
ENGINE COOLING

CONTENTS

SERVICE SPECIFICATIONS	2	THERMOSTAT	3
LUBRICANT	2	WATER PUMP	5
ON-VEHICLE SERVICE	2	WATER HOSE AND WATER PIPE	6
Coolant Replacement	2	RADIATOR	7



SERVICE SPECIFICATIONS

Items		Standard value
Thermostat valve opening temperature °C	When open	76.5 ± 1.5
	When fully open	90
Thermostat lift mm		8.5 or more

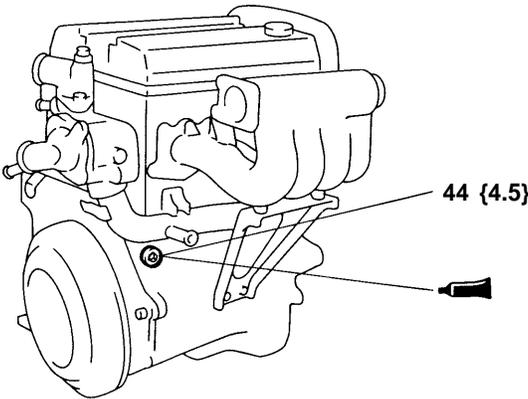
LUBRICANT

Items	Brand	Quantity dm ³ {ℓ}
Coolant capacity (in condenser tank)	mitsubishi_genuine_dia_queen_super_long_life_coolant	6 {6}

ON-VEHICLE SERVICE

COOLANT REPLACEMENT

CYLINDER BLOCK DRAIN PLUG



04M0052

Unit: Nm {kgf·m}

Drying sealant: HELMESEAL H-1M

RADIATOR CAP VALVE OPENING PRESSURE CHECK

On EVOLUTION-V, the radiator cap valve opening pressure must be as shown below.

Standard value: 93 – 123 kPa {0.95 – 1.25 kgf/cm²}

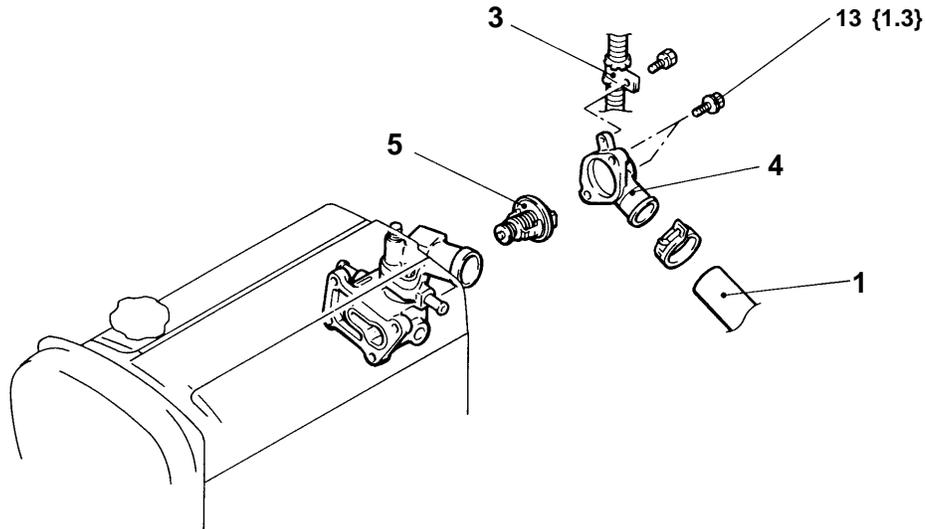
Limit: 83 kPa {0.85 kgf/cm²}

THERMOSTAT

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying
(Refer to P.14-2.)
- Air Intake Hose Assembly Removal and Installation
(Refer to GROUP 15 – Intercooler.)



04M0051

Unit: Nm {kgf·m}

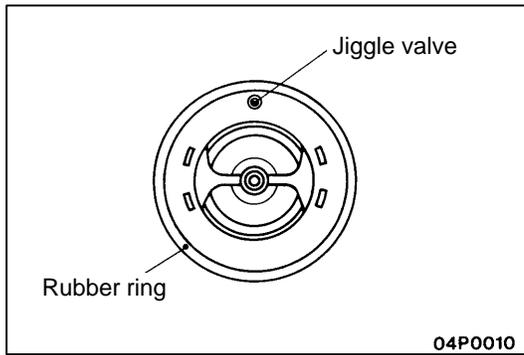
Removal steps

- ◀A▶ ▶B▶ 1. Radiator lower hose connection
 ▶A▶ ▶B▶ 2. Control wiring harness connection
 ▶A▶ ▶B▶ 3. Water inlet fitting
 ▶A▶ ▶B▶ 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

- (1) Install the thermostat so that the jiggle valve is facing straight up.

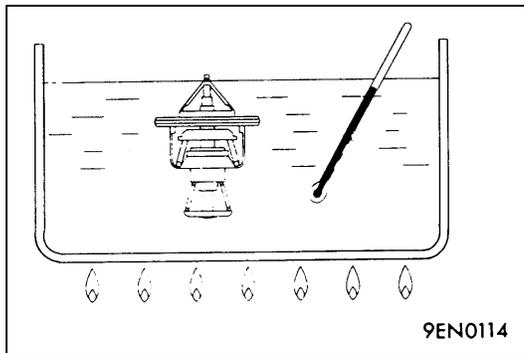
Caution

Make absolutely sure that no oil is adhering to the rubber ring of the thermostat. If the rubber ring is damaged, replace the thermostat.

- (2) When assembling the thermostat, be careful not to fold over or scratch the rubber ring.

►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.

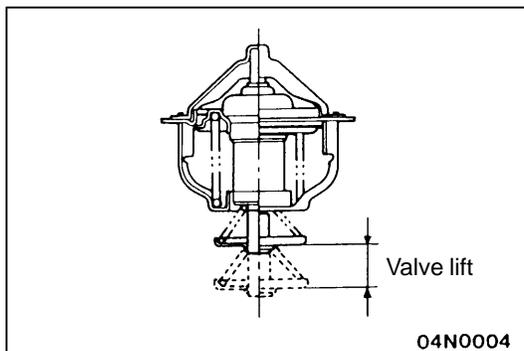


INSPECTION

THERMOSTAT CHECK

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

Standard value: $76.5 \pm 1.5^{\circ}\text{C}$



- (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: 90°C

Amount of valve lift: 8.5 mm or more

NOTE

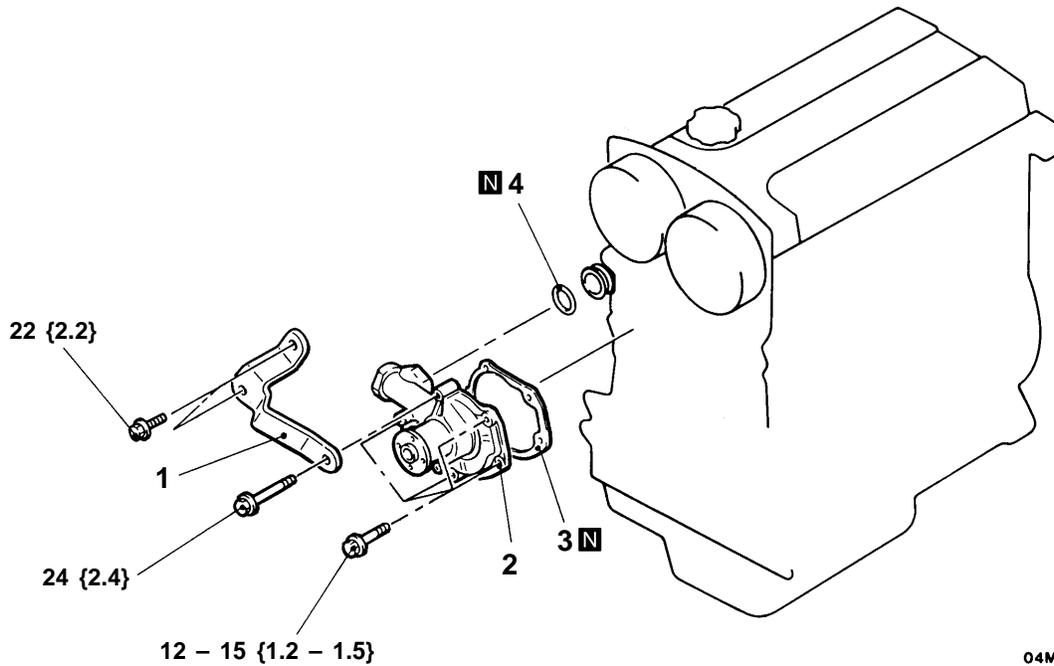
Measure the valve height when the thermostat is fully closed, calculate the valve lift by subtracting this measurement from the valve height when the thermostat is fully open.

WATER PUMP

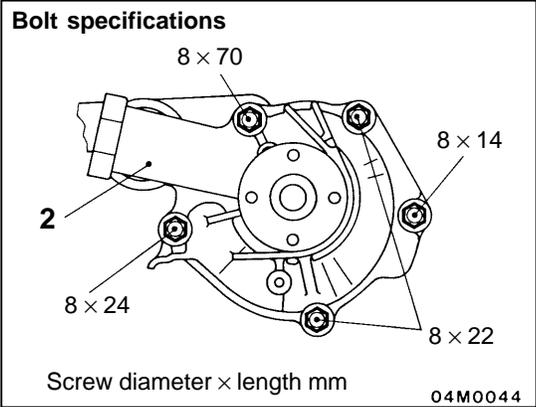
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying (Refer to P.14-2.)
- Timing Belt and Timing Belt B Removal and Installation (Refer to GROUP 11.)

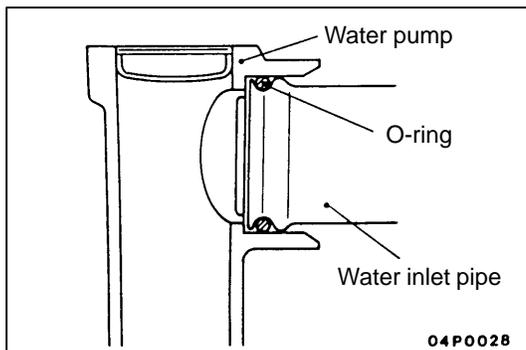


04M0047 Unit: Nm {kgf·m}



Removal steps

1. Alternator brace
2. Water pump
3. Water pump gasket
4. O-ring



INSTALLATION SERVICE POINT

▶A◀ O-RING INSTALLATION

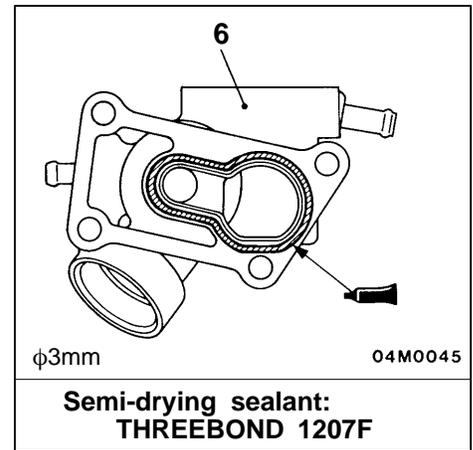
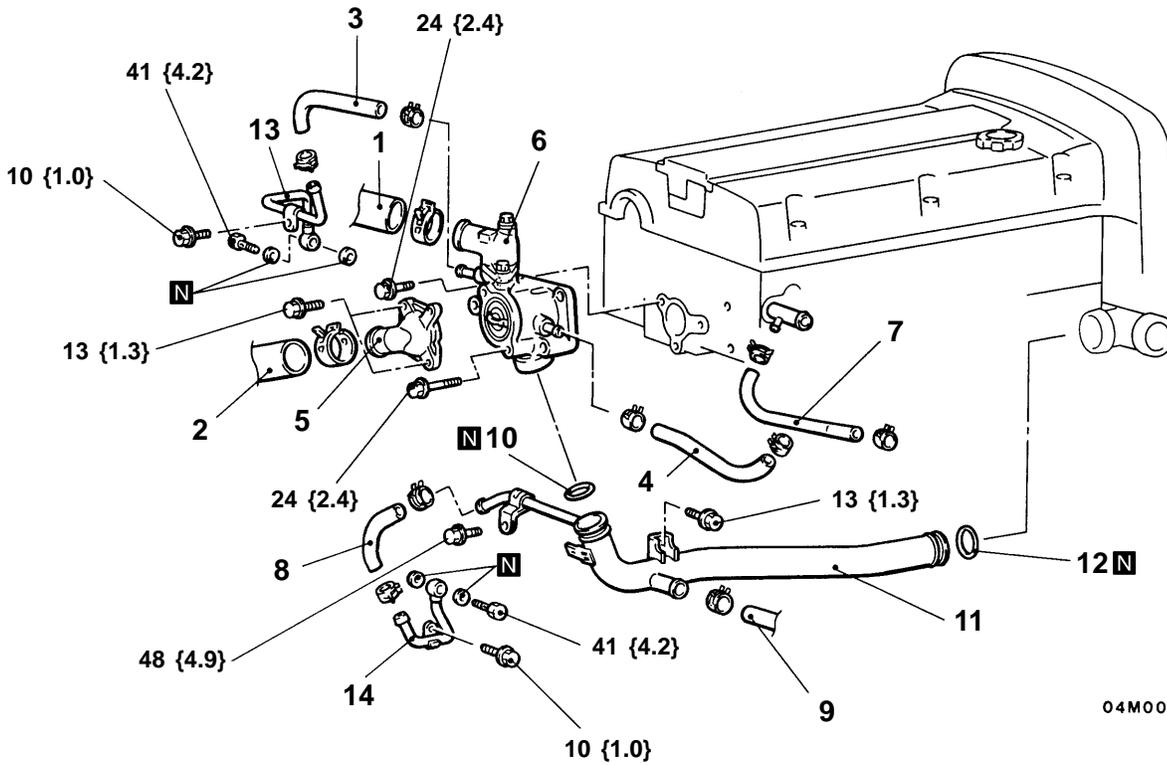
Fit the O-ring in the O-ring groove in the water inlet pipe, and coat the outer circumference of the O-ring or the inside surface of the water pump with water before inserting the pipe.

WATER HOSE AND WATER PIPE

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- (1) Coolant Draining and Refilling (Refer to P.14-2.)
- (2) Air Hose C Removal and Installation (Refer to GROUP 15 – INTERCOOLER.)
- (3) Air Control Valve Bracket Removal and Installation (Refer to GROUP 15 – AIR CONTROL VALVE.)



Unit: Nm {kgf · m}

Removal steps



- 1. Radiator upper hose connection
- 2. Radiator lower hose connection
- 3. Water hose
- 4. Water hose
- 5. Water inlet fitting
- 6. Thermostat case assembly
- 7. Water hose
- 8. Water hose



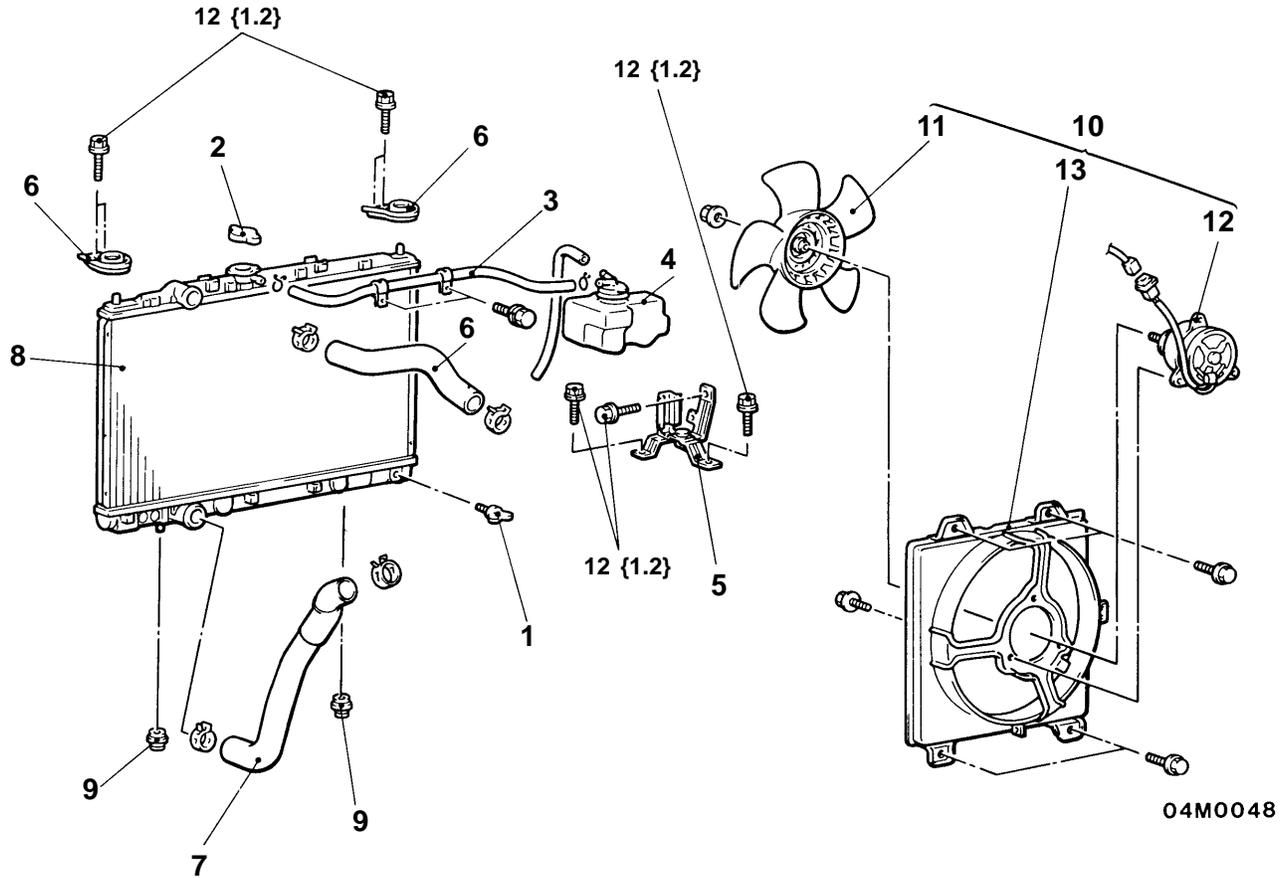
- 9. Heater hose connection
- 10. O-ring
- 11. Water inlet pipe
- 12. O-ring
- Turbocharger (Refer to GROUP 15.)
- 13. Water pipe assembly A
- 14. Water pipe assembly B

RADIATOR

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Engine Coolant Draining and Supplying (Refer to P.14-2.)



Unit: Nm {kgf·m}

Radiator removal steps

1. Drain plug
2. Radiator cap
3. Overflow hose
4. Reserve tank
5. Reserve tank bracket
6. Radiator upper hose
7. Radiator lower hose
8. Radiator assembly
9. Lower insulator
10. Radiator fan motor assembly



Radiator fan motor removal steps

1. Drain plug
2. Radiator cap
6. Radiator upper hose
- Air intake hose
(Refer to GROUP15 – Intercooler.)
10. Radiator fan motor assembly
11. Fan
12. Radiator fan motor
13. Shroud



REMOVAL SERVICE POINTS

◀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 POINT

▶A◀ RADIATOR LOWER HOSE / RADIATOR UPPER HOSE CONNECTION

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

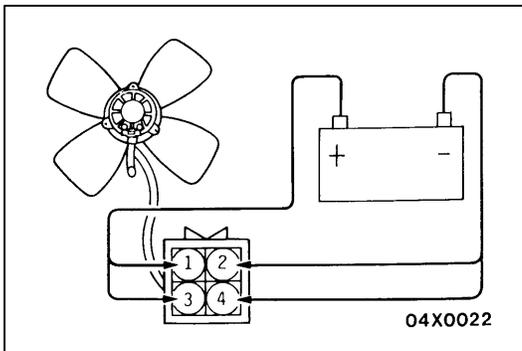
Caution

Fit the clamp on the hose at the same position as before.

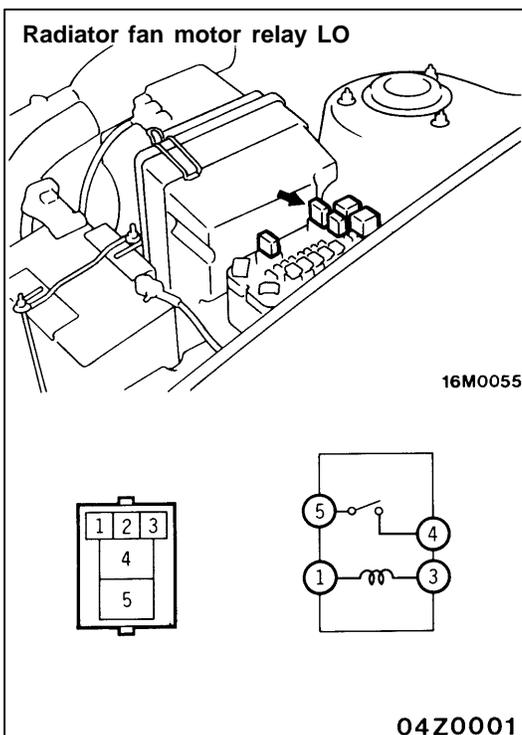
INSPECTION

1. RADIATOR FAN MOTOR CHECK

Apply the battery voltage across connector terminals 1 and 2, and terminals 3 and 4, of the radiator fan motor and check, at that time, that the radiator fan turns.

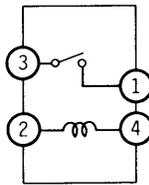
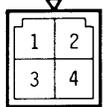
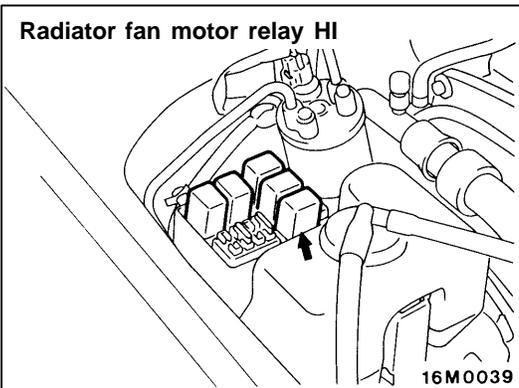


2. POWER RELAY CONTINUITY CHECK



Battery voltage	Terminal number			
	1	3	4	5
When deenergized	○	○		
When energized	⊕	⊖	○	○

Radiator fan motor relay HI



20Z0001

Battery voltage	Terminal number			
	1	2	3	4
When deenergized		○	—	○
When energized	○	⊕	—	○