

Cooling

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10-11

Cooling

Illustrated Index

⚠ WARNING System is under high pressure when engine is hot. To avoid danger of releasing scalding coolant, remove cap only when engine is cool.

Total Cooling System Capacity: Including expansion tank 2.1 l (2.2 US qt. 1.8 Imp qt)

5 M/T: 18.0 l (17.0 US qt. 14.1 Imp qt)

4 A/T: 16.5 l (17.4 US qt. 14.5 Imp qt)

NOTE:

- Check all cooling system hoses for damage, leaks or deterioration and replace if necessary.
- Check all hose clamps and retighten if necessary.
- Use new O-rings when reassembling.

Radiator, Water Pipes and Hoses:

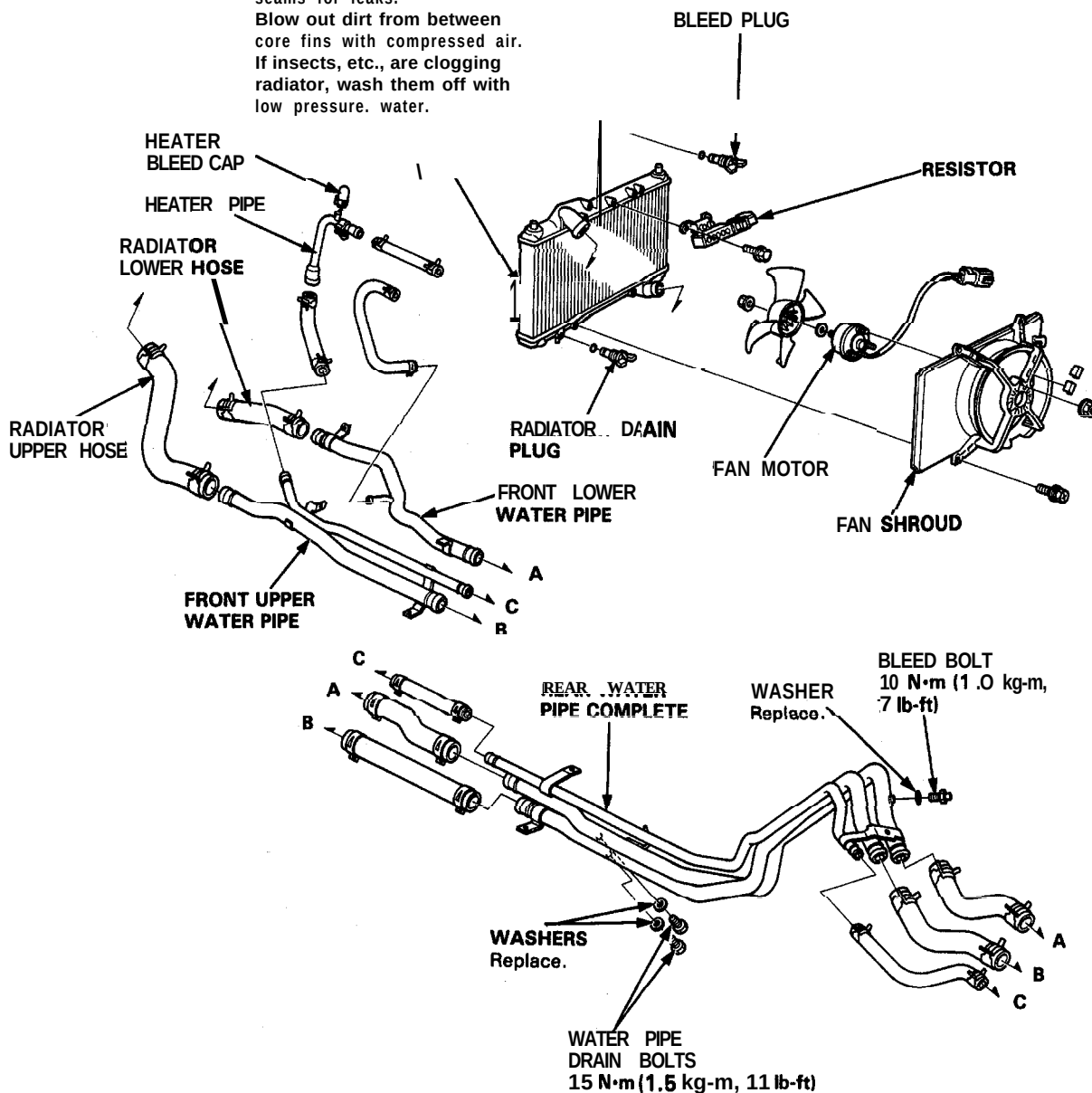
RADIATOR

Refilling and bleeding, page 10-5

Leak test, page 10-8

Inspect soldered joints and seams for leaks.

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

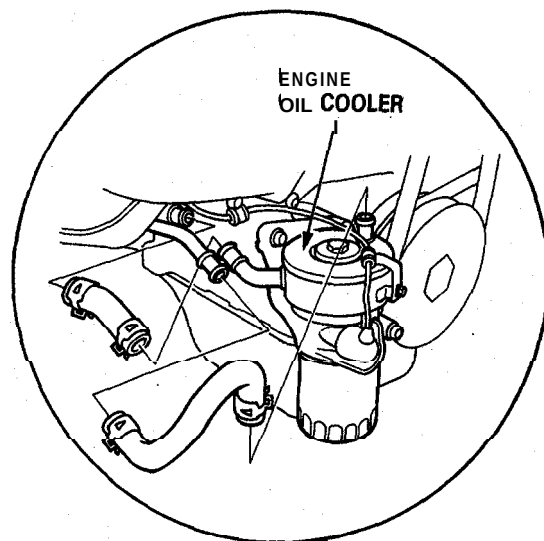




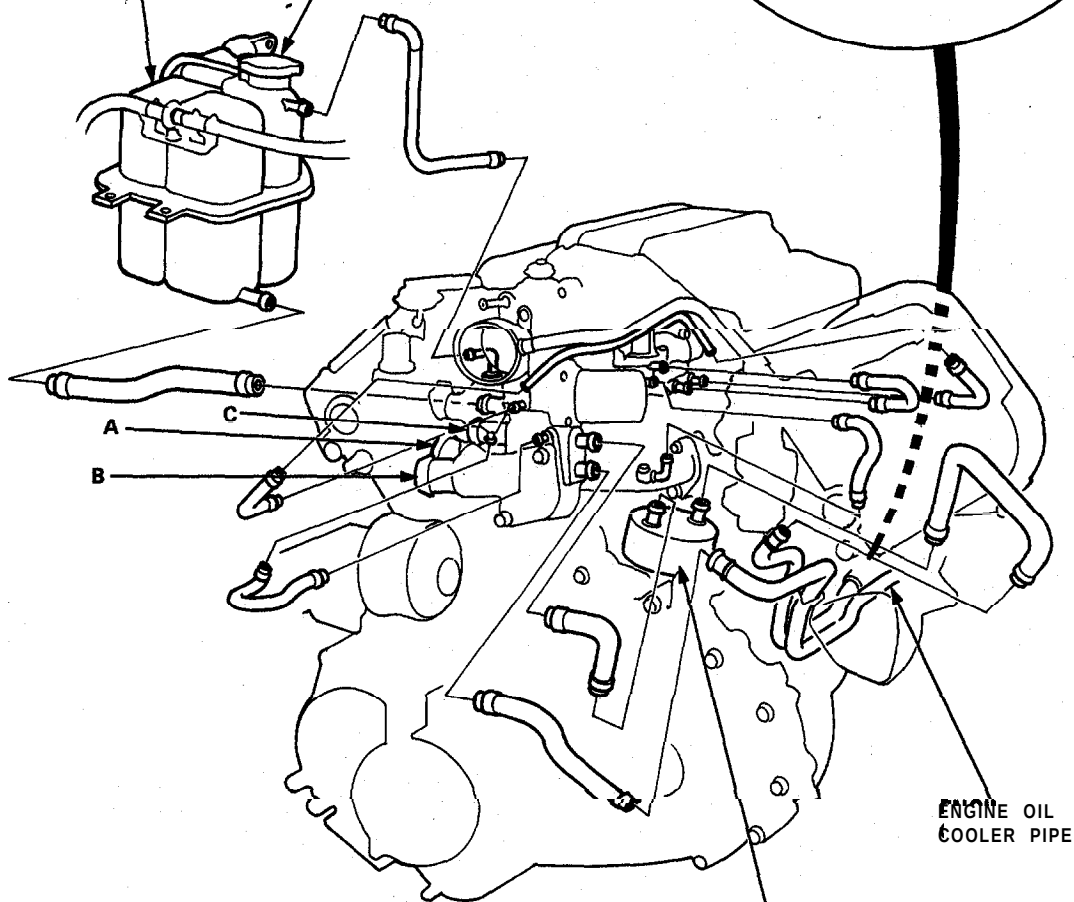
ENGINE PART:

EXPANSION TANK
Refilling and bleeding, page 10-5
Leak Test, page 10-8

CAP
Test, 10-8



ENGINE
OIL COOLER



ENGINE OIL
COOLER PIPE

ATF COOLER
(A/T only)

Radiator

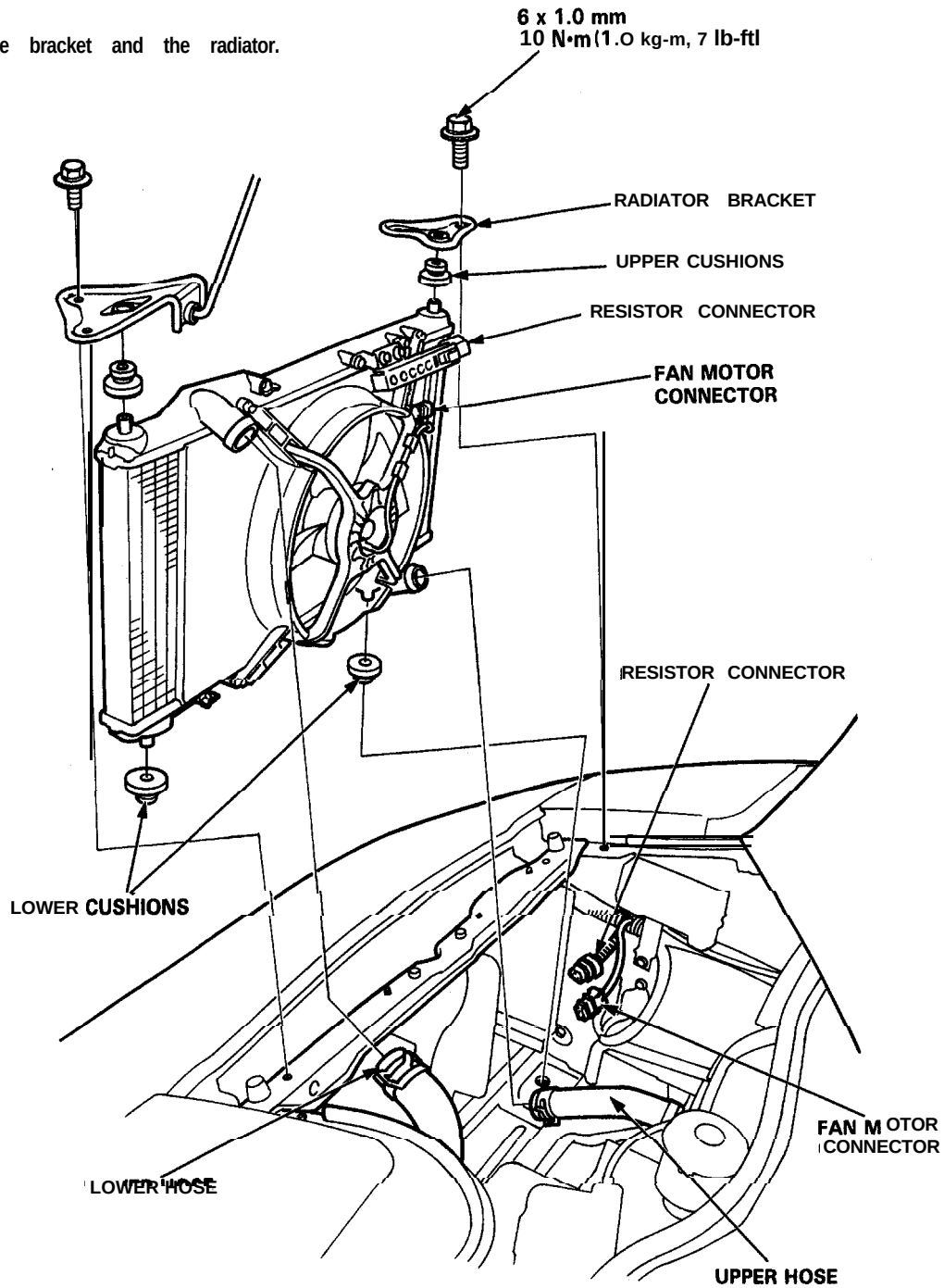
Removal

1. Remove the spare tire.
2. Drain the radiator (page 10-5 thru 10-7).
3. Disconnect the fan motor connector and the resistor connector.
4. Remove the upper and lower hoses from the radiator.
5. Remove the bracket and the radiator.

Install the radiator in the reverse order of removal:

NOTE:

- Set the upper and lower cushions securely.
- Fill the radiator and bleed the air (page 10-5 thru 10-7).





- Refilling and Bleeding

⚠ WARNING Removing the expansion tank 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 expansion tank cap.

CAUTION: When pouring coolant, be sure to shut the relay box lid and not let coolant spill on the electrical parts or the paint. If any coolant spills, rinse it off immediately.

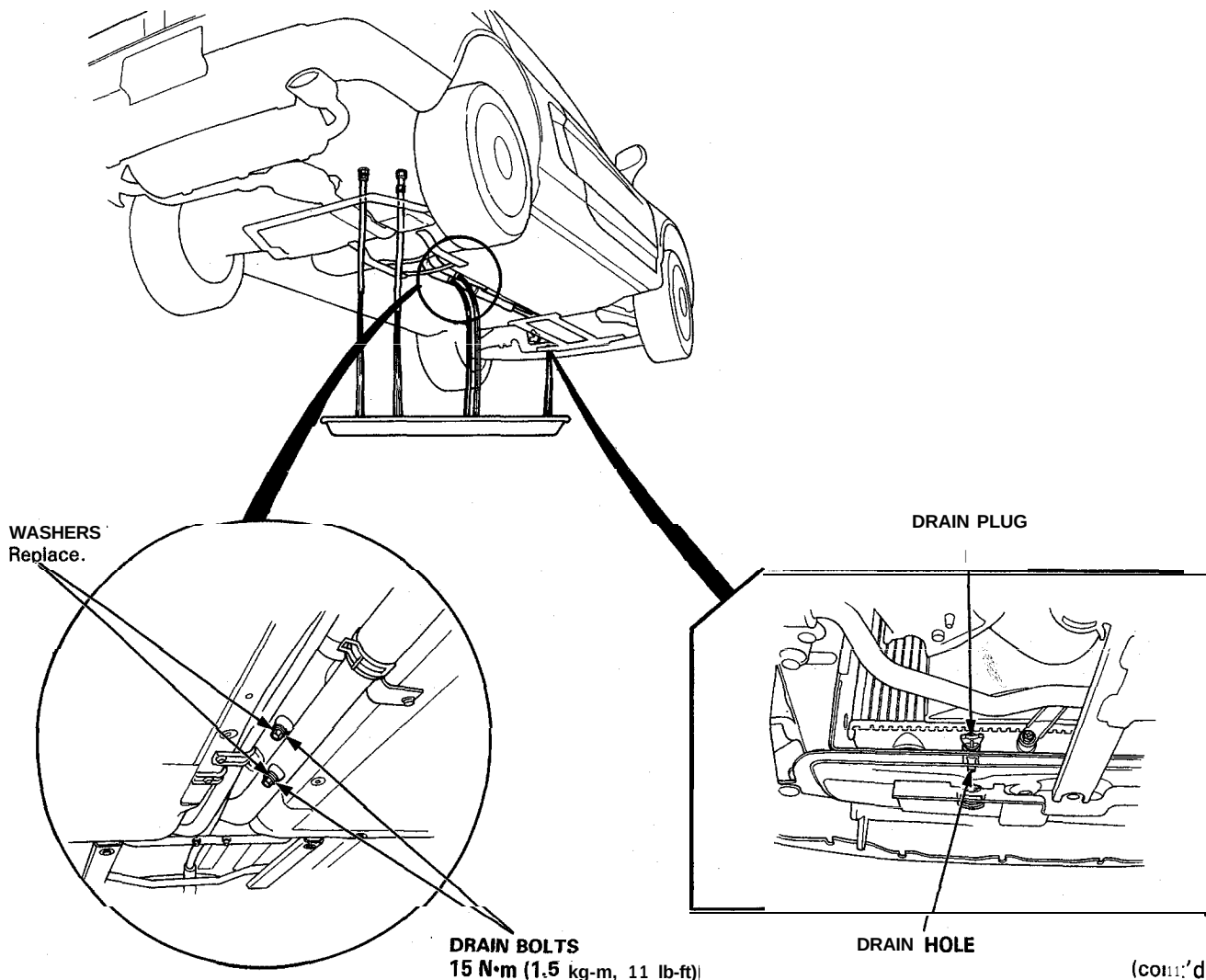
NOTE:

- Perform this when the engine is cool.
- Before replacing the coolant, turn the ignition ON, slowly tune the climate control temperature knob to 90° and turn off the ignition. This will allow the coolant in the heater to drain out with the rest of the system.

1. Open the hood, the rear hatch and the engine cover.
2. Remove the cover protecting the water pipes and shift cables on the underside of the car.
3. Before removing the expansion tank cap, first loosen the cap to lower pressure.

CAUTION: Do not remove the expansion tank cap when engine is hot. The coolant is under pressure and may blow out and scald you. Open the cap slowly when the engine is cool.

4. Loosen the drain plug from the bottom of the radiator and drain the coolant.
5. Remove the two drain bolts from the water pipes and drain the coolant.



Radiator

Refilling and Bleeding (cont'd)

6. Install rubber hoses to drain bolts located at the front and rear of the engine under the cylinder bank and loosen the drain bolts to drain the coolant.
 - Bleeding can be done more quickly if all the bleed bolts, plug and cap are opened. When opening them, make sure the coolant level in the expansion tank has come down completely so that the coolant will not pour out of the bleed bolts, plug and cap.
7. When the coolant stops draining, tighten the radiator drain plug, water pipe drain bolts and engine drain bolts.
 - Be sure to replace the water pipe drain bolt washers with new ones.

8. Open all four bleeders.

- 1) Loosen the radiator bleed plug.
- 2) Remove the heater pipe bleed cap.
- 3) Loosen the water pipe bleed bolt.
- 4) Loosen the engine bleed bolt on the thermo cover.

9. Mix the recommended anti-freeze/coolant with an equal amount of water in a clean container.

NOTE:

- Use only **HONDA-RECOMMENDED** anti-freeze/coolant.
- For best corrosion protection, the coolant concentrations must be maintained year-round at 50% **MINIMUM**. Coolant concentrations less than 50% may not provide sufficient protection against corrosion or freezing.
- Coolant concentrations greater than 60% will impair cooling efficiency and are not recommended.

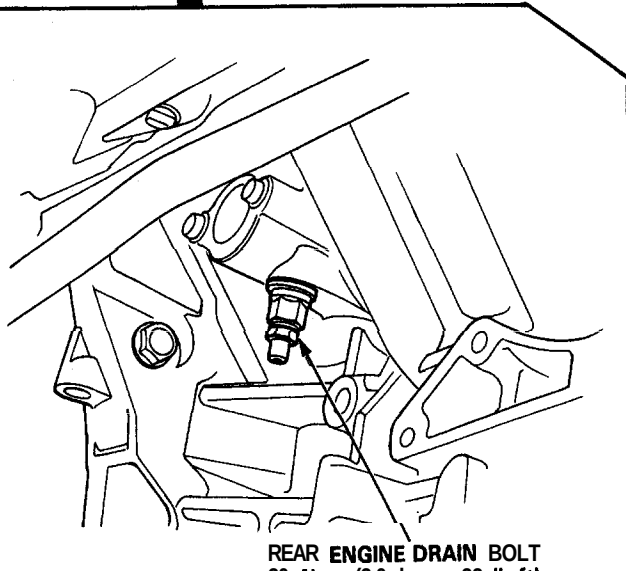
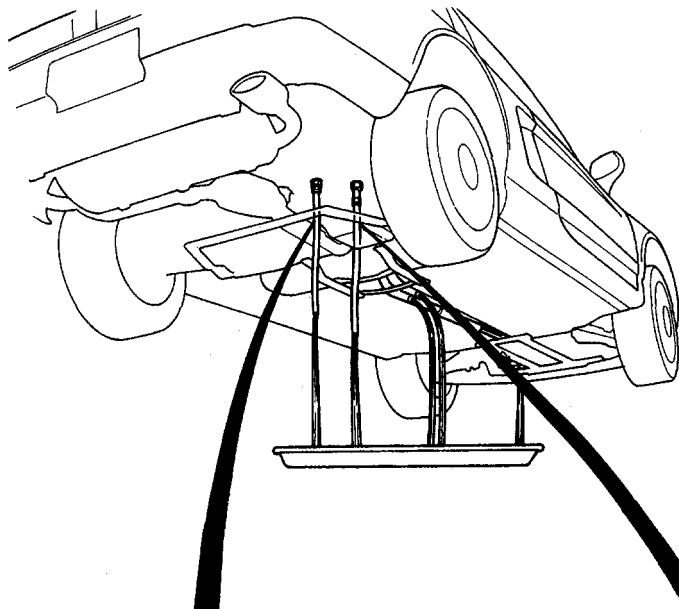
CAUTION:

- Do not mix different brands of anti-freeze/coolant.
- Do not use additional rust inhibitors or anti-rust products: they may not be compatible with the recommended coolant.

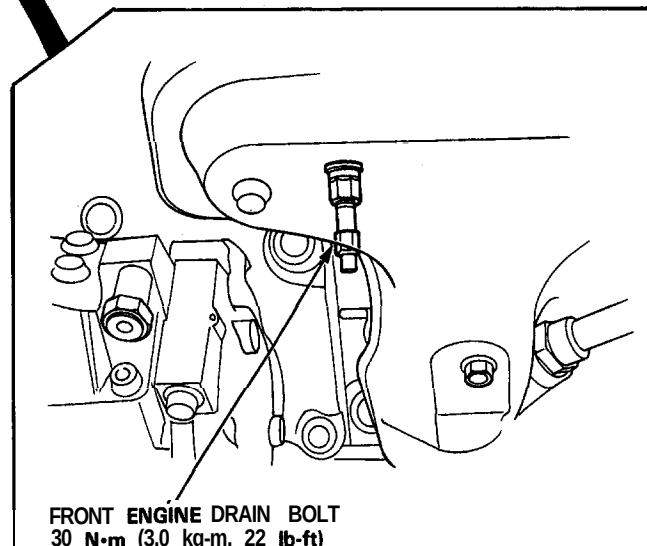
Radiator Coolant Refill Capacity: Including expansion tank 2.1 ℓ (2.2 US qt, 1.8 Imp qt)

Manual: 12.0 ℓ (12.7 US qt, 10.6 Imp qt)

Automatic: 12.0 ℓ (12.7 US qt, 10.6 Imp qt)



REAR ENGINE DRAIN BOLT
30 N·m (3.0 kg-m, 22 lb-ft)

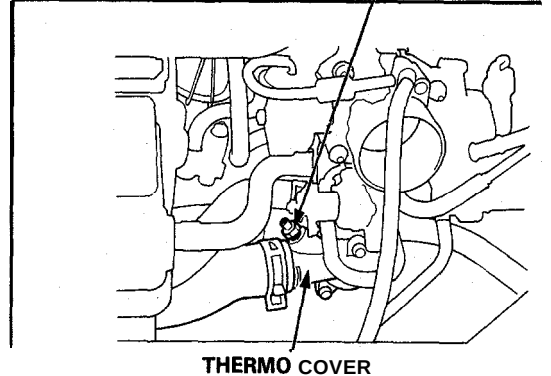
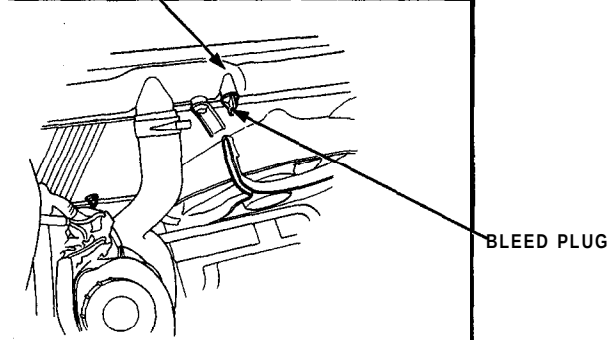
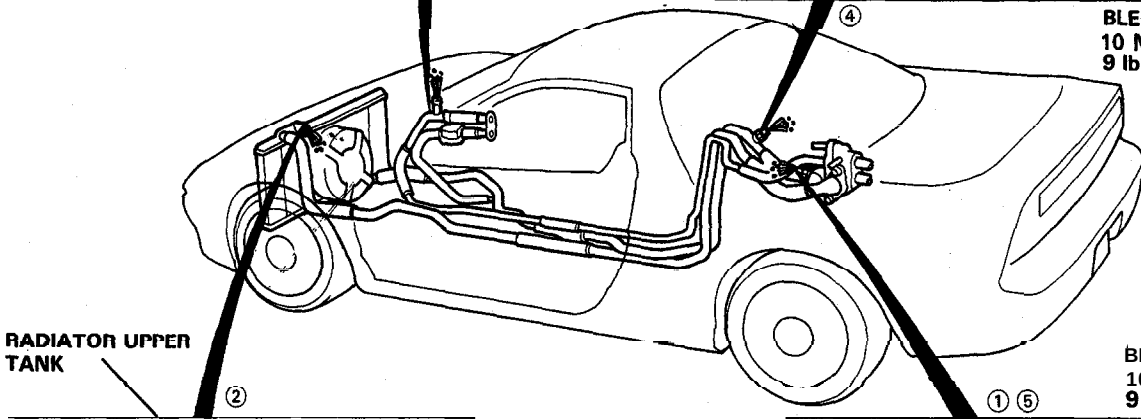
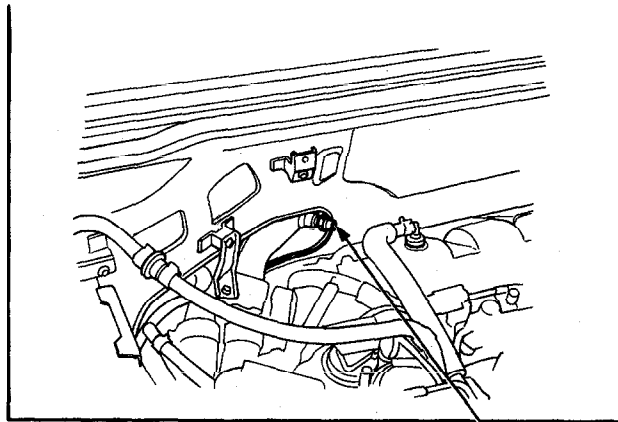
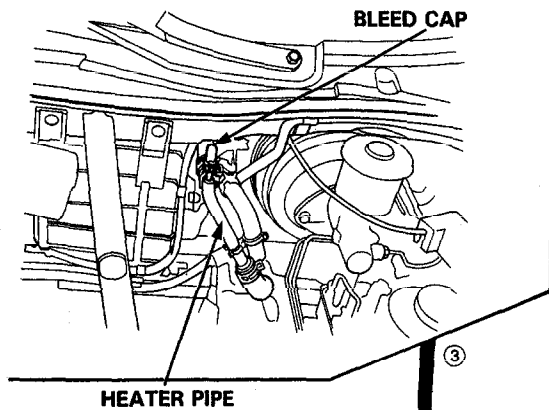


FRONT ENGINE DRAIN BOLT
30 N·m (3.0 kg-m, 22 lb-ft)



10. Fill the expansion tank with coolant.
Tighten the bleeders in sequence: thermo cover bleed bolt, radiator bleed plug, heater pipe bleed cap and water pipe bleed bolt as coolant starts to run out in a steady stream without bubbles.
11. After tightening all the bleeding bolts, plug and cap, fill the expansion tank with coolant up to MAX line.
12. Reloosen the thermo cover bleed bolt to remove air again.
13. When bleeding is completed, retighten the thermo cover bleed bolt and fill the expansion tank up to 0.5 l (0.53 US qt, 0.44 Imp qt) or 30 mm (1.2 in) over the MAX line.

14. Install the expansion tank cap and turn it 60 degrees (where the first lock tab of filler neck is engaged).
15. Start the engine and let it run until warmed up (until the thermostat opens and the radiator cooling fan runs).
16. Turn off the engine. Check the expansion tank and, if needed, add coolant to bring it up to the MAX line.
17. Tighten the expansion tank cap securely.
18. Reinstall the cover on the car's underside.



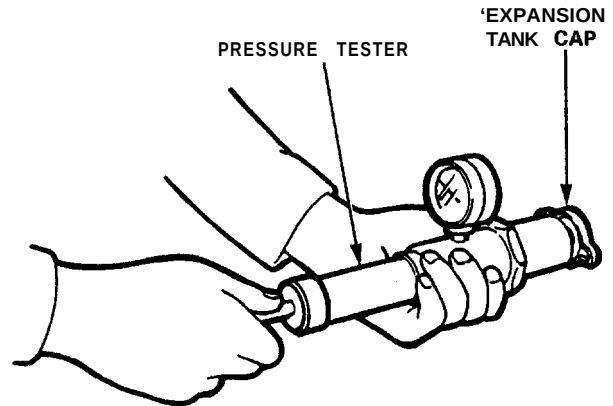
BLEED BOLT
10 N·m (1.0 kg-m,
9 lb-ft)

BLEED BOLT
10 N·m (1.0 kg-m,
9 lb-ft)

Expansion Tank

Cap Testing

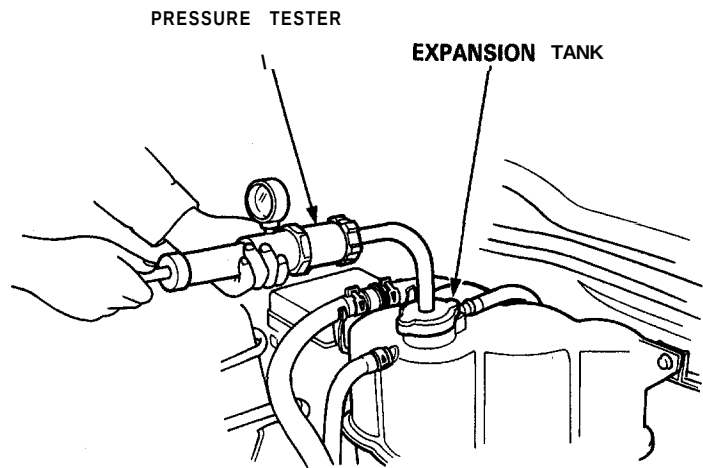
1. Remove the expansion tank cap, wet its seal with coolant, then install it on the pressure tester.
2. Apply a pressure of 93–123 kPa (0.95–1.25 kg/cm², 14–18 psi).
3. Check for a drop in pressure.



Pressure Testing

1. Wait until the engine is cool, then carefully remove the expansion tank cap and fill the expansion tank with coolant to the top of the filler neck.
2. Attach the pressure tester to the radiator and apply a pressure of 93–123 kPa (0.95–1.25 kg/cm², 14–18 psi).
3. Inspect for coolant leaks and a drop in pressure.
4. Remove the tester and reinstall the expansion tank cap.

NOTE: Check for engine oil in coolant and/or coolant in engine oil.

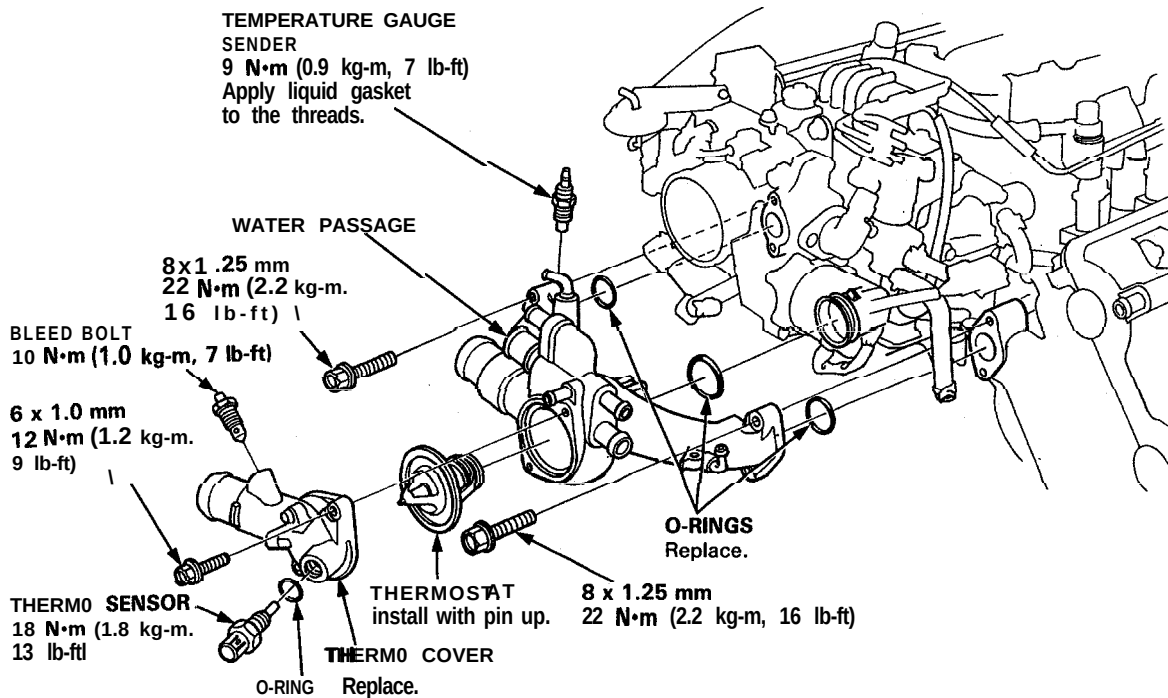




Thermostat

Replacement

NOTE: Use new gaskets and O-rings when reassembling.



Testing

Replace thermostat if it is open at room temperature.

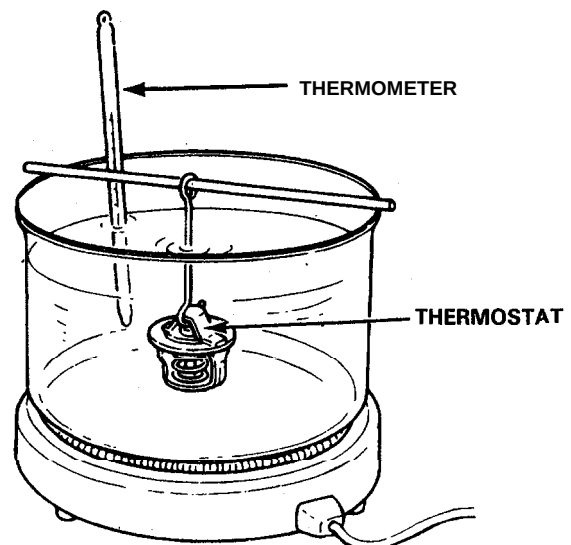
To test a closed thermostat:

1. Suspend the thermostat in a container of water as shown.
2. Heat the water and check the temperature with a thermometer. Check the temperature at which the thermostat first opens and at full lift.

CAUTION: Do not let thermometer touch bottom of hot container.

3. Measure lift height of thermostat when fully open.

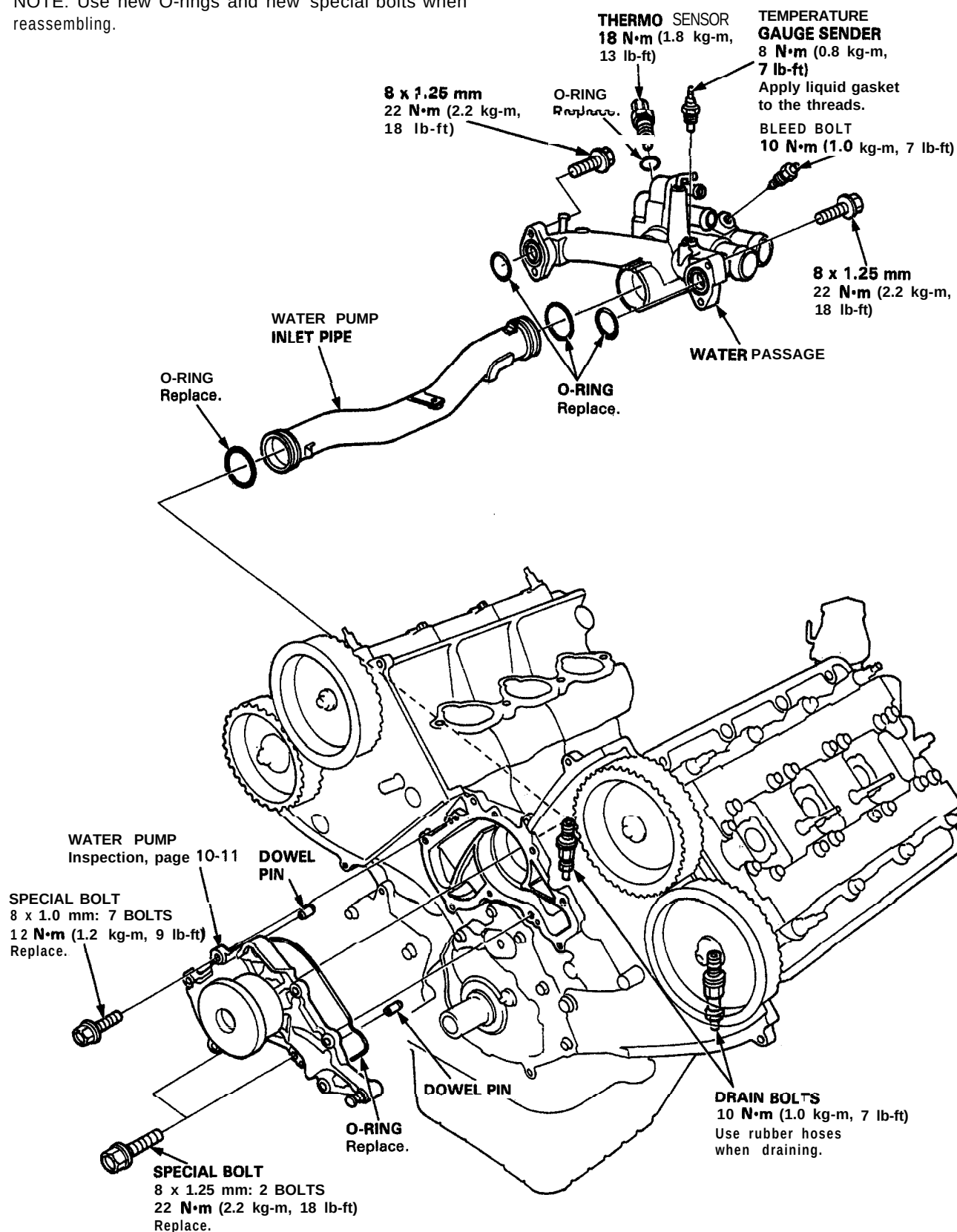
STANDARD THERMOSTAT
Lift height: above 10 mm (0.39 in)
Starts opening: 78°C ± 2 (172°F ± 3)
Fully open: 90°C (194°F)



Water Pump

Illustrated Index

NOTE: Use new O-rings and new special bolts when reassembling.

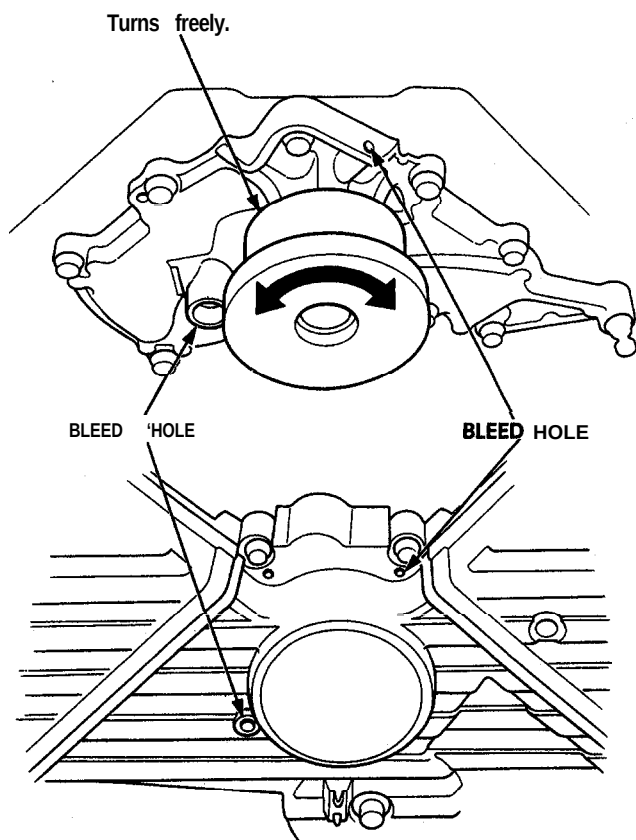




■ Inspection

1. Remove the timing belt (page 6-23).
2. Check that the water pump pulley turns freely.
3. Check for signs of seal leakage.

NOTE: Small amount of “weeping” from the bleed hole is normal.



COVERED:

■ Replacement

1. Remove the timing belt (page 6-23).
2. Unscrew the bolts, then remove the water pump.
3. Install the water pump in the reverse order of removal.

