

### C. Cleaning and Checking of Oil Relief Valve in Main Oil Flow

The only difference in the oil relief valves on the various models is in the shape of the housing (Figs. 18-5/4 and 18-5/5). The method of operation and the cleaning and checking procedures are the same for both versions of the oil relief valve. The piston spring, the piston and the retainer ring are identical on both valves and are interchangeable.

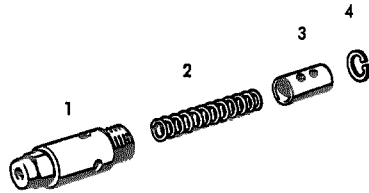


Fig. 18-5/4

Oil relief valve for Models 180 a, 180 b, 190 SL, 220 SE, and 219, 220 S (2<sup>nd</sup> version)

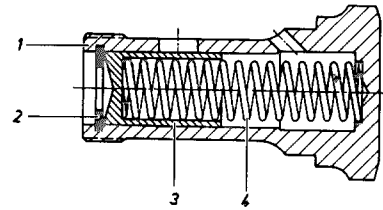


Fig. 18-5/5

Oil relief valve for Models 220 a and 219, 220 S (1<sup>st</sup> version)

- 1 Oil relief valve
- 2 Retainer ring
- 3 Piston
- 4 Spring

### Test Values of the Spring of the Oil Relief Valve

Length L and Pressure P					Wire gage d  mm	External diameter D  mm
Free length L mm	Valve closed		Valve open			
	L <sub>1</sub> mm	P <sub>1</sub> kg	L <sub>2</sub> mm	P <sub>2</sub> kg		
43.6	39	2.4	30.5	6.8±0.35	1.4	9.1—9.4

The opening pressure is  $6 \pm 0.5$  kg/cm<sup>2</sup>

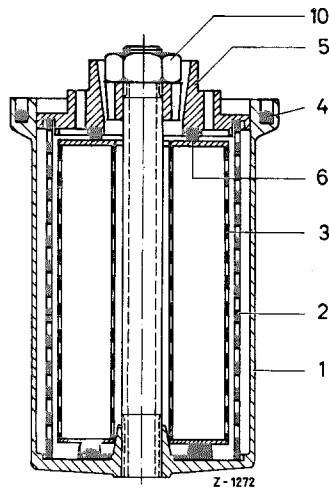
### D. Disassembly, Cleaning, and Reassembly of Oil Filter

On Models 180 a, 180 b, 190 SL, 220 a, 219, 220 S, and 220 SE the disassembly, cleaning and re-assembly procedures of the oil filter are the same as described for Model 190.

There is, however, a difference in the shape of the housing top as was mentioned in Job No. 01-4, Section I. In addition attention should be paid to the different number of elements (Figs. 18-5/6 and 7).

Various types of oil filters have been installed and cleaning procedure varies accordingly:

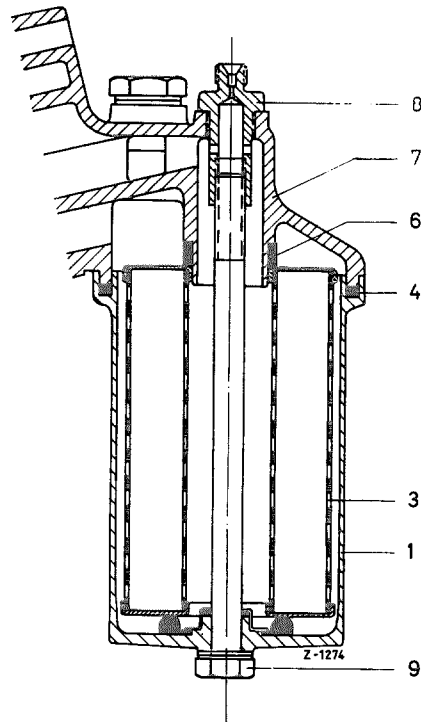
**Oil Filter with Wire Coil Element  
and Paper Filter Element**



**Fig. 18-5/6**

- 1 Oil filter base
- 2 Wire coil
- 3 Paper filter element
- 4 Rubber sealing ring
- 5 Discharge ring
- 6 Rubber sealing ring
- 10 Hexagon nut

**Oil Filter with Paper Filter Element**



**Fig. 18-5/7**

- 1 Oil filter base
- 3 Paper filter element
- 4 Rubber sealing ring
- 6 Rubber sealing ring
- 7 Oil filter top
- 8 Threaded union
- 9 Hexagon screw with seal

The wire coil and strainer elements should be cleaned in a parts washer. If no parts washer is available, both the wire coil elements and the strainer elements must be cleaned in trichloroethylene. To do this soak the element for some time in trichloroethylene and afterwards clean it with a brush.

**Wire elements and strainer elements cannot be cleaned satisfactorily with gasoline.**

The element should be cleaned **very carefully** and should be carefully inspected after cleaning. Hold the wire coils or strainer elements against the light and make sure that they are actually quite clean. Remaining traces of dirt can be removed by knocking the element against a flat surface.

## Explanation of Symbols and Remarks

**Symbols:** ○ = oil change  
P = replace paper element  
D = clean wire coil element

**Remarks:** P = replace paper element.

In the case of oil filters which have a **paper element only** use paper filter element Knecht designation EH 256/1, Part No. 000 184 43 25 (paper type 233).

In the case of filters with both **paper and wire coil element** use paper filter element Part No. 000 184 22 25.

If an oil filter element shows unusual sludge formation, this is an indication that cooling water has mixed with the oil. Examine the engine and stop the leak.

The sealing ring in the oil filter base needs particular attention. **For reasons of safety always replace the sealing ring when the filter has been opened.** When inserting the sealing ring make sure that air pads do not form in the groove of the oil filter base.

The following tables indicate after what mileage the oil filter elements must be replaced or cleaned.

### Oil Change under Normal Running Conditions

500 km	3000 km	6000 km	12000 km	18000 km	24000 km	etc.
Oil filter type: <b>Paper element and wire coil element</b> Models 180, 220 a, 219, 220 S, 220 S Convertible and Coupé, 220 SE and 1st version Models 180 a, 190, 190 SL, 220 SE Convertible and Coupé						
○ D	○	○ P D	○ P D	○ P D	○ P D	etc.
Oil filter type: <b>Paper element only</b> Models 180 b, 190 b, and 2nd version in Models 180 a, 190, 190 SL, 220 SE Convertible and Coupé						
○ P	○	○	○ P	○	○ P	etc.

The test values of the oil relief valve springs in the housing top are also the same as for Model 190.

### Test Values of the Oil Relief Valve Springs

Length L and Pressure P					Wire Gage d	External diameter D
Free length L mm	Valve closed		Valve open			
	L <sub>1</sub> mm	P <sub>1</sub> kg	L <sub>2</sub> mm	P <sub>2</sub> kg	mm	mm
49	32	2.6	24	3.30	1.25	12.25

The opening pressure of the relief valve is

for oil filter shown in fig. 18-5/6  
(2 oil relief valves)

for metal filter  $2 \pm 0.2 \text{ kg/cm}^2$   
for paper filter  $1.2 \pm 0.2 \text{ kg/cm}^2$

for oil filter shown in fig. 18-5/7  
(1 oil relief valve)

paper filter only  $2.5 - 0.3 \text{ kg/cm}^2$