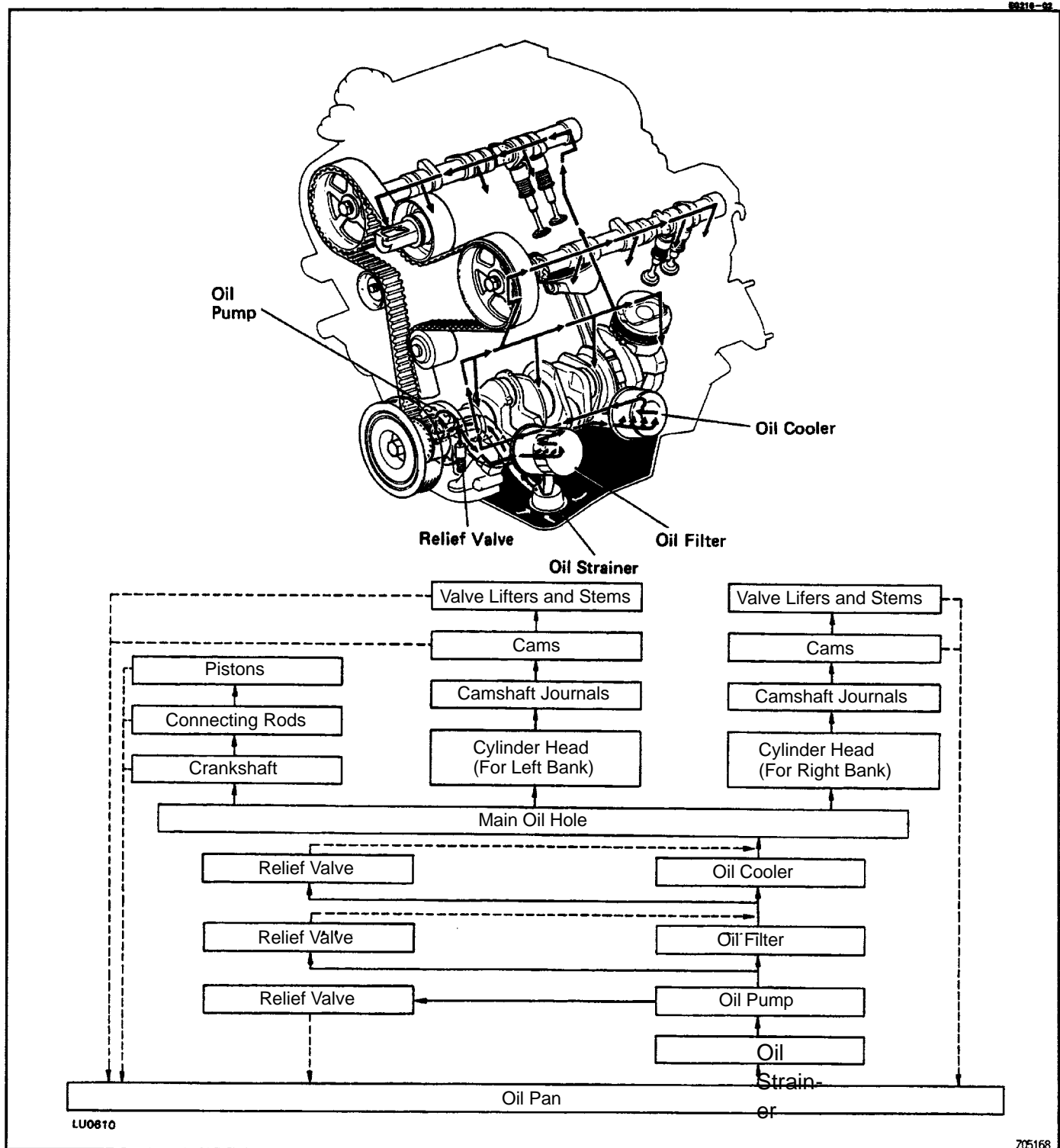


# LUBRICATION SYSTEM

## DESCRIPTION

A fully pressurized, fully filtered lubrication system is used in this engine.

## OPERATION



A pressure feeding lubrication system has been adopted to supply oil to the moving parts of this engine. The lubrication system consists of an oil pan, oil pump, oil filter and other external parts which supply oil to the moving parts in the engine block. The oil circuit is shown in the illustration at the top of the previous page. Oil from the oil pan is pumped up by the oil pump. After it passes through the oil filter, it is fed through the various oil holes in the crankshaft, cylinder block and cylinder head. After passing through the cylinder block and performing its lubricating function, the oil is returned by gravity to the oil pan. A dipstick on the side of the oil pump body is provided to check the oil level.

## **OIL PUMP**

The oil pump pumps up oil from the oil pan and sends it under pressure to the various parts of the engine. An oil strainer is mounted in the front of the inlet to the oil pump to remove impurities. The oil pump itself is a trochoid type pump, inside of which is a drive rotor and a driven rotor. When the crankshaft causes the drive rotor to rotate, the driven rotor rotates in the same direction, and since the axis of the drive rotor shaft is different from the center of the driven rotor, the space between the two rotors changes as they rotate. Oil is drawn in when the space widens, and is discharged when the space becomes narrow.

## **OIL PRESSURE REGULATOR (RELIEF VALVE)**

At high engine speeds, the oil pump supplies more oil to each part than it is necessary. For this reason, an oil pressure regulator which works to prevent an oversupply of oil is installed on the oil pump. During normal oil supply, a coil spring and valve keep the bypass closed, but when too much oil is being supplied, the pressures become extremely high, overpowering the force of the spring and opening the valve. This allows the excess oil to flow through the relief valve and return to the oil pan. ,

## **OIL FILTER**

The oil filter is a full flow type filter with a paper filter element and built-in relief valve. Particles of metal from wear, airborne dirt, carbon and other impurities can get in the oil during use and could cause accelerated wear or seizing if allowed to circulate through the engine. The oil filter, integrated into the oil line, removes these impurities as the oil passes through it.

The filter is mounted outside the engine to simplify replacement of the filter element.

A relief valve is included in front of the filter element to relieve the high oil pressure in case the filter element becomes clogged with impurities. The bypass valve opens when the difference in the oil pressure of the inlet and outlet ports exceeds a specified value. Oil passing through the relief valve bypasses the oil filter and flows directly into the main oil hole in the engine.