D4F, and 784

REFITTING

I - REFITTING PREPARATION OPERATION

❑ Use abrasive pads to clean the bearing faces of:

- the exhaust manifold - cylinder head,
- the exhaust manifold - turbocharger.

❑ Use **SURFACE CLEANER** (see **Vehicle: Parts and consumables for the repair**) (MR 398, 04B, Consumables - Products) and clean cloths to degrease the bearing faces:

- the exhaust manifold - cylinder head,
- the exhaust manifold - turbocharger.

WARNING
The joint faces must be clean, dry and free from grease (avoid finger marks).

❑ Be sure to replace the exhaust manifold gasket.

WARNING
Any damaged heat shields must be replaced.

The sealing between the exhaust manifold sealing surface and the catalytic converter must be perfect.

Always replace all seals and exhaust pipe to rubber mounting bush mounting bolts whenever they are removed.

The catalytic converter must not be subjected to mechanical impacts during removal or refitting, as this could damage it.

II - REFITTING OPERATION FOR PART CONCERNED

❑ Refit:

- the exhaust manifold heat shield,
- the exhaust manifold heat shield bolts.

IMPORTANT
Wear protective gloves during the operation.

❑ Torque tighten the **exhaust manifold heat shield bolts (18 Nm)**.

❑ Refit:

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

❑ Pretighten to torque the **exhaust manifold nuts (initial torque) (20 Nm)**.

❑ Torque tighten the **exhaust manifold nuts (30 Nm)**.

III - FINAL OPERATION.

❑ Refit:

- the turbocharger (see **12B**, **Turbocharging**, **Turbocharger: Removal - Refitting**, page **12B-4**) ,
- the catalytic pre-converter (see **19B**, **Exhaust**, **Catalytic pre-converter: Removal - Refitting**, page **19B-21**) ,
- the front right-hand driveshaft (see **Front right-hand driveshaft: Removal - Refitting**) (MR 392, 29A, Driveshafts).

❑ Fill the gearbox with oil (see **Manual gearbox oils: Draining - Filling**) (MR 392, 21A, Manual gearbox).

❑ Refit:

- the engine undertray,
- the engine cover.

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

D4F or K9K

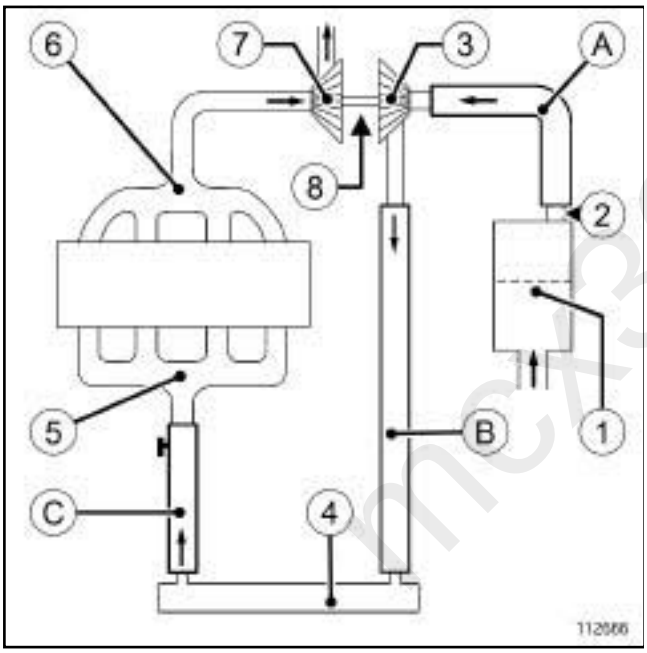
Equipment required
parts washer

I - TURBOCHARGER: GENERAL INSTRUCTIONS

For the turbocharging pressure regulator check (see **Fault finding - Tests**) (Technical Note 3419A, 12B, Turbocharging).

WARNING
The turbocharger pressure regulator rod must not be adjusted.

II - TURBOCHARGER CIRCUIT DIAGRAM



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(**1**) Air filter unit
(**2**) Air flowmeter
(**3**) Compressor wheel
(**4**) Intercooler
(**5**) Inlet manifold
(**6**) Exhaust manifold
(**7**) Turbine wheel
(**8**) Bearing system (bearing + wheel shaft)
(**A**) Air filter box air outlet pipe
(**B**) Turbocharger air outlet pipe
(**C**) Intercooler air outlet pipe

III - APPLICATION CONDITIONS OF INSTRUCTIONS

The instructions below must be followed when replacing a turbocharger due to mechanical damage:

- damage to the bearing system,
- broken shaft or turbine wheel,
- compressor wheel rubbing against the turbocharger casing,
- broken or damaged compressor wheel,
- extensive clogging of the turbine wheel casing (hard deposits).

FOR THE AIR CIRCUIT:

- Consequences:
  - swarf or metal objects in the turbocharger inlet and outlet pipes,
  - oil in the air circuit (collected in the intercooler).
- Risks (after replacing the turbocharger):
  - metal objects sucked in by the compressor wheel (destruction of the turbocharger).

FOR THE LUBRICATION CIRCUIT:

- Consequences:
  - swarf found in the engine oil circuit,
  - circulation of swarf within the circuit.
- Risks (after replacing the turbocharger):
  - premature wear on the bearing system (destruction of turbocharger).

WARNING
Metal objects may enter the oil and air circuits as a result of a broken turbocharger.

Failure to follow the INSTRUCTIONS listed will lead to the turbocharger breaking again.

INSTRUCTIONS:

- Drain the engine oil (see **10A**, **Engine and cylinder block assembly**, **Engine oil: Draining - Refilling**, page **10A-13**)
- Replace the oil filter (see **10A**, **Engine and cylinder block assembly**, **Oil filter: Removal - Refitting**, page **10A-20**) .
- Replace the seals and fittings,
- Carry out the following only if the compressor wheel is broken or rubbing against the turbocharger casing:
  - Drain the intercooler,

D4F or K9K

• Clean the turbocharger air pipes.

Note:

When carrying out an operation on the air or lubrication circuit, it is necessary to plug the open holes to prevent any risk of foreign bodies entering the system.

IV - AIR CIRCUIT*: INSTRUCTIONS FOLLOWING MECHANICAL DAMAGE TO THE TURBOCHARGER

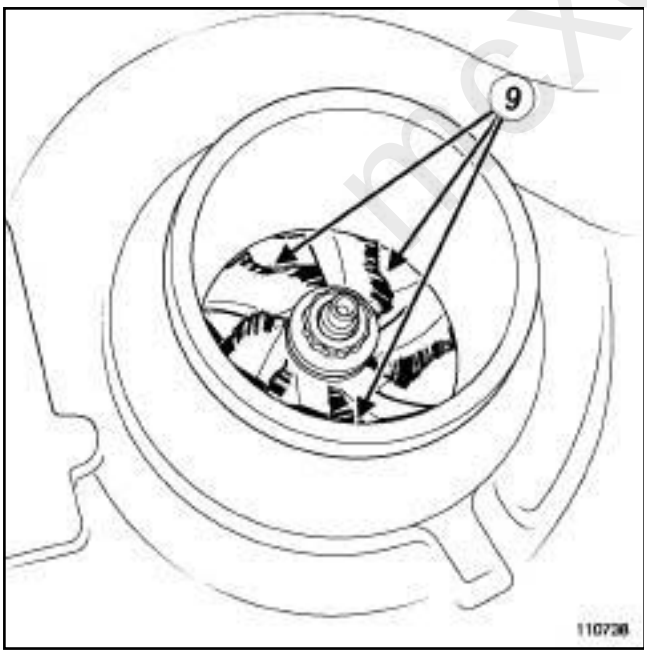
Note:

(*) These instructions for the air circuit are only to be followed in the case of:

- broken compressor wheel,
- compressor wheel rubbing against the turbocharger casing.

Remove the intercooler if fitted to the vehicle (see **12B**, **Turbocharging**, **Intercooler: Removal - Refitting**, page **12B-21**) .

Turn the intercooler over and allow the oil inside to drain out.



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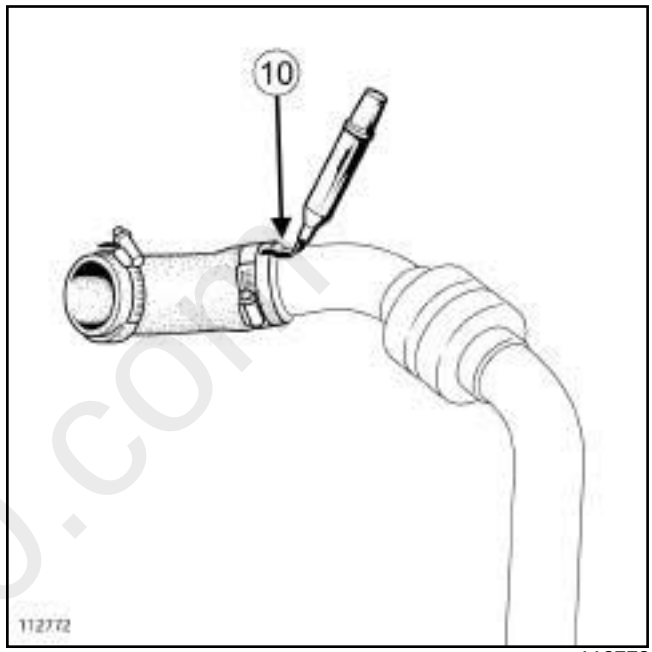
Note:

If the compressor wheel (**9**) is damaged, metal objects are ejected inside the air pipes.

Check that there are no metal objects inside the air flowmeter ***(2)*** .

Remove:

- the air pipe(between the air filter unit and the turbocharger) ***(A)*** ,
- the air pipe ***(B)*** (between the turbocharger and the intercooler).



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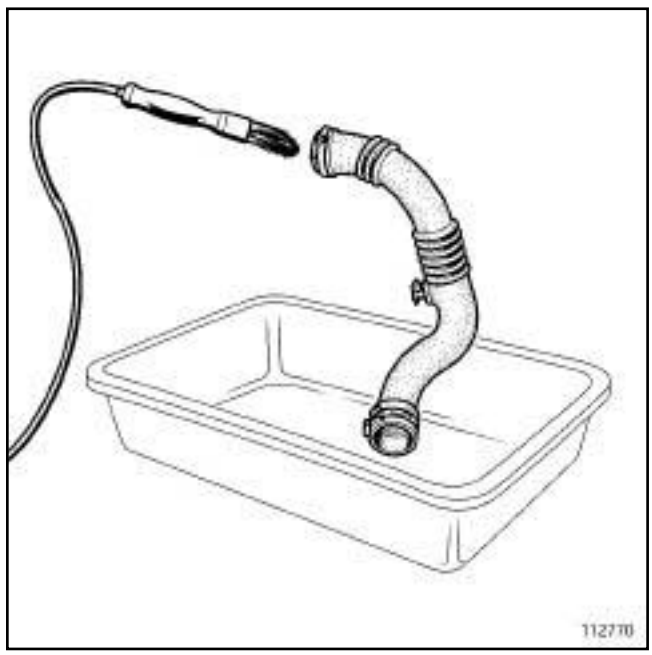
For air pipes comprising several components:

- mark (**10**) the fitting position of each component,
- separate all the components.



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