

General Description

COOLING

1. General Description

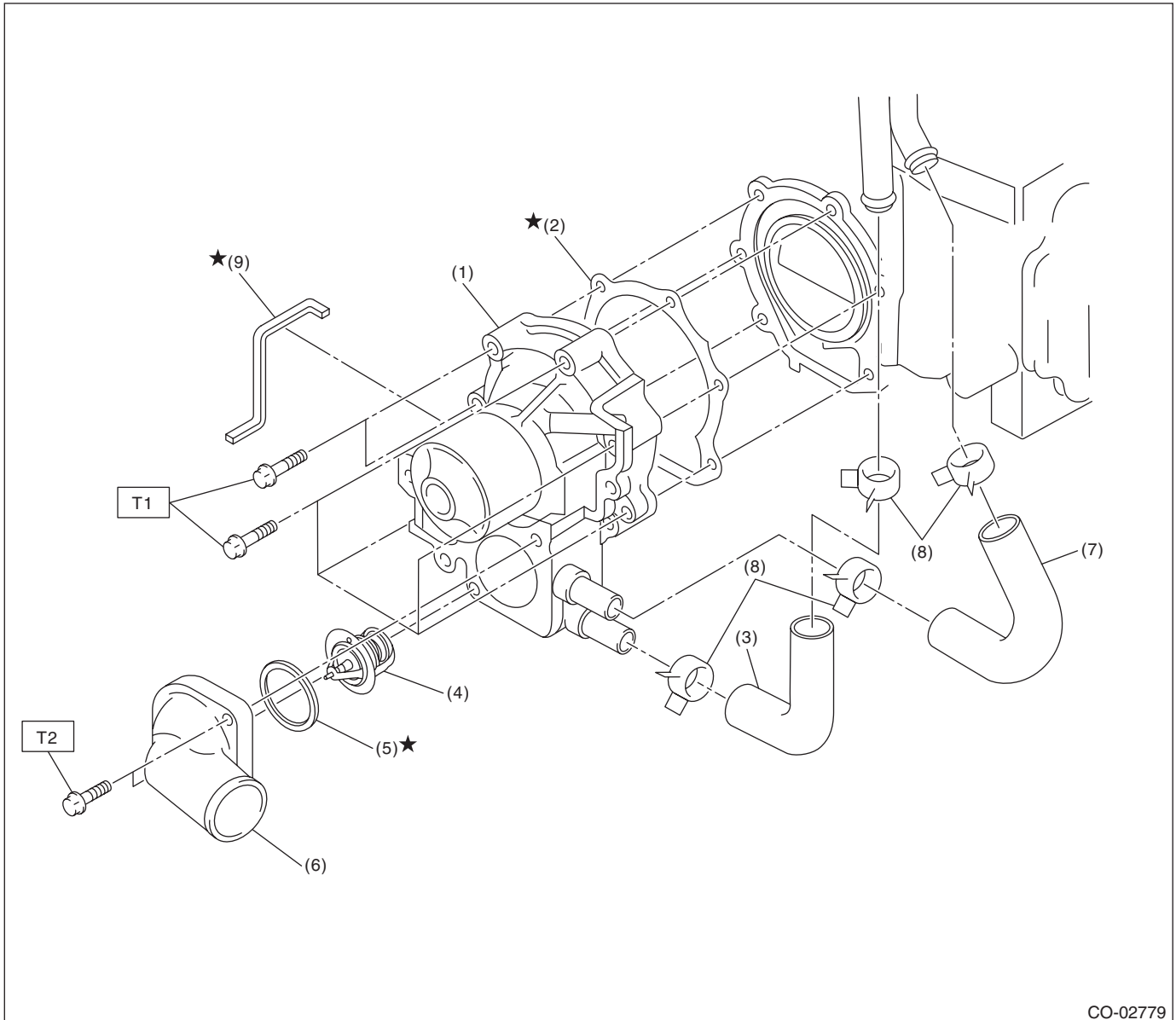
A: SPECIFICATION

Cooling system					Electric fan + Forced engine coolant circulation system					
Total engine coolant capacity					L (US qt, Imp qt)		Approx. 7.4 (7.8, 6.5)			
Water pump	Type						Centrifugal impeller type			
	Discharge performance	Discharge rate		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				80°C (176°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 pump case				mm (in)		Standard		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 / Blade	Main fan			318.5 mm (12.54 in)/9					
		Sub fan			318.5 mm (12.54 in)/11					
Radiator	Type						Down flow			
	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	Coolant filler tank side	kPa (kg/cm ² , psi)		Positive pressure side	Standard	93 — 123 (0.95 — 1.25, 14 — 18)			
						Limit	83 (0.85, 12)			
		Radiator side	kPa (kg/cm ² , psi)		Negative pressure side	Standard	−1.0 — −4.9 (−0.01 — −0.05, −0.1 — −0.7)			
					Positive pressure side only	Standard	122 — 152 (1.24 — 1.55, 18 — 22)			
						Limit	112 (1.14, 16)			
	Fins						Corrugated fin type			
Reservoir tank	Capacity						L (US qt, Imp qt)		0.45 (0.48, 0.40)	

	Recommended materials	Item number	Alternative
Coolant	SUBARU SUPER COOLANT (Concentrated type)	—	—
	SUBARU SUPER COOLANT (Diluted type)	K0670Y0001	
Water for dilution	Distilled water	—	Soft water or tap water
Cooling system protective agent	Cooling system conditioner	SOA345001	—

B: COMPONENT

1. WATER PUMP



- | | |
|-------------------------|---------------------------------|
| (1) Water pump ASSY | (6) Thermostat cover |
| (2) Gasket | (7) Coolant filler by-pass hose |
| (3) Heater by-pass hose | (8) Clip |
| (4) Thermostat | (9) Water pump sealing |
| (5) Gasket | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: First 12 (1.2, 8.9)

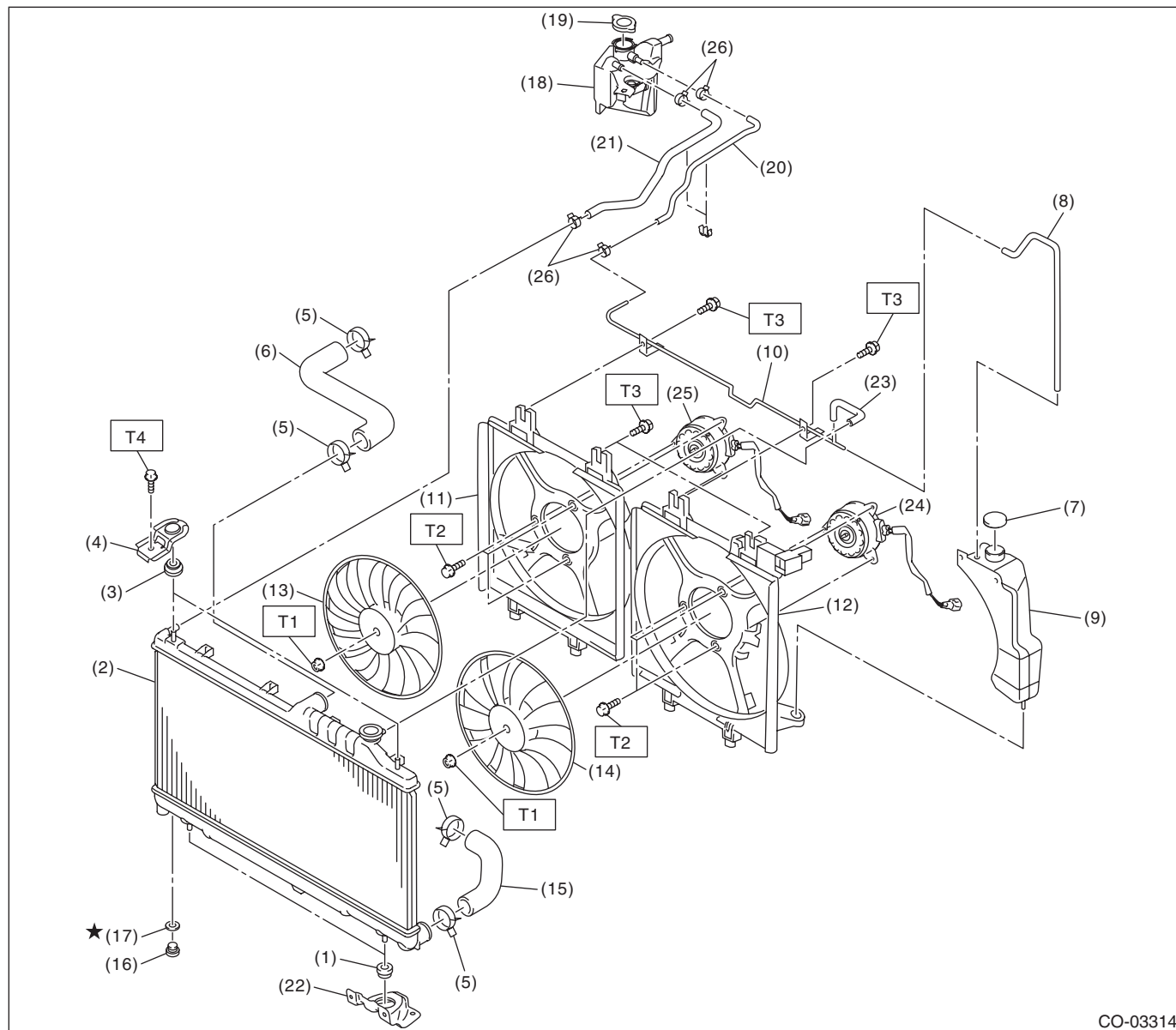
Second 12 (1.2, 8.9)

T2: 12 (1.2, 8.9)

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2. RADIATOR & RADIATOR FAN



CO-03314

- | | | |
|---------------------------------------|---|-----------------------|
| (1) Radiator lower cushion | (12) Radiator main fan shroud | (23) Over flow hose B |
| (2) Radiator | (13) Radiator sub fan | (24) Main fan motor |
| (3) Radiator upper cushion | (14) Radiator main fan | (25) Sub fan motor |
| (4) Radiator upper bracket | (15) Radiator outlet hose | (26) Clip |
| (5) Clip | (16) Radiator drain plug | |
| (6) Radiator inlet hose | (17) O-ring | |
| (7) Engine coolant reservoir tank cap | (18) Coolant filler tank | |
| (8) Over flow hose A | (19) Radiator cap (coolant filler tank cap) | |
| (9) Engine coolant reservoir tank | (20) Engine coolant hose A | |
| (10) Over flow pipe | (21) Engine coolant hose B | |
| (11) Radiator sub fan shroud | (22) Radiator lower bracket | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 3.4 (0.3, 2.5)

T2: 4.41 (0.45, 3.25)

T3: 7.5 (0.8, 5.5)

T4: 12 (1.2, 8.9)

C: CAUTION

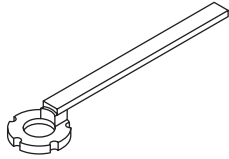
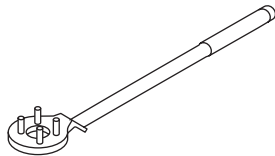
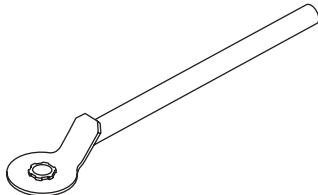
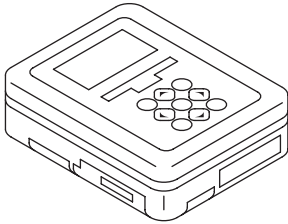
- Prior to starting work, pay special attention to the following:
 1. Always wear work clothes, a work cap, and protective shoes. Additionally, wear a helmet, protective goggles, etc. if necessary.
 2. Protect the vehicle using a seat cover, fender cover, etc.
 3. Prepare the service tools, clean cloth, containers to catch grease and oil, etc.
- Prepare a container and cloth to prevent scattering of engine coolant when performing work where engine coolant can be spilled. If the oil spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Vehicle components are extremely hot immediately after driving. Be wary of receiving burns from heated parts.
- When performing a repair, identify the cause of trouble and avoid unnecessary removal, disassembly and replacement.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from battery.
- Always use the jack-up point when the shop jacks or rigid racks are used to support the vehicle.
- Remove contamination including dirt and corrosion before removal, installation, disassembly or assembly.
- Keep the removed parts in order and protect them from dust and dirt.
- All removed parts, if to be reused, should be reinstalled in the original positions with attention to the correct directions, etc.
- Bolts, nuts and washers should be replaced with new parts as required.
- Be sure to tighten the fasteners including bolts and nuts to the specified torque.
- Follow all government and local regulations concerning disposal of refuse when disposing engine coolant.

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D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST-499207400</p>	499207400	CAM SPROCKET WRENCH	Used for removing and installing exhaust cam sprocket.
 <p>ST-499977100</p>	499977100	CRANK PULLEY WRENCH	Used for removing and installing the crank pulley.
 <p>ST-499977500</p>	499977500	CAM SPROCKET WRENCH	Used for removing and installing intake cam sprocket.
 <p>ST1B022XU0</p>	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Radiator cap tester	Used for checking radiator and radiator cap.