

The block heater does not operate correctly.	Block heater power cable Block heater	CHECK continuity in all 3 power cable circuits. If any circuit measures more than 5 ohms, INSTALL a new power cable. CHECK the resistance of the block heater. If the resistance does not measure between 30 and 40 ohms, INSTALL a new block heater. REFER to: Block Heater .
The electric cooling fan is inoperative in one or more speeds or does not operate correctly.	Wiring Relays Fuses Cooling fan motor Cooling fan resistor	Refer to ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) .
The electric cooling fan stays on all the time.	Wiring Relays	Refer to ENGINE CONTROLS - INTRODUCTION (EXCEPT DIESEL & HYBRID) .
Noisy electric cooling fan operation.	Foreign material contamination Fan motor	REMOVE the foreign material from the cooling fan and shroud. TEST the system for normal operation. If still noisy, INSTALL a new cooling fan assembly. REFER to: Cooling Fan Motor and Shroud .
	Fan blade detached from fan motor	INSTALL a new cooling fan assembly. REFER to: Cooling Fan Motor and Shroud .

DIAGNOSIS AND TESTING > ENGINE COOLING > PINPOINT TESTS

Loss of Coolant

Normal operation and Fault Conditions

The engine cooling system is a closed system providing for coolant expansion and contraction as well as changes in pressure as coolant warms and cools with engine operation. Various gaskets, seals, hoses and clamps contain coolant within the cooling system and keep other fluids and contaminants from entering the cooling system.

Possible Sources

- Coolant hoses or tubes
- Hose clamps
- Thermostat O-ring seal or gasket
- Coolant pump O-ring seal or gasket
- Thermostat housing