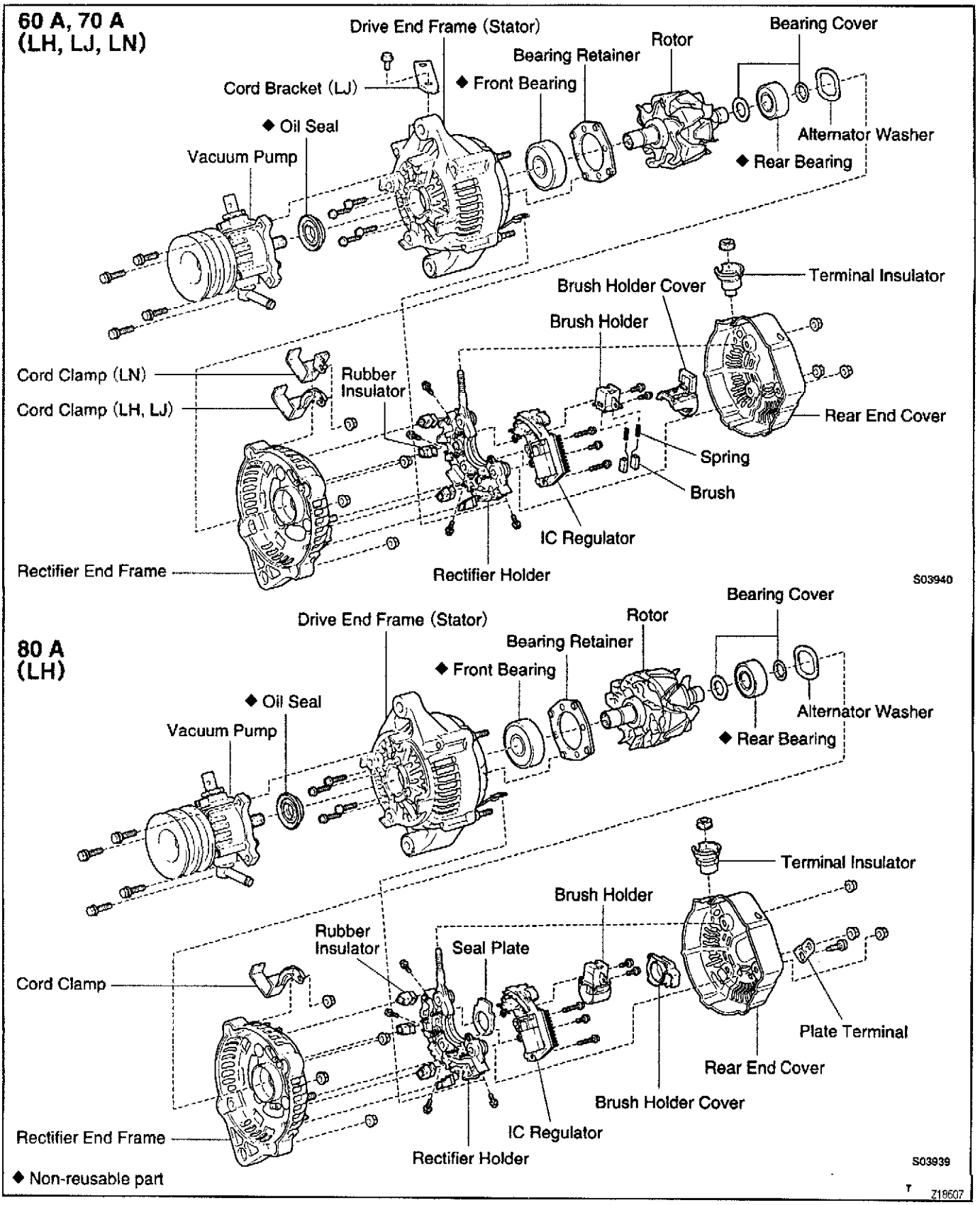
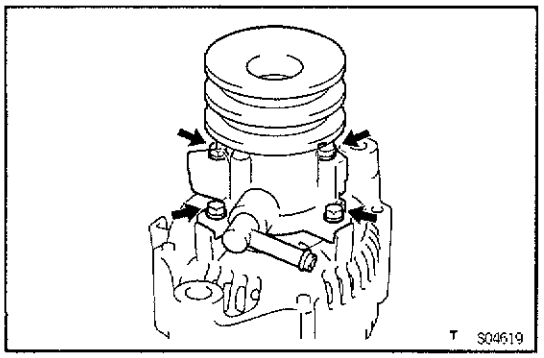
# ALTERNATOR
## (Hi–Speed Compact Type)
## COMPONENTS FOR DISASSEMBLY AND ASSEMBLY

CH0EJ-01



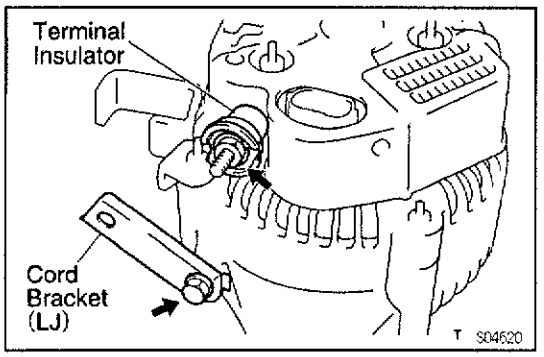
CH0EK–01

## ALTERNATOR DISASSEMBLY




**1. REMOVE VACUUM PUMP**

Remove the 4 bolts and vacuum pump.

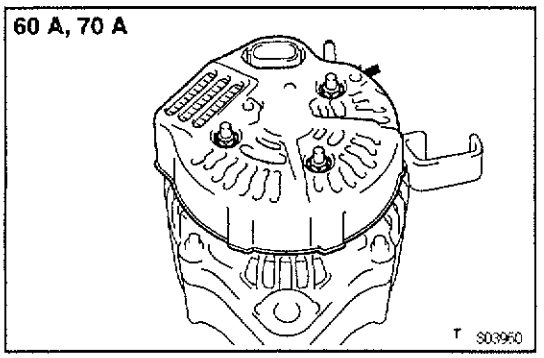



**2. LJ:**
**REMOVE CORD BRACKET**

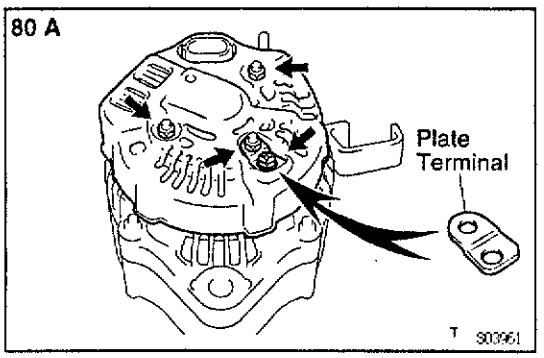
Remove the bolt and cord bracket.

**3. REMOVE REAR END COVER**

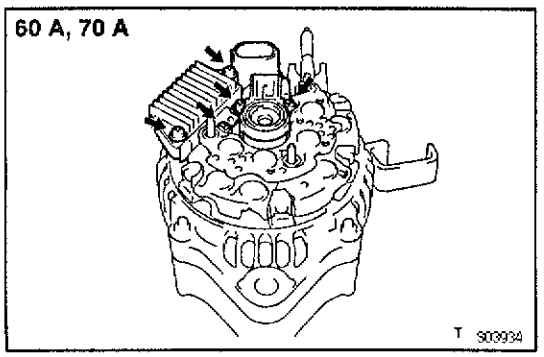
(a) Remove the nut and terminal insulator.




(b) 60 A, 70 A:
Remove the 3 bolts and rear end cover.

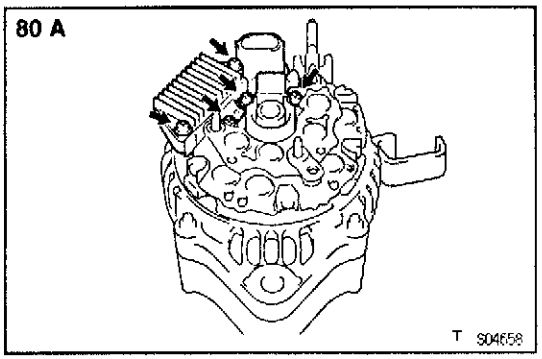



(c) 80 A:
Remove the bolt, 3 nuts, plate terminal and rear end cover.



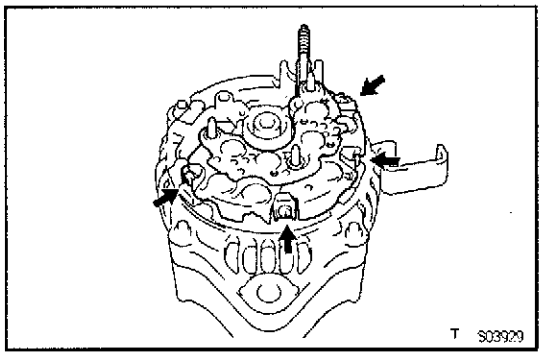

**4. REMOVE BRUSH HOLDER AND IC REGULATOR**
**60 A, 70 A:**

(a) Remove the 5 screws, brush holder and IC regulator.
(b) Remove the brush holder cover from the brush holder.



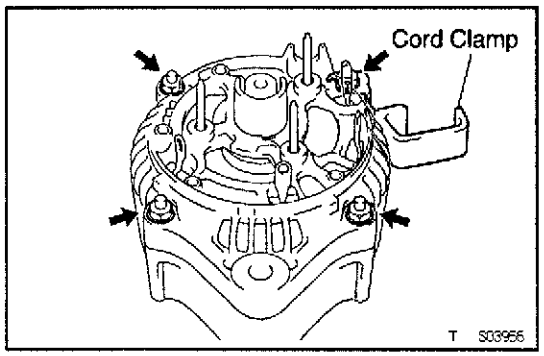

**80 A:**

(a) Remove the brush holder cover from the brush holder.
(b) Remove the 5 screws, brush holder and IC regulator.
(c) Remove the seal plate from the rectifier end frame.



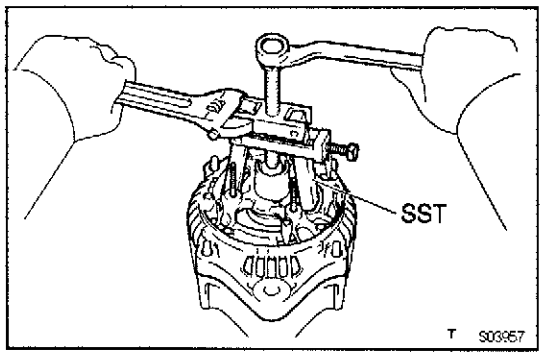

**5. REMOVE RECTIFIER HOLDER**

(a) Remove the 4 screws and rectifier holder.
(b) Remove the 4 rubber insulators.

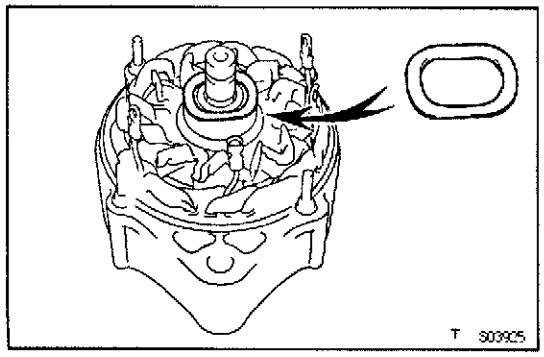



**6. REMOVE RECTIFIER END FRAME**

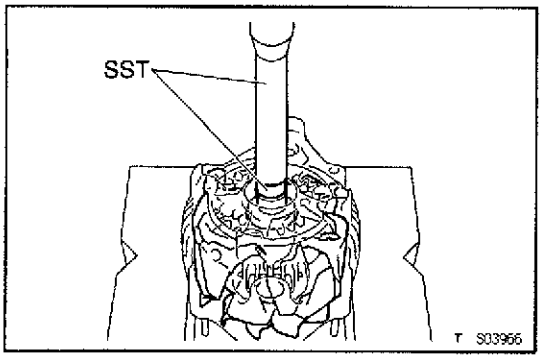
(a) Remove the 4 nuts and cord clamp.




(b) Using SST, remove the rectifier end frame.
SST 09286–46011




(c) Remove the alternator washer from the rotor.

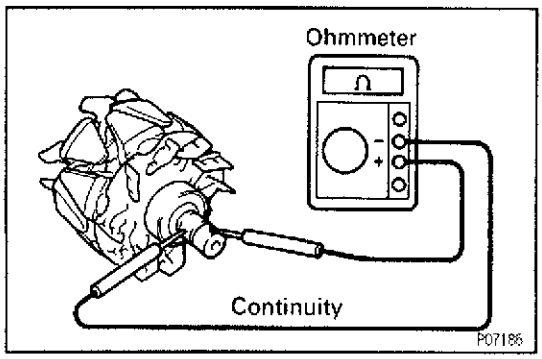



**7. REMOVE ROTOR FROM DRIVE END FRAME**

Using SST and a press, press out the rotor.

SST 09950–60010 (09951–00180),
09950–70010 (09951–07100)

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## ALTERNATOR INSPECTION AND REPAIR

### Rotor

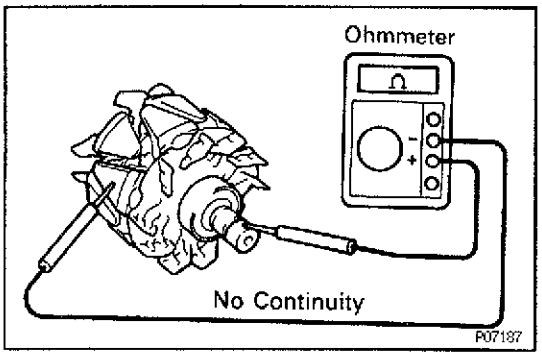
**1. INSPECT ROTOR FOR OPEN CIRCUIT**

Using an ohmmeter, check that there is continuity between the slip rings.

**Standard resistance at 20°C (68°F):**

**2.7 – 3.1 Ω**

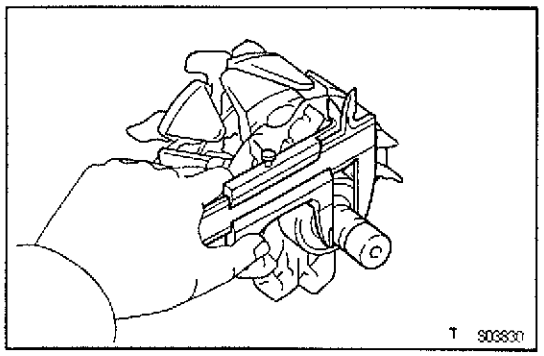
If there is no continuity, replace the rotor.




**2. INSPECT ROTOR FOR GROUND**

Using an ohmmeter, check that there is no continuity between the slip ring and rotor.

If there is continuity, replace the rotor.




**3. INSPECT SLIP RINGS**

(a) Check that the slip rings are not rough or scored.

If rough or scored, replace the rotor.

(b) Using vernier calipers, measure the slip ring diameter.

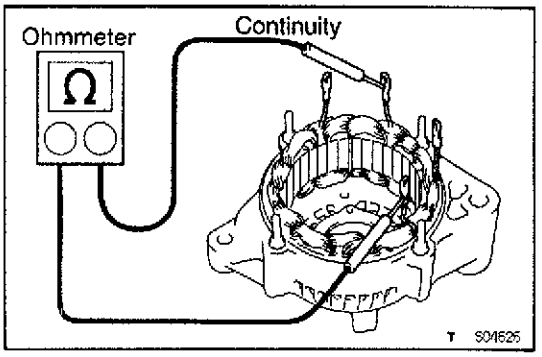
**Standard diameter:**

**14.2 – 14.4 mm (0.559 – 0.567 in.)**

**Minimum diameter:**

**12.8 mm (0.504 in.)**

If the diameter is less than minimum, replace the rotor.

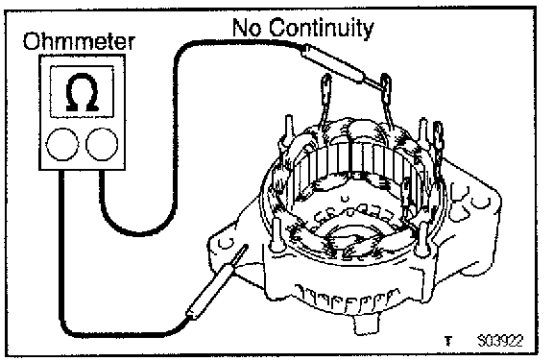



### Stator (Drive End Frame)

**1. INSPECT STATOR FOR OPEN CIRCUIT**

Using an ohmmeter, check that there is continuity between the coil leads.

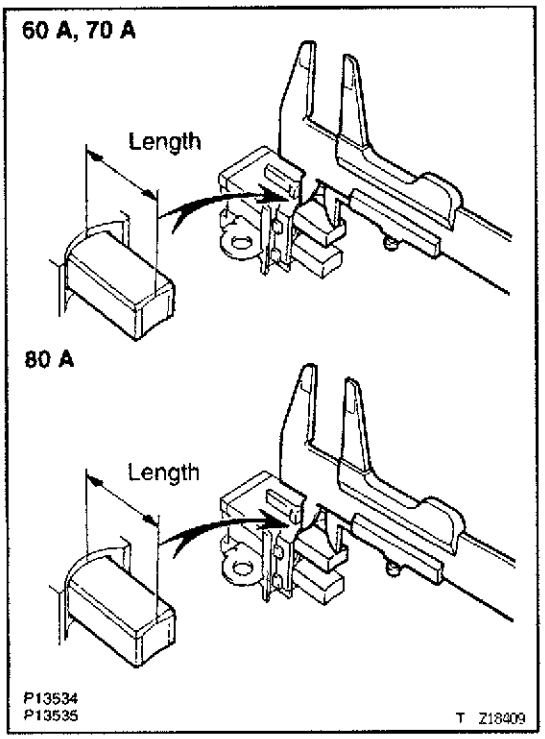
If there is no continuity, replace the drive end frame assembly.




**2. INSPECT STATOR FOR GROUND**

Using an ohmmeter, check that there is no continuity between the coil lead and drive end frame.

If there is continuity, replace the drive end frame assembly.




## Brushes

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**1. INSPECT EXPOSED BRUSH LENGTH**

Using vernier calipers, measure the exposed brush length.

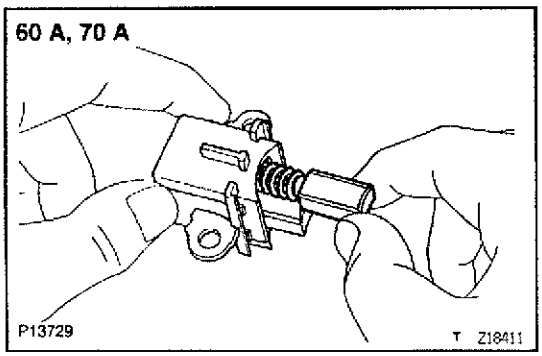
**Standard exposed length:**

**10.5 mm (0.413 in.)**

**Minimum exposed length:**

**1.5 mm (0.059 in.)**

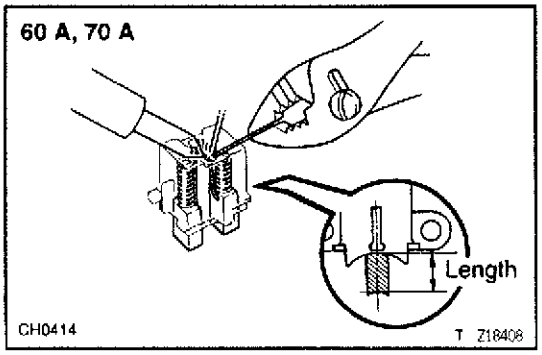
If the exposed length is less than minimum, replace the brushes (60 A, 70 A) or brush holder assembly (80 A).




**2. 60 A, 70 A:**
**IF NECESSARY, REPLACE BRUSHES**

(a) Unsolder and remove the brush and spring.

(b) Run the wire of a new brush through the spring and the hole in the brush holder, and insert the spring and brush into the brush holder.




(c) Solder the brush wire to the brush holder at specified exposed length.

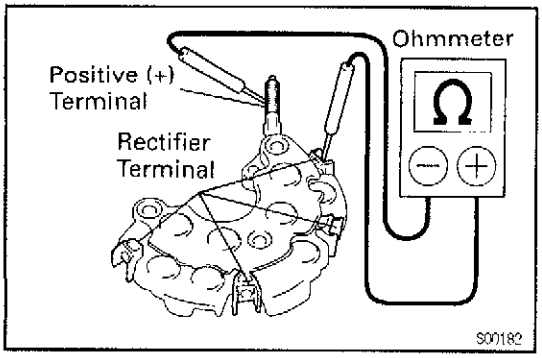
**Exposed length:**

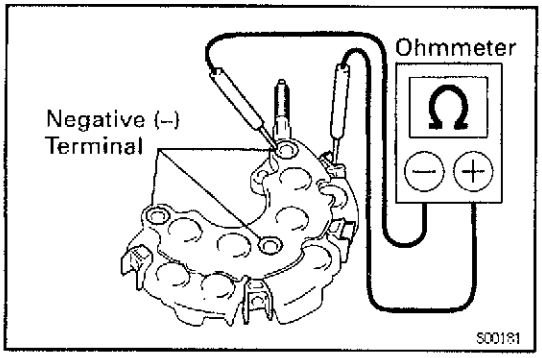
**10.5 mm (0.413 in.)**

(d) Check that the brush moves smoothly in the brush holder.

(e) Cut off the excess wire.

(f) Apply insulation paint to the soldered area.




## Rectifiers (Rectifier Holder)

**1. INSPECT POSITIVE RECTIFIER**

(a) Using an ohmmeter, connect one tester probe to the positive (+) terminal and the other to each rectifier terminal.

(b) Reverse the polarity of the tester probes and repeat step (a).

(c) Check that one shows continuity and the other shows no continuity.

If continuity is not as specified, replace the rectifier holder.

**2. INSPECT NEGATIVE RECTIFIER**

(a) Using an ohmmeter, connect one tester probe to each negative (–) terminal and the other to each rectifier terminal.

(b) Reverse the polarity of the tester probes and repeat step (a).

(c) Check that one shows continuity and the other shows no continuity.

If continuity is not as specified, replace the rectifier holder.

## Bearing

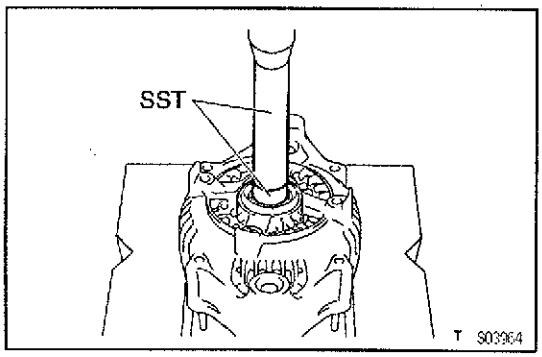
**1. INSPECT FRONT BEARING**

Check that the bearing is not rough or worn.

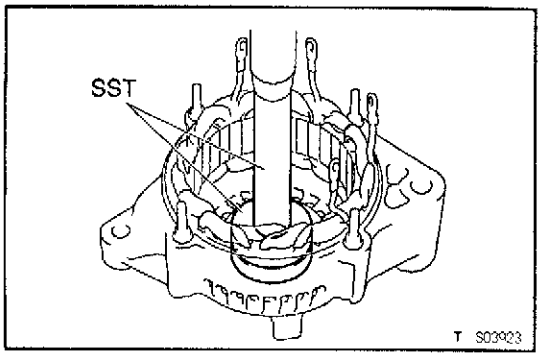
**2. IF NECESSARY, REPLACE FRONT BEARING**

(a) Remove the oil seal.

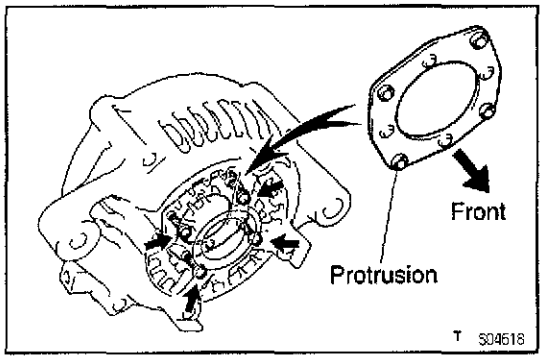
(b) Remove the 4 screws and bearing retainer.




(c) Using SST and a press, press out the bearing.
SST 09950–60010 (09951–00230),
09950–70010 (09951–07100)



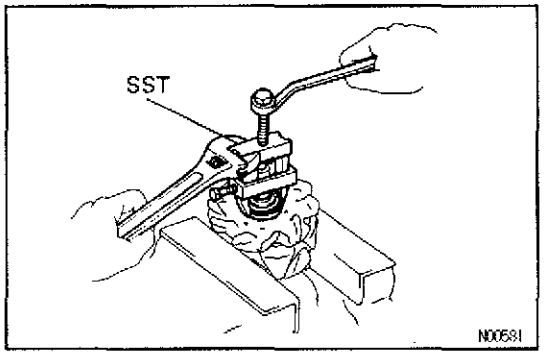

(d) Using SST and a press, press in a new bearing.
SST 09950–60010 (09951–00400),
09950–70010 (09951–07100)




(e) Place the bearing retainer on the drive end frame with the protrusions facing forward.

(f) Install the bearing retainer with the 4 screws.
**Torque: 2.6 N·m (26.5 kgf·cm, 23 in.·lbf)**

(g) Install the oil seal.



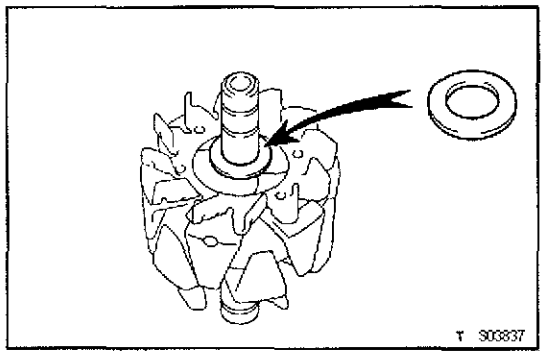

**3. INSPECT REAR BEARING**

Check that the bearing is not rough or worn.

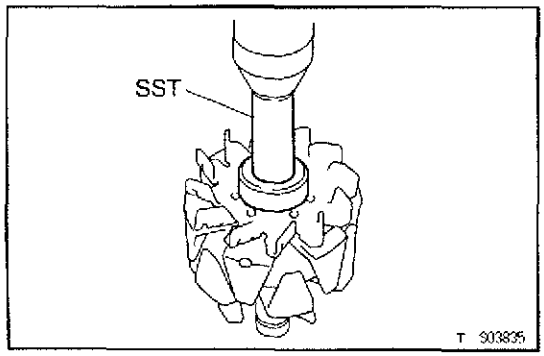
**4. IF NECESSARY, REPLACE REAR BEARING**

(a) Using SST, remove the bearing cover (outside) and bearing.
SST 09820–00021
**NOTICE: Be careful not to damage the fan.**

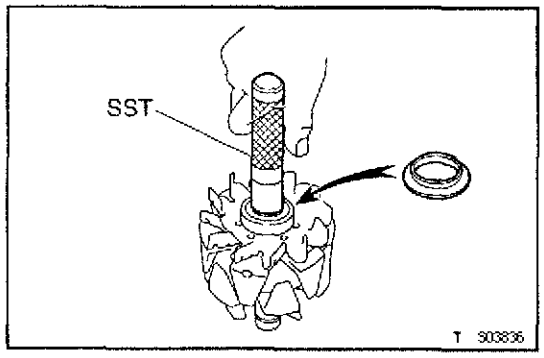
(b) Remove the bearing cover (inside).



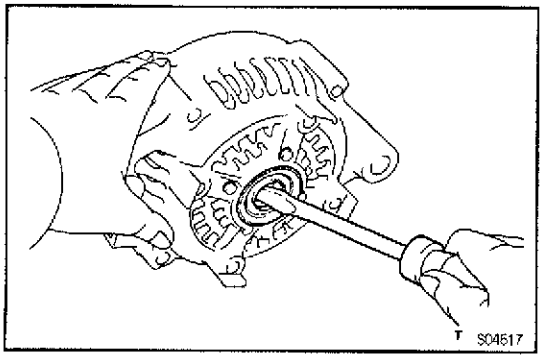

(c) Place the bearing cover (inside) on the rotor.




(d) Using SST and a press, press in a new bearing.
SST 09820–00030




(e) Using SST, push in the bearing cover (outside).
SST 09285–76010

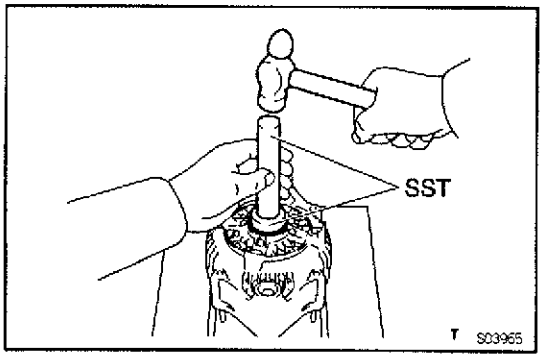



## Oil Seal

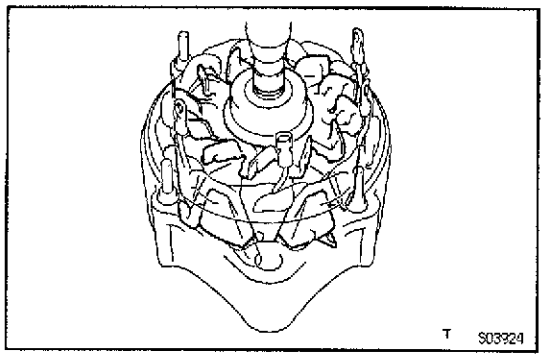
**REPLACE OIL SEAL**

(a) Using a screwdriver, pry out the oil seal.






(b) Using SST and hammer, tap in the oil seal.
SST 09950–60010 (09951–00340),
09950–70010 (09951–07100)

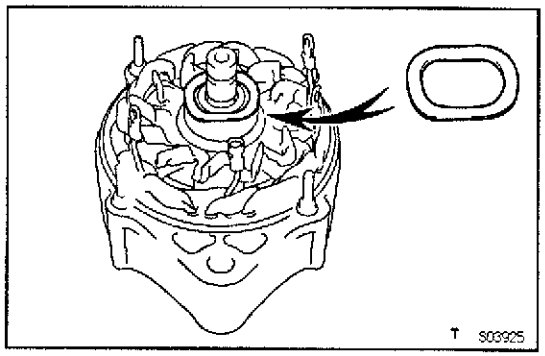



## ALTERNATOR ASSEMBLY

CH0EM–01

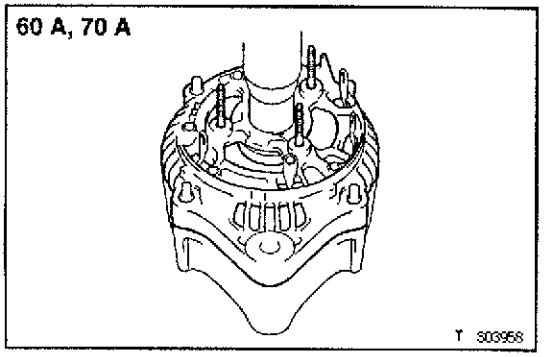
**1. INSTALL ROTOR TO DRIVE END FRAME**

Using a press, press in the rotor.

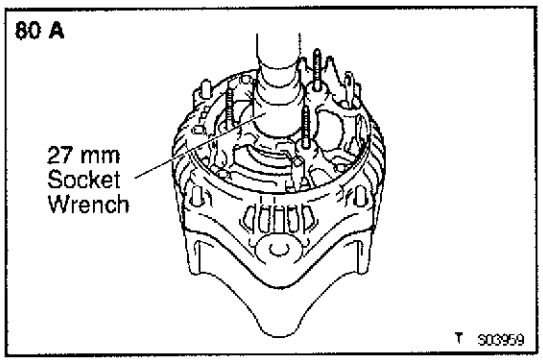



**2. INSTALL RECTIFIER END FRAME**

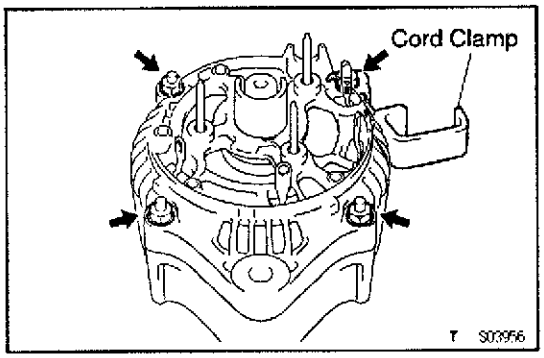
(a) Place the alternator washer on the rotor.




(b) 60 A, 70 A:
Using a press, slowly press in the rectifier end frame.

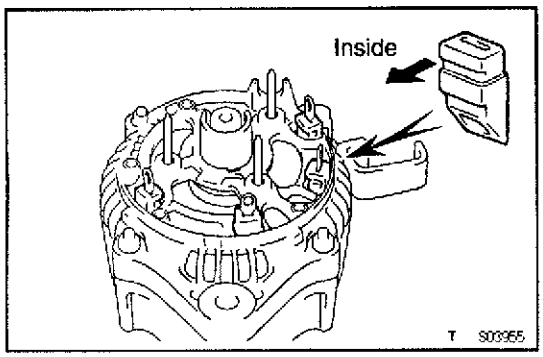



(c) 80 A:
Using a 27 mm socket wrench and press, slowly press in the rectifier end frame.



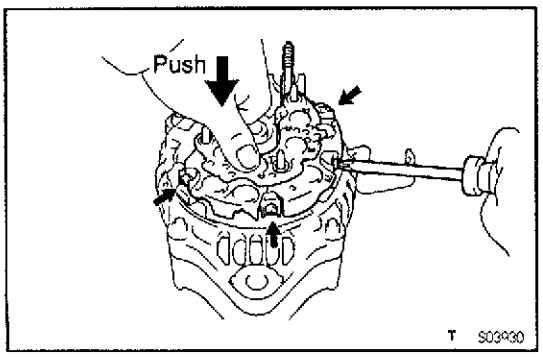

(d) Install the cord clamp and 4 nuts.
**Torque: 4.5 N·m (46 kgf·cm, 40 in.·lbf)**

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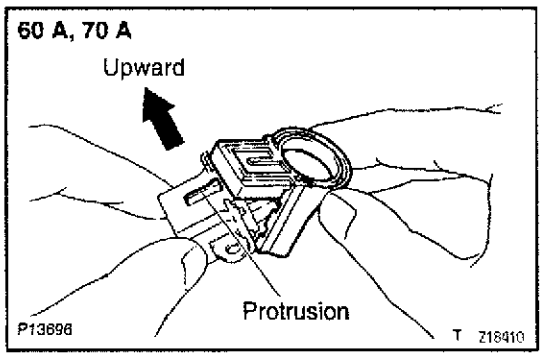



### 3. INSTALL RECTIFIER HOLDER

(a) Install the 4 rubber insulators on the lead wires.
**NOTICE: Be careful of the rubber insulators installation direction.**



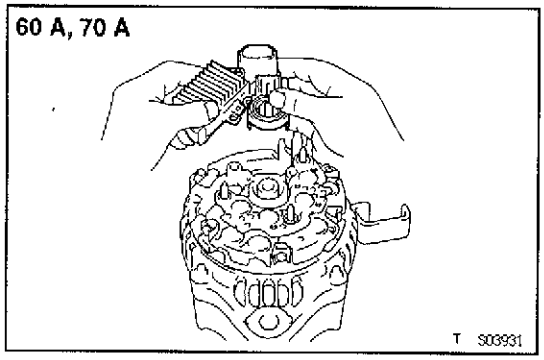

(b) Install the rectifier holder while pushing it with the 4 screws.
**Torque:**
**60 A, 70 A**
**2.0 N·m (20 kgf·cm, 18 in.·lbf)**
**80 A**
**2.9 N·m (30 kgf·cm, 26 in.·lbf)**



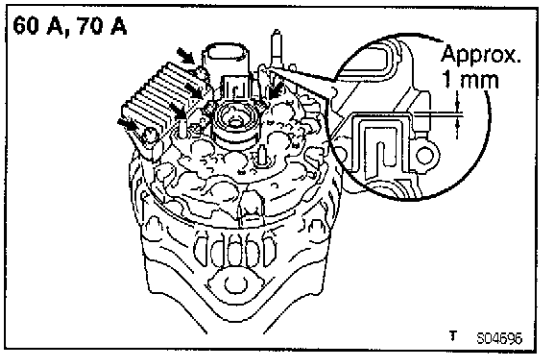

### 4. INSTALL IC REGULATOR AND BRUSH HOLDER

**60 A, 70 A:**

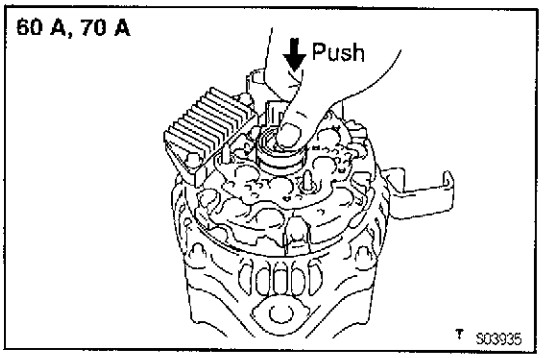
(a) Install the brush holder cover to the brush holder.
**NOTICE: Be careful of the holder installation direction.**



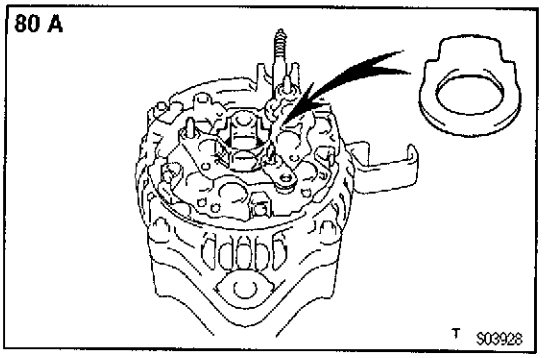

(b) Place the IC regulator together with the brush holder horizontally on the rectifier end frame.




(c) Install the 5 screws until there is a clearance of approx. 1 mm (0.04 in.) between the IC regulator and brush holder.
**Torque: 2.0 N·m (20 kgf·cm, 18 in.·lbf)**

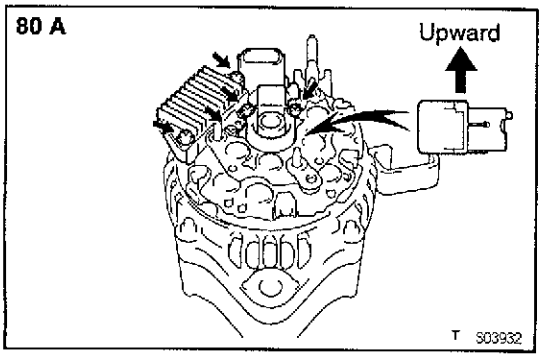



(d) Fit the brush holder cover.

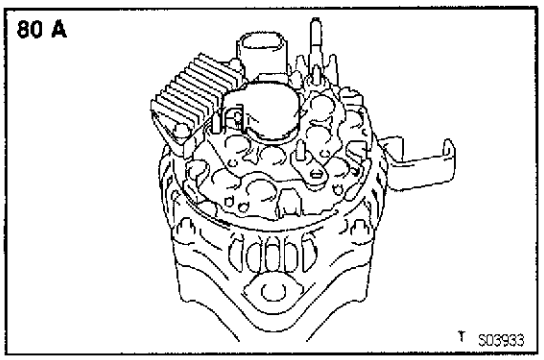



**80 A:**

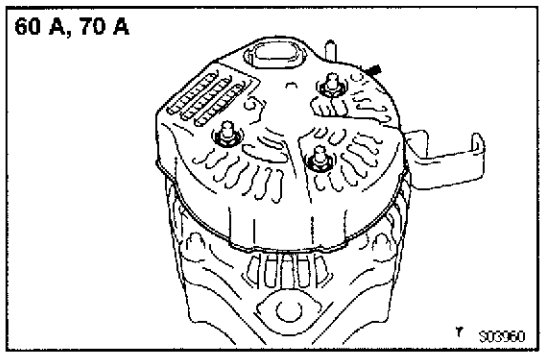
(a) Place the seal plate on the rectifier end frame.




(b) Install the IC regulator and brush holder with the 5 screws.
**Torque: 2.0 N·m (20 kgf·cm, 18 in.·lbf)**
**NOTICE: Be careful of the holder installation direction.**

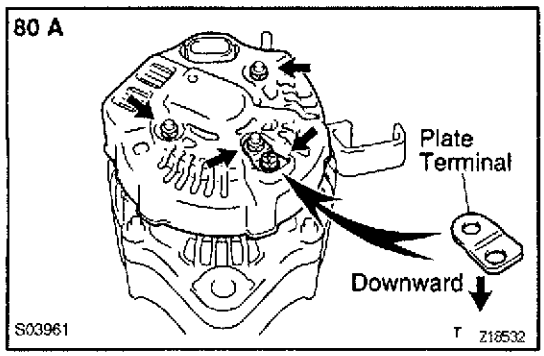



(c) Place the brush holder cover on the brush holder.

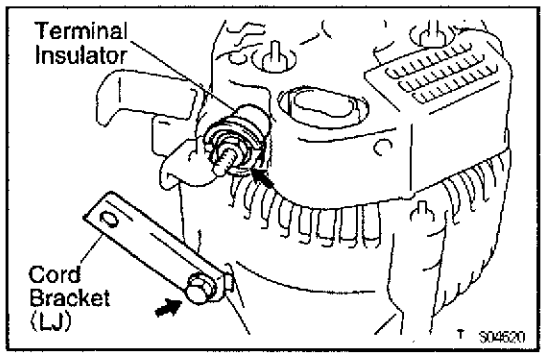



**5. INSTALL REAR END COVER**

(a) 60 A, 70 A:
Install the rear end cover with the 3 bolts.
**Torque: 4.4 N·m (45 kgf·cm, 39 in.·lbf)**

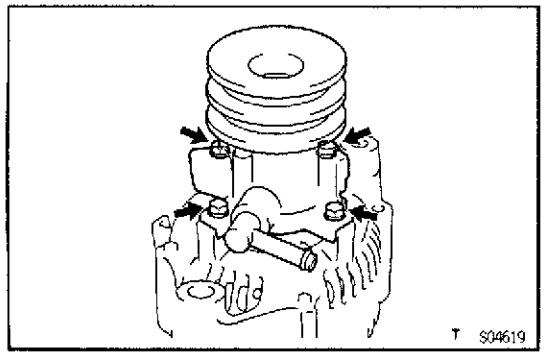



(b) 80 A:
Install the rear end cover and plate terminal with the bolt and 3 nuts.
**Torque:**
**Nut**
**4.4 N·m (45 kgf·cm, 39 in.·lbf)**
**Bolt**
**3.8 N·m (39 kgf·cm, 34 in.·lbf)**




(c) Install the terminal insulator with the nut.
**Torque: 4.1 N·m (41.5 kgf·cm, 36 in.·lbf)**

**6. LJ:**
**INSTALL CORD BRACKET**
Install the cord bracket with the bolt.
**Torque: 6.0 N·m (60 kgf·cm, 53 in.·lbf)**




**7. INSTALL VACUUM PUMP**
Install the vacuum pump with the 4 bolts.
**Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)**

**8. CHECK THAT ROTOR ROTATES SMOOTHLY**