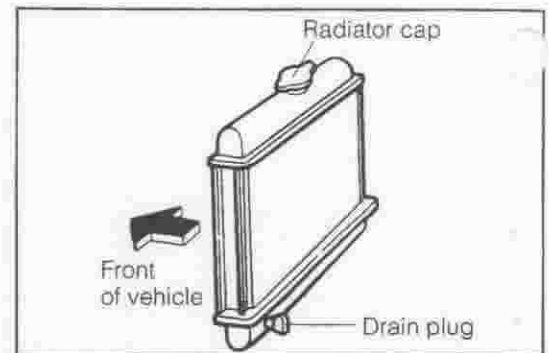


## 1. DRAIN ENGINE COOLANT

### M101 & M201 Series

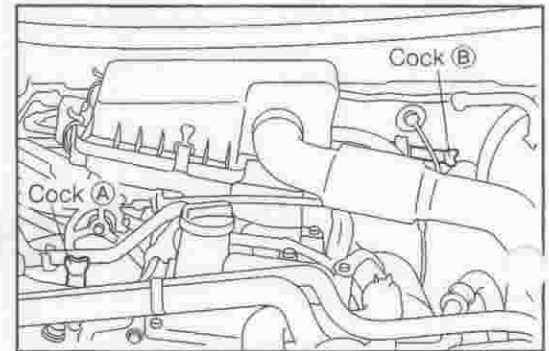
- (1) Remove the radiator cap.
- (2) Drain the coolant by loosening the radiator drain plug.



YCO00006-00003

### J102 Series

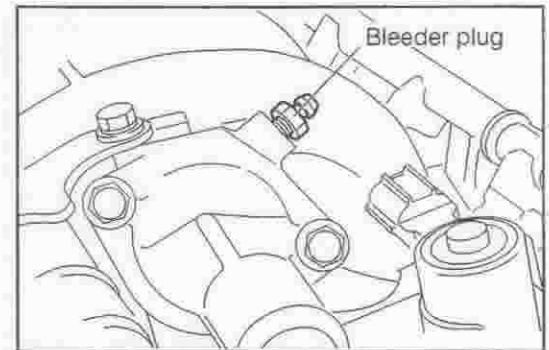
- (1) Remove the radiator cap.
- (2) Loosen and remove the cocks (white) of the air bleeding valves (A) and (B).
- (3) Drain the coolant by loosening the radiator drain plug.



YCO00007-00004

### S221 Series

- (1) Remove the radiator cap.
- (2) Drain the coolant by loosening the radiator drain plug.
- (3) Loosen the bleeder plug located at the top of the engine water outlet housing.



YCO00008-00005

## 2. FILL ENGINE COOLANT

### M101 & M201 Series

- (1) Tighten the drain plug of the radiator. Fill the radiator with water.

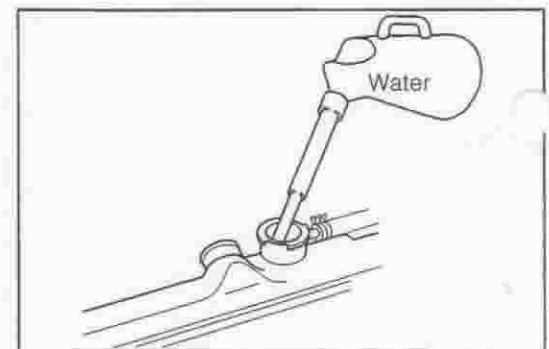
#### CAUTION:

- As regards water to be used as cooling water, use soft water which does not contain salts of minerals, calcium, magnesium, and so forth.

#### NOTE:

- The operations described in steps (1) through (5) are to completely expel any deteriorated coolant remaining in the cooling system.

- (2) Tighten the radiator cap.
- (3) Start the engine, and keep warming up the engine and then stop the engine and allow it to cool down.
- (4) Drain the water. (Refer to page CO-3.)
- (5) Repeat the steps (1) through (4) two to three times.



YCO00009-00006

YCO00010-00000

- (6) Tighten the drain plug of the radiator. Fill the radiator with coolant in accordance with the instructions of the manufacturer of the antifreeze solution.

**CAUTION:**

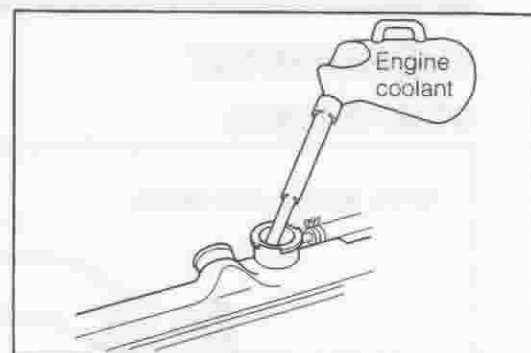
- Use a reliable brand of ethylene-glycol base antifreeze solution.

Coolant Capacity: 3.8 ℓ (W/heater, W/O reserve tank)

Reserve Tank Capacity:

Full: 0.45 ℓ

Low: 0.25 ℓ



YCC00011-00007

- (7) Tighten the radiator cap. Also add the coolant to the reserve tank.
- (8) Warm up the engine until the cooling fan operates twice, and then stop the engine.
- (9) After the engine has cooled down, fill the radiator with coolant and add the coolant up to the full level of the reserve tank.

YCC00012-00000

**J102 Series**

- (1) Tighten the drain plug of the radiator. Fill the radiator with water.

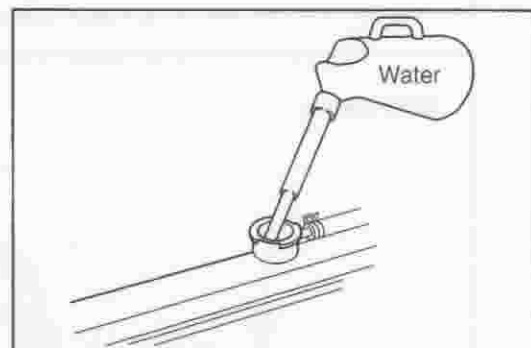
**CAUTION:**

- As regards water to be used as cooling water, use soft water which does not contain salts of minerals, calcium, magnesium, and so forth.

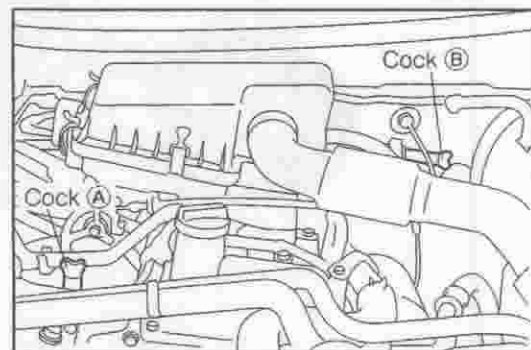
**NOTE:**

- The operations described in steps (1) through (7) are to completely expel any deteriorated coolant remaining in the cooling system.

- (2) Tighten the cock (A) when the water starts to overflow from the air bleeding valve (A).
- (3) Tighten the cock (B) when the water starts to overflow from the air bleeding valve (B).
- (4) Tighten the radiator cap when the water starts to overflow from the radiator.

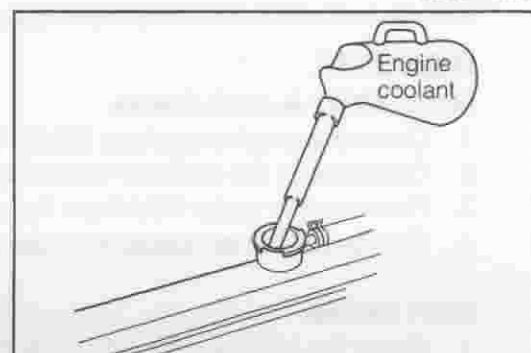


YCC00013-00008



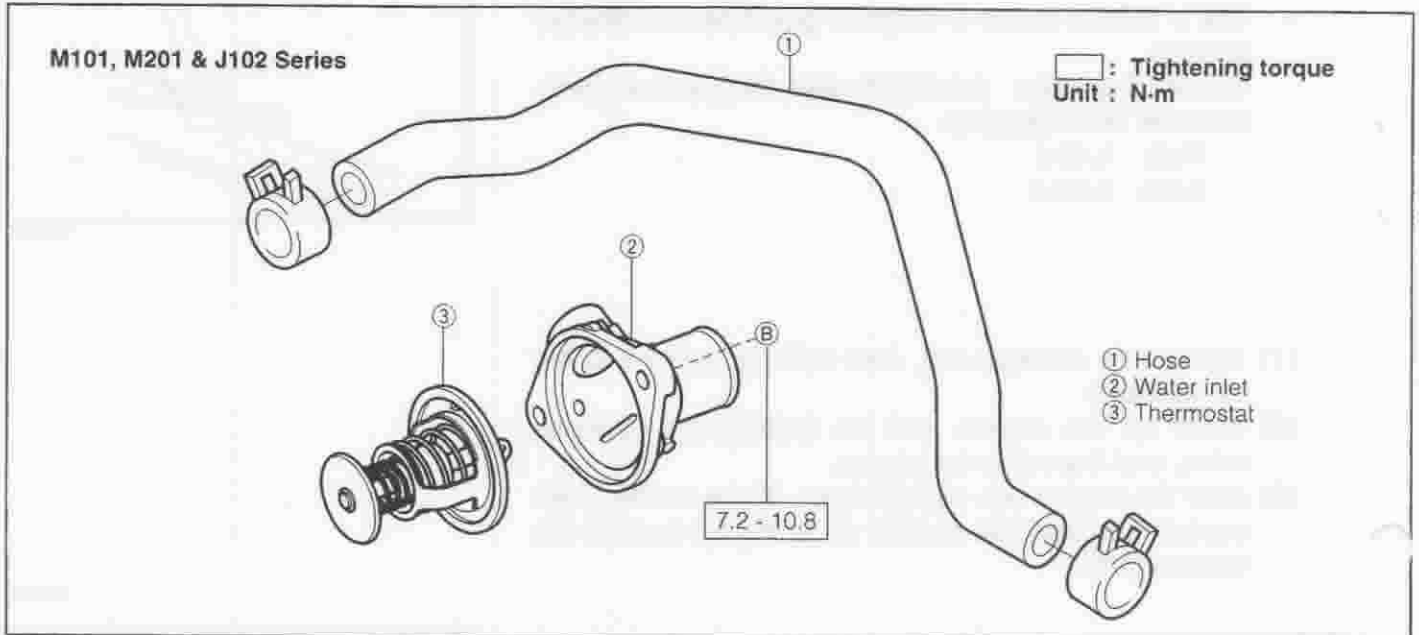
YCC00014-00009

- (5) Start the engine, and keep warming up the engine and then stop the engine and allow it to cool down.
- (6) Drain the water. (Refer to page CO-3.)
- (7) Repeat the steps (1) through (6) two to three times.

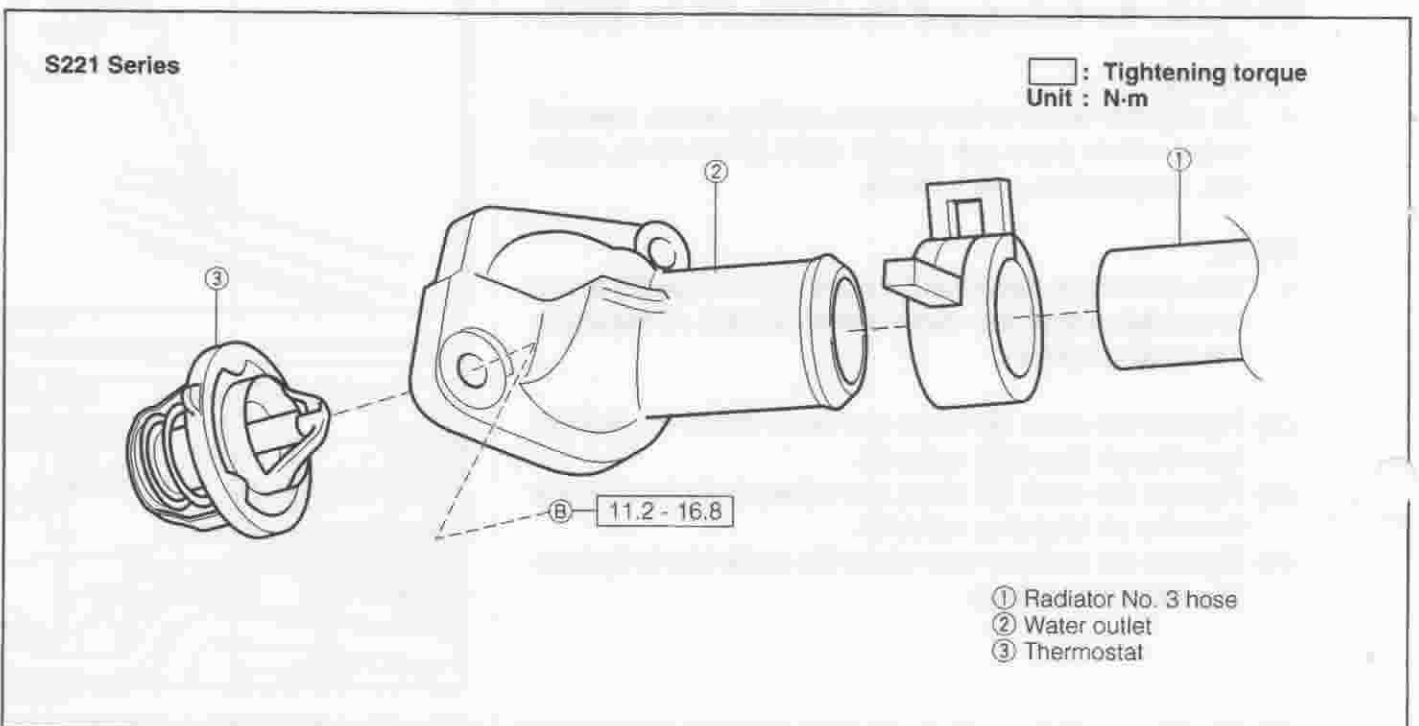


YCC00056-00048

## THERMOSTAT COMPONENTS



YCO00032-00024



YCO00000-00025

## REMOVAL

### M101, M201 & J102 Series

1. Drain the engine coolant. (Refer to CO-3.)
2. Disconnect the radiator thermo control switch connector. (Only for EU spec.)
3. Remove the water inlet from the cylinder head.
4. Remove the thermostat from the cylinder head.

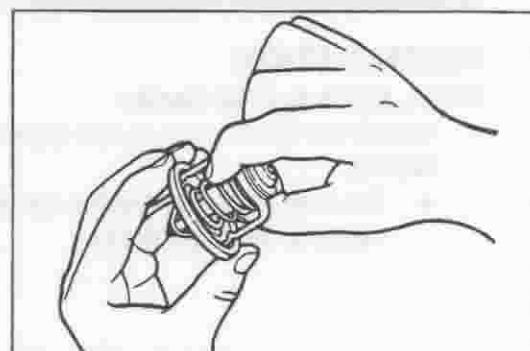
### S221 Series

1. Drain the engine coolant (Refer to CO-3.)
2. Remove the water outlet from the cylinder head.
3. Remove the thermostat from the cylinder head.

YCO00033-00000

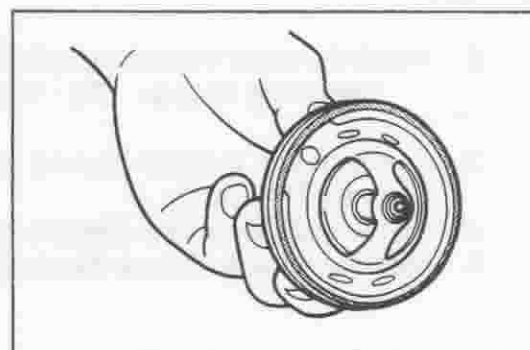
## INSPECTION

1. Ensure that the thermostat valve is closed at room temperature of 20°C and the spring has no play.  
Replace the thermostat if the valve is open or the spring has a play.



YCO00034-00026

2. Check the rubber grommet of the thermostat for damage or crack.  
Replace the thermostat if the rubber grommet exhibits damage or crack.



YCO00035-00027

3. Check of thermostat valve opening temperature
  - (1) Immerse the thermostat in water, as indicated in the right figure. Heat the water gradually. Ensure that the temperature at which the valve begins to open conforms to the specified value.

Specified Valve Opening Temperature:

M101, M201 & J102 Series:  $80 \pm 2^\circ\text{C}$

S221 Series:  $88 \pm 1.5^\circ\text{C}$

If the temperature fails to conform to the specification, replace the thermostat with a new one.

- (2) M101, M201 & J102 Series

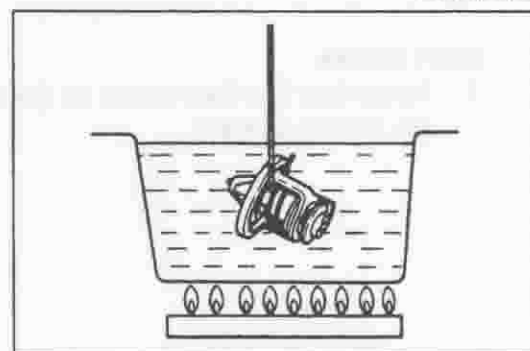
Under the condition described in the step (1), heat the water to 93°C. At this time, ensure that the valve lift is the specified value or more.

Specified Value: More than 8.5 mm

### S221 Series

Under the condition described in the step (1), heat the water to 100°C. At this time, ensure that the valve lift is the specified value or more.

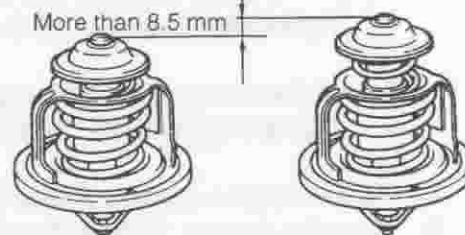
Specified Value: More than 8.0 mm



YCO00036-00028

### M101, M201 & J102 Series

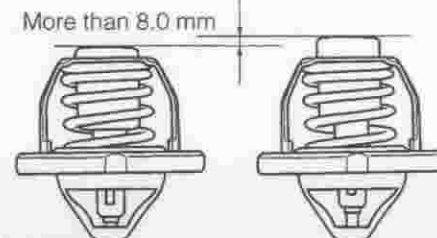
More than 8.5 mm



YCO00037-00029

### S221 Series

More than 8.0 mm



YCO00000-00030

## CAUTION:

- Be very careful not to get scalded, for the heated thermostat will be very hot.

# CO-10-1

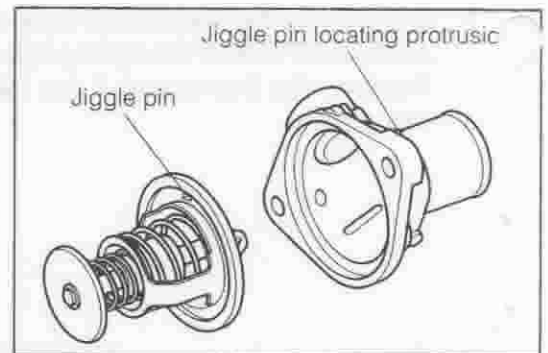
## INSTALLATION

### M101, M201 & J102 Series

1. Install the thermostat to the water inlet.

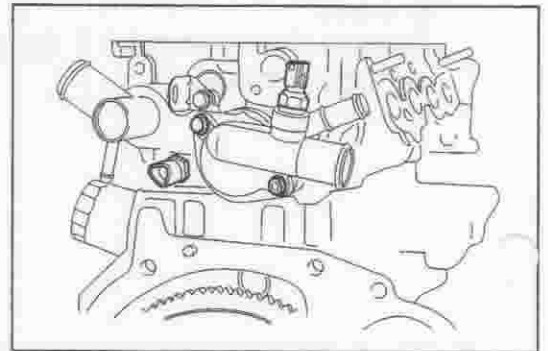
**NOTE:**

- Be sure to assemble the thermostat at the position indicated in the right figure.



YCO00076-00054

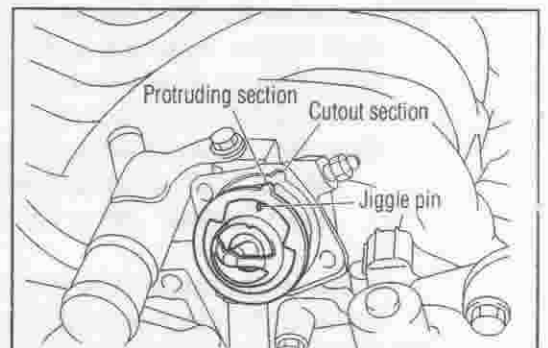
2. Install the water inlet to the cylinder head.  
Tightening Torque: 7.2 - 10.8 N·m
3. Connect the radiator thermo control switch connector.  
(Only for EU spec.)
4. Fill the engine coolant. (Refer to page CO-3.)
5. Start the engine. Ensure that no water leakage is present.



YCO00077-00055

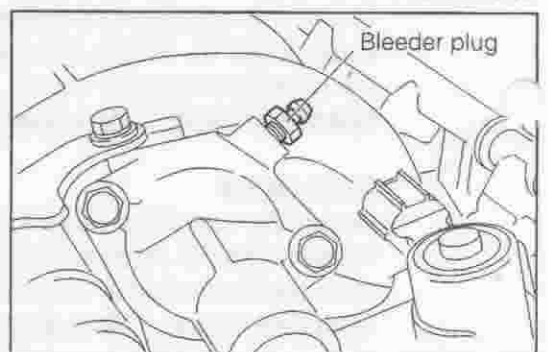
### S221 Series

1. Assemble the thermostat to the water outlet with its jiggle pin facing upward.



YCO00040-00032

2. Install the water outlet to the water outlet housing.  
Tightening Torque: 11.2 - 16.8 N·m
3. Install the water outlet housing to the cylinder head.  
Tightening Torque: 16.0 - 24.0 N·m
4. Fill the engine coolant. (Refer to page CO-5.)
5. Start the engine. Ensure that no water leakage is present.

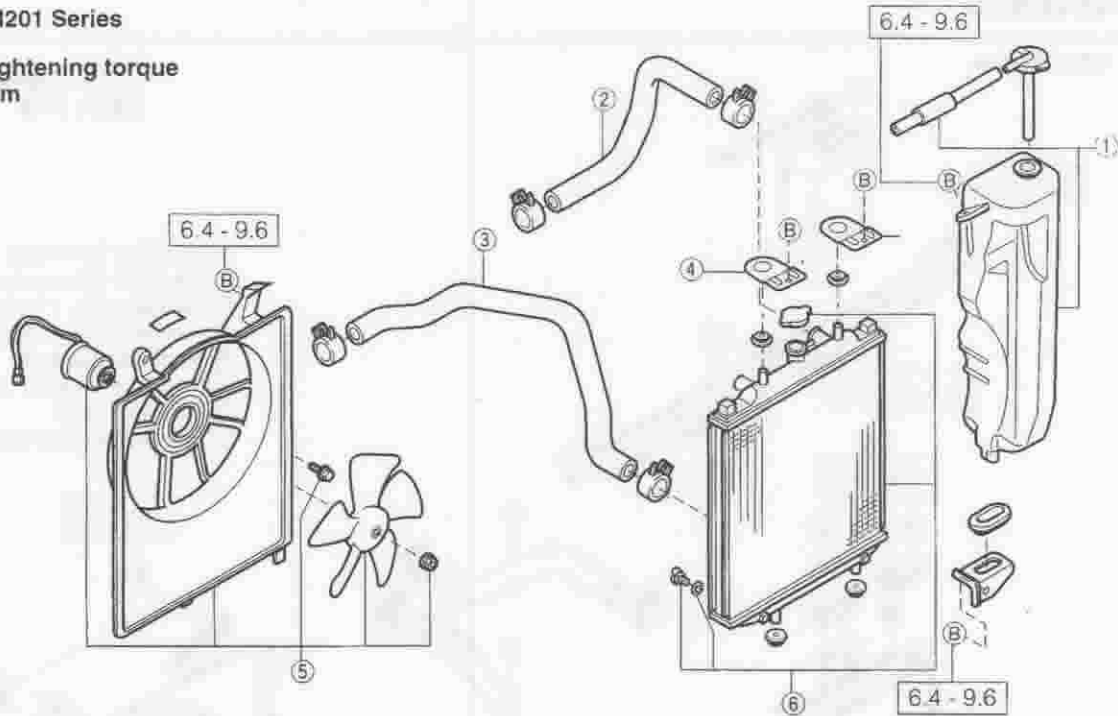


YCO00042-00034

# RADIATOR COMPONENTS

M101 & M201 Series

   : Tightening torque  
Unit : N·m

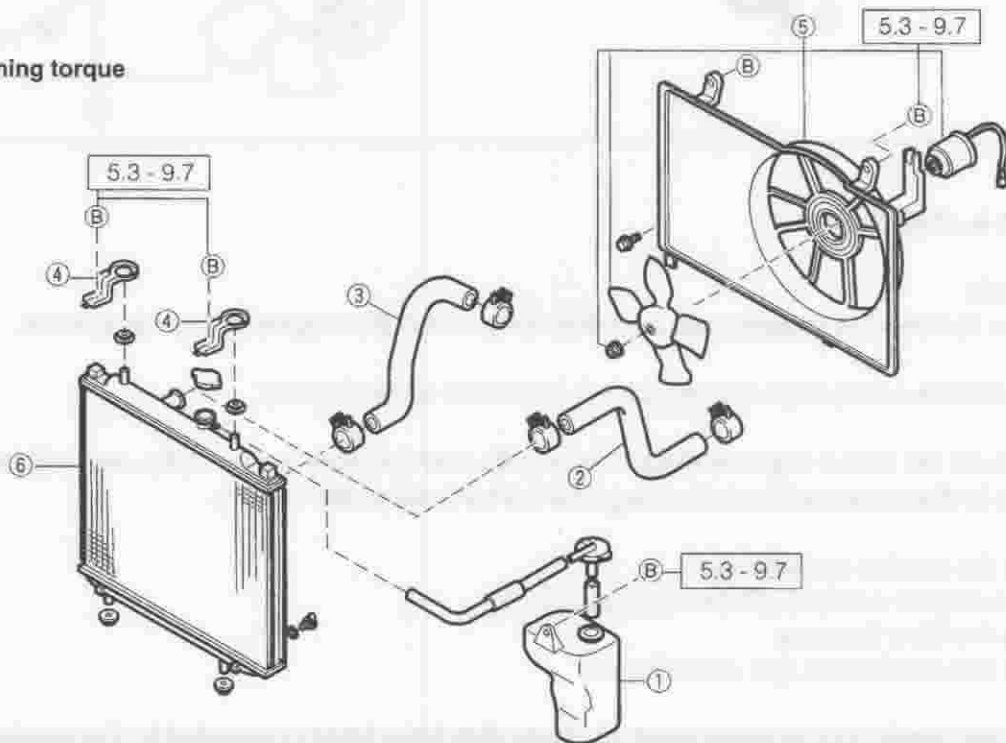


- ① Radiator reserve tank
- ② Radiator inlet hose
- ③ Radiator outlet hose
- ④ Radiator bracket
- ⑤ Fan motor assy
- ⑥ Radiator assy

YCD00043-00035

J102 Series

   : Tightening torque  
Unit : N·m



- ① Radiator reserve tank
- ② Radiator inlet hose
- ③ Radiator outlet hose
- ④ Radiator bracket
- ⑤ Fan motor assy
- ⑥ Radiator assy

YCD00000-00056