

**Audi
V6
3.0L / 2.9L
EA839**

Oil supply

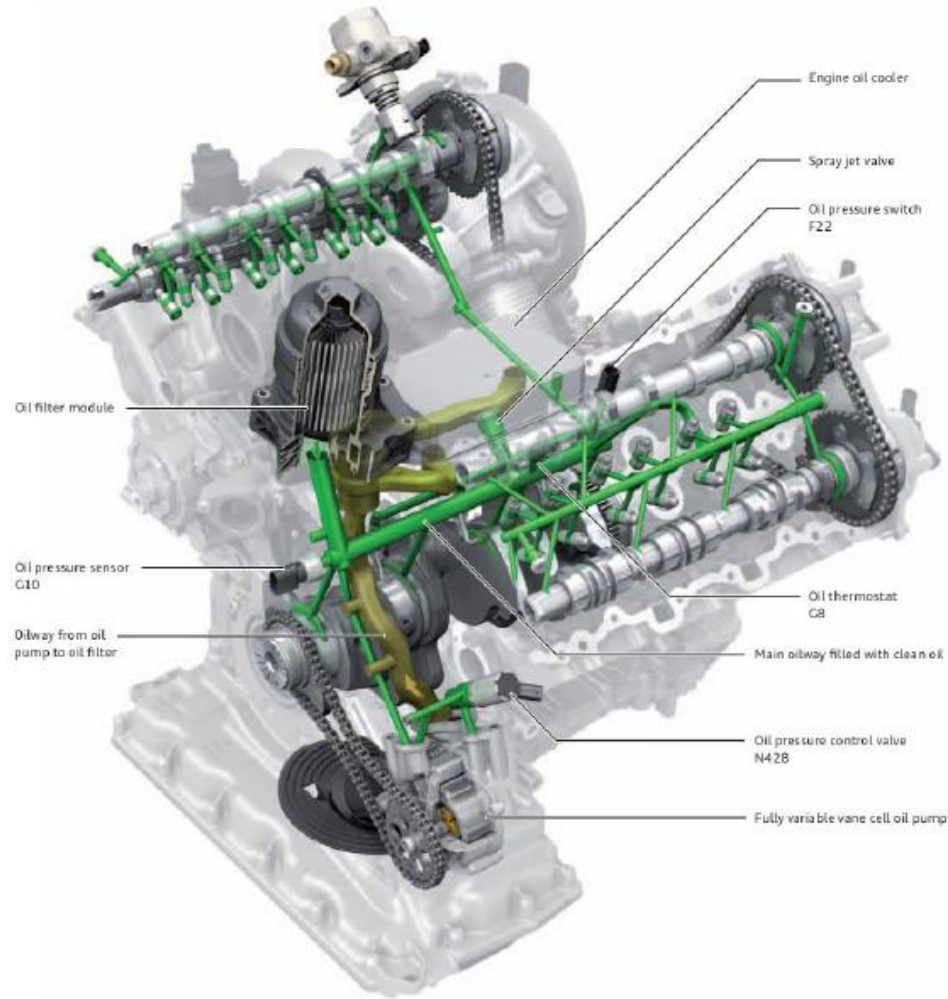
Oil circuit

The key objective during the development of the oil circuit was to keep pressure losses to a minimum. The oil ducts are therefore designed for optimal flow.

The lubrication system is rated for specification 0W-20 and VW50400 engine oil.

The technical features of the oil circuit are:

- > Fully variable map-controlled vane cell oil pump
- > Active piston cooling jets
- > Thermostat controlled engine oil cooler



Oil pressure control function

The required oil pressure is dependent on load demand and engine speed, and is computed on the basis of various ambient conditions, such as engine temperature.

The required oil pressure is computed on the basis of a characteristic map. The signal for the oil pressure control valve N428 is now generated, taking into account the requirements of the various

individual systems such as the camshaft adjuster, exhaust turbo-charger, conrod bearing and piston cooling. Engine oil is pumped from the main oil gallery into the pump control chamber by activating N428 (by PWM). The position of the adjusting ring in the pump changes, thereby adjusting the delivery rate and oil pressure.



Maximum delivery

- > Low duty cycle
- > No application of pressurised oil to the rotary valve



Partial delivery

- > High duty cycle
- > Application of pressurised oil to the rotary valve

Oil pump pressure characteristic

The diagram below shows the pressure curve as a function of engine speed at maximum delivery.



Active piston cooling jets

It is not necessary to cool the piston crowns with oil spray in all engine operating conditions. This is why the piston cooling system is active.

The piston is cooled by increasing the engine oil pressure. When a pressure of 2.5 bar (rel.) is exceeded, the spray jet valve opens against the force of the compression spring and connects the main engine oilway to the duct to which the piston spray jets as well as the oil pressure switch F22 are connected. The spray jet valve is mounted below the oil cooler in the engine block.

Spray jet valve

