

# Disassembly and Cleaning of Oil Filter

Types 220 and 220a

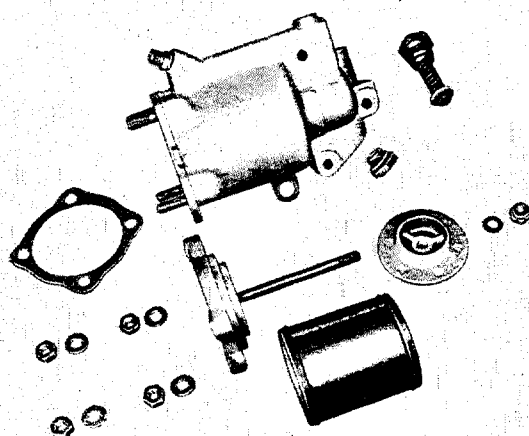


Fig. M 53/00  
Oil filter of Type 220

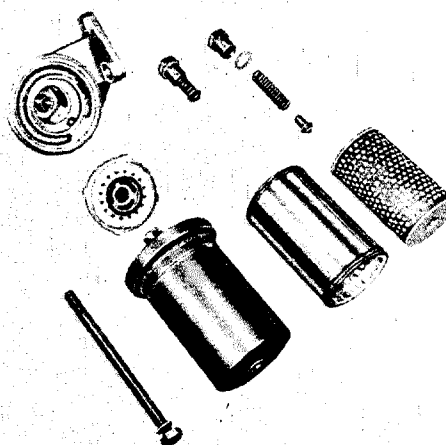


Fig. M 53/01  
Oil filter of Type 220a

The full-flow oil filter for Type 220 is provided with a metal filter element (Fig. M 53/00), whereas the filter of Type 220a is equipped with a metal as well as a paper filter element (Fig. M 53/01).

In the case of Type 220 the filter case contains one oil relief valve; in Type 220a the case contains two oil relief valves, as this filter has two elements.

If one filter or the other is heavily contaminated, the oil is directed over the oil relief valve, so that the flow of oil will not be impaired.

In the following the operations on Type 220 and Type 220a are described separately.

## a) Oil Filter for Type 220

### Procedure:

- 1a. Screw out oil drain plug (2) at bottom of filter and drain contaminated oil (see Fig. M 51/00).
- 2a. Loosen nuts of cover fastening screws and pull cover out together with filter element.
- 3a. Take filter element apart by loosening the retaining nut and taking off bottom ring and filter coil.
- 4a. Clean inside and outside of filter coil thoroughly in cleansing gasoline, using a paint brush (no wire brush). Then blow coil out with compressed air from the inside to the outside, and check whether all gaps are perfectly clean.
- 5a. Reassemble filter element, install it in the case and tighten the nuts evenly. Make sure that sealing ring on case is in perfect condition. Screw oil drain plug into filter case.

- 6a. Turn oil relief valve out, disassemble it and clean. Check valve cone, valve cone seat and spring (Table 28).

- 7a. After oil relief valve has been checked, install it again (Fig. M 53/7a). Do not forget the sealing ring.

The opening pressure of the oil relief valve is  $2 \begin{smallmatrix} +0.2 \\ -0.1 \end{smallmatrix}$  kg/sq.cm ( $28.5 \begin{smallmatrix} +2.8 \\ -1.4 \end{smallmatrix}$  p.s.i.).

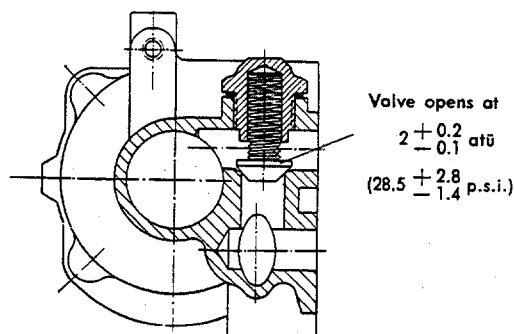


Fig. M 53/7a

## b) Oil Filter for Type 220a

### Procedure:

**Note:** The lower part of the oil filter case has already been unscrewed when the upper part was removed.

- 1b. Loosen cover fastening nut and take out cover, paper element and metal element.
- 2b. Clean inside and outside of metal filter element thoroughly in cleansing gasoline, using a paint brush (no wire brush). Blow element out with compressed air. Clean lower part and cover as well.  
Clean paper element by simply shaking off the oil. If necessary, replace the element.
- 3b. Install filter elements into lower part of case (Fig. M 53/3b). Screw lower part of case to the upper part. Do not forget the sealing ring.

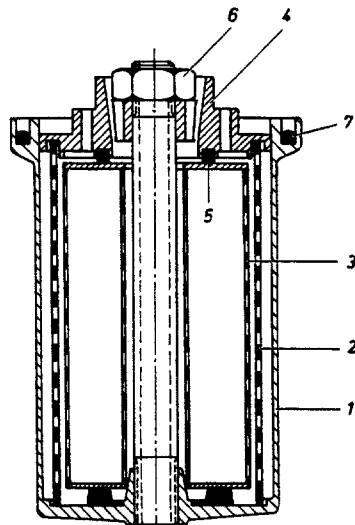


Fig. M 53/3b

- 1 Lower part of oil filter case
- 2 Metal filtering element
- 3 Paper filtering element
- 4 Cover (outlet ring)
- 5 Sealing ring
- 6 Nut
- 7 Sealing ring

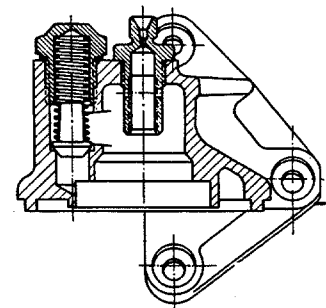
**Note:** When installing the aluminium cover, be sure that it is correctly centered in bore of lower part of case.

- 4b. Screw oil relief valves out, disassemble them and clean. Check valve cones, valve cone seats and springs. The springs for both valves are identical (Table 28).
- 5b. Install oil relief valves again (Fig. M 53/5b).

The opening pressures of the oil relief valves are as follows:

Metal filtering element  $2 \pm 0.2 \text{ kg/sq.cm}$   
( $28.5 \pm 2.8 \text{ ft.lb.}$ )

Paper filtering element  $1.2 \pm 0.2 \text{ kg/sq.cm}$   
( $17 \pm 2.8 \text{ ft.lb.}$ )



Valve opens at  $2 \pm 0.2 \text{ kg/sq.cm}$   
( $28.5 \pm 2.8 \text{ ft. lb.}$ )

Valve opens at  $1.2 \pm 0.2 \text{ kg/sq.cm}$   
( $17 \pm 2.8 \text{ ft. lb.}$ )

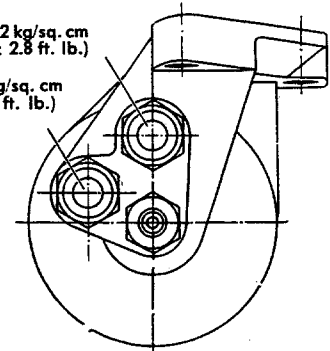


Fig. M 53/5b

Table 28

Length L and Pressure P						Wire thickness d mm. (in.)	Outer dia. D mm. (in.)
Type	Free L mm. (in.)	Valve closed L <sub>1</sub> mm (in.)   P <sub>1</sub> kg (lb.)		Valve opened L <sub>2</sub> mm (in.)   P <sub>2</sub> kg (lb.)			
220	62.5 (2.46)	32 (1.26)	4 (8.8)	25 (0.98)	4.92 (10.84)	1.25 (0.049)	12.25 (0.48)
220a	49 (1.93)	32 (1.26)	2.26 (4.98)	24 (0.95)	3.30 (7.3)	1.25 (0.049)	12.25 (0.48)