Note: Only the hexagon screw (16) with a length of 160 mm and a new sealing ring (15) between the bottom and the fixing screw must be used (see Figure 18–9/5). The passage for the oilpressure gauge line in the adapter (8) can be obstructed if a longer screw is used. The oil pressure gauge will then indicate incorrectly or not at all.

V. Testing of Relief Valves:

The opening pressure of the relief valve (8) installed in the horizontally arranged oil filter (see Figure 18–9/4) and the relief valve (2) for the metal filter element of the bowl-type filter (see Figure 18–9/7) is 2±0.2 km/cm² for each of the two filter designs.

1. Unscrew, disassemble and clean the relief valves installed in the filter housing.
2. Check the valve spring, the valve cones and/or the valve ball installed in the horizontally arranged oil filter, and the valve seats.
3. Identical springs and valve cones are installed in the two relief valves of the bowl-type filter.

Note: The opening pressure of the relief valve (1), which has been provided for a fine filter element to be installed in the bowl-type filter, is 1.2 ± 0.2 kg/cm².

The different opening pressures of the relief valves 1 and 2 (see Figure 18–9/7) are obtained in spite of identical parts by means of the different initial tension of the springs.

B. OM 621

I. General

A vertical, upright main line bowl-type filter (see Figure 18–9/8) is installed in type 621.910 of model 190 D or 190 Db and 621.914 of model 180 Dc.

The OM 621 of type 621.912, model 190 Dc, and 621.913, model L and O 319 Dc is provided with a completely new combination main and by-pass oil filter. It is attached to the cylinder crankcase in an inclined position by means of four hexagon socket screws. The filter is higher and has a substantially larger diameter as compared to the former design (see Figure page 38 and Figure 18–9/10).

The engine oil delivered by the oil pump reaches the oil filter by way of the inlet hole; a large portion of the oil flows over the main filter element (disk plate element with perlon filter) and over the oil outlet hole in the main line in the cylinder crankcase to the engine lube points. A smaller portion of the pressure oil flows back to the oil pan over the by-pass filter element, or the return and throttle hole, respectively. In this way, the engine oil is filtered practically twice which in turn improves oil purification.

II. Main Line Bowl-Type Oil Filter

The disassembly, cleaning and assembly of the main line bowl-type oil filter, refer to Figure 18–9/8, is essentially the same as described for the OM 636 under Section A.

The oil filter of this engine is equipped ex works with a paper filter element part No. 000 184 42 25. With the first oil change, exchange this paper filter against the strainer element part No. 000 184 47 45. This strainer filter can also be subsequently installed into engines which had been in operation for a longer period.

However, also the paper filter element can be further used, which should then be replaced every 3 000 km; as a replacement, the filter element installed by the factory until the first oil change, part No. 000 184 42 25 should not be used then, but the paper filter element part No. 000 184 43 25.

Replacement of the strainer filter element is no longer necessary, but cleaning every 6 000 km. Because of its fine meshes, the cleaning of the strainer filter should be done with special care. **It is not sufficient to clean the strainer filter element with washing gasoline.** If a parts cleaning equipment is available, use this equipment to clean the elements. Otherwise clean the strainer filter elements in Tri lye. It is advisable to place the elements for some time into the Tri lye to soften the layer of dirt and then clean with a brush.

After cleaning a visual inspection is imperative. When holding the element against light, it is possible to ascertain whether the pores of the strainers are clean. The residual impurities can be removed by tapping on the element.

If on the removal of the oil filter element, an extraordinarily heavy formation of sludge has been ascertained, this is an indication that cooling water has passed into the oil. The respective engine should then be examined and the leak eliminated.

Also take special care to the seal ring in the oil filter lower part. **For safety reasons, do not fail to replace the seal ring after opening of the filter.** When fitting a new seal ring, see to it that no air cushion is formed in the groove of the oil filter lower part below the seal ring.

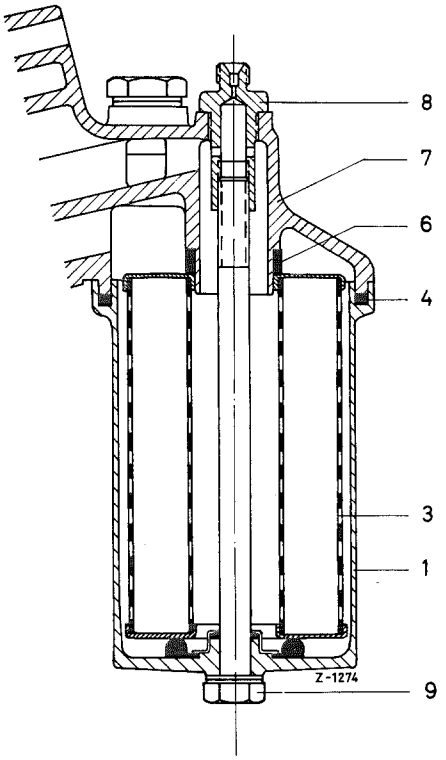

Figure 18–9/8

Oil filter with paper filter element or strainer element, OM 621

1 Oil filter lower part
3 Paper filter element or strainer element
4 Rubber seal ring
6 Rubber seal ring
7 Oil filter upper part
8 Screw fitting
9 Hex. hd. screw for mounting of oil filter lower part

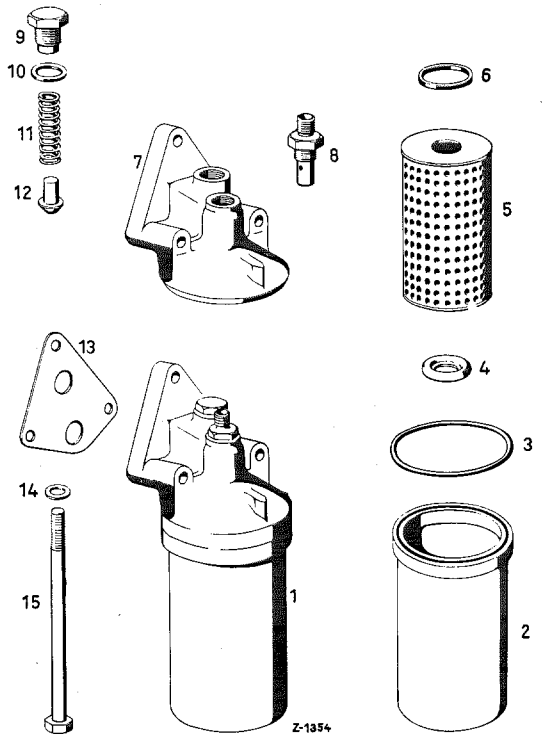

Figure 18–9/9

1 Oil filter, complete
2 Oil filter housing, lower part
3 Rubber seal ring (O-ring type 4.3 mm dia., inner dia : 77–78 mm and outer dia, : 81.3–82.3 mm)
4 Rubber seal ring
5 Filter element
6 Rubber seal ring 9.5 mm high, 24 mm inner dia. and 31 mm outer dia.)
7 Oil filter housing upper part
8 Screw fitting
9 Screw plug
10 Seal ring
11 Spring
12 Valve cone
13 Gasket
14 Seal ring D 10×16 DIN 7603 Al
15 Hex. hd. screw M 10×1×160 DIN 960–8 G

III. Combination Main and By-pass Oil Filter

For cleaning of oil filter do not remove oil filter housing, upper part (2) from the engine (see Figure 18–9/10 and page 38).

For removal, disassembly, cleaning, assembly and installation of bottom part (6) of oil filter housing, refer to Job No. 18–7, section B, b) Combination Main and By-pass Oil Filter.

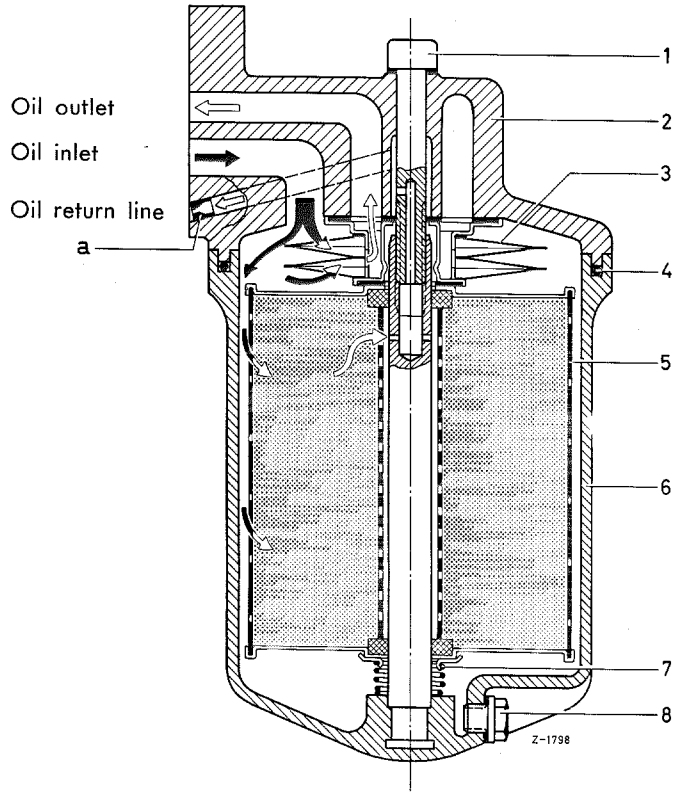

Figure 18–9/10

Combination main and by-pass oil filter 1st design

1 Cylinder bolt for attachment of oil filter lower part
2 Oil filter upper part
3 Main line filter element
4 Rubber seal
5 By-pass filter element
6 Oil filter bottom part
7 Compression spring with spring plate
8 Oil drain screw

a Throttle hole

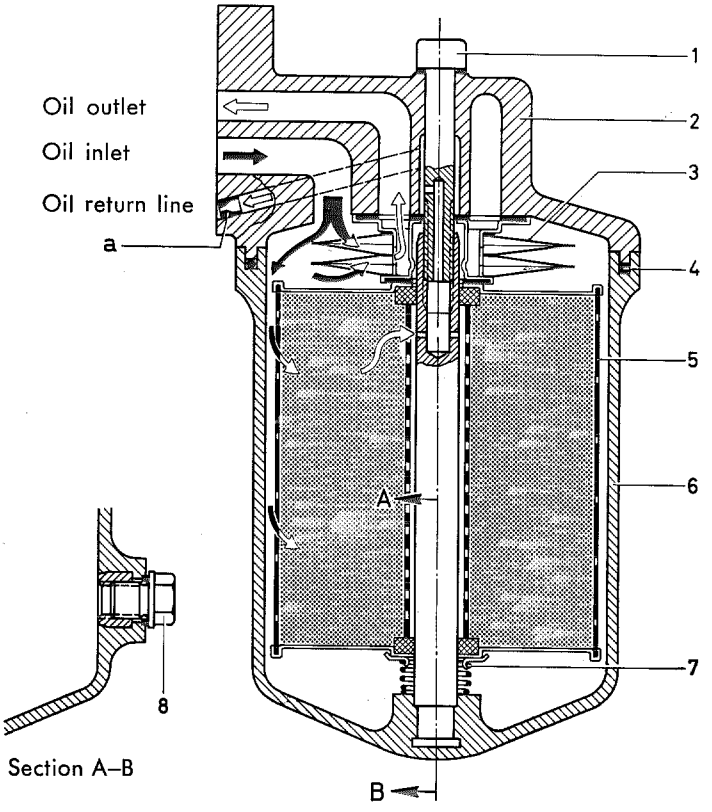

Figure 18–9/11

Combination main and by-pass oil filter 2nd design