

COOLING SYSTEM

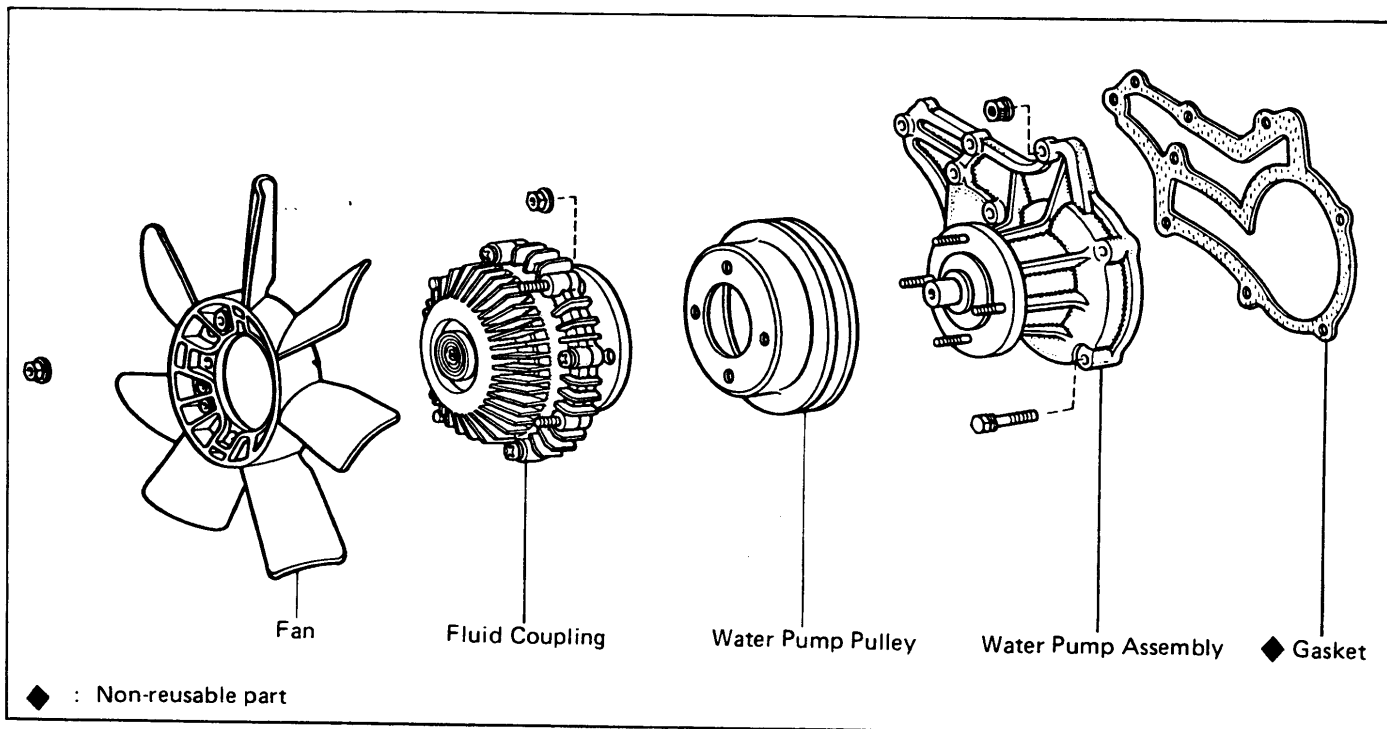
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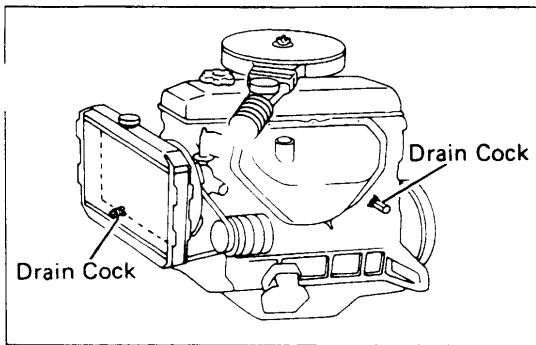
CO

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Engine overheats	Radiator plugged or cap faulty	Check radiator	CO-6
	Fan belt loose or missing	Adjust or replace belt	
	Dirt, leaves or insects on radiator or condenser	Clean radiator or condenser	CO-6
	Hoses, water pump, thermostat housing, radiator, heater, core plugs or head gasket leakage	Repair as necessary	
	Thermostat faulty	Check thermostat	CO-5
	Ignition timing retarded	Reset timing	IG-10
	Fluid coupling faulty	Replace fluid coupling	CO-3
	Radiator hose plugged or rotted	Replace hose	CO-6
	Water pump faulty	Replace water pump	CO-3
	Cylinder head or block cracked or plugged	Repair as necessary	

WATER PUMP COMPONENTS

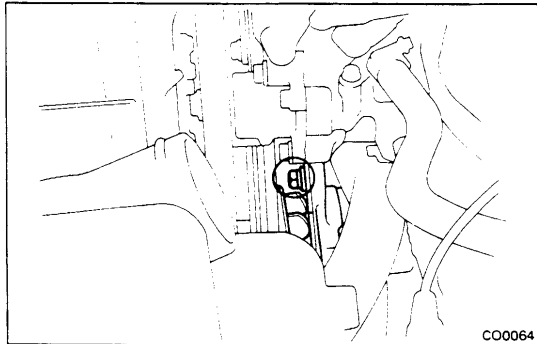




REMOVAL OF WATER PUMP

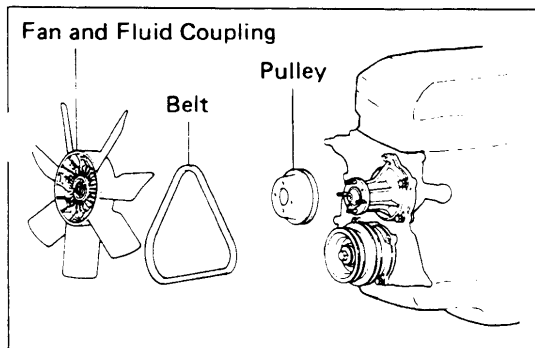
1. DRAIN COOLANT

Open the radiator and engine drain cocks, and allow coolant to drain into a suitable container.



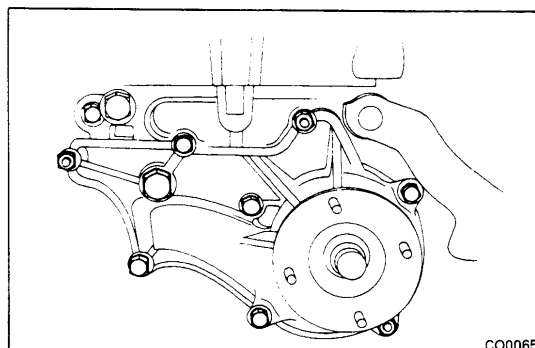
2. LOOSEN FAN BELT

Loosen alternator pivot and adjusting bolts. Swing the alternator toward the engine.



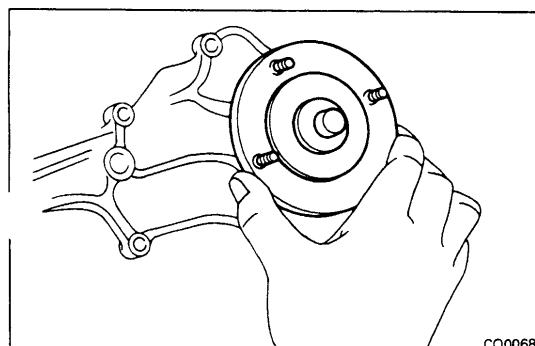
3. REMOVE FLUID COUPLING, FAN AND WATER PUMP PULLEY

- Remove the four nuts from the fluid coupling flange.
- Remove the fluid coupling, water pump pulley and fan belt.
- Remove the fan from the fluid coupling.



4. REMOVE WATER PUMP

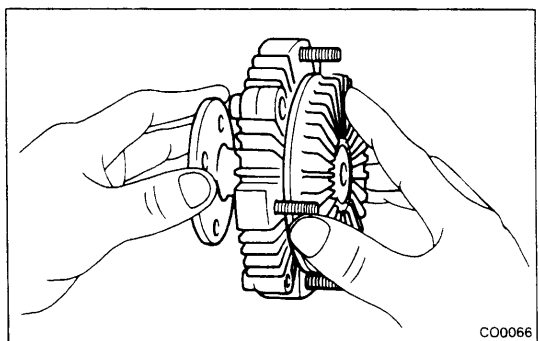
Remove the six bolts, three nuts, water pump and gasket.



INSPECTION OF WATER PUMP

1. INSPECT WATER PUMP BEARING

Check that water pump bearing operation is not rough or noisy.



2. INSPECT FLUID COUPLING

Check the fluid coupling for damage and silicone oil leakage

INSTALLATION OF WATER PUMP

(See page CO-2)

1. INSTALL WATER PUMP OVER NEW GASKET

Install the water pump and a new gasket with six bolts and three nuts.

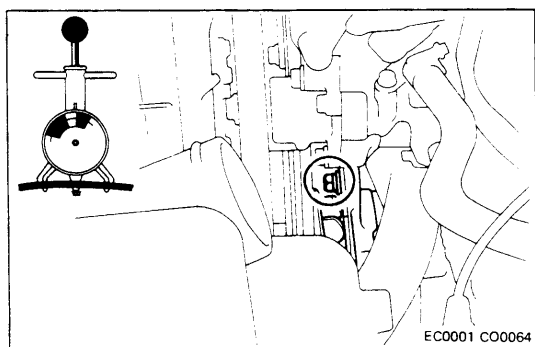
2. INSTALL FAN BELT AND PULLEY

- Check the fan belt for cracks or damage.
- Place the fan belt on the pulley and place the pulley on the water pump bolts.

3. INSTALL FAN ON FLUID COUPLING

4. INSTALL FLUID COUPLING

Install the fluid coupling on the pulley with four nuts.



5. ADJUST FAN BELT TENSION

Using a belt tension gauge, check the drive belt tension.

Belt tension gauge:

Nippondenso BTG-20 (95506-00020) or
Borroughs No. BT-33-73F

Belt tension:

New belt	125 ± 25 lb
Used belt	80 ± 20 lb

6. REFILL COOLANT

Close the radiator and engine drain cocks. Fill with a good brand of ethylene-glycol coolant.

Total capacity: 8.4 liters (8.9 US qts, 7.4 Imp. qts)

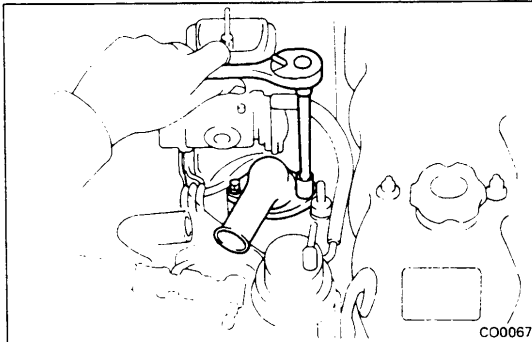
7. START ENGINE AND CHECK FOR LEAKS

THERMOSTAT

REMOVAL OF THERMOSTAT

1. DRAIN COOLANT

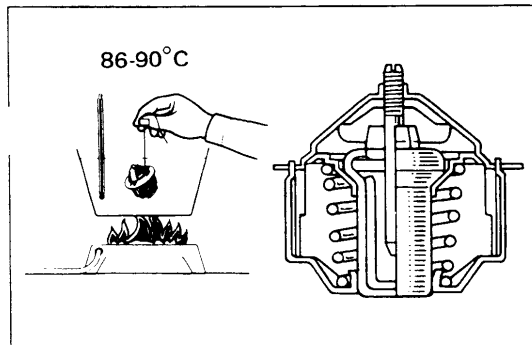
Drain the coolant from the radiator into a clean container. The coolant may be reused if specific gravity is within specifications.



2. REMOVE WATER OUTLET

Remove the two bolts and water outlet from the intake manifold.

3. REMOVE THERMOSTAT AND GASKET



INSPECTION OF THERMOSTAT

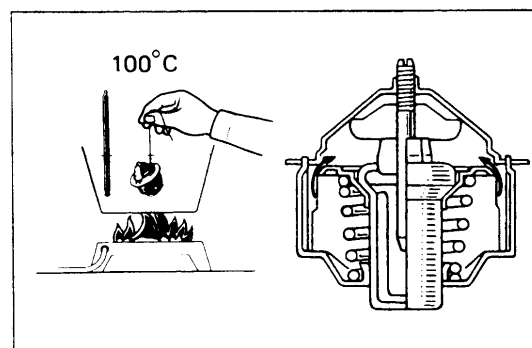
NOTE: The thermostat is marked with the valve opening temperature.

- Immerse the thermostat in water and heat the water gradually.
- Check the valve opening temperature and valve lift. If the valve opening temperature and valve lift are out of following specifications, replace the thermostat.

Valve opening temperature: 86 – 90 °C (187 – 194 °F)

Valve lift: More than 8 mm (0.31 in.) at 100 °C (212 °F)

- Check that the valve spring is tight when the thermostat is fully closed, and replace if necessary.



INSTALLATION OF THERMOSTAT

1. PLACE THERMOSTAT IN INTAKE MANIFOLD

2. INSTALL WATER OUTLET

Install the water outlet on a new gasket with two bolts.

3. REFILL COOLANT

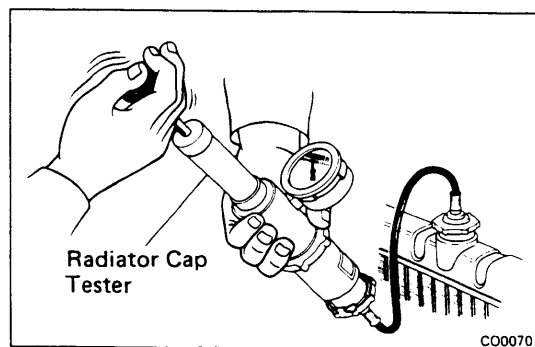
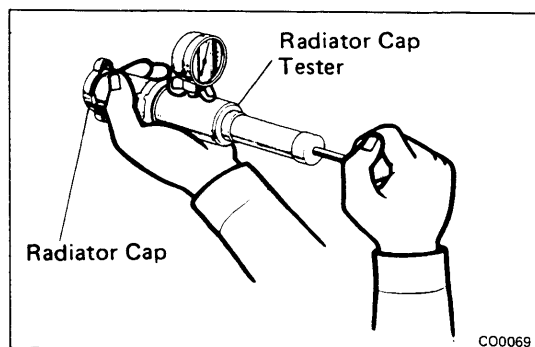
Close the radiator drain cock. Fill with a good brand of ethylene-glycol coolant.

RADIATOR

CLEANING OF RADIATOR

Using water or a steam cleaner, remove mud and dust from radiator core.

CAUTION: If using high pressure type cleaner, be careful not to deform the radiator core fins. For example, keep a distance of at least 40 — 50 cm (15.75 — 19.69 in.) between the radiator core and cleaner nozzle when the cleaner nozzle pressure is 30 — 35 kg/cm² (427 — 498 psi, 2,942 — 3,432 kPa).



INSPECTION OF RADIATOR

1. CHECK RADIATOR CAP

Using a pressure tester, pump the tester until the relief valve opens.

Check that the valve opens between 0.75 kg/cm² (10.7 psi, 74 kPa) and 1.05 kg/cm² (15 psi, 103 kPa).

Check that the pressure gauge does not drop rapidly when pressure on the cap is below 0.6 kg/cm² (8.5 psi, 59 kPa).

If either check is not within limits, replace the cap.

2. CHECK COOLING SYSTEM FOR LEAKS

Attach the pressure tester to the radiator and pump the tester to 0.9 kg/cm² (12.8 psi, 88 kPa). Check the pressure does not drop.

If the pressure drops, check for leaks from the hoses, radiator or water pump. If no external leaks are found, check the heater core, block and intake manifold.

REMOVAL OF RADIATOR

1. DRAIN COOLANT

Open radiator drain and engine drain cocks (located on the left of engine block). Drain the fluid into a suitable container.

2. DISCONNECT TWO RADIATOR HOSES

3. REMOVE FAN SHROUD

4. DISCONNECT TWO COOLER HOSES (A/T only)

NOTE:

- (1) Be careful as some oil will leak out. Catch it in a suitable container.
- (2) Plug the hose to prevent oil from escaping.

5. DISCONNECT COOLANT RESERVOIR TUBE

6. REMOVE FOUR RADIATOR MOUNTING BOLTS AND RADIATOR