
MAINTENANCE OF COOLING SYSTEM

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Disassembly of Cooling System

Removal of Cooling System

- (1) Drain all the antifreeze fluid from the drain valve on the lower portion of radiator.
- (2) Remove the inlet and outlet pipes.
- (3) Remove the four fixing screws on the radiator, and take down the radiator.
- (4) Remove the electric fan.
- (5) Loosen the tension pulley, and remove the belt (For details, see Section "AC Generator and Ignition System" in Chapter "Engine").
- (6) Remove water pump (For details, see Section "Exhaust manifold Water Pump" in Chapter "Engine").

Main Technical Parameters of Cooling System

Technical Parameters		Engine Type	4G64 S4 MPI
		Operating pressure of cooling system/ kPa	90
		Capacity of cooling system/L	8
Radiator	Structure	Pipe-belt type	
	Core dimensions W×H×D (mm×mm×mm)	508x410x42	
Opening Pressure of Radiator Cover or Fluid Reservoir Cover/(kPa)		Vapor valve	88±14.7
		Air valve	0.98~11.8
Operating Temperature of Electric Fan (Characteristics of temperature Controlled device)/(°C)		Low-speed	93
		High-speed	98
		Stop Running	<88

Inspection and Repair of Cooling System

1 Common Diagnosis Parameters of Cooling System

Diagnosis Objective	Diagnosis Parameter
Refrigerant temperature	80-113°C is the normal temperature
Fan drive belt tension	98N
New Belt Flexibility	7.0mm

2 Common Troubles and Removal of Cooling System

Water Leakage Troubleshooting

Trouble	Cause	Remedy
Water tank leaks.	Radiator, radiating pipe or water tank damaged	Replace radiator.
Outlet and inlet pipes leak	Pipe aged, worn, damaged or punctured	Replace pipe.
Outlet and inlet joints leak.	Connection clamp fails	Replace clamp.
Engine water pump leaks.	Water pump seal or water pump damaged	Replace seal or water pump when necessary.

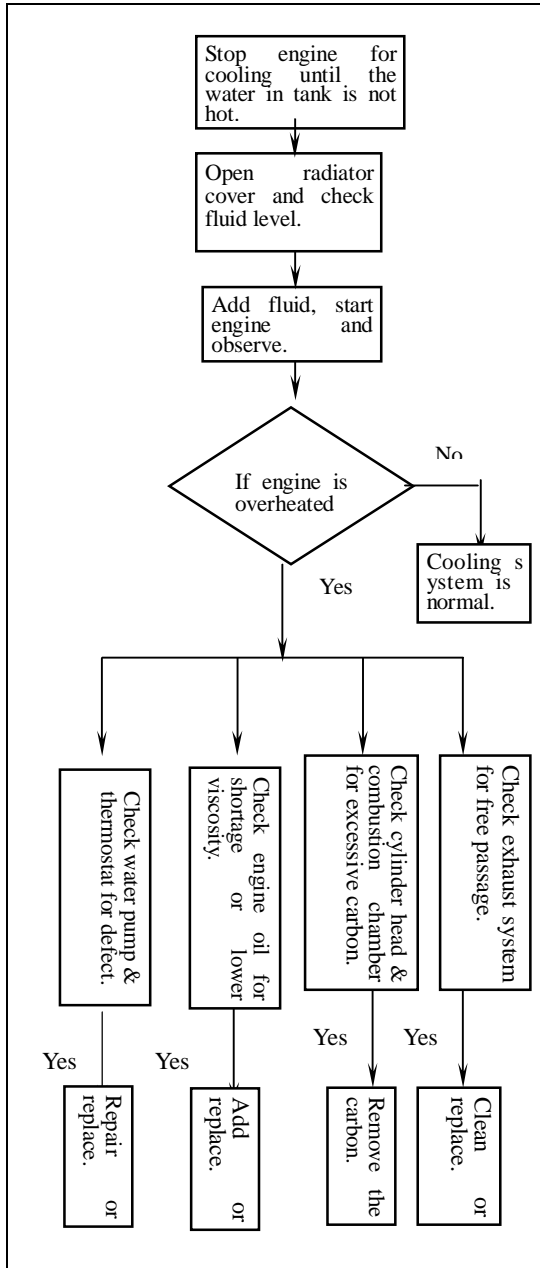
Engine Overheat

(1) Troubleshooting

Trouble	Cause	Remedy
Water tank and overflow water tank are lack of water	Cooling system leakage or natural consumption	Check the system, replace damaged part and add Refrigerant.
Water tank cooling fins decline excessively and blocks the vent port	Vehicle clashed other object	Repair or replace radiator.

(2) Diagnosis Method

As shown in the Fig.



Engine Undercooling

(1) Troubleshooting

Trouble	Cause	Remedy
Thermostat inoperative	Thermostat rusted or incrustated	Replace thermostat.
Electric fan rotates uninterruptedly	Circuit faulty or temperature sensor defective	Check circuit, or replace temperature sensor.

(2) Diagnosis Method

A: Thermostat Test:

Check thermostat for closing, defect or damage at room temperature.

Check thermostat for rust or incrustation, and clean if any. Immerse thermostat in a water container, increase the water temperature and check that the initial opening temperature of thermostat is 82°C, the full opening temperature 95°C, i.e., the valve lead is not less than 8mm of temperature value. Replace the thermostat if the opening temperature is lower than the standard value.

B: Electric fan rotates uninterruptedly:

Cool the engine to normal temperature, start the engine, and observe the fan. Repair the fan if it rotates since the fan control system is out of order.