

Exhaust: Precautions for the repair

Note:

If there are leaks from the **EXHAUST TRUNKING WITH 1 BOLT**, apply **EXHAUST MASTIC** to the trunking (see part no. in Technical Note 5068, 04B Consumables - Products).

If the application of exhaust mastic does not fix the leak:

- remove and replace the used exhaust trunking,
- check the condition of the exhaust pipes (condition of the pipe surface, deburring of the area cut, damage to the pipes).
- fit the new trunking in accordance with the instructions given before.

Catalytic pre-converter: Removal - Refitting

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Tightening torques 	
catalytic pre-converter studs on the turbo-charger	7 N.m
turbocharger studs on the flexible pipe	7 N.m
catalytic pre-converter diesel injector cooler studs	7 N.m
catalytic pre-converter nuts on the turbo-charger	26 N.m
catalytic pre-converter upstream stay bolts on the engine	44 N.m
catalytic pre-converter downstream stay bolt and nut on the gearbox	21 N.m
catalytic pre-converter upstream stay bolts on the catalytic pre-con-verter	26 N.m
catalytic pre-converter downstream stay bolt on the catalytic pre-con-verter	21 N.m
diesel injector cooler nuts	25 N.m
flexible pipe nuts on the catalytic pre-converter	21 N.m

PARTS AND CONSUMABLES FOR THE REPAIR WORK

- ☐ Parts always to be replaced:
 - the seal between the catalytic pre-converter and the turbocharger,
 - the seal between the catalytic pre-converter and the flexible pipe.
- ☐ Consumables:
 - abrasive pads,
 - surface cleaner **77 01 404 178**,
 - clean cloths.

REMOVAL

I - REMOVAL PREPARATION OPERATION

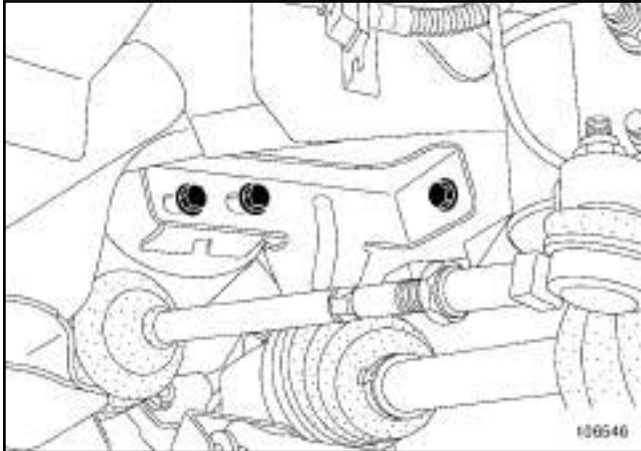
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the engine cover,
 - the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
 - the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment).
- ☐ Disconnect the connector from the turbocharger upstream exhaust gas temperature sensor.
- ☐ Detach the turbocharger upstream exhaust gas temperature sensor connector from the timing end lifting eye.
- ☐ Remove:
 - the bolts from the lifting eye, timing end,
 - the lifting eye on the timing end.

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove:
 - the catalytic pre-converter nuts on the turbocharger,
 - the engine undertray,
 - the lower engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**).
- ☐ Remove:
 - the connecting hose nuts on the catalytic pre-converter,

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- ☐ Remove the bolt from the downstream stay on the catalytic pre-converter.
- ☐ Undo the downstream stay bolts on the cylinder block.
- ☐ Remove the catalytic pre-converter downstream stay.
- ☐ Remove the catalytic pre-converter upstream stay upper bolts.
- ☐ Undo the catalytic pre-converter upstream stay lower bolt.
- ☐ Remove the catalytic pre-converter upstream stay.
- ☐ Remove the catalytic pre-converter diesel injector cooler nuts.
- ☐ Discard the catalytic pre-converter diesel injector cooler seal.
- ☐ Remove the catalytic pre-converter by moving it towards the timing end and moving aside the catalytic pre-converter diesel injector cooler.
- ☐ Remove the catalytic pre-converter from the engine compartment by moving the engine towards the front of the vehicle.
- ☐ Remove:
 - the seal between the catalytic pre-converter and the turbocharger,
 - the seal between the catalytic pre-converter and the flexible pipe.
- ☐ Discard:
 - the seal between the catalytic pre-converter and the turbocharger,
 - the seal between the catalytic pre-converter and the flexible pipe.

REFITTING

I - REMOVAL PREPARATION OPERATION

- ☐ Using **ABRASIVE PADS**, clean the pressure faces:
 - of the turbocharger and the catalytic pre-converter,
 - of the catalytic pre-converter and the exhaust pipe.
- ☐ Next, degrease these pressure faces using **SURFACE CLEANER AND CLEAN CLOTHS 77 01 404 178**.
- ☐ If replacing, torque tighten:
 - the **catalytic pre-converter studs on the turbocharger (7 N.m)**,
 - the **turbocharger studs on the flexible pipe (7 N.m)**,
 - the **catalytic pre-converter diesel injector cooler studs (7 N.m)**.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ From underneath the vehicle, fit:
 - the catalytic pre-converter fitted with a new seal between the catalytic pre-converter and the turbocharger,
 - one of the catalytic pre-converter nuts on the turbocharger,
 - the diesel injector cooler on the catalytic pre-converter,
 - the diesel injector cooler nuts.

WARNING

Check that there is no contact between the catalytic pre-converter and the turbocharger oil return pipe during the entire catalytic pre-converter tightening operation.

- ☐ Torque tighten in order:
 - the catalytic pre-converter upstream stay bolts on the engine,
 - the catalytic pre-converter downstream stay bolt and nut on the gearbox,
 - the catalytic pre-converter upstream stay bolts on the catalytic converter,
 - the catalytic pre-converter downstream stay bolt on the catalytic converter,
 - the catalytic pre-converter nuts on the turbocharger,

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- the diesel injector cooler nuts.
- ☐ Torque tighten in order:
 - the **catalytic pre-converter nuts on the turbo-charger (26 N.m)**,
 - the **catalytic pre-converter upstream stay bolts on the engine (44 N.m)**,
 - the **catalytic pre-converter downstream stay bolt and nut on the gearbox (21 N.m)**,
 - the **catalytic pre-converter upstream stay bolts on the catalytic pre-converter (26 N.m)**,
 - the **catalytic pre-converter downstream stay bolt on the catalytic pre-converter (21 N.m)**,
 - the **diesel injector cooler nuts (25 N.m)**.
- ☐ Refit a new seal between the catalytic pre-converter and the flexible pipe on the catalytic pre-converter.
- ☐ Position the connecting hose on the catalytic pre-converter.
- ☐ Refit the flexible pipe nuts on the catalytic pre-converter.
- ☐ Torque tighten the **flexible pipe nuts on the catalytic pre-converter (21 N.m)**.

III - FINAL OPERATION

- ☐ Refit the lower engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**) .
- ☐ Refit:
 - the lifting eye on the timing end,
 - the timing end lifting eye bolts.
- ☐ Clip the turbocharger upstream exhaust gas temperature sensor connector on the timing end lifting eye.
- ☐ Connect the turbocharger upstream exhaust gas temperature sensor connector.
- ☐ 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.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Refit the engine undertray.

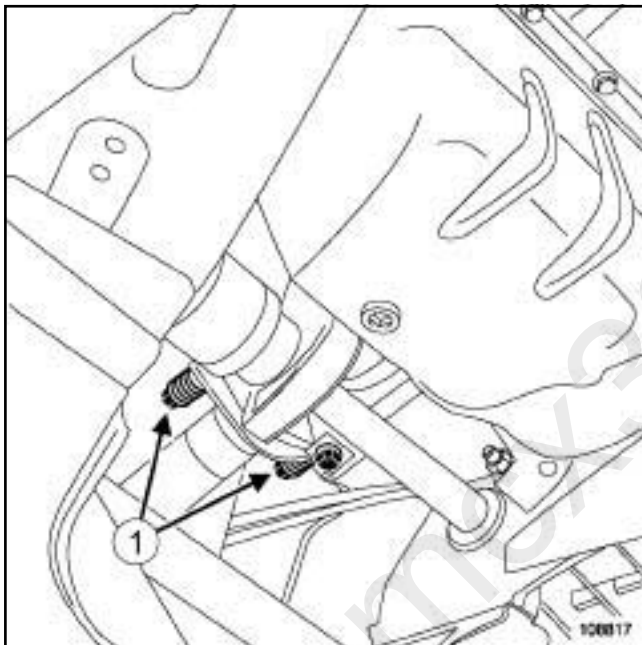
Catalytic pre-converter: Removal - Refitting

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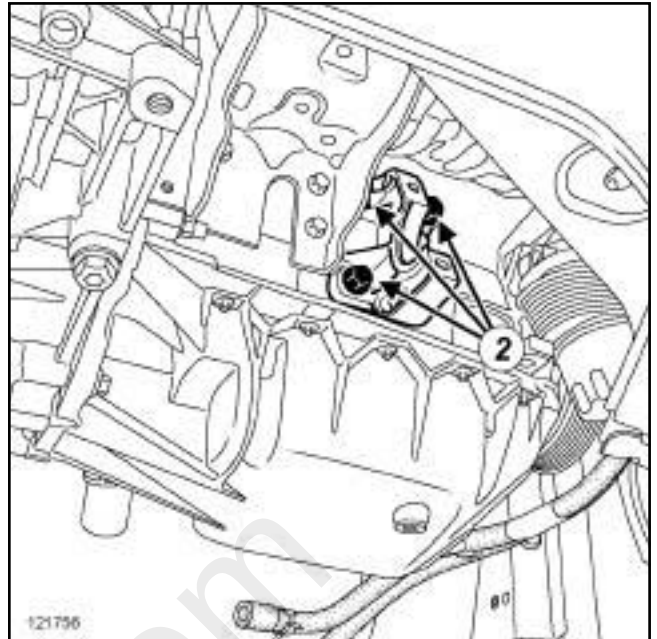
REMOVAL

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 protector,
 - the engine cover.
- ☐ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).



- ☐ Remove the nuts (1) from the exhaust bracket at the outlet of the catalytic pre-converter.

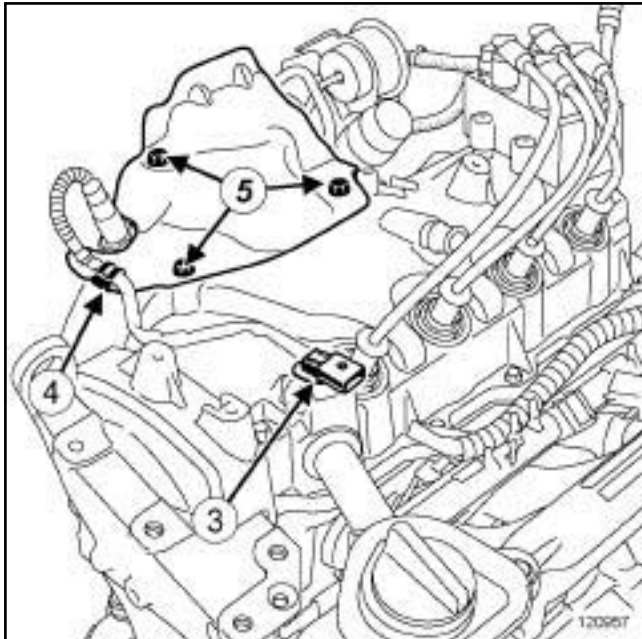


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- ☐ Remove:
 - the front right-hand driveshaft (see **29A, Driveshafts, Front right-hand driveshaft: Removal - Refitting**),
 - the front right-hand wheel driveshaft bearing nuts (2) ,
 - the front right-hand wheel driveshaft bearing.

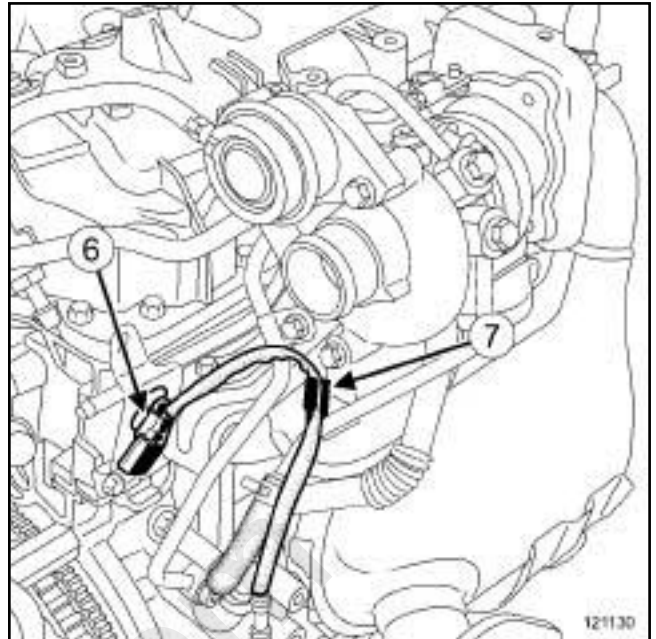
Catalytic pre-converter: Removal - Refitting

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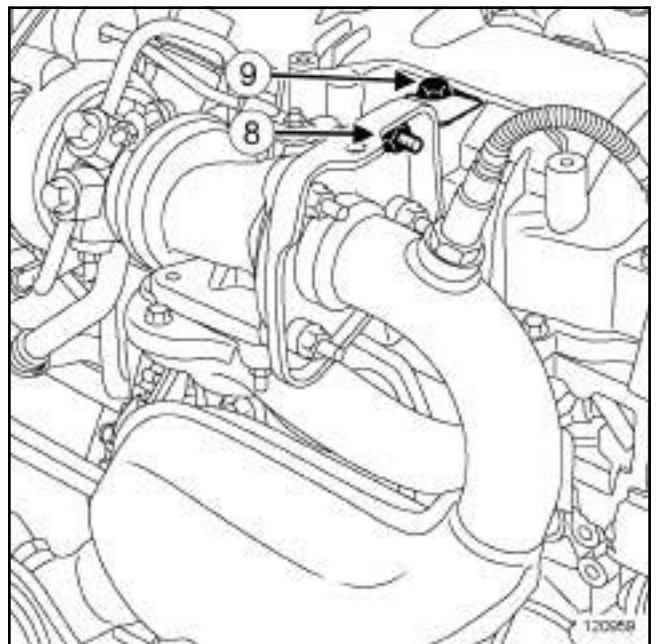
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- ☐ Disconnect the catalytic pre-converter upstream oxygen sensor connector (3) .
- ☐ Unclip the catalytic pre-converter upstream oxygen sensor connector.
- ☐ Detach the catalytic pre-converter upstream oxygen sensor wiring harness at (4) .
- ☐ Remove:
 - the bolts (5) from the turbocharger heat shield,
 - the turbocharger heat shield.



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- ☐ Disconnect the catalytic pre-converter downstream oxygen sensor connector (6) .
- ☐ Unclip the catalytic pre-converter downstream oxygen sensor connector.
- ☐ Detach the catalytic pre-converter downstream oxygen sensor wiring harness at (7) .



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- ☐ Remove:
 - the nut (8) from the turbocharger strut,
 - the bolt (9) from the turbocharger strut,
 - the turbocharger strut.