

General Description

STARTING/CHARGING SYSTEMS

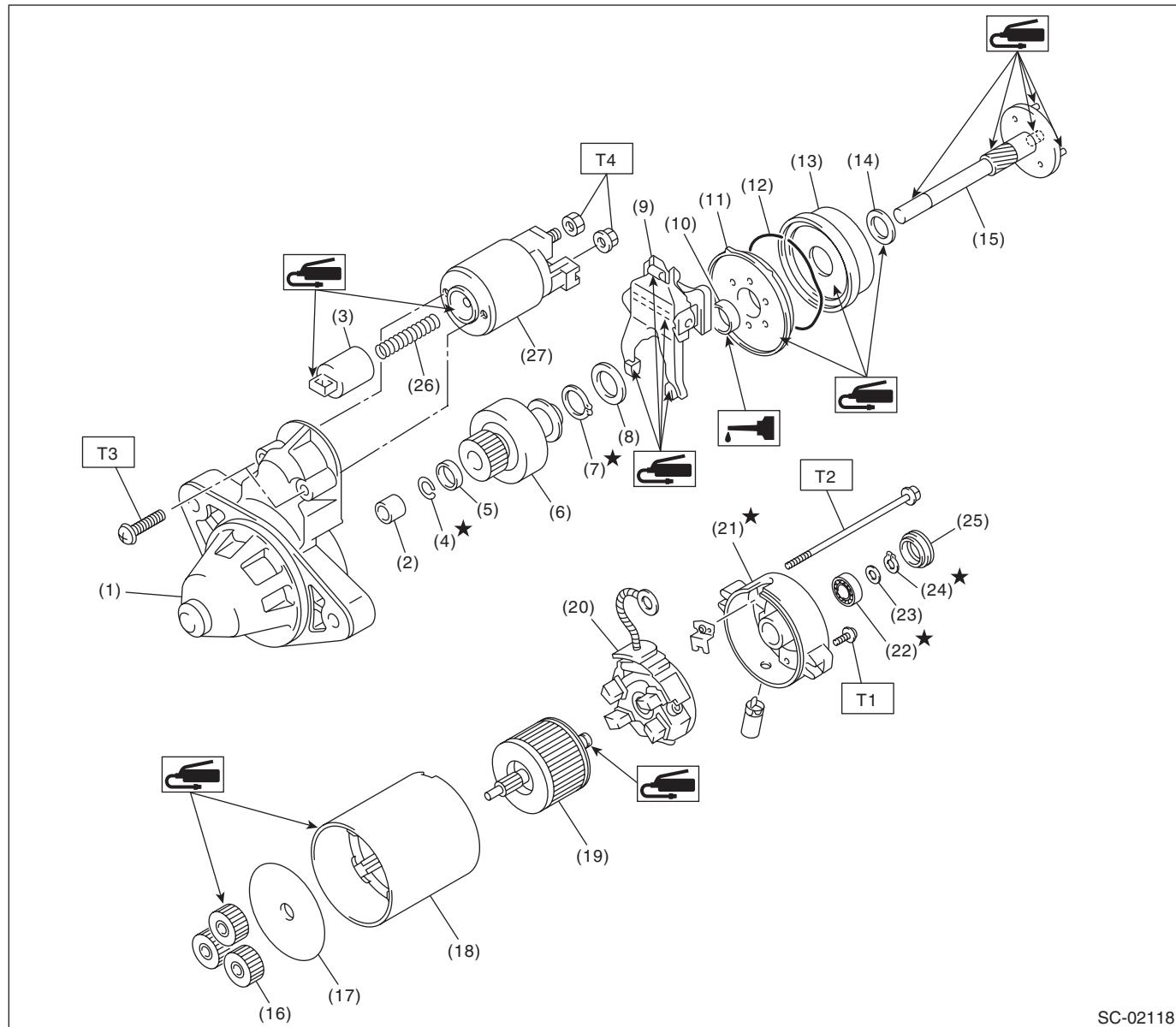
1. General Description

A: SPECIFICATION

Item		Specification
Vehicle model		AT
Starter	Type	Reduction type
	Model	428000-2290
	Manufacturer	DENSO
	Voltage and output	12 V — 1.4 kW
	Direction of rotation	Counterclockwise (when observed from pinion)
	Number of pinion teeth	9
	No-load characteristics	Voltage 11 V
		Current 90 A or less
		Rotating speed More than 1,720 rpm
	Load characteristics	Voltage 8 V
		Current 370 A
		Torque 12.78 N·m (1.30 kgf-m, 9.4 ft-lb) or more
		Rotating speed More than 850 rpm
	Lock characteristics	Voltage 3 V
		Current 900 A or less
		Torque 15.42 N·m (1.57 kgf-m, 11.3 ft-lb) or more
Generator	Type	Rotating-field three-phase type, voltage regulator built-in type, with load response control system
	Model	A003TG0591
	Manufacturer	mitsubishi electric
	Voltage and output	12 V — 110 A
	Polarity on ground side	Negative
	Direction of rotation	Clockwise (when observed from pulley side)
	Armature connection	3-phase Y-type
	Output current	1,500 rpm — 50 A or more
		2,500 rpm — 91 A or more
		5,000 rpm — 105 A or more
	Regulated voltage	14.1 — 14.8 V [20°C (68°F)]
Battery	Type and capacity	12 V — 52 AH (75D23L)

B: COMPONENT

1. STARTER



SC-02118

(1) Front bracket	(12) Wave washer	(23) Space ring
(2) Front bearing	(13) Internal gear	(24) Snap ring
(3) Plunger	(14) Washer	(25) End frame cover
(4) Snap ring	(15) Shaft	(26) Plunger spring
(5) Stopper	(16) Planetary gear	(27) Magnet switch
(6) Overrunning clutch	(17) Armature plate	
(7) Snap ring	(18) Yoke	
(8) Washer	(19) Armature	
(9) Lever	(20) Brush holder ASSY	
(10) Oilless bearing	(21) End frame	
(11) Shock absorber bearing	(22) Rear bearing	

Tightening torque:N·m (kgf·m, ft·lb)

T1: 1.4 (0.14, 1.03)

T2: 6 (0.6, 4.4)

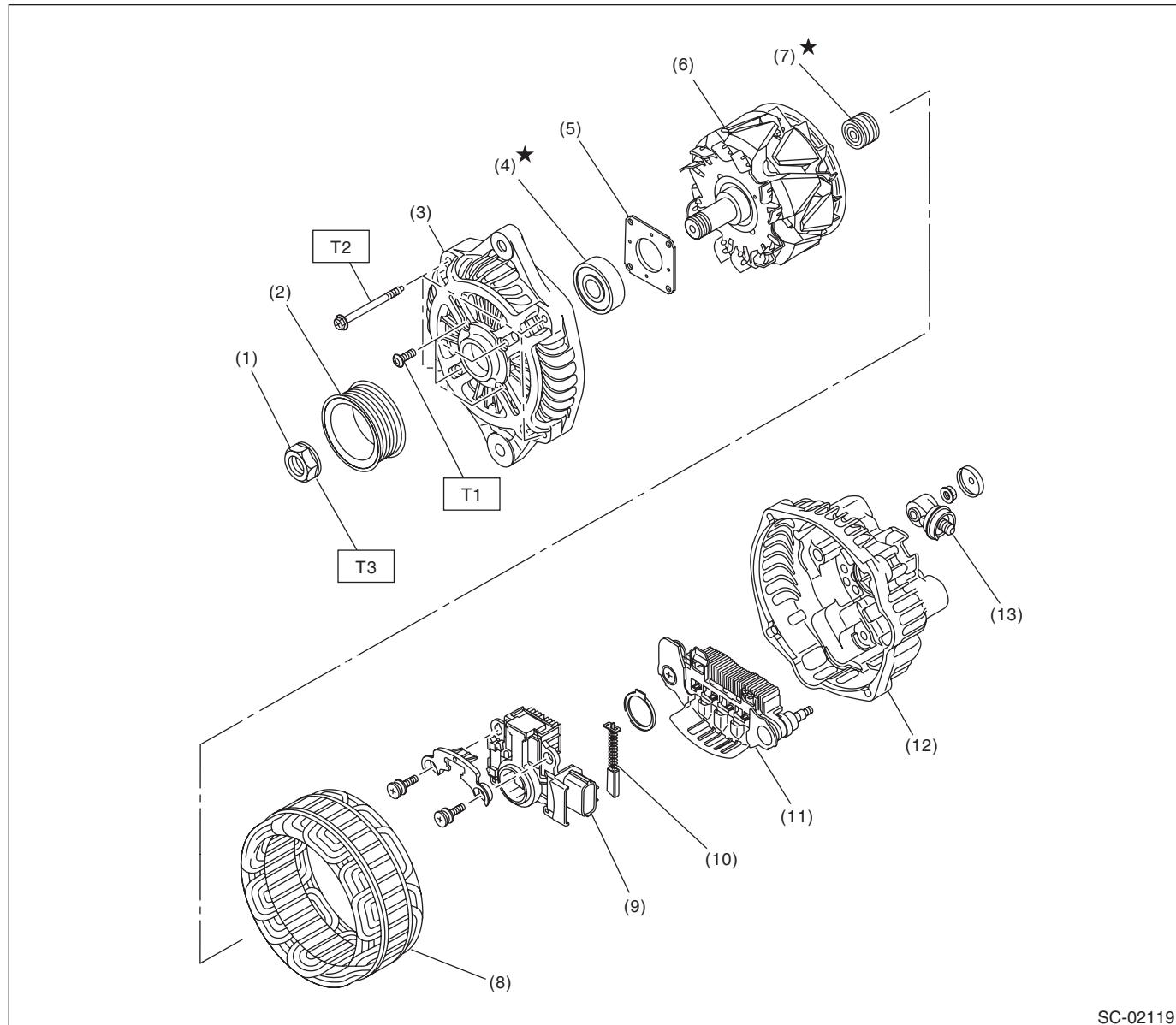
T3: 7.5 (0.8, 5.5)

T4: 10 (1.0, 7.4)

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2. GENERATOR



SC-02119

- (1) Pulley nut
- (2) Pulley
- (3) Front cover
- (4) Ball bearing
- (5) Bearing retainer
- (6) Rotor

- (7) Bearing
- (8) Stator coil
- (9) IC regulator with brush
- (10) Brush
- (11) Rectifier
- (12) Rear cover

- (13) Terminals

Tightening torque:N·m (kgf·m, ft-lb)

T1: 3.9 (0.4, 2.9)

T2: 4.6 (0.47, 3.4)

T3: 103 (10.5, 76)

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 the battery.