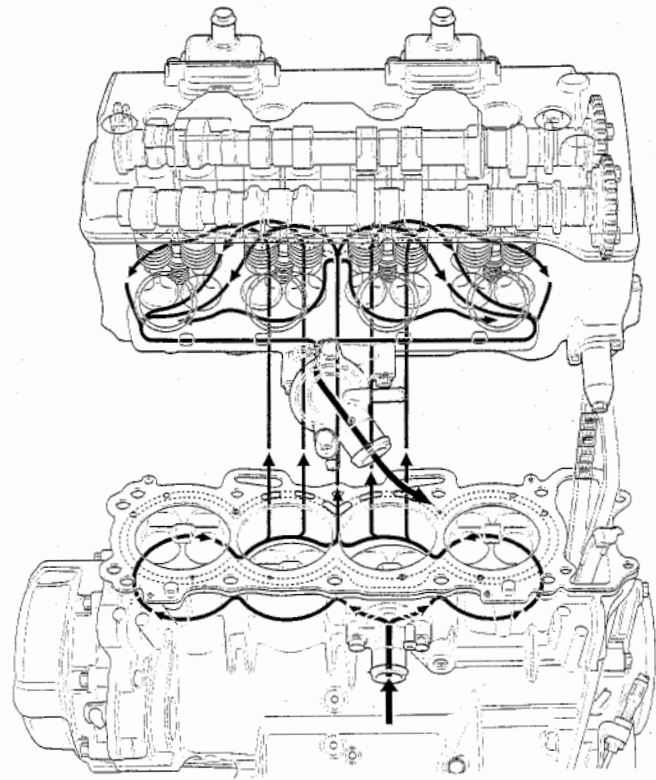
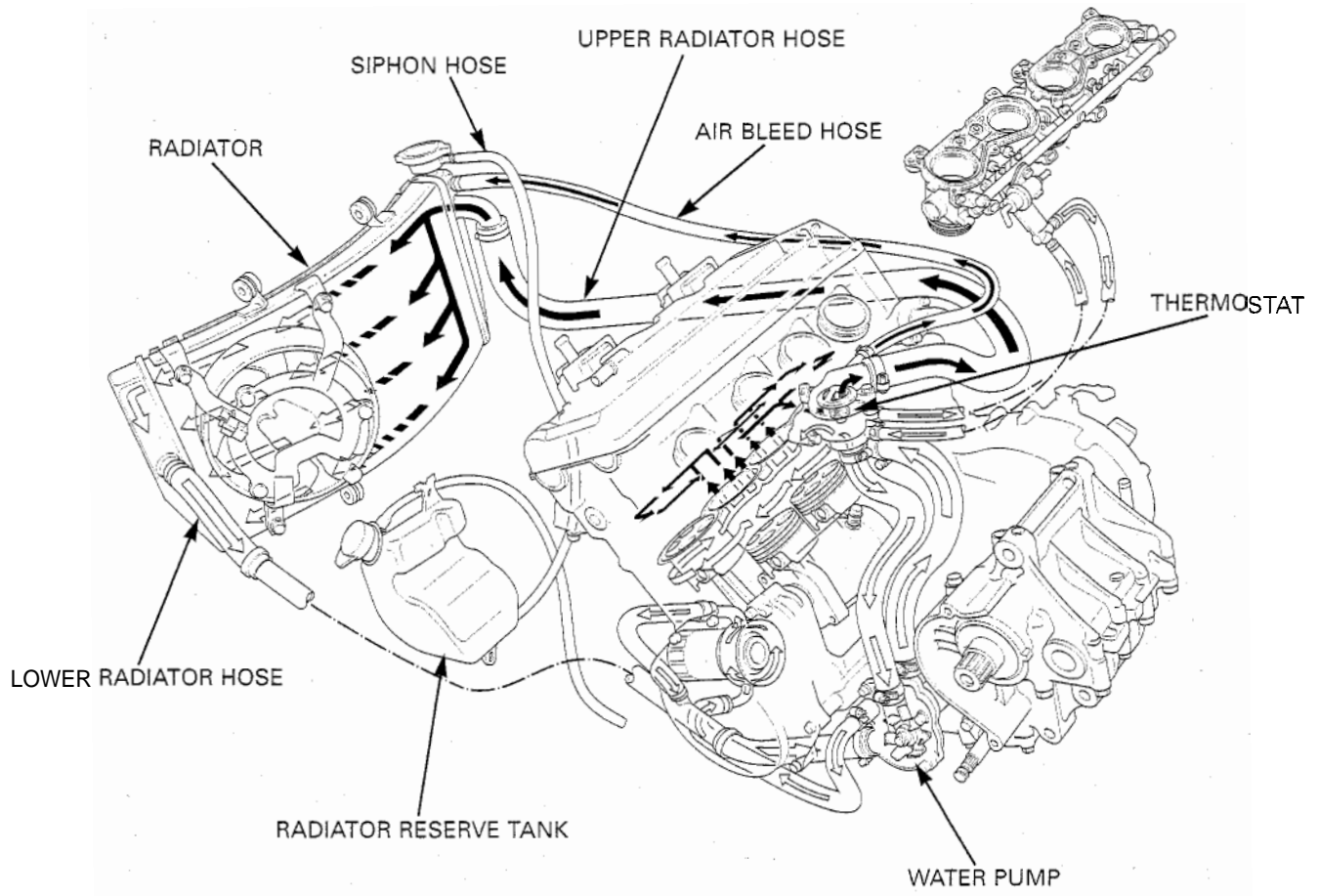


SYSTEM FLOW PATTERN



6. COOLING SYSTEM

SYSTEM FLOW PATTERN	6-0	THERMOSTAT	6-6
SERVICE INFORMATION	6-1	RADIATOR	6-8
TROUBLESHOOTING	6-2	WATER PUMP	6-13
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SERVICE INFORMATION

GENERAL

⚠ WARNING

Removing the radiator cap while the engine is hot can cause the coolant to spray out, seriously scalding you.
Always let the engine and radiator cool down before removing the radiator cap.

NOTICE

Using coolant *with* silicate inhibitors may cause premature *wear of* water pump seals or blockage of *radiator* passages.
Using tap water may cause engine damage.

- Add cooling system at the reserve tank. Do not remove the radiator cap except to refill or drain the system.
- All cooling system services can be done 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 19 for coolant temperature sensor inspection.

COOLING SYSTEM

SPECIFICATIONS

ITEM		SPECIFICATIONS
Coolant capacity	Radiator and engine	3.1 liter (3.3 US qt, 2.7 Imp qt)
	Reserve tank	0.4 liter (0.4 US qt, 0.4 Imp qt)
Radiator cap relief pressure		108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 16 – 20 psi)
Thermostat	Begin to open	80.5 – 83.5°C (177 – 182°F)
	Fully open	95°C (203°F)
	Valve lift	8 mm (0.3 in) minimum
Recommended antifreeze		Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors
Standard coolant concentration		1:1 mixture of antifreeze and soft water

TORQUE VALUES

Water pump cover bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	CT bolt
ECT (Engine Coolant Temperature)/thermo sensor	23 N•m (2.3 kgf•m, 17 lbf•ft)	Apply sealant to the threads.
Thermostat cover flange bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	CT bolt
Cooling fan nut	3 N•m (0.27 kgf•m, 2.0 lbf•ft)	Apply a locking agent to the threads.
Fan motor nut	5 N•m (0.5 kgf•m, 3.6 lbf•ft)	
Fan motor shroud mounting bolt	8 N•m (0.8 kgf•m, 5.8 lbf•ft)	

TROUBLESHOOTING

Engine temperature too high

- Faulty radiator cap
- Insufficient coolant
- Passages blocked in radiator, hoses or water jacket
- Air in system
- Faulty water pump
- Thermostat stuck closed
- Faulty temperature gauge or coolant temperature sensor
- Faulty coolingfan motor
- Faulty fan control relay

Coolant leak

- Faulty water pump mechanical seal
- Deteriorated O-rings
- Damaged or deteriorated gasket
- Loose hose connection or clamp
- Damaged or deteriorated hose
- Faulty radiator cap

Engine temperature too low

- Faulty temperature gauge or ECT/thermo sensor
- Thermostat stuck open
- Faulty fan control relay

SYSTEM TESTING

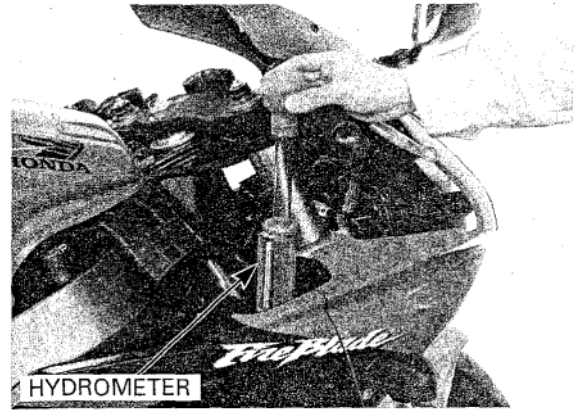
COOLANT (HYDROMETER TEST)

Remove the right duct cover (page 2-4).

Remove the radiator cap.



Test the coolant specific gravity using a hydrometer (see below for "Coolant gravity chart"). For maximum corrosion protection, a 1:1 solution of ethylene glycol and distilled water is recommended (page 6-4). Look for contamination and replace the coolant if necessary.



COOLANT GRAVITY CHART

Coolant temperature °C (°F)	Coolant ratio %										
	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)
5	1.009	1.009	1.008	1.008	1.007	1.006	1.005	1.003	1.001	0.999	0.997
10	1.018	1.017	1.017	1.016	1.015	1.014	1.013	1.011	1.009	1.007	1.005
15	1.028	1.027	1.026	1.025	1.024	1.022	1.020	1.018	1.016	1.014	1.012
20	1.036	1.035	1.034	1.033	1.031	1.029	1.027	1.025	1.023	1.021	1.019
25	1.045	1.044	1.043	1.042	1.040	1.038	1.036	1.034	1.031	1.028	1.025
30	1.053	1.052	1.051	1.047	1.046	1.045	1.043	1.041	1.038	1.035	1.032
35	1.063	1.062	1.060	1.058	1.056	1.054	1.052	1.049	1.046	1.043	1.040
40	1.072	1.070	1.068	1.066	1.064	1.062	1.059	1.056	1.053	1.050	1.047
45	1.080	1.078	1.076	1.074	1.072	1.069	1.066	1.063	1.060	1.057	1.054
50	1.086	1.084	1.082	1.080	1.077	1.074	1.071	1.068	1.065	1.062	1.059
55	1.095	1.093	1.091	1.088	1.085	1.082	1.079	1.076	1.073	1.070	1.067
60	1.100	1.098	1.095	1.092	1.089	1.086	1.083	1.080	1.077	1.074	1.071

RADIATOR CAP/SYSTEM PRESSURE INSPECTION

Before installing the cap in the tester, wet the sealing surfaces

Remove the radiator cap (page 6-3).

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 6 seconds.

RADIATOR CAP RELIEF PRESSURE:

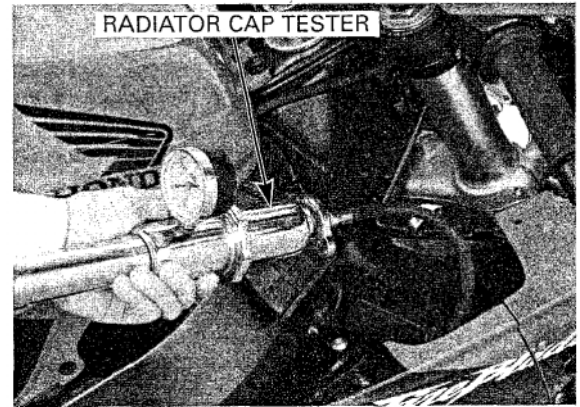
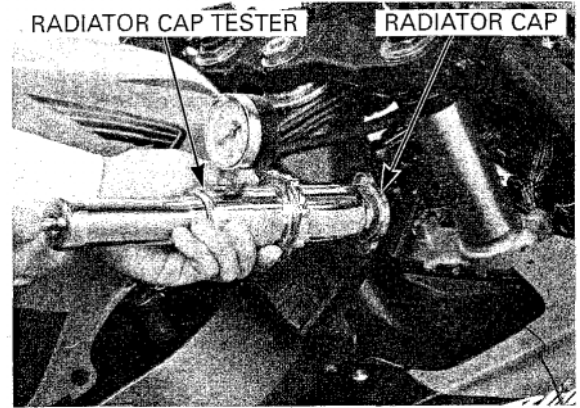
108 – 137 kPa (1.1 – 1.4 kgf/cm², 16 – 20 psi)

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

NOTICE

Excessive pressure can damage the cooling system components. Do not exceed 137 kPa (1.4 kgf/cm², 20 psi).

Repair or replace components if the system will not hold the specified pressure for at least 6 seconds.



COOLANT REPLACEMENT

PREPARATION

- The effectiveness of coolant decreases with the accumulation of rust or if there is a change in the mixing proportion during usage. Therefore, for best performance change the coolant regularly as specified in the maintenance schedule.
- Mix only distilled, low mineral water with the anti-freeze.

RECOMMENDED ANTIFREEZE:

Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors

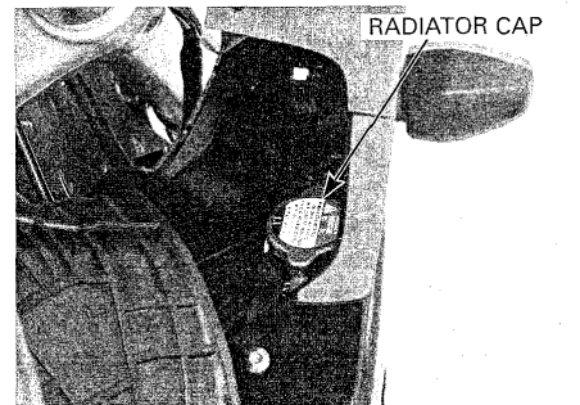
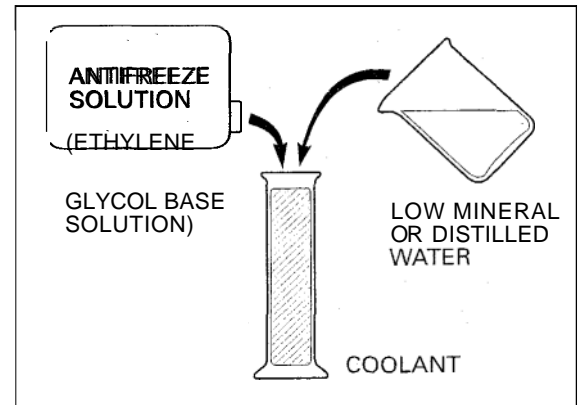
RECOMMENDED MIXTURE:

1:1 (Distilled water and antifreeze)

REPLACEMENT/AIR BLEEDING

Remove the radiator cap.

When filling the system or reserve tank with coolant (checking coolant level), place the motorcycle in a vertical position on a flat, level surface

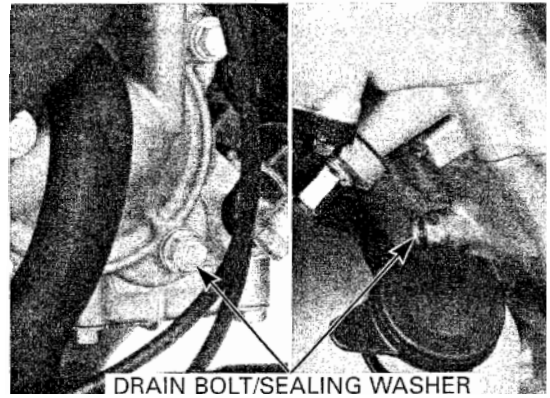


Remove the lower cowl (page 2-7)

Remove the drain bolt on the water pump cover and drain the system coolant.

Remove the cylinder drain bolt and drain the coolant from the cylinder.

Reinstall the drain bolt with a new sealing washer.

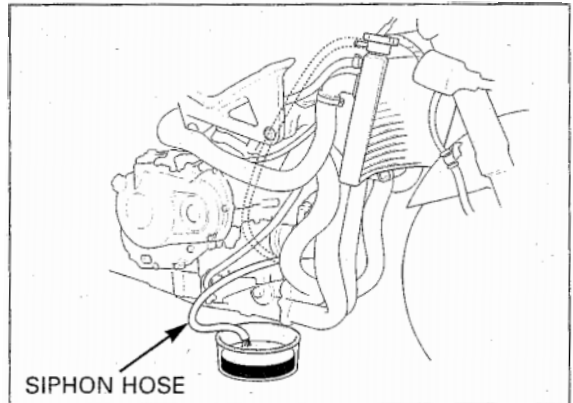


Disconnect the siphon hose from the radiator.

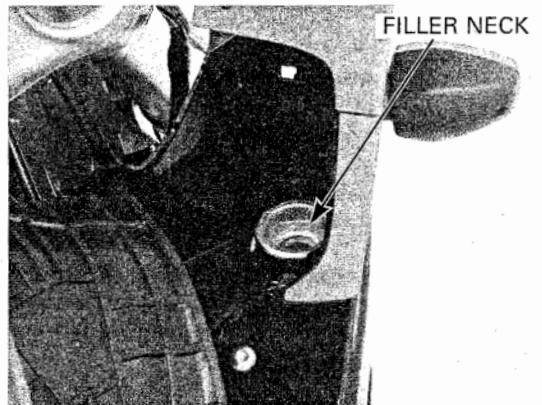
Drain the reserve tank coolant.

Empty the coolant and rinse the inside of the reserve tank with water.

Reinstall the radiator siphon hose.



Fill the system with the recommended coolant through the filler opening up to the filler neck.



Remove the radiator reserve tank cap and fill the reserve tank to the upper level line.

Bleed air from the system as follow:

1. Shift the transmission into neutral. Start the engine and let it idle for 2 – 3 minutes.
2. Snap the throttle three to four times to bleed air from the system.
3. Stop the engine and add coolant up to the proper level if necessary. Reinstall the radiator cap.
4. Check the level of coolant in the reserve tank and fill to the upper level if it is low.

