

GROUP 14

ENGINE COOLING

GENERAL

OUTLINE OF CHANGE

The service procedures have been established due to the change of the thermostat, the thermostat case assembly and the water inlet pipe assembly in vehicles with 4G1 engine.
Other service procedures are the same as before.

SERVICE SPECIFICATIONS

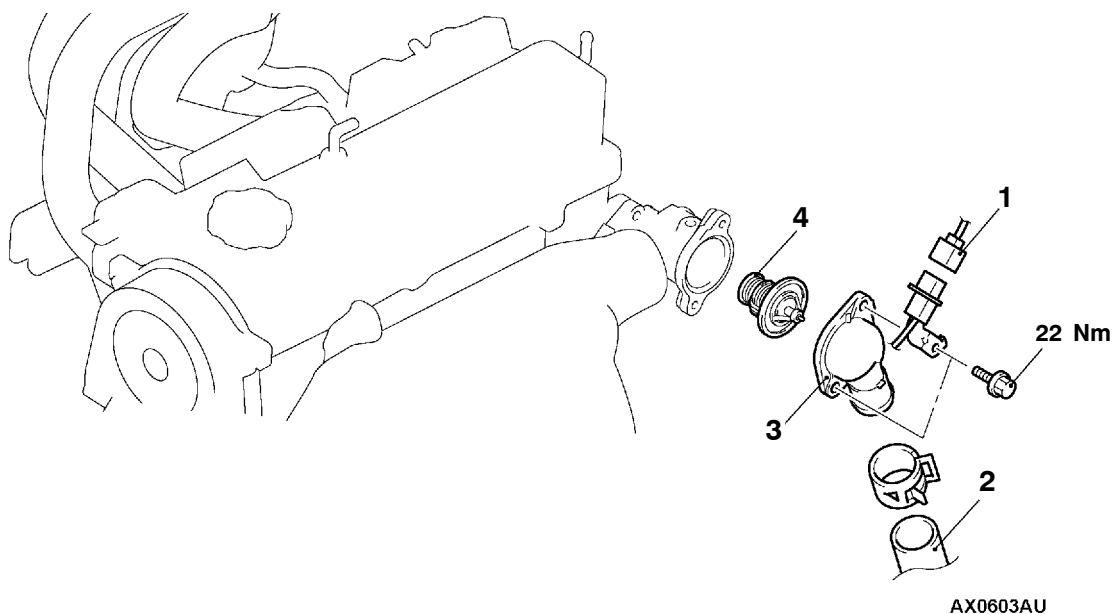
Items		Standard value
Thermostat <4G1>	Valve opening temperature of thermostat °C	88 ± 1.5
	Full-opening temperature of thermostat °C	100
	Valve lift (at 100°C) mm	8.5 or more

THERMOSTAT

REMOVAL AND INSTALLATION

<4G1>

Pre-removal and Post-installation Operation
Engine Coolant Draining and Supplying



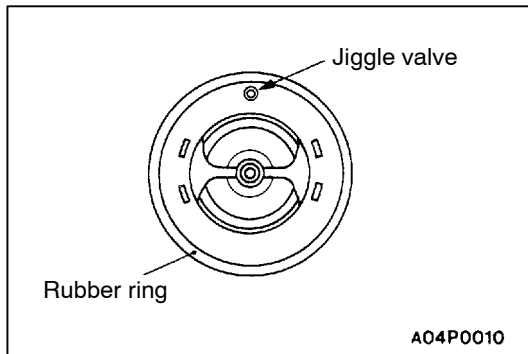
Removal steps

◀A▶ ▶B▶
1. Oxygen sensor (front) connector
2. Radiator lower hose connection

▶A▶
3. Water inlet fitting
4. Thermostat

REMOVAL SERVICE POINT**◀A▶ RADIATOR LOWER HOSE DISCONNECTION**

After making mating marks on the radiator hose and the hose clamp, disconnect the radiator hose.

**INSTALLATION SERVICE POINTS****▶A◀ THERMOSTAT INSTALLATION**

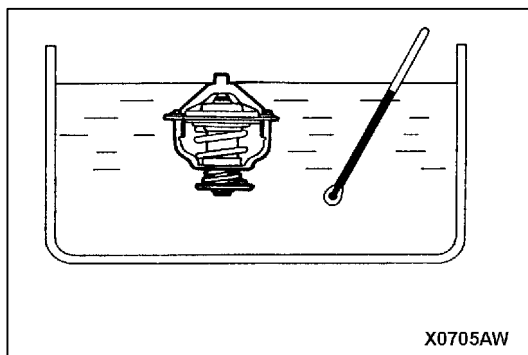
Install the thermostat so that the jiggle valve is facing straight up.

Caution

Make absolutely sure that no oil is adhering to the rubber ring of the thermostat. In addition, be careful not to fold over or scratch the rubber ring when inserting. If the rubber ring is damaged, replace the thermostat.

▶B◀ RADIATOR LOWER HOSE CONNECTION

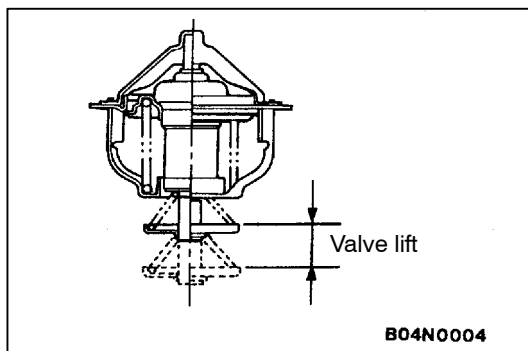
1. Insert each hose as far as the projection of the water inlet fitting.
2. Align the mating marks on the radiator hose and hose clamp, and then connect the radiator hose.

**INSPECTION****THERMOSTAT CHECK**

1. Immerse the thermostat in water, and heat the water while stirring. Check the thermostat valve opening temperature.

Standard value:

Valve opening temperature: $88 \pm 1.5^{\circ}\text{C}$



2. Check that the amount of valve lift is at the standard value when the water is at the full-opening temperature.

Standard value:

Full-opening temperature: 100°C

Amount of valve lift: 8.5 mm or more

NOTE

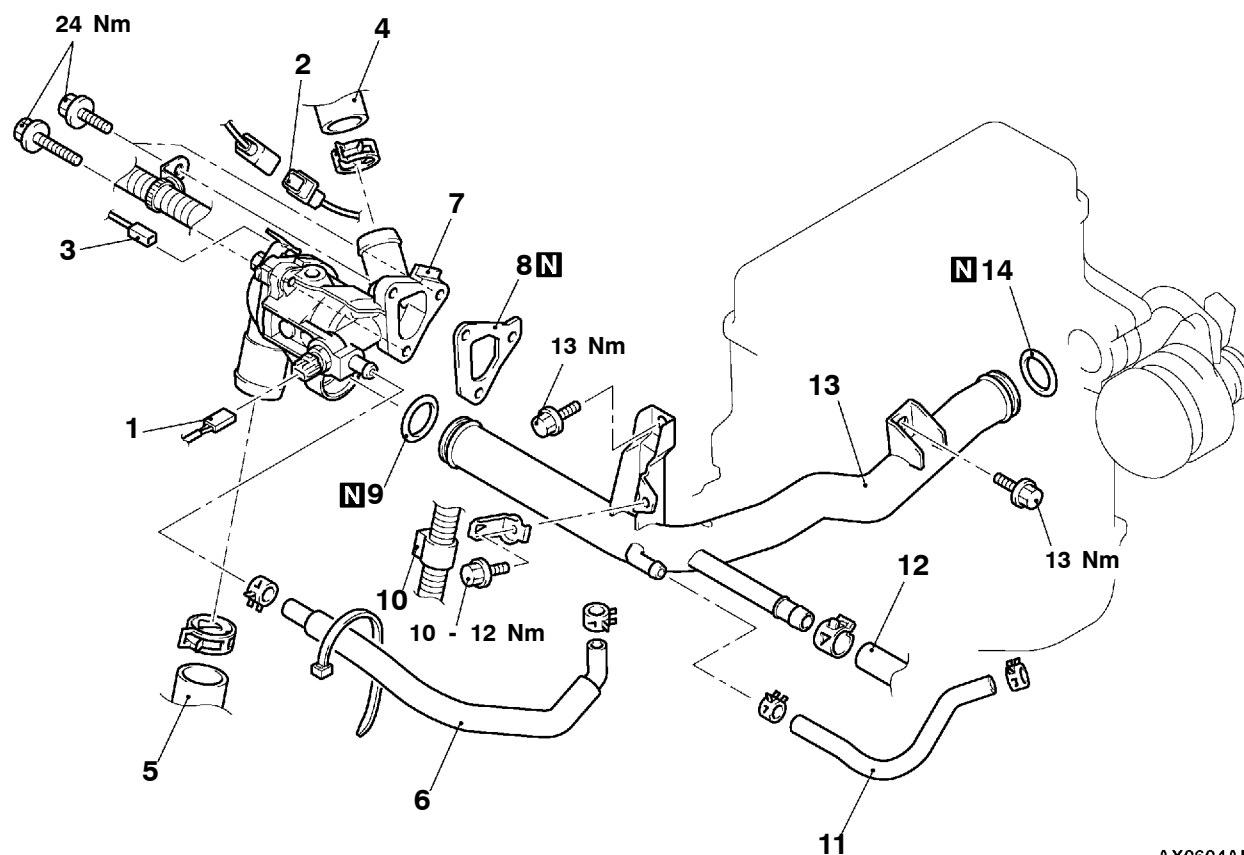
Measure the valve height when the thermostat is fully closed, and use this measurement to calculate the valve height when the thermostat is fully open.

WATER HOSE AND WATER PIPE <4G1>

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying
- Air Cleaner Removal and Installation
- Battery and Battery Tray Removal and Installation



Removal steps

1. Engine coolant temperature sensor connector
2. Oxygen sensor (front) connector
3. Engine coolant temperature gauge unit connector
4. Radiator upper hose connection
5. Radiator lower hose connection
6. Water hose



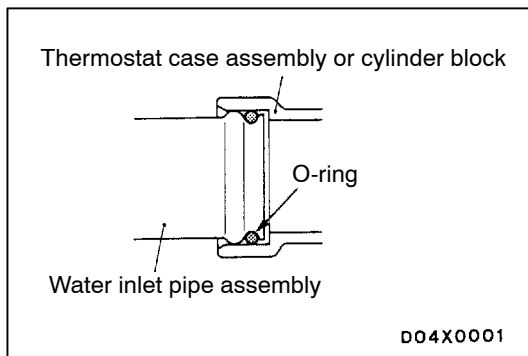
7. Thermostat case assembly
8. Thermostat case gasket
9. O-ring
10. Control harness connection
11. Water hose
12. Heater hose connection
13. Water inlet pipe
14. O-ring



REMOVAL SERVICE POINT

◀A▶ RADIATOR UPPER HOSE/RADIATOR LOWER HOSE DISCONNECTION

After making mating marks on the radiator hose and the hose clamp, disconnect the radiator hose.



INSTALLATION SERVICE POINTS

►A◄ O-RING INSTALLATION

Insert the O-ring to the water inlet pipe assembly, and coat the outer circumference of the O-ring with water or engine coolant.

Caution

Do not allow engine oil or other greases to adhere to the O-ring.

►B◄ RADIATOR LOWER HOSE/RADIATOR UPPER HOSE CONNECTION

1. Insert each hose as far as the projection of the water inlet fitting or thermostat case assembly.
2. Align the mating marks on the radiator hose and hose clamp, and then connect the radiator hose.