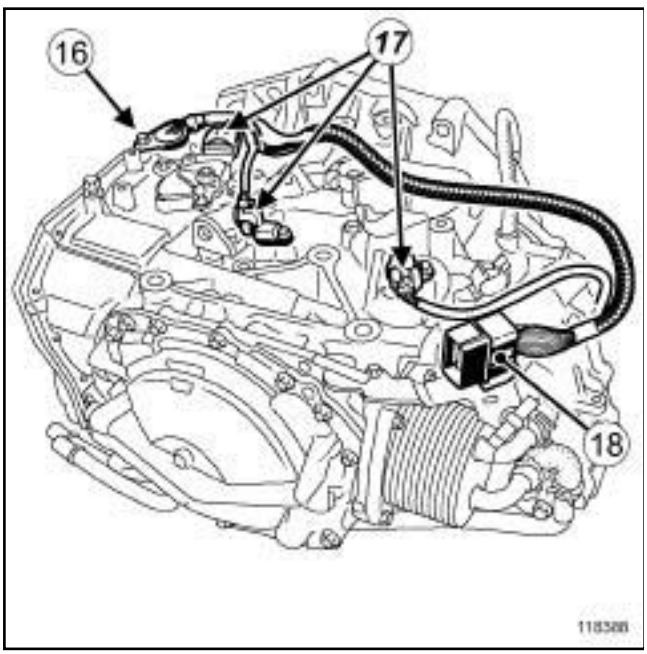
M9R, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED



118831

❏ Disconnect the connector (**15**) between the hydraulic distributor internal wiring and the hydraulic distributor wiring.



118388

❏ Remove the cable routing retaining bolt (**16**) .

❏ Disconnect the connectors (**17**) and (**18**) from the hydraulic distributor wiring.

❏ Unclip the supply connector (**18**) from the hydraulic distributor wiring.

❏ Remove:

- the retaining bracket bolts from the hydraulic distributor wiring,
- the hydraulic distributor wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean the hydraulic distributor panel joint faces:

- on the automatic gearbox,
- on the hydraulic distributor panel.

❏ Always replace the hydraulic distributor panel seal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the hydraulic distributor wiring.

❏ Refit the retaining bracket bolts on the hydraulic distributor wiring.

❏ Clip the hydraulic distributor wiring supply connector.

❏ Connect the hydraulic distributor wiring connectors.

❏ Refit the wiring routing retaining bolt.

❏ Connect the connector between the hydraulic distributor internal wiring and the hydraulic distributor wiring.

III - FINAL OPERATION

❏ Refit and lock the cable sleeve stop in its mounting.

❏ Clip the cable ball joint onto the multifunction switch.

❏ Refit:

- a new hydraulic distributor panel seal.
- the hydraulic distributor panel.

❏ Torque tighten the **hydraulic distributor panel bolts (8 N.m)**.

❏ Clip on all of the cooling hoses.

❏ Connect the hose to the thermoplunger unit.

❏ Refit the hose clip on the thermoplunger unit using the **(Mot. 1448)**.

❏ Connect the cooling radiator bottom hose.

❏ Refit the cooling radiator bottom hose clip using the **(Mot. 1448)**.

M9R, and AJ0

❏ Connect the gearbox oil coolant pipe hoses.

❏ Refit the gearbox oil coolant pipe hose clips using the **(Mot. 1448)**.

❏ Fit the front end panel.

❏ Refit:

- the lower bolts from the front end panel,
- the front end panel upper bolts,
- the rigid cooling hose bolts on the front end panel.

❏ Clip:

- the degassing hose on the front end panel,
- the connector on the front end panel.

❏ Refit the bolts of the engine wiring channel.

❏ Fit the bonnet catch cable.

❏ Clip the bonnet catch cable on the front end panel.

❏ Refit:

- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) ,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the bonnet supports,
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- fill up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Refit the engine cover.

FK0

REMOVAL

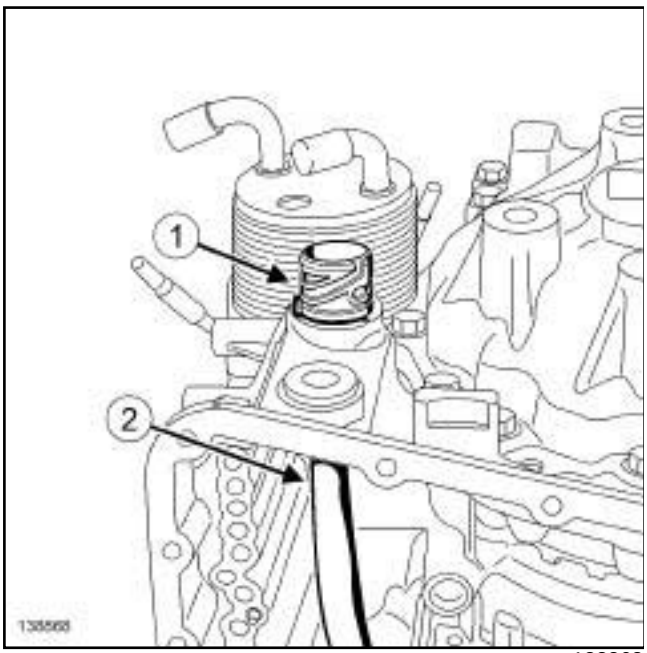
I - REMOVAL PREPARATION OPERATION

❏ Disconnect the gearbox connector.

❏ Remove:

- the gearbox oil sump (see **23A**, **Automatic gearbox**, **Gearbox oil sump: Removal - Refitting**, page **23A-22**) ,
- the hydraulic distributor (see **23A**, **Automatic gearbox**, **Hydraulic distributor: Removal - Refitting**, page **23A-24**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



138868

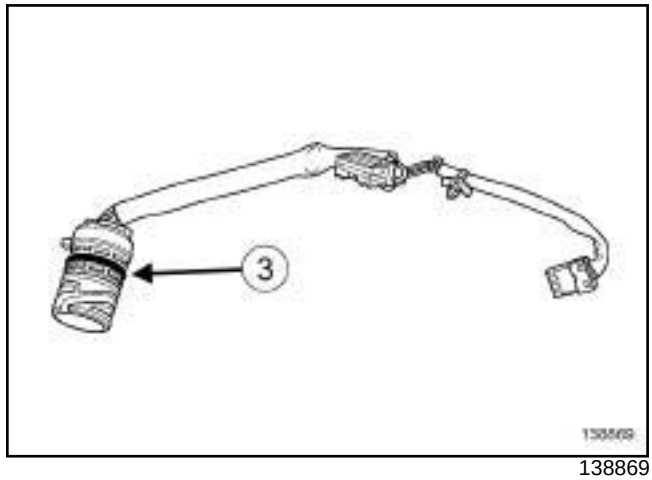
❏ Remove:

- the wiring clip (**1**) on the sump,
- the wiring (**2**) .

REFITTING

I - REFITTING PREPARATION OPERATION

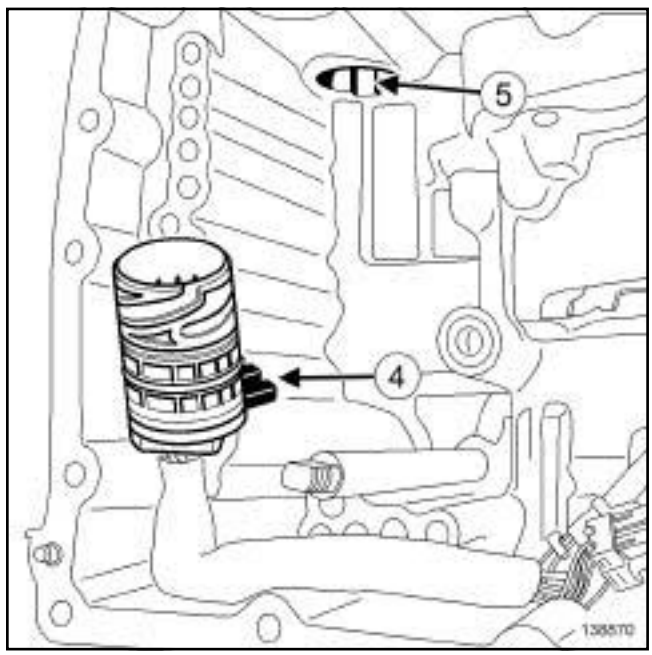
❏ Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) on the automatic gearbox and on the hydraulic distributor housing, taking care not to damage the contact surfaces.



138869

❏ Always replace the wiring O-ring (**3**) .

II - REFITTING OPERATION FOR PART CONCERNED



138870

❏ Refit:

- the wiring by placing the bornier locking lug (**4**) in the position (**5**) indicated in the illustration,
- the clip,
- the hydraulic distributor (see **23A**, **Automatic gearbox**, **Hydraulic distributor: Removal - Refitting**, page **23A-24**) ,
- the gearbox oil sump (see **23A**, **Automatic gearbox**, **Gearbox oil sump: Removal - Refitting**, page **23A-22**) .

M9R, and AJ0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
hydraulic distributor panel bolts	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine cover,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),

B95 or D95

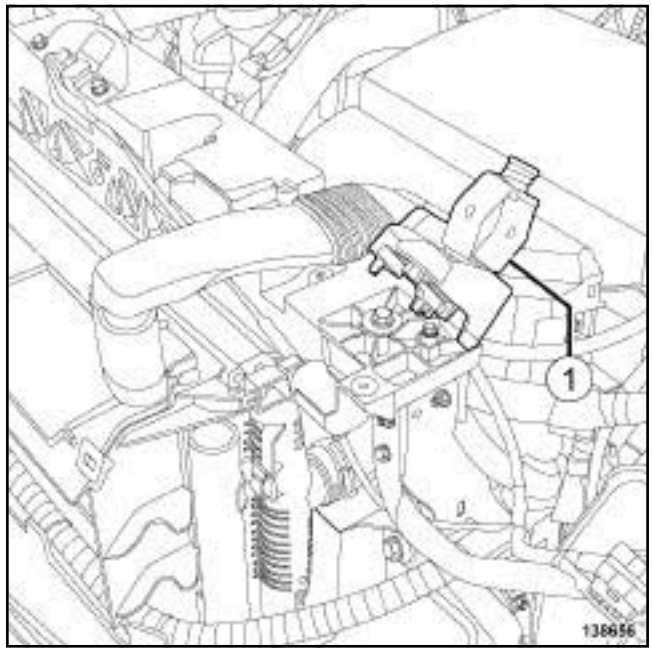
❑ Remove the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❑ Remove the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging).

❑ 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-17**) .

J95



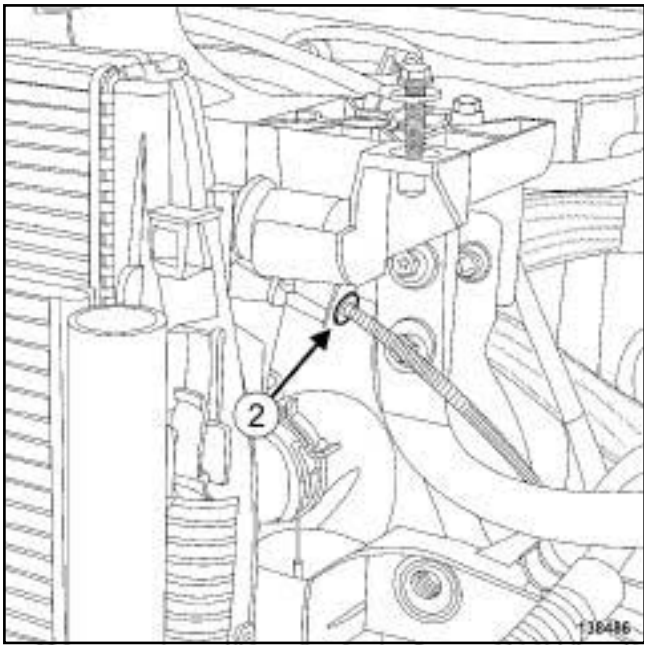
138656

❑ Remove the bonnet supports (**1**) .

❑ Remove:

- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

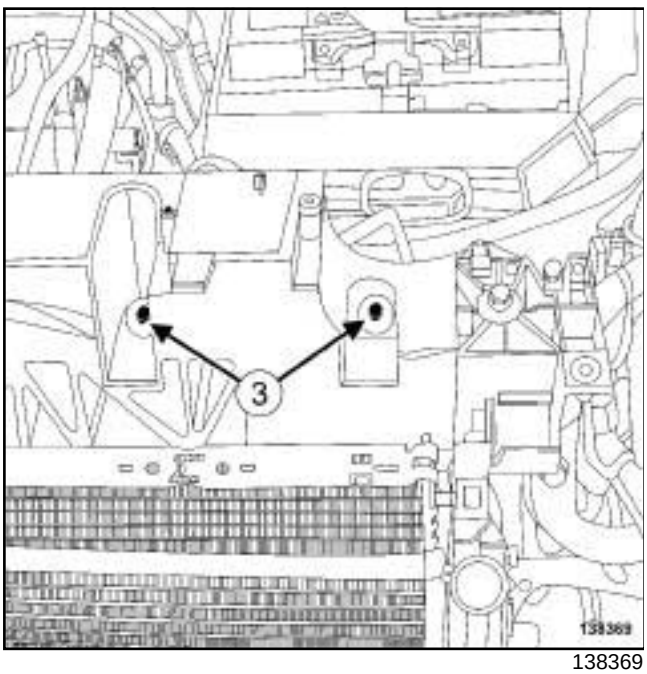
M9R, and AJ0



138486

❏ Unclip the bonnet catch cable (**2**) on the front end panel.

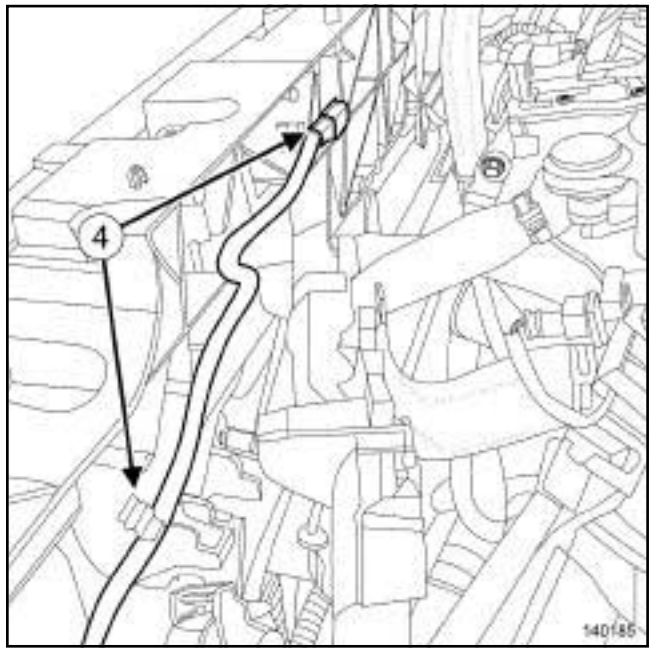
❏ Move aside the bonnet catch wiring.



138369

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

J95

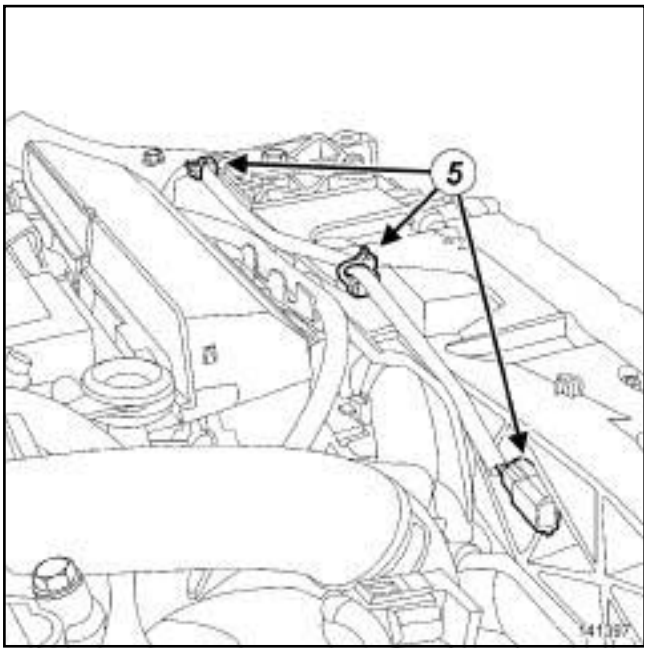


140185

❏ Unclip the remaining connector (**4**) from the front end panel.

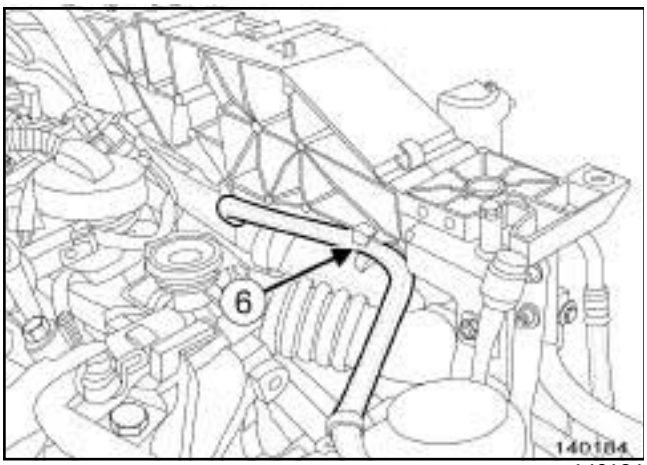
M9R, and AJ0

B95 or D95



141397

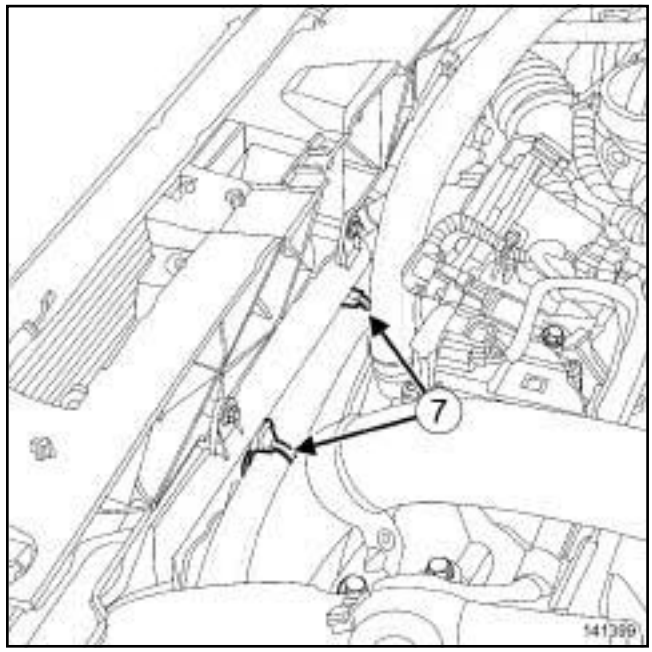
❏ Unclip the remaining connector (**5**) from the front end panel.



140184

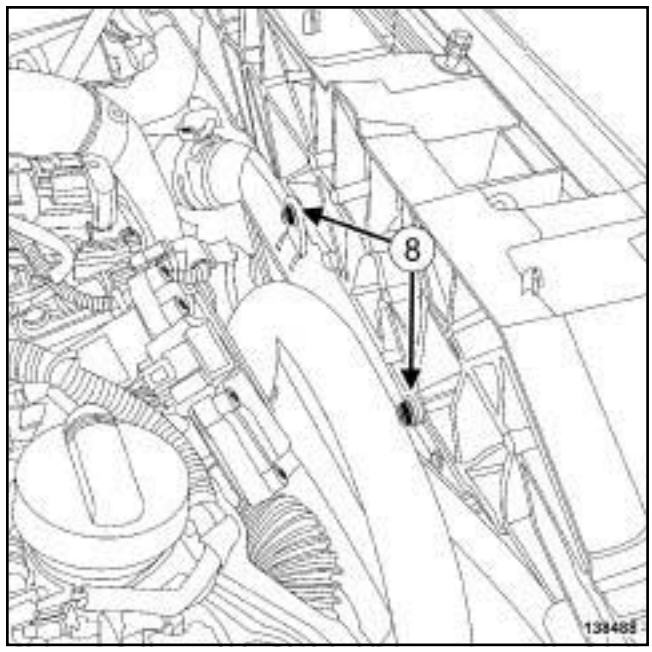
❏ Unclip the degassing hose (**6**) from the front end panel.

B95 or D95



141399

❏ Unclip the hose from the front end panel (**7**) .

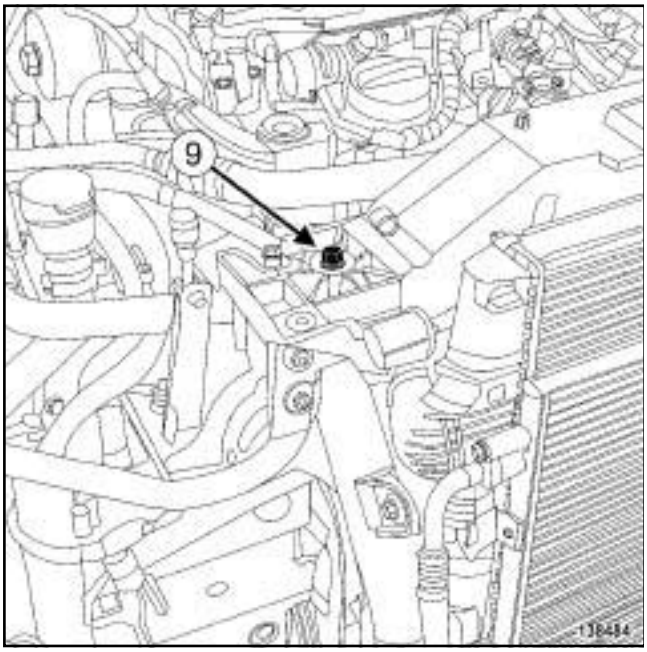


138488

❏ Remove the rigid cooling hose bolts (**8**) from the front end panel.

M9R, and AJ0

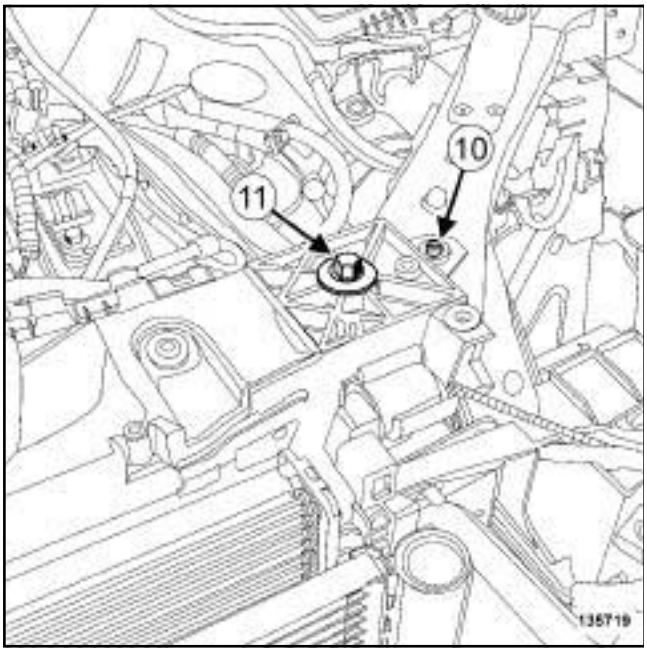
J95



138484

❏ Remove the upper bolts (**9**) from the front end panel.

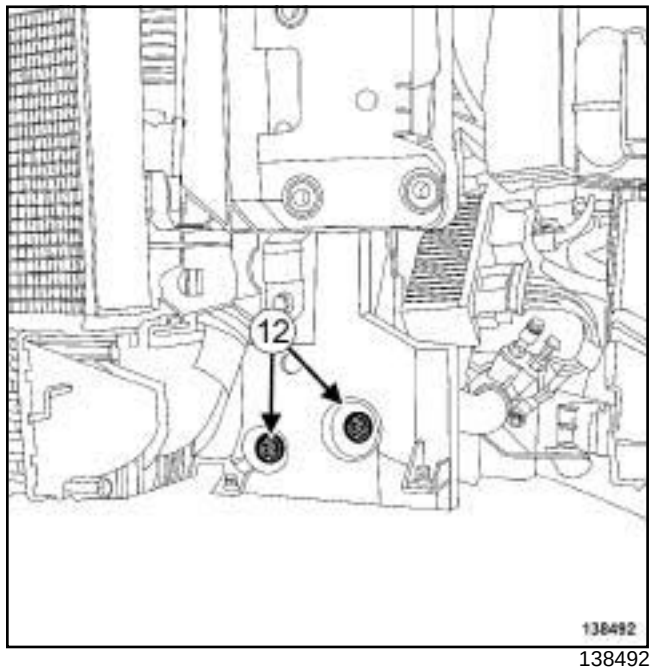
B95 or D95



135719

❏ Remove:

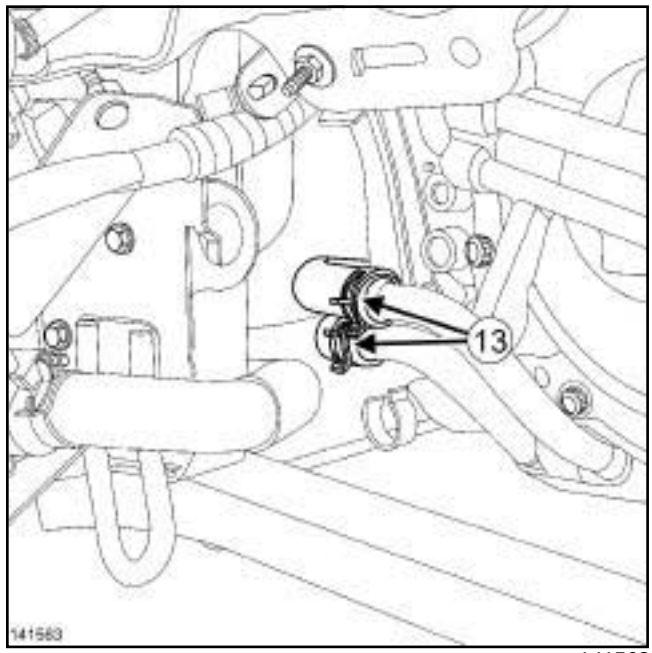
- the front end panel clips (**10**) ,
- the front end panel upper bolts (**11**) .



138492

❏ Remove the lower bolts (**12**) from the front end panel.

❏ Move aside the front end panel.

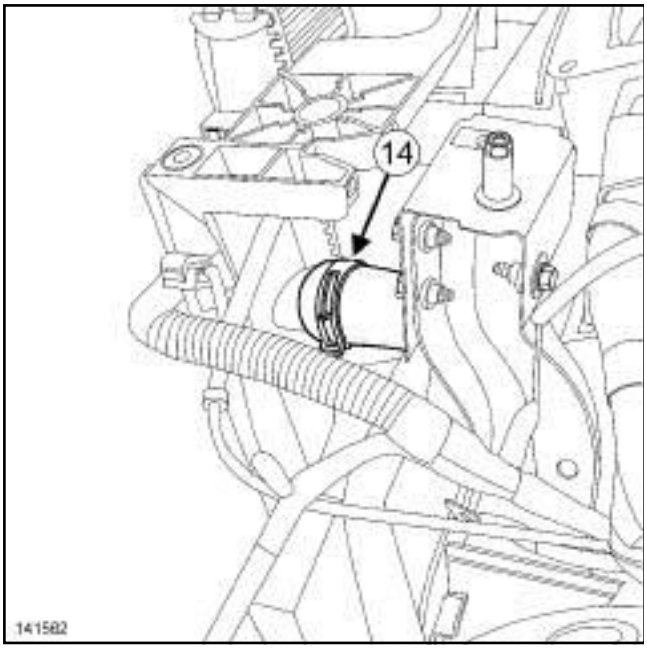


141563

❏ Remove the gearbox oil coolant pipe hose clips (**13**) using the **(Mot. 1448)**.

❏ Disconnect the hoses from the gearbox oil coolant pipes.

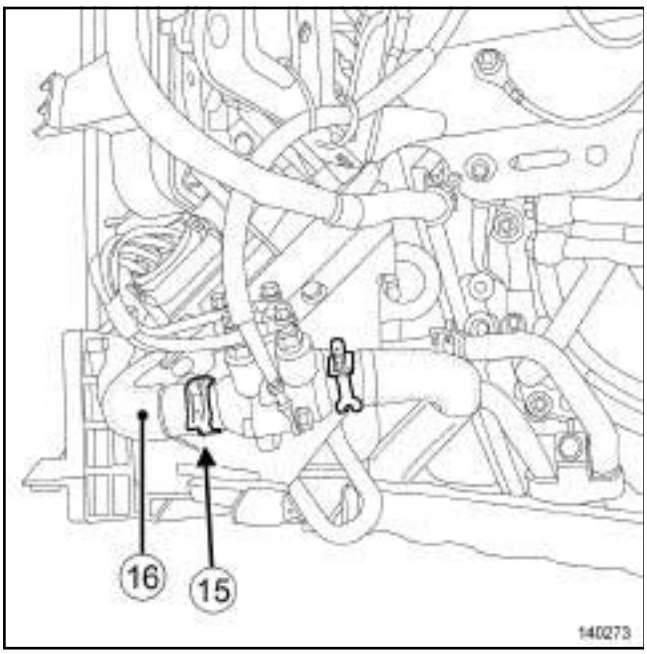
M9R, and AJ0



141562

❏ Remove the cooling radiator bottom hose clip (**14**) using the tool **(Mot. 1448)**.

❏ Disconnect the bottom hose from the cooling radiator.



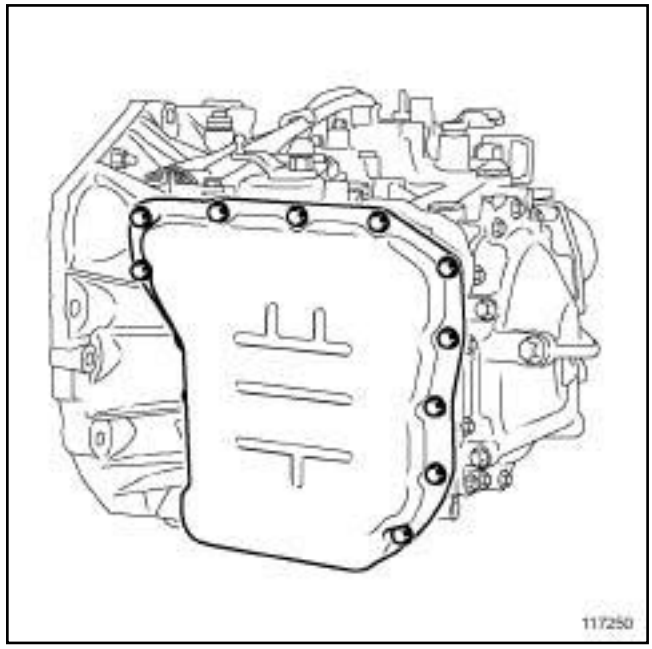
140273

❏ Remove the clip (**15**) from the thermoplunger unit hose using the **(Mot. 1448)**.

❏ Disconnect the hose (**16**) from the thermoplunger unit.

❏ Unclip all of the cooling hoses.

❏ Move aside all of the cooling hoses to facilitate access to the hydraulic distributor panel.



117250

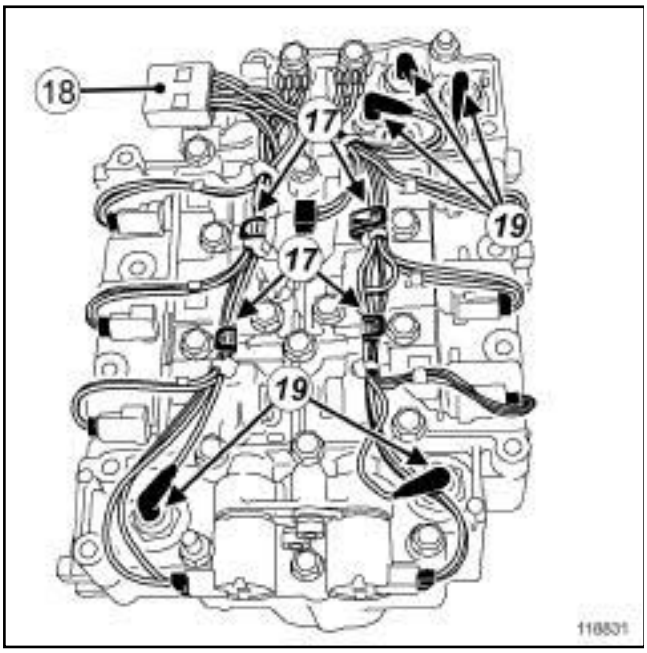
❏ Place a container under the automatic gearbox to collect the oil.

❏ Remove:

- the bolts from the hydraulic distributor panel,
- the hydraulic distributor panel,
- the seal on the hydraulic distributor panel.

M9R, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED

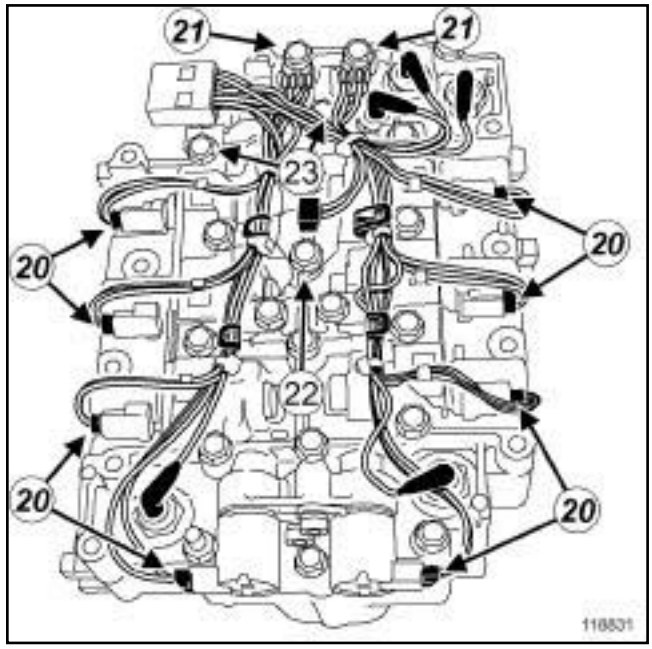


118831

❏ Lift the internal wiring retaining clips (**17**) .

❏ Disconnect:

- the connector (**18**) between the hydraulic distributor internal wiring and the hydraulic distributor wiring,
- the pressure sensor connections (**19**) .



118831

❏ Disconnect the solenoid valve connections (**20**) .

❏ Remove:

- the retaining bolts (**21**) from the earths,
- the temperature sensor retaining plate bolts (**22**) ,
- the temperature sensor retaining plate.

❏ Disconnect the temperature sensor from the hydraulic distributor.

❏ Remove:

- the bolts (**23**) from the retaining plate of the hydraulic distributor internal wiring,
- the hydraulic distributor internal wiring.

❏ Unclip the internal wiring retaining plate on the connector between the hydraulic distributor internal wiring and the hydraulic distributor wiring.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean the hydraulic distributor panel joint faces:

- on the automatic gearbox,
- on the hydraulic distributor panel.

❏ Always replace the hydraulic distributor panel seal.

M9R, and AJ0

❑ Clip the internal wiring retaining plate on the connector between the hydraulic distributor internal wiring and the hydraulic distributor wiring.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the hydraulic distributor internal wiring.

❑ Refit the bolts on the hydraulic distributor internal wiring retaining plate.

❑ Connect the temperature sensor on the hydraulic distributor.

❑ Refit:

- the temperature sensor retaining plate,
- the temperature sensor retaining plate bolt fitted with an earth terminal,
- the earth retaining bolts.

❑ Connect:

- the solenoid valve connections,
- the pressure sensor connections,
- the connector between the hydraulic distributor internal wiring and the hydraulic distributor wiring.

❑ Pull down the retaining clips on the hydraulic distributor internal wiring.

III - FINAL OPERATION

❑ Refit:

- a new hydraulic distributor panel seal.
- the hydraulic distributor panel,

❑ Torque tighten the **hydraulic distributor panel bolts (8 N.m)**.

❑ Clip on all of the cooling hoses.

❑ Connect the hose to the thermoplunger unit.

❑ Refit the hose clip on the thermoplunger unit using the **(Mot. 1448)**.

❑ Connect the cooling radiator bottom hose.

❑ Refit the cooling radiator bottom hose clip using the **(Mot. 1448)**.

❑ Connect the gearbox oil coolant pipe hoses.

❑ Refit the gearbox oil coolant pipe hose clips using the **(Mot. 1448)**.

❑ Fit the front end panel.

❑ Refit:

- the lower bolts from the front end panel,
- the front end panel upper bolts.

B95 or D95

❑ Refit the front end panel clips.

❑ Refit the rigid cooling hose bolts on the front end panel.

B95 or D95

❑ Clip the hose on the front end panel.

❑ Clip:

- the degassing hose on the front end panel,
- the remaining connector on the front end panel.

❑ Refit the bolts of the engine wiring channel.

❑ Fit the bonnet catch cable.

❑ Clip the bonnet catch cable on the front end panel.

❑ Refit:

- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) ,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn).

J95

❑ Refit the bonnet supports.

❑ Refit the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging).

M9R, and AJ0

B95 or D95

❑ Refit the front bumper supports (see **Front bumper support: Removal - Refitting**) (42A, Front upper structure).

❑ Refit:

- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Perform the following operations:

- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling)
- fill up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❑ Refit the engine cover.

FK0

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
automatic gearbox oil cooler bolts	**4.2 N.m**

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

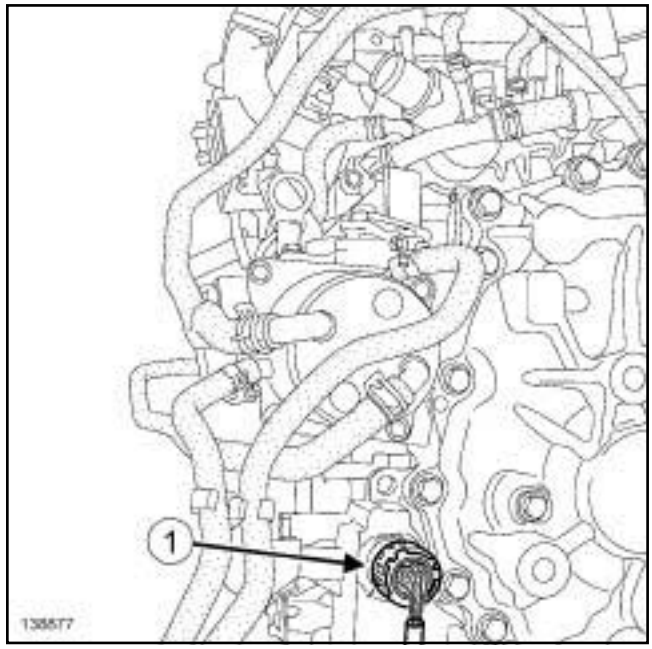
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

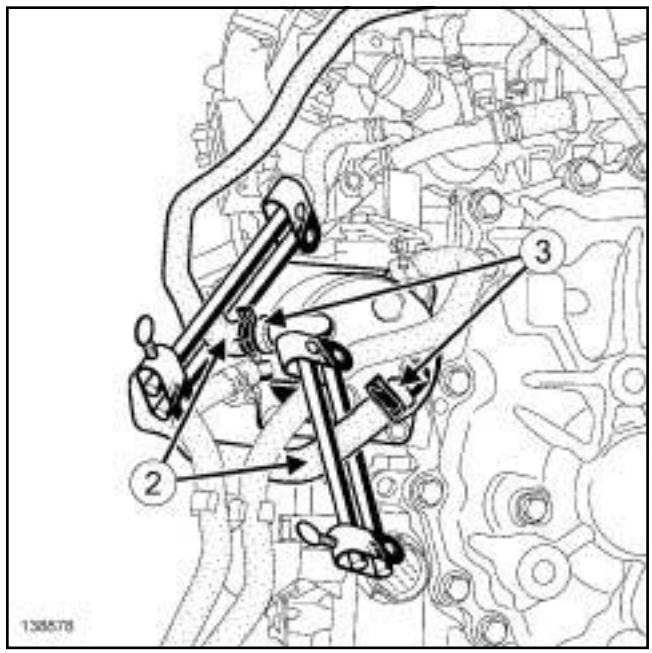
- the engine undertray,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),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



138877

❏ Disconnect the main connector (**1**) from the automatic gearbox.

II - OPERATION FOR REMOVAL OF PART CONCERNED



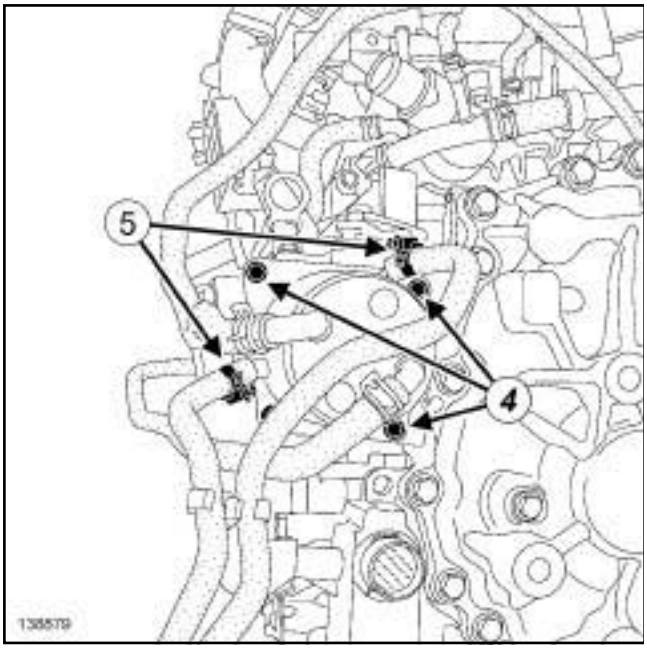
138878

❏ Position the **(Ms. 583)** on the coolant hoses (**2**) of the automatic gearbox oil cooler.

❏ Using the **(Mot. 1448)**, separate the clips (**3**) on the coolant hoses of the automatic gearbox oil cooler.

❏ Disconnect the coolant hoses from the automatic gearbox oil cooler.

FK0



138879

❑ Remove:

- the automatic gearbox oil cooler bolts (**4**) ,
- the oil cooler with its pipes,
- the automatic gearbox oil cooler seal.

❑ Undo the clips (**5**) on the oil hoses of the gearbox oil cooler.

❑ Disconnect the gearbox oil cooler hoses.

❑ Fit two blanking plugs on the oil hoses of the gearbox oil cooler.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Clean the joint faces using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❑ Lubricate the seal with automatic gearbox oil (CVT).

❑ Always replace:

- the automatic gearbox oil cooler seal,
- the automatic gearbox oil filter.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Remove the blanking plugs on the oil hoses of the gearbox oil cooler.

❑ Connect the oil hoses to the automatic gearbox oil cooler.

❑ Refit the clips on the oil hoses of the automatic gearbox oil cooler.

❑ Tighten the clip bolts on the oil hoses of the automatic gearbox oil cooler.

❑ Refit:

- the new seal on the automatic gearbox oil cooler,
- the oil cooler with its pipes,
- the automatic gearbox oil cooler bolts.

❑ Torque tighten the **automatic gearbox oil cooler bolts (4.2 N.m)**.

III - FINAL OPERATION

❑ Connect the coolant hoses to the automatic gearbox oil cooler.

❑ Using the **(Mot. 1448)**, refit the clips on the coolant hoses of the automatic gearbox oil cooler.

❑ Remove the tools **(Ms. 583)** on the coolant hoses of the gearbox oil cooler.

❑ Connect the automatic gearbox main connector.

❑ Clip the automatic gearbox main connector onto its support.

❑ Refit:

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

M9R, and AJ0

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
gearbox oil cooler bolts	**4 N.m**

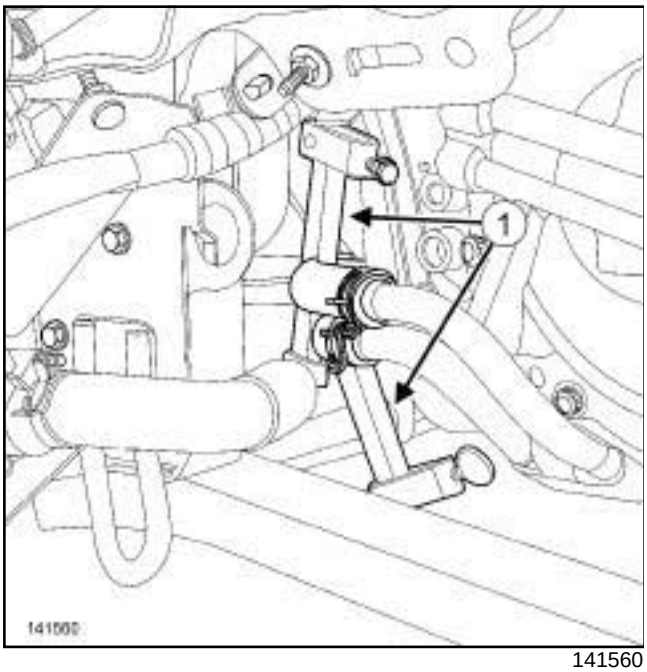
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

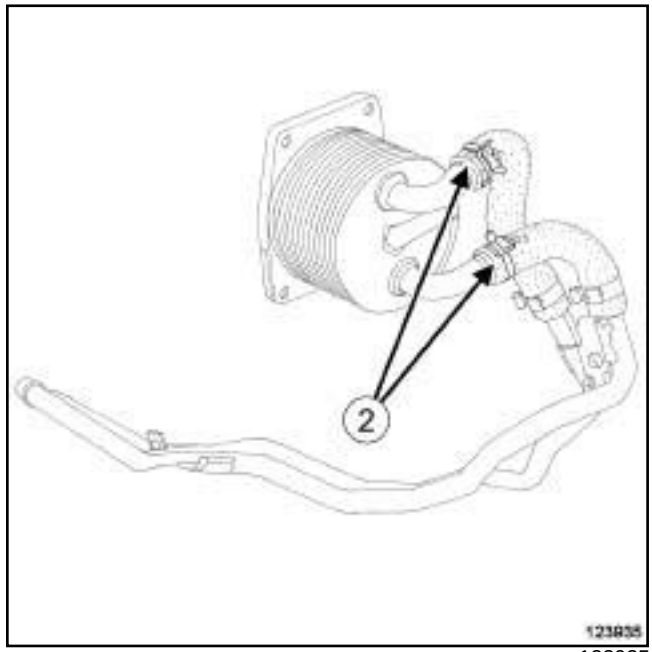


141560

❏ Fit the tools **(Ms. 583)** (**1**) on the gearbox oil coolant pipe hoses.

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

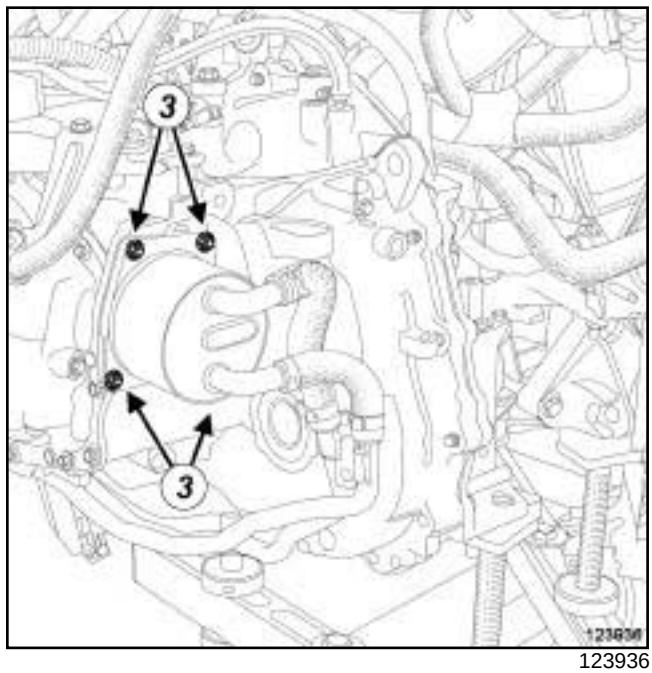
II - OPERATION FOR REMOVAL OF PART CONCERNED



123935

❏ Remove the gearbox oil coolant pipe hose clips (**2**) using the **(Mot. 1448)**.

❏ Disconnect the gearbox oil coolant pipe hoses on the gearbox oil cooler.



123936

❏ Remove:

- the gearbox oil cooler bolts (**3**) ,
- the gearbox oil cooler,
- the gearbox oil cooler O-ring.

M9R, and AJ0

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Clean the joint faces of the gearbox oil cooler using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products):

- on the automatic gearbox,
- on the gearbox oil cooler.

❏ **parts always to be replaced: gearbox oil cooler seal (12,09,01,04)**

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit:

- a new O-ring on the gearbox oil cooler,
- the gearbox oil cooler.

❏ Torque tighten the **gearbox oil cooler bolts (4 N.m)**.

❏ Connect the gearbox oil coolant pipe hoses on the gearbox oil cooler.

❏ Refit the gearbox oil coolant pipe hose clips using the **(Mot. 1448)**.

III - FINAL OPERATION

❏ Remove the tools **(Ms. 583)** from the gearbox oil coolant pipe hoses.

❏ Perform the following operations:

- bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- top up the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Refit:

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

FK0

Tightening torques ▽	
oil hose clips	**2 N.m**

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

REMOVAL

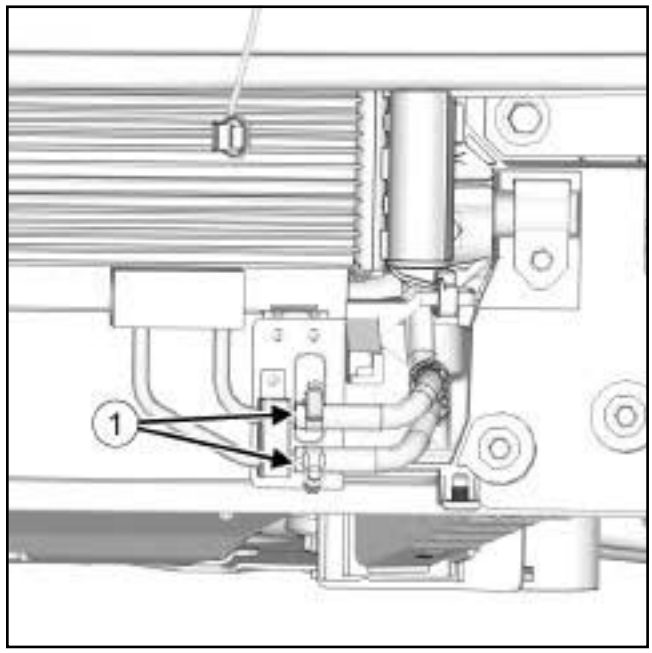
I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

II - REMOVAL OPERATION FOR THE ADDITIONAL COOLER



141305

❏ Loosen the 2 hose clips (**1**) on the automatic gearbox additional oil cooler end.

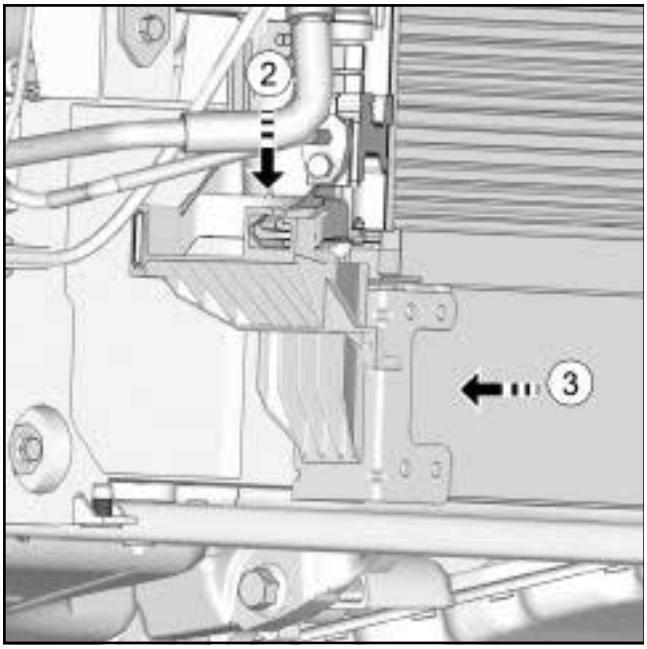
❏ Prepare for the outflow of automatic gearbox oil.

❏ Disconnect the two hoses on the automatic gearbox additional oil cooler end.

❏ Fit a blanking plug on either end of the automatic gearbox additional oil cooler.

❏ Wipe the excess oil off the ends of the automatic gearbox additional oil cooler.

FK0

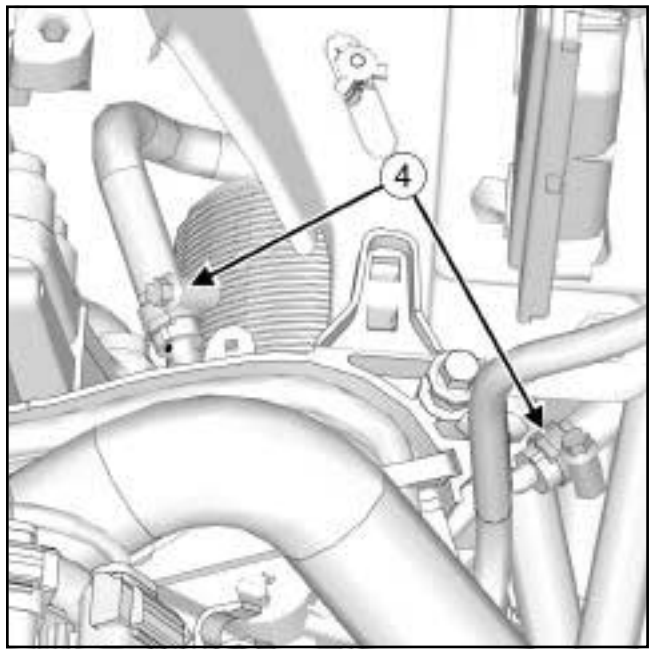


141304

❏ Unclip (**2**) the automatic gearbox additional oil cooler.

❏ Remove (**3**) the automatic gearbox additional oil cooler.

III - REMOVAL OPERATION FOR THE ADDITIONAL COOLER HOSES



141309

❏ Loosen the 2 hose clips (**4**) on the automatic gearbox oil cooler end.

❏ Prepare for the outflow of automatic gearbox oil.

❏ Disconnect the two hoses on the automatic gearbox oil cooler end.

❏ Fit a blanking plug on either end of the automatic gearbox oil cooler, and on the automatic gearbox oil hoses.

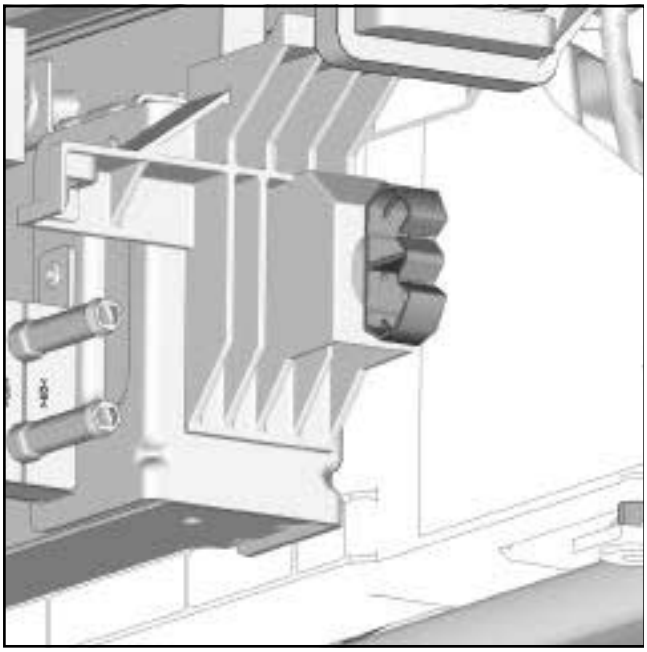
❏ Remove the two automatic gearbox oil hoses.

❏ Wipe the excess oil off the ends of the automatic gearbox oil cooler.

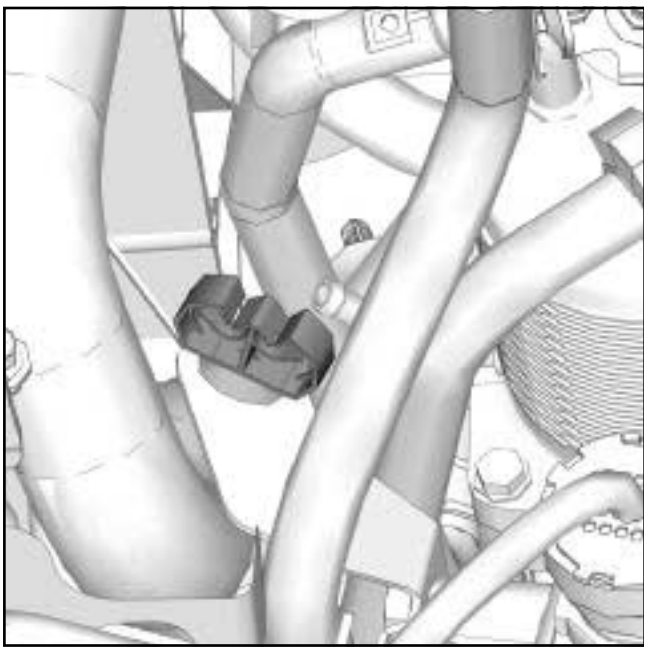
FK0

REFITTING

I - REFITTING PREPARATION OPERATION



141310



141311

❑ Check the presence and condition of the two double retaining clips on the two automatic gearbox oil hoses.

❑ Always replace:

- the tightening clips on the two automatic gearbox oil hoses.

II - REFITTING OPERATION FOR THE ADDITIONAL COOLER HOSES

❑

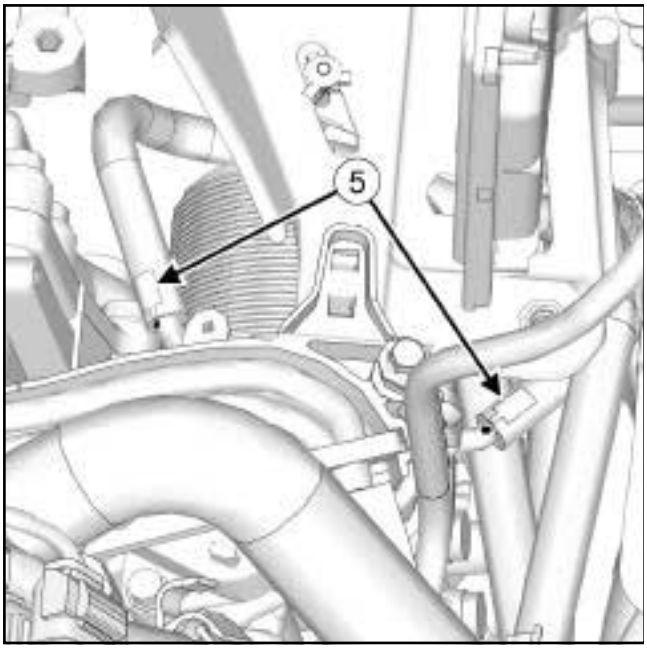
WARNING

Failure to observe the following procedure could cause irreparable damage to the automatic gearbox.

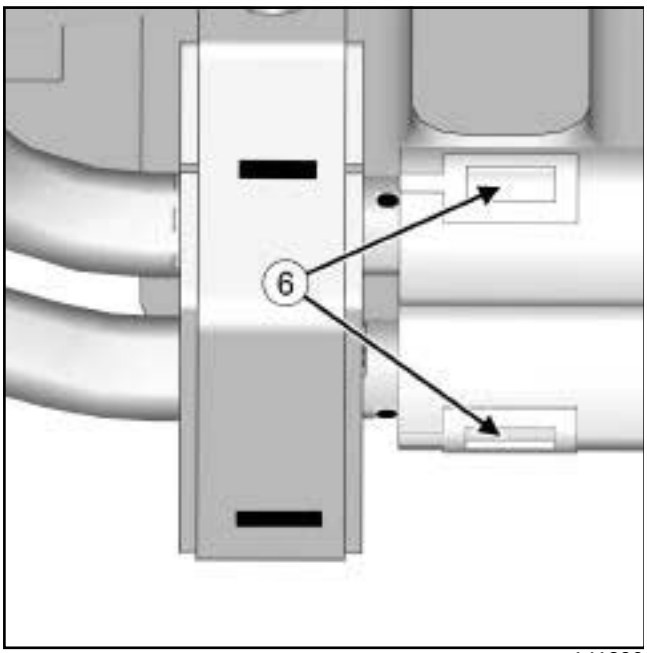
Note:

Oil hoses must be fitted in a given direction. Consequently, the hoses are marked with their correct fitting direction.

FK0



141308



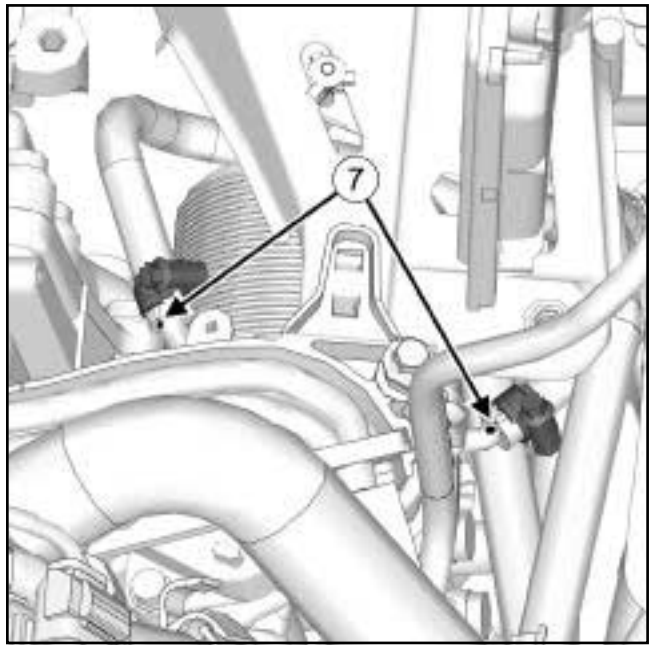
141296

❏ Identify the oil hose fitting direction:

- The full rectangles (**5**) drawn on the hoses are fitted on the oil cooler end.
- The empty rectangles (**6**) drawn on the hoses are fitted on the additional oil cooler end.

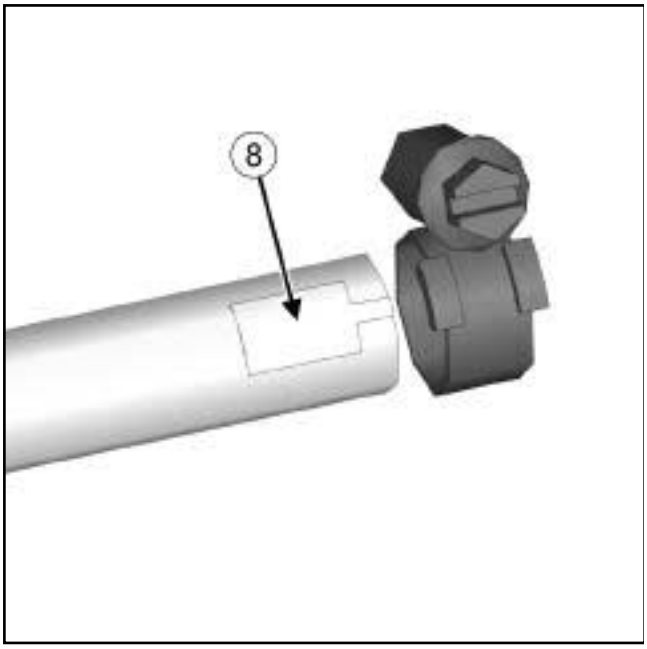
❏ Fit new clips on both hoses, taking into account the final fitting direction of the clips ***(4)*** .

❏ Remove the blanking plugs from the gearbox oil cooler.

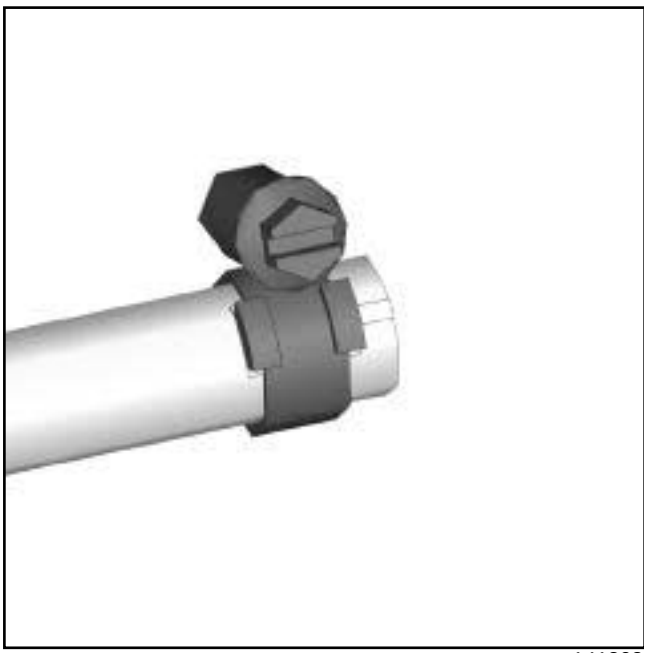


141307

❏ Fit the hoses up to the marks (**7**) on the two oil cooler pipes on the automatic gearbox end and align them (**7**) .

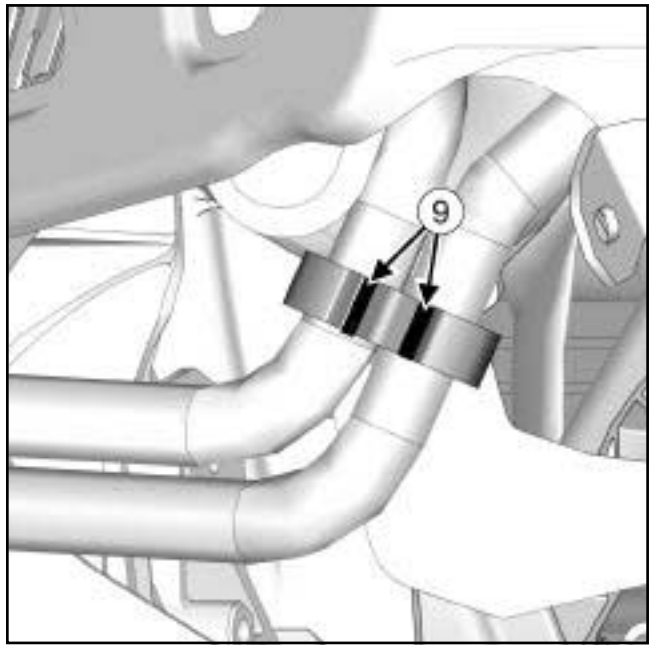


141302



141303

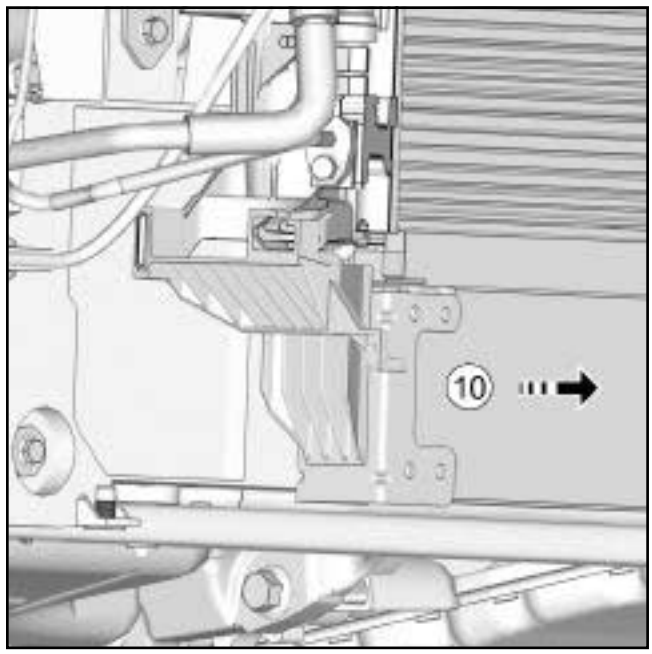
❑ Position the clips in relation to the mark (**8**) on the cooler oil hoses on the automatic gearbox end.



141298

❑ Clip the two hoses in the double retaining clip in line with the marks (**9**) on the hoses.

III - REFITTING OPERATION FOR THE ADDITIONAL COOLER



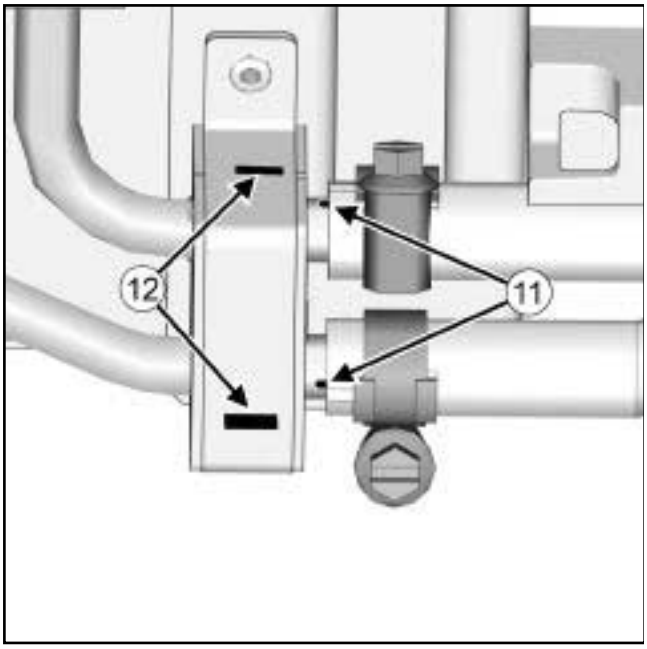
141304

❑ Refit (**10**) the gearbox additional oil cooler.

❑ Fit new clips on both hoses, taking into account the final fitting direction of the clips.

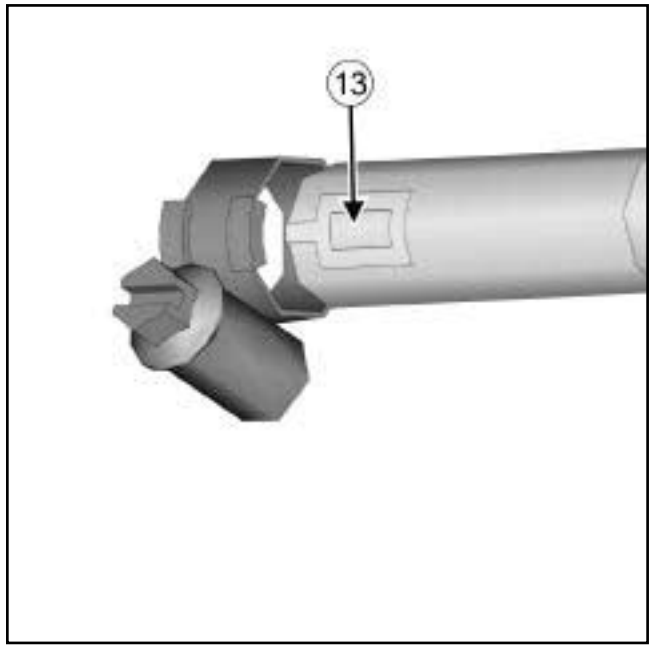
❑ Remove the blanking plugs from the gearbox additional oil cooler.

FK0

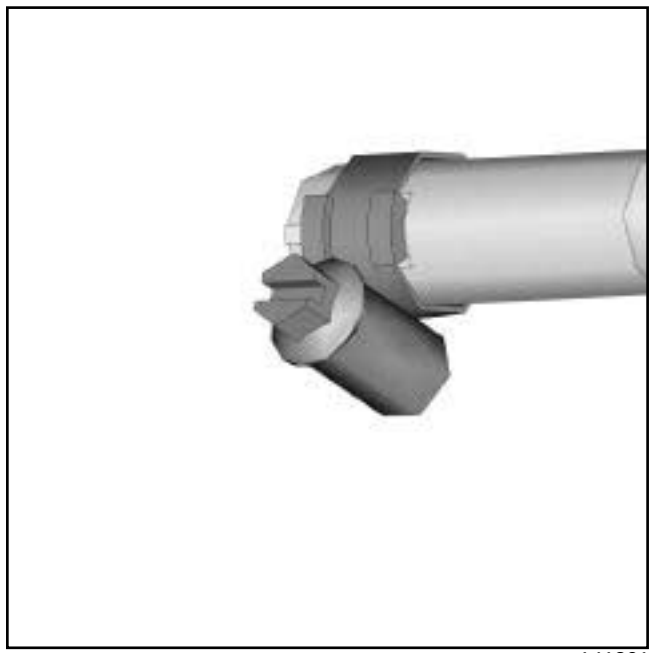


141306

❑ Fit the hoses up to the marks (**11**) on the two automatic gearbox additional oil cooler pipes and align them (**12**) .



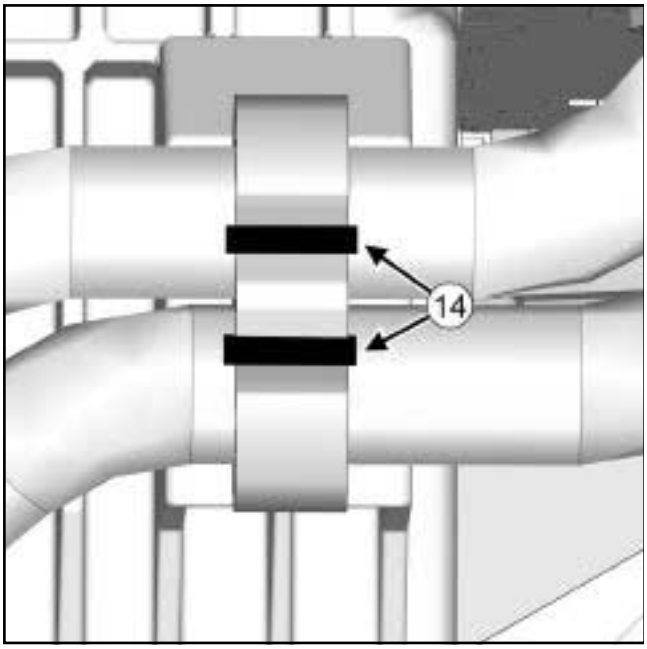
141300



141301

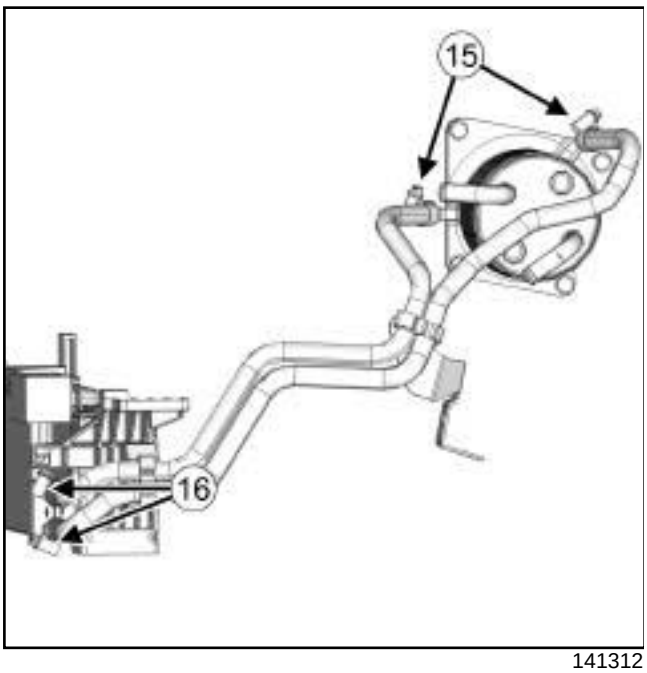
❑ Position the clips in relation to the mark (**13**) on the automatic gearbox additional oil cooler hoses.

FK0



141299

❑ Clip the two hoses on the additional cooler end in the double retaining clip in line with the marks (**14**) on the hoses.



141312

❑ Check the cleanliness of the hoses after fitting the hose and automatic gearbox additional oil cooler assembly.

❑ Torque tighten the **oil hose clips (2 N.m)** on the gearbox oil cooler (**15**) and on the gearbox additional oil cooler (**16**) .

IV - FINAL OPERATION

❑ Refit:

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

❑ Top up the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

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

FK0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

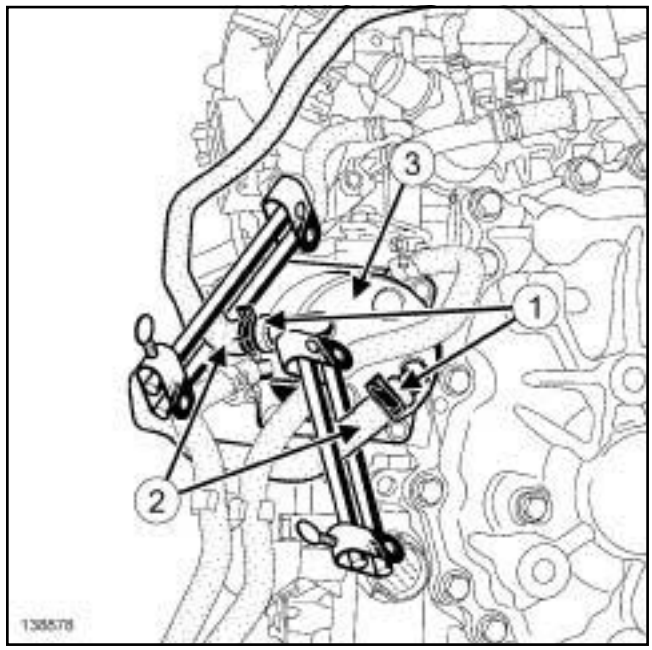
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

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

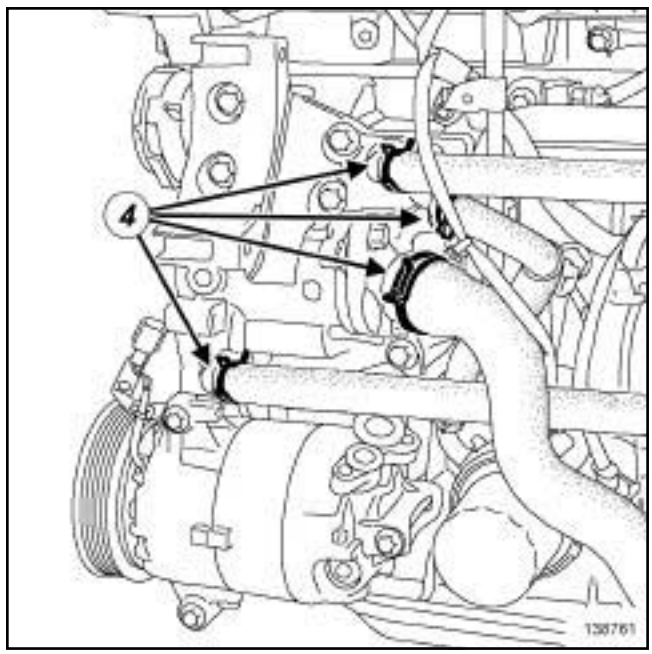
II - OPERATION FOR REMOVAL OF PART CONCERNED



138878

❏ Using the **(Mot. 1448)**, separate the clips (**1**) on the gearbox oil coolant pipes (**2**) from the gearbox oil cooler (**3**) .

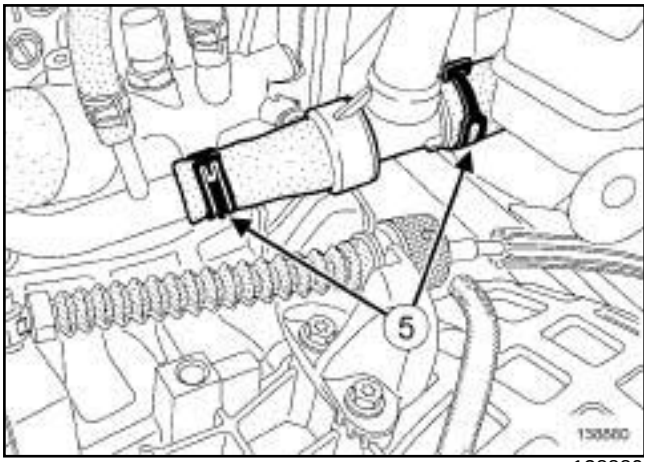
❏ Remove the gearbox oil coolant pipes from the gearbox oil cooler.



138761

❏ Using the **(Mot. 1448)**, separate the clips (**4**) on the gearbox oil coolant pipes from the multifunction support.

❏ Remove the gearbox oil coolant pipes from the multifunction support.



138880

❏ Using the **(Mot. 1448)**, separate the clips (**5**) on the gearbox oil coolant pipes of the coolant outlet unit.

❏ Remove the gearbox oil coolant pipes from the coolant outlet unit.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Connect the gearbox oil coolant pipes to the coolant outlet unit.

❏ Using the **(Mot. 1448)**, fit the clips on the gearbox oil coolant pipes of the coolant outlet unit.

❏ Refit the gearbox oil coolant pipes on the multifunction support.

❏ Using the **(Mot. 1448)**, fit the clips on the gearbox oil coolant pipes of the multifunction support.

❏ Connect the gearbox oil coolant pipes to the gearbox oil cooler.

❏ Using the **(Mot. 1448)**, refit the clips on the gearbox oil coolant pipes of the gearbox oil cooler.

II - FINAL OPERATION

❏ 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.

M9R, and AJ0

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
lower engine tie-bar bolt on its mounting	**180 N.m**

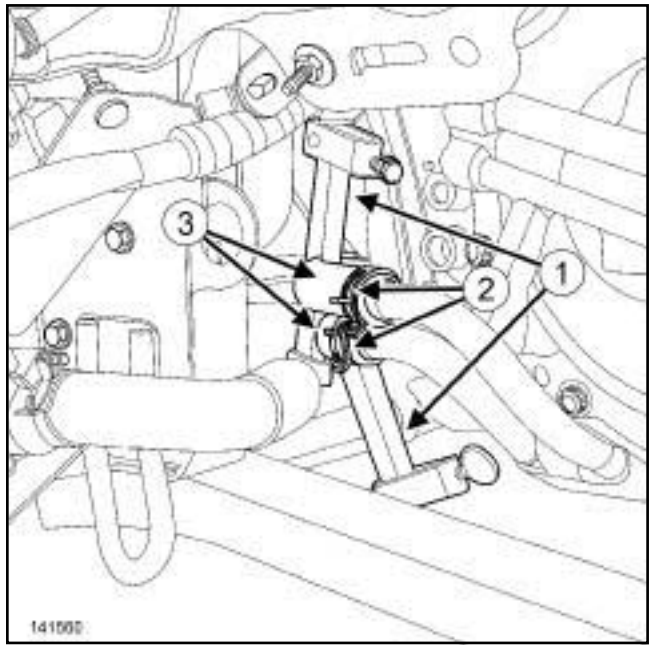
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

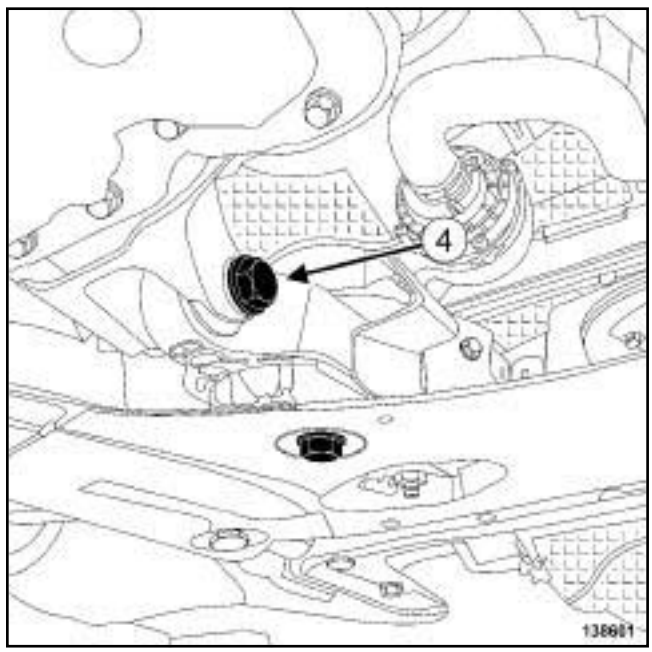


141560

❏ Fit the tools **(Ms. 583)** (**1**) on the gearbox oil coolant pipe hoses at the radiator end.

❏ Remove the gearbox oil coolant pipe hose clips at the radiator end (**2**) using the **(Mot. 1448)**.

❏ Disconnect the hoses (**3**) from the gearbox oil coolant pipes at the radiator end.

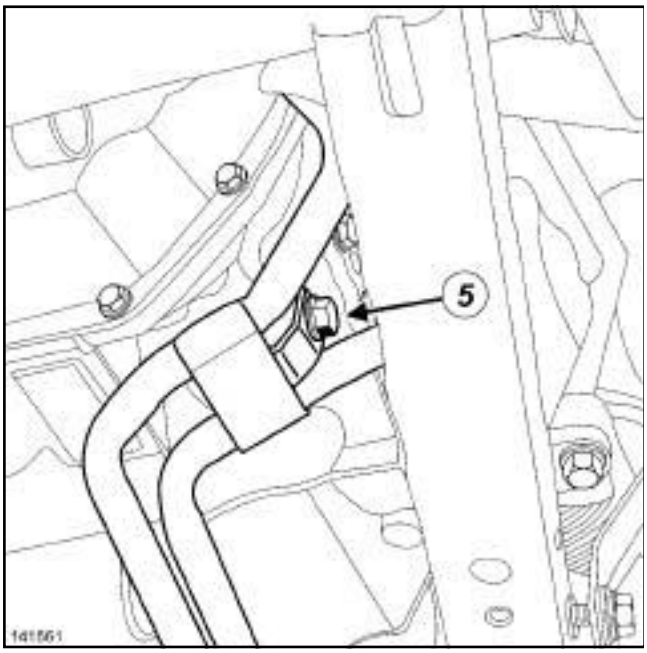


138601

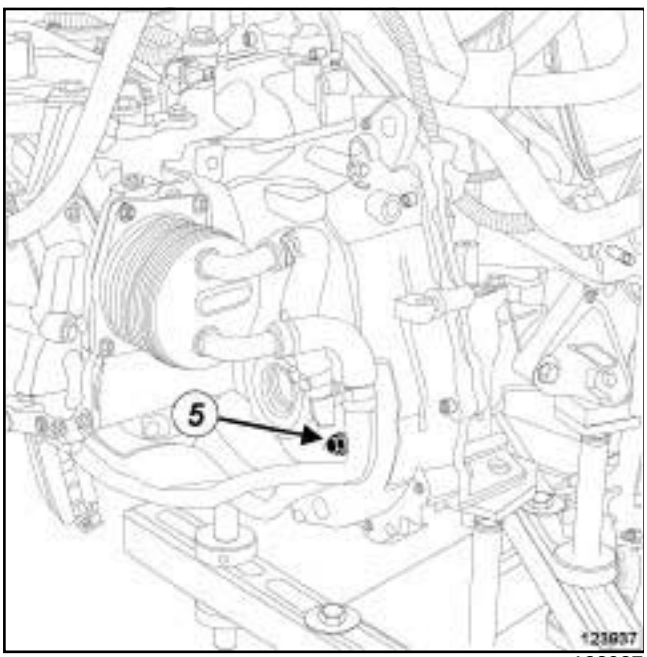
❏ Remove the bolt (**4**) mounting the lower engine tie bar on its support.

M9R, and AJ0

II - OPERATION FOR REMOVAL OF PART CONCERNED

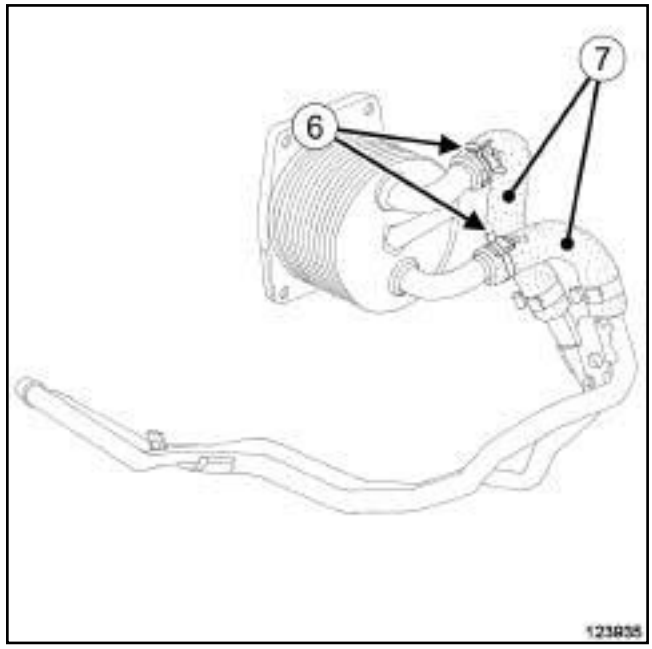


141561



123937

❑ Remove the bolts (**5**) from the gearbox oil coolant pipes.



123935

❑ Remove the gearbox oil coolant pipe hose clips at the cooler end (**6**) using the **(Mot. 1448)**.

❑ Disconnect the gearbox oil coolant pipes at the cooler end (**7**) from the gearbox oil cooler hoses.

> Note:
>
> When removing the gearbox coolant pipes, do not bend or damage the pipes.

❑ Remove the gearbox oil coolant pipes by tilting the engine backwards.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the gearbox oil coolant pipes by tilting the engine backwards.

❑ Connect the gearbox oil coolant pipe hoses at the cooler end on the gearbox oil cooler.

❑ Refit the gearbox oil coolant pipe hose clips at the cooler end using the **(Mot. 1448)**.

❑ Refit the bolts on the gearbox oil coolant pipes.

II - FINAL OPERATION

❑ Refit the bolt mounting the lower engine tie bar on its support.

❑ Torque tighten the **lower engine tie-bar bolt on its mounting (180 N.m)**.

M9R, and AJ0

- ❏ Connect the gearbox oil coolant pipe hoses at the radiator end.
- ❏ Refit the gearbox oil coolant pipe hose clips at the radiator end using the **(Mot. 1448)**.
- ❏ Remove the tools **(Ms. 583)** from the gearbox oil coolant pipe hoses.
- ❏ Bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling).
- ❏ Refit:
  - the front section of the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
  - the engine undertray,
  - the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

FK0

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-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.

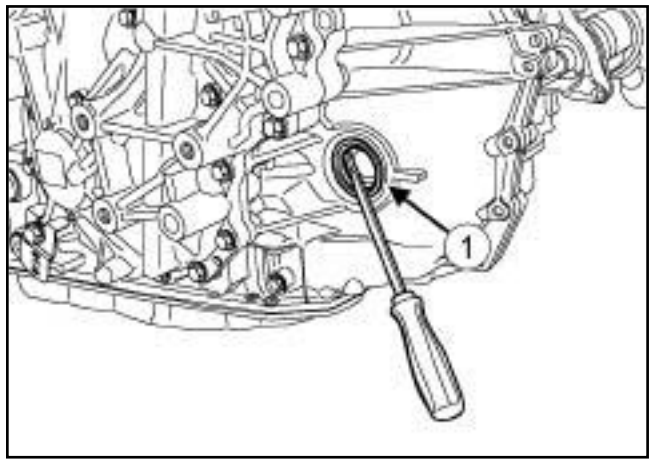
❏ Remove the engine undertray.

❏ Drain the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ 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-18**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

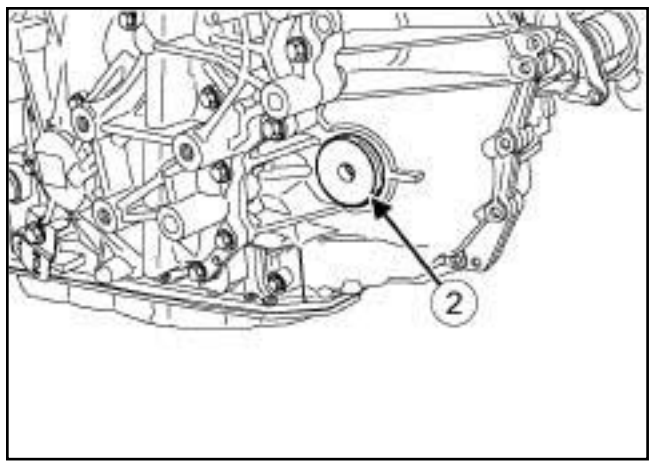


129986

❏ 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-18**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

FK0

- ❑ Top up the automatic transmission oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .
- ❑ Refit the engine undertray.

AJ0

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

❏ Drain the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .

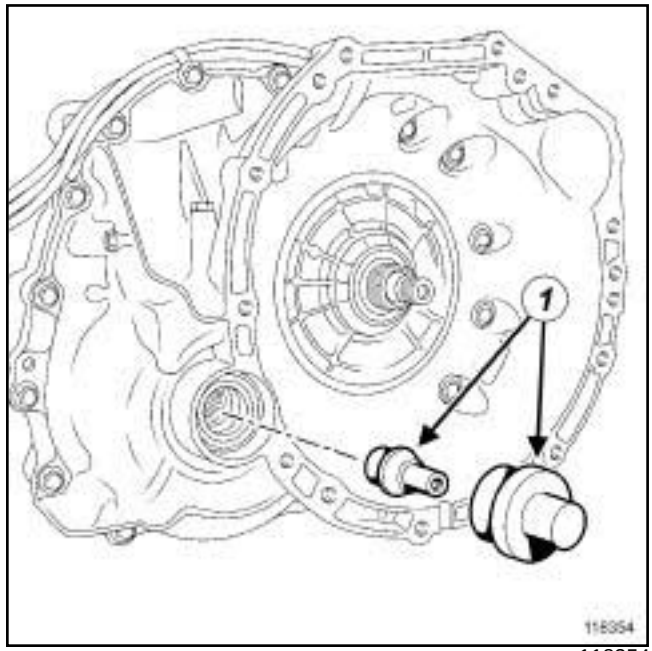
II - OPERATION FOR REMOVAL OF PART CONCERNED

❏ Remove:

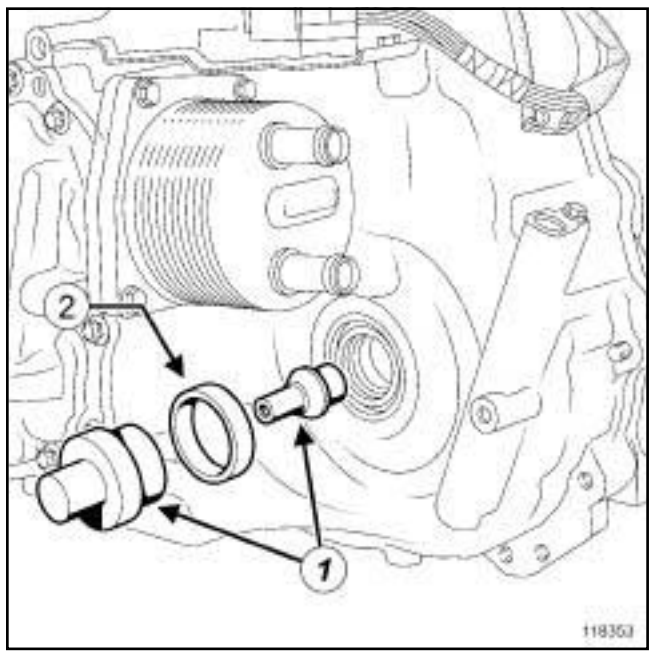
- the right-hand differential output seal using a screwdriver, without scratching the contact surfaces,
- the left-hand differential output seal using a screwdriver, without scratching the contact surfaces.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



118354



118353

❏ Refit:

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

AJ0

II - FINAL OPERATION

❑ Refit:

- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) .
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

❑ Top up the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

FK0

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-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

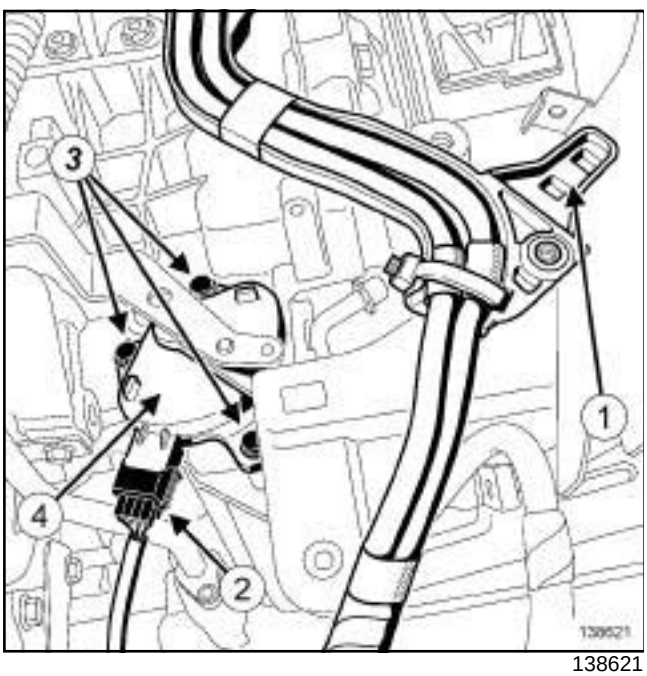
❏ Shift the gear lever to **Neutral**.

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

❏ 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



138621

❏ Move aside the wiring support (**1**) .

❏ Disconnect the multifunction switch connector ***(2)*** .

❏ Remove the multifunction switch bolts ***(3)*** .

❏ Lift up the multifunction switch ***(4)*** .

❏ Move the multifunction switch aside.

❏ Detach the multifunction switch lever from the gearbox control linkage.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the multifunction switch lever into the automatic gearbox control linkage.

❏ Position the multifunction switch.

❏ Refit:

- the multifunction switch,
- the multifunction switch bolts.

❏ Adjust the multifunction switch (see **23A**, **Automatic gearbox**, **Multifunction switch: Adjusting**, page **23A-71**) .

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

❏ Connect the multifunction switch connector.

❏ Fit the wiring support.

II - FINAL OPERATION

❏ Refit:

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

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

AJ0

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

Tightening torques ▽	
multifunction switch bolts	**6 N.m**

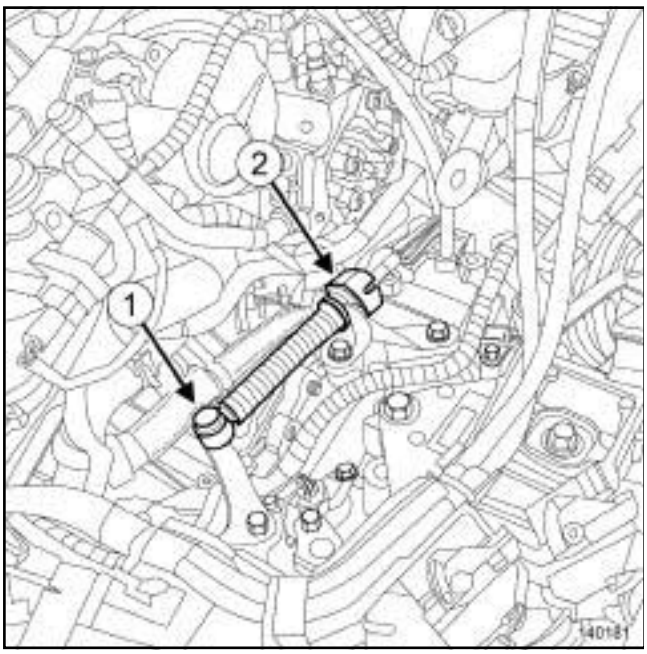
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Shift the gear selector to the **N** position.

❏ Remove:

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

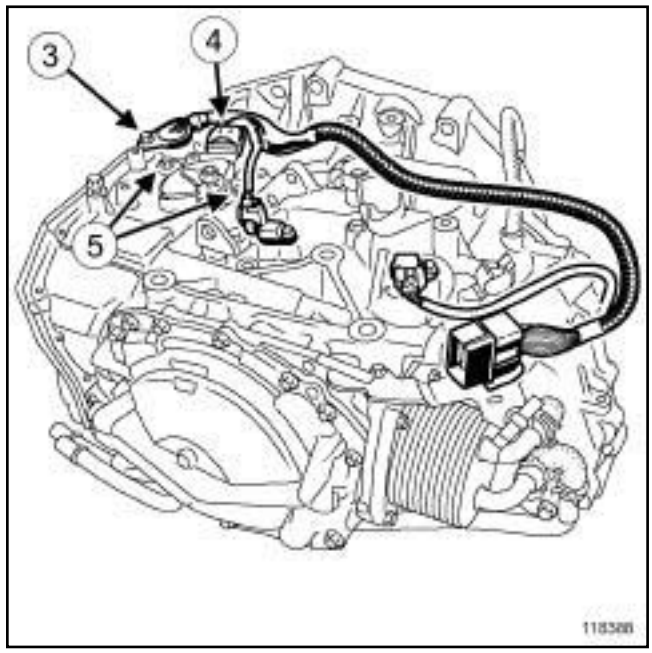


140181

❏ Unclip the ball joint (**1**) of the cable on the multifunction switch using an open-jawed spanner.

❏ Unlock and detach the cable sleeve stop (**2**) from its mounting.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118388

❏ Remove:

- the hydraulic distributor wiring routing retaining bolt
- the hydraulic distributor wiring retaining bracket bolt from the gearbox at the multifunction switch connector,
- the hydraulic distributor wiring retaining bracket from the gearbox at the multifunction switch connector.

❏ Move aside the hydraulic distributor wiring.

❏ Disconnect the multifunction switch connector (**4**) .

❏ Remove:

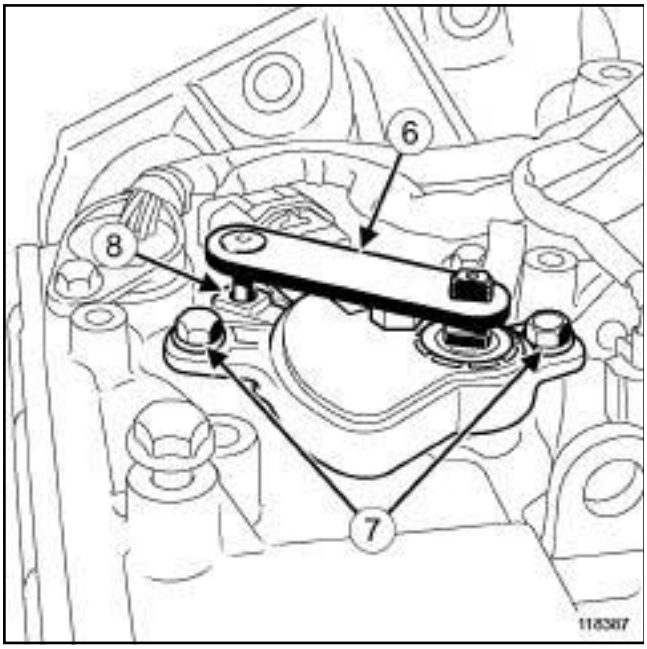
- the multifunction switch bolts (**5**) ,
- the multifunction switch.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Check that the multifunction switch is in the **N** position.

❏ Refit the multifunction switch.



118387

❏ Position the **(Bvi. 1805)** (**6**) .

❏ Align the tool shaft with the hole provided on the multifunction switch (**7**) .

❏ Torque tighten the **multifunction switch bolts (6 N.m)** (**8**) .

❏ Remove the **(Bvi. 1805)**.

❏ Connect the multifunction switch connector.

❏ Refit:

- the hydraulic distributor wiring retaining bracket on the gearbox at the multifunction switch connector,
- the hydraulic distributor wiring routing retaining bolt.

II - FINAL OPERATION

❏ Refit and lock the cable sleeve stop in its mounting.

❏ Clip the cable ball joint onto the multifunction switch.

❏ Refit:

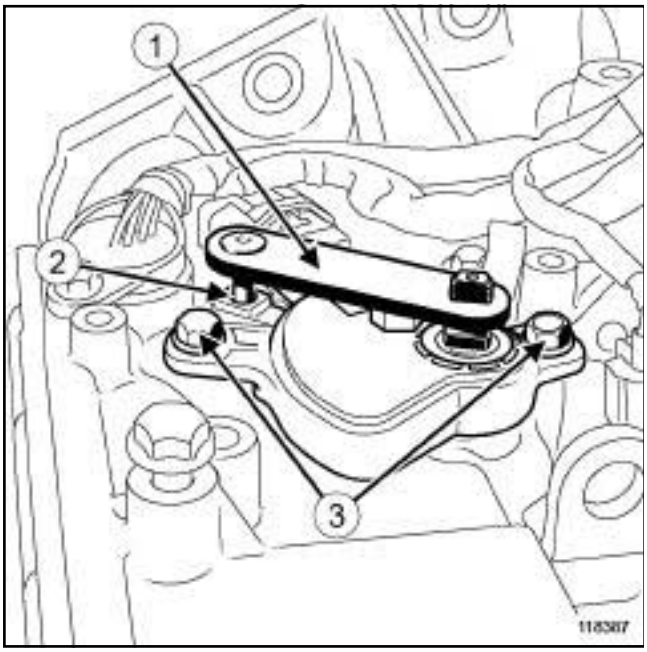
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

AJ0

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

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

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



118387

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

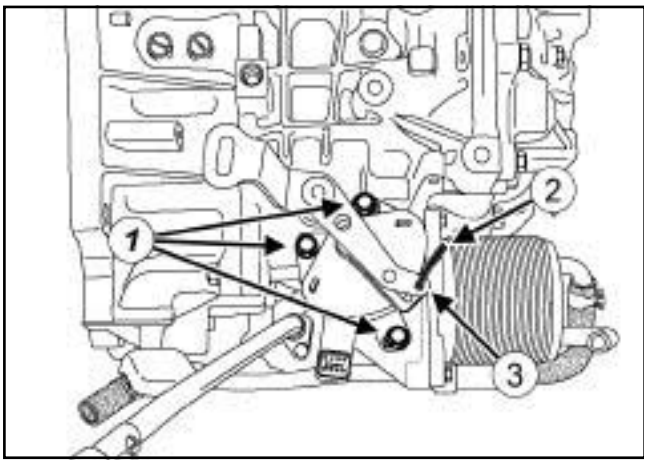
FK0

Tightening torques ▽	
multifunction switch bolts	**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-1**) .

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-68**) 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 N.m)**.
- ❏ Remove the Allen key ***(2)*** .

FK0

Tightening torques ▽	
input speed sensor bolt	**6 N.m**
output speed sensor bolt	**6 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 **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

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

1 - Input speed sensor

❑ Remove:

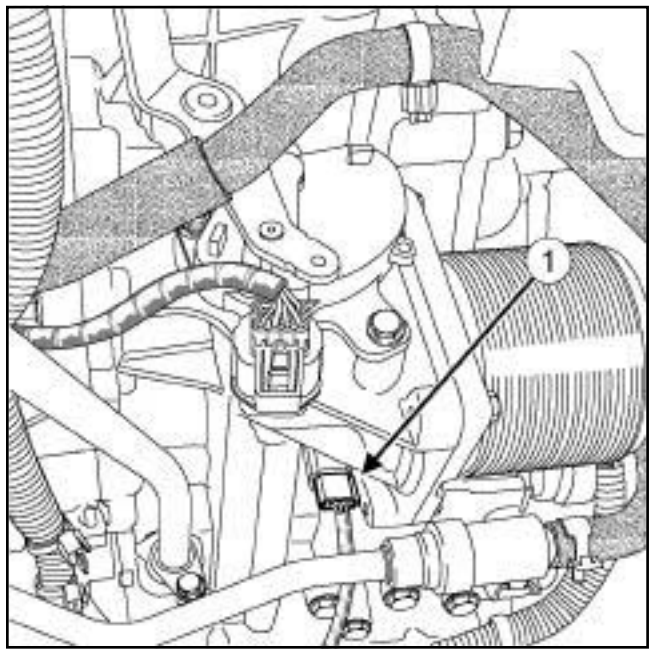
- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery).

2 - Output speed sensor

❑ Remove the engine undertray.

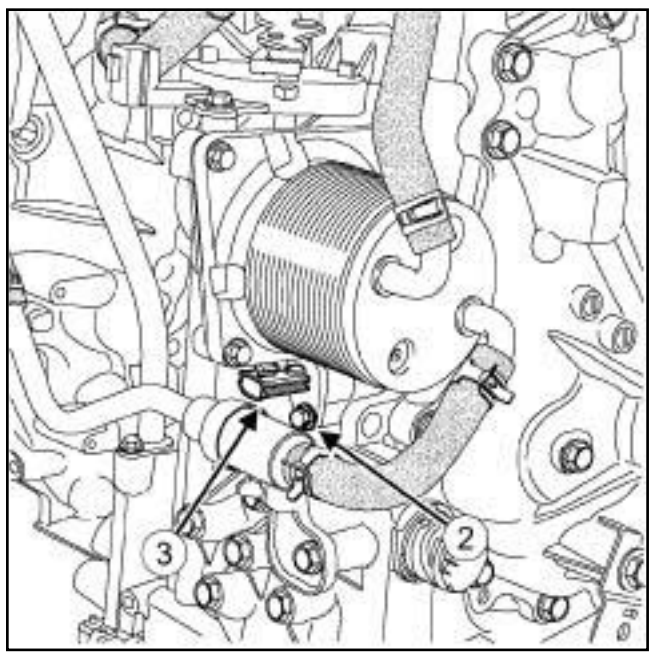
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Input speed sensor



129993

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



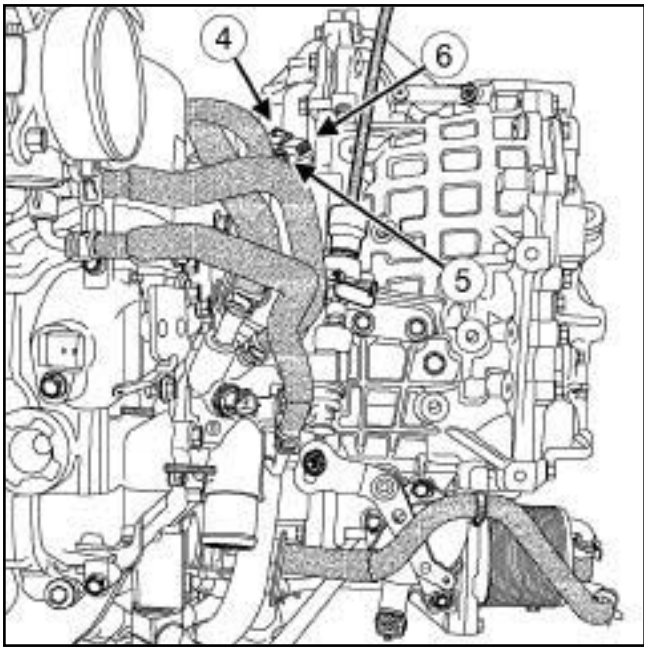
129994

❑ Remove:

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

FK0

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 sensor O-rings.

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

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

2 - Output speed sensor

❏ Refit the engine undertray.

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

AJ0

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

REMOVAL

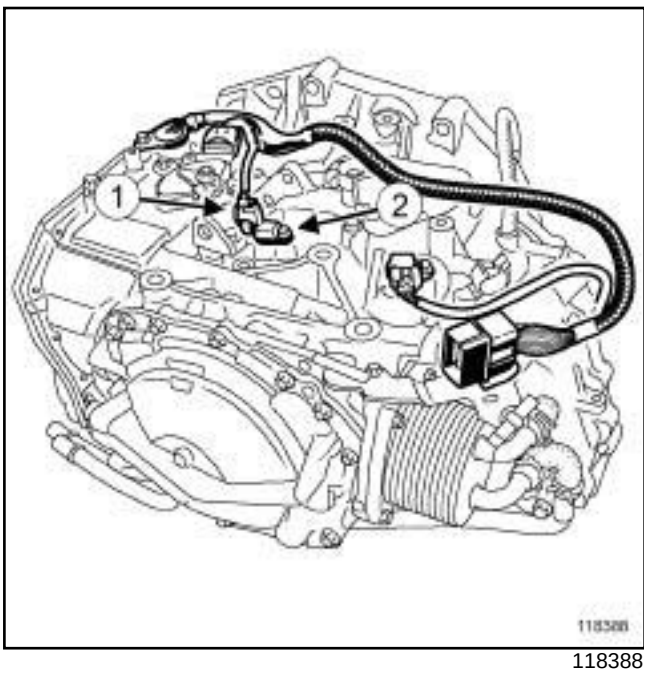
I - REMOVAL PREPARATION OPERATION

❑ Remove:

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

II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Input speed sensor



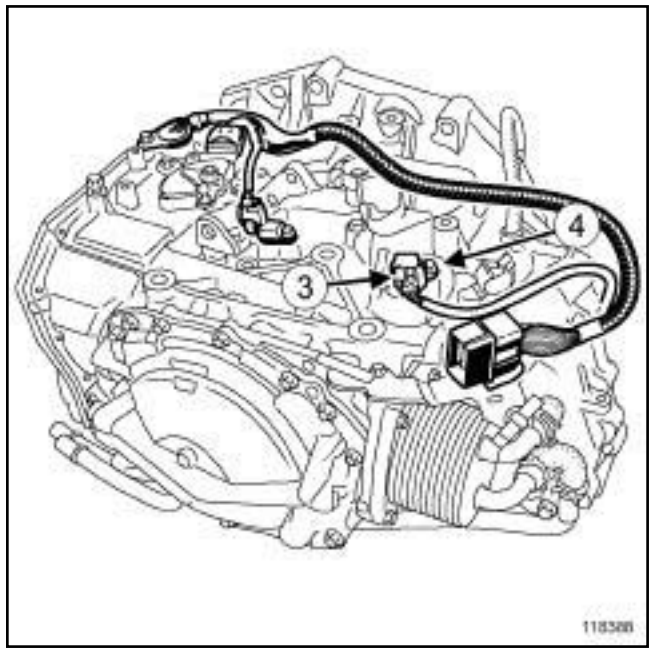
118388

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

❑ Remove:

- the input speed sensor bolt (**2**) ,
- the input speed sensor.

2 - Output speed sensor



118388

❑ Disconnect the output speed sensor connector (**3**) .

❑ Remove:

- the output speed sensor bolt (**4**) ,
- the output speed sensor.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace the speed sensor O-ring.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Input speed sensor

❑ Refit:

- 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 output speed sensor,
- the output speed sensor bolt.

AJ0

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

❏ Connect the output speed sensor connector.

III - FINAL OPERATION

❏ Refit:

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

M9R, and AJ0

Essential special tooling	
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
oil pressure switch	**4 N.m**
hydraulic distributor panel bolts	**8 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

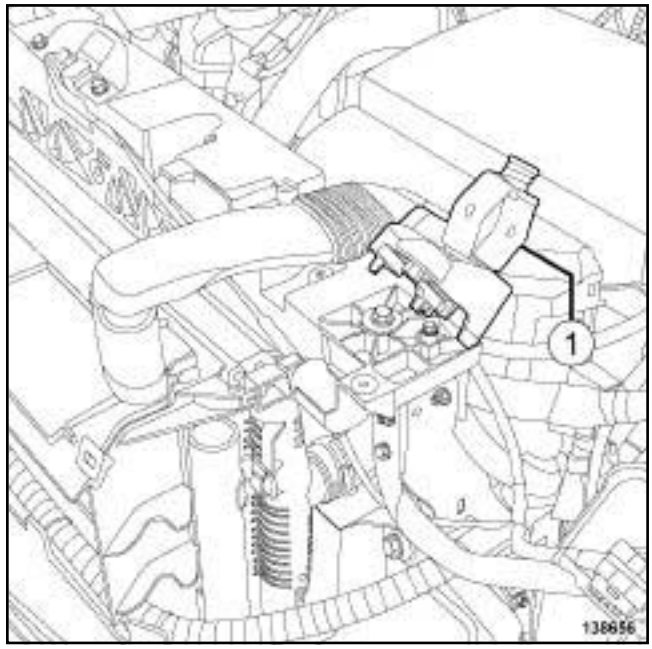
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging).

❏ 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-17**) .

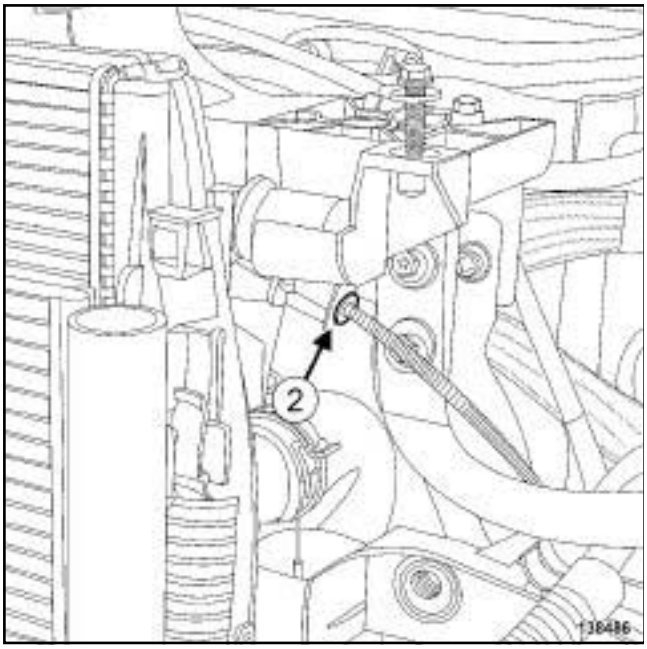


138656

❏ Remove:

- the bonnet supports (**1**) ,
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

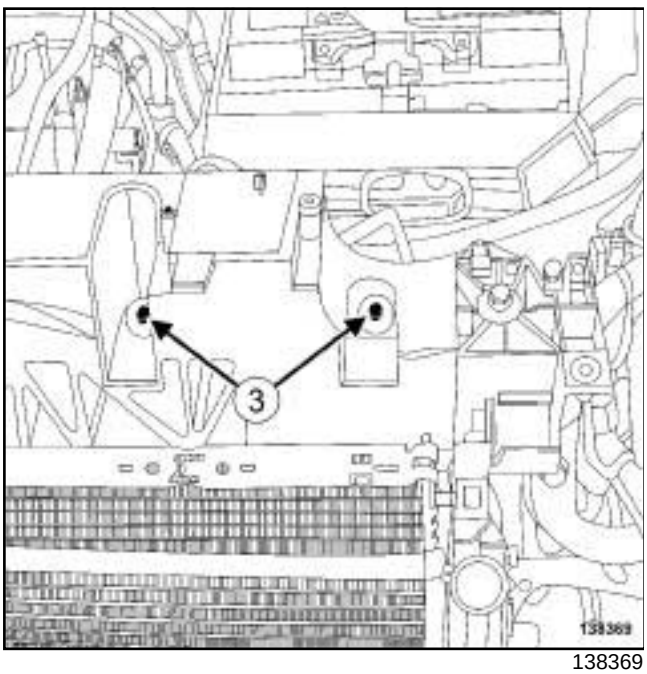
M9R, and AJ0



138486

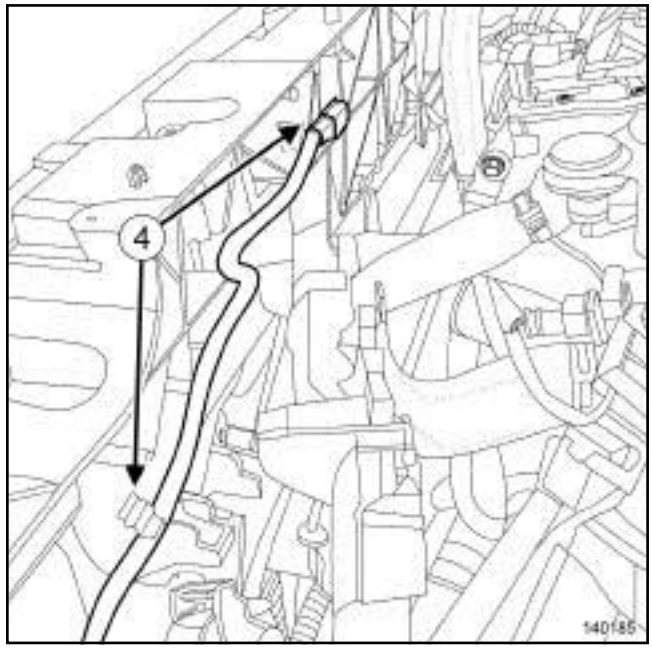
❏ Unclip the bonnet catch cable (**2**) on the front end panel.

❏ Move aside the bonnet catch wiring.



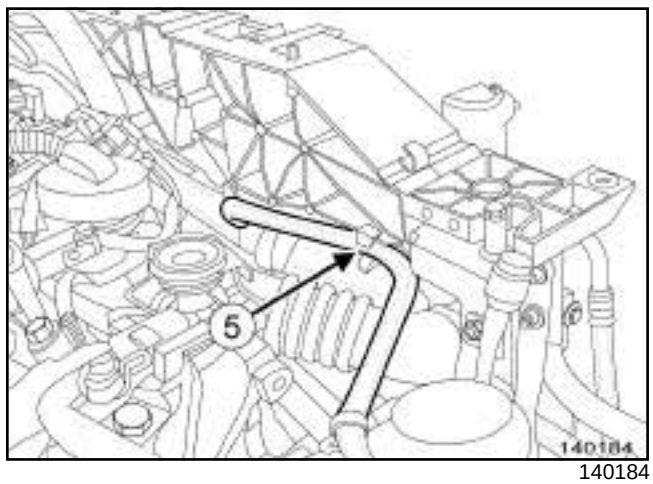
138369

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



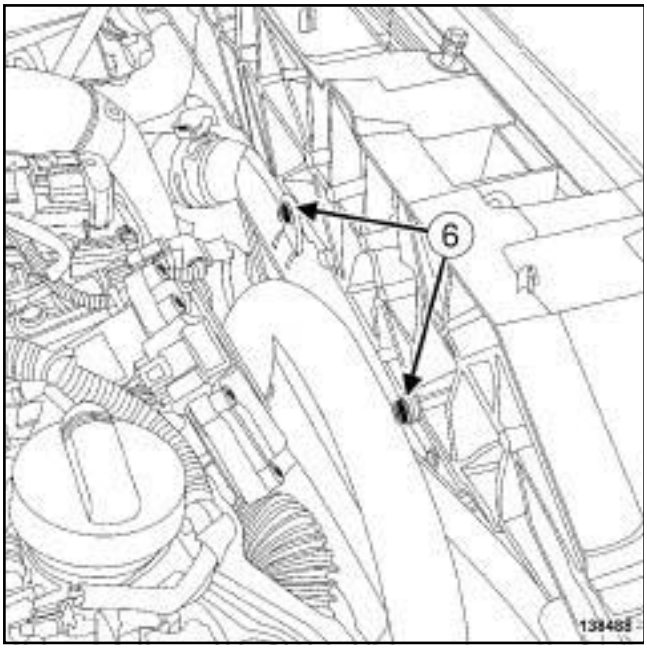
140185

❏ Unclip the connector (**4**) from the front end panel.



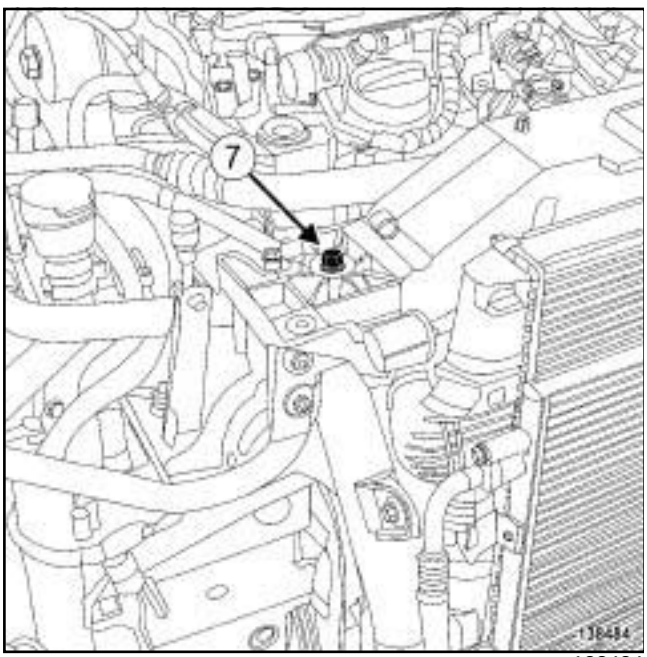
140184

❏ Unclip the degassing hose (**5**) from the front end panel.



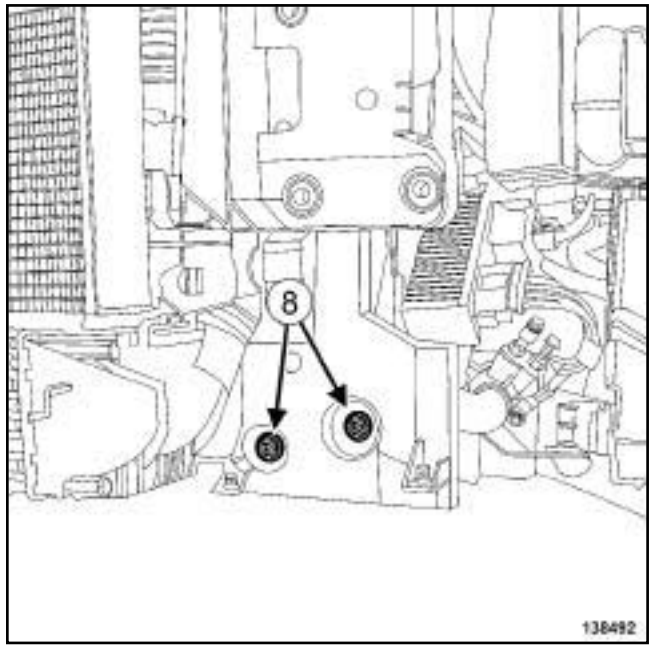
138488

❏ Remove the rigid cooling hose bolts (**6**) from the front end panel.



138484

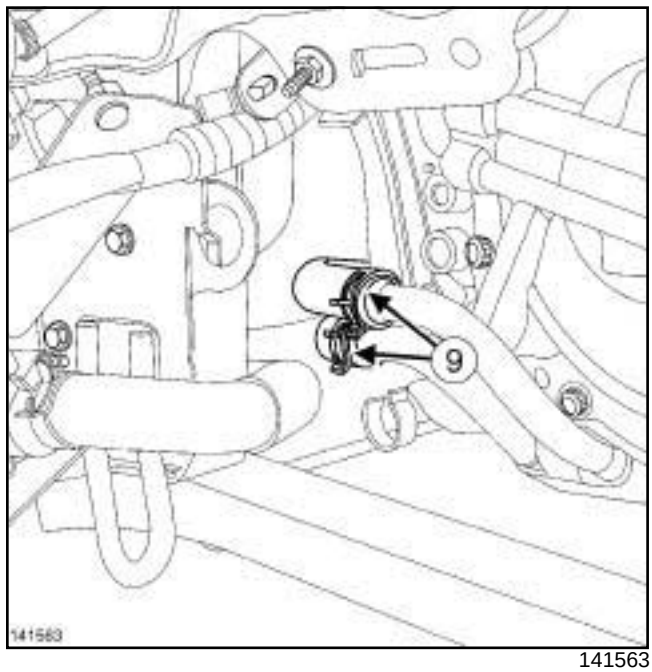
❏ Remove the upper bolts (**7**) from the front end panel.



138492

❏ Remove the lower bolts (**8**) from the front end panel.

❏ Move aside the front end panel.

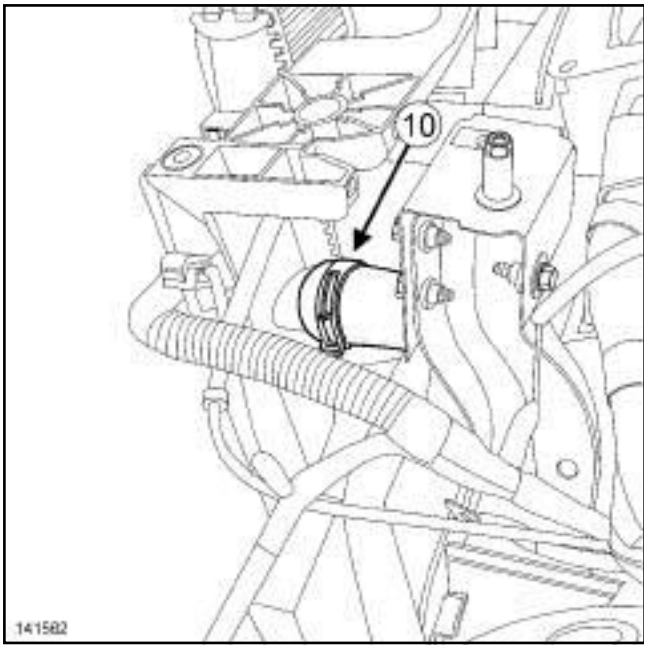


141563

❏ Remove the gearbox oil coolant pipe hose clips (**9**) using the **(Mot. 1448)**.

❏ Disconnect the hoses from the gearbox oil coolant pipes.

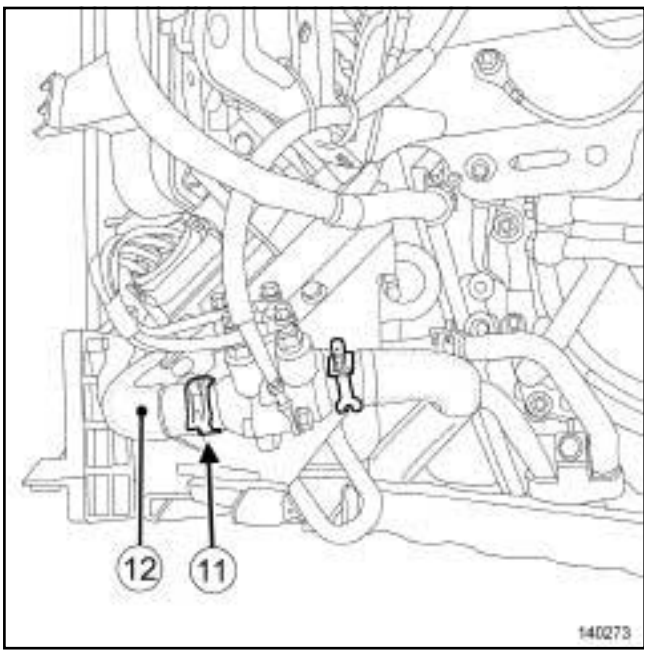
M9R, and AJ0



141562

❏ Remove the cooling radiator bottom hose clip (**10**) using the tool **(Mot. 1448)**.

❏ Disconnect the bottom hose from the cooling radiator.



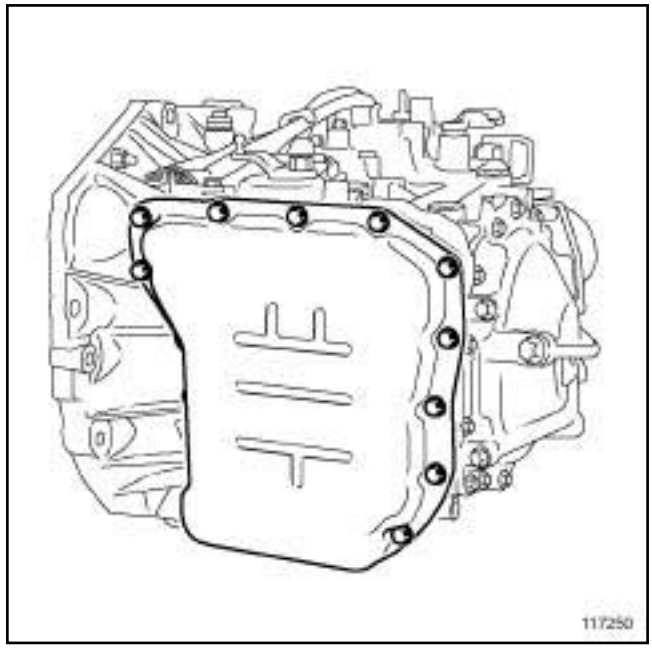
140273

❏ Remove the clip (**11**) from the thermoplunger unit hose using the **(Mot. 1448)**.

❏ Disconnect the hose (**12**) from the thermoplunger unit.

❏ Unclip all of the cooling hoses.

❏ Move aside all of the cooling hoses to facilitate access to the hydraulic distributor panel.



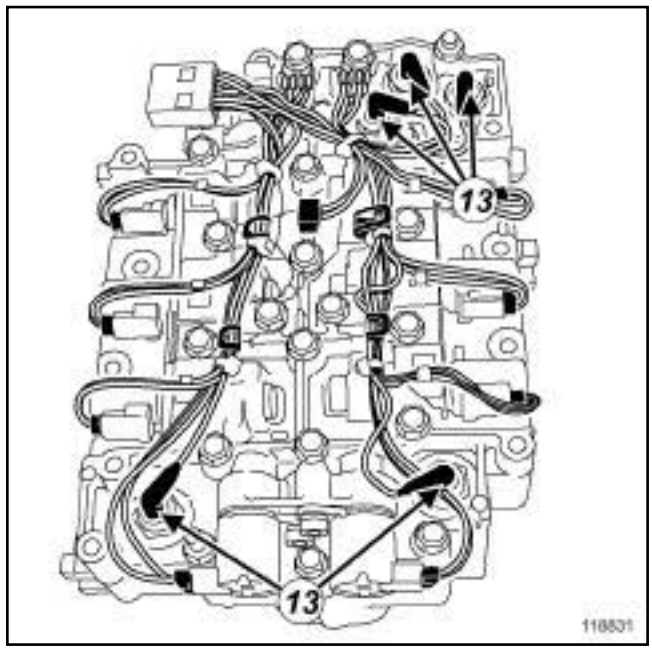
117250

❏ Place a container under the automatic gearbox to collect the oil.

❏ Remove:

- the bolts from the hydraulic distributor panel,
- the hydraulic distributor panel,
- the seal on the hydraulic distributor panel.

II - OPERATION FOR REMOVAL OF PART CONCERNED



118831

❏ Disconnect the oil pressure switch connector (**13**) .

M9R, and AJ0

❏ Remove the oil pressure switch concerned.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Use **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to clean the hydraulic distributor panel joint faces:

- on the automatic gearbox,
- on the hydraulic distributor panel.

❏ Always replace the hydraulic distributor panel housing seal.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the oil pressure switch concerned.

❏ Torque tighten the **oil pressure switch (4 N.m)**.

❏ Connect the oil pressure switch connector.

III - FINAL OPERATION

❏ Refit:

- a new hydraulic distributor panel seal,
- the hydraulic distributor panel.

❏ Torque tighten the **hydraulic distributor panel bolts (8 N.m)**.

❏ Clip on all of the cooling hoses.

❏ Connect the hose to the thermoplunger unit.

❏ Refit the hose clip on the thermoplunger unit using the **(Mot. 1448)**.

❏ Connect the cooling radiator bottom hose.

❏ Refit the cooling radiator bottom hose clip using the **(Mot. 1448)**.

❏ Connect the gearbox oil coolant pipe hoses.

❏ Refit the gearbox oil coolant pipe hose clips using the **(Mot. 1448)**.

❏ Fit the front end panel.

❏ Refit:

- the lower bolts from the front end panel,
- the front end panel upper bolts,
- the rigid cooling hose bolts on the front end panel.

❏ Clip:

- the degassing hose on the front end panel,
- the connector on the front end panel.

❏ Refit the bolts of the engine wiring channel.

❏ Fit the bonnet catch cable.

❏ Clip the bonnet catch cable on the front end panel.

❏ Refit:

- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) ,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the bonnet supports,
- the intercooler air inlet pipe (see **Intercooler air inlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray,
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery).

❏ Perform the following operations:

- fill up and bleed the cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- fill up the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❏ Refit the engine cover.

AJ0

❑ The removal-refitting method for the automatic gearbox converter is included in the method for removing the converter seal (see **23A**, **Automatic gearbox**, **Converter seal: Removal - Refitting**, page **23A-88**) .

FK0

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 **23A**, **Automatic gearbox**, **Automatic gearbox: Precautions for repair**, page **23A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

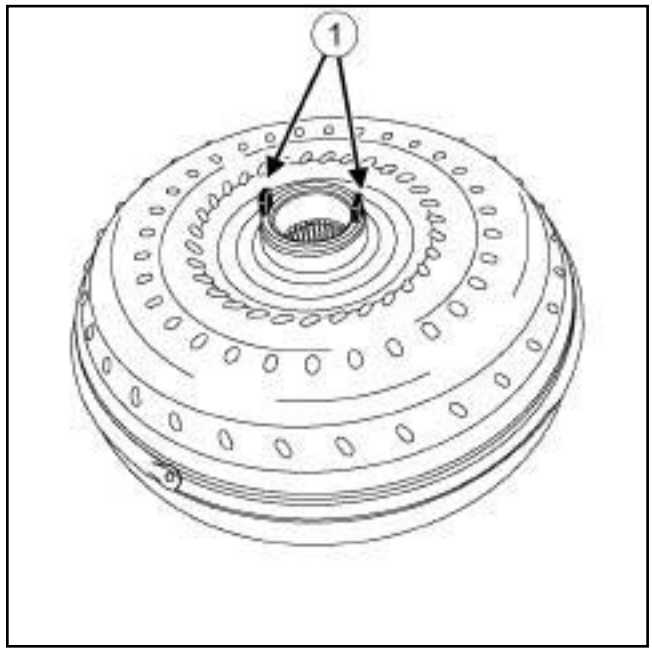
- the engine - gearbox assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the gearbox converter.

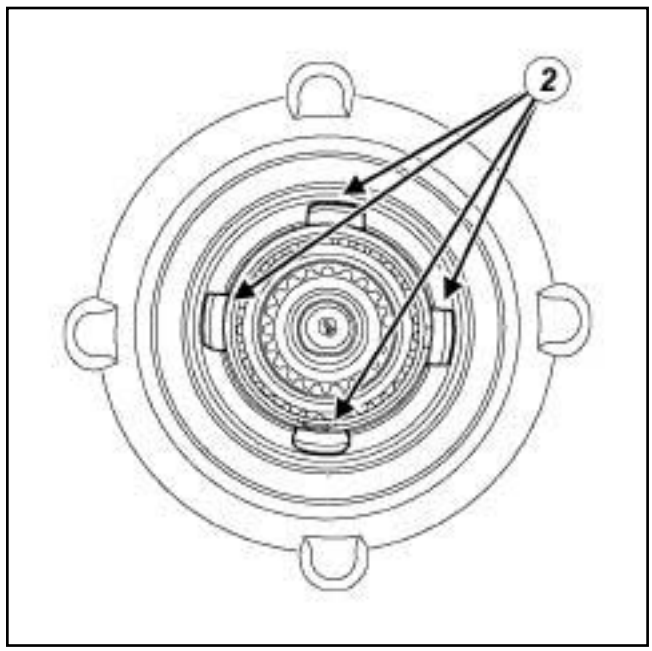
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED



130029

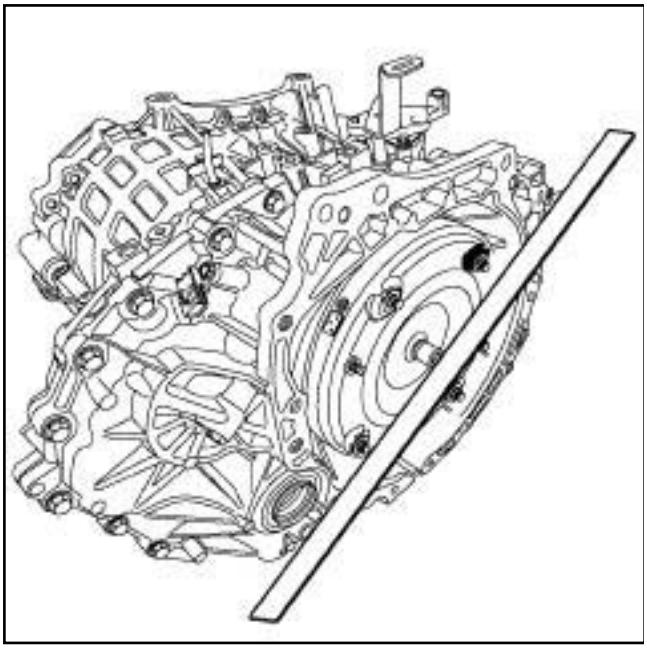
❑ Refit the automatic gearbox converter.



130030

❑ Check that the converter lugs ***(1)*** are engaged in the drive sprocket holes (**2**) .

FK0



130023

❑ Check:

- that the converter correctly is inserted using a rule and a straightedge,
- that the distance between the mating face and the rule is at least **14.4 mm**.

II - FINAL OPERATION

❑ Refit:

- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the engine - gearbox assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals).

M9R, and AJ0

Essential equipment
refrigerant charging station

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

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

❏ Remove:

- the engine cover,
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

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

❏ Drain:

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

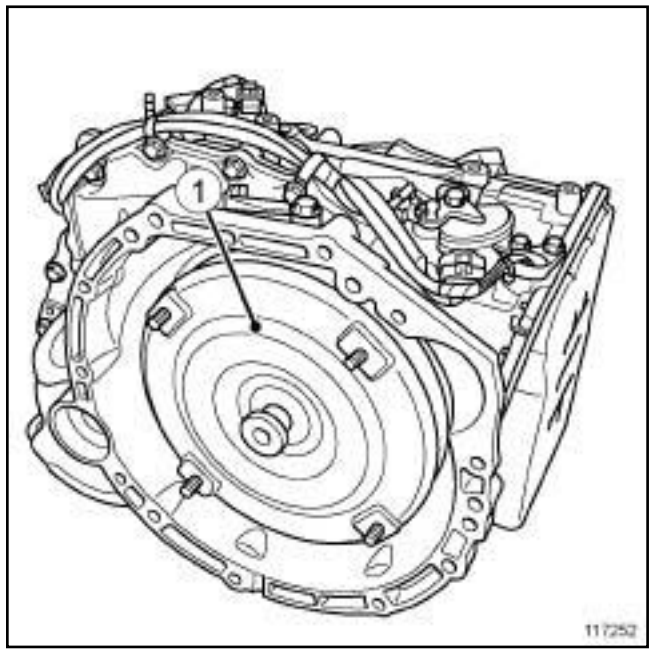
M9R, and AJ0

- the engine cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❑ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117252

❑ Remove the converter (**1**) .

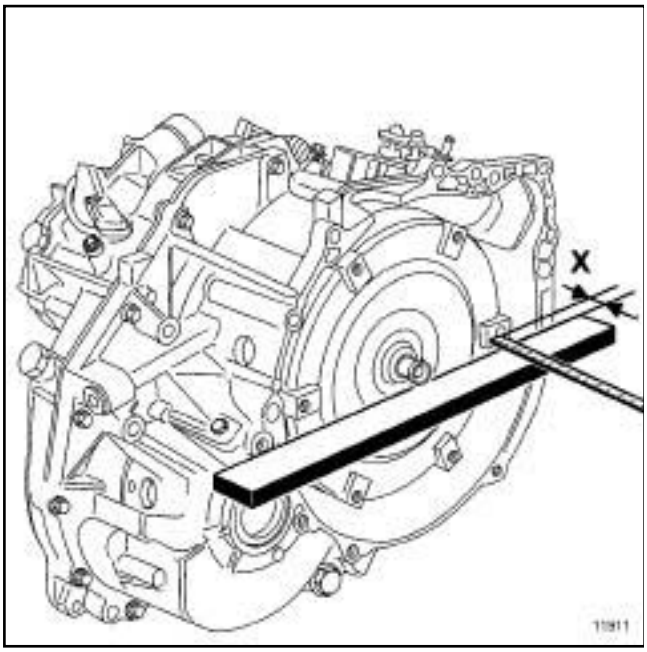
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the converter.

M9R, and AJ0

II - FINAL OPERATION



11911

❏ Check the distance **(X)** using a ruler. This distance must be **20.4 ± 0.5 mm**.

❏ Refit:

- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

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

❏ Refill:

- the refrigerant circuit (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning),
- the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) (23A, Automatic gearbox).

❏ Refit the engine cover.

FK0

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-1**) .

REMOVAL

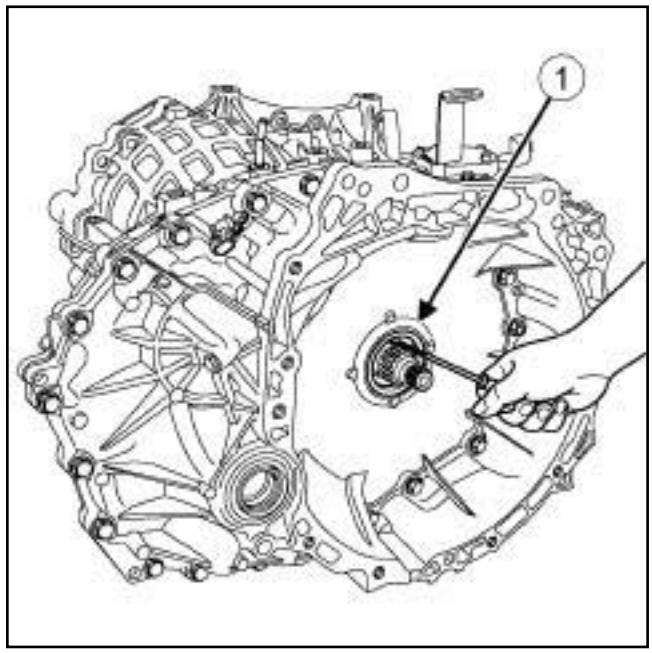
I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

- the engine - gearbox assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the automatic gearbox converter (see **23A**, **Automatic gearbox**, **Automatic gearbox converter: Removal - Refitting**, page **23A-82**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



130027

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

REFITTING

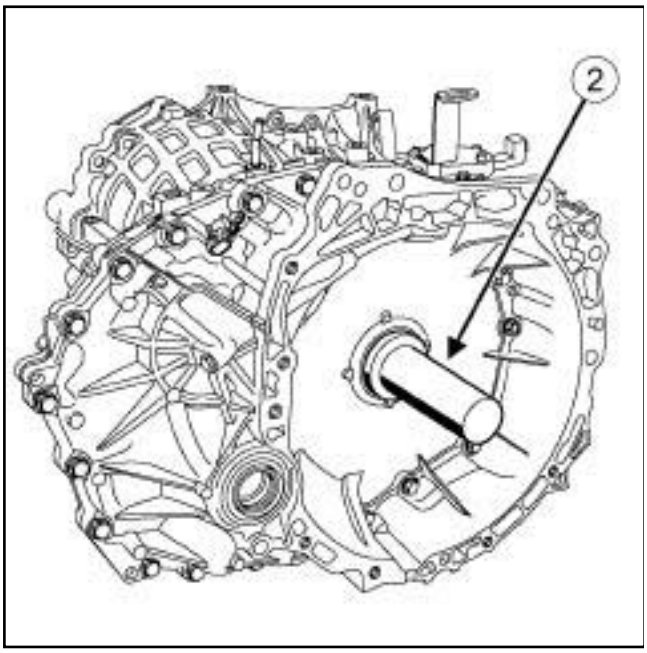
I - REFITTING PREPARATION OPERATION

❏ Always replace the converter seal with a new seal.

❏ Check and clean the mating face of the gearbox converter seal.

FK0

II - REFITTING OPERATION FOR PART CONCERNED



130028

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

III - FINAL OPERATION

❑ Refit:

- the automatic gearbox converter (see **23A**, **Automatic gearbox**, **Automatic gearbox converter: Removal - Refitting**, page **23A-82**) ,
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the engine - gearbox assembly (see **Engine/gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals).

AJ0

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

Essential equipment
refrigerant charging station

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

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

❑ Remove:

- the engine cover,
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the engine undertray bolts,
- the engine undertray,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the air deflectors,
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging).

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

❑ Drain:

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

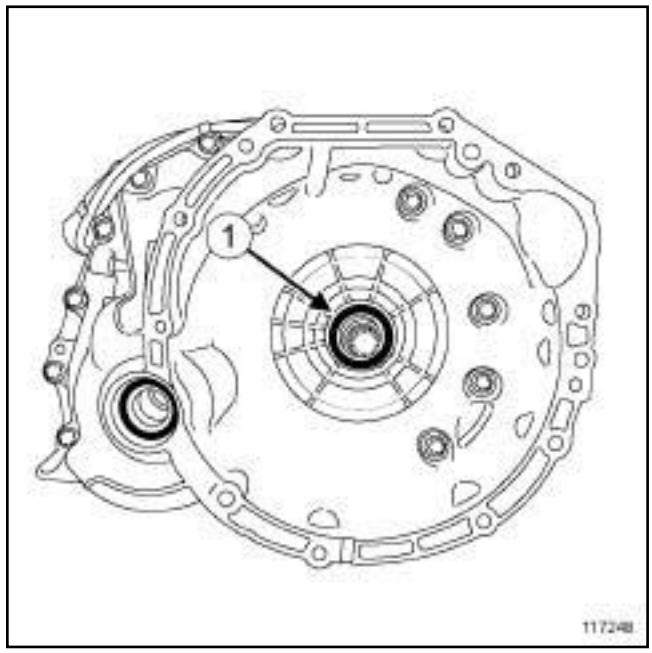
AJ0

- the engine cooling system (see **Cooling circuit: Draining - Refilling**) (19A, Cooling),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) .

❑ Remove:

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the automatic gearbox converter (see **23A**, **Automatic gearbox**, **Automatic gearbox converter: Removal - Refitting**, page **23A-82**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



117248

❑ Remove the converter seal (**1**) using a screwdriver, taking care not to damage the input shaft splines.

REFITTING

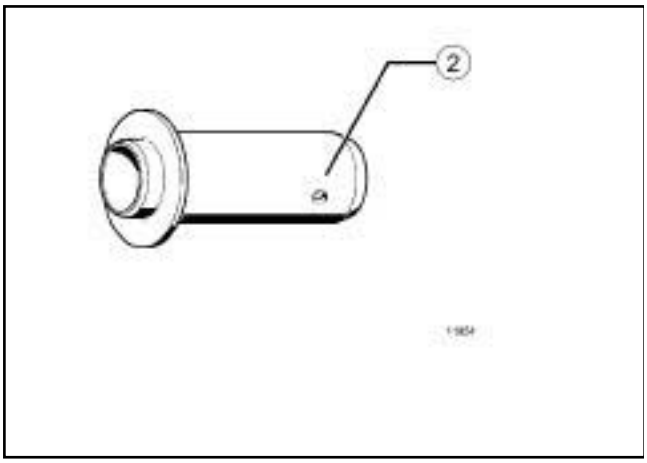
I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Converter seal (12, 07,02,21)**

❑ Check and clean the converter seal mating face on the gearbox using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

AJ0

II - REFITTING OPERATION FOR PART CONCERNED



11954

❏ Refit a new seal on the converter using the **(Bvi. 1804)** from the kit (**2**) .

III - FINAL OPERATION

❏ Refit:

- the automatic gearbox converter (see **23A**, **Automatic gearbox**, **Automatic gearbox converter: Removal - Refitting**, page **23A-82**) ,
- the automatic gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox: Removal - Refitting**, page **23A-8**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging)
- the « engine - gearbox» assembly (see **Engine/ gearbox assembly: Removal - Refitting**) (10A, Engine and peripherals),
- the right-hand suspended engine mounting (see **Right-hand suspended engine mounting: Removal - Refitting**) (19D, Engine mounting),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the radiator mounting cross member (see **Radiator support cross member: Removal - Refitting**) (31A, Front axle components),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the intercooler air outlet pipe (see **Intercooler air outlet pipe: Removal - Refitting**) (12B, Turbocharging),
- the bonnet catch (see **Bonnet latch: Removal - Refitting**) (52A, Non-side opening element mechanisms),
- the air deflectors,
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the audible warning (see **Horn: Removal - Refitting**) (82B, Horn),
- the headlights (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the engine undertray,
- the air filter unit (see **Air filter unit: Removal - Refitting**) (12A, Fuel mixture),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the scoop under the centre section of the scuttle panel grille (see **Scoop under scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the centre section of the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment).

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

❏ Refill:

- the refrigerant circuit (see **Coolant circuit Draining - Refilling**) (62A, Air conditioning),
- the automatic gearbox oil (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) (23A, Automatic gearbox).

❏ Refit the engine cover.

FK0

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-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

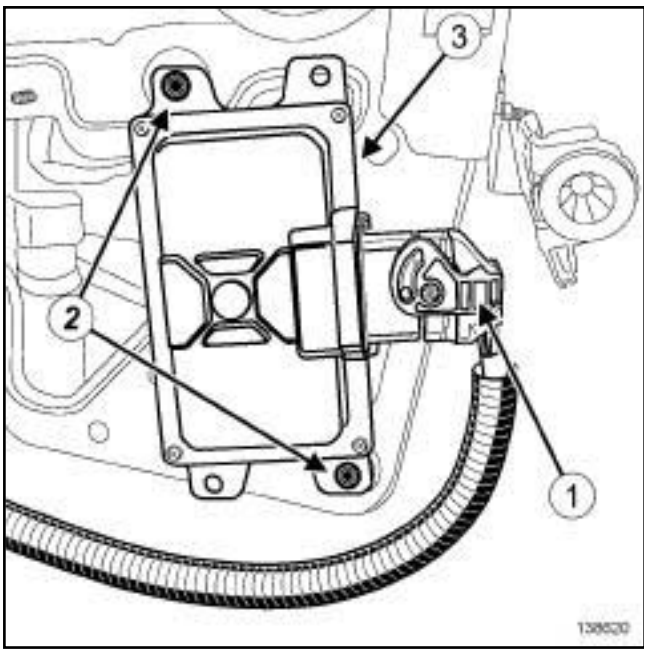
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

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

❑ Remove:

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

II - OPERATION FOR REMOVAL OF PART CONCERNED



138620

❑ Disconnect the connector (**1**) from the automatic transmission computer.

❑ Remove:

- the automatic transmission computer nuts (**2**) ,
- the automatic transmission computer (**3**) .

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

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

❑ Connect the automatic transmission computer connector.

II - FINAL OPERATION

❑ Refit:

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

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

AJ0

Essential equipment
diagnostic tool

REMOVAL

I - REMOVAL PREPARATION OPERATION

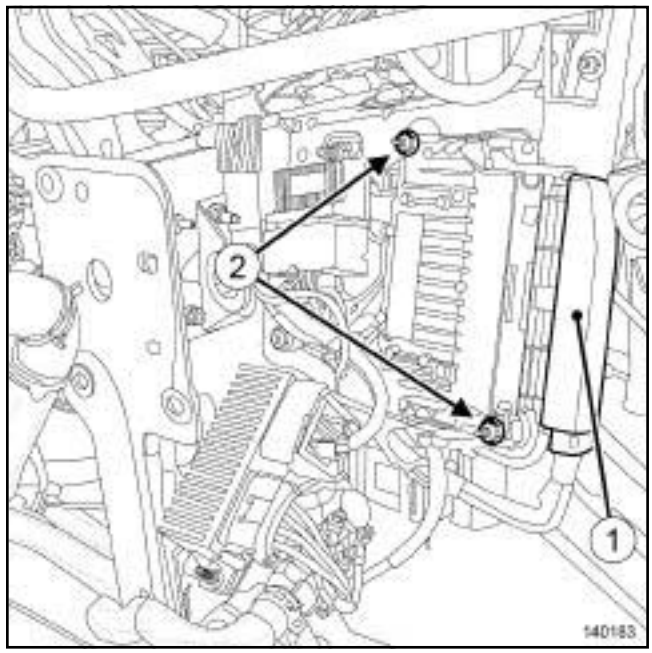
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

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

❏ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the left-hand headlight (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture).

II - REMOVAL OPERATION FOR THE PART CONCERNED



140183

❏ Disconnect the connector (**1**) from the automatic transmission computer.

❏ Remove:

- the automatic transmission computer nuts (**2**) ,
- the automatic transmission computer.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the automatic transmission computer.

❏ Connect the automatic transmission computer connector.

II - FINAL OPERATION

❏ Refit:

- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the left-hand headlight (see **Front headlight: Removal - Refitting**) (80B, Headlights),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),

AJ0

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

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

❏ Apply the after repair procedure using the **diagnostic tool** :

- connect the **diagnostic tool**,
- select « Gearbox computer » ,
- go to repair mode,
- display the « Before/After repair procedure » for the computer selected,
- carry out the operations described in the « After repair procedure » section.

Driveshaft: Precautions for repair

GENERAL RECOMMENDATIONS

1 - Advice to be followed before any operation

For an operation requiring the use of a lift, follow the safety advice (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

2 - Instructions to be followed during the operation

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

Lubricate the base of the driveshaft bearing with **BR2 + GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to prevent the bearing from sticking.

Always replace the differential output seals every time a driveshaft is removed.

Check for oil leaks from the gearbox. An oil leak can damage a driveshaft.

Front left-hand wheel driveshaft: Removal - Refitting

PK4

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 push back tool (plate and claws without ram).
Emb. 880	Pin extractor.
Tav. 1813	Clipped driveshaft extractor jaw

Tightening torques ▽	
shock absorber base nuts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

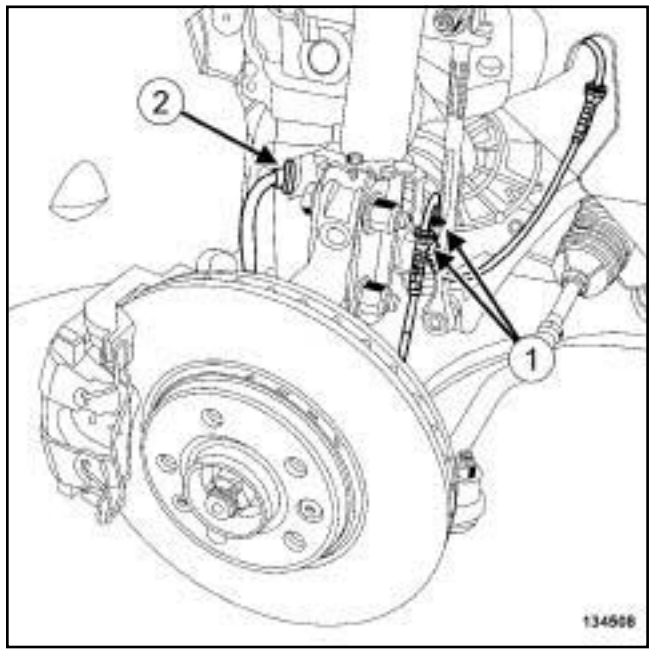
❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❑ Remove:

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

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

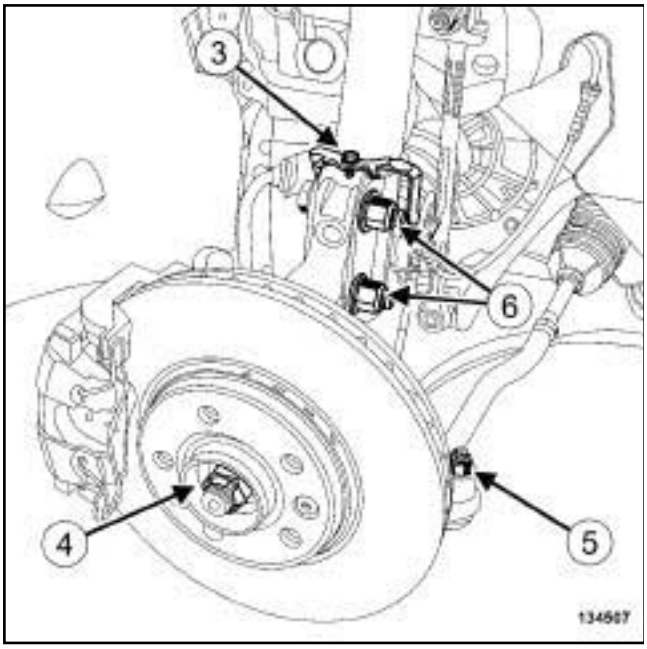


134508

❑ Unclip:

- the wheel speed sensor wiring at (**1**) ,
- the front brake hose at (**2**) .

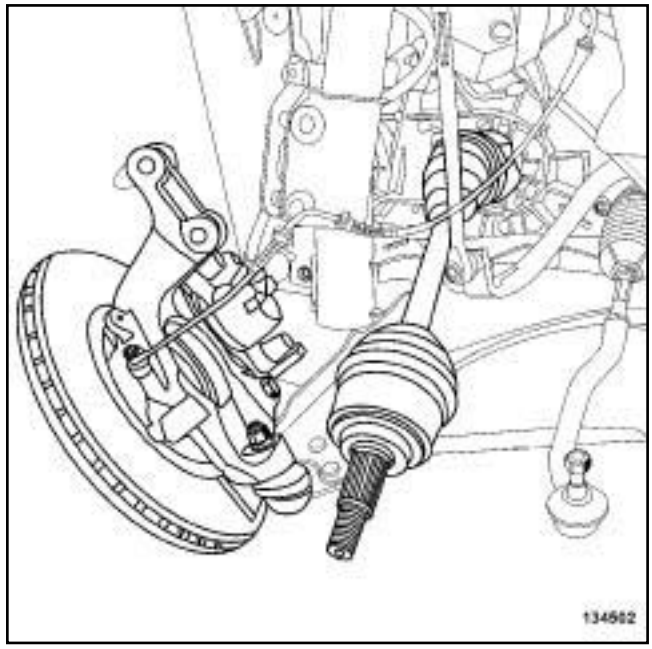
PK4



134507

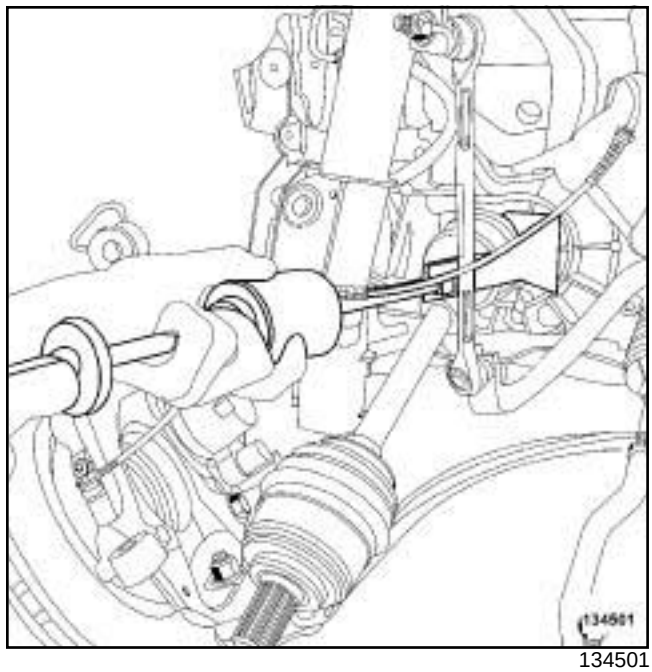
❑ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support (**4**) ,
- the nut (**5**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**6**) from the track rod end,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base bolts.



134502

❑ Push back the front left-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.



134501

❑ Detach the front left-hand driveshaft on the gearbox side using the tool **(Emb. 880)** fitted with the tool **(Tav. 1813)**.

❑ Remove:

- the front left-hand driveshaft.
- the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

PK4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

> Note:
>
> When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❑ Fit the front left-hand driveshaft into the gearbox as horizontally as possible.

❑ Engage the driveshaft into the hub carrier.

> Note:
>
> The driveshaft must fit freely into the hub carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit the shock absorber base bolts.

❑ Torque tighten the **shock absorber base nuts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit a new hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using the tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❑ Clip:

- the wheel speed sensor wiring,
- the brake hose.

III - FINAL OPERATION

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

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

TL4

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 push back tool (plate and claws without ram).
Emb. 880	Pin extractor.
Tav. 1813	Clipped driveshaft extractor jaw

Tightening torques ▽	
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

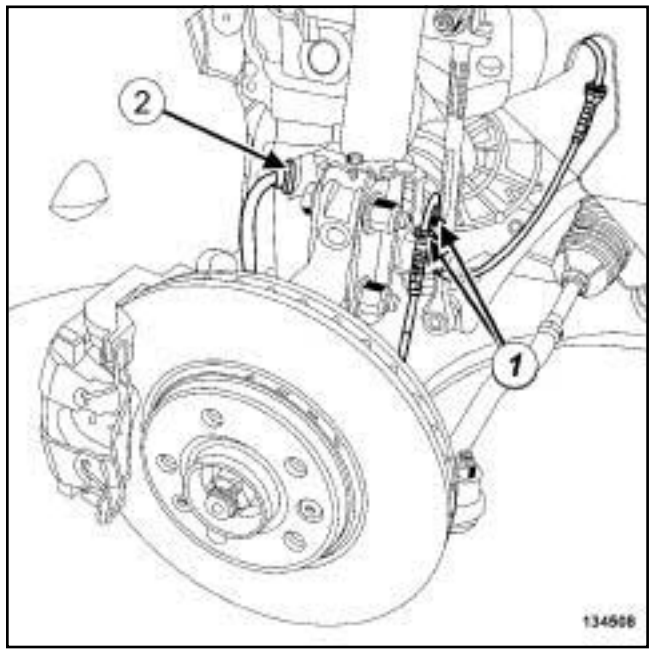
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

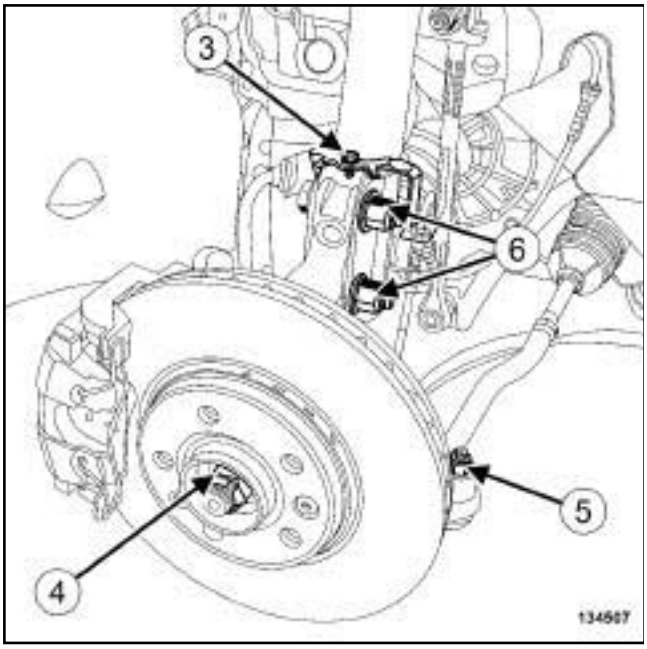


134508

❏ Unclip:

- the wheel speed sensor wiring at (**1**) ,
- the front brake hose at (**2**) .

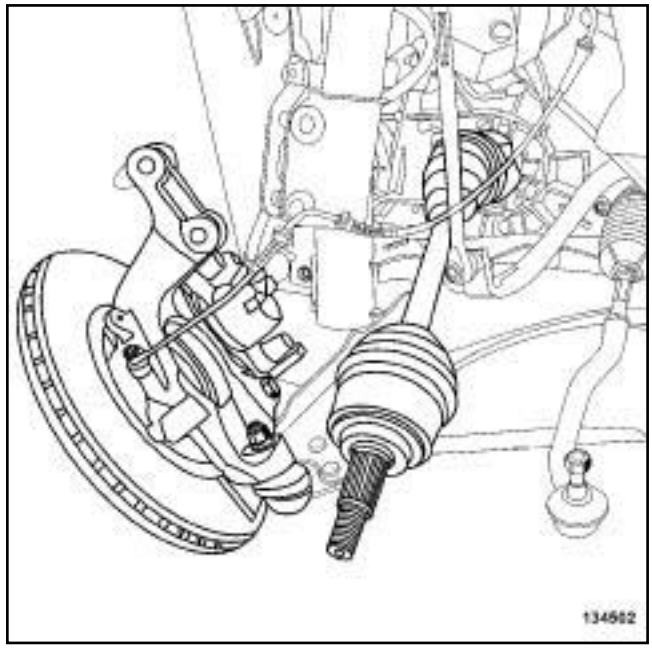
TL4



134507

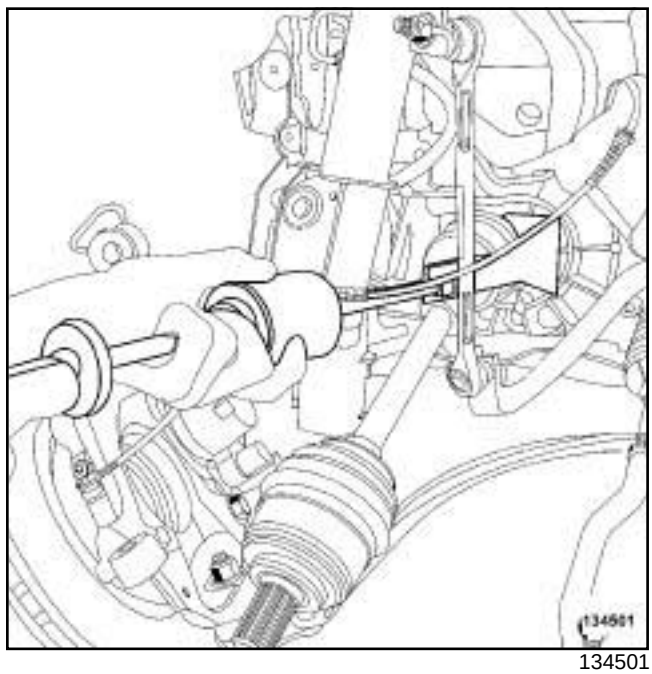
❑ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base studs (**6**) .



134502

❑ Push back the front left-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.



134501

❑ Detach the front left-hand driveshaft on the gearbox side using the tool **(Emb. 880)** fitted with the tool **(Tav. 1813)**.

❑ Remove the front left-hand driveshaft.

❑ Remove the left-hand side differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

TL4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit a new left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

> Note:
>
> When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❑ Fit the front left-hand driveshaft into the gearbox as horizontally as possible.

❑ Insert the front left-hand driveshaft into the hub carrier.

> Note:
>
> The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit the shock absorber base bolts

❑ Torque tighten the **shock absorber base bolts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit a new hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❑ Clip:

- the wheel speed sensor wiring,
- the brake hose.

III - FINAL OPERATION

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

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

ND4

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 push back tool (plate and claws without ram).

Tightening torques ▽	
shock absorber base nuts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

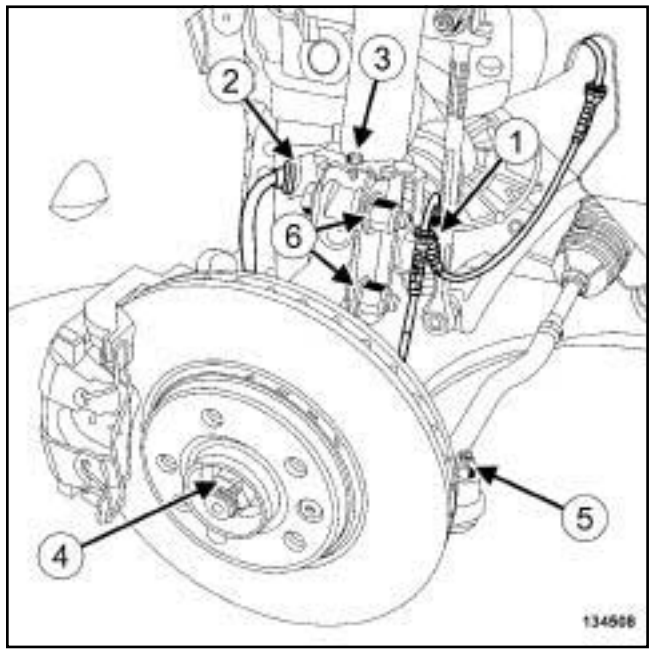
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - REMOVAL OPERATION FOR PART CONCERNED



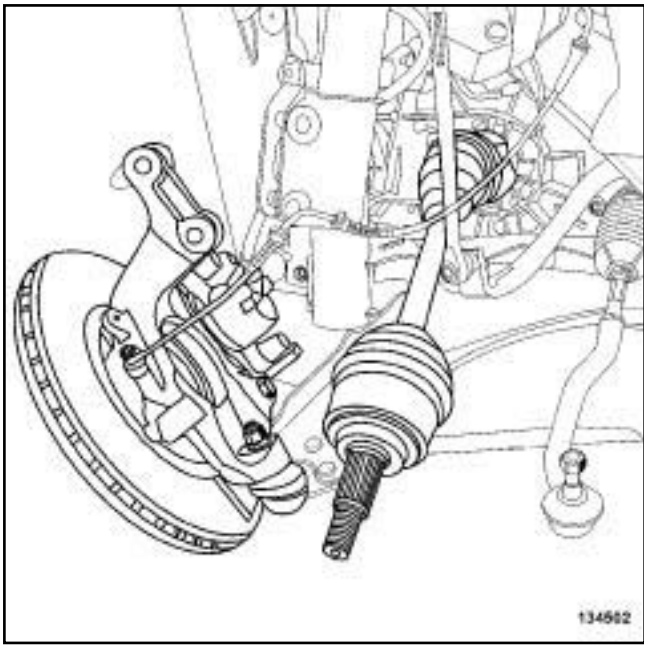
134508

❏ Unclip:

- the wheel speed sensor wiring (**1**) ,
- the brake hose (**2**) .

❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the stub axle carrier using the **(Tav. 476)**,
- the shock absorber base bolts (**6**) .



134502

❑ Push back the front left-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❑ Remove:

- the front left-hand driveshaft.
- the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

Note:

When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❑ Fit the driveshaft into the gearbox as horizontally as possible.

❑ Engage the driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

❑ Torque tighten the **shock absorber base nuts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit a new hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❑ Refit the brake hose and wheel speed sensor wiring support.

❑ Tighten the **bolt of the the brake hose and wheel speed sensor wiring support (8 N.m)**.

❑ Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

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

Front left-hand wheel driveshaft: Removal - Refitting

JH3 or JR5

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 push back tool (plate and claws without ram).
Emb. 880	Pin extractor.
Tav. 1813	Clipped driveshaft extractor jaw

Tightening torques ▽	
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
brake hose retaining bracket bolt8	**N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

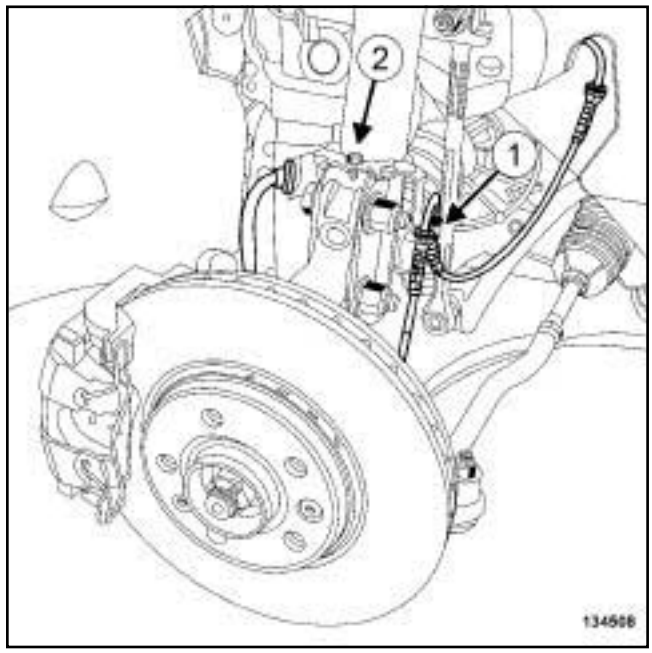
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



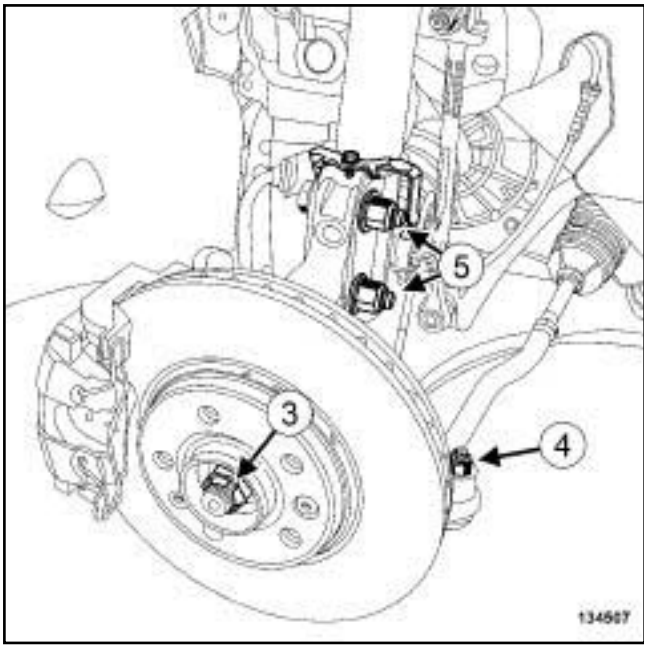
134508

❏ Unclip the wiring from the wheel speed sensor at (**1**) .

❏ Remove the bolt (**2**) from the brake hose retaining bracket.

❏ Move aside the brake hose retaining bracket.

JH3 or JR5



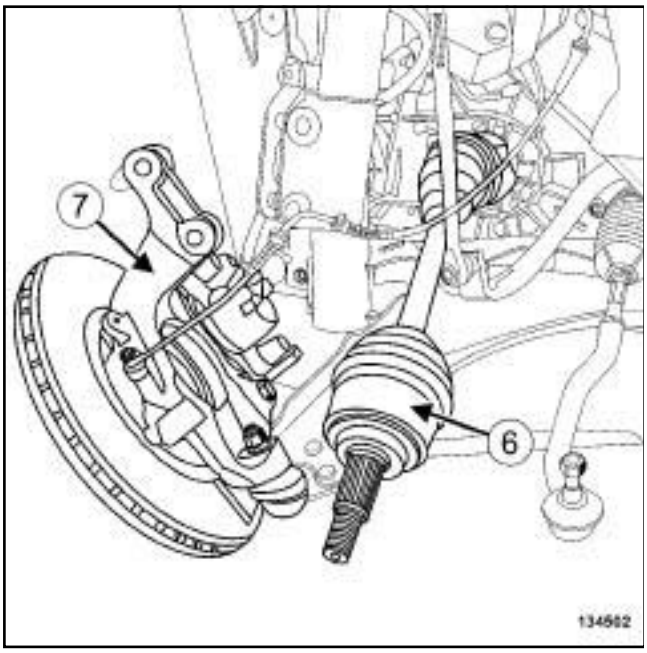
134507

❏ Remove:

- the hub nut (**3**) by immobilising the hub using the tool **(Rou. 604-01)**,
- the track rod end nut (**4**) .

❏ Detach the track rod end using the **(Tav. 476)**.

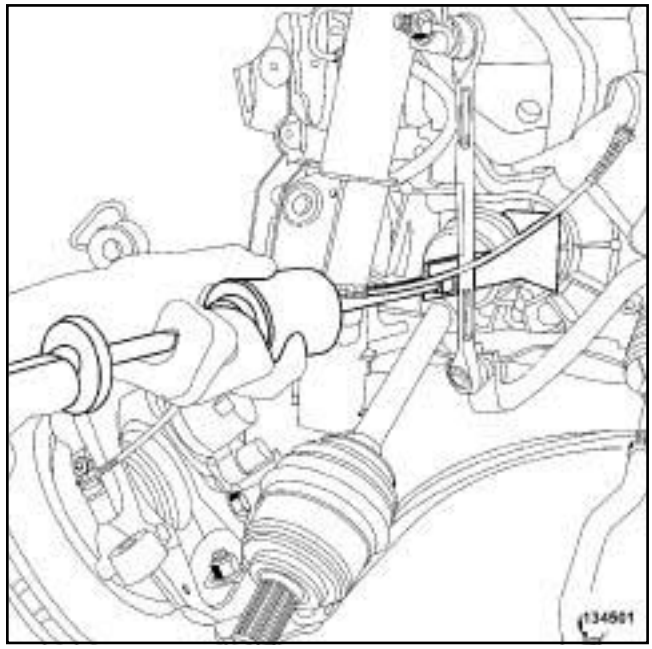
❏ Remove the shocker absorber base bolts (**5**) .



134502

❏ Push back the front left-hand driveshaft (**6**) from the stub axle carrier (**7**) **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❏ Remove the front left-hand driveshaft, on the wheel side.



134501

❏ Extract the front left-hand driveshaft from the manual gearbox using the tool **(Emb. 880)** fitted with the tool **(Tav. 1813)**.

❏ Remove:

- the front left-hand driveshaft.
- the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit a left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

Note:

When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

JH3 or JR5

❏ Insert the front left-hand driveshaft into the gearbox, moving it straight in horizontally until it clips.

Note:

Pull on the driveshaft slightly to verify that it is properly clipped into the gearbox.

❏ Insert the front left-hand driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit the shock absorber base bolts.

❏ Torque tighten the **shock absorber base bolts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Refit a new hub nut.

❏ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❏ Fit the retaining bracket of the brake hose.

❏ Refit the bolt of the brake hose retaining bracket.

❏ Torque tighten the **brake hose retaining bracket bolt8 (N.m)**.

❏ Clip on the wheel speed sensor wiring harness.

III - FINAL OPERATION

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

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

Front left-hand wheel driveshaft: Removal - Refitting

FK0

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 push back tool (plate and claws without ram).
Tav. 1813	Clipped driveshaft extractor jaw
Emb. 880	Pin extractor.

Essential equipment
oil recovery container

Tightening torques ▽	
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

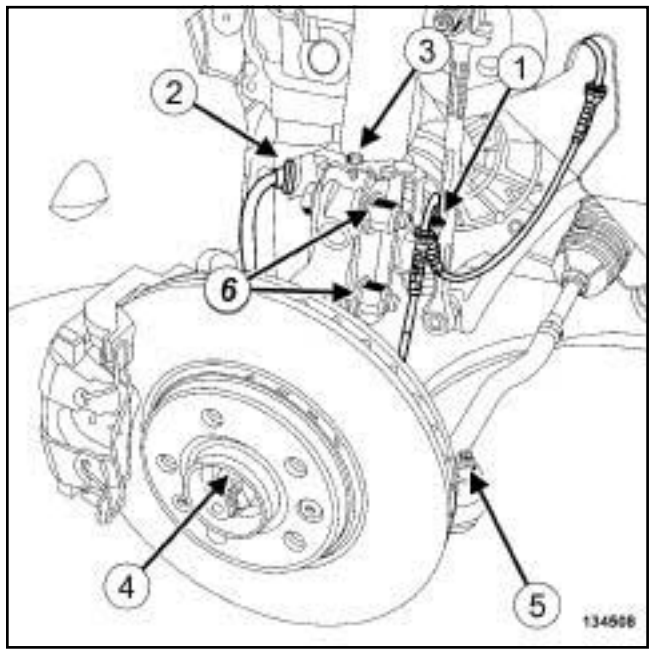
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Fit a **oil recovery container**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



134508

❏ Unclip:

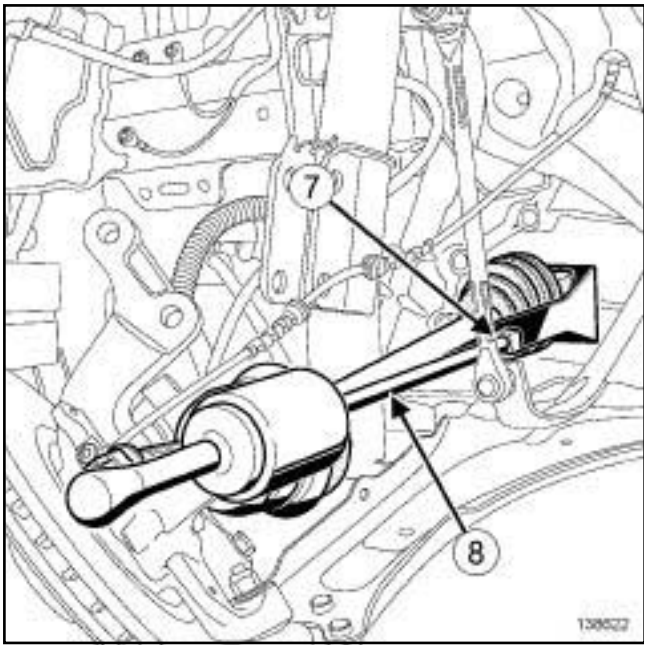
- the wheel speed sensor wiring (**1**) ,
- the brake hose (**2**) .

❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the stub axle carrier using the tool **(Tav. 476)**,
- the bolts and the nuts (**6**) from the shock absorber base.

❏ Push back the driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

FK0



138622

❏ Remove the front left-hand driveshaft from the automatic gearbox using the assembled tools **(Tav. 1813)** (**7**) and **(Emb. 880)** (**8**)

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace:

- the universal joint nut,
- the differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-64**) .

II - REFITTING OPERATION FOR PART CONCERNED

❏

> Note:
>
> During removal, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and universal joint nut when refitting.

❏ Fit the driveshaft into the gearbox as horizontally as possible.

❏ Engage the driveshaft into the stub axle carrier.

> Note:
>
> The driveshaft must fit freely into the stub axle carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

❏ Torque tighten the **shock absorber base bolts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Refit the hub nut.

❏ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using the tool **(Rou. 604-01)**.

❏ Refit the brake hose and wheel speed sensor wiring support.

❏ Tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❏ Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION

❏ Refit the front left-hand wheel (see **Wheel: Removal - Refitting**) .

❏ Top up the automatic transmission (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) . (Put back the quantity equivalent to the quantity recovered).

❏ Refit the engine undertray.

AJ0

Essential special tooling	
Rou. 604-01	Hub locking tool.
Tav. 476	Ball joint extractor.

Tightening torques ▽	
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

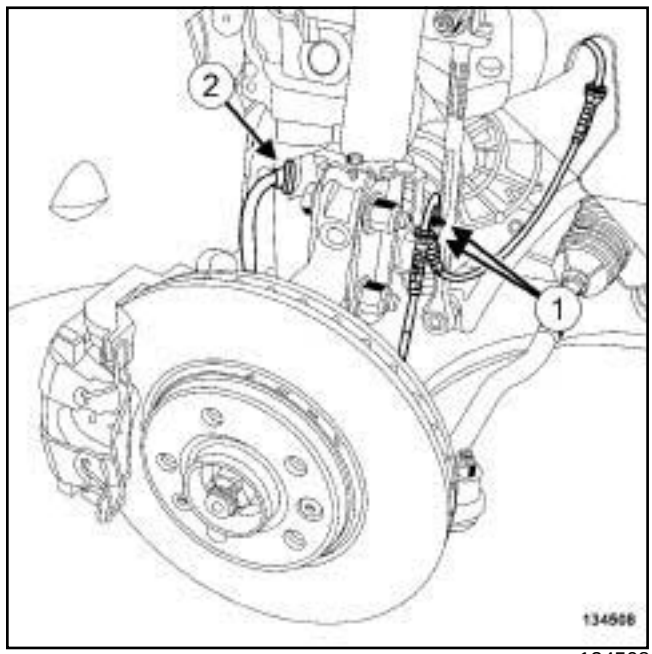
I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

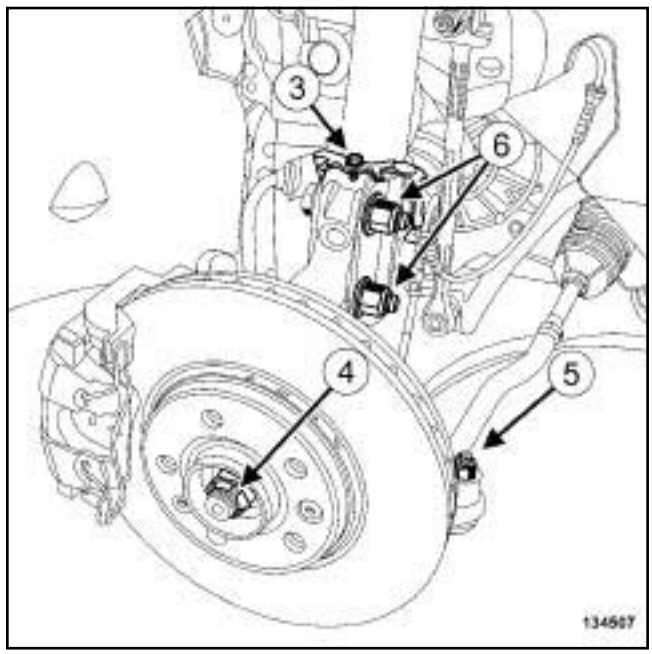
II - OPERATION FOR REMOVAL OF PART CONCERNED



134508

❏ Unclip:

- the wheel speed sensor wiring at (**1**) ,
- the front brake hose at (**2**) .



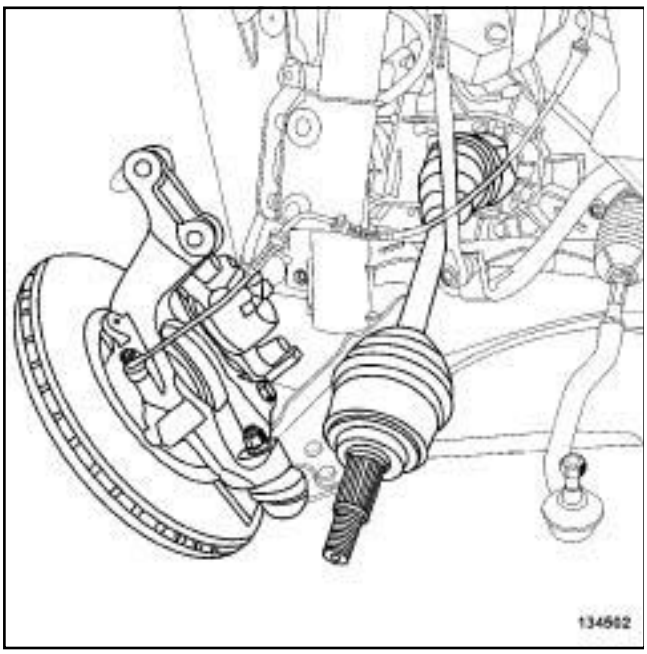
134507

❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,

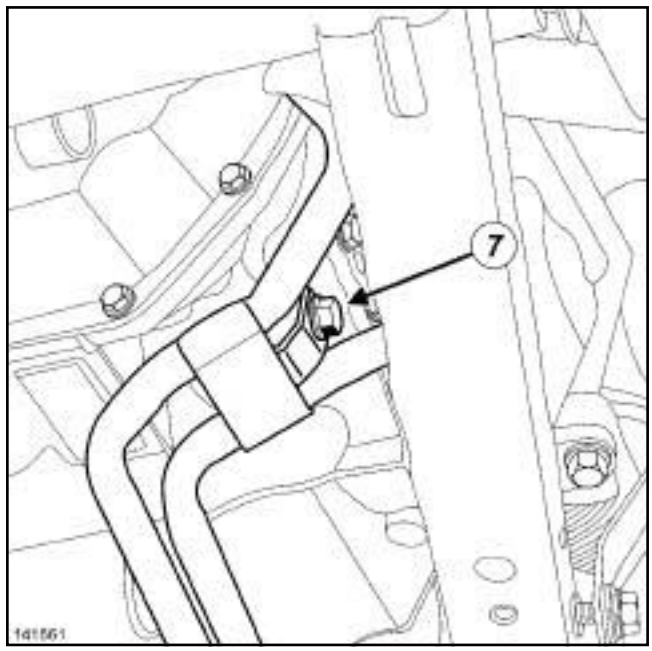
AJ0

- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base studs (**6**) .

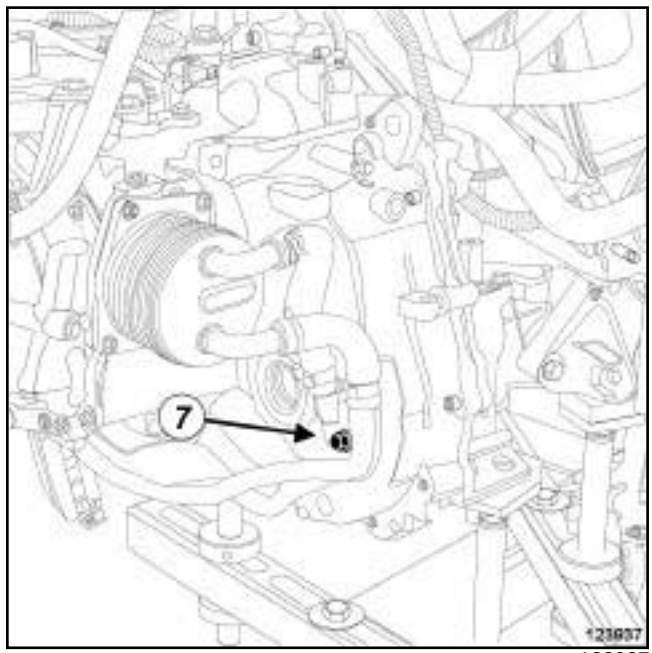


134502

❏ Push the front left-hand driveshaft back from the hub carrier by pivoting the hub carrier.



141561

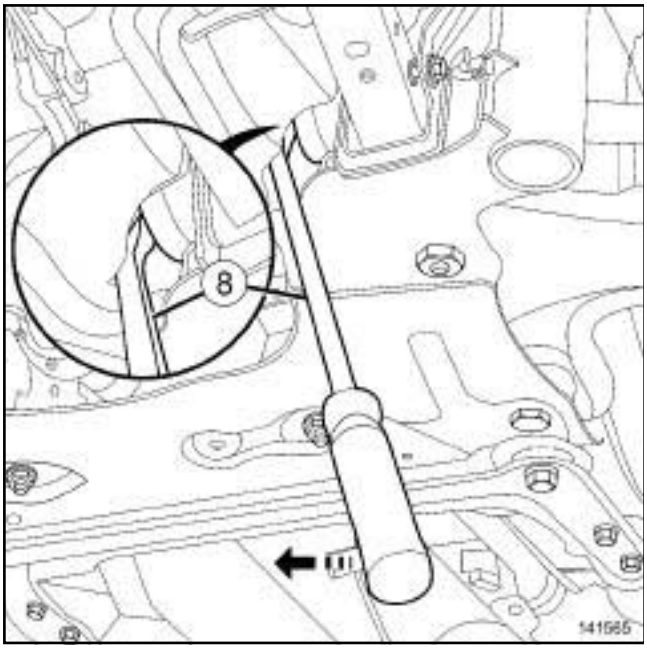


123937

❏ Remove the bolts (**7**) from the gearbox oil coolant pipes.

❏ Move aside the gearbox oil coolant pipes.

AJ0



141565

❑

Note:

Do not apply pressure to the gearbox oil coolant pipes.

❑ Disengage the front left-hand driveshaft from the gearbox using a lever (**8**) .

❑ Remove the front left-hand driveshaft.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit the front left-hand driveshaft into the gearbox as horizontally as possible.

❑ Fit the gearbox oil coolant pipes.

❑ Refit the bolts on the gearbox oil coolant pipes.

Note:

The driveshaft must fit freely into the hub carrier until it protrudes enough for the hub nut to be fitted.

❑ Engage the driveshaft into the hub carrier.

❑ Refit the shock absorber base bolts.

❑ Torque tighten the **shock absorber base bolts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit the hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using the tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❑ Clip:

- the wheel speed sensor wiring,
- the brake hose.

III - FINAL OPERATION

❑ Refit:

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

PK4

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 push back tool (plate and claws without ram).

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
wheel speed sensor wiring support bolt	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

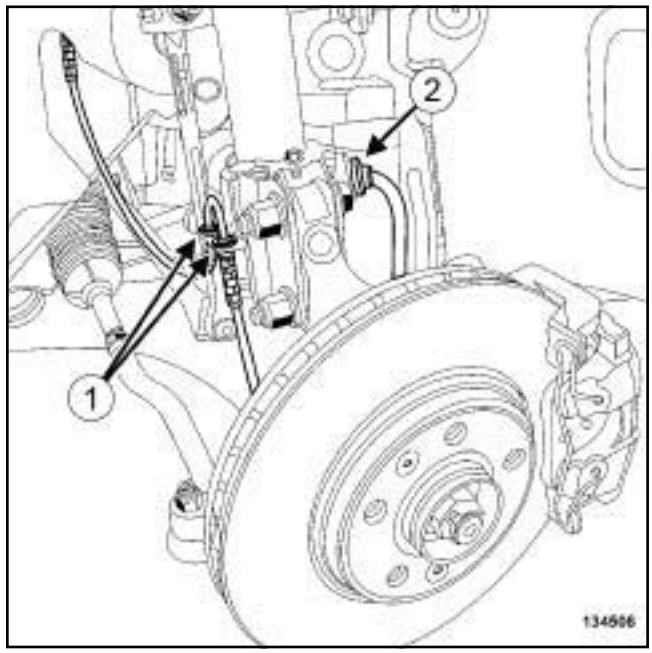
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

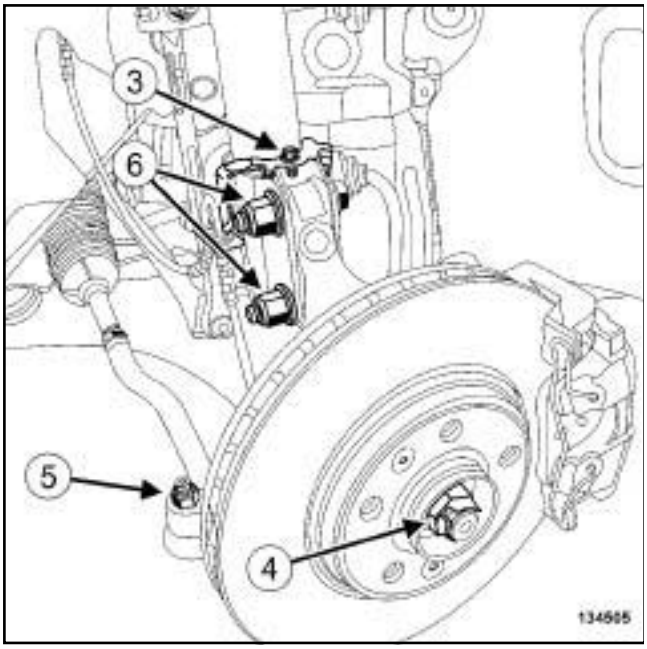


134506

❏ Unclip:

- the wheel speed sensor wiring at (**1**) ,
- the brake hose (**2**) .

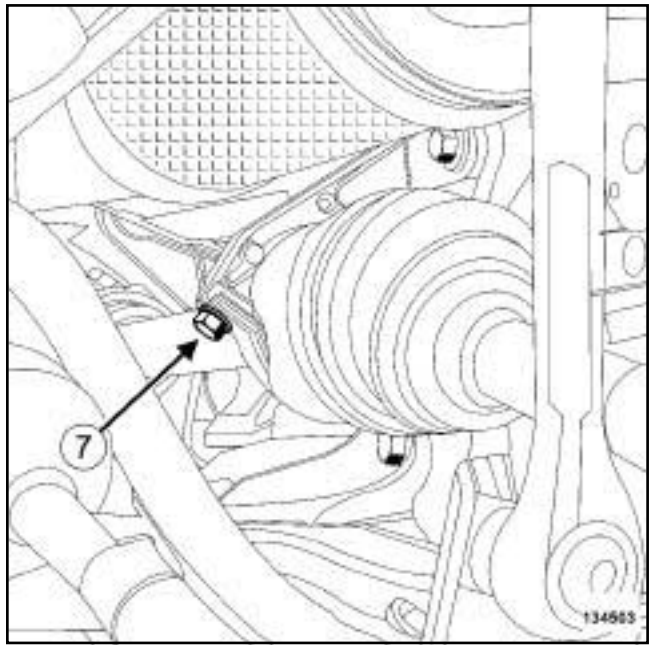
PK4



134505

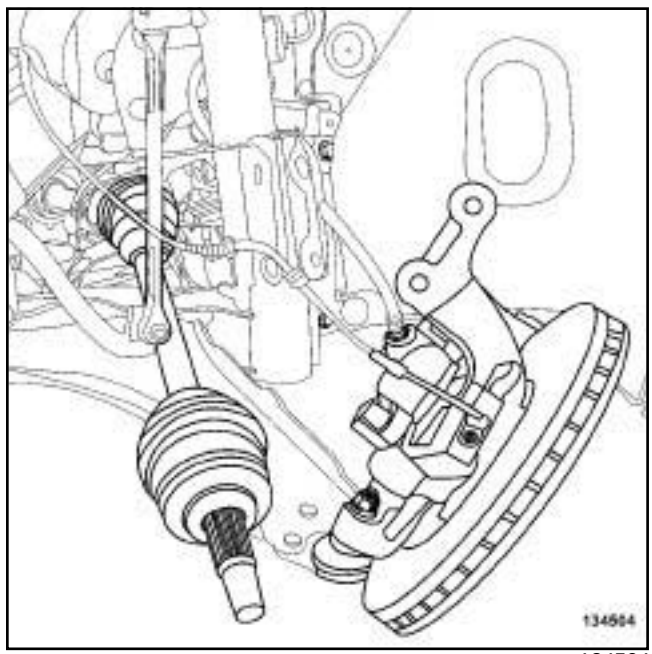
❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base studs (**6**) .



134503

❏ Remove the driveshaft relay bearing bolt (**7**) .



134504

❏ Push back the front right-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❏ Remove:

- the front right-hand driveshaft.
- the right-hand differential output seal (see **Differential output seal: Removal - Refitting**) .

PK4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

❑ **parts always to be replaced: relay bearing bracket bolt (13,01,01,11)**.

> Note:
>
> Always replace the relay bearing self-threading bolt with a classic tapered-end bolt or a cylindrical-pilot bolt every time the right-hand driveshaft is removed (except if the entire relay bearing is replaced, in which case it is supplied with a self-threading bolt).

❑ Clean and grease the driveshaft relay bearing bore into which the bearing is inserted with **BR2+ GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit a new right-hand differential output seal (see **Differential output seal: Removal - Refitting**) .

> Note:
>
> When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❑ Fit the front right-hand driveshaft into the gearbox as horizontally as possible.

❑ Refit:

- the front right-hand driveshaft into the relay bearing,
- a new relay bearing bolt.

❑ Torque tighten the **relay bearing bolt (21 N.m)**.

❑ Insert the front right-hand driveshaft into the hub carrier.

> Note:
>
> The driveshaft must fit freely into the hub carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit the shock absorber base bolts.

❑ Torque tighten the **shock absorber base bolts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit a new hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using the tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **wheel speed sensor wiring support bolt (8 N.m)**.

❑ Clip:

- the wheel speed sensor wiring,
- the brake hose.

III - FINAL OPERATION

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

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

TL4

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 push back tool (plate and claws without ram).

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
wheel speed sensor support bolt	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

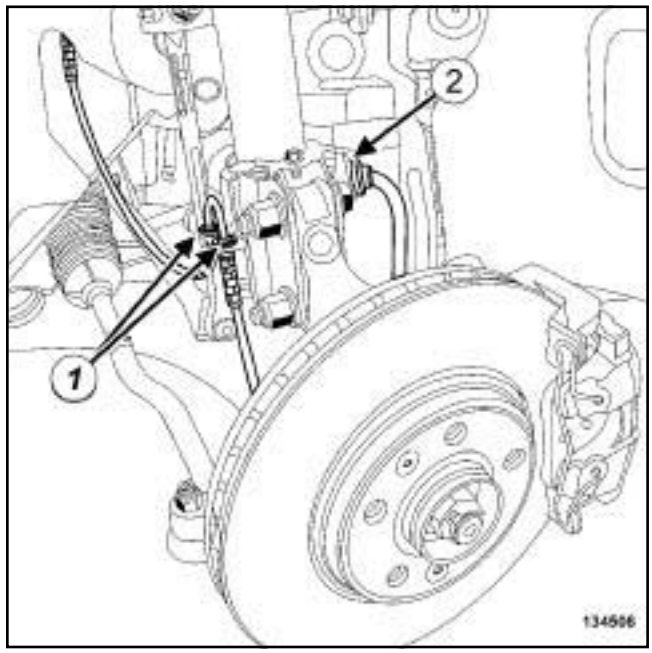
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

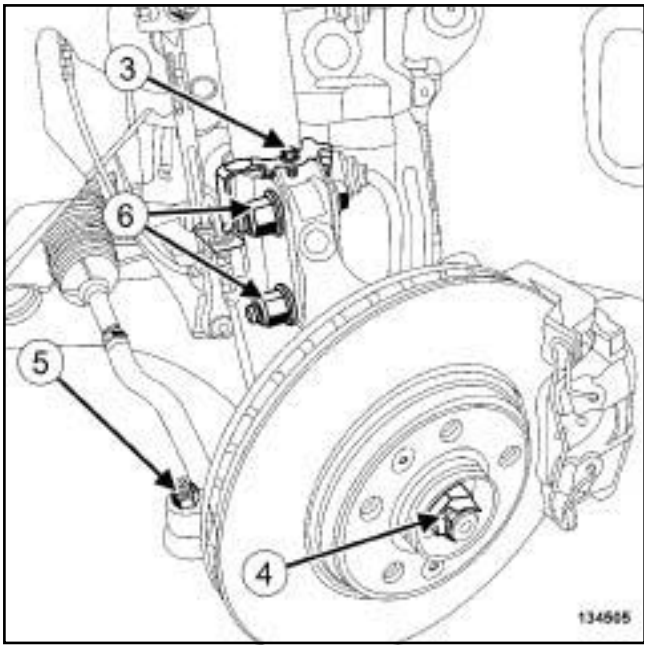


134506

❏ Unclip:

- the wheel speed sensor wiring at (**1**) ,
- the brake hose at (**2**)

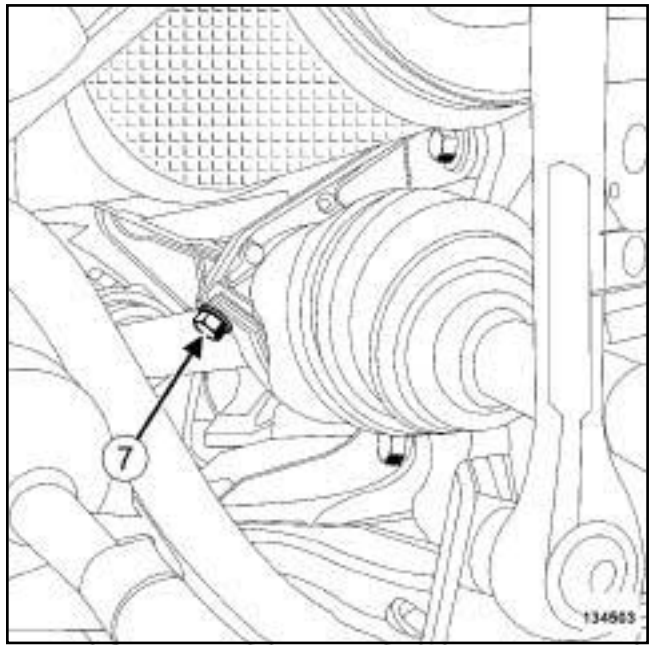
TL4



134505

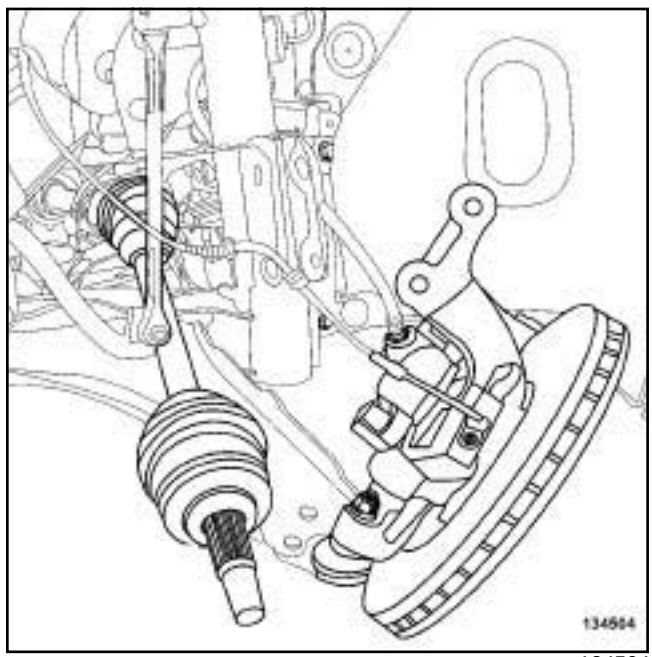
❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the nut (**5**) from the track rod end,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base studs (**6**) .



134503

❏ Remove the driveshaft relay bearing bolt (**7**) .



134504

❏ Push back the front right-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❏ Remove:

- the front right-hand driveshaft,
- the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

TL4

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

❑ **parts always to be replaced: relay bearing bracket bolt (13,01,01,11)**.

> Note:
>
> Always replace the relay bearing self-threading bolt with a classic tapered-end bolt or a cylindrical-pilot bolt every time the right-hand driveshaft is removed (except if the entire relay bearing is replaced, in which case it is supplied with a self-threading bolt).

❑ Clean and grease the driveshaft relay bearing bore into which the bearing is inserted with **BR2+ GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the new right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

> Note:
>
> When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❑ Fit the front right-hand driveshaft into the gearbox as horizontally as possible.

❑ Refit:

- the front right-hand driveshaft into the relay bearing,
- a new relay bearing bolt.

❑ Torque tighten the **relay bearing bolt (21 N.m)**.

❑ Insert the front right-hand driveshaft into the hub carrier.

> Note:
>
> The driveshaft must fit freely into the hub carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit the shock absorber base bolts.

❑ Torque tighten the **shock absorber base bolts (180 N.m)**.

❑ Position the track rod.

❑ Torque tighten the **track rod end nut (37 N.m)**.

❑ Refit a new hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **wheel speed sensor support bolt (8 N.m)**.

❑ Clip:

- the wheel speed sensor wiring,
- the brake hose.

III - FINAL OPERATION

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit:

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

ND4

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 push back tool (plate and claws without ram).

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base nuts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

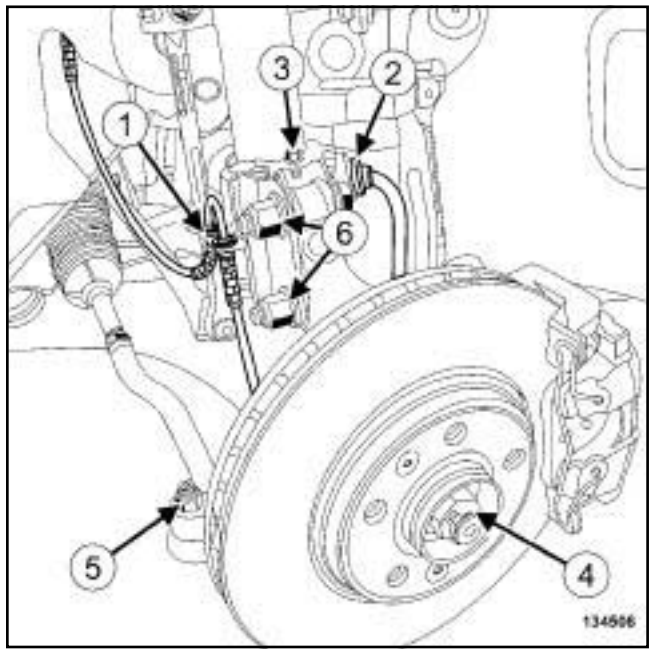
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



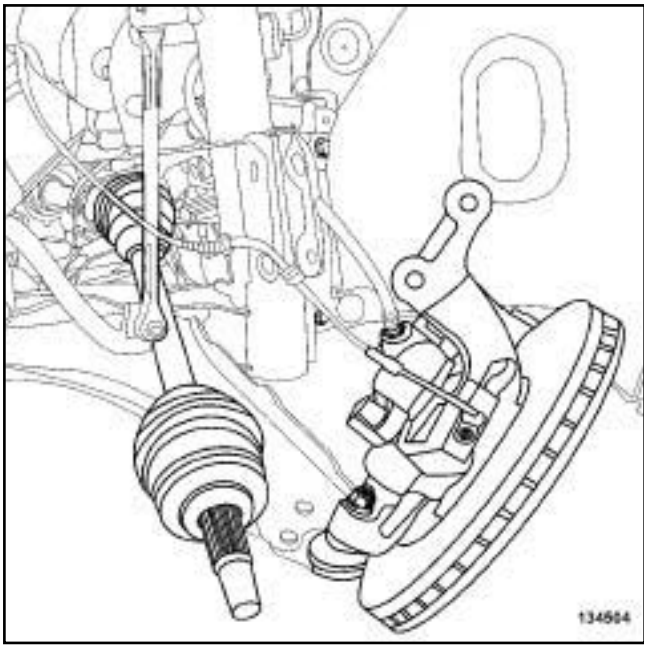
134506

❏ Unclip:

- the wheel speed sensor wiring (**1**) ,
- the brake hose (**2**) .

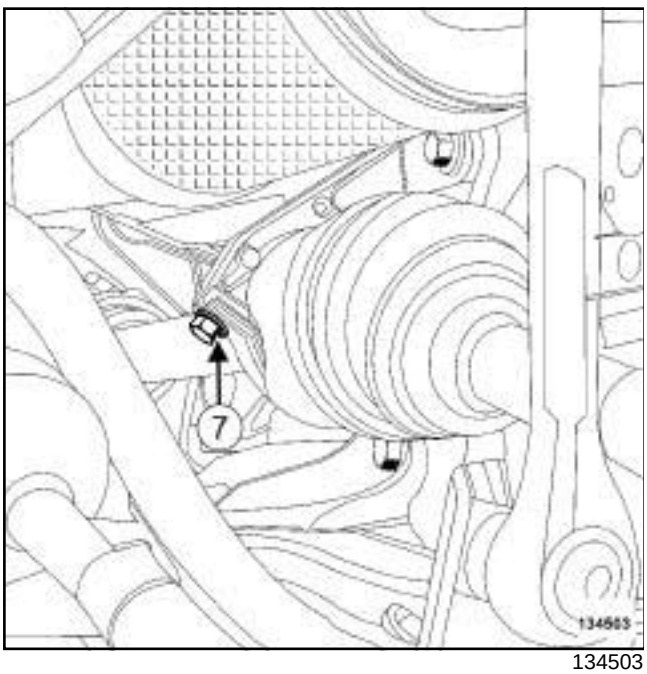
❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the track rod end nut (**5**) ,
- the track rod end from the stub axle carrier using the **(Tav. 476)**,
- the shock absorber base bolts (**6**) .



134504

❏ Push back the front right-hand driveshaft from the stub axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.



134503

❏ Remove:

- the bolt (**7**) for the driveshaft relay bearings,
- the front right-hand driveshaft,
- the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: relay bearing bracket bolt (13,01,01,11)**.

❏ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

> Note:
>
> Always replace the relay bearing self-tapping bolt with a classic tapered-end bolt or a cylindrical-pilot bolt every time the right-hand driveshaft is removed (except if the entire relay bearing is replaced, in which case it is supplied with a self-tapping bolt).

❏ Clean the bore of the driveshaft relay bearing into which the bearing will be fitted using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❏ Lubricate the bore of the driveshaft relay bearing into which the bearing is fitted using **BR2+GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

> Note:
>
> When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❏ Fit the driveshaft into the gearbox as horizontally as possible.

❏ Refit:

- the driveshaft into the relay bearing,
- a new relay bearing bolt.

❏ Torque tighten the **relay bearing bolt (21 N.m)**

ND4

❏ Engage the driveshaft into the stub axle carrier.

> Note:
>
> The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

❏ Torque tighten the **shock absorber base nuts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Refit a new hub nut.

❏ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❏ Refit the brake hose and wheel speed sensor wiring support.

❏ Torque tighten the **bolt of the wheel speed sensor wiring support (8 N.m)**.

❏ Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

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

JH3 or JR5

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 push back tool (plate and claws without ram).

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
brake hose retaining bracket bolt8	**N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

I - REMOVAL PREPARATION OPERATION

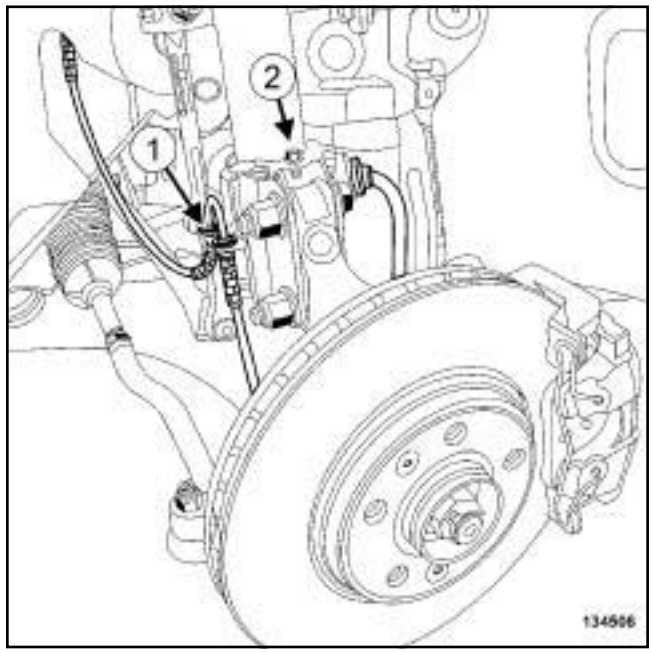
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



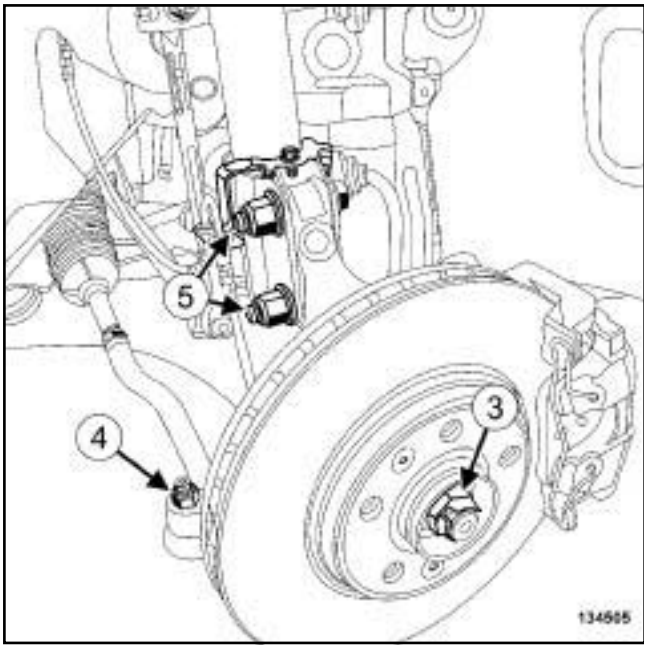
134506

❏ Unclip the wiring from the wheel speed sensor at (**1**) .

❏ Remove the bolt (**2**) from the brake hose retaining bracket.

❏ Move aside the brake hose retaining bracket.

JH3 or JR5



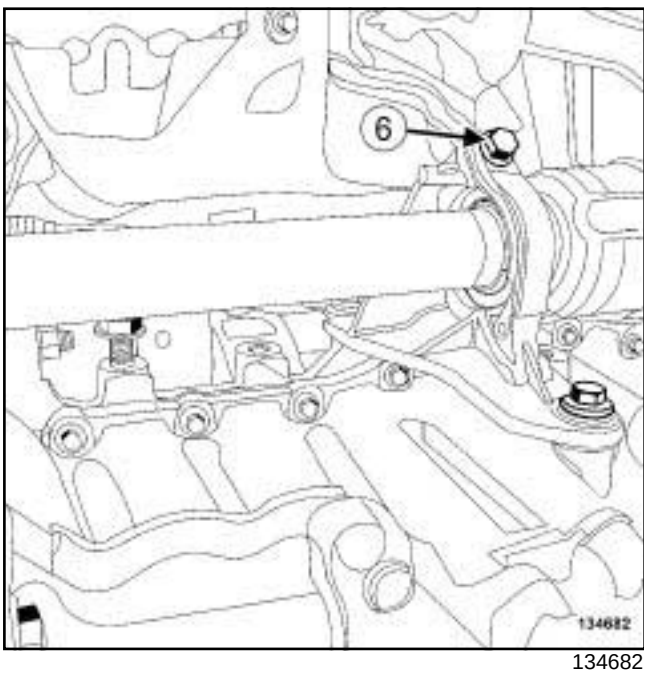
134505

❏ Remove:

- the hub nut (**3**) by immobilising the hub using the tool **(Rou. 604-01)**,
- the track rod end nut (**4**) .

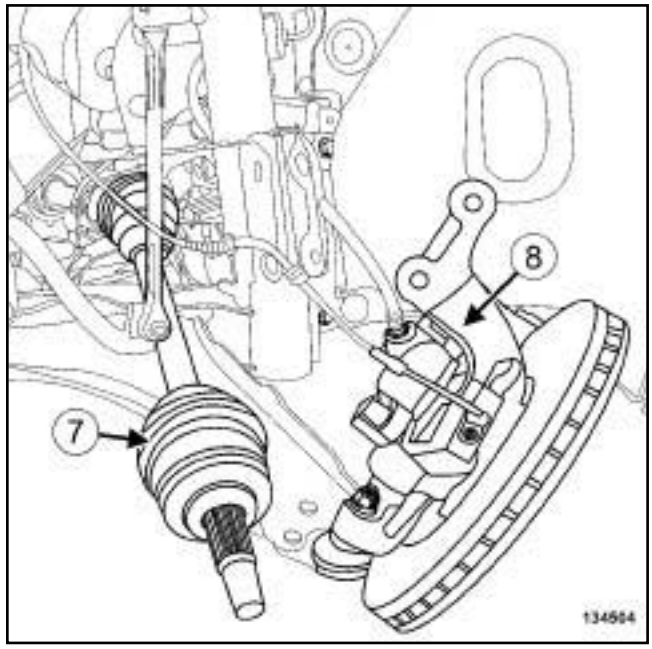
❏ Detach the track rod end using the **(Tav. 476)**.

❏ Remove the shocker absorber base bolts (**5**) .



134682

❏ Remove the bolt (**6**) from the front right-hand driveshaft relay bearing.



134504

❏ Push back the front right-hand driveshaft (**7**) from the stub axle carrier (**8**) using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❏ Remove:

- the front right-hand driveshaft from the gearbox,
- the front right-hand driveshaft.
- the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**.

❏ **parts always to be replaced: relay bearing bracket bolt (13,01,01,11)**.

❏ Clean and grease the relay bearing hole on the front right-hand driveshaft into which the bearing is inserted with **BR2 + GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

JH3 or JR5

II - REFITTING OPERATION FOR PART CONCERNED

❏ Refit a new right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

Note:

When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and the universal joint nut when refitting.

❏ Position and fit the front right-hand driveshaft into the gearbox.

❏ Refit the front right-hand driveshaft in the relay bearing equipped with a new bolt.

❏ Torque tighten the **relay bearing bolt (21 N.m)**.

❏ Insert the front right-hand driveshaft into the stub axle carrier.

Note:

The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit the shock absorber base bolts.

❏ Torque tighten the **shock absorber base bolts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Refit a new hub nut.

❏ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❏ Fit the retaining bracket of the brake hose.

❏ Refit the brake hose retaining bracket.

❏ Torque tighten the **brake hose retaining bracket bolt8 (N.m)**.

❏ Clip on the wheel speed sensor wiring harness.

III - FINAL OPERATION

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit:

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

FK0

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 push back tool (plate and claws without ram).

Essential equipment
oil recovery container

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base nuts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

I - REMOVAL PREPARATION OPERATION

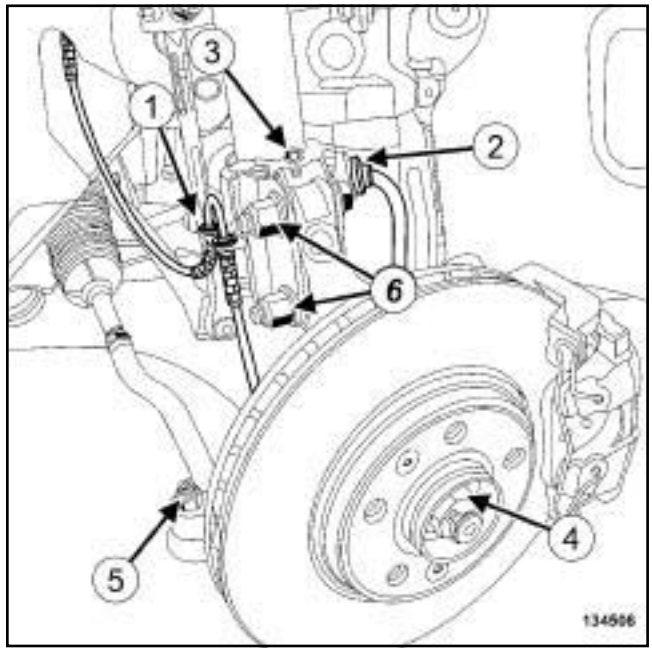
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Fit a **oil recovery container**.

II - OPERATION FOR REMOVAL OF PART CONCERNED



134506

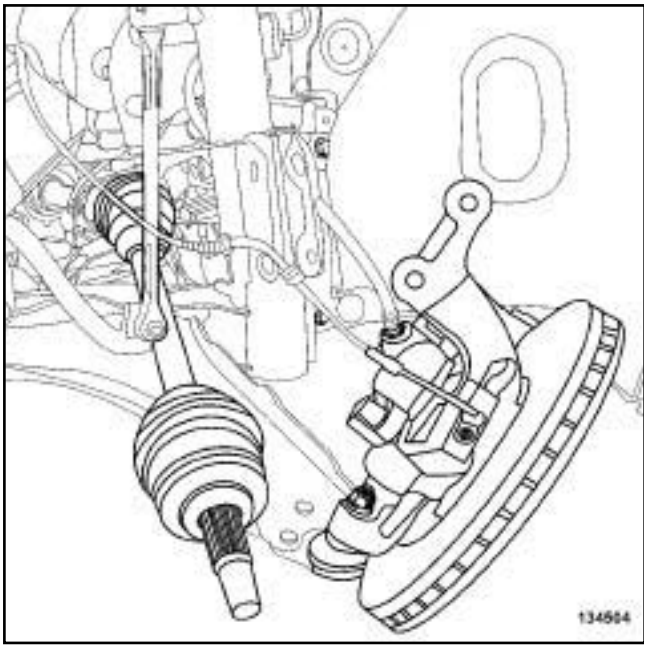
❏ Unclip:

- the wheel speed sensor wiring (**1**) ,
- the brake hose (**2**) .

❏ Remove:

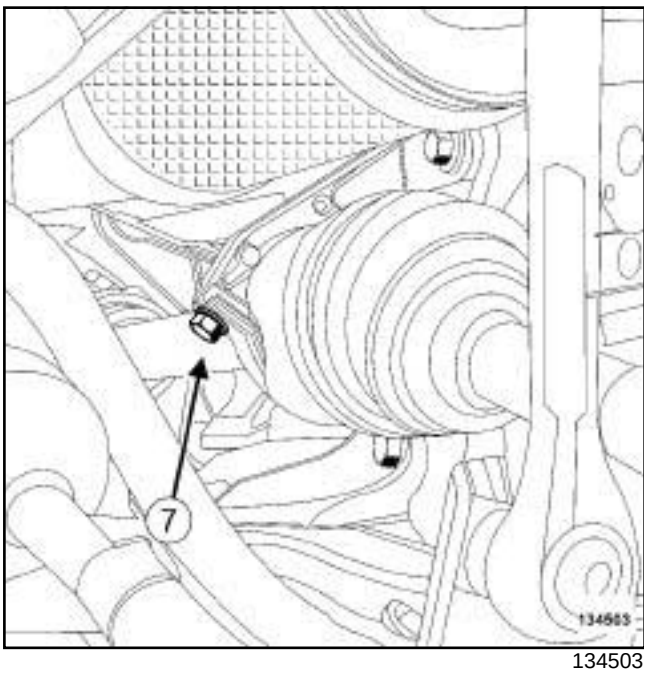
- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,
- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the track rod end nut (**5**) ,
- the track rod end from the stub axle carrier using the **(Tav. 476)**,
- the bolts and the nuts (**6**) of the shock absorber base.

FK0



134504

❑ Push back the driveshaft from the stub-axle carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.



134503

❑ Remove:

- the driveshaft relay bearing bolt (**7**) ,
- the front right-hand driveshaft.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace:

- the universal joint nut,
- the relay bearing bracket bolt,
- the differential output seal (see **23A**, **Automatic gearbox**, **Differential output seal: Removal - Refitting**, page **23A-64**) .

Note:

Always replace the self-tapping bolt on the relay bearing with a standard ogival ended bolt or a cylindrical pilot point bolt whenever the right-hand driveshaft is removed (except for a complete replacement of the relay bearing as it is supplied with a self-tapping bolt).

❑ Clean the bore of the driveshaft relay bearing into which the bearing will be fitted using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❑ Lubricate the bore of the driveshaft relay bearing into which the bearing is fitted using **BR2+ GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❑

Note:

When removing, if there is threadlock on the splines of the universal joint and the universal joint nut, apply threadlock to the splines of the universal joint and universal joint nut when refitting. (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❑ Fit the driveshaft into the gearbox as horizontally as possible.

❑ Refit:

- the driveshaft into the relay bearing,
- the new bearing bolt.

❑ Torque tighten the **relay bearing bolt (21 N.m)**.

FK0

❏ Insert the driveshaft in the stub-axle carrier.

Note:

The driveshaft must fit freely into the stub-axle carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit:

- the shock absorber base bolts,
- the shock absorber base nuts.

❏ Torque tighten the **shock absorber base nuts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Refit the hub nut.

❏ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❏ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❏ Torque tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❏ Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION

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

❏ Fill up the manual gearbox (see **23A**, **Automatic gearbox**, **Automatic gearbox oil: Draining - Refilling**, page **23A-17**) . (Put back the quantity equivalent to the quantity recovered)

❏ Refit the engine undertray.

AJ0

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 push back tool (plate and claws without ram).

Tightening torques ▽	
relay bearing bolt	**21 N.m**
shock absorber base bolts	**180 N.m**
track rod end nut	**37 N.m**
hub nut	**280 N.m**
bolt of the brake hose and wheel speed sensor wiring support	**8 N.m**

WARNING

In order to prevent irreversible damage to the front hub bearing:

- Do not loosen or tighten the driveshaft nut when the wheels are on the ground.
- Do not place the vehicle with its wheels on the ground when the driveshaft has been loosened or removed.

REMOVAL

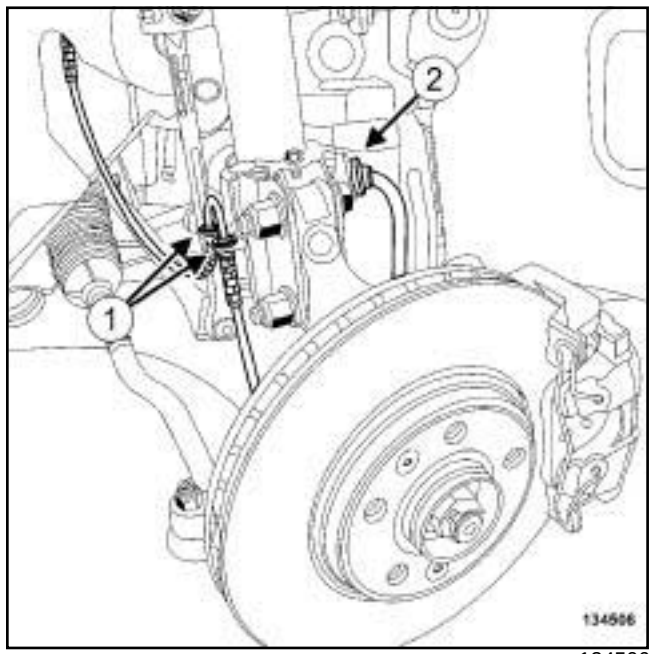
I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

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

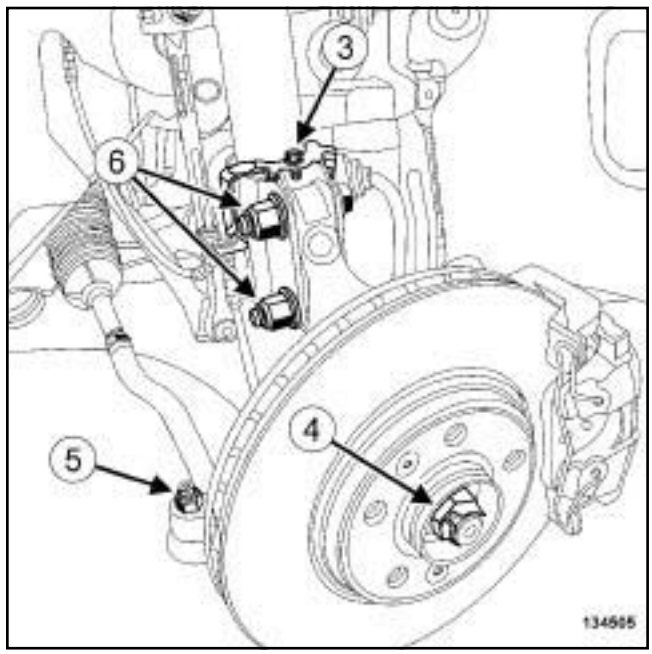
II - OPERATION FOR REMOVAL OF PART CONCERNED



134506

❏ Unclip:

- the wheel speed sensor wiring (**1**) ,
- the brake hose (**2**) .



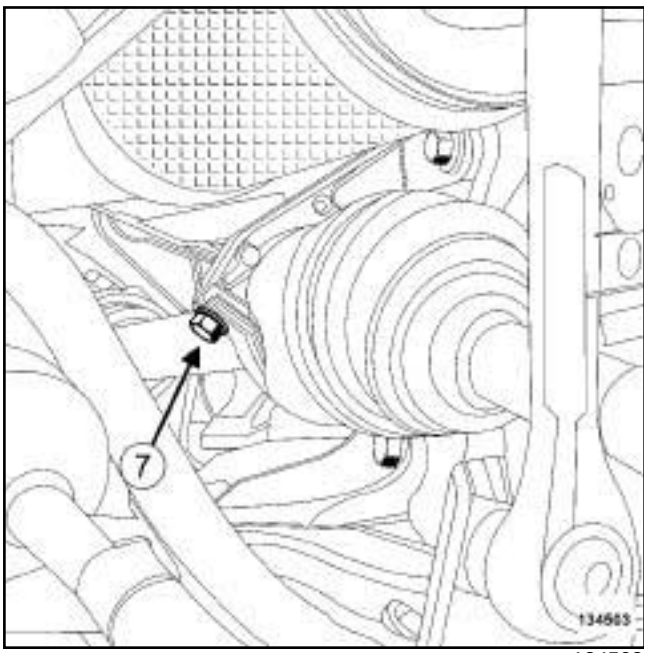
134505

❏ Remove:

- the bolt (**3**) of the brake hose and wheel speed sensor wiring support,
- the brake hose and wheel speed sensor wiring support,

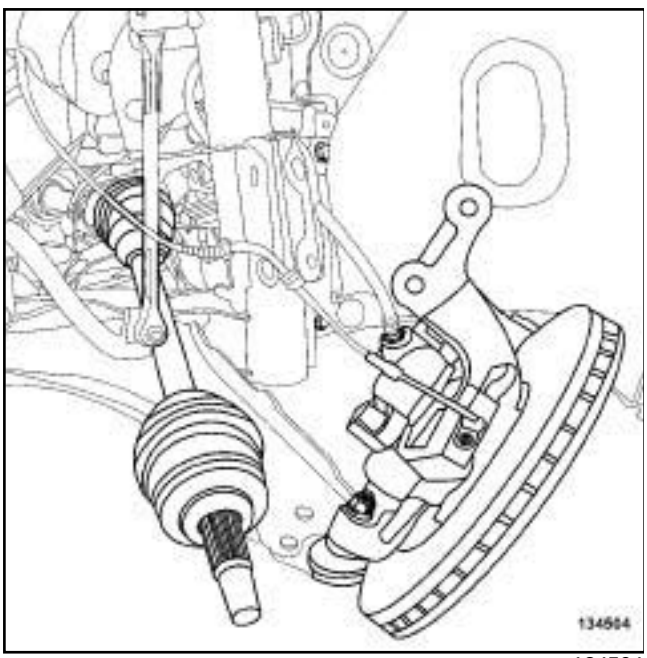
AJ0

- the nut (**4**) from the hub, immobilising the hub using the **(Rou. 604-01)**,
- the track rod end nut (**5**) ,
- the track rod end from the hub carrier using the tool **(Tav. 476)**,
- the shock absorber base studs (**6**) .



134503

❏ Remove the driveshaft relay bearing bolt (**7**) .



134504

❏ Push back the driveshaft from the hub carrier using the assembled tools **(Tav. 1420-01)** and **(Tav. 1050-04)**.

❏ Remove the front right-hand driveshaft.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Front wheel hub nut (13,02,03,20)**

❏ **parts always to be replaced: relay bearing bracket bolt (13,01,01,11)**

> Note:
>
> Always replace the relay bearing self-threading bolt with a classic tapered-end bolt or a cylindrical-pilot bolt every time the right-hand driveshaft is removed (except if the entire relay bearing is replaced, in which case it is supplied with a self-threading bolt).

❏ Clean the bore of the driveshaft relay bearing into which the bearing will be fitted using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❏ Lubricate the bore of the driveshaft relay bearing into which the bearing is fitted using **BR2+ GREASE** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit the driveshaft into the gearbox as horizontally as possible.

❏ Refit:

- the front right-hand driveshaft into the relay bearing,
- a new relay bearing bolt.

❏ Torque tighten the **relay bearing bolt (21 N.m)**.

❏ Insert the front right-hand driveshaft into the hub carrier.

> Note:
>
> The driveshaft must fit freely into the hub carrier until it protrudes enough for the hub nut to be fitted.

❏ Refit the shock absorber base bolts.

❏ Torque tighten the **shock absorber base bolts (180 N.m)**.

❏ Position the track rod.

❏ Torque tighten the **track rod end nut (37 N.m)**.

AJ0

❑ Refit the hub nut.

❑ Torque tighten the **hub nut (280 N.m)** while immobilising the hub using tool **(Rou. 604-01)**.

❑ Refit:

- the brake hose and wheel speed sensor wiring support,
- the bolt of the brake hose and wheel speed sensor wiring support.

❑ Torque tighten the **bolt of the brake hose and wheel speed sensor wiring support (8 N.m)**.

❑ Clip:

- the brake hose,
- the wheel speed sensor wiring.

III - FINAL OPERATION

❑ Refit:

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

JH3 or JR5

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

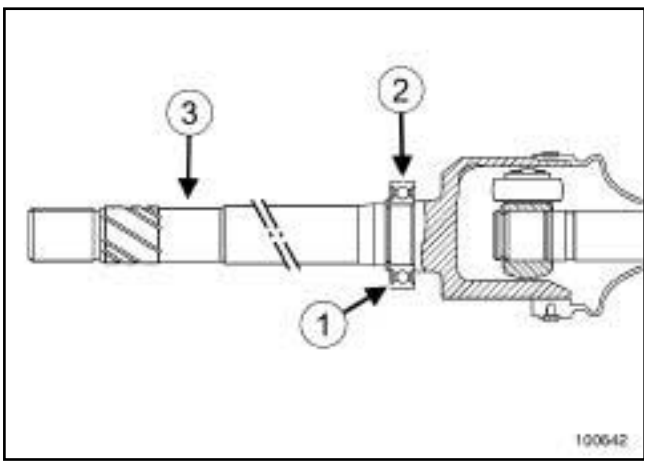
- the engine undertray bolts,
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



100642

❏ Remove the lock ring (**1**) from the relay shaft bearing (**2**) .

> Note:
>
> Do not scratch the contact surface of the lip seal on the relay shaft (**3**) .

❏ Extract the relay shaft bearing (**2**) using a press and an extractor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Relay shaft bearing (13,01,01,07)**.

❏ **parts always to be replaced: relay bearing rubber ring (13,01,01,10)**.

❏ Using **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products), clean and degrease the relay bearing bore.

❏ Lubricate the relay shaft mating face into which the relay shaft bearing is inserted.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit a new bearing on the relay shaft.

❏ Fit the relay shaft bearing until it is fully inserted using a tube so that it rests on the relay shaft inner bearing ring.

❏ Refit a new lock ring.

III - FINAL OPERATION

❏ Refit:

- the differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Fill the gearbox oil (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.

ND4 or PK4 or TL4

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

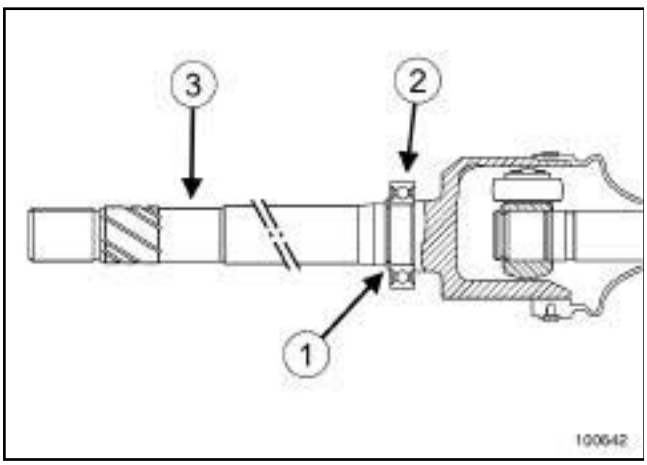
- the engine undertray bolts,
- the engine undertray.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



100642

❏ Remove the lock ring (**1**) from the relay shaft bearing (**2**) .

> Note:
>
> Do not scratch the contact surface of the lip seal on the relay shaft (**3**) .

❏ Extract the relay shaft bearing (**2**) using a press and an extractor.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: Relay shaft bearing (13,01,01,07)**.

parts always to be replaced: relay bearing rubber ring (13,01,01,10).

❏ Clean and degrease the bore of the relay bearing with **SURFACE CLEANER** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products).

❏ Lubricate the relay shaft mating face into which the bearing is inserted.

II - REFITTING OPERATION FOR PART CONCERNED

❏ Fit a new bearing on the relay shaft.

❏ Fit the bearing to the end using a tube, so that it rests on the inner bearing race.

❏ Refit a new lock ring.

III - FINAL OPERATION

❏ Refit:

- a new right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

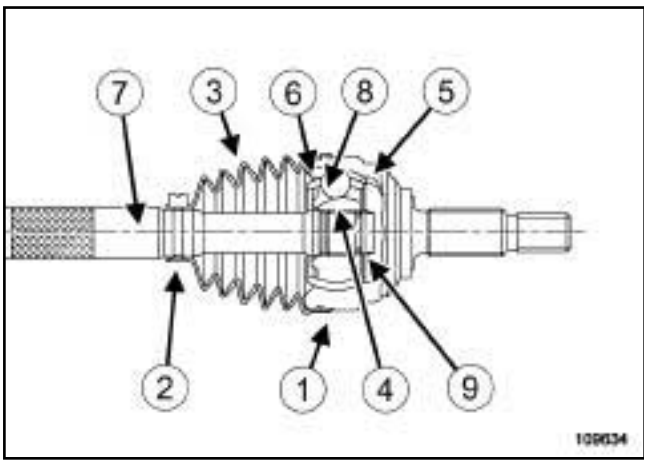
❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.

JH3 or JR5 or ND4 or PK4 or TL4

Essential special tooling	
Tav. 1168	Thermoplastic driveshaft gaiter clip fitting tool.
Tav. 1784	Driveshaft gaiter clip tool.

Essential equipment
steel inertia hammer
roll pin punch
parts washer



109634

(**1**) Big securing clip
(**2**) Small securing clip
(**3**) Driveshaft gaiter
(**4**) Ball hub
(**5**) Stub axle bowl
(**6**) Ball race
(**7**) Driveshaft
(**8**) Balls
(**9**) Lock ring

❑

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine undertray bolts,
- the engine undertray,

❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

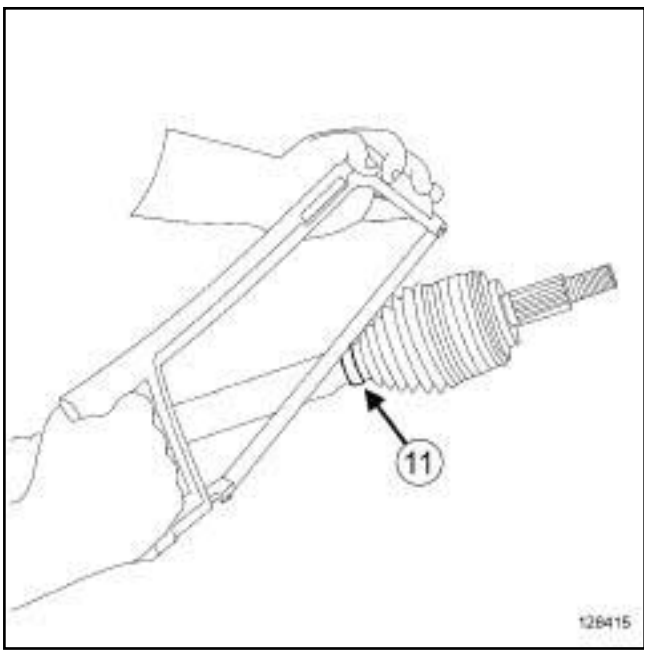
❑ Remove:

- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the differential output seal on the side concerned (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

JH3 or JR5 or ND4 or PK4 or TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED

93034



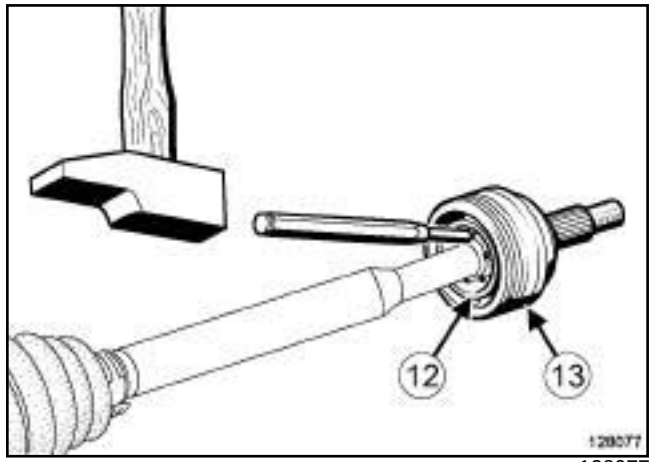
128415

❑ Cut the big securing clip (**10**) and the small securing clip (**11**) using cutting pliers or a metal saw, taking care not to damage the stub axle bowl and the driveshaft.

❑ Push back the gaiter to release the stub axle bowl.

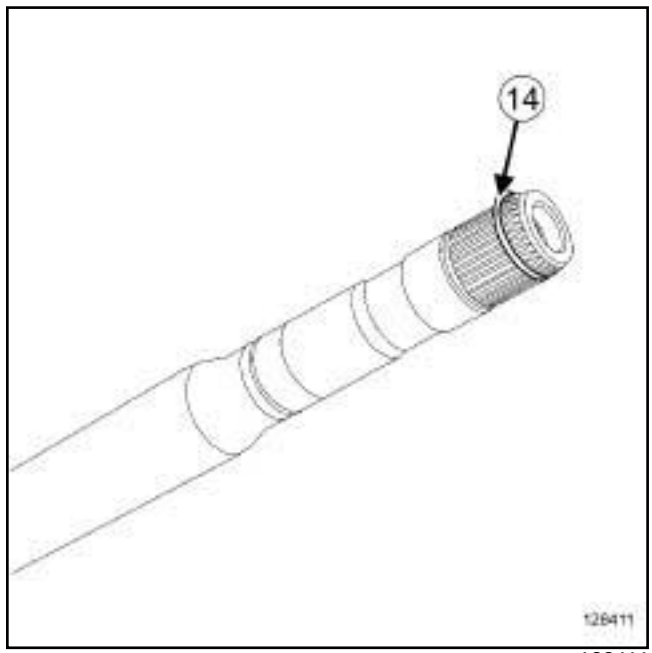
❑ Cut off the driveshaft gaiter.

❑ Remove as much grease as possible.



128077

❑ Using a **steel inertia hammer** and a **roll pin punch**, hit the ball hub (**12**) a few times to detach the stub axle bowl (**13**) from the driveshaft.



128411

❑ Remove the lock ring (**14**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front driveshaft gaiter on wheel side (13,01,03,05)**.

❑ **parts always to be replaced: wheel side front driveshaft seal locking ring (13,01,01,09)**.

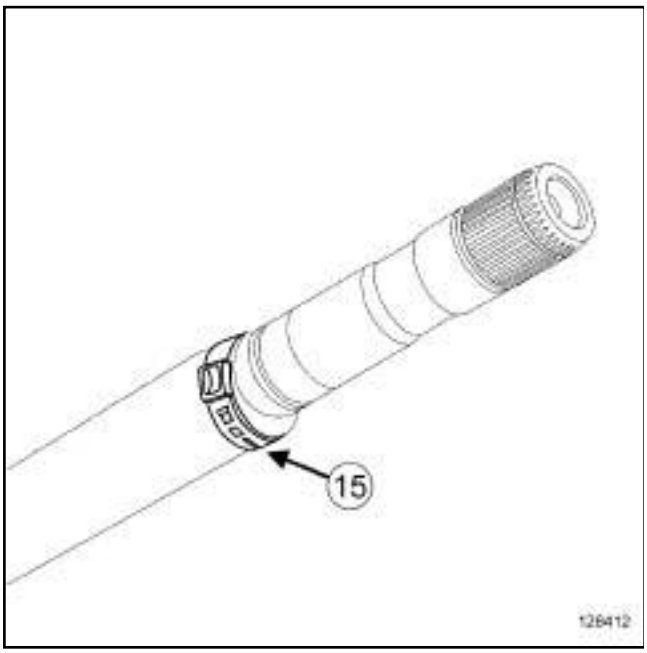
❑ Always replace:

- the small securing clip,
- the big securing clip.

JH3 or JR5 or ND4 or PK4 or TL4

❏ Using a **parts washer**, clean the driveshaft and the stub axle bowl.

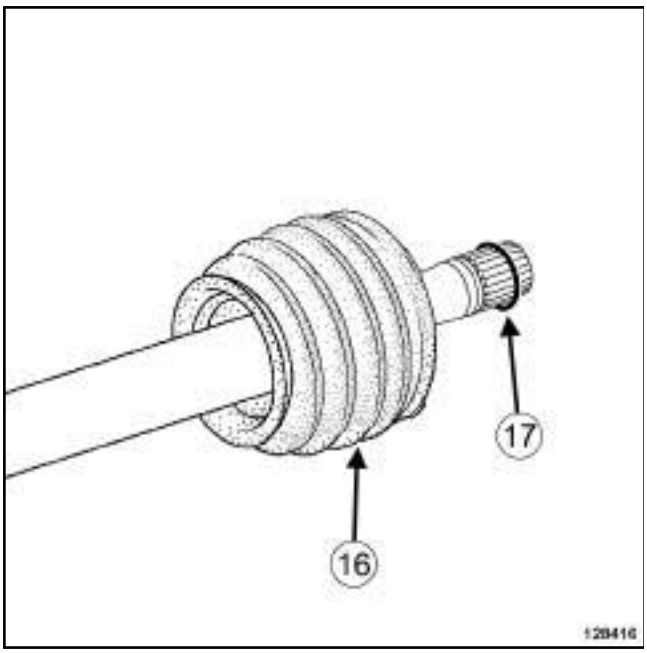
II - REFITTING OPERATION FOR PART CONCERNED



128412

❏ Fit the small securing clip (**15**) onto the driveshaft.

❏ Lightly lubricate the driveshaft using the grease supplied with the gaiter to facilitate its fitting.



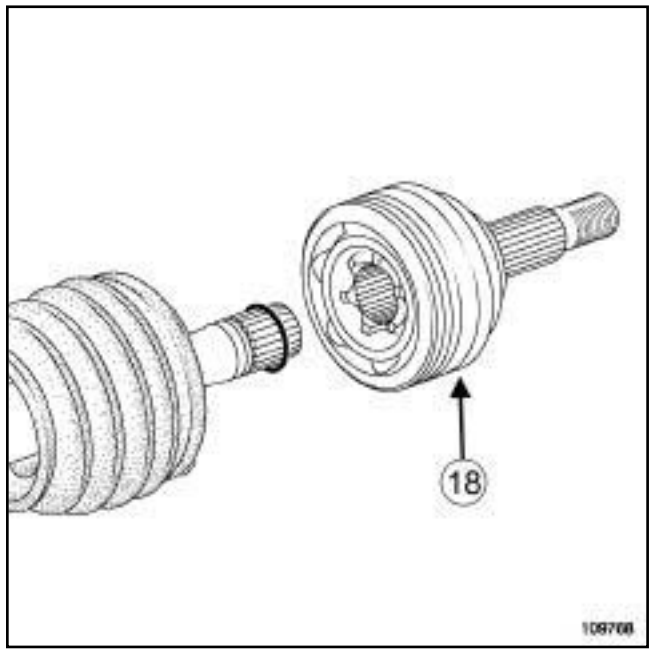
128416

❏ Refit the gaiter (**16**) onto the driveshaft.

❏ Insert the gaiter lip into the groove of the driveshaft.

❏ Refit the lock ring (**17**) .

❏ Spread the quantity of grease around the gaiter and the stub axle bowl.



109768

❏ Refit the stub axle bowl (**18**) to the driveshaft by tapping the stub axle bowl using a brass drift until the lock ring clicks into place behind the ball hub.

❏ Insert the gaiter lip into the groove of the stub axle bowl.

Note:

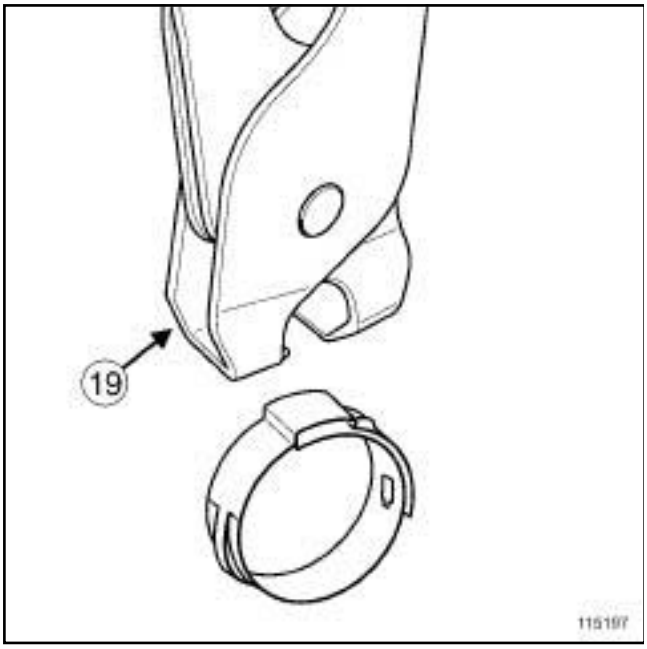
Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

❏ Fit the small securing clip on the driveshaft gaiter.

❏ Refit the big securing clip on the driveshaft gaiter.

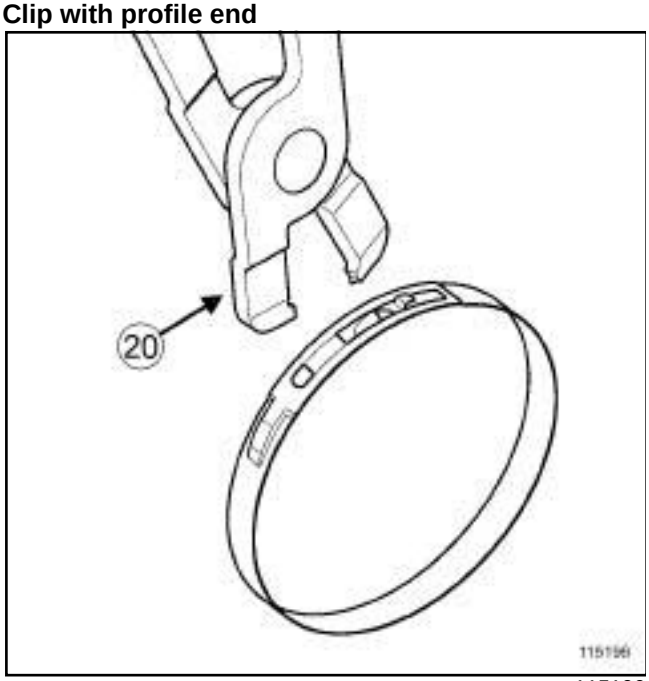
JH3 or JR5 or ND4 or PK4 or TL4

Clic clip



115197

Clip with profile end



115196

❑ Tighten the clips using the tool **(Tav. 1168)** (**19**) for clic clips or the tool **(Tav. 1784)** (**20**) for profile end clips.

III - FINAL OPERATION

❑ Refit:

- the differential output seal on the side concerned (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the wheel driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) or (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the wheel on the side concerned (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

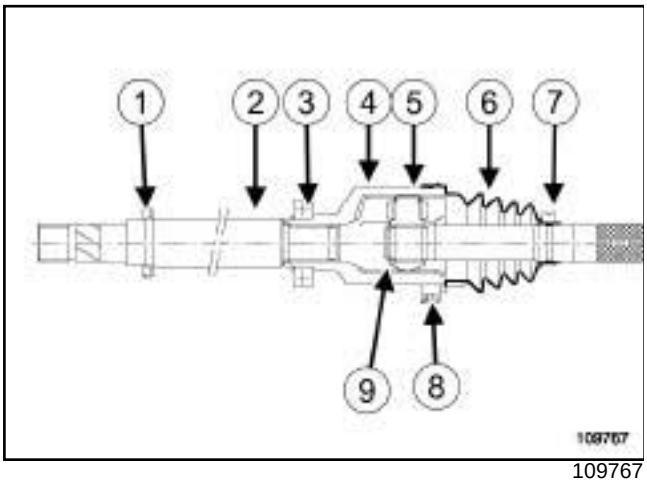
❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Refit the engine undertray.

JH3 or JR5 or ND4 or PK4 or TL4

Essential special tooling	
Tav. 1168	Thermoplastic driveshaft gaiter clip fitting tool.
Tav. 1784	Driveshaft gaiter clip tool.

Essential equipment
parts washer



109767

(**1**) Deflector
(**2**) Driveshaft
(**3**) Ball bearing
(**4**) Driveshaft yoke sleeve
(**5**) Spider
(**6**) Driveshaft gaiter
(**7**) Small securing clip
(**8**) Big securing clip
(**9**) Lock ring

❑

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove

- the engine undertray bolts,
- the engine undertray.

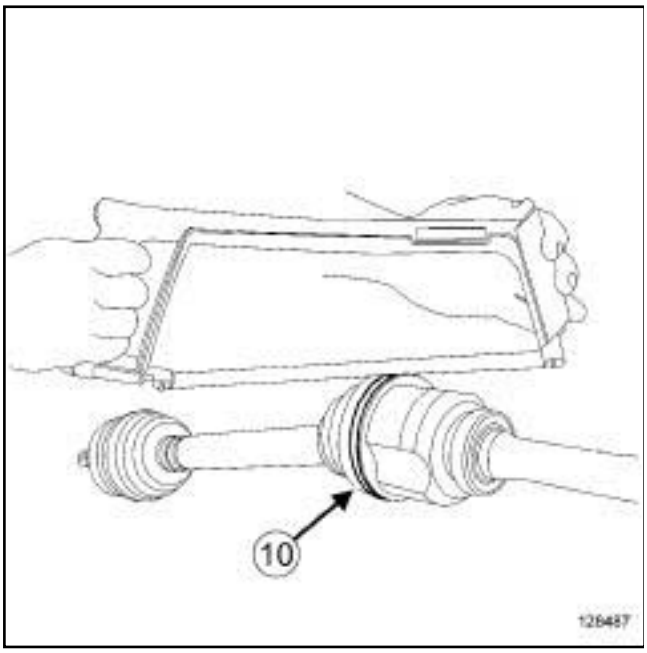
❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Remove:

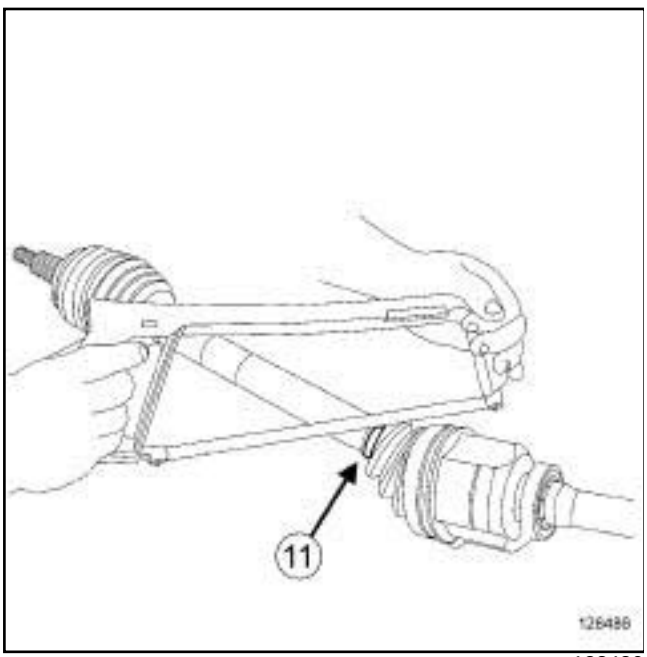
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

JH3 or JR5 or ND4 or PK4 or TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED



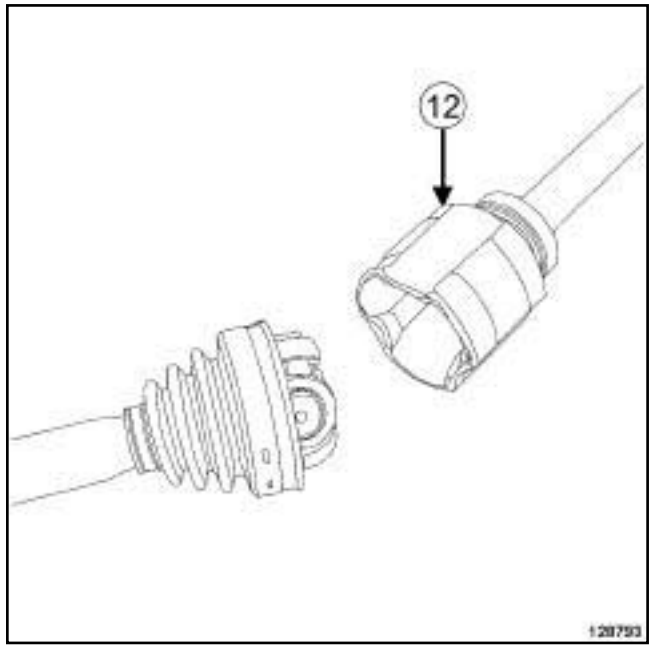
128487



128486

❏ Cut the big securing clip (**10**) and the small securing clip (**11**) using cutting pliers or a metal saw, taking care not to damage the yoke sleeve or the driveshaft.

❏ Push back the driveshaft gaiter to release the driveshaft yoke sleeve.



128793

❏ Remove the driveshaft yoke sleeve (**12**) .

Note:

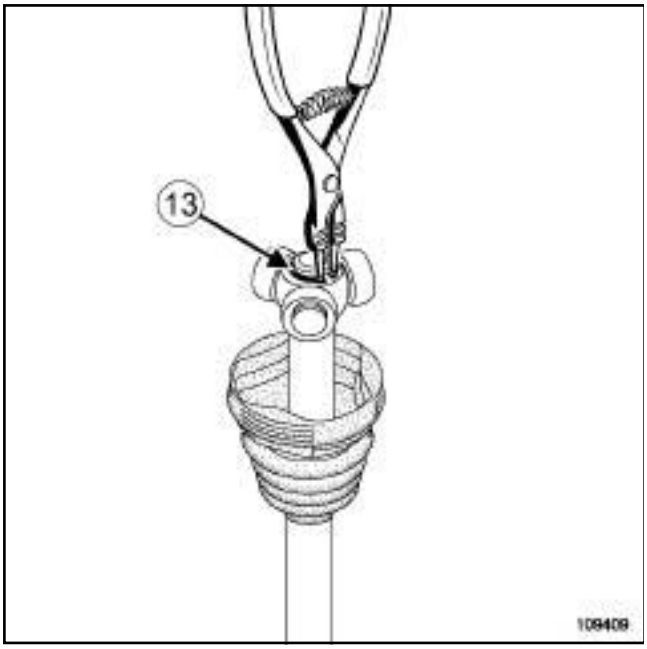
- since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced,
- do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

❏ Remove as much grease as possible from inside the yoke sleeve.

Note:

Never use thinner to remove grease.

JH3 or JR5 or ND4 or PK4 or TL4

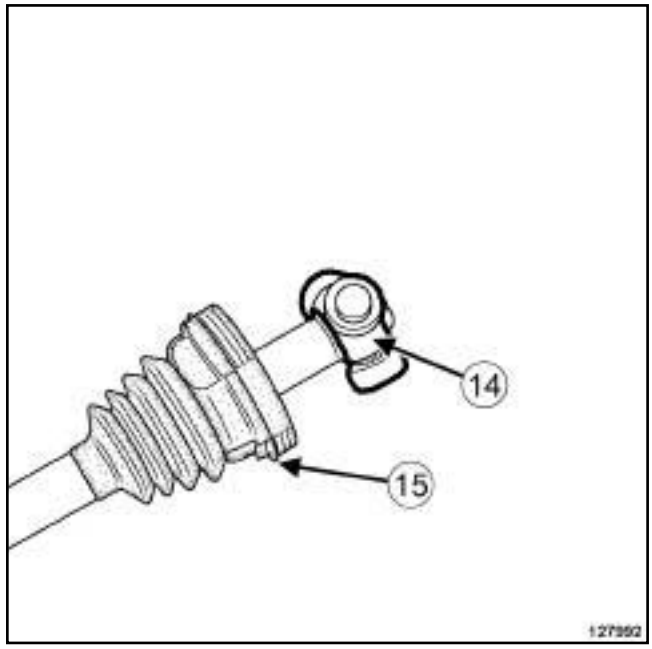


109409

❑ Remove the lock ring (**13**) using circlip pliers.

Note:

Mark the position of the spider before extracting it.



127992

❑

Note:

Mark the position of the spider before extracting it.

❑ Remove the spider (**14**) using a press and a releasing type extractor.

❑ Remove the driveshaft gaiter (**15**) from the driveshaft.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front right-hand driveshaft gaiter on gearbox side (13,01,03,03)**.

❑ **parts always to be replaced: gearbox side front driveshaft seal locking ring (13,01,01,08)**.

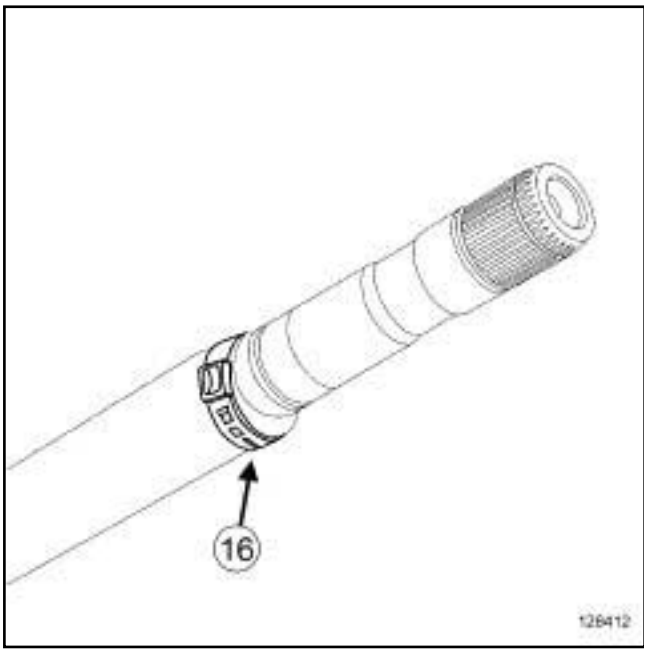
❑ Always replace:

- the big securing clip,
- the small securing clip.

❑ Use a **parts washer** to clean the driveshaft, the spider and the driveshaft yoke sleeve.

JH3 or JR5 or ND4 or PK4 or TL4

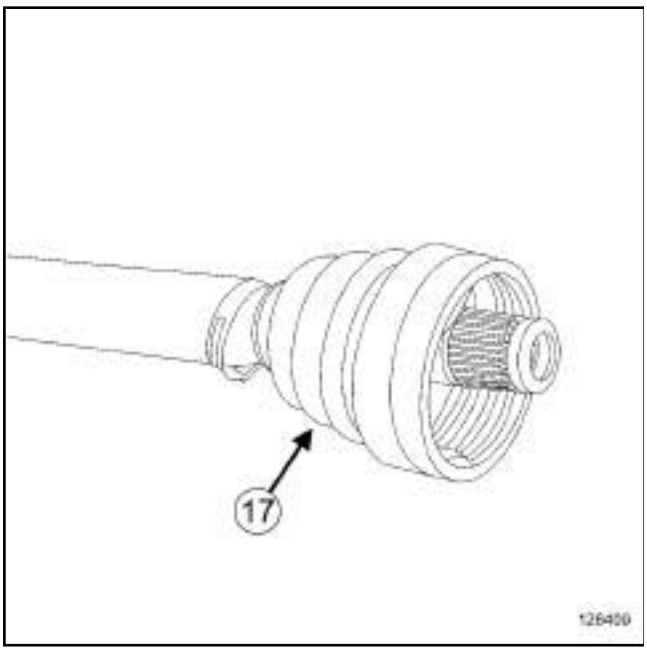
II - REFITTING OPERATION FOR PART CONCERNED



128412

❏ Fit the small tightening clip (**16**) to the propeller shaft.

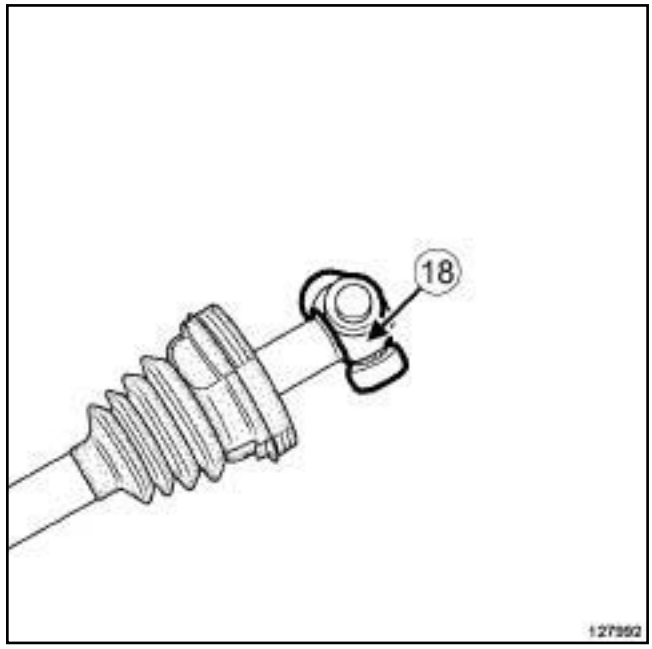
❏ Lightly lubricate the driveshaft using the grease supplied with the gaiter to facilitate its fitting.



128409

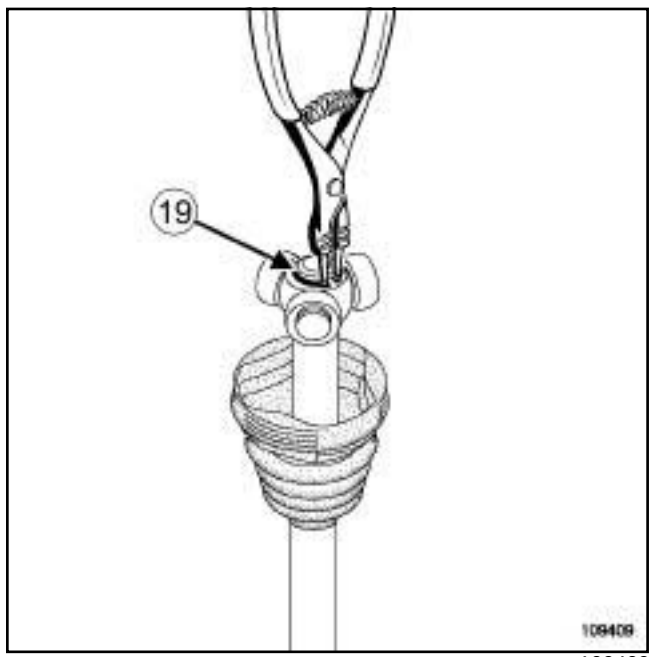
❏ Refit the gaiter (**17**) onto the driveshaft.

❏ Insert the gaiter lip into the groove of the driveshaft.



127992

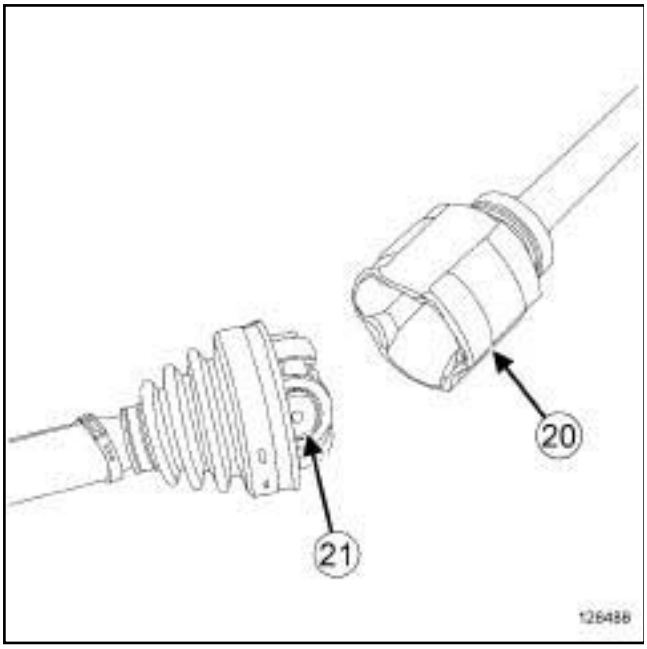
❏ Refit the spider (**18**) in the position marked during removal.



109409

❏ Fit a new lock ring (**19**) using circlip pliers.

JH3 or JR5 or ND4 or PK4 or TL4



128488

❏ Divide the quantity of grease between the driveshaft gaiter and the yoke sleeve.

❏ Engage the yoke sleeve (**20**) on the tripod (**21**) .

❏ Position the driveshaft gaiter lip into the groove of the yoke sleeve.

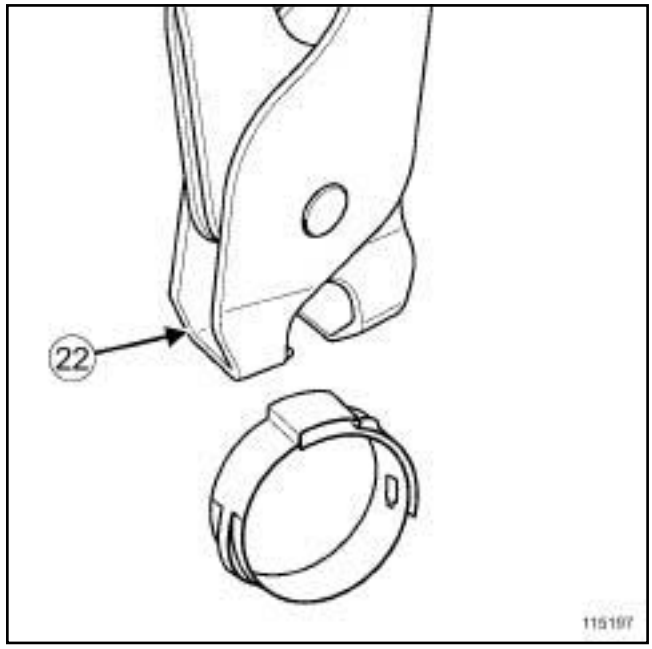
Note:

Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

❏ Fit the small securing clip on the driveshaft gaiter.

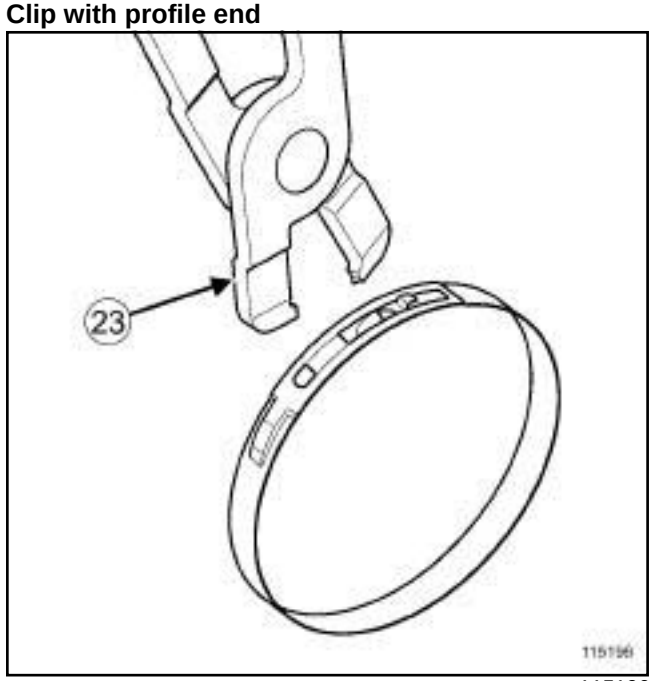
❏ Refit the big securing clip on the driveshaft gaiter.

Clic clip



115197

Clip with profile end



115196

❏ Tighten the clips using the tool **(Tav. 1168)** (**22**) for clic clips or the tool **(Tav. 1784)** (**23**) for profile end clips.

III - FINAL OPERATION

❏ Refit:

- a new differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,

JH3 or JR5 or ND4 or PK4 or TL4

- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand wheel driveshaft: Removal - Refitting**, page **29A-18**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

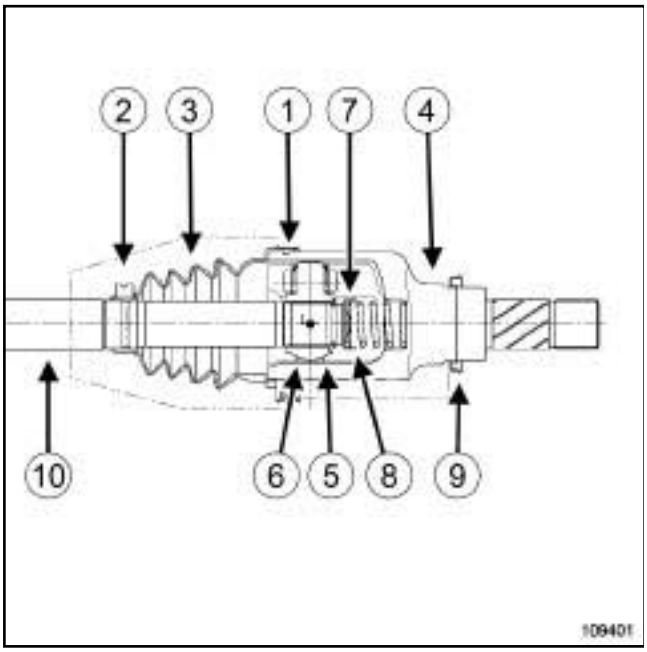
❏ Refit the engine undertray.

Front left-hand driveshaft gaiter on gearbox side: Removal - Refitting

JH3 or JR5 or ND4 or PK4 or TL4

Essential special tooling	
Tav. 1168	Thermoplastic driveshaft gaiter clip fitting tool.
Tav. 1784	Driveshaft gaiter clip tool.

Essential equipment
parts washer



109401

(**1**) Big securing clip
(**2**) Small securing clip
(**3**) Driveshaft gaiter
(**4**) Driveshaft yoke sleeve
(**5**) Lock ring
(**6**) Spider
(**7**) Cup
(**8**) Cup spring
(**9**) Deflector
(**10**) Driveshaft

❑

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

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

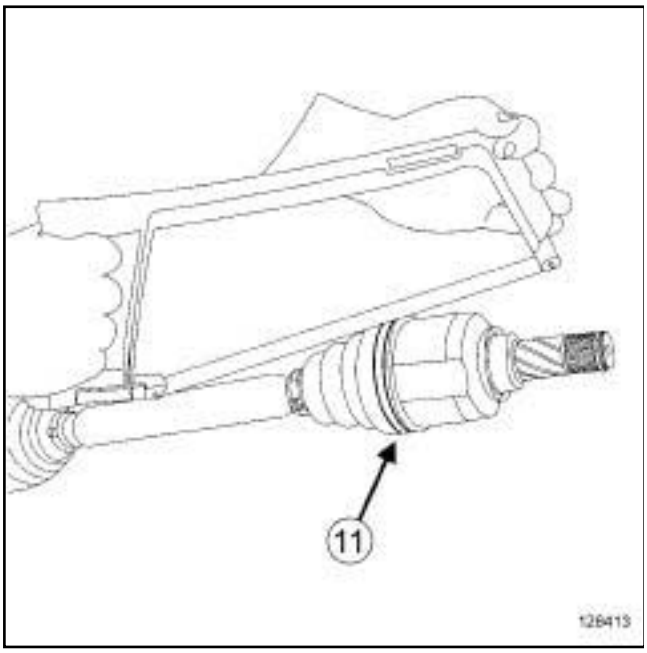
❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❑ Remove:

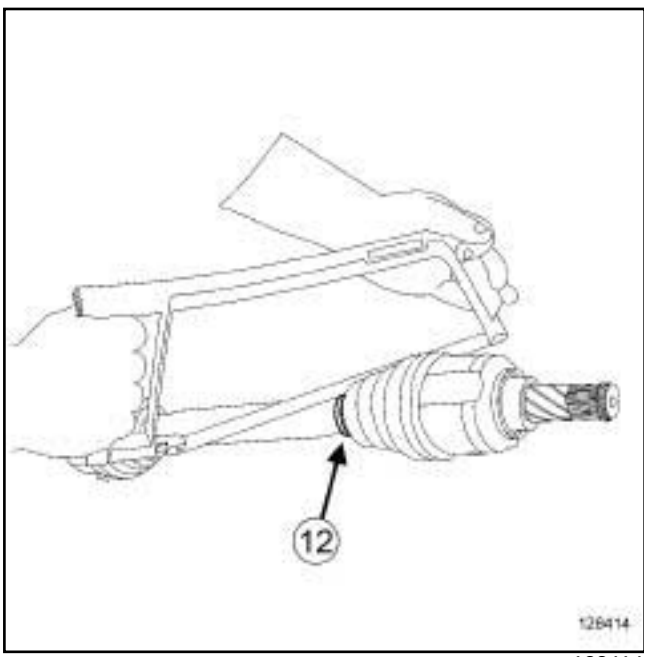
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) .

JH3 or JR5 or ND4 or PK4 or TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED



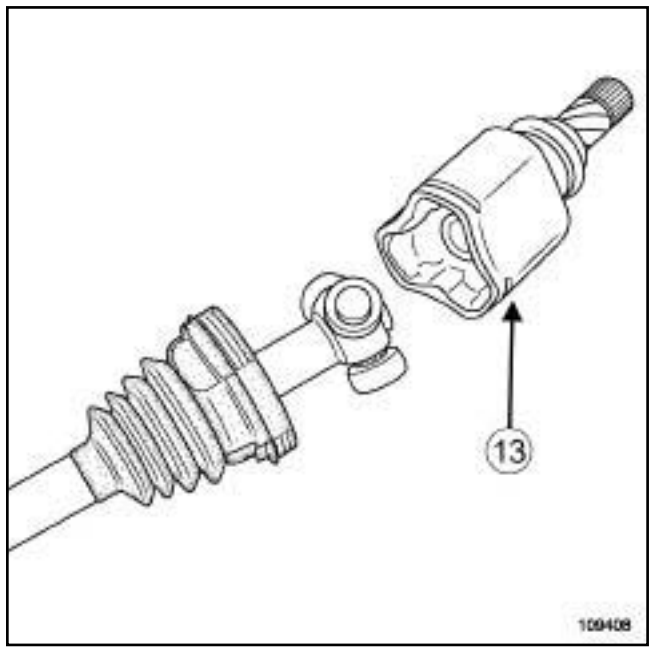
128413



128414

❏ Cut the big securing clip (**11**) and the small securing clip (**12**) using cutting pliers or a metal saw, taking care not to damage the yoke sleeve or the driveshaft.

❏ Push back the driveshaft gaiter to release the driveshaft yoke sleeve.



109408

❏ Remove the driveshaft yoke sleeve (**13**) .

Note:

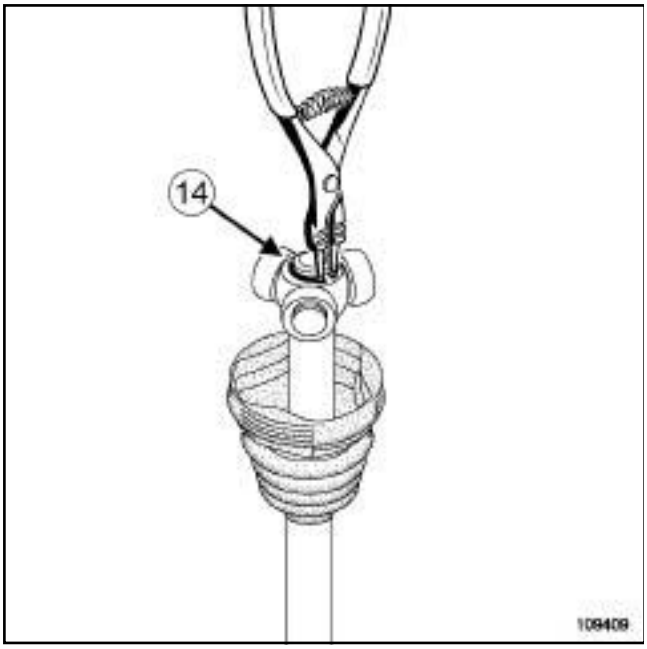
- since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced,
- do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

❏ Remove as much grease as possible from inside the driveshaft yoke sleeve.

Note:

Never use thinner to remove grease.

JH3 or JR5 or ND4 or PK4 or TL4

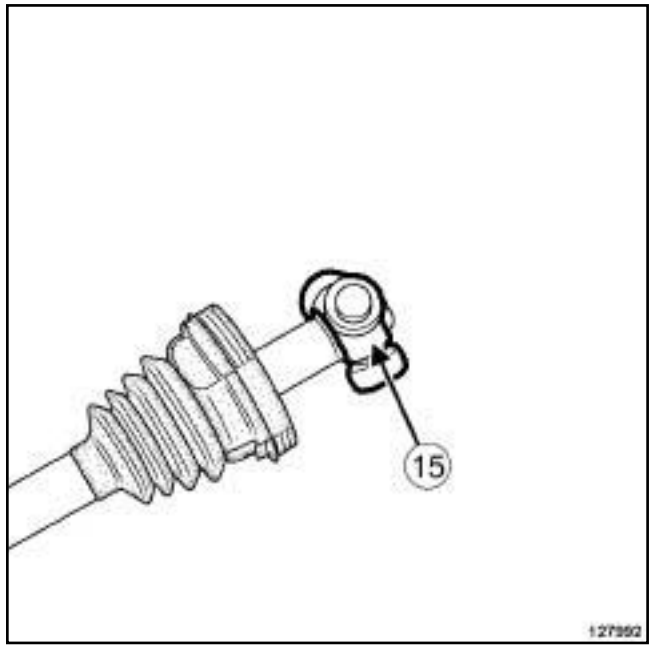


109409

❑ Remove the lock ring (**14**) using circlip pliers.

Note:

Mark the position of the spider before extracting it.



127992

❑

Note:

Mark the position of the spider before extracting it.

❑ Remove the spider (**15**) using a press and a releasing type extractor.

❑ Remove:

- the gaiter from the driveshaft,
- the cup equipped with the cup spring.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front left-hand driveshaft gaiter on gearbox side (13,01,03,04)**.

❑ **parts always to be replaced: gearbox side front driveshaft seal locking ring (13,01,01,08)**.

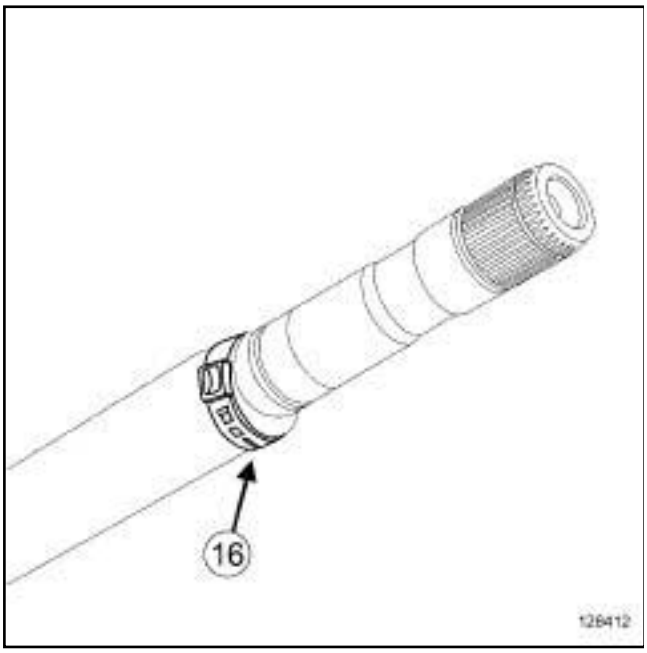
❑ Always replace:

- the cup,
- the cup spring,
- the big securing clip,
- the small securing clip.

❑ Use a **parts washer** to clean the driveshaft, the spider and the driveshaft yoke sleeve.

JH3 or JR5 or ND4 or PK4 or TL4

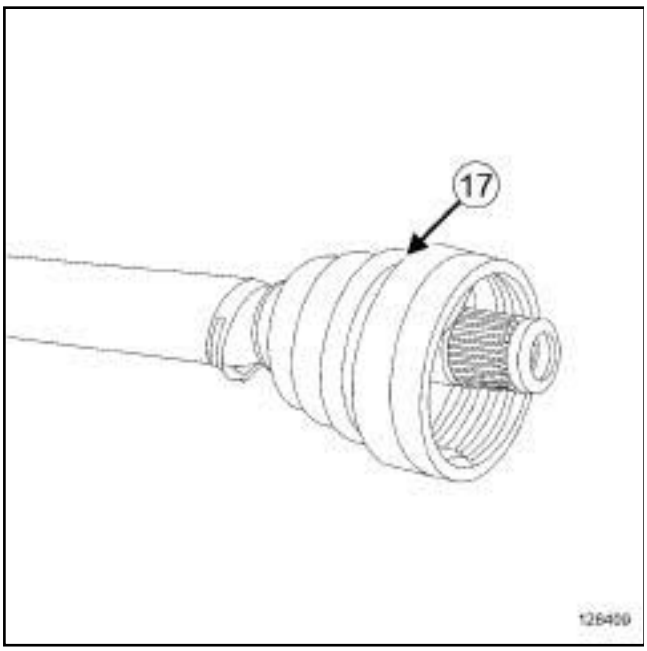
II - REFITTING OPERATION FOR PART CONCERNED



128412

❏ Fit the small securing clip (**16**) onto the driveshaft.

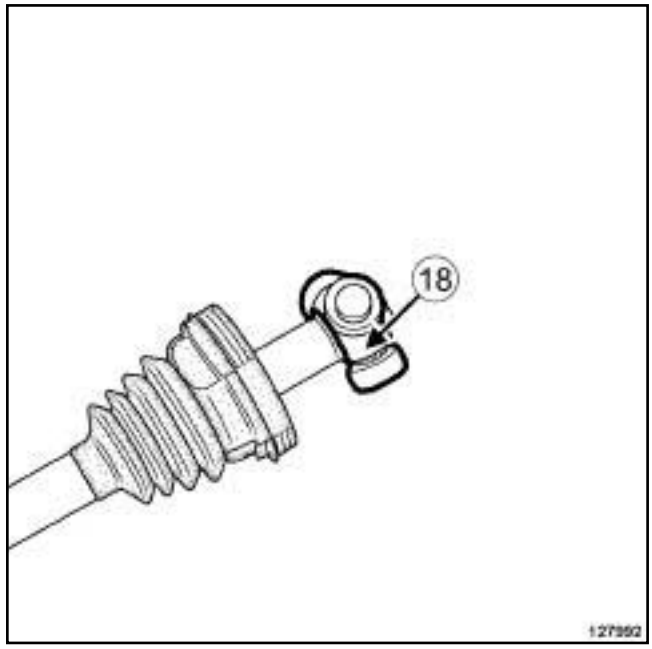
❏ Lightly lubricate the driveshaft using the grease supplied with the gaiter to facilitate its fitting.



128409

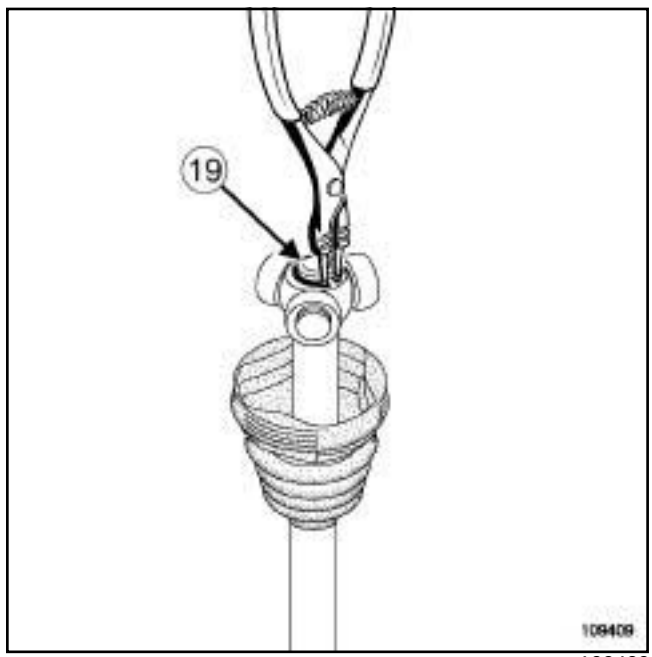
❏ Refit the gaiter (**17**) onto the driveshaft.

❏ Insert the gaiter lip into the groove of the driveshaft.



127992

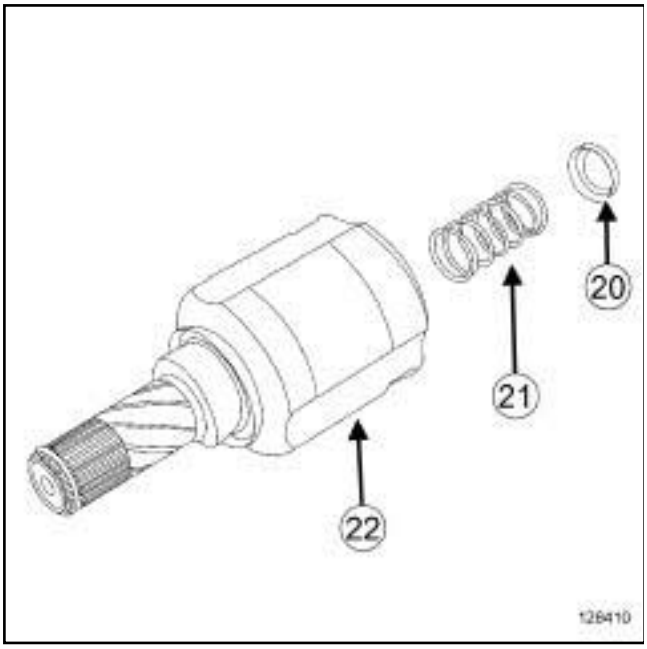
❏ Refit the spider (**18**) in the position marked during removal.



109409

❏ Refit a new lock ring (**19**) using circlip pliers.

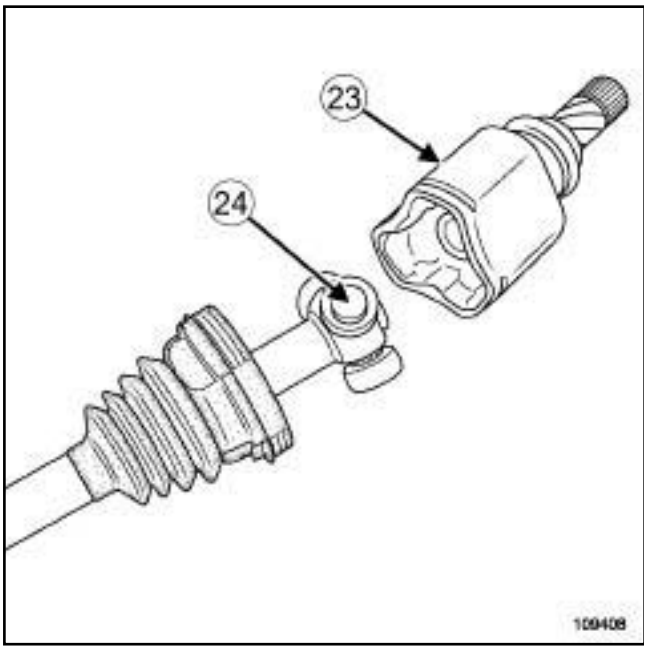
JH3 or JR5 or ND4 or PK4 or TL4



128410

❏ Refit:

- the cup (**20**) onto the cup spring (**21**) ,
- the cup spring equipped with the cup into the driveshaft yoke sleeve (**22**) .



109408

❏ Divide the quantity of grease between the driveshaft gaiter and the yoke sleeve.

❏ Engage the yoke sleeve (**23**) on the tripod (**24**) .

❏ Position the driveshaft gaiter lip into the groove of the yoke sleeve.

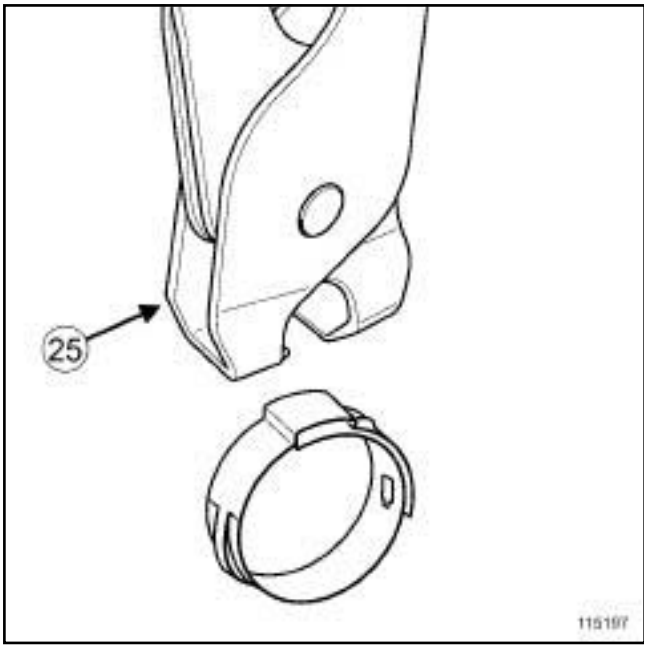
> Note:
>
> Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

❏ Fit the small securing clip on the driveshaft gaiter.

❏ Refit the big securing clip on the driveshaft gaiter.

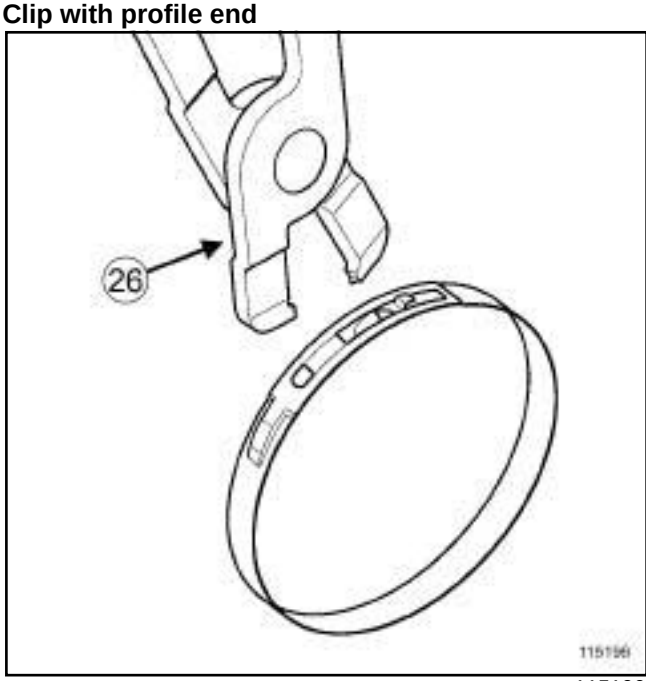
JH3 or JR5 or ND4 or PK4 or TL4

Clic clip



115197

Clip with profile end



115196

❏ Tighten the clips using the tool **(Tav. 1168)** (**25**) for clic clips or the tool **(Tav. 1784)** (**26**) for profile end clips.

III - FINAL OPERATION

❏ Refit:

- a new differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-10**) ,
- the front left-hand driveshaft (see **29A**, **Driveshafts**, **Front left-hand wheel driveshaft: Removal - Refitting**, page **29A-2**) ,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❏ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oil: Draining - Refilling**, page **21A-2**) .

❏ Refit the engine undertray.