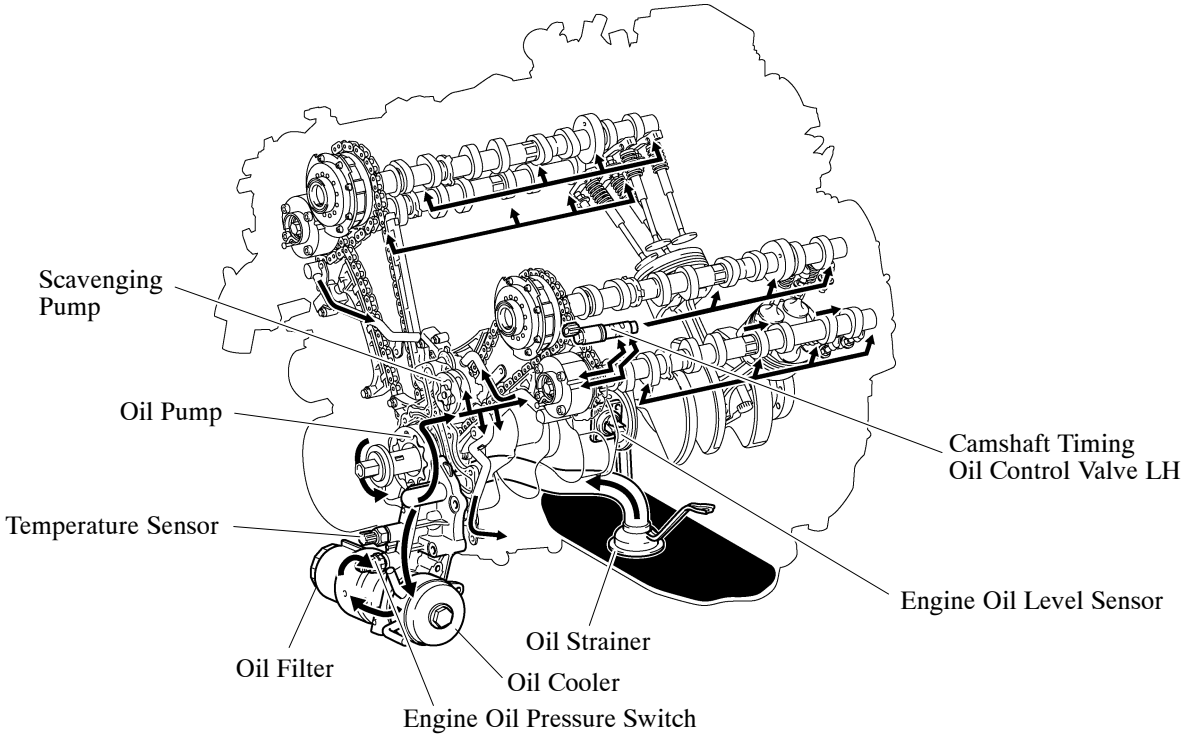
■LUBRICATION SYSTEM

1. General

- The lubrication circuit is fully pressurized and all oil passes through an oil filter.
- A cycloid rotor type oil pump is used.
- As a result of the adoption of a scavenging pump, a stable supply of oil is possible even during high G turns.
- A liquid cooled oil cooler is adopted to suppress oil temperature increase even during high load driving.



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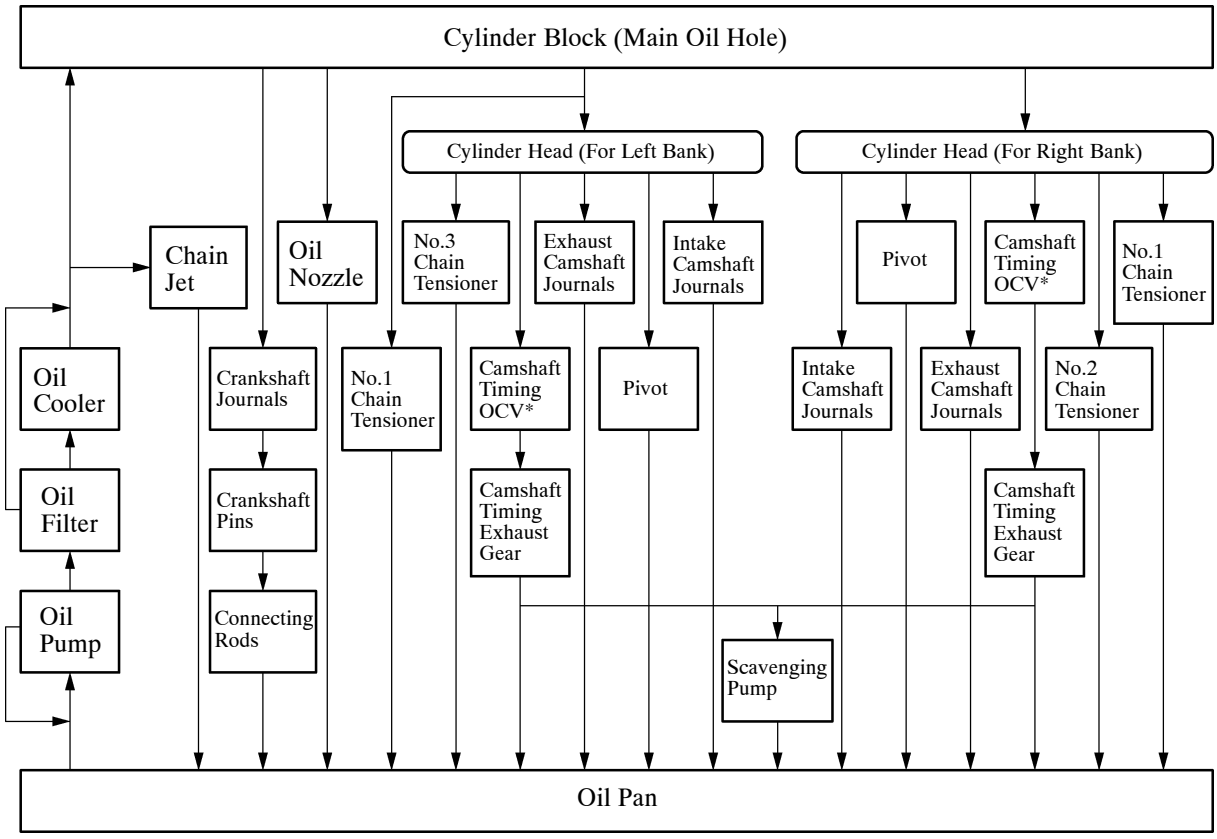
▶ Oil Circuit ◀



*: Oil Control Valve

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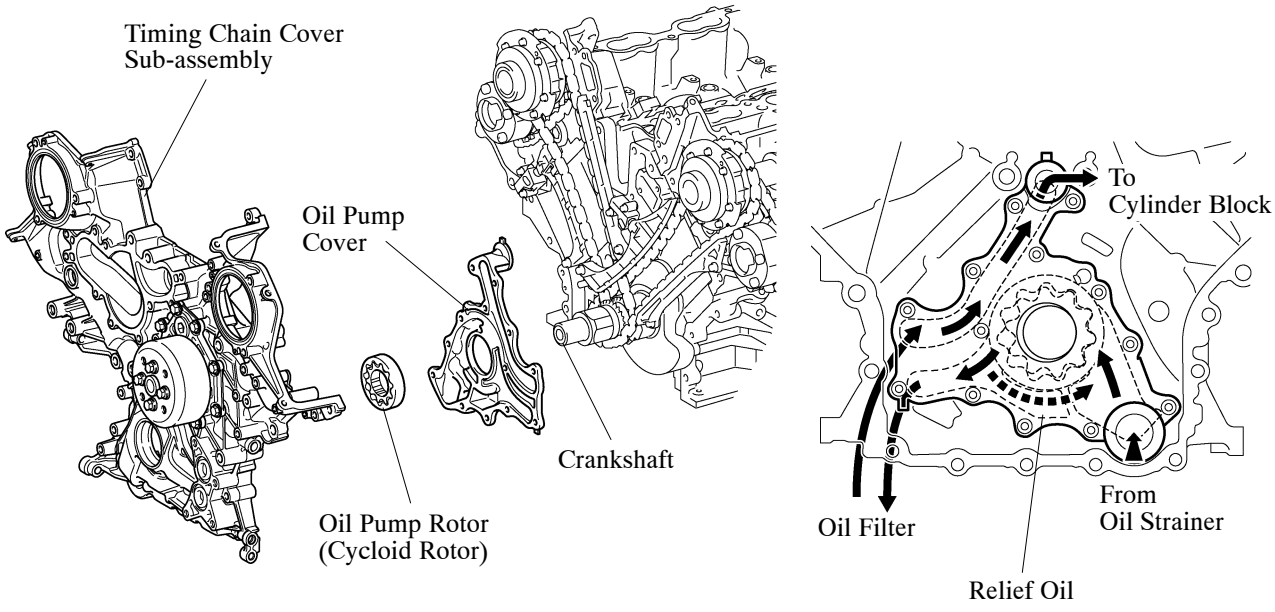
▶ Specification ◀

Oil Capacity [Liters (US qts, Imp. qts)]	Dry	10.5 (11.1, 9.2)
	with Oil Filter	9.3 (9.8, 8.2)
	without Oil Filter	8.2 (8.7, 7.2)

2. Oil Pump

- A compact cycloid rotor type oil pump directly driven by the crankshaft is used.
- This oil pump uses an internal relief method which circulates relief oil to the suction passage in the oil pump. This aims to minimize oil level change in the oil pan, reduce friction, and reduce air mixing rate in the oil.



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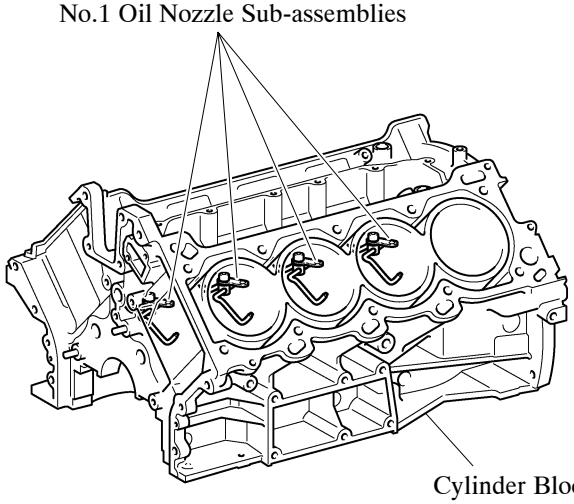
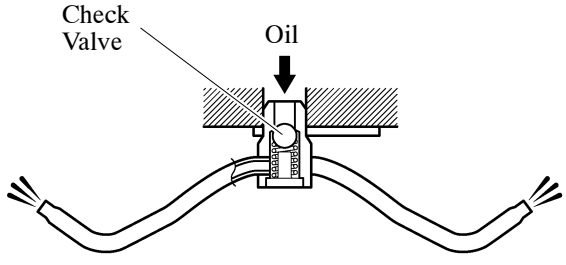
3. Oil Nozzle

- No.1 oil nozzle sub-assemblies for cooling and lubricating the pistons have been provided in the cylinder block, in the center of the right and left banks.
- These No.1 oil nozzle sub-assemblies contain a check valve to prevent oil from being fed when the oil pressure is low. This prevents the overall oil pressure in the engine from dropping.





No.1 Oil Nozzle Sub-assembly Cross Section

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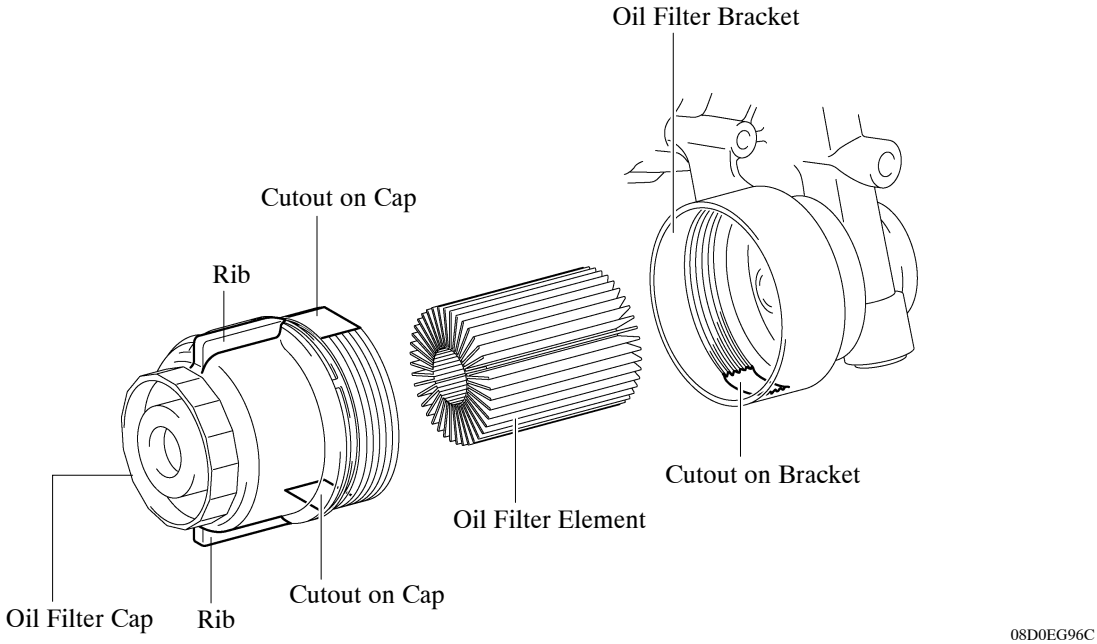
4. Oil Filter

- A newly developed oil filter with a replaceable element is used. The oil filter element uses a high-performance filter paper to improve filtration performance. It is also combustible for environmental protection.
- An aluminum alloy oil filter cap is used to extend its life.
- A construction which allows the draining of oil is provided to reduce the splashing of oil during the oil filter element replacement procedure. Oil can be drained by matching the thread cutout on the oil filter cap against the thread cutout of the bracket.

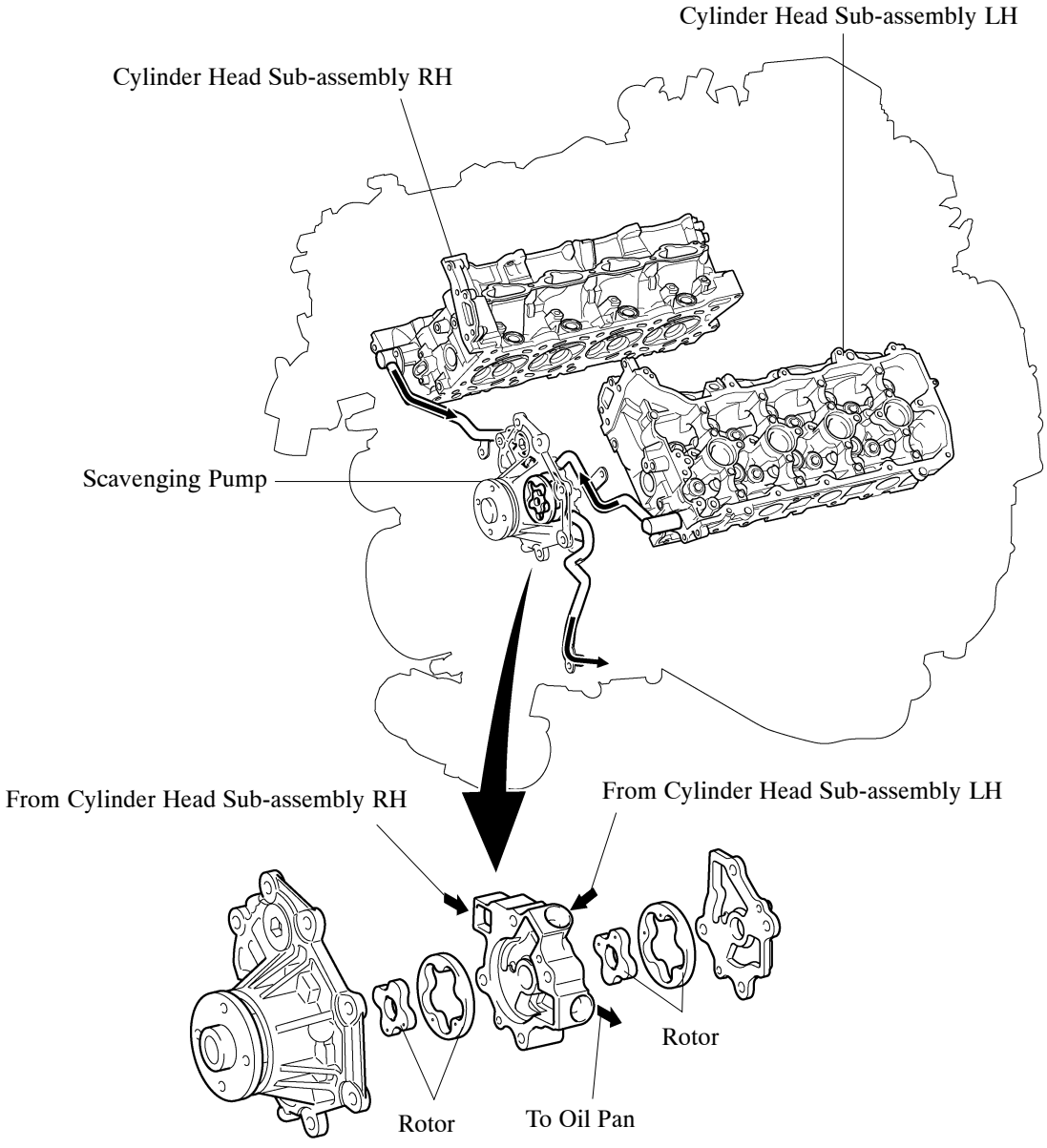


Service Tip

- To drain the oil, rotate the oil filter cap about four turns, and align the cutouts on the cap and bracket using the rib as a reference.
- The engine oil maintenance interval for a model that has an oil filter with a replaceable element is the same as that for conventional models. For details, refer to the LEXUS IS F Repair Manual (Pub. No. RM08E0E).

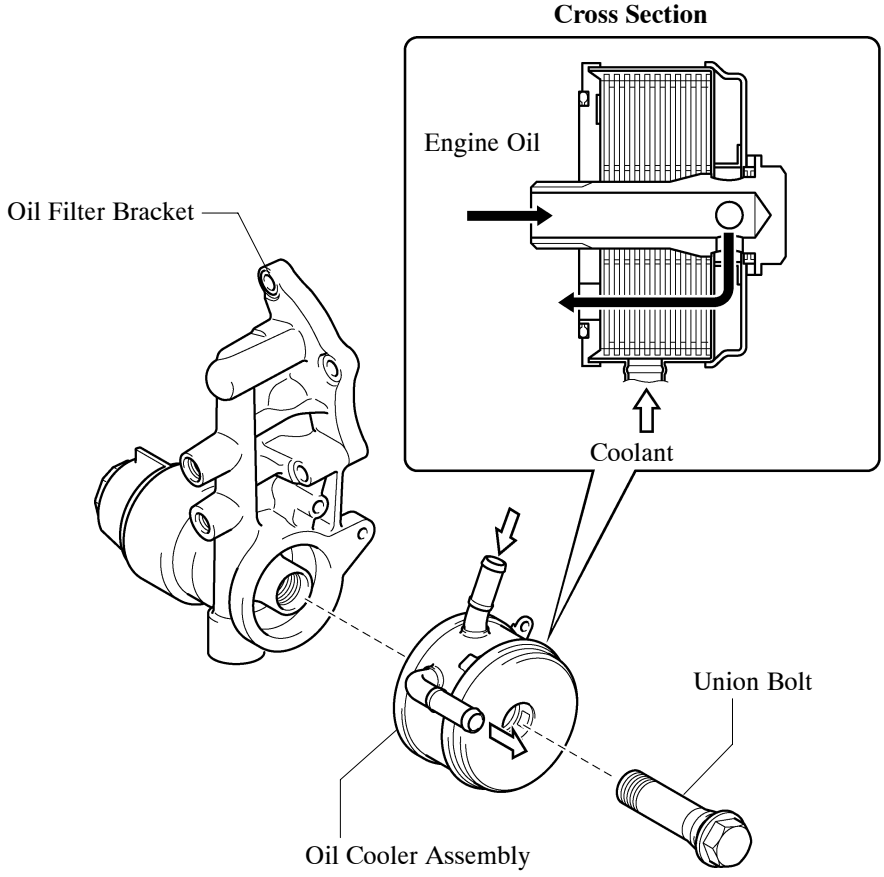
5. Scavenging Pump

- A scavenging pump is adopted that forcibly returns oil from the cylinder head sub-assemblies to the oil pan. Even during cornering that exceeds 1G, oil level fluctuation in the oil pan is controlled to ensure a stable oil supply.
- The scavenging pump is a belt driven 2 rotor pump, both rotors operate in parallel with one each for the right and left banks. A compact high efficiency cycloid type rotor which has 4 lobes on the inner rotor and 5 on the outer rotor is used.



6. Oil Cooler

Oil that has passed through the oil filter is cooled by engine coolant and supplied to the engine main oil gallery. Because of this, oil temperature increase and oil deterioration are suppressed.



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