# 1. General Description

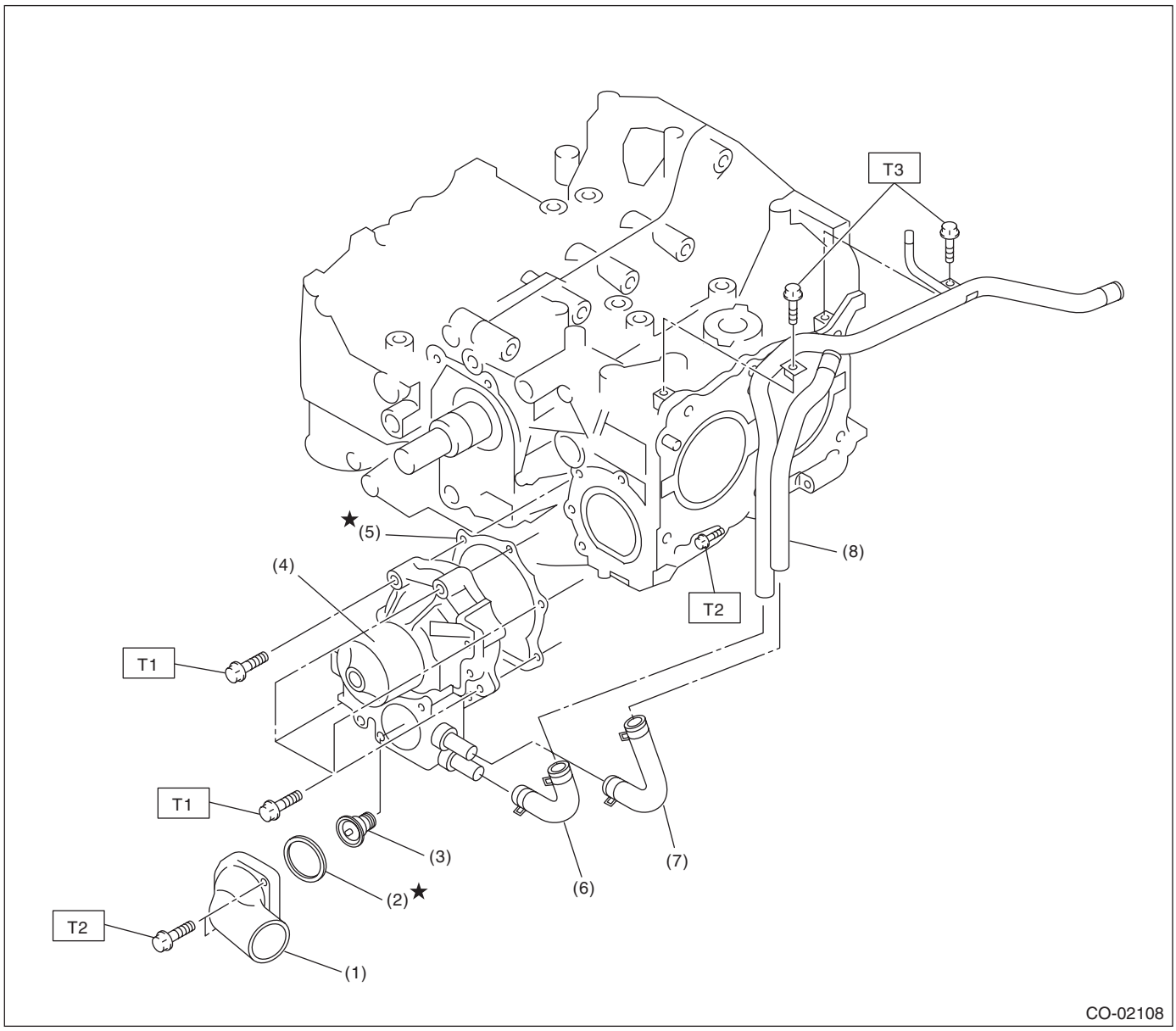
## A: SPECIFICATION

| | | | |
|---|---|---|---|
| Cooling system | | | Electric fan + Forced engine coolant circulation system |
| Total engine coolant capacity | | ℓ (US qt, Imp qt) | MT: Approx. 7.3 (7.7, 6.4)<br>AT: Approx. 7.2 (7.6, 6.3) |
| Water pump | Type | | Centrifugal impeller type |
| | Discharge performance I | Discharge rate ℓ (US gal, Imp gal) /min | 20 (5.3, 4.4) |
| | | Pump speed — Discharge pressure | 760 rpm — 2.9 kPa (0.3 mAq) |
| | | Engine coolant temperature | 80°C (176°F) |
| | Discharge performance II | Discharge rate ℓ (US gal, Imp gal) /min | 100 (26.4, 22.0) |
| | | Pump speed — Discharge pressure | 3,000 rpm — 49.0 kPa (5.0 mAq) |
| | | Engine coolant temperature | 80°C (176°F) |
| | Discharge performance III | 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 case | Standard mm (in) | 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<br>W | 120 |
| | | Sub fan<br>W | 120 |
| | Fan diameter / Blade | Main fan | 320 mm (12.6 in)/5 |
| | | Sub fan | 320 mm (12.6 in)/7 |
| 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) | Above: 108±15<br>(1.1±0.15, 16±2)<br>Below: –1.0 — –4.9<br>(–0.01 — –0.05, –0.1 — –0.7) |
| | | Radiator side kPa ($kg/cm^2$, psi) | Above only: 137±14.7<br>(1.40±0.15, 20±2.1) |
| | Fins | | Corrugated fin type |
| Reservoir tank | Capacity | ℓ (US qt, Imp qt) | 0.45 (0.48, 0.40) |

| Vehicle speed | A/C compressor load | Engine coolant temperature | | |
|---|---|---|---|---|
| | | Increase: 94°C (201°F) or less Decrease: 91°C (196°F) or less | Increase: 95 — 96°C (203 — 205°F) Decrease: 92 — 94°C (198 — 201°F) | Increase: 97°C (207°F) or more Decrease: 95°C (203°F) or more |
| | | Radiator fan operation | Radiator fan operation | Radiator fan operation |
| During acceleration: 19 km/h (12 MPH) or less During deceleration: 10 km/h (6 MPH) or less | OFF | OFF | Low-Speed | High-Speed |
| | Low | Low-Speed | Low-Speed | High-Speed |
| | High | High-Speed | High-Speed | High-Speed |
| During acceleration: 20 — 69 km/h (12 — 43 MPH) During deceleration: 11 — 64 km/h (7 — 40 MPH) | OFF | OFF | Low-Speed | High-Speed |
| | Low | High-Speed | High-Speed | High-Speed |
| | High | High-Speed | High-Speed | High-Speed |
| During acceleration: 70 — 105 km/h (43 — 65 MPH) During deceleration: 65 — 100 km/h (40 — 62 MPH) | OFF | OFF | Low-Speed | High-Speed |
| | Low | High-Speed | High-Speed | High-Speed |
| | High | High-Speed | High-Speed | High-Speed |
| During acceleration: 106 km/h (66 MPH) or more During deceleration: 101 km/h (63 MPH) or more | OFF | OFF | High-Speed | High-Speed |
| | Low | High-Speed | High-Speed | High-Speed |
| | High | High-Speed | High-Speed | High-Speed |

# B: COMPONENT

## 1. WATER PUMP




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

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

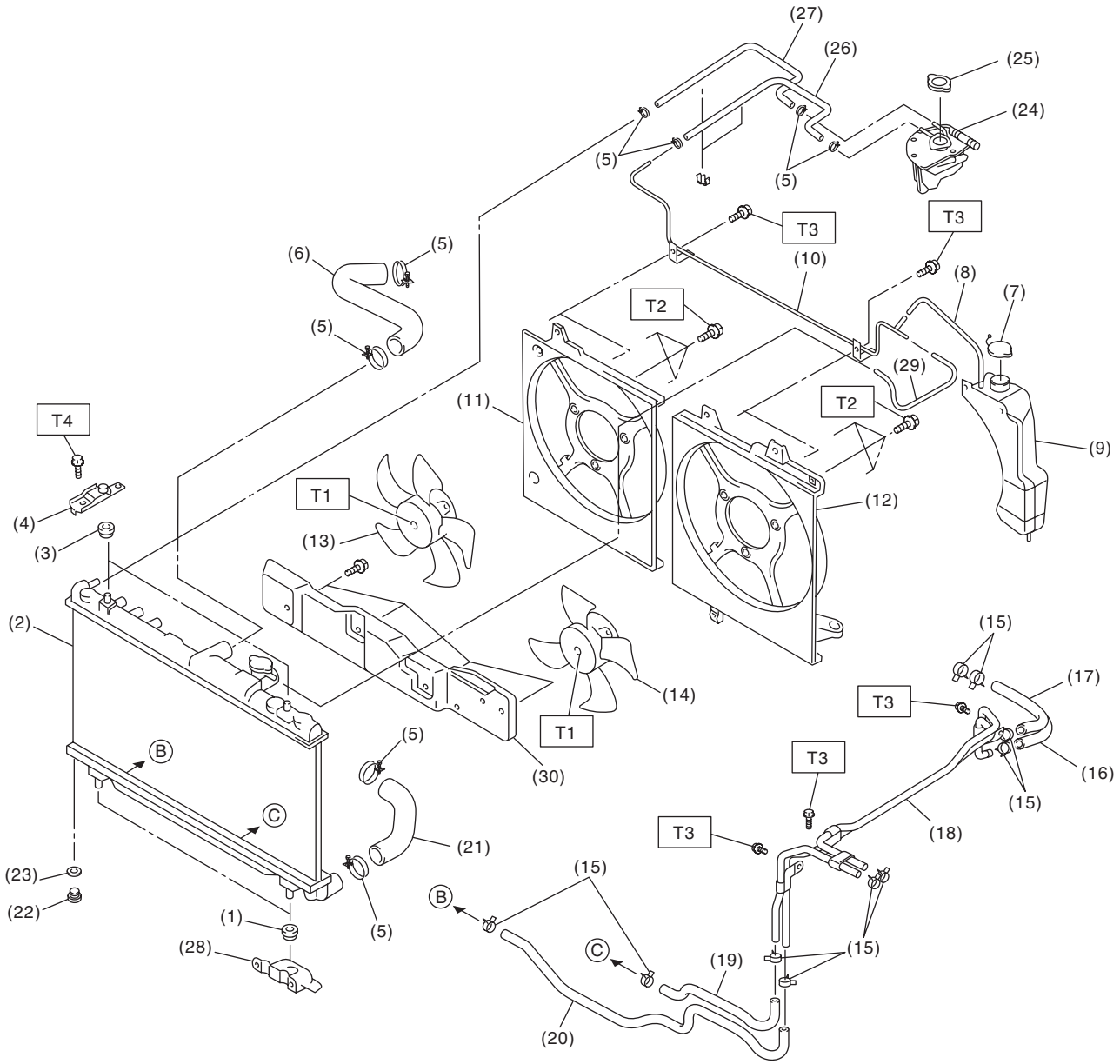
***T1: First 12 (1.2, 8.9)***

***Second 12 (1.2, 8.9)***

***T2: 12 (1.2, 8.9)***

***T3: 6.5 (0.7, 4.8)***

## 2. RADIATOR AND RADIATOR FAN




CO-02132

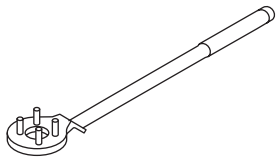
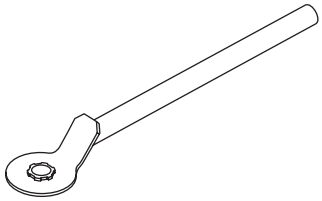
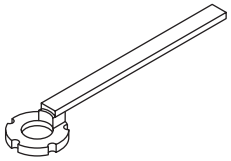
(1) Radiator lower cushion
(2) Radiator
(3) Radiator upper cushion
(4) Radiator upper bracket
(5) Clamp
(6) Radiator hose A
(7) Engine coolant reservoir tank cap
(8) Overflow hose A
(9) Engine coolant reservoir tank
(10) Overflow pipe
(11) Radiator sub fan shroud
(12) Radiator main fan shroud
(13) Radiator sub fan ASSY
(14) Radiator main fan ASSY
(15) ATF hose clamp (AT model)
(16) ATF hose A (AT model)
(17) ATF hose B (AT model)
(18) ATF pipe (AT model)
(19) ATF hose C (AT model)
(20) ATF hose D (AT model)
(21) Radiator hose B
(22) Radiator drain plug
(23) O-ring
(24) Engine coolant filler tank
(25) Radiator cap (Engine coolant filler tank cap)
(26) Coolant filler tank hose A
(27) Coolant filler tank hose B
(28) Radiator lower bracket
(29) Overflow hose B
(30) Heat shield cover (AT model)

| ***Tightening torque: N·m (kgf-m, ft-lb)*** | |
|---|---|
| ***T1:*** | ***3.4 (0.35, 2.5)*** |
| ***T2:*** | ***5 (0.5, 3.6)*** |
| ***T3:*** | ***7.5 (0.76, 5.5)*** |
| ***T4:*** | ***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.

## D: PREPARATION TOOL

| ILLUSTRATION | TOOL NUMBER | DESCRIPTION | REMARKS |
|---|---|---|---|
|  ST-499977100 | 499977100 | CRANK PULLEY WRENCH | Used to stop rotation of the crank pulley when loosening or tightening crank pulley bolts. |
|  ST-499977500 | 499977500 | CAM SPROCKET WRENCH | Used for removing and installing intake cam sprocket. |
|  ST-499207400 | 499207400 | CAM SPROCKET WRENCH | Used for removing and installing exhaust cam sprocket. |