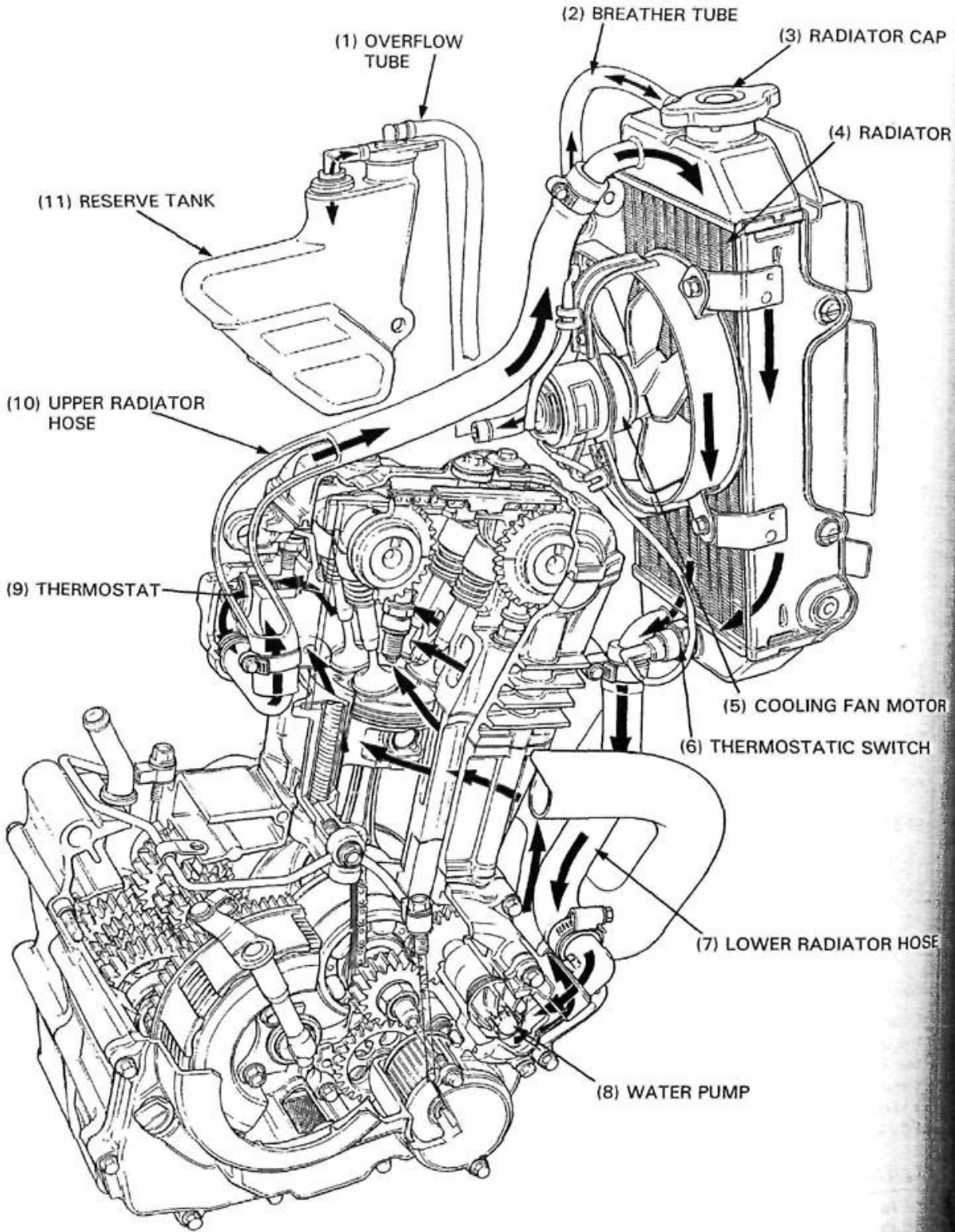

(1) OVERFLOW TUBE
(2) BREATHER TUBE
(3) RADIATOR CAP
(4) RADIATOR
(5) COOLING FAN MOTOR
(6) THERMOSTATIC SWITCH
(7) LOWER RADIATOR HOSE
(8) WATER PUMP
(9) THERMOSTAT
(10) UPPER RADIATOR HOSE
(11) RESERVE TANK

SERVICE INFORMATION

GENERAL

⚠WARNING

- *Do not remove the radiator cap when the engine is hot. The coolant is under pressure and severe scalding could result.*
- *The engine must be cool before servicing the cooling system.*
- *If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.*

- Use only distilled water and ethylene glycol in the cooling system. A 50—50 mixture is recommended for maximum corrosion protection. Do not use alcohol-based antifreeze or an antifreeze with self sealing properties.
- Add coolant at the reserve tank. Do not remove the radiator cap except to refill or drain the system.
- Radiator, cooling fan and thermostat services can be made with the engine in the frame.
- Avoid spilling coolant on painted surfaces.
- After servicing the system, check for leaks with a cooling system tester.
- Refer to Section 18 for fan motor thermostatic switch and temperature sensor inspections.

SPECIFICATIONS

Radiator cap relief pressure	1.1—1.4 kg/cm² (15.6—19.9 psi)
Freezing point (Hydrometer test):	55% Distilled water + 45% ethylene glycol: −32°C (−25°F) 50% Distilled water + 50% ethylene glycol: −37°C (−34°F) 45% Distilled water + 55% ethylene glycol: −44.5°C (−48°F)
Coolant capacity: Radiator and engine Reserve tank Total system	 0.8 liters (0.85 US qt, 0.70 Imp qt) 0.2 liters (0.21 US qt, 0.18 Imp qt) 1.0 liters (1.06 US qt, 0.88 Imp qt)
Thermostat	Begins to open: 80° to 84°C (176° to 183°F) Valve lift: Minimum of 8 mm at 95°C (0.315 in at 203°F)
Boiling point (with 50—50 mixture):	Unpressurized: 107.7°C (226°F) Cap on, pressurized: 125.6°C (258°F)

TORQUE VALUES

Thermostatic switch	18 N·m (1.8 kg-m, 13 ft-lb)
Water pump impeller	12 N·m (1.2 kg-m, 9 ft-lb)

TOOLS

Special	
Driver base	07947—KR10100
Driver shaft	07947—KR10000
Fork seal driver	07947—3710101
Commmon	
Driver	07749—0010000
Pilot, 15 mm	07746—0040300

TROUBLESHOOTING

Engine temperature too high
- Faulty temperature gauge or gauge sensor
- Thermostat stuck closed
- Faulty radiator cap
- Insufficient coolant
- Passages blocked in radiator, hoses, or water jacket
- Bent fan blades
- Faulty fan motor
- Air bubbles in cooling system

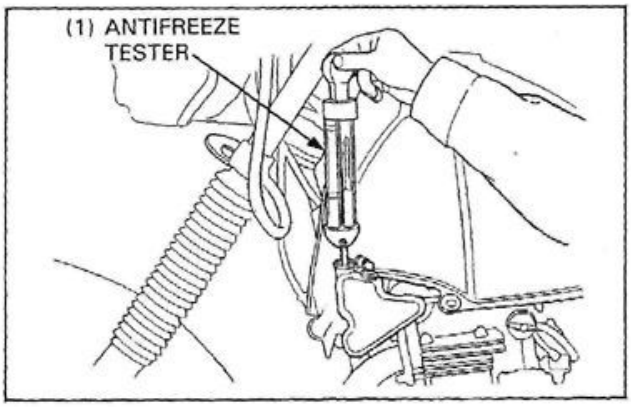
Engine temperature too low
- Faulty temperature gauge or sensor
- Thermostat stuck open

Coolant leaks
- Faulty water pump mechanical seal
- Deteriorated O-rings
- Damaged gasket

SYSTEM TESTING

COOLANT

Remove the coolant reserve tank cap.
Test the coolant mixture with an antifreeze tester. For maximum corrosion protection, a 50–50% solution of ethylene glycol and distilled water is recommended.

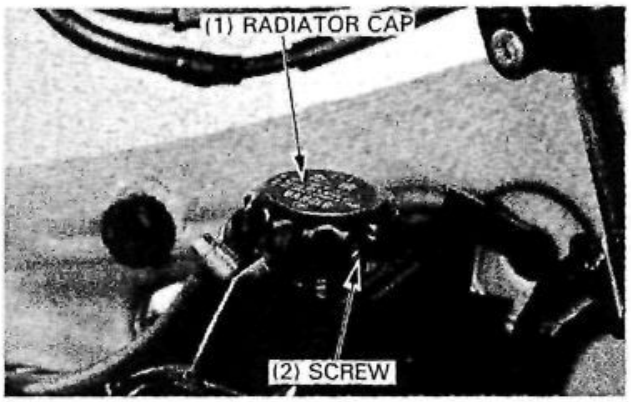


RADIATOR CAP/SYSTEM INSPECTION

Remove the right side fairing (page 15-2).
Remove the radiator cap by removing the screw.

⚠WARNING

- ***The engine must be cool before removing the radiator cap, or severe scalding may result.***

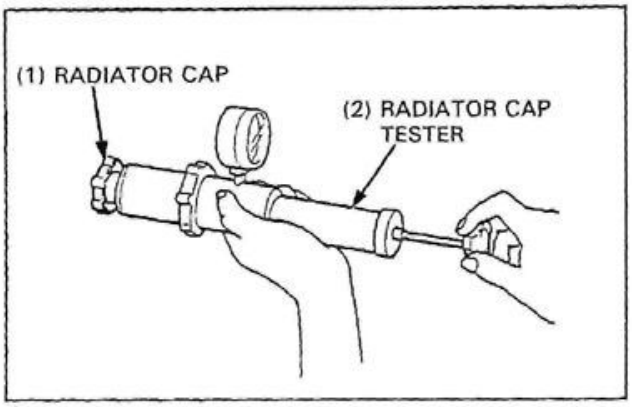


Pressure test the radiator cap. Replace the radiator cap if it does not hold pressure, or if relief pressure is too high or too low. It must hold the specified pressure for at least six seconds.

CAUTION

- *Before installing the cap on the tester, wet the sealing surfaces.*

RADIATOR CAP RELIEF PRESSURE:
1.1–1.4 kg/cm² (15.6–19.9 psi)

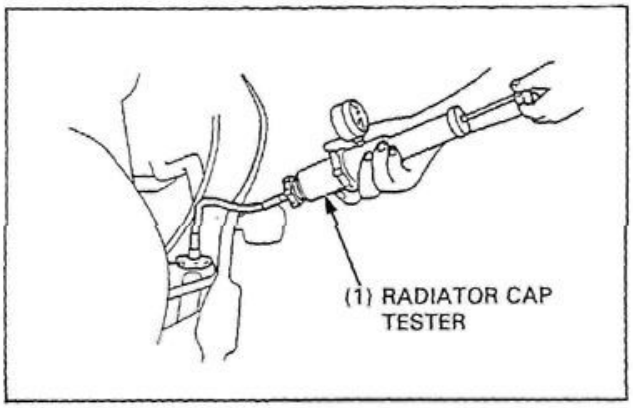


Pressurize the radiator, engine and hoses, and check for leaks.

CAUTION

- *Excessive pressure can damage the radiator. Do not exceed 1.4 kg/cm² (19.9 psi).*

Repair or replace components if the system will not hold specified pressure for at least six seconds.

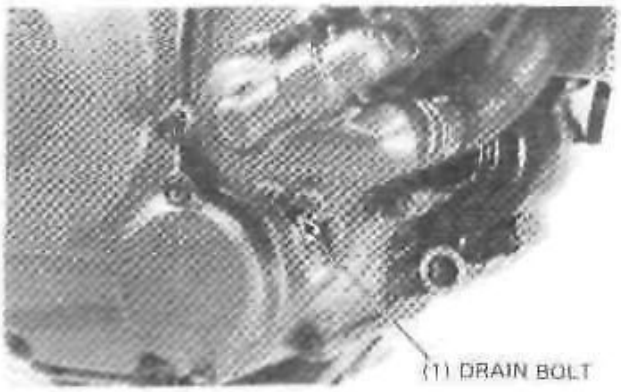


COOLANT REPLACEMENT

⚠ WARNING

- *The engine must be cool before servicing the cooling system, or severe scalding may result.*

Remove the right side fairing and radiator cap by removing the screw.
Remove the skid plate.
Remove the drain bolt located at the water pump and drain the system coolant.

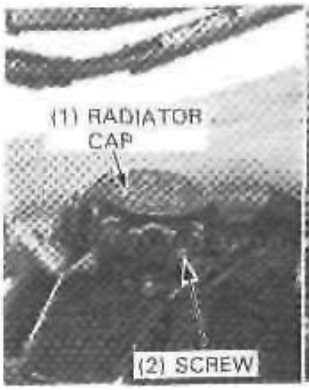


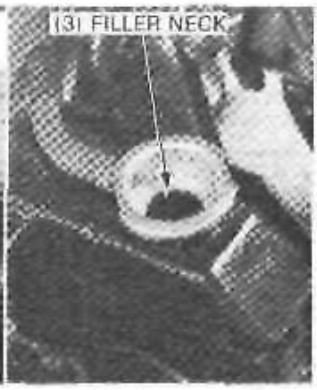
Replace the drain bolt if it is badly corroded.
Install the drain bolt with a new sealing washer and tighten it.

Fill the system with a 50 - 50 mixture of distilled water and ethylene glycol.

Bleed the air from the radiator as follows:

- Support the motorcycle in an upright on level ground.
- Shift the transmission into neutral.
- *Start the engine and snap the throttle grip 3—4 times at* 4,000—5,000 min $^{-1}$ (rpm). Then add coolant up to the radiator filler neck.
- Reinstall the radiator cap and tighten the screw securely.
- Check the level of coolant in the reserve tank and fill to the correct level if it is low.

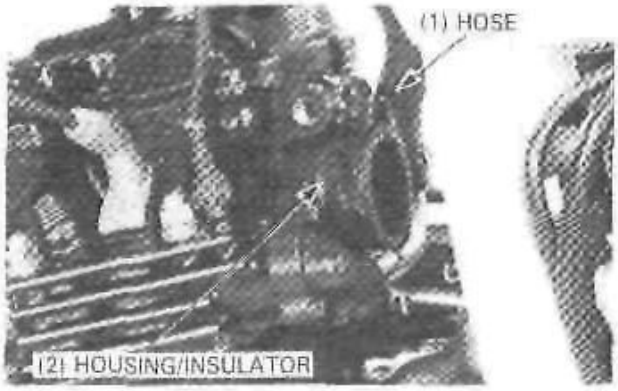




THERMOSTAT

REMOVAL

Drain the coolant.
Remove the carburetor (page 4-5).
Disconnect the upper radiator hose from the water pipe.
Remove the thermostat housing/carburetor insulator.
Remove the thermostat and O-ring.



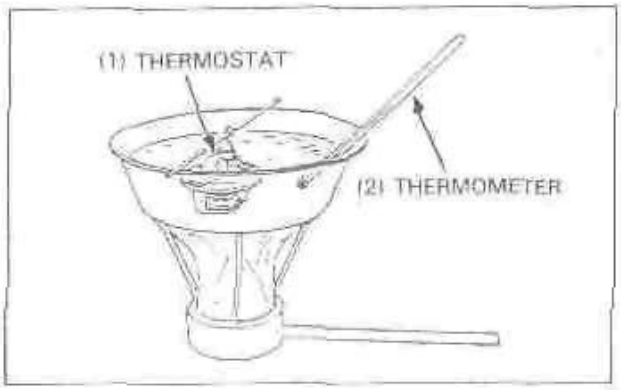
INSPECTION

Visually inspect the thermostat for damage.
Suspend the thermostat in heated water to check its operation. Do not let the thermostat or thermometer touch the pan or false readings will result.

Replace the thermostat if the valve stays open at room temperature, or if it responds at temperatures other than those specified.

Technical Data

Starts to open	80° to 84°C (176° to 183°F)
Valve lift	*8 mm minimum (0.315 in)* when heated to 95°C (203°F) for five minutes.



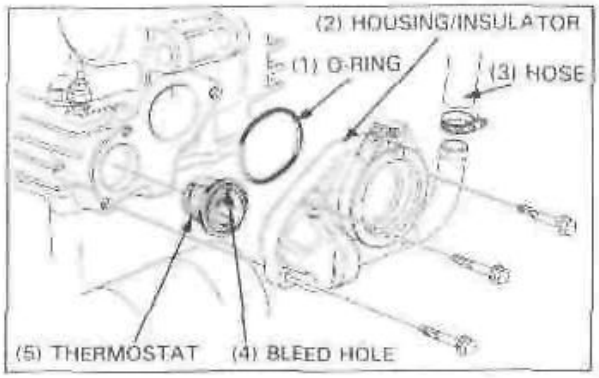
INSTALLATION

Install the thermostat into the cylinder head with its air bleed hole facing up.
Install a new O-ring in the groove on the thermostat housing/carburetor insulator.

Install the housing/insulator on the cylinder head.
Tighten the bolts securely.
Connect the upper radiator hose to the water pipe.

Install the carburetor (page 4-14).

Fill the cooling system (page 5-4).

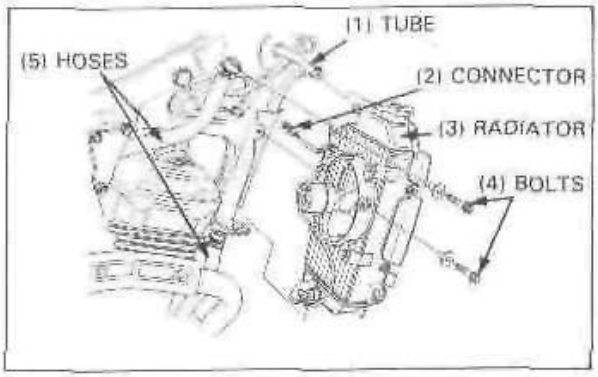


RADIATOR/COOLING FAN

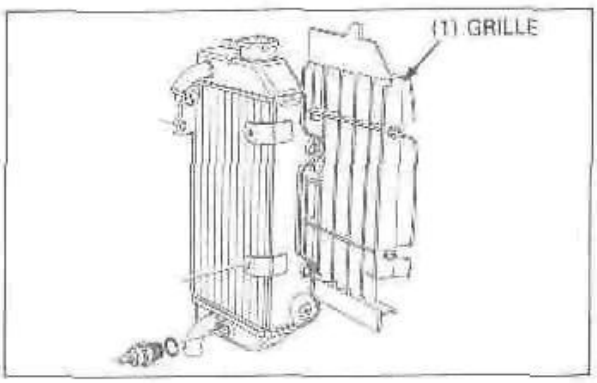
REMOVAL

Remove the fuel tank (page 4-3).
Drain the coolant (page 5-4).

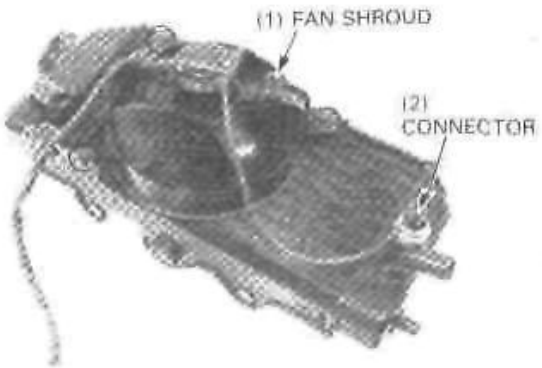
Remove the radiator mounting bolts.
Disconnect the radiator hoses and breather tube from the radiator.
Disconnect the cooling fan motor wire connector and remove the radiator.



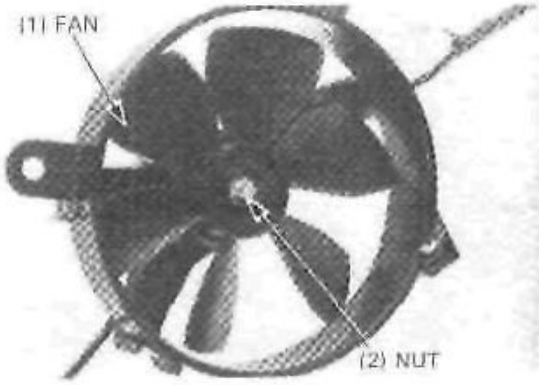
Grasp the grille evenly on both sides and carefully free the bosses, then remove the grille.



Disconnect the thermostatic switch wire connector.
Remove the fan shroud from the radiator.



Remove the nut and the fan.
Release the motor by removing the three screws.

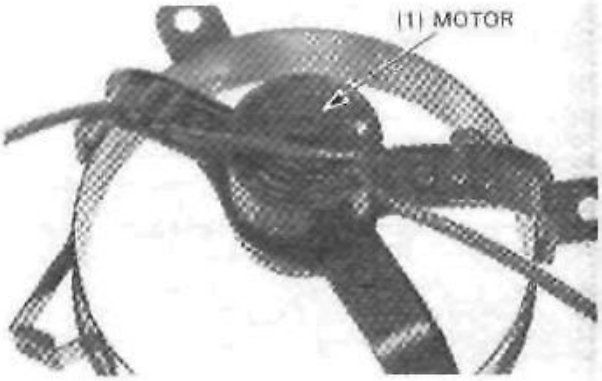


RADIATOR/FAN INSPECTION

Inspect the radiator soldered joints and seams for leaks.

Blow dirt out from between core fins with compressed air. If insects, etc., are clogging the radiator, wash them off with low pressure water.

Carefully straighten any bent fins.



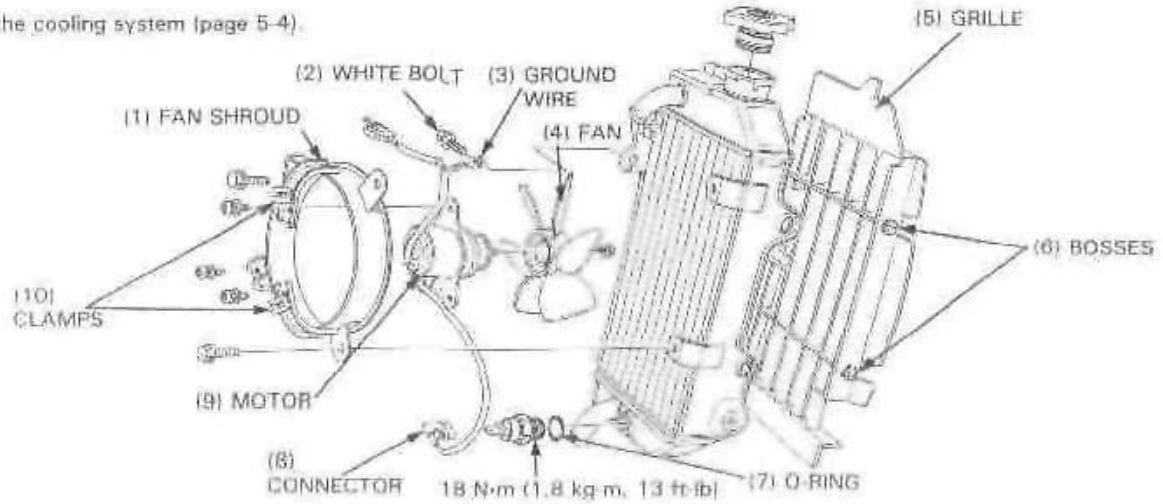
ASSEMBLY/INSTALLATION

Assemble and install the radiator in the reverse order of disassembly/removal.

If the thermostatic switch was removed, install a new O-ring and tighten the switch to the specified torque.

THERMOSTATIC SWITCH:
TORQUE: 18 N·m (1.8 kg-m, 13 ft-lb)

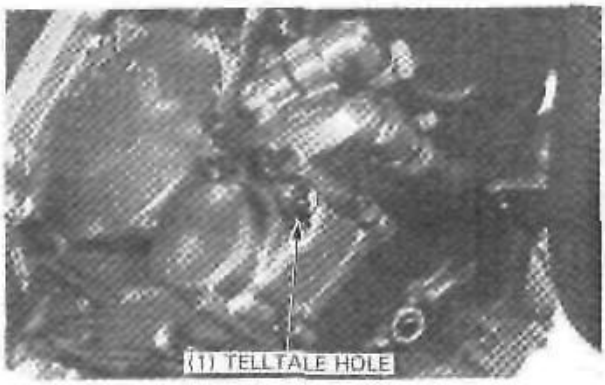
Fill the cooling system (page 5-4).



WATER PUMP

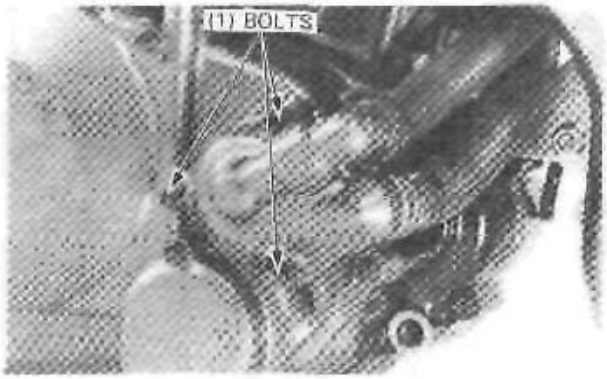
MECHANICAL SEAL INSPECTION

Inspect the telltale hole for signs of coolant leakage.
Replace the water pump mechanical seal if the coolant is leaking.

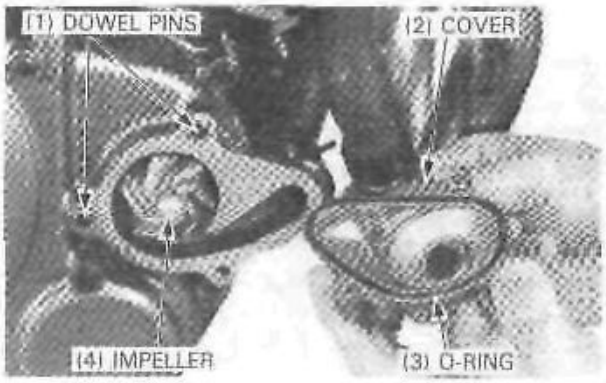


MECHANICAL SEAL REPLACEMENT

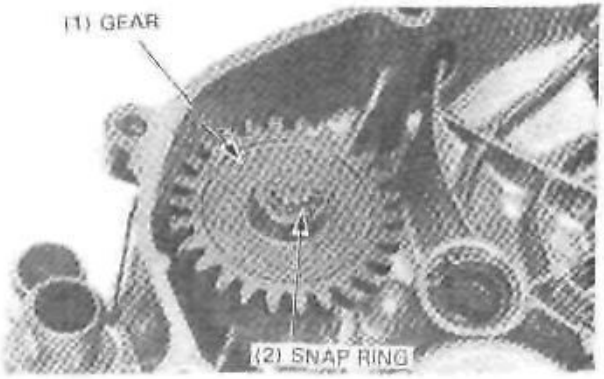
Drain the coolant (page 5-4).
Remove the water pump cover bolts.



Remove the following:
- water pump cover.
- O-ring.
- dowel pins.
- impeller.
- right crankcase cover (page 7-3).

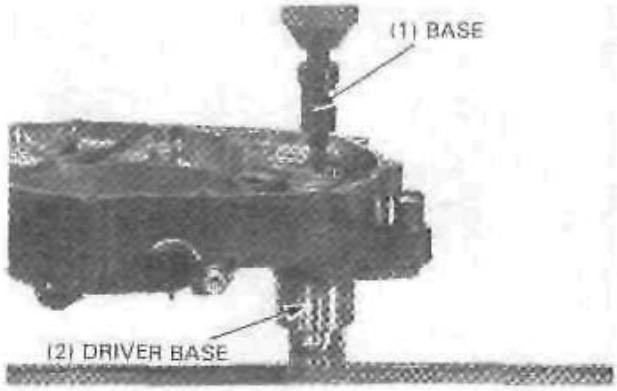


Remove snap ring and water pump driven gear.



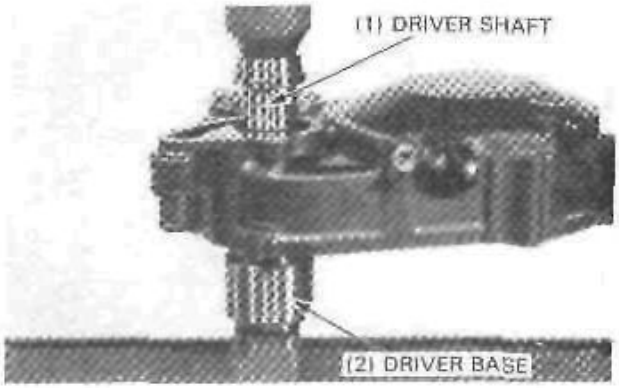
Press the mechanical seal and water pump shaft out of the right crankcase cover.

TOOLS:
Driver base **07947–KR10100**

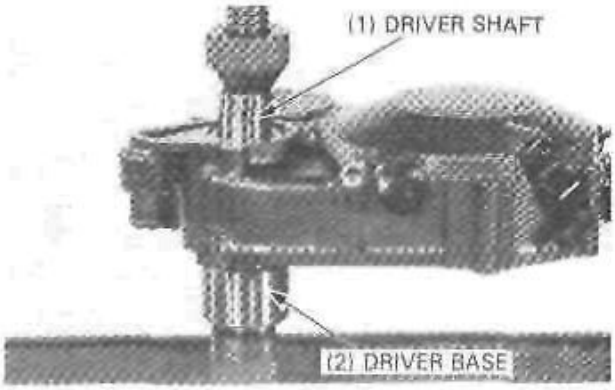


Press the water pump shaft with bearing into the right crankcase cover.

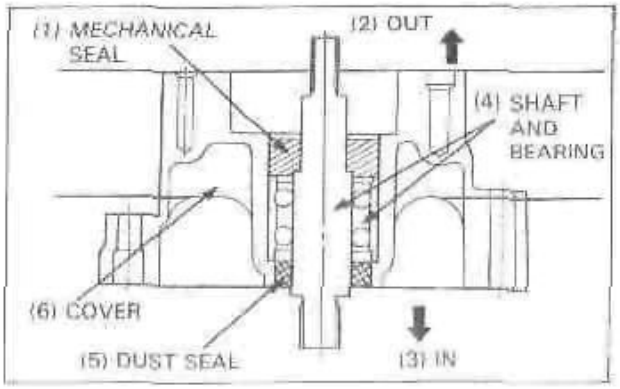
TOOLS:
Driver shaft **07947–KR10000**
Driver base **07947–KR10100**



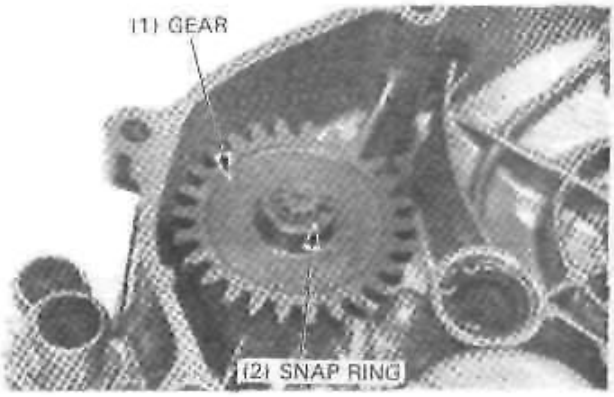
Press a new mechanical seal into the right crankcase cover using same tools.



Install a new dust seal.



Install the water pump driven gear and secure it with a new snap ring.



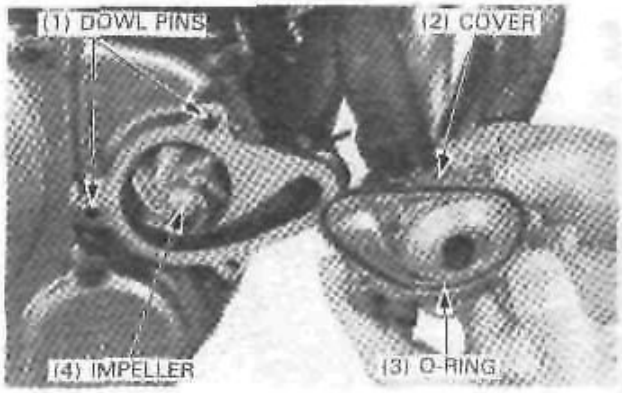
Install the right crankcase cover (page 7-10).

Install the impeller and tighten it to the specified torque.

TORQUE: 12 N·m (1.2 kg-m, 9 ft-lb)

Install the dowel pins.
Install a new O-ring in the groove of the water pump cover.
Install the cover and tighten the bolts securely.

Fill the cooling system (page 5-4).



RESERVE TANK

Remove the left side fairing (page 15-2).
Remove the reserve tank by removing the mounting bolt.
Disconnect the tubes from the tank.
Install the reserve tank in the reverse order of the removal.