1. General Description

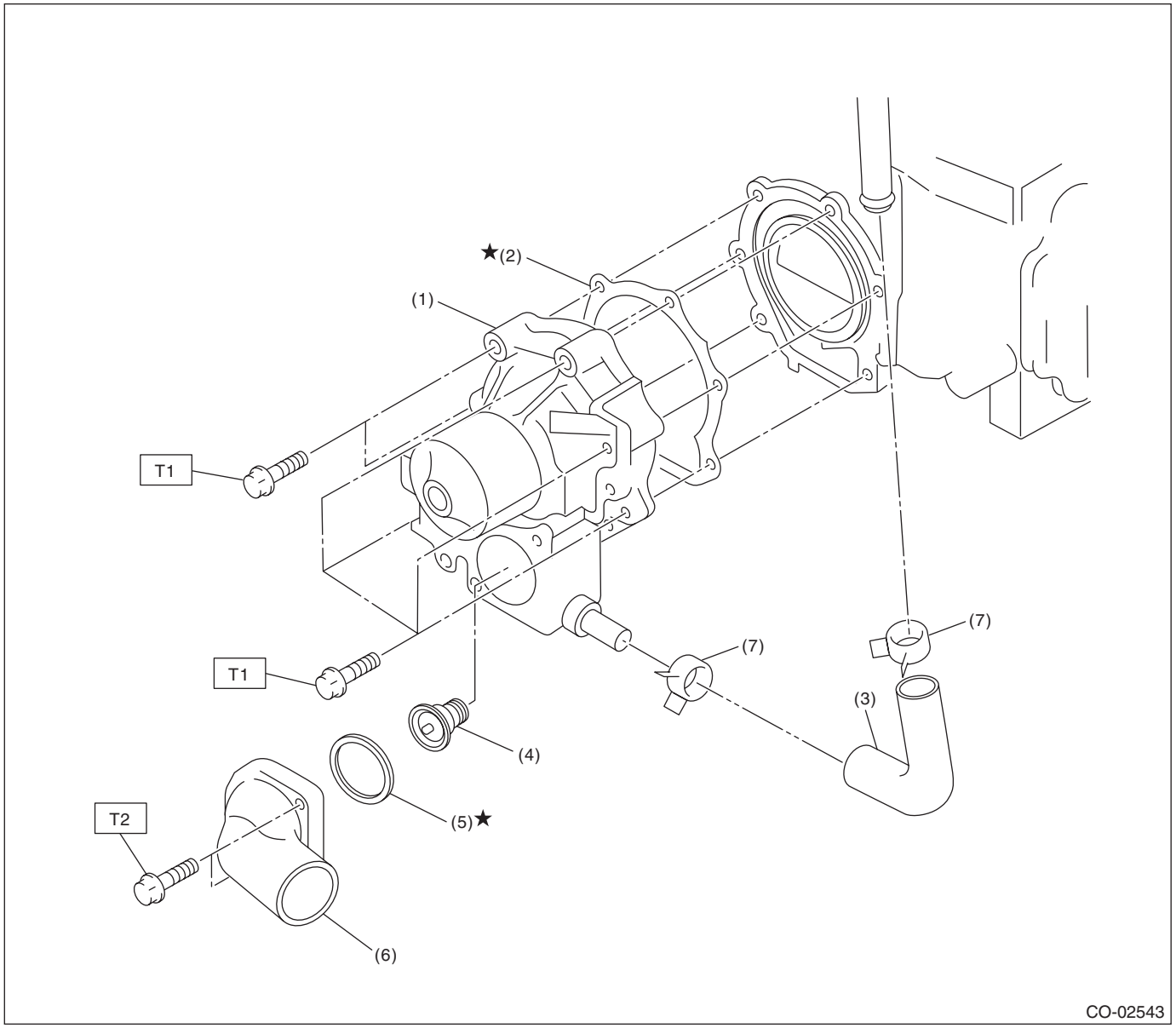
A: SPECIFICATION

Cooling system				Electric fan + Forced engine coolant circulation system
Total engine coolant capacity ℓ (US qt, Imp qt)				AT model: Approx. 6.7 (7.1, 5.9)
				MT model: Approx. 6.8 (7.2, 6.0)
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)
	Number of impeller vanes			8
	Pump pulley diameter mm (in)			60 (2.36)
	Clearance between impeller and case mm (in)		Standard	0.5 — 1.5 (0.020 — 0.060)
Thermo-stat	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 fan	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
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)	Above	Standard	93 — 123 (0.95 — 1.25, 14 — 18)
			Limit	83 (0.85, 12)
		Below	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

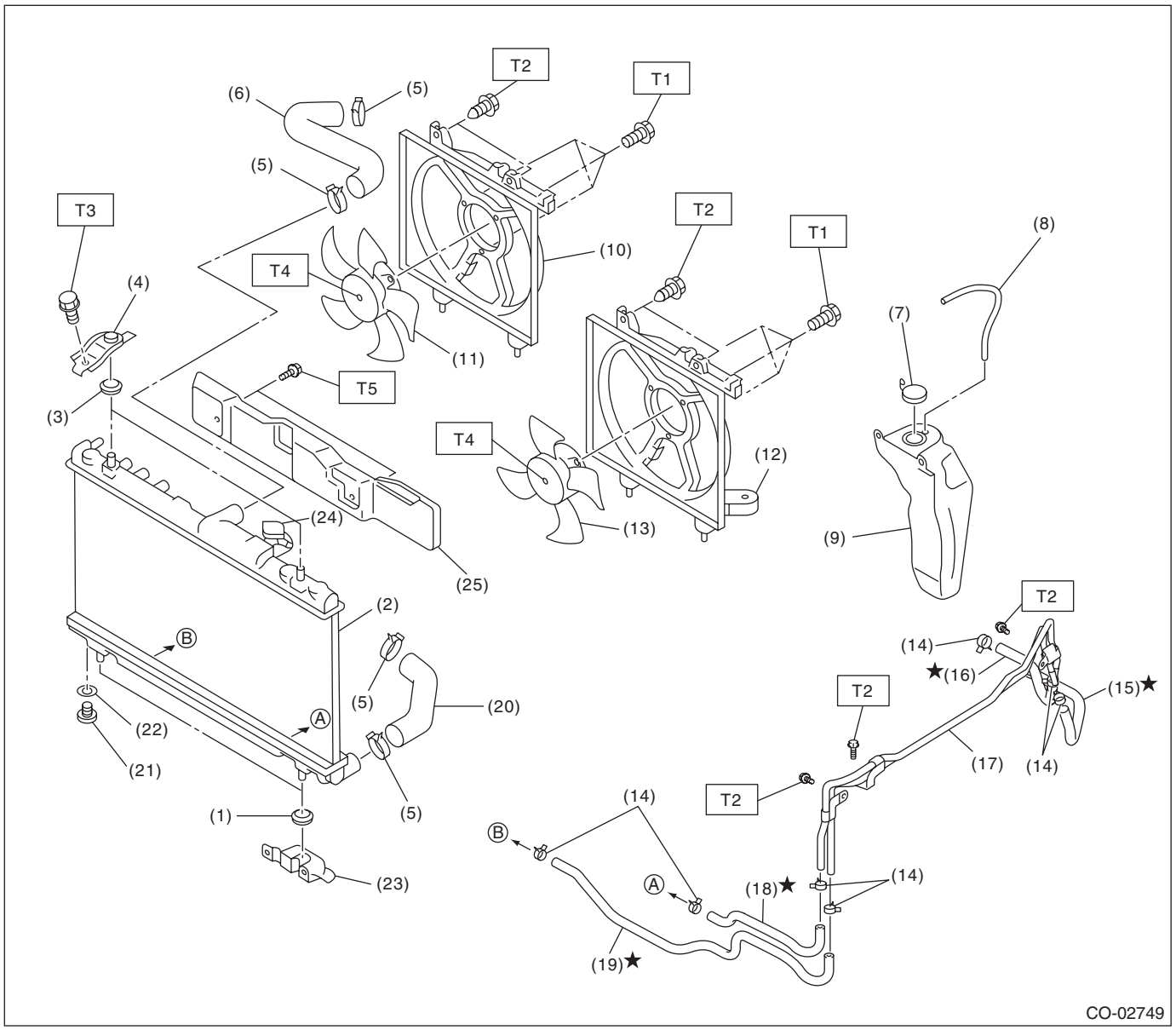
1. WATER PUMP



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

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)

2. RADIATOR & RADIATOR FAN



(1)	Radiator lower cushion	(12)	Radiator main fan shroud	(23)	Radiator lower bracket
(2)	Radiator	(13)	Radiator main fan, main fan motor ASSY	(24)	Radiator cap
(3)	Radiator upper cushion	(14)	ATF hose clip (AT model)	(25)	Heat shield cover (AT model)
(4)	Radiator upper bracket	(15)	ATF hose A (AT model)		
(5)	Clip	(16)	ATF hose B (AT model)		
(6)	Radiator inlet hose	(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 outlet hose		
(10)	Radiator sub fan shroud	(21)	Radiator drain plug		
(11)	Radiator sub fan, sub fan motor ASSY	(22)	O-ring		

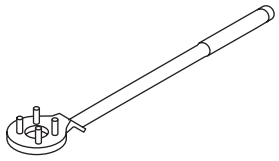
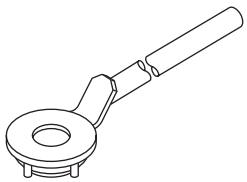
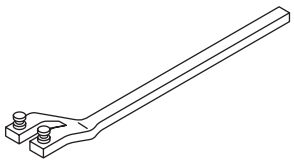
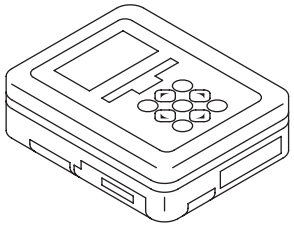
Tightening torque:N·m (kgf-m, ft-lb)
T1: 5 (0.5, 3.7)
T2: 7.5 (0.8, 5.5)
T3: 12 (1.2, 8.9)
T4: 3.4 (0.3, 2.5)
T5: 3 (0.3, 2.2)

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 oil 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.

D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST-499977100	499977100	CRANK PULLEY WRENCH	Used for removing and installing the crank pulley. (MT model)
 ST-499977400	499977400	CRANK PULLEY WRENCH	Used for removing and installing the crank pulley. (AT 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.