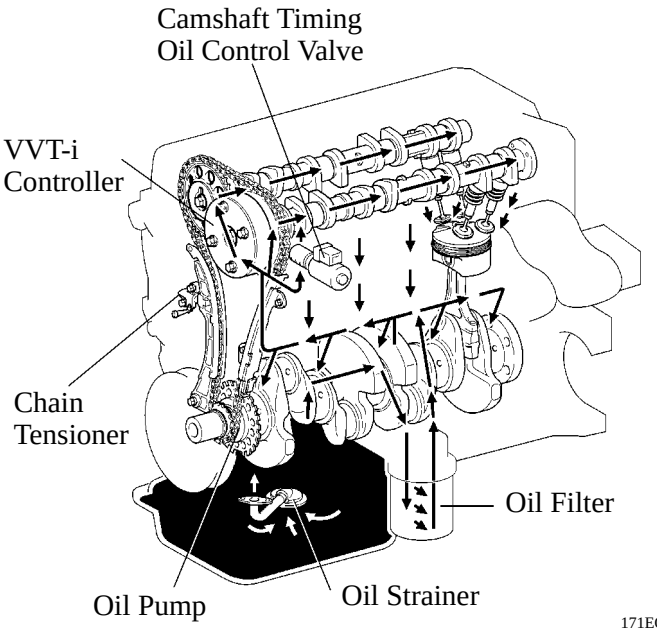
■LUBRICATION SYSTEM

1. General

- The lubrication circuit is fully pressurized and oil passes through an oil filter.
- A trochoid gear type oil pump, which is driven directly by the crankshaft, is provided in the front of the cylinder block.
- The oil filter is installed diagonally downward from the side of the cylinder block to realize excellent serviceability.
- The intake camshaft is provided with a VVT-i controller, and cylinder head is provided with a camshaft timing oil control valve. This system is operated by the engine oil.

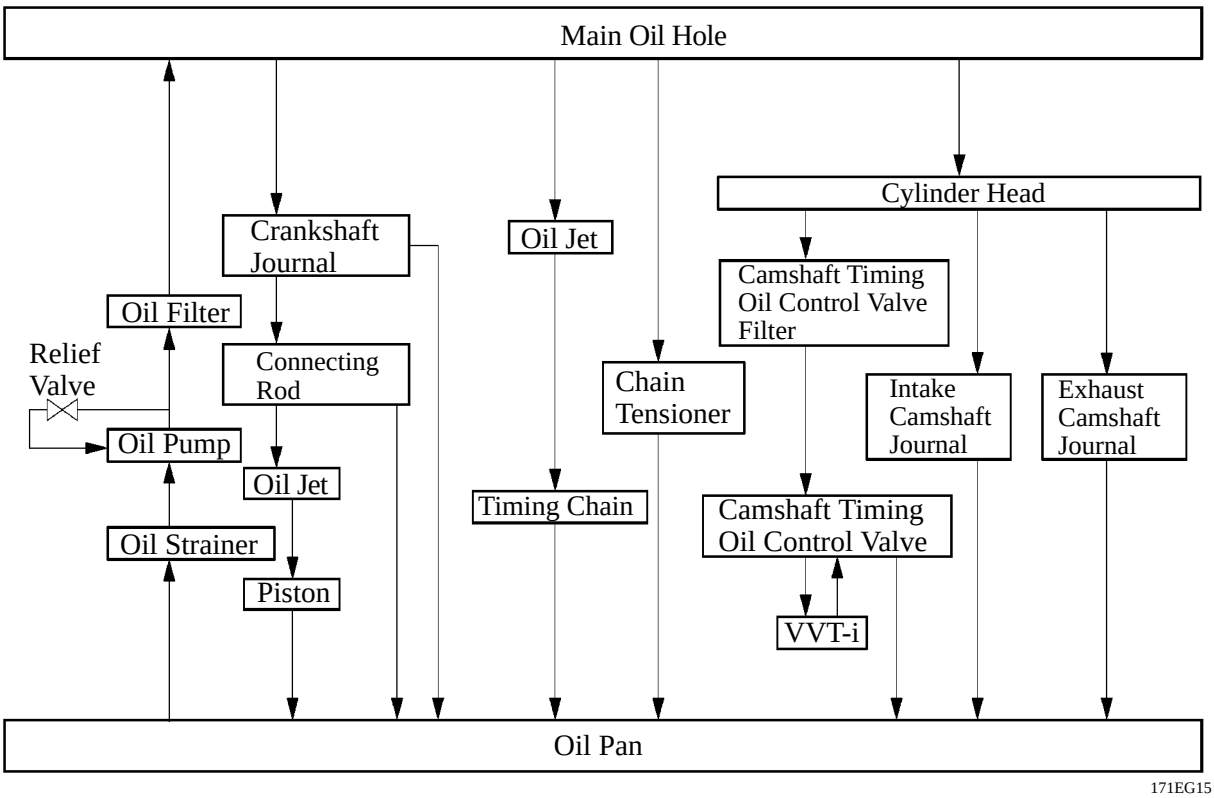


171EG14

▶ **Oil Capacity** ◀ Liter (US qts, Imp qts)

Dry	4.1 (4.3, 3.6)
with Oil Filter	3.7 (3.9, 3.3)
without Oil Filter	3.4 (3.6, 3.0)

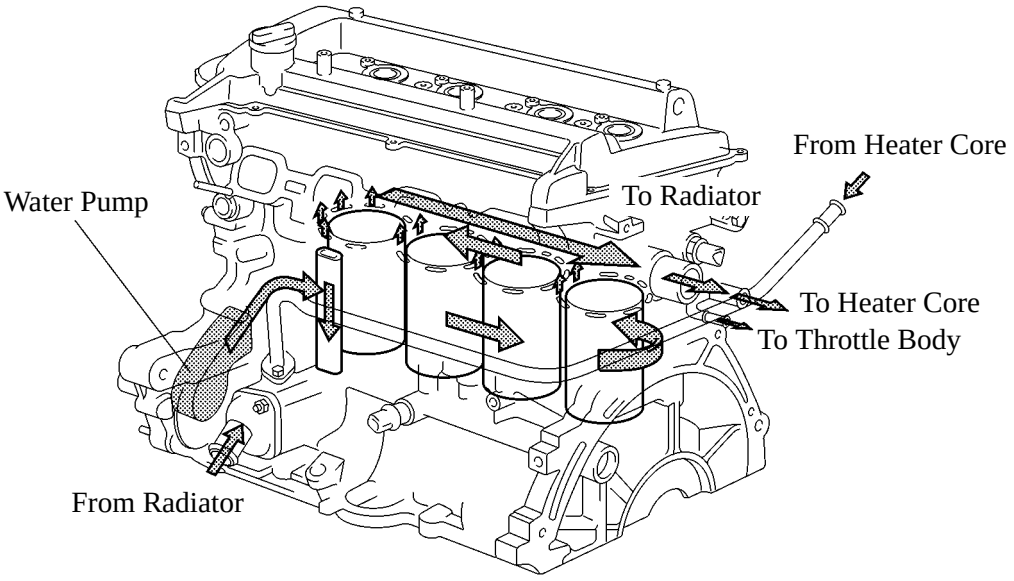
▶ **Oil Circuit** ◀



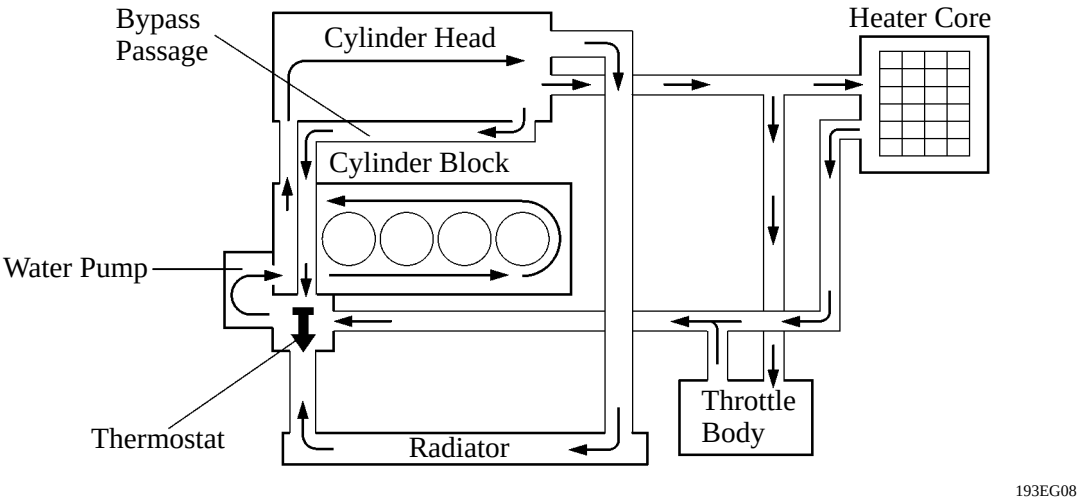
171EG15

■COOLING SYSTEM

- The cooling system is a pressurized, forced-circulation type.
- A thermostat with a bypass valve is located on the water inlet housing to maintain suitable temperature distribution in the cooling system.
- An aluminum radiator core is used for weight reduction.
- The flow of the engine coolant makes a U-turn in the cylinder block to ensure a smooth flow of the engine coolant.
- A single cooling fan provides both the cooling and air conditioner performance.
- The TOYOTA genuine Super Long Life Coolant (SLLC) is used.



▶ System Diagram ◀



▶ Engine Coolant Specifications ◀

Engine Coolant	Type		TOYOTA genuine Super Long Life Coolant (SLLC) or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology (coolant with long-life hybrid organic acid technology is a combination of low phosphates and organic acids.) Do not use plain water alone.
	Color		Pink
	Capacity Liters (US qts, Imp. qts)	M/T	4.8 (5.1, 4.2)
		A/T	4.7 (5.0, 4.1)
	Maintenance Intervals	First Time	100,000 miles (160,000 km)
		Subsequent	Every 50,000 miles (80,000 km)
Thermostat	Opening Temperature °C (°F)		80 - 84 (176 - 183)

- SLLC is pre-mixed (the U.S.A. models: 50 % coolant and 50 % deionized water, the Canada. models: 55 % coolant and 45 % deionized water). Therefore, no dilution is needed when SLLC in the vehicle is added or replaced.
- If LLC is mixed with SLLC, the interval for LLC (ever 40,000 km/24,000 miles or 24 months) should be used.