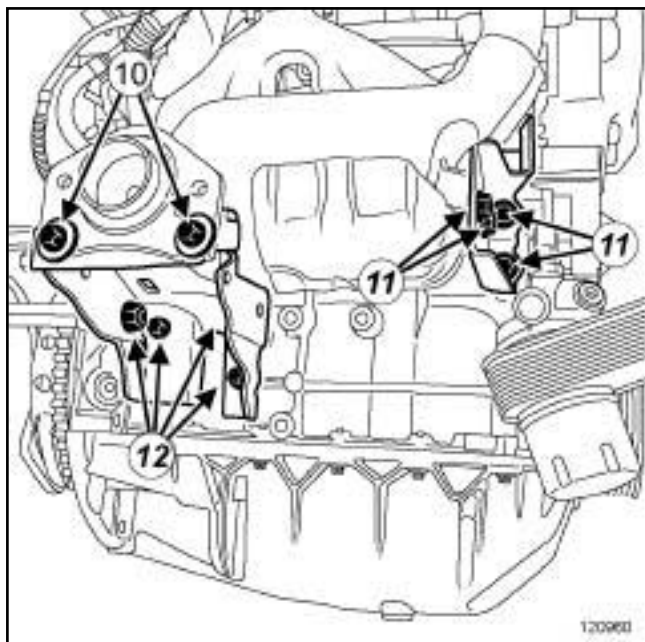


Catalytic pre-converter: Removal - Refitting

D4F, and 784



120960

- ☐ Disconnect the oil pressure sensor connector.
- ☐ Undo the bolts (10) on the catalytic pre-converter primary strut.
- ☐ Remove:
 - the catalytic pre-converter upstream strut bolts (11)
 - the catalytic pre-converter upstream stay,
 - the bolts (12) from the catalytic pre-converter primary strut,
 - the primary strut on the catalytic pre-converter.

Catalytic converter: Removal - Refitting

K4J or K4M

Special tooling required

Mot. 1495-01 22 mm socket for removal - refitting of oxygen sensors.

Tightening torques

oxygen sensor	45 Nm
manifold studs	7 Nm
nuts mounting the catalytic converter on the exhaust manifold	21 Nm
exhaust sleeve	25 Nm
exhaust manifold studs	8 Nm
exhaust sleeve	25 Nm

IMPORTANT

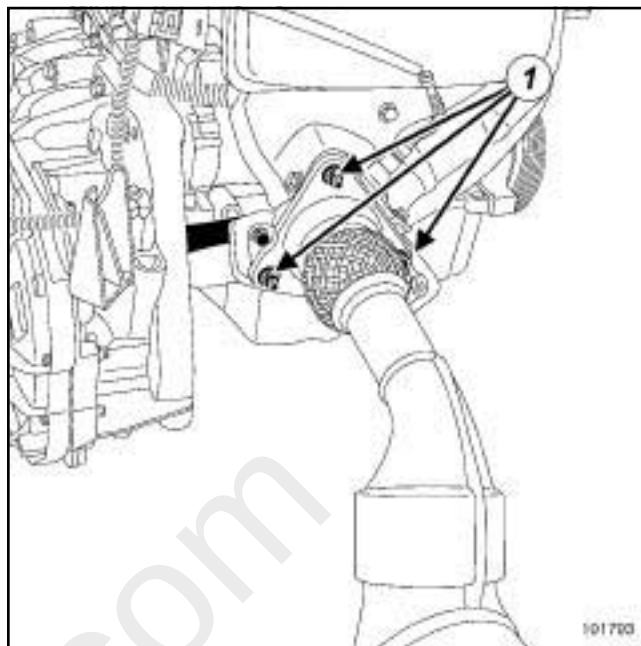
Catalytic converters contain ceramic fibres: these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ☐ Remove the connector from the downstream oxygen sensor.
- ☐ Unclip the wiring harness from the downstream oxygen sensor.
- ☐ Cut the exhaust pipe (see **Exhaust: Parts and consumables for the repair**) and (see **19B, Exhaust: Precautions for the repair**, page 19B-17) .

II - OPERATION FOR REMOVAL OF PART CONCERNED



101793

☐ Remove:

- the catalytic converter mounting nuts (1) from the exhaust manifold
- the exhaust catalytic converter,
- the downstream oxygen sensor of the catalytic converter using tool (**Mot. 1495-01**).

REFITTING

I - REFITTING PREPARATIONS OPERATION

- ☐ Refit the oxygen sensor.
- ☐ Torque tighten the **oxygen sensor (45 Nm)**.
- ☐ Replace the exhaust flange seal.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Torque tighten the **manifold studs (7 Nm)**.
- ☐ Fit:
 - the catalytic converter,
 - the catalytic converter sleeve (see **19B, Exhaust: Precautions for the repair**, page 19B-17) .
- ☐ Torque tighten the **nuts mounting the catalytic converter on the exhaust manifold (21 Nm)**.

Catalytic converter: Removal - Refitting

K4J or K4M

III - FINAL OPERATION

- ☐ Torque tighten:
 - the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment,
 - the **exhaust manifold studs (8 Nm)**,
 - the **exhaust sleeve (25 Nm)** while supporting the exhaust pipe to ensure correct alignment.
- ☐ Connect the oxygen sensor connector.
- ☐ Make sure that all the exhaust pipe heat shields are in place and properly secured.
- ☐ Refit the engine undertray.
- ☐ Make sure that there is no contact with the underbody.

WARNING

Make sure:

- position the sleeve « bolt - tightening nut » assembly vertically with the nut facing downwards to prevent any risk of underbody contact,
- that you position the new component in a way that the cutting area marks are aligned,
- that the two marks are flush with the two ends of the sleeve,
- that an old sleeve is not reused.

Catalytic converter: Removal - Refitting

K9K

Tightening torques 	
turbocharger output studs	7 N.m
catalytic converter mounting nuts on the turbocharger	26 N.m
bolts mounting the upstream strut on the engine	44 N.m
bolts mounting the downstream strut on the gearbox	21 N.m
bolts mounting the upstream strut on the catalytic converter	26 N.m
bolt mounting the downstream strut on the catalytic converter	21 N.m
exhaust clamp studs on the catalytic converter output	7 N.m
exhaust bracket nuts	21 N.m
exhaust pipe rubber mounting bush mountings on the body	62 N.m

IMPORTANT

Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

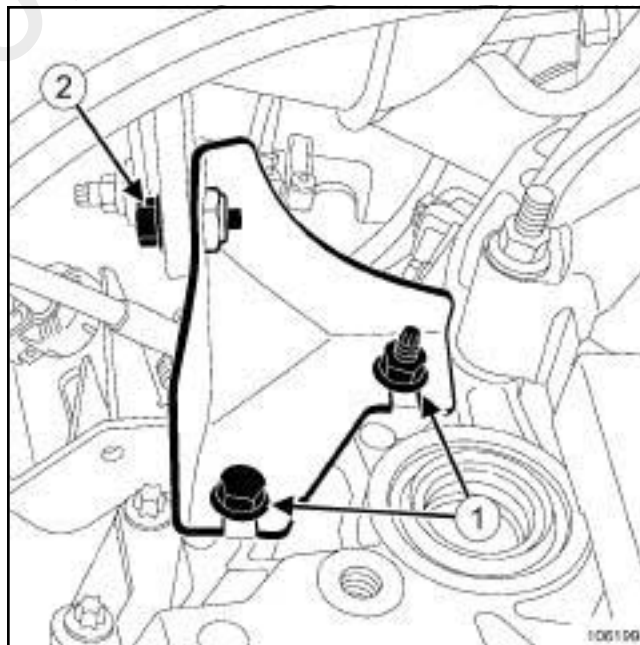
REMOVAL**I - REMOVAL PREPARATION OPERATION**

- ☐ 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 air inlet duct,

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the engine undertray.

☐ Remove:

- the engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page 19D-13) ,
- the wiring harness mountings between the catalytic converter and the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

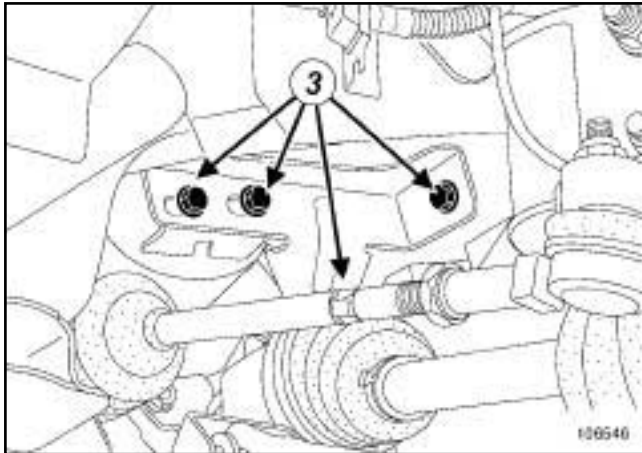
☐ Withdraw the exhaust pipe.

106199

☐ Remove:

- the downstream strut mountings (1) on the gearbox,
- the catalytic converter downstream strut mounting bolt (2) ,
- the downstream strut.

K9K

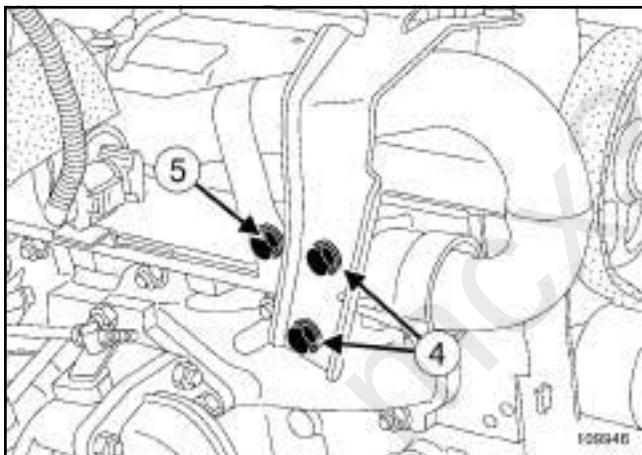


106546

❑ Remove:

- the upstream strut mountings (3) ,
- the upstream strut.

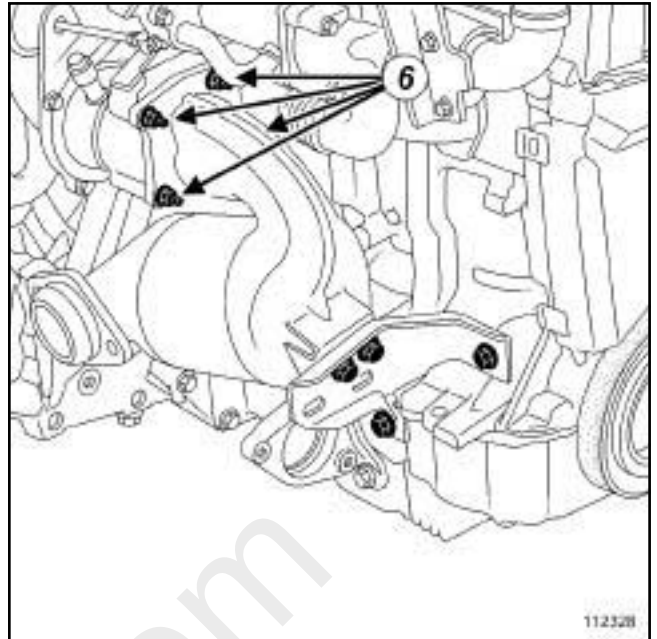
II - OPERATION FOR REMOVAL OF PART CONCERNED



109946

❑ Remove:

- the lifting eye mounting bolts (4) on the timing end,
- the lifting eye on the timing end,
- the mounting bolt (5) from the air inlet tube,
- the air inlet duct.



112328

❑ Remove:

- the bolts (6) mounting the catalytic converter to the turbocharger,
- the catalytic converter and its seal on the turbocharger,
- the sealing ring or the seal (depending on the version) then dispose of them in a waste bin.

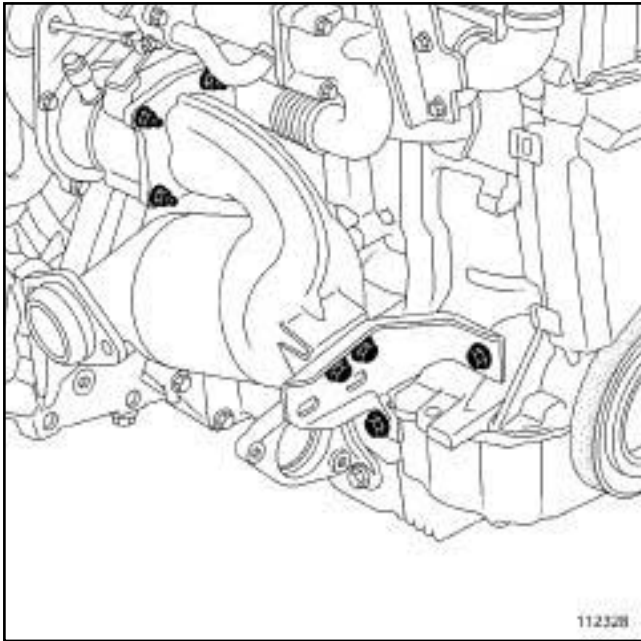
REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- ❑ Clean the bearing faces of the turbocharger and catalytic converter using an abrasive pad (see **Vehicle: Parts and consumables for the repair**) .
- ❑ Degrease the bearing faces using surface cleaner and clean cloths (see **Vehicle: Parts and consumables for the repair**) .

Catalytic converter: Removal - Refitting

K9K



112328

- ☐ In case of replacement, torque tighten the **turbocharger output studs (7 N.m)**.
- ☐ Fit the catalytic converter equipped with a new seal on the turbocharger.
- ☐ Pretighten in order:
 - the upstream strut bolts on the engine,
 - the downstream strut bolts on the gearbox,
 - the upstream strut bolts on the catalytic converter,
 - the downstream strut bolts on the catalytic converter,
 - the catalytic converter/turbocharger mounting nuts.
- ☐ Tighten to torque and in order:
 - the **catalytic converter mounting nuts on the turbocharger (26 N.m)**,
 - the **bolts mounting the upstream strut on the engine (44 N.m)**,
 - the **bolts mounting the downstream strut on the gearbox (21 N.m)**,
 - the **bolts mounting the upstream strut on the catalytic converter (26 N.m)**,
 - the **bolt mounting the downstream strut on the catalytic converter (21 N.m)**.

☐ Refit:

- the air inlet duct,
- the lifting eye,
- the exhaust pipe,
- the rubber bush mountings of the exhaust pipe on the bodywork.

WARNING

Make sure there is no contact between the catalytic converter and the turbocharger oil return pipe.

**WARNING**

Always replace the sealing ring between the catalytic converter and the exhaust pipe with a new component.

- ☐ Refit a new sealing ring or a new seal (depending on the version).

☐ Torque tighten:

- in the event of replacement, the **exhaust clamp studs on the catalytic converter output (7 N.m)**,
- the **exhaust bracket nuts (21 N.m)**.

II - FINAL OPERATION

- ☐ Torque tighten the **exhaust pipe rubber mounting bush mountings on the body (62 N.m)**.
- ☐ Make sure that there is no contact with the underbody.
- ☐ Refit the engine tie-bar (see **19D, Engine mounting, Lower engine tie-bar: Removal - Refitting**, page **19D-13**).

WARNING

Check:

- the exhaust pipe is not touching the body,
- all the heat shields are present.

☐ Refit:

- the engine undertray,
- the scoop under the scuttle panel grille (see **Scoop under the scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
- the two shock absorber cup covers,

Catalytic converter: Removal - Refitting

K9K

- the scuttle panel grille (see **Scuttle panel grille: Removal - Refitting**) (MR 393, 56A, Exterior equipment),
 - the air inlet duct,
 - the engine cover.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

Catalytic converter: Removal - Refitting

D4F, and 740 or 764

Special tooling required

Mot. 1495-01 22 mm socket for removal - refitting of oxygen sensors.

Tightening torques

manifold output bracket studs	7 Nm
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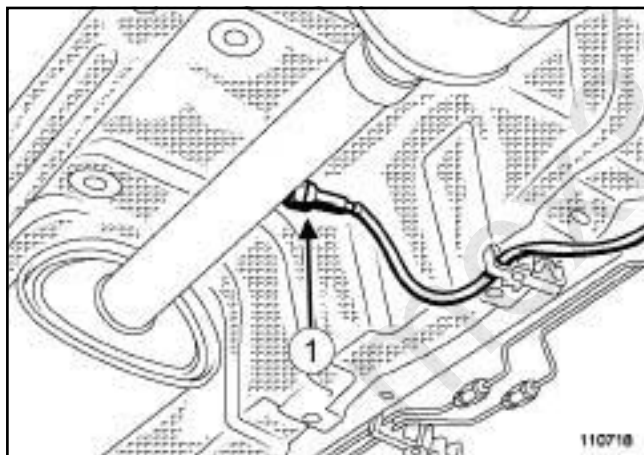
exhaust bracket mounting bolts	25 Nm
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oxygen sensor	45 Nm
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REMOVAL

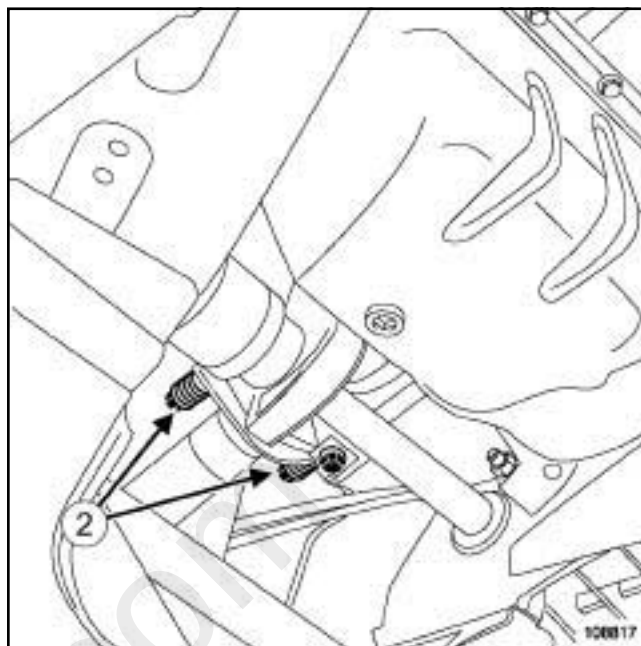
I - REMOVAL PREPARATION OPERATION

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



- ☐ Remove:
 - the engine undertray mounting bolts,
 - the engine undertray,
 - the downstream oxygen sensor (1) using the (**Mot. 1495-01**).
- ☐ Cut the exhaust pipe (see **Exhaust: Parts and consumables for the repair**) and (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**).

II - OPERATION FOR REMOVAL OF PART CONCERNED



- ☐ Remove:
 - the exhaust clamp mounting bolts (2),
 - the catalytic converter.

IMPORTANT

Catalytic converters contain ceramic fibres; these are contained within a closed unit and cannot be dispersed. Drilling or cutting catalytic converters is prohibited.

Catalytic converter: Removal - Refitting

D4F, and 740 or 764

REFITTING

I - REFITTING PREPARATIONS OPERATION



109399

**WARNING**

It is essential to replace the sealing ring between the exhaust manifold and the catalytic converter.

- ☐ Position the after sales sleeve on the catalytic converter (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) .

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ When replacing, torque tighten the **manifold output bracket studs (7 Nm)**.
- ☐ Refit the catalytic converter.
- ☐ Torque tighten the **exhaust bracket mounting bolts (25 Nm)**.
- ☐ Torque tighten the after-sales sleeve (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) .

III - FINAL OPERATION.

- ☐ Torque tighten the **oxygen sensor (45 Nm)** using the **(Mot. 1495-01)**.
- ☐ Refit:
 - the engine undertray,
 - the engine undertray mounting bolts,

- ☐ Check:

- that there is no contact with the underbody,
- all the exhaust pipe heat shields are in place and properly attached.

WARNING

Any damaged heat shields must be replaced.

Catalytic converter: Removal - Refitting

M4R

Tightening torques

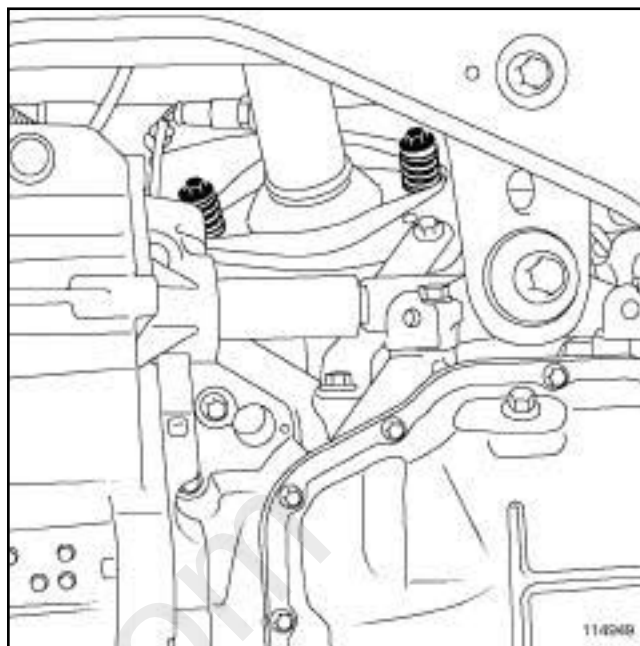
exhaust flange mounting bolts	21 Nm
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REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Put the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .
- ☐ Remove the engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) .
- ☐ Remove:
 - the engine undertray,
 - the upstream and downstream oxygen sensors (see **17B, Petrol injection, Oxygen sensors: Removal - Refitting**, page **17B-19**) .
- ☐ Cut the exhaust pipe in the area to be cut number 1 (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) and (see **Exhaust: Parts and consumables for the repair**) .

II - REMOVAL OF PART CONCERNED



114949

- ☐ Remove:
 - the exhaust clamp mounting bolts,
 - the catalytic converter,
 - the exhaust flange sealing ring.

IMPORTANT

Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

Catalytic converter: Removal - Refitting

M4R

REFITTING

I - REFITTING PREPARATION OPERATION



109399

- ☐ Always replace the exhaust flange sealing ring.

II - REFITTING THE PART CONCERNED

- ☐ Position the after sales sleeve on the catalytic converter (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) .
- ☐ Torque tighten the **exhaust flange mounting bolts (21 Nm)**.

III - FINAL OPERATION

- ☐ Refit:
 - the upstream and downstream oxygen sensors (see **17B, Petrol injection, Oxygen sensors: Removal - Refitting**, page **17B-19**) ,
 - the engine undertray.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) .
- ☐ Refit the engine cover.

Catalytic converter: Removal - Refitting

F4R

The emission control assembly is comprised of two catalytic converters on the vehicle:

- one integrated into the exhaust manifold,
- one integrated into the exhaust pipe.

The method below deals with the operating procedure on the catalytic converter integrated into the exhaust pipe.

Note:

The catalytic converter integrated into the exhaust manifold cannot be separated from the latter. When removing - refitting the catalytic converter, the catalytic converter - exhaust manifold assembly must be removed (see **12A, Fuel mixture, Exhaust manifold: Removal - Refitting**, page **12A-75**) . When replacing the catalytic converter, the catalytic converter - exhaust manifold assembly must be replaced.

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).

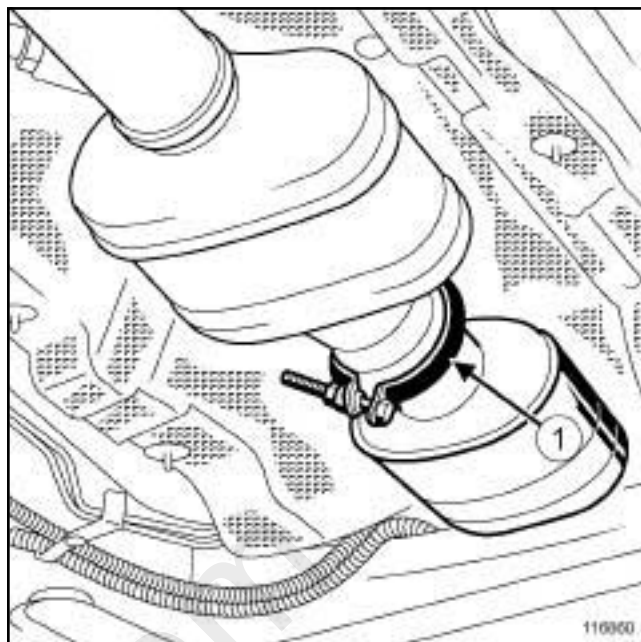
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Removing the catalytic converter integrated into the exhaust manifold

- ☐ Remove the exhaust manifold (see **12A, Fuel mixture, Exhaust manifold: Removal - Refitting**, page **12A-75**) .

2 - Removing the catalytic converter integrated into the exhaust pipe

- ☐ Remove the downstream oxygen sensor (see **17B, Petrol injection, Oxygen sensors: Removal - Refitting**, page **17B-19**) .
- ☐ Cut the exhaust system at the cutting area **ZC1** for this purpose (see **Exhaust: Parts and consumables for the repair**) and (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) .



116860

☐ Remove:

- the exhaust pipe clamp (1) ,
- the catalytic converter integrated into the exhaust pipe.

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

1 - Refitting the catalytic converter integrated into the exhaust manifold

- ☐ Refit the exhaust manifold (see **12A, Fuel mixture, Exhaust manifold: Removal - Refitting**, page **12A-75**) .

2 - Refitting the catalytic converter integrated into the exhaust pipe

- ☐ Fit the catalytic converter integrated into the exhaust pipe.
- ☐ Tighten the new exhaust pipe clamp by several turns.
- ☐ Fit the new After-Sales sleeve following the instructions supplied (see **19B, Exhaust, Exhaust: Precautions for the repair**, page **19B-17**) .
- ☐ Remove the downstream oxygen sensor (see **17B, Petrol injection, Oxygen sensors: Removal - Refitting**, page **17B-19**) .

Catalytic converter: Removal - Refitting

F4R

II - FINAL OPERATION

- ☐ Make sure there is no contact with the underbody.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Start the engine and check that there are no leaks: deal with any problems as necessary.

Catalytic converter: Removal - Refitting

D4F, and 784

Special tooling required

Mot. 1495-01 22 mm socket for removal - refitting of oxygen sensors.

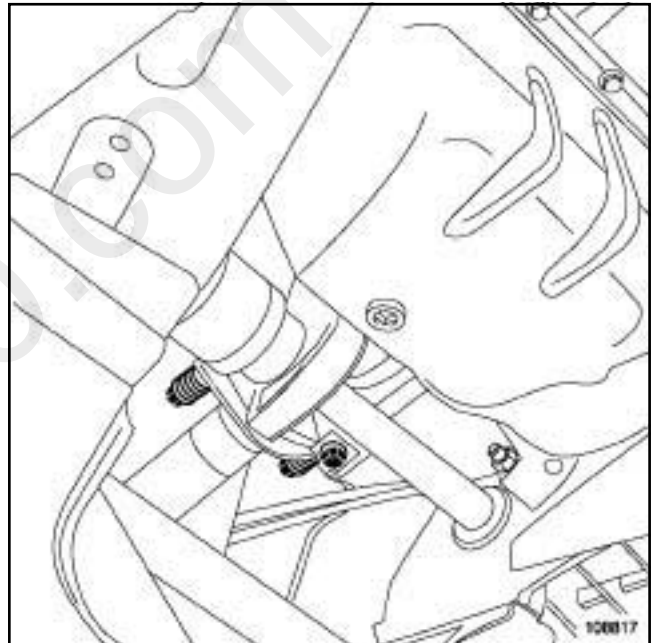
Tightening torques

upstream and downstream oxygen sensors	45 Nm
primary strut bolts on the cylinder block	25 Nm
primary strut bolt on the gearbox	44 Nm
catalytic converter nuts on the turbocharger (initial torque)	20 Nm
catalytic converter nuts on the turbocharger	30 Nm
primary strut bolts on the catalytic converter (initial torque)	20 Nm
primary strut bolts on the catalytic converter	30 Nm
catalytic converter upstream strut bolts on the catalytic converter	21 Nm
catalytic converter upstream strut bolts on the cylinder block	21 Nm
turbocharger strut nut	21 Nm
turbocharger strut bolt	21 Nm
turbocharger heat shield bolts	8 Nm
front right-hand wheel driveshaft relay bearing nuts	44 Nm
exhaust bracket bolts at the catalytic converter outlet	9 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

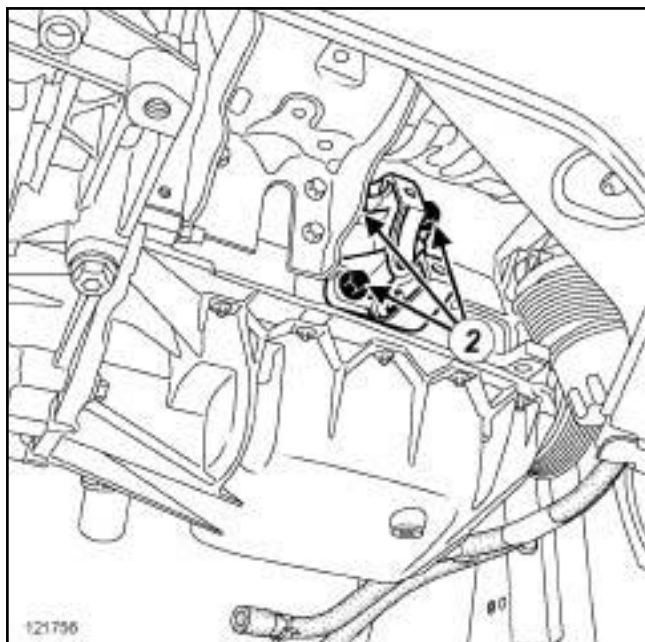
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the engine cover,
 - the engine undertray.
- ☐ Drain the gearbox (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).



108817

- ☐ Remove the nuts from the exhaust bracket at the catalytic converter outlet.

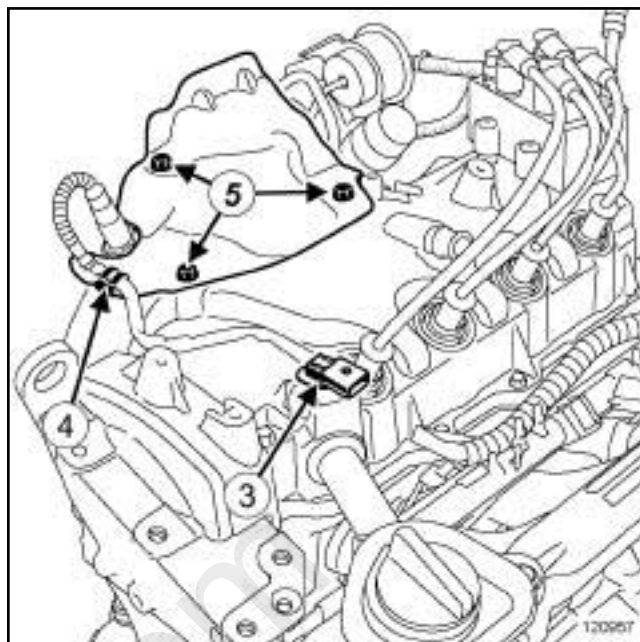
D4F, and 784



121756

❑ Remove:

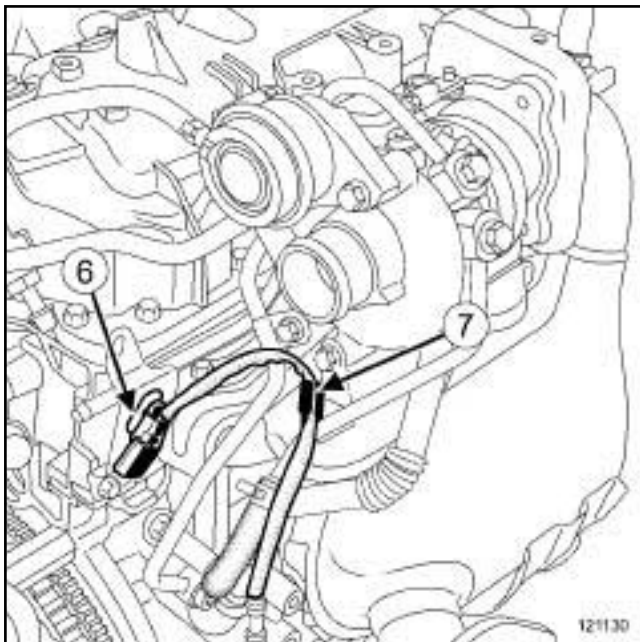
- the front right-hand hand wheel driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts),
- the front right-hand wheel driveshaft relay bearing nuts (2) ,
- the front right-hand wheel driveshaft relay bearing.



120957

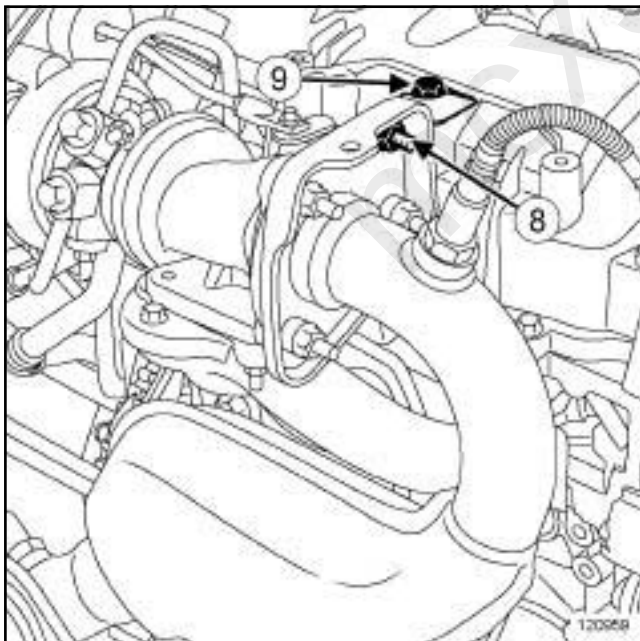
- ❑ Disconnect the upstream oxygen sensor connector (3) .
- ❑ Unclip the upstream oxygen sensor connector.
- ❑ Detach the upstream oxygen sensor wiring harness at (4) .
- ❑ Remove:
 - the bolts (5) from the turbocharger heat shield,
 - the turbocharger heat shield.

D4F, and 784



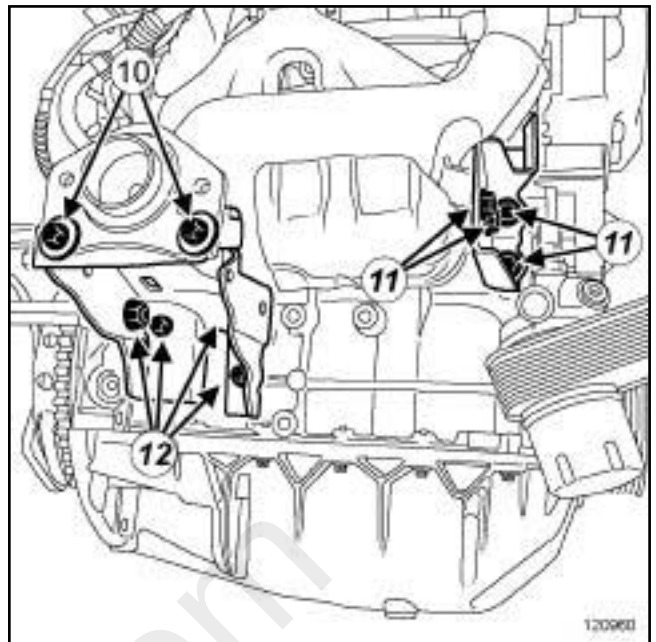
121130

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



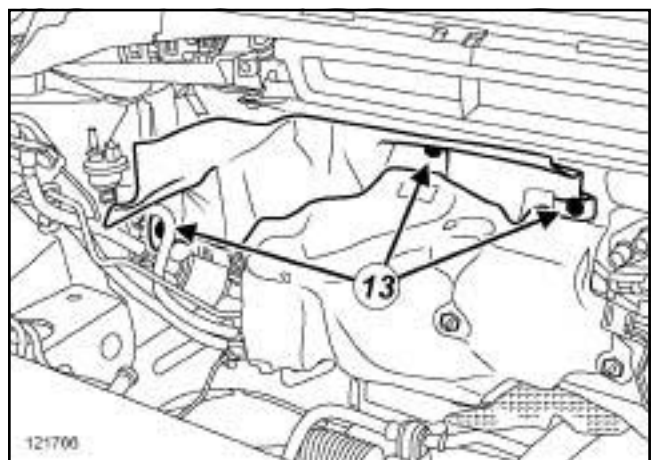
120959

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



120960

- ☐ Disconnect the oil pressure sensor connector.
- ☐ Undo the bolts (10) on the catalytic converter primary strut.
- ☐ Remove:
 - the catalytic converter upstream strut bolts (11) ,
 - the catalytic converter upstream stay,
 - the bolts (12) on the cylinder block primary strut,
 - the primary strut from the cylinder block.



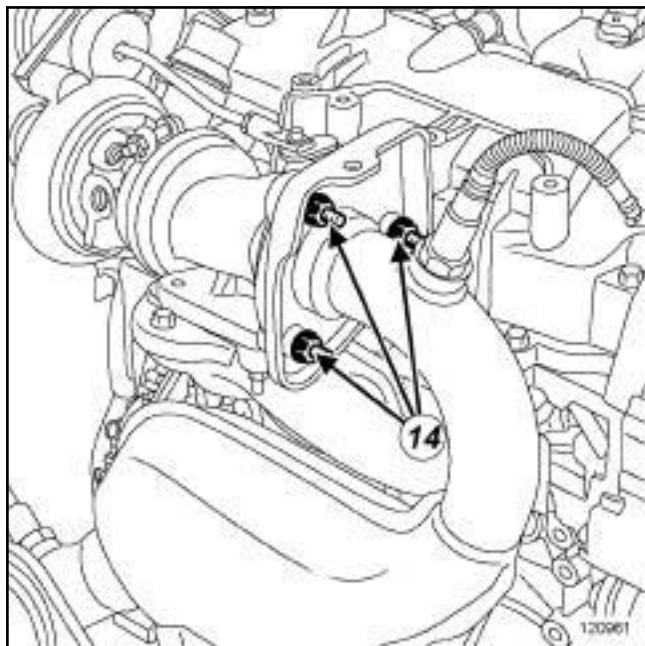
121766

- ☐ remove:
 - the clips (13) from the upper heat shield,
 - the upper heat shield.

Catalytic converter: Removal - Refitting

D4F, and 784

II - OPERATION FOR REMOVAL OF PART CONCERNED



120961

❑ Remove:

- the nuts (**14**) mounting the catalytic converter on the turbocharger and the spacers,
- the catalytic converter,
- the catalytic converter seal on the turbocharger.

IMPORTANT

Catalytic converters contain ceramic fibres; these are contained within a closed unit, and cannot disperse. Cutting or drilling catalytic converters is prohibited.

- ❑ When replacing the catalytic converter, remove the upstream and downstream oxygen sensors on the workbench using the (**Mot. 1495-01**).

REFITTING

I - REFITTING PREPARATIONS OPERATION

- ❑ When replacing the catalytic converter, refit the upstream and downstream oxygen sensors on the workbench.
- ❑ Torque tighten the **upstream and downstream oxygen sensors (45 Nm)** using the (**Mot. 1495-01**).
- ❑ Always replace:
 - the catalytic converter seal,
 - the catalytic converter nuts on the turbocharger,

- ❑ Use abrasive pads to clean the bearing faces of:

- the turbocharger,
- the catalytic converter.

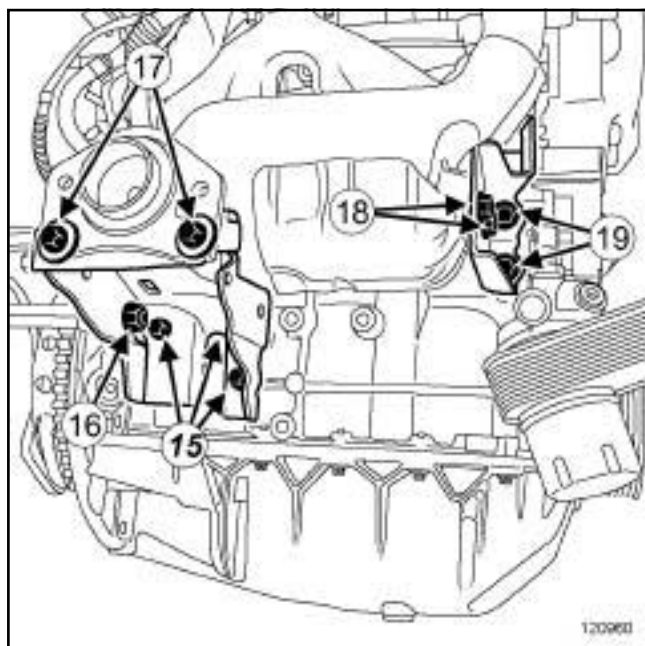
- ❑ Degrease the pressure faces using **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 392, 04B, Consumables - Products) and a clean cloth:

- the turbocharger,
- the catalytic converter.

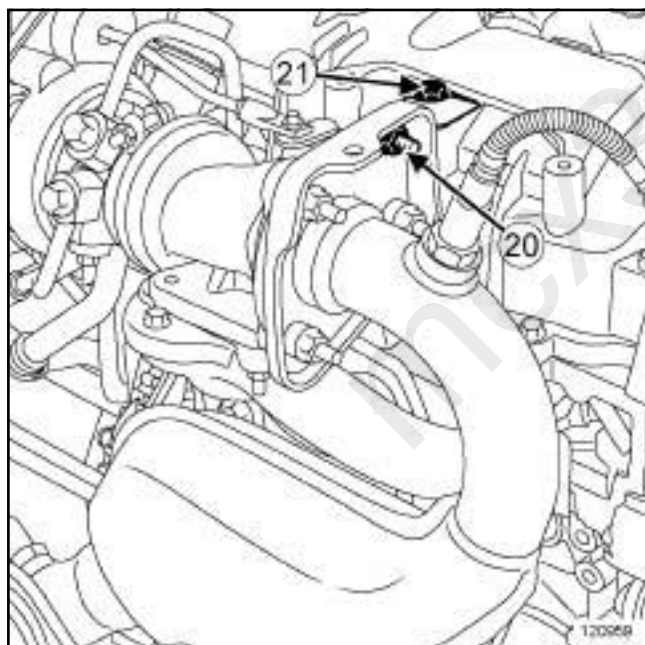
Catalytic converter: Removal - Refitting

D4F, and 784

II - REFITTING OPERATION FOR PART CONCERNED



120960



120959

□ Refit:

- the catalytic converter seal on the turbocharger,
- the catalytic converter,
- the new nuts with the catalytic converter spacers on the turbocharger,
- the catalytic converter primary strut,
- the bolts (15) on the cylinder block primary strut,
- the primary strut bolt (16) on the gearbox,

- the catalytic converter upstream stay,
- the catalytic converter upstream strut bolts (18) and (19) ,
- the turbocharger strut.
- the bolt (21) from the turbocharger strut,
- the turbocharger strut nut (20) .

□ Torque tighten:

- the **primary strut bolts on the cylinder block (25 Nm)** by locking the strut on the gearbox lug at (15) ,
- the **primary strut bolt on the gearbox (44 Nm)** at (16) ,
- the **catalytic converter nuts on the turbocharger (initial torque) (20 Nm)**,
- the **catalytic converter nuts on the turbocharger (30 Nm)**,
- the **primary strut bolts on the catalytic converter (initial torque) (20 Nm)** at (17) ,
- the **primary strut bolts on the catalytic converter (30 Nm)**,
- the **catalytic converter upstream strut bolts on the catalytic converter (21 Nm)** at (18) ,
- the **catalytic converter upstream strut bolts on the cylinder block (21 Nm)** at (19) ,
- the **turbocharger strut nut (21 Nm)** at (20) ,
- the **turbocharger strut bolt (21 Nm)** at (21) .

III - FINAL OPERATION.

□ Refit:

- the upper heat shield,
- the clips on the upper heat shield.

□ Connect the oil pressure sensor connector.

□ Attach the downstream oxygen sensor wiring harness.

□ Fit the downstream oxygen sensor connector.

□ Connect the downstream oxygen sensor connector.

□ Refit:

- the turbocharger heat shield,
- the turbocharger heat shield bolts.

□ Torque tighten the **turbocharger heat shield bolts (8 Nm)**.

□ Attach the upstream oxygen sensor wiring harness.

□ Fit the upstream oxygen sensor connector.

□ Connect the upstream oxygen sensor connector.