RENAULT

2 Transmission

20A CLUTCH

21A MANUAL GEARBOX

29A DRIVESHAFTS

X79

NOVEMBER 2009 **EDITION ANGLAISE**

DUSTER - Chapitre 2

Contents

Clutch: Precautions for the repair

Before removing the clutch, check:

- The direction of fitting for the clutch plate.

Before refitting the clutch, check:

- The flywheel friction track (no scratches or blue stains),
- The crankshaft bearing (no sticking),
- The engine and gearbox seals (replace if necessary),
- The sliding action of the clutch plate on the output shaft,
- The guide of the thrust bearing and clutch fork (no wear or scratches).

WARNING

To prevent the clutch from juddering or slipping, do not grease the output shaft or the clutch plate hub.

During refitting:

Check the direction of the clutch plate.

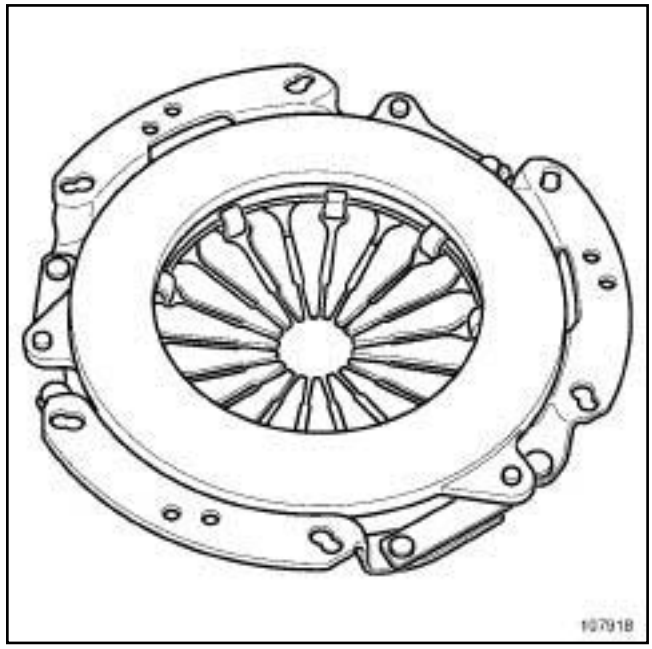
Centre the clutch plate using theor.

Gradually torque tighten the clutch pressure plate bolts.

After refitting, check:

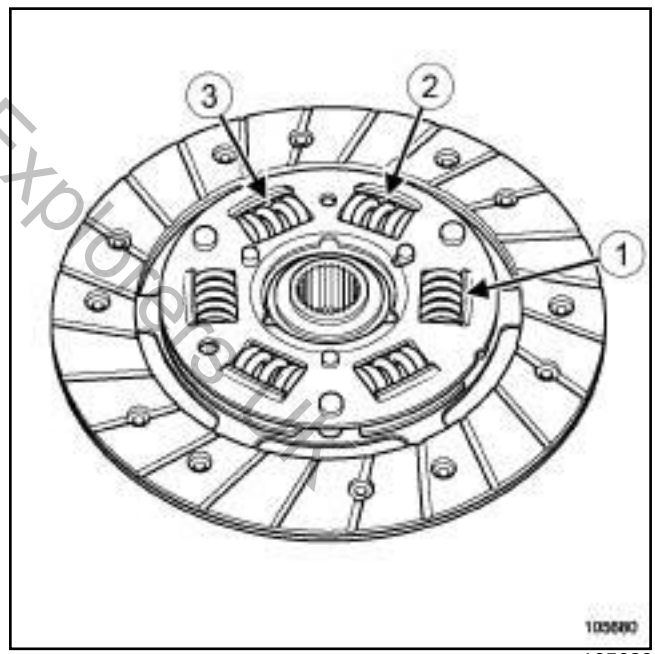
- The clutch play (for a cable operated vehicle),
- Bleeding of the hydraulic circuit (for vehicles with hydraulic controls).

K4M or K9K



107918

Drive plate



105680

Plate external diameter: **200 mm**

Plate thickness: **7.5 mm**

Number of splines: **26**

Spring colour (**1**) : **Grey**

Spring colour (**2**) : **Green**

Spring colour (**3**) : **Lilac blue**

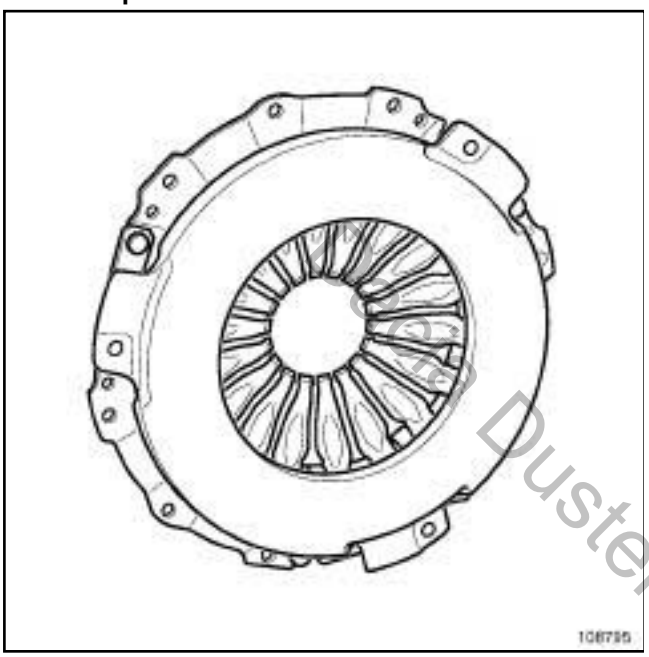
K4M

Pressure plate

K4M or K9K

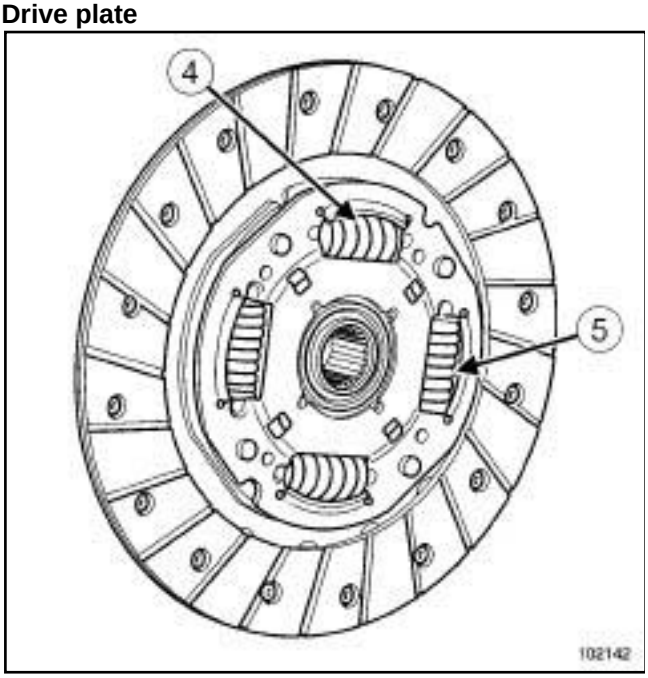
K9K

Pressure plate



108795

Drive plate



102142

Plate outer diameter: **215 mm**.

Plate thickness: **6.9 mm**.

Number of grooves: **26**.

Colours of the springs (**4**) : Red and black.

Colour of spring (**5**) : Grey.

K4M

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

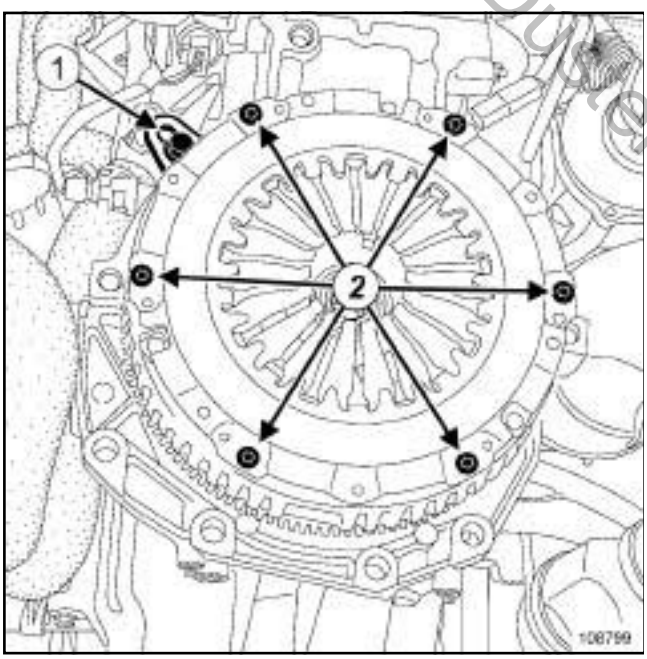
- (see **20A**, **Clutch**, **Clutch: Precautions for the repair**, page **20A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

II - REMOVAL OPERATION



108799

❏ Lock the engine using the (**1**) .

❏ Remove:

- the clutch pressure plate bolts (**2**) .
- the clutch pressure plate,
- the friction plate.

REFITTING

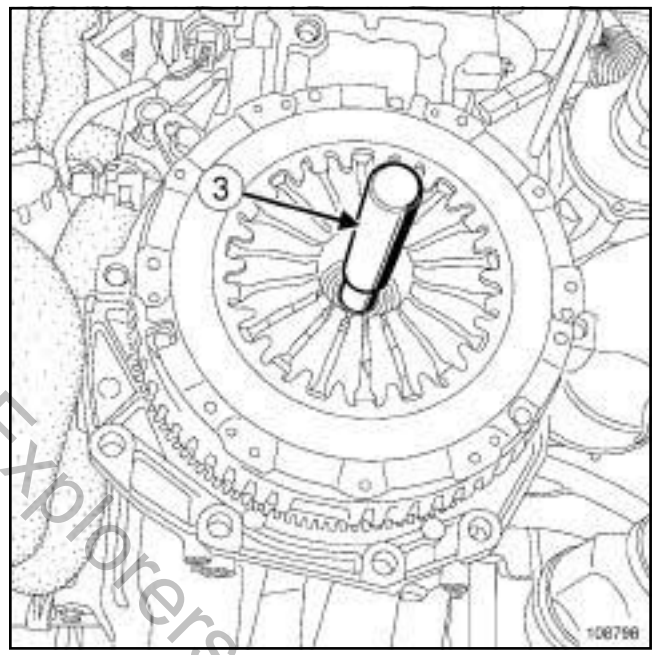
I - REFITTING PREPARATION OPERATION

❏ Replace any faulty parts.

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

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

II - REFITTING OPERATION



108798

❏ Position the clutch plate.

❏ Centre the clutch plate using theor (**3**) .

❏ Gradually tighten the clutch pressure plate bolts radially.

❏ Remove the tool.

III - FINAL OPERATION

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

K9K

Tightening torques ▽	
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:

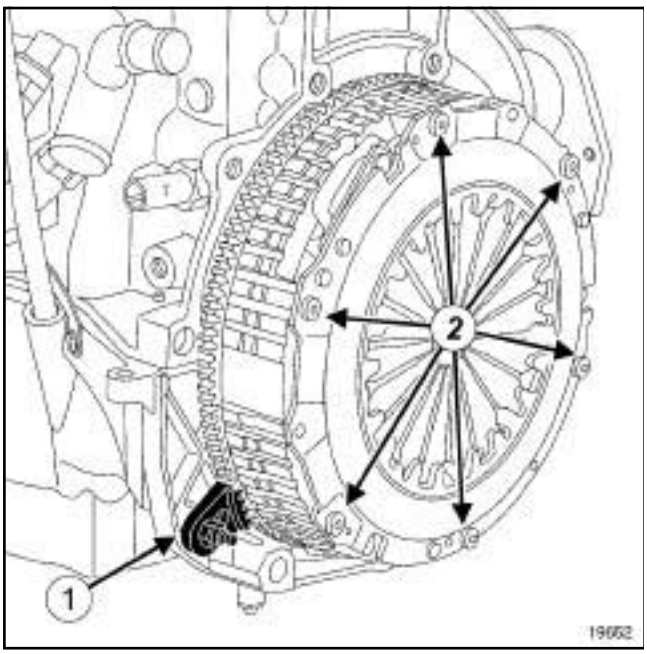
- (see **20A**, **Clutch**, **Clutch: Precautions for the repair**, page **20A-1**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

II - REMOVAL OPERATION



19652

❏ Lock the engine using the (**1**) .

❏ Remove:

- the clutch pressure plate bolts (**2**) .
- the clutch pressure plate,
- the friction plate.

REFITTING

I - REFITTING PREPARATION OPERATION

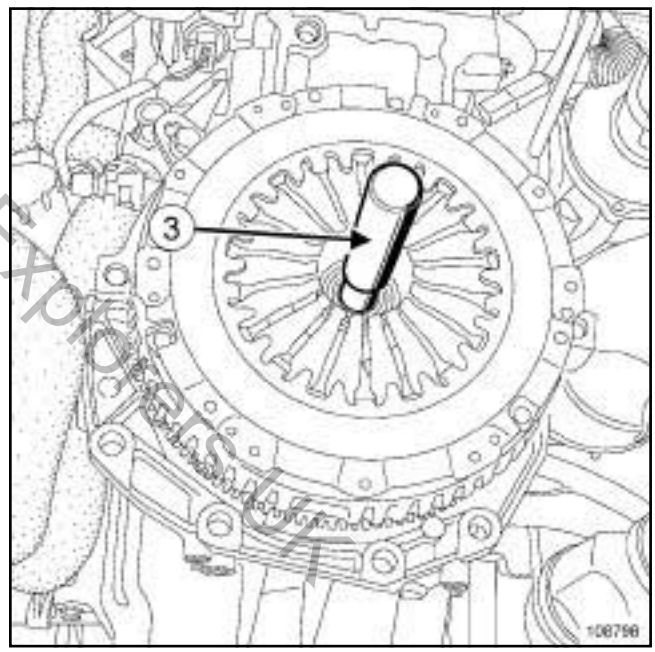
❏ Replace any faulty parts.

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

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

WARNING
Do not grease the clutch shaft splines.

II - REFITTING OPERATION



108798

❏ Position the clutch plate.

❏ Centre the clutch plate using theor (**3**) .

❏ Tighten the clutch pressure plate mounting bolts gradually and radially.

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

❏ Remove the tool.

III - FINAL OPERATION

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

JR5

Tightening torques ▽	
clutch thrust bearing bolts on the clutch housing	21 N.m

The thrust bearing is connected to the clutch slave cylinder.

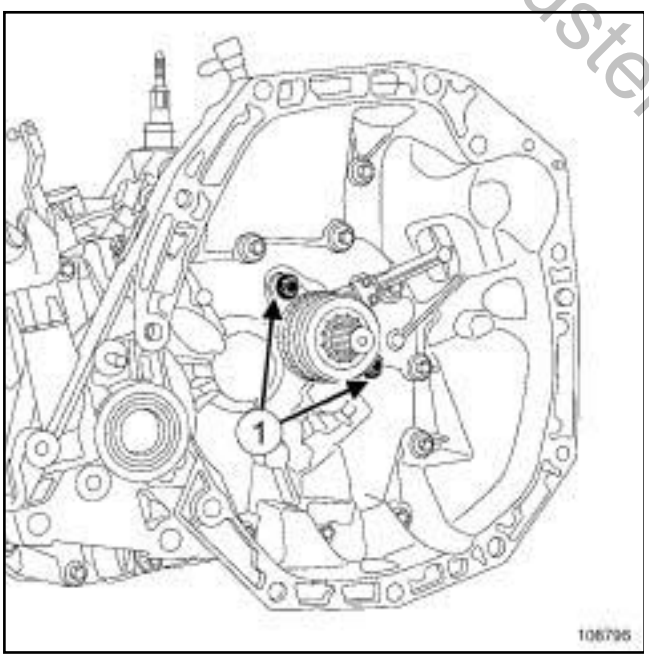
REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ Drain the brake reservoir using a syringe to remove the clutch thrust bearing and control.

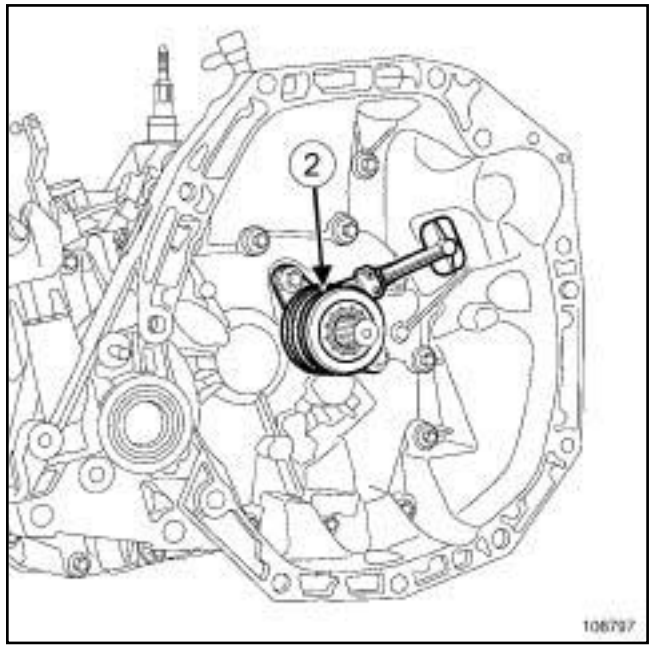
❏ Remove the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

II - REMOVAL



108796

❏ Remove the two clutch thrust bearing bolts (**1**) on the clutch housing.



108797

❏ Remove the clutch thrust bearing (**2**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Always replace the clutch thrust bearing.

❏

Note:

To obtain optimum bleeding, prefill the clutch thrust bearing when refitting.

II - REFITTING

❏ Refit a new clutch thrust bearing.

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

WARNING

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

Never operate the system while the slave cylinder is removed.

III - FINAL OPERATION

❏ Refit the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox: Removal - Refitting**, page **21A-4**) .

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

JR5

Tightening torques ▽	
drain plug	**22 N.m**

Type of gearbox	Capacity (litres)
JH1	2.8
JH3	
JR5	2.5

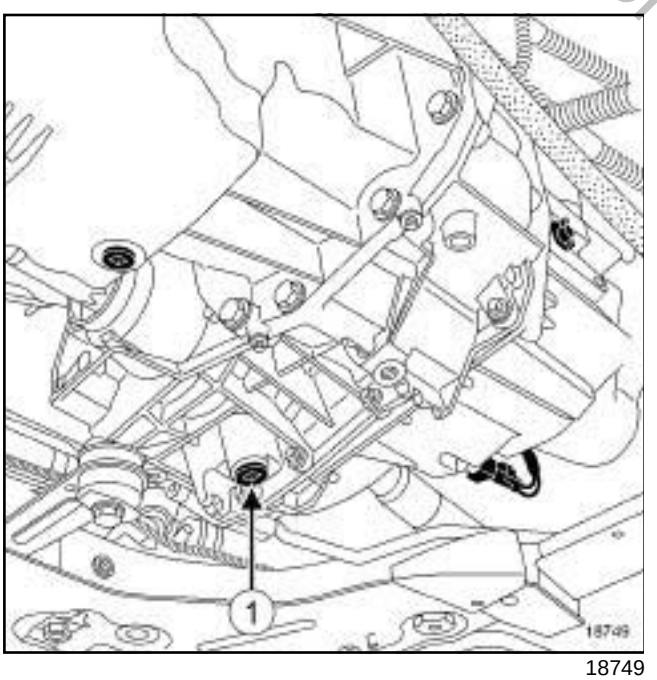
DRAINING

❏ 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 tray under the gearbox.



18749

❏ Remove the drain plug (**1**) .

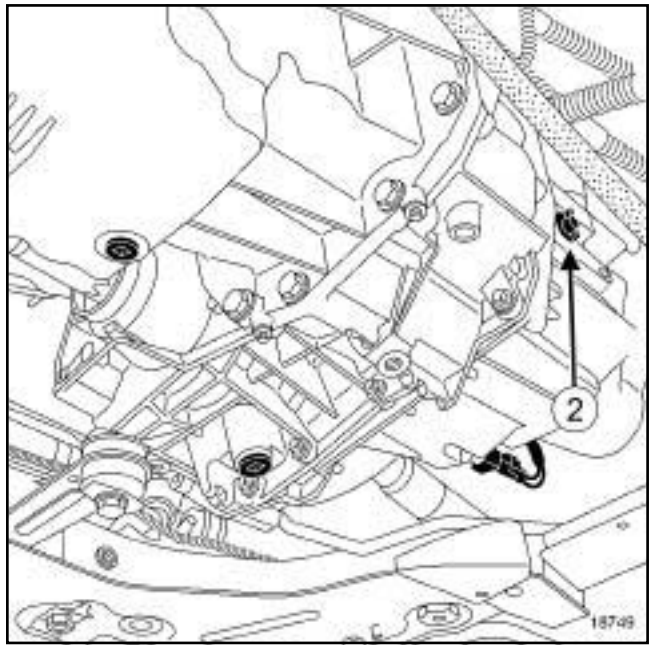
❏ Allow the oil to flow into the oil recovery tray.

FILLING

❏ It is essential to replace the drain plug seal.

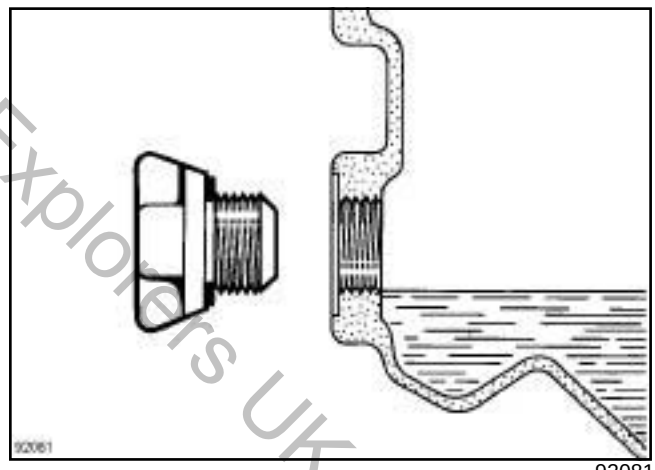
❏ Refit the drain plug fitted with a new seal.

❏ Torque tighten the **drain plug (22 N.m)**.



18749

❏ Remove the filler cap (**2**) .



92081

❏ Fill the gearbox up to the level of the opening with oil recommended by the manufacturer (see **Manual gearbox oil: Specifications**) (Technical Note 6012A, 04, Lubricants).

❏ Refit the filler cap.

❏ Wipe any oil run-off with a cloth.

❏ Remove the oil recovery tray.

❏ Refit the engine undertray.

JR5

REMOVAL

I - REMOVAL PREPARATION OPERATION

❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 388, 02A, Lifting equipment).

❑ Remove:

- the engine undertray bolts,
- the engine undertray.

❑ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

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

❑ Remove:

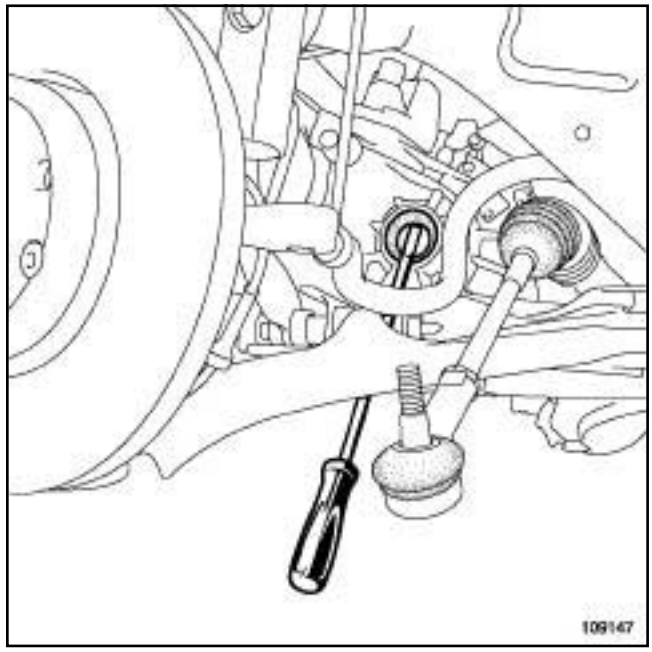
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) (29A, Driveshafts).

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

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) (29A, Driveshafts).

II - REMOVAL OPERATION



109147

❑ Tap the base of the lip seal using a drift punch and a small hammer to release it and cause it to turn in its housing.

❑ Withdraw the lip seal using a screwdriver, taking care not to damage the differential housing.

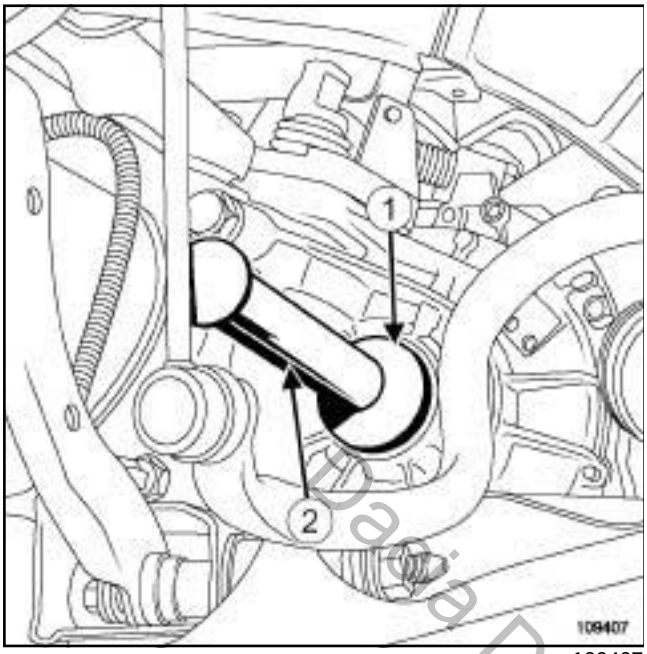
REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Differential output seal**.

JR5

II - REFITTING OPERATION



109407

❏ Refit the differential output seal using the tool (**1**) with **A** on the right-hand side, and **B** on the left-hand side.

❏ Tap the toolwith a copper hammer (**2**) to fit the new differential output seal fully.

III - FINAL OPERATION

❏ Proceed in the reverse order to removal.

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

K9K, and JR5

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
component jack

Tightening torques ▽	
stud on the engine	**8 N.m**
stud on the gearbox	**8 N.m**
gearbox stud nuts	**44 N.m**
upper and lower gear-box bolts	**44 N.m**
power-assisted steering pipe bolt on the sub-frame	**21 N.m**
power-assisted steering pipe bolt on the gear-box mounting	**21 N.m**
power-assisted steering pipe bolt on the gearbox	**21 N.m**
earth strap bolts on the gearbox	**21 N.m**
expansion bottle nuts	**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 **Manual gearbox: Precautions for the repair**) ,
- (see **Vehicle: Precautions for the repair**) .

REMOVAL

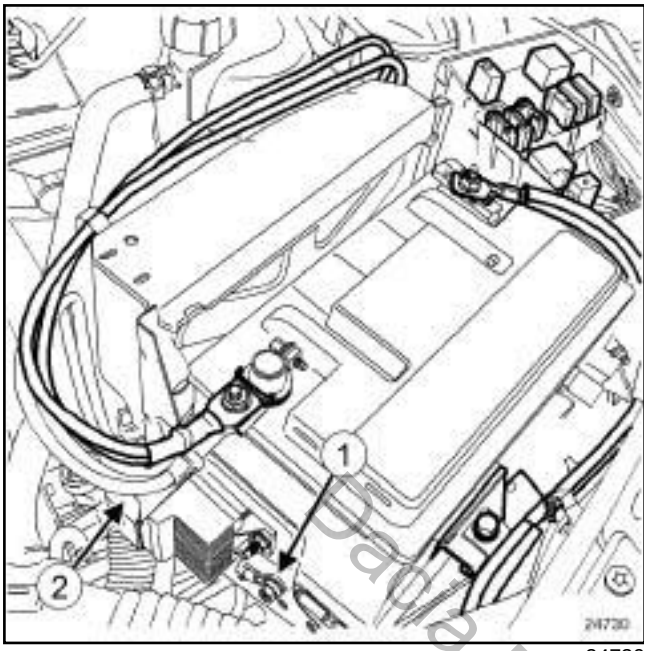
I - REMOVAL PREPARATION OPERATION

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

IMPORTANT

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

K9K, and JR5



24730

❏ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray,
- the earth strap nut (**1**) ,
- the injection computer (see **Diesel injection computer: Removal - Refitting**) (13B, Diesel injection),
- the wiring mounting on the injection computer support.

❏ Move the engine harness aside.

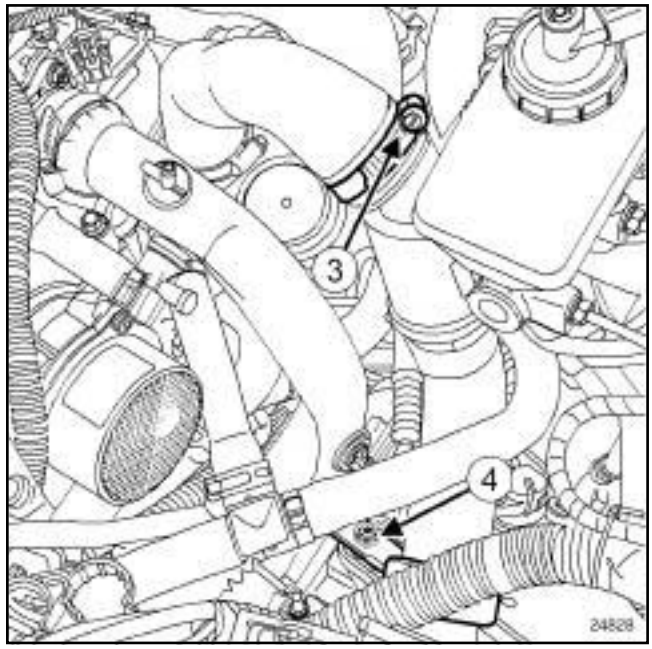
❏ Disconnect:

- the pre-postheating unit connector (**2**) ,
- the vehicle speed sensor connector.

❏ Remove:

- the vehicle speed sensor protective cover,
- the expansion bottle nuts.

❏ Move aside the expansion bottle from its support.



24828

❏ Remove:

- the clip (**3**) on the air pipe between the turbocharger and the intercooler,
- the air pipe nut (**4**) on the gearbox,
- the air pipe clip on the intercooler,
- the air pipe between the turbocharger and the intercooler.

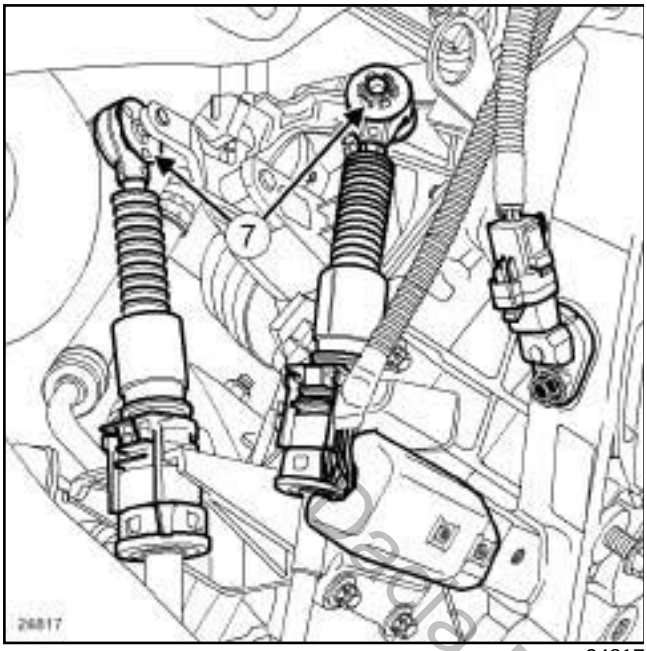
❏ Remove the wiring mountings on the gearbox.

❏ Move away the engine wiring around the gearbox.

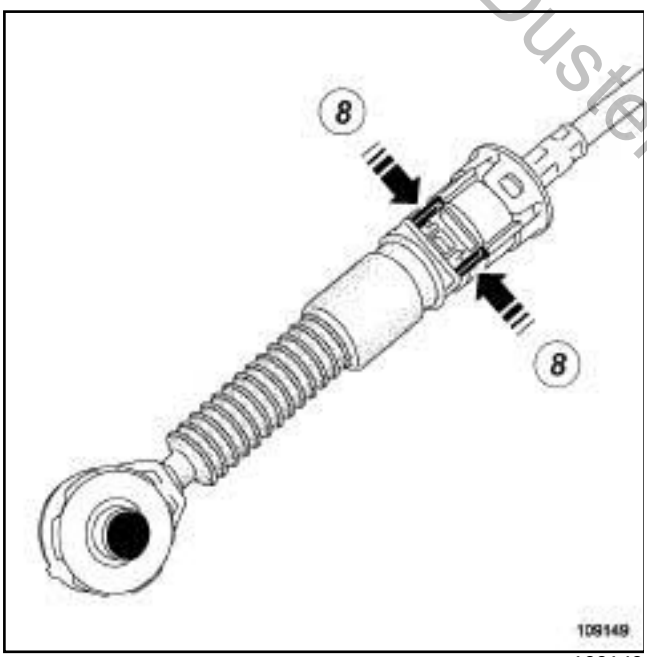
❏ Remove:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) (13B, Petrol injection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

K9K, and JR5



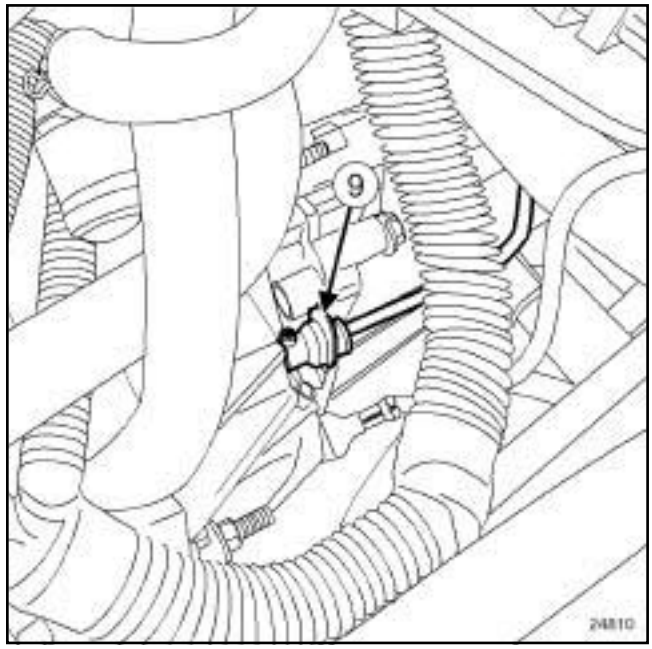
24817



109149

❑ Unclip:

- the gear control cables on the gearbox at (**7**) ,
- the gearbox control cable sleeve stops by pressing at (**8**) .



24810

❑ Press on the clip (**9**) and disconnect the clutch control pipe on the clutch slave cylinder.

WARNING

Do not pull the clip. If it is incorrectly handled in any way, the pipe will need to be replaced.

❑ Recover the brake fluid in a container.

❑ Fit blanking plugs into openings.

❑ Remove the engine undertray.

❑ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

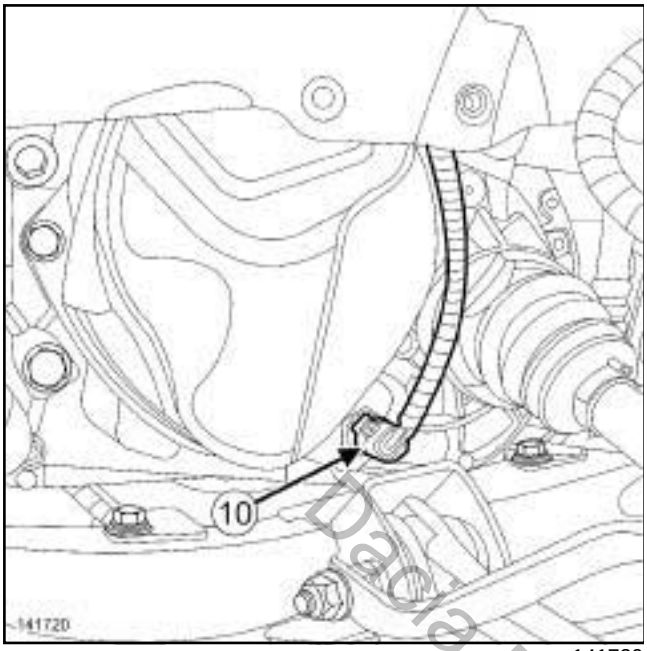
❑ Remove the front bumper (see **Front bumper assembly: Exploded view**) .

1 - LEFT-HAND SIDE OF VEHICLE:

❑ Remove the front left-hand wheel arch side liner.

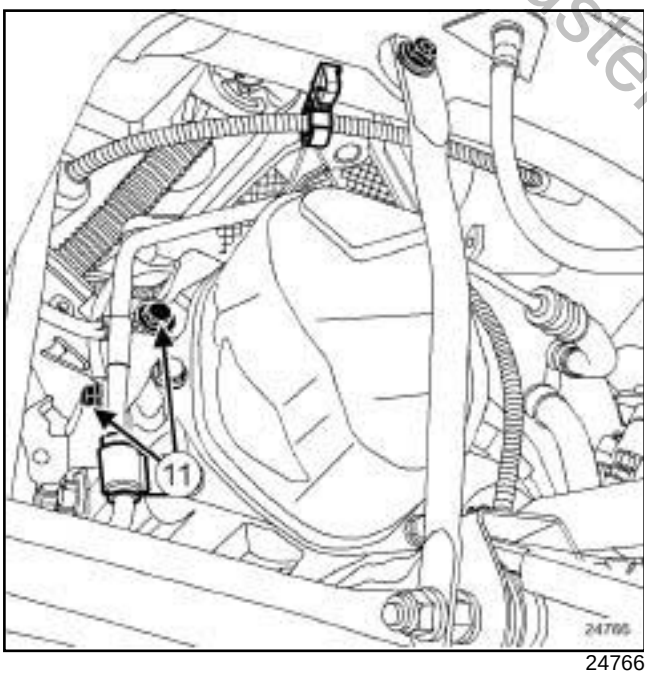
❑ Uncouple the front left-hand driveshaft from the gearbox (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

K9K, and JR5



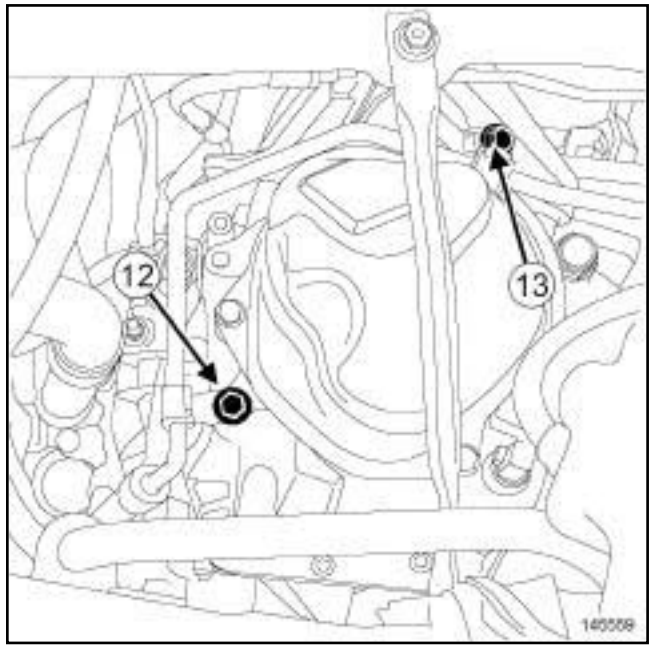
141720

❏ Disconnect the reverse gear connector (**10**) .

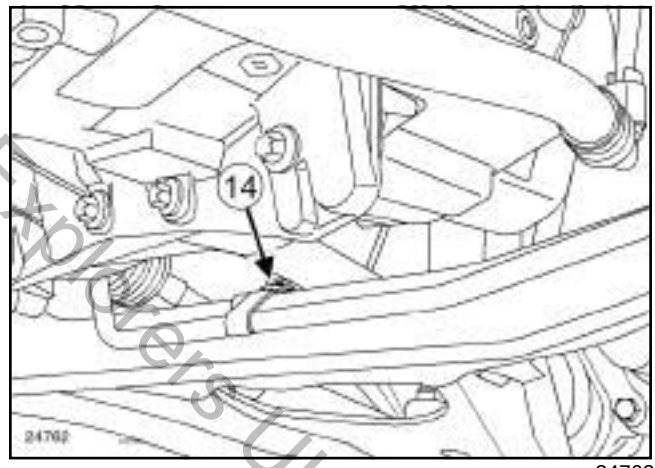


24766

❏ Remove the earth strap bolts (**11**) on the gearbox.



145559



24762

❏ Remove:

- the bolt (**12**) from the power-assisted steering pipe on the gearbox,
- the bolt (**13**) from the power-assisted steering pipe on the gearbox mounting,
- the bolt (**14**) from the power-assisted steering pipe on the subframe.

2 - RIGHT-HAND SIDE OF VEHICLE

❏ Remove the front right-hand wheel arch side liner.

❏ Uncouple the front right-hand wheel driveshaft from the gearbox (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

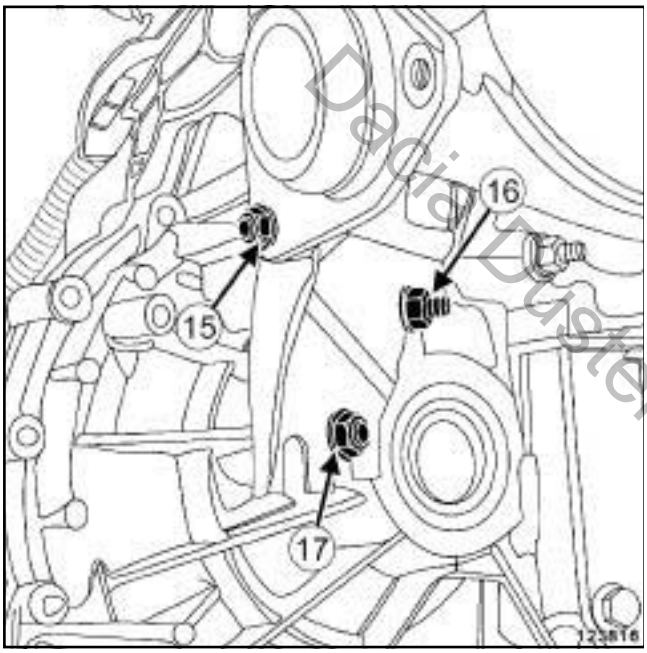
K9K, and JR5

❏ Remove the steering box bolts on the subframe.

❏ Attach the steering rack to the body.

❏ Remove:

- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).



123816

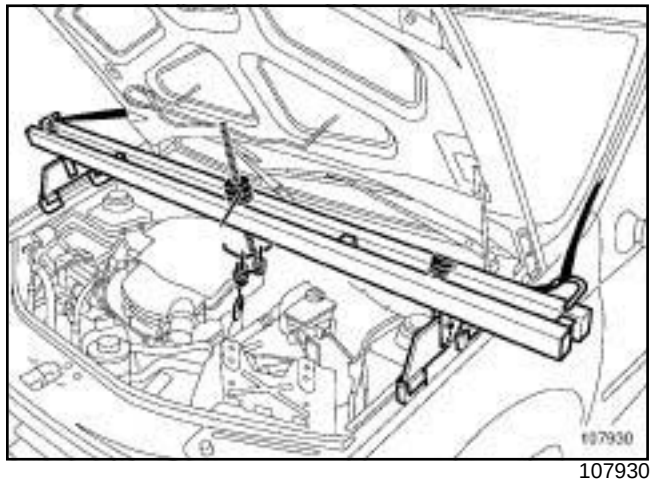
❏ Remove the bolt (**15**) from the catalytic converter downstream strut.

❏ Undo:

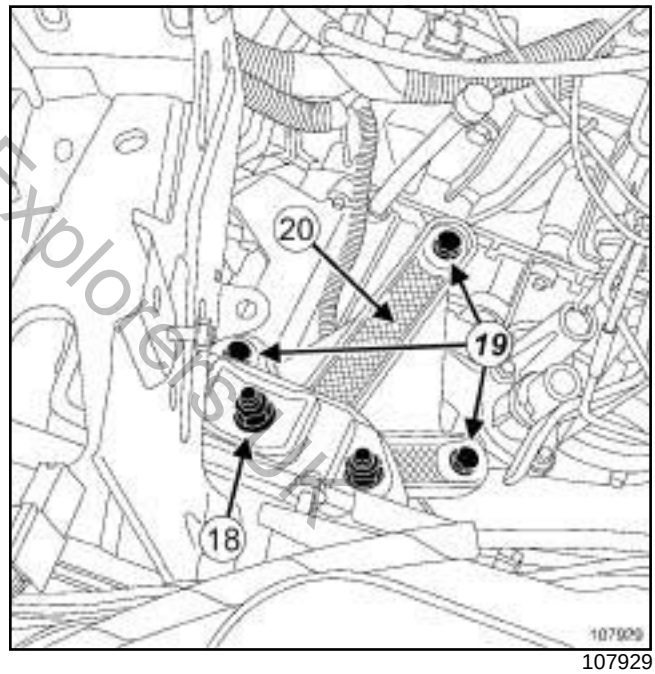
- the nut (**16**) from the catalytic converter downstream strut,
- the bolt (**17**) of the catalytic converter downstream strut.

❏ Remove the catalytic converter downstream strut.

II - REMOVAL OPERATION


107930

❏ Fit the engine support tool **(Mot. 1453)** with the retaining belt, taking the flywheel end lifting eye as an anchoring point.



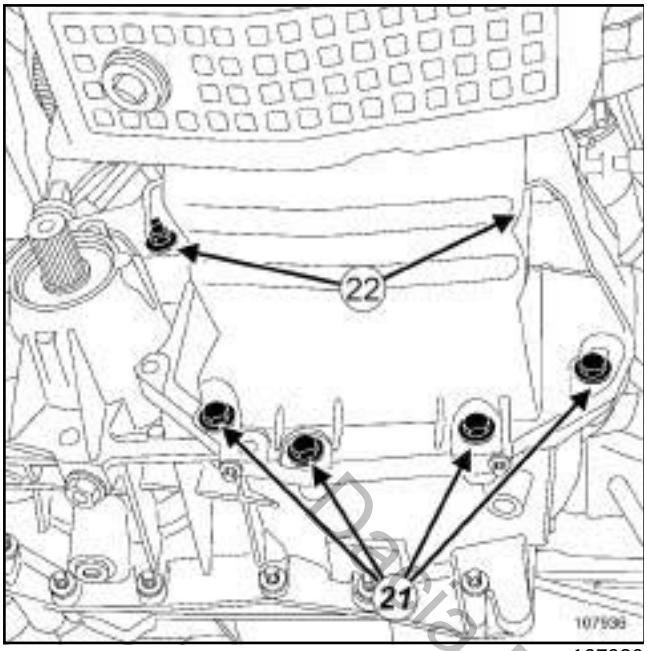
107929

❏ Remove:

- the suspended mounting nut (**18**) on the rubber pad,
- the bolts (**19**) from the gearbox suspended mounting,
- the gearbox suspended mounting (**20**) ,
- the gearbox upper bolts.

❏ Fit a **component jack** under the gearbox.

K9K, and JR5



107936

❑ Remove:

- the gearbox lower bolts (**21**) ,
- the gearbox stud nuts (**22**) ,
- the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check for leaks from the input shaft, replace the guide tube if necessary (see **21A**, **Manual gearbox**, **Input shaft lip seal: Removal - Refitting**, page **21A-25**) .

❑ Always replace:

- the differential outlet seals,
- the clutch thrust bearing.

❑ Remove:

- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-6**) .

❑ Refit:

- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .
- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-6**) .

❑

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

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

❑

Note:

If a stud is loosened during this operation, coat the stud with **HIGH RESISTANCE THREAD-LOCK** (see **Vehicle: Parts and consumables for the repair**) . .

Torque tighten:

- the **stud on the engine (8 N.m)**,
- the **stud on the gearbox (8 N.m)**.

II - REFITTING OPERATION

❑ Check that the engine - gearbox centring rings are in place and correctly positioned.

❑ Couple the gearbox to the engine.

❑ Refit the gearbox stud nuts.

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

❑ Refit:

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

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

❑ Remove the **component jack**.

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

❑ Remove the engine support tool (**Mot. 1453**).

K9K, and JR5

III - FINAL OPERATION

❑ Refit:

- the catalytic converter downstream strut (see **Catalytic converter: Removal - Refitting**) ,
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the steering box (see **Steering box: Removal - Refitting**) (36A, Steering assembly).

❑ Connect the vehicle speed sensor connector.

❑ Refit:

- the vehicle speed sensor protective cover,
- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) .

IV - RIGHT-HAND SIDE OF THE VEHICLE

❑ Couple the front right-hand wheel driveshaft, on the gearbox side (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

❑ Refit the front right-hand wheel arch side liner.

V - LEFT-HAND SIDE OF THE VEHICLE

❑ Refit:

- the power-assisted steering pipe bolt on the subframe,
- the bolt for the power-assisted steering pipe on the gearbox mounting,
- the power-assisted steering pipe bolt on the gearbox.

❑ Torque tighten:

- the **power-assisted steering pipe bolt on the subframe (21 N.m)**,
- the **power-assisted steering pipe bolt on the gearbox mounting (21 N.m)**,
- the **power-assisted steering pipe bolt on the gearbox (21 N.m)**.

❑ Refit the earth strap bolts on the gearbox.

❑ Torque tighten the **earth strap bolts on the gearbox (21 N.m)**.

❑ Connect the reverse gear connector.

❑ Couple the front left-hand wheel driveshaft, on the gearbox side (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

❑ Refit the front left-hand wheel arch side liner.

❑ Refit the front bumper (see **Front bumper assembly: Exploded view**) .

❑ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❑ Refit the engine undertray.

❑ Connect the clutch control pipe to the clutch slave cylinder.

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

❑ Refit:

- the gearbox control cable sleeve stops on the gearbox,
- the gear control cables to the gearbox.

❑ Refit:

- the wiring on the gearbox,
- the wiring mounting on the injection computer mounting,
- the injection computer (see **Diesel injection computer: Removal - Refitting**) (13B, Diesel injection),
- the earth strap mounting nut,

❑ Connect the preheating unit connector.

❑ Refit:

- the air pipe between the turbocharger and the intercooler,
- the air pipe clip on the intercooler,
- the air pipe nut on the gearbox,
- the clip on the air pipe between the turbocharger and the intercooler.

❑ Refit the expansion bottle on its support.

❑ Torque tighten the **expansion bottle nuts (8 N.m)**.

❑ Refit:

- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the battery tray,
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

K4M, and JR5

Special tooling required	
Mot. 1453	Engine anchorage support with multiple adjustments and retaining straps.

Equipment required
component jack

Tightening torques ▽	
stud on the engine	**8 N.m**
stud on the gearbox	**8 N.m**
gearbox stud nuts	**44 N.m**
upper and lower gearbox bolts	**44 N.m**
stay bolt on the cylinder block	**21 N.m**
stay nut on the exhaust manifold	**21 N.m**
power-assisted steering pipe bolt on the subframe	**21 N.m**
power-assisted steering pipe bolt on the gearbox mounting	**21 N.m**
power-assisted steering pipe bolt on the gearbox	**21 N.m**
earth strap bolts on the gearbox	**21 N.m**
expansion bottle nuts	**8 N.m**
earth strap nut on the injection computer support	**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 **Manual gearbox: Precautions for the repair**) ,
- (see **Vehicle: Precautions for the repair**) .

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

IMPORTANT

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

❑ Remove:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery tray,
- the earth strap nut on the injection computer mounting,
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection),
- the wiring mounting on the injection computer mounting.
- the wiring mounting on the gearbox,

❑ Move the engine harness aside.

❑ Remove the expansion bottle nuts.

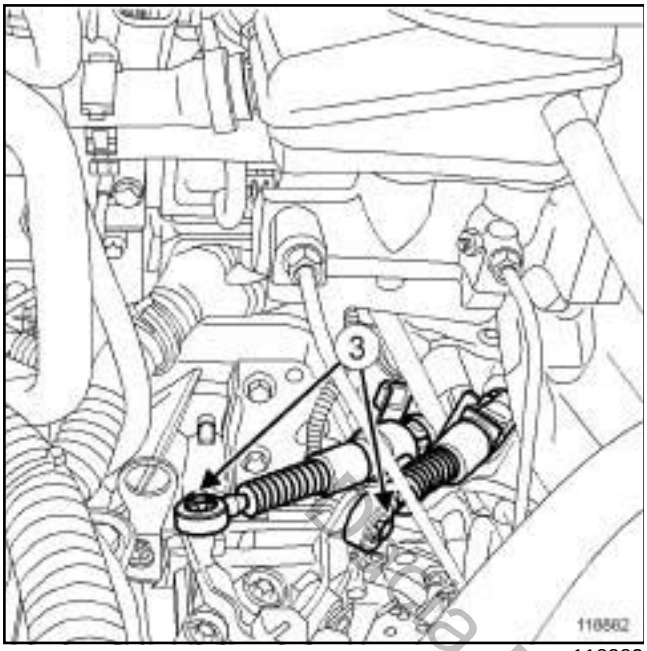
❑ Move aside the expansion bottle from its support.

❑ Disconnect the vehicle speed sensor connector.

❑ Remove:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

K4M, and JR5



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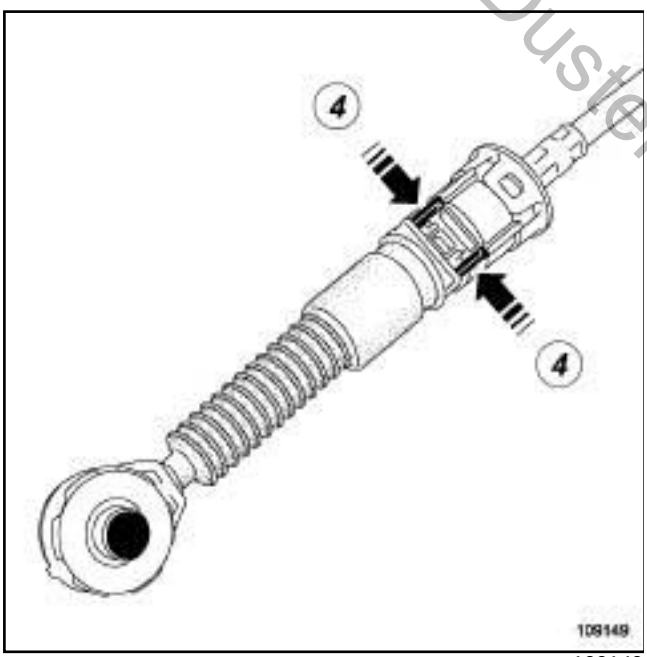
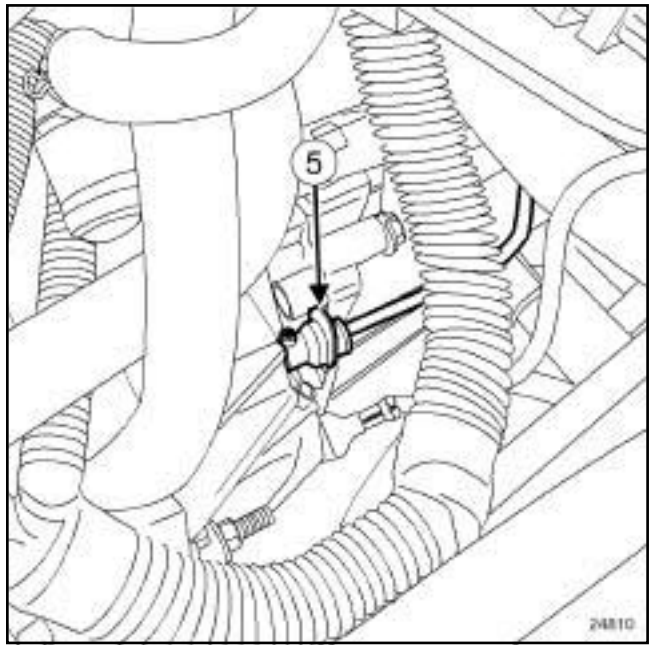


109149

❑ Unclip:

- the gear control cables on the gearbox at (**3**) ,
- the gearbox control cable sleeve stops by pressing at (**4**) .



24810

❑ Press the clip (**5**) and disconnect the clutch control pipe on the clutch slave cylinder by pressing on the retaining clip.

WARNING

Do not pull the clip. If it is incorrectly handled in any way, the pipe will need to be replaced.

❑ Recover the brake fluid in a container.

❑ It is essential to place blanking plugs on the pipe openings.

❑ Remove the engine undertray.

❑ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

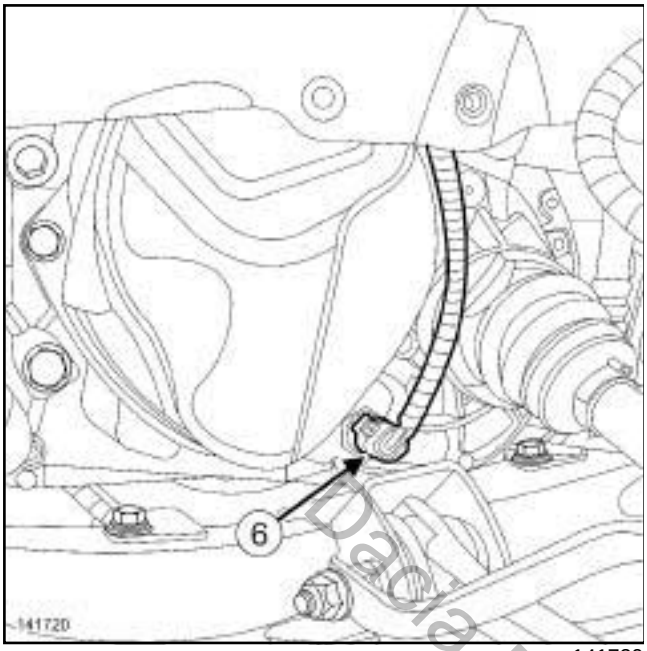
❑ Remove the front bumper (see **Front bumper assembly: Exploded view**) .

1 - LEFT-HAND SIDE OF VEHICLE:

❑ Remove the front left-hand wheel arch side liner.

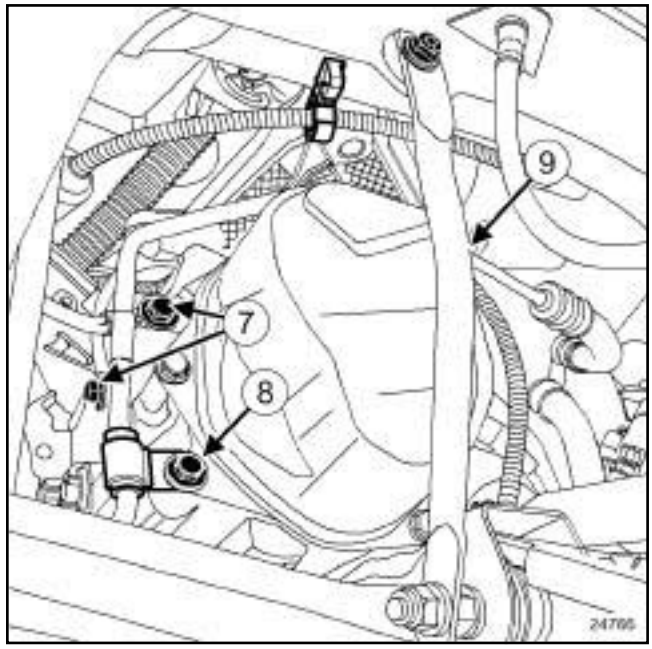
❑ Uncouple the front left-hand driveshaft from the gearbox (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

K4M, and JR5



141720

❑ Disconnect the reverse gear connector (**6**) .



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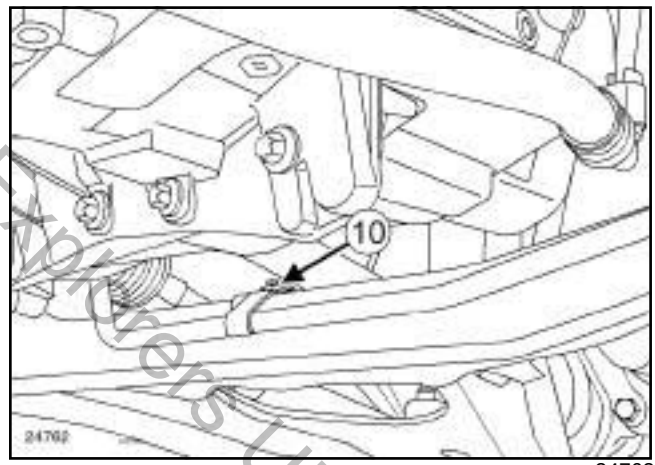


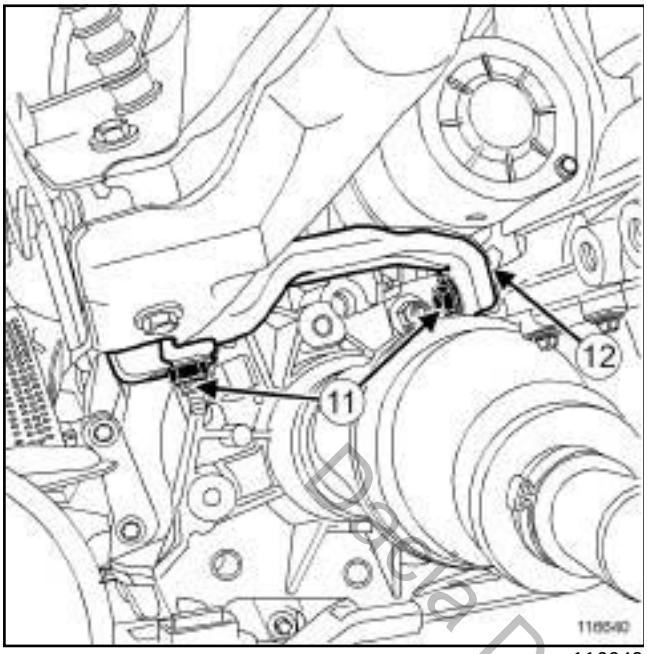
24762

❑ Remove:

- the earth strap bolts (**7**) on the gearbox,
- the bolt (**8**) from the power-assisted steering pipe on the gearbox,
- the bolt (**9**) from the power-assisted steering pipe on the gearbox mounting,
- the bolt (**10**) from the power-assisted steering pipe on the subframe.

K4M, and JR5

2 - RIGHT SIDE OF VEHICLE

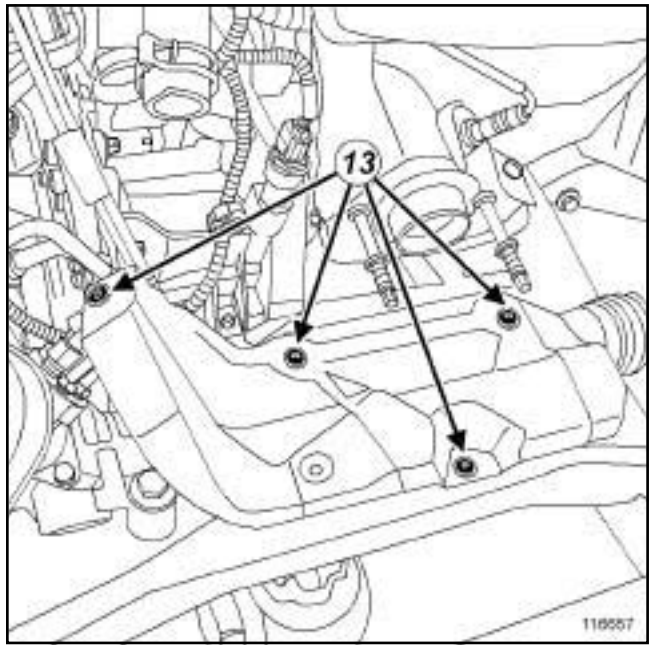


116640

❏ Remove:

- the front right-hand wheel arch side liner,
- the mountings (**11**) of the stay between the exhaust manifold and the cylinder block,
- the stay (**12**) .

❏ Uncouple the front right-hand wheel driveshaft from the gearbox (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .



116657

❏ Remove:

- the bolts (**13**) from the steering box heat-resistant protector,
- the heat shield,
- the steering box bolts on the subframe.

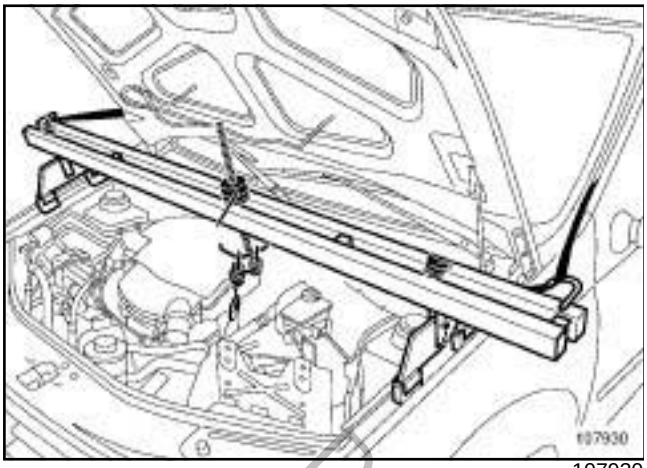
❏ Attach the steering rack to the body.

❏ Remove:

- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging).

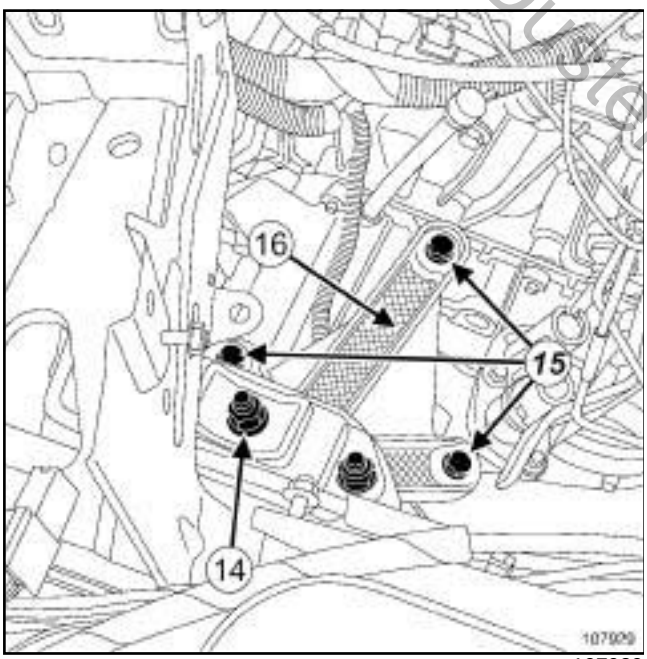
K4M, and JR5

II - REMOVAL OPERATION



107930

❏ Fit the engine support tool **(Mot. 1453)** with the retaining belt, taking the flywheel end lifting eye as an anchoring point.

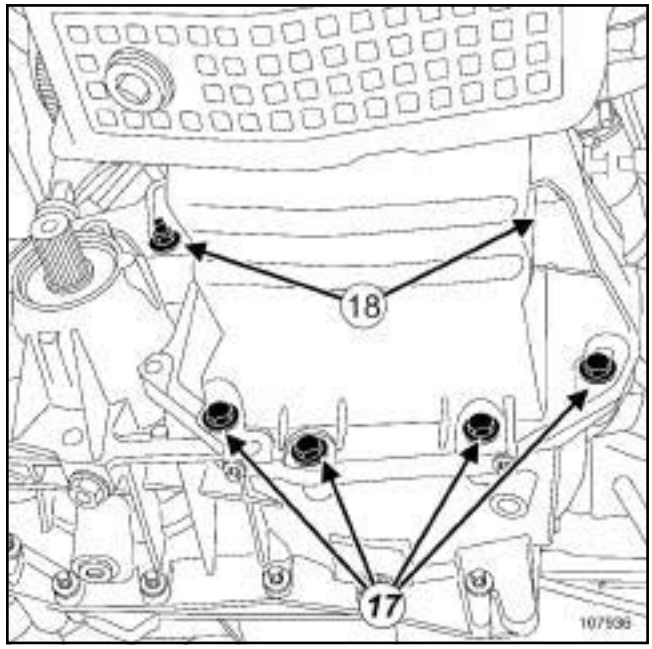


107929

❏ Remove:

- the suspended mounting nut (**14**) on the rubber pad,
- the bolts (**15**) from the gearbox suspended mounting,
- the suspended mounting (**16**) from the gearbox,
- the gearbox upper bolts.

❏ Fit a **component jack** under the gearbox.



107936

❏ Remove:

- the gearbox lower bolts (**17**) ,
- the gearbox stud nuts (**18**) ,
- the gearbox.

REFITTING

I - REFITTING PREPARATION OPERATION

❏ Check for leaks from the input shaft, replace the guide tube if necessary (see **21A**, **Manual gearbox**, **Input shaft lip seal: Removal - Refitting**, page **21A-25**) .

❏ Always replace:

- the differential output seals,
- the clutch thrust bearing.

❏ Remove:

- the differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) ,
- the clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-6**) .

❏ Refit:

- new differential output seals (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .

K4M, and JR5

- a new clutch thrust bearing (see **20A**, **Clutch**, **Clutch thrust bearing: Removal - Refitting**, page **20A-6**) .

❑

WARNING
Do not grease the clutch shaft splines.

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

❑

Note:

If a stud is loosened during this operation, coat the stud with **HIGH STRENGTH THREADLOCK** (see **Vehicle: Parts and consumables for the repair**) .

Torque tighten:

- the **stud on the engine (8 N.m)**,
- the **stud on the gearbox (8 N.m)**.

II - REFITTING OPERATION

❑ Check that the engine - gearbox centring rings are in place and correctly positioned.

❑ Couple the gearbox to the engine.

❑ Refit the gearbox stud nuts.

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

❑ Refit:

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

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

❑ Remove the **component jack**.

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

❑ Remove the engine support tool (**Mot. 1453**).

III - FINAL OPERATION

❑ Refit:

- the starter (see **Starter: Removal - Refitting**) (16A, Starting - Charging),
- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the lower engine tie-bar (see **Lower engine tie-bar: Removal - Refitting**) (19D, Engine mounting),
- the steering box (see **Steering box: Removal - Refitting**) (36A, Steering assembly),
- the steering box heat shield.

1 - RIGHT SIDE OF VEHICLE

❑ Couple the front right-hand wheel driveshaft, on the gearbox side (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

❑ Refit the stay between the exhaust manifold and the cylinder block.

❑ Torque tighten in order:

- the **stay bolt on the cylinder block (21 N.m)**,
- the **stay nut on the exhaust manifold (21 N.m)**.

❑ Refit the front right-hand wheel arch side liner.

2 - LEFT SIDE OF VEHICLE

❑ Refit:

- the power-assisted steering pipe bolt on the subframe,
- the bolt for the power-assisted steering pipe on the gearbox mounting,
- the power-assisted steering pipe bolt on the gearbox.

❑ Torque tighten:

- the **power-assisted steering pipe bolt on the subframe (21 N.m)**,
- the **power-assisted steering pipe bolt on the gearbox mounting (21 N.m)**,
- the **power-assisted steering pipe bolt on the gearbox (21 N.m)**.

❑ Refit the earth strap bolts on the gearbox.

❑ Torque tighten the **earth strap bolts on the gearbox (21 N.m)**.

❑ Connect the reverse gear connector.

❑ Couple the front left-hand wheel driveshaft, on the gearbox side (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

❑ Refit the front left-hand wheel arch side liner.

K4M, and JR5

❏ Refit the front bumper (see **Front bumper assembly: Exploded view**) .

❏ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❏ Refit the engine undertray.

❏ Connect the clutch control pipe to the clutch slave cylinder.

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

❏ Refit:

- the gearbox control cable sleeve stops on the gearbox,
- the gear control cables to the gearbox.

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

❏ Connect the vehicle speed sensor connector.

❏ Refit:

- the crankshaft position sensor (see **Crankshaft position sensor: Removal - Refitting**) ,
- the expansion bottle on its support.

❏ Torque tighten the **expansion bottle nuts (8 N.m)**.

❏ Refit:

- the wiring mounting on the gearbox,
- the wiring mounting on the injection computer mounting,
- the injection computer (see **Petrol injection computer: Removal - Refitting**) (17B, Petrol injection),
- the air resonator (see **Air resonator: Removal - Refitting**) (12A, Fuel mixture),
- the earth strap nut onto the injection computer support.

❏ Torque tighten the **earth strap nut on the injection computer support (8 N.m)**.

❏ Refit:

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

JR5

Equipment required
oil recovery tray

Tightening torques ▽	
5th gear housing bolts	**25 N.m**
front left-hand axle sub-frame tie-rod bolt	**21 N.m**
the nut of the front left-hand axle subframe tie-rod	**21 N.m**

IMPORTANT

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- (see **Manual gearbox: Precautions for the repair**) ,
- **see Vehicle: Precautions for repair** (01D, Mechanical introduction).

I - REMOVAL PREPARATION OPERATION

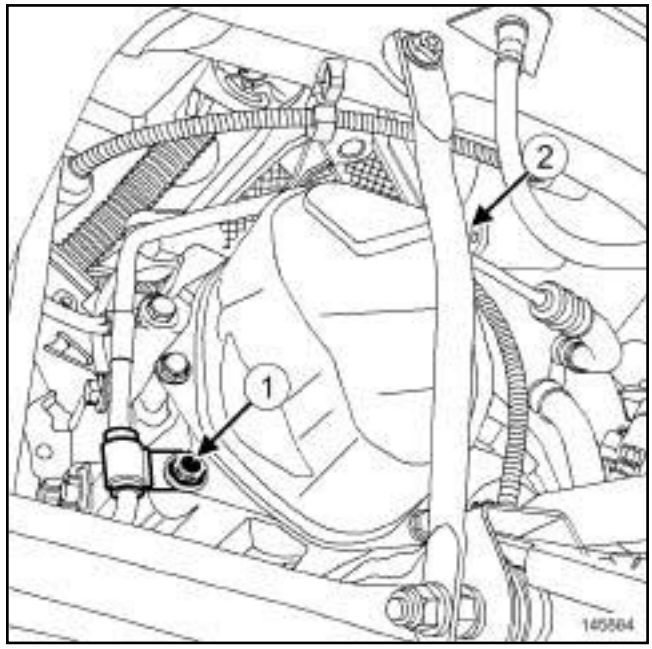
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) (21A, Manual gearbox).

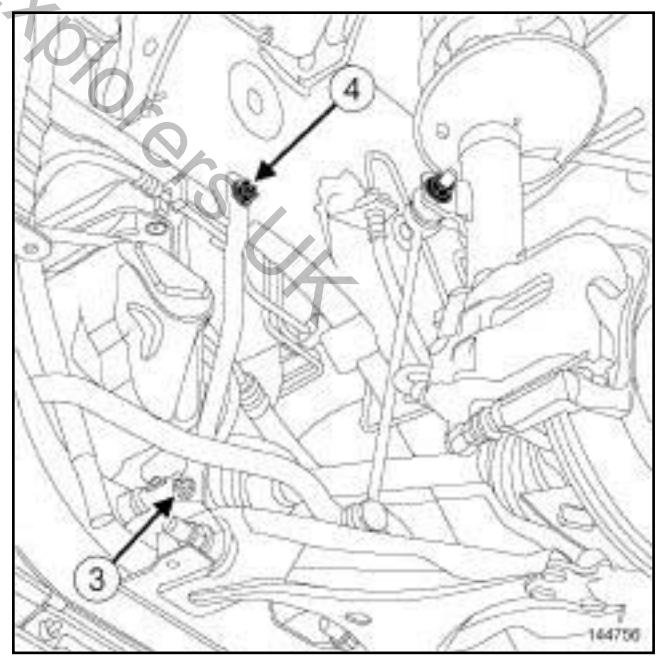
❏ Remove the front left-hand wheel arch side liner.



145884

❏ Remove:

- the bolt (**1**) mounting the power-assisted steering pipe on the gearbox,
- the bolt (**2**) mounting the power-assisted steering pipe on the gearbox support.

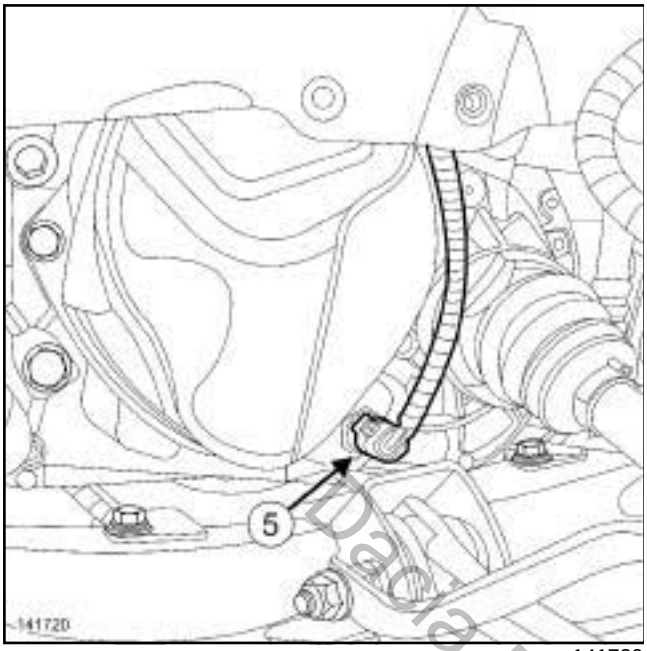


144756

❏ Loosen the nut (**3**) on the tie rod of the front left-hand axle subframe.

❏ Remove the bolt (**4**) from the tie rod of the front left-hand axle subframe.

❏ Move the tie rod away from the front left-hand axle subframe.

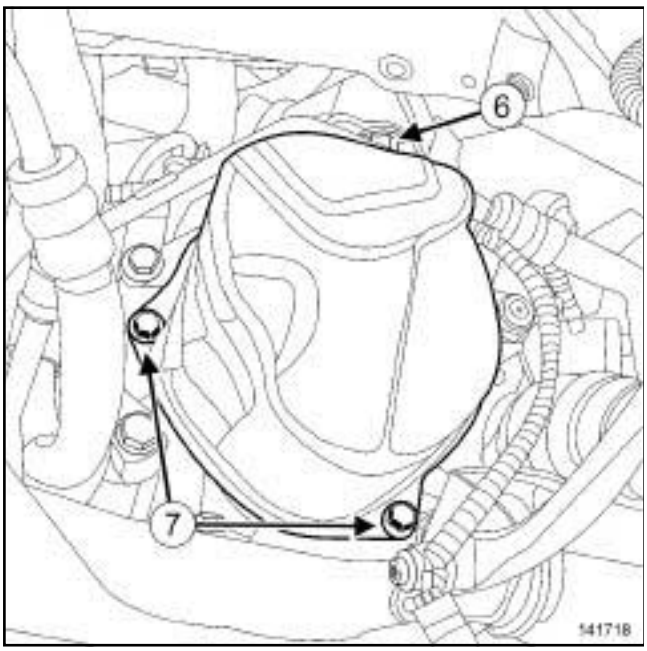


141720

❏ Disconnect the connector (**5**) from the reverse gear switch.

II - REMOVAL OPERATION

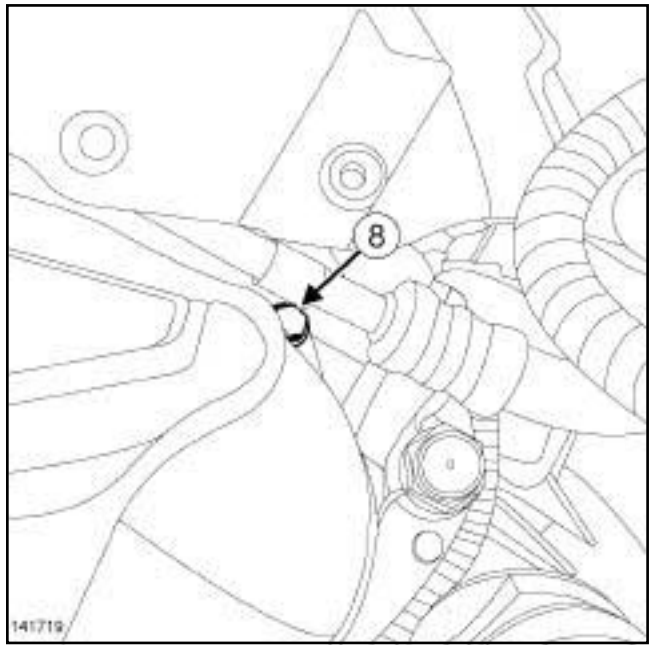
❏ Fit an **oil recovery tray** under the 5th gear housing.



141718

❏ Unclip the wiring (**6**) of the reverse gear switch on the 5th gear housing.

❏ Remove the bolts (**7**) from the 5th gear housing.



141719

❏ Remove:

- the bolt (**8**) of the 5th gear housing,
- the 5th gear housing,
- the seal of the 5th gear housing.

I - REFITTING PREPARATION OPERATION

❏ **parts always to be replaced: 5th gear housing seal**.

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

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

❏ Use **SURFACE CLEANER** (see) to clean and degrease the joint face of:

- the 5th gear housing,
- the mechanism housing.

II - REFITTING OPERATION

❏ Refit the 5th gear housing equipped with a new seal.

❏ Torque tighten the **5th gear housing bolts (25 N.m)**.

JR5

❑ Proceed in the reverse order to removal.

❑ Torque tighten:

- the **front left-hand axle subframe tie-rod bolt (21 N.m)**,
- **the nut of the front left-hand axle subframe tie-rod (21 N.m)**.

III - FINAL OPERATION

❑ Fill and check the gearbox oil level (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

JR5

Special tooling required	
Bvi. 1170	Extractor tool for 5th gear hub on primary shaft.
Bvi. 1175	Fixed 5th gear mounting bolt.

Tightening torques ▽	
input shaft nut	**190 N.m**
output shaft bolt	**80 N.m**

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❏ Remove:

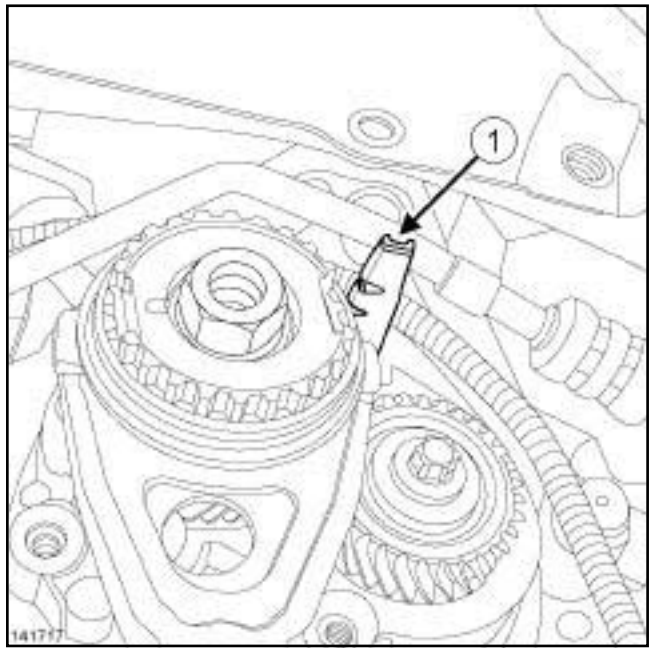
- the engine undertray bolts,
- the engine undertray,
- the front left-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front left-hand wheel arch side liner.

❏ Drain the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❏ Remove:

- the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components),
- the 5th gear housing (see **21A**, **Manual gearbox**, **5th gear housing: Removal - Refitting**, page **21A-18**) .

II - REMOVAL OPERATION

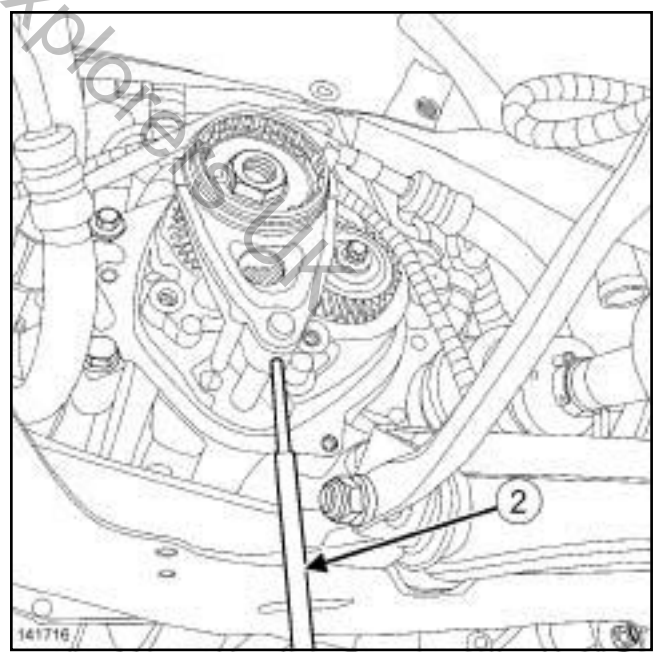


141717

❏

Note:

Take care not to damage the fifth gear lubrication neck (**1**) during the entire operation.

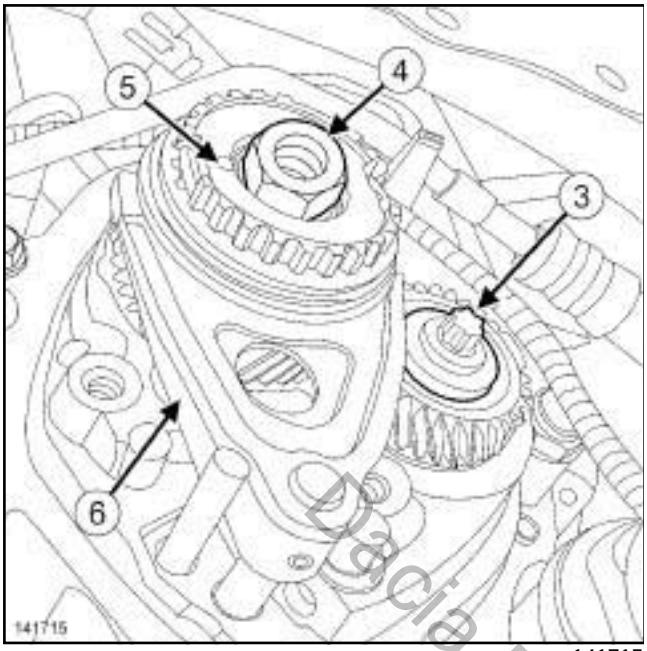


141716

❏ Remove the pin from the fifth gear fork using the tool (**2**) .

❏ Engage first gear using the gear lever.

JR5



141715

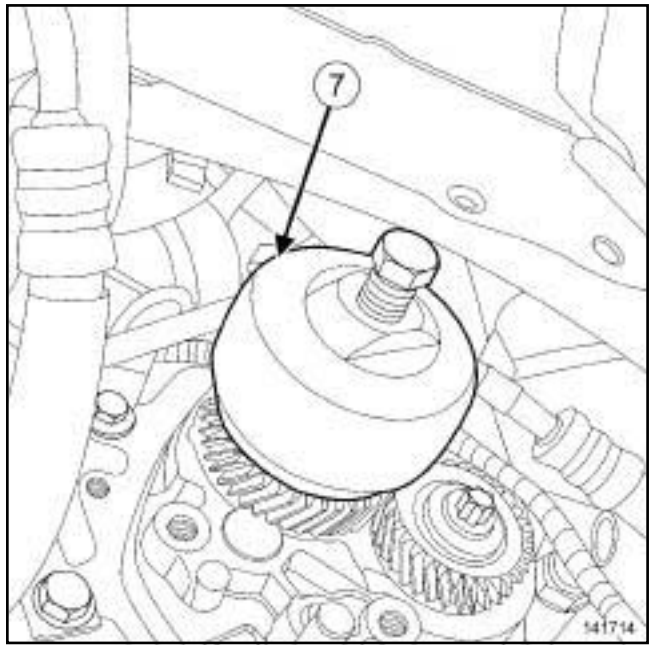
❏ Engage fifth gear by moving the fifth gear fork.

Note:

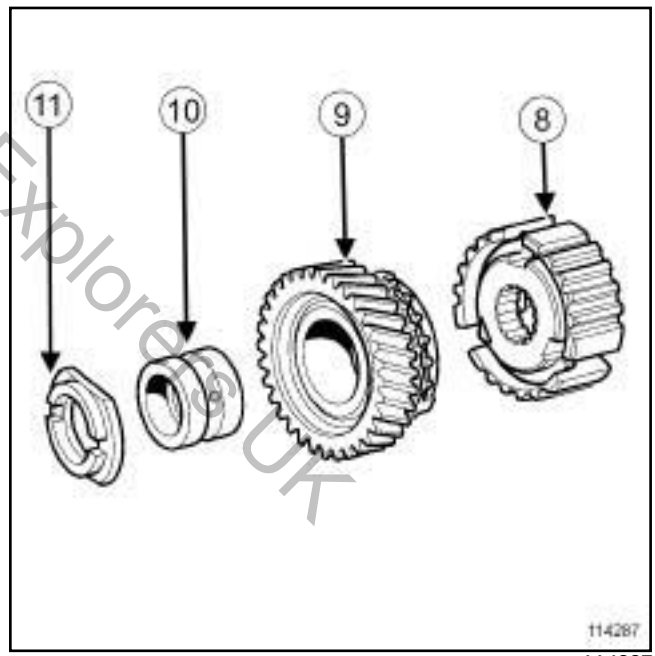
The purpose of this operation is to lock the gear-box shafts in order to facilitate loosening.

❏ Remove:

- the output shaft bolt (**3**) ,
- the input shaft nut (**4**) ,
- the washer (**5**) of the input shaft nut,
- the fifth gear fork and selector rod (**6**) .



141714



114287

❏ Position the **(Bvi. 1170)** (**7**) .

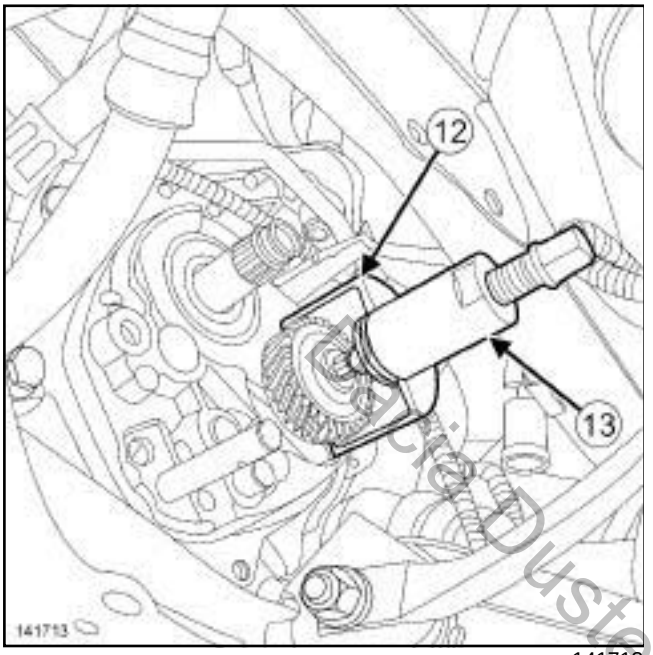
Note:

Tum the tool **(Bvi. 1170)** in order to position the splines of the tool selector rod opposite the fifth gear hub.

❏ Remove:

- the fifth gear hub fitted with its synchroniser springs ***(8)*** ,

- the fifth idle gear fitted with its synchroniser ring ***(9)*** ,
- the idle gear supporting ring ***(10)*** ,
- the lock washer ***(11)*** .

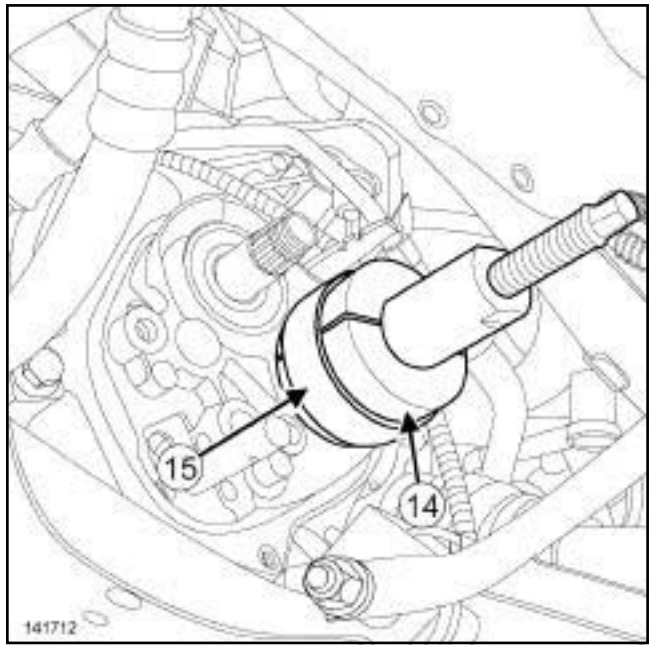


141713

❑ Refit the output shaft bolt, screwing it in a few turns.

❑ Fit:

- a half-shellof the tool (**12**) under the fifth gear pinion,
- the (**13**) on the half-shell of the tool.



141712

❑ Fit the other half-shell (**14**) and the ringof the tool (**15**) .

❑ Remove the fifth gear pinion.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Always replace:

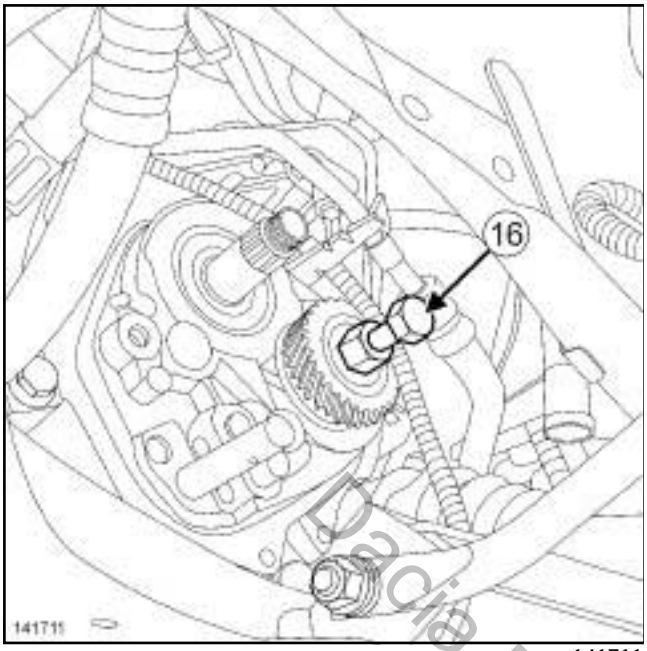
- the input shaft nut,
- the washer of the input shaft nut,
- the output shaft bolt,
- the pin of the fifth gear fork.

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

II - REFITTING OPERATION

❑ Put several drops of **FRENETANCHE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) on the splines of the fifth gear pinion.

JR5



141711

❑ Refit the fifth gear pinion using the tool (**16**) **(Bvi. 1175)**.

❑ Remove the tool **(Bvi. 1175)**.

❑ On the input shaft, refit:

- the lock washer,
- the idle gear supporting ring,
- the fifth idle gear fitted with its synchroniser ring,
- the fifth gear hub fitted with its synchroniser springs.

❑ Refit:

- the fifth gear fork and selector rod,
- a new washer for the input shaft nut,
- a new nut for the input shaft,
- a new bolt for the output shaft.

❑ Change into fifth gear by moving the fifth gear fork.

❑ Torque tighten:

- the **input shaft nut (190 N.m)**,
- the **output shaft bolt (80 N.m)**.

❑ Put the gearbox in neutral.

❑ Fit a new pin for the fifth gear fork using the tool.

III - FINAL OPERATION

❑ Proceed in the reverse order to removal.

❑ Top up the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❑ Carry out a function test.

Input shaft lip seal: Removal - Refitting

JR5

❑ Replace the lip seal after having opened the gearbox (see **Clutch housing bearing: Removal - Refitting**) (Technical Note 6029A, 21A, Manual gearbox).

JR5

Special tooling required	
Bvi. 1934	Socket for removing/refitting reverse gear switch

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

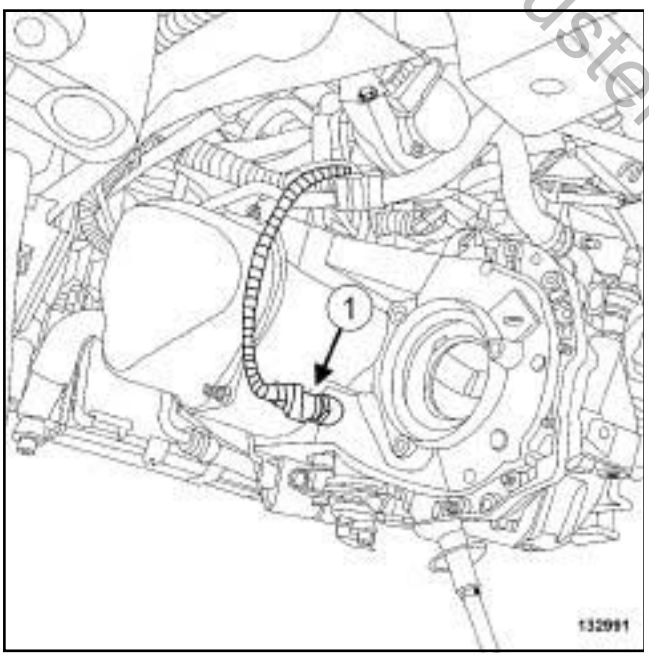
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

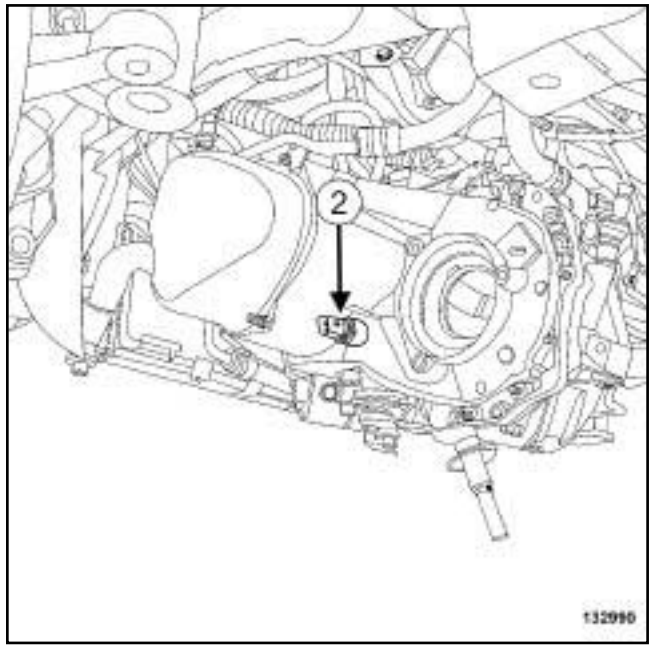
❑ Remove the engine undertray.

II - OPERATION FOR REMOVAL OF PART CONCERNED



132991

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



132990

❑ Remove the reverse gear switch (**2**) using the **(Bvi. 1934)**.

Note:

Seal the housing of the reverse gear switch while replacing the part.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

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

❑ Refit the reverse gear switch using the **(Bvi. 1934)**.

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

❑ Connect the reverse gear switch connector.

II - FINAL OPERATION

❑ Fill the gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❑ Refit the engine undertray.

JR5

Special tooling required	
Emb. 880	Pin extractor tool.
Tav. 1813	Extraction claw for clip secured type driveshafts

Tightening torques ▽	
shock absorber base bolts	**105 N.m**
hub nut	**280 N.m**
track rod end nut	**37 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

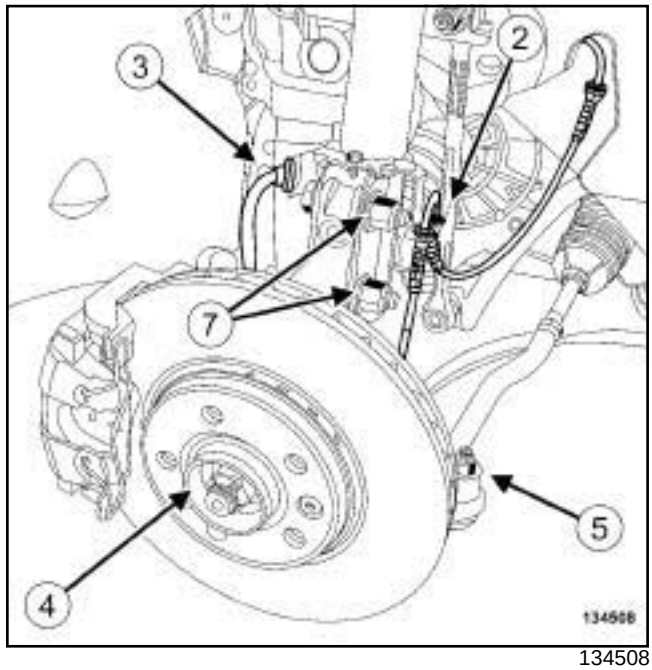
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ 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 oils: Draining - Filling**, page **21A-1**) .

II - REMOVAL OPERATION



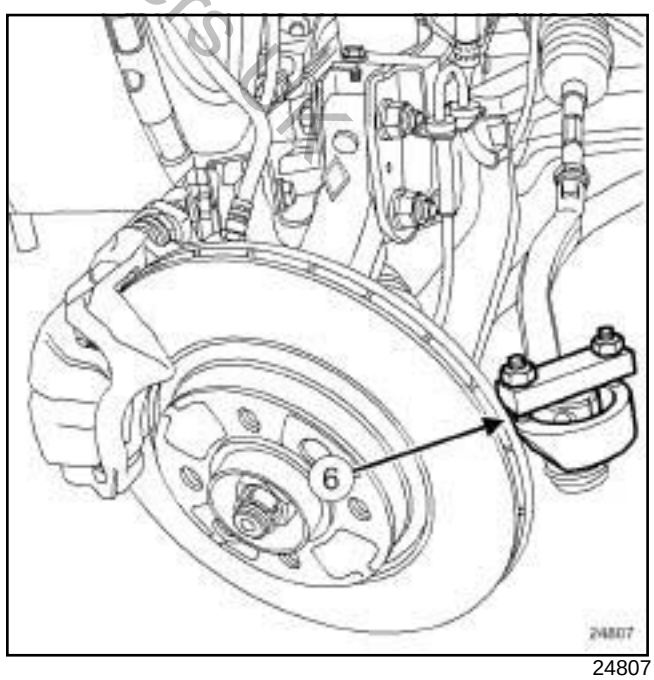
134508

❏ Unclip:

- the wiring of the front left-hand wheel speed sensor at (**2**) ,
- the brake hose of the front left-hand wheel at (**3**) .

❏ Remove:

- the hub nut ***(4)*** , using the,
- the track rod end nut ***(5)*** .



24807

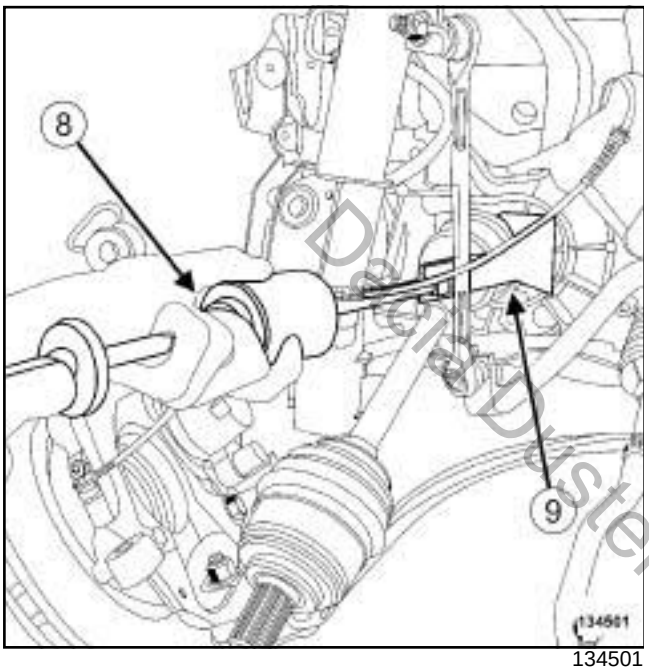
❏ Remove the left-hand track rod end using the tool (**6**) .

JR5

❏ Remove the bolts ***(7)*** from the base of the left-hand shock absorber.

❏ Push back the front left-hand driveshaft from the stub axle carrier using the toolsand.

❏ Pivot the stub axle carrier to separate the driveshaft from the stub axle carrier.



134501

❏ Extract the front left-hand driveshaft from the gearbox using the tool **(Emb. 880)** (**8**) fitted with the tool **(Tav. 1813)** (**9**) .

❏ Remove:

- the front left-hand driveshaft.
- the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .

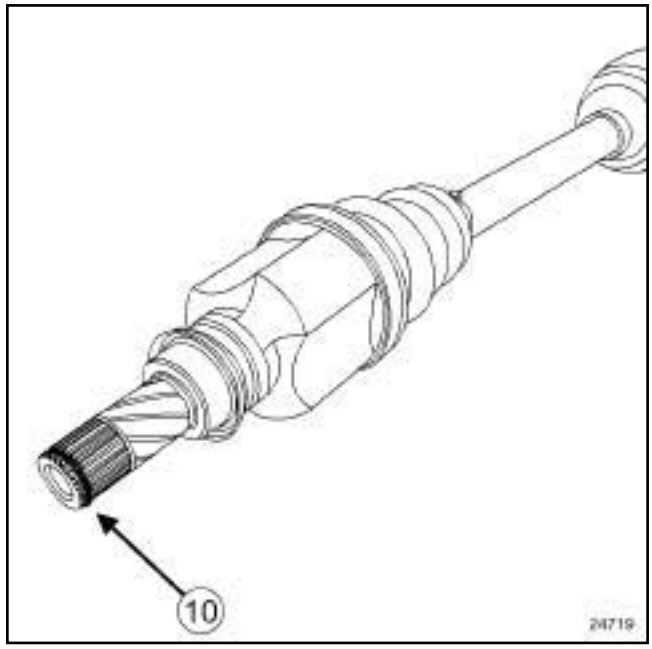
REFITTING

I - REFITTING PREPARATION OPERATION

❏

WARNING
Do not refit a driveshaft if the lip seal mating face is damaged.

❏ Check the condition of the lip seal mating face on the driveshaft.



24719

❏ Always replace the driveshaft circlip (**10**) .

II - REFITTING OPERATION

❏ Refit the left-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .

❏ Engage the drive shaft splines in the differential grooves as straight as possible so as not to damage the seal.

❏ Insert the drive shaft splines in the hub grooves.

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 (105 N.m)**.

❏ Refit the hub nut.

❏ Torque tighten the **hub nut (280 N.m)** using the tool.

❏ Refit the track rod end.

❏ Torque tighten the **track rod end nut (37 N.m)**.

❏ Clip:

- the wiring of the front left-hand wheel speed sensor at ***(2)*** ,
- the brake hose of the front left-hand wheel at ***(3)*** .

JR5

III - FINAL OPERATION

❑ Refit:

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

❑ Fill and check the manual gearbox oil level (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

JR5

Tightening torques ▽	
driveshaft relay bearing bracket bolts	**21 N.m**
shock absorber base bolts	**105 N.m**
hub nut	**280 N.m**
track rod ball joint nut	**37 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

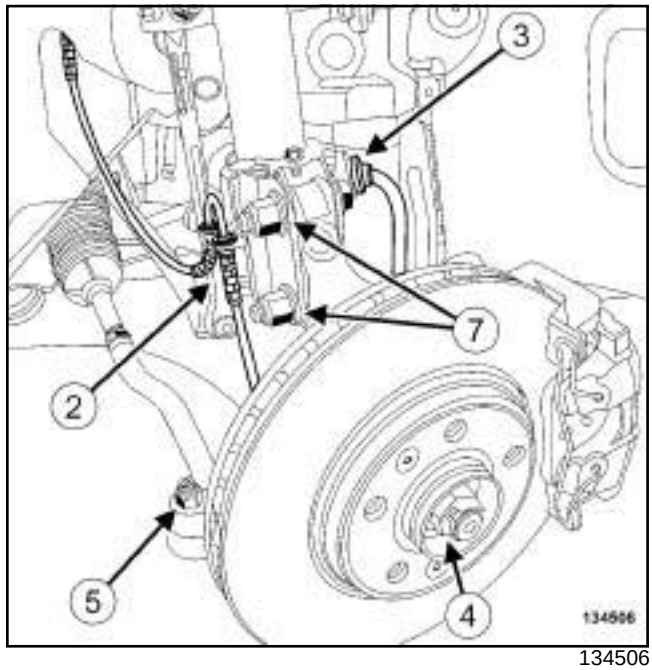
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

❏ Remove:

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

❏ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

II - REMOVAL OPERATION



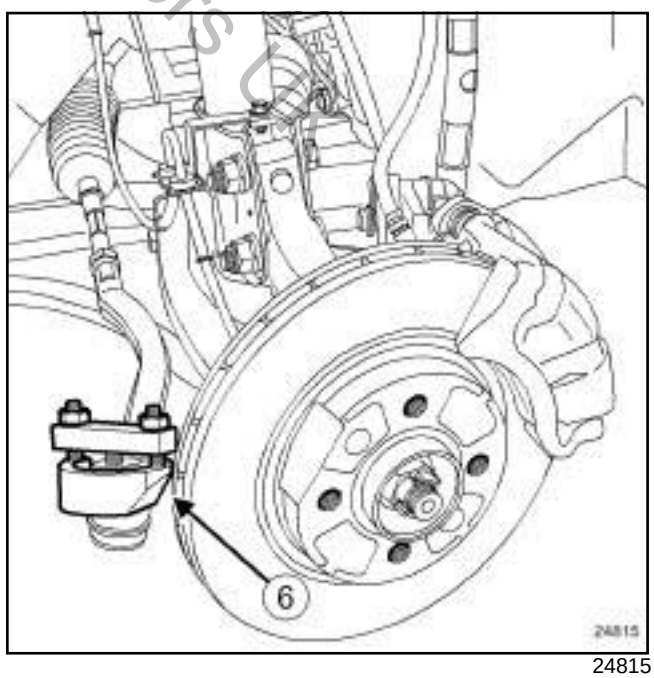
134506

❏ Unclip:

- the wiring from the front right-hand wheel speed sensor at (**2**) ,
- the brake hose of the front right-hand wheel at (**3**) .

❏ Remove:

- the hub nut ***(4)*** using the,
- the right-hand track rod ball joint nut ***(5)*** .



24815

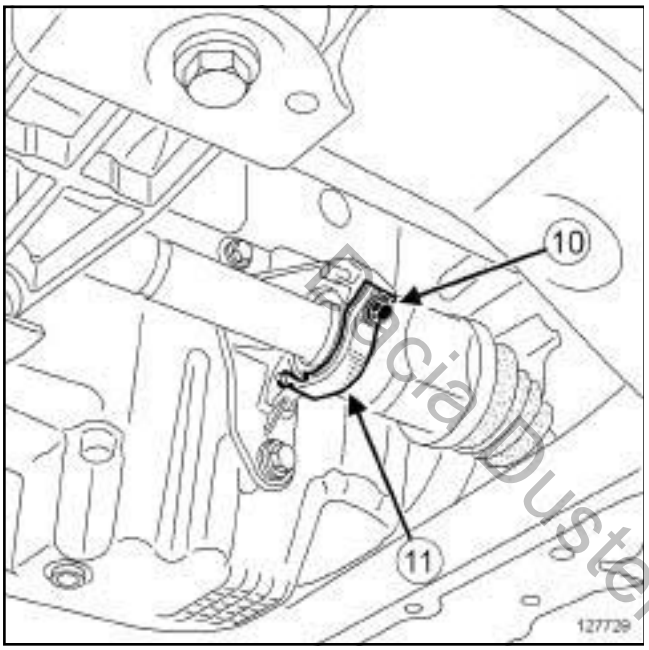
❏ Remove the ball joint from the right-hand track rod using the tool (**6**) .

JR5

❑ Remove the bolts from the base of the right-hand shock absorber ***(7)*** .

❑ Push back the front right-hand driveshaft from the stub axle carrier using the toolsand.

❑ Pivot the stub axle carrier to separate the driveshaft from the stub axle carrier.



127729

❑ Remove the bolt (**10**) from the driveshaft relay bearing bracket.

❑ Pivot the driveshaft relay bearing bracket (**11**) .

❑ Remove:

- the front right-hand driveshaft from the gearbox,
- the right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Check the condition of the lip seal mating face on the driveshaft.

WARNING
Do not refit a driveshaft if the lip seal mating face is damaged.

❑ **parts always to be replaced: Front wheel hub nut**.

❑ **parts always to be replaced: relay bearing bracket bolt**.

❑ Refit a new right-hand differential output seal (see **21A**, **Manual gearbox**, **Differential output seal: Removal - Refitting**, page **21A-2**) .

❑ Clean and grease the driveshaft relay bearing bore into which the bearing is inserted with **BR2+ GREASE** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

II - REFITTING OPERATION

❑ Engage the driveshaft splines with the differential splines as straight as possible, so as to not damage the seal.

❑ Insert the drive shaft splines in the hub grooves.

Note:
The driveshaft must fit freely into the stub axle carrier until it protrudes enough for the hub nut to be fitted.

❑ Refit the relay bearing bracket.

❑ Torque tighten the **driveshaft relay bearing bracket bolts (21 N.m)**.

❑ Refit the bolts to the shock absorber base.

❑ Torque tighten the **shock absorber base bolts (105 N.m)**.

❑ Refit the hub nut.

❑ Torque tighten the **hub nut (280 N.m)** using the tool.

❑ Refit the track rod ball joint.

❑ Torque tighten the **track rod ball joint nut (37 N.m)**.

❑ Clip:

- the wiring of the front right-hand wheel speed sensor,
- the brake hose of the front right-hand wheel.

III - FINAL OPERATION

❑ Refit:

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

❑ Fill and check the manual gearbox oil level (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

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.

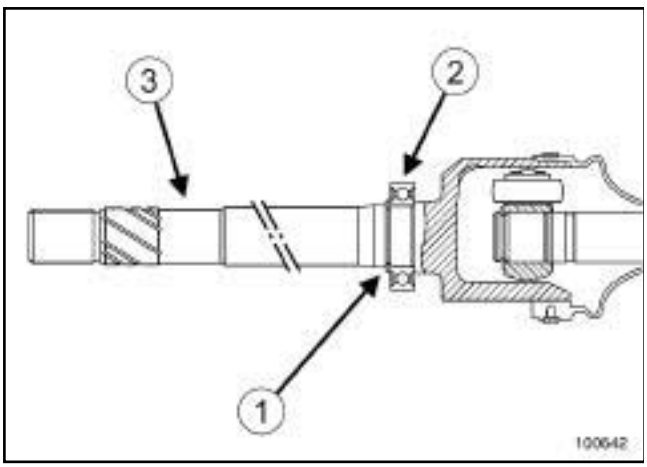
❑ Drain the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❑ Remove:

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front right-hand wheel driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

❑ Extract the deflector using a press and an extractor.

II - OPERATION FOR REMOVAL OF PART CONCERNED



100642

❑ Remove the rubber ring (**1**) of the relay bearing (**2**) .

Note:

Do not scratch the mating face 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**.

parts always to be replaced: relay bearing rubber ring.

❑ Clean and degrease the bore of the relay bearing with **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products).

❑ Lubricate the mating face of the driveshaft receiving the deflector and the relay shaft bearing.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Fit a new relay shaft bearing to the relay shaft.

❑ Fit the bearing to the end using a tube, so that it rests on the inner bush of the bearing.

❑ Refit a new rubber ring for the relay bearing.

III - FINAL OPERATION

❑ Fit a new deflector to the relay shaft.

❑ Fit the deflector to the end using a tube, so that it rests on the surface of the deflector.

❑ Clean and grease the bearing hole into which the bearing will be inserted.

❑ Refit:

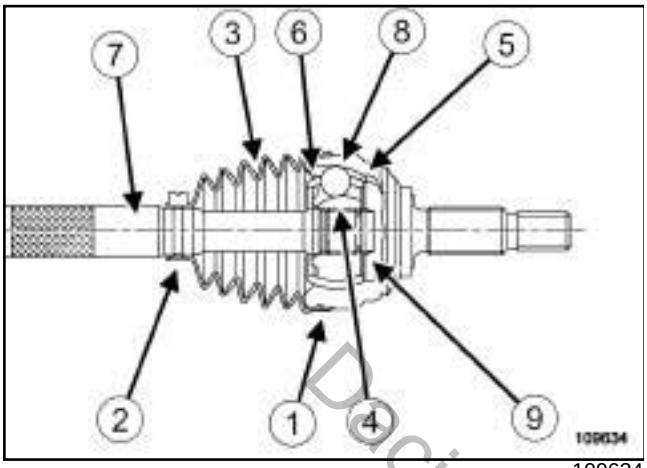
- the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) ,
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).

❑ Fill up the manual gearbox (see **21A**, **Manual gearbox**, **Manual gearbox oils: Draining - Filling**, page **21A-1**) .

❑ Refit the engine undertray.

JR5

Special tooling required	
Emb. 880	Pin extractor tool.



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

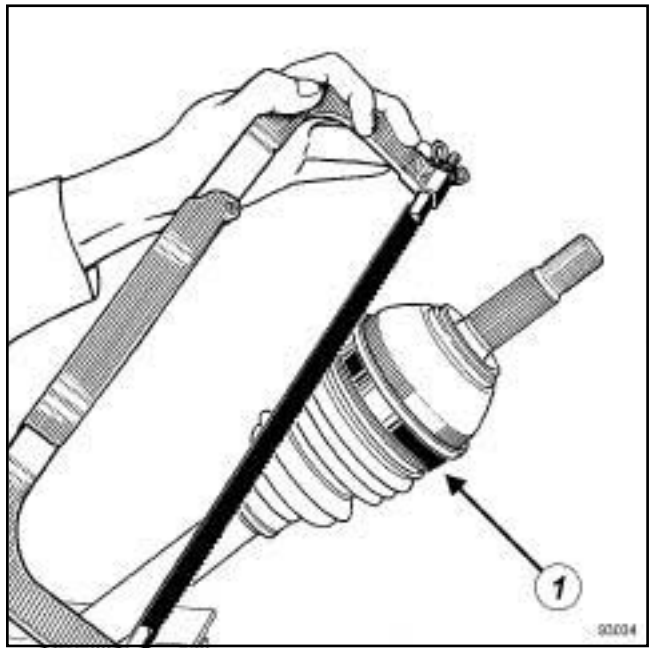
IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

REMOVAL

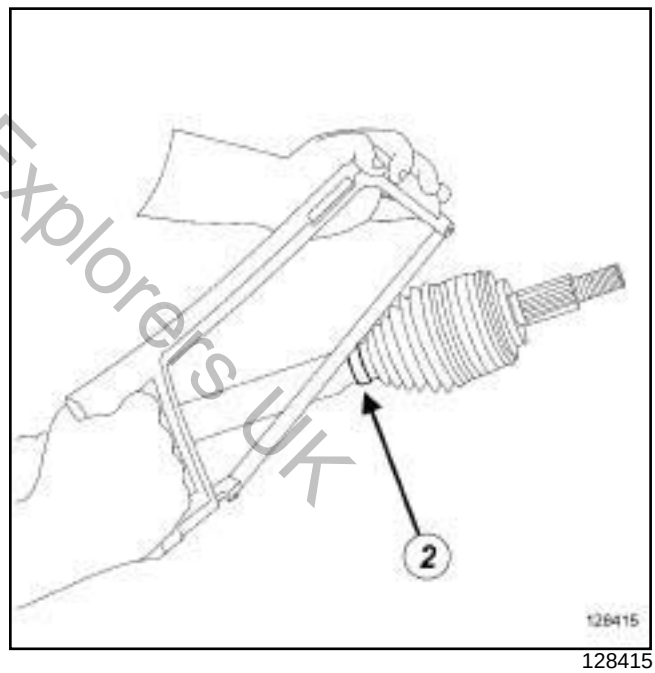
I - REMOVAL PREPARATION OPERATION

❑ Remove the front driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

II - REMOVAL OPERATION



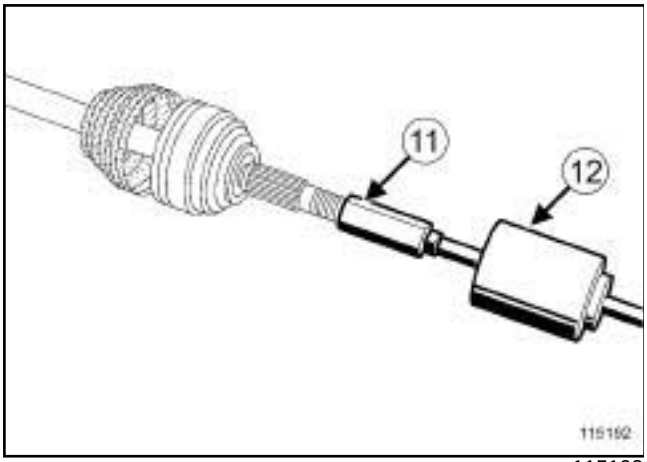
93034



128415

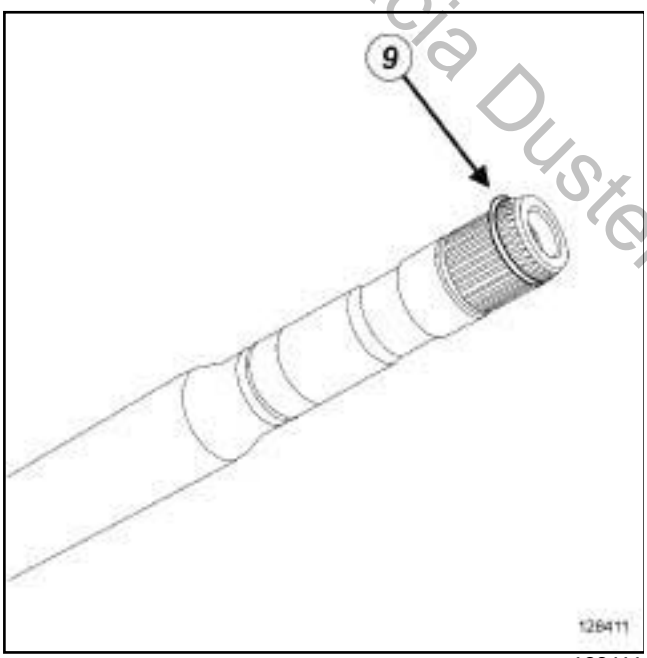
❑ Cut the big securing clip (**1**) and the small securing clip (**2**) using cutting pliers or a metal saw, taking care not to damage the stub axle bowl and the driveshaft.

JR5



115192

❏ Pull out the stub axle bowl using the (**11**) and the extractor **(Emb. 880)** (**12**) .



128411

❏ Remove:

- the locking ring (**9**) ,
- the driveshaft gaiter (**3**) .

REFITTING

I - REFITTING PREPARATION OPERATION

❏

WARNING
Never use thinner to clean the components.

Note:
It is essential to use the prescribed volume of grease (see) .

❏ **parts always to be replaced: Front driveshaft gaiter, wheel side**.

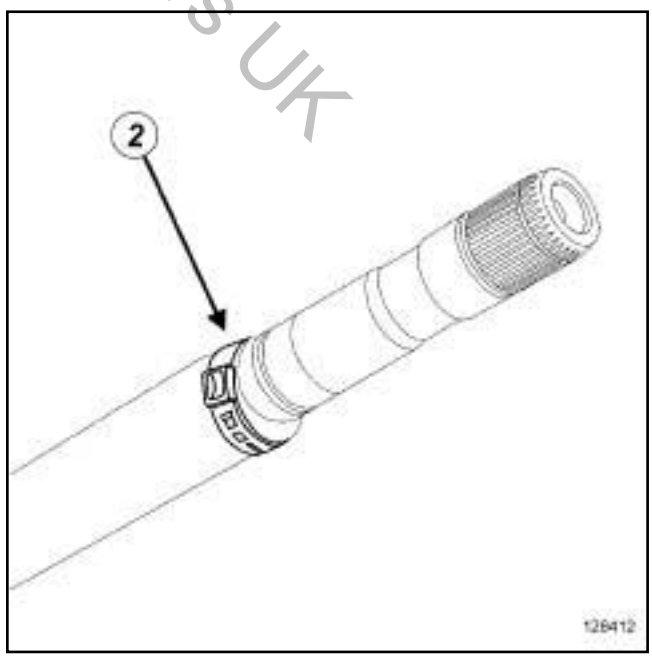
❏ **parts always to be replaced: wheel side front driveshaft seal locking ring**.

❏ Always replace:

- the small securing clip,
- the big securing clip.

❏ Use a **CLEANING STATION** to clean the driveshaft and the stub axle bowl.

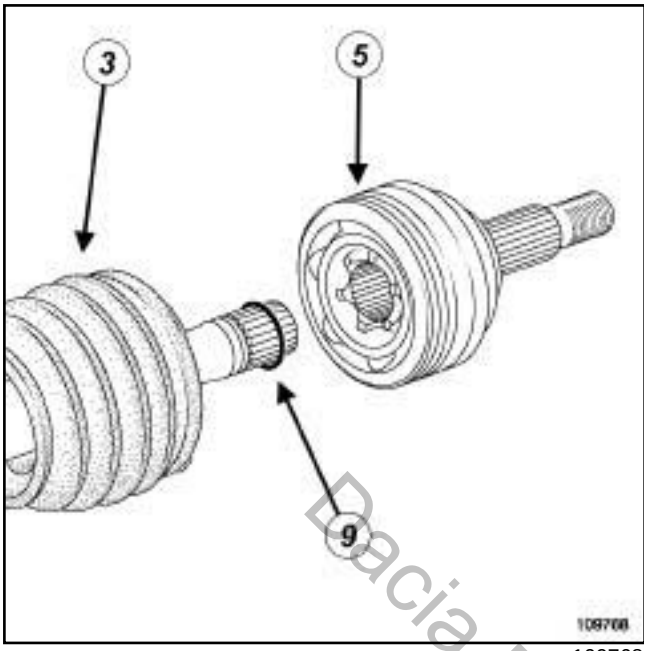
II - REFITTING OPERATION



128412

❏ Fit the small tightening clip (**2**) to the driveshaft.

JR5



109768

❏ Lightly lubricate the driveshaft using the **GREASE** supplied with the gaiter to facilitate its fitting.

❏ Fit the gaiter (**3**) onto the driveshaft.

❏ Refit:

- the new lock ring (**9**) ,
- the stub axle bowl (**5**) to the driveshaft by tapping the stub axle bowl using a brass drift until the lock ring clicks into place behind the ball hub.

❏ Spread the quantity of grease around the gaiter and the stub axle bowl.

❏ Insert the lips of the gaiter into the grooves of the stub axle bowl and driveshaft.

> Note:
>
> Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

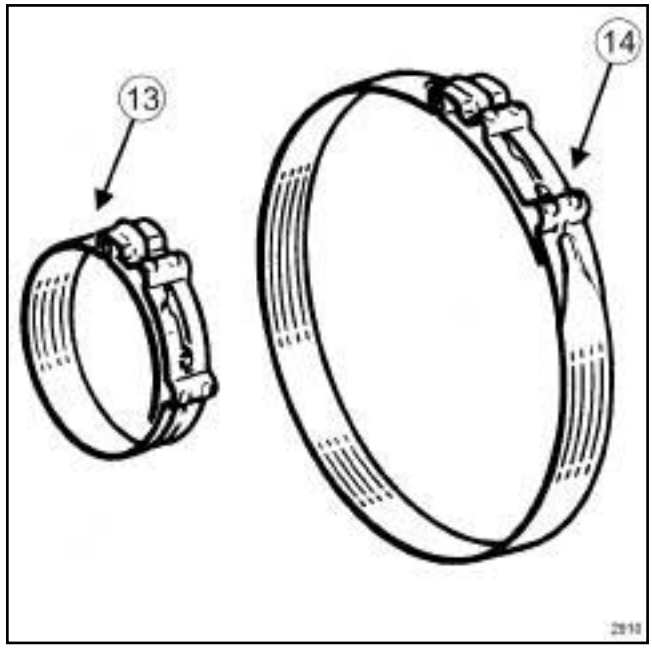
❏ Move the seal by hand to check that the edges are positioned correctly.

❏ Insert a smooth rod with a rounded end between the gaiter and the stub axle bowl to regulate the amount of air inside the joint.

❏ Fit:

- the small securing clip on the driveshaft gaiter,
- the big securing clip on the driveshaft gaiter.

CAILLEAU « click » clips



2910

❏ Tighten the small clip (**13**) and the big clip (**14**) until they click, using the tool.

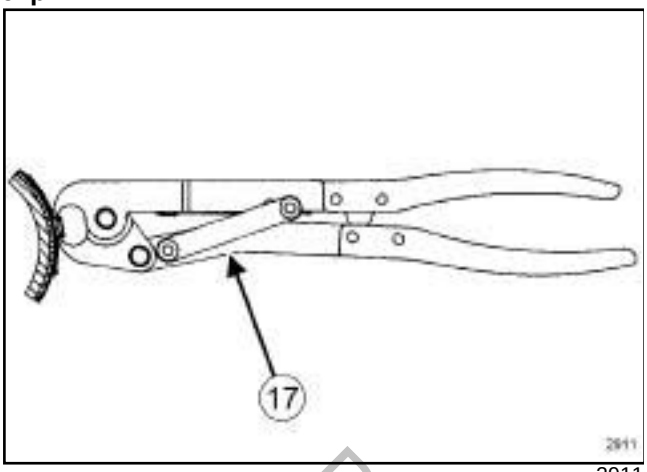
OETIKER clips

96048

❏ Tighten the small clip (**15**) and the big clip (**16**) using the tool.

JR5

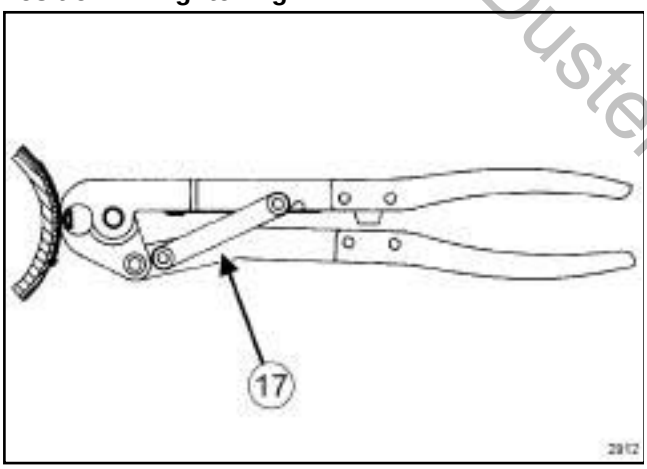
Position 1 - Pre-tightening and positioning of the clip



2911

❏ Put the linkage (**17**) in the lower position, and close the pliers fully. The pre-tightened clip slides onto the gaiter and can be positioned.

Position 2 - Tightening



2912

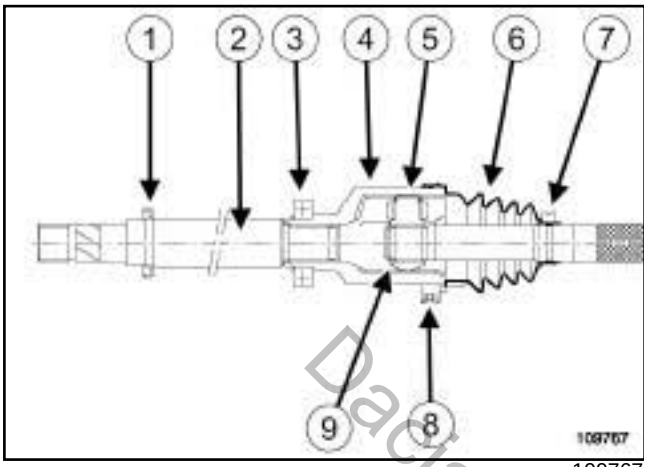
❏ Put the linkage (**17**) in the upper position, and close the pliers fully.

III - FINAL OPERATION

❏ Refit the driveshaft on the side concerned (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) or (see **29A**, **Driveshafts**, **Front left-hand driveshaft: Removal - Refitting**, page **29A-1**) .

JR5

Equipment required
parts washer



109767

(**1**) Deflector
(**2**) Driveshaft
(**3**) Relay shaft bearing
(**4**) Driveshaft yoke sleeve
(**5**) Spider
(**6**) Driveshaft gaiter
(**7**) Small securing clip
(**8**) Big securing clip
(**9**) Lock ring

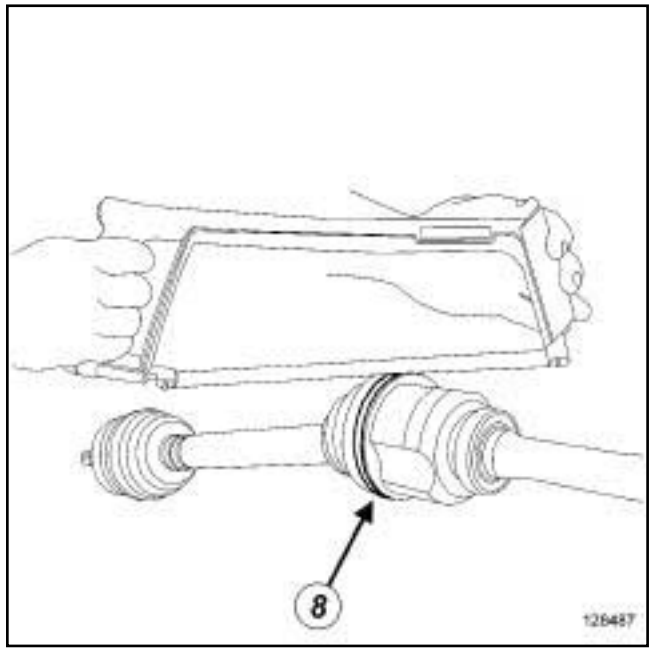
IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

REMOVAL

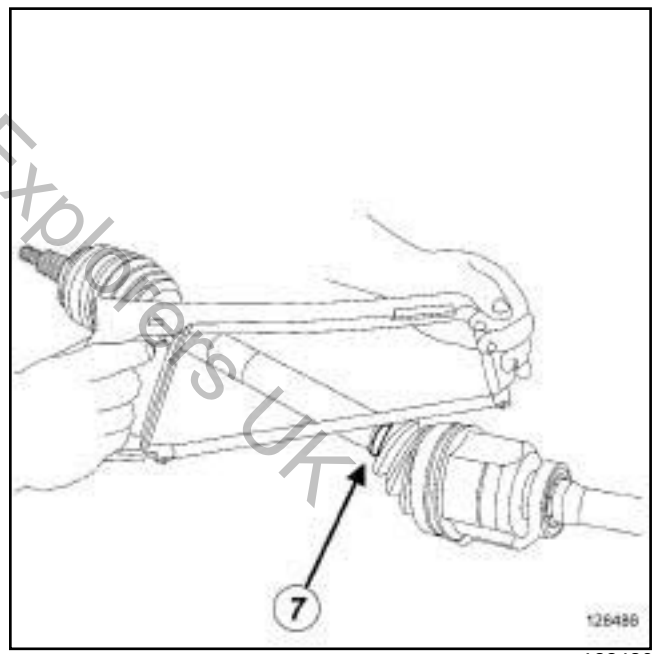
I - REMOVAL PREPARATION OPERATION

❏ Remove the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

II - REMOVAL OPERATION



128487

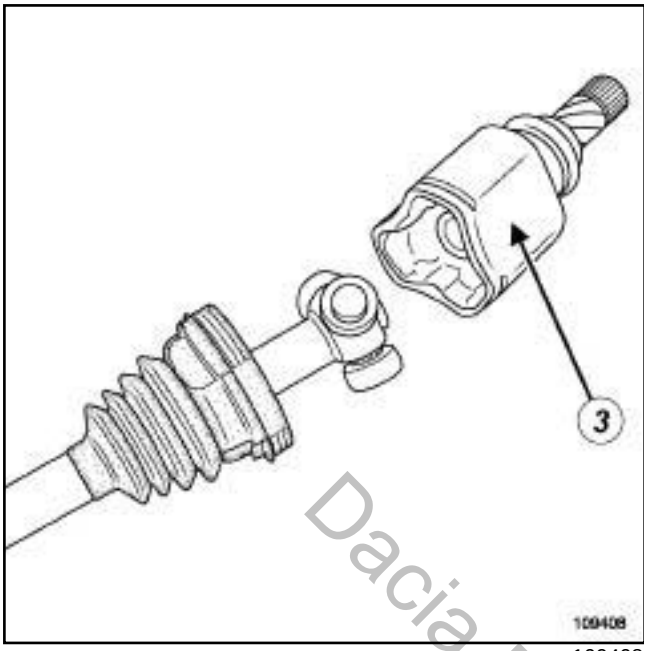


128486

❏ Cut the big securing clip (**8**) and the small securing clip (**7**) using cutting pliers or a metal saw, taking care not to damage the yoke sleeve or the driveshaft.

❏ Push back the gaiter to release the driveshaft yoke sleeve.

JR5



109408

❑ Remove the driveshaft yoke sleeve (**3**) .

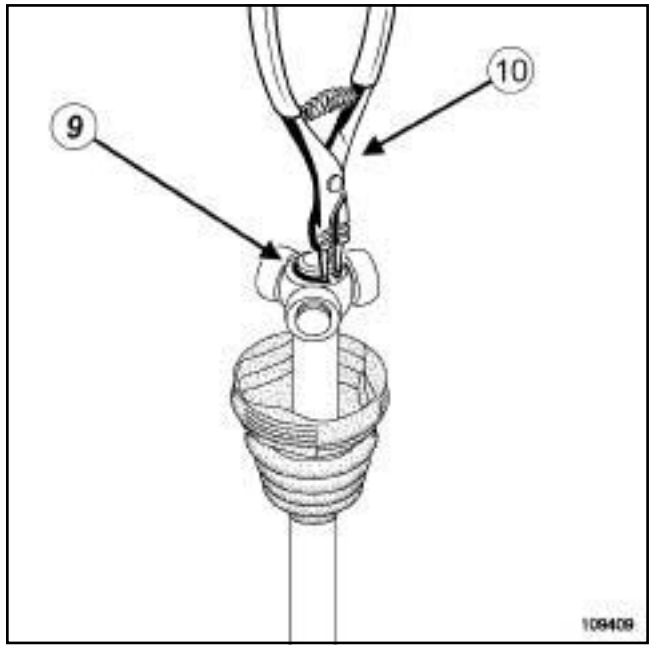
Note:

- Since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced.
- Do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

❑ Remove as much grease as possible from inside the yoke sleeve.

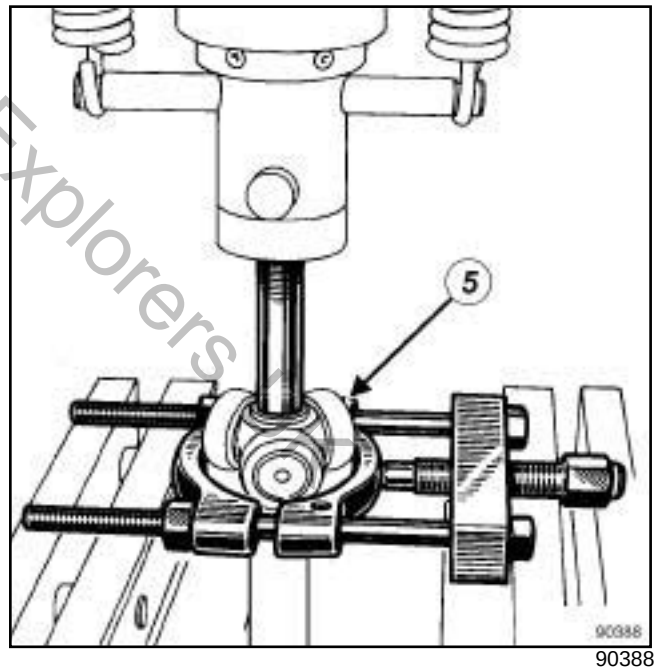
Note:

Never use thinner to remove grease.



109409

❑ Remove the lock ring (**9**) using **circlip pliers** (**10**) .



90388

❑ Extract the spider (**5**) using a **press** and a **releasing type extractor**.

Note:

Mark the position of the spider before extracting it.

❑ Remove the driveshaft gaiter from the driveshaft.

JR5

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front right-hand driveshaft gaiter, gearbox side**.

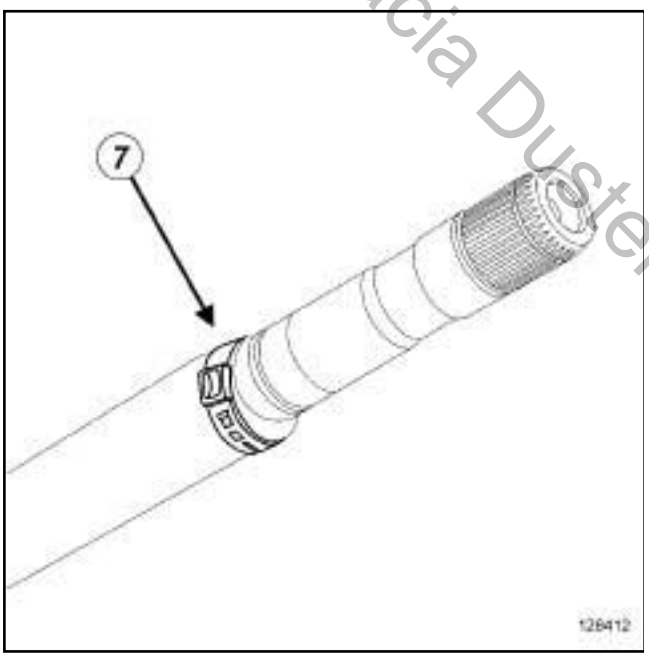
❑ **parts always to be replaced: gearbox side front driveshaft seal locking ring**.

❑ 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.

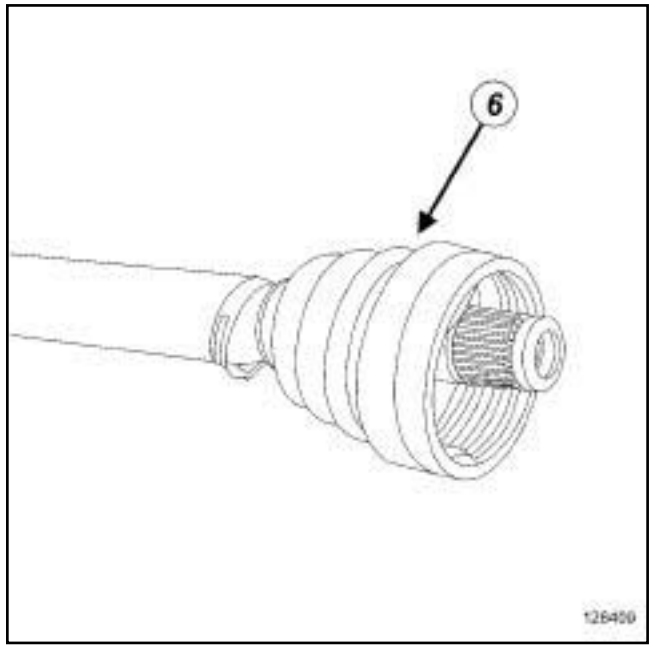
II - REFITTING OPERATION



128412

❑ Fit the small tightening clip (**7**) to the driveshaft.

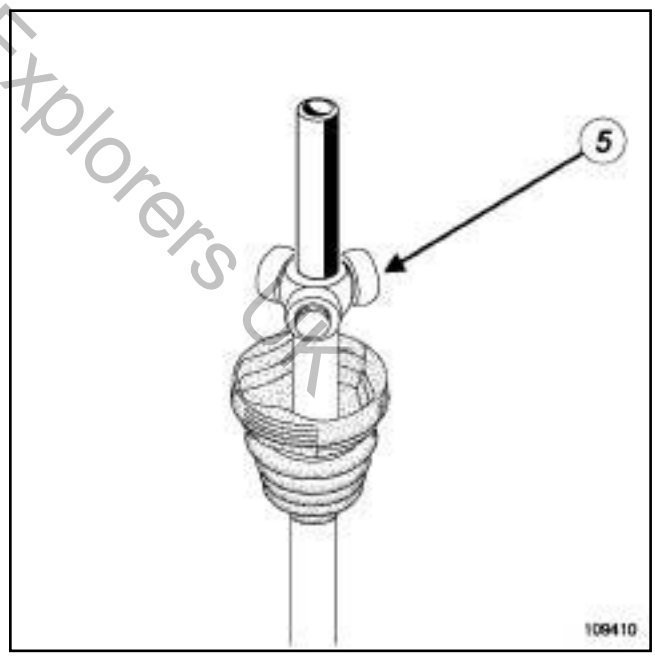
❑ Lightly lubricate the driveshaft using the **GREASE** supplied with the gaiter to facilitate its fitting.



128409

❑ Refit the gaiter (**6**) onto the driveshaft.

❑ Insert the gaiter lip into the groove of the driveshaft.



109410

❑ Refit the spider (**5**) in the position marked during removal.

❑ Refit a new lock ring using **circlip pliers**.

❑ Divide the quantity of grease between the gaiter and the driveshaft yoke sleeve.

❑ Fit the driveshaft yoke sleeve onto the spider.

JR5

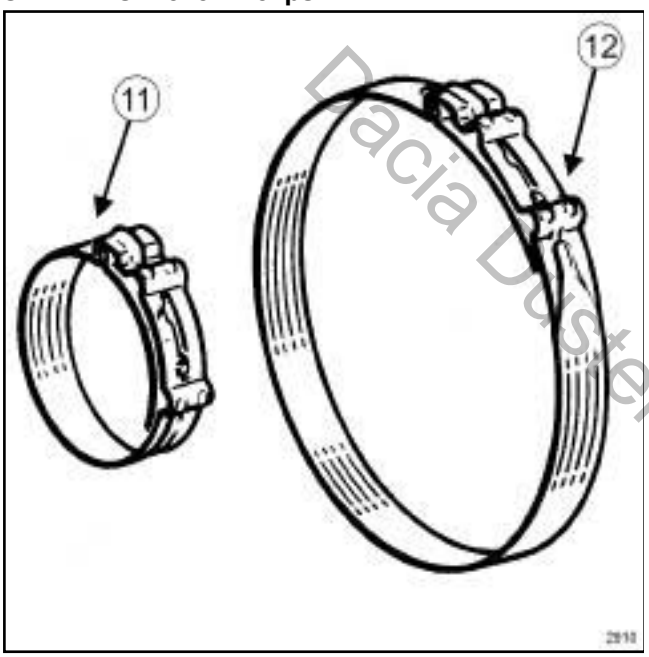
❑ Position the gaiter lip into the groove of the yoke sleeve.

> Note:
>
> Check that the gaiter lip is correctly positioned in the groove of the driveshaft.

❑ Fit:

- the small securing clip on the driveshaft gaiter,
- the big securing clip on the driveshaft gaiter.

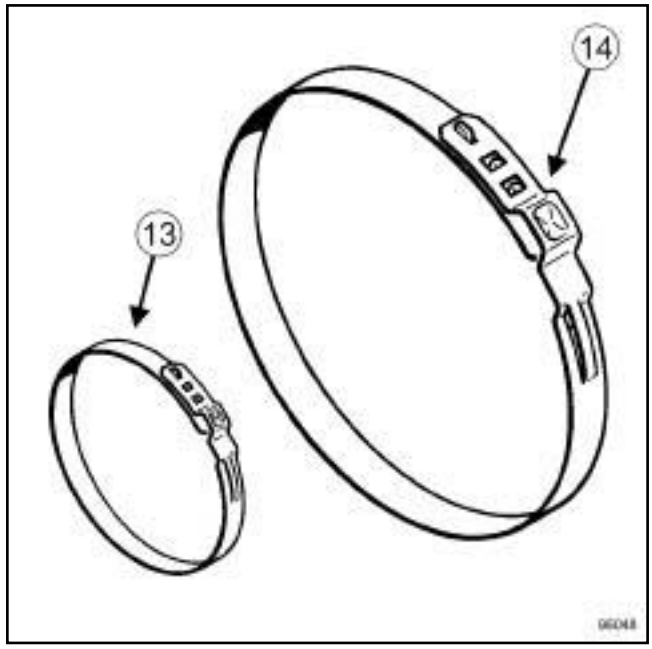
CAILLEAU « click » clips



2910

❑ Tighten the small clip (**11**) and the big clip (**12**) until they click, using the tool.

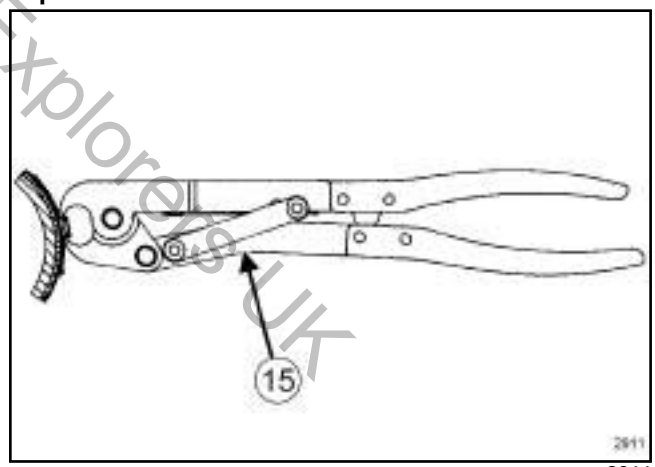
OETIKER clips



96048

❑ Tighten the small clip (**13**) and the big clip (**14**) using the tool.

Position 1 - Pre-tightening and positioning of the clip

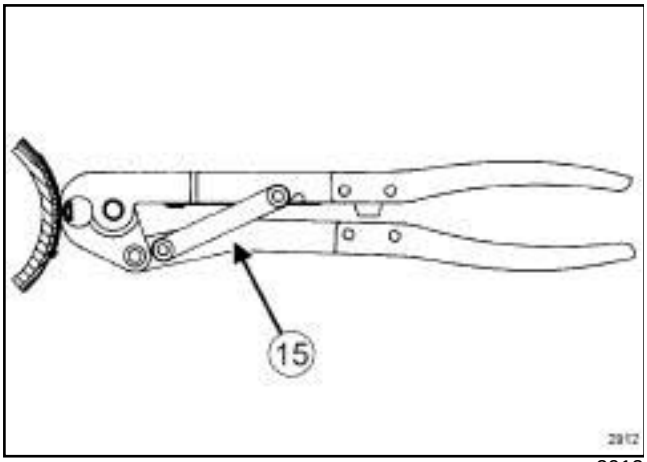


2911

❑ Put the linkage (**15**) in the lower position, and close the pliers fully. The pre-tightened clip slides onto the gaiter and can be positioned.

JR5

Position 2 - Tightening



2912

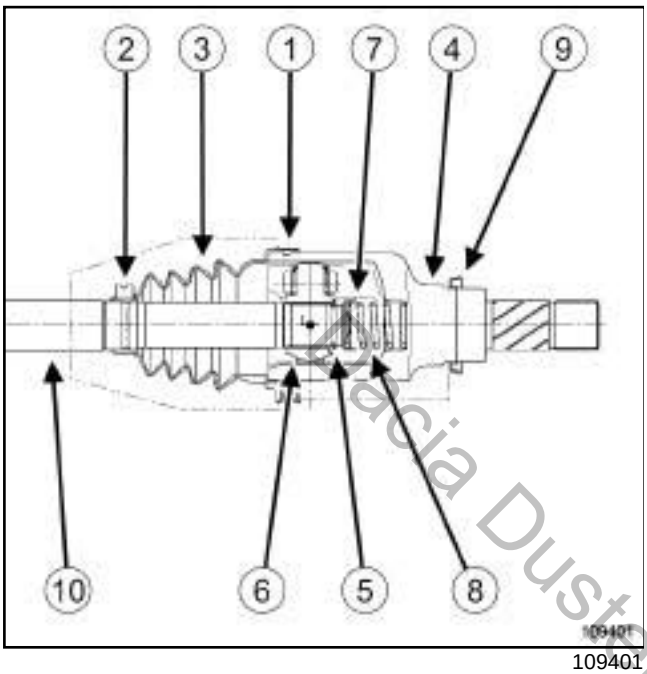
❑ Put the linkage (**15**) in the upper position, and close the pliers fully.

III - FINAL OPERATION

❑ Refit the front right-hand driveshaft (see **29A**, **Driveshafts**, **Front right-hand driveshaft: Removal - Refitting**, page **29A-4**) .

JR5

Equipment required
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

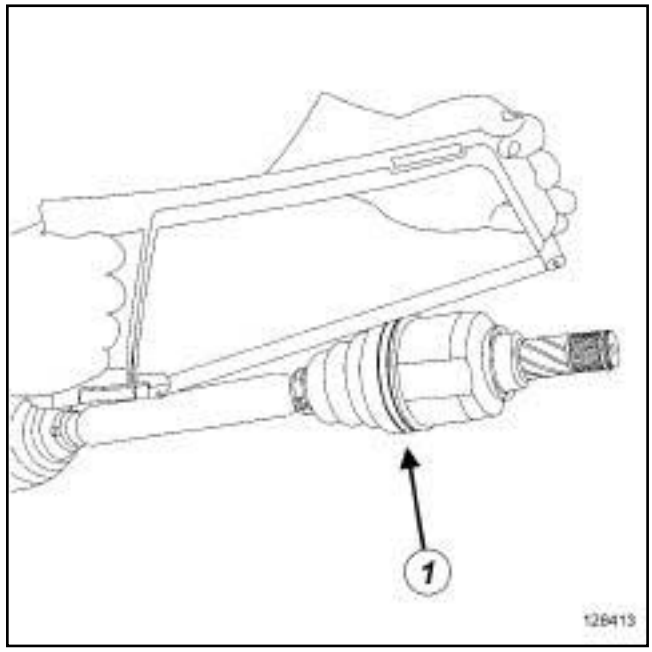
IMPORTANT
Wear leaktight gloves (Nitrile type) for this operation.

REMOVAL

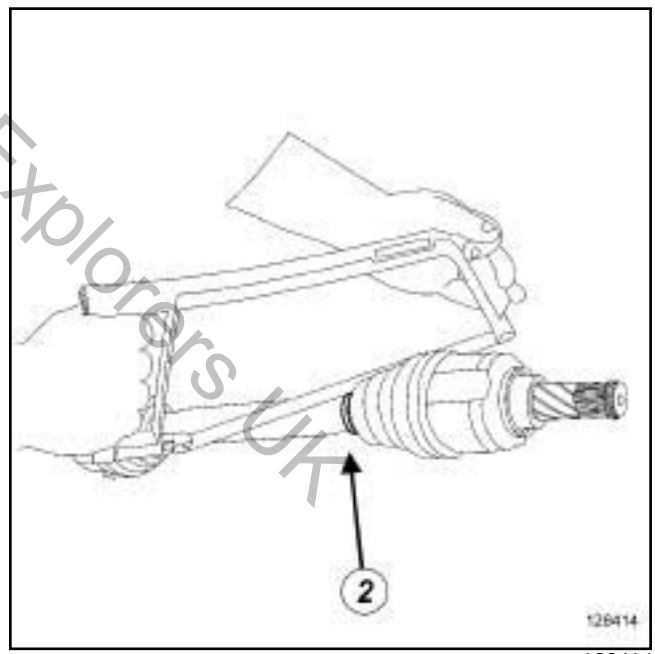
I - REMOVAL PREPARATION OPERATION

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

II - REMOVAL OPERATION



128413

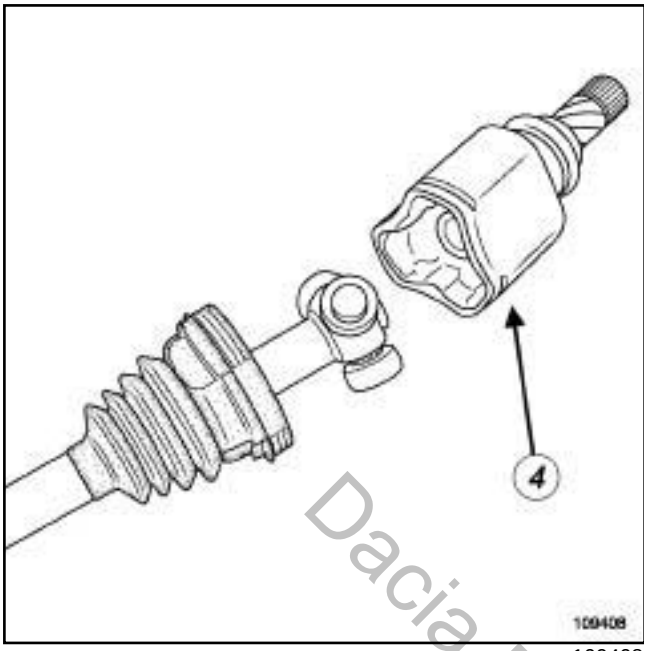


128414

❑ Cut the big securing clip (**1**) and the small securing clip (**2**) 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.

JR5



109408

❑ Remove the driveshaft yoke sleeve (**4**) .

Note:

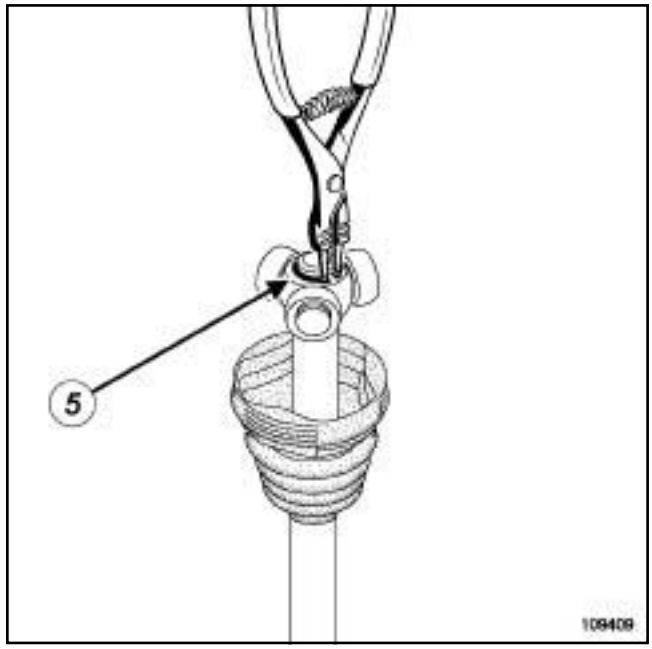
- Since the driveshaft yoke sleeve does not have a stop tab, it can be removed without being forced,

- do not remove the rollers from their respective bushings as the rollers and needles are matched and should never be interchanged.

❑ Remove as much grease as possible.

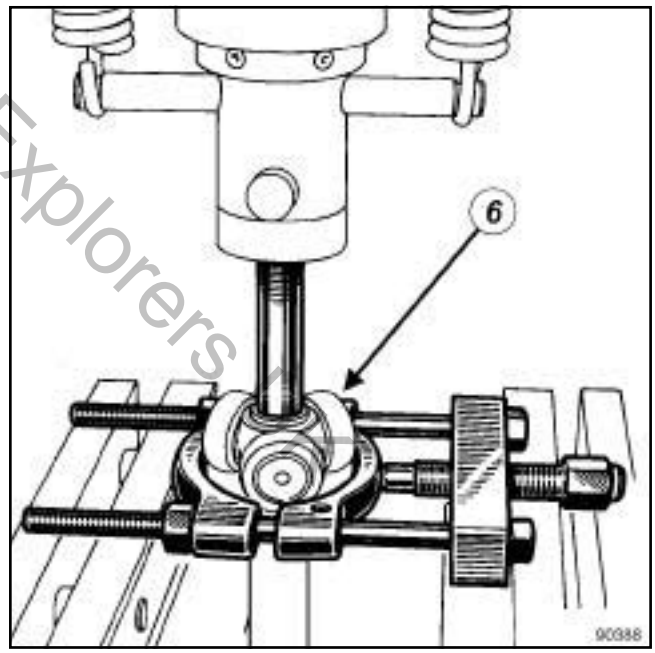
Note:

Never use thinner to remove grease.



109409

❑ Remove the lock ring (**5**) using **circlip pliers**.



90388

❑ Remove the spider (**6**) using a press and a releasing type extractor.

Note:

Mark the position of the spider before extracting it.

❑ Remove:

- the gaiter from the driveshaft,

- the cup equipped with the cup spring.

JR5

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Front left-hand driveshaft gaiter, gearbox side**.

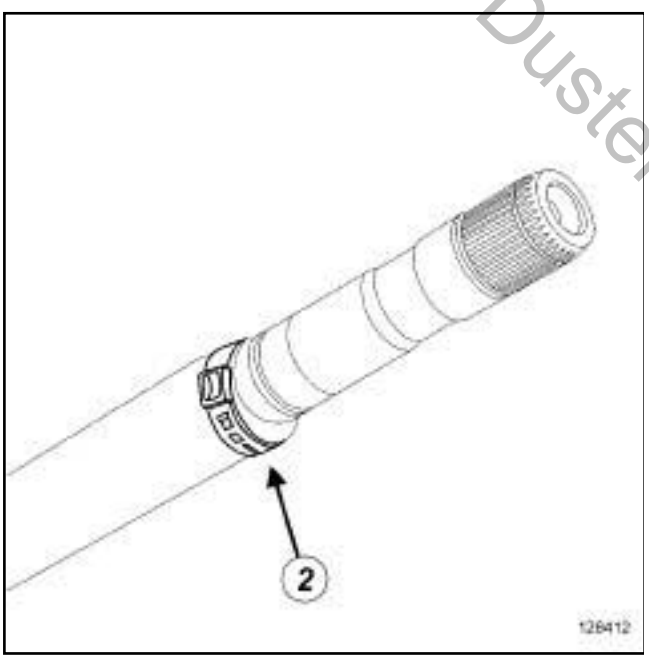
❑ **parts always to be replaced: gearbox side front driveshaft seal locking ring**.

❑ 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.

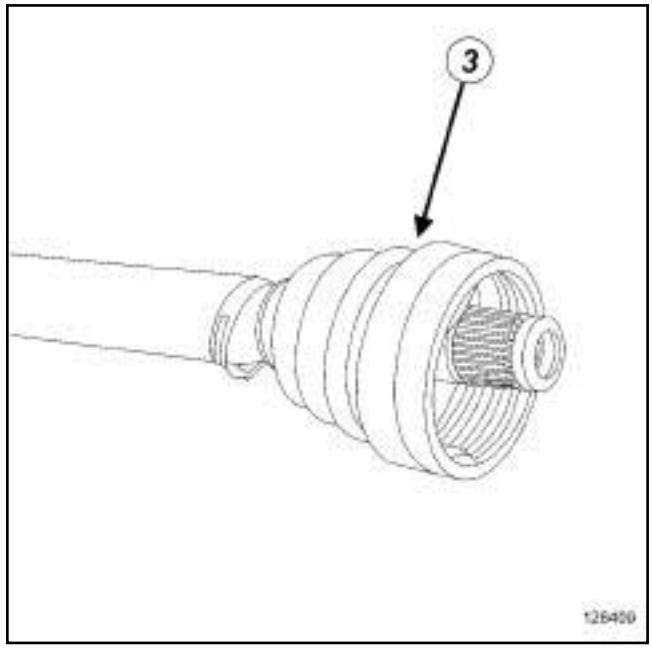
II - REFITTING OPERATION



128412

❑ Fit the small tightening clip (**2**) to the driveshaft.

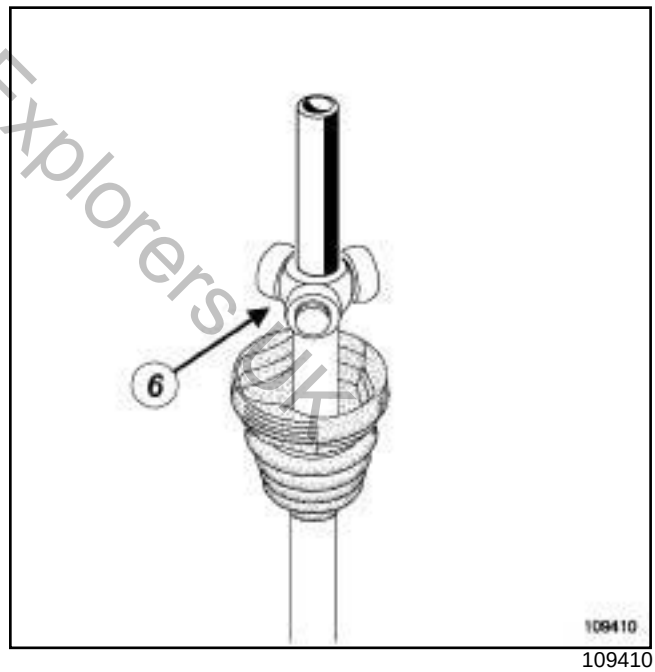
❑ Lightly lubricate the driveshaft using the **GREASE** supplied with the gaiter to facilitate its fitting.



128409

❑ Refit the gaiter (**3**) onto the driveshaft.

❑ Insert the gaiter lip into the groove of the driveshaft.

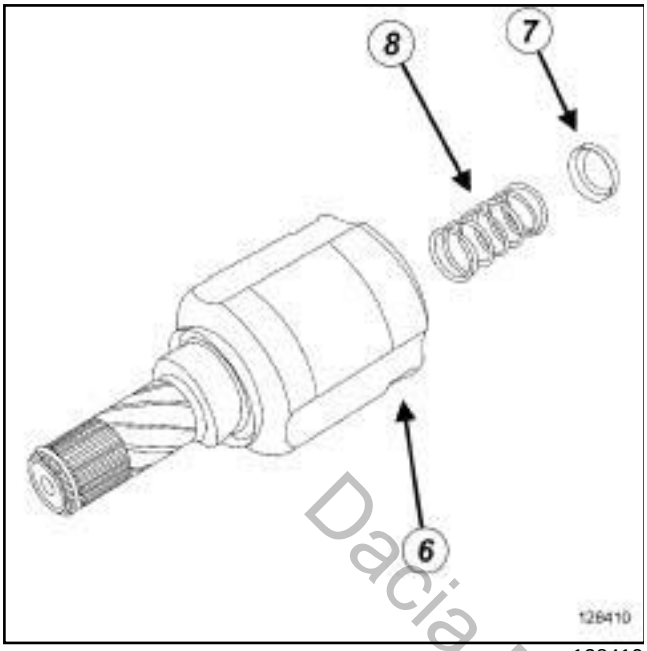


109410

❑ Refit:

- the spider (**6**) in the position marked during removal,
- a new lock ring using **circlip pliers**.

JR5



128410

❏ Refit:

- the cup (**7**) onto the cup spring (**8**) ,
- the cup spring equipped with the cup into the driveshaft yoke sleeve (**6**) .

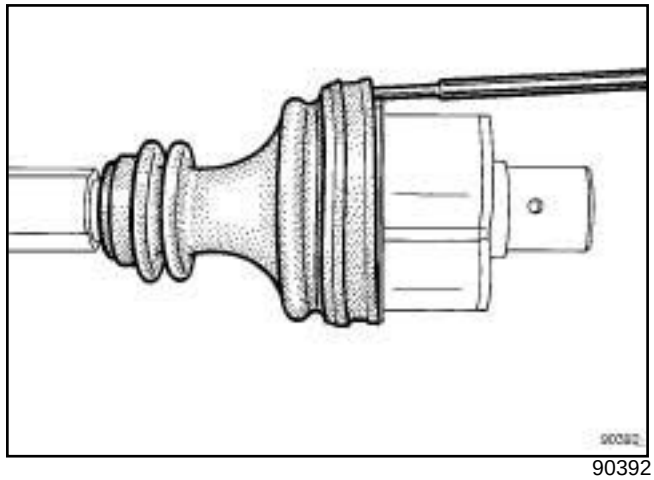
❏ Divide the quantity of grease between the driveshaft gaiter and the yoke sleeve.

❏ Fit the driveshaft yoke sleeve onto the spider.

❏ 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.



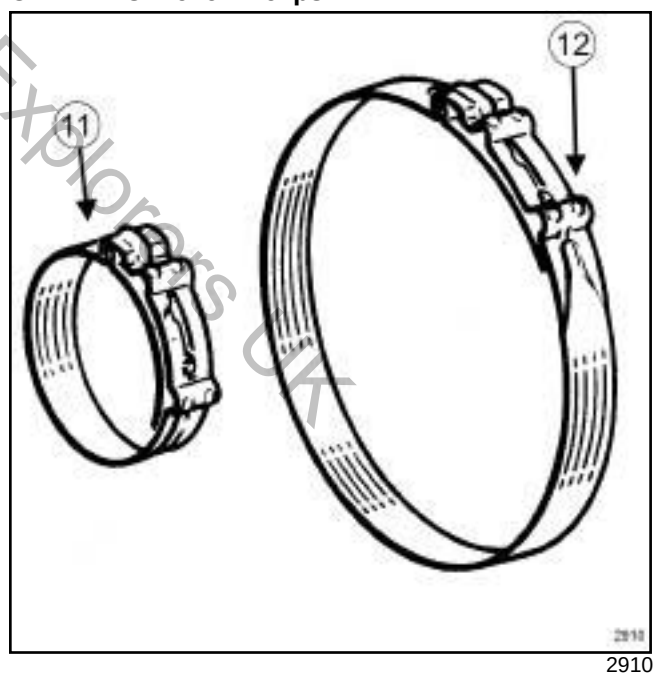
90392

❏ Insert a smooth rod with a rounded end between the gaiter and driveshaft to control the amount of air inside the joint.

❏ Fit:

- the small securing clip on the driveshaft gaiter,
- the big securing clip on the driveshaft gaiter.

CAILLEAU « click » clips

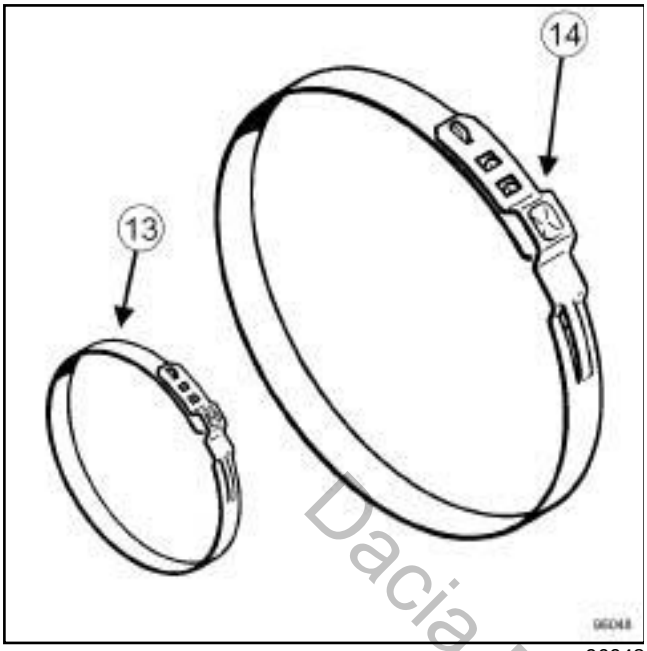


2910

❏ Tighten the small clip (**11**) and the big clip (**12**) until they click, using the tool.

JR5

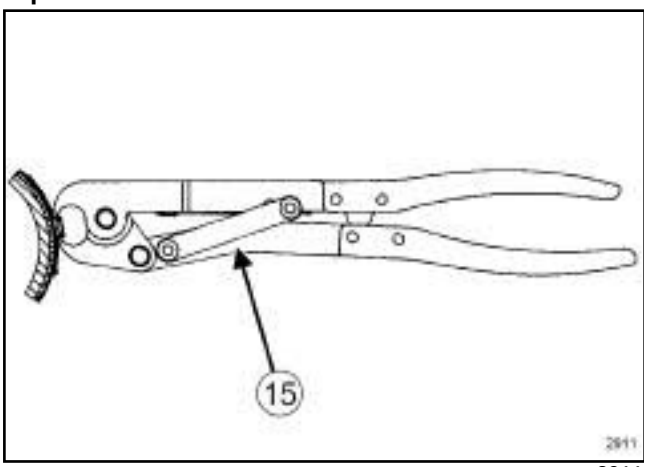
OETIKER clips



96048

❑ Tighten the small clip (**13**) and the big clip (**14**) using the tool.

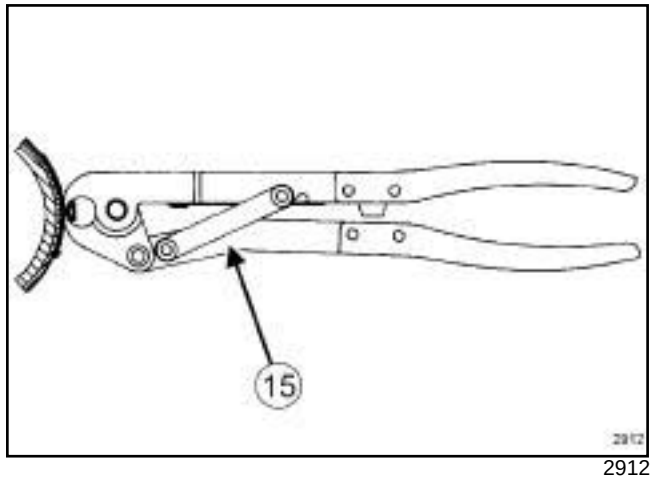
Position 1 - Pre-tightening and positioning of the clip



2911

❑ Put the linkage (**15**) in the lower position, and close the pliers fully. The pre-tightened clip slides onto the gaiter and can be positioned.

Position 2 - Tightening



2912

❑ Put the linkage (**15**) in the upper position, and close the pliers fully.

III - FINAL OPERATION

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