

## Oil Pressure in $\text{kp/cm}^2$

Min. oil pressure	0,5
Operating oil pressure	2–5

## Opening Pressures of Pressure Relief Valves in atü

Oil pressure relief valve (15) in main oil duct	5
Bypass valve (16) – air oil cooler	1,5
Overflow valve (20) – filter element	4,5

The operational safety of the engine is not impaired, as long as at operating temperature the oil pressure at idling speed **does not drop below  $0.5 \text{ kp/cm}^2$** , and rises immediately upon acceleration. The connection of the oil pressure gauge is at the rear on the left hand cylinder head (arrow in Fig. 1).

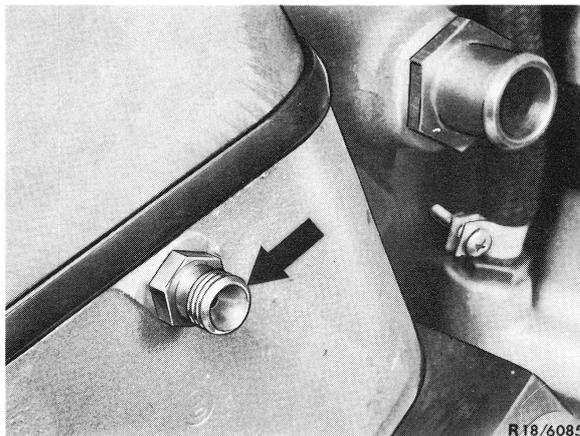


Fig. 1

The following overflow and pressure relief valves are housed in cylinder crankcase:

The **oil pressure relief valve** (15 in Fig. 3) on crankcase face end in main oil duct behind oil filter **restricts the oil pressure in the main oil duct to 5 atü**. The overflowing oil flows back to the oil pan. The valve is accessible after opening a closing plug in the timing housing cover.

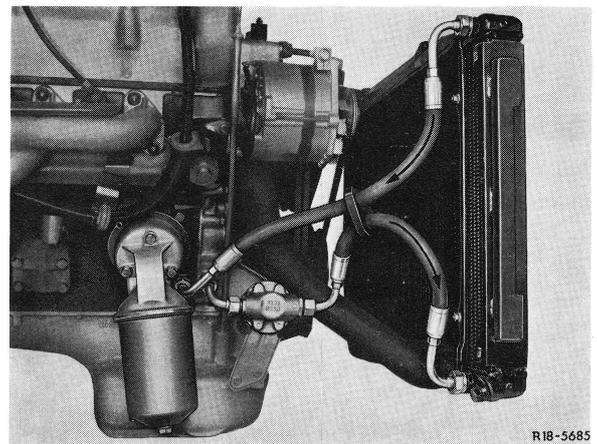


Fig. 2

Flow direction of engine oil (arrows)

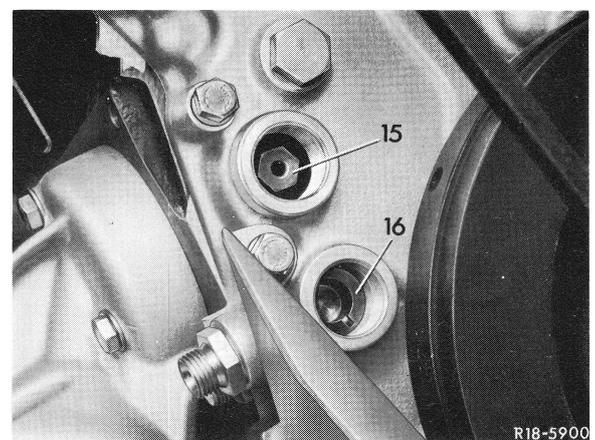


Fig. 3

15 Oil pressure relief valve 5 atü  
16 Bypass valve-oil cooler 1.5 atü

# 18.1 Oil Pressure and Pressure Relief Valves in Engine

The **bypass valve** (16 in Fig. 3) for the air oil cooler with an opening pressure of 1.5 atü on cylinder crankcase face end is concealed by a closing plug in the timing housing cover. This valve opens, when the flow resistance of the cold, viscous oil in the oil cooler is very high.

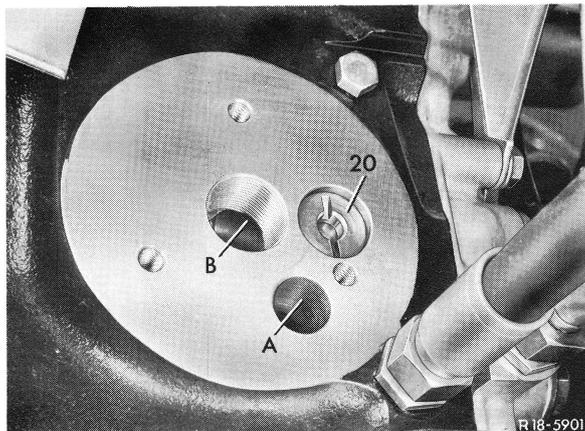


Fig. 4  
Engine Type Designation 116.982, 117.982  
20 Overflow valve for filter element 4.5 atü  
A Oil inlet, unfiltered  
B Oil outlet, filtered

An **overflow valve** (20 in Fig. 4 and 5) for the filter element is located in the crankcase and enters into the main oil duct. When the differential pressure between the dirty end of the oil filter and the main oil duct exceeds 4.5 atü, i. e., when, e. g., the filter element is badly contaminated, this valve will open and the oil enters into the lubrication system in uncleaned condition.

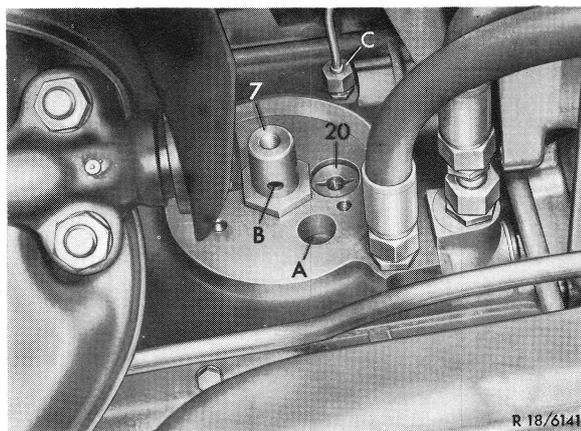


Fig. 5  
Engine Type Designation 116.980, 116.981, 117.981, 117.984  
7 Connection  
20 Oil overflow valve filter element 4.5 atü  
A Oil inlet, unfiltered  
B Oil outlet, filtered  
C Connection lub oil line — air compressor  
(not applicable for 116.980 and 117.984)