

General Description

COOLING

1. General Description

A: SPECIFICATION

Cooling system		Electric fan + Forced engine coolant circulation system		
Total engine coolant capacity		ℓ (US qt, Imp qt)		
		MT: Approx. 7.3 (7.7, 6.4) AT: Approx. 7.2 (7.6, 6.3)		
Water pump	Type	Centrifugal impeller type		
	Discharge performance I	Discharge amount ℓ (US gal, Imp gal)/min	20 (5.3, 4.4)	
		Pump speed — Discharge pressure	760 rpm — 2.9 kPa (0.3 mAq)	
		Engine coolant temperature	85°C (185°F)	
	Discharge performance II	Discharge amount ℓ (US gal, Imp gal)/min	100 (26.4, 22.0)	
		Pump speed — Discharge pressure	3,000 rpm — 49.0 kPa (5.0 mAq)	
		Engine coolant temperature	85°C (185°F)	
	Discharge performance III	Discharge amount ℓ (US gal, Imp gal)/min	200 (52.8, 44.0)	
		Pump speed — Discharge pressure	6,000 rpm — 225.4 kPa (23.0 mAq)	
		Engine coolant temperature	85°C (185°F)	
Impeller diameter	mm (in)	76 (2.99)		
Number of impeller vanes		8		
Pump pulley diameter	mm (in)	60 (2.36)		
Clearance between impeller and case	Standard	mm (in)	0.5 — 1.5 (0.020 — 0.059)	
Thermostat	Type	Wax pellet type		
	Starting temperature to open	76 — 80°C (169 — 176°F)		
	Fully opens	91°C (196°F)		
	Valve lift	mm (in)	9.0 (0.354) or more	
	Valve bore	mm (in)	35 (1.38)	
Radiator fan	Motor input	Main fan W	120	
		Sub fan W	120	
	Fan diameter / Blades	Main fan	320 mm (12.6 in) /5	
		Sub fan	320 mm (12.6 in) /7	
Radiator	Type	Down flow		
	Core dimensions	Width × Height × Thickness	mm (in)	
	Pressure range in which cap valve is open	Coolant filler tank side	kPa (kg/cm ² , psi)	Above: 108±15 (1.1±0.15, 16±2) Below: -1.0 — -4.9 (-0.01 — -0.05, -0.1 — -0.7)
		Radiator side	kPa (kg/cm ² , psi)	Above only: 137±14.7 (1.40±0.15, 20±2.1)
	Fins	Corrugated fin type		
Reservoir tank	Capacity	ℓ (US qt, Imp qt)	0.45 (0.48, 0.40)	

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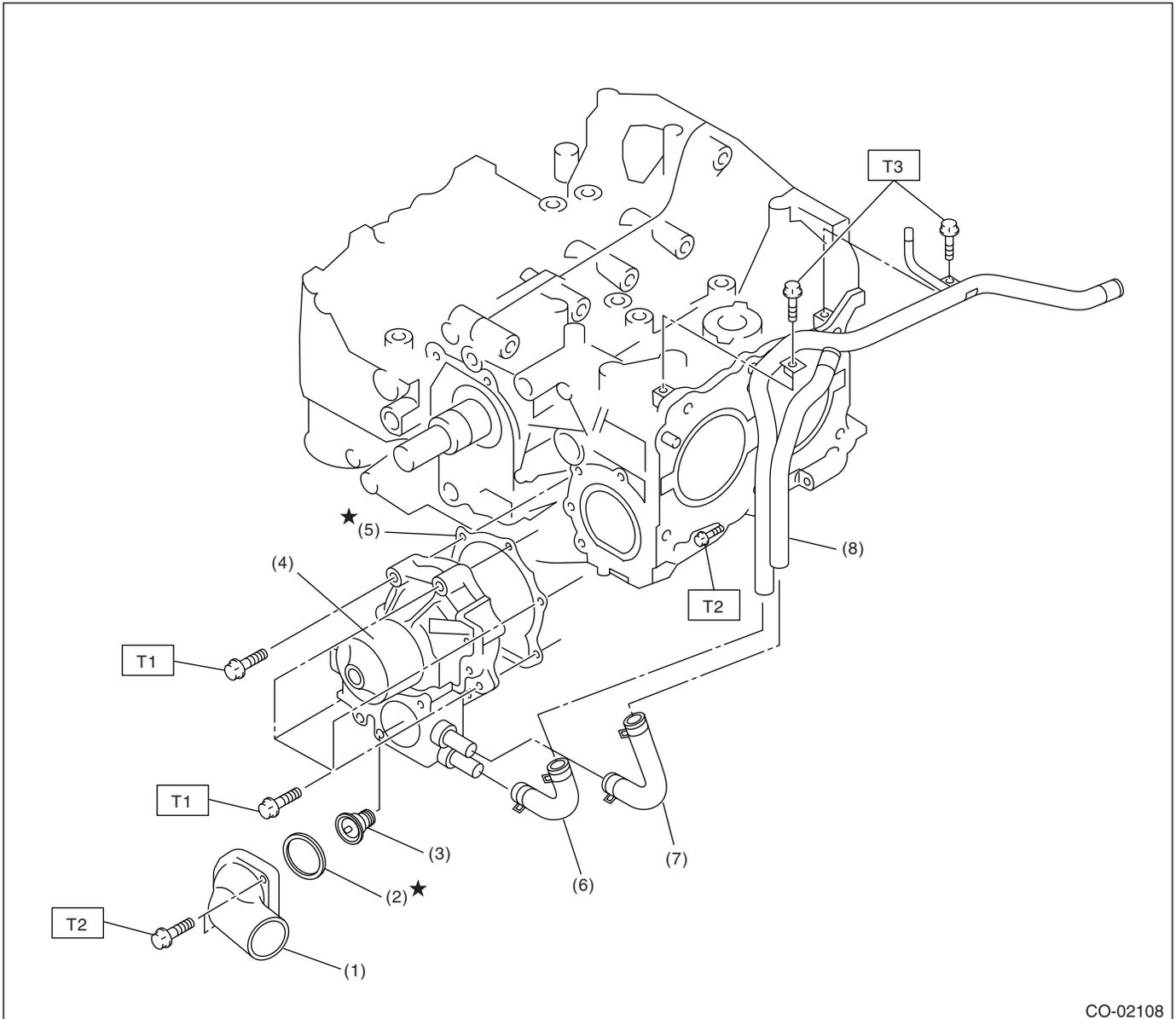
Vehicle speed	A/C compressor load	Engine coolant temperature		
		When increased: 94°C (201°F) or less When decreased: 91°C (196°F) or less	When increased: 95 — 96°C (203 — 205°F) When decreased: 92 — 94°C (198 — 201°F)	When increased: 97°C (207°F) or more When decreased: 95°C (203°F) or more
		Operation of radiator fan	Operation of radiator fan	Operation of radiator fan
When accelerating: 19 km/h (12 MPH) or less When decelerating: 10 km/h (6 MPH) or less	OFF	OFF	Low-Speed	High-Speed
	Low	Low-Speed	Low-Speed	High-Speed
	High	High-Speed	High-Speed	High-Speed
When accelerating: 20 — 69 km/h (12 — 43 MPH) When decelerating: 11 — 64 km/h (7 — 40 MPH)	OFF	OFF	Low-Speed	High-Speed
	Low	High-Speed	High-Speed	High-Speed
	High	High-Speed	High-Speed	High-Speed
When accelerating: 70 — 105 km/h (43 — 65 MPH) When decelerating: 65 — 100 km/h (40 — 62 MPH)	OFF	OFF	Low-Speed	High-Speed
	Low	High-Speed	High-Speed	High-Speed
	High	High-Speed	High-Speed	High-Speed
When accelerating: 106 km/h (66 MPH) or more When decelerating: 101 km/h (63 MPH) or more	OFF	OFF	High-Speed	High-Speed
	Low	High-Speed	High-Speed	High-Speed
	High	High-Speed	High-Speed	High-Speed

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B: COMPONENT

1. WATER PUMP



CO-02108

- | | |
|----------------------|---------------------------------|
| (1) Thermostat cover | (5) Gasket |
| (2) Gasket | (6) Heater by-pass hose |
| (3) Thermostat | (7) Coolant filler by-pass hose |
| (4) Water pump ASSY | (8) Water by-pass pipe |

Tightening torque: N·m (kgf·m, ft·lb)

**T1: First 12 (1.2, 8.9)
Second 12 (1.2, 8.9)**

T2: 12 (1.2, 8.9)

T3: 6.5 (0.7, 4.8)

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(1) Radiator lower cushion	(14) Radiator main fan ASSY	(26) Coolant filler hose A
(2) Radiator	(15) ATF hose clamp (AT model)	(27) Coolant filler hose B
(3) Radiator upper cushion	(16) ATF hose A (AT model)	(28) Radiator lower bracket
(4) Radiator upper bracket	(17) ATF hose B (AT model)	(29) Overflow hose B
(5) Clamp	(18) ATF pipe (AT model)	(30) Heat shield cover (AT model)
(6) Radiator hose A	(19) ATF hose C (AT model)	
(7) Engine coolant reservoir tank cap	(20) ATF hose D (AT model)	
(8) Overflow hose A	(21) Radiator hose B	
(9) Engine coolant reservoir tank	(22) Radiator drain plug	
(10) Overflow pipe	(23) O-ring	
(11) Radiator sub fan shroud	(24) Engine coolant filler tank	
(12) Radiator main fan shroud	(25) Radiator cap (Engine coolant filler tank cap)	
(13) Radiator sub fan ASSY		

Tightening torque: N·m (kgf·m, ft·lb)**T1: 3.4 (0.35, 2.5)****T2: 5 (0.5, 3.6)****T3: 7.5 (0.76, 5.5)****T4: 12 (1.2, 8.9)**

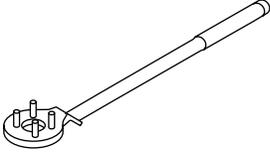
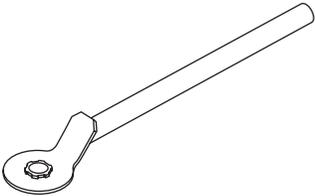
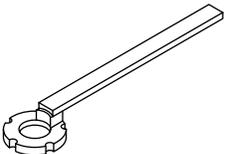
C: CAUTION

- Wear work clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Be careful not to burn yourself, because each part on the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Before disconnecting electrical connectors of sensors or units, be sure to disconnect the ground cable from battery.

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D: PREPARATION TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-499977100</p>	499977100	CRANK PULLEY WRENCH	Used for stopping crank pulley when loosening and tightening crank pulley bolts.
 <p style="text-align: center;">ST-499977500</p>	499977500	CAM SPROCKET WRENCH	Used for removing and installing the intake camshaft sprocket.
 <p style="text-align: center;">ST-499207400</p>	499207400	CAM SPROCKET WRENCH	Used for removing and installing the exhaust camshaft sprocket.