

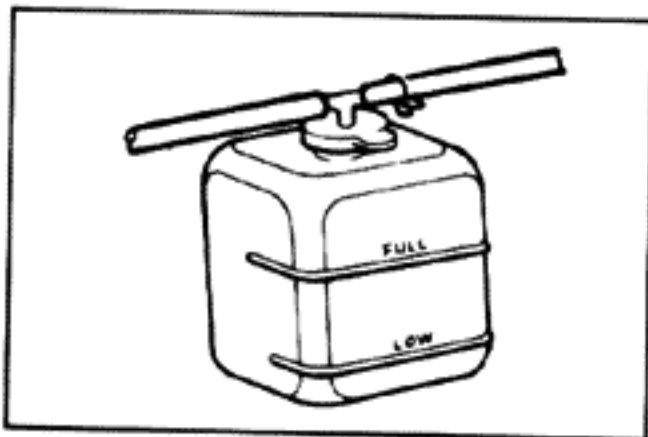
COOLING SYSTEM

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CO

TROUBLESHOOTING

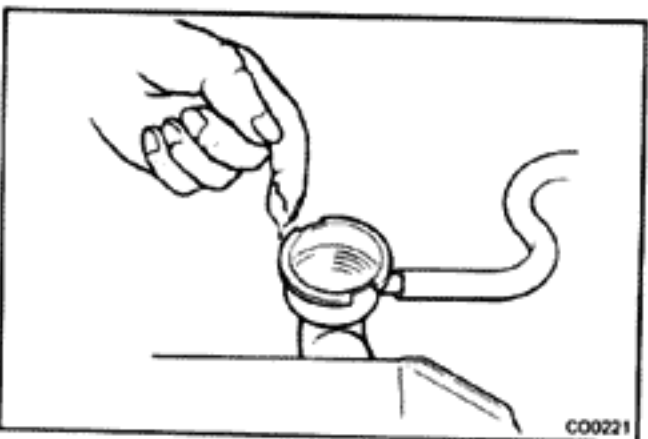
Problem	Possible cause	Remedy	Page
Engine overheats	Fan belts loose or missing	Adjust or replace belts	CH-4
	Dirt, leaves or insects on radiator or condenser	Clean radiator or condenser	
	Hoses, water pump, thermostat housing, radiator, heater, core plugs or head gasket leakage	Repair as necessary	
	Thermostat faulty	Check thermostat	CO-6
	Ignition timing retarded	Set timing	IG-10
	Fluid coupling faulty	Replace fluid coupling	CO-3
	Radiator hose plugged or rotted	Replace hose	
	Water pump faulty	Replace water pump	CO-3
	Radiator plugged or cap faulty	Check radiator	CO-7
	Cylinder head or block cracked or plugged	Repair as necessary	



CHECK AND REPLACE ENGINE COOLANT

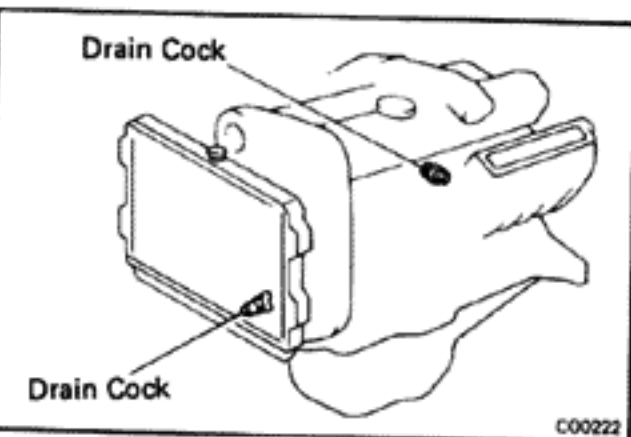
1. CHECK COOLANT LEVEL

The coolant level should be between the LOW and FULL lines. If low check for leakage and add coolant up to the FULL line.



2. CHECK COOLANT QUALITY

There should not be any excessive deposits of rust or scales around the radiator cap or radiator filler hole, and the coolant should also be free from oil. Replace the coolant if excessively dirty.

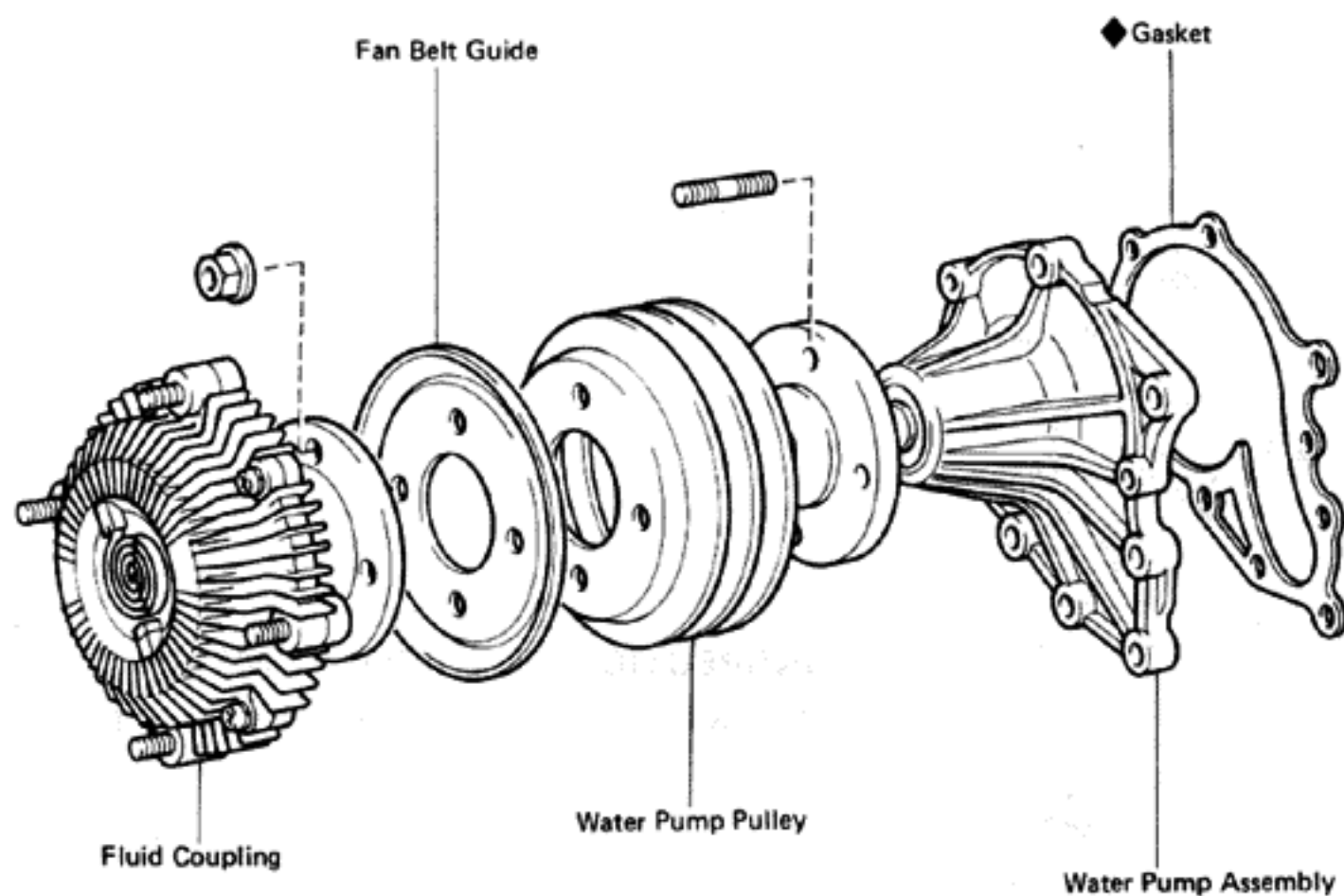


3. REPLACE ENGINE COOLANT

- Drain the coolant from radiator and engine drain cocks. (Engine drain is at right rear of engine block.)
- Close the drain cocks.
- Fill system with coolant.

Use a good brand of ethylene-glycol base coolant, mixed according to the maker's directions.

WATER PUMP COMPONENTS

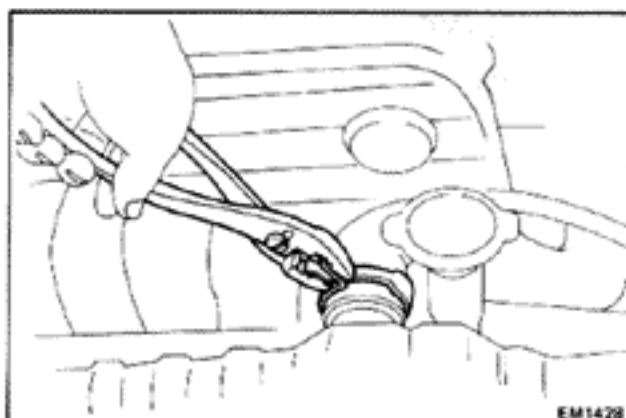


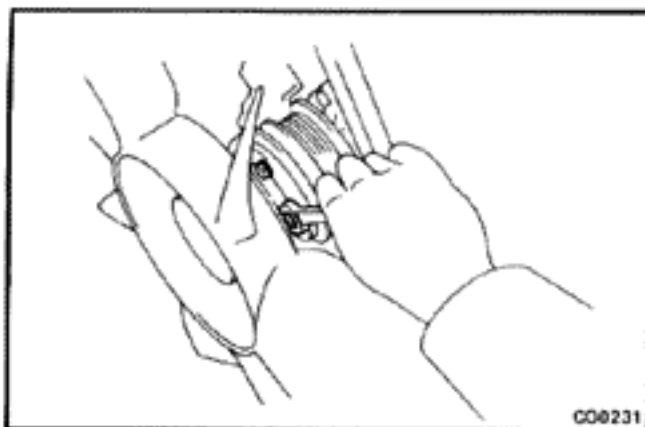
◆ Non-reusable part

CO0230

REMOVAL OF WATER PUMP

1. DRAIN COOLANT
2. LOOSEN FAN BELTS
 - (a) Loosen the belt adjusting bolt, and nut of the PS pump and alternator.
 - (b) Remove the alternator pivot nut and adjusting bar.
3. REMOVE AIR CLEANER CASE
4. DISCONNECT UPPER RADIATOR HOSE
5. REMOVE FOUR FAN SHROUD BOLTS

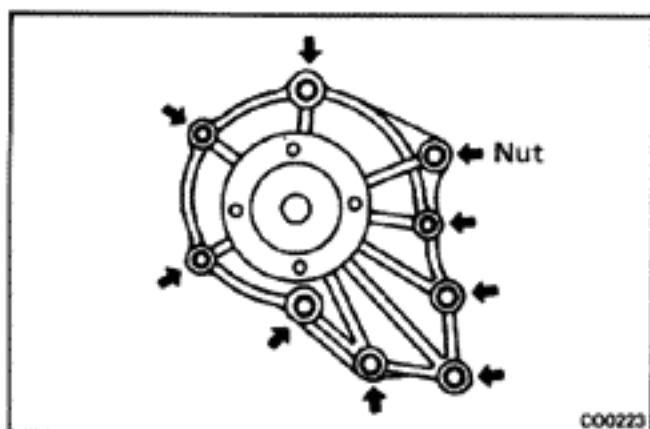




CO0231

6. REMOVE FLUID COUPLING, FAN, FAN BELT GUIDE AND WATER PUMP PULLEY

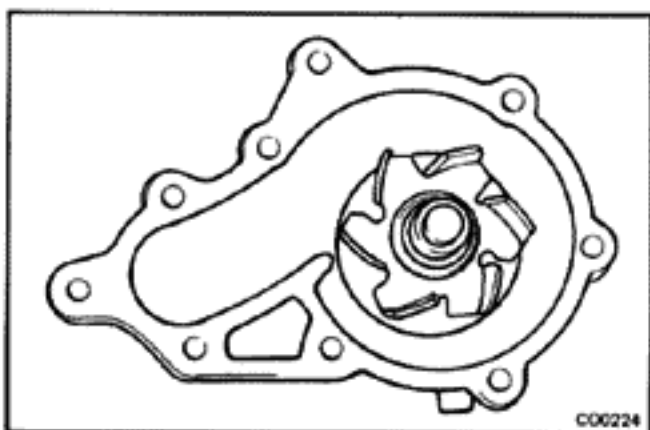
- (a) Remove the four nuts from the fluid coupling flange.
- (b) Pull out the fluid coupling with the fan shroud.
- (c) Remove the fan belt guide, water pump pulley and fan belts.
- (d) Remove the fan from the fluid coupling.



CO0223

7. REMOVE WATER PUMP

Remove the eight bolts and one nut, and remove the water pump and gasket.

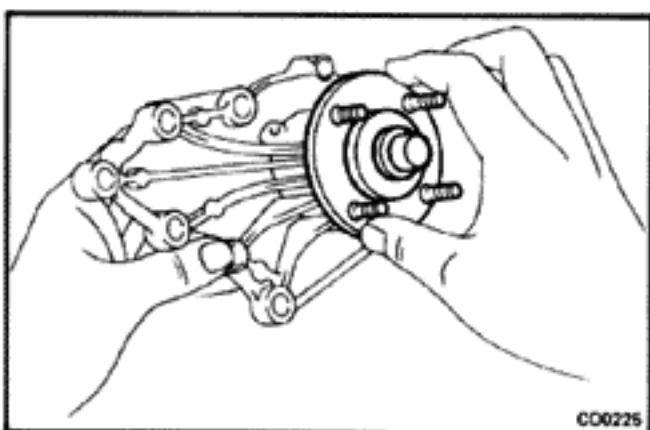


CO0224

INSPECTION OF WATER PUMP

1. INSPECT WATER PUMP BODY AND TIMING BELT CASE

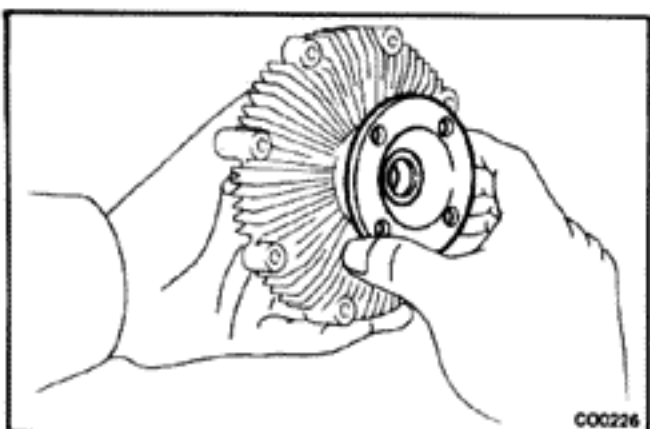
Check the water pump body and timing belt case for cracks and damaged gasket surfaces. Replace if necessary.



CO0225

2. INSPECT WATER PUMP BEARING

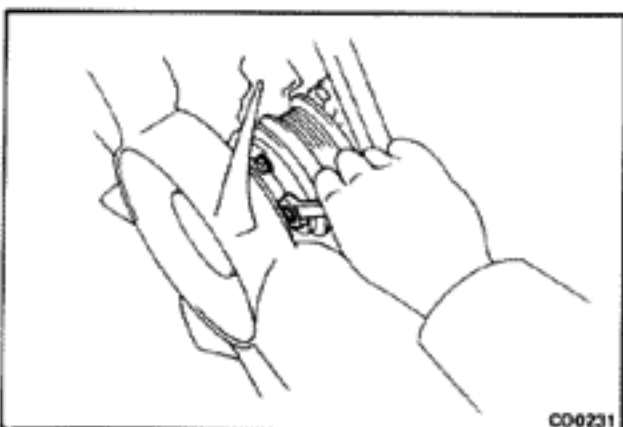
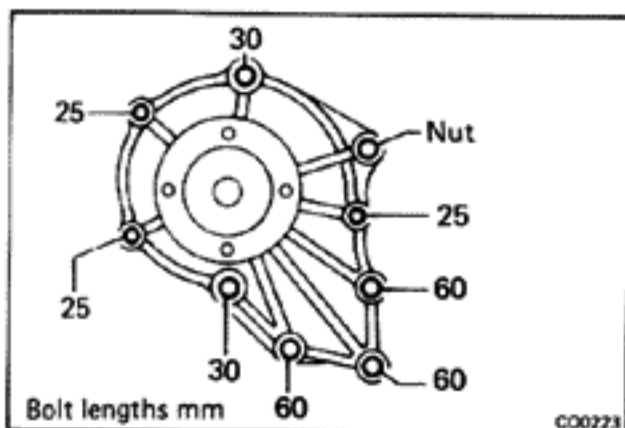
Check that the water pump bearing operation is not rough or noisy.



CO0226

3. INSPECT FLUID COUPLING

Check the fluid coupling for damage and silicone oil leakage.



INSTALLATION OF WATER PUMP

(See page CO-3)

1. INSTALL WATER PUMP OVER NEW GASKET

Install the water pump over a new gasket with eight bolts and one nut.

2. INSTALL FAN BELTS, FAN BELT GUIDE AND PULLEY

- (a) Check the fan belts for cracks or damage.
- (b) Place fan belts on the pulley, and position the pulley and fan belt guide on the bolts of the water pump.

3. INSTALL FAN ON FLUID COUPLING

4. INSTALL FLUID COUPLING AND FAN SHROUD

- (a) Install the fan shroud together with the fluid coupling to the engine compartment.
- (b) Install the fluid coupling on the pulley with four nuts.
- (c) Install the four fan shroud bolts.

5. INSTALL ALTERNATOR ADJUSTING BAR

6. ADJUST FAN BELT TENSION

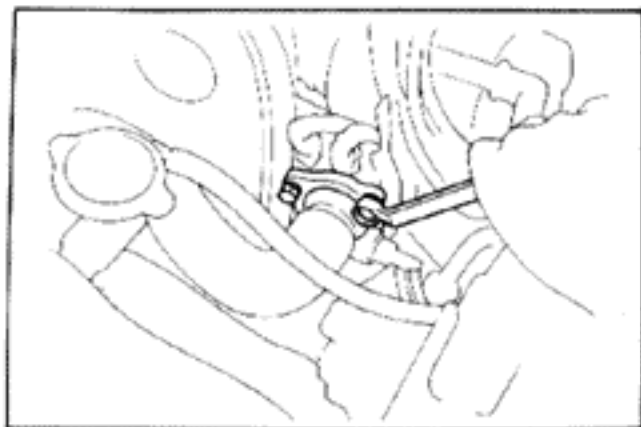
(See page MA-4)

7. CONNECT UPPER RADIATOR HOSE

8. INSTALL AIR CLEANER CASE

9. FILL WITH COOLANT

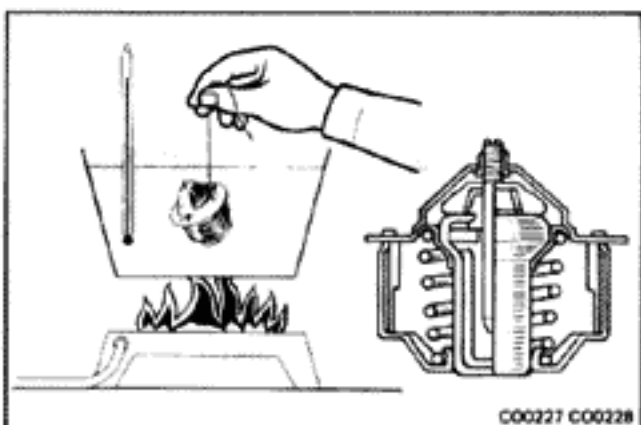
10. START ENGINE AND CHECK FOR LEAKS



THERMOSTAT

REMOVAL OF THERMOSTAT

1. DRAIN COOLANT
2. REMOVE WATER OUTLET
Remove the three bolts and the water outlet from the water outlet housing.
3. REMOVE THERMOSTAT AND GASKET



INSPECTION OF THERMOSTAT

NOTE: The thermostat is numbered according to the valve opening temperature.

- (a) Immerse the thermostat in water and heat the water gradually.

- (b) Check the valve opening temperature and valve lift. If the valve opening temperature and valve lift are not within the following specifications, replace the thermostat.

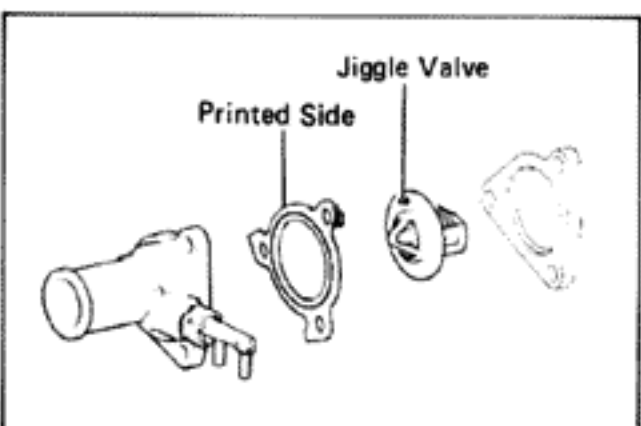
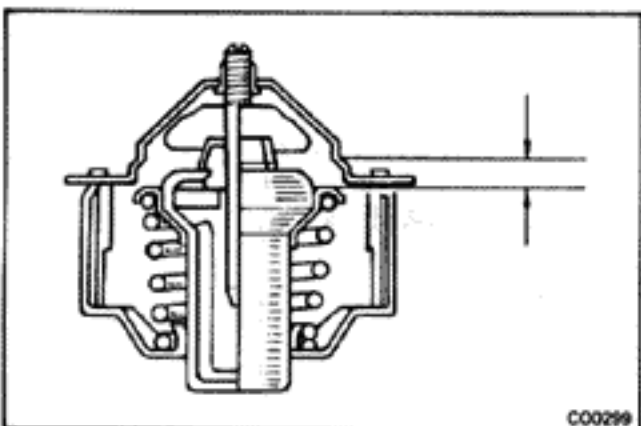
Valve opening temperature:

86 – 90°C (187 – 194°F)

Valve lift:

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

- (c) Check that valve spring is tight when the thermostat is fully closed. Replace if necessary.



INSTALLATION OF THERMOSTAT

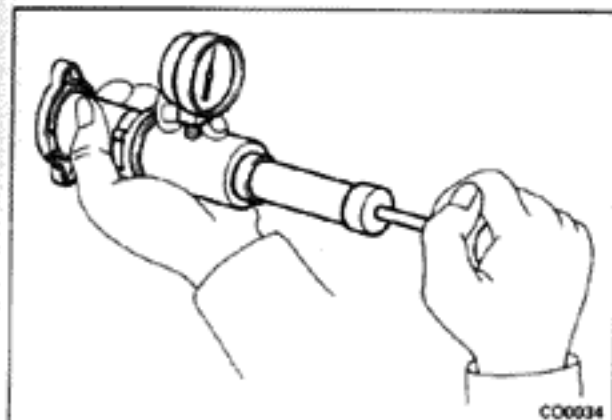
1. PLACE THERMOSTAT IN WATER OUTLET HOUSING
Install the thermostat with the jiggle valve upward.
2. INSTALL WATER OUTLET
Install the water outlet, facing the printed side of gasket forward.
3. FILL WITH COOLANT
4. START ENGINE AND CHECK FOR LEAKS

RADIATOR

CLEANING OF RADIATOR

Using water or steam cleaner, remove mud and dirt from the radiator core.

CAUTION: If using high-pressure type cleaner, be careful not to deform the fins of the radiator core. Keep a distance more than 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 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 cap goes below 0.6 kg/cm² (8.5 psi, 59 kPa).

If either check is not within limits, replace cap.

2. CHECK COOLING SYSTEM FOR LEAKS

(a) Fill the radiator with coolant and attach a pressure tester.

(b) Warm up the engine.

(c) Pump it to 1.2 kg/cm² (17.1 psi, 118 kPa), check that pressure does not drop.

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

