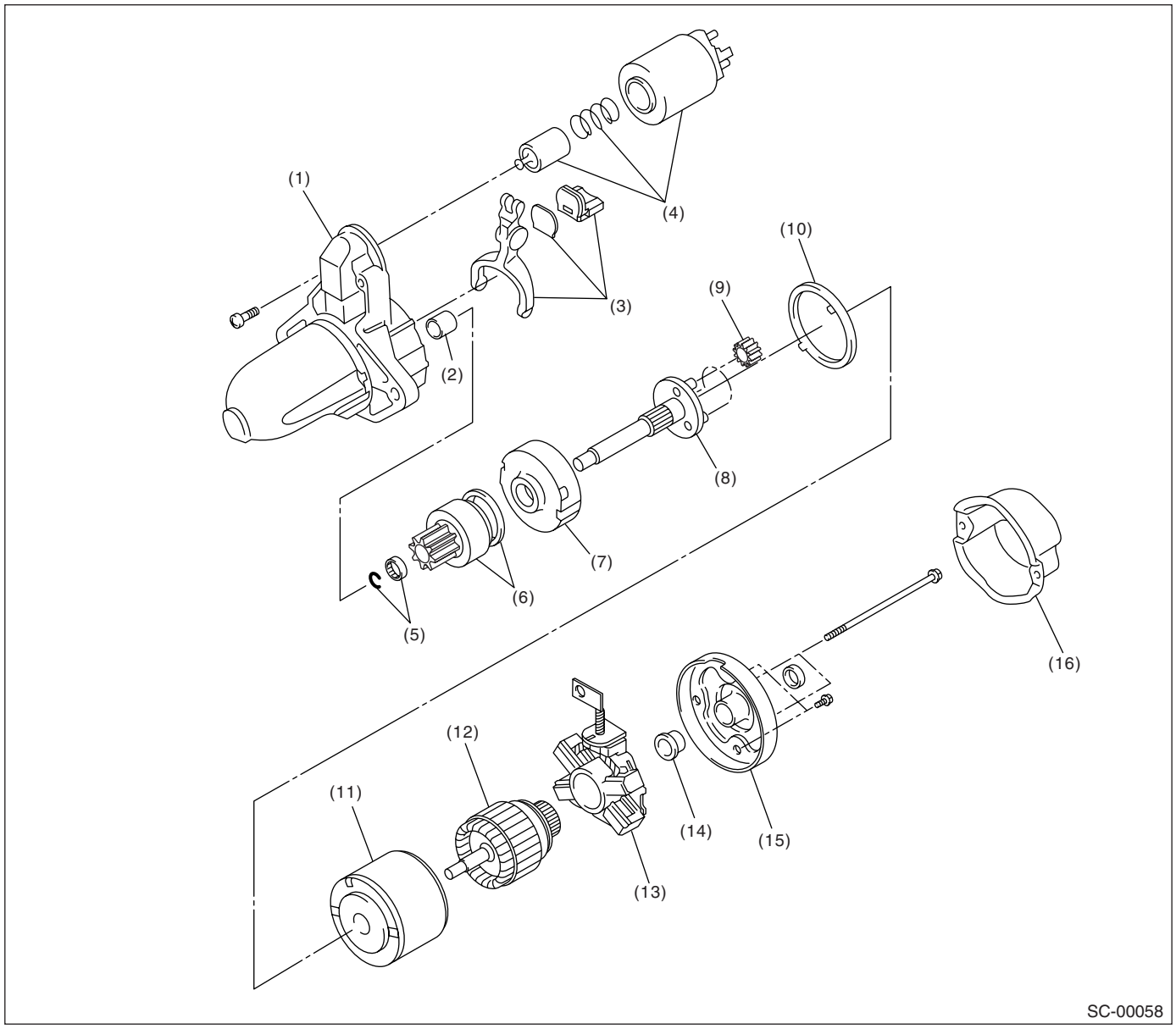
# 1. General Description

## A: SPECIFICATIONS

| Item | | | Designation | |
|---|---|---|---|---|
| Starter | Type | | Reduction type | |
| | Vehicle type | | MT vehicles | AT vehicles |
| | Model | | M000T30471 | M000T20171 |
| | Manufacturer | | Mitsubishi Electric | |
| | Voltage and output | | 12 V — 1.0 kW | 12 V — 1.4 kW |
| | Direction of rotation | | Counterclockwise (viewed from pinion gear side) | |
| | Number of pinion teeth | | 8 | 9 |
| | No-load characteristics | Voltage | 11 V | |
| | | Current | 95 A or less | 90 A or less |
| | | Rotating speed | 2,500 rpm or more | 2,000 rpm or more |
| | Load characteristics | Voltage | 7.5 V | 7.7 V |
| | | Current | 300 A | 400 A |
| | | Torque | 8.84 N (0.90 kgf, 1.99 lb) or more | 16.7 N (1.70 kgf, 3.75 lb) or more |
| | | Rotating speed | 870 rpm or more | 710 rpm or more |
| | Lock characteristics | Voltage | 4 V | 3.5 V |
| | | Current | 680 A or less | 960 A or less |
| | | Torque | 17 N (1.73 kgf, 12.5 lb) or more | 31 N (3.16 kgf, 22.9 lb) or more |
| Generator | Type | | Rotating-field three-phase type, Voltage regulator built-in type, with load response control system | |
| | Model | | A002TB2891 | |
| | Manufacturer | | Mitsubishi Electric | |
| | Voltage and output | | 12 V — 90 A | |
| | Polarity on ground side | | Negative | |
| | Rotating direction | | Clockwise (viewed from pulley side) | |
| | Armature connection | | 3-phase Y-type | |
| | Output current | | 1,500 rpm — 36 A or more<br>2,500 rpm — 65 A or more<br>5,000 rpm — 86 A or more | |
| | Regulated voltage | | 14.1 — 14.8 V [20°C (68°F)] | |
| Battery | Voltage and output | | MT: 12 V — 48 AH (55D23L)<br>AT: 12 V — 52AH (75D23L) | |

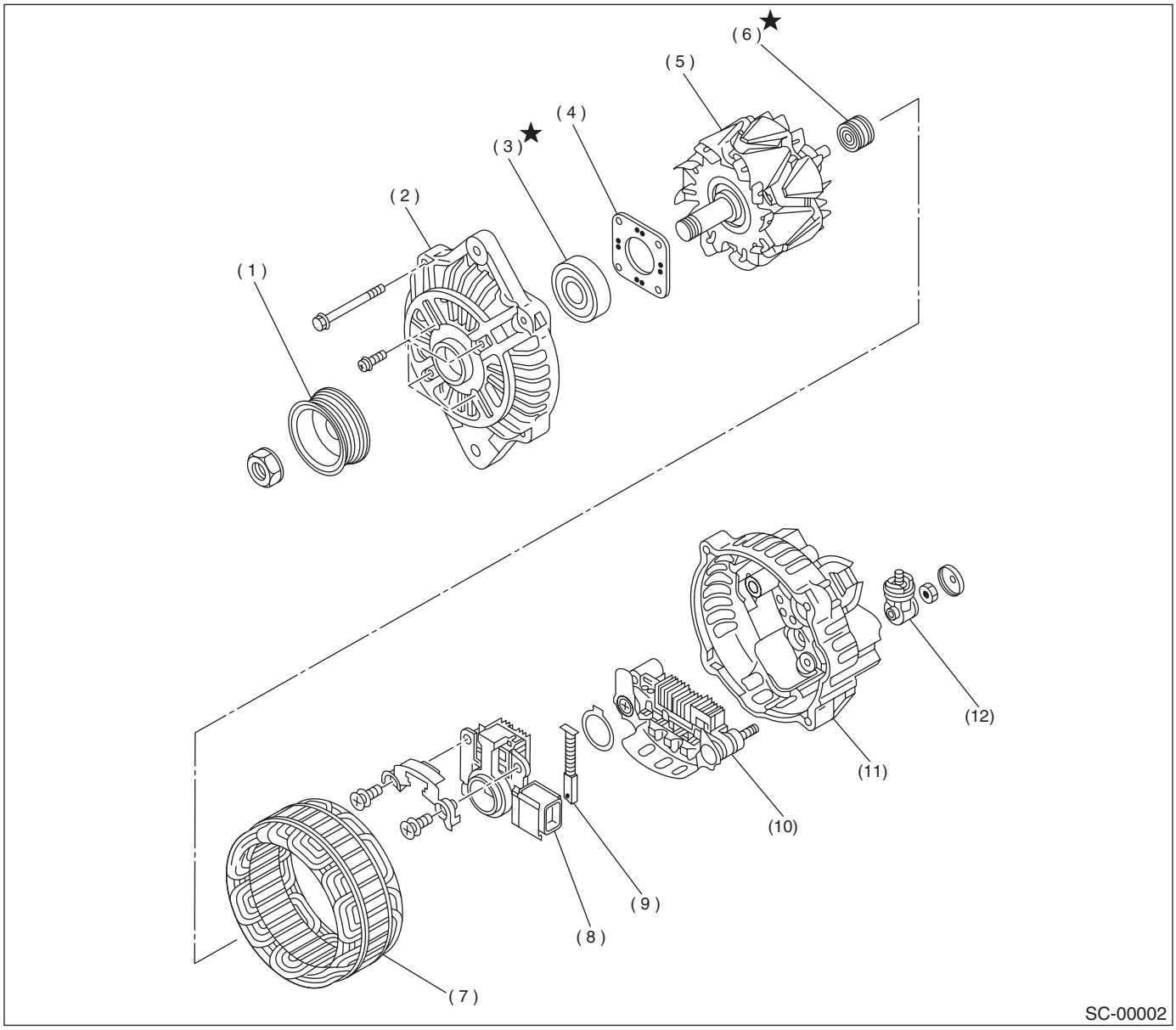
# B: COMPONENT

## 1. STARTER




(1) Front bracket
(2) Sleeve bearing
(3) Lever set
(4) Switch ASSY
(5) Stopper set
(6) Over running clutch
(7) Internal gear ASSY
(8) Shaft ASSY
(9) Gear ASSY
(10) Packing
(11) Yoke ASSY
(12) Armature
(13) Brush holder ASSY
(14) Sleeve bearing
(15) Rear cover
(16) Rear cover set

## 2. GENERATOR




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

## C: CAUTION

• Wear working clothing, including a cap, protective goggles, and protective shoes during operation.
• Remove contamination including dirt and corrosion before removal, installation or disassembly.
• Keep the disassembled parts in order and protect them from dust or dirt.
• Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
• Be careful not to burn your hands, because each part in the vehicle is hot after running.
• Be sure to tighten fasteners including bolts and nuts to the specified torque.
• Place shop jacks or safety stands at the specified points.
• Before disconnecting electrical connectors of sensors or units, be sure to disconnect the ground cable from battery.