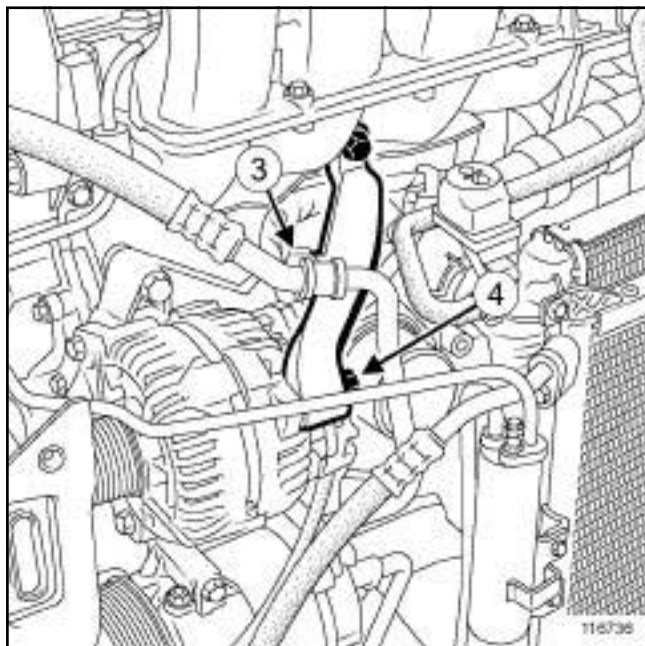


Injector holder shim: Removal - Refitting

F4R

II - OPERATION FOR REMOVAL OF PART CONCERNED



116736

- ☐ remove the mounting bolt (3) from the pipe connecting the «expansion valve - compressor» on the stay.
- ☐ Loosen the lower mounting bolt (4) of the stay sufficiently between the alternator and the injector holder plate.
- ☐ Remove:
 - the injector holder plate mounting bolts,
 - the injector holder plate, moving aside the stay between the alternator and the injector holder plate.

Note:

Mark the length of the mounting bolts when they are removed.

REFITTING

I - REFITTING PREPARATIONS OPERATION

- ☐ Carefully clean the joint faces.
- ☐ Always replace all of the seals with new ones.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Move the top of the stay aside.

- ☐ Bring the injector holder plate and the stay alongside each other so that the upper mounting hole on the stay and the mounting hole on the injector holder plate are aligned.
- ☐ Pull back the injector holder plate - stay assembly.
- ☐ Refit the injector holder plate mounting bolts.
- ☐ Torque tighten the **injector holder plate mounting bolts (21 Nm)**.
- ☐ Torque tighten the **stay mounting bolt between the alternator and the injector holder plate (21 Nm)**

1 - When replacing the injector holder plate

- ☐ Refit the injector rail fitted with its injectors (see **13A, Fuel supply, Injector rail - Injectors: Removal - Refitting**, page **13A-11**) .

2 - refitting a single injector holder plate

- ☐ Position the injector wiring harness.
- ☐ Connect:
 - the injector connectors,
 - the fuel supply union on the injector rail.

III - FINAL OPERATION.

- ☐ Refit:
 - the mounting bolts on the pipe connecting the « expansion valve - compressor » ,
 - the intake distributor (see **12A, Fuel mixture, Inlet distributor: Removal - Refitting**, page **12A-46**) ,
 - the throttle valve (see **12A, Fuel mixture, Throttle valve: Removal - Refitting**, page **12A-33**) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Using the **Diagnostic tool**, check that there are no faults stored by the computer, and clear them if necessary.

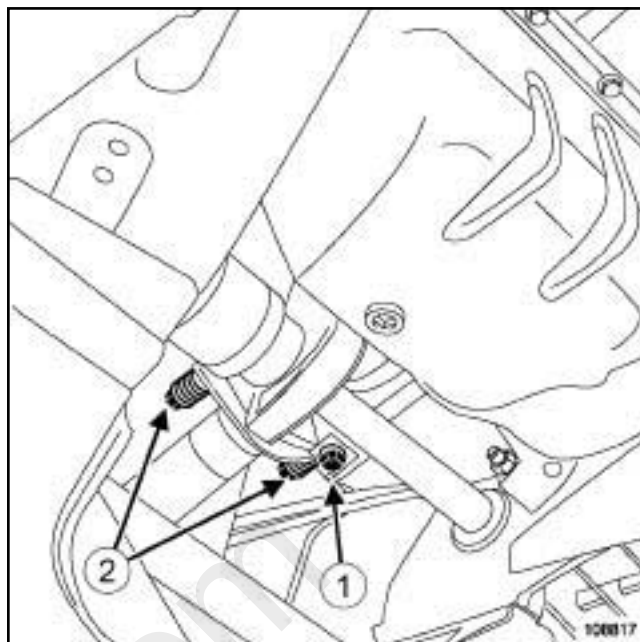
D4F, and 740 or 742 or 764

Tightening torques 	
manifold mounting stud	9 N.m
exhaust manifold mounting nuts	25 N.m
exhaust bracket mounting bolts	25 N.m

REMOVAL

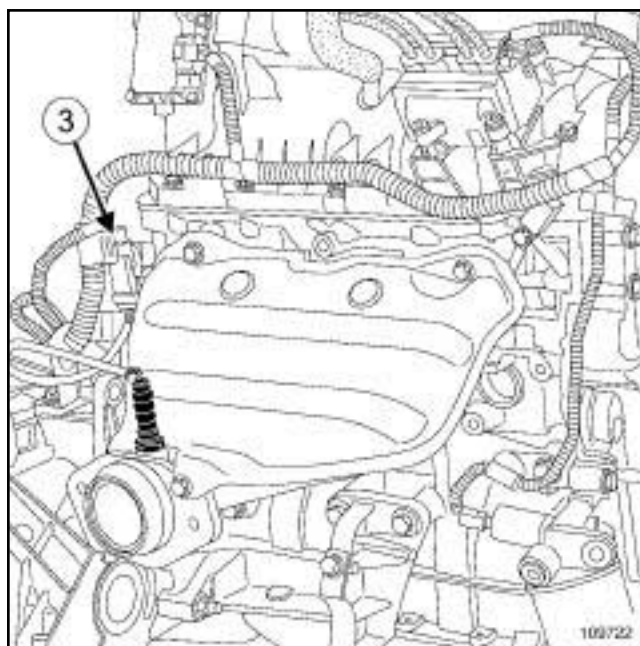
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR392, 80A, Battery).
- ☐ Remove:
 - the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-17) ,
 - the engine undertray.
- ☐ Unclip the wiring harness from the downstream oxygen sensor.
- ☐ Disconnect the connector from the downstream oxygen sensor.



108817

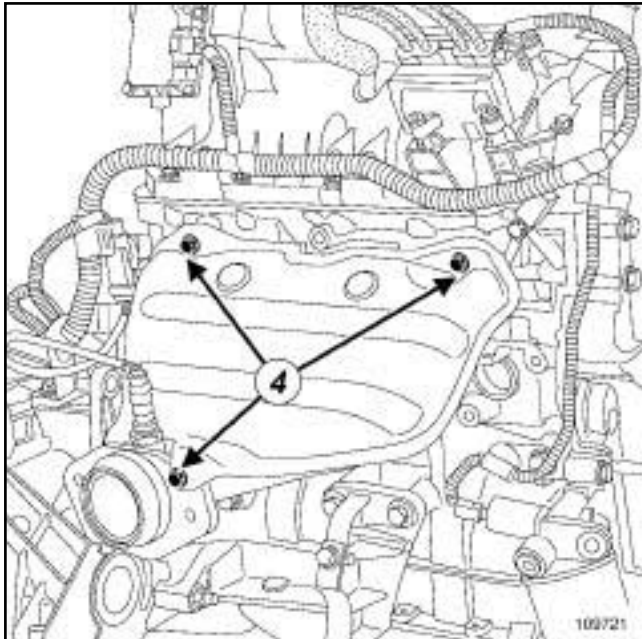
- ☐ Remove:
 - the exhaust manifold retaining strut mounting bolt **(1)** ,
 - the exhaust bracket mounting bolts **(2)** .
- ☐ Remove the exhaust pipe towards the rear of the vehicle.



109722

- ☐ Unclip the upstream oxygen sensor electrical wiring harness at the cylinder head.
- ☐ Disconnect the upstream oxygen sensor connector **(3)** .

D4F, and 740 or 742 or 764

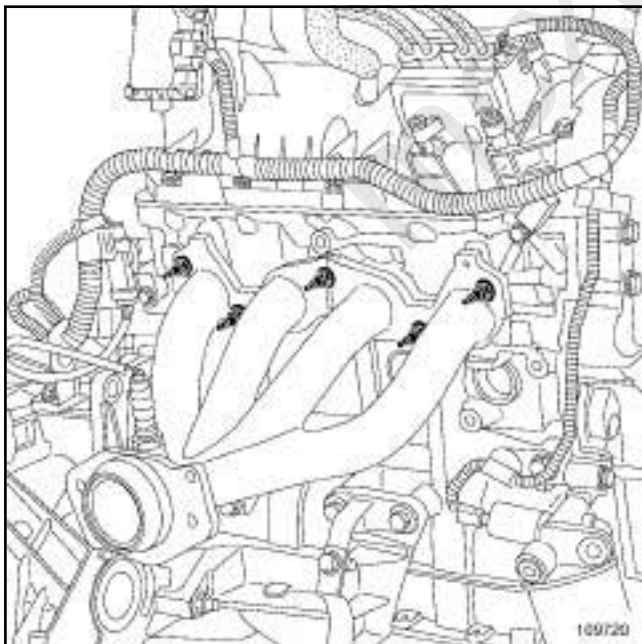


109721

❑ Remove:

- the heat shield mounting bolts (4) ,
- heat shield.

II - OPERATION FOR REMOVAL OF PART CONCERNED



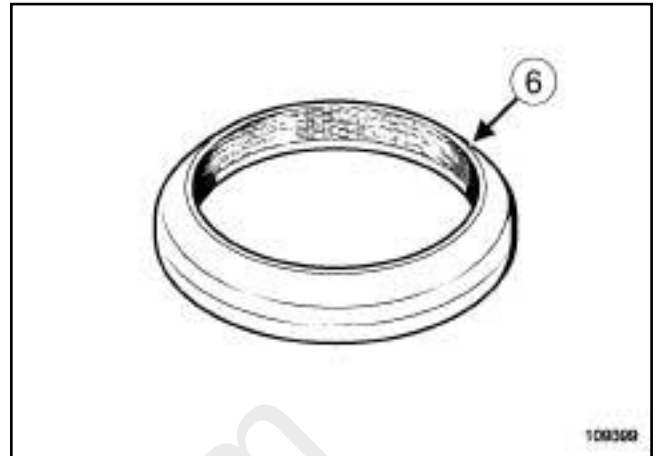
109720

❑ Remove:

- the exhaust manifold mounting nuts,
- the exhaust manifold,
- the exhaust manifold gasket.

REFITTING

I - REFITTING PREPARATION OPERATION



109399

❑ Always replace:

- the sealing ring (6) between the exhaust manifold and the catalytic converter,
- the exhaust manifold seal.

Note:

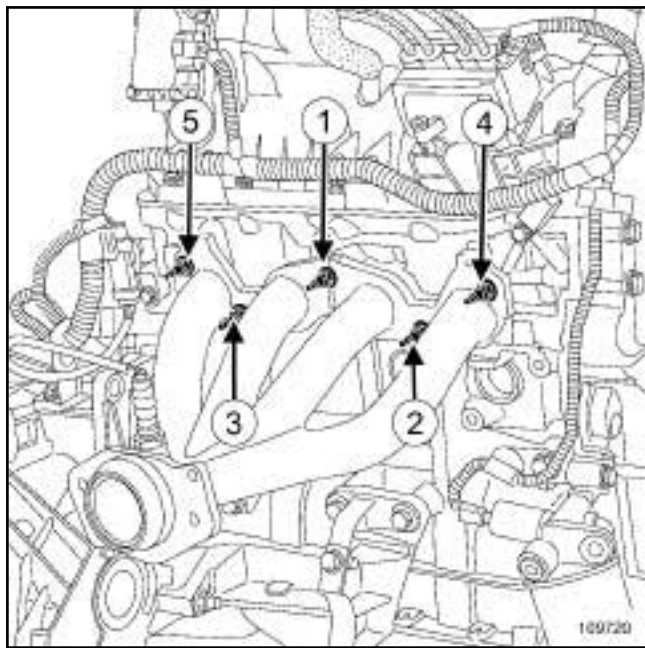
If a stud becomes loose during this operation, coat it with **LOCTITE FRENBLOC**.

Torque tighten the **manifold mounting stud (9 N.m)**.

Exhaust manifold: Removal - Refitting

D4F, and 740 or 742 or 764

II - REFITTING OPERATION FOR PART CONCERNED



109720

- ☐ Pre-tighten to torque and in order the **exhaust manifold mounting nuts (10 N.m)**.
- ☐ Tighten to torque and in order the **exhaust manifold mounting nuts (25 N.m)**.

III - FINAL OPERATION.

- ☐ Refit:
 - heat shield.
 - the heat shield mounting bolts,

WARNING

Any damaged heat shields must be replaced.

- ☐ Clip the wiring harness to the downstream oxygen sensor.
- ☐ Connect the downstream oxygen sensor connector.
- ☐ Refit the exhaust manifold retaining strut bolt.
- ☐ Torque tighten the **exhaust bracket mounting bolts (25 N.m)**.
- ☐ Connect the upstream oxygen sensor connector.
- ☐ Clip the upstream oxygen sensor wiring harness into place at the cylinder head.
- ☐ Refit:
 - the engine undertray,
 - the air filter box (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-17**).

- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR392, 80A, Battery).

K9K

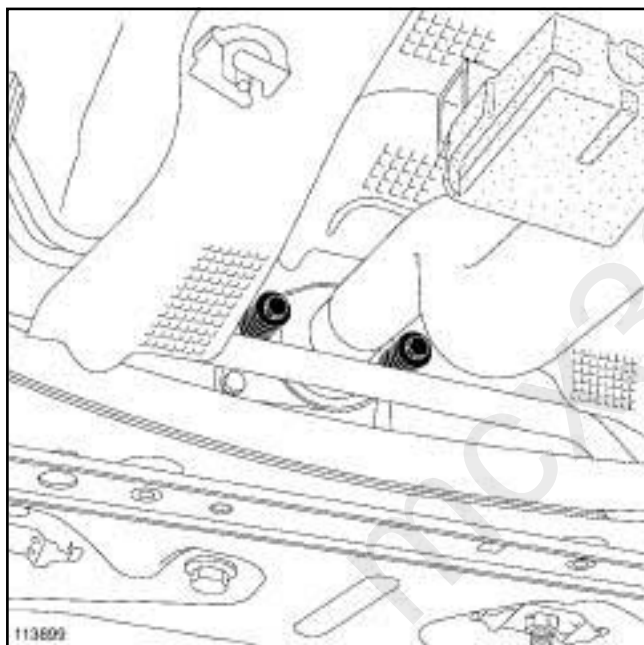
Tightening torques

exhaust manifold studs	10 Nm
exhaust manifold mounting nuts	26 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 undertray.



113899

- ☐ Remove:
 - the exhaust downpipe bolts,
 - the catalytic converter (see **19B, Exhaust, Catalytic converter: Removal - Refitting**, page **19B-27**),
 - the turbocharger (see **12B, Turbocharging, Turbocharger: Removal - Refitting**, page **12B-4**),

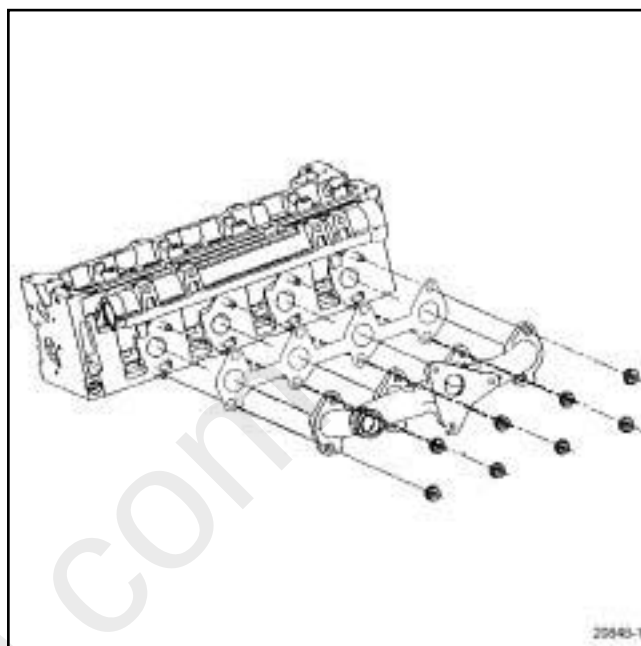
II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove:
 - the exhaust manifold mounting nuts,
 - the exhaust manifold.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ Clean the joint faces.



20848-1

☐

WARNING

It is essential to replace the seal with a new one.

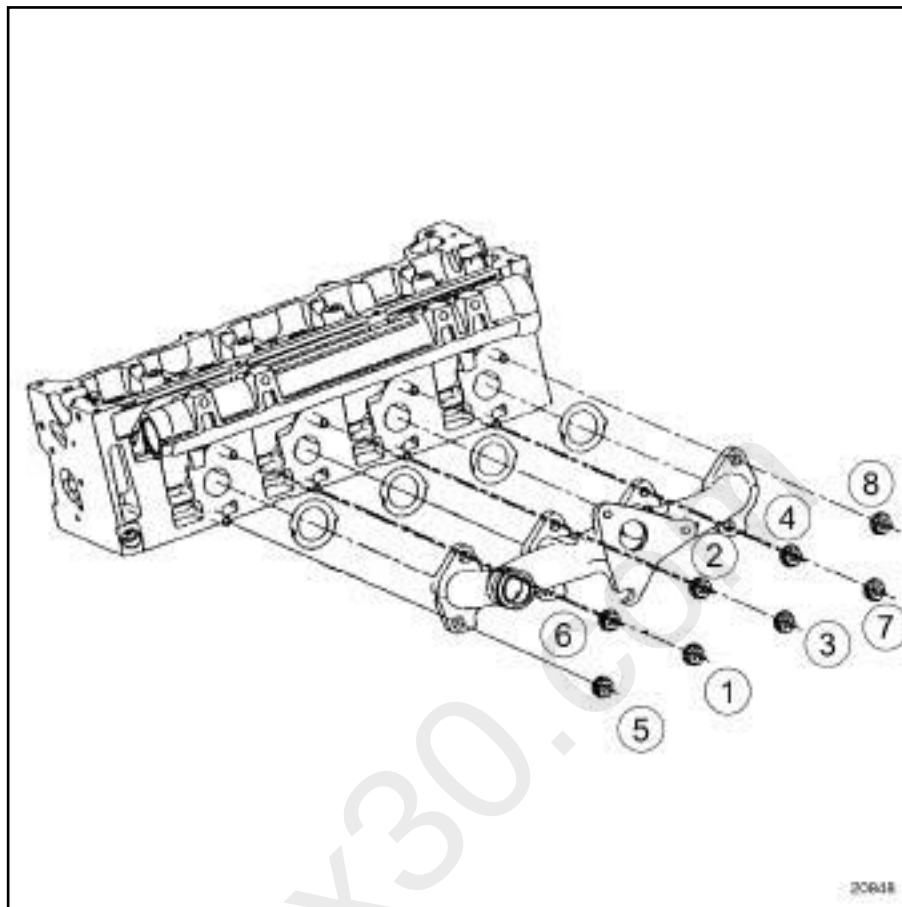
FUEL MIXTURE

Exhaust manifold: Removal - Refitting

12A

K9K

II - REFITTING OPERATION FOR PART CONCERNED



20848

- ☐ If replacing, torque tighten the **exhaust manifold studs (10 Nm)**
- ☐ refit:
 - the exhaust manifold,
 - the exhaust manifold mounting nuts.
- ☐ Torque tighten in order the **exhaust manifold mounting nuts (26 Nm)**.

III - FINAL OPERATION.

- ☐ refit:
 - the turbocharger (see **12B, Turbocharging, Turbocharger: Removal - Refitting**, page **12B-4**) ,
 - the catalytic converter (see **19B, Exhaust, Catalytic converter: Removal - Refitting**, page **19B-27**) ,
 - the exhaust downpipe,
 - the engine undertray.

Exhaust manifold: Removal - Refitting

K4J or K4M

Tightening torques 	
exhaust manifold stud	8 N.m
lower heat shield bolts	12 N.m
exhaust manifold nuts	26 N.m
exhaust manifold nuts	26 N.m
exhaust manifold upstream and downstream stays	44 N.m
exhaust manifold upper heat shield bolts	12 N.m
upstream oxygen sensor	44 N.m
exhaust pipe support bolt on the body	21 N.m
exhaust flange bolts	21 N.m

IMPORTANT

Wear protective gloves during the operation.

WARNING

To prevent the surrounding components from overheating, do not damage (tear, pierce, bend, etc.) a heat shield.

Any damaged heat shields must be replaced.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

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

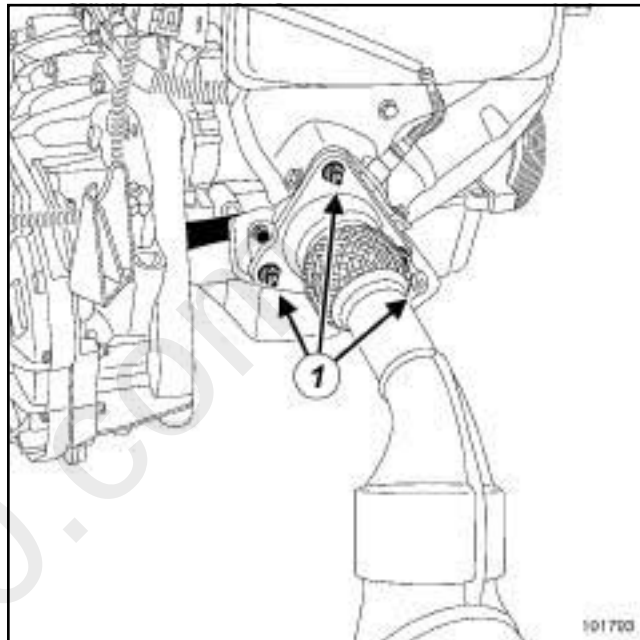
K4M, and 862

- ☐ Remove:

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

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection).

- ☐ Remove the intake distributor (see **12A, Fuel mixture, Inlet distributor: Removal - Refitting**, page 12A-46).



101793

- ☐ Remove the bolts (1) from the exhaust bracket.

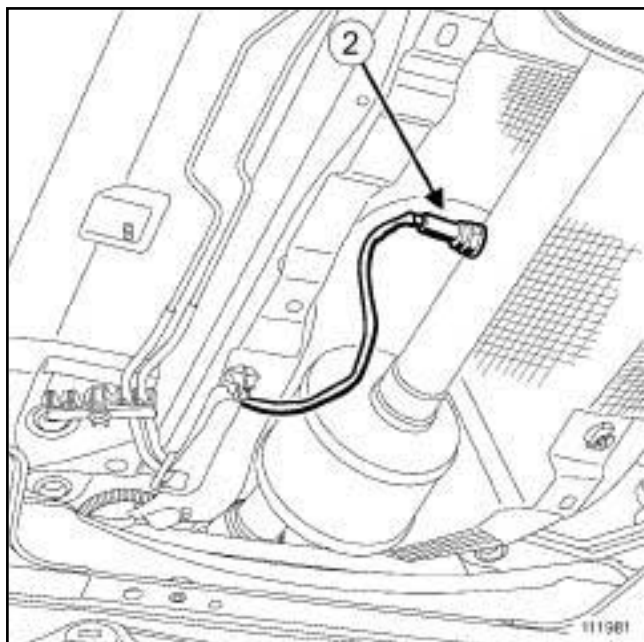
K4J – K4M, and 800 or 801 or 804

- ☐ Remove the exhaust pipe rubber mounting bush support bolt on the body.

Note:

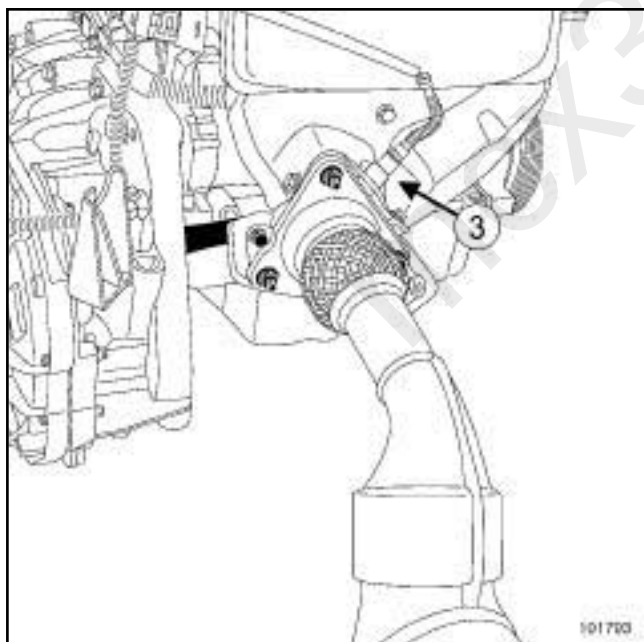
Mark with a pen the position of the exhaust silentbloc supports on the vehicle body.

K4J or K4M



111981

- ☐ Disconnect the downstream oxygen sensor connector at (2) .
- ☐ Withdraw the exhaust pipe towards the rear of the vehicle.

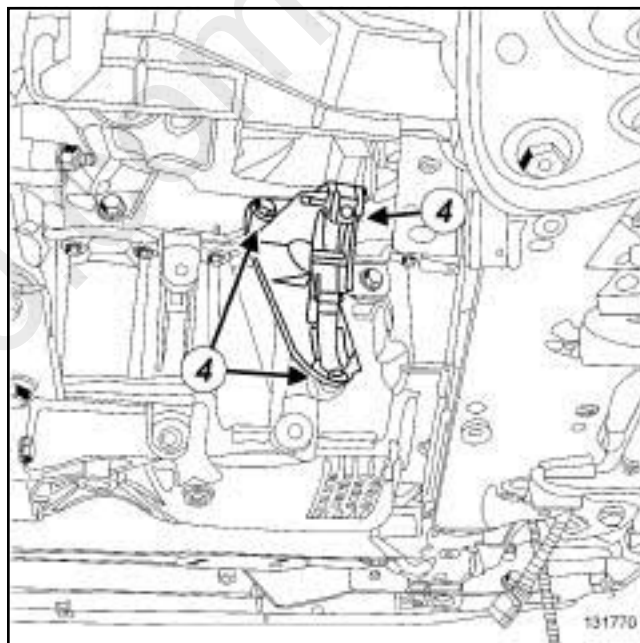


101793

- ☐ Disconnect the upstream oxygen sensor connector.
- ☐ Remove:
 - the upstream oxygen sensor (3) ,
 - the upper heat shield from the exhaust manifold.

K4M, and 862

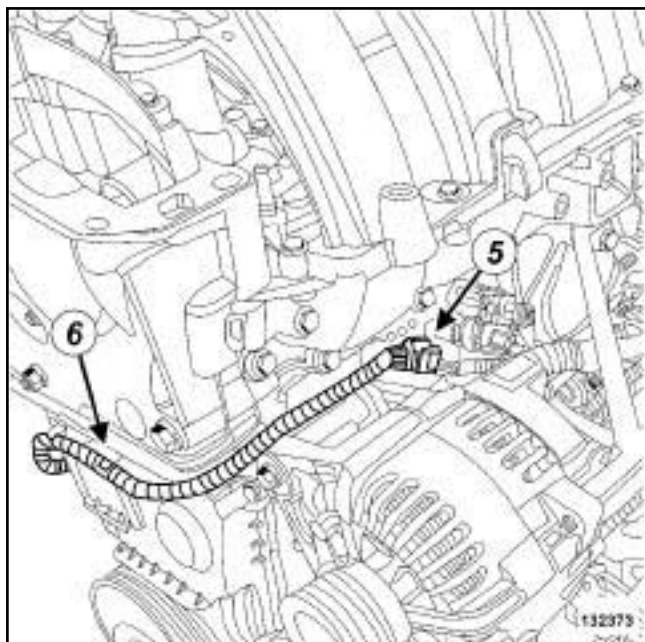
- ☐ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).
- ☐ Remove:
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts),
 - the differential output seal (see **Differential output seal: Removal - Refitting**) (21A, Manual gearbox).
 - the lower engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting, page 19D-13**) .



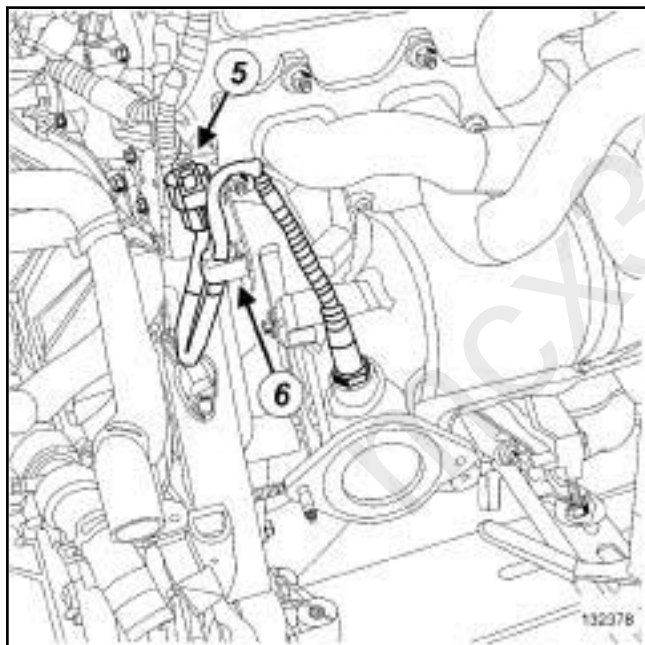
131770

- ☐ Remove:
 - the bolts (4) from the front right-hand wheel driveshaft relay bearing,
 - the front right-hand wheel driveshaft relay bearing.

K4J or K4M



132373

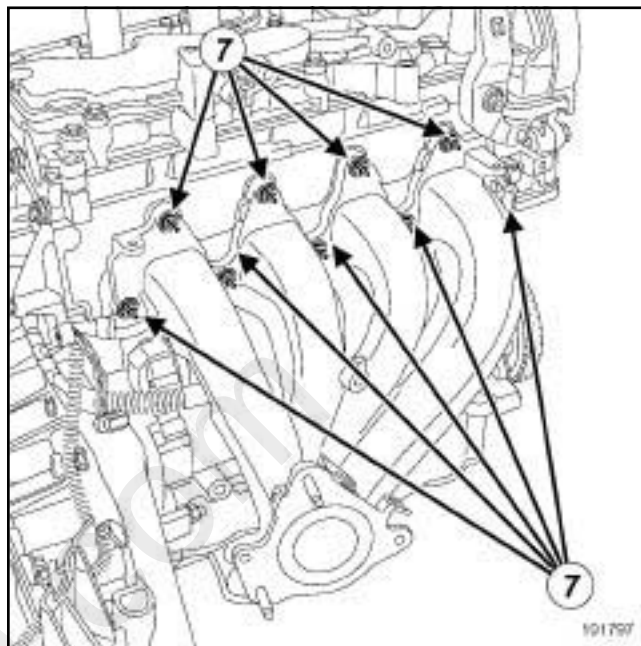


132378

- ☐ Disconnect the oxygen sensor connectors (5) .
- ☐ Unclip the oxygen sensor wiring (6) .

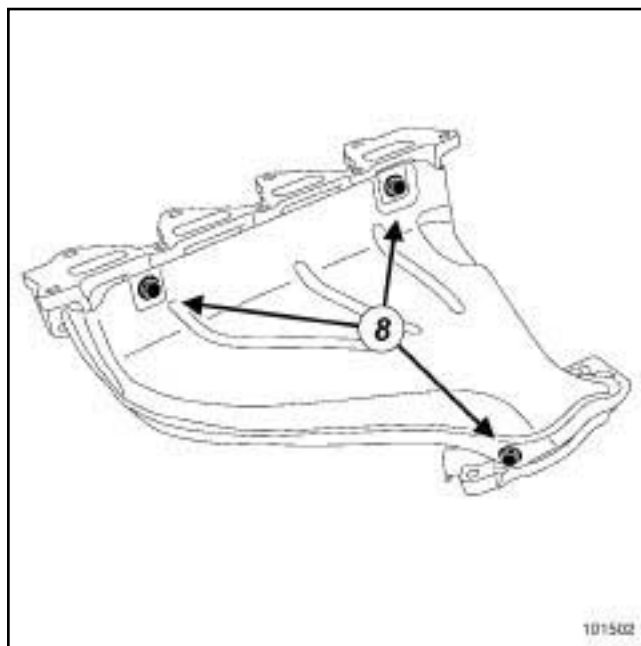
II - OPERATION FOR REMOVAL OF PART CONCERNED

K4J – K4M, and 800 or 801 or 804



101797

- ☐ Remove:
 - the nuts (7) from the exhaust manifold,
 - the exhaust manifold.



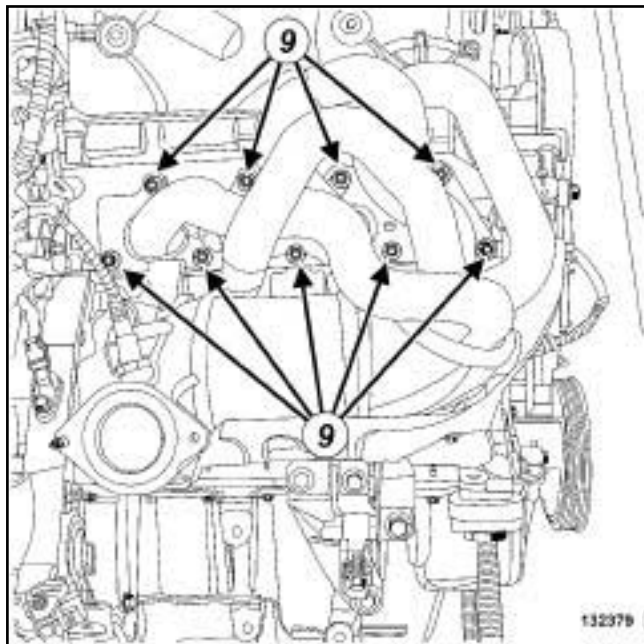
101502

- ☐ Using the workbench, remove:
 - the lower heat shield bolts,

K4J or K4M

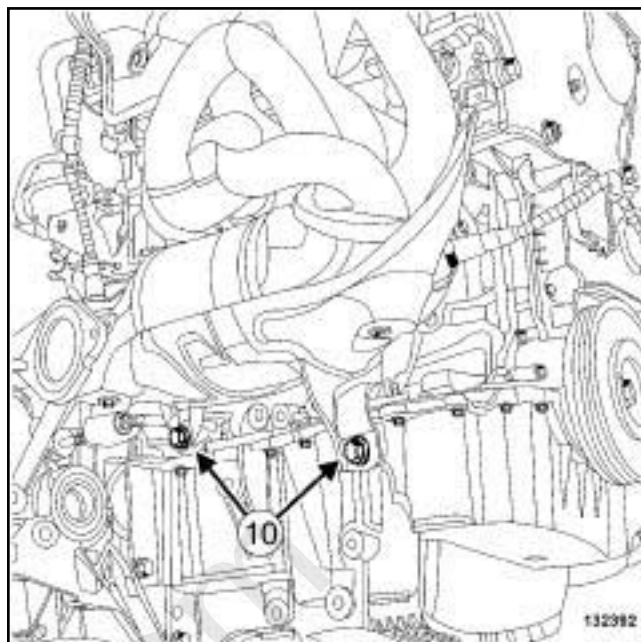
- the lower heat shield.

K4M, and 862

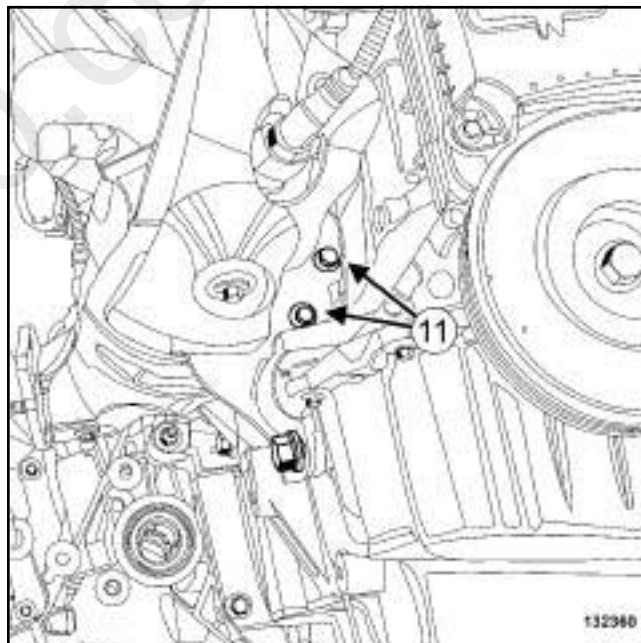


132379

- ❑ Remove the exhaust manifold nuts (9) .



132392



132360

- ❑ Remove:

- the downstream stay bolts (10) of the exhaust manifold,
- the upstream stay bolts (11) of the exhaust manifold,
- the exhaust manifold,
- the exhaust manifold gasket.

K4J or K4M

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ parts always to be replaced: exhaust manifold seal (10,07,02,07)
- ☐ Part always to be replaced: Exhaust bracket seal.
- ☐ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease:
 - the exhaust manifold joint face if it is to be re-used,
 - the cylinder head joint face.

Note:

If a stud becomes loose during this operation, coat the stud with **LOCTITE HIGH STRENGTH THREAD LOCK** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products). Torque tighten the **exhaust manifold stud (8 N.m)**.

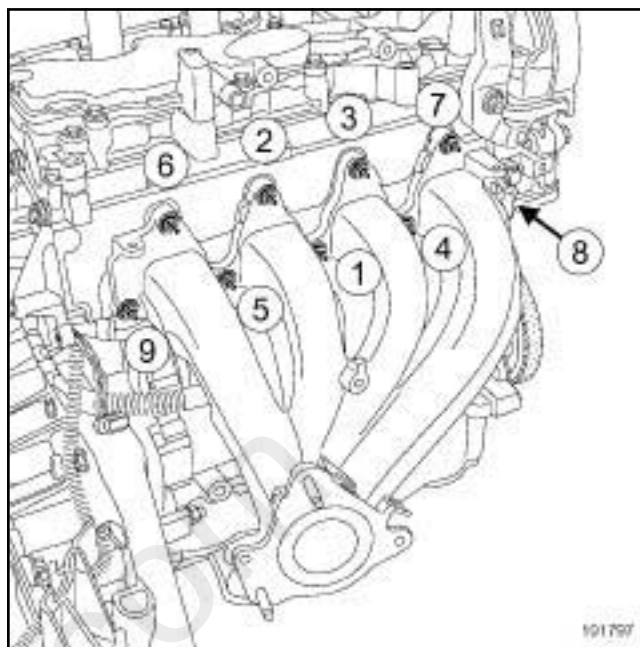
K4J – K4M, and 800 or 801 or 804

- ☐ Refit the lower heat shield.
- ☐ Torque tighten the **lower heat shield bolts (12 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit the exhaust manifold with a new seal.

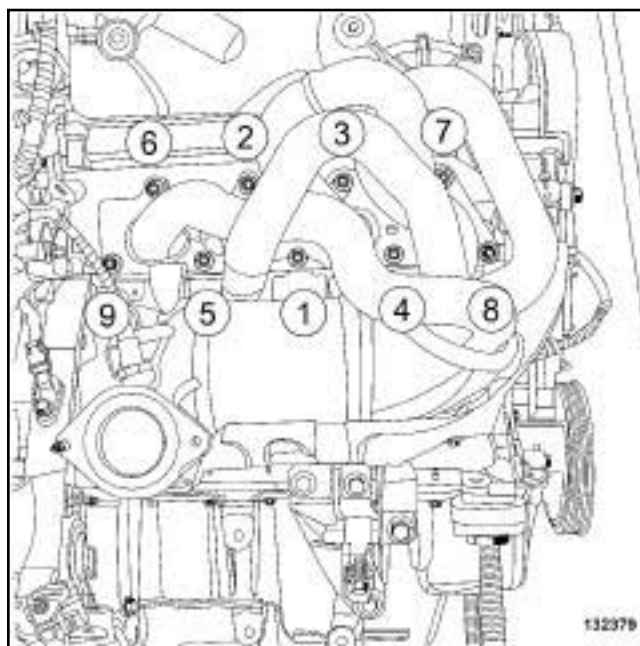
K4J – K4M, and 800 or 801 or 804



101797

- ☐ Torque tighten in order the **exhaust manifold nuts (26 N.m)**.

K4M, and 862



132379

- ☐ Tighten to torque and in order:
 - the **exhaust manifold nuts (26 N.m)**,

Exhaust manifold: Removal - Refitting

K4J or K4M

- the bolts of the **exhaust manifold upstream and downstream stays (44 N.m)**.

III - FINAL OPERATION

K4M, and 862

- ☐ Clip on the oxygen sensor wiring.
- ☐ Connect the oxygen sensor connectors.
- ☐ Refit:
 - the front right-hand wheel driveshaft relay bearing,
 - the lower engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting, page 19D-13**),
 - the differential output seal (see **Differential output seal: Removal - Refitting**) (21A, Manual gearbox),
 - the front right-hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (29A, Driveshafts).
- ☐ Fill the manual gearbox (see **Manual gearbox oils: Draining - Filling**) (21A, Manual gearbox).

- ☐ Refit the exhaust manifold upper heat shield.
- ☐ Torque tighten the **exhaust manifold upper heat shield bolts (12 N.m)**.
- ☐ Refit the upstream oxygen sensor.
- ☐ Torque tighten the **upstream oxygen sensor (44 N.m)**.
- ☐ Connect the oxygen sensors.

K4J – K4M, and 800 or 801 or 804

- ☐ Refit the exhaust pipe rubber mounting bush support bolt on the body.
- ☐ Torque tighten the **exhaust pipe support bolt on the body (21 N.m)**.
- ☐ Refit a new exhaust flange.
- ☐ Torque tighten the **exhaust flange bolts (21 N.m)**.
- ☐ Refit the inlet distributor (see **12A, Fuel mixture, Inlet distributor: Removal - Refitting, page 12A-46**)

K4M, and 862

- ☐ Refit:
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

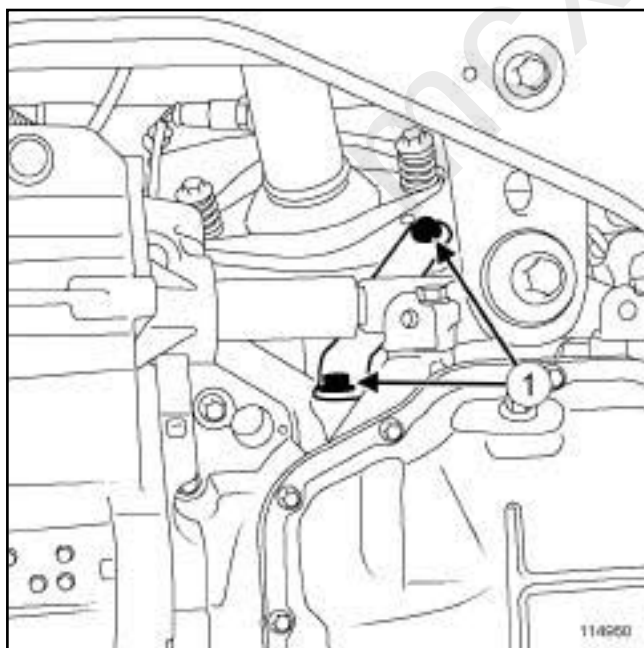
M4R

Tightening torques 	
exhaust manifold mounting studs	8 Nm
exhaust manifold mounting nuts	33 Nm
exhaust manifold heat shield mounting bolts	6 Nm
exhaust manifold stay mounting bolts	43 Nm
exhaust bracket mounting bolts	21 Nm

REMOVAL

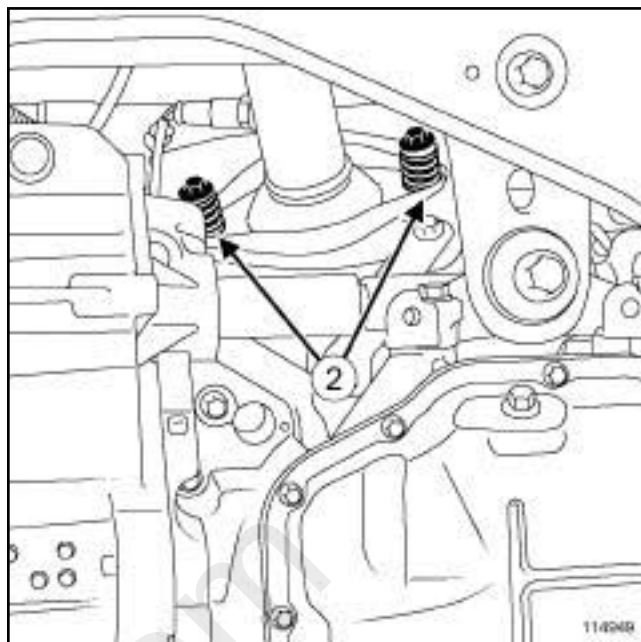
I - REMOVAL PREPARATION OPERATION

- ☐ Remove the engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**).
- ☐ Remove the inlet manifold (see **12A, Fuel mixture, Inlet distributor: Removal - Refitting**, page 12A-46).



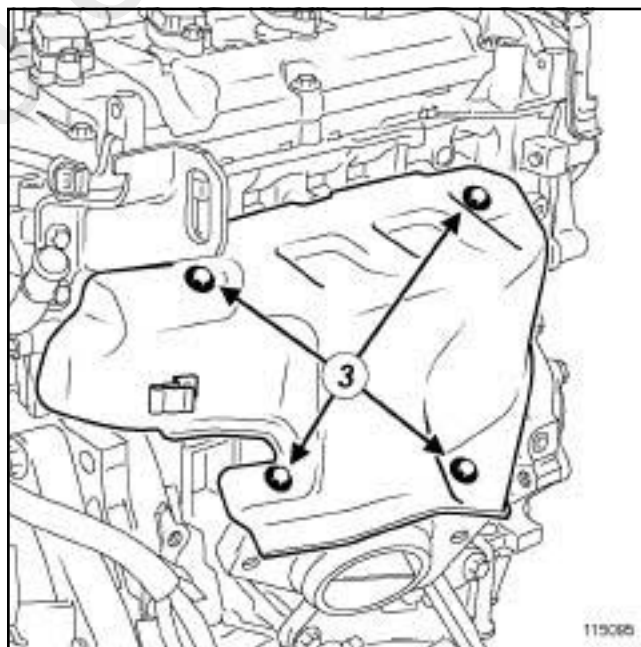
114950

- ☐ Remove:
 - the exhaust manifold stay mounting bolts (1),
 - the exhaust manifold stay.



114949

- ☐ Remove the mounting bolts (2) from the exhaust bracket.

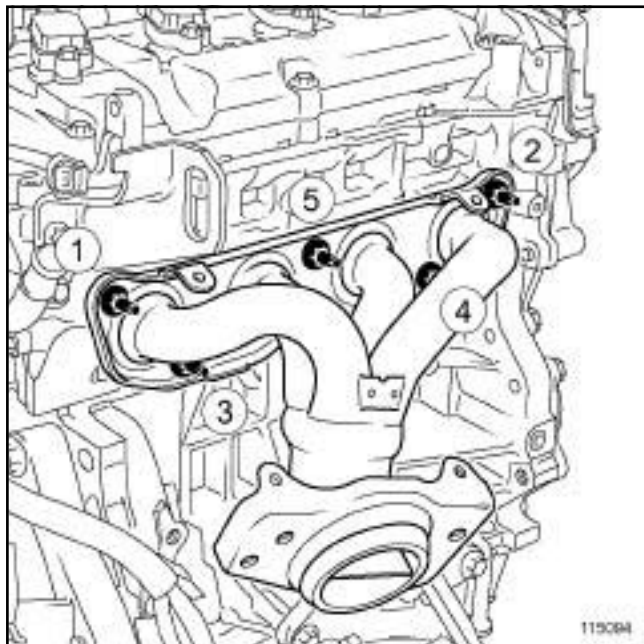


115095

- ☐ Remove:
 - the mounting bolts from the exhaust manifold heat shield (3),
 - the exhaust manifold heat shield.

M4R

II - REMOVAL OF PART CONCERNED



115094

☐ Remove:

- the exhaust manifold mounting nuts, in order,
- the exhaust manifold,
- the exhaust manifold seal.

REFITTING

I - REFITTING PREPARATION OPERATION



109399

☐ Always replace:

- the sealing ring (4) between the exhaust manifold and the catalytic converter,
- the exhaust manifold seal.

Note:

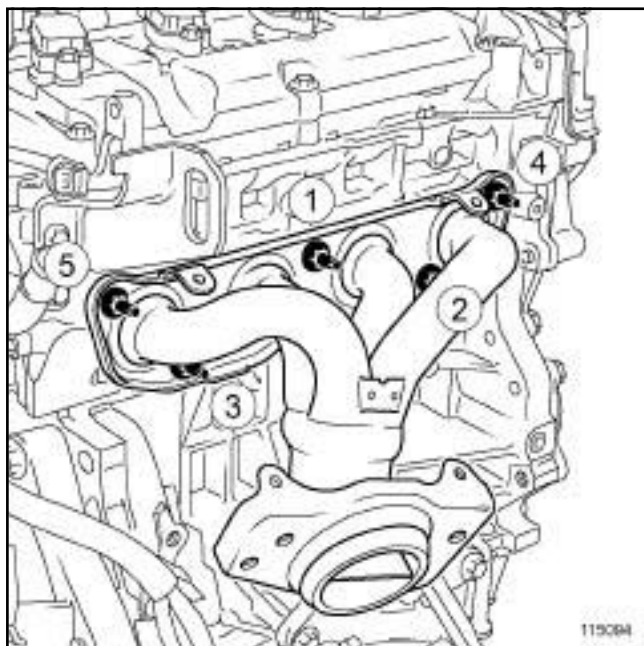
If a stud loosens during this operation, it should be coated with **LOCTITE FRENBLOC**.

- ☐
- Tighten to torque the
- exhaust manifold mounting studs (8 Nm)**
- .

Exhaust manifold: Removal - Refitting

M4R

II - REFITTING THE PART CONCERNED



115094

- ☐ Finger tighten the mounting nuts until they are in contact with the exhaust manifold.
- ☐ Tighten to torque and in order the **exhaust manifold mounting nuts (33 Nm)**.

III - FINAL OPERATION

- ☐ Refit the exhaust manifold heat shield.
- ☐ Tighten to torque the **exhaust manifold heat shield mounting bolts (6 Nm)**.
- ☐ Refit the exhaust manifold stay.
- ☐ Tighten to torque:
 - the **exhaust manifold stay mounting bolts (43 Nm)**,
 - the **exhaust bracket mounting bolts (21 Nm)**.
- ☐ Refit the inlet manifold (see **12A, Fuel mixture, Inlet distributor: Removal - Refitting**, page 12A-46) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) .
- ☐ Refit the engine cover.

FUEL MIXTURE

Exhaust manifold: Removal - Refitting

12A

F4R

Tightening torques 	
exhaust manifold stud	9 N.m
upstream oxygen sensor	44 N.m
exhaust manifold nuts	30 N.m

Note:

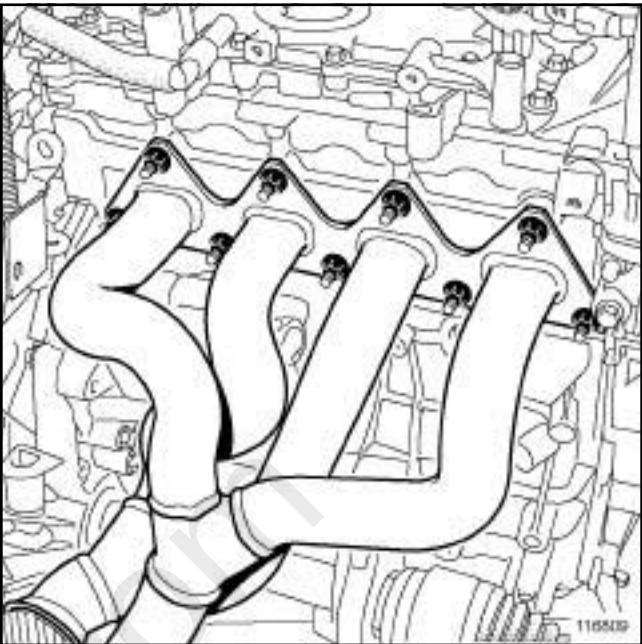
When removing and refitting the exhaust manifold, remove the «manifold - catalytic converter» assembly.

REMOVAL

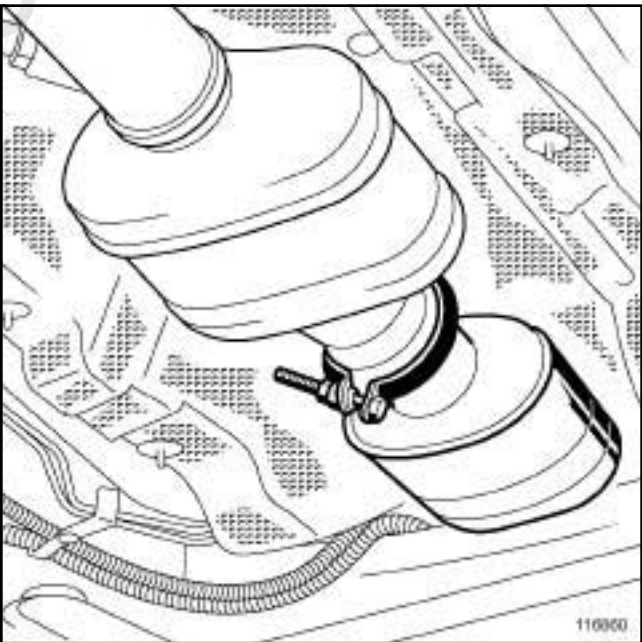
I - REMOVAL PREPARATION OPERATION

- ❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- ❑ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ❑ Remove the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).

II - OPERATION FOR REMOVAL OF PART CONCERNED



- ❑ Remove the exhaust manifold nuts.
- ❑ Disconnect the upstream oxygen sensor connector.



- ❑ Remove:
 - the clip connecting the catalytic converter and the expansion chamber,
 - the « manifold - catalytic converter » assembly.

F4R

When replacing the exhaust manifold

- ☐ On the workbench:
 - clamp the « manifold - catalytic converter » assembly in a vice to hold it in place,
 - remove the upstream oxygen sensor.

REFITTING**I - REFITTING PREPARATION OPERATION**

- ☐ **parts always to be replaced: exhaust manifold seal (10,07,02,07).**
- ☐ **parts always to be replaced: Catalytic converter clip (10,08,02,17).**
- ☐ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease:
 - the joint faces of the manifold if it is being reused,
 - the cylinder head joint faces.

Note:

If a stud is loosened during this operation, coat the stud with **HIGH STRENGTH BOLT LOCKING PRODUCT**.

Torque tighten the **exhaust manifold stud (9 N.m)**.

When replacing the exhaust manifold

- ☐ On the workbench:
 - clamp the « manifold - catalytic converter » assembly in a vice to hold it in place.
 - refit the upstream oxygen sensor.

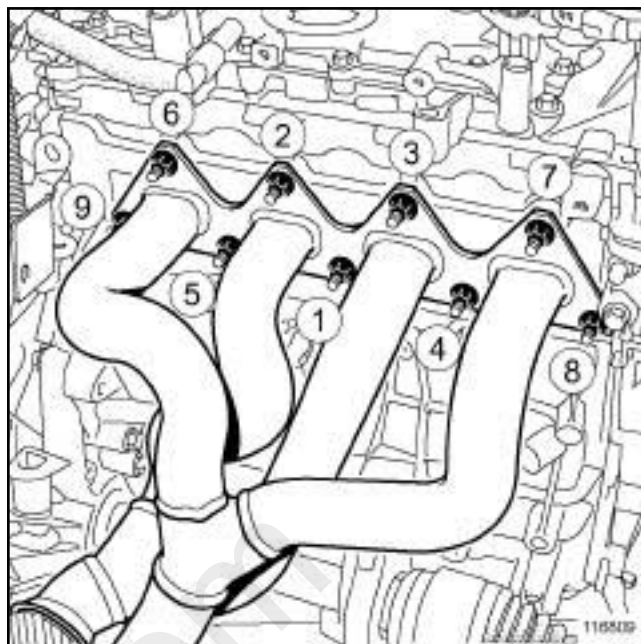
Note:

Be careful not to damage the « manifold - catalytic converter » pipes during this operation.

- ☐ Torque tighten the **upstream oxygen sensor (44 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Fit the new exhaust manifold gasket.
- ☐ Refit:
 - the « manifold - catalytic converter » assembly.
 - the exhaust manifold nuts.



116809

- ☐ Torque tighten in order the **exhaust manifold nuts (30 N.m)**.
- ☐ Refit the new clip connecting the catalytic converter and the expansion chamber.
- ☐ Connect the upstream oxygen sensor connector.

III - FINAL OPERATION

- ☐ Refit the front axle subframe (see **Front axle subframe: Removal - Refitting**) (31A, Front axle components).
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Check that there are no exhaust gas leaks.
- ☐ Check the axle assembly values (see **Front axle assembly: Adjustment values**) (30A, General information).

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Tightening torques

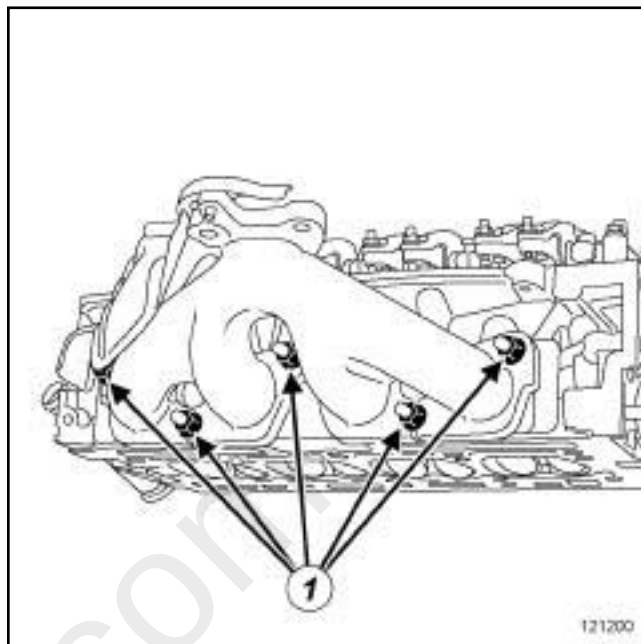
exhaust manifold heat shield bolts	18 Nm
exhaust manifold nuts (initial torque)	20 Nm
exhaust manifold nuts	30 Nm

IMPORTANT

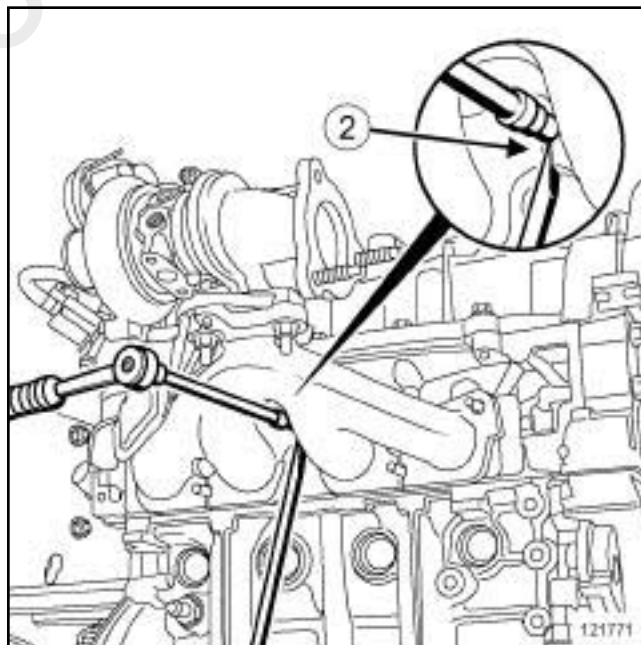
Wear protective gloves during the operation.

REMOVAL**I - REMOVAL PREPARATION OPERATION**

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the engine undertray,
 - the engine cover.
- ☐ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).
- ☐ Remove:
 - the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
 - the catalytic pre-converter (see **19B, Exhaust, Catalytic pre-converter: Removal - Refitting**, page 19B-21) ,
 - the turbocharger (see **12B, Turbocharging, Turbocharger: Removal - Refitting**, page 12B-4) .

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove the exhaust manifold nuts (1) .



- ☐ Remove:
 - the exhaust manifold by holding the centre stud with a male torx socket and removing the manifold with a larger screwdriver as shown at (2) ,
 - the exhaust manifold heat shield bolts,
 - the exhaust manifold heat shield.