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CLEANLINESS INSTRUCTIONS WHICH MUST BE FOLLOWED WHEN WORKING ON THE HIGH PRESSURE DIRECT INJECTION SYSTEM

Risks relating to contamination

The system is very sensitive to contamination. The risks caused by the introduction of contamination are:

- damage to or destruction of the high pressure injection system,
- seizing or leaking of a component.

All After-Sales operations must be performed under very clean conditions. This means that no impurities (particles a few microns in size) must be allowed to enter the system during dismantling or into the circuits via the fuel unions.

The cleanliness principle must be applied from the filter to the injectors.

WHAT ARE THE SOURCES OF CONTAMINATION?

Contamination is caused by:

- metal or plastic chips,
- paint,
- fibres,
 - of cardboard,
 - brushes,
 - paper,
 - clothing,
 - cloths.
- foreign bodies such as hairs,
- ambient air,
- etc.

IMPORTANT: it is forbidden to clean the engine using a high pressure washer because of the risk of damaging connections. Also the moisture may collect in the connectors and cause electrical connection problems.

INSTRUCTIONS TO BE FOLLOWED BEFORE ANY WORK IS CARRIED OUT ON THE INJECTION SYSTEM

- Ensure that you have the plugs for the unions to be opened (bag of plugs sold by the Parts Stores - Part no.: **77 01 206 804**).
Plugs are to be used once only. After use, they must be thrown away (once used they are soiled and cleaning is not sufficient to make them reusable). Unused plugs must be thrown away.
- Ensure that you have the resealable plastic bags for storing removed parts. There is less risk of parts stored in this way being exposed to contamination. The bags must be used only once, and after use they must be thrown away.
- Make sure that lint-free cleaning cloths are available (cleaning cloths part number **77 11 211 707**). **The use of conventional cloth or paper is prohibited.** These are not lint-free and may contaminate the fuel circuit of the system. Each lint-free cloth should only be used once.

CLEANING INSTRUCTIONS TO BE FOLLOWED BEFORE CARRYING OUT ANY WORK ON THE FUEL SYSTEM

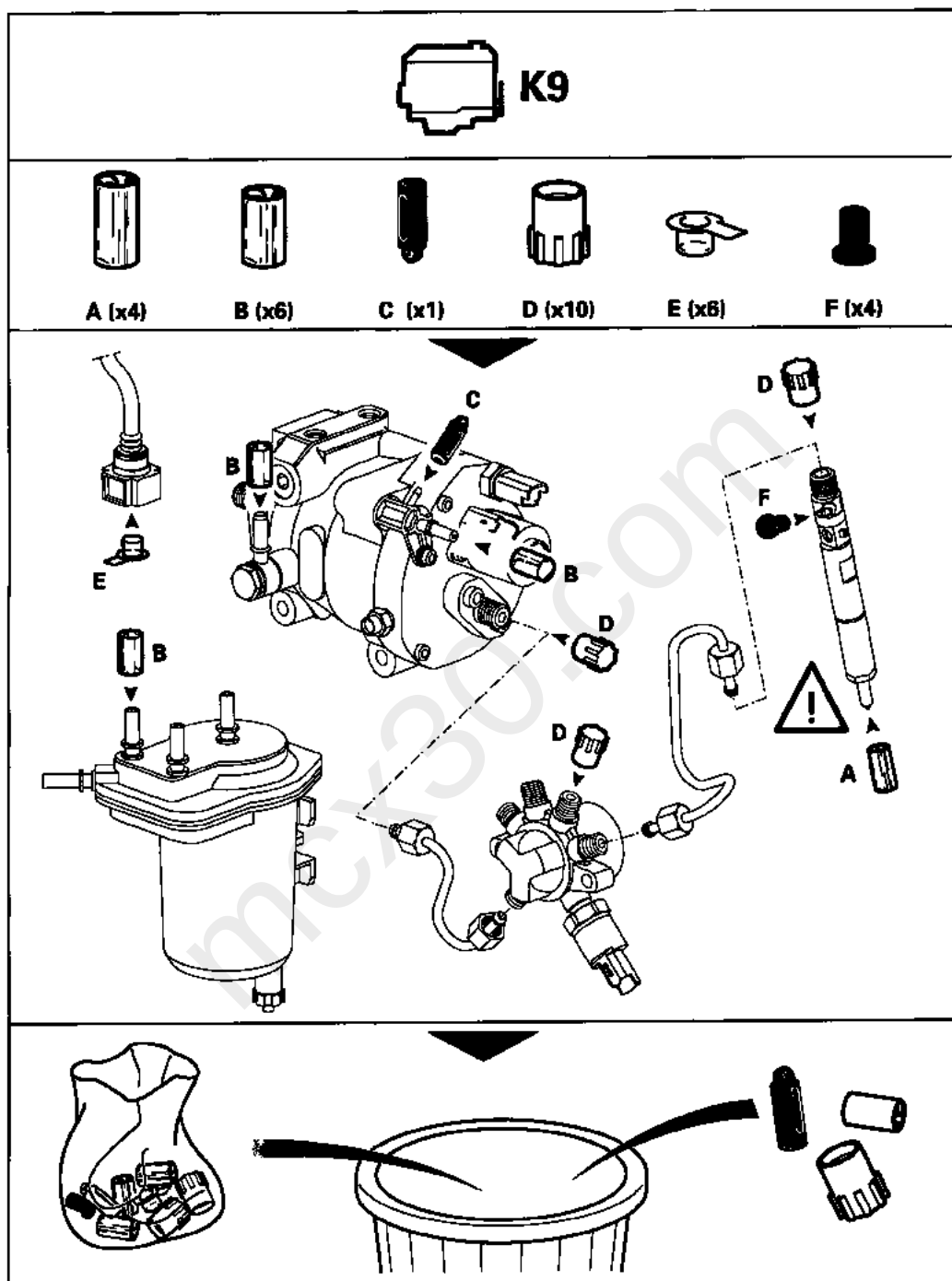
- For each operation, use new thinner (used thinner contains impurities). Pour it into a clean receptacle.
- For each operation, use a clean brush which is in good condition (the brush must not shed its bristles).
- Use a brush and thinners to clean the connections to be opened.
- Blow compressed air over the cleaned parts (tools, bench and parts, connections and injection system zone).
Check that no bristles remain adhered.
- Wash your hands before and during the operation if necessary.
- When wearing leather protective gloves, cover these with latex gloves.

INSTRUCTIONS TO BE FOLLOWED DURING THE OPERATION

- As soon as the circuit is open, all openings must be plugged to prevent impurities from entering the system. The plugs to be used are available from the **Parts Stores** (part number **77 01 206 804**). They must not, under any circumstances, be reused .
- Close the hermetically sealed bag, even if it has to be reopened shortly afterwards. Ambient air carries contamination.
- All components of the injection system that are removed must be stored in a hermetically sealed plastic bag once the plugs have been inserted.
- The use of a brush, thinner, bellows, sponge or normal cloth is strictly forbidden once the circuit has been opened. In fact, these items are likely to result in impurities entering the system.
- A new component replacing an old one must not be removed from its packaging until it is to be fitted to the vehicle.

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INSTRUCTIONS FOR FITTING THE PLUGS (part number 77 01 206 804)



IMPORTANT

- The engine must not run with:
 - diesel containing more than 10% diester,
 - petrol, even in very small amounts.
- The system can inject the diesel into the engine at a pressure of up to 1400 bars. Before carrying out any work, check that the injector rail is no longer pressurised and that the fuel temperature is not too high.
- You must respect the cleaning and safety advice specified in this document for any work on the high pressure injection system.
- Removal of the interior of the pump and injectors is prohibited. Only the flow actuator, the diesel temperature sensor and the venturi may be changed on the pump.
- For safety reasons, it is strictly forbidden to undo a high pressure pipe union when the engine is running.
- It is forbidden to remove the pressure sensor from the fuel rail because this may cause contamination problems. If the pressure sensor develops a fault, the pressure sensor, fuel rail and the five high pressure pipes must be replaced.
- It is strictly forbidden to remove any high pressure pump pulley bearing the part no. 070 575. The pulley must be replaced when the high pressure pump is replaced.
- It is forbidden to repair the wiring connecting the accelerometer and the engine speed sensor. If the wiring should fail, it has to be replaced with new wiring.
- Applying 12 volts directly to any component in the system is prohibited.
- Ultrasonic decoking and cleaning are prohibited.
- Never start the engine if the battery is not connected correctly.
- Disconnect the injection system computer when carrying out any welding work on the vehicle.
- All disconnected plastic air inlet hoses must be replaced.