

General Description

STARTING/CHARGING SYSTEMS

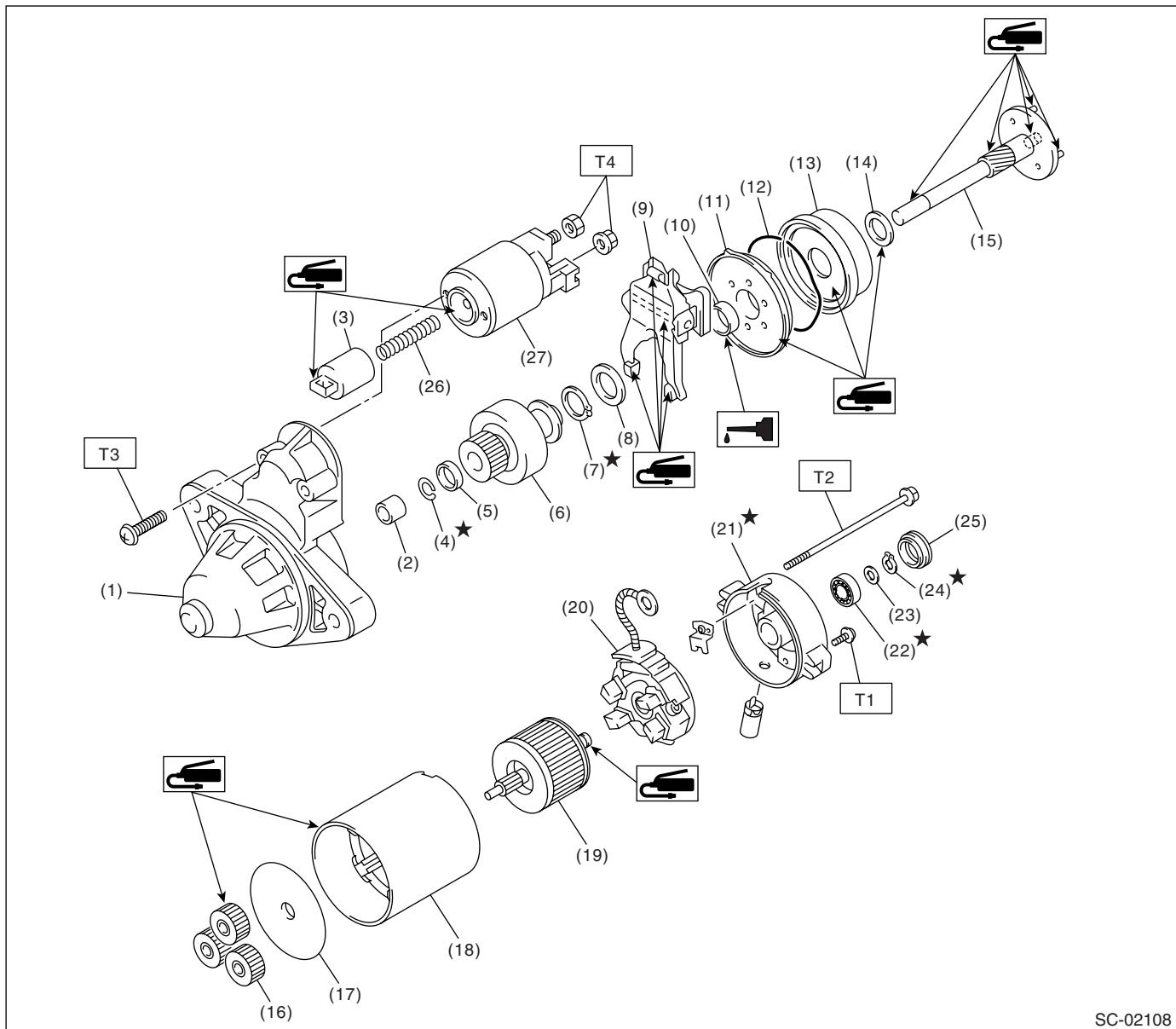
1. General Description

A: SPECIFICATION

Item		Specification	
Vehicle model		MT	AT
Starter	Type	Reduction type	
	Model	428000-2300	428000-2291
	Manufacturer	DENSO	
	Voltage and output	12 V — 1.0 kW	12 V — 1.4 kW
	Direction of rotation	Counterclockwise (when observed from pinion)	
	Number of pinion teeth	9	9
	No-load characteristics	Voltage	11 V
		Current	90 A or less
		Rotating speed	1,820 rpm or more
	Load characteristics	Voltage	8 V
		Current	280 A
		Torque	7.76 N·m (0.79 kgf-m, 5.7 ft-lb) or more
		Rotating speed	900 rpm or more
	Lock characteristics	Voltage	3 V
		Current	900 A or less
		Torque	13.62 N·m (1.39 kgf-m, 10.0 ft-lb) or more
Generator	Type	Rotating-field three-phase type, voltage regulator built-in type, with load response control system	
	Model	2.5 L Non-turbo	A003TG2391ZC
		3.0 L Non-turbo	A003TB1891
		2.5 L Turbo	A003TG0491
	Manufacturer	Mitsubishi Electric	
	Voltage and output	12V — 110A	
	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 — 48 AH (55D23L)	12 V — 52 AH (75D23L)

B: COMPONENT

1. STARTER



- (1) Front bracket
- (2) Front bearing
- (3) Plunger
- (4) Snap ring
- (5) Stopper
- (6) Overrunning clutch
- (7) Snap ring
- (8) Washer
- (9) Lever
- (10) Oilless bearing
- (11) Shock absorber bearing

- (12) Wave washer
- (13) Internal gear
- (14) Washer
- (15) Shaft
- (16) Planetary gear
- (17) Armature plate
- (18) Yoke
- (19) Armature
- (20) Brush holder ASSY
- (21) End frame
- (22) Rear bearing

- (23) Space ring
- (24) Snap ring
- (25) End frame cover
- (26) Plunger spring
- (27) Magnet switch

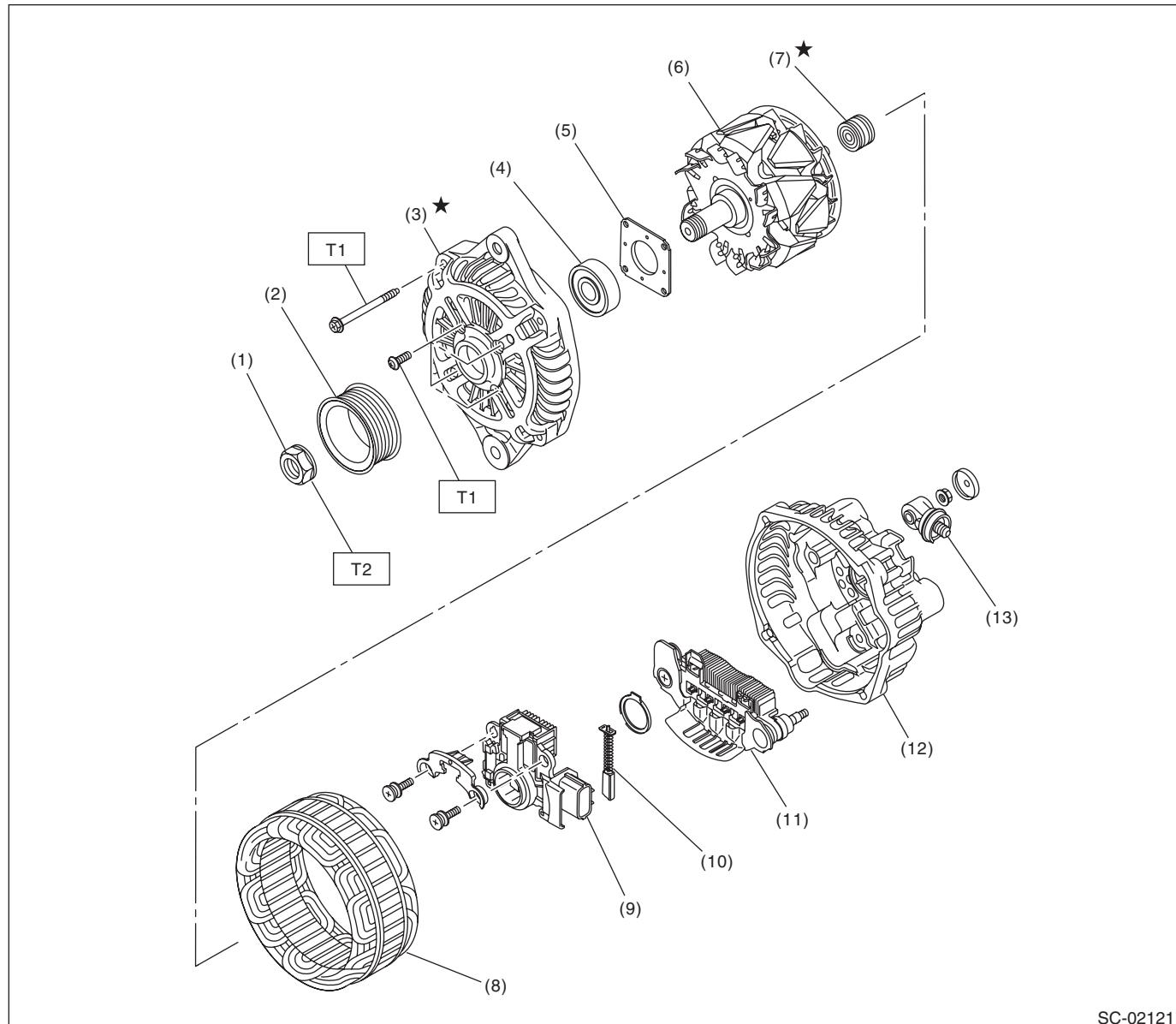
Tightening torque:N·m (kgf·m, ft·lb)

- 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



- (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) Terminal

Tightening torque:N·m (kgf·m, ft·lb)

T1: 4.7 (0.48, 3.5)

T2: 108 (11.0, 80)

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.