INDEX

CHAPTER 5.
COOLING SYSTEM

COOLING SYSTEM

RADIATOR

⚠WARNING:

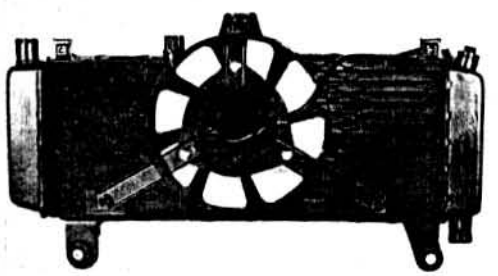
Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, open the radiator cap by the following procedure:
Place a thick rag, like a towel, over the radiator cap, slowly rotate the cap counterclockwise to the detent. This procedure allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

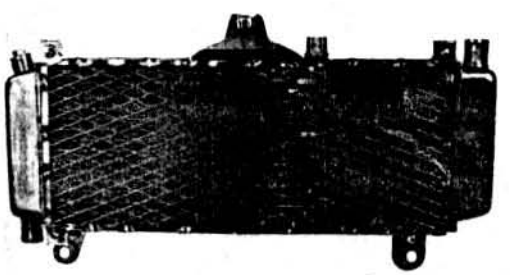
REMOVAL

1. Drain:
   - Coolant

   Refer to "CHAPTER 3. COOLANT REPLACEMENT".
2. Disconnect:
   - Fan motor coupler
3. Remove:
   - Radiator assembly

   Refer to "CHAPTER 3. VALVE CLEARANCE ADJUSTMENT".
4. Remove:
   - Fan motor assembly
   - Radiator grille



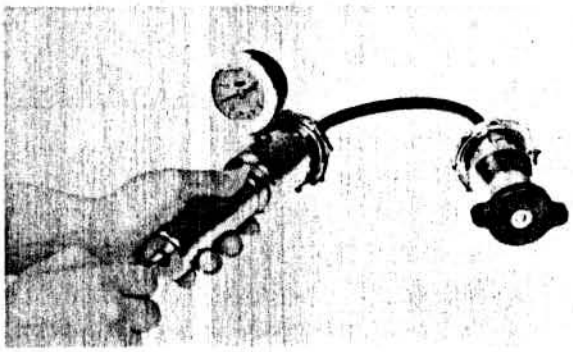


INSPECTION

1. Inspect:
   - Radiator

   Obstruction → Blow out with compressed air through rear of radiator.
   Flattened fins → Repair.
   - Coolant hoses

   Cracks/Damage → Replace.



2. Inspect:
   - Radiator cap
   - Vacuum valve

Inspection steps:
- Measure radiator cap pressure using the radiator cap tester.
- Check vacuum valve for spring tension and seating condition.

Radiator cap tester:
P/N 90890-01325

Valve opens at pressure below specified value or defective → Replace.

Valve opening pressure:
74 ~ 103 KPa
(0.75 ~ 1.05 kg/cm^2,
10.7 ~ 14.9 psi)

ASSEMBLY

1 Install:
   - Radiator assembly

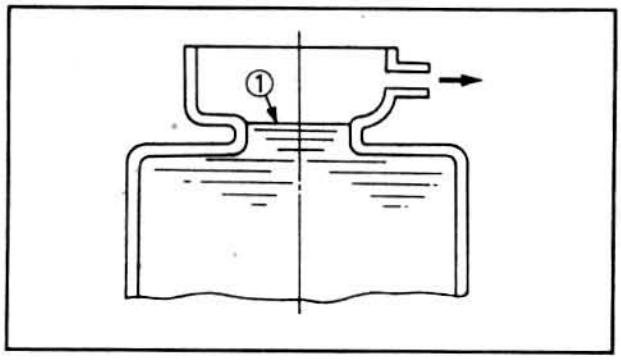
Bolts (radiator):
7 Nm (0.7 m•kg, 5.1 ft•lb)

2. Connect:
   - Fan motor coupler
   - Hose (radiator — inlet)
   - Hose (radiator — outlet)
3. Tighten:
   - Drain bolts

Drain bolts:
10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:

Replace with new copper gaskets.



4. Fill:
   • Cooling system

Coolant filling steps:
- Fill the coolant into the radiator until the radiator is full.
- Start the engine (coolant level decreases.)

⚠CAUTION:

Always check coolant level, and check for coolant leakage before starting engine.

- Add the coolant while engine is running.
- Stop the engine when coolant level stabilizes.
- Add the coolant again to specified level (1).
- Install the radiator cap.

Recommended coolant:
High quality ethylene glycol anti-freeze containing anti-corrosion for aluminum engine inhibitors
Coolant and water mixed ratio:
50%/50%
Total amount:
1.7 L (1.5 Imp qt, 1.8 US qt)
Reservoir tank capacity:
0.45 L (0.40 Imp qt, 0.48 US qt)
From "LOW" to "FULL" level:
0.15 L (0.13 Imp qt, 0.16 US qt)

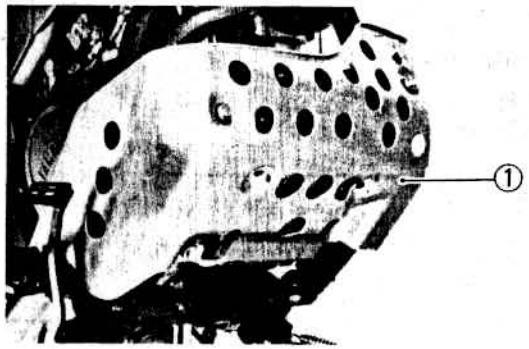
⚠CAUTION:

- **Hard water or salt water is harmful to the engine. You may use distilled water if you can't get soft water.**
- **Do not mix more than one type of ethlen glycol anti-freeze containing corrosion for aluminum engine inhabitors.**

5. Inspect:
   • Cooling system

Inspection steps:
- Connect radiator cap tester.
- Apply 1.0 kg/cm^2 (14 lb/in^2) pressure.
- Measure pressure with gauge.
  Decrease of pressure (leaks)→Repair as required.

Radiator cap tester:
P/N 90890-01325

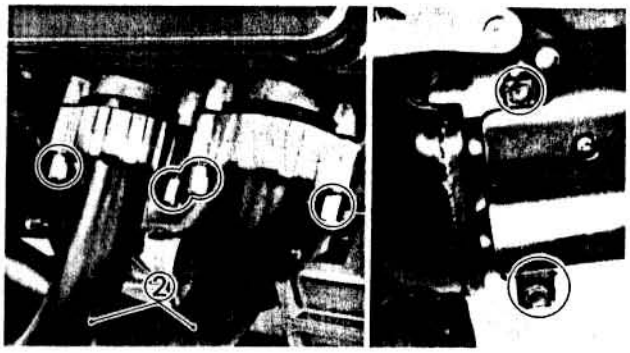


WATER PUMP

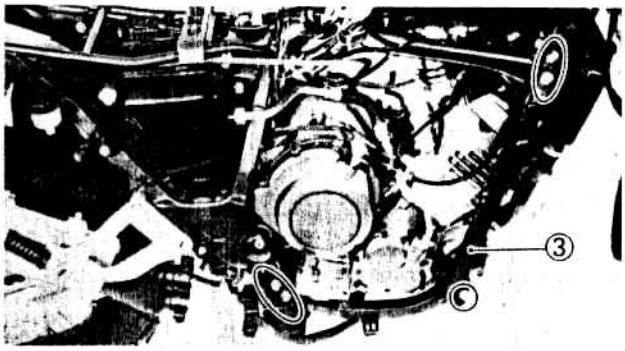
DISASSEMBLY

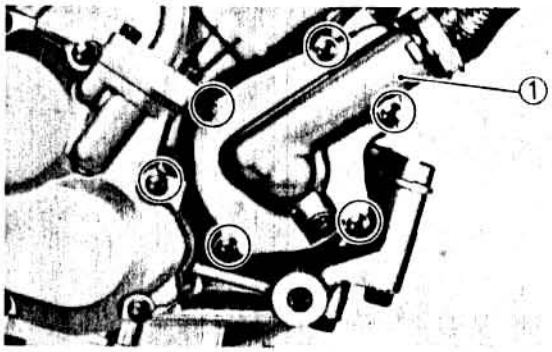
NOTE:

Be sure to drain the coolant before disassembly of the cooling system components.

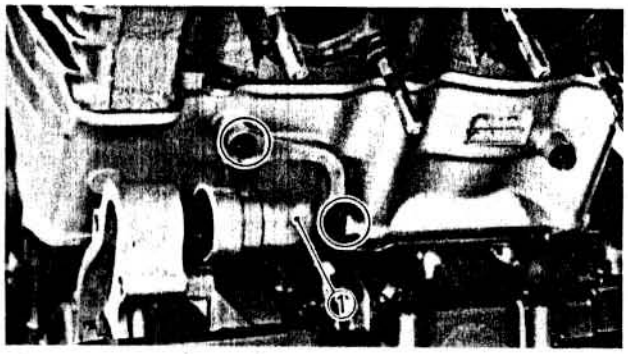


1. Remove:
   - Engine guard ①
   - Exhaust pipe ②
   - Down tube (right) ③

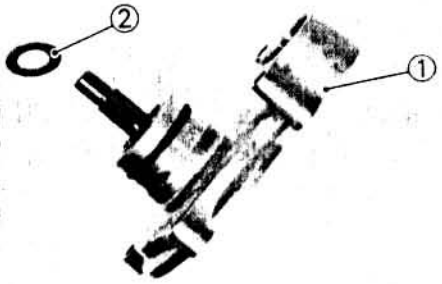




2. Remove:
   - Cover (water pump) ①



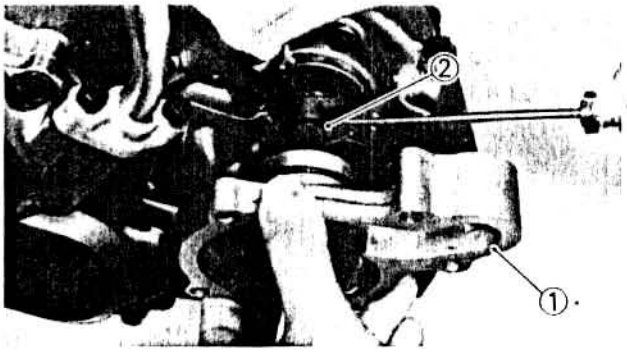
3. Remove:
   - Joint pipe ①



4. Remove:
   - Water pump housing ①
   - O-ring
   - Plain washer ②

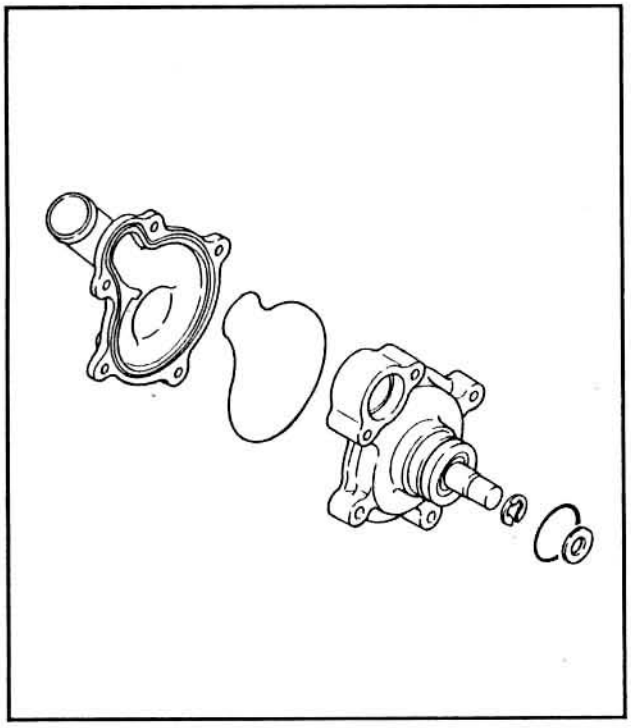
NOTE:

Put the washer on the shaft so that it may not drop into the crankcase, while remoring the water pump housing.



5. Eliminate:
   - Deposits

   From the impeller and water pump housing.



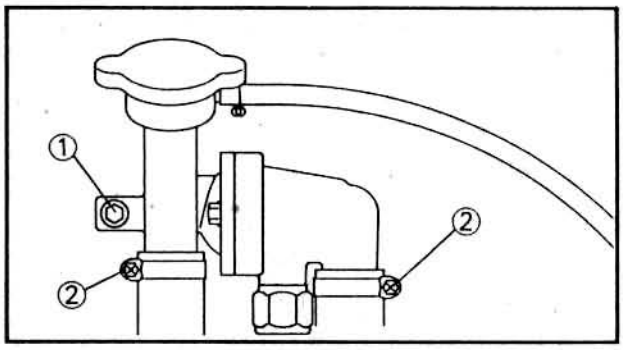
INSPECTION

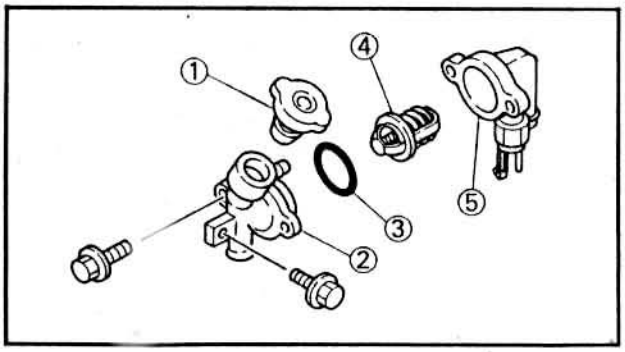
1. Inspect:
   - O-rings
   - Water pump housing
   - Plane washer
   - Joint pipe

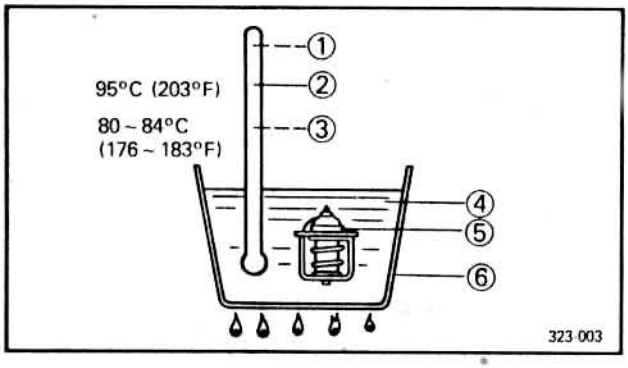
   Cracks/wear/damage→Replace.

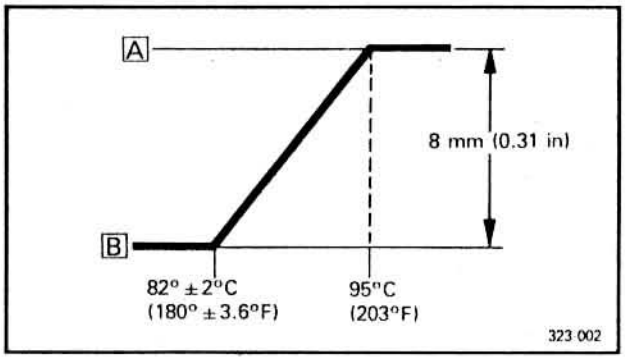
ASSEMBLY

Reverse the "DISASSEMBLY" procedure.









THERMOSTAT

REMOVAL

1. Remove:
   - Bolt (thermostat cover) ①
   - Clamp (radiator hose) ②

2. Remove:
   - Radiator cap ①
   - Thermostat cover ②
   - O-ring ③
   - Thermostat ④
   - Thermostat housing ⑤

INSPECTION

1. Inspect:
   - Thermostat ⑤
     Valve does not open at 80 ~ 84°C (176 ~ 183°F) → Replace.

Inspection steps:
- Suspend thermostat in a vessel.
- Place reliable thermometer in a water.
- Heat water slowly.
- Observe thermometer, while stirring water continually.

① Thermometer
② Full open
③ Opening sequence begins
④ Water
⑤ Thermostat
⑥ Vessel
[A] OPEN
[B] CLOSE

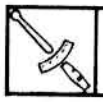
NOTE:

Thermostat is sealed and its setting is specialized work. If its accuracy is in doubt, replace it. A faulty unit could cause serious overheating or overcooling.

2. Inspect:
   - O-ring
     Wear/damage → Replace.

ASSEMBLY

1. Install:
   - Thermostat
   - Thermostat cover



Bolts (thermostat cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)