K4M

Essential special tooling	
Mot. 1385	Crankshaft oil seal fitting tool (timing end) (35 x 47 x 7)

REMOVAL

I - REMOVAL PREPARATION OPERATION

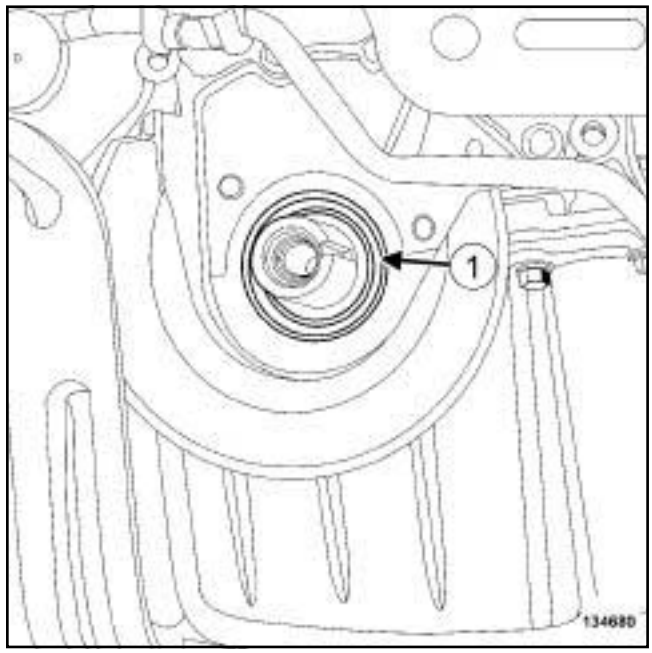
❏ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

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

❏ Remove:

- the engine cover,
- the throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-17**) ,
- 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 right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the engine undertray bolts,
- the engine undertray,
- the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-33**) ,
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-7**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-15**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-18**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-29**) ,
- the crankshaft timing sprocket.

II - OPERATION FOR REMOVAL OF PART CONCERNED



134680

❏ Remove the crankshaft seal (**1**) at the timing end.

REFITTING

I - REFITTING PREPARATION OPERATION

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

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

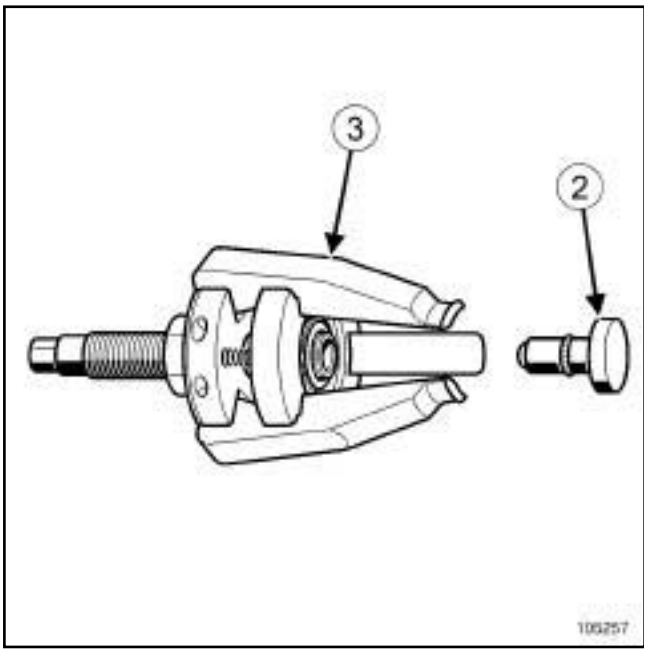
- the seal mating face on the crankshaft,
- the seal housing on the cylinder block.

WARNING

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

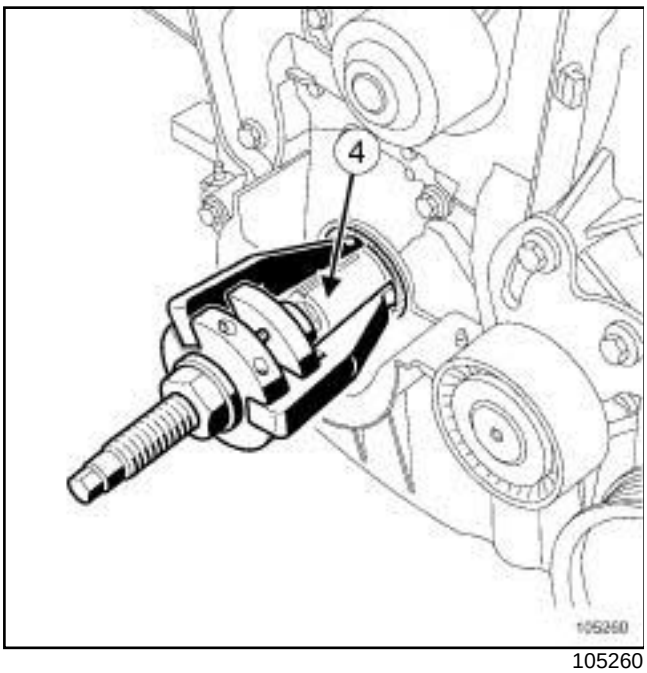
K9K

II - OPERATION FOR REMOVAL OF PART CONCERNED



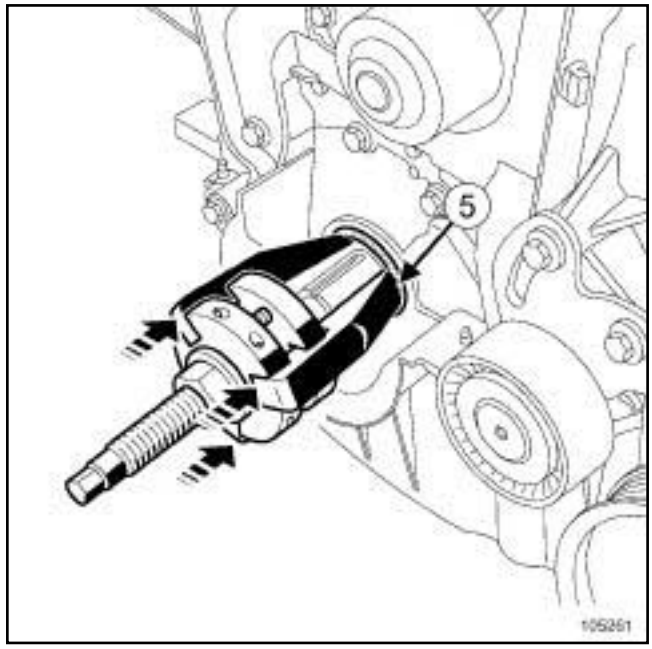
105257

❑ Fit the end piece (**2**) onto the tool **(Mot. 1577)** (**3**) .



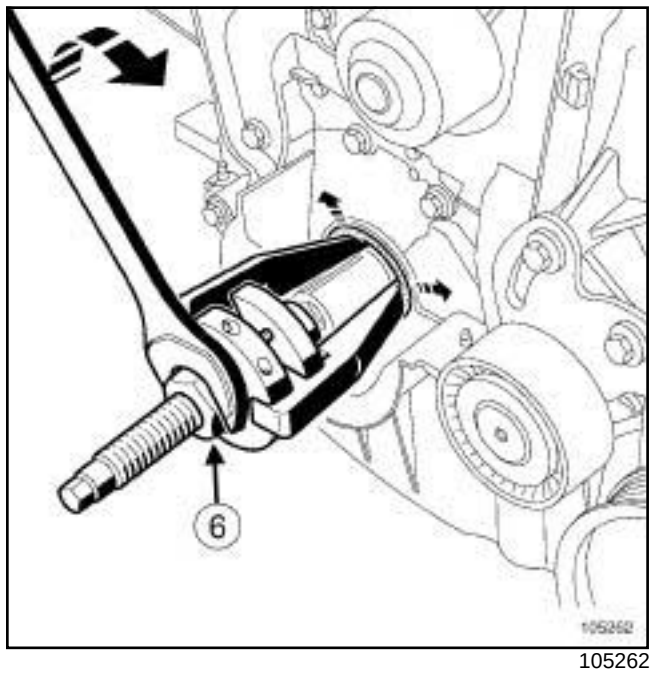
105260

❑ Position the jaws of the tool **(Mot. 1577)** onto the crankshaft nose (**4**) .



105261

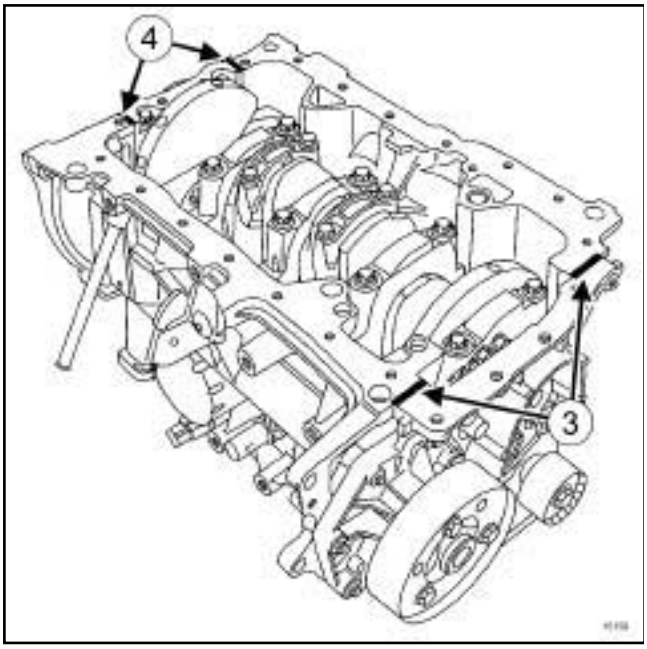
❑ Push on the tool **(Mot. 1577)** until contact is made between the ends (**5**) of the jaws and the crankshaft seal.



105262

❑ Separate the jaws by screwing the nut **(Mot. 1577)** of the tool (**6**) .

F9Q



15159

❑

Note:

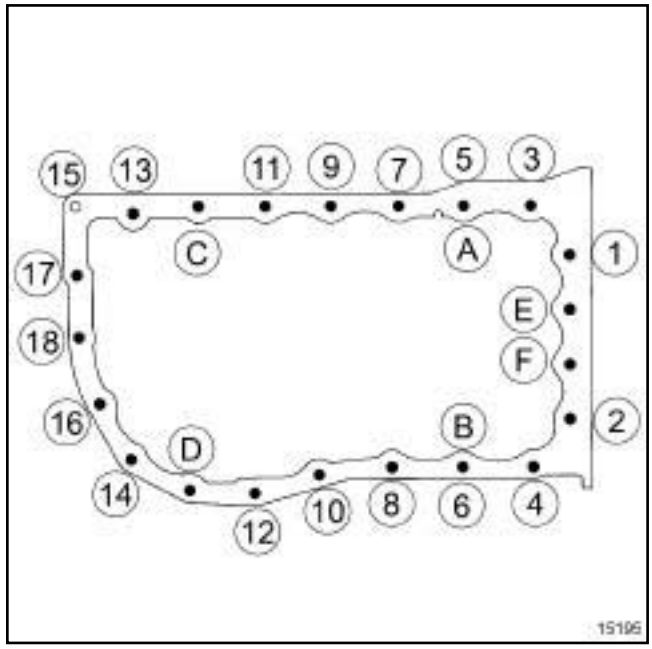
Do not cut the two tabs on the crankshaft closure panel seal, which sit higher than the cylinder block gasket face (**3**) .

❑ Apply a **BEAD OF SILICONE ADHESIVE SEALANT** (see **Vehicle: Parts and ingredients for the repairwork**) (04B, Consumables - Products) to each side of bearing No. 1 at (**4**) .

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- a new seal to the sump,
- the sump.



15195

❑ Tighten to torque and in order:

- the **sump bolts (A) to (F) (18 N.m)**,
- the **sump bolts (1) to (18) (15 N.m)**.

❑ Connect the oil vapour rebreathing pipe to the sump.

III - FINAL OPERATION

❑ Refit the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-33**) .

❑ Fill up with engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-40**) ,

❑ Refit the engine undertray.

K4M

Tightening torques ▽	
oil pump bolts	**25 N.m**

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:

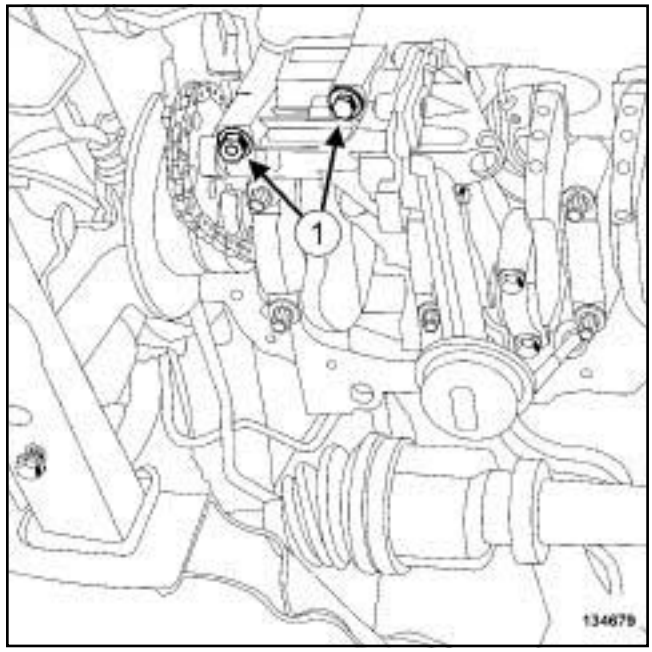
- the engine undertray bolts,
- the engine undertray,

❑ Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-40**) .

❑ Remove:

- the oil level sensor (see **10A**, **Engine and cylinder block assembly**, **Oil level sensor: Removal - Refitting**, page **10A-69**) ,
- the sump (see **10A**, **Engine and cylinder block assembly**, **Sump: Removal - Refitting**, page **10A-25**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



134679

❑ Remove:

- the oil pump bolts (**1**) ,
- the oil pump.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Position the oil pump pinion on the chain.

❑ Refit the oil pump.

❑ Torque tighten the **oil pump bolts (25 N.m)**.

II - FINAL OPERATION

❑ Refit:

- the sump (see **10A**, **Engine and cylinder block assembly**, **Sump: Removal - Refitting**, page **10A-25**) ,
- the oil level sensor (see **10A**, **Engine and cylinder block assembly**, **Oil level sensor: Removal - Refitting**, page **10A-69**) .

❑ Fill up the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-40**) .

❑ Refit the engine undertray.

K9K

Essential special tooling	
Mot. 582	Flywheel locking tool.

Tightening torques ▽	
flywheel bolts	**20 N.m + 36° ± 6°**
flywheel bolts	**50 N.m**

IMPORTANT
Consult the safety and cleanliness advice 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 battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
- the air filter unit (see **12A**, **Fuel mixture**, **Air filter unit: Removal - Refitting**, page **12A-4**) ,
- the engine undertray bolts,
- the engine undertray,
- the crankshaft position sensor (see **13B**, **Diesel injection**, **Crankshaft position sensor: Removal - Refitting**, page **13B-25**) ,
- the starter (see **16A**, **Starting - Charging**, **Starter: Removal - Refitting**, page **16A-16**) ,
- 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 gearbox (see **Manual gearbox oil: Draining - Refilling**) .

❑ Remove:

- the front left-hand wheel driveshaft (see **Front left-hand wheel driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand wheel driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the differential output seals (see **Differential output seal: Removal - Refitting**) (21A, Manual gearbox).

JR5

❑ Remove the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-33**) .

❑ Remove:

- 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 **19D**, **Engine mounting**, **Left-hand suspended engine mounting: Removal - Refitting**, page **19D-1**) ,
- the manual gearbox (see **Manual gearbox: Removal - Refitting**) (21A, Manual gearbox).
- the hydraulic clutch release bearing (see **Clutch thrust bearing: Removal - Refitting**) (20A, Clutch),
- the clutch disc and pressure plate (see **Mechanism / Disk: Removal - Refitting**) (20A, Clutch).

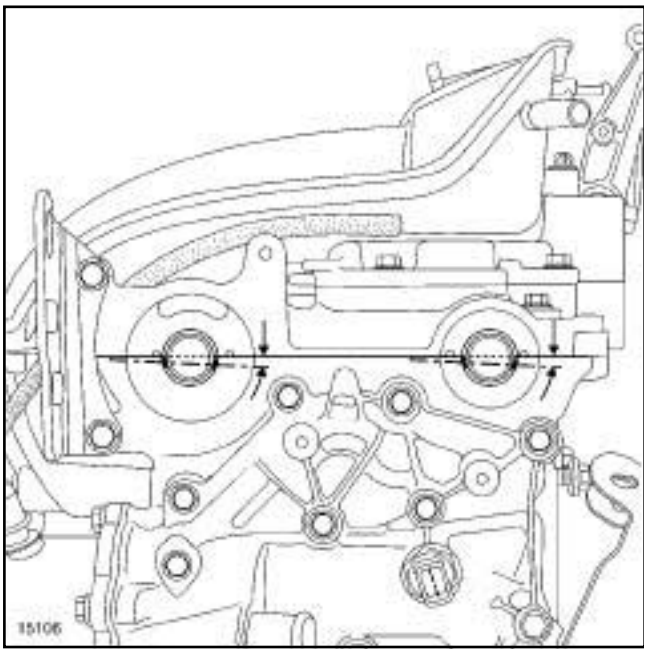
F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED

Adjusting the timing

❑ Refit:

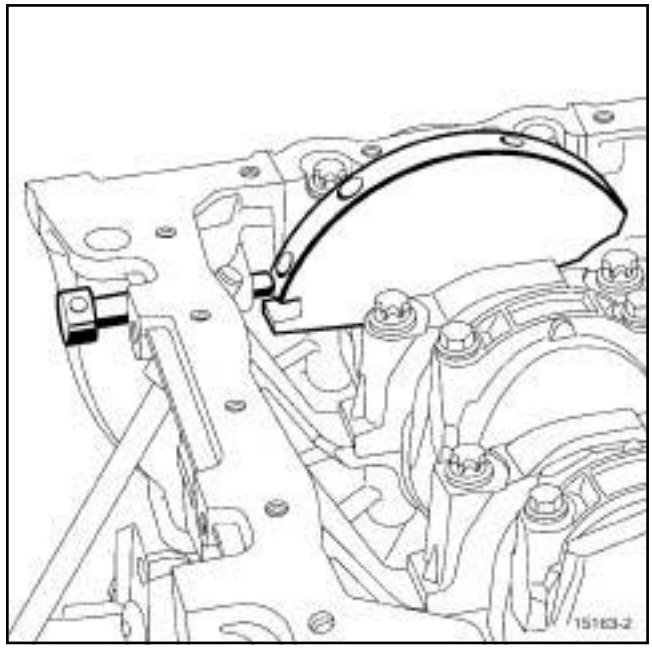
- the crankshaft accessories pulley,
- the crankshaft accessories pulley bolt.



15106

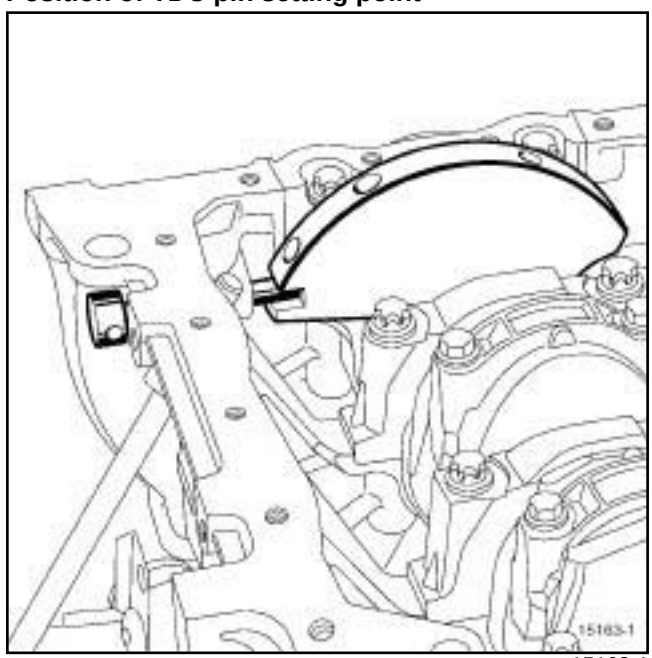
❑ Rotate the engine clockwise (timing end) so that the camshaft grooves are offset below the centre line and almost horizontal.

Position of TDC pin before setting point



15163-2

Position of TDC pin setting point

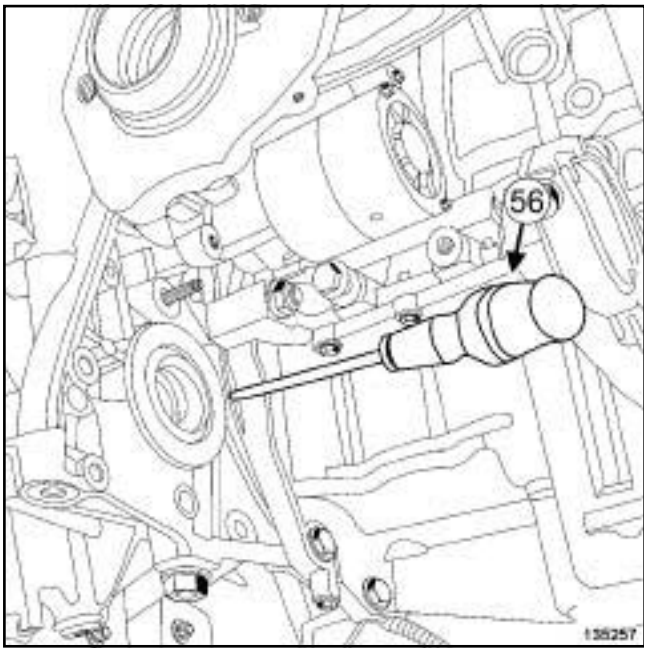


15163-1

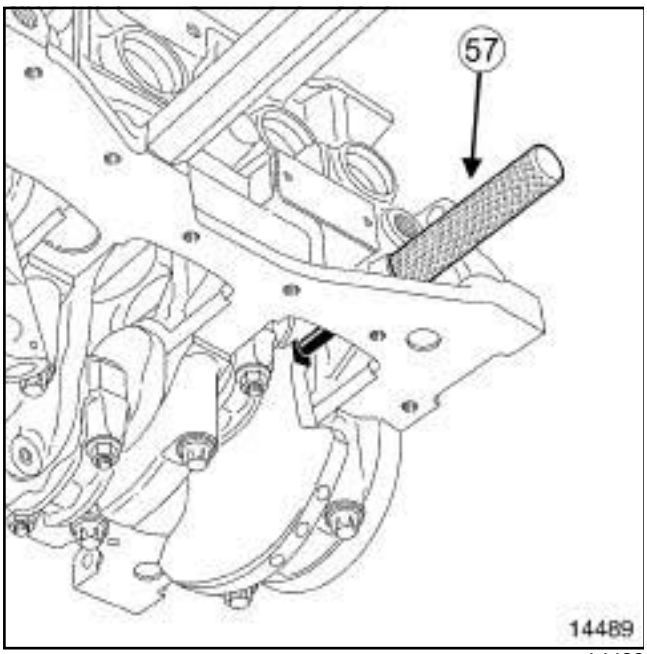
❑ Insert the TDC setting pin **(Mot. 1054)** and rotate the engine slightly clockwise (timing end) until the setting point is reached.

K4M

K4M, and 848



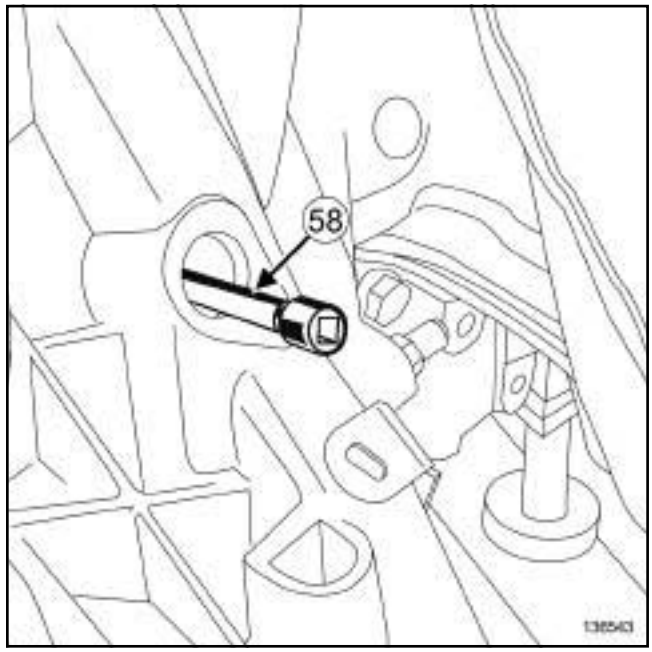
135257



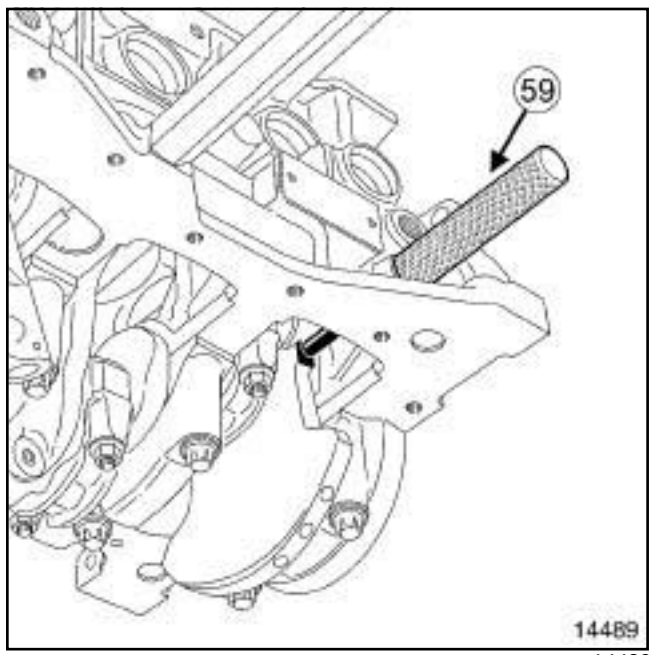
14489

❏ Use a screwdriver (**56**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the TDC setting pin **(Mot. 1489)** (**57**) using the screwdriver; the crankshaft groove should be at the top.

K4M, and 858 or 866



136543



14489

❏ Use a ratchet extension piece (**58**) to check that the flywheel does not turn (clockwise at the timing end), otherwise bring the crankshaft back into contact with the TDC setting pin **(Mot. 1489)** (**59**) using the ratchet extension piece; the crankshaft groove should be pointing upwards.

F9Q

Essential special tooling	
Mot. 799-01	Timing gear wheel immobiliser.

Tightening torques ▽	
bolts of the camshaft bearing cap cover	**30 N.m**
camshaft pulley bolt	**80 N.m**

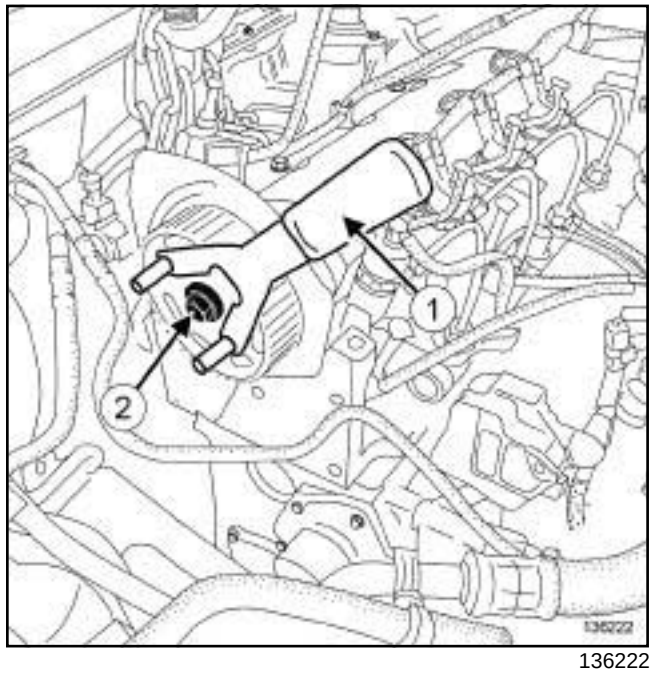
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine cover,
- the battery (see **Battery : Removal - Refitting**) (80A, Battery),
- the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).
- the vacuum pump (see **Vacuum pump: Removal - Refitting**) (37A, Mechanical component controls),
- the engine undertray bolts,
- the engine undertray,
- 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),
- the accessories belt (see **11A**, **Top and front of engine**, **Accessories belt: Removal - Refitting**, page **11A-7**) ,
- the crankshaft accessories pulley (see **11A**, **Top and front of engine**, **Crankshaft accessories pulley: Removal - Refitting**, page **11A-15**) ,
- the engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-33**) ,
- 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 camshaft position sensor (see **13B**, **Diesel injection**, **Camshaft position sensor: Removal - Refitting**, page **13B-19**) ,
- the right-hand suspended engine mounting (see **19D**, **Engine mounting**, **Right-hand suspended engine mounting: Removal - Refitting**, page **19D-18**) ,
- the timing belt (see **11A**, **Top and front of engine**, **Timing belt: Removal - Refitting**, page **11A-29**) ,
- the high pressure pipe between the pump and the rail (see **13B**, **Diesel injection**, **High-pressure pipe between the pump and rail: Removal - Refitting**, page **13B-71**) ,
- the high pressure pump (see **13B**, **Diesel injection**, **High pressure pump: Removal - Refitting**, page **13B-30**) .



136222

❑ Lock the camshaft pulley using the **(Mot. 799-01)** (**1**) .

❑ Remove:

- the bolt (**2**) from the camshaft pulley,
- the camshaft pulley.

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Remove the camshaft seals using a screwdriver.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ **parts always to be replaced: Camshaft seal on timing end (10,02,02,02)**.

❑ **parts always to be replaced: Camshaft timing sprocket nut (10,02,02,18)**.

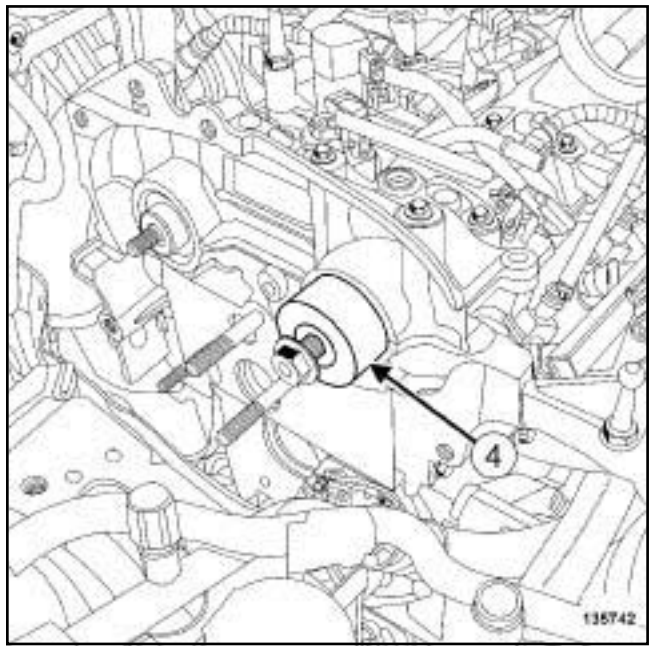
> **WARNING**
> Do not scrape the joint faces of the aluminium, any damage caused to the joint face will result in a risk of leaks.

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

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

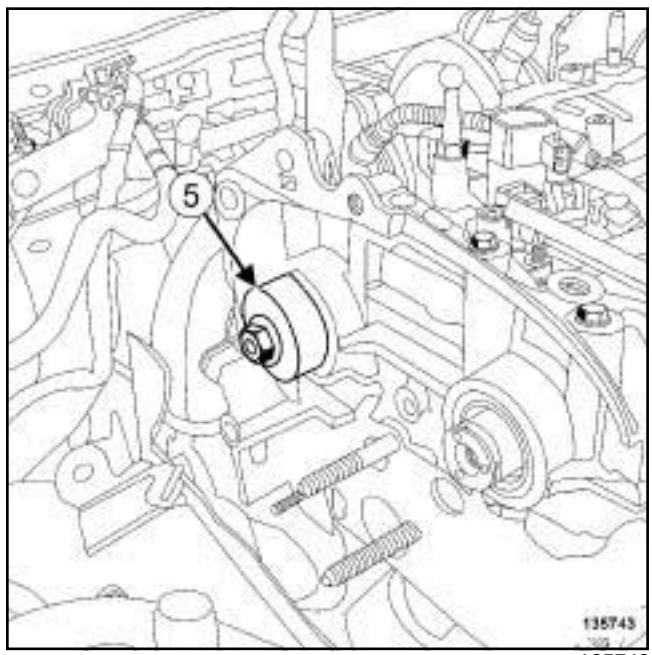
- the seal mating face of each camshaft,
- the cylinder head seal housings.

II - REFITTING OPERATION FOR PART CONCERNED



135742

❑ Refit a new inlet camshaft seal using the tool **(Mot. 1517)** (**4**) .



135743

❑ Refit a new exhaust camshaft seal using the tool **(Mot. 1512)** (**5**) .

III - FINAL OPERATION

❑ Refit:

- the camshaft dephaser (see **11A**, **Top and front of engine**, **Camshaft dephaser: Removal - Refitting**, page **11A-177**) ,

K4M

Tightening torques ▽	
bolts 1 to 5 of the inlet manifold	**9 N.m**
bolts 6 to 8 of the inlet manifold	**12 N.m**

IMPORTANT

During this operation, be sure to:

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

IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

WARNING

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

WARNING

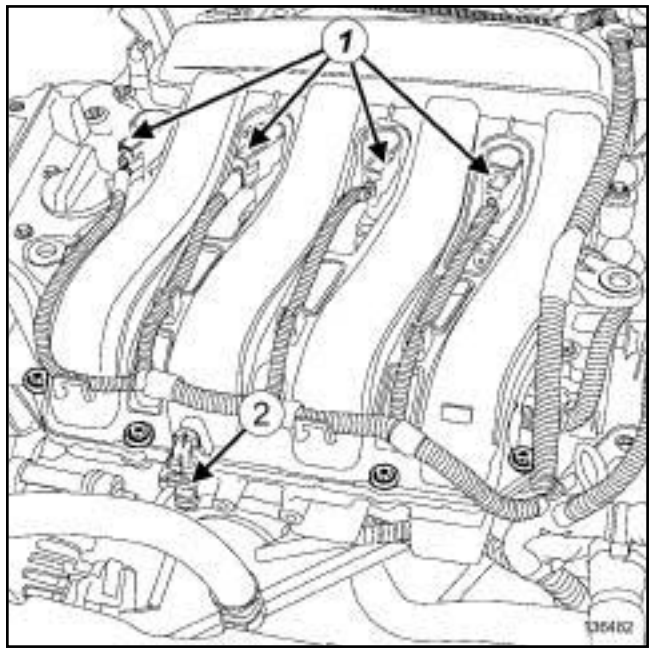
To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

REMOVAL

I - REMOVAL PREPARATION OPERATION

❏ 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 throttle valve (see **12A**, **Fuel mixture**, **Throttle valve: Removal - Refitting**, page **12A-17**) .



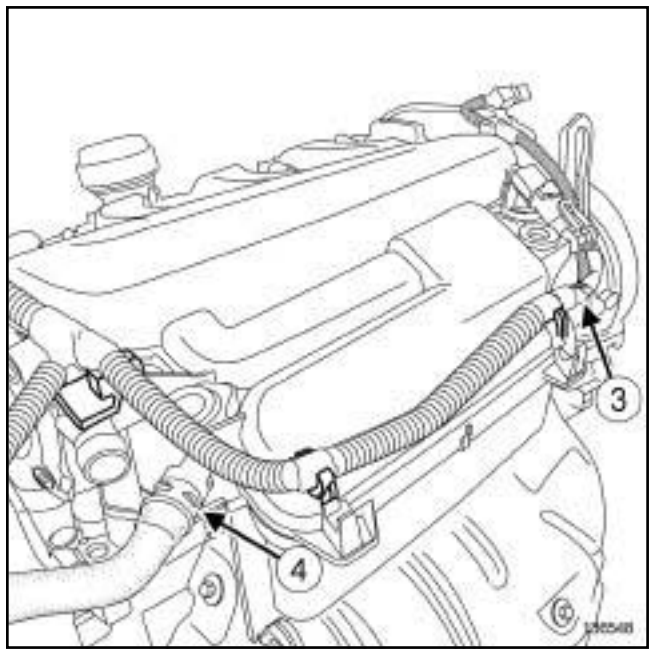
136482

❏ Disconnect:

- all coil connectors (**1**) ,
- the air temperature sensor connector (**2**) .

❏ Unclip the wiring from the inlet manifold coils.

❏ Move the coil wiring to one side.



136548

❏ Disconnect the following from the inlet manifold:

- the inlet manifold pressure sensor connector (**3**) ,
- the oil vapour rebreathing hose (**4**) .

K9K, and 830 or 832

Tightening torques ▽	
turbocharger studs on the exhaust manifold	**9 Nm**
turbocharger stud on the turbocharger	**9 Nm**
turbocharger nuts	**28 Nm**

IMPORTANT
Wear protective gloves during the operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

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

❑ Remove:

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

K9K, and 830

❑ Remove the lower engine tie-bar (see **19D**, **Engine mounting**, **Lower engine tie-bar: Removal - Refitting**, page **19D-33**) .

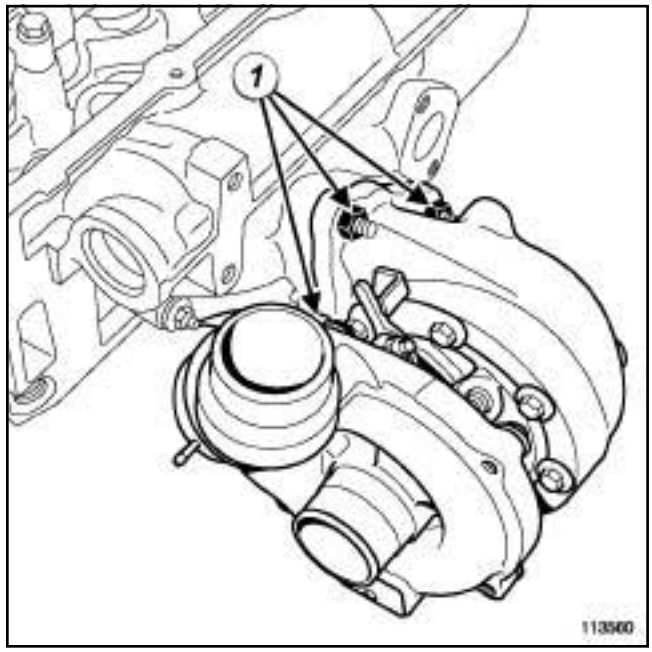
❑ Remove:

- the catalytic converter (see **19B**, **Exhaust**, **Catalytic converter: Removal - Refitting**, page **19B-17**) ,
- the turbocharger oil return pipe (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-22**) ,
- the turbocharger air outlet pipe (see **12B**, **Turbocharging**, **Intercooler air inlet pipe: Removal - Refitting**, page **12B-41**) ,
- the turbocharger oil supply pipe (see **12B**, **Turbocharging**, **Turbocharger oil pipe: Removal - Refitting**, page **12B-22**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

❑ Disconnect the turbocharging pressure regulation valve control hose from the turbocharger.

K9K, and 832

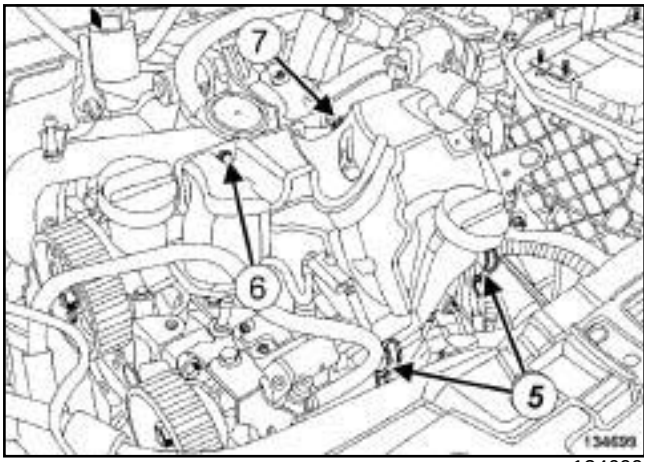


113560

❑ Remove:

- the turbocharger nuts (**1**) ,
- the turbocharger,
- the turbocharger seal.

K9K, and 832

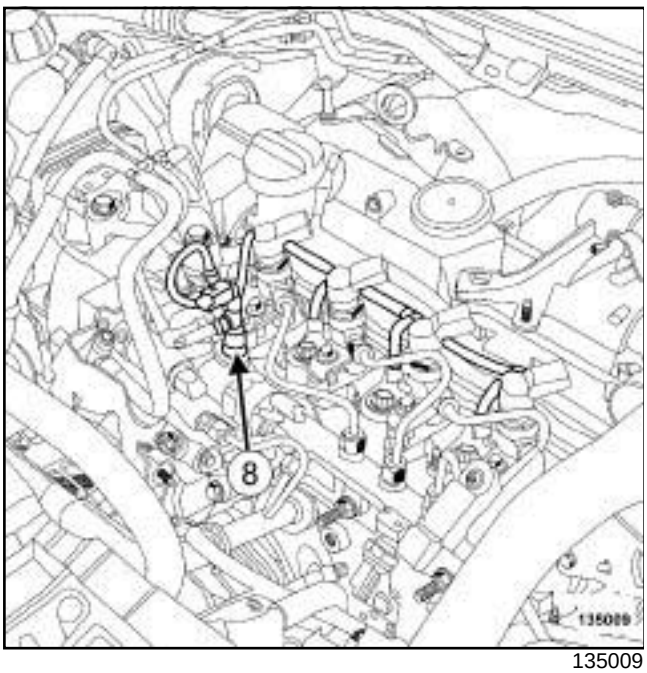


134699

❏ Unclip the injector rail protector cover at (**5**) .

❏ Remove:

- the injector rail protector cover bolt (**6**) ,
- the injector rail protector cover nut (**7**) ,
- the injection rail protector cover,



135009

❏ Disconnect the diesel injector fuel return rail (**8**) from the high pressure pump.

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

❏ Fit a blanking plug onto the opening of the diesel injector fuel return rail.

❏ Connect the **8 mm** diameter offset union fitted with its hose contained in the tool **(Mot. 1771)** to the high pressure pump union.

❏ Immerse this hose in the **500 ml graduated measuring cylinder**.

❏ Connect:

- the camshaft position sensor connector,
- the damper valve connector,
- the intercooler outlet air pipe on the damper valve.

❏ Torque tighten the **intercooler air outlet pipe clip on the damper valve (5.5 N.m)**.

❏ Refit the turbocharger air outlet pipe (see **12B**, **Turbocharging**, **Intercooler air inlet pipe: Removal - Refitting**, page **12B-41**) .

II - CHECKING OPERATION FOR PART CONCERNED

❏ Force the vehicle's + after ignition feed.

❏ Connect the **diagnostic tool**.

❏ Run commands:

- RZ009 "Program vehicle functions",
- VP036 "Inhibit fuel supply".

❏ Run the starter for **15 seconds**.

❏ Check that the minimum flow is **25 ml** for **15 seconds**.

❏ Run command VP037 "Stop fuel supply inhibition".

❏ Disconnect the **diagnostic tool**.

III - FINAL OPERATION

❏ Remove the turbocharger outlet air pipe (see **12B**, **Turbocharging**, **Intercooler air inlet pipe: Removal - Refitting**, page **12B-41**) .

❏ Separate the intercooler air outlet pipe clip on the damper valve.

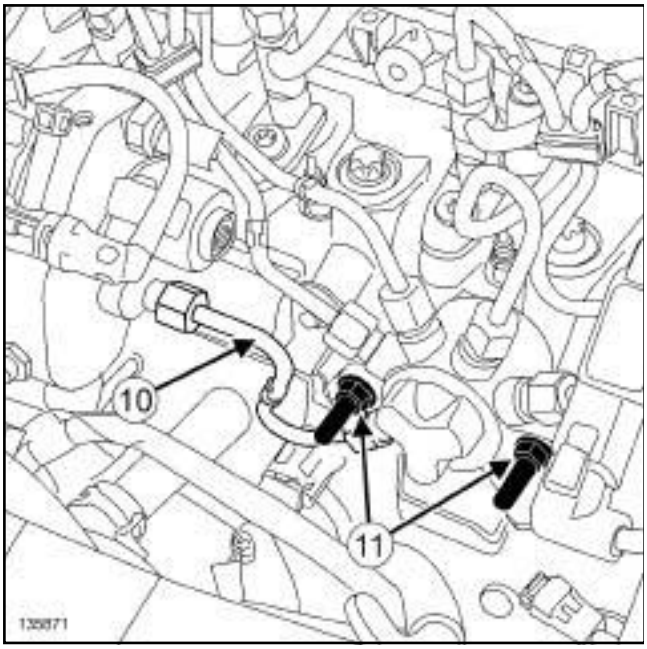
❏ Disconnect:

- the intercooler air outlet pipe on the damper valve,
- the damper valve connector,
- the camshaft position sensor connector.

❏ Disconnect the **8 mm** diameter offset union fitted with its hose contained in the tool **(Mot. 1771)** on the high pressure pump union.

❏ Remove the blanking plug from the diesel injector fuel return rail opening.

K9K, and 830



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❑

WARNING

Always hold the intermediate injector union in place with a wrench when loosening the high pressure pipes.

Do not damage the injector return nozzle.

❑ Undo the injector rail nuts (**10**) .

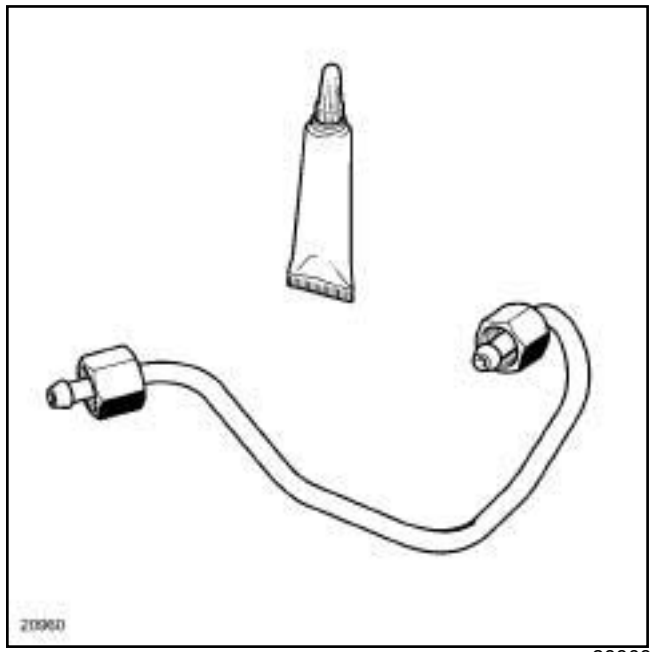
❑ Remove the high pressure pipe (**11**) between the high pressure pump and the injector rail.

❑ Place a suitable blanking plug on:

- the high pressure pump opening,
- the injector rail opening.

REFITTING

I - REFITTING PREPARATION OPERATION



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❑

WARNING

Before fitting a new high pressure pipe, lightly lubricate the nut threads with the oil from the applicator provided in the new parts kit.

Be careful not to allow oil into the high pressure pipe.

Do not lubricate high pressure pipes supplied without an applicator, as these high pressure pipes are self-lubricating.

WARNING

Do not remove the blanking plugs from each component until the last moment.

Also, do not remove the components from their packaging until they are to be fitted to the vehicle.

❑ **parts always to be replaced: High-pressure pipe between the pump and rail (11,05,03,02)**.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Remove the blanking plug from:

- the high pressure pump opening,
- the injector rail opening.

K9K, and 834

Essential equipment
diagnostic tool

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

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 **13B**, **Diesel injection**, **Diesel injection: Precautions for repair**, page **13B-1**) .

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

REMOVAL

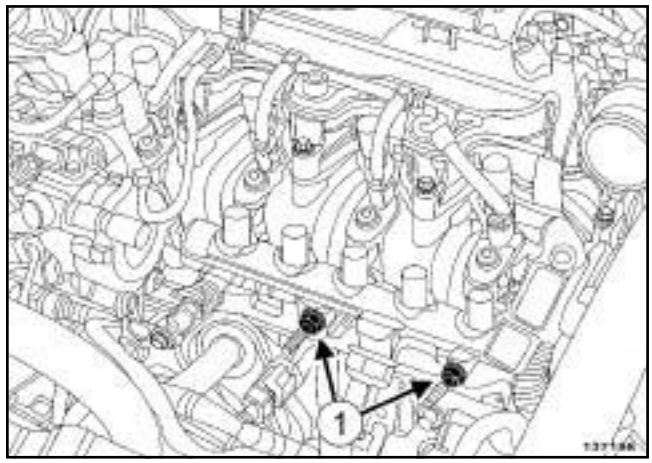
I - REMOVAL PREPARATION OPERATION

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

❑ Remove:

- the engine cover,
- the high pressure pipe between the high pressure pump and the injector rail (see **13B**, **Diesel injection**, **High-pressure pipe between the rail and injector: Removal - Refitting**, page **13B-87**) ,
- the high pressure pipe between the injector rail and the diesel injectors (see **13B**, **Diesel injection**, **High-pressure pipe between the rail and injector: Removal - Refitting**, page **13B-87**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



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❑ Remove:

- the nuts (**1**) from the injector rail,
- the injector rail.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

❑ Refit the injector rail.

❑ Without tightening, fit the injector rail nuts.

II - FINAL OPERATION

❑ Refit:

- the high pressure pipe between the injector rail and the diesel injectors (see **13B**, **Diesel injection**, **High-pressure pipe between the rail and injector: Removal - Refitting**, page **13B-87**) ,
- the high pressure pipe between the high pressure pump and the injector rail (see **13B**, **Diesel injection**, **High-pressure pipe between the rail and injector: Removal - Refitting**, page **13B-87**) .
- the engine cover.

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

❑ Check that there are no diesel leaks.

❑ Apply the after repair procedure using the **diagnostic tool** :

- connect the **diagnostic tool**,
- select "Injection computer",
- go to repair mode,

F9Q

Essential special tooling	
Ms. 583	Hose clamp pliers.
Mot. 1448	Long nose pliers for hose clips.

Tightening torques ▽	
exhaust gas recirculation assembly bolts	**25 N.m**

REMOVAL

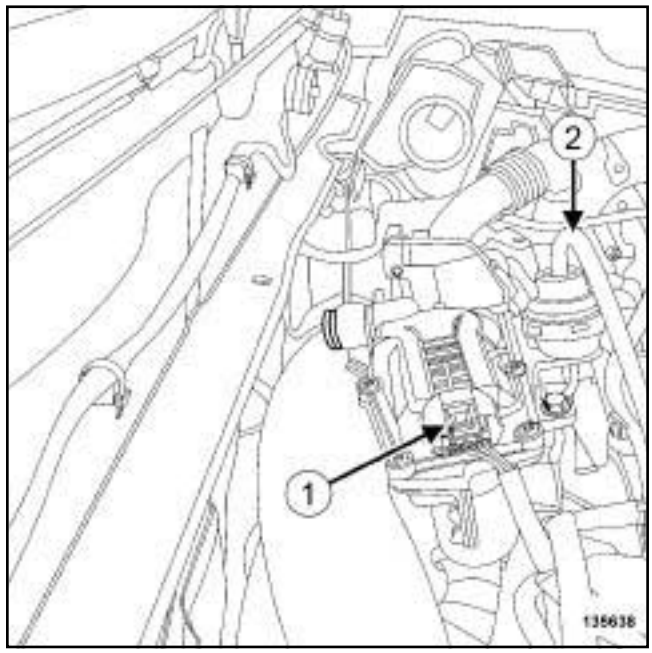
I - REMOVAL PREPARATION OPERATION

❑ 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 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 intercooler air inlet pipe (see **12B**, **Turbocharging**, **Intercooler air inlet pipe: Removal - Refitting**, page **12B-41**) ,
- the exhaust gas recirculation rigid pipes (see **14A**, **Antipollution**, **Exhaust gas recirculation rigid pipe: Removal - Refitting**, page **14A-30**) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



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❑ Disconnect:

- the exhaust gas recirculation solenoid valve connector (**1**) ,
- the air pipe (**2**) of the exhaust gas recirculation bypass control solenoid valve.