

Troubleshooting the Cooling System

Problem	Cause	Solution
High temperature gauge indication—overheating	<ul style="list-style-type: none"> • Coolant level low • Improper fan operation • Radiator hose(s) collapsed • Radiator airflow blocked • Faulty pressure cap • Ignition timing incorrect • Air trapped in cooling system • Heavy traffic driving • Incorrect cooling system component(s) installed • Faulty thermostat • Water pump shaft broken or impeller loose • Radiator tubes clogged • Cooling system clogged • Casting flash in cooling passages • Brakes dragging • Excessive engine friction • Antifreeze concentration over 68% • Missing air seals • Faulty gauge or sending unit • Loss of coolant flow caused by leakage or foaming • Viscous fan drive failed 	<ul style="list-style-type: none"> • Replenish coolant • Repair or replace as necessary • Replace hose(s) • Remove restriction (bug screen, fog lamps, etc.) • Replace pressure cap • Adjust ignition timing • Purge air • Operate at fast idle in neutral intermittently to cool engine • Install proper component(s) • Replace thermostat • Replace water pump • Flush radiator • Flush system • Repair or replace as necessary. Flash may be visible by removing cooling system components or removing core plugs. • Repair brakes • Repair engine • Lower antifreeze concentration percentage • Replace air seals • Repair or replace faulty component • Repair or replace leaking component, replace coolant • Replace unit
Low temperature indication—undercooling	<ul style="list-style-type: none"> • Thermostat stuck open • Faulty gauge or sending unit 	<ul style="list-style-type: none"> • Replace thermostat • Repair or replace faulty component
Coolant loss—boilover	<ul style="list-style-type: none"> • Overfilled cooling system • Quick shutdown after hard (hot) run • Air in system resulting in occasional “burping” of coolant • Insufficient antifreeze allowing coolant boiling point to be too low • Antifreeze deteriorated because of age or contamination • Leaks due to loose hose clamps, loose nuts, bolts, drain plugs, faulty hoses, or defective radiator 	<ul style="list-style-type: none"> • Reduce coolant level to proper specification • Allow engine to run at fast idle prior to shutdown • Purge system • Add antifreeze to raise boiling point • Replace coolant • Pressure test system to locate source of leak(s) then repair as necessary