

# General Description

## COOLING

### 1. General Description

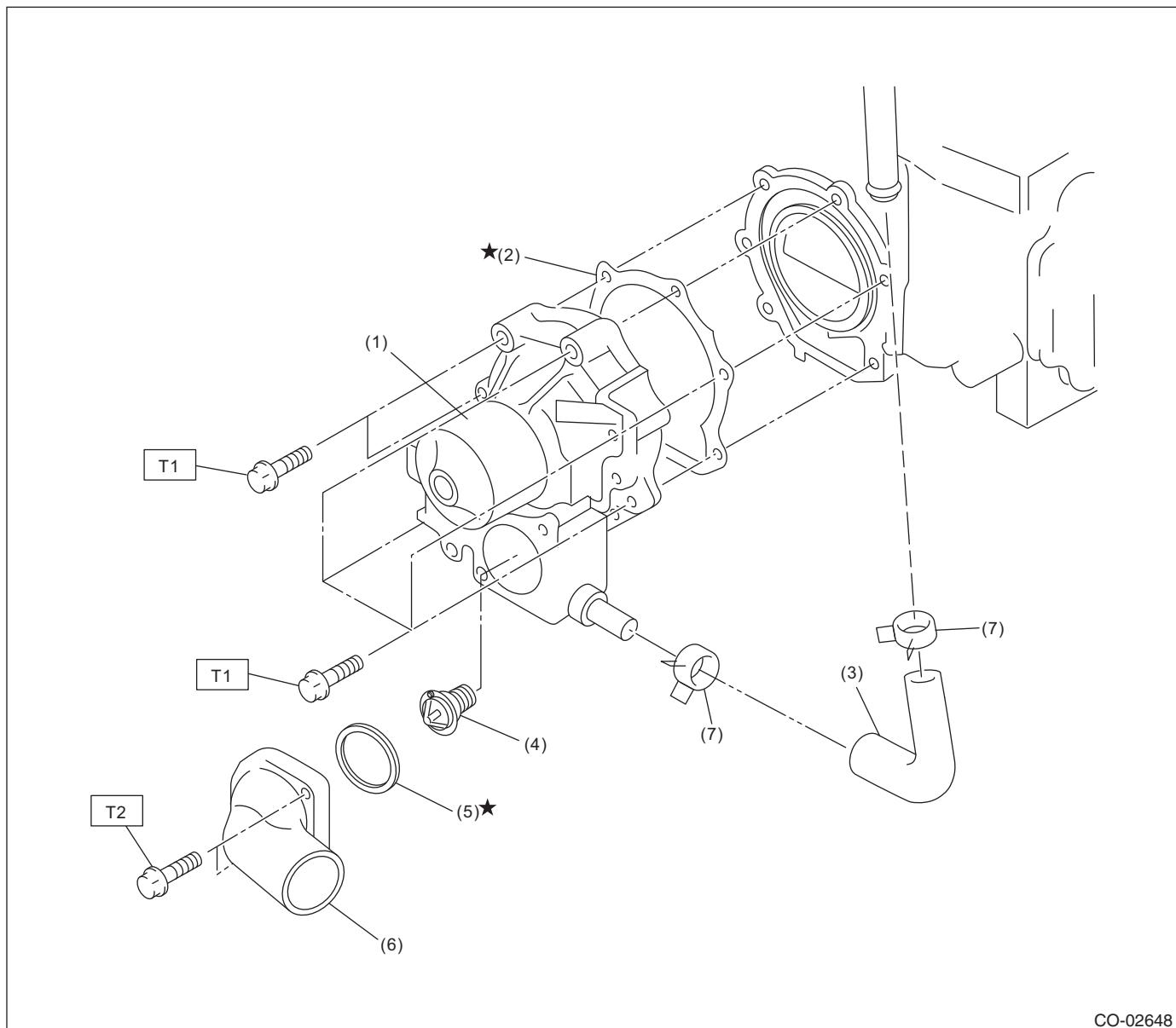
#### A: SPECIFICATION

Cooling system			Electric fan + Forced engine coolant circulation system	
Total engine coolant capacity	ℓ (US qt, Imp qt)			Approx. 6.5 (6.9, 5.7)
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 mAq)
		Engine coolant temperature		80°C (176°F)
	Impeller diameter	mm (in)		76 (2.99)
Thermostat	Number of impeller vanes			8
	Pump pulley diameter			60 (2.36)
	Clearance between impeller and case	mm (in)	Standard	0.5 — 1.5 (0.020 — 0.060)
	Type			Wax pellet type
	Starting temperature to open			86 — 90°C (187 — 194°F)
Radiator fan	Fully opens			95°C (203°F)
	Valve lift	mm (in)		9.0 (0.354) or more
	Valve bore	mm (in)		35 (1.38)
	Motor input	Main fan	W	90
		Sub fan	W	90
Radiator	Fan diameter / Blade	Main fan	300 mm (11.81 in)/4	
		Sub fan	300 mm (11.81 in)/5	
		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		Positive pressure side	Standard 93 — 123 (0.95 — 1.25, 14 — 18)
			Service limit	83 (0.85, 12)
	Fins		Negative pressure side	Standard —1.0 to —4.9 or less (—0.01 — —0.05, —0.1 — —0.7)
				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)	K0670Y0000	
Water for dilution	Distilled water	—	Soft water or tap water
Cooling system protecting agent	Cooling system conditioner	SOA345001	—

## B: COMPONENT

## 1. WATER PUMP



CO-02648

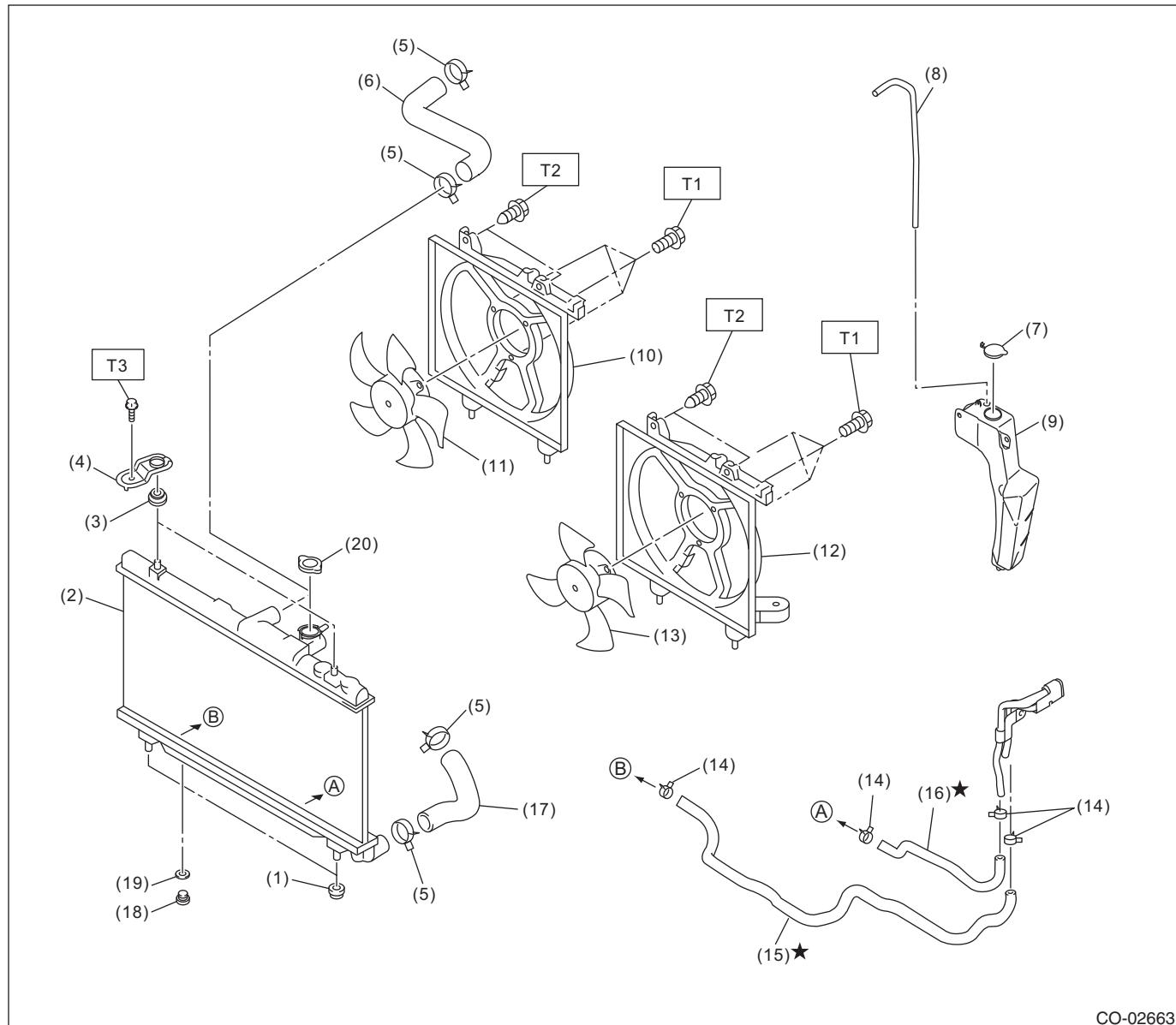
(1)	Water pump ASSY	(5)	Gasket
(2)	Gasket	(6)	Thermostat cover
(3)	Heater by-pass hose	(7)	Clip
(4)	Thermostat		

**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-02663

(1) Radiator lower cushion	(10) Radiator sub fan shroud	(19) O-ring
(2) Radiator	(11) Radiator sub fan, radiator sub fan motor ASSY	(20) Radiator cap
(3) Radiator upper cushion	(12) Radiator main fan shroud	
(4) Radiator upper bracket	(13) Radiator main fan, radiator main fan motor ASSY	
(5) Clip	(14) CVTF hose clamp (CVT model)	
(6) Radiator inlet hose	(15) CVTF hose A (CVT model)	
(7) Engine coolant reservoir tank cap	(16) CVTF hose B (CVT model)	
(8) Over flow hose	(17) Radiator outlet hose	
(9) Engine coolant reservoir tank	(18) Radiator drain plug	

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

**T1: 5 (0.5, 3.7)**

**T2: 7.5 (0.8, 5.5)**

**T3: 12 (1.2, 8.9)**

## C: CAUTION

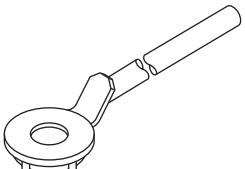
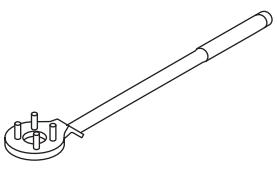
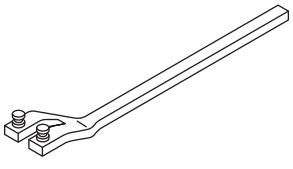
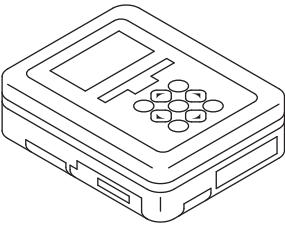
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, 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 battery.
- Prepare a container and cloth to prevent scattering of engine coolant when performing work where engine coolant can be spilled. If the fuel spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- 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
 ST-499977400	499977400	CRANK PULLEY WRENCH	Used for removing and installing the crank pulley. (CVT model)
 ST-499977100	499977100	CRANK PULLEY WRENCH	Used for removing and installing the crank pulley. (MT model)
 ST18231AA010	18231AA010	CAM SPROCKET WRENCH	Used for removing and installing cam sprocket. NOTE: CAM SPROCKET WRENCH (499207100) can also be used.
 ST1B022XU0	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.