Removal and Installation of Injection Lines, Vacuum Line, and Fuel Hoses

Job No. 07–15

A. OM 636

If an injection line is replaced, it has to be determined whether lines of the old version with an internal diameter of 1.5 mm are installed or lines of the new version with an internal diameter of 2.0 mm. Apart from replacing the entire set of lines, only lines corresponding exactly to the dimensions of the pipes installed must be used. Deviations from length and internal diameter influence the injection and can cause trouble. If the entire set of lines is replaced, only lines with an internal diameter of 2.0 mm should be used.

Lines and hoses which are chafed and brittle must be replaced.

Removal:

1. Disconnect the injection lines (3 and 4) at the injection pump and the injection nozzles (see Figure 07–15/1).

   Place caps over the connectors for the injection lines of the injection pump and the injection nozzles (see Figure 07–15/1).

   If the vacuum line (2) is also removed, disconnect same at the diaphragm housing of the injection pump and at the throttle duct (Figure 07–15/1).

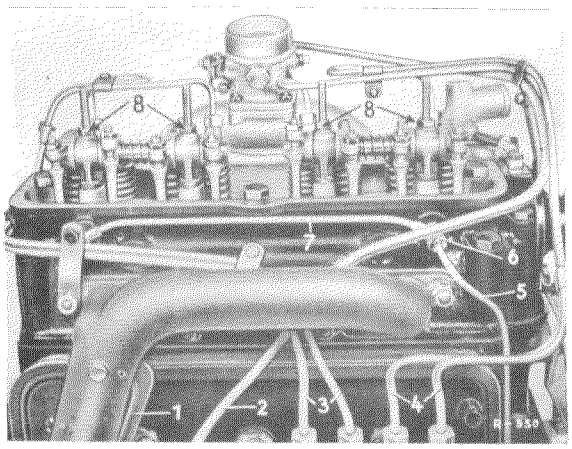

Figure 07–15/1

1 Screen of exhaust manifold
2 Vacuum line
3 Injection lines for cylinder 3 and 4
4 Injection lines for cylinder 1 and 2
5 Oil line from main oilway to cylinder head for lubrication of rockers
6 Connector at 1st rocker bracket
7 Oil line to 4th rocker bracket
8 Splash oil exit at grooves in rocker brackets

2. Unscrew the pipe clips at the exhaust manifold and at the holder on the water pump and remove the injection lines.

Note: On the engines of the type 636.915 with two-piece cylinder head cover, the injection lines are installed between the two covers. Furthermore, the oil line (7) lubricating the rockers is installed on top of the injection lines and must therefore be removed before the removal of the injection lines (Figure 07–15/1).

3. Disconnect the feed hose (3) between the feed pump (2) and the filter (8), the connection hose (6) between filter (8) and injection pump (1) (see Figure 07–15/2).

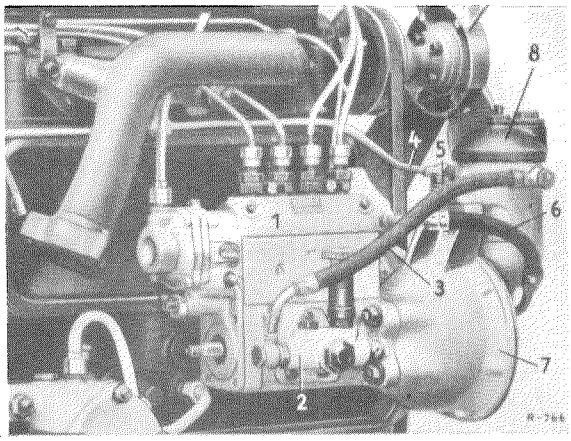

Figure 07–15/2

1 Injection pump
2 Feed pump
3 Flexible fuel hose
4 Overflow line
5 Hex. hd. screw
6 Flexible fuel hose
7 Timing gear housing cover
8 Fuel main filter

Installation:

Check, clean and if necessary repair old lines before reinstallation (see Job No. 07–16). Before the installation clean new lines thoroughly, especially stored lines which had not been preserved and capped at the ends (see Job No. 07–16, Paragraph 3).

The satisfactory performance of the injection nozzles depends to a wide extent on the cleanness of the injection lines.

4. Fix injection lines with cap nuts to the injection pump and the injection nozzles. To do this apply a torque of 3 to 3.5 mkg to the cap nuts. If too much force is applied, the sealing cones are compressed and become leaky.

Note: The injection lines must fit exactly as far as their shape is concerned and must be realigned if necessary before installation.

On no account should the lines be installed under tension. Installed lines thus stressed tend to break. The cap nuts should allow screwing on by hand for several threads.

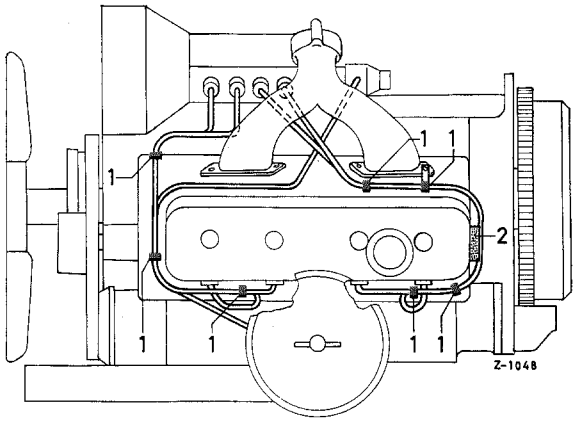

Figure 07–15/3

Layout of the Injection Lines and Location of the Pipe Clips

1 Pipe clips
2 Rubber pad

5. Install the pipe clips and fix them, together with the two holders, to the water pump and the exhaust manifold (see Figure 07–15/1 and 07–15/3).

The pipe clips must fit tightly at the lines to eliminate vibrations and noises. Strong vibrations can cause breaking of the lines.

6. To prevent a contact between the injection lines and the cylinder head a rubber pad (2) is inserted between the lines and the cylinder head (see Figure 07–15/3).

Note: This rubber pad (2) should be subsequently installed on all engines, because especially at this point the lines often cause noises due to contact with the cylinder head.

7. If removed, reinstall the vacuum line at the diaphragm housing and at the throttle duct and connect the oil line (7) to the cylinder head (see Figure 07–15/1).

8. Check the fuel hoses for reusability. Then mount the fuel hoses including new seal ring on filter, feed pump and injection pump. The hoses should be so mounted to ensure that they do not rub and are free from tensions.
9. Bleed the fuel system (see Job No. 00–10).

B. OM 621

Removal and installation of the pressure or injection lines, the vacuum line and the fuel hoses are in principle identical with the respective procedures for the OM 636, except for the arrangement, which is different (see Figure 07–9/1).

The injection lines of 2 mm inner dia. are standard. For special cases, refer to Job No. 07–16.