

GROUP 14

ENGINE COOLING

GENERAL

OUTLINE OF CHANGES

The service procedures have been established due to the following changes:

- Specifications of the radiator have been changed <4G9-GDI>.
- The service specifications for the thermostat have been changed <4G9>.
- The air by-pass valve has been discontinued <4G9-GDI>.

GENERAL SPECIFICATIONS

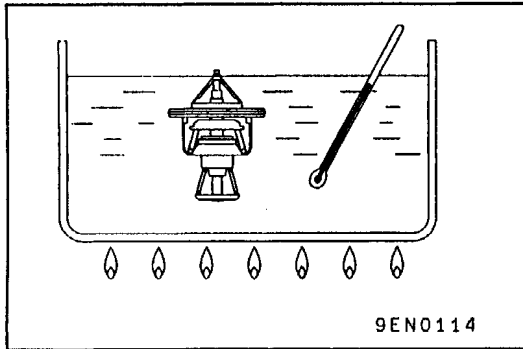
<4G9-GDI>

Items		Specifications
Radiator	Performance kJ/h	129,800
Automatic transmission oil cooler	Performance kJ/h	5,300

SERVICE SPECIFICATIONS

<4G9>

Items		Standard value
Valve opening temperature of thermostat °C	MPI	88 ± 1.5
	GDI-D3 spec.	85 ± 1.5
	GDI-D4 spec.	82 ± 1.5
Full-opening temperature of thermostat °C	MPI	100
	GDI-D3 spec.	98
	GDI-D4 spec.	95
Lift stroke when thermostat is fully opened		8.5 or more



THERMOSTAT <4G9>

INSPECTION

THERMOSTAT CHECK

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

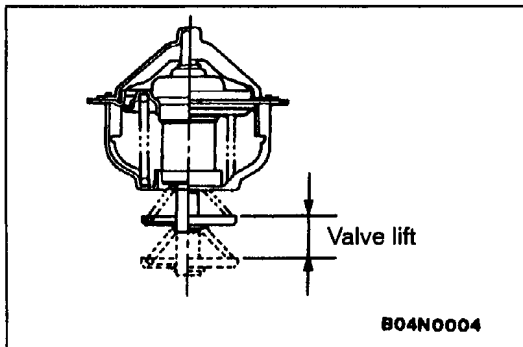
Standard value:

Valve opening temperature:

<MPI>: $88 \pm 1.5^{\circ}\text{C}$

<GDI-D3 spec.>: $85 \pm 1.5^{\circ}\text{C}$

<GDI-D4 spec.>: $82 \pm 1.5^{\circ}\text{C}$



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:

<MPI>: 100°C

<GDI-D3 spec.>: 98°C

<GDI-D4 spec.>: 95°C

Amount of valve lift: 8.5 mm or more

NOTE

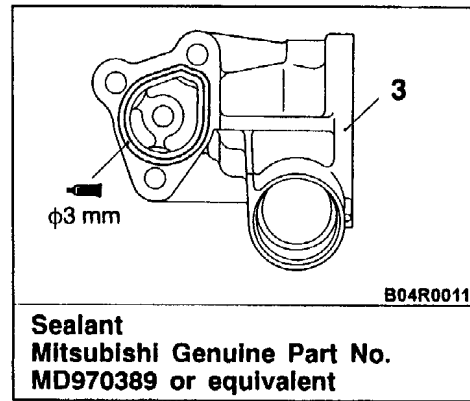
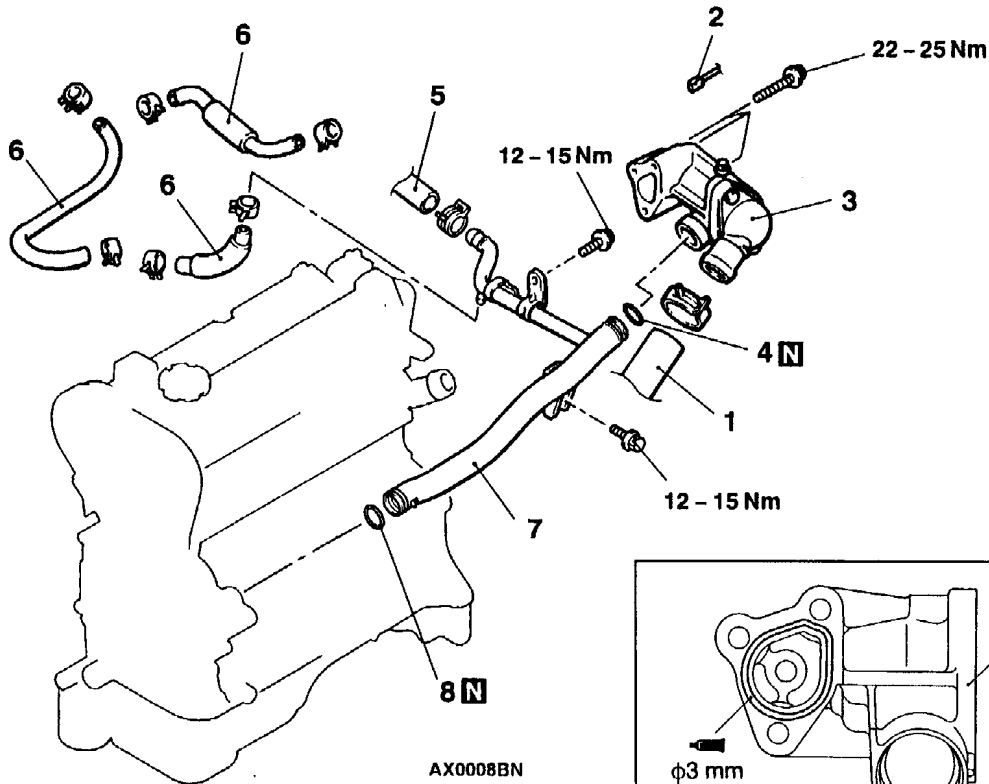
Measure the valve height when the thermostat is fully closed, and use this measurement to calculate the valve height when the thermostat is fully open.

WATER HOSE AND WATER PIPE <4G9-GDI>

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Engine Coolant Draining and Suppling
- Air Cleaner and Air Intake Hose Assembly Removal and Installation



Removal steps

- ◀A▶ ▶C▶ 1. Radiator lower hose connection
- ▶B▶ 2. Engine coolant temperature gauge unit connector
- ▶A▶ 3. Thermostat case assembly
- 4. O-ring
- 5. Heater hose connection
- 6. Water hose

- ▶A▶ 7. Water inlet pipe assembly
- 8. O-ring

NOTE

Removal and installation service points are the same as before.