

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)			CVT model		Approx. 7.6 (8.0, 6.7)		
			MT model		Approx. 7.4 (7.8, 6.5)		
Water pump	Type				Centrifugal impeller type		
	Discharge performance	Discharge rate L (US gal, Imp gal)/min				230 (60.8, 50.6)	
		Pump speed — Discharge pressure				6,600 rpm — 211.0 kPa (22 mAq)	
		Engine coolant temperature				80°C (176°F)	
	Impeller diameter mm (in)				60 (2.36)		
	Number of impeller vanes				7		
	Pump pulley diameter mm (in)				130 (5.12)		
Thermostat	Type				Wax pellet type		
	Starting temperature to open		Engine side		86 — 90°C (187 — 194°F)		
			CVTF cooler (with warmer feature) side		48 — 52°C (118 — 126°F)		
	Fully opens		Engine side		95°C (203°F)		
			CVTF cooler (with warmer feature) side		63°C (145°F)		
	Valve lift mm (in)		Engine side		8.0 (0.315) or more		
			CVTF cooler (with warmer feature) side		6.0 (0.236) or more		
Valve bore mm (in)				32 (1.26)			
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, pressure type		
	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 ² , psi)		Positive pressure side		Standard	93 — 123 (0.95 — 1.25, 14 — 18)	
					Limit	83 (0.85, 12)	
			Negative pressure side		Standard	−1.0 to −4.9 or less (−0.01 — −0.05, −0.1 — −0.7)	
	Fins				Corrugated fin type		
Reservoir tank	Capacity L (US qt, Imp qt)				0.45 (0.48, 0.40)		

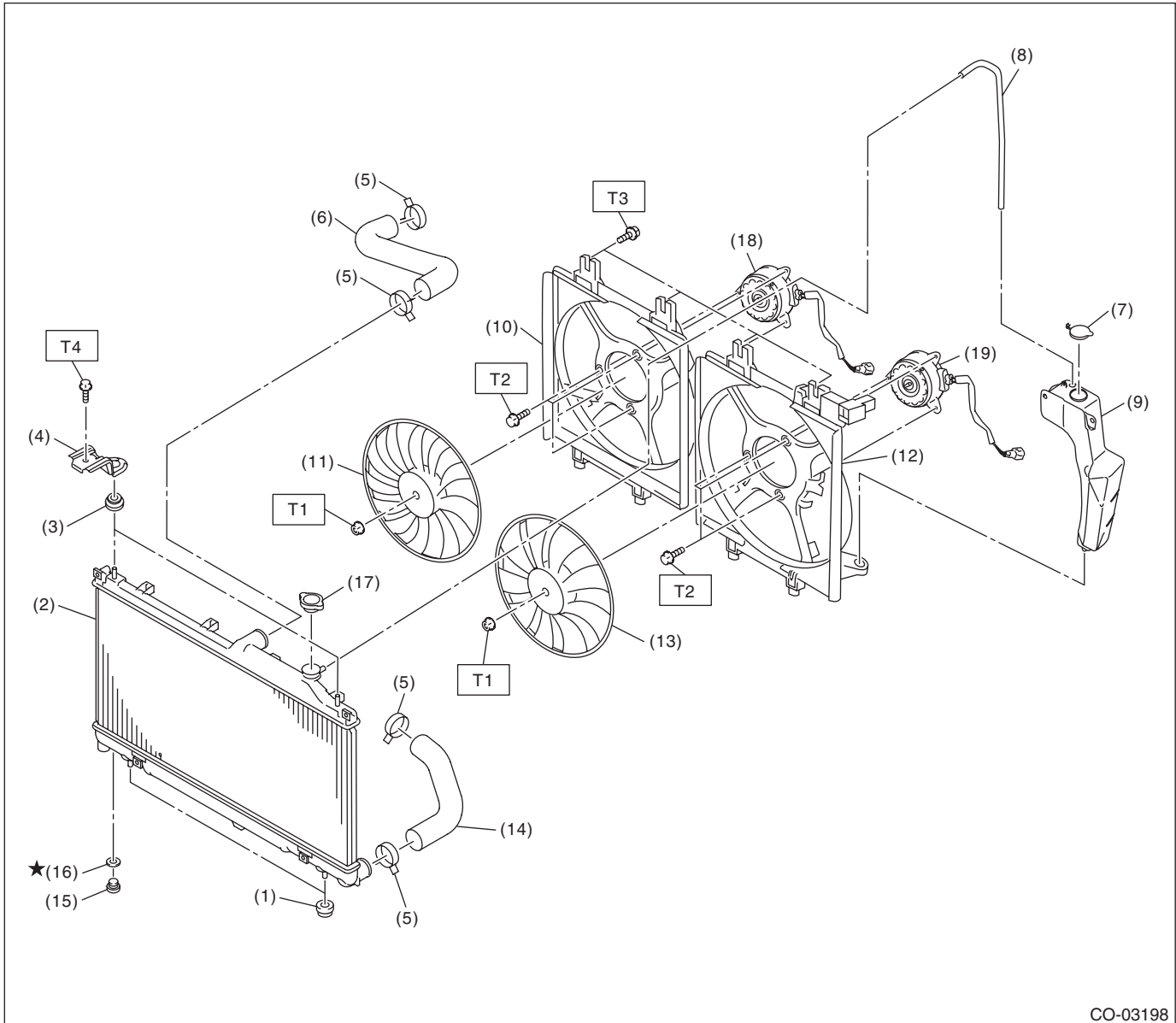
	Recommended materials	Item number	Alternative
Coolant	SUBARU SUPER COOLANT (concentrated type)	—	—
	SUBARU SUPER COOLANT (diluted type)	K0670Y0001	
Water for dilution	Distilled water	—	Soft water or tap water
Cooling system protective agent	Cooling system conditioner	SOA345001	—

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(1) Water pump pulley	(9) Water pipe LH	(17) Gasket (CVTF cooler (with warmer feature) side)
(2) Water pump ASSY	(10) Preheater hose	(18) Thermostat cover (CVTF cooler (with warmer feature) side)
(3) Gasket	(11) Clip	
(4) Thermostat (engine side)	(12) Water pipe RH (CVT model)	<i>Tightening torque: N·m (kgf-m, ft-lb)</i>
(5) Gasket (engine side)	(13) Clip (CVT model)	<i>T1: 6.4 (0.7, 4.7)</i>
(6) Thermostat cover (engine side)	(14) Water pipe hose RH (CVT model)	<i>T2: 14 (1.4, 10.3)</i>
(7) Clip	(15) Water pipe ASSY	
(8) Water pipe hose LH	(16) Thermostat (CVTF cooler (with warmer feature) side)	

2. RADIATOR & RADIATOR FAN



CO-03198

- | | |
|---------------------------------------|-------------------------------|
| (1) Radiator lower cushion | (10) Radiator sub fan shroud |
| (2) Radiator | (11) Radiator sub fan |
| (3) Radiator upper cushion | (12) Radiator main fan shroud |
| (4) Radiator upper bracket | (13) Radiator main fan |
| (5) Clip | (14) Radiator outlet hose |
| (6) Radiator inlet hose | (15) Radiator drain plug |
| (7) Engine coolant reservoir tank cap | (16) O-ring |
| (8) Over flow hose | (17) Radiator cap |
| (9) Engine coolant reservoir tank | (18) Sub fan motor |

- (19) Main fan motor

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)

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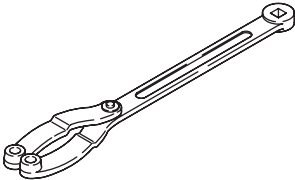
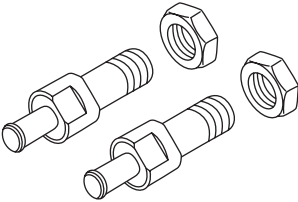
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C: CAUTION

- Prior to starting work, pay special attention to the following:
 1. Always wear work clothes, a safety cap, 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.

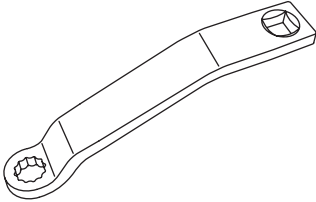
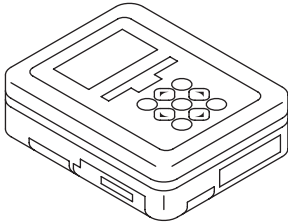
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18355AA000	18355AA000	PULLEY WRENCH	Used for removing and installing water pump pulley.
 ST18334AA030	18334AA030	PULLEY WRENCH PIN SET	Used for removing and installing water pump pulley.

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST73099SG000</p>	73099SG000 (Newly adopted tool)	SPECIAL TOOL CONDENSER	Used for installing the radiator.
 <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.