

# General Description

## STARTING/CHARGING SYSTEMS

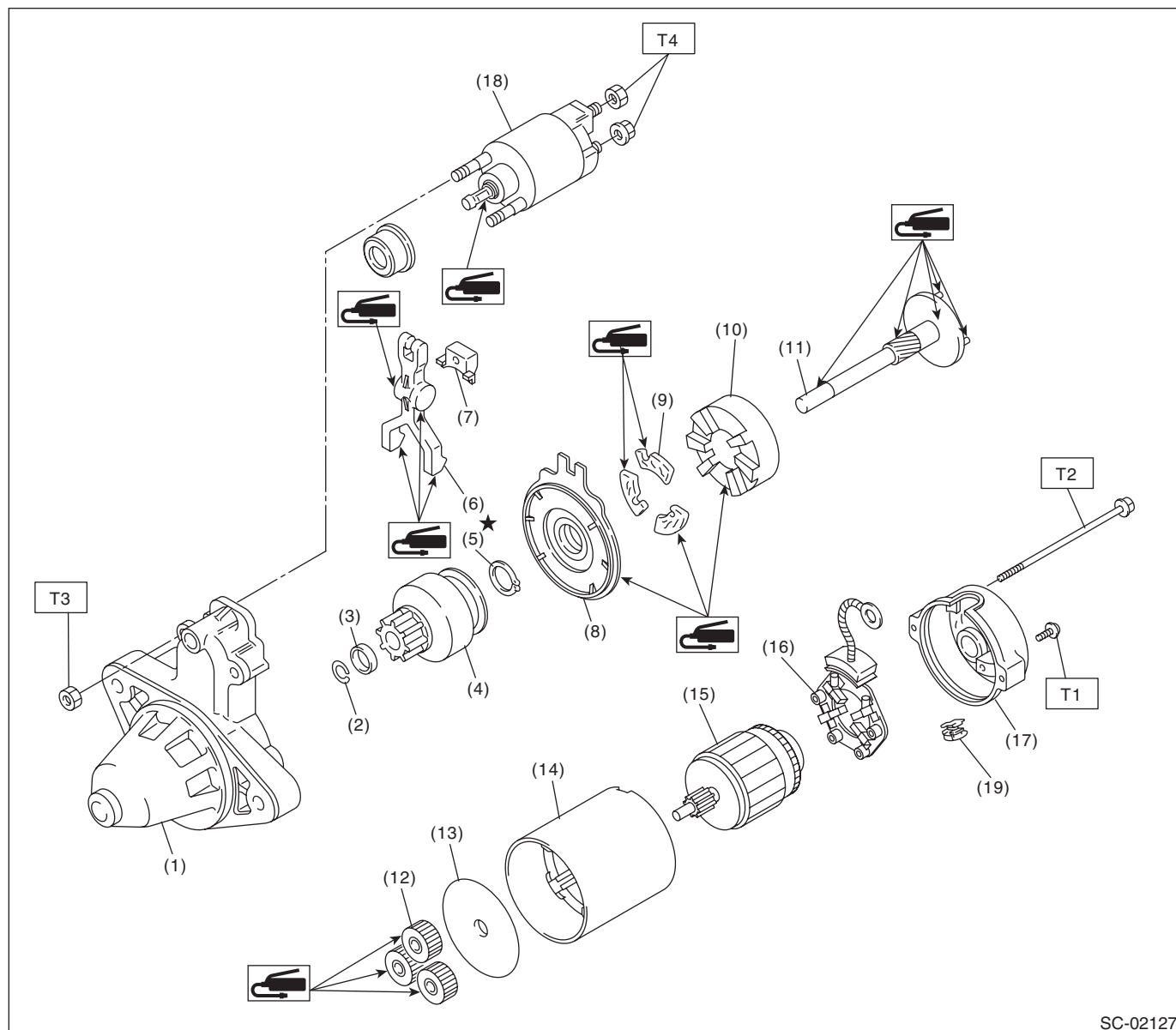
### 1. General Description

#### A: SPECIFICATION

Item		Specification
Vehicle model		AT
Starter	Type	Reduction type
	Model	428000-5250
	Manufacturer	DENSO
	Voltage and output	12 V — 1.6 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
		1,550 rpm or more
	Load characteristics	Voltage
		8 V
		Current
		370 A
	Lock characteristics	Torque
		12.8 N·m (1.31 kgf-m, 9.4 ft-lb) or more
		Rotating speed
		800 rpm or more
Generator	Type	Rotating-field three-phase type, voltage regulator built-in type, with load response control system
	Model	A003TJ2091
	Manufacturer	MITSUBISHI ELECTRIC
	Voltage and output	12 V — 130 A
	Polarity on ground side	Negative
	Direction of rotation	Clockwise (when observed from pulley side)
	Stator coil connection	3-phase delta connection
	Output current	1,500 rpm — 55 A or more
		2,500 rpm — 108 A or more
		5,000 rpm — 127 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



- (1) Starter housing
- (2) Snap ring
- (3) Stopper
- (4) Overrunning clutch
- (5) Snap ring
- (6) Shift lever
- (7) Starter seal
- (8) Shock absorber bearing
- (9) Shock absorber

- (10) Internal gear
- (11) Shaft
- (12) Planetary gear
- (13) Starter plate
- (14) Yoke
- (15) Armature
- (16) Brush holder ASSY
- (17) Starter cover

- (18) Magnet switch ASSY
- (19) Drain duct

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

**T1: 1.4 (0.1, 1.0)**

**T2: 6 (0.6, 4.4)**

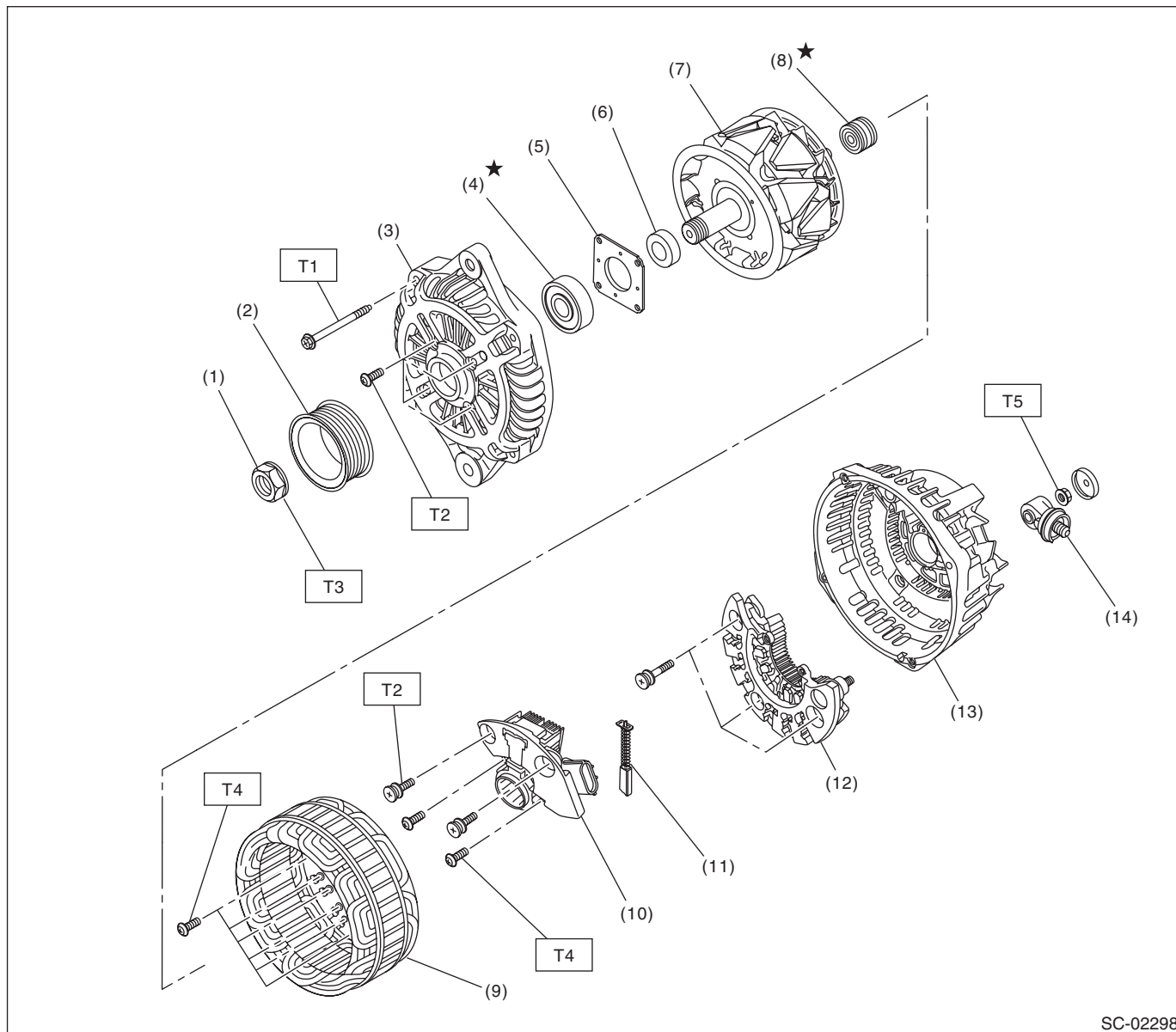
**T3: 7.5 (0.8, 5.5)**

**T4: 10 (1.0, 7.4)**

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### 2. GENERATOR



SC-02298

- |                      |                   |
|----------------------|-------------------|
| (1) Pulley nut       | (8) Bearing       |
| (2) Pulley           | (9) Stator coil   |
| (3) Front cover      | (10) IC regulator |
| (4) Ball bearing     | (11) Brush        |
| (5) Bearing retainer | (12) Rectifier    |
| (6) Spacer           | (13) Rear cover   |
| (7) Rotor            | (14) Terminal B   |

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

***T1: 4.4 (0.4, 3.2)***

***T2: 3.9 (0.4, 2.9)***

***T3: 117.5 (12.0, 86.7)***

***T4: 2 (0.2, 1.5)***

***T5: 8.9 (0.9, 6.6)***

### **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.