COOLING SYSTEM DESCRIPTION

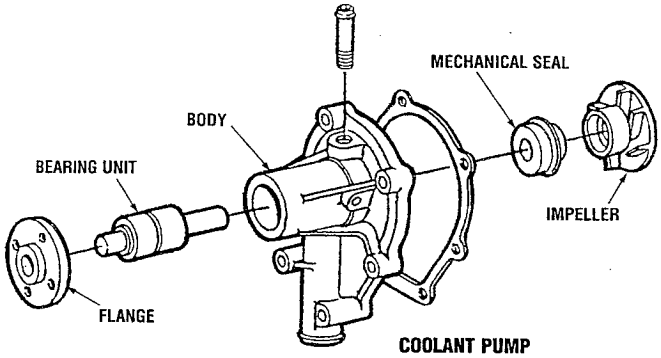
DESCRIPTION

The engine is cooled by a closed fresh water coolant circuit. The coolant is circulated by a belt-driven impeller pump. The coolant temperature is thermostatically controlled.

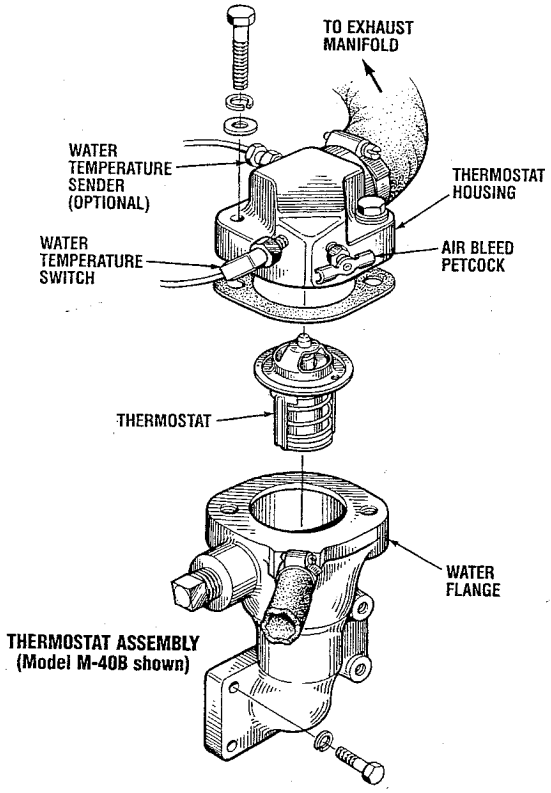
Raw water is pumped by gear-driven impeller pump through an engine-mounted heat exchanger to cool the engine coolant. The raw water then enters the water-injected exhaust elbow where it mixes with and cools the exhaust gasses. This mixture then discharges overboard.

COOLANT PUMP

The coolant pump is a centrifugal-type metal impeller pump mounted on the front of the engine. It is driven from the crankshaft by a V-belt.



COOLANT PUMP



THERMOSTAT

A thermostat, located near the manifold at the front of the engine, controls the coolant temperature as it continuously flows through the closed cooling circuit.

The thermostat is a wax pellet type thermostat. Wax is enclosed in the pellet. The wax is solid at low temperatures, but turns liquid at high temperatures, expands and opens the valve.

When the engine is first started, the closed thermostat prevents coolant from flowing (some coolant is by-passed through a hole in the thermostat to prevent the exhaust manifold from overheating). As the engine warms up, the thermostat gradually opens. The thermostat is accessible and can be checked, cleaned, or replaced easily.

WATER TEMPERATURE SWITCH

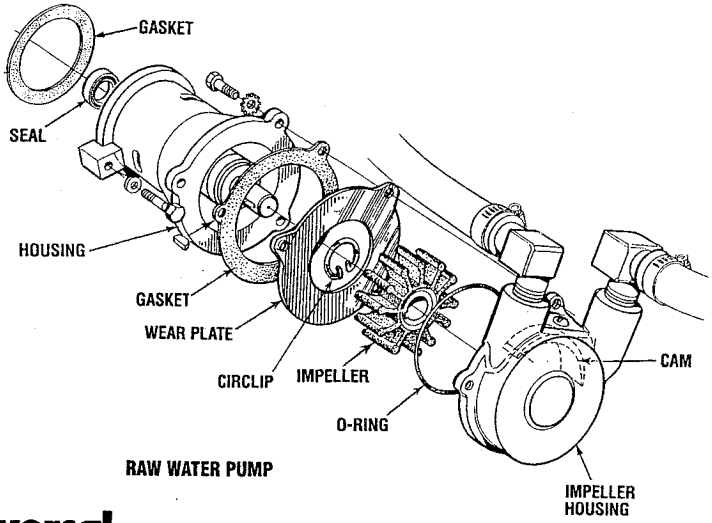
The water temperature switch is located on the thermostat housing (see illustration). This switch is normally open. When activated, it will close and sound an alarm.

WATER TEMPERATURE SENDER (Optional)

The water temperature sender (if supplied) is located on the thermostat housing (see illustration). It is a variable resistor affected by heat. Voltage from the water temperature gauge is grounded through the sender to the block. Depending on the resistance through the sender affected by coolant heat, the gauge will indicate a temperature reading.

RAW WATER PUMP

The raw water pump is a gear driven, positive displacement, self-priming rotary pump with a non-ferrous housing and a neoprene impeller. The impeller has flexible vanes which wipe against a curved cam plate within the impeller housing, producing the pumping action. On no account should this pump be run dry as water acts as a lubricant for the impeller. There should always be a spare impeller and impeller cover gasket aboard (an impeller kit). Raw water pump impeller failures occur when lubricant (raw water) is not present during engine operation. Such failures are not warrantable, and operators are cautioned to make sure raw water flow is present at start-up.



RAW WATER PUMP