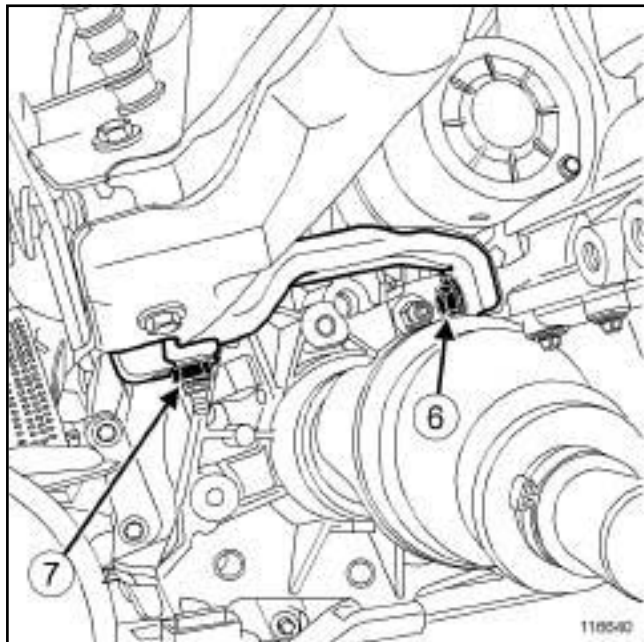


Exhaust manifold: Removal - Refitting

K4M

III - FINAL OPERATION



116640

- ☐ Refit the stay between the exhaust manifold and the cylinder block.
- ☐ Tighten to torque and in order:
 - the **bolts (6) mounting the stay on the cylinder block (21 N.m)**,
 - the **nut (7) mounting the stay on the exhaust manifold (21 N.m)**.
- ☐ Refit the exhaust manifold upper heat shield.
- ☐ Torque tighten the **exhaust manifold upper heat shield mounting bolts (12 N.m)**.
- ☐ Refit the upstream oxygen sensor using the.
- ☐ Torque tighten the **upstream oxygen sensor (45 N.m)**.
- ☐ Connect the upstream oxygen sensor connector.
- ☐ Refit the exhaust bracket mounting bolts.
- ☐ Torque tighten the **exhaust bracket mounting bolts (21 N.m)**.
- ☐ Refit:
 - the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page **12A-6**) ,
 - the air resonator (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-2**) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 388, 80A, Battery).

TURBOCHARGING

Turbocharger: Removal - Refitting

12B

K9K

Equipment required

Diagnostic tool

Tightening torques

new turbocharger studs on the exhaust manifold	9 N.m
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new turbocharger stud on the turbocharger	9 N.m
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turbocharger nuts	28 N.m
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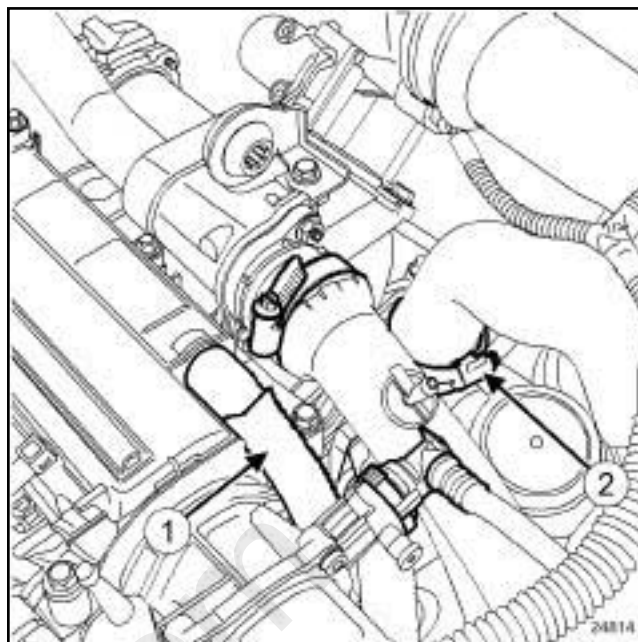
IMPORTANT

Wear leaktight gloves (Nitrile type) for this operation.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Remove:
 - the engine cover,
 - the air filter unit (see **12A, Fuel mixture, Air filter unit: Removal - Refitting**, page 12A-6) .



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- ☐ Disconnect:
 - the oil vapour rebreathing pipe (1) ,
 - the duct between the turbocharger and the inter-cooler at (2) .
- ☐ Remove:
 - the exhaust gas recirculation solenoid valve (see **14A, Antipollution, Exhaust gas recirculation solenoid valve: Removal - Refitting**, page 14A-4) ,
 - the air duct between the turbocharger and the air filter unit,
 - the engine undertray,
 - the catalytic converter (see **19B, Exhaust, Catalytic converter: Removal - Refitting**, page 19B-10) .

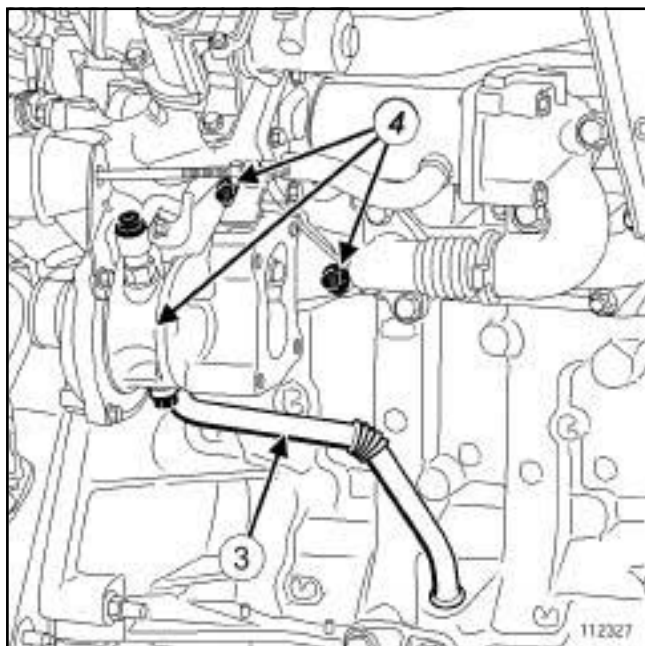
TURBOCHARGING

Turbocharger: Removal - Refitting

12B

K9K

II - REMOVAL OPERATION



- ☐ Remove (see **12B, Turbocharging, Turbocharger oil pipe: Removal - Refitting**, page **12B-4**) :
 - the turbocharger oil return pipe (3) ,
 - the turbocharger oil supply pipe.
- ☐ Remove:
 - the nuts (4) from the turbocharger on the exhaust manifold,
 - the turbocharger,
 - the turbocharger seal.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ parts always to be replaced: Turbocharger nut.
- ☐ parts always to be replaced: seal between exhaust manifold and turbocharger.

- ☐ parts always to be replaced: exhaust manifold stud on the turbocharger (if loosened).

WARNING

Ensure that no foreign bodies enter the turbine or compressor during the refitting operation.

Check that the turbocharger oil return pipe is not partially or completely blocked by scale. Check that there are no leaks. If there are, replace the part.

WARNING

Following a turbocharger fault, check that the intercooler and air circuit assembly are not full of oil. If they are, remove them and clean them with a cleaning tray or station and dry them with a compressed air gun.

- ☐ Use **GREY ABRASIVE PADS** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean:
 - the exhaust manifold joint face,
 - the turbocharger gasket face if reused.
- ☐ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (04B, Consumables - Products) to clean and degrease:
 - the exhaust manifold joint face,
 - the turbocharger joint face if it is to be reused,
 - the housing of the turbocharger air outlet pipe seal,
 - the joint face of the exhaust gas cooler mounting on the gearbox end.

WARNING

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

- ☐ Torque tighten:
 - the **new turbocharger studs on the exhaust manifold (9 N.m)**,
 - the **new turbocharger stud on the turbocharger (9 N.m)**.

II - REFITTING OPERATION

- ☐ Refit:
 - a new turbocharger seal on the exhaust manifold,
 - the turbocharger.