

D4F, and 784

II - FINAL OPERATION.

AIR CONDITIONING

- ☐ Refit the air conditioning compressor.
- ☐ Attach the air conditioning pipe to the body between the compressor and the expansion valve.
- ☐ Refit the air conditioning compressor bolts.
- ☐ Torque tighten the **air conditioning compressor bolts (25 Nm)**.
- ☐ Connect the air conditioning compressor clutch connector.

☐ Refit:

- the alternator (see **16A, Starting - Charging, Alternator: Removal - Refitting**, page 16A-5) ,
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page 11A-5) ,
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-21) ,
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the engine undertray.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Ms. 583	Pipe clamps.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques 	
left-hand suspended engine mounting shaft nut	62 N.m
earth nut on the shock absorber cup height adjuster	8 N.m
nut of each earth cable on the side member	8 N.m
nut of the supply cable on the battery protection fuse box	6 N.m
nut of the fuse board supply cable	8 N.m
bolt of the connecting pipe between the « expansion valve - compressor »	8 N.m
air filter unit air outlet pipe clip	5.5 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- ☐ Remove:
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
 - the air filter unit air inlet pipe,

- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

☐ Drain:

- the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
- the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

AIR CONDITIONING

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

☐ Remove:

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

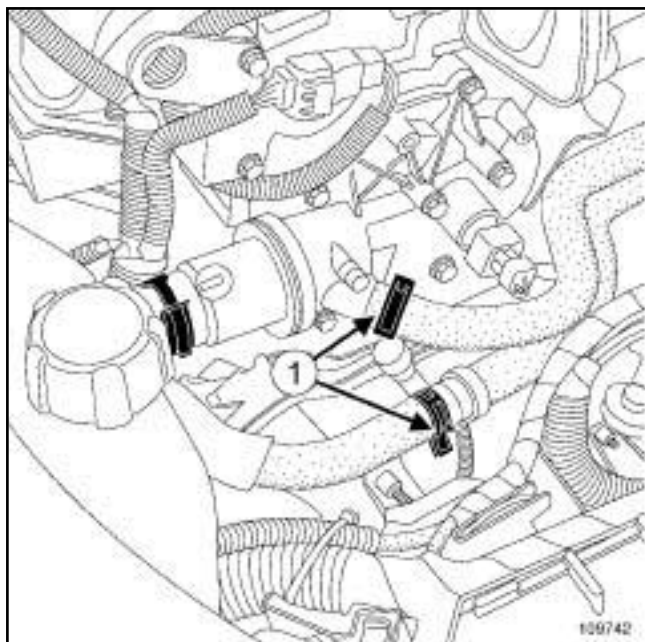
- ☐ Loosen the clip of the air filter unit air outlet pipe on the throttle valve.
- ☐ Disconnect the air filter unit air outlet pipe from the throttle valve.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

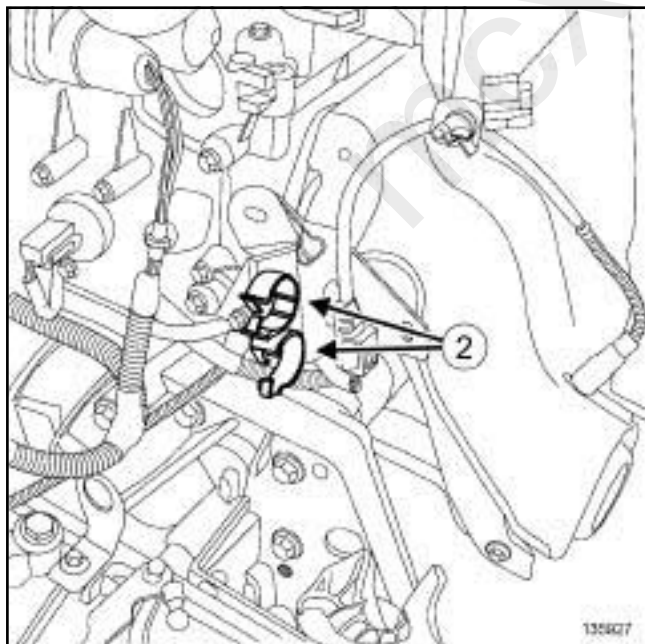
10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4



109742

- ❑ Separate the clip on each heater matrix cooling hose (1) using the tool (**Mot. 1448**).
- ❑ Disconnect:
 - the heater matrix cooling hose from the water chamber,
 - the heater matrix cooling hose from the cylinder block cooling hose.

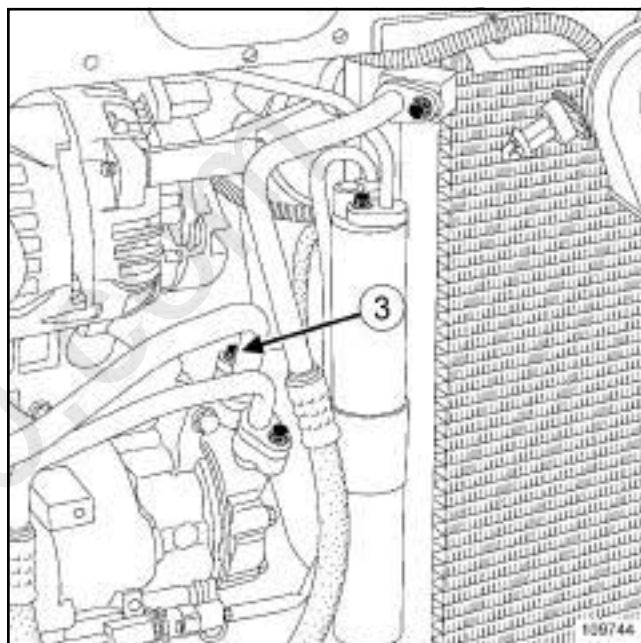


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- ❑ Unclip the heater matrix cooling hoses at (2) .
- ❑ Remove:
 - the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) ,

- the air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) ,
- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) ,
- the exhaust downpipe nuts,
- the seal between the catalytic converter and the exhaust downpipe hose.

AIR CONDITIONING or CLIMATE CONTROL



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- ❑ Remove the bolt (3) from the « expansion valve - compressor » connecting pipe on the compressor.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

- ❑ Disconnect the « expansion valve - compressor » connecting pipe from the compressor.

- ❑ Remove:

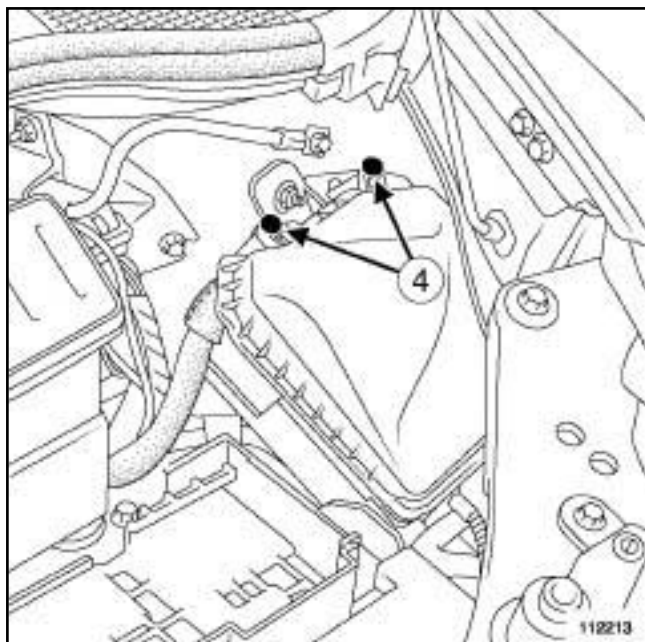
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting** (41A, Front lower structure),
- the « condenser - cooling radiator - engine cooling fan assembly » (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

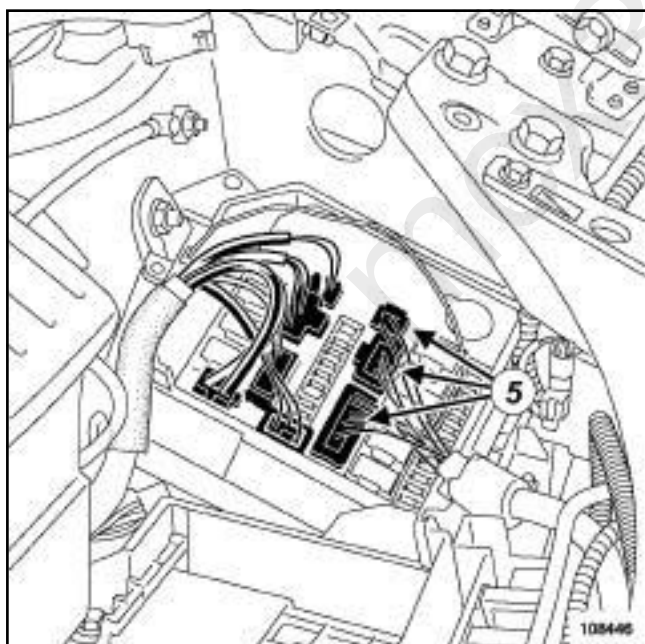
K4M, and JH3 – K4J, and JH3 – K4M, and TL4



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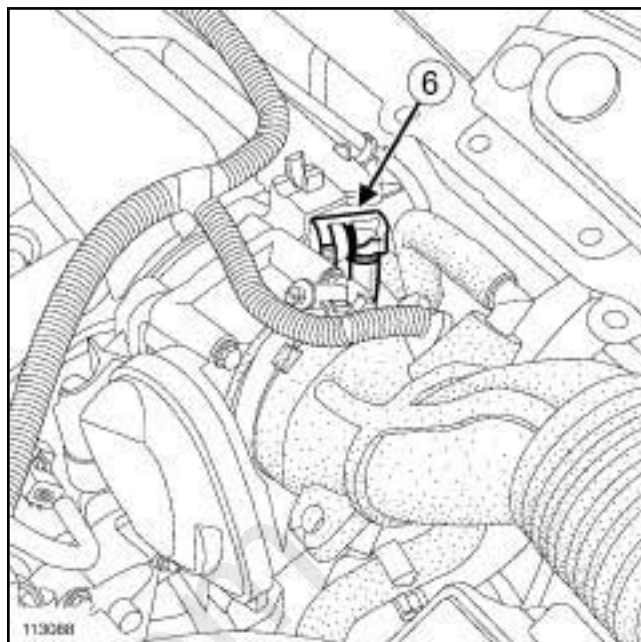
❑ Remove:

- the bolts (4) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.



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- ❑ Disconnect the connectors (5) from the Protection and Switching Unit.

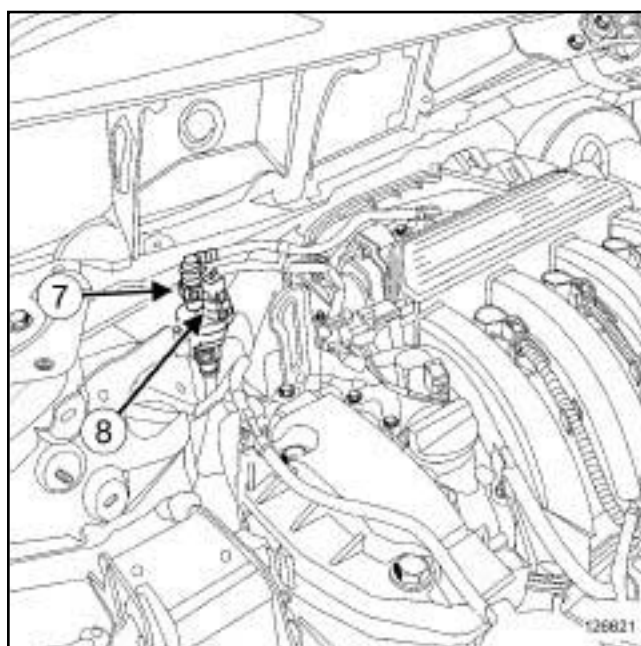


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- ❑ Disconnect the brake servo pipe union (6) from the inlet distributor.

K4J – K4M, and JH3

- ❑ Disconnect the oxygen sensor connectors.



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❑ Disconnect:

- the union (7) of the fuel vapour rebreathing pipe from the petrol vapour rebreathing solenoid valve,

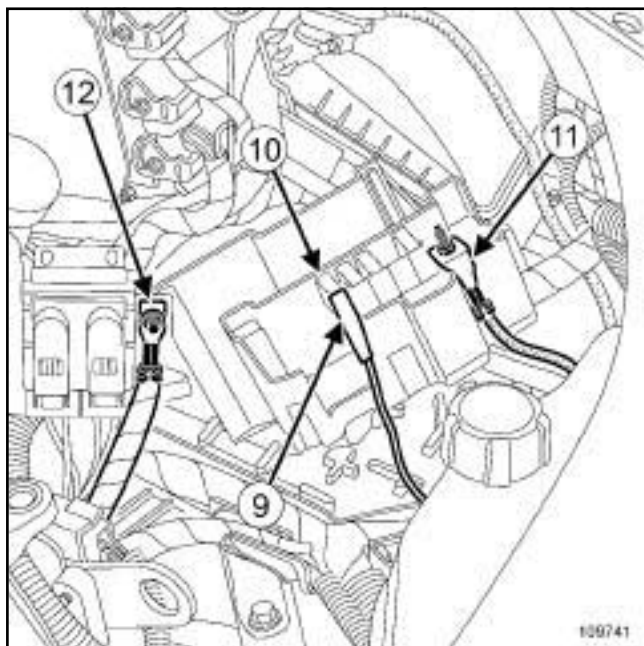
ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

- the connector (8) of the fuel vapour rebreathing solenoid valve.



❑ Disconnect:

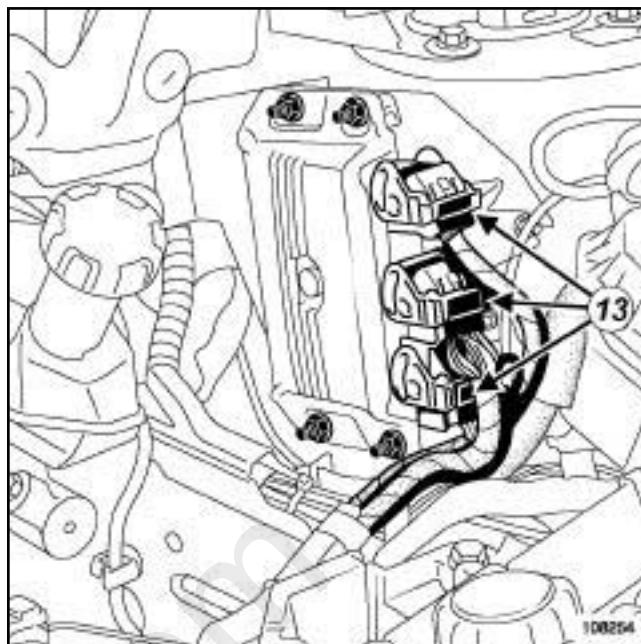
- the fuse (9) ,
- the fuse holder (10) from the fuse board.

❑ Remove:

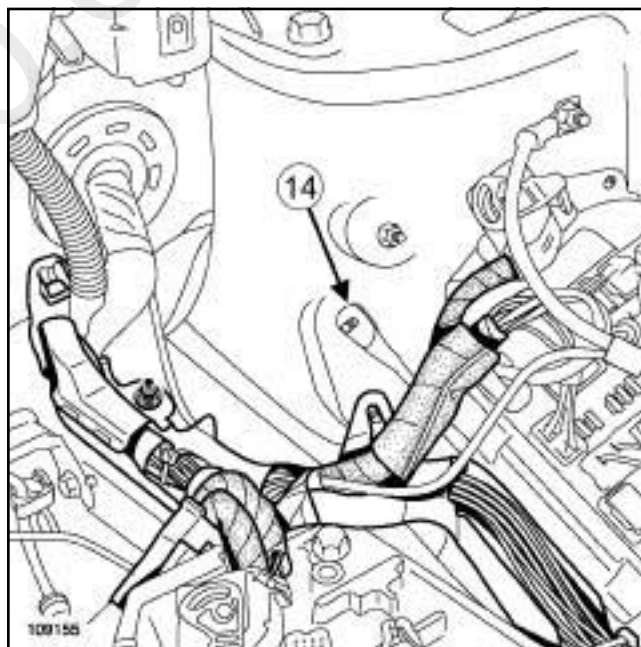
- the nut from the supply cable of the fuse board (11) ,
- the supply cable nut from the battery protection fuse box (12) ,
- the nut of each side member earth cable.

❑ Remove:

- the supply cable from the fuse board,
- the supply cable from the battery protection fuse box,
- the earth cables on the side member.



- ❑ Disconnect the connector (13) from the petrol injection computer.



- ❑ Remove the earth nut (14) .

❑ Remove:

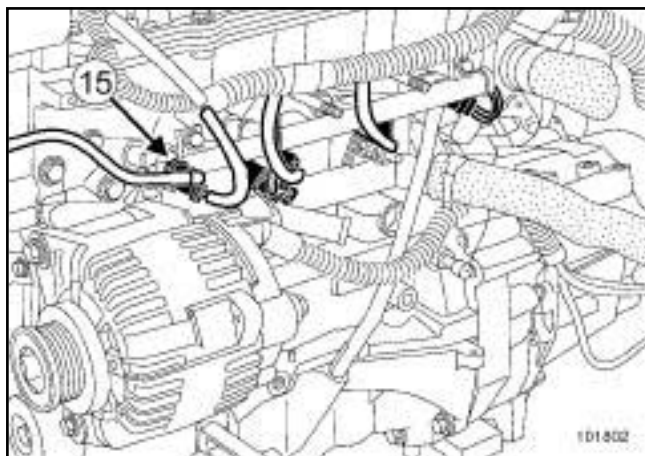
- the earth cable from the shock absorber cup height adjuster,
- the wiring channel.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4



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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.

WARNING

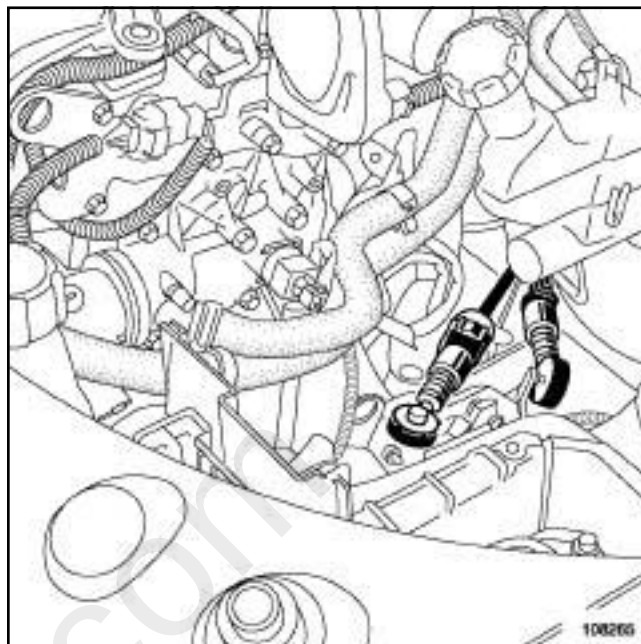
To avoid any corrosion or damage, protect the areas on which fuel is likely to run.

WARNING

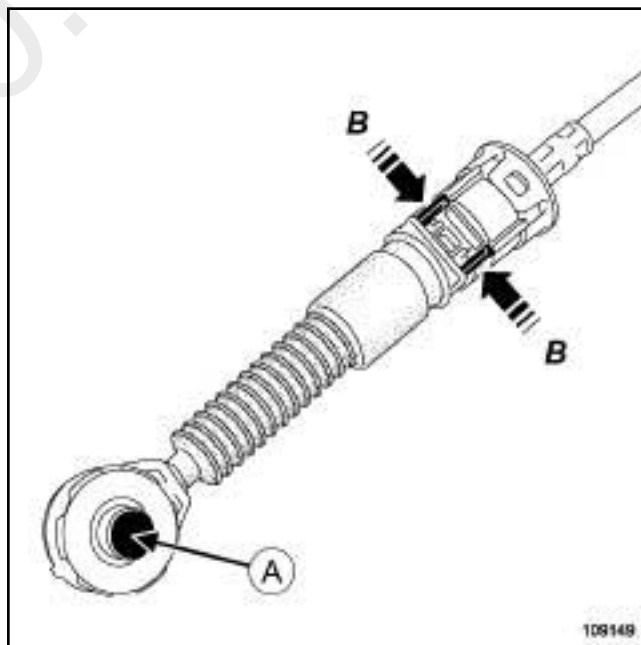
To prevent impurities from entering the circuit, place protective plugs on all fuel circuit components exposed to the open air.

- ❑ Disconnect the fuel supply pipe union (15) from the injector rail.
- ❑ Unclip the fuel supply pipe from the retaining bracket.

JH3



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- ❑ Move aside the gear control cables by:
 - pressing at (A) ,
 - pressing at (B) .
- ❑ Remove the wiring channel mountings from the gearbox.

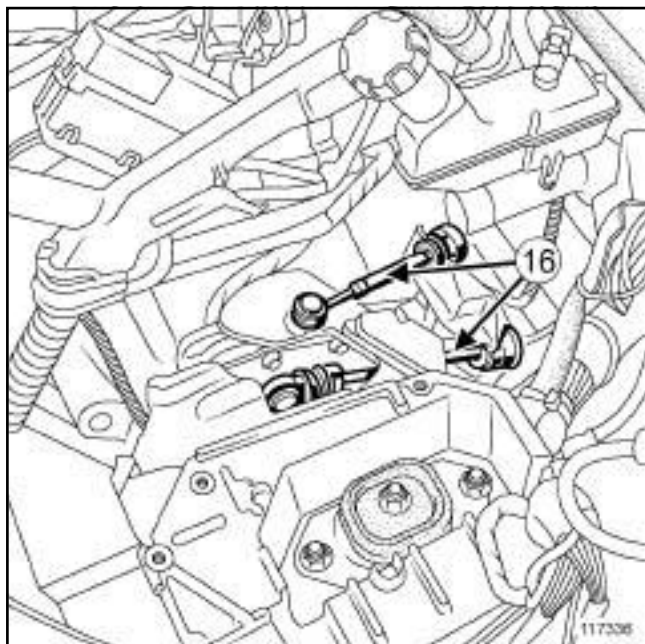
ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

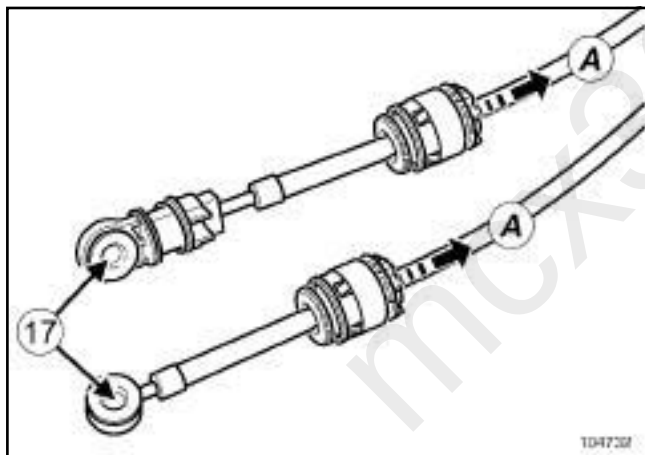
10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

TL4



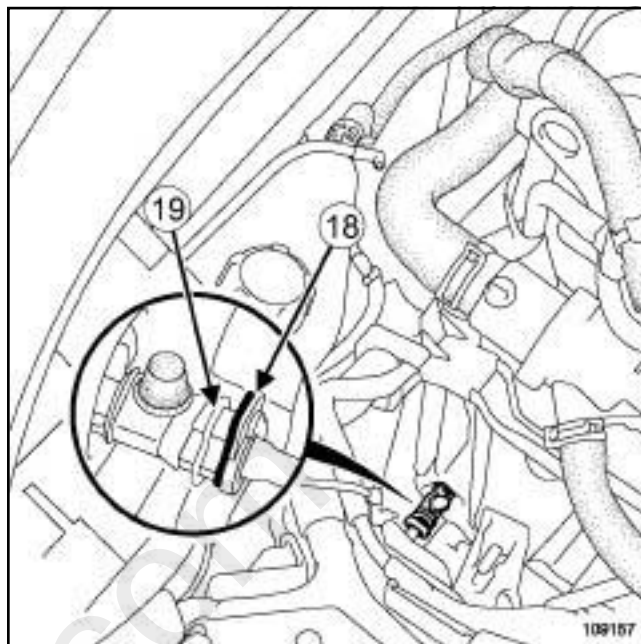
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- ❑ Move aside the gear control cables (16) by:
 - unclipping each gear control cable (17) from the gearbox control levers using an open-jawed spanner,
 - pulling each control cable sleeve stop ring towards (A) .
- ❑ Fit the tool (Ms. 583) between the brake fluid reservoir and the clutch master cylinder.

JH3

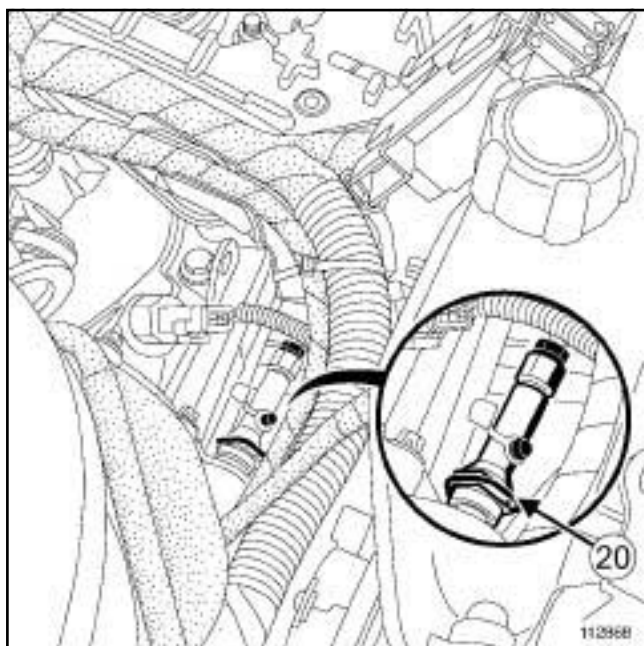


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- ❑ Disconnect the clutch pipe union from the hydraulic clutch slave cylinder by pulling on the clips (18) and (19) .

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

TL4



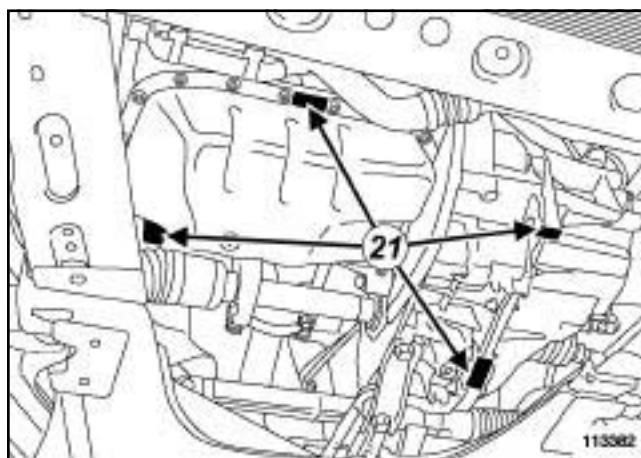
- ❑ Disconnect the clutch pipe union from the hydraulic clutch slave cylinder by pressing the clip (20) .

- ❑ Fit a blanking plug:

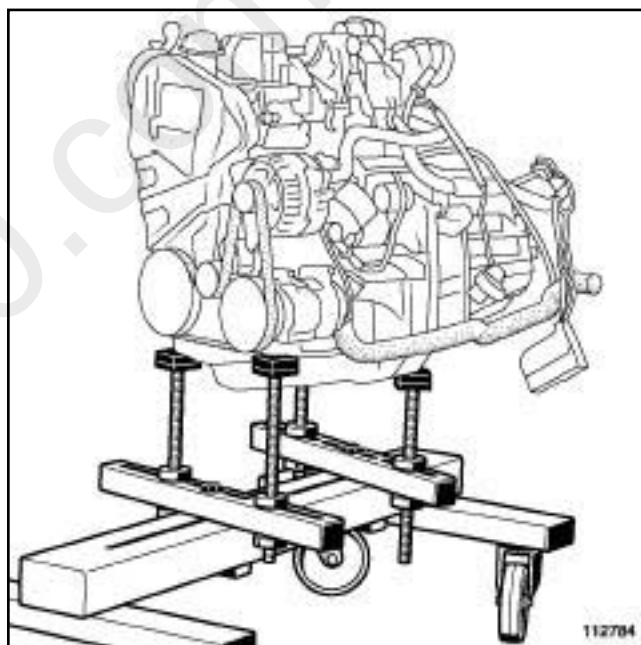
- on the opening of the hydraulic clutch slave cylinder,
- on the clutch pipe union.

- ❑ Unclip the clutch pipe from the left-hand suspended engine mounting support on the gearbox.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382



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- ❑ Remove:

- the « engine - gearbox » assembly using the tool (Mot. 1390) positioning it on the marks (21) of the « engine - gearbox » assembly,
- the right-hand suspended engine mounting (see 19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting, page 19D-22) ,
- the left-hand suspended engine mounting shaft nut.

- ❑ Hit the shaft of the left-hand suspended engine mounting using a copper hammer.

- ❑ Raise the vehicle, moving the engine towards the front.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

- ❑ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

- ❑ For standard engine replacements (see **Standard replacement**) (Technical Note 6023A, 10A, Engine and peripherals).
- ❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose (10, 08, 02, 21).**

II - REFITTING OPERATION FOR PART CONCERNED

- ❑ Refit:
 - the « engine - gearbox » assembly in the vehicle,
 - the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page 19D-22) .
- ❑ Torque tighten the **left-hand suspended engine mounting shaft nut (62 N.m)**.
- ❑ Remove the **(Mot. 1390)** from the «engine - gearbox » assembly.

III - FINAL OPERATION

- ❑ Remove the blanking plug:
 - on the opening of the hydraulic clutch slave cylinder,
 - on the clutch pipe union.
- ❑ Connect the clutch pipe to the hydraulic clutch slave cylinder.
- ❑ Clip the clutch pipe onto the left-hand suspended engine mounting support on the gearbox.
- ❑ Remove the tool **(Ms. 583)** between the brake fluid reservoir and the clutch master cylinder.
- ❑ Clip each gear control cable onto:
 - the gear control cable sleeve stops,
 - the gearbox control levers.
- ❑ Connect the fuel supply pipe union to the injector rail.
- ❑ Clip the fuel supply pipe onto the retaining bracket.
- ❑ Fit:
 - the wiring channel,

- the earth cable on the shock absorber cup height adjuster.

- ❑ Tighten the **earth nut on the shock absorber cup height adjuster (8 N.m)**.
- ❑ Connect the petrol injection computer connectors.
- ❑ Fit:
 - the earth cables on the side member,
 - the supply cable of the battery protection fuse box on the battery protection fuse box,
 - the fuse board supply cable on the fuse board.
- ❑ Torque tighten:
 - the **nut of each earth cable on the side member (8 N.m)**,
 - the **nut of the supply cable on the battery protection fuse box (6 N.m)**,
 - the **nut of the fuse board supply cable (8 N.m)**.
- ❑ Connect:
 - the fuse holder to the fuse board,
 - the fuse,
 - the connector of the fuel vapour rebreathing solenoid valve,
 - the union of the fuel vapour rebreathing pipe to the petrol vapour rebreathing solenoid valve.

K4M, and JH3 – K4J, and JH3

- ❑ Connect the oxygen sensor connectors.

- ❑ Connect:
 - the brake servo pipe union on the inlet distributor,
 - the Protection and Switching Unit connectors.
- ❑ Refit:
 - the Protection and Switching Unit cover,
 - the bolts on the Protection and Switching Unit cover,
 - the « condenser - cooling radiator - engine cooling fan assembly » (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and JH3 – K4J, and JH3 – K4M, and TL4

AIR CONDITIONING or CLIMATE CONTROL

- ☐ Connect the « expansion valve - compressor » connecting pipe to the compressor.
- ☐ Torque tighten the **bolt of the connecting pipe between the « expansion valve - compressor » (8 N.m).**

☐ Refit:

- a new seal between the catalytic converter and the exhaust downpipe hose,
- the exhaust downpipe nuts,
- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-10**) ,
- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**) .
- ☐ Connect the heater matrix cooling hose to:
 - the water chamber,
 - the cylinder block cooling hose.
- ☐ Fit the clip on each heater matrix cooling hose using the tool (**Mot. 1448**).
- ☐ Clip on the heater matrix cooling hoses.
- ☐ Connect the air filter box air outlet pipe to the throttle valve.
- ☐ Torque tighten the **air filter unit air outlet pipe clip (5.5 N.m).**
- ☐ Refit:
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),

- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the air filter unit air inlet pipe,
- the battery tray (see **Battery: Removal - Refitting**) (80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (80A, Battery).

☐ Perform the following operations:

- fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
- fill and bleed the cooling circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the clutch circuit (see **Clutch circuit: Removal - Refitting**) (37A, Mechanical component controls).

AIR CONDITIONING

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

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K4M, and DP0

Special tooling required

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

Tightening torques

exhaust downpipe mounting nuts	9 Nm
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the air conditioning pipe mounting bolts on the air conditioning compressor	8 Nm
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the bolts mounting the air conditioning pipes on the evaporator	8 Nm
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the bolts mounting the air conditioning pipes on the condenser	8 Nm
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REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT

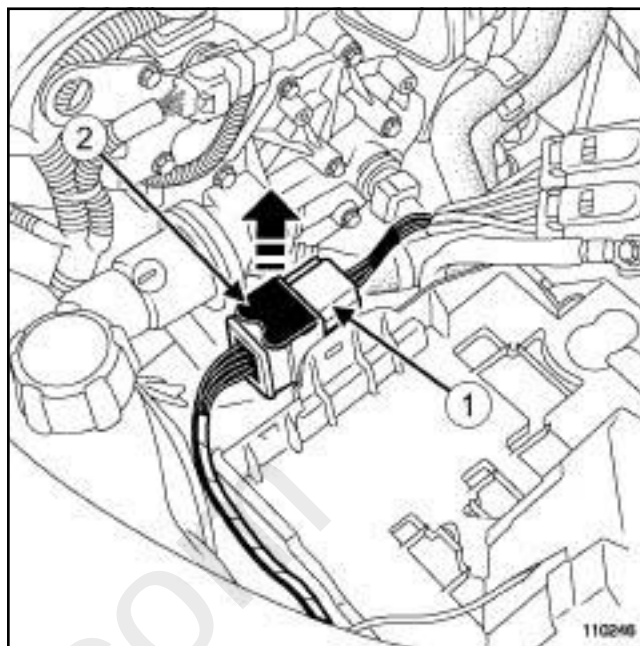
During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

- ☐ To fit the strap to the vehicle (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

- ☐ Remove:

- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air inlet duct,
- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).



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- ☐ Disconnect:

- the modular connector (1) by pulling the slide (2) ,
- the petrol vapour rebreathing pipe on the petrol vapour rebreathing solenoid valve.

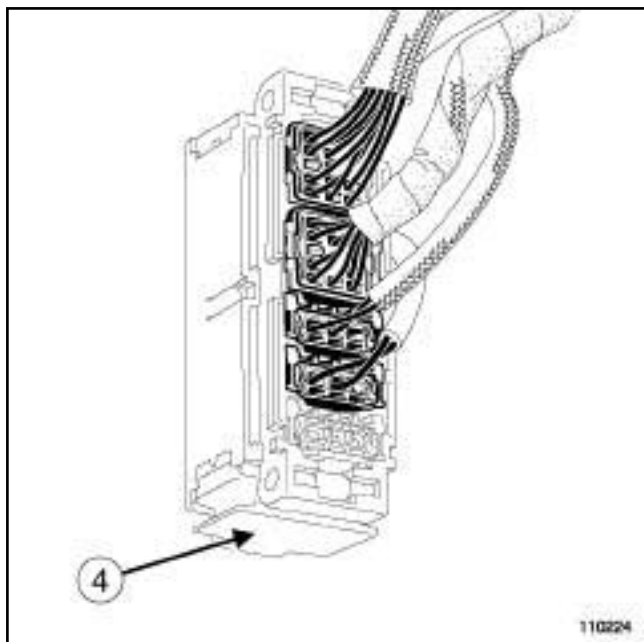
- ☐ Drain:

- the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission).

AIR CONDITIONING

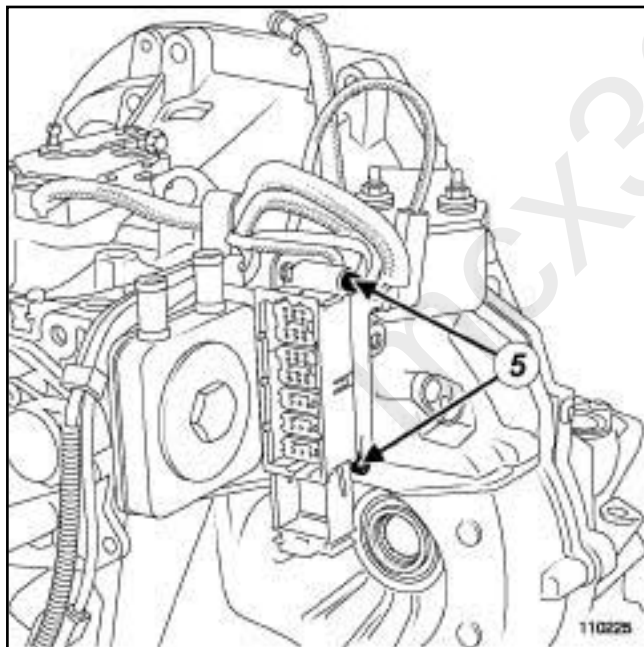
- ☐ Drain the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

K4M, and DP0



110224

- ❑ Disconnect the connectors from the modular connector by pulling the slide (4) .



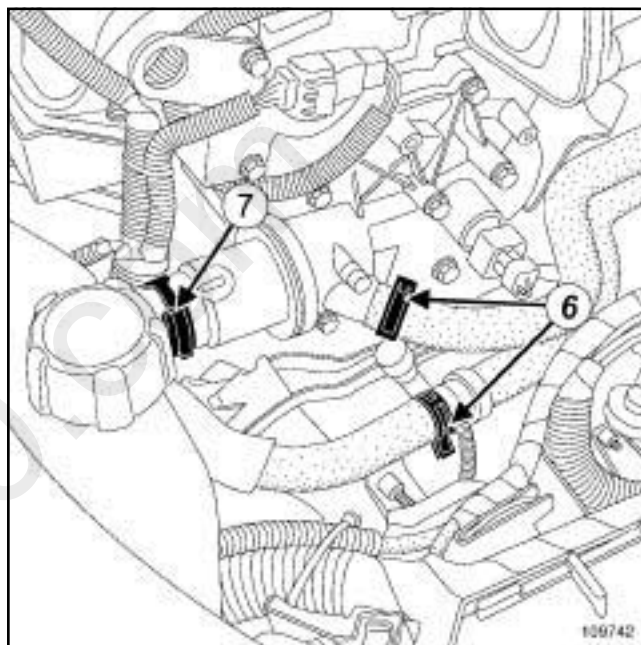
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- ❑ Remove the modular connector mounting bolts (5) .
- ❑ Protect the modular connector by putting it into a waterproof plastic bag.
- ❑ Disconnect the automatic transmission cooling hoses.

- ❑ Remove:

- the « left-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component),
- the « right-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

- ❑ Attach the cooling radiator assembly to the front end panel.



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- ❑ Disconnect:

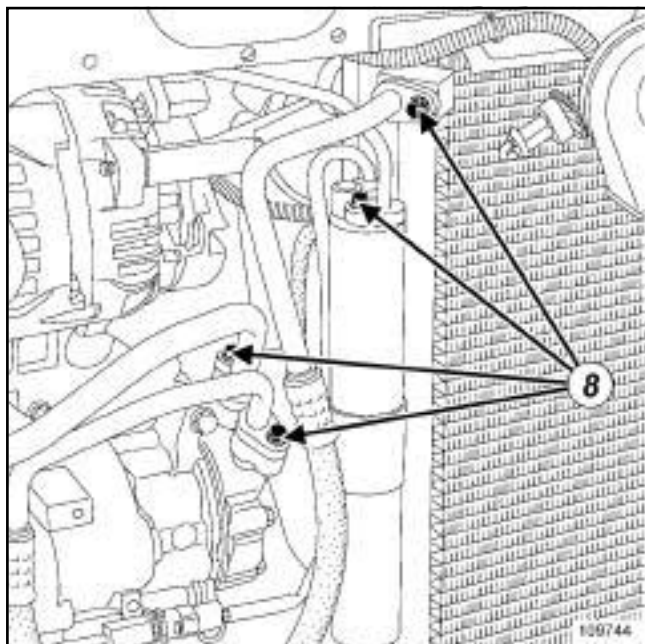
- the engine cooling fan assembly connectors,
- the top hose (7) on the cylinder head coolant pipe housing outlet,
- the passenger compartment heating hoses (6) .

- ❑ Remove:

- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) ,
- the air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) .

K4M, and DP0

AIR CONDITIONING



109744

❑ Disconnect:

- the pressure switch from the condenser,
- the mounting bolts (8) from the air conditioning pipes on the air conditioning compressor, on the evaporator, and on the condenser.

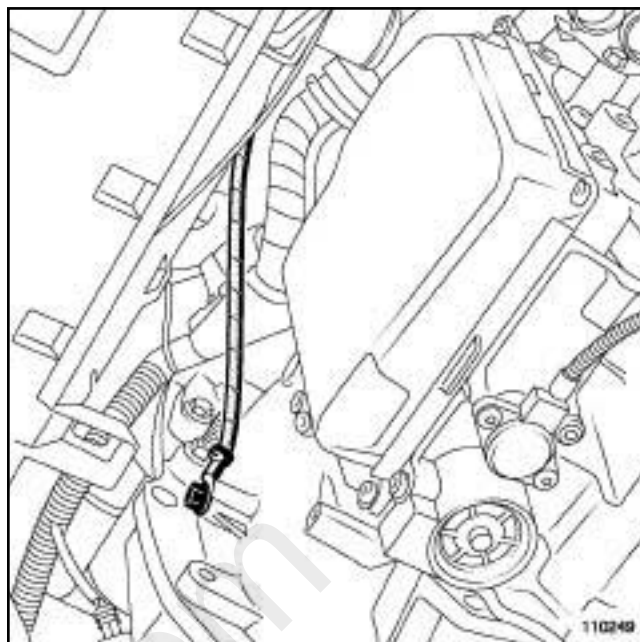
WARNING

Fit plugs into the openings.

Plugs must be fitted on the hoses to prevent moisture from entering the system.

❑ Remove:

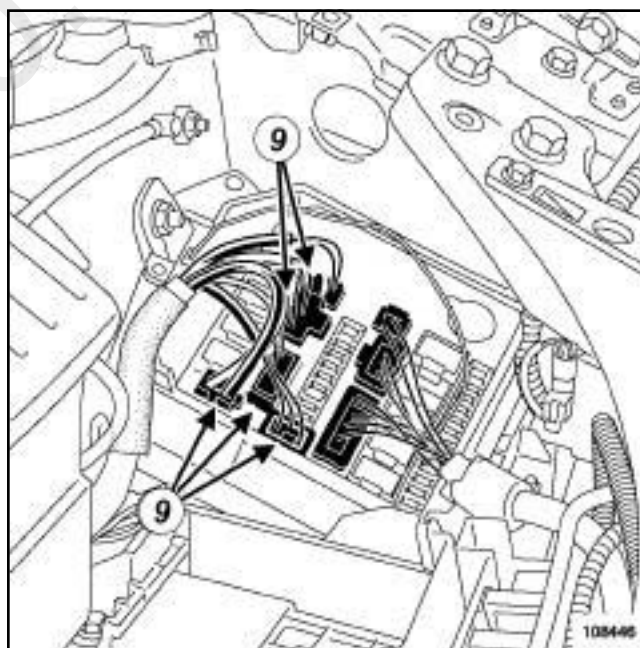
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) .



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- ❑ Remove the earth strap from the gearbox.

- ❑ Remove the Protection and Switching Unit cover.

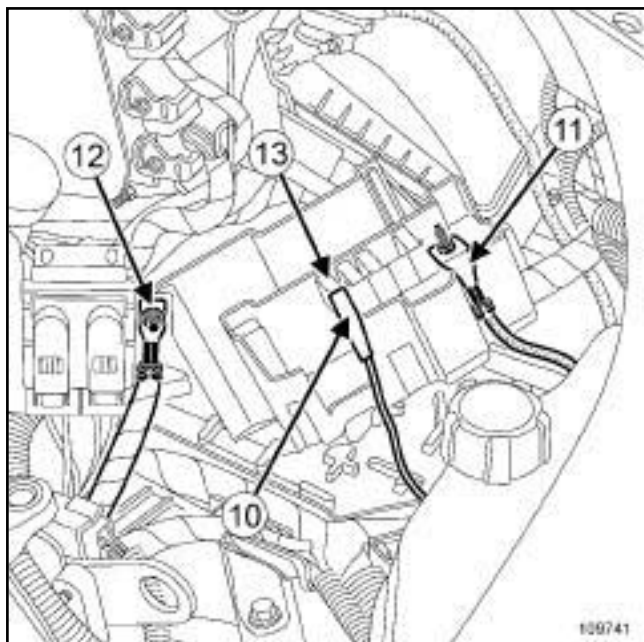


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❑ Disconnect:

- the Protection and Switching Unit connectors (9) ,
- the brake servo pipe,
- the oxygen sensor connectors,
- the petrol vapour rebreather connector,
- the connector from the lifting eye at the flywheel end,

K4M, and DP0



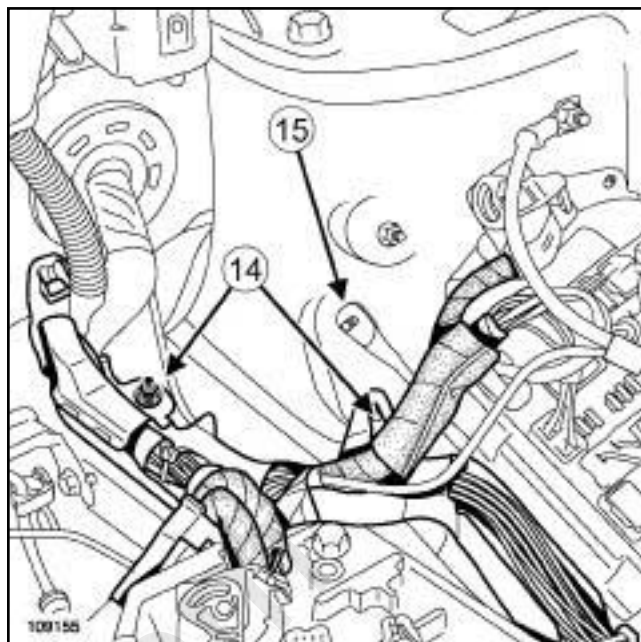
109741

☐ Disconnect:

- the fuse (10) ,
- the fuse holder (11) from the fuse board,
- the feed wire (12) from the fuse board,
- the feed wire (13) from the battery protection fuse box,
- the earths on the side member.

☐ Remove:

- the computer (see 17B, **Petrol injection, Petrol injection computer: Removal - Refitting**, page 17B-37) ,
- the computer mounting.

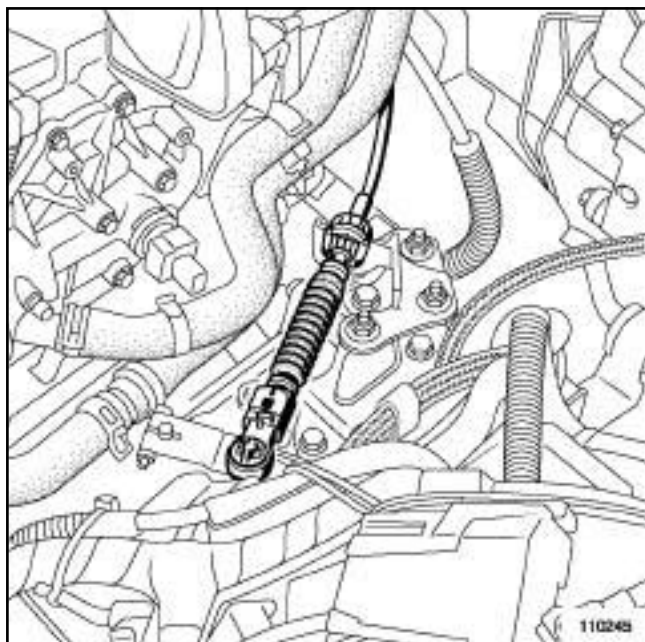


109155

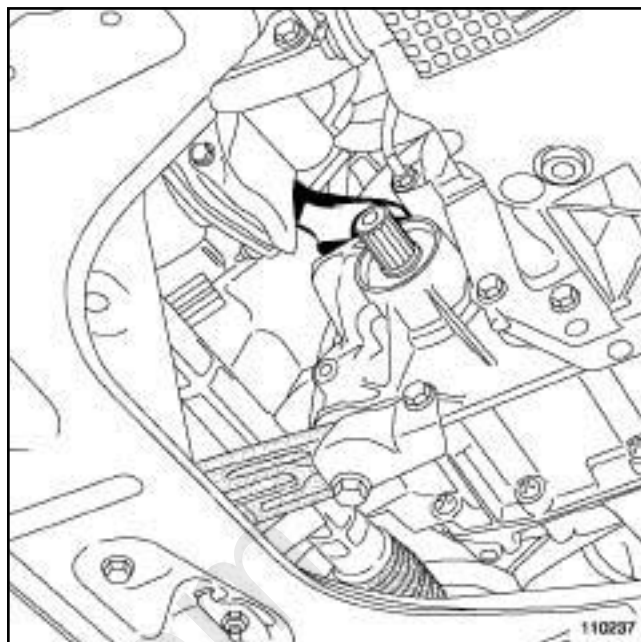
☐ Remove:

- the wiring harness channel mounting bolts (14) on the body,
- the earth (15) .
- ☐ Remove the adhesive tape from the electrical wiring harness.
- ☐ Disconnect the fuel supply pipe from the injection rail.
- ☐ Remove the wiring duct.

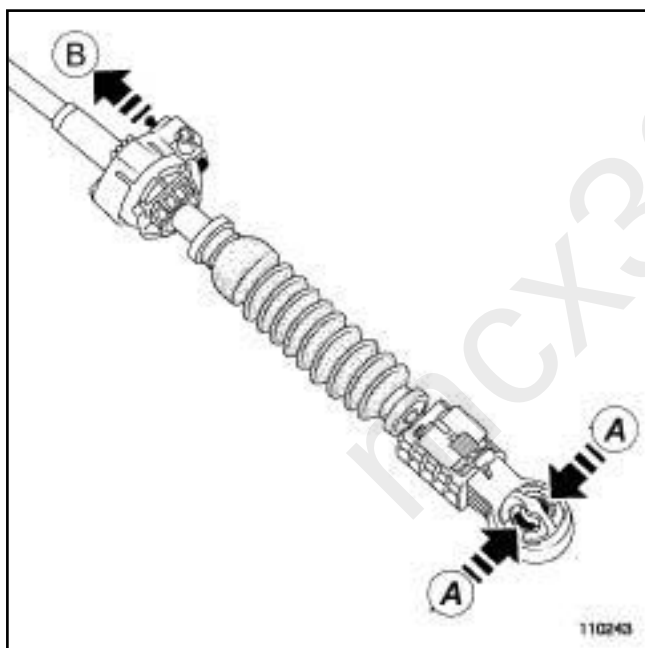
K4M, and DP0



110245



110237



110243

❑ Remove:

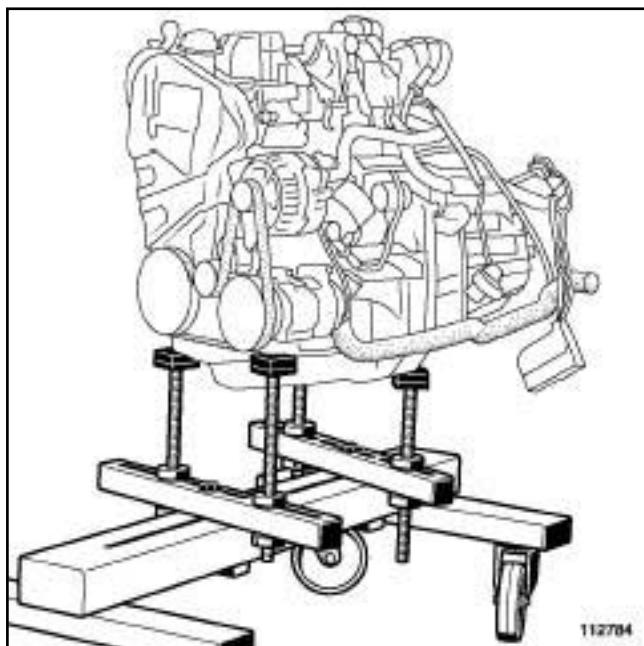
- the gear control cable on the box by pushing in (A) ,
- the control cable by pushing in (B) ,
- the wiring harness channel mountings on the gear-box.

❑ Remove:

- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting, page 19D-13**) ,
- the exhaust downpipe mountings.

K4M, and DP0

II - OPERATION FOR REMOVAL OF PART CONCERNED



112784

- ☐ Mark the positions of the suspended engine mountings on the body.
- ☐ Support the «engine-gearbox assembly» on the (Mot. 1390).
- ☐ Remove:
 - the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
 - the left-hand suspended engine mounting nut (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .
- ☐ Strike the stud with a copper hammer.
- ☐ Remove:
 - the gearbox mounting rubber pad,
 - the left-hand suspended engine mounting.
- ☐ Raise the vehicle, moving the engine towards the front.
- ☐ Be sure to replace the clip on the automatic transmission control cable each time it is removed.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Standard replacement**) (Technical Note 3784A, 10A, Engine and peripherals).

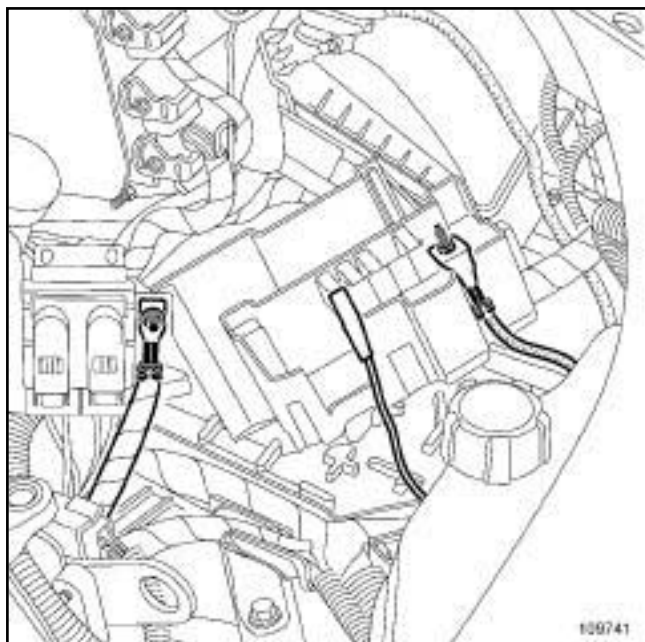
II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Position the « engine-gearbox » assembly in the vehicle.
- ☐ Refit:
 - the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
 - the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .
- ☐ Remove the (Mot. 1390) from the «engine - gearbox » assembly.

III - FINAL OPERATION.

- ☐ Refit the exhaust downpipe mountings.
- ☐ Torque tighten the **exhaust downpipe mounting nuts (9 Nm)**.
- ☐ Refit the rear engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .
- ☐ Refit the wiring harness channel to the gearbox.
- ☐ Refit the gearbox control cable.
- ☐ Reconnect the petrol supply pipe to the injector rail.
- ☐ Refit the wiring harness channel mountings to the body.
- ☐ Refit:
 - the wiring harness channel mounting nuts on the body,
 - the computer (see **17B, Petrol injection, Petrol injection computer: Removal - Refitting**, page **17B-37**) .

K4M, and DP0



109741

☐ Connect:

- the supply cable to the battery protection fuse box,
- the supply cable on the fuse board,
- the fuse holder on the fuse board,
- the fuse,
- the connector on the lifting eye at the flywheel end,
- the petrol vapour rebreather connector,
- the oxygen sensor connectors,
- the brake servo pipe,
- the Protection and Switching Unit connectors.

☐ Refit:

- the Protection and Switching Unit cover,
- the earths,
- the cooling radiator assembly (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

AIR CONDITIONING

☐ Refit:

- the bolts mounting the air conditioning pipes on the air conditioning compressor,
- the bolts mounting for the air conditioning pipes on the evaporator,
- the bolts mounting the air conditioning pipe on the condenser.

Torque tighten:

- **the air conditioning pipe mounting bolts on the air conditioning compressor (8 Nm),**
- **the bolts mounting the air conditioning pipes on the evaporator (8 Nm),**
- **the bolts mounting the air conditioning pipes on the condenser (8 Nm).**

☐ Connect the pressure switch connector to the condenser.

☐ Refit:

- the resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) ,
- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) .

☐ Connect:

- the passenger compartment heater hoses,
- the top hose on the cylinder head coolant outlet unit,
- the fan assembly connectors.

☐ Refit:

- the « right-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component),
- the « left-hand driveshaft-stub axle carrier » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).

☐ Connect the automatic transmission cooling hoses.

☐ Remove the waterproof plastic bag from the modular connector.

☐ Refit the mounting bolts to the modular connector.

☐ Connect the connectors to the modular connector.

K4M, and DP0

❑ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

❑ Refill:

- the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**),
- the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),
- the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**).

❑ Refit:

- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**),
- the air inlet duct,
- the two air inlet duct clips,
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the wiring harness channel mounting bolts on the body.

AIR CONDITIONING

- ❑ Fill the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 – K9K, and 772, and TL4

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

Equipment required	
safety strap(s)	
refrigerant charging station	

Tightening torques 	
bolts for the gearbox suspended mounting	62 Nm
bolts for the suspended engine mounting on the engine	62 Nm
bolts for the suspended engine mounting on the body	62 Nm
engine tie-bar bolts	105 Nm
front cross member bolts	105 Nm
air conditioning pipe bolts	8 Nm
nut mounting the inter-cooler air inlet pipe on the alternator	8 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

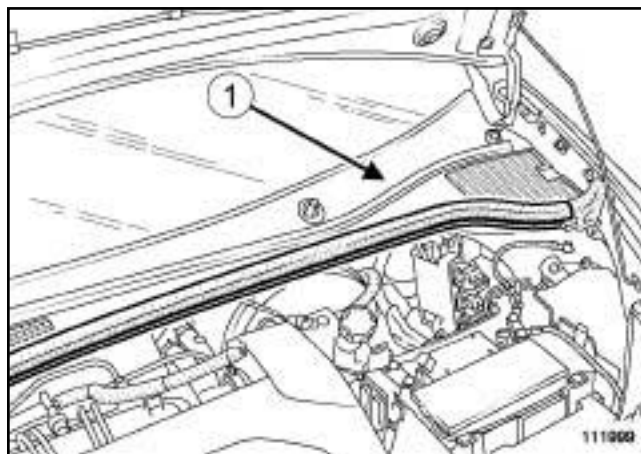
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

WARNING

During this operation, secure the vehicle to the lift with a **safety strap(s)**, to prevent it from becoming unbalanced.

To fit the strap to the vehicle (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

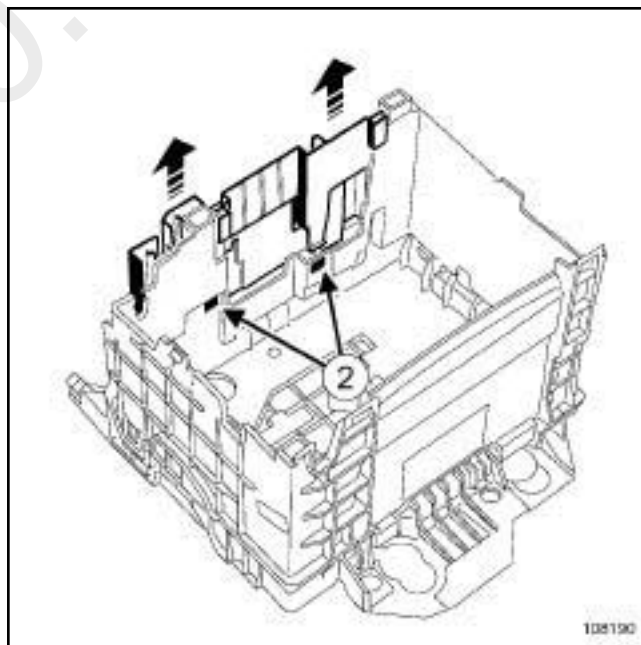
- ☐ Remove the front engine cover.



- ☐ Remove:

- the scuttle panel grille (1) (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the scoop under the scuttle panel grille.

- ☐ Remove the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



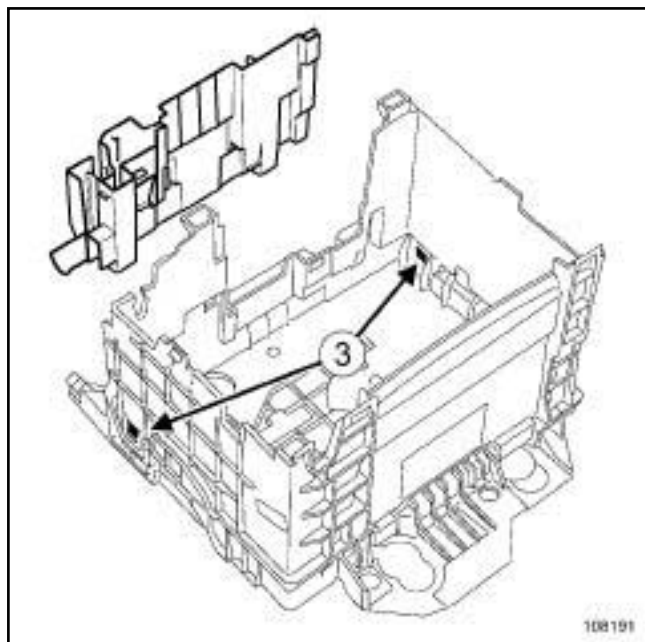
- ☐ Unclip the power supply fuse board support at (2) .
- ☐ Move the support from the fuse board as indicated by the arrows.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

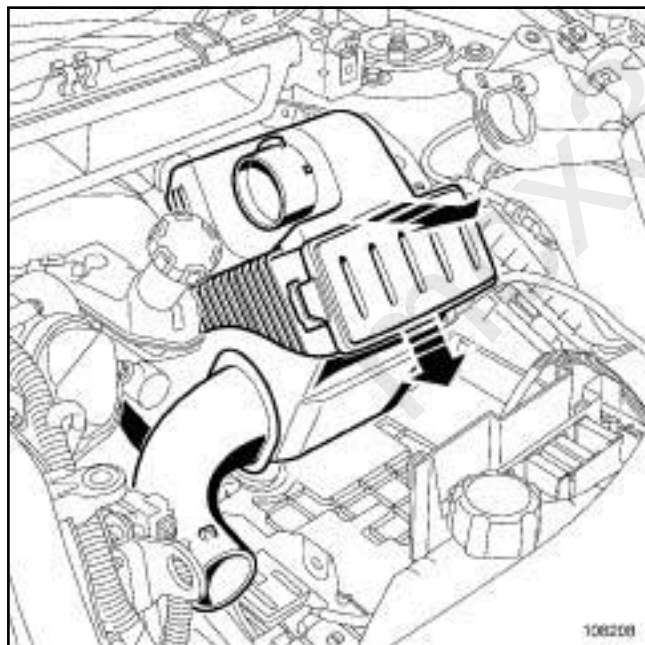
10A

K9K, and JH3 or JR5 – K9K, and 772, and TL4



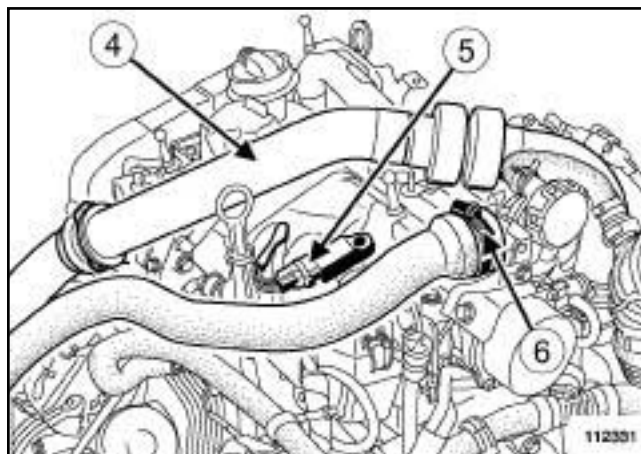
108191

- ☐ Remove the shielding by unclipping at (3) .
- ☐ Disconnect the air flow sensor connector.



108208

- ☐ Loosen the air inlet duct clip on the air filter unit.
- ☐ Remove:
 - the air filter unit,
 - the battery tray base.



112331

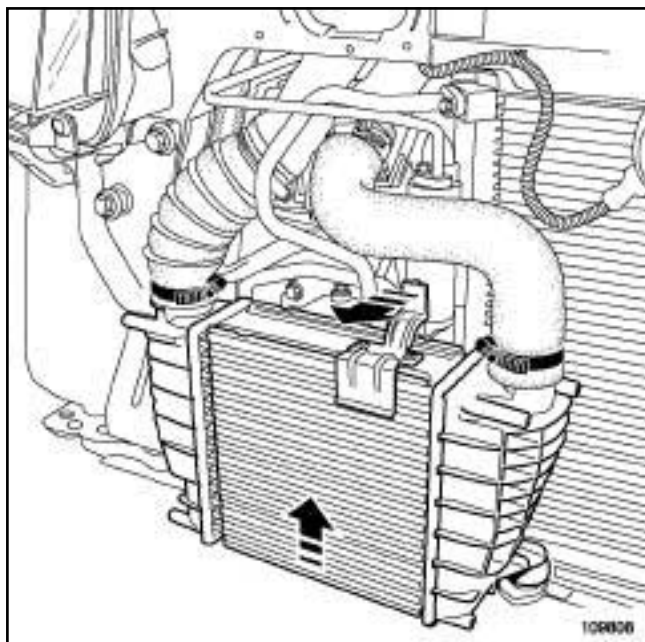
- ☐ Loosen the mounting nut of the air pipe at the inter-cooler inlet on the alternator.
- ☐ Remove the air duct bolt on the rocker cover.
- ☐ Move the air duct clips to one side of the turbocharger and the air pipe at the intercooler inlet.
- ☐ Unclip the air duct (4) on the turbocharger and the air pipe at the intercooler inlet.
- ☐ Disconnect the connector (5) from the inlet air pressure sensor.
- ☐ Loosen the air inlet duct clip (6) .
- ☐ Remove the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- ☐ Remove the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

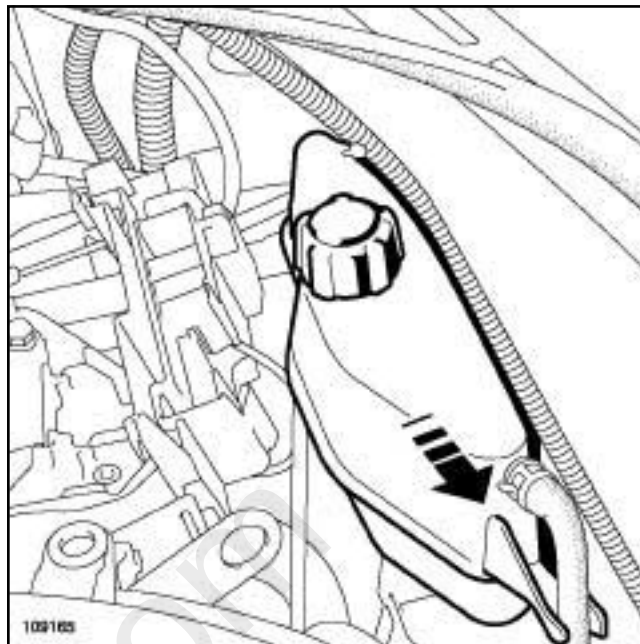
K9K, and JH3 or JR5 – K9K, and 772, and TL4



109808

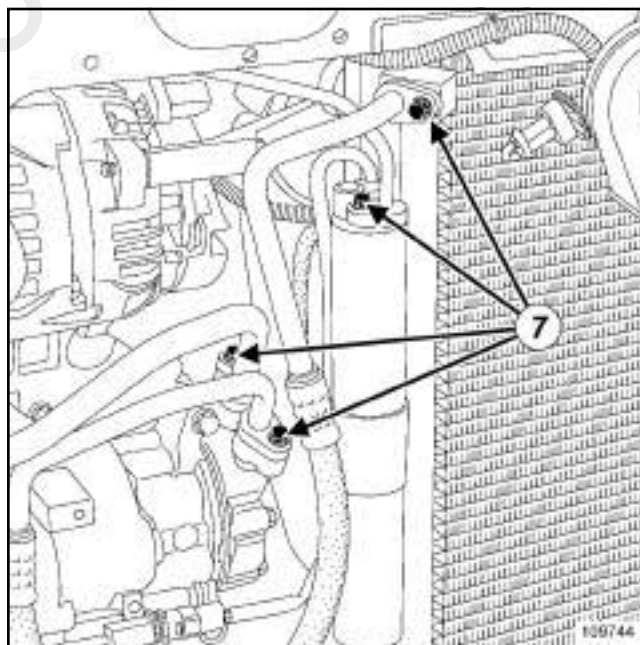
- ☐ Remove the air duct clips on the intercooler.
- ☐ Pull the tab and lift the intercooler from its mounting studs.
- ☐ Remove:
 - the intercooler,
 - the nut from the air pipes on the alternator,
 - the turbocharging air ducts.
- ☐ Drain:
 - the cooling circuit through the radiator bottom hose,
 - the gearbox,
 - the engine, if necessary.
- ☐ Drain the coolant circuit using the **refrigerant charging station**.
- ☐ Remove the « hub carrier - left-hand driveshaft » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).
- ☐ Remove the « hub carrier - right-hand driveshaft » assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).
- ☐ Check the condition of the lip seal contact surface.
- ☐ Disconnect:
 - the engine cooling fan assembly connectors,
 - the top hose on the cylinder head coolant outlet unit,

- the passenger compartment heater hoses.



109165

- ☐ Extract the expansion bottle from its housing by following the direction of the arrow and put it to one side.



109744

- ☐ Disconnect the pressure switch connector on the condenser.
- ☐ Remove the bolts (7) from the air conditioning pipes.

Note:

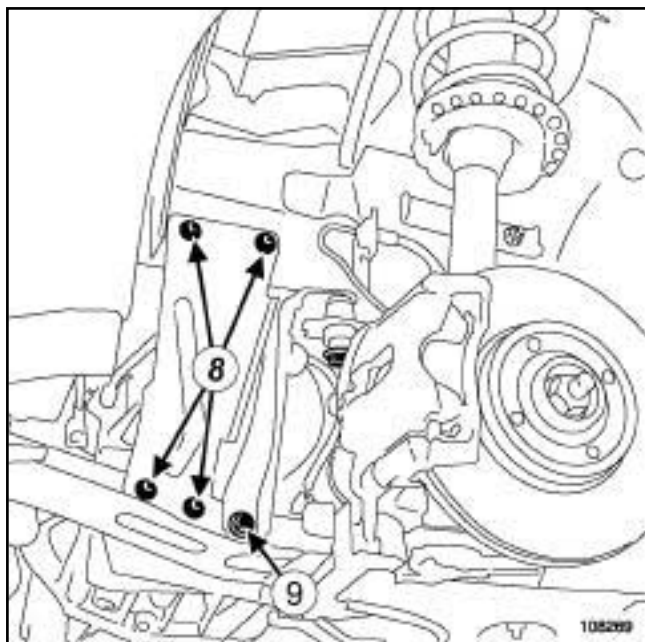
Plugs must be fitted on the hoses to prevent moisture from entering the system.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

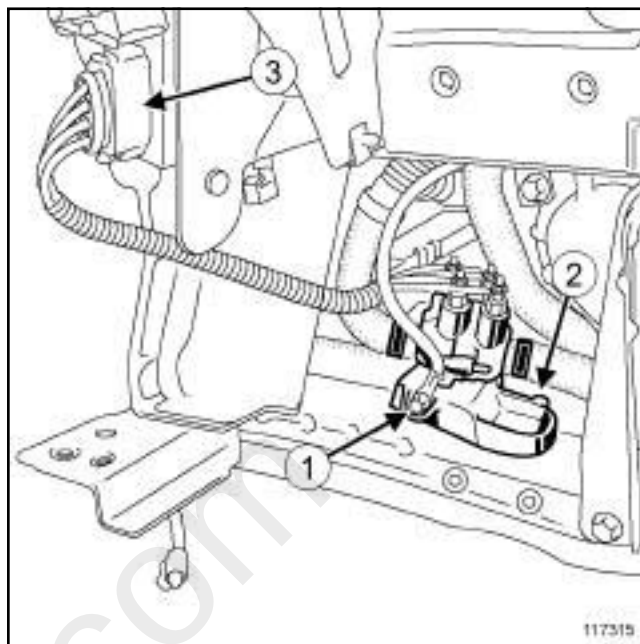
K9K, and JH3 or JR5 – K9K, and 772, and TL4



Remove:

- the left-hand side stiffener bolts (8) ,
- the left-hand side stiffener,
- the lower bolt (9) from the side tie rods.

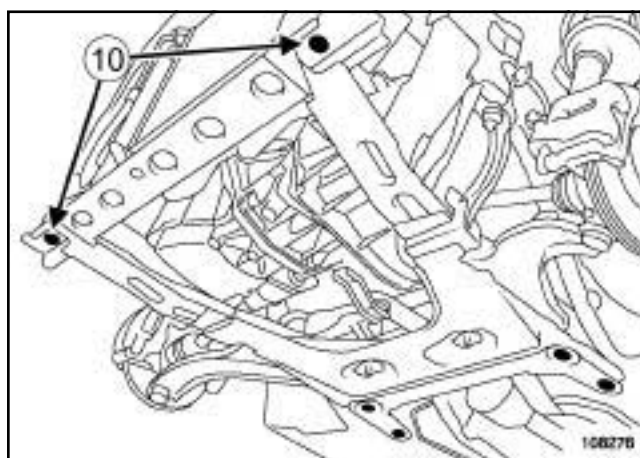
K9K, and 772, and TL4



Remove:

- the bolt (1) mounting the earth on the coolant pump and the heating element unit support,
- the bolt (2) mounting the coolant pump and the heating element unit support on the radiator mounting cross member.

- Disconnect the connector (3) from the heating element unit.



Remove:

- the front cross member bolts (10) ,
- the front radiator cross member,

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

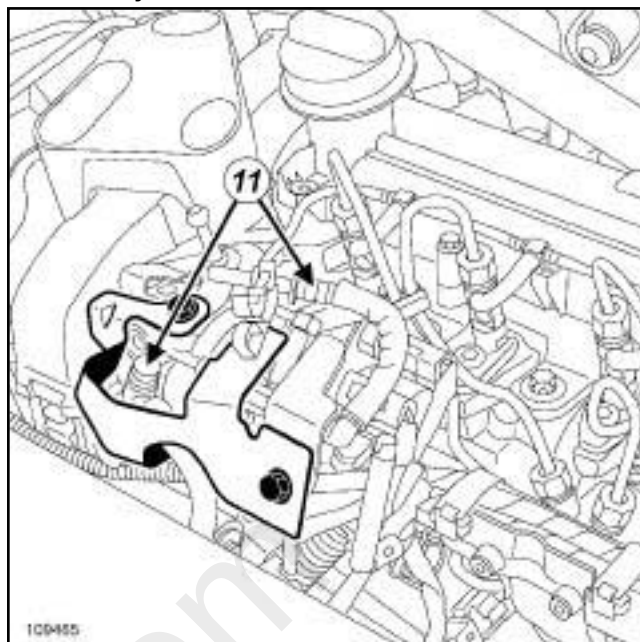
K9K, and JH3 or JR5 – K9K, and 772, and TL4

- the cooling radiator assembly,
- the earth wiring.

☐ Disconnect:

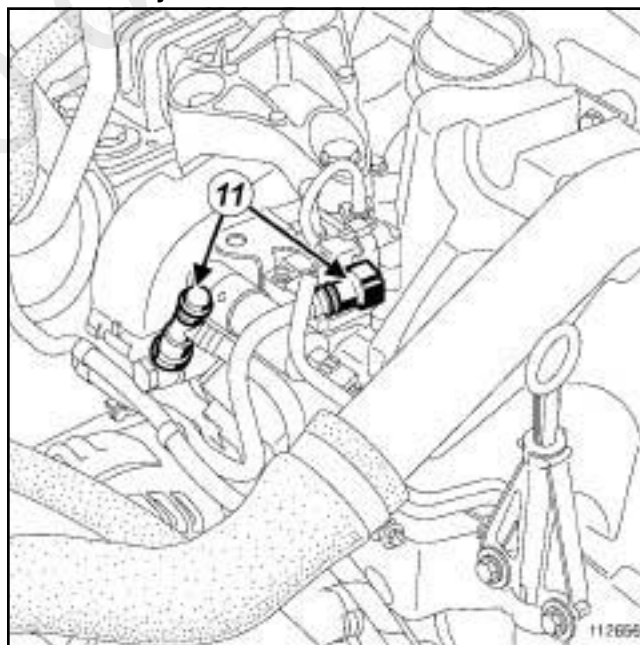
- the preheating unit connector.
- the coolant temperature sensor.

DELPHI injection



109465

SIEMENS injection



112656

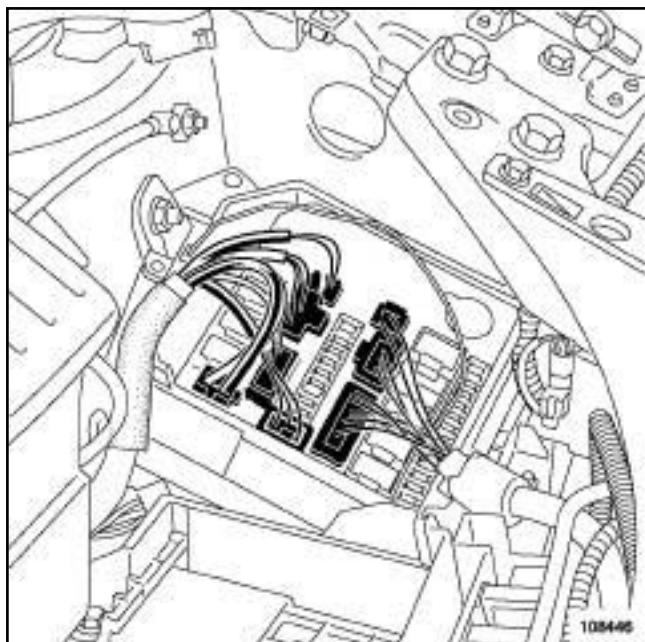
- ☐ Disconnect the fuel supply and return pipes on the high-pressure pump (11) .
- ☐ Move the engine wiring harness to one side.
- ☐ Remove the Protection and Switching Unit cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

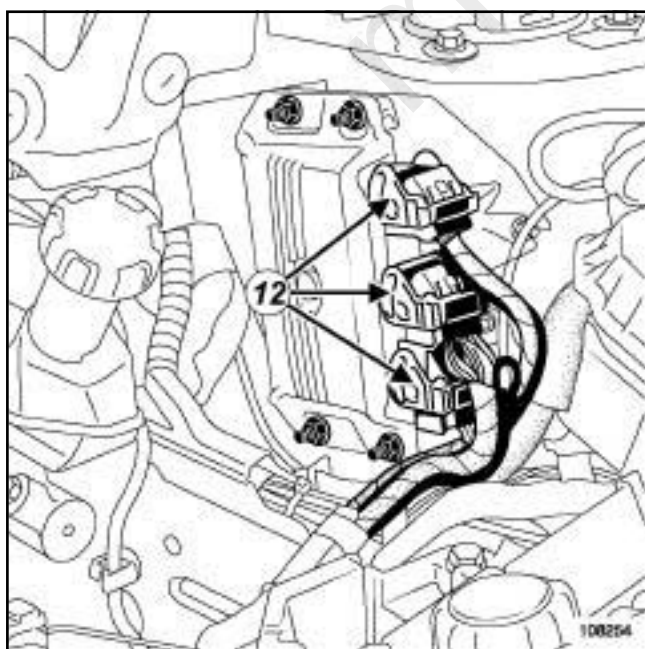
K9K, and JH3 or JR5 – K9K, and 772, and TL4



108446

□ Disconnect:

- the Protection and Switching Unit connectors,
- the brake servo pipe,
- the **30A** and **70A** engine fuses,
- the fuse holder on the fuse board,
- the feed wiring on the fuse board,
- the feed wiring on the battery protection fuse box.

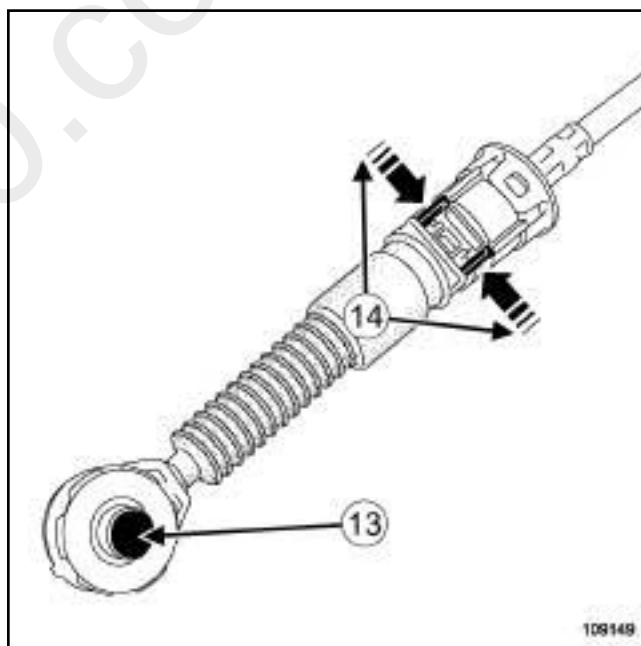


108254

□ Disconnect the injection computer connectors (12) .



108265



109149

□ Remove:

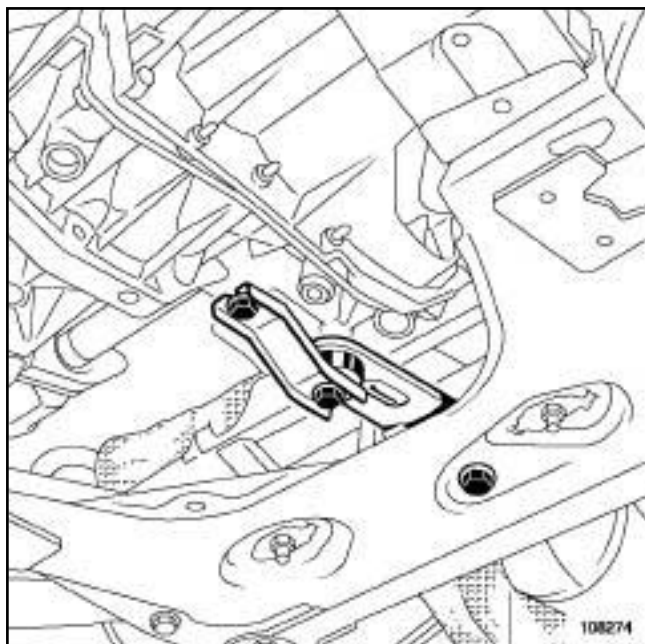
- the gear control cables on the gearbox by pushing at (13) ,
- the gear control cables from the sleeve stops by pressing at (14) ,
- the wiring harness channel mountings on the gear-box.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

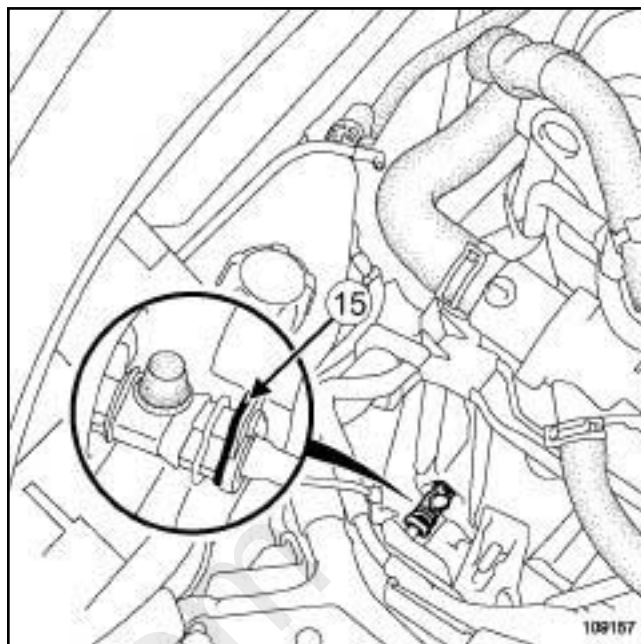
10A

K9K, and JH3 or JR5 – K9K, and 772, and TL4



108274

- ☐ Remove:
 - the engine tie-bar,
 - the exhaust downpipe bolts.
- ☐ Drain the brake fluid reservoir down to the clutch master cylinder pipe union using a syringe.



109157

- ☐ Remove the clip at the wheel end (15) .
- ☐ Disconnect the clutch pipe from the clutch slave cylinder.
- ☐ Support the engine and gearbox assembly on (**Mot. 1390**).
- ☐ Mark the positions of the suspended engine mountings on the body.
- ☐ Remove:
 - the suspended engine mounting,
 - the gearbox support rubber pad,
 - the gearbox suspended engine mounting.

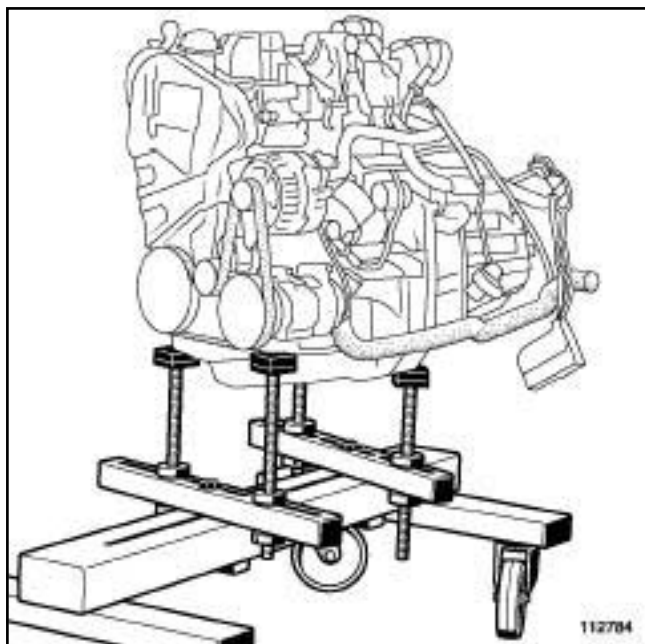
K9K, and 772, and TL4

- ☐ Disconnect the fuel supply union from the diesel injector on the catalytic pre-converter.

II - REMOVAL OF PART CONCERNED

- ☐ Raise the vehicle, moving the engine towards the front.

K9K, and JH3 or JR5 – K9K, and 772, and TL4



112784

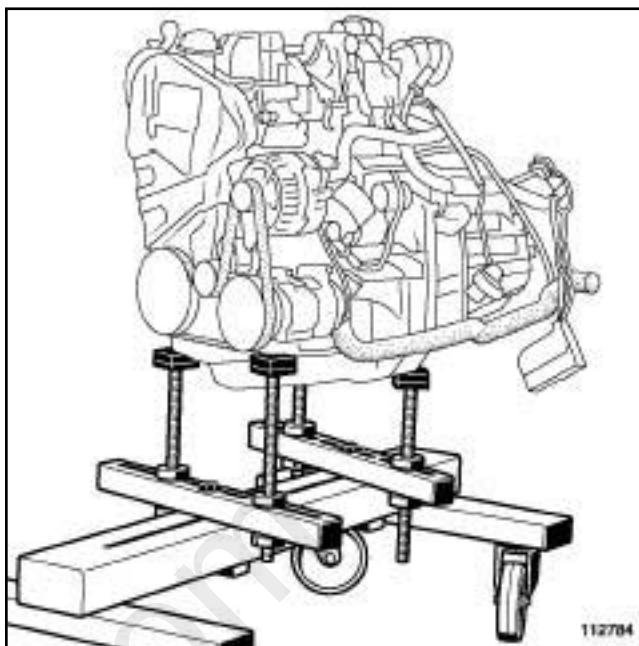
- ☐ Extract the engine and gearbox assembly from the engine compartment.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Standard replacement**) (Technical Note 6006A, 10A, Engine and peripherals).

II - REFITTING PART CONCERNED



112784

- ☐ Refit the engine and gearbox assembly in the engine compartment.

III - FINAL OPERATION.

K9K, and 772, and TL4

- ☐ Connect the fuel supply union to the diesel injector on the catalytic pre-converter.

☐ Refit:

- the gearbox suspended engine mounting,
- the gearbox support rubber pad,
- the suspended engine mounting.

☐ Remove the (**Mot. 1390**).

☐ Torque tighten:

- the **bolts for the gearbox suspended mounting (62 Nm)**,
- the **bolts for the suspended engine mounting on the engine (62 Nm)**,
- the **bolts for the suspended engine mounting on the body (62 Nm)**.

☐ Connect the clutch pipe.

☐ Bleed the clutch system.

☐ Refit the exhaust downpipe bolts.

☐ Refit the lower engine tie-bar.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 – K9K, and 772, and TL4

- ☐ Tighten to torque the **engine tie-bar bolts (105 Nm)**.
- ☐ Refit the gear control cables.
- ☐ Reconnect:
 - the connectors to the injection computer,
 - the feed wiring on the battery protection fuse box,
 - the feed wiring on the fuse board,
 - the fuse holder on the fuse board,
 - the **30A** and **70A** engine fuses,
 - the brake servo pipe,
 - the Protection and Switching Unit connectors.
- ☐ Refit the Protection and Switching Unit cover.
- ☐ Refit the engine wiring harness.
- ☐ Connect the fuel supply and return pipes on the high-pressure pump.
- ☐ Connect:
 - the coolant temperature sensor,
 - the preheating unit connector.
 - the earth wiring.
- ☐ Refit:
 - the cooling radiator assembly,
 - the front radiator cross member,
 - the front cross member bolts.
- ☐ Tighten to torque the **front cross member bolts (105 Nm)**.

K9K, and 772, and TL4

- ☐ Refit:
 - the bolt mounting the earth on the coolant pump and heating element unit support,
 - the bolt mounting the coolant pump and heating element unit support on the radiator mounting cross member.
- ☐ Connect the connector to the heating element unit.
- ☐ Refit:
 - the side tie-rod lower bolts,
 - the left-hand side stiffener,
 - the air conditioning pipes.

- ☐ Tighten to torque the **air conditioning pipe bolts (8 Nm)**.
- ☐ Connect the pressure switch connector to the condenser.
- ☐ Refit the expansion bottle.
- ☐ Connect:
 - the passenger compartment heater hoses,
 - the top hose on the cylinder head coolant outlet unit,
 - the radiator bottom hose,
 - the fan assembly connectors.
- ☐ Always replace the differential output lip seal each time the driveshaft is removed (see **Differential output seal: Removal - Refitting**) (MR 392, 21A, Manual gearbox).
- ☐ Refit the « hub carrier - right-hand driveshaft» assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).
- ☐ Refit the « hub carrier - left-hand driveshaft» assembly (see **Hub carrier - driveshaft assembly: Removal - Refitting**) (MR 392, 31A, Front axle component).
- ☐ Refit:
 - the turbocharging pipes,
 - the nut to the turbocharger pipes on the alternator,
 - the intercooler.
- ☐ Refit the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- ☐ Refit the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).
- ☐ Refit the inlet pipe to the inlet manifold.
- ☐ Connect the inlet air pressure sensor
- ☐ Fit the air duct between the turbocharger and the intercooler air inlet pipe.
- ☐ Clip the air duct on the turbocharger and the air pipe at the intercooler inlet.
- ☐ Refit the air duct bolt on the rocker cover.
- ☐ Torque tighten the **nut mounting the intercooler air inlet pipe on the alternator (8 Nm)**.
- ☐ refit:
 - the battery tray base,
 - the air filter unit.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 – K9K, and 772, and TL4

- ☐ Refit the air inlet duct to the air filter unit and tighten the clip.
- ☐ Refit the battery protective tray.
- ☐ Refit the fuse board.
- ☐ Perform the following operations:
 - refill the refrigerant circuit using the **refrigerant charging station**,
 - refill the engine if necessary,
 - refill the gearbox,
 - refill the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**) .
- ☐ Bleed the cooling system (see **Cooling system: Bleed**) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Refit:
 - the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
 - the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
 - the engine cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and 740 or 742 or 764

Tightening torques 		
exhaust mountings	downpipe	9 N.m
air conditioning mounting bolts on the compressor, evaporator and condenser		8 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

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

IMPORTANT

During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

For strapping the vehicle (see **02A, Lifting equipment, Vehicle: Towing and lifting**).

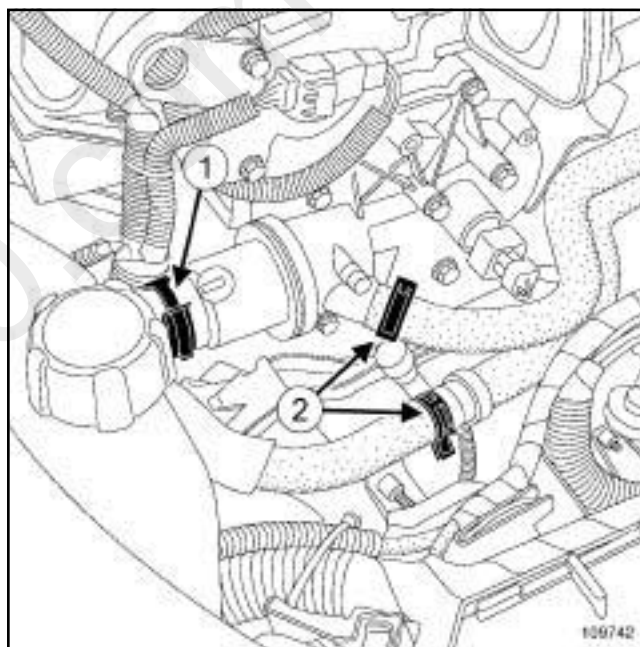
- ☐ Remove:
 - the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
 - the battery (see **Battery: Removal - Refitting**) ,
 - the battery tray (see **Battery tray: Removal - Refitting**) ,
 - the engine undertray.
- ☐ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the gearbox (see **Manual gearbox oils: Draining - Filling**) ,
 - the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page 10A-13) .

AIR CONDITIONING

- ☐ Drain the coolant circuit (see **Air conditioning: Parts and consumables for the repair**) .

- ☐ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) ,
- the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners**),
- the front bumper (see **MR 393, Bodywork, 55A, Exterior protection, Front bumper: Removal - Refitting**),
- the « left-hand driveshaft-stub axle carrier » assembly, (see **Hub carrier - driveshaft assembly: Removal - Refitting**)
- the « right-hand driveshaft-stub axle carrier » assembly. (see **Hub carrier - driveshaft assembly: Removal - Refitting**)

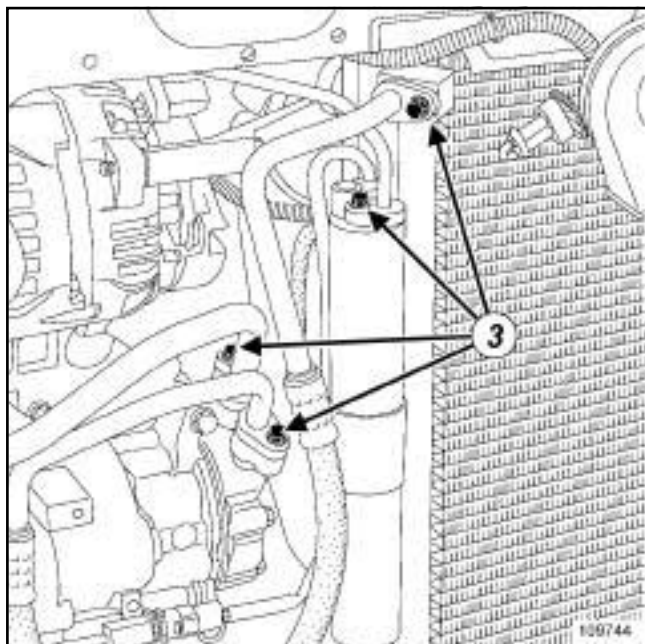


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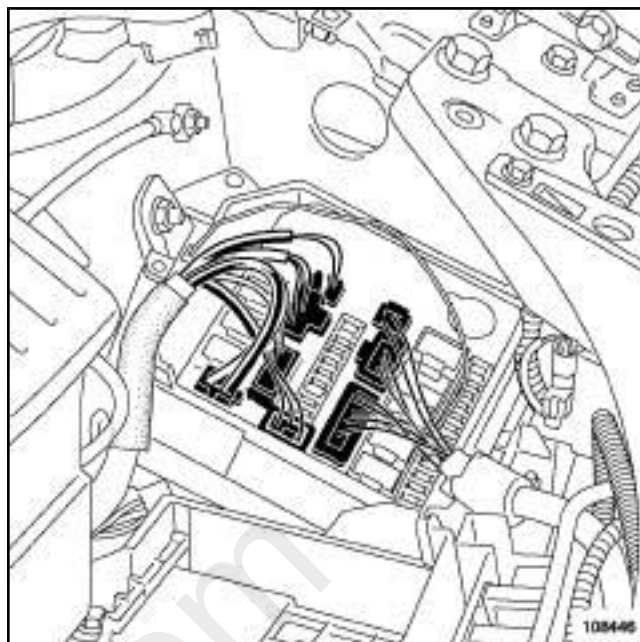
- ☐ Disconnect:
 - the engine cooling fan assembly connectors,
 - the top hose (1) on the cylinder head coolant pipe housing outlet,
 - the passenger compartment heater hoses (2) .
- ☐ Remove the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) .

D4F, and 740 or 742 or 764

AIR CONDITIONING



- ☐ Unclip the wiring harness of the pressure switch on the condenser.
 - ☐ Disconnect:
 - the pressure switch from the condenser,
 - the air conditioning compressor clutch connector.
 - ☐ Remove the air conditioning pipe union mounting bolts (3) on the compressor, evaporator and condenser.
 - ☐ Fit plugs into the openings.
-
- ☐ Remove:
 - the radiator mounting cross member (see **MR 393 Bodywork, 41A, Lower front structure, Radiator mounting cross member: Removal - Refitting**).
 - the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
 - the earths,
 - the Protection and Switching Unit cover.

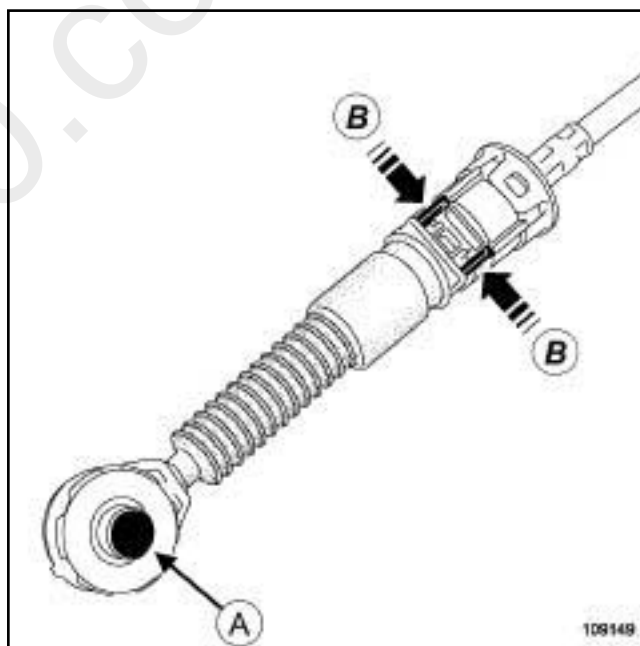


- ☐ Disconnect the connectors from the protection and switching unit.
- ☐ Unclip the oxygen sensor harnesses.
- ☐ Disconnect:
 - the brake servo pipe,
 - the oxygen sensor connectors,
 - the petrol vapour rebreather connector,
 - the connector from the lifting eye at the flywheel end,
- ☐ Disconnect:
 - the fuse,
 - the fuse holder to the fuse board,
 - the supply cable on the fuse board,
 - the supply cable from the battery protection fuse box.
- ☐ Remove:
 - the petrol injection computer (see **17B, Petrol injection, Petrol injection computer: Removal - Refitting**, page 17B-37) ,
 - the computer support mounting bolts,
 - the computer bracket.

D4F, and 740 or 742 or 764



- ☐ Remove the wiring channel mounting bolts (4) on the body.
- ☐ Remove the wiring duct.
- ☐ Disconnect:
 - the canister solenoid valve connector,
 - the canister solenoid valve pipe,
 - the petrol supply pipe from the injector rail.
- ☐ Fit plugs into the openings.



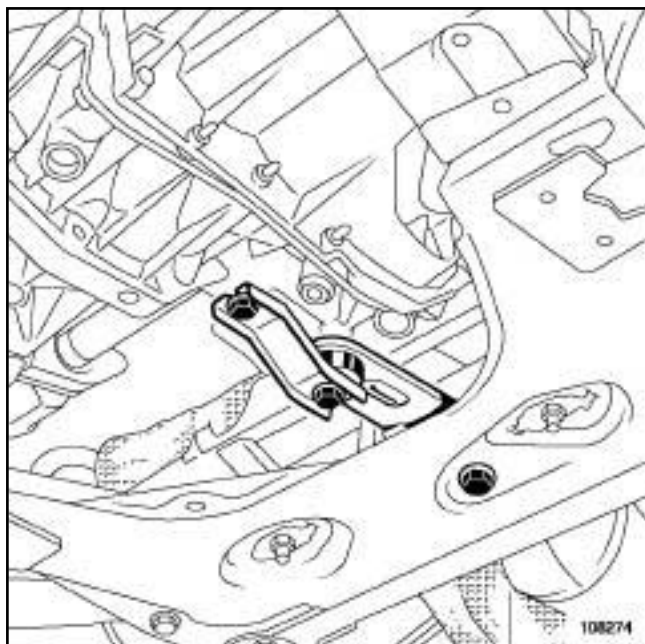
- ☐ Remove:
 - the gear control cables on the gearbox by pushing at (A) ,
 - the control cables by pushing at (B) ,
 - the wiring harness channel mountings on the gearbox.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and 740 or 742 or 764

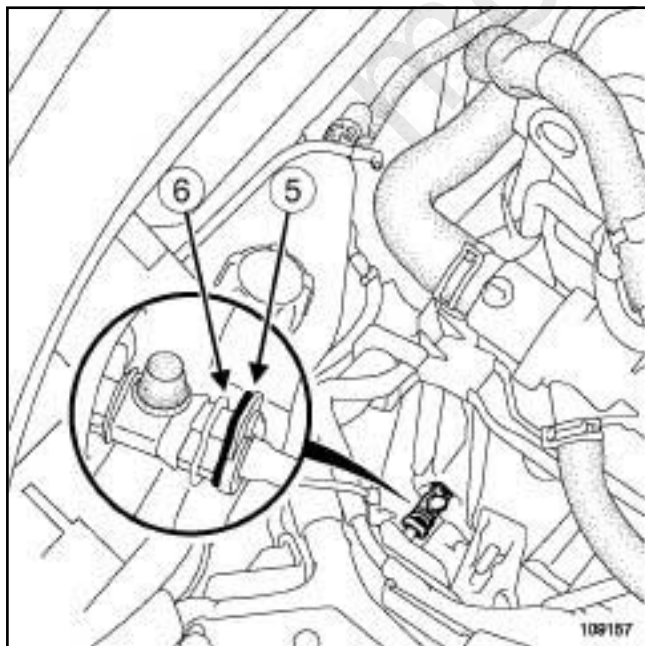


108274

❑ Remove:

- the engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting, page 19D-13**),
- the exhaust downpipe mountings.

- ❑ Fit a hose clamp between the brake fluid reservoir and the clutch master cylinder.



109157

- ❑ Disconnect the clutch slave cylinder by pulling the clips (5) and (6)

- ❑ Collect the fluid in a container.

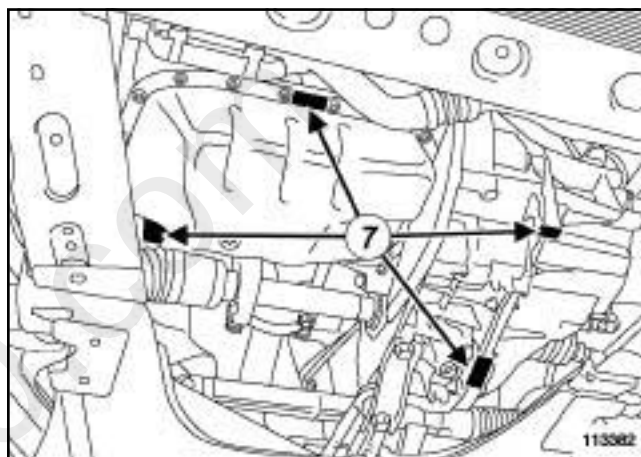
WARNING

Fit plugs into the openings.

Plugs must be fitted on the pipes to prevent moisture from entering the system.

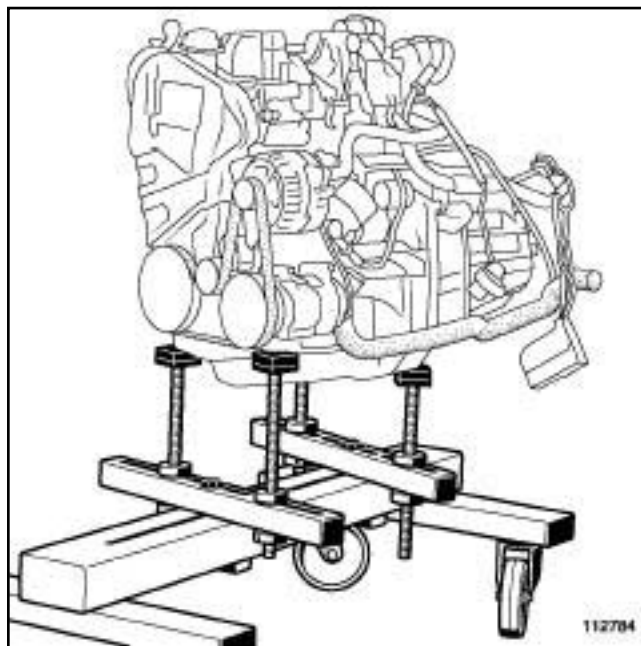
- ❑ Unclip the gearbox clutch pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382

- ❑ Support the « engine - gearbox » assembly on the engine marks (7) with the.



112784

- ❑ Mark the positions of the suspended engine mountings on the body.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and 740 or 742 or 764

Remove:

- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .
- ☐ Raise the vehicle, moving the engine towards the front.
- ☐ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ If carrying out a standard engine replacement (see **Technical Note 6004A, 4 cylinder - D4 - petrol engine, 10A, Engine and peripherals, Standard replacement**) .

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Position the « engine - gearbox » assembly in the vehicle.
- ☐ Refit:
 - the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
 - the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .
- ☐ Remove the from the « engine - gearbox » assembly.

III - FINAL OPERATION.

- ☐ Clip the clutch pipe to the gearbox.
- ☐ Remove the protective plugs from the pipe openings.
- ☐ Connect the clutch slave cylinder pipes.
- ☐ Remove the hose clamp between the brake fluid reservoir and the clutch master cylinder.
- ☐ Refit the exhaust downpipe mountings.
- ☐ Torque tighten the **exhaust downpipe mountings (9 N.m)**.

- ☐ Refit the engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .

- ☐ Refit the wiring harness channel mountings on the gearbox.

- ☐ Refit the gearbox control cables.

- ☐ Remove the protective plug from the injector rail.

- ☐ Connect:

- the fuel supply pipe to the injector rail,
- the canister solenoid valve pipe,
- the canister solenoid valve connector.

- ☐ Refit the wiring harness channel mountings to the body.

- ☐ Refit:

- the wiring harness channel mountings to the body,
- the computer mounting,
- the computer bracket mounting bolts bolts,
- the injection computer (see **17B, Petrol injection, Petrol injection computer: Removal - Refitting**, page **17B-37**) .

- ☐ Connect:

- the supply cable on the battery protection fuse box,
- the supply cable on the fuse board,
- the fuse holder to the fuse board,
- the fuse,
- the connector on the lifting eye at the flywheel end,
- the petrol vapour rebreather connector,
- the oxygen sensor connectors,
- the brake servo pipe ,
- the Protection and Switching Unit connectors.

- ☐ Refit:

- the Protection and Switching Unit cover,
- the earths,
- the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the radiator mounting cross member (see **MR 393 Bodywork, 41A, Lower front structure, Radiator mounting cross member: Removal - Refitting**) .

- ☐ Clip the oxygen sensor wiring harnesses into place.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and 740 or 742 or 764

AIR CONDITIONING

- ☐ Refit the air conditioning pipe mounting bolts on the compressor, evaporator and condenser.
- ☐ Torque tighten the **air conditioning mounting bolts on the compressor, evaporator and condenser (8 N.m)**.
- ☐ Connect:
 - the pressure switch from the condenser,
 - the air conditioning compressor clutch connector.
- ☐ Clip the pressure switch wiring harness on the condenser.

- ☐ Refit the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**).

- ☐ Connect:
 - the passenger compartment heating hoses,
 - the top hose from the cylinder head coolant outlet unit,
 - the fan assembly connectors.

- ☐ Refit:
 - the « right-hand driveshaft and stub-axle carrier assembly » (see **Hub carrier - driveshaft assembly: Removal - Refitting**),
 - the « left-hand driveshaft and stub axle carrier assembly » (see **Hub carrier - driveshaft assembly: Removal - Refitting**),
 - the front bumper (see **MR 393, Bodywork, 55A, Exterior protection, Front bumper: Removal - Refitting**),
 - the front wheel arch liners (see **MR 393 Bodywork, 55A, Exterior protection, Front wheel arch liners**),
 - the front wheels (see **Wheel: Removal - Refitting**).

- ☐ Refill:
 - the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**),
 - the gearbox (see **Manual gearbox oils: Draining - Filling**),
 - the engine cooling circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**).

Refit:

- the engine undertray,
- the battery tray (see **Battery tray: Removal - Refitting**),
- the battery (see **Battery: Removal - Refitting**),
- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**).

AIR CONDITIONING

- ☐ Refill the coolant circuit (see **Air conditioning: Parts and consumables for the repair**).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

M4R, and DP0

Special tooling required

Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required

refrigerant charging station

Tightening torques

engine cover mounting bolts	62 Nm
rubber mounting bush mounting bolts on the body	62 Nm
rubber mounting bush mounting bolt on the engine cover	105 Nm
upper engine tie-bar mounting bolts	105 Nm
gearbox support mounting bolts on the body	62 Nm
rubber mounting bush mounting bolts on the gearbox mounting	62 Nm
rubber mounting bush mounting nut on the gearbox	62 Nm
exhaust clamp mounting bolts	21 Nm
engine tie-bar mounting bolt on the engine	180 Nm
engine tie-bar mounting bolt on the sub-frame	105 Nm
air inlet duct clips	6 Nm

REMOVAL

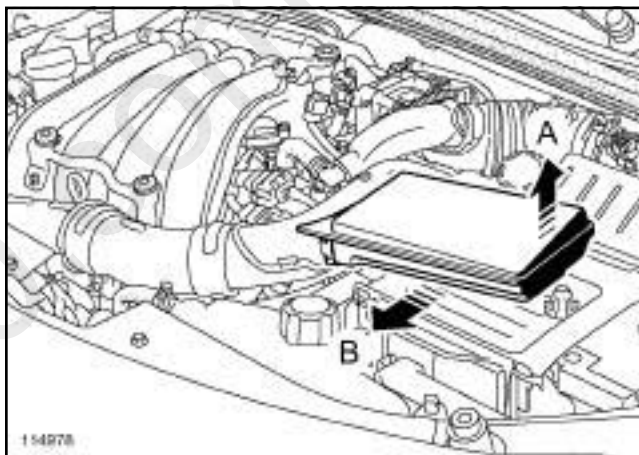
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT

During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

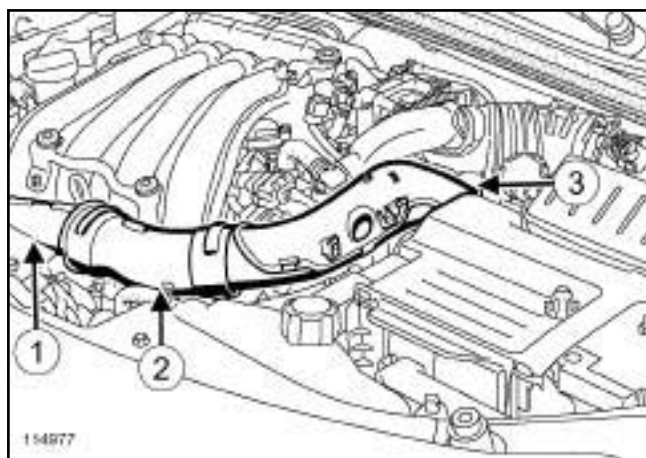
- ☐ Remove the engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).



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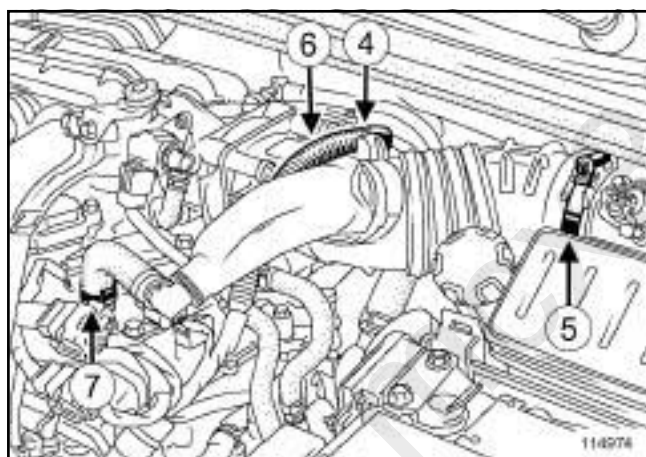
- ☐ Lift the air resonator (**A**) to remove it from the battery cover.
- ☐ Pull the air resonator (**B**) towards the front of the vehicle to remove it.

M4R, and DP0



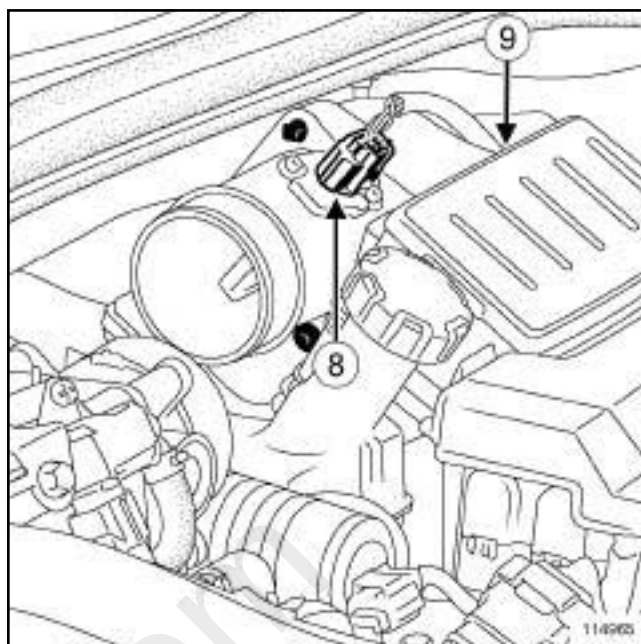
114977

- ❑ Detach the air intake sleeve:
 - from the front end panel at (1) ,
 - from the air resonator on the front end panel at (2) ,
 - from the air filter unit at (3) .
- ❑ Remove the air intake sleeve.



114974

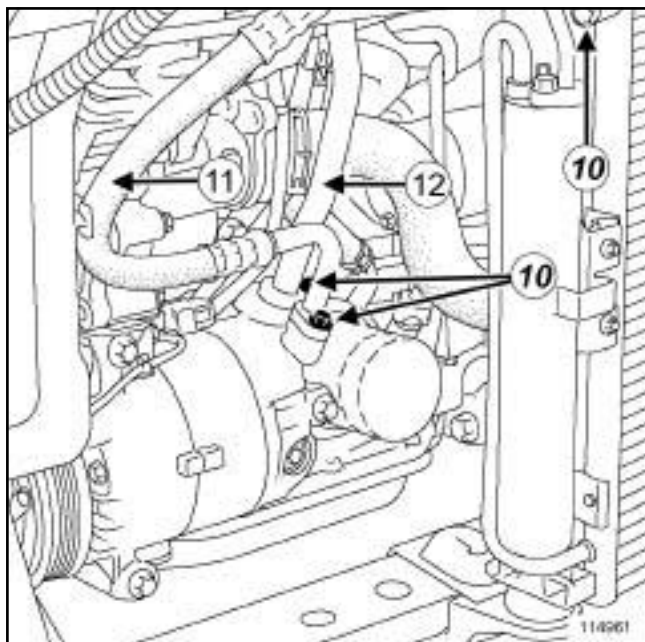
- ❑ Detach the wiring harness from the air inlet duct at (4) .
- ❑ Undo the air duct securing clips:
 - on the air flow sensor (5) ,
 - on the motorised throttle valve (6) .
- ❑ Remove the oil vapour rebreather duct (7) from the rocker cover using the (Mot. 1448).
- ❑ Remove the air inlet duct.



114965

- ❑ Disconnect the air flowmeter connector (8) .
- ❑ Unclip the air flowmeter connector wiring harness at (9) .
- ❑ Remove the engine undertray.
- ❑ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),
 - the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).
- ❑ Remove:
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) ,

M4R, and DP0



114961

❑ Remove:

- the bolts (10) from the air conditioning pipe unions,
- the air conditioning pipe (11) .

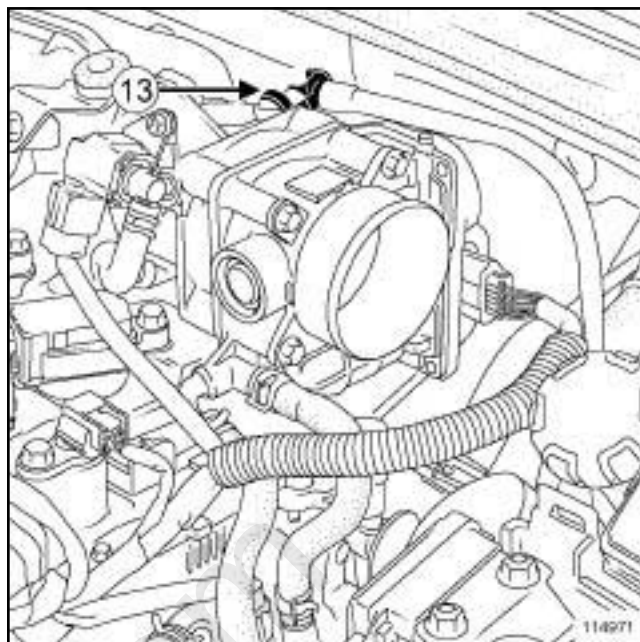
WARNING

Plugs must be fitted on the hoses to prevent moisture from entering the system.

❑ Pull out the air conditioning pipe (12) .

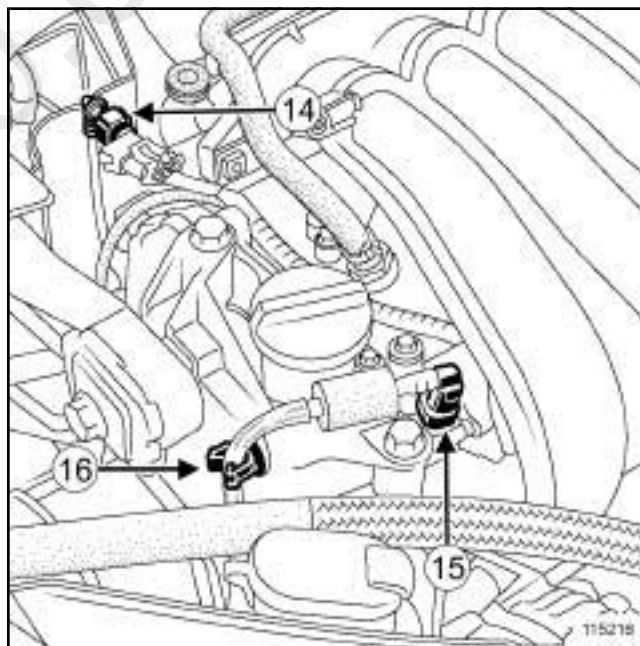
❑ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).



114971

❑ Disconnect the brake servo hose (13) .



115216

❑ Disconnect:

- the petrol vapour rebreather pipe (14) ,
- the fuel supply pipe (15) .

WARNING

Protect sensitive areas from fuel spillage.

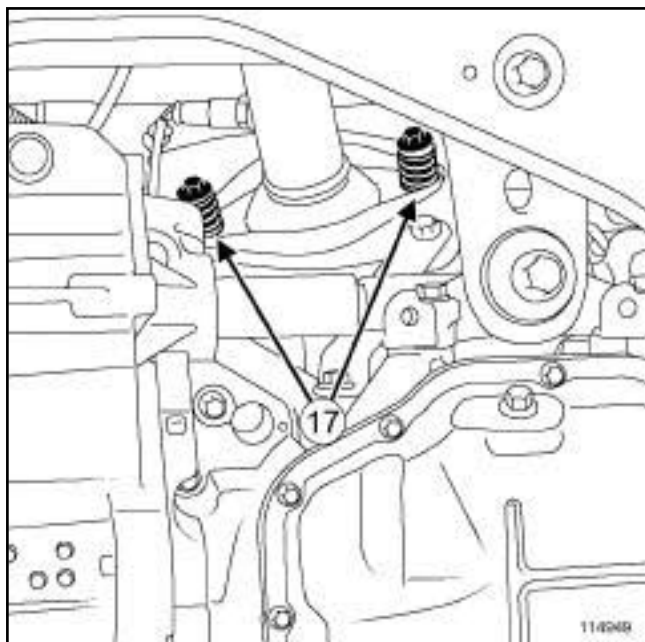
❑ Unclip the fuel supply pipe at (16) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

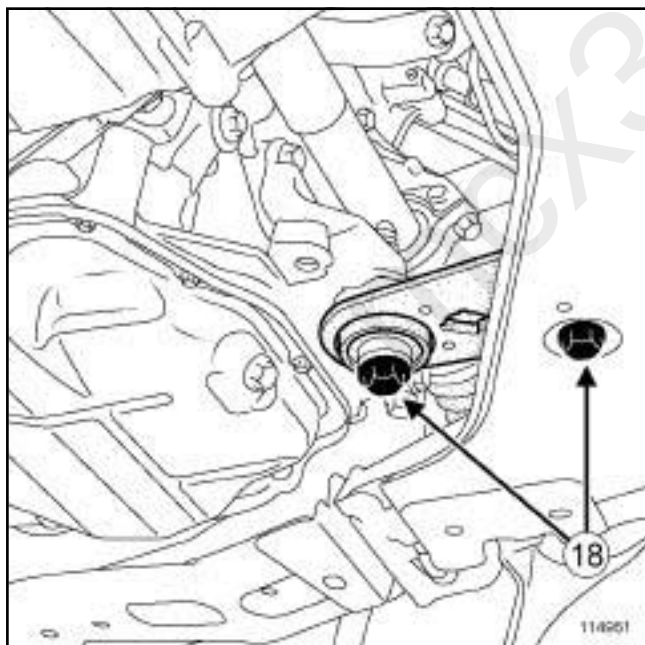
10A

M4R, and DP0



❑ Remove:

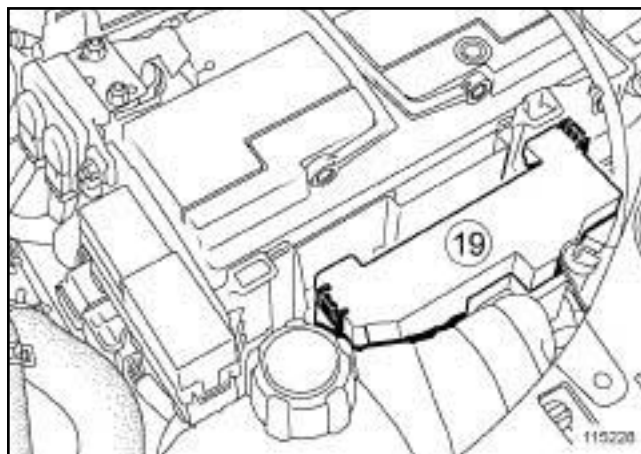
- the exhaust clamp mounting bolts (17) ,
- the exhaust clamp seal.



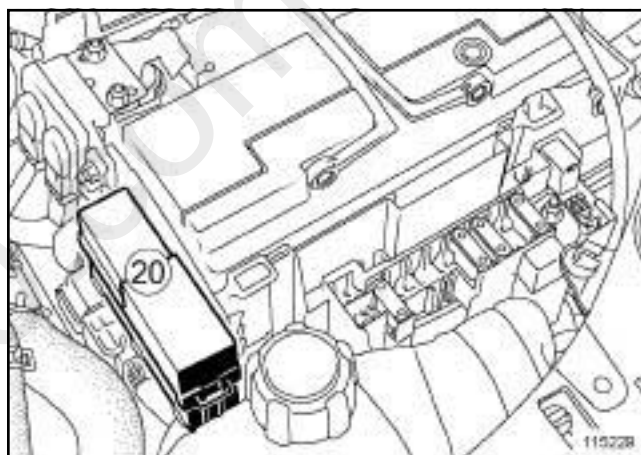
❑ Remove:

- the engine tie-bar mounting bolts (18) ,
- the engine tie-bar.

❑ Remove the battery cover.



❑ Remove the fuse box cover (19) .



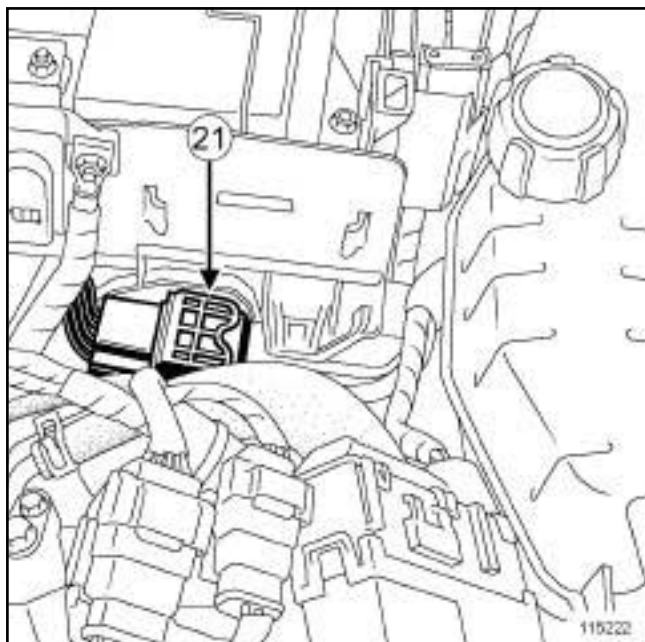
❑ Unclip the relay box (20) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

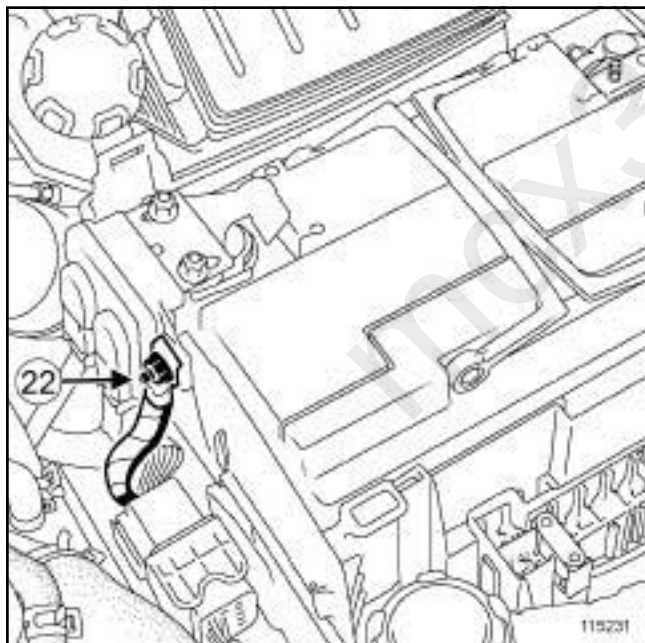
Engine - gearbox assembly: Removal - Refitting

10A

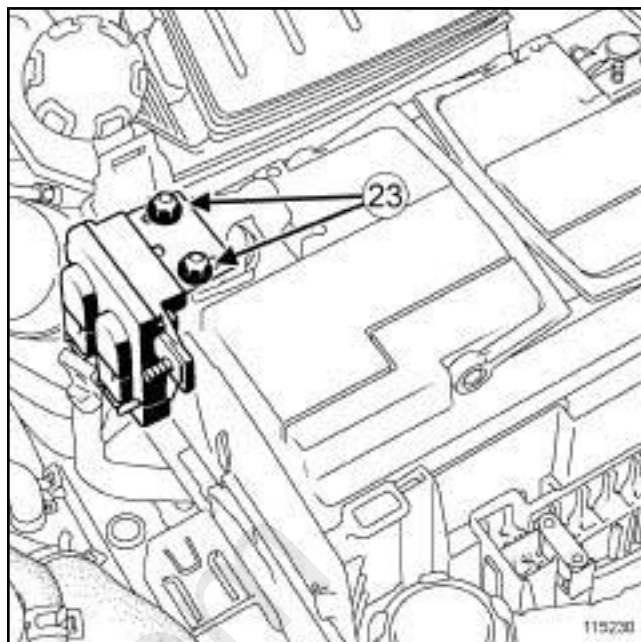
M4R, and DP0



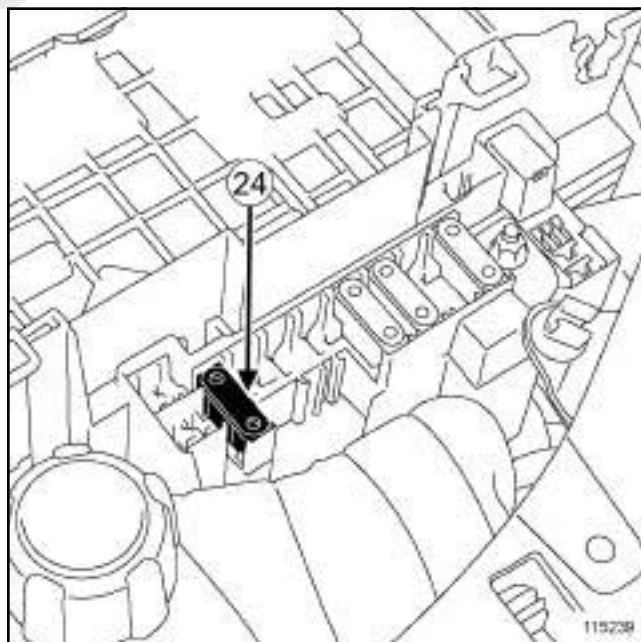
- ☐ Unclip the wiring harness connector (21) .
- ☐ Disconnect the wiring harness connector (21) .



- ☐ Disconnect the lead (22) .

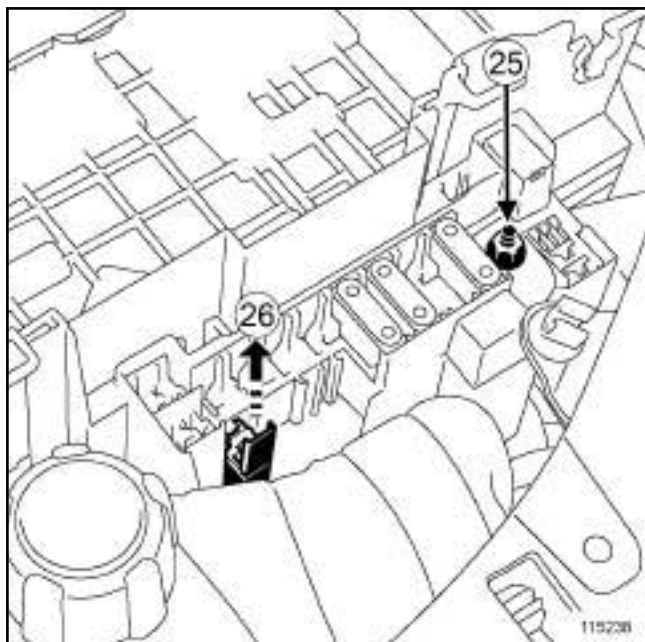


- ☐ Disconnect the positive battery terminal (23) .
- ☐ Remove:
 - the battery mounting clamp,
 - the battery.

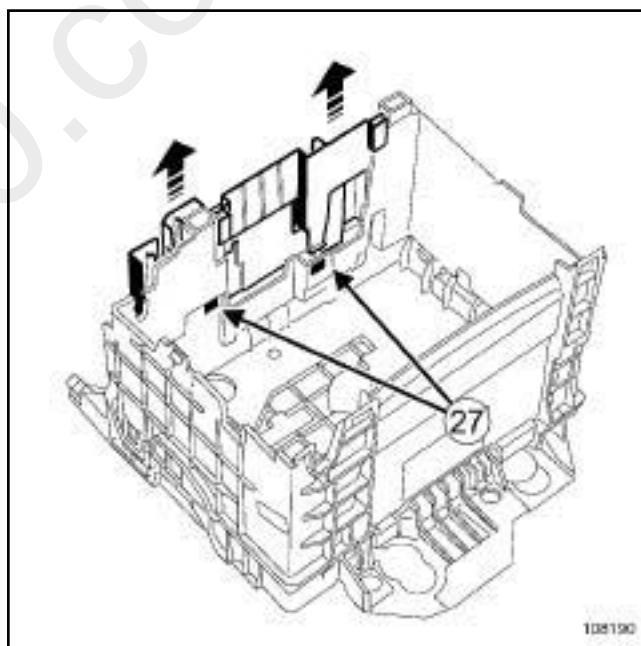
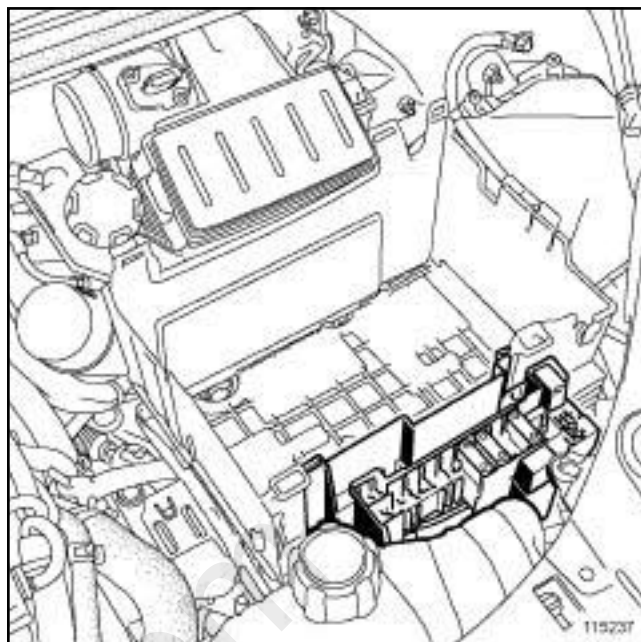


- ☐ Remove the fuse (24) .

M4R, and DP0



- ☐ Disconnect the electrical connector (25) .
- ☐ Pull the fuse holder out from the fuse box (26) .



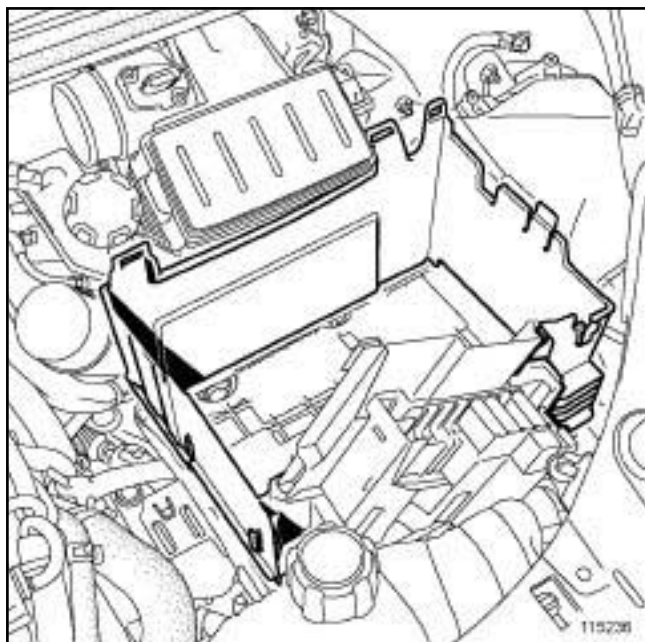
- ☐ Unhook the fuse box from the battery tray at (27) .
- ☐ Move the fuse box away from the battery tray.

ENGINE AND CYLINDER BLOCK ASSEMBLY

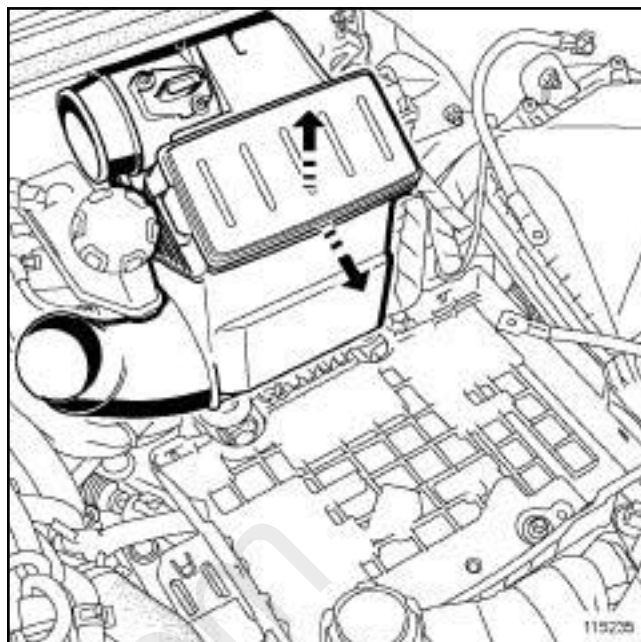
Engine - gearbox assembly: Removal - Refitting

10A

M4R, and DP0

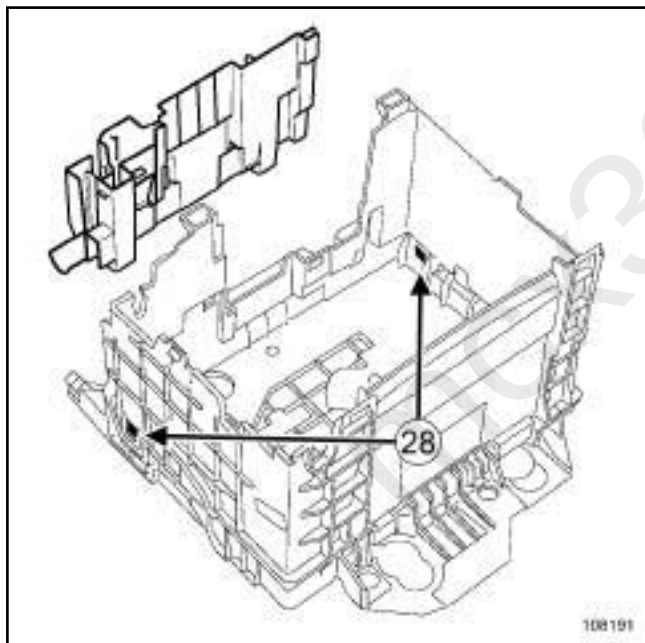


115236



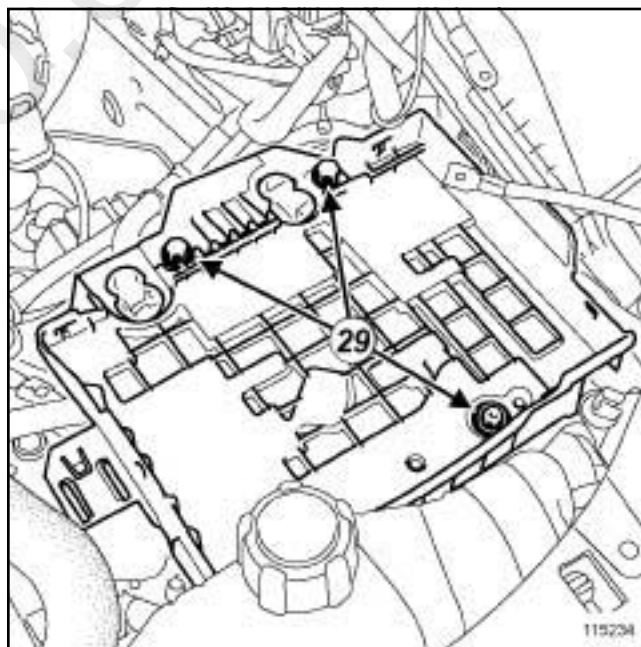
115235

- ❑ Remove the air filter unit in the direction of the arrows.



108191

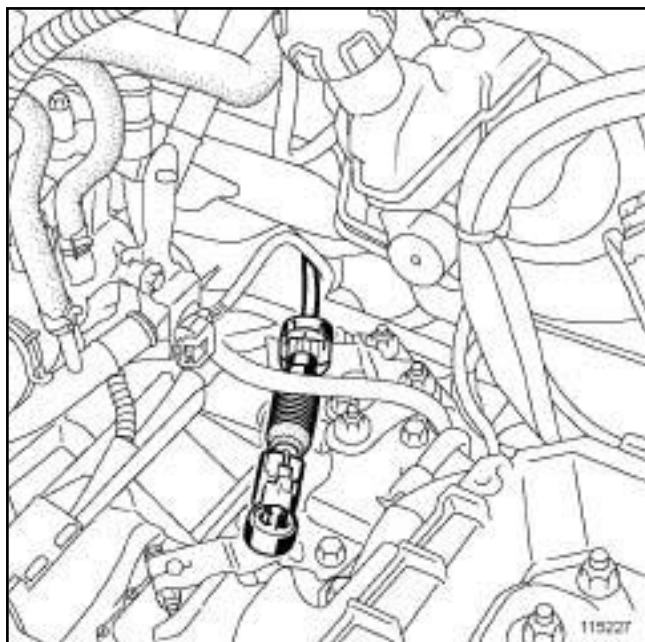
- ❑ Unclip the battery tray from the battery tray base at (28) .
- ❑ Remove the battery tray.



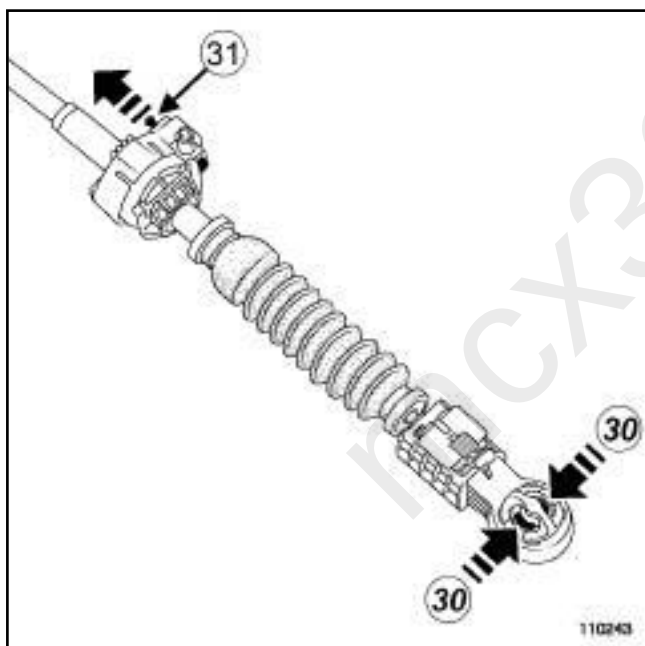
115234

- ❑ Remove:
 - the battery tray base mounting bolts (29) ,
 - the battery tray base.

M4R, and DP0

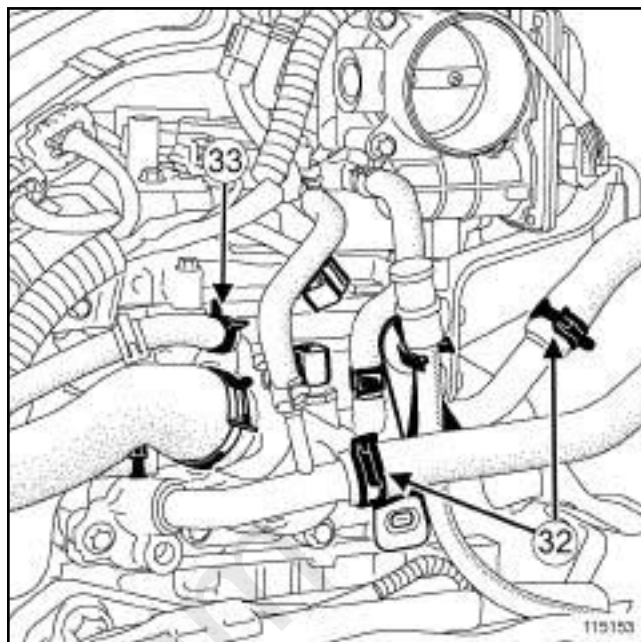


115227



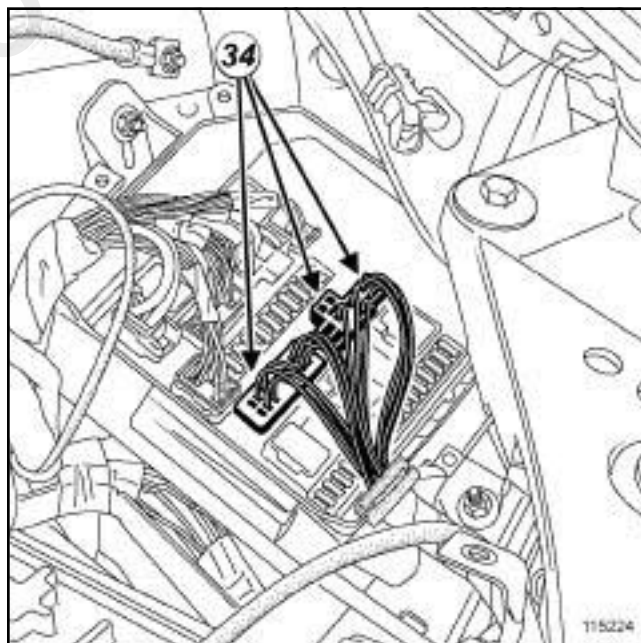
110243

- ❑ Detach the automatic transmission control cable ball joint by pressing at (30) .
- ❑ Pull out the automatic transmission control cable by pulling tab (31) .



115153

- ❑ Disconnect:
 - the passenger compartment heating hoses (32) ,
 - the expansion bottle hoses (33) .



115224

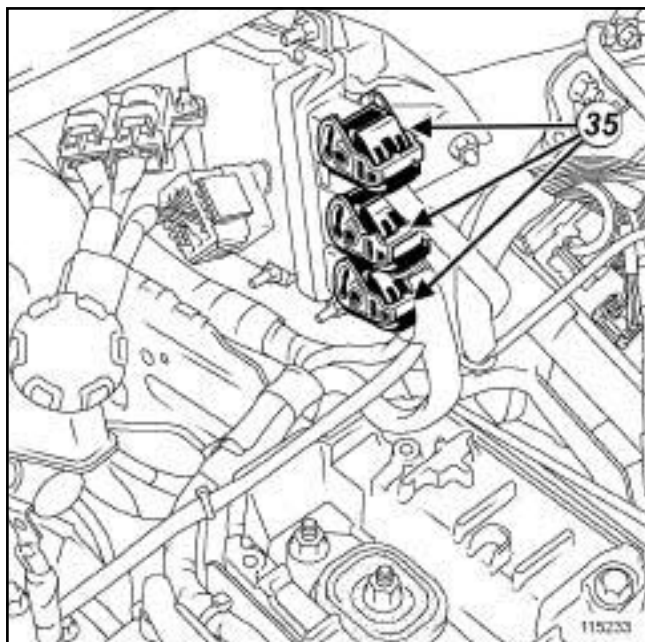
- ❑ Remove the Protection and Switching Unit cover.
- ❑ Remove the engine wiring harness connectors (34) from the Protection and Switching unit.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

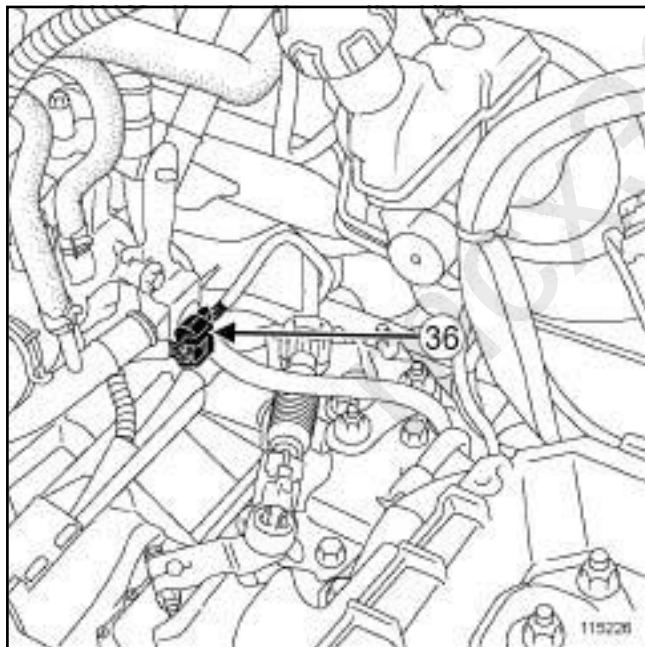
10A

M4R, and DP0



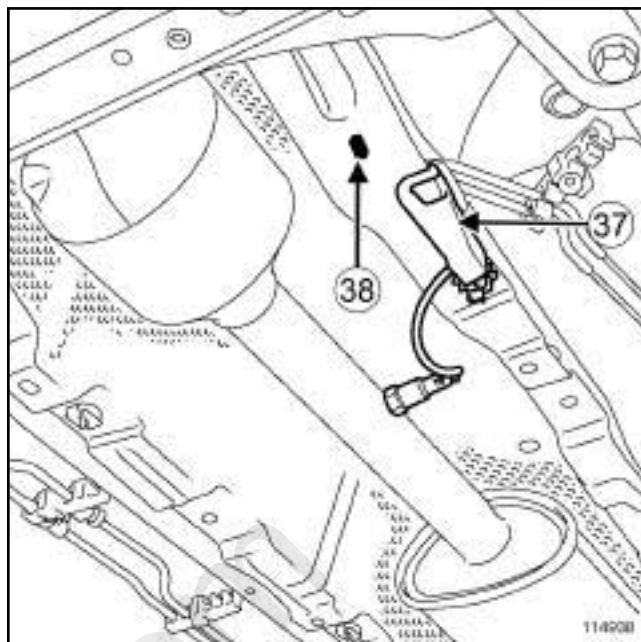
115233

- ❑ Disconnect the engine wiring harness connectors (35) from the injection computer.



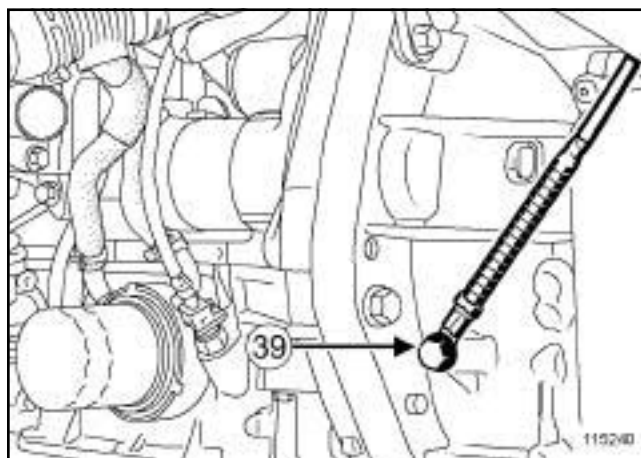
115226

- ❑ Disconnect the upstream oxygen sensor connector (36).



114938

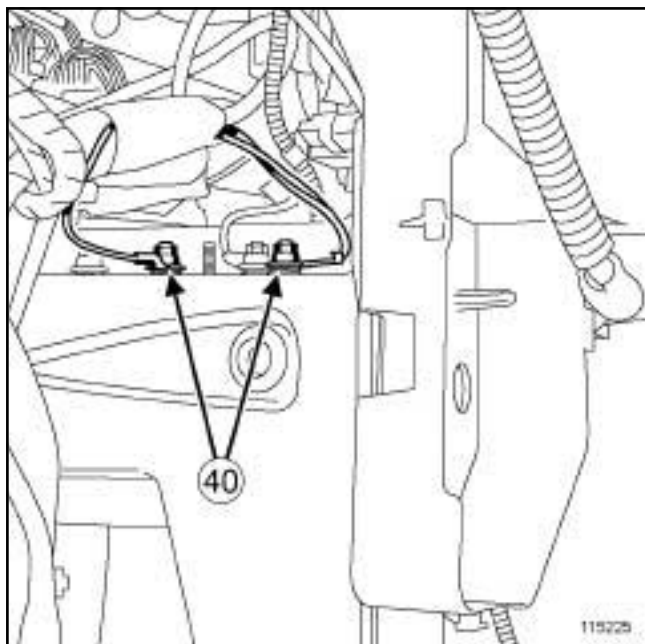
- ❑ Remove the plastic cover (37).
- ❑ Detach the downstream oxygen sensor connector at (38).
- ❑ Disconnect the downstream oxygen sensor connector.
- ❑ Unclip the downstream oxygen sensor wiring harness from the power-assisted steering box.
- ❑ Feed the downstream oxygen sensor wiring harness into the engine compartment.



115240

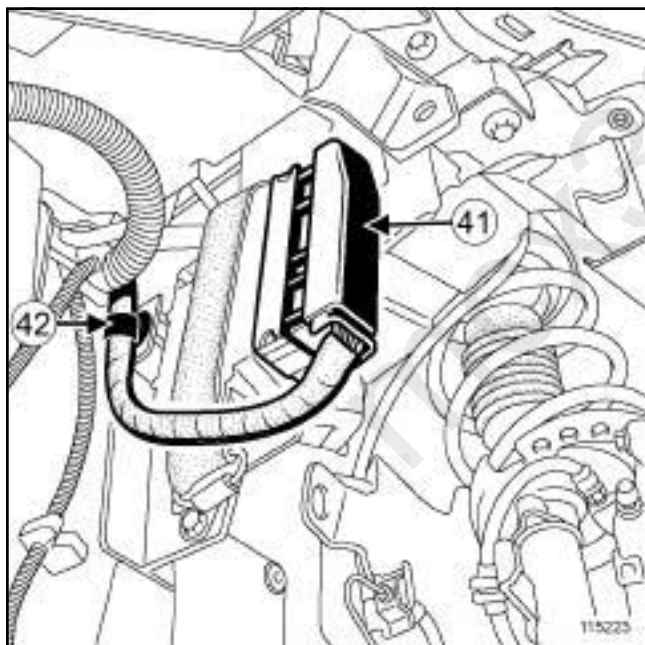
- ❑ Disconnect the automatic transmission earth wire (39).

M4R, and DP0



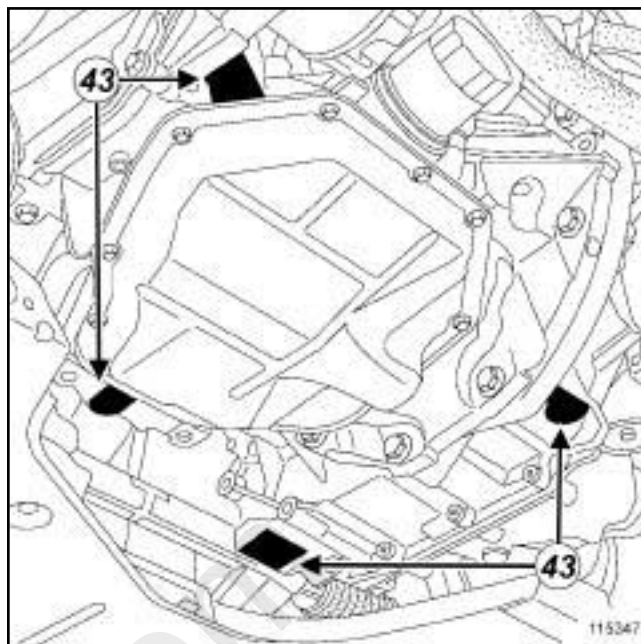
115225

- ❑ Disconnect the side member earth wires.



115223

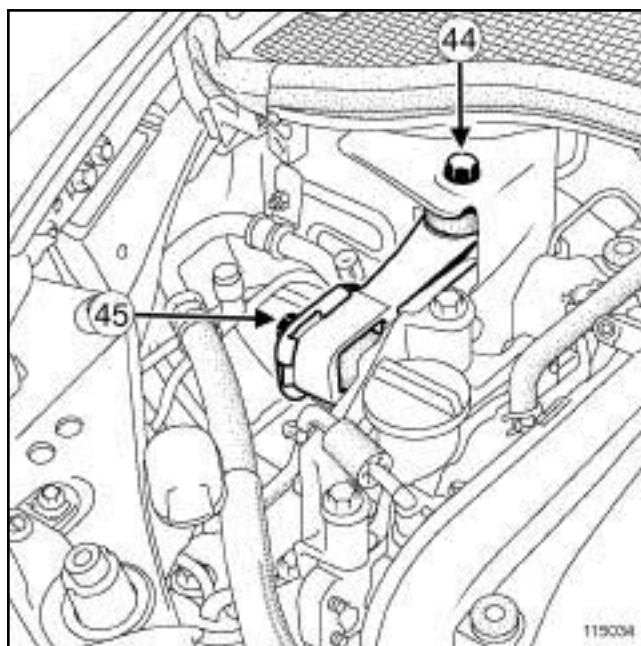
- ❑ Disconnect the automatic transmission connector (41) .
- ❑ Unclip the automatic transmission wiring harness at (42) .
- ❑ Feed the automatic transmission wiring harness into the engine compartment.



115347

- ❑ Position the (Mot. 1390) under the « engine-gearbox » assembly.
- ❑ Lower the vehicle down onto the pads of the (Mot. 1390).
- ❑ Adjust the pads of the (Mot. 1390) at (43) to ensure that the « engine-gearbox » assembly is stable.

II - REMOVAL OF PART CONCERNED



115034

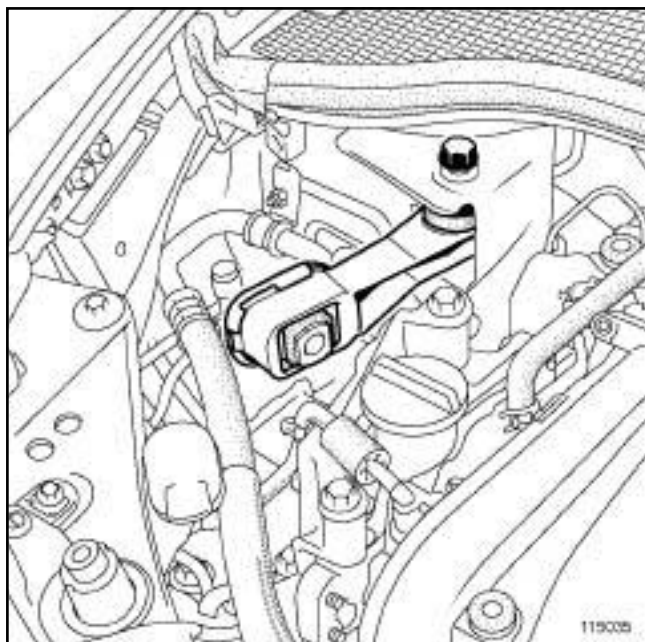
- ❑ Undo the upper engine tie-bar mounting bolt (44) .
- ❑ Remove the upper engine tie-bar mounting bolt (45)

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

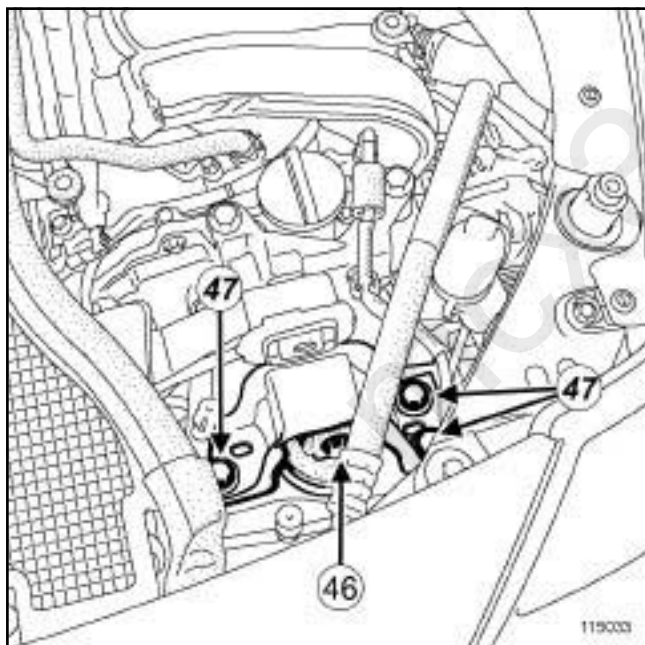
10A

M4R, and DP0



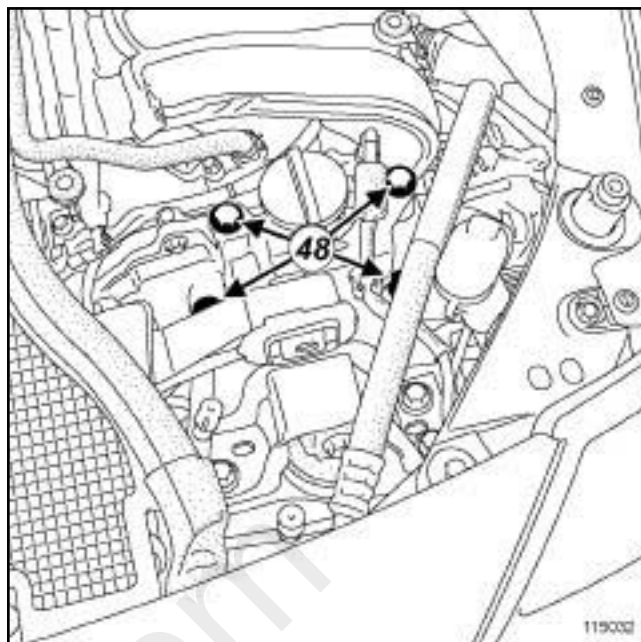
115035

- ❑ Remove the upper engine tie-bar.



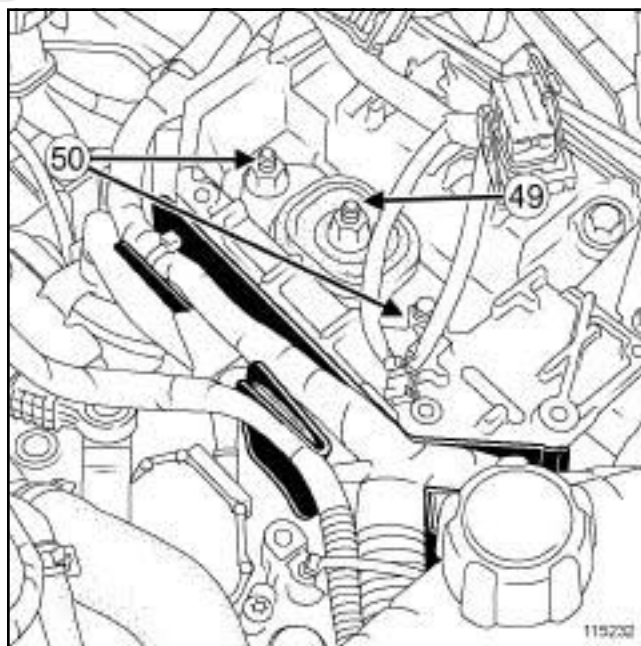
115033

- ❑ Remove:
 - the bolt (46) mounting the rubber mounting bush to the engine cover,
 - the bolts (47) mounting the rubber mounting bush to the body.



115032

- ❑ Remove:
 - the engine cover mounting bolts (48) ,
 - the engine cover,
 - the rubber mounting bush.



115232

- ❑ Separate the neck of the wiring harness from the gearbox support.
- ❑ Remove:
 - the nut (49) mounting the rubber mounting bush to the gearbox cover,
 - the rubber mounting bush mounting bolts (50) ,

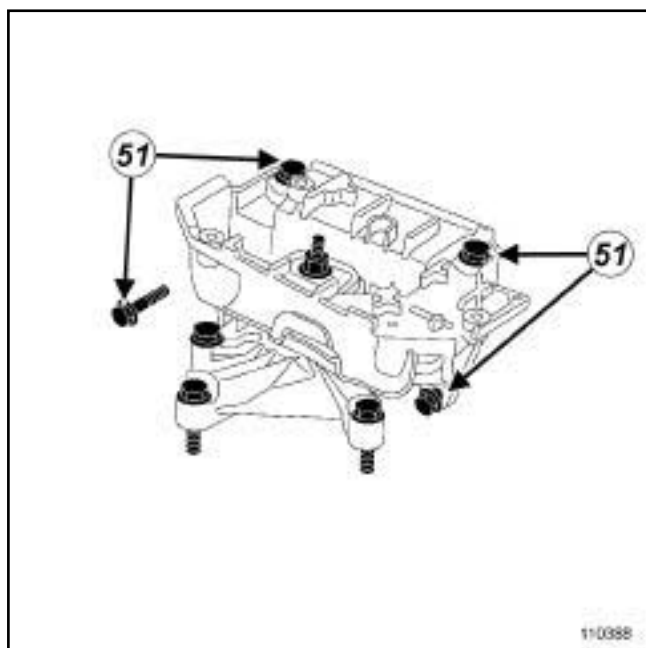
ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

M4R, and DP0

- the rubber mounting bush.



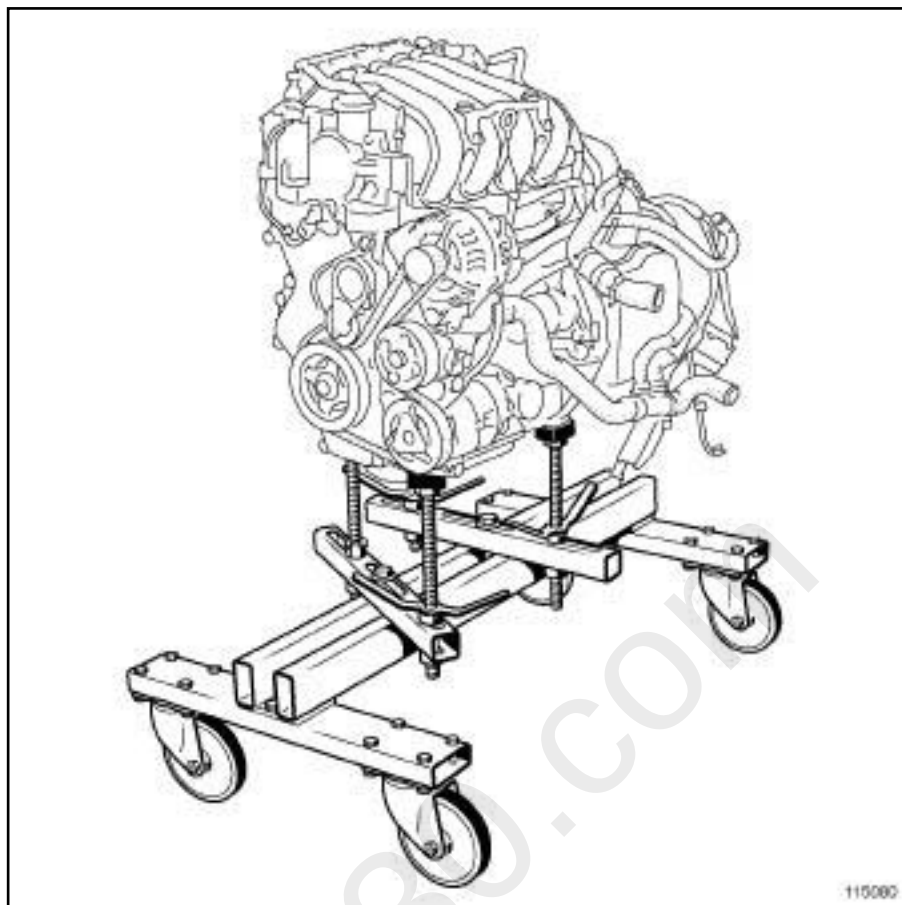
110388

☐ Remove:

- the bolts (51) mounting the gearbox support on the body,
- the gearbox support.

☐ Gently move the engine towards the front of the vehicle.

M4R, and DP0



115080

- ☐ Lift the vehicle to remove the «engine-gearbox» assembly.

Note:

Check that no component obstructs the movement of the body around the «engine and gearbox» assembly.

REFITTING

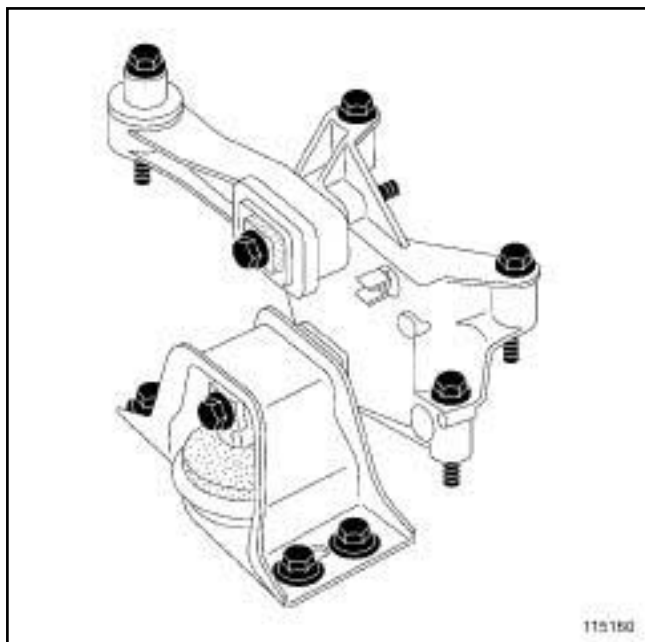
I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Standard replacement**) (Technical Note 6020A, 10A, Engine and peripherals).

II - REFITTING PART CONCERNED

- ☐ Position the «engine - gearbox» assembly in the body.

M4R, and DP0



☐ Fit:

- the rubber mounting bush,
- the engine cover.

☐ Pretighten:

- the engine cover mounting bolts,
- the bolts securing the rubber mounting bush to the body.

Note:

Allow the two parts to move freely.

☐ Fit the bolts securing the rubber mounting bush to the engine cover.

☐ Torque tighten and in order:

- the **engine cover mounting bolts (62 Nm)**,
- the **rubber mounting bush mounting bolts on the body (62 Nm)**,
- the **rubber mounting bush mounting bolt on the engine cover (105 Nm)**,
- the **upper engine tie-bar mounting bolts (105 Nm)**.

☐ Refit:

- the gearbox support,
- the mounting bolts securing the gearbox support to the body,
- the rubber mounting bush,

- the mounting studs securing the rubber mounting bush to the gearbox support,
- the mounting nut securing the rubber mounting bush to the gearbox cover.

☐ Torque tighten:

- the **gearbox support mounting bolts on the body (62 Nm)**,
- the **rubber mounting bush mounting bolts on the gearbox mounting (62 Nm)**,
- the **rubber mounting bush mounting nut on the gearbox (62 Nm)**.

III - FINAL OPERATION.

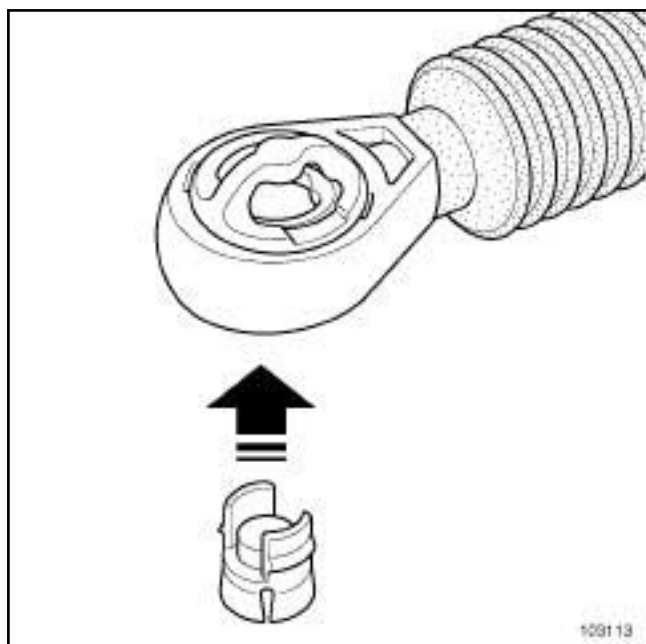
☐ Connect:

- the engine wiring harness,
- the air conditioning pipe unions,
- the cooling hoses,
- the air flowmeter connector,
- the fuel supply pipe,
- the petrol vapour rebreather pipe,
- the brake servo pipe.

☐ Clip:

- the fuel supply pipe,
- the air flowmeter connector wiring harness.

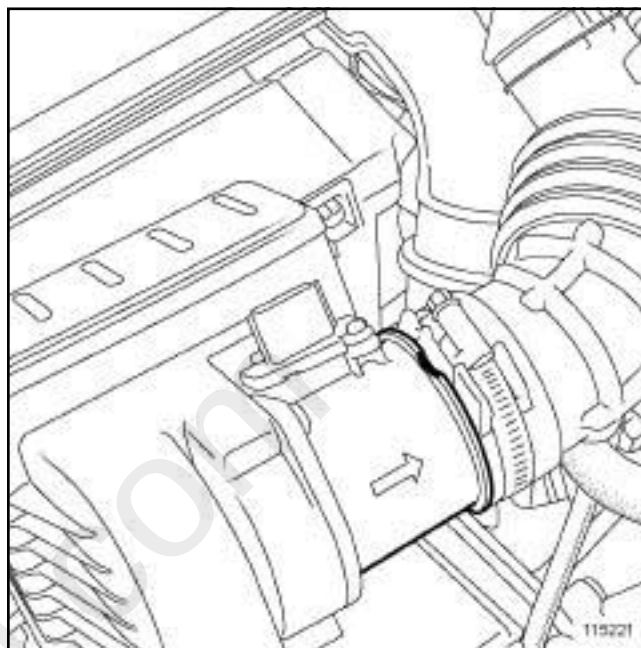
M4R, and DP0



103113

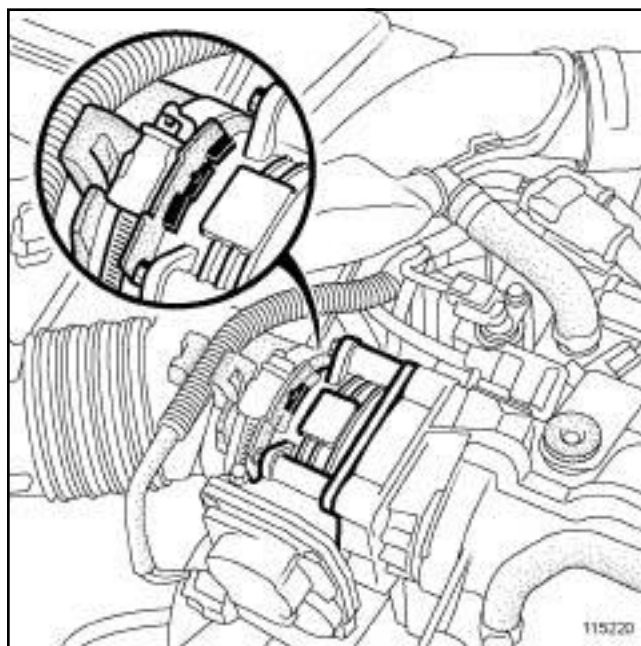
- ☐ Be sure to replace the clip on the gearbox control cable ball joint each time it is removed.
- ☐ Fit the gearbox control cable.
- ☐ The exhaust clamp seal must be replaced.
- ☐ Torque tighten:
 - the **exhaust clamp mounting bolts (21 Nm)**,
 - the **engine tie-bar mounting bolt on the engine (180 Nm)**,
 - the **engine tie-bar mounting bolt on the sub-frame (105 Nm)**.
- ☐ Refit:
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-10**) ,
 - the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
 - the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**) ,
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),

- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



115221

- ☐ Fit the air inlet duct on the air flowmeter following the assembly marking.



115220

- ☐ Fit the air inlet duct on the motorised throttle valve following the assembly marking.
- ☐ Connect the oil vapour rebreather pipe to the rocker cover.
- ☐ Torque tighten the **air inlet duct clips (6 Nm)**.

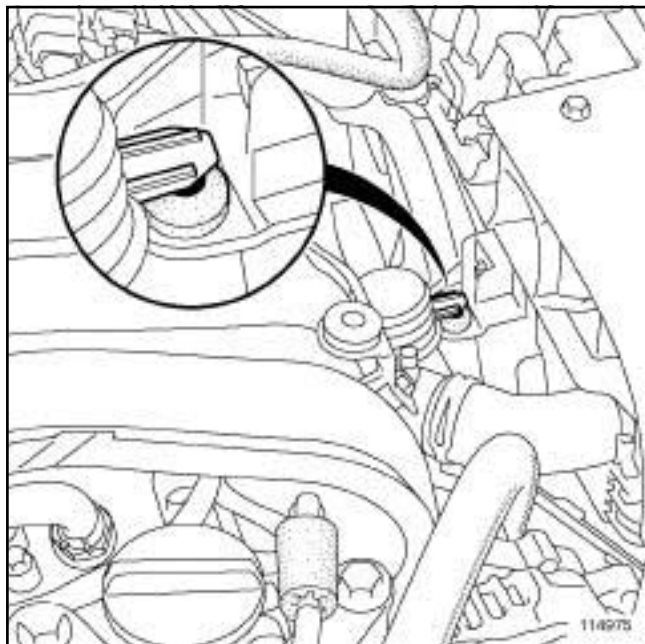
ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

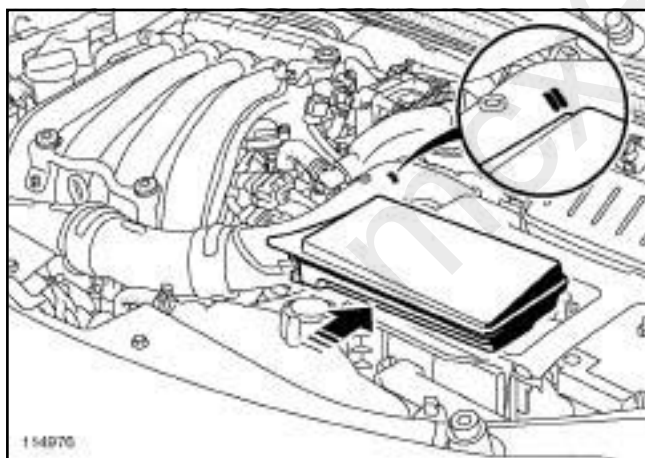
10A

M4R, and DP0

- ❑ Clip the wiring harness onto the air inlet duct.



- ❑ Before refitting the air inlet hose, check that the air resonator upper mounting at the front end is correctly clipped at .
- ❑ Refit the air intake sleeve.



- ❑ Push the air resonator towards the rear of the vehicle so that the corner of the air resonator is between the two lines marked on the air inlet hose.
- ❑ Press on the air resonator to fit it into the battery cover.
- ❑ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❑ Perform the following operations:
 - fill the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (MR 392, 23A, Automatic transmission),

- fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).
- fill the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
- bleed the cooling system (see **Cooling system: Bleed**) .

- ❑ Refit the engine cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

F4R

Special tooling required

Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required

refrigerant charging station

Diagnostic tool

Tightening torques

exhaust manifold nuts	30 N.m
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REMOVAL

I - REMOVAL PREPARATION OPERATION

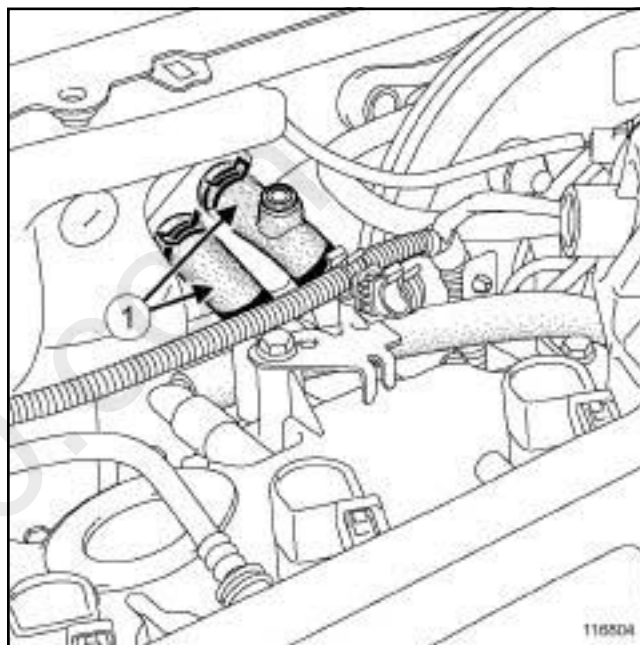
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

IMPORTANT

During this operation, secure the vehicle to the lift with a strap to prevent it from becoming unbalanced.

- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove the engine undertray.
- ☐ Perform the following operations:
 - drain the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning),
 - drain the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**),
 - drain the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
 - drain the engine oil (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**).
- ☐ Remove:
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

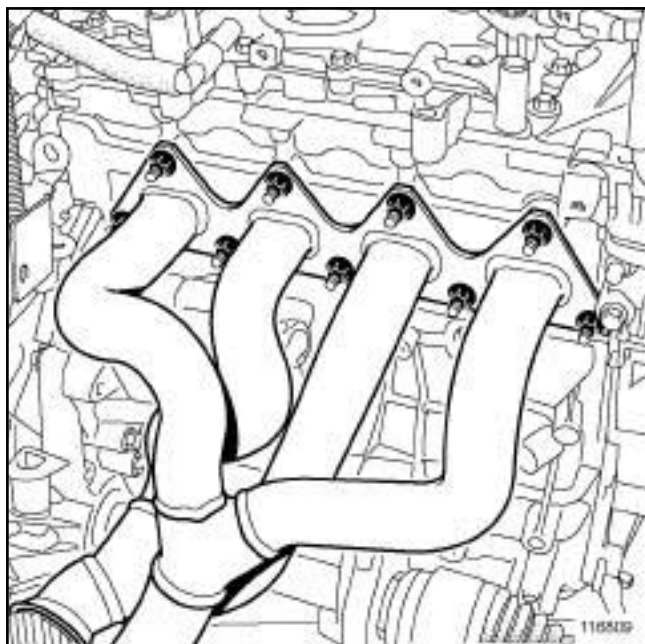
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**),
- the soundproofing unit,
- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery tray).



116804

- ☐ Disconnect the hoses (1) from the heater radiator using the (**Mot. 1448**).

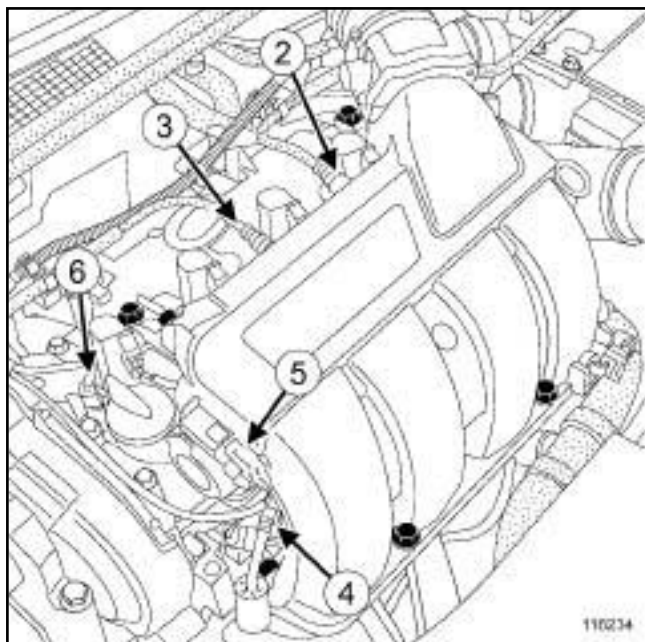
F4R



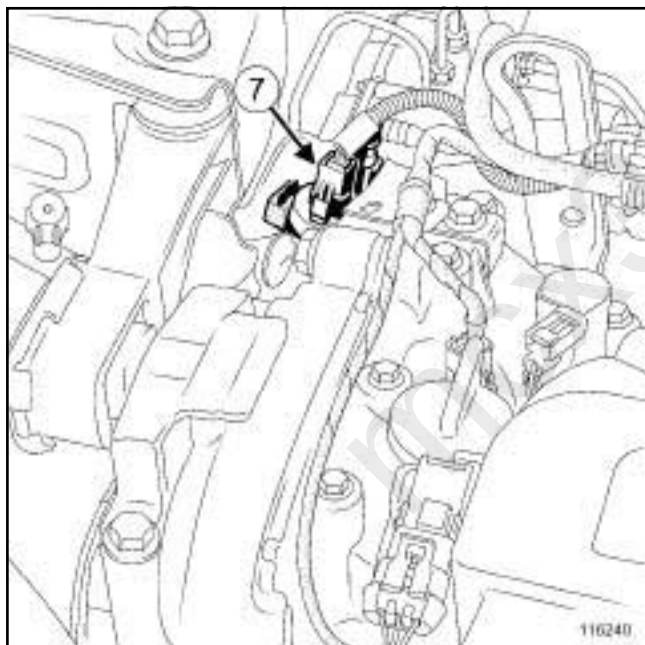
116809

- ❑ Remove the exhaust manifold nuts.

F4R



116234

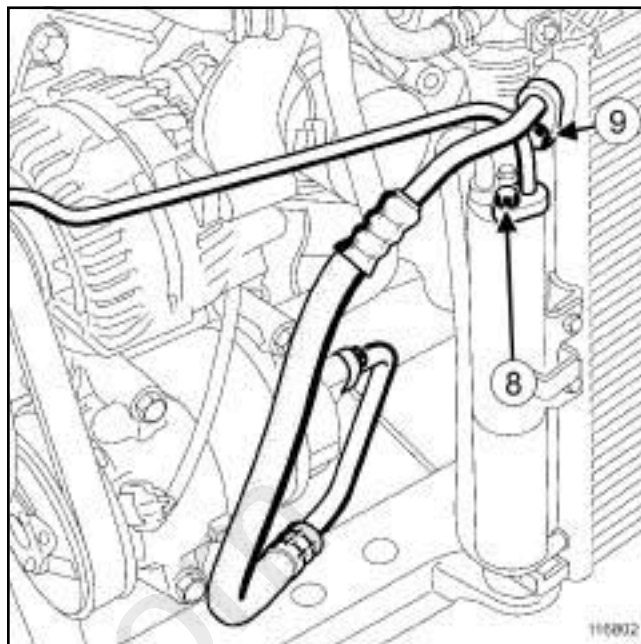


116240

❑ Disconnect:

- the brake servo pipe (2) on the inlet distributor side,
- the petrol vapour rebreather pipe (3) on the inlet distributor side,
- the fuel supply pipe (4) from the injector rail,
- the connector (5) from the inlet air pressure sensor,
- the camshaft dephaser solenoid valve connector (6) ,
- the petrol vapour recirculation solenoid valve connector (7) .

❑ Move the wiring harness to one side.



116802

❑ Remove:

- the bolt (8) from the «expansion valve - condenser» connecting pipe,
- the « compressor - condenser » connecting pipe bolt (9) .

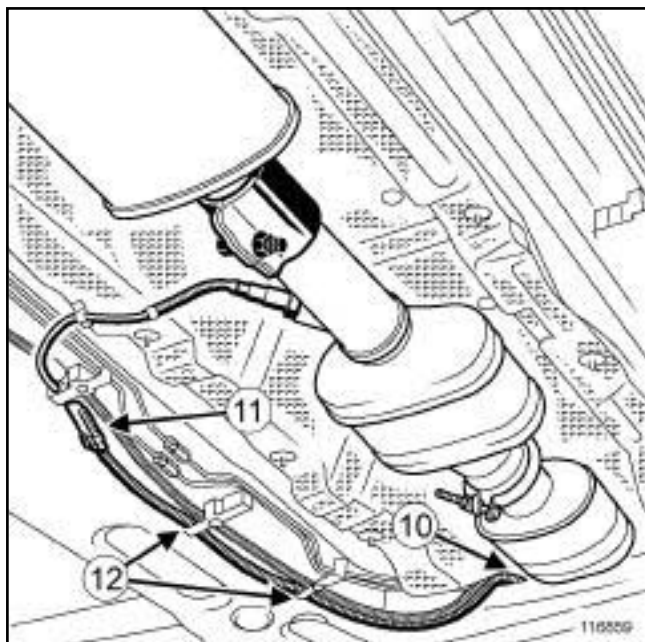
❑ Disconnect:

- the « expansion valve - condenser » connecting pipe on the condenser side,
- the « compressor - condenser » connecting pipe on the condenser side,
- the cooling radiator hose on the cooling radiator using the (Mot. 1448),
- the fan assembly connectors.

❑ Remove:

- the « engine cooling fan - radiator - condenser - expansion bottle » assembly,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) ,
- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).

F4R

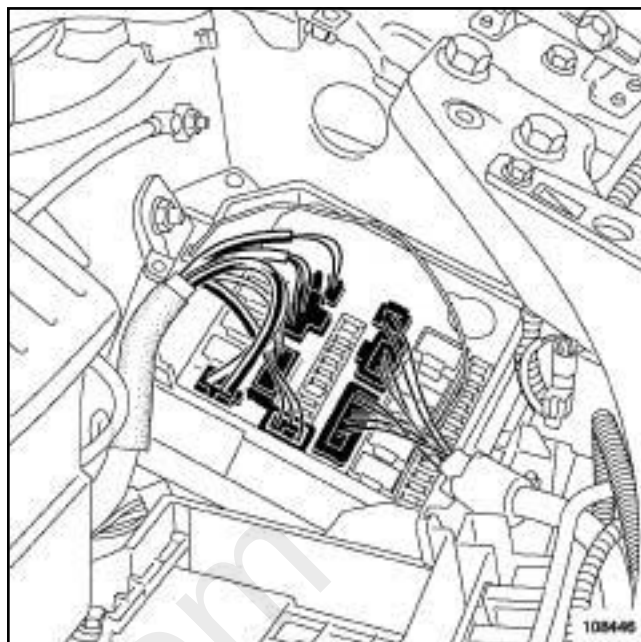


116859

- ❑ Disconnect:
 - the upstream oxygen sensor connector (10) ,
 - the downstream oxygen sensor connector (11) .
- ❑ Unclip the wiring harness at (12) from the downstream oxygen sensor.

Note:

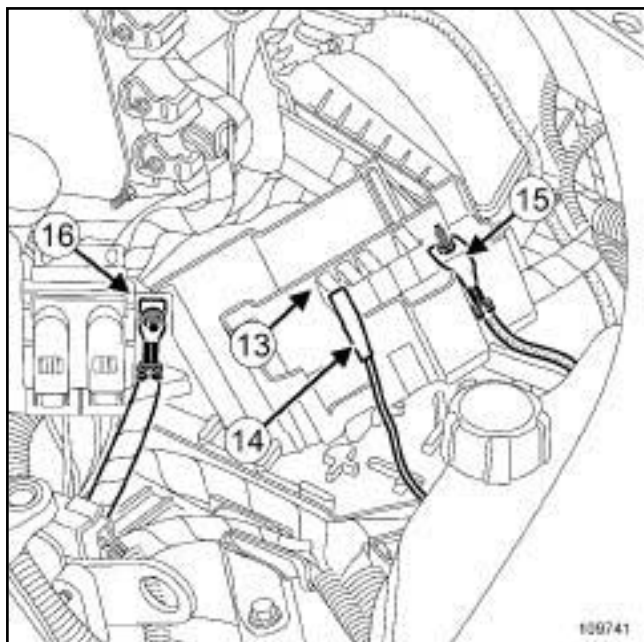
with the wiring harness sitting on the engine, it is necessary to move the heat shields aside when removing the engine.



108446

- ❑ Disconnect:
 - the injection computer connectors,
 - the connectors in the connection unit.

F4R

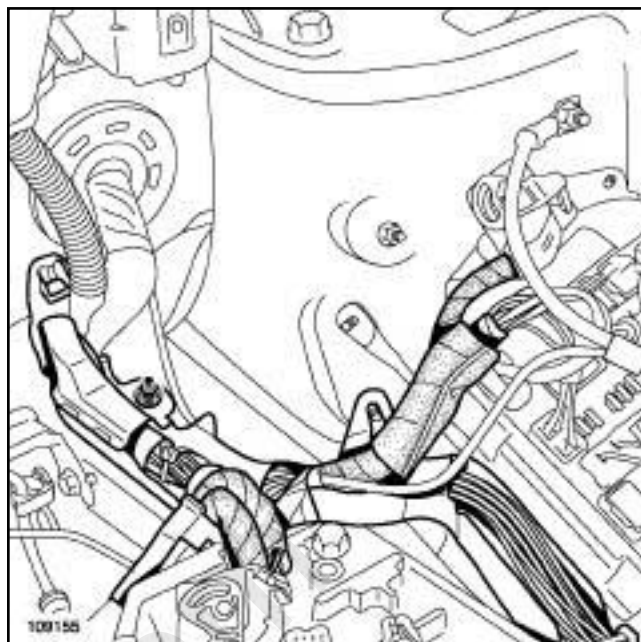


❑ Disconnect:

- the fuse (13) ,
- the fuse holder (14) from the fuse board,
- the supply cable (15) from the fuse board,
- the supply cable (16) from the battery protection fuse box.

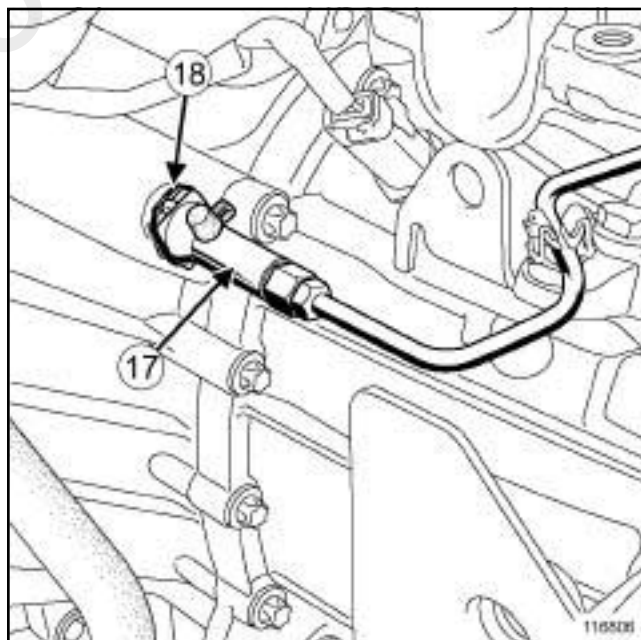
❑ Remove:

- the petrol injection computer,
- the earth nut on the side member,
- the earth nut on the left-hand wheel arch.



- ❑ Cut the adhesive tape in order to move the wiring harness away from its channel.

- ❑ Move the engine wiring away from the channel



- ❑ Disconnect the clutch control duct (17) by pushing the clip (18) and moving it aside.

- ❑ Remove the gearbox controls.

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ❑ Position the (Mot. 1390).

F4R

❑ Remove:

- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,

- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

❑ Move the « engine-gearbox » assembly forward positioned on the **(Mot. 1390)**.

❑ Raise the vehicle using a two-post lift to remove the « engine-gearbox » assembly from the engine compartment.

REFITTING

I - REFITTING PREPARATION OPERATION

❑ For standard engine replacements (see **Standard replacement**) (Technical Note 6027A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

❑ Position the « engine - gearbox » assembly in the engine compartment.

❑ Refit:

- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,

- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

❑ Remove the tool **(Mot. 1390)**.

III - FINAL OPERATION

❑ Connect the clutch control duct.

❑ Bleed the clutch control.

❑ Refit the gearbox controls.

❑ Fit the wiring harness.

❑ Refit:

- the earth nut on the left-hand wheel arch,

- the earth nut on the side member,

- the petrol injection computer.

❑ Connect:

- the injection computer connectors,

- the connectors in the connection unit.

❑ Refit the engine compartment connection unit cover.

❑ Position the engine wiring harness in its channel.

❑ Attach the wiring harness using **ADHESIVE TAPE** on its channel.

❑ Connect:

- the supply cable to the battery protection fuse box,

- the supply cable to the fuse board,

- the fuse holder to the fuse board,

- the fuse .

❑ Pass the downstream oxygen sensor wiring harness behind the heat shield.

❑ Connect:

- the upstream oxygen sensor connector,

- the downstream oxygen sensor connector.

❑ Clip the downstream oxygen sensor wiring harness into place.

F4R

☐ Refit:

- the driveshafts (see **Front left-hand driveshaft: Removal - Refitting**) and (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the « engine cooling fan - radiator - condenser» assembly.

☐ Connect:

- the cooling radiator upper and lower hoses using the (**Mot. 1448**),
- the engine cooling fan assembly connectors,
- the cooling radiator hose to the cooling radiator using the (**Mot. 1448**),
- the « compressor - condenser » connecting pipe on the condenser side,
- the « expansion valve - condenser» connecting pipe on the condenser side.

☐ Refit:

- the bolt (9) on the « compressor - condenser » connecting pipe,
- the bolt (8) of the « expansion valve - condenser » connecting pipe.

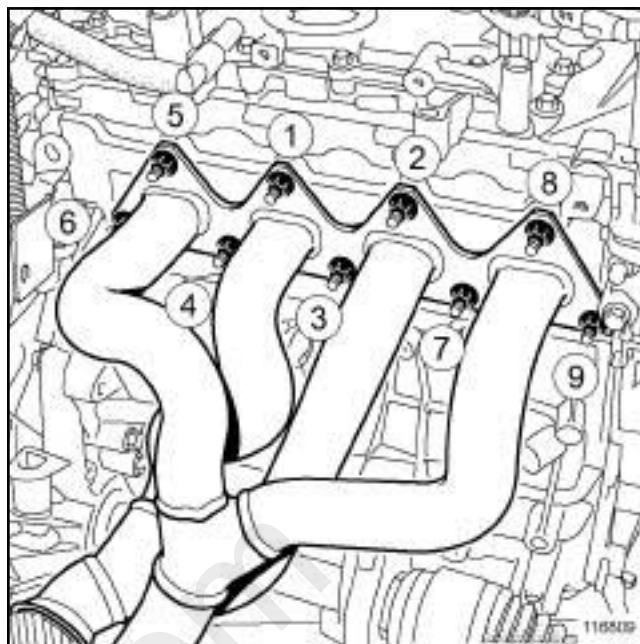
☐ Connect:

- the petrol vapour recirculation solenoid valve connector.
- the camshaft dephaser solenoid valve connector,
- the inlet air pressure sensor connector,
- the fuel supply pipe on the injector rail,
- the petrol vapour rebreather pipe on the inlet distributor side,
- the brake servo pipe on the inlet distributor side

☐ Fit:

- a new exhaust manifold seal on the cylinder head,
- the exhaust manifold on the cylinder head.

☐ Refit the exhaust manifold nuts.



116809

☐ Torque tighten in order the **exhaust manifold nuts (30 N.m)**.

☐ Connect the heating radiator hoses using the (**Mot. 1448**).

☐ Refit:

- the battery tray mounting (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery tray),
- the soundproofing unit,
- the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

☐ Perform the following operations:

- top up the engine oil (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page 10A-13) ,
- fill up the gearbox oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- fill the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,

F4R

- bleed the cooling circuit,
- fill the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).
- ☐ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.
- ☐ Check:
 - that there are no leaks,
 - using the **Diagnostic tool**, that there are no faults stored by the computer, and clear them if necessary.
- ☐ Refit the engine undertray.
- ☐ Carry out a road test to check that the vehicle is in good working order.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

M4R, and TL4

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

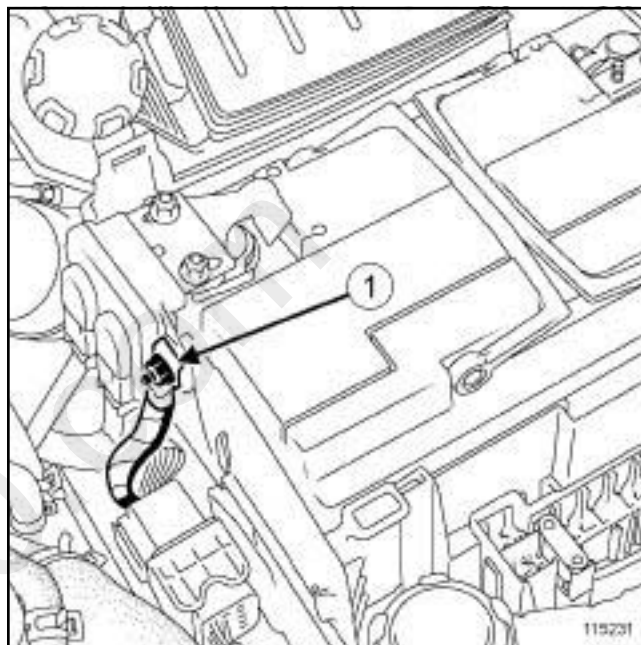
Equipment required
refrigerant charging station

Tightening torques 	
side member earth wiring nuts	8 N.m
manual gearbox earth wiring bolt	21 N.m
Protection and Switching Unit cover bolts	4 N.m
nut of the supply wiring for the power supply fuse unit	8 N.m
exhaust flange bolts	21 N.m
compressor-intermediate pipe connecting pipe bolt on the compressor	8 N.m
dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir	8 N.m
compressor-condenser connecting pipe bolt on the compressor	8 N.m
compressor-condenser connecting pipe bolt on the compressor	8 N.m
air filter box air outlet pipe clips	6 N.m
protective fuse mounting wiring nut	6 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

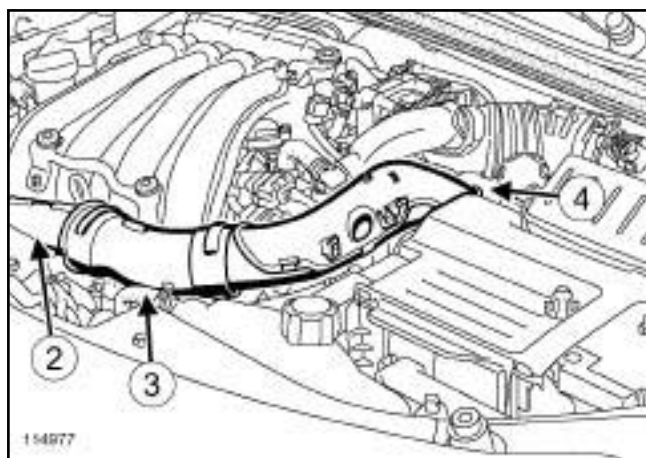
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- ☐ Remove the front engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



115231

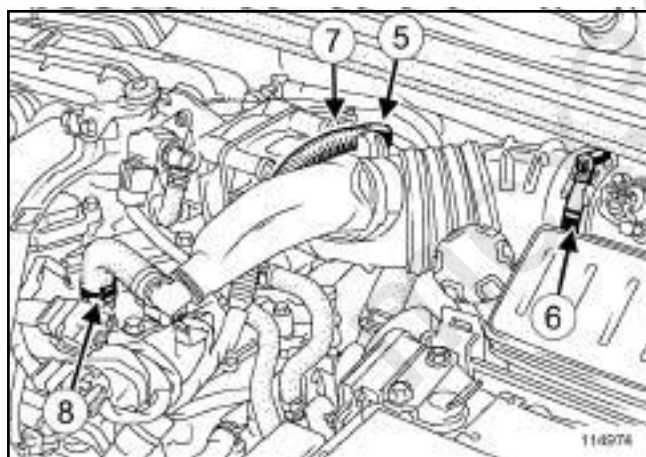
- ☐ Remove:
 - the nut (1) from the protective fuse mounting wiring,
 - the protective fuse mounting wiring,
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery).

M4R, and TL4



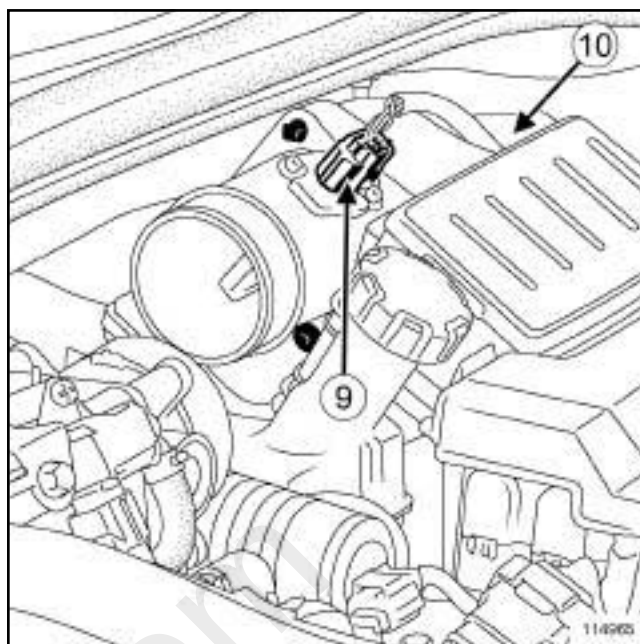
114977

- ❑ Disconnect the air filter unit air inlet pipe:
 - from the front end panel at (2) ,
 - from the air resonator on the front end panel at (3) ,
 - from the air filter unit at (4) .
- ❑ Remove the air pipe at the air filter unit inlet.



114974

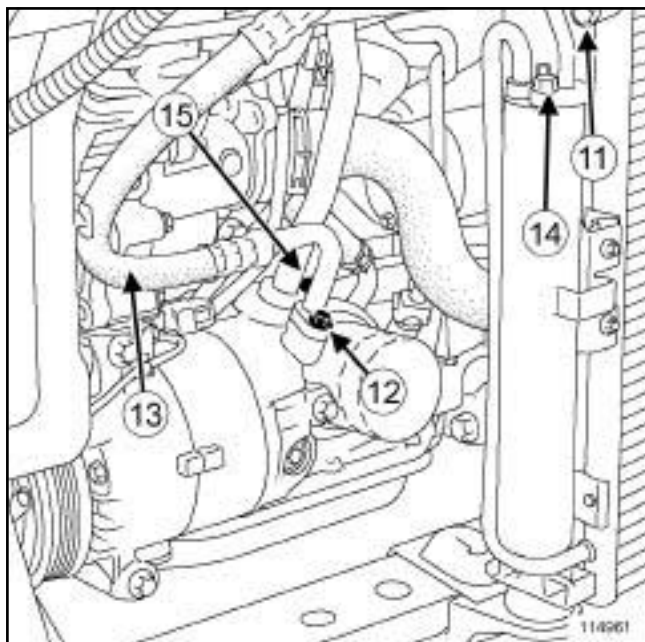
- ❑ Unclip the wiring from the air filter unit air outlet pipe at (5) .
- ❑ Undo the clips on the air filter unit air outlet pipe:
 - on the air flow sensor (6) ,
 - on the motorised throttle valve (7) .
- ❑ Separate the clip (8) of the oil vapour rebreathing hose on the rocker cover using the tool (Mot. 1448).
- ❑ Disconnect the oil vapour rebreathing hose on the rocker cover.
- ❑ Remove the air outlet pipe from the air filter box.



114965

- ❑ Disconnect the air flowmeter connector (9) .
- ❑ Unclip the air flowmeter connector wiring (10) .
- ❑ Remove the engine undertray.
- ❑ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).
 - the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- ❑ Remove:
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) .

M4R, and TL4



114961

☐ Remove:

- the bolt (11) from the compressor-condenser connecting pipe, on the condenser,
 - the bolt (12) from the compressor-condenser connecting pipe, on the compressor,
 - the compressor-condenser connecting pipe (13) ,
 - the bolt (14) from the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Disconnect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Remove the bolt (15) from the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Disconnect the compressor-intermediate pipe connecting pipe on the compressor.

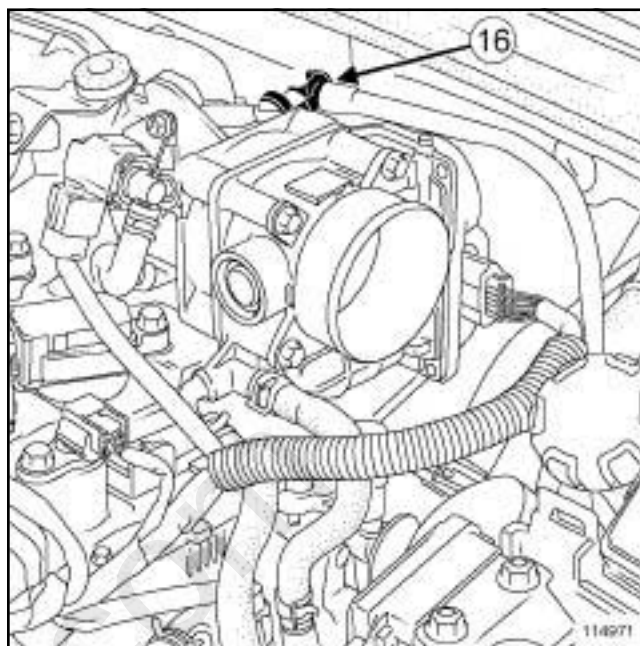
WARNING

Plugs must be fitted on the hoses to prevent moisture from entering the system.

☐ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),

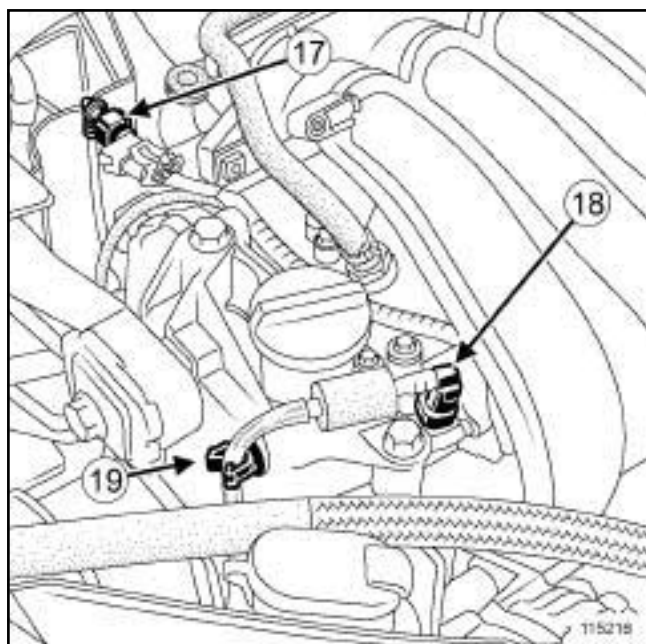
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).



114971

- ☐ Disconnect the brake servo pipe union (16) from the inlet distributor.

M4R, and TL4



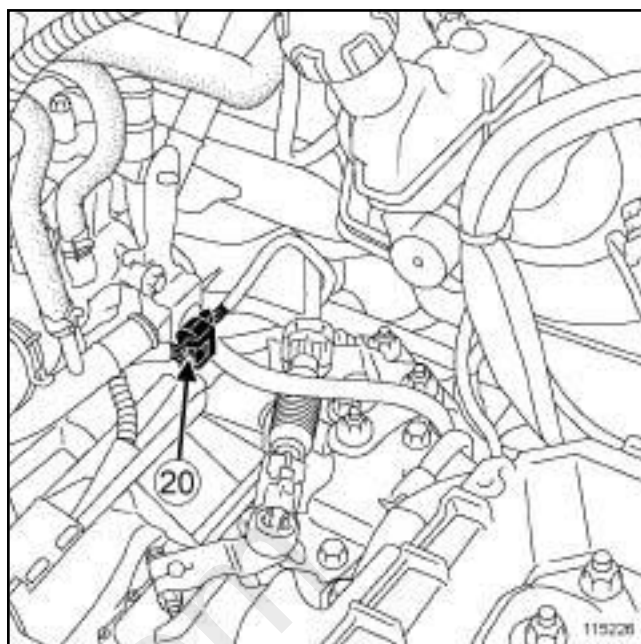
☐ Disconnect:

- the petrol vapour rebreather pipe (17) ,
- the fuel supply pipe (18) .

WARNING

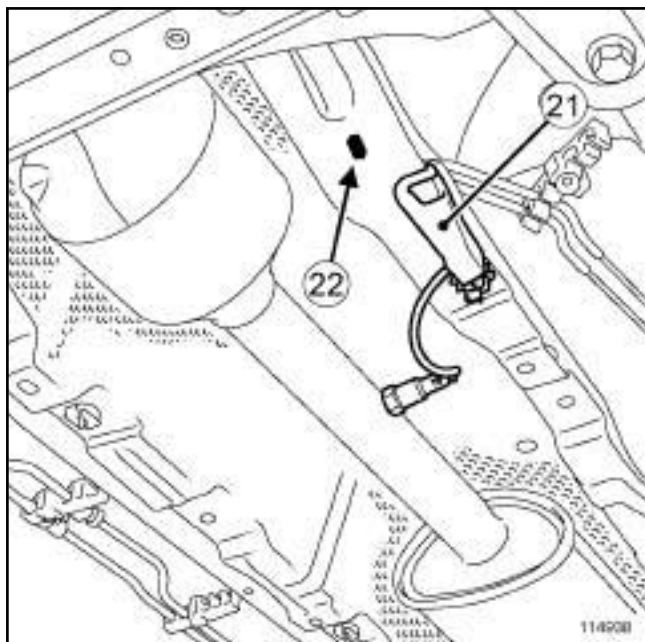
Protect sensitive areas from fuel spillage.

- ☐ Unclip the fuel supply pipe at (19) .



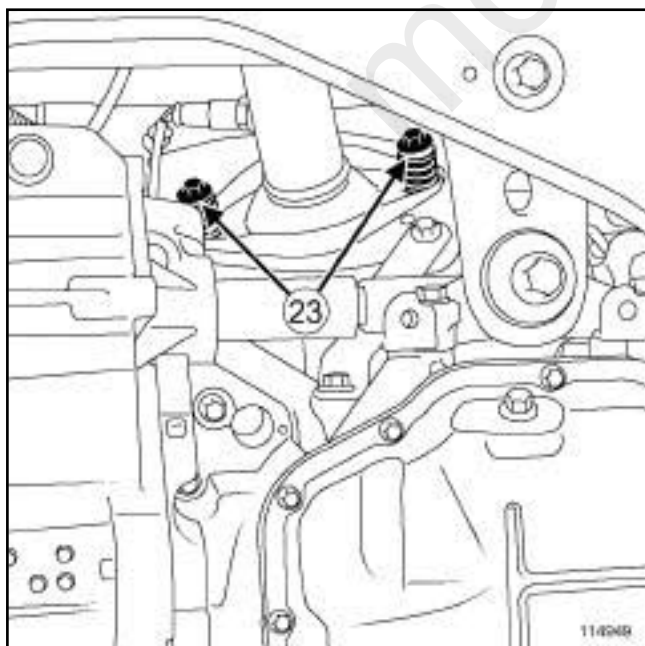
- ☐ Disconnect the upstream oxygen sensor connector (20) .
- ☐ Move the connector away from the upstream oxygen sensor.

M4R, and TL4



114938

- ☐ Remove the plastic cover (21) .
- ☐ Detach the downstream oxygen sensor connector at (22) .
- ☐ Disconnect the downstream oxygen sensor connector.
- ☐ Unclip the downstream oxygen sensor wiring from the power-assisted steering box.
- ☐ Feed the downstream oxygen sensor wiring into the engine compartment.

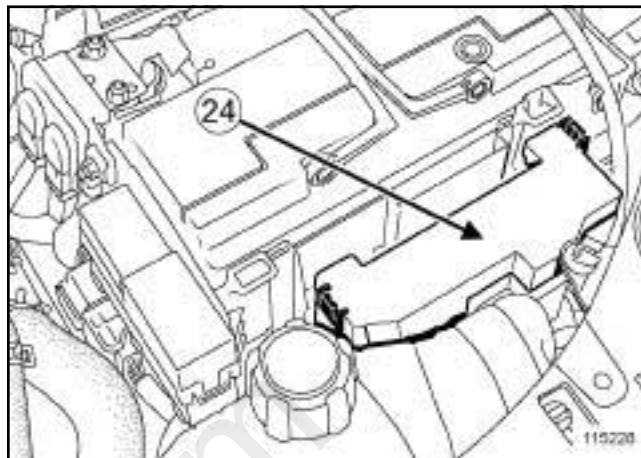


114949

- ☐ Remove:
 - the bolts (23) from the exhaust flange,

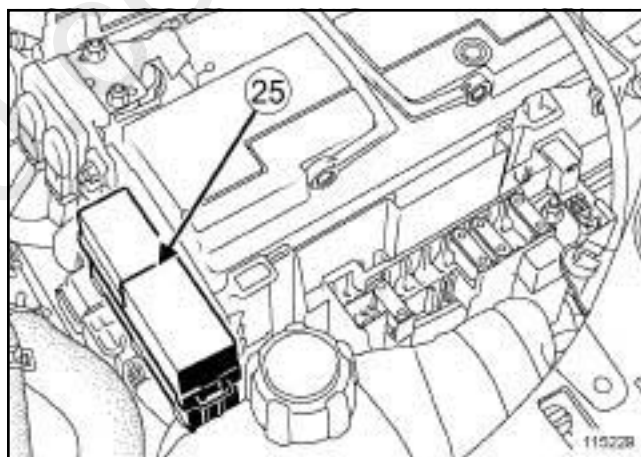
- the exhaust flange seal.

- ☐ Remove the rear suspended engine mounting (see 19D, Engine mounting, Lower engine tie-bar: Removal - Refitting, page 19D-13) .



115228

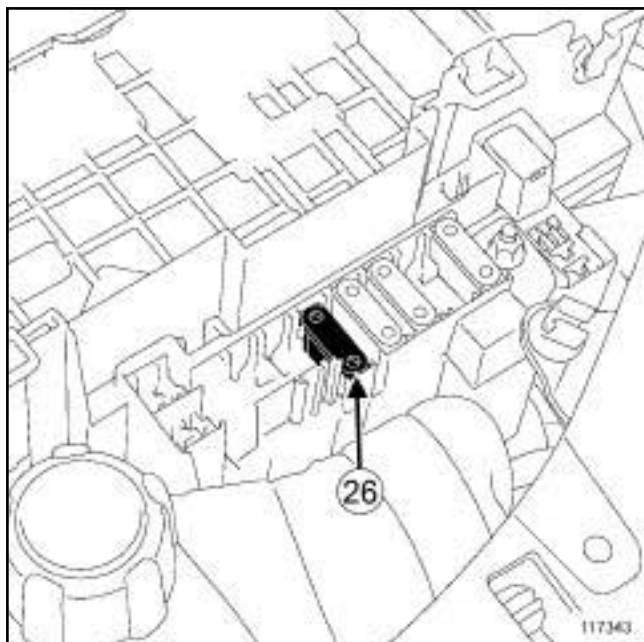
- ☐ Remove the cover (24) from power supply fuse unit.



115229

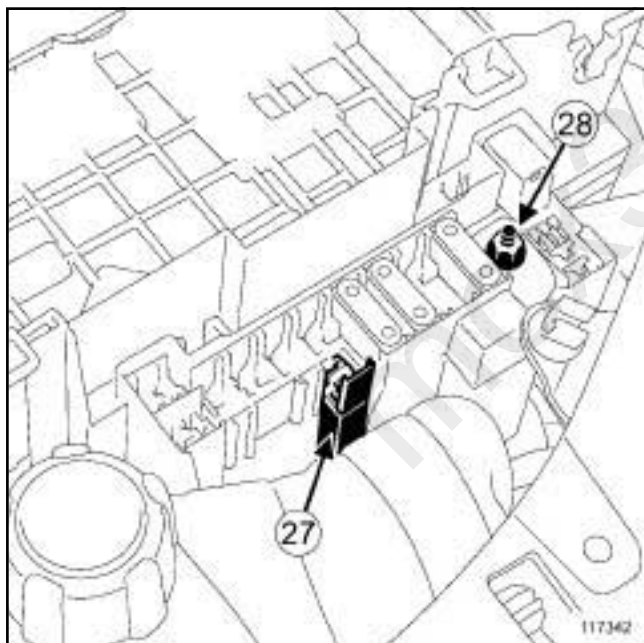
- ☐ Unclip the optional relay unit (25) .

M4R, and TL4



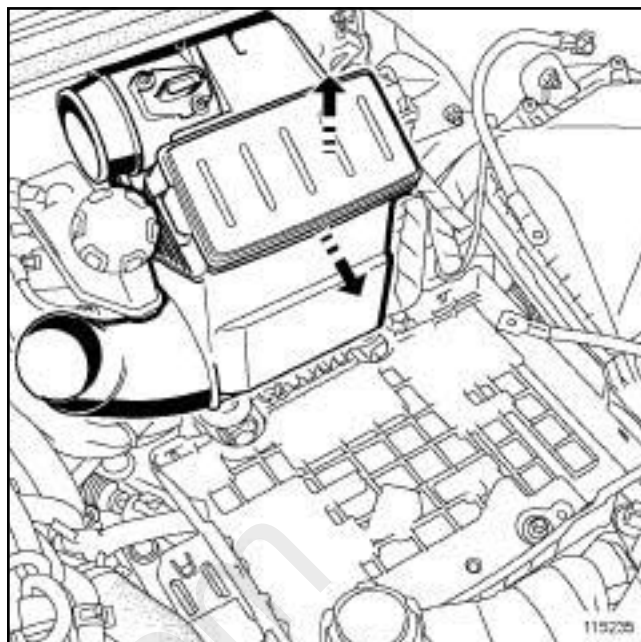
117343

- ❑ Remove the fuse (26) .



117342

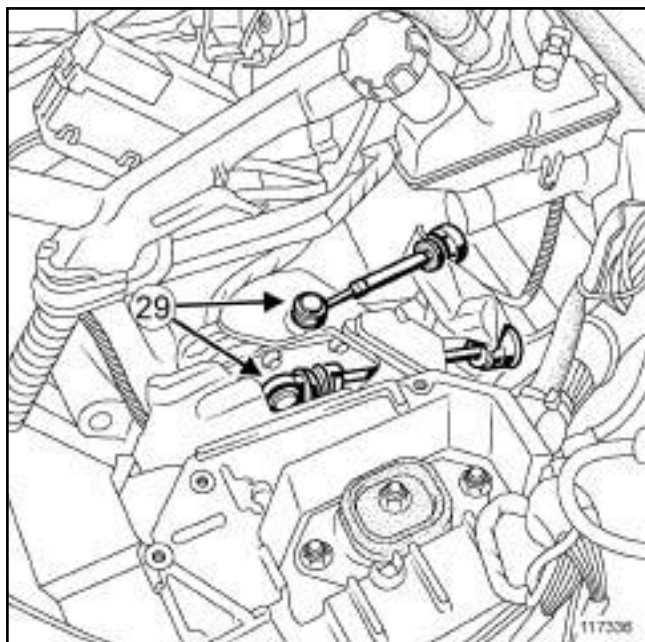
- ❑ Unclip the fuse holder (27) .
- ❑ Remove the nut (28) from the supply wiring of the power supply fuse unit.
- ❑ Disconnect the supply wiring from the power supply fuse unit.
- ❑ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).



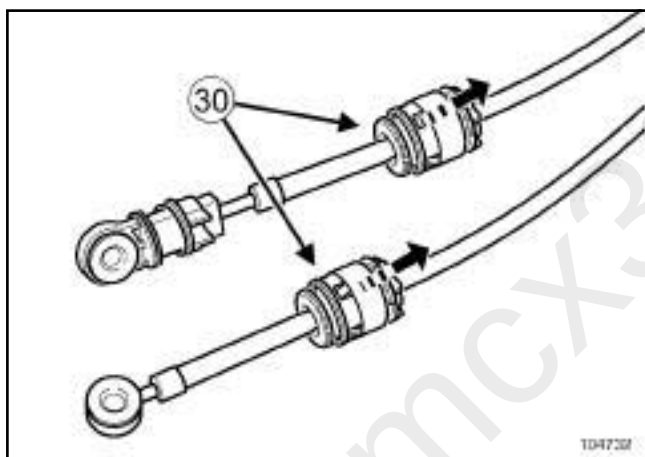
115235

- ❑ Remove the air filter unit in the direction of the arrows.

M4R, and TL4



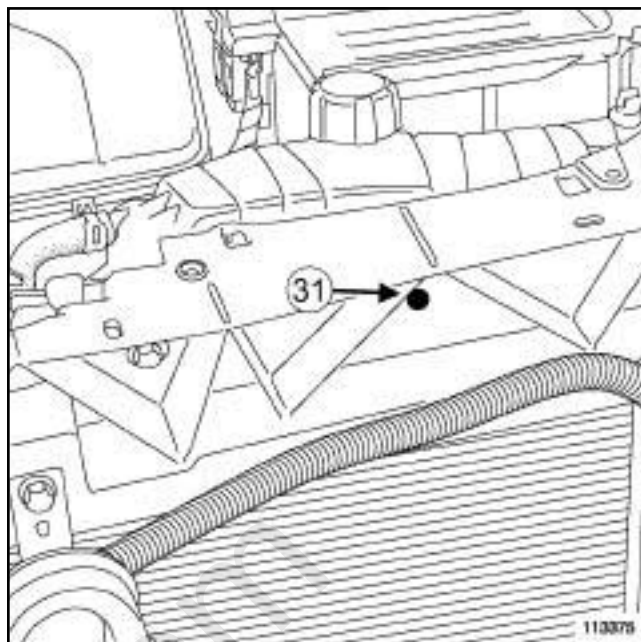
117336



104732

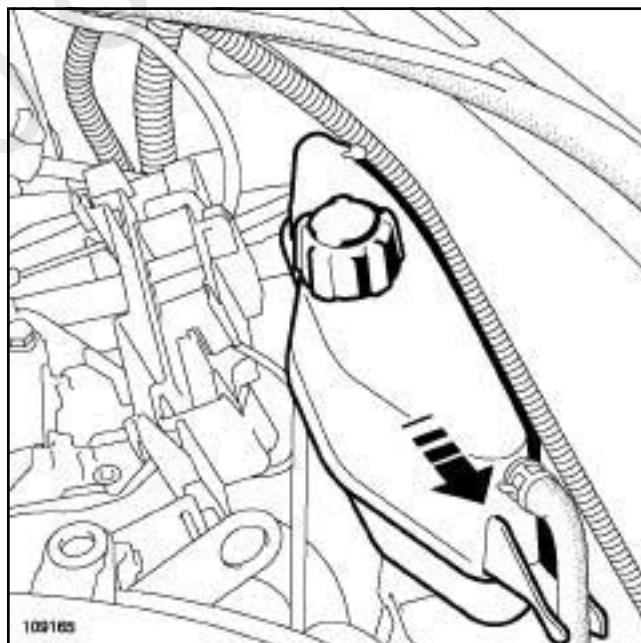
□ Unclip:

- the control cables (29) on the gearbox using an open-ended spanner,
- the control cable sleeve stops (30) on the gearbox.



113375

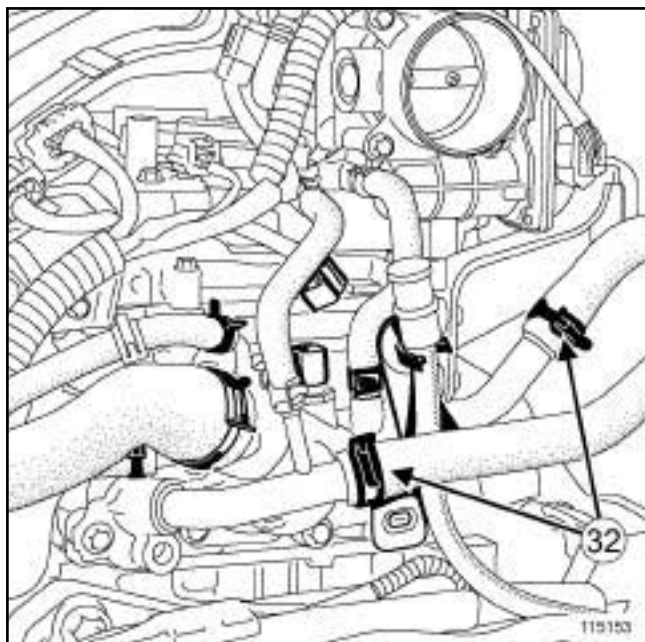
- Remove the clip (31) from the expansion bottle.



109165

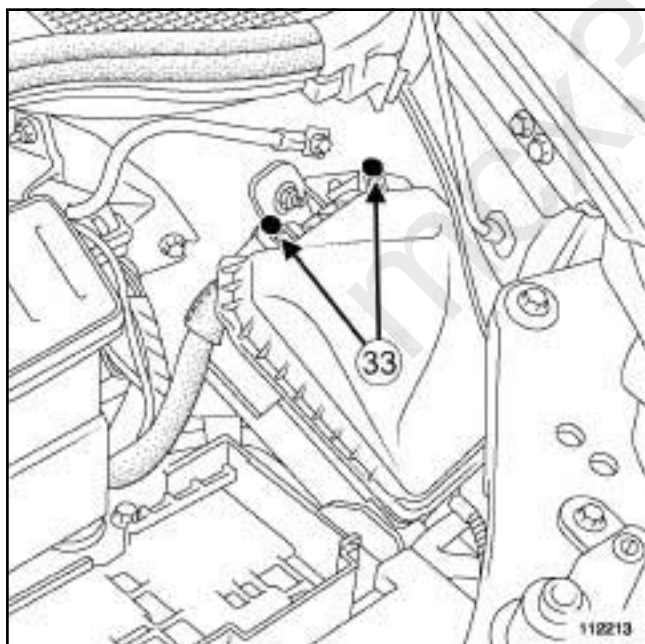
- Move the expansion bottle away from its housing in the direction of the arrow.

M4R, and TL4



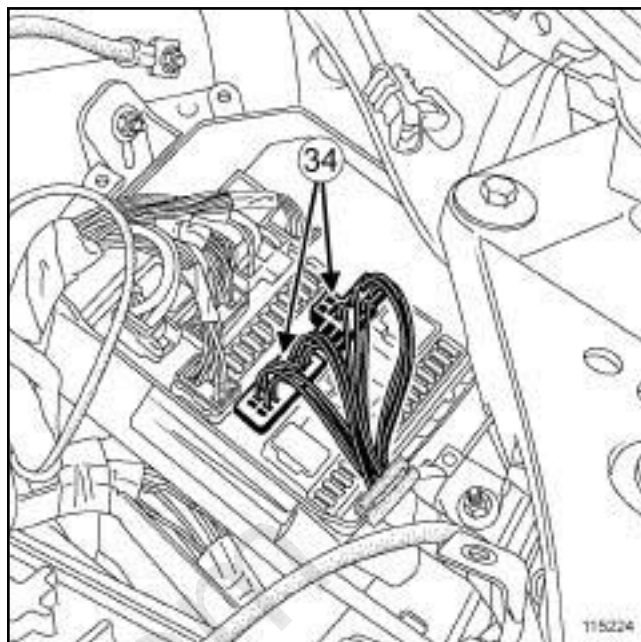
115153

- ❑ Separate the clips (32) on the passenger compartment heater hoses using the tool (Mot. 1448).
- ❑ Disconnect the passenger compartment heater hoses.



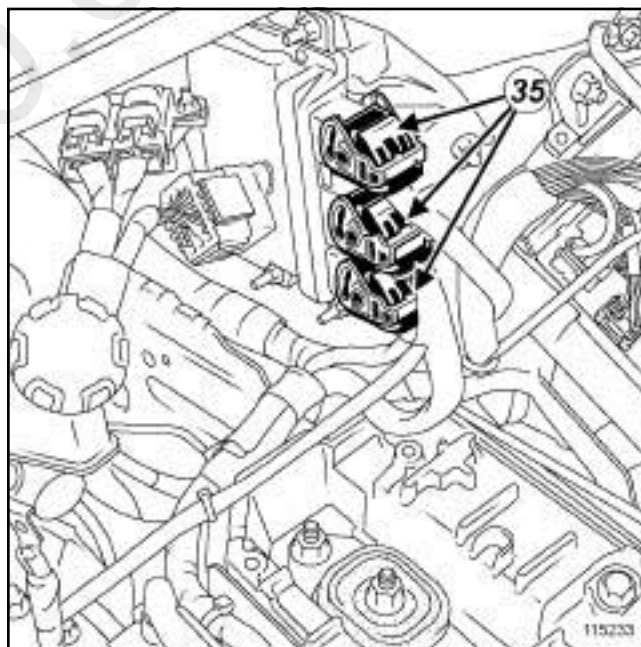
112213

- ❑ Remove:
 - the bolts (33) from the Protection and Switching Unit cover,
 - the Protection and Switching Unit cover.



115224

- ❑ Disconnect the engine wiring connectors (34) from the Protection and Switching Unit.



115233

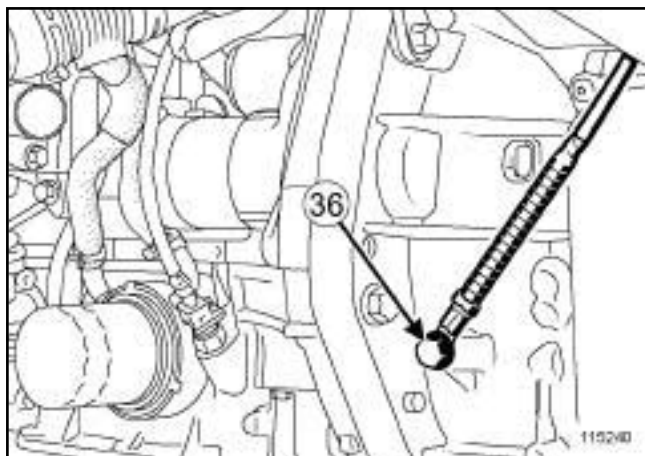
- ❑ Disconnect the injection computer connectors (35) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

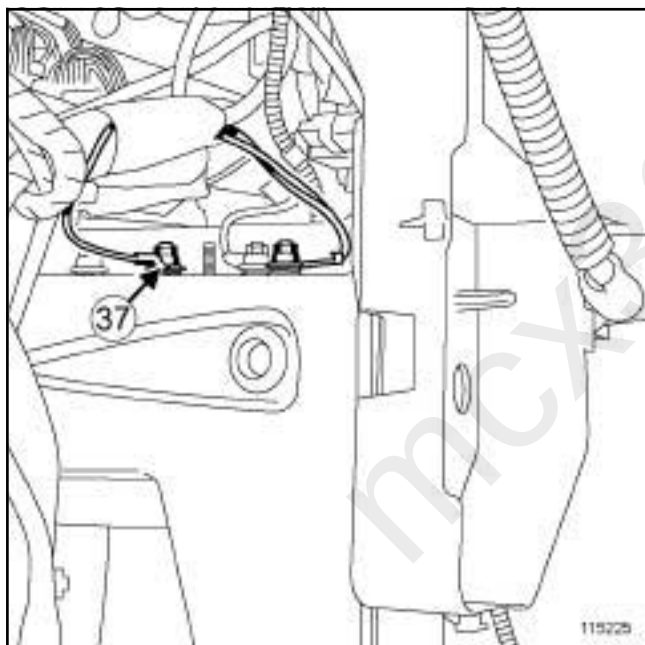
10A

M4R, and TL4

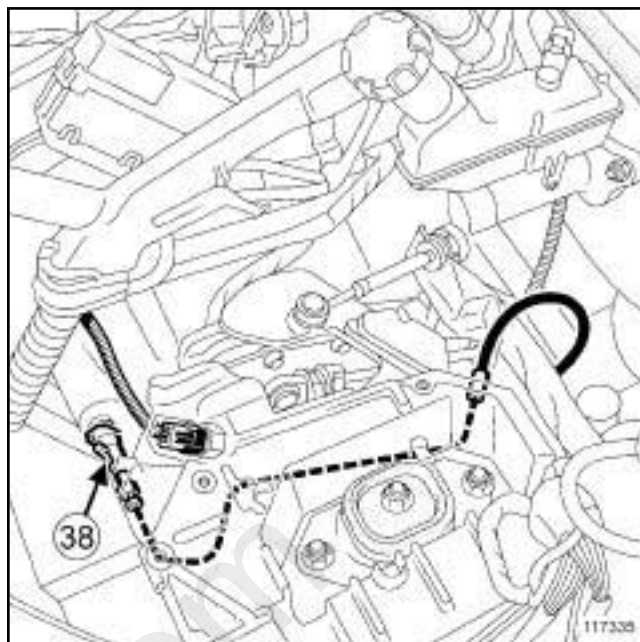


❑ Remove:

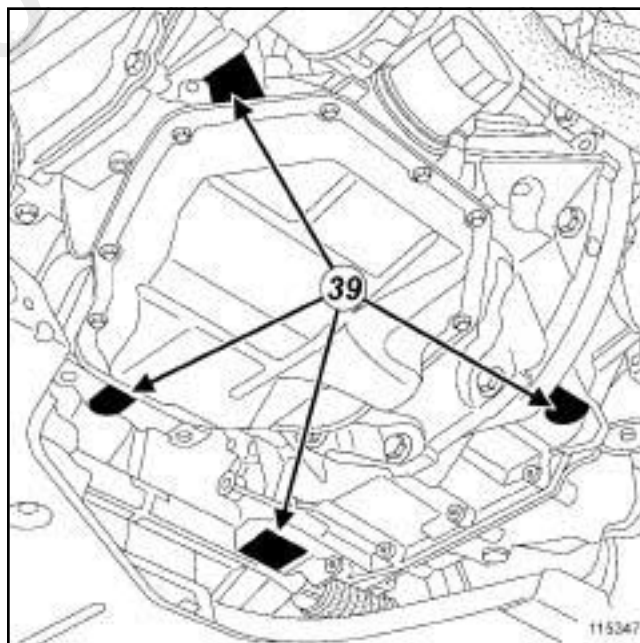
- the bolt (36) from the manual gearbox earth wiring.
- the manual gearbox earth wiring.



- ❑ Remove the nut (37) from the side member earth wiring.
- ❑ Move the earth wiring away from the side member.



- ❑ Push on the clip of the hydraulic clutch control pipe.
- ❑ Disconnect the hydraulic clutch control pipe (38) .
- ❑ Unclip the hydraulic clutch control pipe.

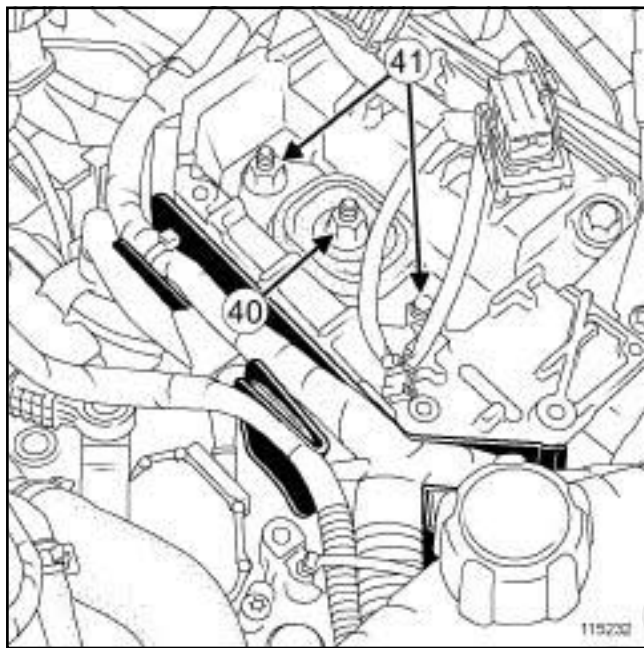


- ❑ Support the (**Mot. 1390**) on the « engine - gearbox » assembly marks.

M4R, and TL4

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ❑ Remove the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .



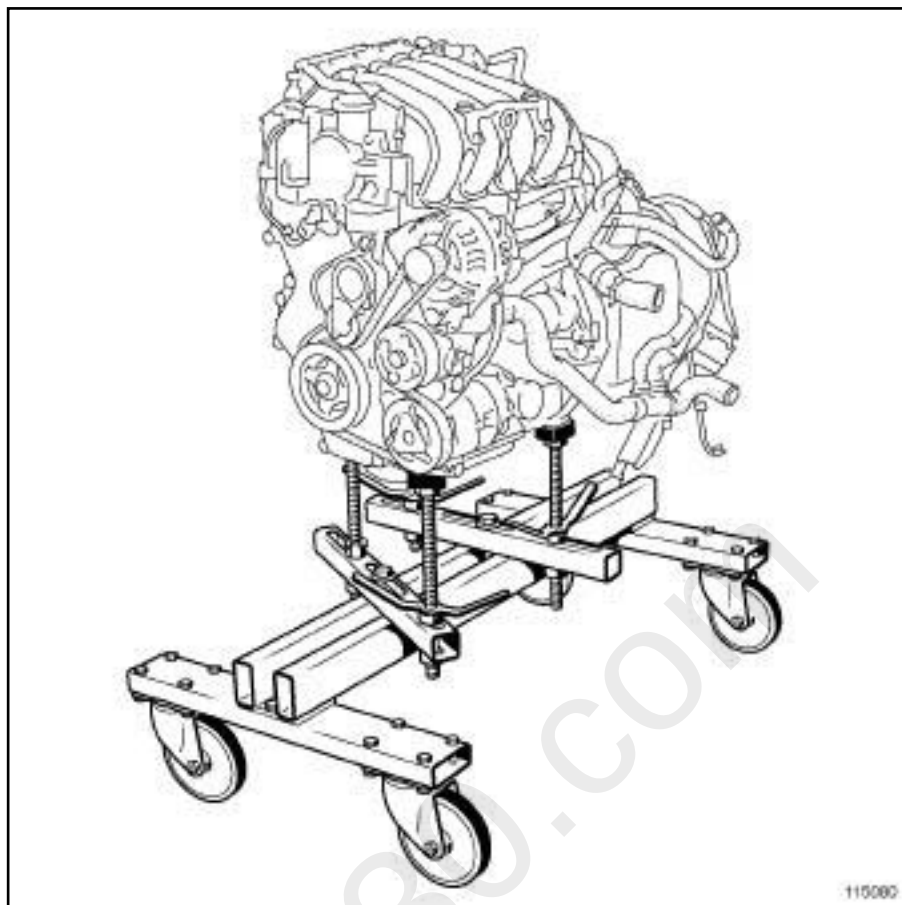
115232

- ❑ Separate the neck of the electrical wiring from the gearbox support.
- ❑ Remove:
 - the left-hand suspended engine mounting shaft nut (**40**) ,
 - the nuts (**41**) from the left-hand suspended engine mounting rubber pad,
 - the left-hand suspended engine mounting rubber pad.

Note:

Tap the bolt with a copper hammer, if necessary.

M4R, and TL4



115080

- ❑ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

- ❑ For standard engine replacements (see **Engine: New replacement**) (Technical Note 6020A, 10A, Engine and peripherals).
- ❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose (10, 08,02,21)**

II - REFITTING OPERATION FOR PART CONCERNED

- ❑ Position the « engine - gearbox » assembly in the body.
- ❑ Refit:
 - the left-hand suspended engine mounting rubber pad,
 - the nuts for the left-hand suspended engine mounting rubber pad,

- the left-hand suspended engine mounting shaft nut.

- ❑ Torque tighten (see **19D, Engine mounting, Suspended engine mounting: Tightening torque**, page **19D-1**) .
- ❑ Refit the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .
- ❑ Lift the (**Mot. 1390**) from the « engine - gearbox » assembly.

III - FINAL OPERATION

- ❑ Connect the hydraulic clutch control pipe.
- ❑ Clip on the hydraulic clutch control pipe.
- ❑ Fit the side member earth wiring.
- ❑ Refit the side member earth wiring nuts.
- ❑ Torque tighten the **side member earth wiring nuts (8 N.m)**.
- ❑ Refit:
 - the manual gearbox earth wiring,

ENGINE AND CYLINDER BLOCK ASSEMBLY

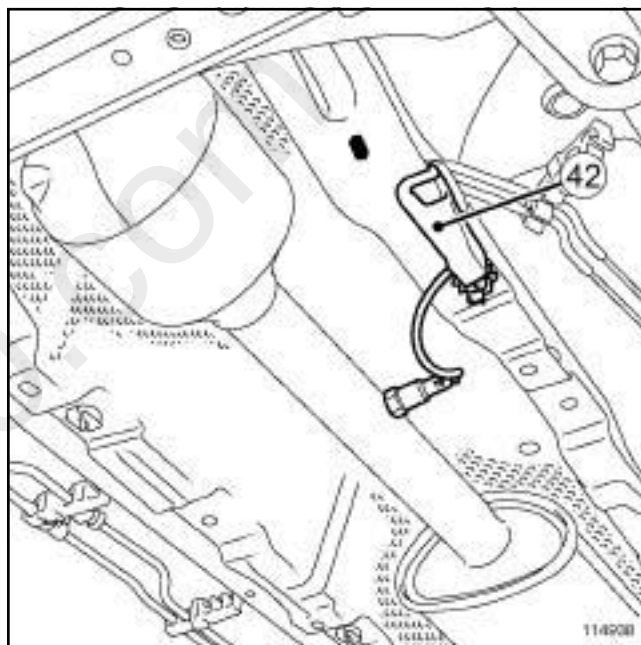
Engine - gearbox assembly: Removal - Refitting

10A

M4R, and TL4

- the bolt to the manual gearbox earth wiring.
- ☐ Torque tighten the **manual gearbox earth wiring bolt (21 N.m)**.
- ☐ Connect:
 - the injection computer connectors,
 - the engine wiring connectors to the Protection and Switching Unit.
- ☐ Refit:
 - the Protection and Switching Unit cover,
 - the bolts on the Protection and Switching Unit cover.
- ☐ Torque tighten the **Protection and Switching Unit cover bolts (4 N.m)**.
- ☐ Connect the passenger compartment heater hoses.
- ☐ Fit:
 - the passenger compartment heater hose clips,
 - the expansion bottle into its housing.
- ☐ Refit the clip to the expansion bottle.
- ☐ Clip:
 - the control cables onto the gearbox using an open-ended spanner,
 - the gearbox control cable sleeve stops onto the gearbox.
- ☐ Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the air filter unit.
- ☐ Connect the air flowmeter connector.
- ☐ Clip on the air flowmeter connector wiring.
- ☐ Connect the supply wiring of the power supply fuse unit.
- ☐ Refit the nut of the supply wiring for the power supply fuse unit.
- ☐ Torque tighten the **nut of the supply wiring for the power supply fuse unit (8 N.m)**.
- ☐ Clip in the fuse holder.
- ☐ Refit:
 - the fuse,
 - the cover of the power supply fuse unit.
- ☐ Clip on the optional relay unit.
- ☐ Refit the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) .

- ☐ Tighten to torque the (see **19D, Engine mounting, Suspended engine mounting: Tightening torque**, page 19D-1)
- ☐ Refit:
 - a new exhaust flange seal,
 - the exhaust flange bolts.
- ☐ Torque tighten the **exhaust flange bolts (21 N.m)**.
- ☐ Clip the downstream oxygen sensor wiring onto the power-assisted steering box.
- ☐ Connect the downstream oxygen sensor connector.
- ☐ Clip the downstream oxygen sensor connector.

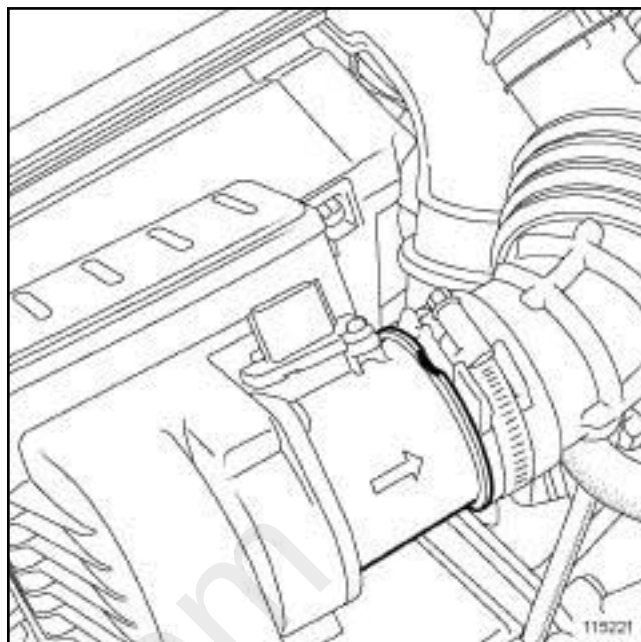


114938

- ☐ Refit the plastic cover (42) .
- ☐ Connect:
 - the upstream oxygen sensor connector,
 - the brake servo pipe to the brake servo,
 - the petrol vapour rebreathing pipe,
 - the fuel supply pipe.
- ☐ Clip on the fuel supply pipe.
- ☐ Refit:
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,

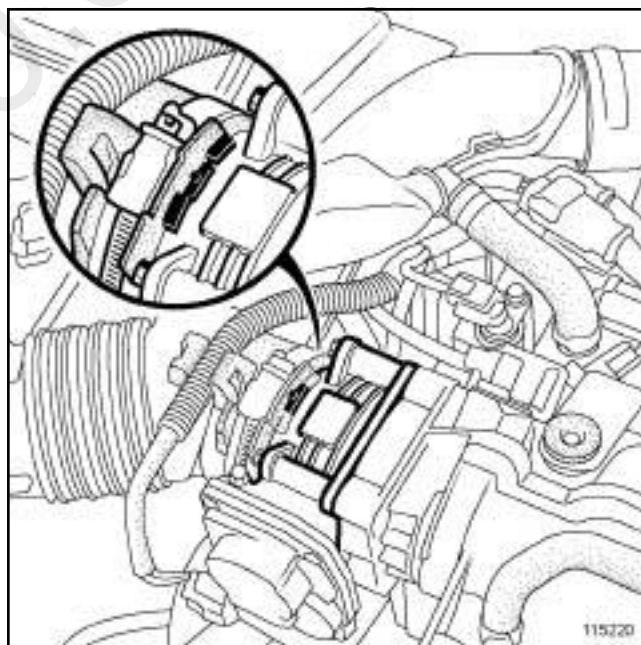
M4R, and TL4

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the air conditioning pipes,
- the air conditioning pipe bolts.
- ☐ Connect the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Refit the bolt to the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Torque tighten the **compressor-intermediate pipe connecting pipe bolt on the compressor (8 N.m)**.
- ☐ Connect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Refit the dehydrator reservoir-expansion valve connecting pipe bolt on the dehydrator reservoir.
- ☐ Torque tighten the **dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir (8 N.m)**.
- ☐ Refit:
 - the compressor-condenser connecting pipe,
 - the condenser-compressor connecting pipe bolt on the compressor,
 - the compressor-condenser connecting pipe bolt on the condenser.
- ☐ Tighten to torque:
 - the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**,
 - the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**.
- ☐ Refit:
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-10**),
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
 - the headlights (see **Headlight: Removal - Refitting**) (80B, Headlights),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



115221

- ☐ Refit the air filter unit air outlet pipe on the air flow-meter, taking care to follow the markings for fitting.



115220

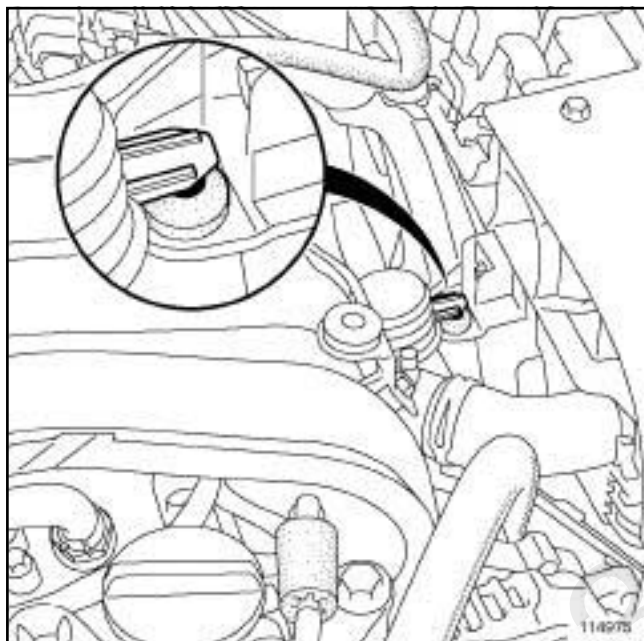
- ☐ Refit the air filter unit air outlet pipe on the motorised throttle valve, taking care to follow the markings for fitting.
- ☐ Connect the oil vapour rebreathing hose on the rocker cover.
- ☐ Fit the oil vapour rebreathing hose clip onto the rocker cover using the tool (**Mot. 1448**).
- ☐ Torque tighten the **air filter box air outlet pipe clips (6 N.m)**.

M4R, and TL4

☐ Refit:

- the battery (see **Battery: Removal - Refitting**) (80A, Battery),
- the protective fuse mounting wiring,
- the protective fuse mounting cable nut.

☐ Torque tighten the **protective fuse mounting wiring nut (6 N.m)**.



114975

- ☐ Before refitting the air filter unit air inlet pipe, check that the upper mounting of the air resonator is correctly clipped on the front end panel.
- ☐ Refit the air filter unit air inlet pipe.
- ☐ Connect the air filter unit air inlet pipe:
 - to the front end panel,
 - on the air resonator on the front end panel,
 - on the air filter box.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Perform the following operations:
 - fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
 - fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning),
 - fill and bleed the cooling circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - bleed the clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component controls).

☐ Refit:

- the engine cover,
- the engine undertray.

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

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JA5

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

Equipment required
refrigerant charging station

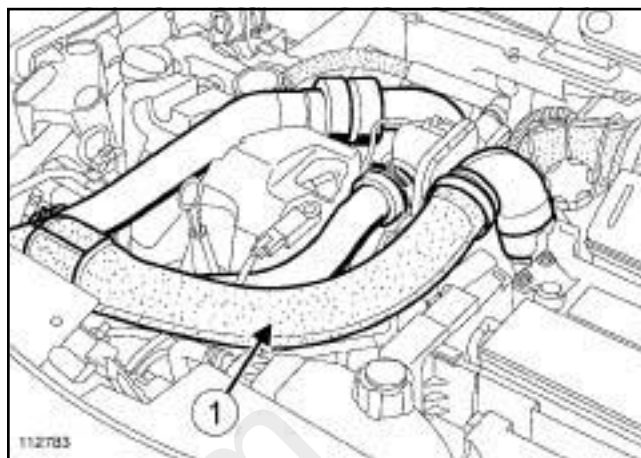
Tightening torques 	
side member earth wiring nuts	8 N.m
Protection and Switching Unit cover bolts	4 N.m
air filter unit air outlet pipe clip, turbocharger side, on the air filter unit air outlet pipe, turbocharger side	5.5 N.m
intercooler air outlet pipe clip	5.5 N.m
supply wiring nut of the power supply fuse unit	8 N.m
exhaust flange bolts	21 N.m
compressor-intermediate pipe connecting pipe bolt on the compressor	8 N.m
dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir	8 N.m
compressor-condenser connecting pipe bolt on the compressor	8 N.m
compressor-condenser connecting pipe bolt on the condenser	8 N.m
protective fuse mounting wiring nut	6 N.m

REMOVAL

I - REMOVAL PREPARATION OPERATION

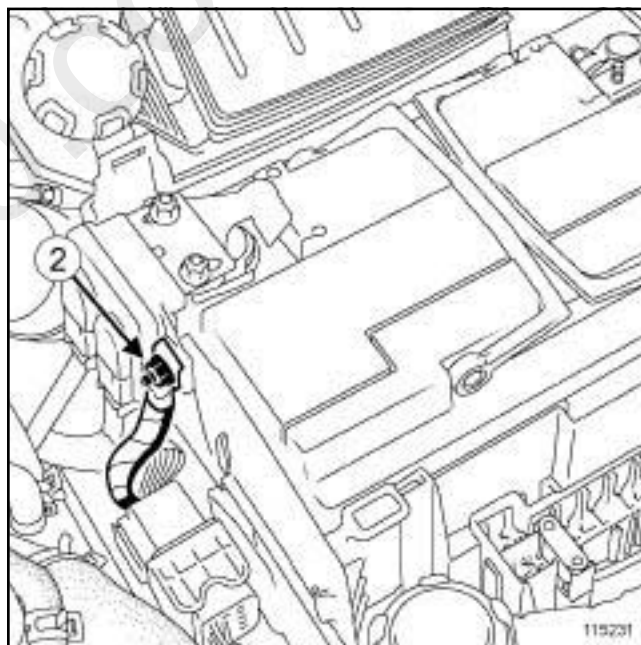
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).

- ☐ Remove the front engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).



112783

- ☐ Remove the air pipe at the air filter unit inlet (1) .



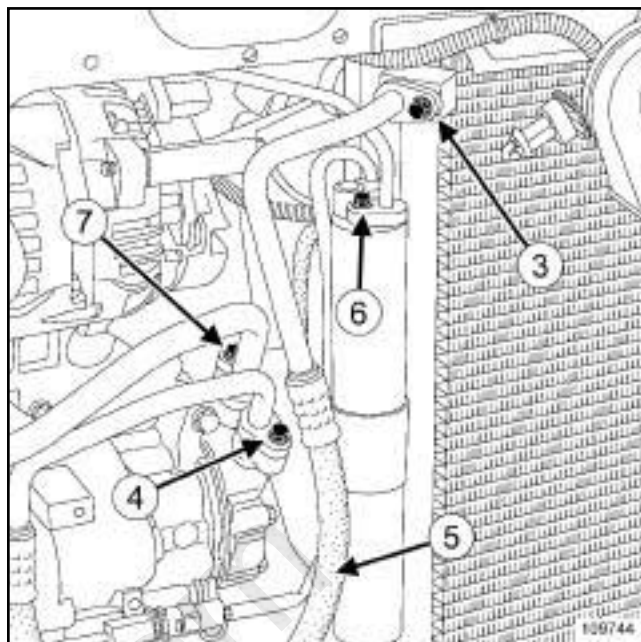
115231

- ☐ Remove the nut (2) from the protective fuse mounting wiring.
- ☐ Move the protective fuse mounting wiring to one side.
- ☐ Remove:
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the engine undertray.

- ☐ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,

K9K, and JA5

- the sequential gearbox,
 - the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- ☐ Remove:
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page **12B-21**) ,
 - the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**) .



109744

- ☐ Remove:
- the bolt (3) from the compressor-condenser connecting pipe, on the condenser,
 - the bolt (4) from the compressor-condenser connecting pipe, on the compressor,
 - the compressor-condenser connecting pipe (5) ,
 - the bolt (6) from the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Disconnect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Remove the bolt (7) from the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Disconnect the compressor-intermediate pipe connecting pipe on the compressor.

WARNING

Plugs must be fitted on the hoses to prevent moisture from entering the system.

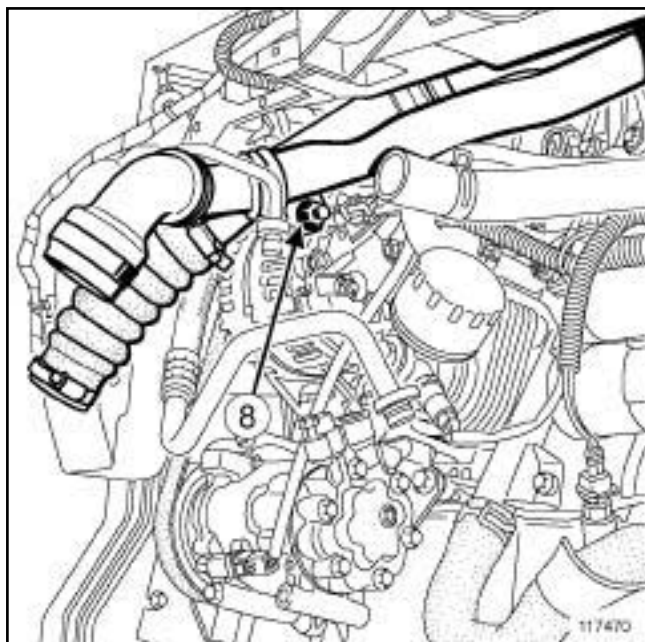
- ☐ Remove:
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

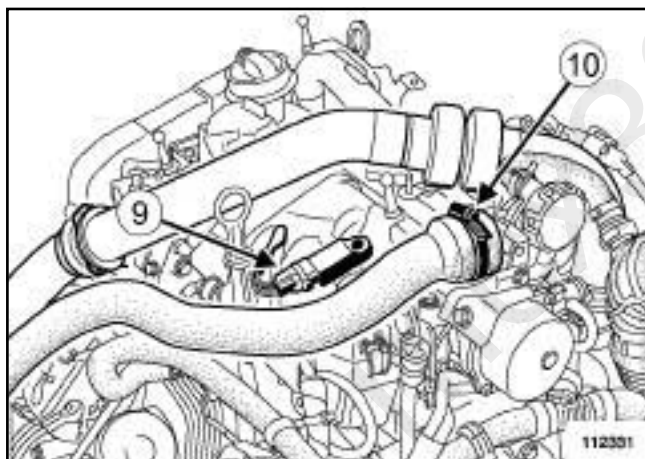
10A

K9K, and JA5



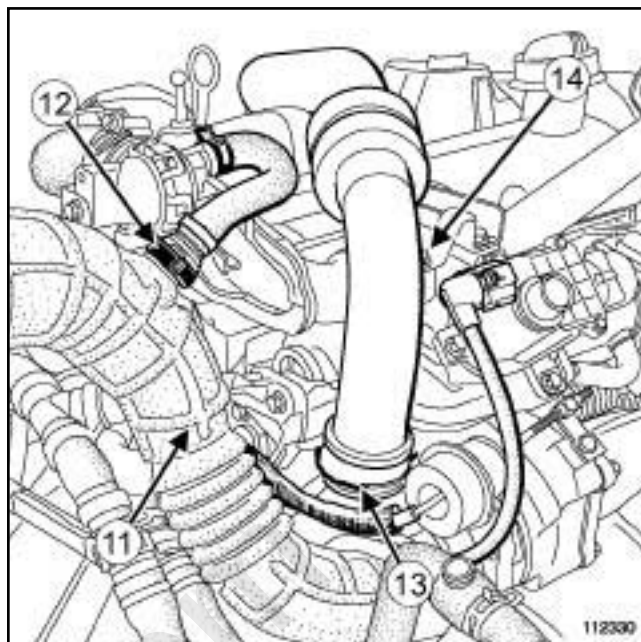
117470

- ❑ Remove the nut (8) from intercooler air inlet and outlet pipes.



112331

- ❑ Disconnect the connector (9) from the inlet air pressure sensor.
- ❑ Loosen the clip (10) on the intercooler air outlet pipe.
- ❑ Remove the intercooler air outlet pipe.



112330

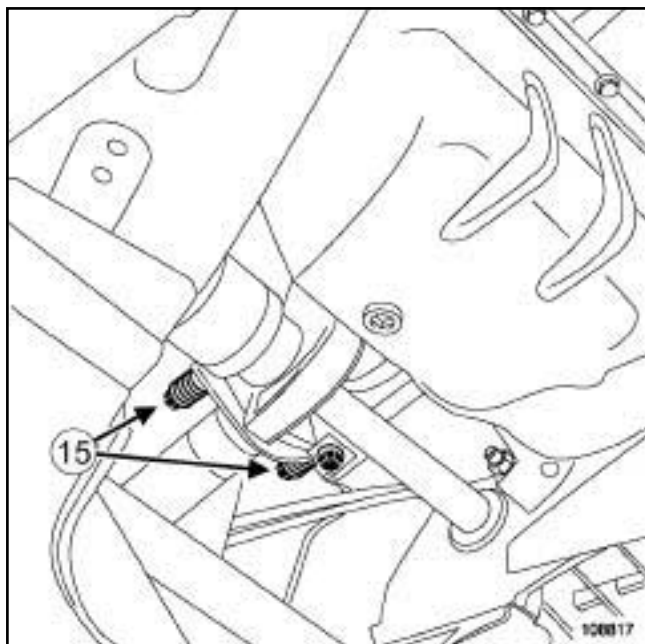
- ❑ Undo the clip of the air filter unit air outlet pipe at the turbocharger side.
- ❑ Disconnect:
 - the air filter unit air outlet pipe (11) on the turbocharger side,
 - the oil rebreathing pipe (12) on the air filter unit air outlet pipe, on the turbocharger side.
- ❑ Remove:
 - the clip (13) of the turbocharger air outlet pipe,
 - the bolt (14) from the turbocharger air outlet pipe,
 - the turbocharger air outlet pipe.
- ❑ Disconnect the union from the brake servo pipe on the vacuum pump side.
- ❑ Remove:
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

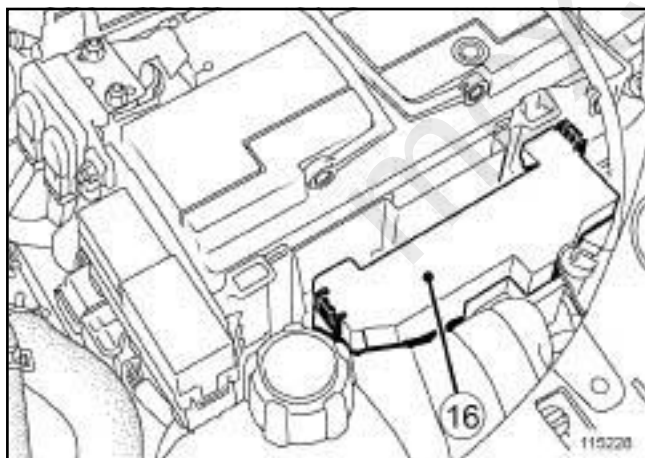
K9K, and JA5



108817

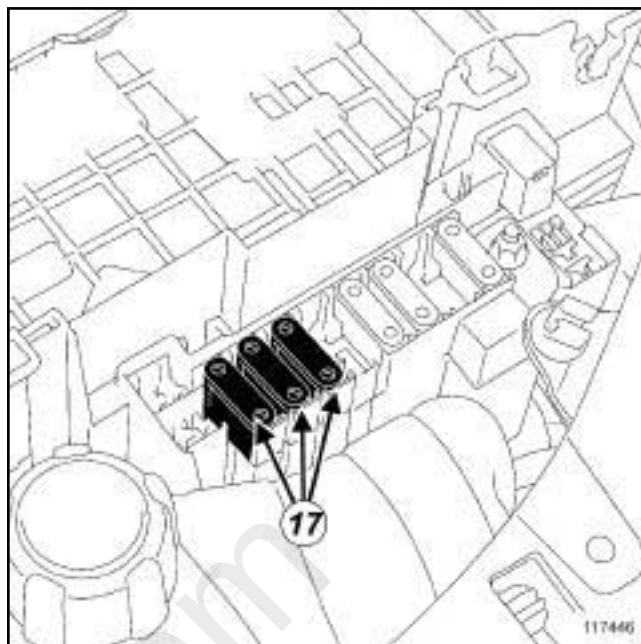
❑ Remove:

- the bolts (15) from the exhaust flange,
- the exhaust bracket gasket,
- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) .



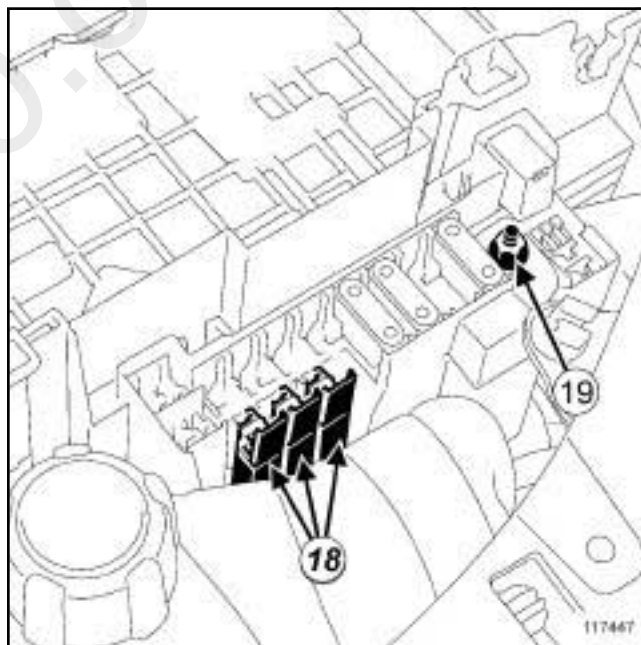
115228

- ❑ Remove the cover (16) from the power supply fuse unit.



117446

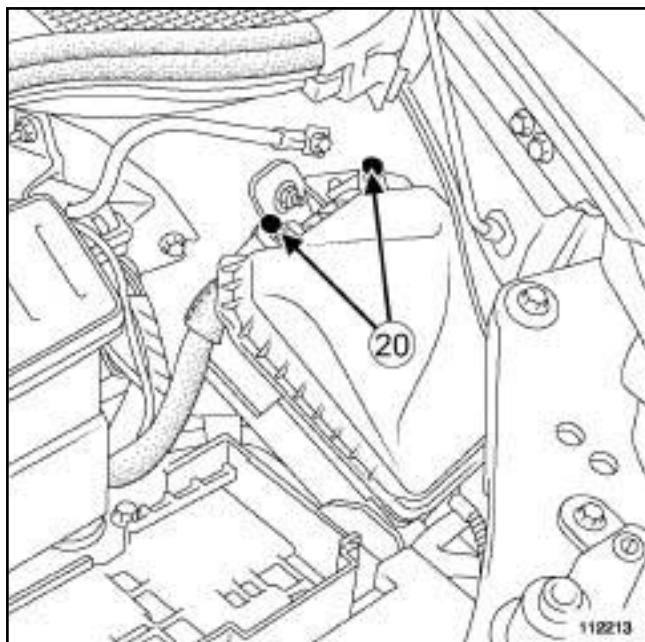
- ❑ Remove the fuses (17) .



117447

- ❑ Unclip the fuse holder (18) .
- ❑ Remove the nut (19) from the supply wiring of the power supply fuse unit.
- ❑ Disconnect the supply wiring from the power supply fuse unit.
- ❑ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

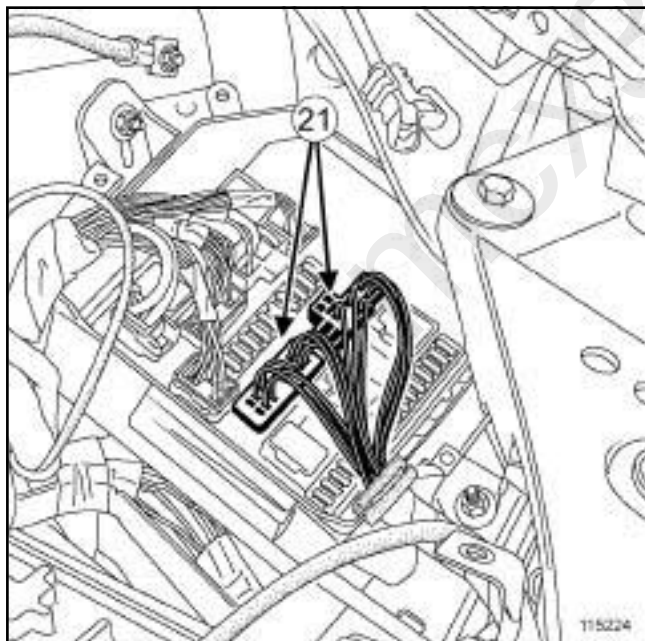
K9K, and JA5



112213

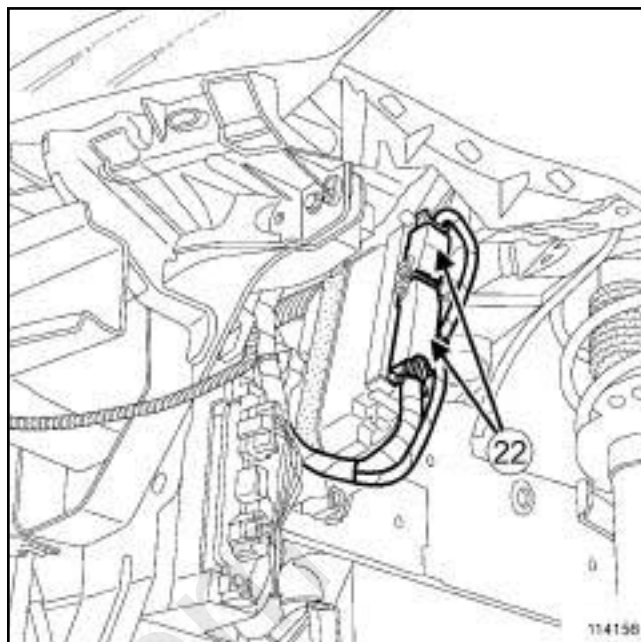
❑ Remove:

- the bolts (20) from the Protection and Switching Unit cover,
- the Protection and Switching Unit cover.



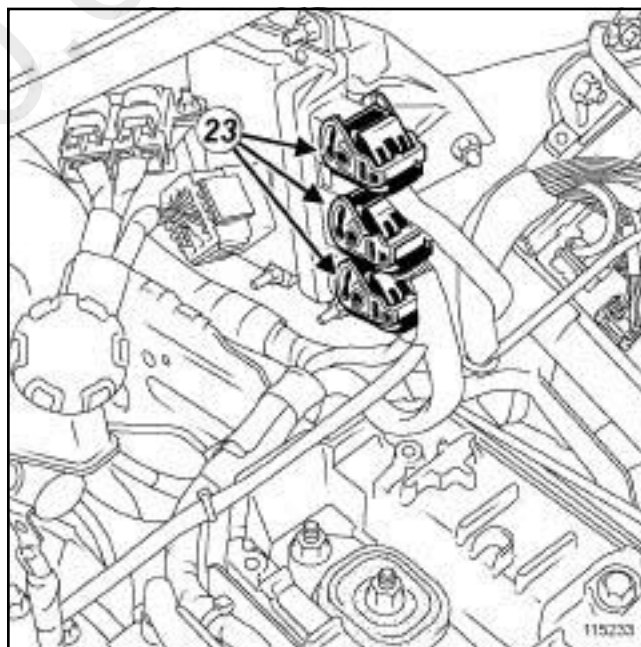
115224

- ❑ Disconnect the engine wiring connectors (21) from the Protection and Switching Unit.



114156

- ❑ Disconnect the connectors (22) from the sequential gearbox computer.



115233

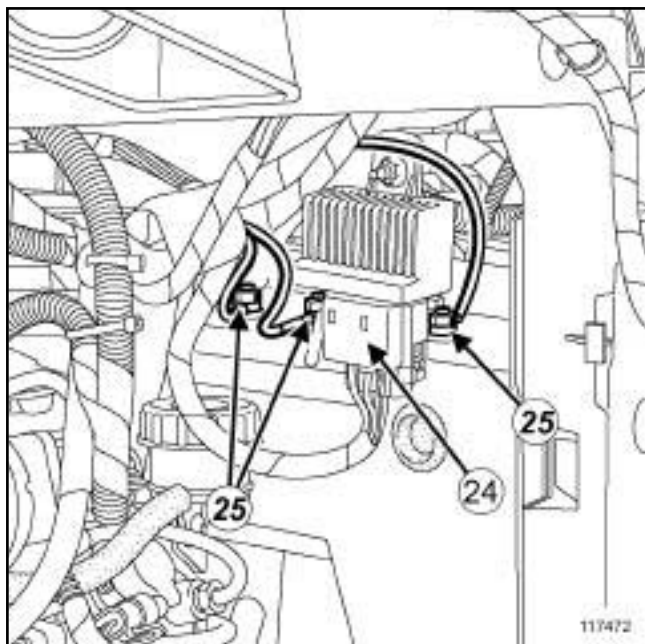
- ❑ Disconnect the injection computer connectors (23) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

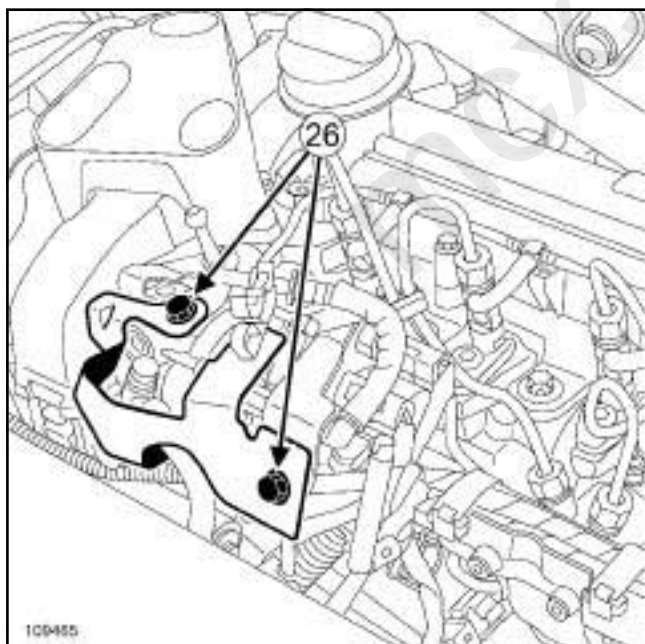
10A

K9K, and JA5



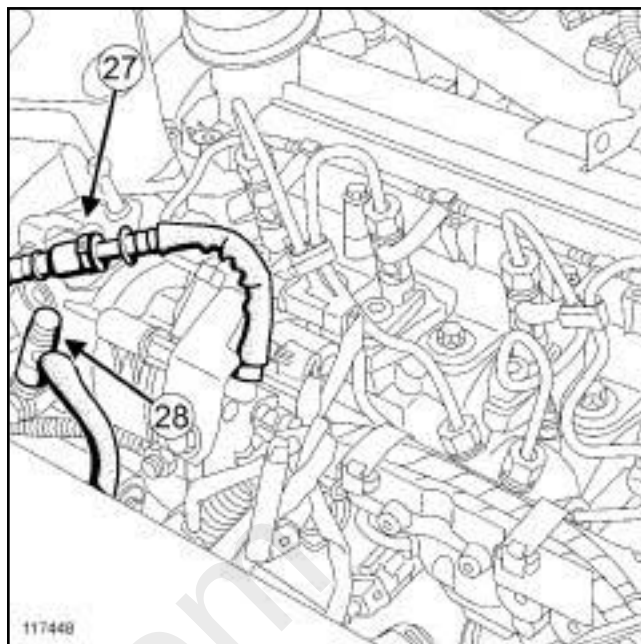
117472

- ☐ Disconnect the pre-postheating unit connector (24) .
- ☐ Remove the nuts (25) from the side member earth wiring.
- ☐ Move the earth wiring away from the side member.



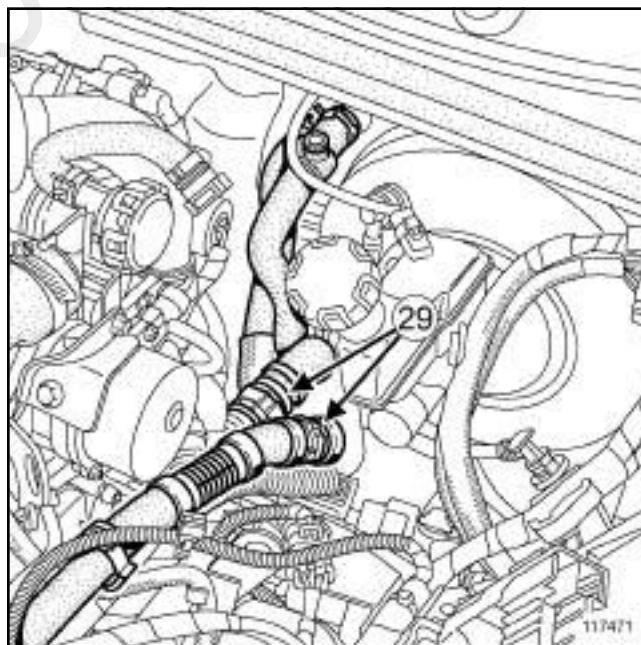
109465

- ☐ Remove:
 - the bolts (26) from the high pressure pump protector,
 - the high pressure pump protector.



117448

- ☐ Disconnect:
 - the fuel supply pipe (27) ,
 - the fuel return pipe (28) .

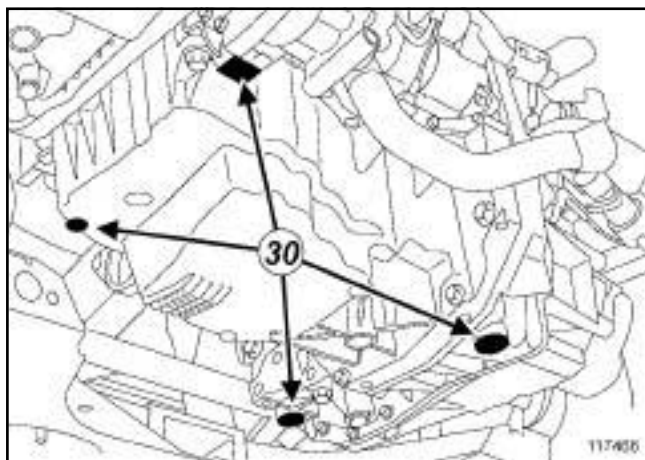


117471

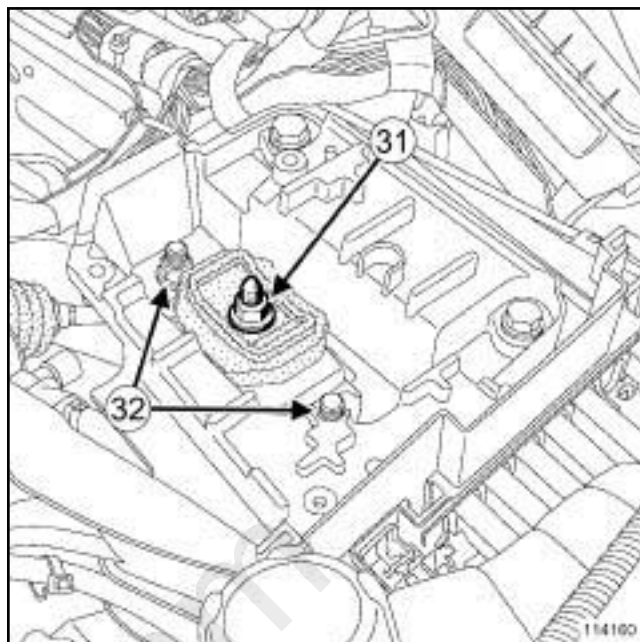
- ☐ Disconnect the quick-release unions (29) from the heater radiator hoses.

K9K, and JA5

II - OPERATION FOR REMOVAL OF PART CONCERNED



- ☐ Support the **(Mot. 1390)** on the marks **(30)** on the « engine - gearbox » assembly.
- ☐ Remove the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting, page 19D-22**) .

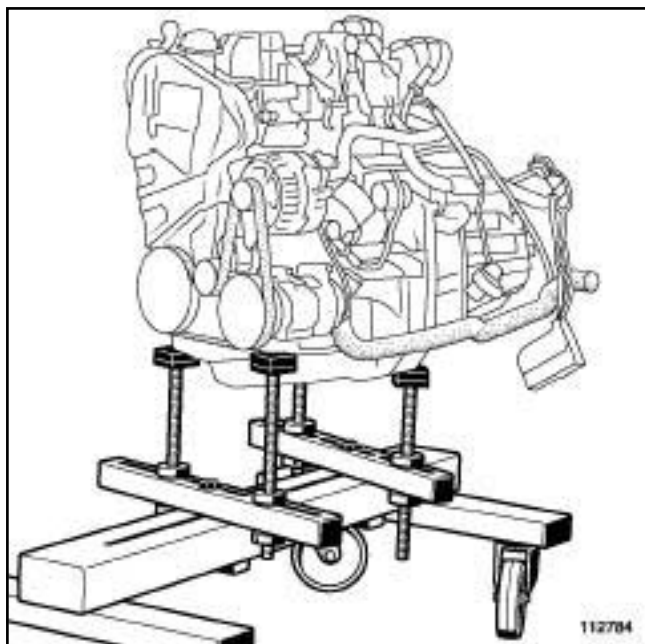


- ☐ Separate the neck of the electrical wiring from the gearbox support.
- ☐ Remove:
 - the left-hand suspended engine mounting shaft nut **(31)** ,
 - the nuts **(32)** from the left-hand suspended engine mounting rubber pad,
 - the left-hand suspended engine mounting rubber pad.

Note:

Tap the bolt with a copper hammer, if necessary.

K9K, and JA5



112784

- ❑ Remove the « engine and gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

- ❑ For standard engine replacements (see **Standard replacement**) (Technical Note 6006A, 10A, Engine and peripherals).
- ❑ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose (10,08,02,21).**

II - REFITTING OPERATION FOR PART CONCERNED

- ❑ Position the « engine - gearbox » assembly in the body.
- ❑ Refit:
 - the left-hand suspended engine mounting rubber pad,
 - the nuts for the left-hand suspended engine mounting rubber pad,
 - the left-hand suspended engine mounting shaft nut.
- ❑ Torque tighten (see **19D, Engine mounting, Suspended engine mounting: Tightening torque, page 19D-1**).

- ❑ Refit the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting, page 19D-22**).
- ❑ Torque tighten (see **19D, Engine mounting, Suspended engine mounting: Tightening torque, page 19D-1**).
- ❑ Lift the **(Mot. 1390)** from the « engine - gearbox » assembly.

III - FINAL OPERATION

- ❑ Connect:
 - the quick-release unions of the cooling radiator hoses,
 - the fuel return pipe,
 - the fuel supply pipe.
- ❑ Refit:
 - the high pressure pump protector,
 - the bolts of the high pressure pump protector.
- ❑ Fit the side member earth wiring.
- ❑ Refit the side member earth wiring nuts.
- ❑ Torque tighten the **side member earth wiring nuts (8 N.m)**.
- ❑ Connect:
 - the pre-postheating unit connector,
 - the injection computer connectors,
 - the connectors to the sequential gearbox computer,
 - the engine wiring connectors to the Protection and Switching Unit.
- ❑ Refit:
 - the Protection and Switching Unit cover,
 - the bolts on the Protection and Switching Unit cover.
- ❑ Torque tighten the **Protection and Switching Unit cover bolts (4 N.m)**.
- ❑ Refit:
 - the turbocharger air outlet pipe,
 - the clip of the turbocharger air outlet pipe,
 - the turbocharger air outlet pipe bolt.
- ❑ Connect:
 - the brake servo union on the vacuum pump,

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JA5

- the air filter unit air outlet pipe on the turbocharger side,
- the oil rebreathing pipe on the air filter unit air outlet pipe, on the turbocharger side.
- ☐ Torque tighten the **air filter unit air outlet pipe clip, turbocharger side, on the air filter unit air outlet pipe, turbocharger side (5.5 N.m)**.
- ☐ Refit:
 - the intercooler air outlet pipe,
 - the nut from the intercooler air inlet and outlet pipes.
- ☐ Torque tighten the **intercooler air outlet pipe clip (5.5 N.m)**.
- ☐ Connect the air inlet pressure sensor connector.
- ☐ Refit the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).
- ☐ Clip on the fuse holder.
- ☐ Connect the supply wiring of the power supply fuse unit.
- ☐ Refit the supply wiring nut of the power supply fuse unit.
- ☐ Torque tighten the **supply wiring nut of the power supply fuse unit (8 N.m)**.
- ☐ Refit:
 - the fuses,
 - the fuse box cover,
 - the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) .
 - a new exhaust bracket seal,
 - the exhaust bracket bolts,
- ☐ Torque tighten the **exhaust flange bolts (21 N.m)**.
- ☐ Refit:
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) .
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- ☐ Connect the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Refit the bolt to the compressor-intermediate pipe connecting pipe on the compressor.
- ☐ Torque tighten the **compressor-intermediate pipe connecting pipe bolt on the compressor (8 N.m)**.
- ☐ Connect the dehydrator reservoir-expansion valve connecting pipe on the dehydrator reservoir.
- ☐ Refit the dehydrator reservoir-expansion valve connecting pipe bolt on the dehydrator reservoir.
- ☐ Torque tighten the **dehydrator reservoir - expansion valve connecting pipe bolt on the dehydrator reservoir (8 N.m)**.
- ☐ Refit:
 - the compressor-condenser connecting pipe,
 - the condenser-compressor connecting pipe bolt on the compressor,
 - the compressor-condenser connecting pipe bolt on the condenser.
- ☐ Tighten to torque:
 - the **compressor-condenser connecting pipe bolt on the compressor (8 N.m)**,
 - the **compressor-condenser connecting pipe bolt on the condenser (8 N.m)**.
- ☐ Refit:
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-21) ,
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
 - the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) ,
 - the headlights (see **Halogen headlight: Removal - Refitting**) (80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (80C, Xenon bulbs),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Fit the protective fuse mounting wiring.
- ☐ Refit the protective fuse mounting wiring nut.

K9K, and JA5

- ☐ Torque tighten the **protective fuse mounting wiring nut (6 N.m)**.
- ☐ Refit the air filter unit air inlet pipe.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Perform the following operations:
 - fill the sequential gearbox,
 - fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
 - fill and bleed the coolant circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**).
- ☐ Refit:
 - the engine cover,
 - the engine undertray.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and JA3

Special tooling required

Mot. 1448 Remote operation pliers for hose clips.

Tightening torques

exhaust downpipe bolts **9 Nm**

REMOVAL

I - REMOVAL PREPARATION OPERATION

☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).

☐ Remove:

- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the engine undertray,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection).

☐ Drain:

- the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**) ,
- the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**) .

AIR CONDITIONING

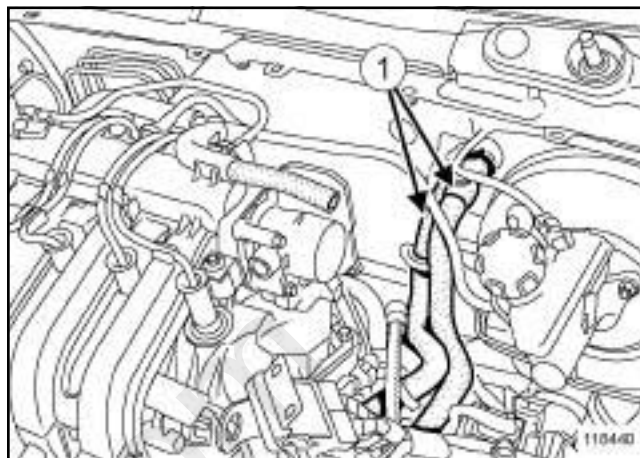
☐ Drain the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

☐ Remove:

- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),

- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).



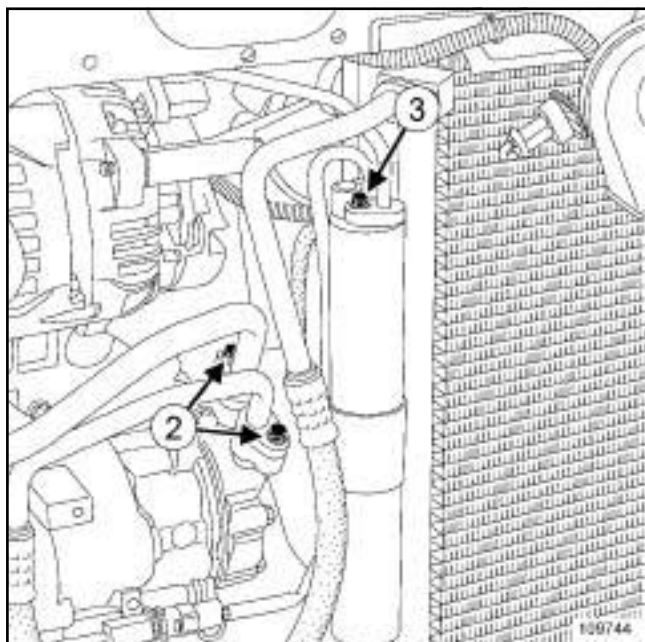
118440

☐ Remove:

- the clips for the passenger compartment heating hoses using the (**Mot. 1448**),
- the passenger compartment heater hoses (**1**) ,
- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**) .

D4F, and JA3

AIR CONDITIONING



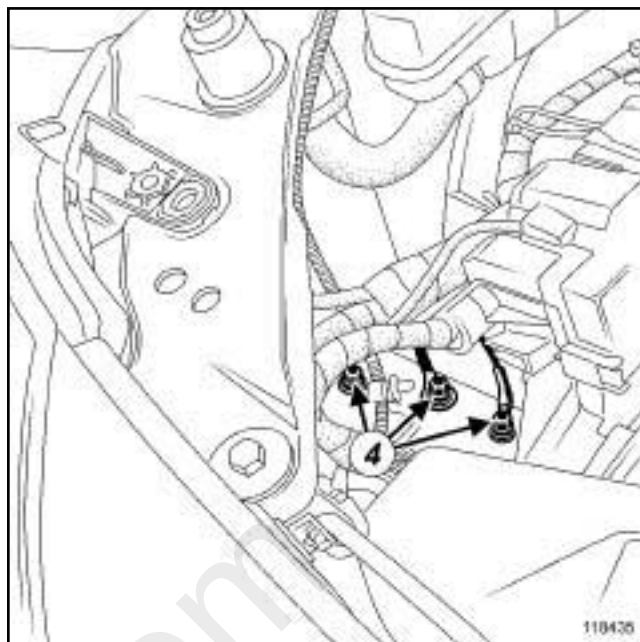
109744

- ☐ Unclip the wiring harness of the pressure switch on the condenser.
- ☐ Disconnect the pressure switch connector on the condenser.
- ☐ Remove:
 - the bolts (2) from the air conditioning pipe unions on the compressor,
 - the bolts (3) from the air conditioning pipe unions on the condenser.

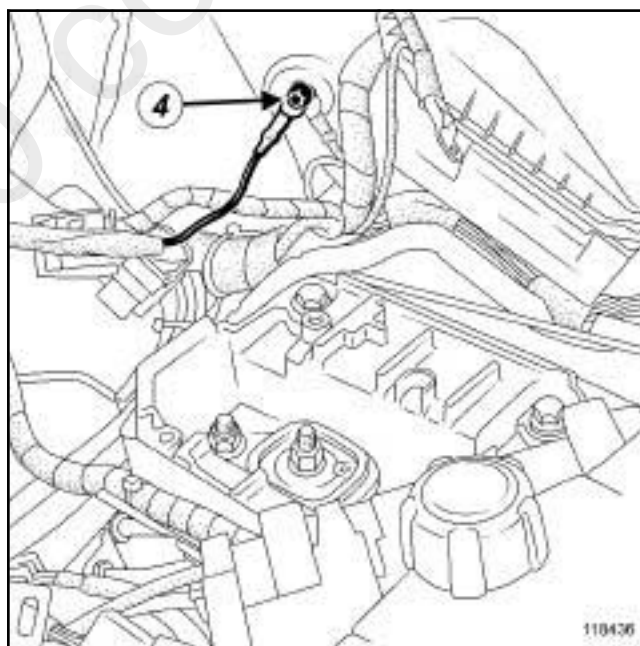
WARNING

Plugs must be fitted on the hoses to prevent moisture from entering the system.

- ☐ Remove:
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
 - the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
 - the petrol injection computer (see **17B, Petrol injection, Petrol injection computer: Removal - Refitting**, page 17B-37) ,
 - the injection computer support mounting bolts,
 - the injection computer support.



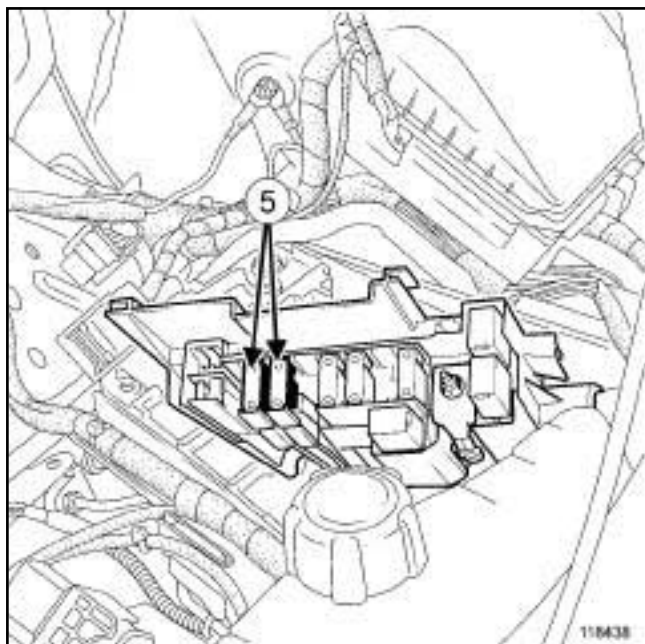
118435



118436

- ☐ Remove:
 - the earth terminal nuts,
 - the earth terminals (4) .

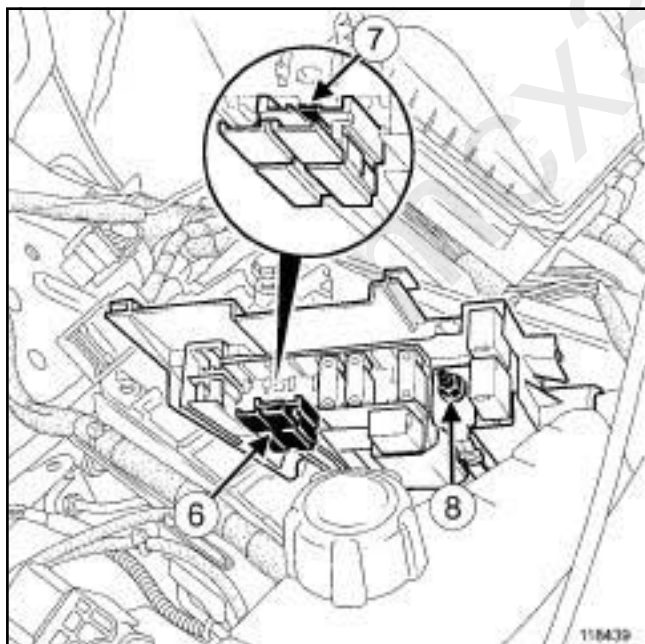
D4F, and JA3



118438

❑ Remove:

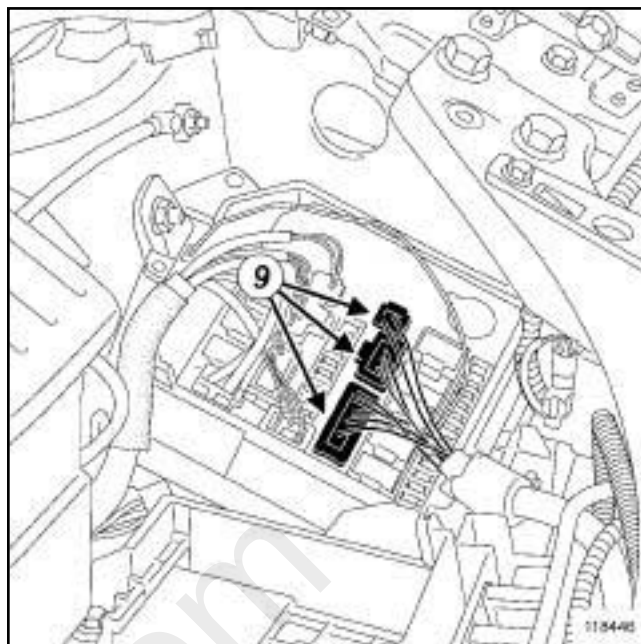
- the cover from the fuse holder board,
- the fuses (5) .



118439

❑ Remove:

- the fuse holder (6) by pressing on the tab (7) ,
- the feed wire (8) from the fuse holder board,
- the supply cable from the battery protection fuse box.



118446

❑ Remove the Protection and Switching Unit cover.

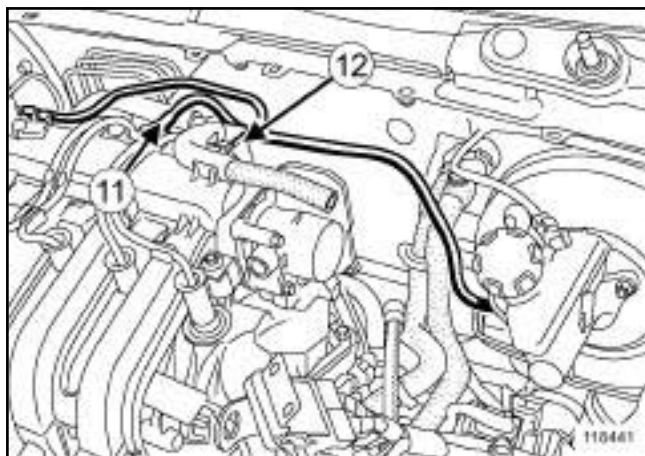
- ❑ Disconnect the connectors (9) from the Protection and Switching Unit.
- ❑ Remove the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).



109155

- ❑ Remove the bolts (10) from the wiring channel on the body.
- ❑ Move the wiring harness to one side.

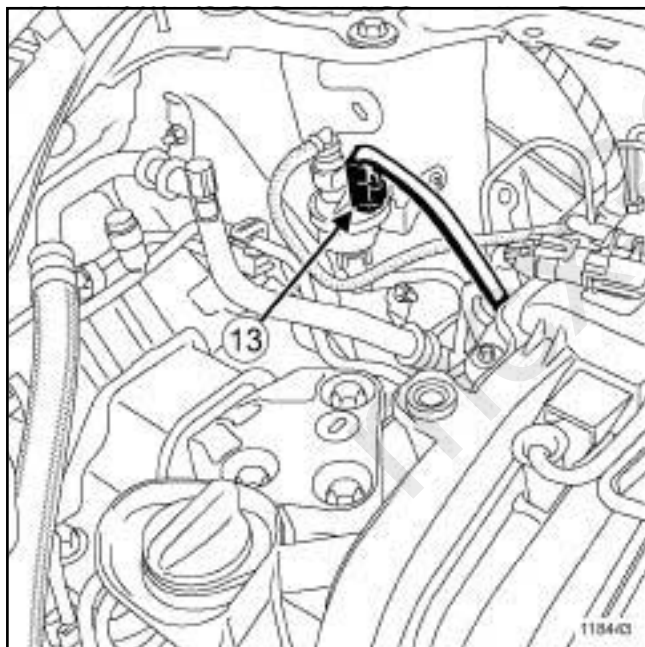
D4F, and JA3



118441

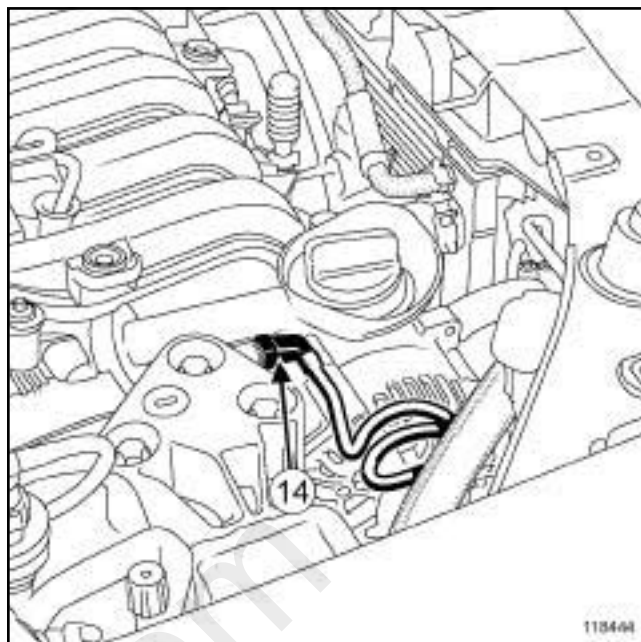
❑ Disconnect:

- the quick-release union from the brake servo pipe (11) ,
- the quick-release union from the petrol vapour re-breathing pipe (12) .



118443

- ❑ Disconnect the connector (13) from the fuel vapour absorber bleed solenoid valve.



118444

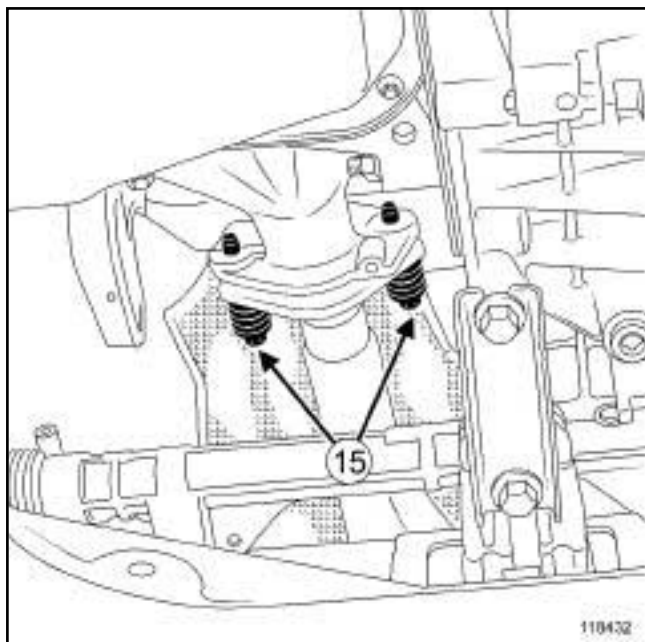
- ❑ Disconnect the quick-release union from the fuel supply pipe (14) on the injector rail.

IMPORTANT

During this operation, be sure to:

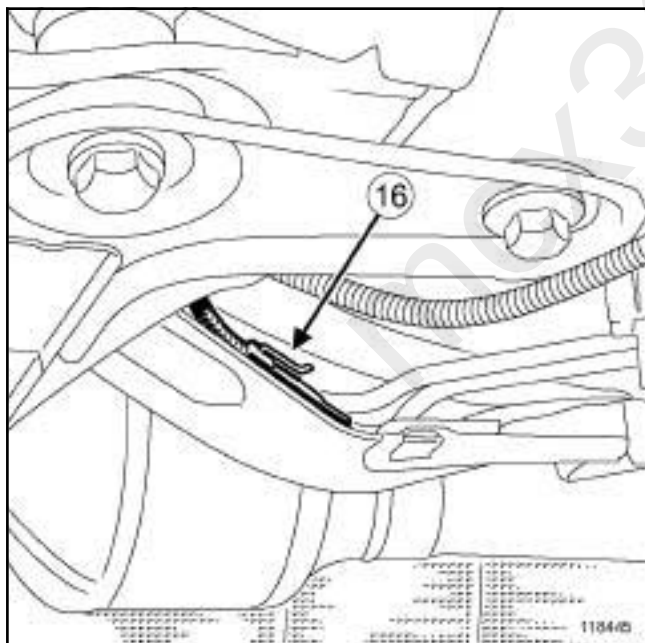
- refrain from smoking or bringing red hot objects close to the working area,
- beware of fuel splashes when disconnecting the union,
- protect sensitive areas from fuel outflow.

D4F, and JA3



118432

- ☐ Remove the bolts (15) from the exhaust downpipe.
- ☐ Remove the exhaust pipe towards the rear of the vehicle.

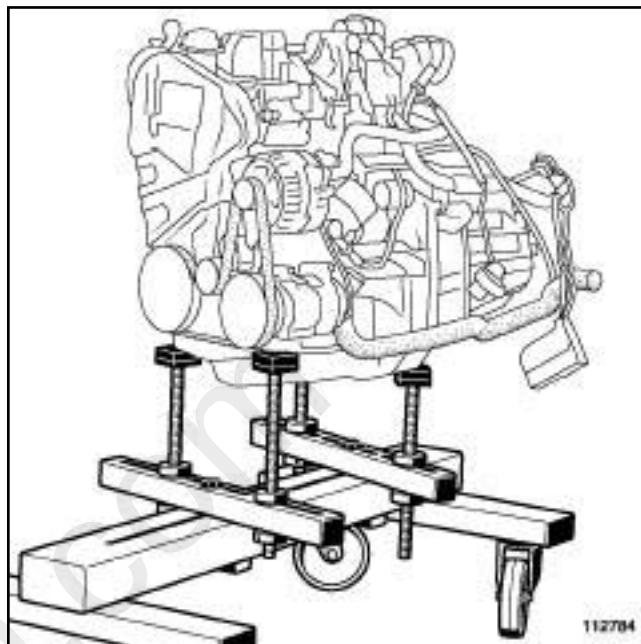


118445

- ☐ Disconnect the oxygen sensor connector (16) .
- ☐ Feed the oxygen sensor wiring harness into the engine compartment.

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove the lower engine torque reaction tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) .



112784

- ☐ Support the « engine - gearbox » assembly on engine marks using the.
- ☐ Remove the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page 19D-22) .
- ☐ Remove the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page 19D-34) .
- ☐ Raise the vehicle, moving the engine towards the front.
- ☐ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Standard replacement**) (Technical Note 6004A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit:
 - the « engine - gearbox » assembly in the vehicle,

D4F, and JA3

- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

☐ Remove the.

III - FINAL OPERATION.

☐ Refit:

- the lower engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the oxygen sensor wiring harness.

☐ Connect the oxygen sensor connector.

☐ Refit the exhaust downpipe.

☐ Torque tighten the **exhaust downpipe bolts (9 Nm)**.

☐ Connect:

- the quick-release union to the fuel supply pipe on the injector rail,
- the quick-release union to the petrol vapour re-breathing pipe,
- the quick-release union to the brake servo pipe.

☐ refit the wiring harness.

☐ Screw the bolts for the wiring harness channel on the body.

☐ Refit the sequential gearbox computer (see **Sequential gearbox converter: Removal - Refitting**) (MR 392, 21B, Sequential gearbox).

☐ Connect the Protection and Switching Unit connectors.

☐ Refit:

- the Protection and Switching Unit cover,
- the supply cable on the battery protection fuse box,
- the feed wire on the fuse holder board,
- the fuse holder,
- the fuses,
- the cover from the fuse holder board,
- the earth terminals on the side member,
- the earth terminal nuts,
- the injection computer mounting,

- the injection computer support bolts,

- the petrol injection computer (see **17B, Petrol injection, Petrol injection computer: Removal - Refitting**, page **17B-37**) ,

- the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**) ,

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure).

AIR CONDITIONING

☐ Refit:

- the bolts to the air conditioning pipe unions on the condenser,
- the bolts to the air conditioning pipe unions on the compressor.

☐ Connect the pressure switch connector to the condenser.

☐ Clip the pressure switch wiring harness on the condenser.

☐ Refit:

- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the passenger compartment heater hoses,
- the clips for the passenger compartment heating hoses using the (**Mot. 1448**).

☐ Refit:

- the clip for the top hose on the cooling radiator using the (**Mot. 1448**),
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

☐ Refill:

- the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**) ,

D4F, and JA3

- the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**) .

☐ Refit:

- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the engine undertray,
- the battery tray (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**) .

AIR CONDITIONING

- ☐ Fill the refrigerant circuit (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

D4F, and 784

Special tooling required

Ms. 583 Pipe clamps.

Equipment required

refrigerant charging station

Tightening torques

connecting pipe bolts **8 Nm**

exhaust downpipe bolts **9 Nm**

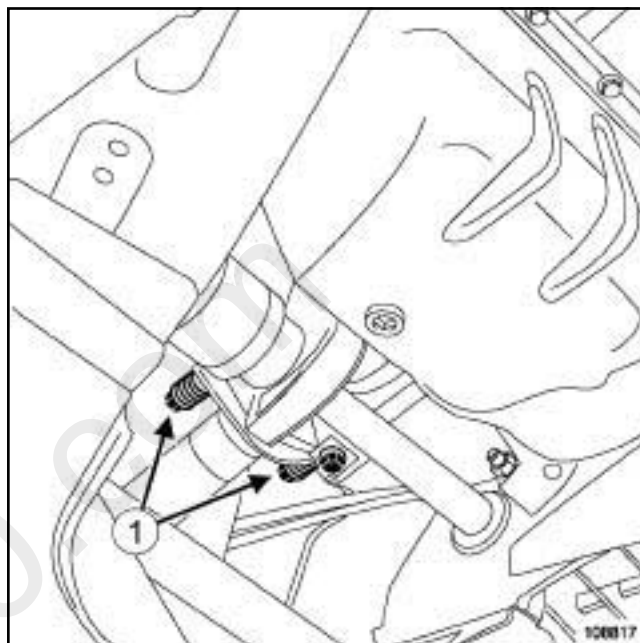
REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Remove:
 - the engine cover,
 - the engine undertray,
 - the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery),
 - the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
 - the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-21) .
- ☐ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
 - the engine if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page 10A-13) .

AIR CONDITIONING

- ☐ Drain the air conditioning circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (MR 392, 62A, Air conditioning).

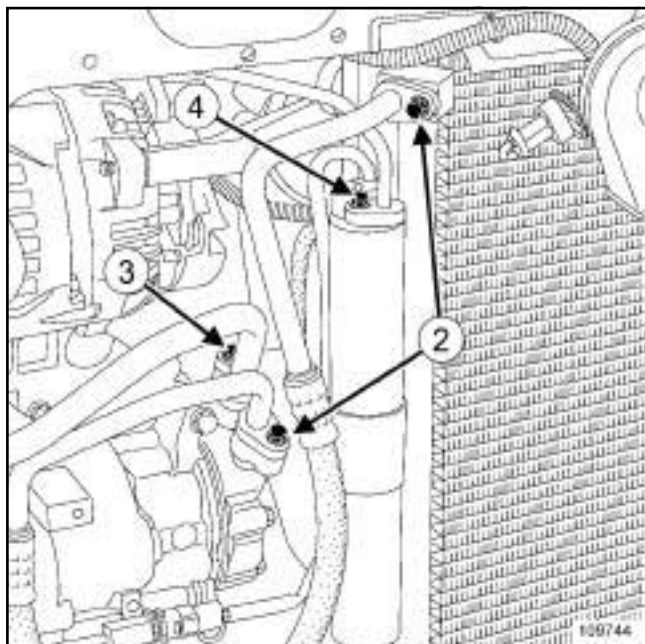


108817

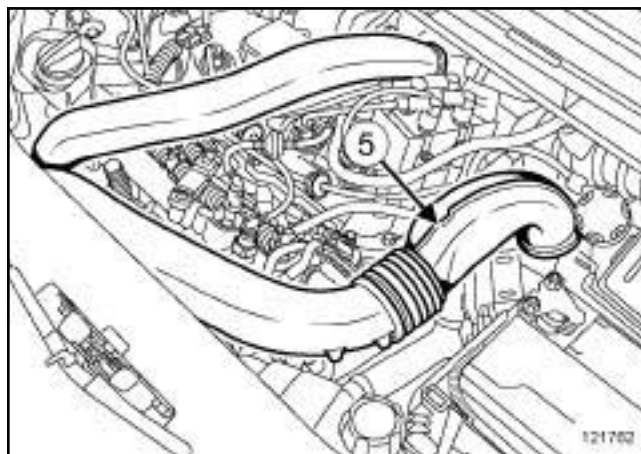
- ☐ Remove:
 - the exhaust downpipe bolts (1) ,
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
 - the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) .

D4F, and 784

AIR CONDITIONING

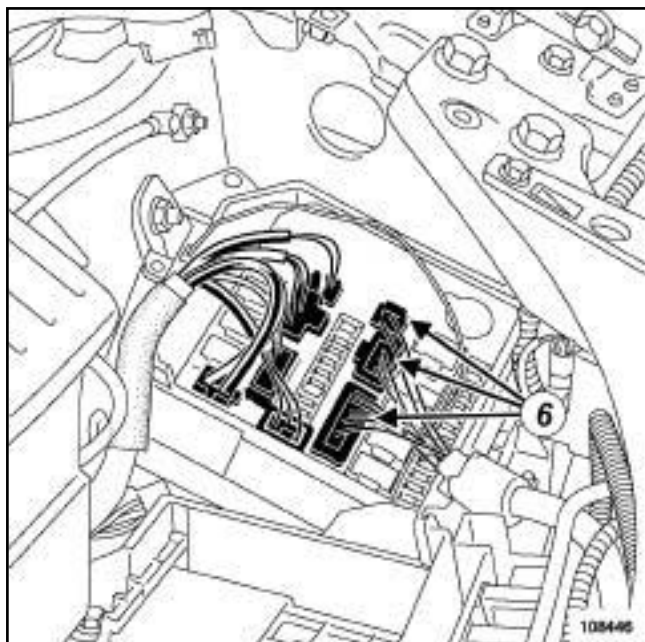


- ☐ Unclip the wiring harness of the pressure switch on the condenser.
- ☐ Disconnect:
 - the pressure switch from the condenser,
 - the air conditioning compressor clutch connector.
- ☐ Remove:
 - the compressor - condenser connecting pipe bolts (2) ,
 - the compressor - condenser connection pipe.
 - the compressor - expansion valve connecting pipe bolt (3) ,
 - the dehydrator reservoir - expansion valve connecting pipe bolt (4) .
- ☐ Uncouple the connecting pipes.
- ☐ Plug the openings.



- ☐ Remove:
 - the air filter unit air inlet pipe (5) ,
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
 - the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page 19A-101) ,
 - the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
 - the passenger compartment radiator cooling hoses on the bulkhead,
 - the Protection and Switching Unit cover.

D4F, and 784



108446

❑ Disconnect:

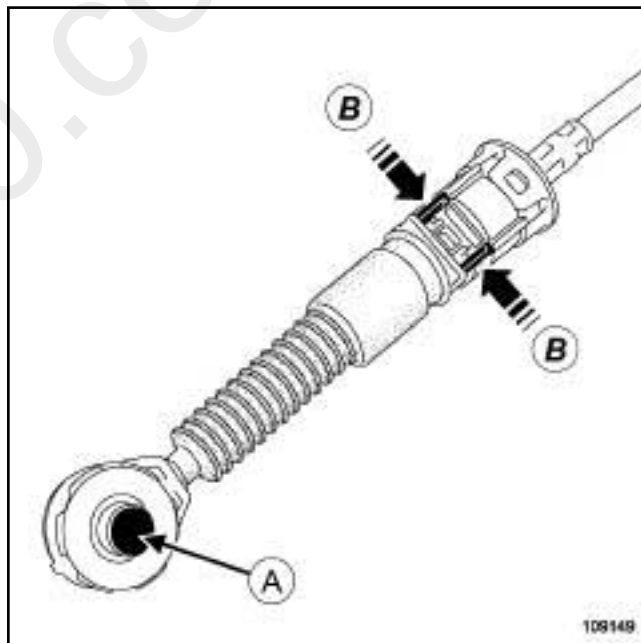
- the Protection and Switching Unit connectors (6) ,
- the fuse,
- the fuse holder to the fuse board,
- the supply cable on the battery protection fuse box,
- the petrol injection computer connectors.

❑ Remove the earth nuts.

❑ Move the wiring harness to one side.



108265

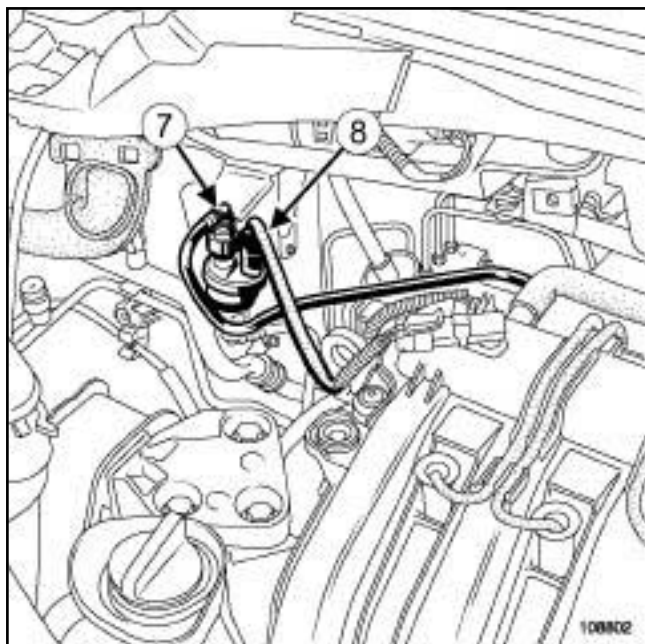


109149

❑ Remove:

- the gear control cables on the gearbox by pushing at (A) ,
- the control cables by pushing at (B) .

D4F, and 784



108802

❑ Disconnect:

- the petrol vapour recirculation solenoid valve connector (8) ,
- the fuel vapour recirculation pipe (7) ,
- the brake servo non-return valve.

WARNING

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

IMPORTANT

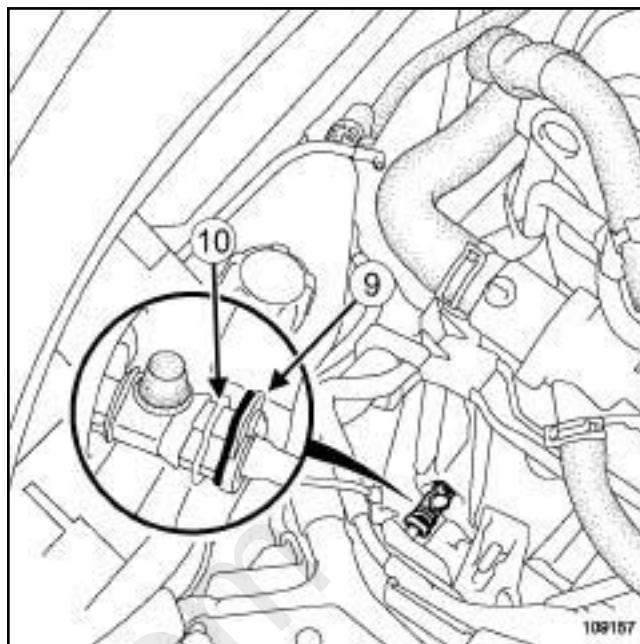
Wear latex gloves during the operation.

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.

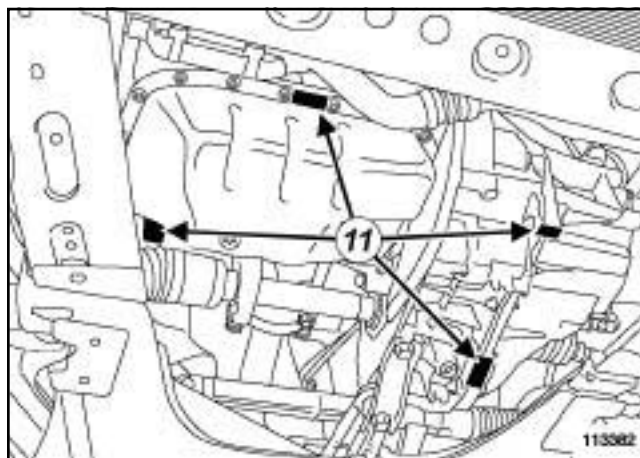
- ❑ Disconnect the fuel inlet union on the injection rail.
- ❑ Plug the openings.



109157

- ❑ Place a hose clamp (**Ms. 583**) between the brake fluid reservoir and the clutch master cylinder.
- ❑ Disconnect the clutch slave cylinder by pulling the clips (9) and (10)
- ❑ Unclip the gearbox clutch pipe.
- ❑ Plug the openings.

II - OPERATION FOR REMOVAL OF PART CONCERNED



113382

- ❑ Support the « engine - gearbox » assembly on the engine marks (11) with the.
- ❑ Mark the positions of the suspended engine mountings on the body.

D4F, and 784

☐ Remove:

- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) ,
- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) .

☐ Raise the vehicle, moving the engine towards the front.

☐ Remove the « engine - gearbox » assembly.

REFITTING

I - REFITTING PREPARATION OPERATION

☐ For standard engine replacements (see **Parts always to be replaced**) (Technical Note 6004A, 10A, Engine and peripherals).

II - REFITTING OPERATION FOR PART CONCERNED

☐ Position the « engine-gearbox » assembly in the vehicle.

☐ Refit:

- the left-hand suspended engine mounting (see **19D, Engine mounting, Left-hand suspended engine mounting: Removal - Refitting**, page **19D-34**) ,
- the right-hand suspended engine mounting (see **19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting**, page **19D-22**) .

☐ Remove the from the « engine - gearbox » assembly.

III - FINAL OPERATION.

- ☐ Clip the clutch pipe to the gearbox.
- ☐ Remove the blanking plugs from the openings.
- ☐ Connect the clutch slave cylinder pipes.
- ☐ Remove the hose clamp (**Ms. 583**).
- ☐ Remove the blanking plugs from the openings.
- ☐ Connect:
 - the petrol inlet union on the injector rail,
 - the brake servo non-return valve,
 - fuel vapour recirculation pipe,

- the petrol vapour recirculation solenoid valve connector.

☐ Refit:

- the gearbox control cables,
- the earth nuts.

☐ Connect:

- the connectors to the petrol injection computer,
- the Protection and Switching Unit connectors,
- the fuse,
- the fuse holder to the fuse board,
- the feed wire from the battery protection fuse box.

☐ Refit:

- the Protection and Switching Unit cover,
- the passenger compartment radiator cooling hoses on the bulkhead,
- the cooling radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**) ,
- the expansion bottle (see **19A, Cooling, Expansion bottle: Removal - Refitting**, page **19A-101**) ,
- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
- the air filter unit air inlet pipe.

AIR CONDITIONING

☐ Remove the blanking plugs.

☐ Couple the connecting pipes.

☐ Refit:

- the dehydrator reservoir - expansion valve connecting pipe bolt,
- the compressor - expansion valve connecting pipe bolt,
- the compressor - condenser connection pipe.
- the compressor - condenser connecting pipe bolts.

☐ Torque tighten the **connecting pipe bolts (8 Nm)**.

☐ Connect:

- the pressure switch from the condenser,
- the air conditioning compressor clutch connector.

☐ Clip the pressure switch wiring harness on the condenser.

D4F, and 784

☐ Refit:

- the rear suspended engine mounting (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) ,
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the exhaust downpipe bolts.

☐ Torque tighten the **exhaust downpipe bolts (9 Nm)**.

☐ Refit:

- the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page **12B-21**) ,
- the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
- the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**) ,
- the battery tray (see **Battery tray: Removal - Refitting**) (MR 392, 80A, Battery),
- the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

☐ Perform the following operations:

- fill up the engine oil if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page **10A-13**) ,
- fill the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox),
- fill and bleed the coolant circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page **19A-16**) ,
- bleed the clutch circuit (see **Clutch circuit: Bleed**) (MR 392, 37A, Mechanical component controls).

☐ Refit:

- the engine undertray,
- the engine cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

M4R, and DP0

Special tooling required	
Mot. 1448	Remote operation pliers for hose clips.
Mot. 1390	Support for removal - refitting of engine - gearbox assembly

Equipment required
refrigerant charging station

Tightening torques 	
bolts of the right-hand suspended engine mounting cover	62 N.m
bolts for the right-hand suspended engine mounting rubber pad	62 N.m
bolt of the right-hand suspended engine mounting rubber pad	105 N.m
upper engine tie-bar bolts	105 N.m
support bolts for the left-hand suspended engine mounting on the vehicle body	62 N.m
left-hand suspended engine mounting rubber pad nuts	62 N.m
left-hand suspended engine mounting central nut	62 N.m
exhaust flange bolts	21 N.m
engine tie-bar bolt on the engine	180 N.m
engine tie-bar bolt on the subframe	105 N.m
air inlet duct clips	6 N.m

REMOVAL

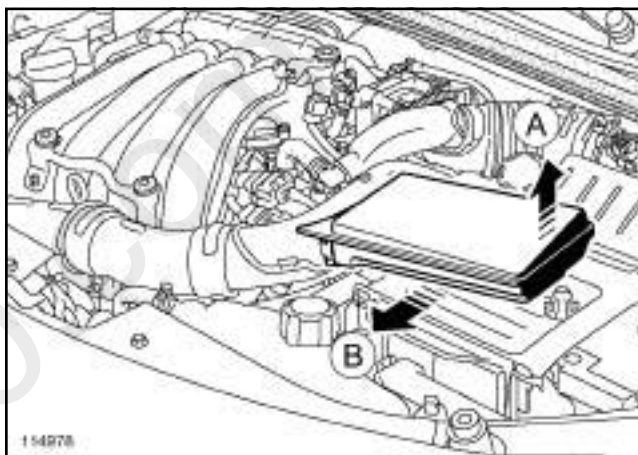
I - REMOVAL PREPARATION OPERATION

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

IMPORTANT

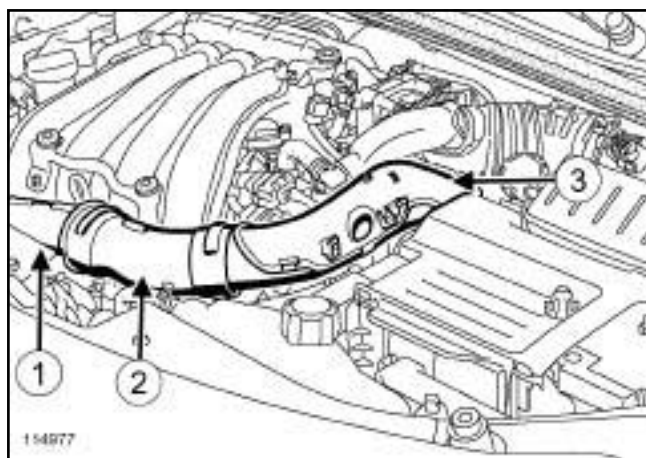
To prevent the vehicle from falling, lash it to the vehicle lift using a strap.

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



- ☐ Lift the air resonator (A) to remove it from the battery cover.
- ☐ Pull the air resonator (B) towards the front of the vehicle to remove it.

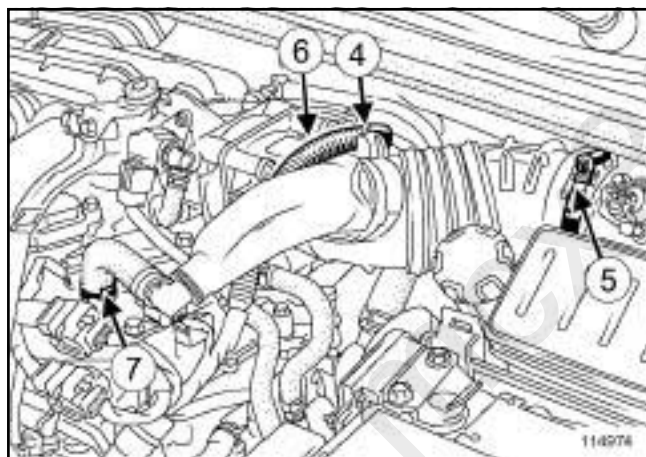
M4R, and DP0



114977

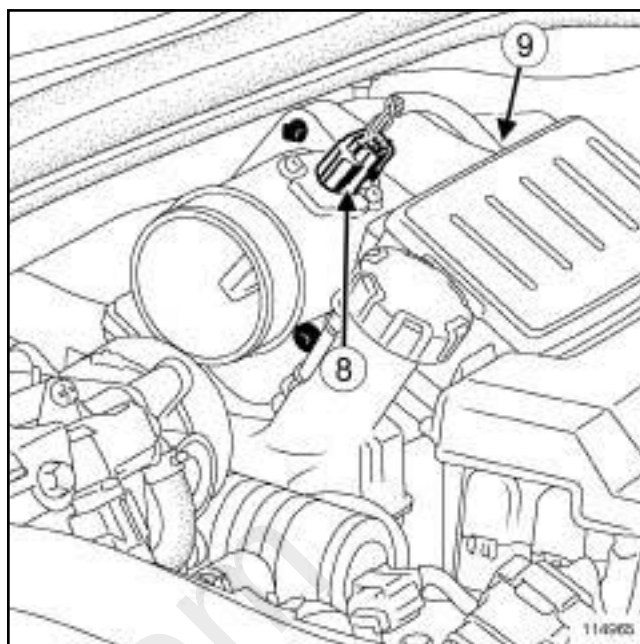
- ❑ Detach the air intake sleeve:
 - from the front end panel at (1) ,
 - from the air resonator on the front end panel at (2) ,
 - from the air filter unit at (3) .

- ❑ Remove the air inlet sleeve.



114974

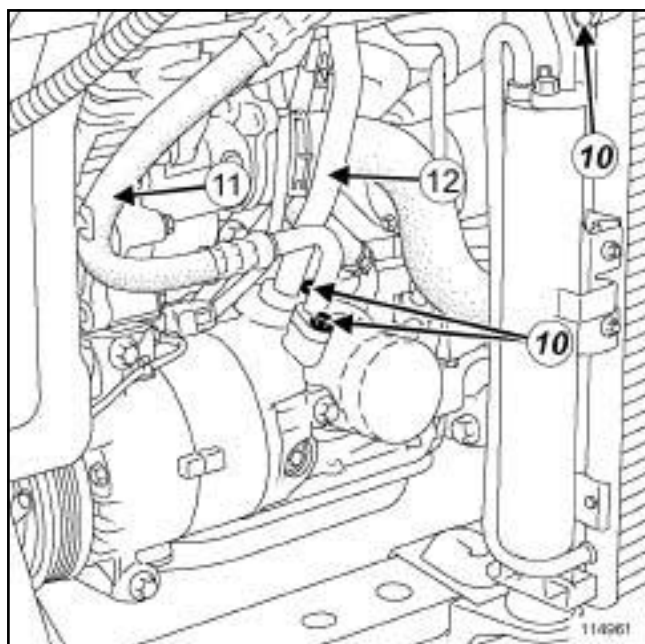
- ❑ Unclip the electrical wiring from the air inlet duct at (4) .
- ❑ Loosen the air duct clips:
 - on the air flow sensor (5) ,
 - on the motorised throttle valve (6) .
- ❑ Extract the oil vapour rebreathing hose (7) on the rocker cover using the tool (Mot. 1448).
- ❑ Remove the air inlet duct.



114965

- ❑ Disconnect the air flowmeter connector (8) .
- ❑ Unclip the air flowmeter connector electrical wiring at (9) .
- ❑ Remove the engine undertray.
- ❑ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (23A, Automatic transmission),
 - the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- ❑ Remove:
 - the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page 12A-10) .

M4R, and DP0



114961

❑ Remove:

- the bolts (10) from the air conditioning pipe unions,
- the air conditioning pipe (11) .

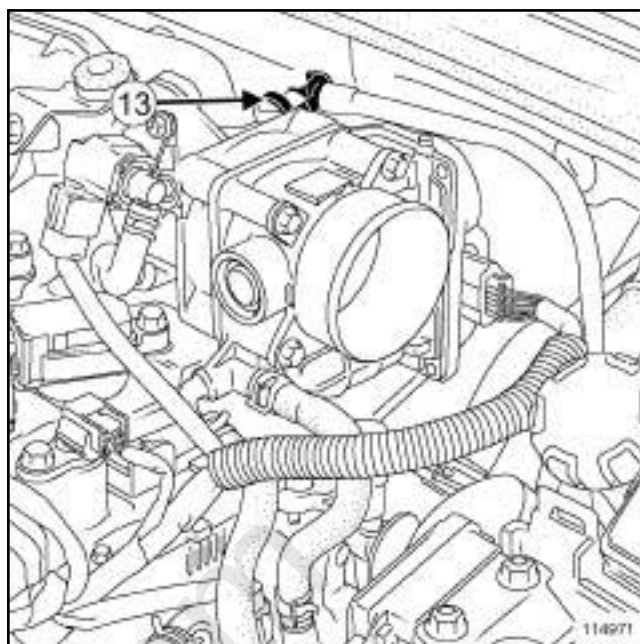
WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

❑ Pull out the air conditioning pipe (12) .

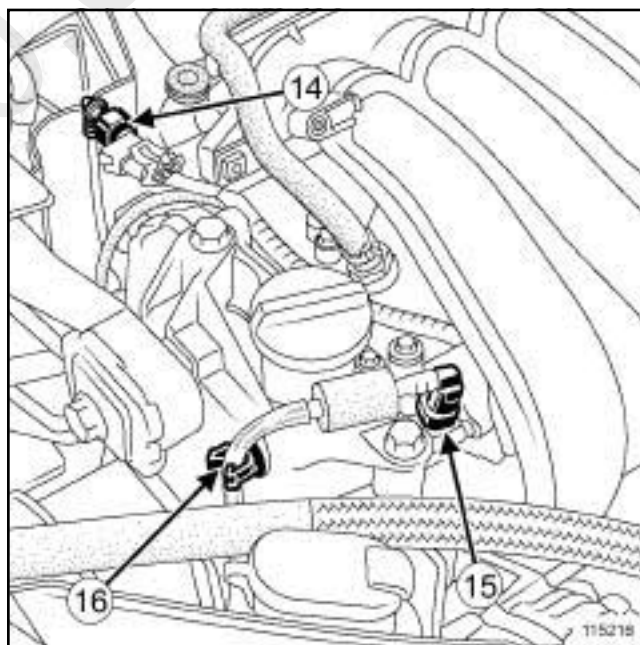
❑ Remove:

- the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
- the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page 19A-20) ,
- the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
- the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).



114971

❑ Disconnect the brake servo pipe (13) from the intake distributor.



115216

❑ Disconnect:

- the petrol vapour rebreather pipe (14) ,
- the fuel supply pipe (15) .

WARNING

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

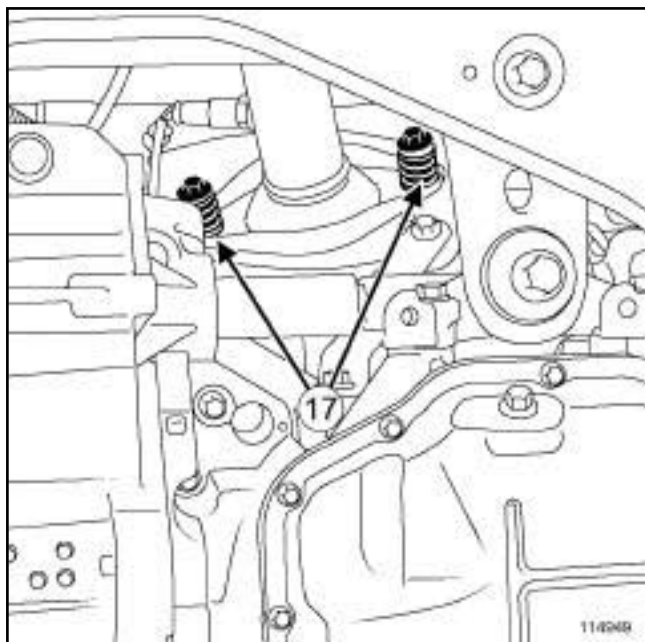
❑ Unclip the fuel supply pipe at (16) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

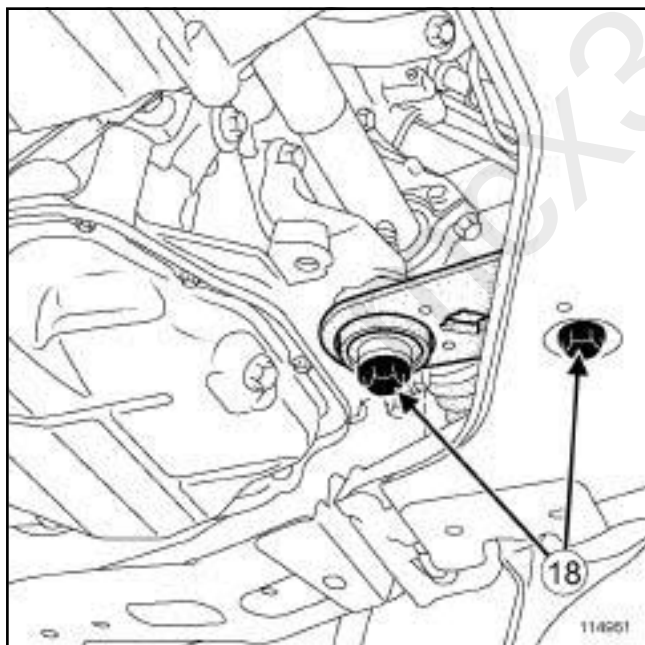
10A

M4R, and DP0



❑ Remove:

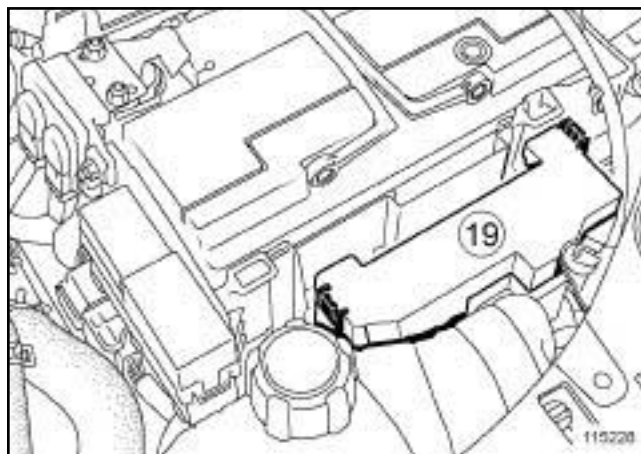
- the bolts (17) from the exhaust flange,
- the exhaust flange seal.



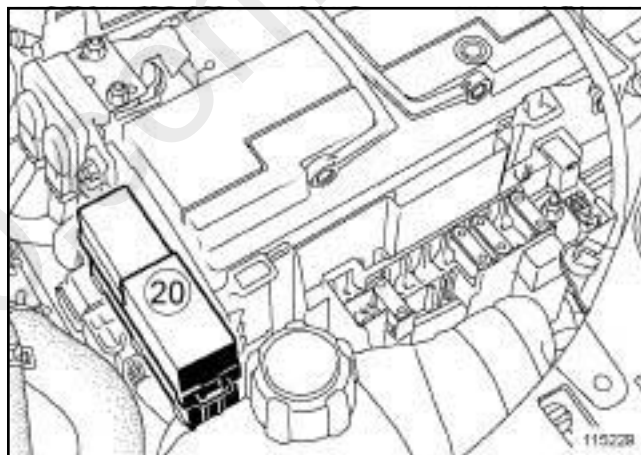
❑ Remove:

- the engine tie-bar bolts (18) ,
- the engine tie-bar .

❑ Remove the battery cover.



- ❑ Remove the cover (19) from the power supply fuse unit.



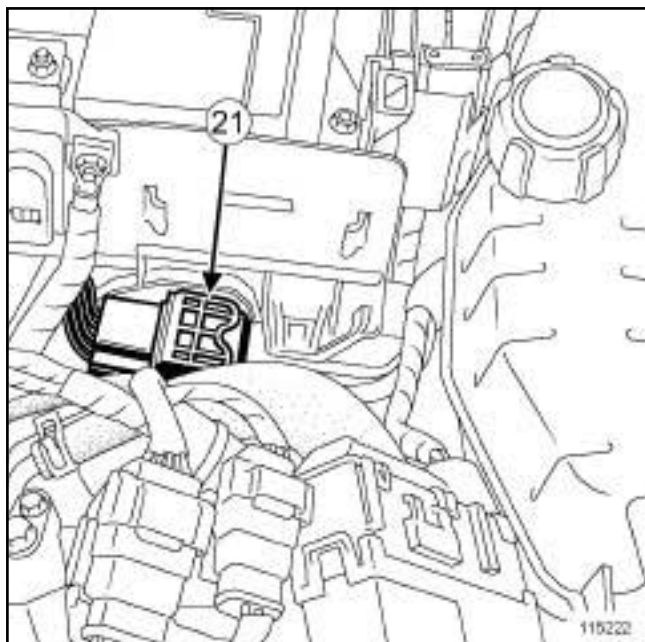
- ❑ Unclip the optional relay unit (20) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

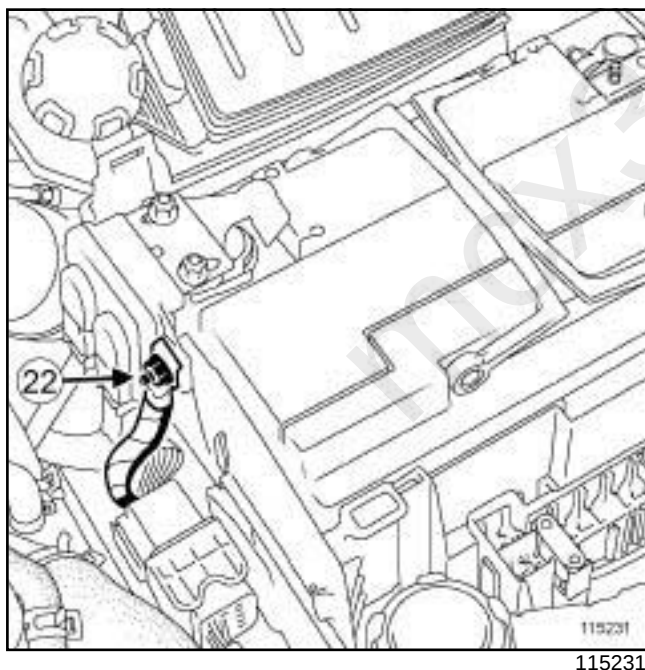
Engine - gearbox assembly: Removal - Refitting

10A

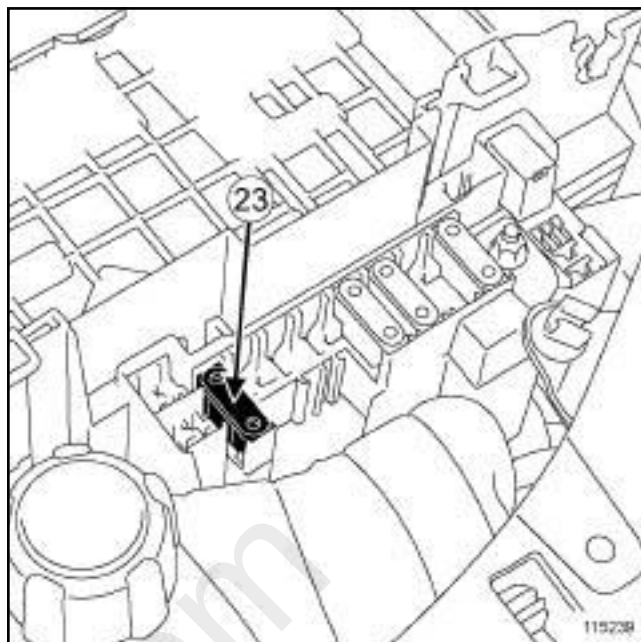
M4R, and DP0



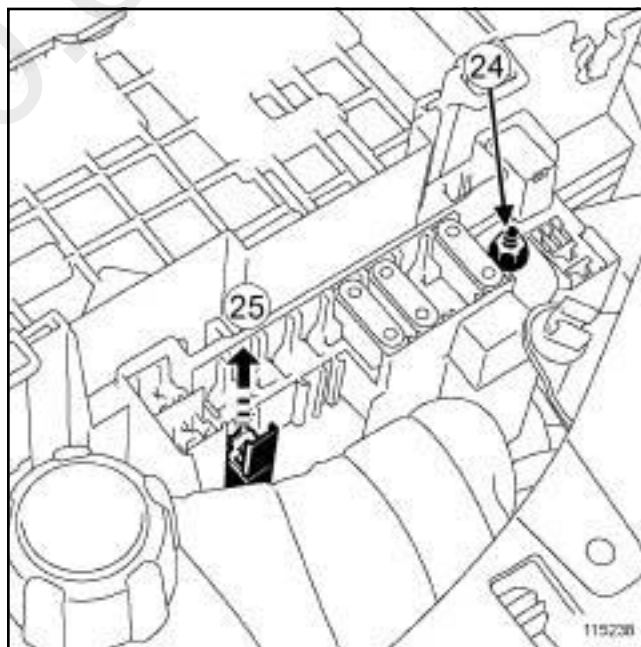
- ❑ Unclip the electrical wiring connector (21) .
- ❑ Disconnect the electrical wiring connector (21) .



- ❑ Remove the nut (22) from the protective fuse mounting wiring.
- ❑ Move aside the protective fuse mounting wiring.
- ❑ Remove the battery (see **Battery: Removal - Refitting**) (80A, Battery).

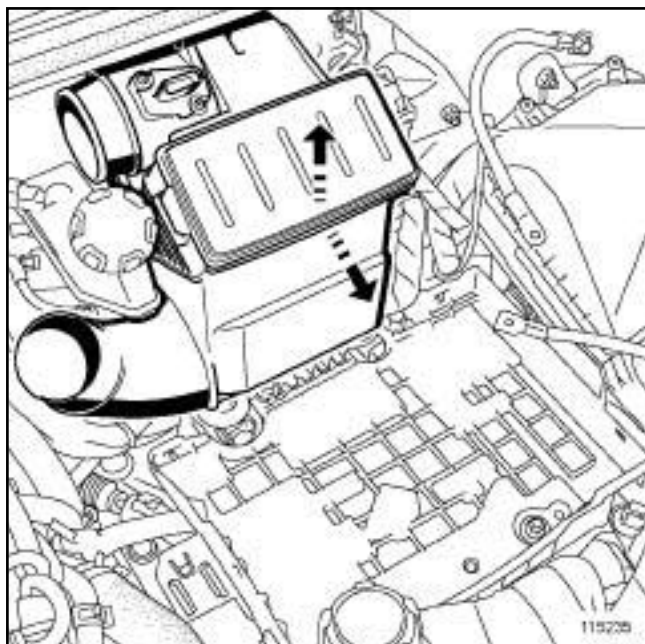


- ❑ Remove the fuse (23) .



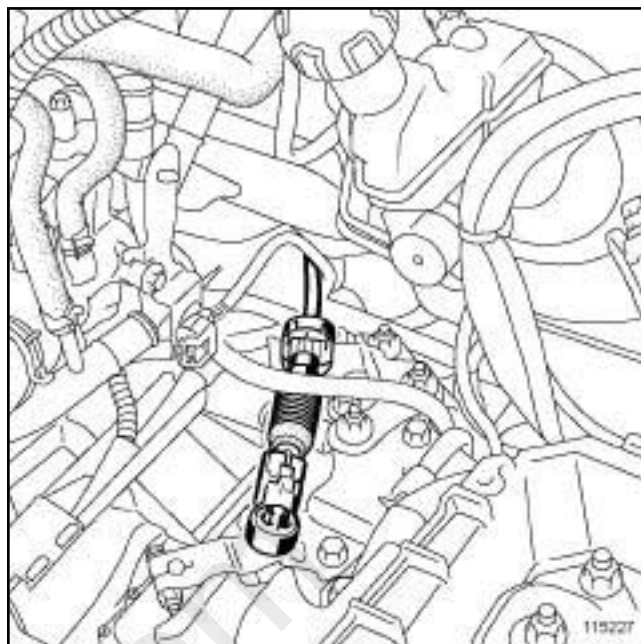
- ❑ Remove the nut (24) from the supply wiring of the power supply fuse unit.
- ❑ Disconnect the supply wiring from the power supply fuse unit.
- ❑ Extract the fuse holder from the power supply fuse unit (25) .
- ❑ Remove the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery).

M4R, and DP0

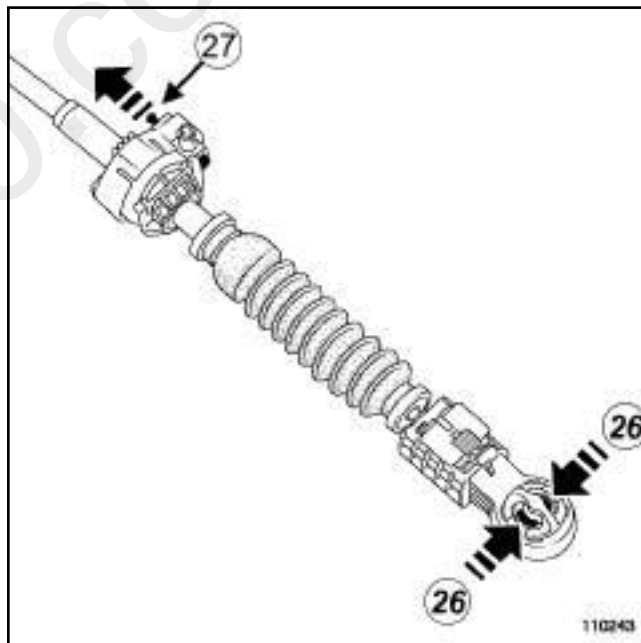


115235

- ❑ Remove the air filter unit in the direction of the arrows.



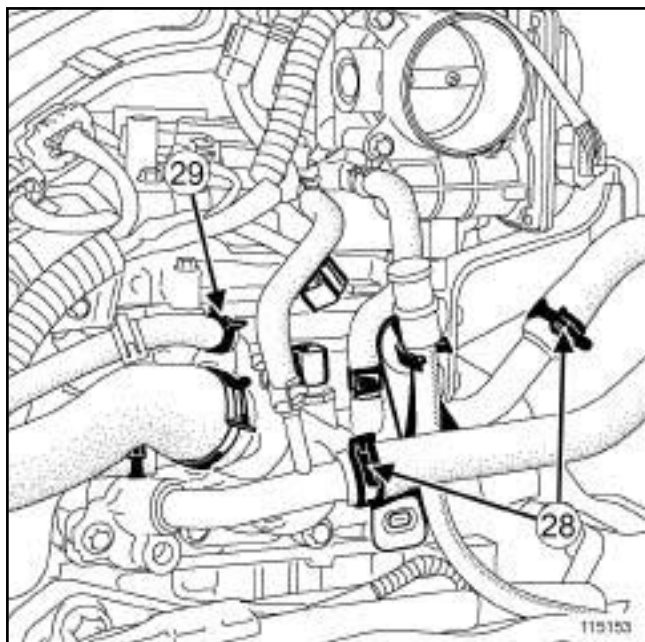
115227



110243

- ❑ Detach the automatic transmission control cable ball joint by pressing at (26) .
- ❑ Pull out the automatic transmission control cable by pulling tab (27) .

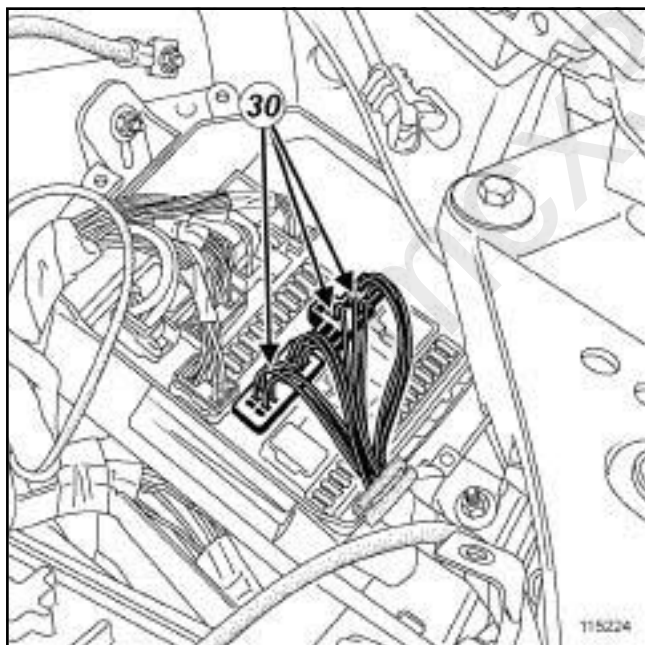
M4R, and DP0



115153

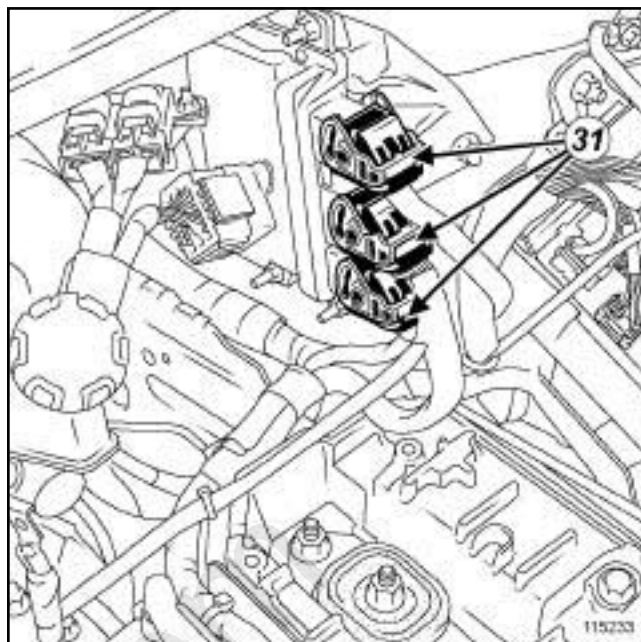
- ❑ Disconnect the hoses from:

- the heater matrix (28) ,
- the expansion bottle (29) .



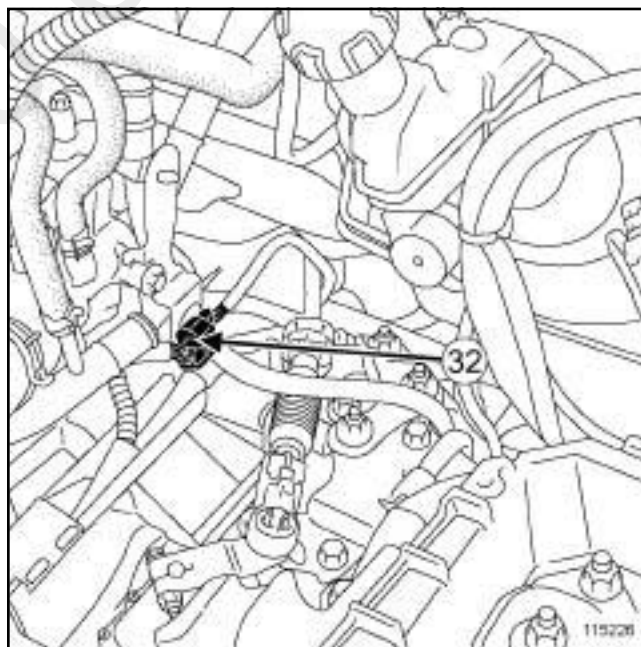
115224

- ❑ Remove the Protection and Switching Unit cover.
- ❑ Disconnect the engine electrical wiring connectors (30) from the Protection and Switching Unit.



115233

- ❑ Disconnect the engine electrical wiring connectors (31) from the injection computer.



115226

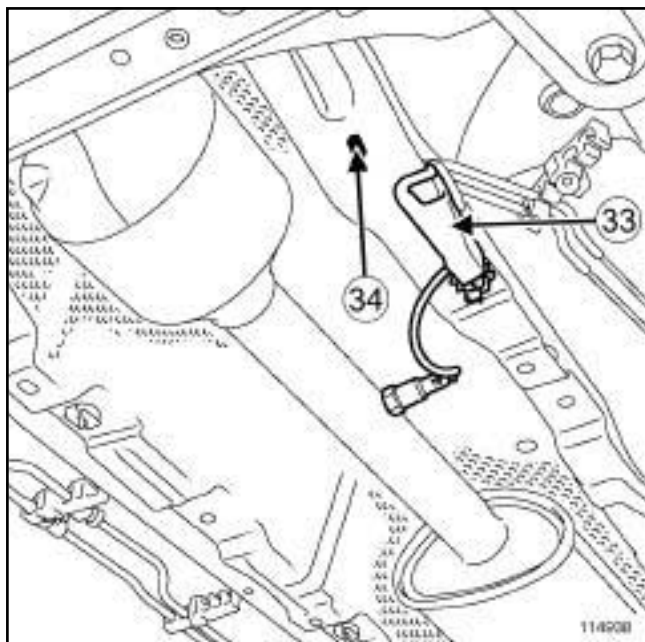
- ❑ Disconnect the upstream oxygen sensor connector (32) .

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

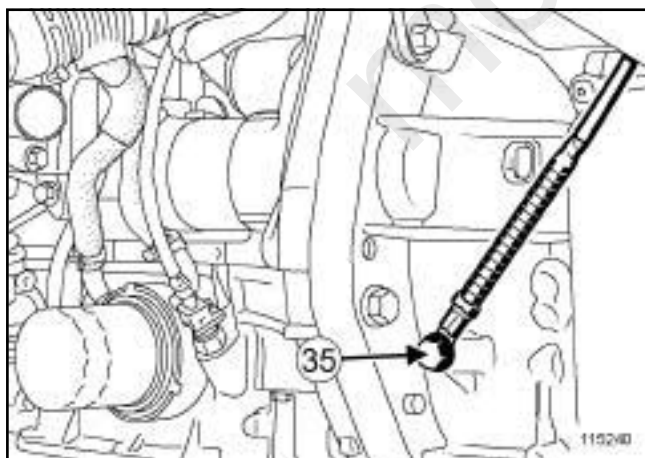
10A

M4R, and DP0



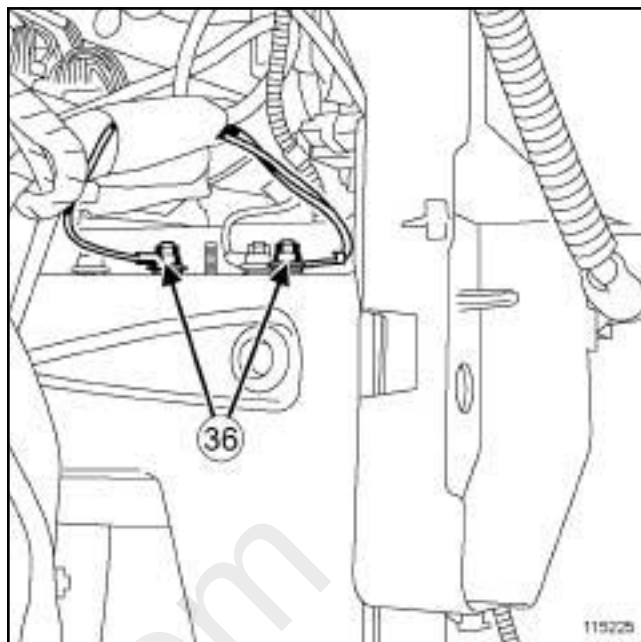
114938

- ☐ Remove the plastic cover (33) .
- ☐ Detach the downstream oxygen sensor connector at (34) .
- ☐ Disconnect the downstream oxygen sensor connector.
- ☐ Unclip the downstream oxygen sensor electrical wiring from the power-assisted steering box.
- ☐ Feed the downstream oxygen sensor electrical wiring into the engine compartment.



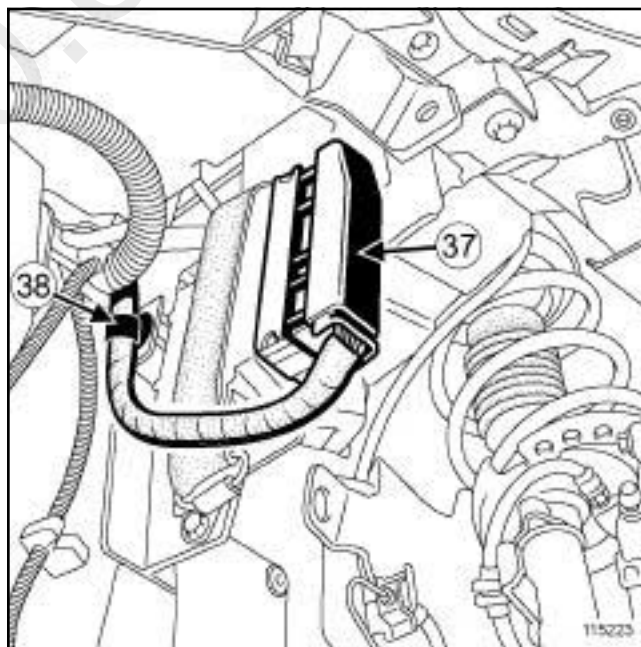
115240

- ☐ Disconnect the automatic transmission earth wire (35) .



115225

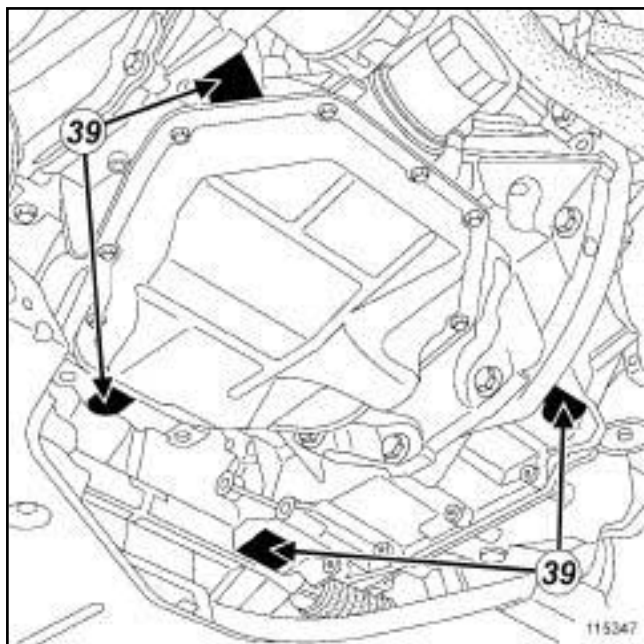
- ☐ Disconnect the earth cables (36) from the side member.



115223

- ☐ Disconnect the automatic transmission connector (37) .
- ☐ Unclip the automatic transmission electrical wiring at (38) .
- ☐ Feed the automatic transmission electrical wiring into the engine compartment.

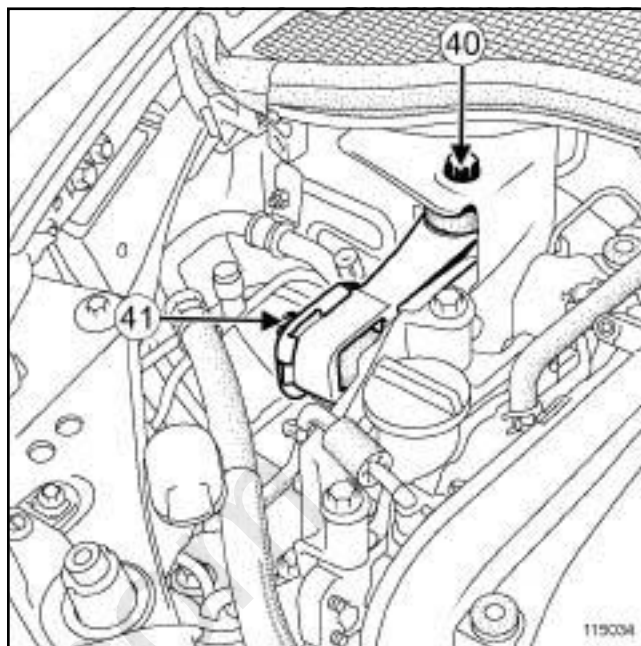
M4R, and DP0



115347

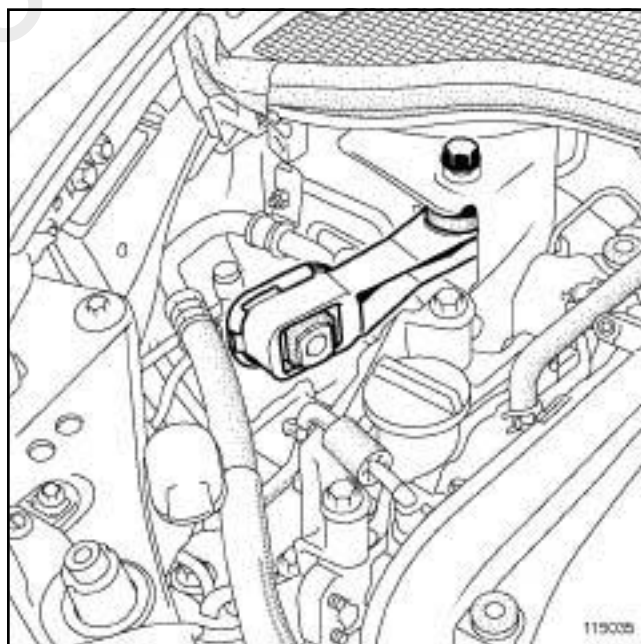
- ☐ Position the (**Mot. 1390**) under the «engine - gearbox» assembly.
- ☐ Lower the vehicle down onto the pads of the (**Mot. 1390**).
- ☐ Adjust the pads of the tool (**Mot. 1390**) at (39) to ensure that the «engine - gearbox» assembly is stable.

II - OPERATION FOR REMOVAL OF PART CONCERNED



115034

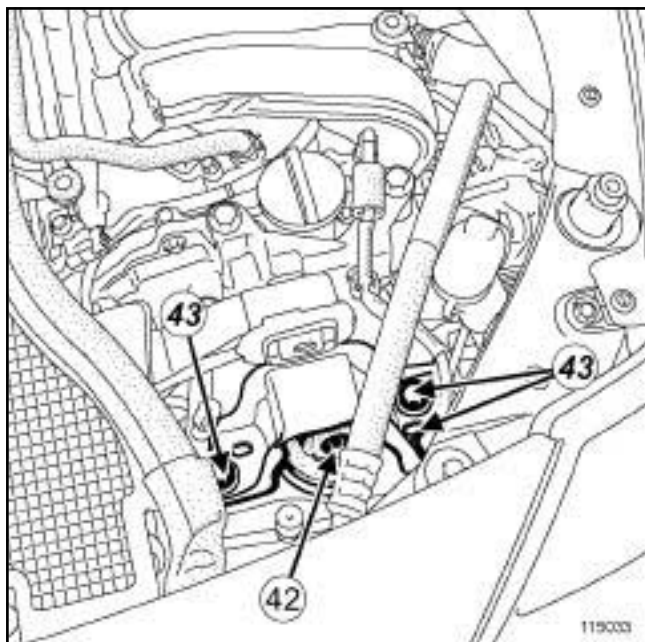
- ☐ Undo the upper engine tie-bar bolt (40) .
- ☐ Remove the upper engine tie-bar bolt (41) .



115035

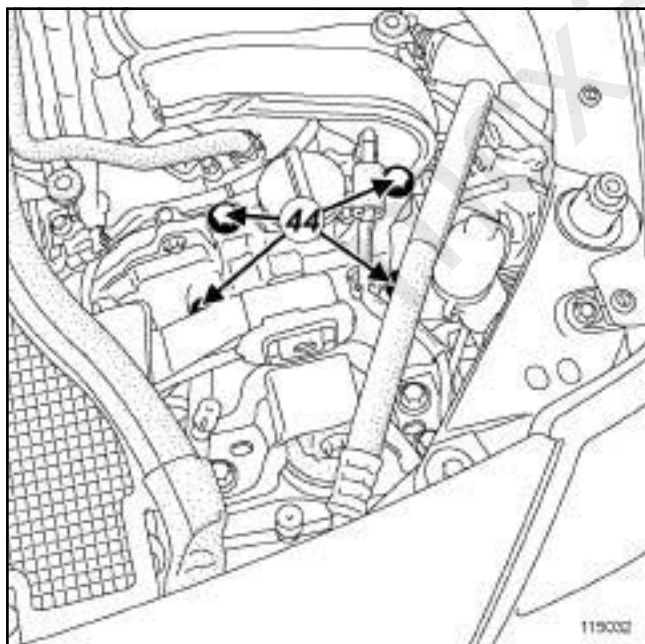
- ☐ Remove the upper engine tie-bar.

M4R, and DP0



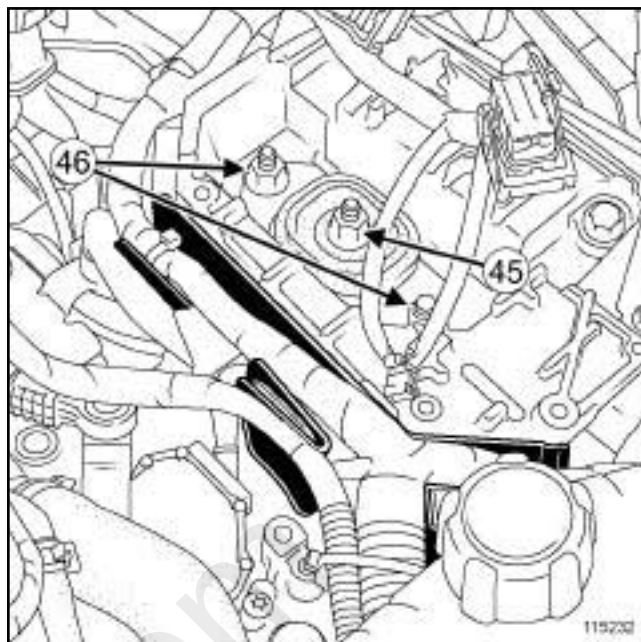
❑ Remove:

- the bolt (42) of the rubber pad on the right-hand suspended engine mounting,
- the bolts (43) of the rubber pad on the right-hand suspended engine mounting.



❑ Remove:

- the bolts (44) from the right-hand suspended engine mounting cover,
- the right-hand suspended engine mounting cover,
- the rubber pad on the right-hand suspended engine mounting.

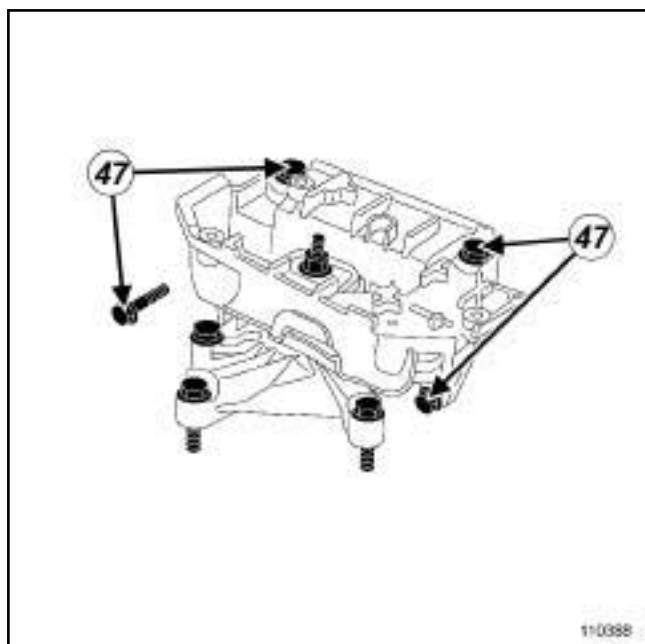


- ❑ Separate the neck of the electrical wiring from the gearbox support.

❑ Remove:

- the left-hand suspended engine mounting shaft nut (45) ,
- the nuts (46) from the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting rubber pad.

M4R, and DP0



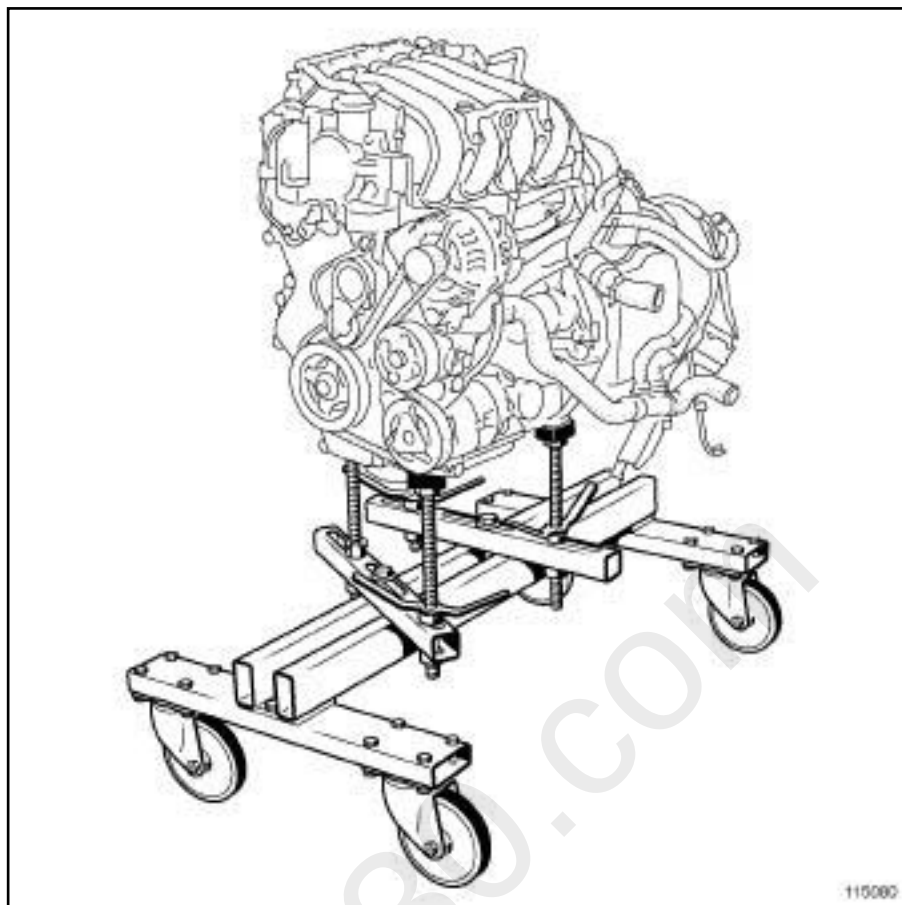
110388

☐ Remove:

- the bolts (47) from the left-hand suspended engine mounting support on the body,
- the left-hand suspended engine mounting support on the body.

- ☐ Gently move the engine towards the front of the vehicle.

M4R, and DP0



115080

- ☐ Lift the vehicle to remove the «engine-gearbox» assembly.

Note:

Check that no component obstructs the movement of the body around the «engine - gearbox» assembly.

REFITTING

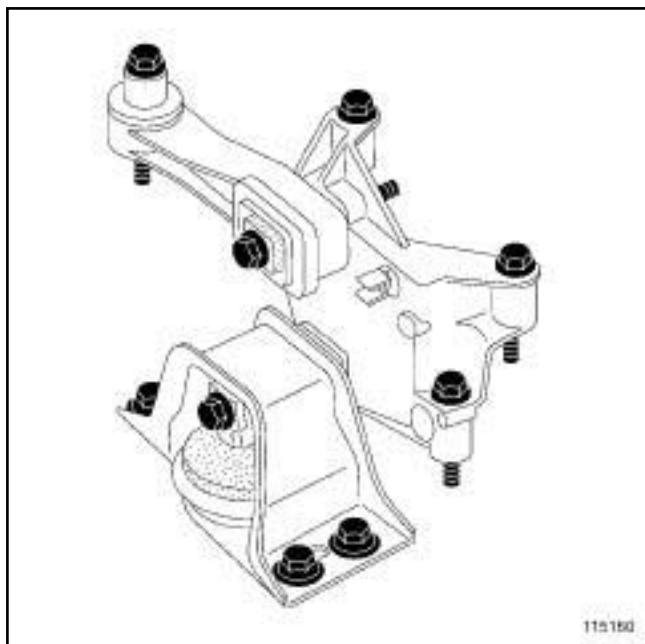
I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Engine: Standard replacement**) (Technical Note 6020A, 10A, Engine and peripherals).
- ☐ **parts always to be replaced: seal between catalytic converter and exhaust downpipe hose (10, 08,02,21).**

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Position the «engine - gearbox» assembly in the body.

M4R, and DP0



115160

☐ Fit:

- the rubber pad on the right-hand suspended engine mounting.
- the right-hand suspended engine mounting cover.

☐ Pretighten:

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

Note:

Allow the two parts to move freely.

☐ Fit the bolt of the right-hand suspended engine mounting rubber pad.

☐ Tighten to torque and in order:

- the **bolts of the right-hand suspended engine mounting cover (62 N.m)**,
- the **bolts for the right-hand suspended engine mounting rubber pad (62 N.m)**,
- the **bolt of the right-hand suspended engine mounting rubber pad (105 N.m)**,
- the **upper engine tie-bar bolts (105 N.m)**.

☐ Refit:

- the left-hand suspended engine mounting support on the body,
- the left-hand suspended engine mounting support bolts,

- the left-hand suspended engine mounting rubber pad,
- the nuts for the left-hand suspended engine mounting rubber pad,
- the left-hand suspended engine mounting shaft nut.

☐ Tighten to torque:

- the **support bolts for the left-hand suspended engine mounting on the vehicle body (62 N.m)**,
- the **left-hand suspended engine mounting rubber pad nuts (62 N.m)**,
- the **left-hand suspended engine mounting central nut (62 N.m)**.

III - FINAL OPERATION

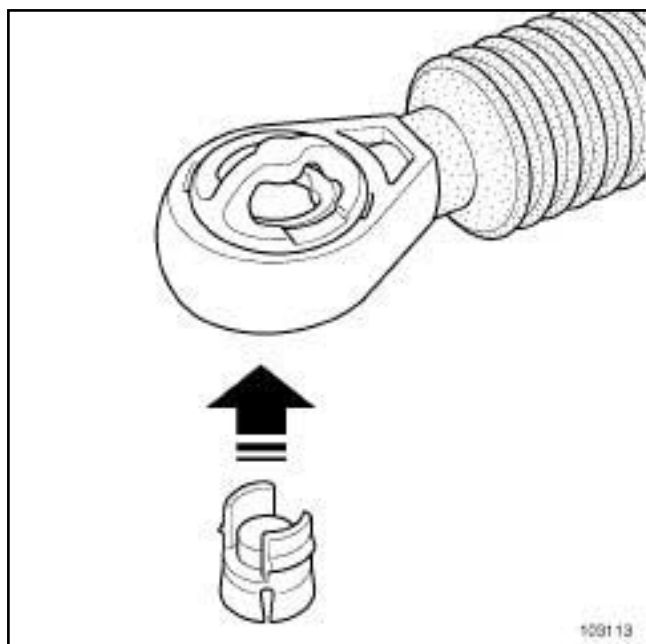
☐ Connect:

- the engine electrical wiring,
- the air conditioning pipe unions,
- the cooling hoses,
- the air flowmeter connector,
- the fuel supply pipe,
- the petrol vapour rebreathing pipe,
- the brake servo pipe on the inlet manifold.

☐ Clip:

- the fuel supply pipe,
- the air flowmeter connector electrical wiring.

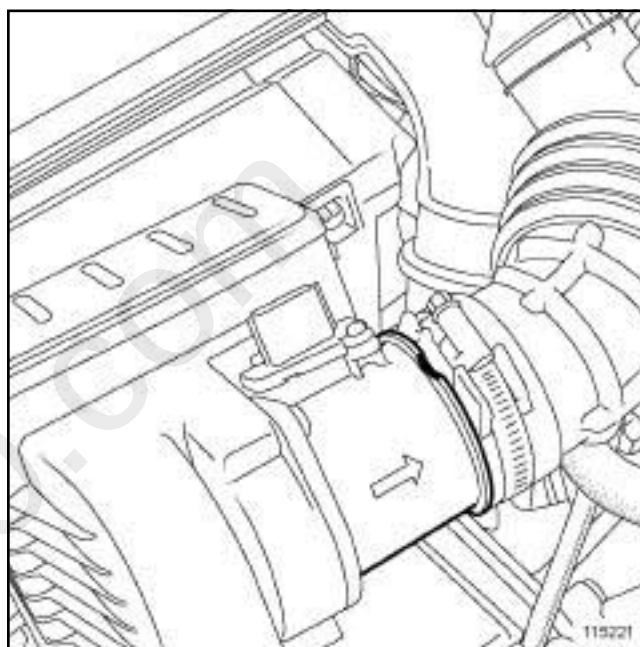
M4R, and DP0



103113

- ☐ Be sure to replace the clip on the gearbox control cable ball joint each time it is removed.
- ☐ Fit the gearbox control cable.
- ☐ Fit a new exhaust flange seal.
- ☐ Tighten to torque:
 - the **exhaust flange bolts (21 N.m)**,
 - the **engine tie-bar bolt on the engine (180 N.m)**,
 - the **engine tie-bar bolt on the subframe (105 N.m)**.
- ☐ Refit:
 - the battery tray (see **Battery tray: Removal - Refitting**) (80A, Battery),
 - the battery (see **Battery: Removal - Refitting**) (80A, Battery),
 - the front left-hand wheel driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the radiator (see **19A, Cooling, Cooling radiator: Removal - Refitting**, page **19A-20**),
 - the radiator mounting cross member (see **Radiator mounting cross member: Removal - Refitting**) (41A, Front lower structure),
 - the front end panel air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-10**),

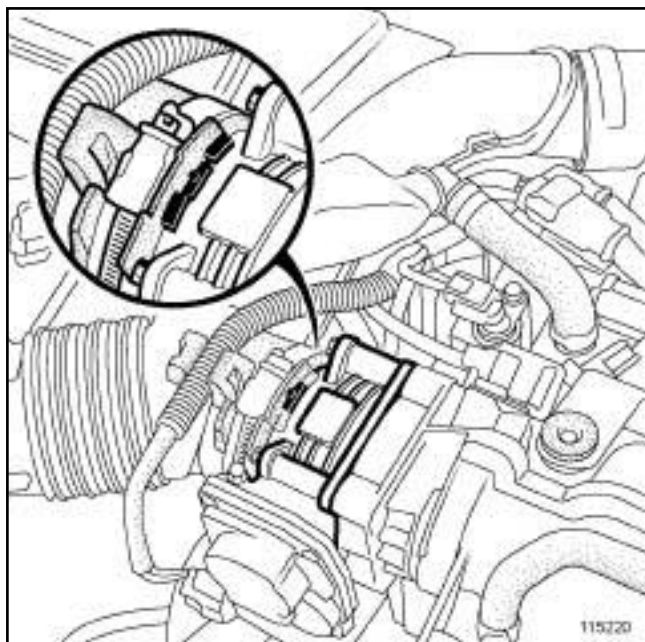
- the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure),
- the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
- the front sections of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).



115221

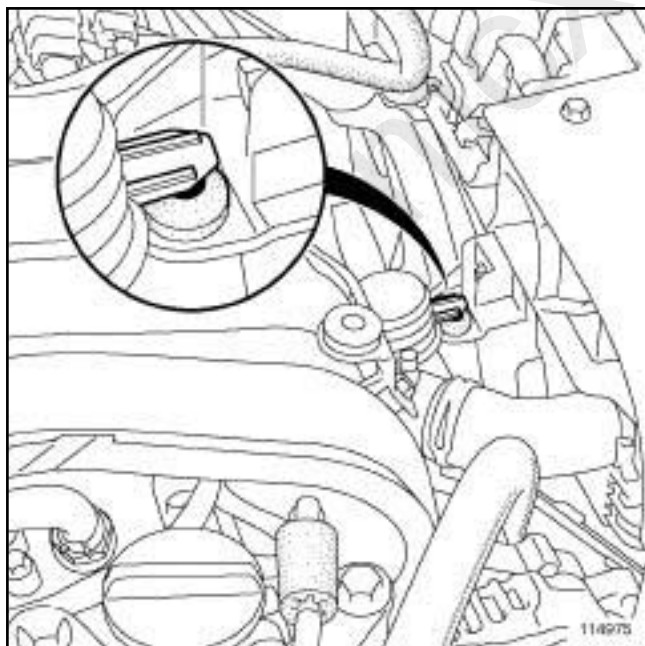
- ☐ Fit the air inlet duct on the air flowmeter, paying attention to the fitting mark.

M4R, and DP0



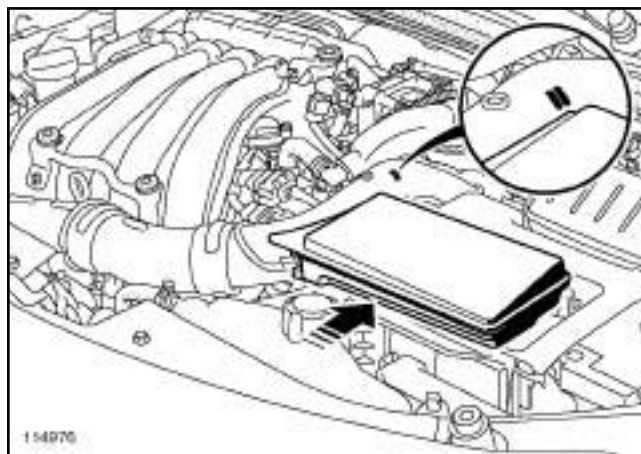
115220

- ☐ Fit the air inlet duct on the motorised throttle valve, paying attention to the fitting mark.
- ☐ Connect the oil vapour rebreathing hose on the rocker cover.
- ☐ Torque tighten the **air inlet duct clips (6 N.m)**.
- ☐ Clip the electrical wiring onto the air inlet duct.



114975

- ☐ Before refitting the air intake sleeve, check that the upper mounting is correctly clipped onto the front end panel air resonator.
- ☐ Refit the air intake sleeve.



114976

- ☐ Push the air resonator towards the rear of the vehicle so that the corner of the air resonator is between the two lines marked on the air inlet hose.
- ☐ Press on the air resonator to fit it into the battery cover.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Perform the following operations:
 - fill the automatic transmission (see **Automatic gearbox oil: Draining - Filling**) (23A, Automatic transmission),
 - fill the refrigerant circuit using a **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
 - fill and bleed the coolant circuit (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) .
- ☐ Refit the engine cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 or TL4

Special tooling required

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

Equipment required

refrigerant charging station

Tightening torques

left-hand suspended engine mounting shaft nut	62 N.m
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engine tie-bar bolts	105 N.m
----------------------	----------------

front cross member bolts	105 N.m
--------------------------	----------------

air conditioning pipe bolts	8 N.m
-----------------------------	--------------

nut mounting the inter-cooler inlet air pipe on the alternator	8 N.m
--	--------------

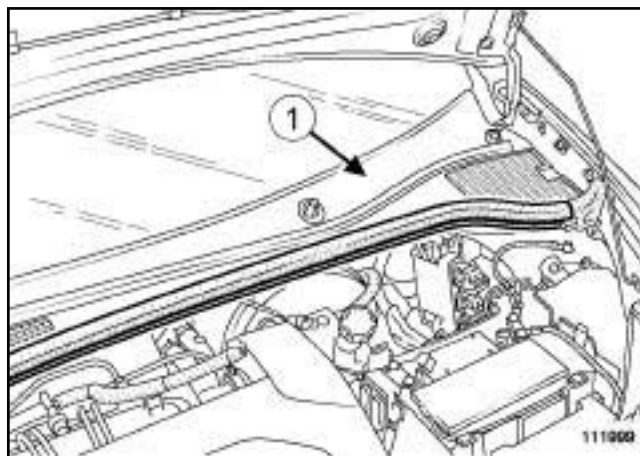
REMOVAL

I - REMOVAL PREPARATION OPERATION

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

K9K, and 772

- ☐ Discharge the pressure in the fuel supply circuit of the exhaust fuel injector (see **19B, Exhaust, Exhaust fuel injector: Removal - Refitting**, page **19B-64**).

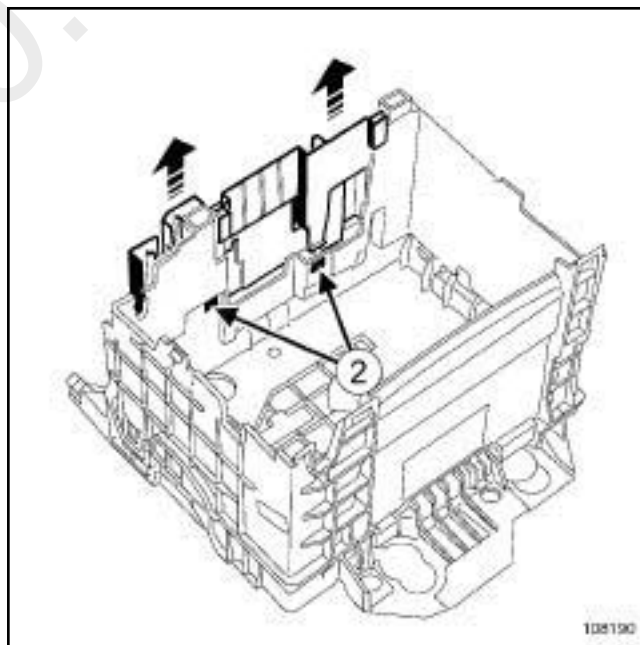


111999

☐ Remove:

- the scuttle panel grille (1) (see **Scuttle panel grille: Removal - Refitting**) (56A, Exterior equipment),
- the scoop under the scuttle panel grille.

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



108190

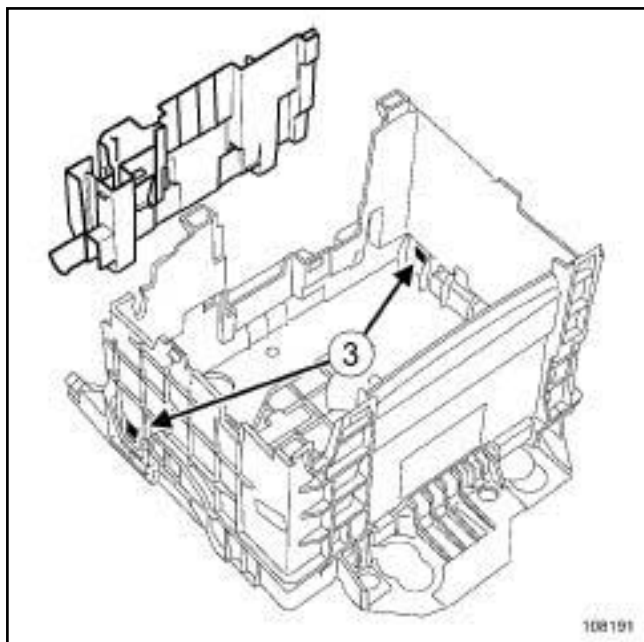
- ☐ Unclip the power supply fuse board support at (2).
- ☐ Move the support from the fuse board as indicated by the arrows.

ENGINE AND CYLINDER BLOCK ASSEMBLY

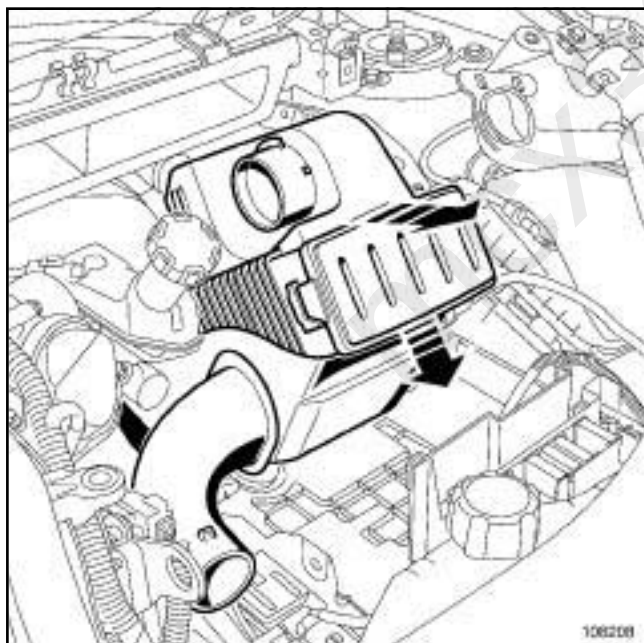
Engine - gearbox assembly: Removal - Refitting

10A

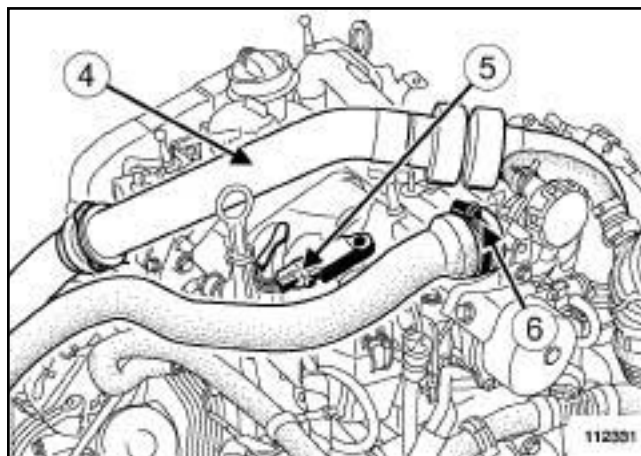
K9K, and JH3 or JR5 or TL4



- ☐ Remove the shielding by unclipping at (3) .
- ☐ Disconnect the connector from the air flowmeter (if equipped).



- ☐ Loosen the air inlet duct clip on the air filter unit.
- ☐ Remove:
 - the air filter unit,
 - the battery tray base.

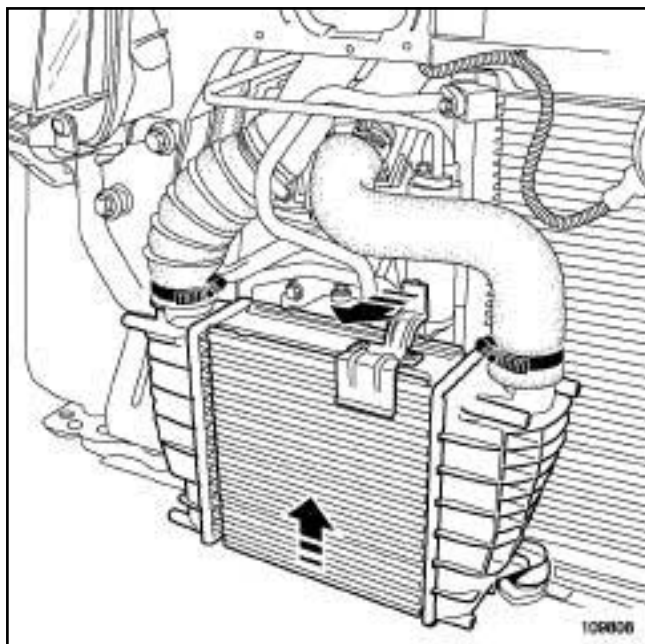


- ☐ Loosen the intercooler air inlet pipe nut on the alternator.
- ☐ Remove the air duct bolt on the rocker cover.
- ☐ Separate the clips on the turbocharger air duct and on the intercooler air inlet pipe.
- ☐ Unclip the air duct (4) on the turbocharger and the intercooler air inlet pipe.
- ☐ Disconnect the connector (5) from the inlet air pressure sensor.
- ☐ Loosen
- ☐ Remove:
 - the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection).

K9K, and 764 or 772

- ☐ Disconnect the electrical connector from the damper valve (if equipped).

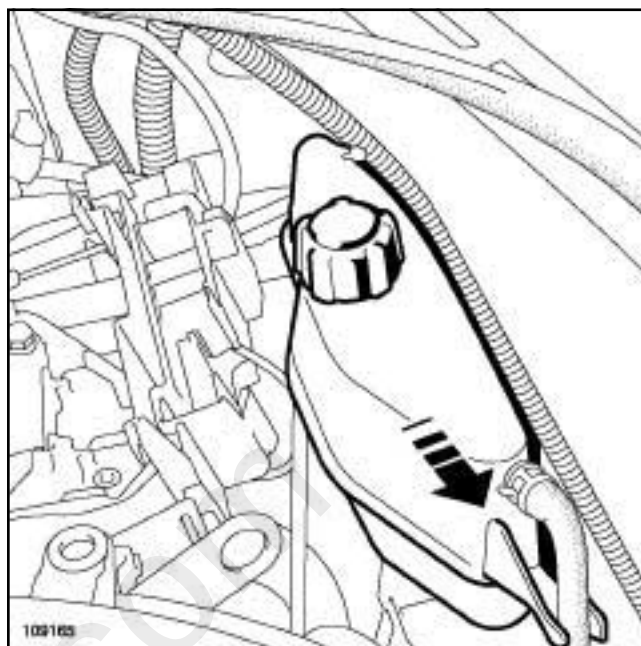
K9K, and JH3 or JR5 or TL4



109808

- ☐ Remove the air duct clips on the intercooler.
- ☐ Pull the tab and lift the intercooler from its mounting studs.
- ☐ Remove:
 - the intercooler,
 - the nut from the air ducts on the alternator,
 - the turbocharging air ducts.
- ☐ Drain:
 - the cooling system (see **19A, Cooling, Cooling system: Draining - Refilling**, page 19A-16) ,
 - the manual gearbox oil (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox),
 - the engine oil if necessary (see **10A, Engine and cylinder block assembly, Engine oil: Draining - Refilling**, page 10A-13) ,
 - the refrigerant fluid circuit using the **refrigerant charging station** (see **Refrigerant circuit: Draining - Filling**) (62A, Air conditioning).
- ☐ Remove:
 - the front left-hand driveshaft (see **Front left-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).
- ☐ Disconnect:
 - the engine cooling fan assembly connectors,

- the top hose on the coolant outlet unit,
- the passenger compartment heating hoses.



109165

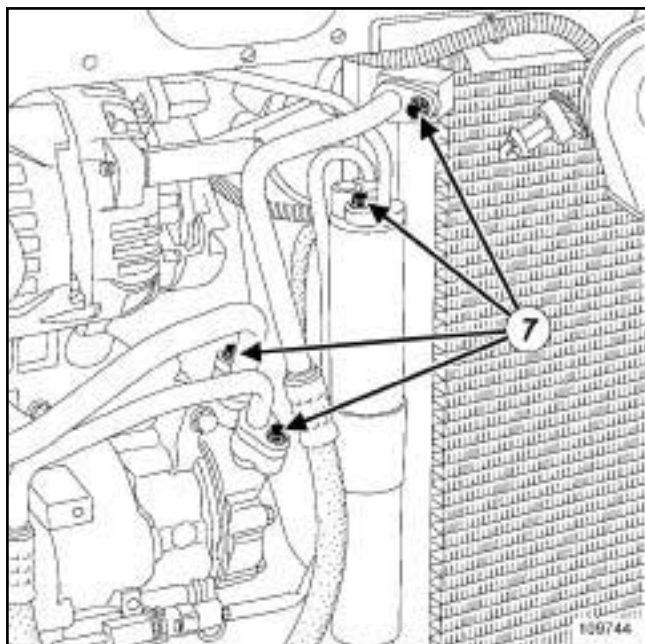
- ☐ Extract the expansion bottle from its housing by following the direction of the arrow and put it to one side.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 or TL4

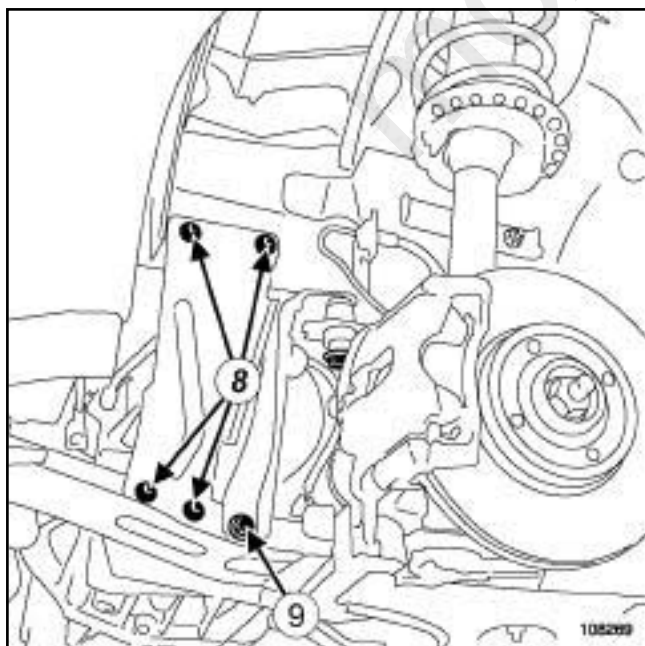


109744

- ☐ Disconnect the pressure switch connector on the condenser.
- ☐ Remove the bolts (7) from the air conditioning pipes.

WARNING

To prevent moisture from entering the system, place plugs on the cold loop components which are open to the air.

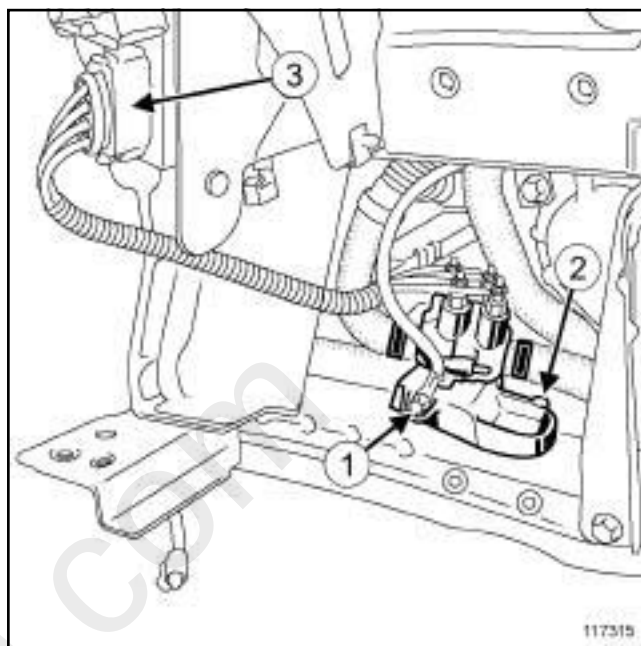


108269

- ☐ Remove:
 - the left-hand side reinforcement bolts (8) ,

- the left-hand side reinforcement,
- the lower bolt (9) from the side tie rods.

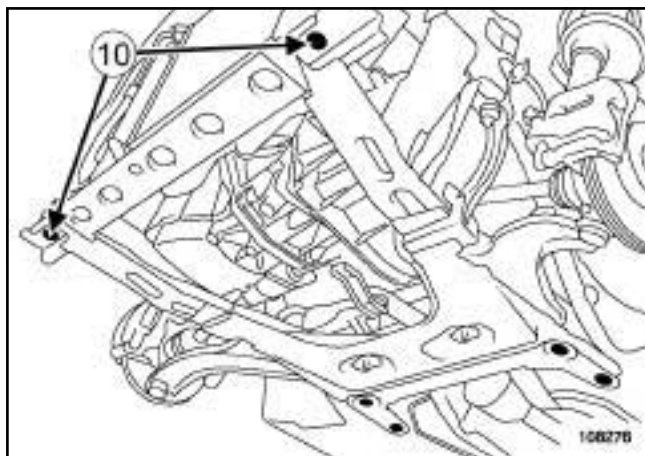
K9K, and 772



117315

- ☐ Remove:
 - the bolt (1) mounting the earth on the thermoplunger unit and the coolant pump mounting,
 - the bolt (2) mounting the thermoplunger unit and the coolant pump mounting on the radiator mounting cross member.
- ☐ Disconnect the connector (3) from the thermoplunger unit.

K9K, and JH3 or JR5 or TL4



108276

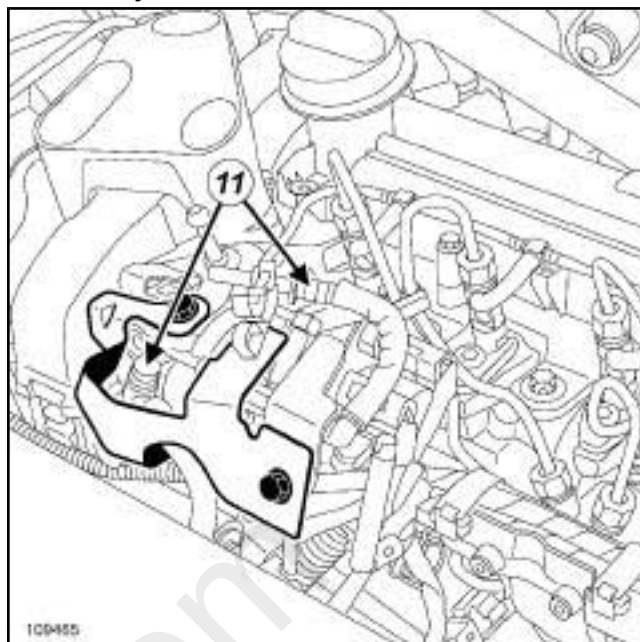
❑ Remove:

- the front cross member bolts (10) ,
- the front radiator cross member,
- the cooling radiator assembly,
- the earth wiring.

❑ Disconnect:

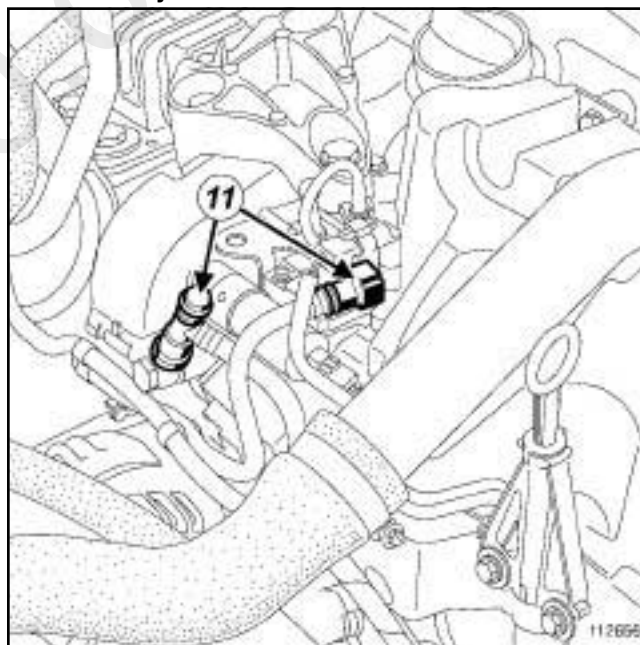
- the pre-postheating unit connector ,
- the coolant temperature sensor.

DELPHI injection



109465

SIEMENS injection



112656

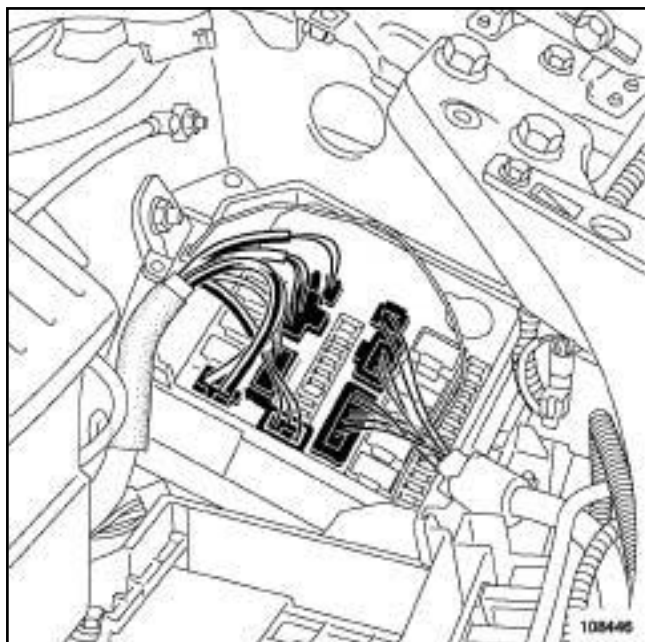
- ❑ Disconnect the fuel supply and return pipes on the high-pressure pump (11) .
- ❑ Move aside the engine wiring.
- ❑ Remove the Protection and Switching Unit cover.

ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

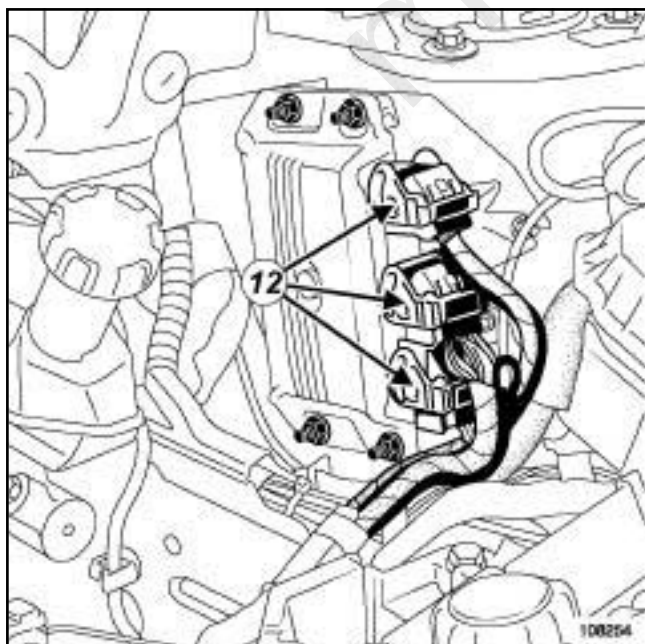
K9K, and JH3 or JR5 or TL4



108446

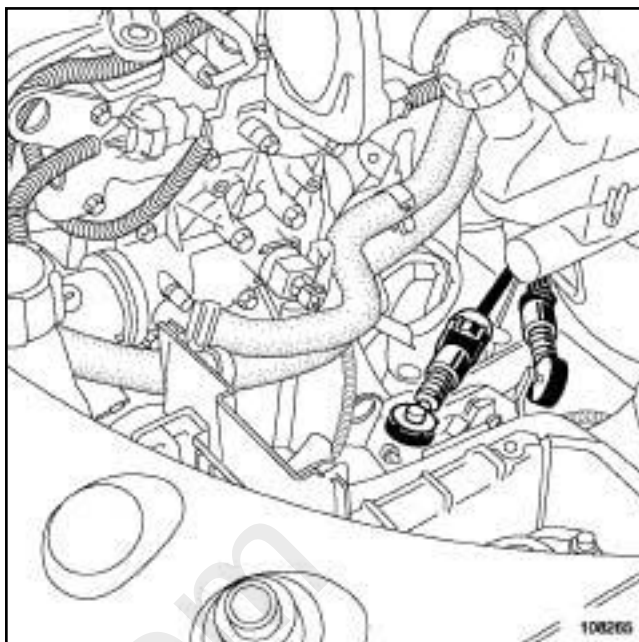
□ Disconnect:

- the Protection and Switching Unit connectors,
- the brake servo pipe from the vacuum pump,
- the engine fuses **30A** and **70A**,
- the fuse holder on the fuse board,
- the feed wiring on the fuse board,
- the supply wiring on the battery protection fuse box.

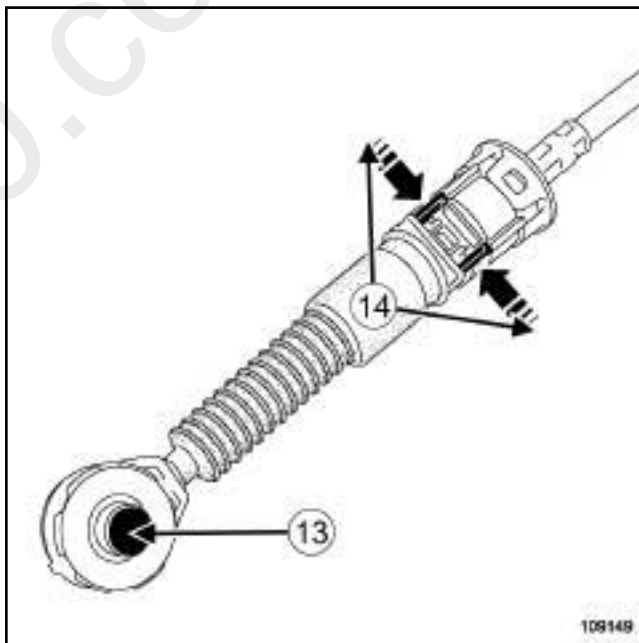


108254

- Disconnect the injection computer connectors (12) .



108265



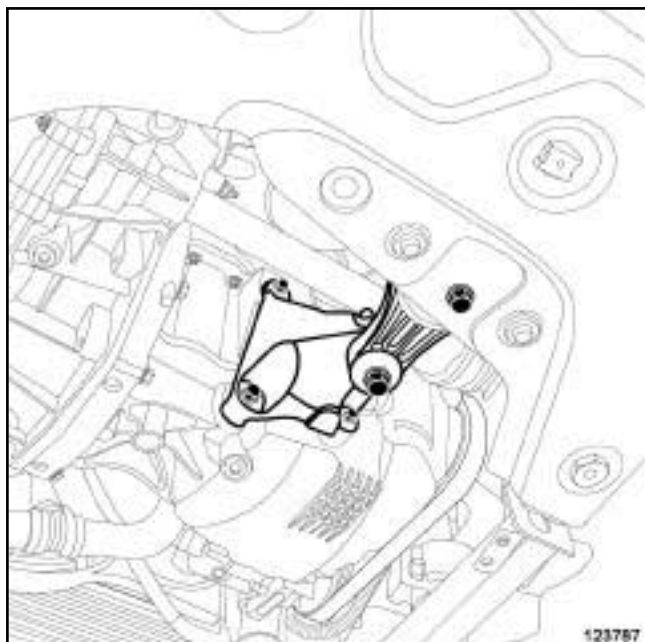
109149

□ Remove:

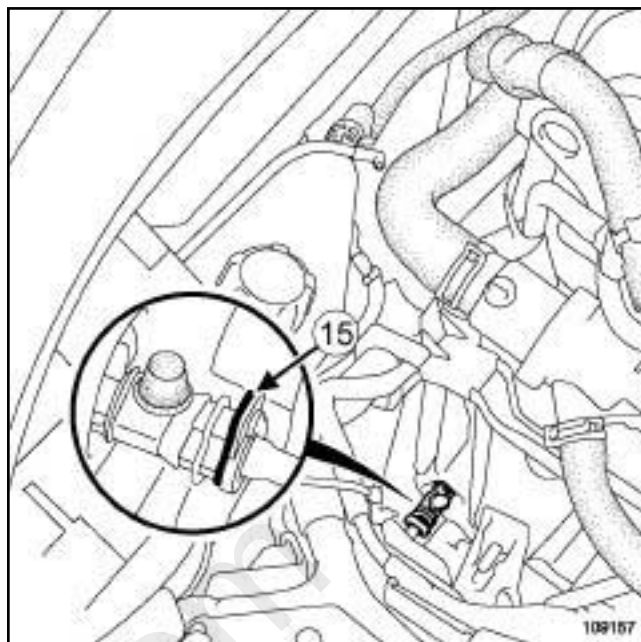
- the gear control cables on the gearbox by pushing at (13) ,
- the gear control cables from the sleeve stops by pressing at (14) ,
- the wiring harness channel mountings on the gear-box.

K9K, and JH3 or JR5 or TL4

K9K/TL4

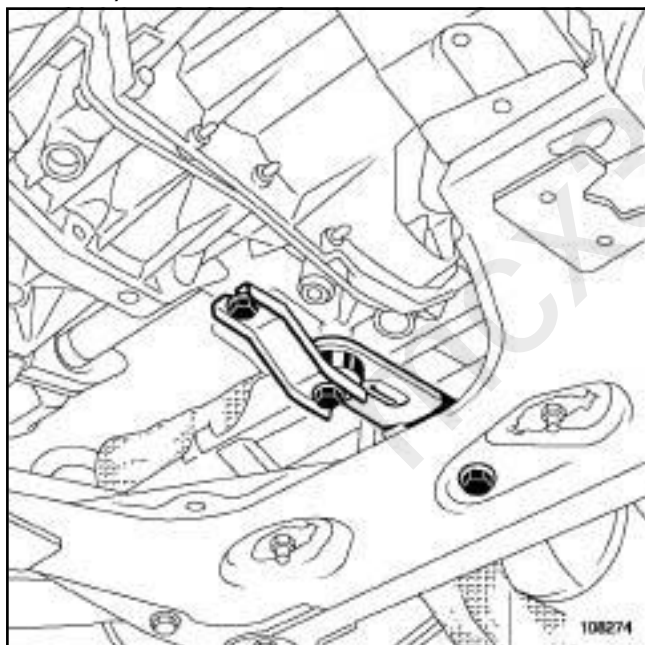


123787



109157

K9K/JH3, JR5

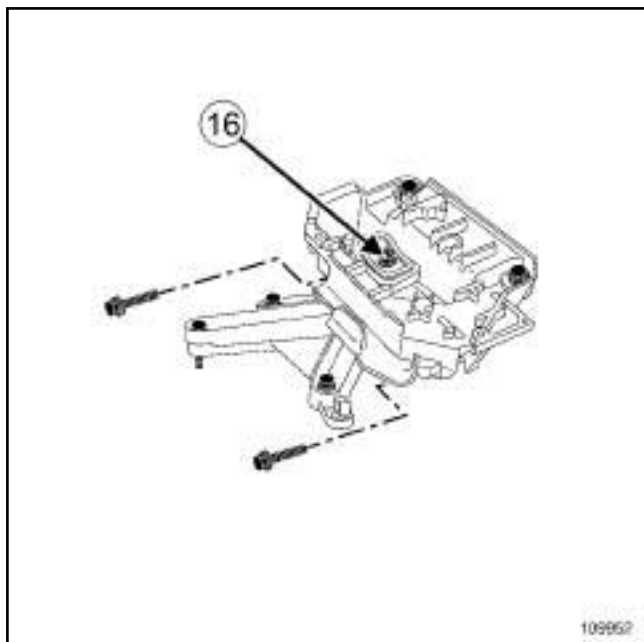


108274

- ☐ Remove:
 - the engine tie-bar,
 - the exhaust downpipe bolts.
- ☐ Drain the brake fluid reservoir down to the clutch master cylinder pipe union using a syringe.

- ☐ Remove the clip at the wheel end (15) .
- ☐ Disconnect the clutch pipe from the clutch slave cylinder.
- ☐ Support the « engine-gearbox assembly» on the (Mot. 1390) .
- ☐ Mark the positions of the suspended engine mountings on the body.
- ☐ Remove the right-hand suspended engine mounting (see 19D, Engine mounting, Right-hand suspended engine mounting: Removal - Refitting, page 19D-22) .

K9K, and JH3 or JR5 or TL4



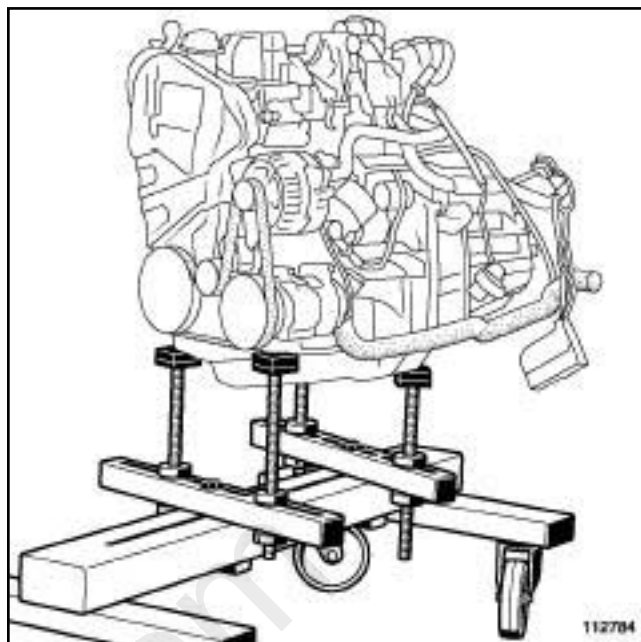
- ☐ Remove the left-hand suspended engine mounting shaft nut (16) .

K9K, and 772

- ☐ Disconnect the fuel supply union from the diesel injector on the catalytic pre-converter.

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Raise the vehicle, moving the engine towards the front.



- ☐ Extract the « engine - gearbox » assembly from the engine compartment.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ For standard engine replacements (see **Standard replacement**) (Technical Note 6006A, 10A, Engine and peripherals).

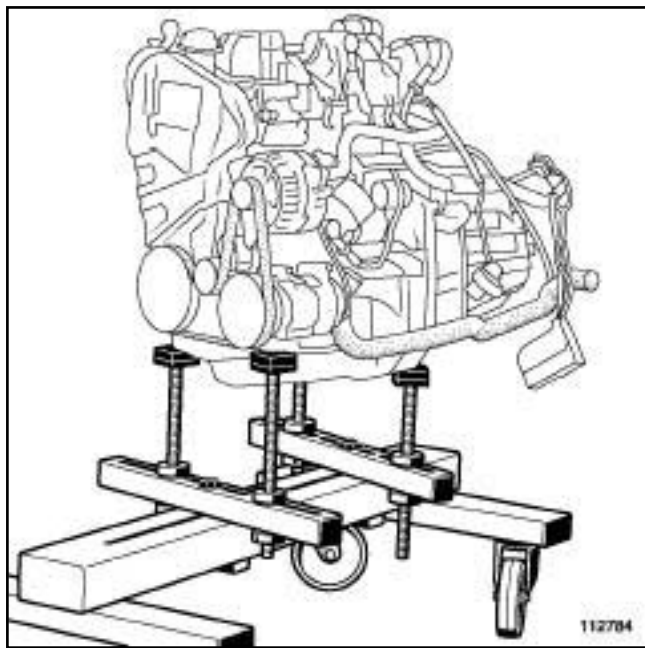
ENGINE AND CYLINDER BLOCK ASSEMBLY

Engine - gearbox assembly: Removal - Refitting

10A

K9K, and JH3 or JR5 or TL4

II - REFITTING OPERATION FOR PART CONCERNED



112784

- ☐ Position the « engine - gearbox » assembly in the engine compartment.

III - FINAL OPERATION

K9K, and 772

- ☐ Connect the fuel supply union to the diesel injector on the catalytic pre-converter.
- ☐ Fit the left-hand suspended engine mounting shaft.
- ☐ Refit:
 - the left-hand suspended engine mounting shaft nut,
 - the right-hand suspended engine mounting.
- ☐ Remove the tool (**Mot. 1390**).
- ☐ Torque tighten the **left-hand suspended engine mounting shaft nut (62 N.m)**.
- ☐ Connect the clutch pipe.
- ☐ Bleed the clutch circuit (see **Clutch circuit: Bleed**) (37A, Mechanical component control).
- ☐ Refit:
 - the exhaust downpipe bolts,
 - the lower engine tie-bar.
- ☐ Torque tighten the **engine tie-bar bolts (105 N.m)**.

- ☐ Refit the gear control cables.
- ☐ Connect:
 - the injection computer connectors,
 - the supply wiring on the battery protection fuse box,
 - the feed wiring on the fuse board,
 - the fuse holder on the fuse board,
 - the engine fuses **30A** and **70A**,
 - the brake servo pipe on the vacuum pump,
 - the Protection and Switching Unit connectors.

K9K, and 764 or 772

- ☐ Disconnect the electrical connector from the damper valve (if equipped).
- ☐ Fit the engine wiring.
- ☐ Connect the fuel supply and return pipes on the high-pressure pump.
- ☐ Connect:
 - the coolant temperature sensor,
 - the pre-postheating unit connector ,
 - the earth wiring.
- ☐ Refit:
 - the cooling radiator assembly,
 - the front radiator cross member,
 - the front cross member bolts.
- ☐ Tighten to torque the **front cross member bolts (105 N.m)**.

TL4

- ☐ Refit:
 - the bolt mounting the earth on the thermoplunger unit and the coolant pump mounting,
 - the bolt on the thermoplunger unit and the coolant pump mounting on the radiator mounting cross member.
- ☐ Connect the thermoplunger unit connector.
- ☐ Refit:
 - the side tie-rod lower bolts,