

# General Description

## COOLING

### 1. General Description

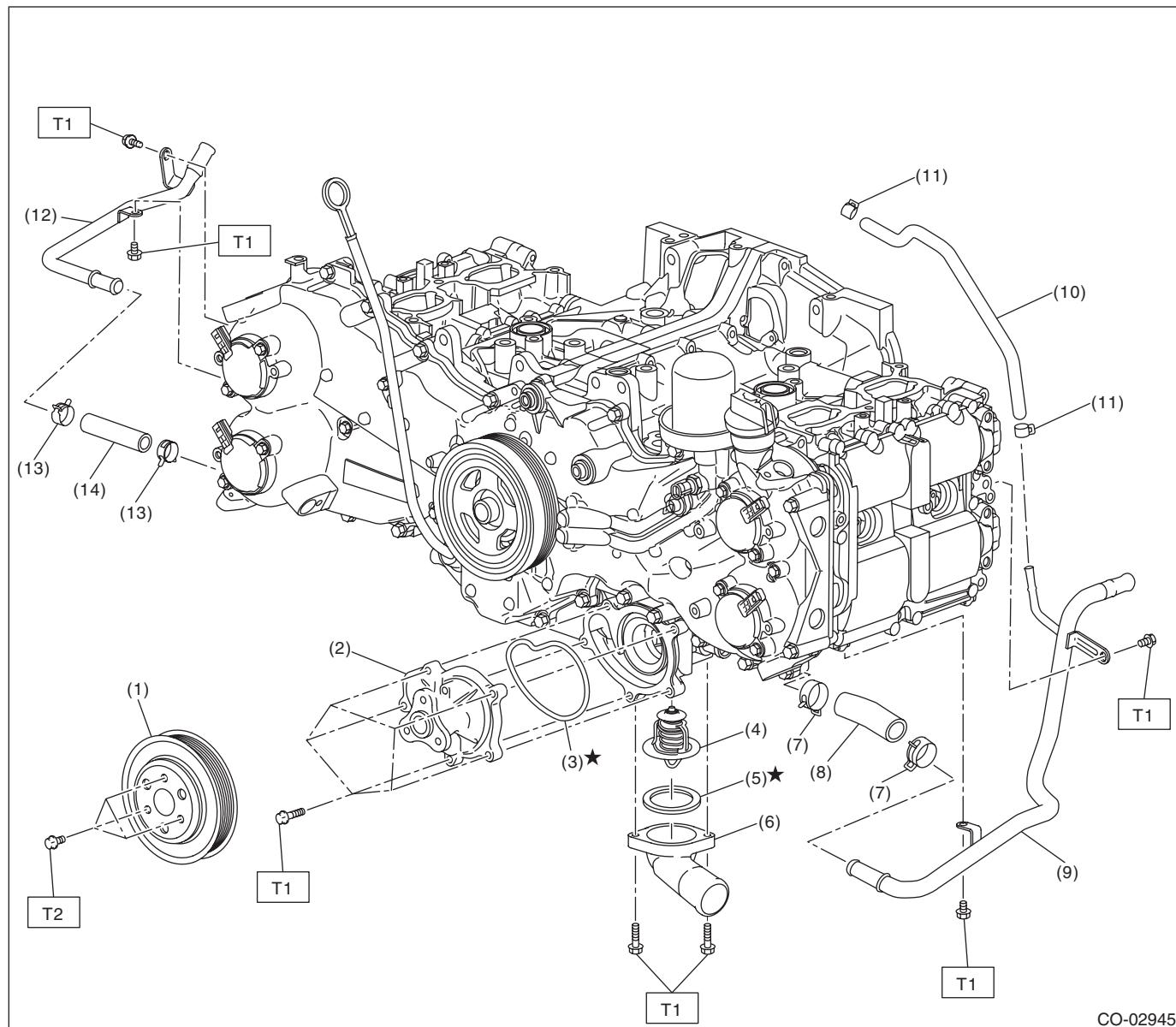
#### A: SPECIFICATION

Cooling system			Electric fan + Forced engine coolant circulation system		
Total engine coolant capacity		ℓ (US qt, Imp qt)	CVT model	Approx. 7.8 (8.2, 6.9)	
			MT model	Approx. 7.5 (7.9, 6.6)	
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
Thermostat	Pump pulley diameter			mm (in)	130 (5.12)
	Type			Wax pellet type	
	Starting temperature to open	Engine side		87 — 91°C (189 — 196°F)	
		ATF cooler (with warmer feature) side		48 — 52°C (118 — 126°F)	
	Fully opens	Engine side		98°C (208°F)	
		ATF cooler (with warmer feature) side		63°C (145°F)	
Radiator fan	Valve lift	mm (in)	Engine side		8.0 (0.315) or more
			ATF cooler (with warmer feature) side		6.0 (0.236) or more
	Valve bore			mm (in)	32 (1.26)
	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 <sup>2</sup> , psi)	Positive pres- sure side	Standard	93 — 123 (0.95 — 1.25, 14 — 18)
			Limit		83 (0.85, 12)
			Negative pres- sure 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	—

### B: COMPONENT

#### 1. WATER PUMP



(1) Water pump pulley	(7) Clip	(13) Clip (CVT model)
(2) Water pump ASSY	(8) Water pipe hose LH	(14) Water pipe hose RH (CVT model)
(3) Gasket	(9) Water pipe LH	
(4) Thermostat	(10) Preheater hose	
(5) Gasket	(11) Clip	
(6) Thermostat cover	(12) Water pipe RH (CVT model)	

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

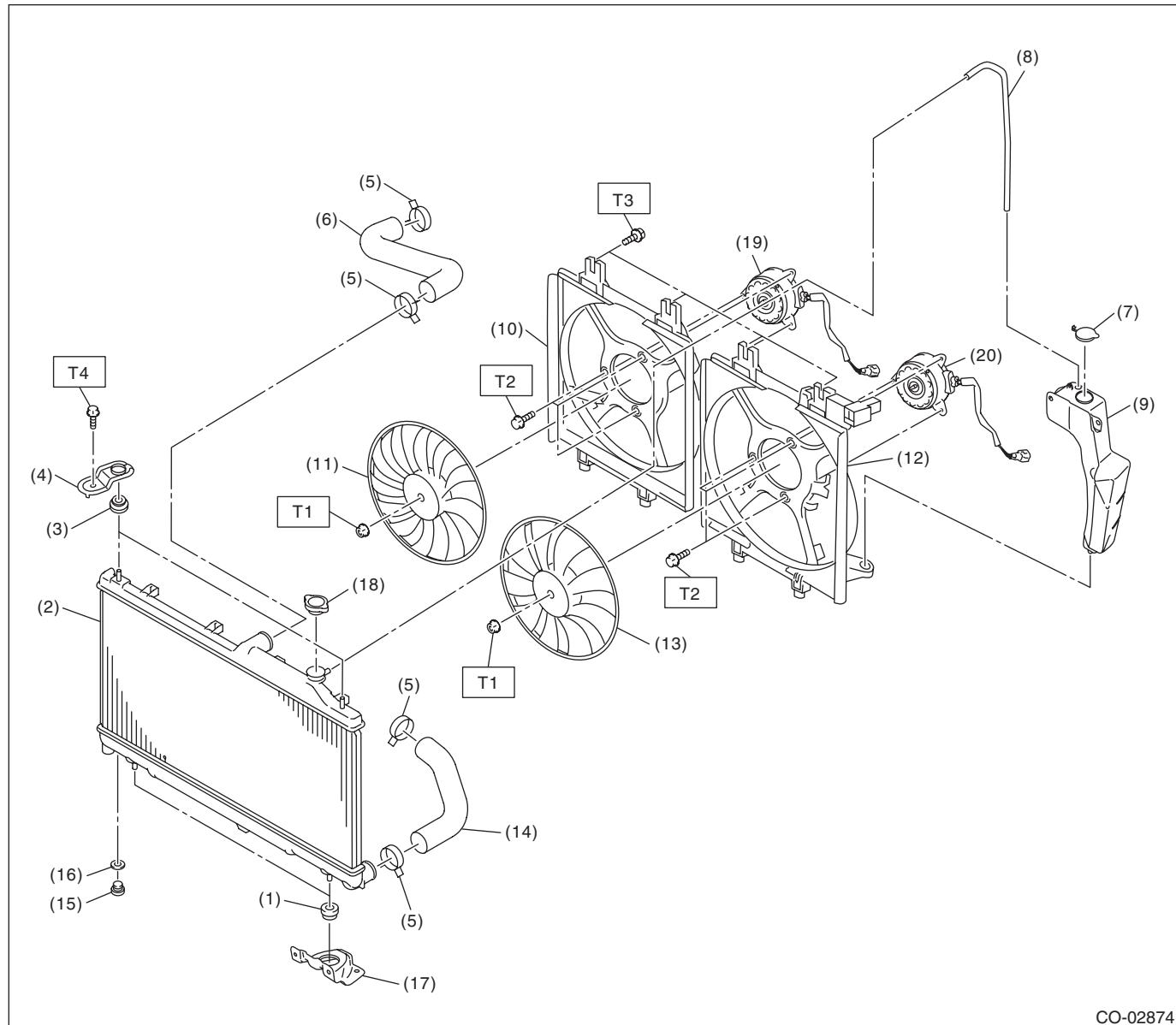
**T1: 6.4 (0.7, 4.7)**

**T2: 14 (1.4, 10.3)**

# General Description

## COOLING

### 2. RADIATOR & RADIATOR FAN



CO-02874

(1) Radiator lower cushion	(10) Radiator sub fan shroud	(19) Sub fan motor
(2) Radiator	(11) Radiator sub fan	(20) Main fan motor
(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 lower bracket	
(9) Engine coolant reservoir tank	(18) Radiator cap	

#### **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

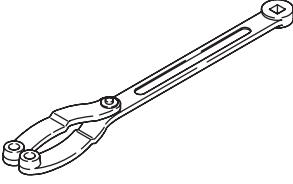
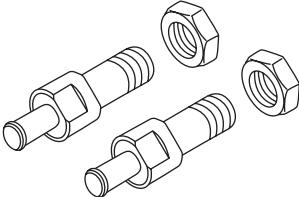
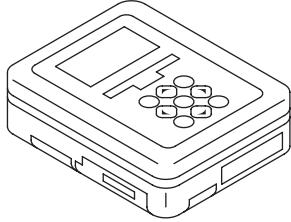
- Prior to starting work, pay special attention to the following:
  1. Always wear work clothes, a safety cap, protective shoes. Additionally, wear a helmet, protective goggles, etc. if necessary.
  2. Protect the vehicle using a seat cover, fender cover, etc.
  3. Prepare the service tools, clean cloth, 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.

# General Description

## COOLING

### 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.
 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.