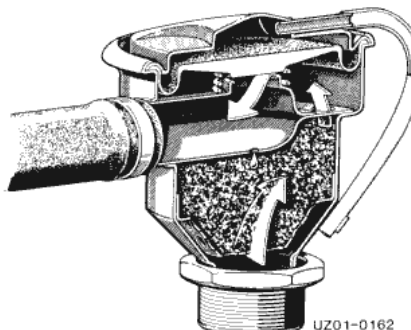


Function

The engine vent filter consists of an oil separator with filter element and pressure control valve. The vent of the pressure control valve must be open (pay attention to contamination). All connections on the vent filter and intake system must be tight and free from leaks.

A vacuum is produced in the crankcase by the intake system via the pressure control valve when the engine is running. A defective or soiled engine vent filter can cause gauge pressure within the crankcase, leading to leaks in the engine.

Note: Despite filter element, an unavoidable, small amount of oil flows via the oil separator into the intake system together with the crankcase exhaust gases and deposits on the walls as a wet oil precipitation. This is normal and of no consequence to the oil consumption. It does not indicate damage. A certain quantity of oil is required for lubricating the intake valve seats.



Trouble shooting

| Fault | Cause | Remedy |
|-------------------------|---|---|
| Vacuum too high | Clogged vent opening to the diaphragm, e. g. through dirt or disconnection of the vent hose. | Free vent opening, renew vent hose. |
| | Diaphragm does not close as a result of foreign particles, spring force too high or spring not fitted correctly. | Examine diaphragm seat and remove foreign particles through outlet, or renew engine vent filter. |
| Gauge pressure too high | Leaks at the connections of the engine vent filter to the intake pipe. | Check connections for correct fit. |
| | Intake vacuum too slight resulting from defective air filter or leaking intake line. | Check air cleaner and intake passages up to exhaust gas turbocharger (risk of dust damage). |
| | Diaphragm of the pressure control valve torn. Check by pressure testing the engine vent filter at 0,2 bar gauge pressure via the vent opening to the diaphragm. | If the diaphragm is torn renew engine vent filter. |
| | Sludging ¹⁾ of the engine vent filter in the filter element through viscous, sticking oil. | Clean engine vent filter with diesel fuel. If cleaning is not successful, renew the engine vent filter. |

1) If there is sludging, the cause must be determined and removed, otherwise severe engine damage may occur. Possible causes, e. g.: oil contamination, oil aging, unsuitable oil grades, water in oil.

Note: After carrying out corrective measures, check crankcase pressure once again.

X7 Test

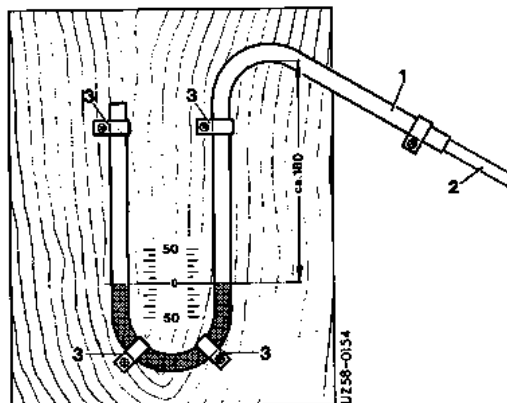
01/823 1 Secure plastic hose (inside diameter 12 to 15 mm, length approx. 2000 mm) in U-form to a rectangular board.

01/824 2 Draw a corresponding millimeter scale drawing on the board.

01/825 3 Place the vehicle on an even surface.

01H155 **Note:** Check oil level at service temperature condition, adjust if required.

01/826 4 Before starting the engine, connect the long end of the water pressure gauge with the dipstick guide tube to the engine and fill the water pressure gauge up to the "zero marking" with water only.



Water pressure gauge

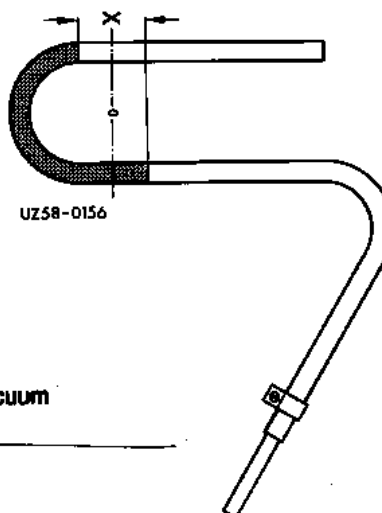
(to be made in your own workshop)

- 1 Plastic hose
- 2 Oil dipstick guide tube
- 3 Fastening clip

01/827 5 After starting the engine observe the water level in the pressure gauge. There is a vacuum in the crankcase when the water column is higher at the long part of the hose than at the short, open part.

01/828 The correct value is indicated by the difference, dimension "x" between the two water levels and must be measured in "mm".

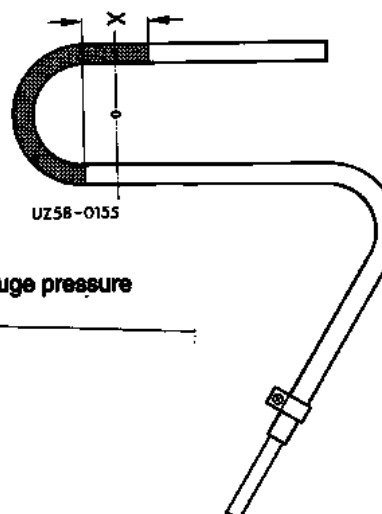
01/1403 Permissible vacuum in the entire speed range of the engine + 10 to - 100 mm water column.



Vacuum

01/830 If there is gauge pressure, the water column at the short open end of the water pressure gauge rises.

01H156 **Note:** If the vacuum or gauge pressure is too great, proceed as indicated in the trouble shooting.



Gauge pressure