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# COOLING

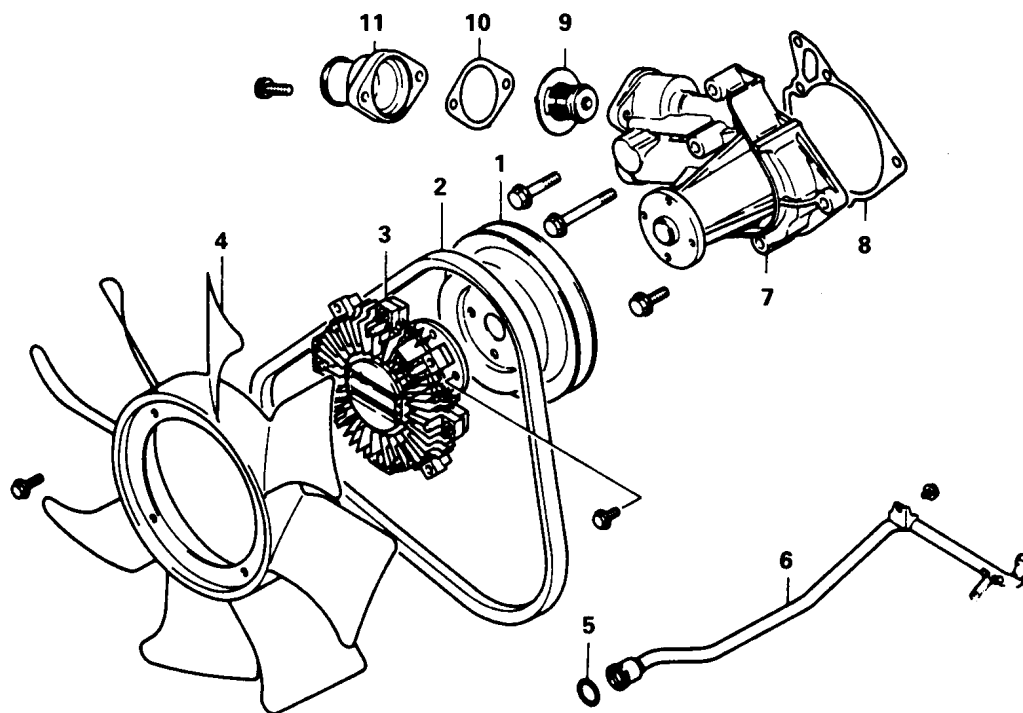
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**1. SPECIFICATIONS**

Description	Specifications	Remarks
Fan belt		
Type	Low edge multi-ply type B	
Length	1 095 mm	
Cooling fan O.D. x number	410 mm x 8	
Fan clutch type	Thermostatic type	
Water pump type	Centrifugal type with impeller	
Thermostat		
Type	Wax type	
Control system	Inlet control, bypass control	
Valve opening temperature	82°C	
Water temperature gauge unit		
Type	Thermistor, 2 elements	
Element	Water temperature gauge, glow plug control	
Coolant capacity	3.9 lit. in engine only	

2. COMPONENTS

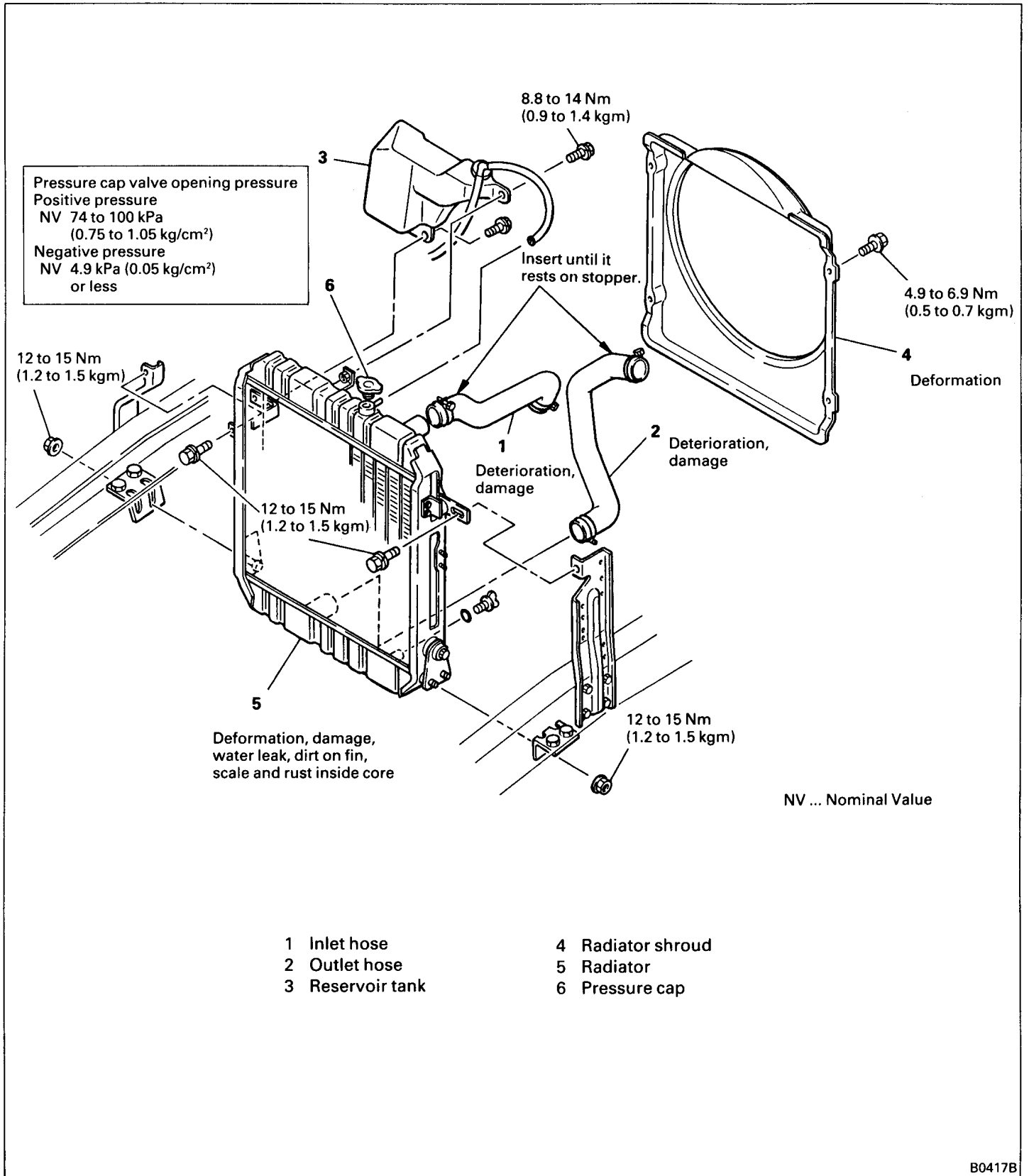


- |                     |                        |
|---------------------|------------------------|
| 1 Water pump pulley | 7 Water pump           |
| 2 Fan belt          | 8 Water pump gasket    |
| 3 Fan clutch        | 9 Thermostat           |
| 4 Cooling fan       | 10 Gasket              |
| 5 O-ring            | 11 Water inlet fitting |
| 6 Water pipe        |                        |

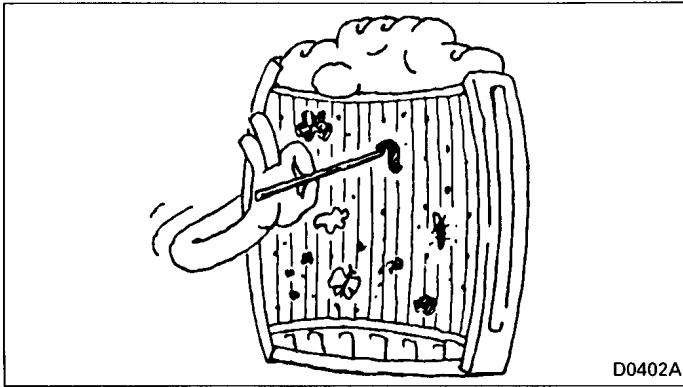
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### 3. RADIATOR

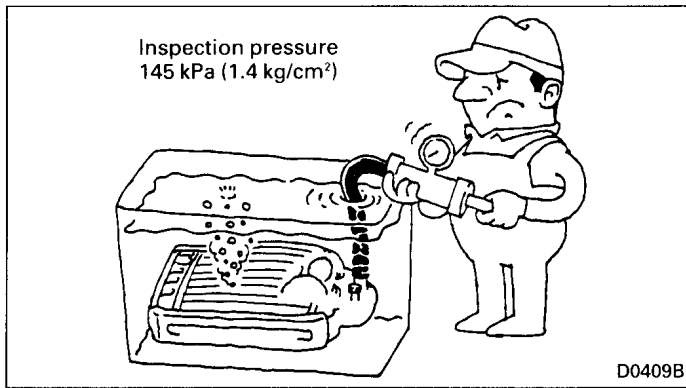
#### 3.1 REMOVAL, INSTALLATION, DISASSEMBLY AND REASSEMBLY



**3.2 INSPECTION**

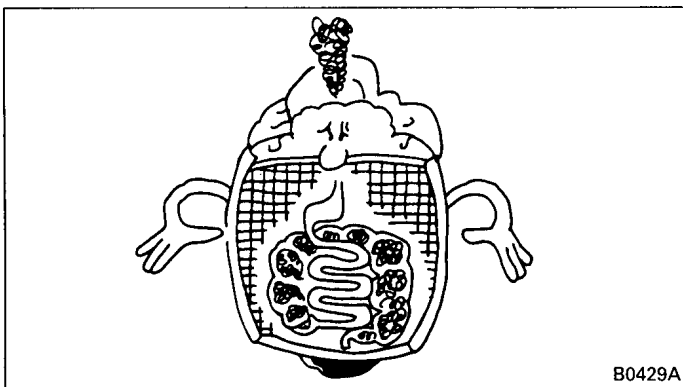


Using a copper wire or similar device, remove dirt, mud, and bugs from the front of radiator core with care to prevent damage to tubings.



Connect a hose to one of the radiator ports, cap the other port, and immerse the radiator into water. Using a radiator cap tester, force the compressed air under the specified inspection pressure from the hose end to check for leaks. If there is a leak, resolder the point of leakage or replace the radiator.

**3.3 CLEANING OF COOLING SYSTEM**

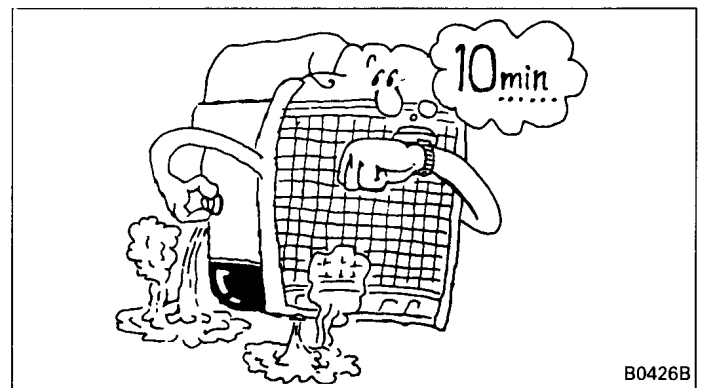


The radiator, if used for a long period, accumulates rust, scale, and mud inside, resulting in overheating of the engine. Clean the cooling system using the following procedures.

**NOTE:**

- 1. Use a cleaning solution if the radiator is seriously obstructed or coolant is severely contaminated.**
- 2. When cleaning or flushing the system, keep the coolant temperature at around 90°C, or, the thermostat closes with the coolant temperature below the thermostat valve opening temperature, preventing normal circulation of coolant.**

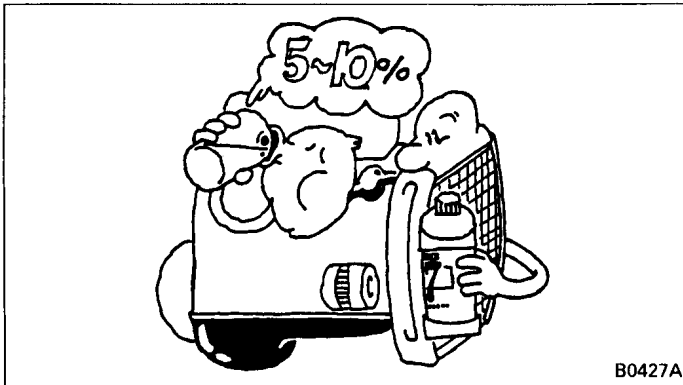
1. Washing with Water (Every two years at coolant change or before and after the use of antifreeze)



Discharge coolant from the radiator, crankcase, and reservoir tank.

After draining the system, fill it with tap water (preferably hot water) and, with the water temperature kept at around 90°C, run the engine at idle for about 10 minutes. Then, discharge water. Continue flushing until the drained water runs clear.

2. Washing with Cleaning Solution (Radipet-7)  
(When radiator clogging or coolant contamination are serious)

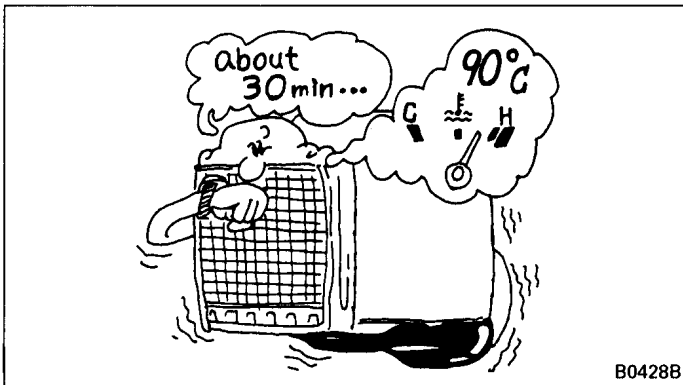


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Discharge coolant from the radiator, crankcase, and reservoir tank.

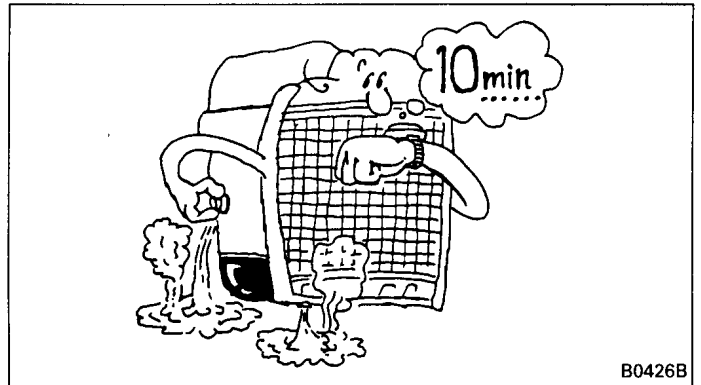
Ready a mixture of Genuine Fuso Radiator Cleaner (Radipet-7: 5 to 10%) and tap water.

Pour the specified amount of mixture into the radiator.



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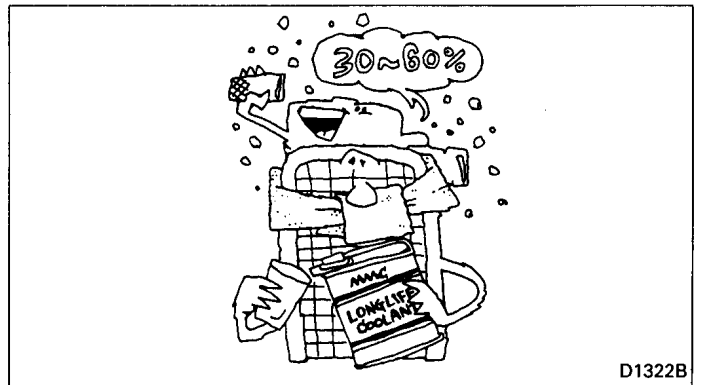
Run the engine to raise the solution temperature to around 90°C. Let the engine run at idle for another 30 minutes, then remove the solution.



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After discharging the solution, fill the system with tap water (preferably hot water) and, with the water temperature kept at around 90°C, run the engine at idle for about 10 minutes. Then, drain water. Continue flushing until the drained water runs clear.

3. Long Life Coolant



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Add 30 to 60% (to the total amount of coolant) of "Diaqueen Long Life Coolant" to give protection against freezeup of coolant and corrosion of the system.

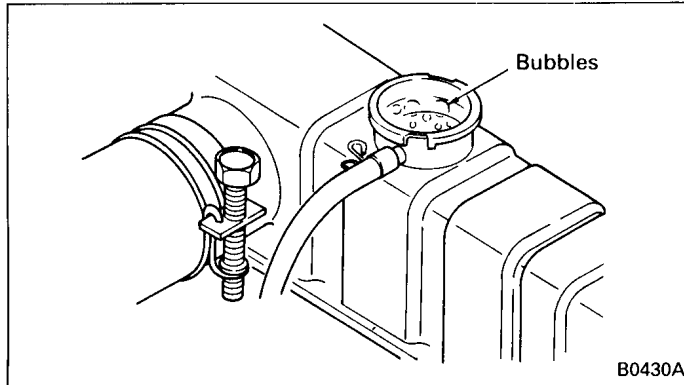
To ensure full antifreeze and antirust effects, change the coolant every two years.

For use of the Long Life Coolant, see Owner's Handbook.

### 3.4 GAS LEAK TEST

Air or exhaust gas leaked into the coolant prompts corrosion and rust formation. Perform the following check and, if defects are found, take remedial action.

#### 1. Inspection



Remove the pressure cap from the radiator, and run the engine to raise the coolant temperature up to around 90°C.

If bubbles continue forming in the coolant under the condition, it indicates that air or exhaust gas has leaked into the coolant.

#### 2. Causes

If air is trapped in coolant, check cylinder head bolts, water pump mounting bolts, and hose connections for looseness. Check also hoses for damage.

If the exhaust gas has leaked into coolant, check the cylinder head gasket for damage and the cylinder head for cracks.

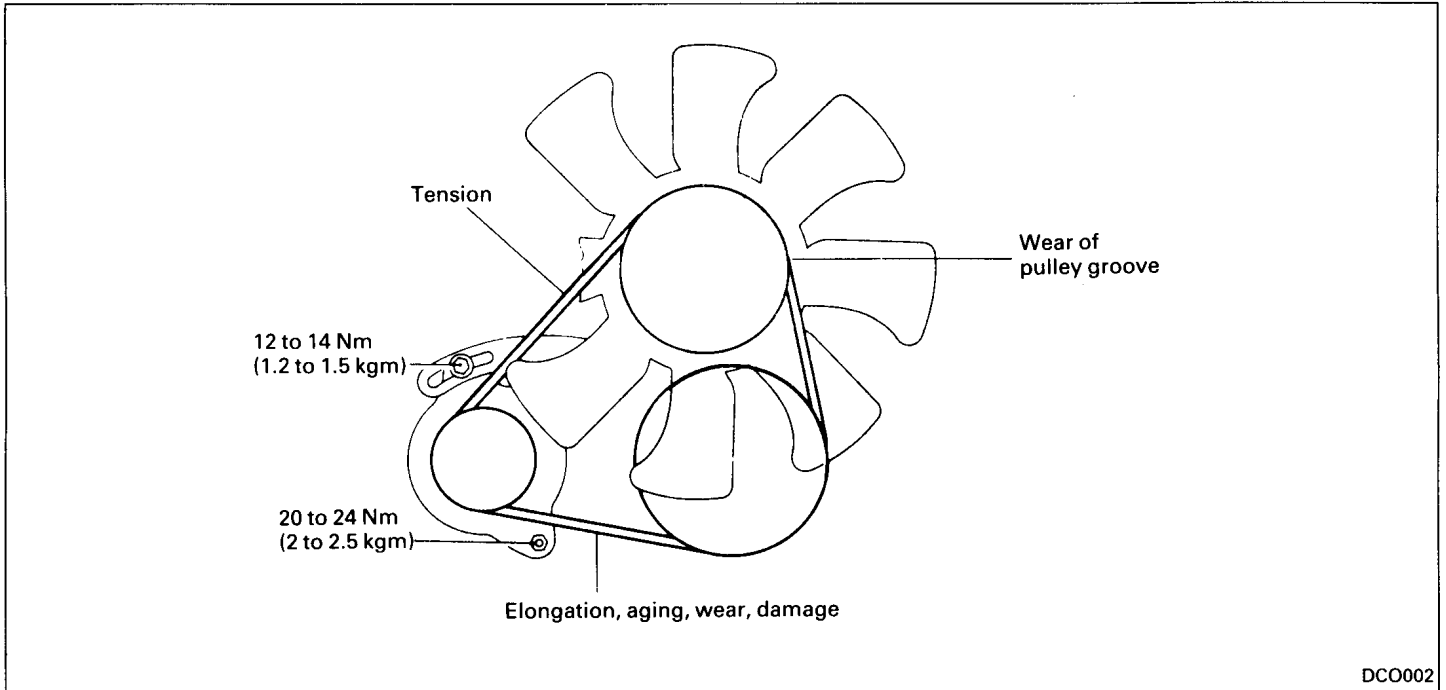
### 3.5 BLEEDING THE COOLING SYSTEM

1. With the pressure cap removed from the radiator, let the engine run at idle with coolant temperature of about 90°C to bleed the system completely. (In this case, place the heater lever in the maximum-temperature position to allow coolant to circulate through the heating system.)
2. After the system has been bled of air, add coolant to radiator and reservoir tank as required.

### 4. FAN BELT

#### 4.1 INSPECTION

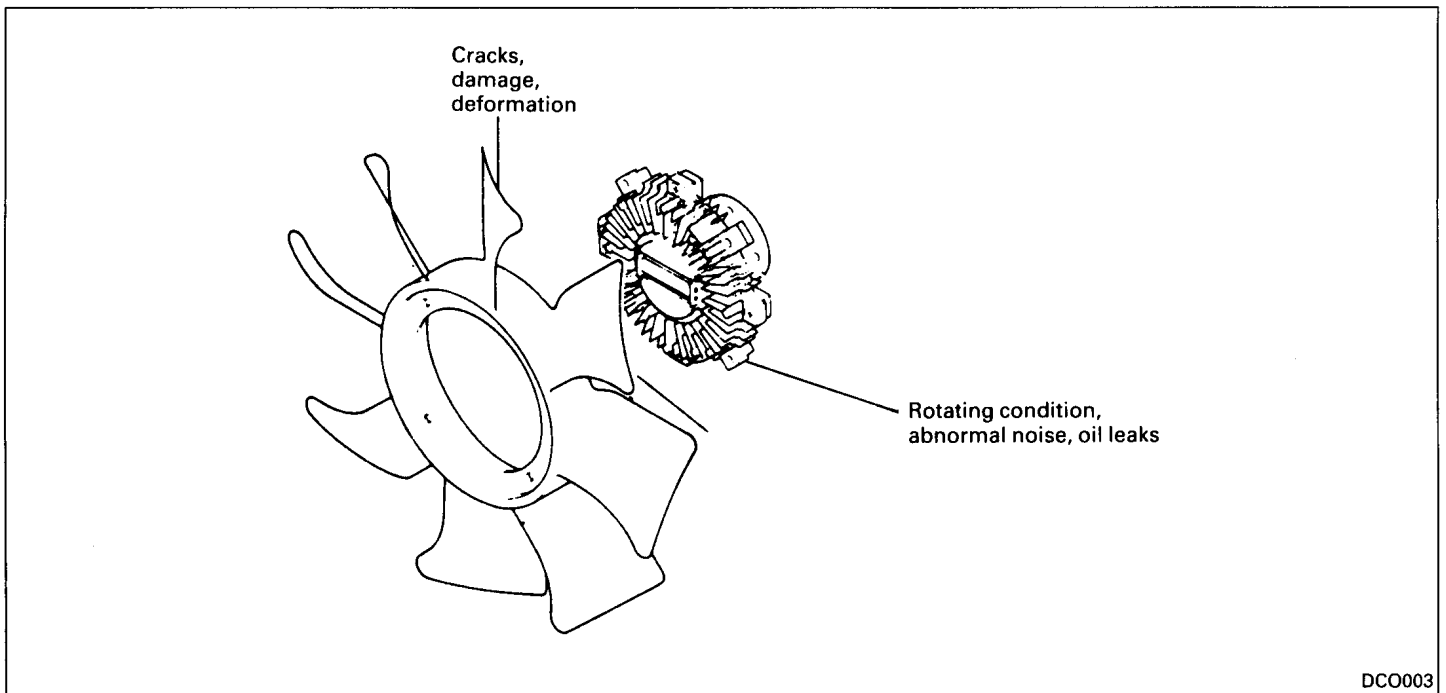
For fan belt tension, see "Group 00. MAINTENANCE".



### 5. FAN AND FAN CLUTCH

#### 5.1 INSPECTION

Check and replace if defective.

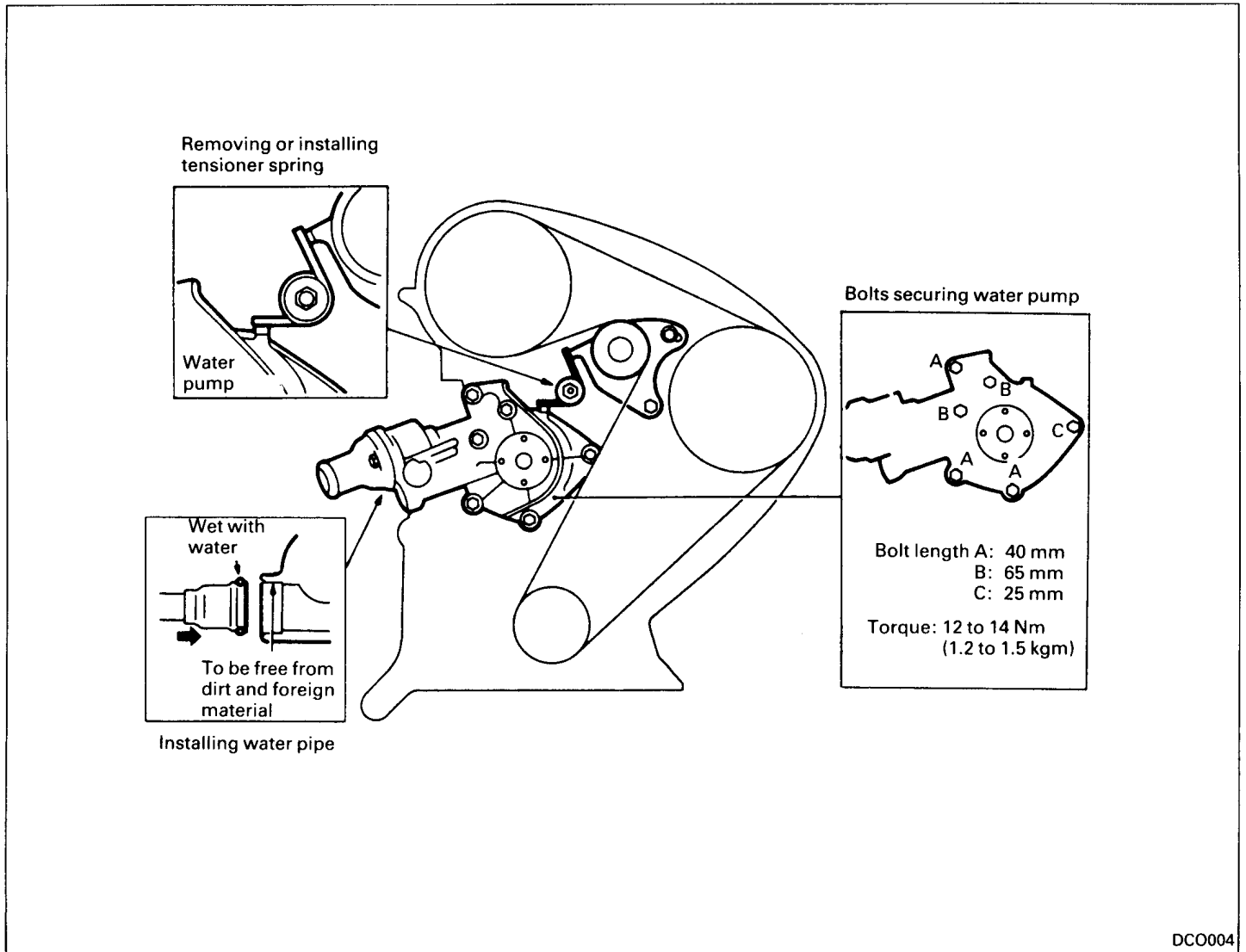




## 6. WATER PUMP

### 6.1 REMOVAL AND INSTALLATION

1. Remove (install) the water pump pulley, damper pulley and timing belt cover.
2. Pay attention to the following.



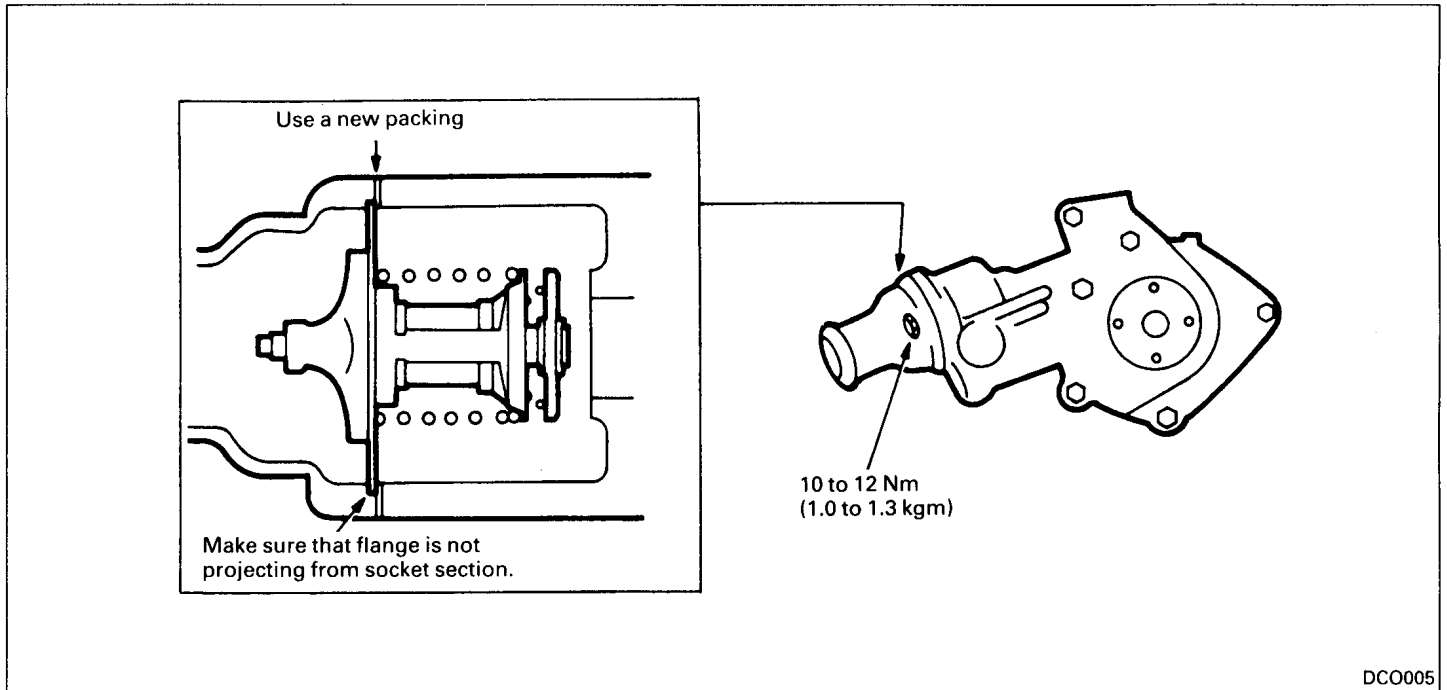
### 6.2 INSPECTION

Check for water leaks, rotating condition and cracks. If found defective, replace the water pump assembly.

## 7. THERMOSTAT

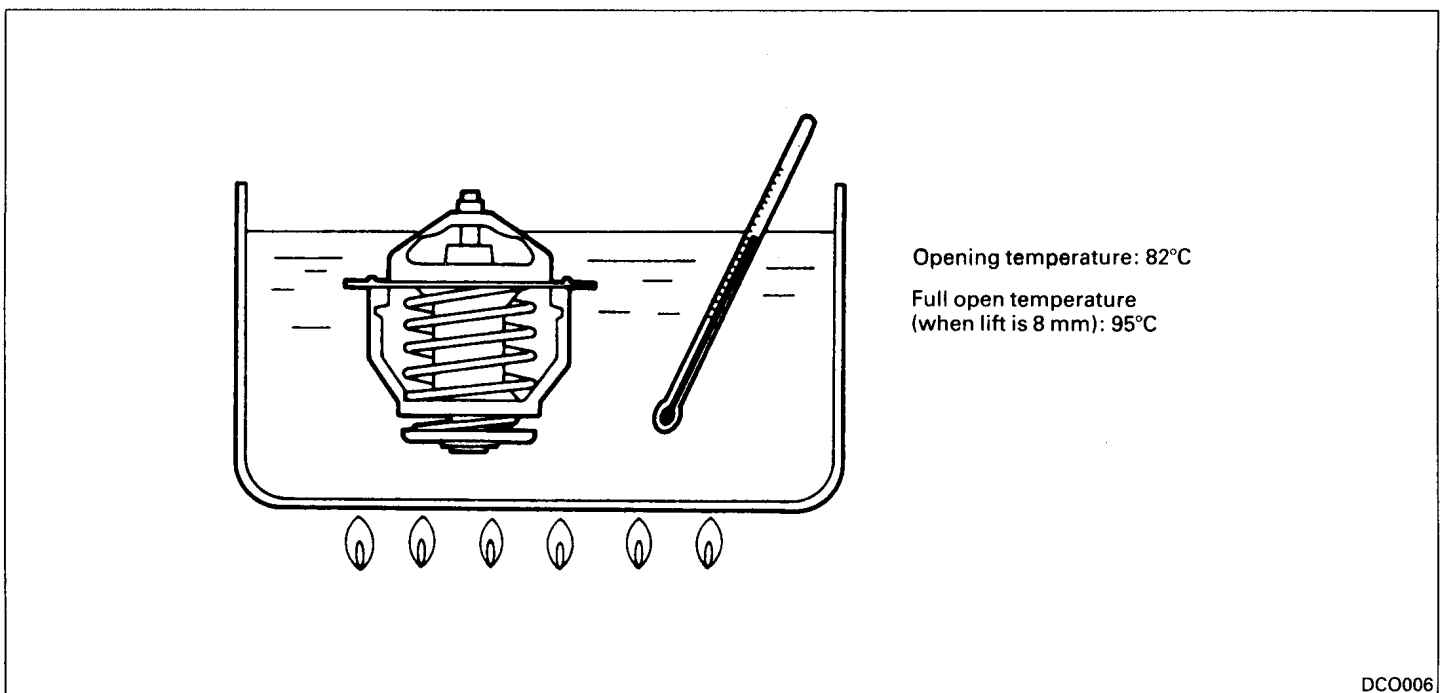
### 7.1 REMOVAL AND INSTALLATION

When installing the thermostat, pay attention to the following.



### 7.2 INSPECTION

Check and replace if defective.



**8. WATER TEMPERATURE GAUGE UNIT**

**8.1 INSPECTION**

Check and replace if defective.

	Temperature	Resistance
For water temperature gauge	80°C	69Ω
	100°C	36Ω
For glow plug control	20°C	3 250Ω
	80°C	300Ω

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**8.2 INSTALLATION**

When installing, pay attention to the following.

30 to 39 Nm  
(3 to 4 kgm)

NOTE:  
After installation, attach the connector securely.

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