LUBRICATION SYSTEM DESCRIPTION

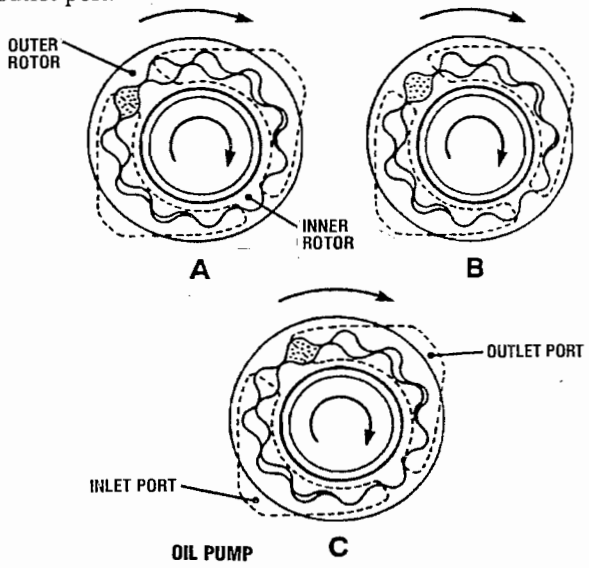
OIL PUMP

The oil pump is a trochoid type pump. Inside the pump body, the 10-lobe inner rotor is eccentrically engaged with the 11-lobe outer rotor. The inner rotor is driven by the crankshaft, which in turn rotates the outer rotor.

When the inner rotor rotates, the outer rotor also rotates in the same direction. Since the two rotors have different centers and different numbers of lobes, spaces are generated between the lobes as shown in the illustration.

At position **A**, there is little space between lobes in the inlet port. As the rotor rotates towards position **B**, the space between the lobes becomes larger, creating a negative pressure which draws in oil.

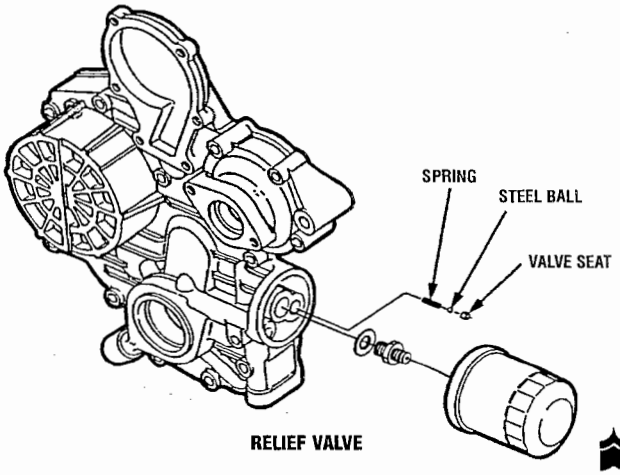
Outside the inlet port, as shown in position **B**, the space between the lobes becomes gradually smaller, and oil pressure increases. At position **C**, oil is discharged from the outlet port.



OIL PUMP

RELIEF VALVE

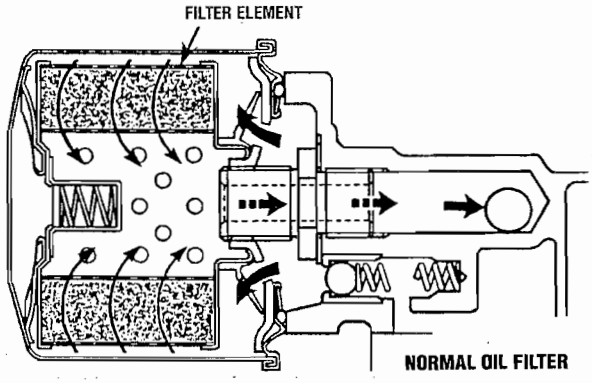
The relief valve prevents damage to the lubrication system due to high oil pressure. This relief valve is a ball-type direct acting relief valve, and is best suited for low pressures. When oil pressure exceeds the upper limit, the ball is pushed back by the oil pressure, and the oil escapes.



RELIEF VALVE

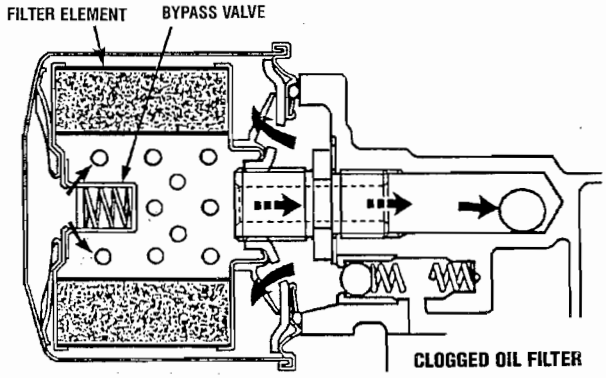
OIL FILTER

Impurities in engine oil can cause wear and components to seize as well as impairing the physical and chemical properties of the oil itself. Impurities contained in force-fed engine oil are absorbed as they pass through the filter element.



NORMAL OIL FILTER

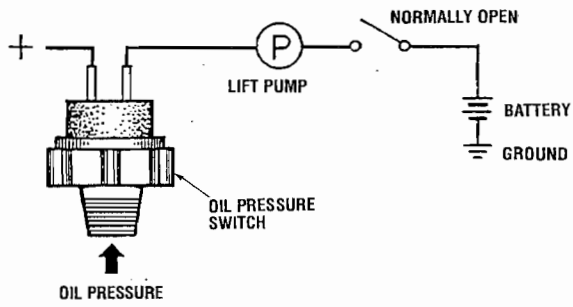
When the filter element is clogged and the oil pressure in the inlet line builds up by 14 psi (1.0 kgf/cm²) (98 kPa) more than the outlet line, the bypass valve opens and the oil flows from the inlet to the outlet, bypassing the filter element.



CLOGGED OIL FILTER

OIL PRESSURE SWITCH

The oil pressure switch is mounted on the cylinder block, to warn the operator that the lubricating oil pressure is low. If the oil pressure falls below 7 psi (0.5 kgf/cm²) (49 kPa), the oil warning light will go on, alerting the operator. If this happens, stop the engine immediately and check the cause of the oil pressure drop.



OIL PRESSURE SWITCH