

# General Description

## COOLING

### 1. General Description

#### A: SPECIFICATION

Cooling system			Electric fan + Forced engine coolant circulation system
Total engine coolant capacity			MT: approx. 6.4 (6.8, 5.6) AT: approx. 6.3 (6.7, 5.5)
Water pump	Type	Centrifugal impeller type	
	Discharge performance I	Discharge rate $\ell$ (US gal, Imp gal) /min	20 (5.3, 4.4)
	Discharge performance II	Pump speed — Discharge pressure	760 rpm — 2.9 kPa (0.3 mAq)
		Engine coolant temperature	80°C (176°F)
		Discharge rate $\ell$ (US gal, Imp gal) /min	100 (26.4, 22.0)
	Discharge performance III	Pump speed — Discharge pressure	3,000 rpm — 49 kPa (5.0 mAq)
		Engine coolant temperature	80°C (176°F)
		Discharge rate $\ell$ (US gal, Imp gal) /min	200 (52.8, 44.0)
		Pump speed — Discharge pressure	6,000 rpm — 225.4 kPa (23 mAq)
		Engine coolant temperature	80°C (176°F)
Thermostat	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 — 0.060)
Radiator fan	Type	Wax pellet type	
	Starting temperature to open	80 — 84°C (176 — 183°F)	
	Fully opens	95°C (203°F)	
	Valve lift	mm (in)	9.0 (0.354) or more
	Valve bore	mm (in)	35 (1.38)
Radiator	Motor input	Main fan	90 W
		Sub fan	90 W
	Fan diameter / Blade	Main fan	300 mm (11.81 in)/4
		Sub fan	300 mm (11.81 in)/5
	Type	Down flow, pressure type	
Reservoir tank	Core dimensions	Width × Height × Thickness	mm (in) 687.4 × 340 × 16 (27.06 × 13.39 × 0.63)
	Pressure range in which cap valve is open		
	kPa (kg/cm <sup>2</sup> , psi)		
	Above: 108±15 or more (1.1±0.15, 16±2) Below: -1.0 to -4.9 or less (-0.01 — -0.05, -0.1 — -0.7)		
Fins			Corrugated fin type
Capacity	$\ell$ (US qt, Imp qt)		0.45 (0.48, 0.40)

Coolant	Recommended materials	Item number	Alternative
Coolant	SUBARU coolant	000016218	Phosphoric acid (non-amine) type
Water for dilution	Distilled water	—	Soft water or tap water
Cooling system protective agent	Cooling system conditioner	SOA345001	None

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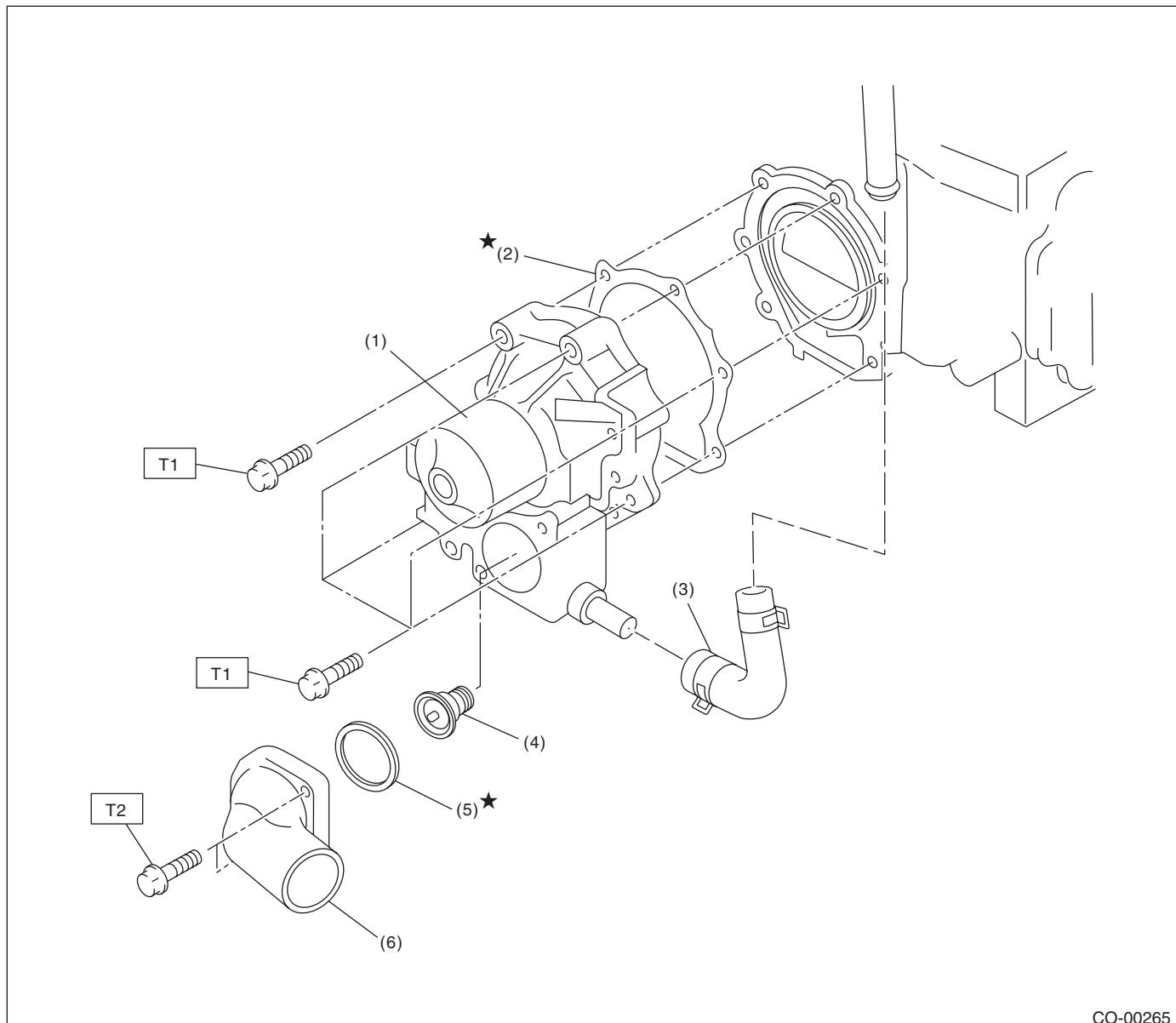
Vehicle speed	A/C compressor load	Engine coolant temperature		
		Increase: 95°C (203°F) or less Decrease: 92°C (198°F) or less	Increase: 96 — 99°C (205 — 210°F) Decrease: 93 — 94°C (199 — 201°F)	Increase: 100°C (212°F) or more Decrease: 95°C (203°F) or more
		Radiator fan operation	Radiator fan operation	Radiator fan operation
During acceleration: 19 km/h (12 MPH) or less During deceleration: 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
During acceleration: 20 — 69 km/h (12 — 43 MPH) During deceleration: 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
During acceleration: 70 — 105 km/h (43 — 65 MPH) During deceleration: 65 — 103 km/h (40 — 64 MPH)	OFF	OFF	Low-Speed	High-Speed
	Low	OFF	Low-Speed	High-Speed
	High	Low-Speed	High-Speed	High-Speed
During acceleration: 106 km/h (66 MPH) or more During deceleration: 104 km/h (65 MPH) or more	OFF	OFF	OFF	High-Speed
	Low	OFF	Low-Speed	High-Speed
	High	OFF	Low-Speed	High-Speed

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### B: COMPONENT

#### 1. WATER PUMP



CO-00265

(1)	Water pump ASSY	(4)	Thermostat
(2)	Gasket	(5)	Gasket
(3)	Heater by-pass hose	(6)	Thermostat cover

**Tightening torque: N·m (kgf·m, ft-lb)**

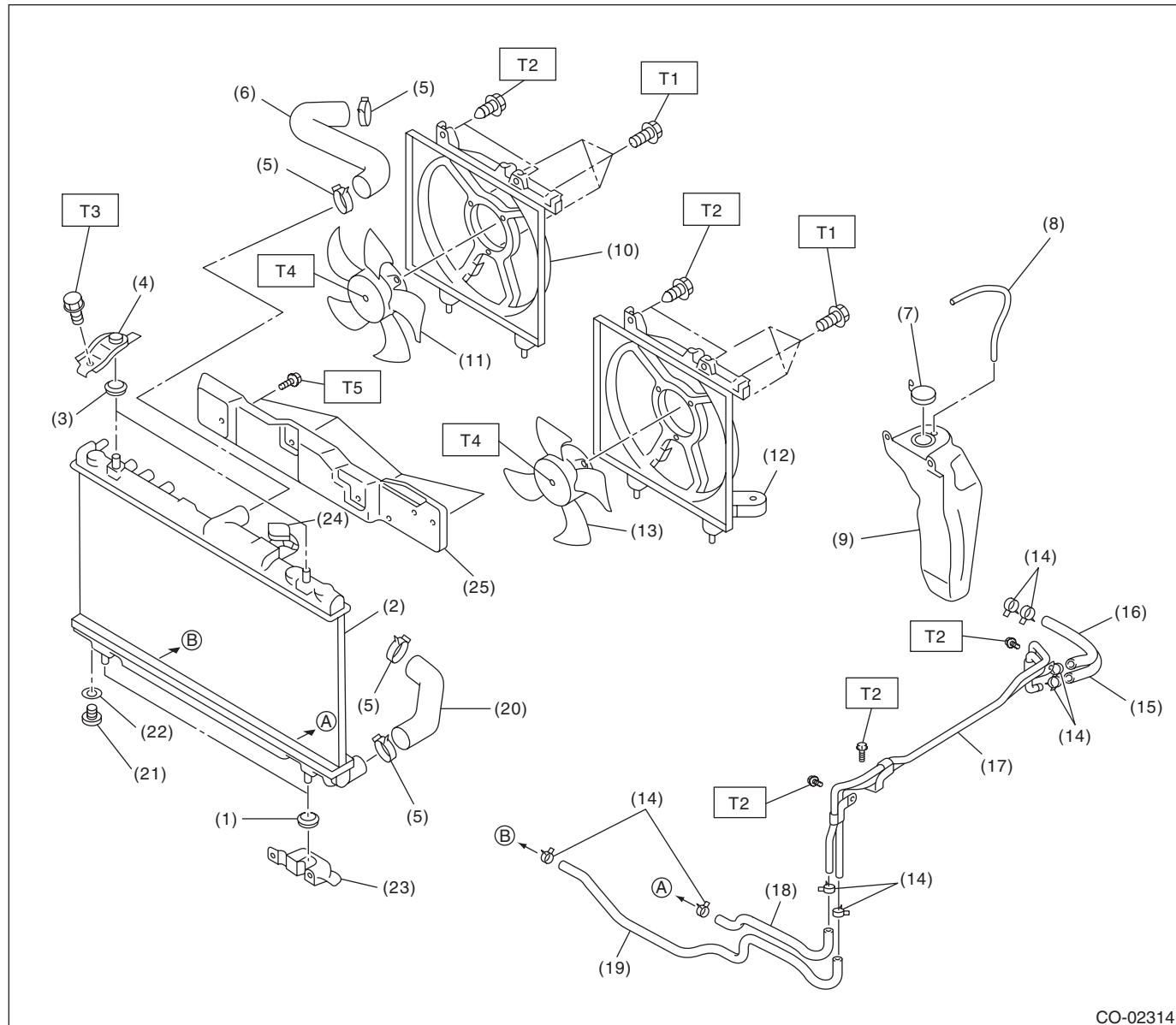
**T1: First 12 (1.2, 8.9)  
Second 12 (1.2, 8.9)**

**T2: 12 (1.2, 8.9)**

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## 2. RADIATOR & RADIATOR FAN



CO-02314

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

### Tightening torque:N·m (kgf·m, ft·lb)

T1: 5 (0.5, 3.6)

T2: 7.5 (0.76, 5.5)

T3: 12 (1.2, 8.9)

T4: 3.4 (0.35, 2.5)

T5: 3 (0.3, 2.2)

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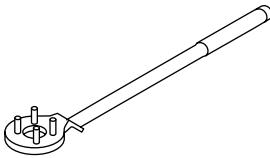
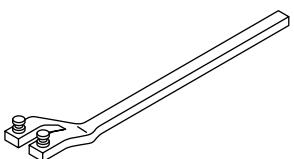
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### C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- 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.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- 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 connectors of sensors or units, be sure to disconnect the ground cable from the battery.

### D: PREPARATION TOOL

#### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499977100	499977100	CRANK PULLEY WRENCH	Used for stopping the rotation of crank pulley when removing and tightening the crank pulley bolt.
 ST18231AA010	18231AA010	CAM SPROCKET WRENCH	<ul style="list-style-type: none"><li>• Used for removing and installing cam sprocket.</li><li>• CAM SPROCKET WRENCH (499207100) can also be used.</li></ul>