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TURBOCHARGING: PRECAUTIONS FOR THE REPAIR



Note, one or more warnings are present in this procedure



Equipment required

parts washer



WARNING

Before carrying out any operation on a vehicle fitted with the Stop & Start system, always follow the safety instructions [Vehicle: Precautions for the repair](#)

1. TURBOCHARGER: GENERAL INSTRUCTIONS

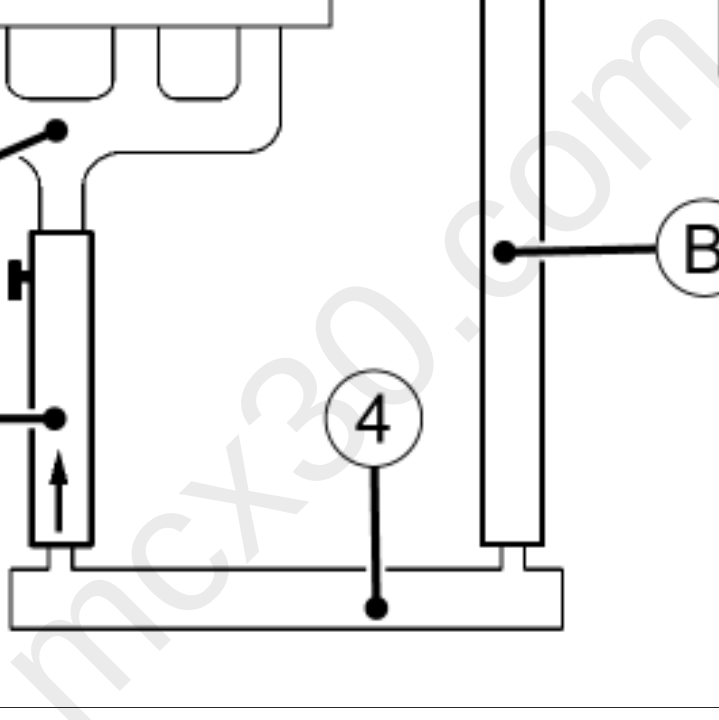
For the turbocharging pressure regulator check (see Fault finding - Tests) (TN 3419A, 12B, Turbocharging).



CAUTION

The turbocharger pressure regulator rod must not be adjusted.

2. TURBOCHARGER CIRCUIT DIAGRAM



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- (1) Air filter unit
- (2) Air flowmeter
- (3) Compressor wheel
- (4) Intercooler
- (5) Inlet distributor
- (6) Exhaust manifold
- (7) Turbine wheel
- (8) Bearing system (bearing + wheel shaft)

(A) Air filter unit outlet pipe

(B) Turbocharger air outlet pipe

(C) Intercooler air outlet pipe

3. 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).

CAUTION



Failure to observe the following instructions will lead to the turbocharger breaking again.

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

INSTRUCTIONS:



Drain the engine oil [Engine oil - Oil filter : Draining - Filling](#)



Replace the oil filter [Engine oil - Oil filter : Draining - Filling](#) .



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,

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.

4. 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,

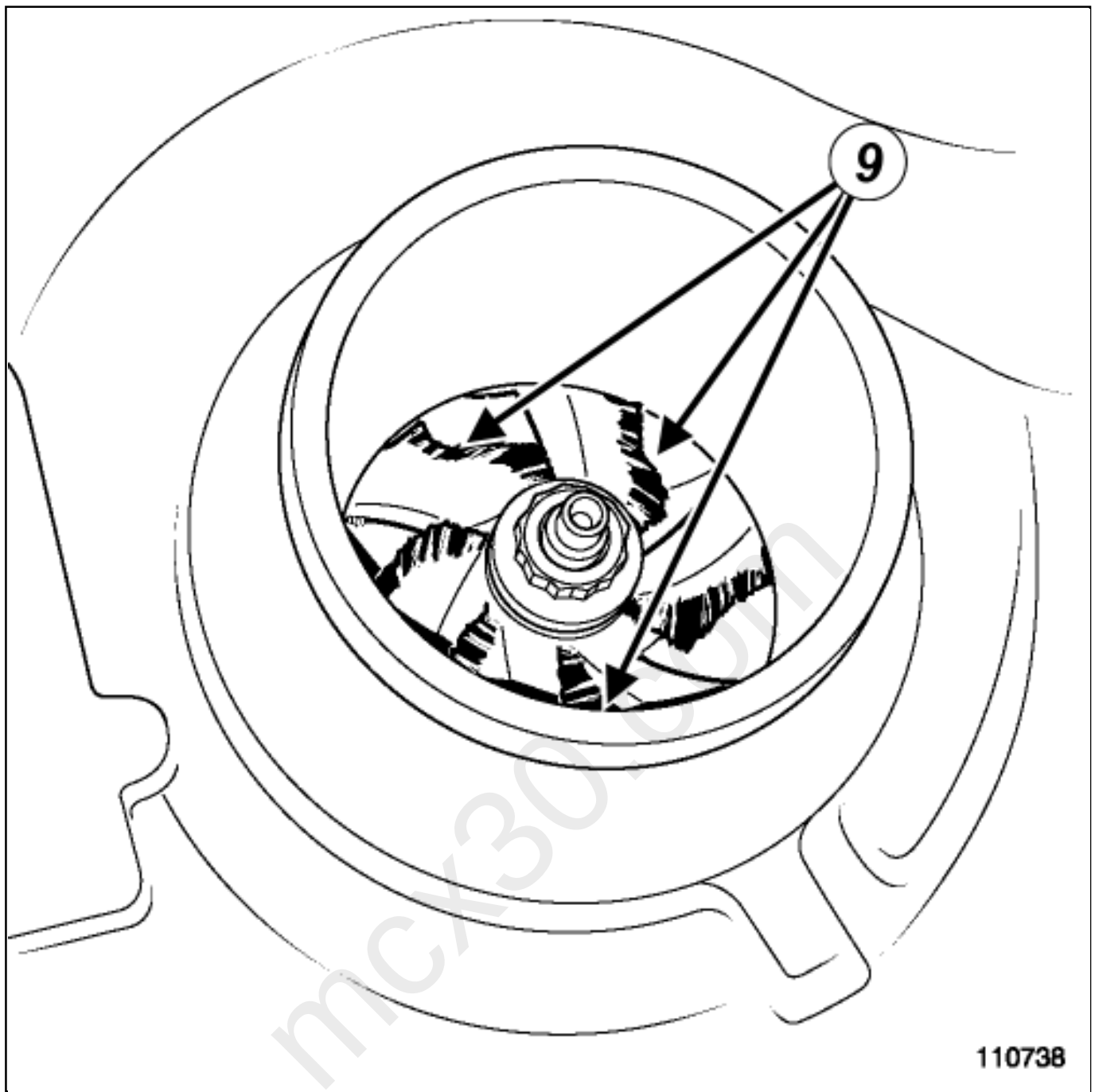


compressor wheel rubbing against the turbocharger casing.

Remove the intercooler if fitted to the vehicle ([see 12B, Turbocharging, Intercooler: Removal - Refitting](#)) .

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.

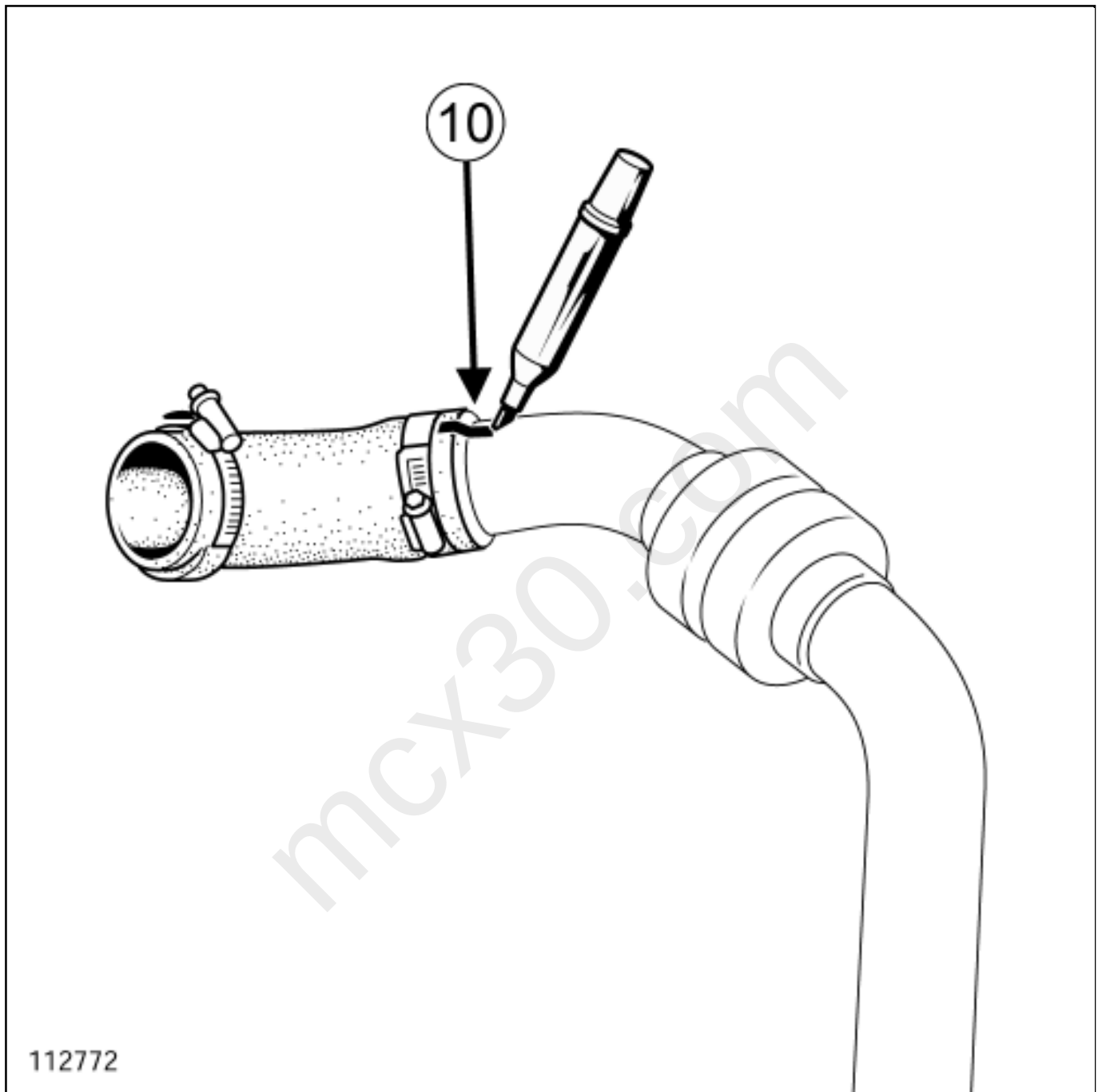
Check that there are no metal objects inside the air flowmeter(2) .

Remove:



- the air pipe (between the air filter unit and the turbocharger)(A) ,

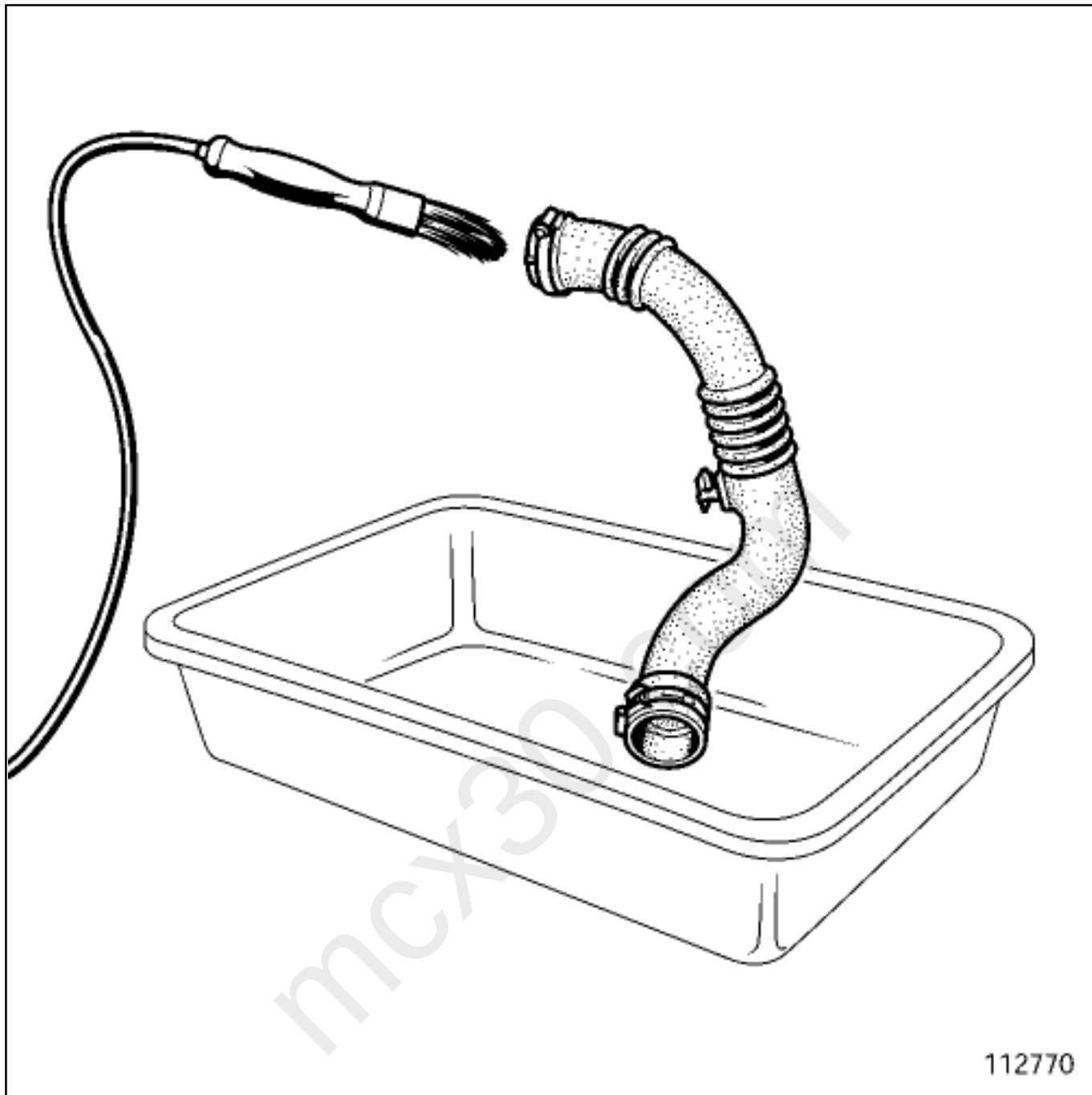
- the air pipe(B) (between the turbocharger and the intercooler).



For air pipes comprising several components:

- mark(10) the fitting position of each component,

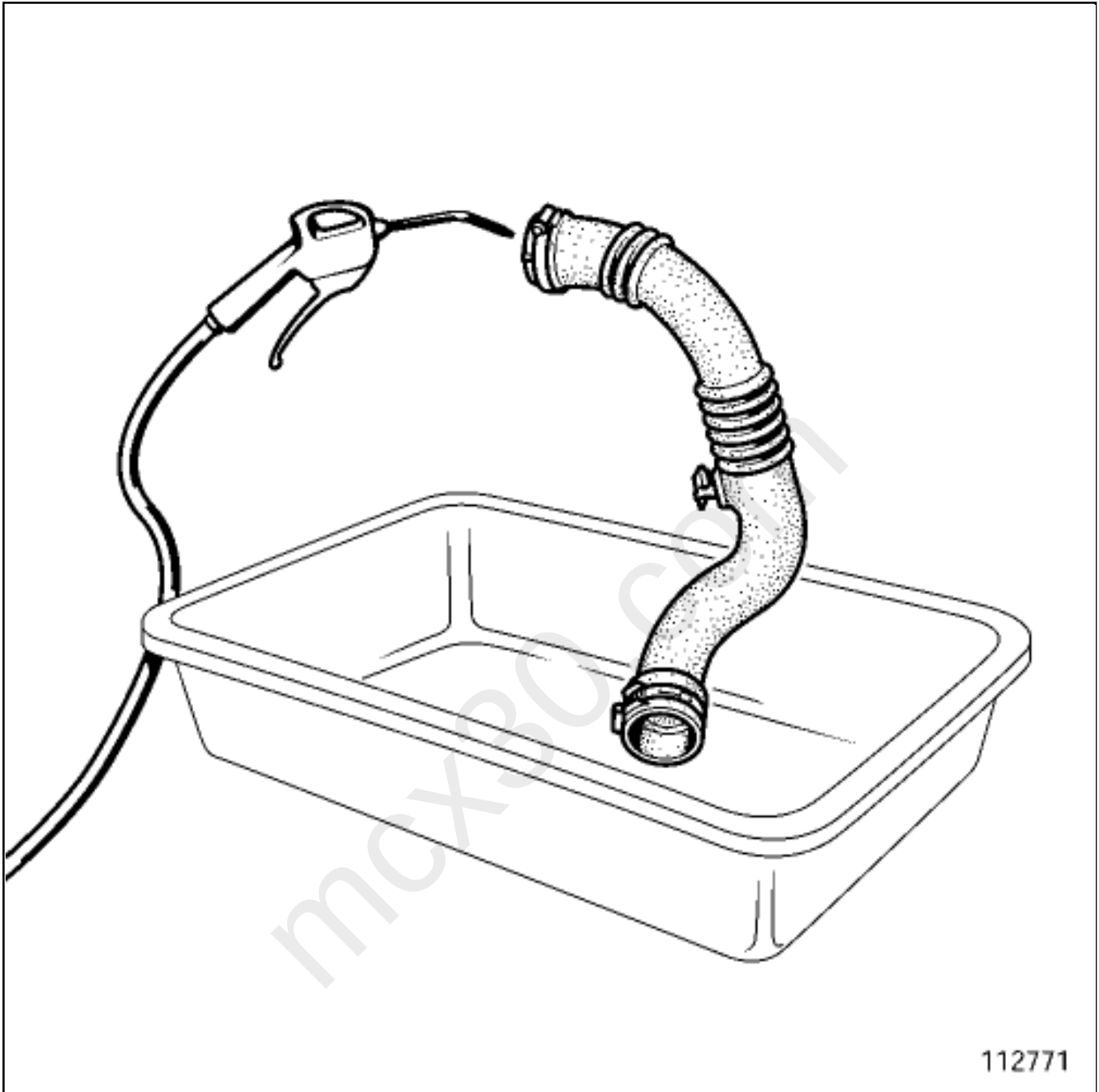
- separate all the components.



One by one, clean the pipes removed with the parts washer:

-
- brush as much of the inside of the pipe as possible (only use brushes with plastic bristles),
- wash plenty of cleaning product from the cleaning station through the pipe,
- allow the cleaned pipe to drain by standing it upright,
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ensure the cleaning product has drained out completely (check areas where liquid may be retained, e.g. gaiters, resonators etc.).



Dry the pipes one by one using a compressed air spray gun.

■ For pipes comprising several components:

■ assemble the components, taking note of their correct fitting position(10) .

Refit:

the air pipe(between the air filter unit and the turbocharger)(A) ,

the air pipe(B) (between the turbocharger and the intercooler).

Refit the intercooler, if fitted to the vehicle([see 12B, Turbocharging, Intercooler: Removal - Refitting](#)) .

5. LUBRICATION CIRCUIT**: INSTRUCTIONS FOLLOWING MECHANICAL DAMAGE TO THE TURBOCHARGER



Note:

(**) These instructions relating to the lubrication circuit must always be followed in all cases of mechanical damage as listed above.

Drain the engine oil[Engine oil - Oil filter : Draining - Filling](#) .

Replace the oil filter[Engine oil - Oil filter : Draining - Filling](#) .

Only fill the engine with a suitable oil type[Engine oil: Specifications](#) (TN 6013A, 04A, Lubricants).

6. GENERAL INSTRUCTIONS TO BE FOLLOWED WHEN REMOVING A TURBOCHARGER



Always replace:

all seals that have been removed,

all fittings that have been removed.

-the oil supply pipe:

if the pipe is blocked, even partially (due to scale, carbonised oil etc.),

if the pipe is fitted with self-retaining seals.

-the oil return pipe: