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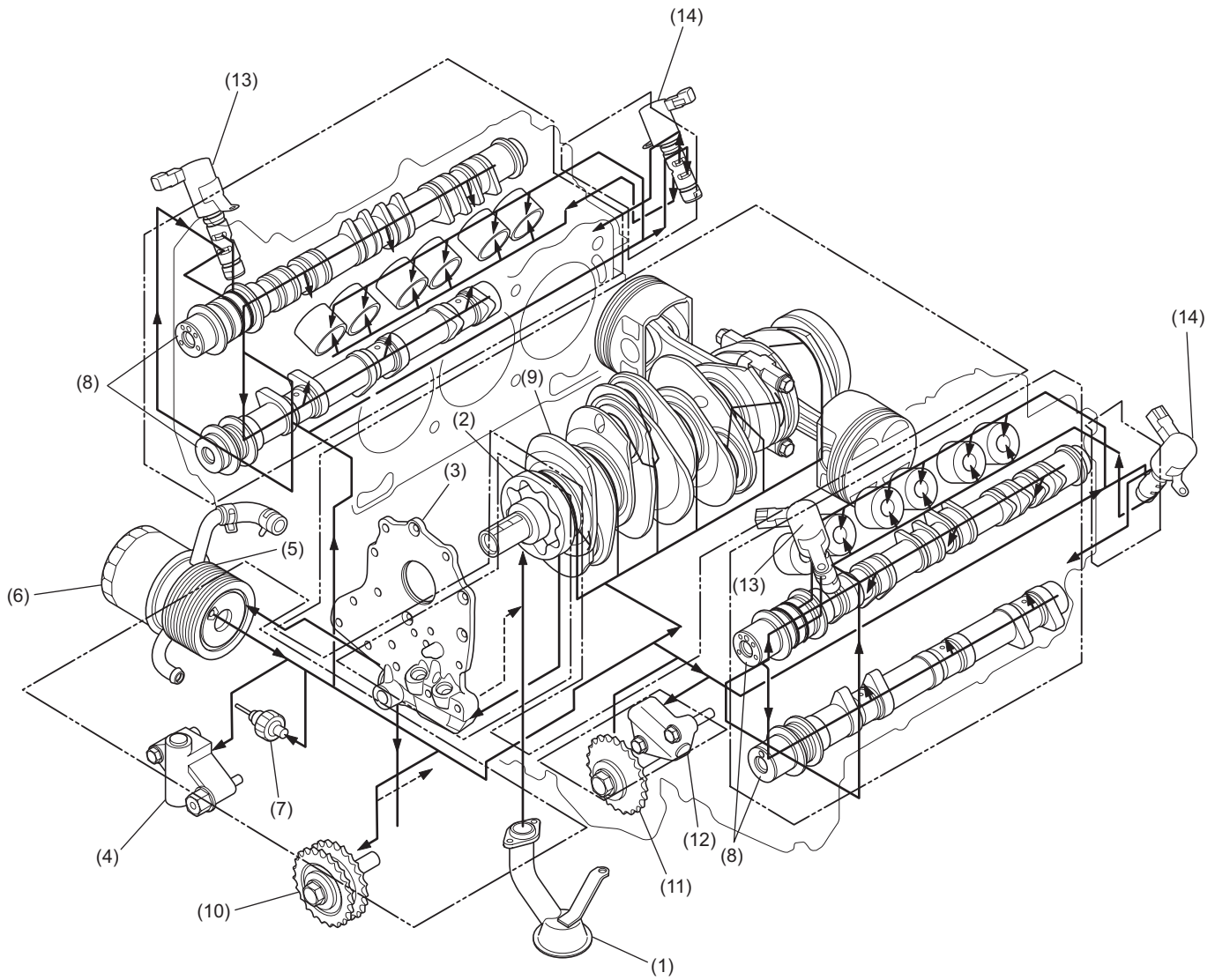
LUBRICATION

GENERAL

LUBRICATION

1. General

- The lubrication system forcibly circulates engine oil throughout the engine using an oil pump. The oil pressure is regulated by the relief valve.
- The oil pump is a thin, large-diameter trochoid rotor type which can accommodate the engine's high output. The pump is directly driven by the crankshaft.
- The engine oil is cleaned by a full-flow, paper element type oil filter. The filter has a bypass valve, which allows the engine oil to flow bypassing the filter if it is clogged.
- The engine oil discharged from the oil pump is delivered to the journal bearings, connecting rod bearings, and other parts requiring lubrication and cooling via an oil passage, oil filter, and oil galleries.
- The engine oil is also distributed to each cylinder head valve mechanism at a proper flow rate achieved by metering by the orifice provided in each cylinder head oil gallery.



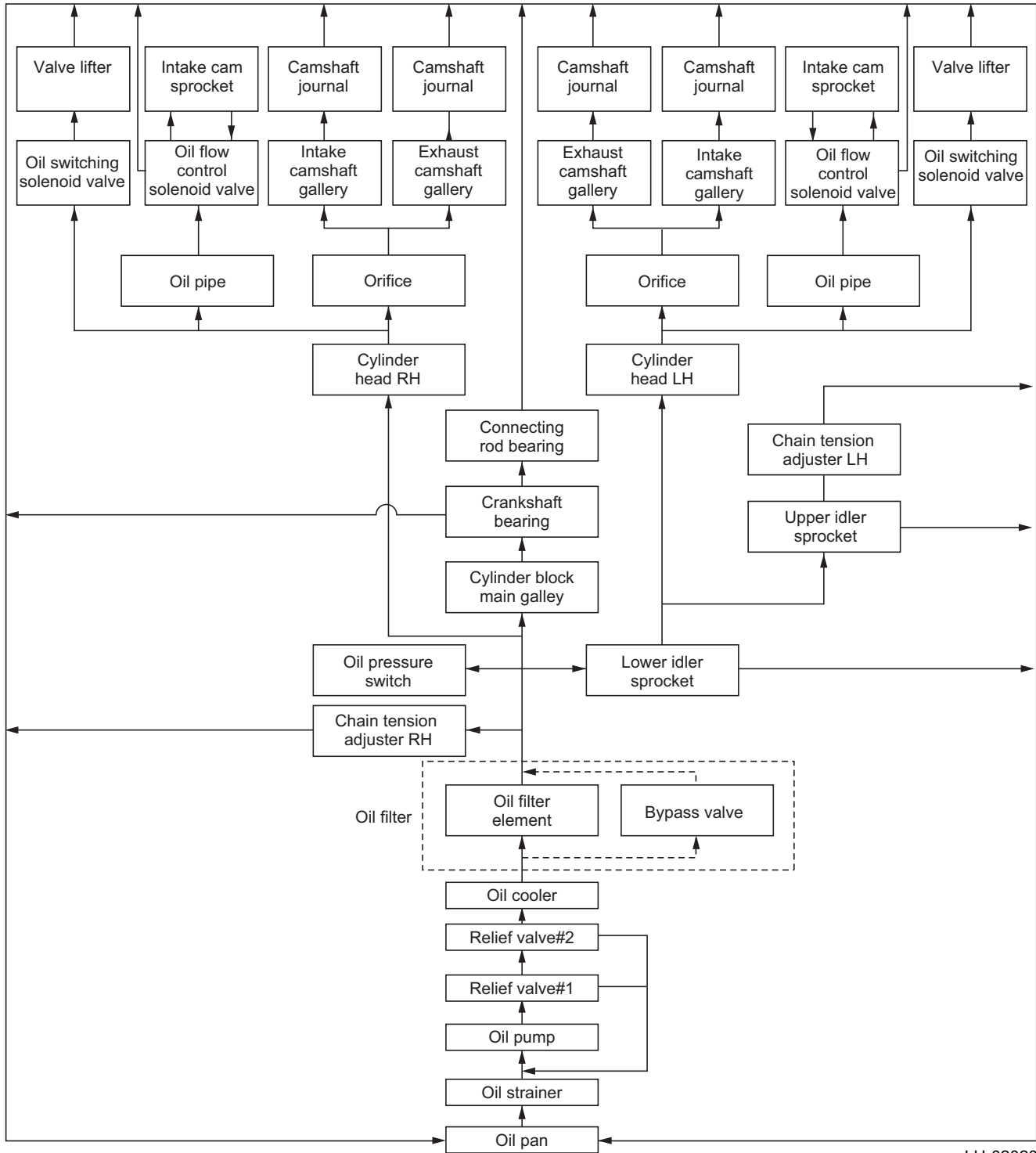
LU-02107

- | | |
|-------------------------------|--------------------------------------|
| (1) Oil strainer | (8) Camshaft |
| (2) Oil pump | (9) Crankshaft |
| (3) Oil pump cover | (10) Lower idler sprocket |
| (4) Chain tension adjuster RH | (11) Upper idler sprocket |
| (5) Oil cooler | (12) Chain tension adjuster LH |
| (6) Oil filter | (13) Oil flow control solenoid valve |
| (7) Oil pressure switch | (14) Oil switching solenoid valve |

ENGINE OIL FLOW

LUBRICATION

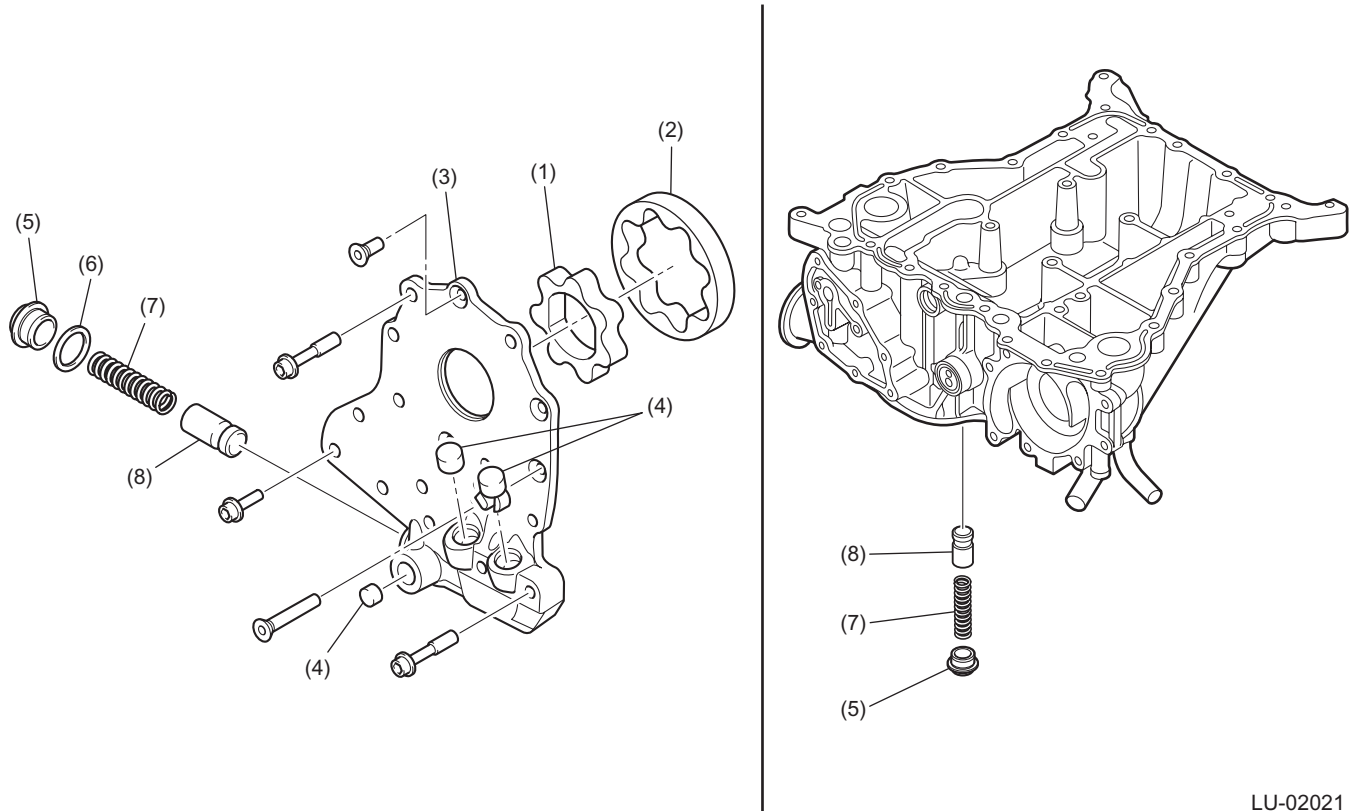
2. Engine Oil Flow



LU-02020

3. Oil Pump and Relief Valve

- The oil pump is a thin, large-diameter trochoid roller pump directly driven by the crankshaft. Its outer rotor and inner rotor are assembled with each other inside the rotor housing which is formed in the rear chain cover. The rotor housing is closed by the oil pump cover. The oil pump cover is made of aluminum die-casting and the outer rotor and inner rotor are made of sintered metal.
- When the pump discharge pressure exceeds a certain level, the relief valve opens and allows excess oil to return to the inlet of the pump. Two relief valves are installed; one in the oil pump cover and one in the oil pan upper.



- (1) Inner rotor
- (2) Outer rotor
- (3) Oil pump cover
- (4) Plug

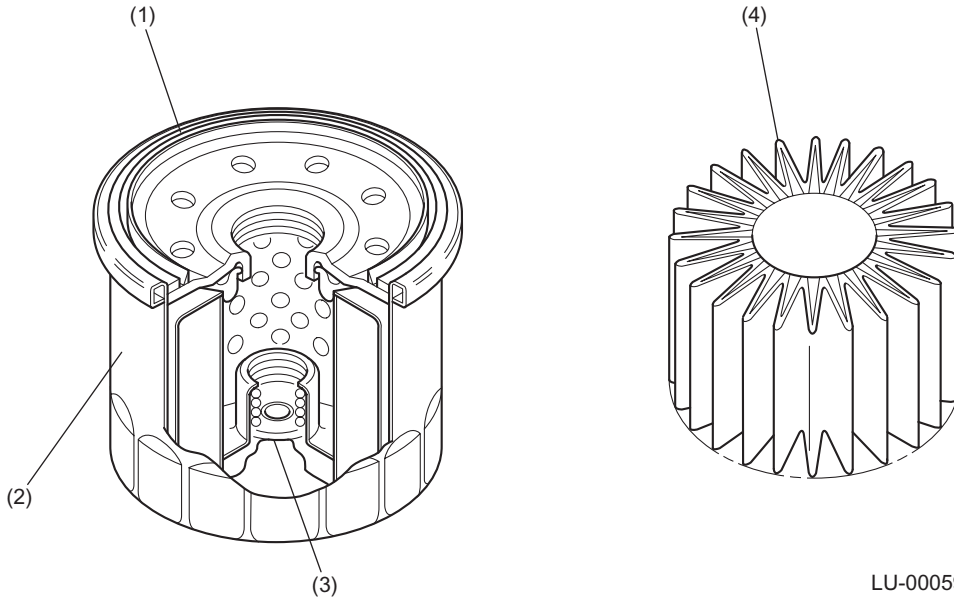
- (5) Plug
- (6) Gasket
- (7) Relief valve spring
- (8) Relief valve

LU-02021

OIL FILTER

4. Oil Filter

The oil filter is a full-flow filtering, cartridge type that utilizes a paper element. It also has a built-in bypass valve. The filter element has a special pleat design to increase the effective filtering area.

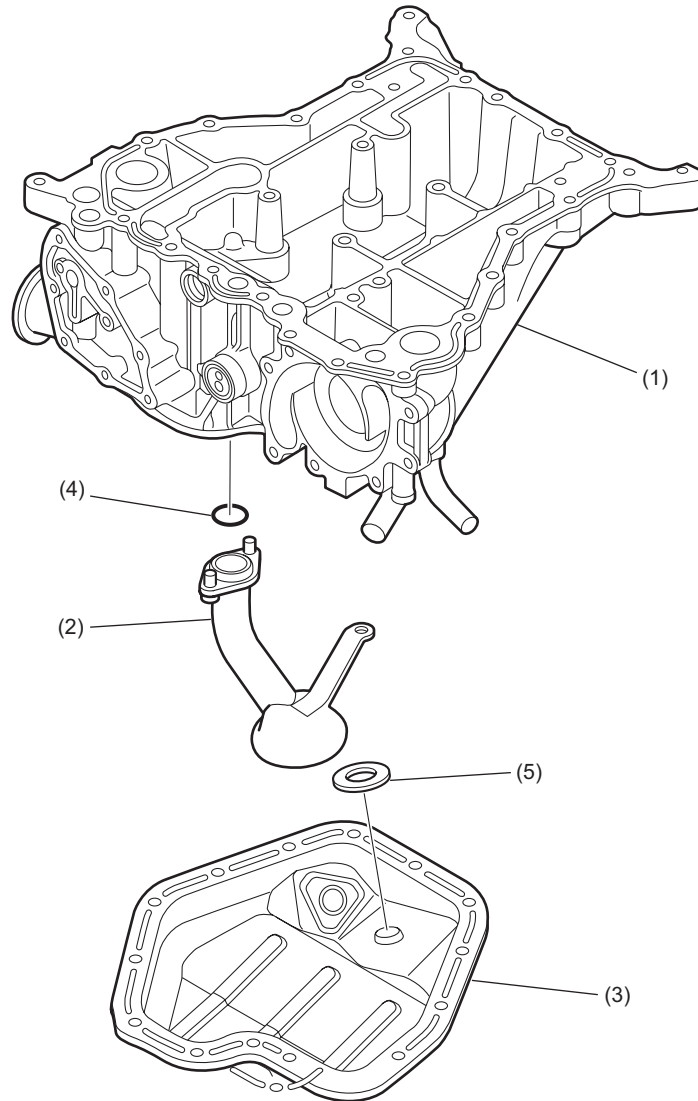


LU-00059

- (1) Oil seal
- (2) Filter body
- (3) Bypass valve
- (4) Pleated element

5. Oil Pan and Oil Strainer

- The oil pan consists of an upper oil pan (aluminum die-casting) and a lower oil pan (formed steel plate). The upper oil pan has an integrally mold baffle plate to improve stability of the oil level.
- The oil strainer has a stay whose end is attached to the upper oil pan. The strainer pipe is connected to the upper oil pan using an O-ring. The upper oil pan forms a passage together with the block and liquid gasket, and the passage leads from the block through an O-ring to the rear chain cover, which is connected to the oil pump. The strainer is located close to the bottom at the center of the oil pan where the oil level changes the least.



LU-02043

- (1) Upper oil pan
- (2) Strainer
- (3) Oil pan lower

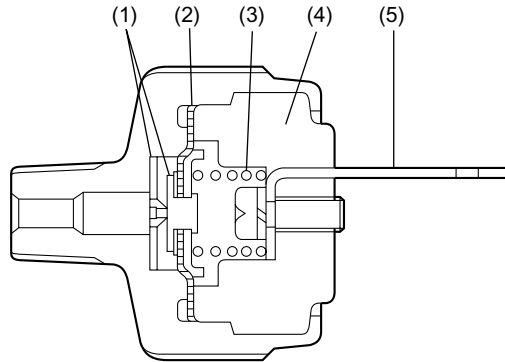
- (4) O-ring
- (5) Magnet

OIL PRESSURE SWITCH

LUBRICATION

6. Oil Pressure Switch

The oil pressure switch is located at the right of the oil pan upper. The purpose of this switch is to monitor the operation of the oil pump as well as the lubricating oil pressure when the engine is running.



LU-00061

- | | |
|---------------|--------------------|
| (1) Contact | (4) Molded portion |
| (2) Diaphragm | (5) Terminal |
| (3) Spring | |

1) When oil pressure does not build up (immediately after ignition switch is turned ON):
The diaphragm is pushed toward the oil pan upper by the spring force (a force equivalent to the specified oil pressure). This closes the contact points, causing the oil pressure warning light in the combination meter to illuminate.

2) When oil pressure reaches the specified value (after engine starts):
After reaching the specified value of 14.7 kPa (0.15 kgf/cm², 2.1 psi), the oil pressure pushes the diaphragm against the spring force. This opens the contact points and the oil pressure warning light goes out.