COOLING SYSTEM

DESCRIPTION

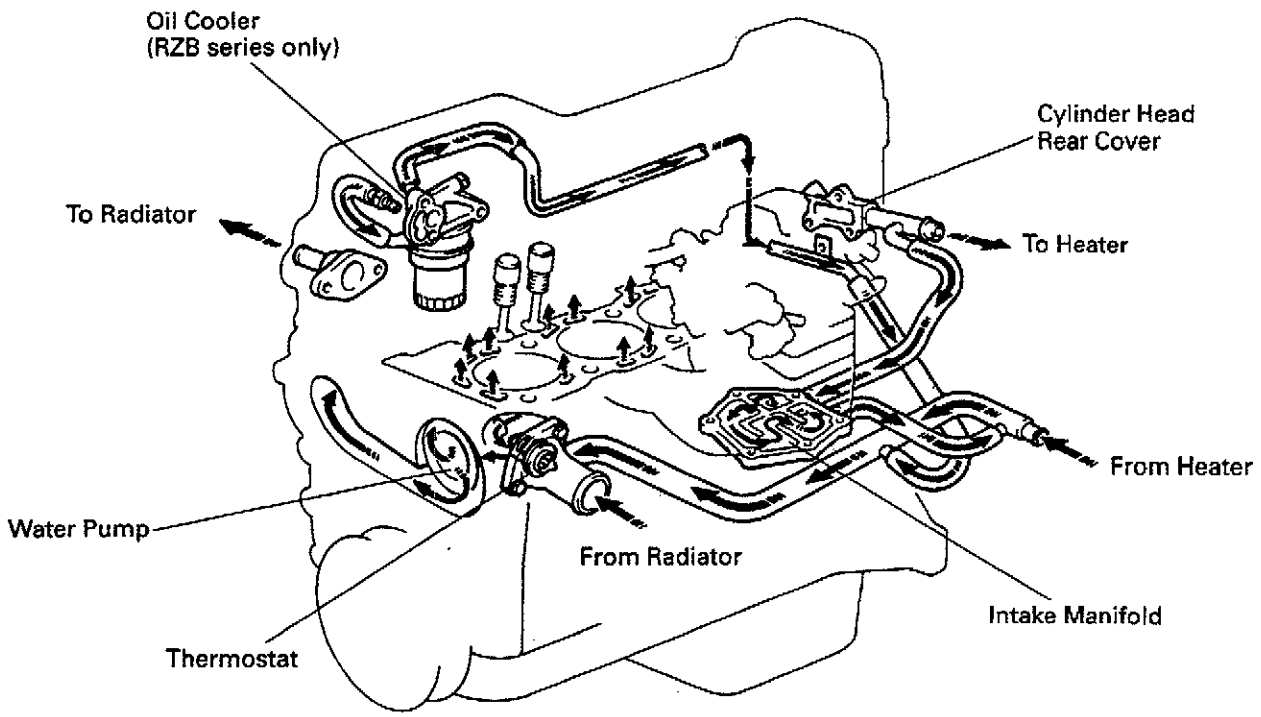
EG1HY-04

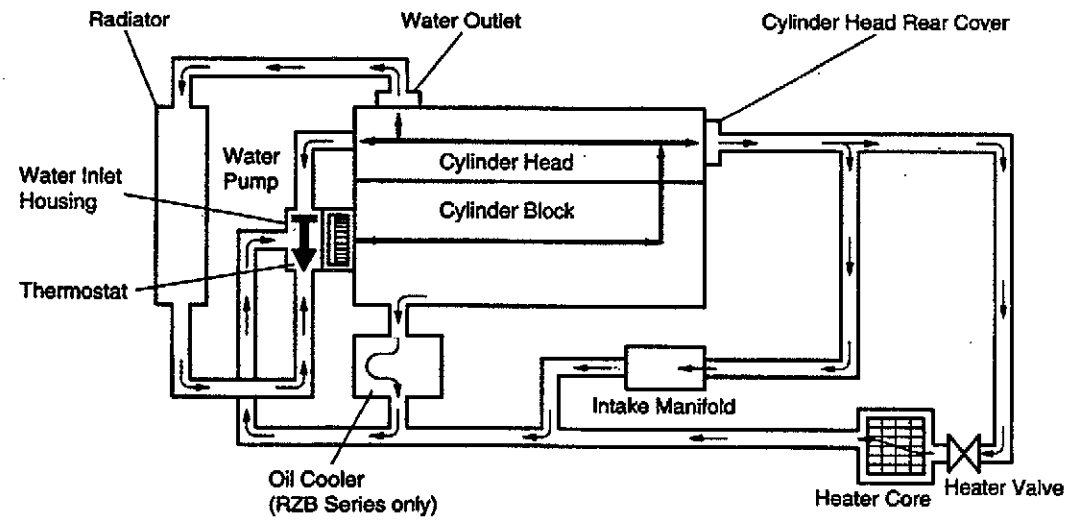
This engine utilizes a pressurized forced circulation cooling system which includes a thermostat equipped with a bypass valve mounted on the inlet side.

OPERATION

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EG1HZ-07





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P18353

Z12965

The cooling system is composed of the water jacket (inside the cylinder block and cylinder head), radiator, water pump, thermostat, cooling fan, hoses and other components.

Coolant which is heated in the water jacket is pumped to the radiator, through which a cooling fan draws air to cool the coolant as it passes through. Coolant which has been cooled is then sent back to the engine by the water pump, where it cools the engine.

The water jacket is a network of channels in the shell of the cylinder block and cylinder head through which coolant passes. It is designed to provide adequate cooling of the cylinders and combustion chambers which become heated during engine operation.

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RADIATOR

The radiator mounted in the front of the vehicle performs the function of cooling the coolant which has passed through the water jacket and become hot. The radiator consists of an upper and lower tank, and a core which connects the two tanks. The upper tank contains the inlet for coolant from the water jacket and the filler inlet. It also has a hose attached through which excess coolant or steam can flow. The lower tank has an outlet and drain cock for the coolant. The core contains many tubes through which coolant flows from the upper tank to the lower tank as well as to cooling fins which radiate heat away from the coolant in the tubes. The air drawn through the radiator by the cooling fan, as well as the wind generated by the vehicle's travel, passes through the radiator, cooling the coolant. An automatic transmission fluid cooler is built into the lower tank of the radiator. A cooling fan with fluid coupling is mounted behind the radiator to assist the flow of air through the radiator.

RADIATOR CAP

The radiator cap is a pressure—type cap which seals the radiator, resulting in pressurization of the radiator as the coolant expands. The pressurization prevents the coolant from boiling even when the coolant temperature exceeds 100°C (212°F). A relief valve (pressurization valve) and a vacuum valve (negative pressure valve) are built into the radiator cap. The relief valve opens and lets steam escape through the overflow pipe when the pressure generated inside the cooling system exceeds the limit (coolant temperature: 110—120°C (230—248°F), pressure; 59—103 kPa (0.6—1.05 kgf/cm^2, 8.5—14.9 psi). The vacuum valve opens to alleviate the vacuum which develops in the cooling system after the engine is stopped and the coolant temperature drops. The valve's opening allows the coolant in the reservoir tank to return to the cooling system.

RESERVOIR TANK

The reservoir tank is used to catch coolant which overflows from the cooling system as a result of volumetric expansion when the coolant is heated. The coolant in the reservoir tank returns to the radiator when the coolant temperature drops, thus keeping the radiator full at all times and avoiding needless coolant loss.

Check the reservoir tank level to learn if the coolant needs to be replenished.

WATER PUMP

The water pump is used for forced circulation of coolant through the cooling system. It is mounted on the front of the cylinder block and driven by drive belt.