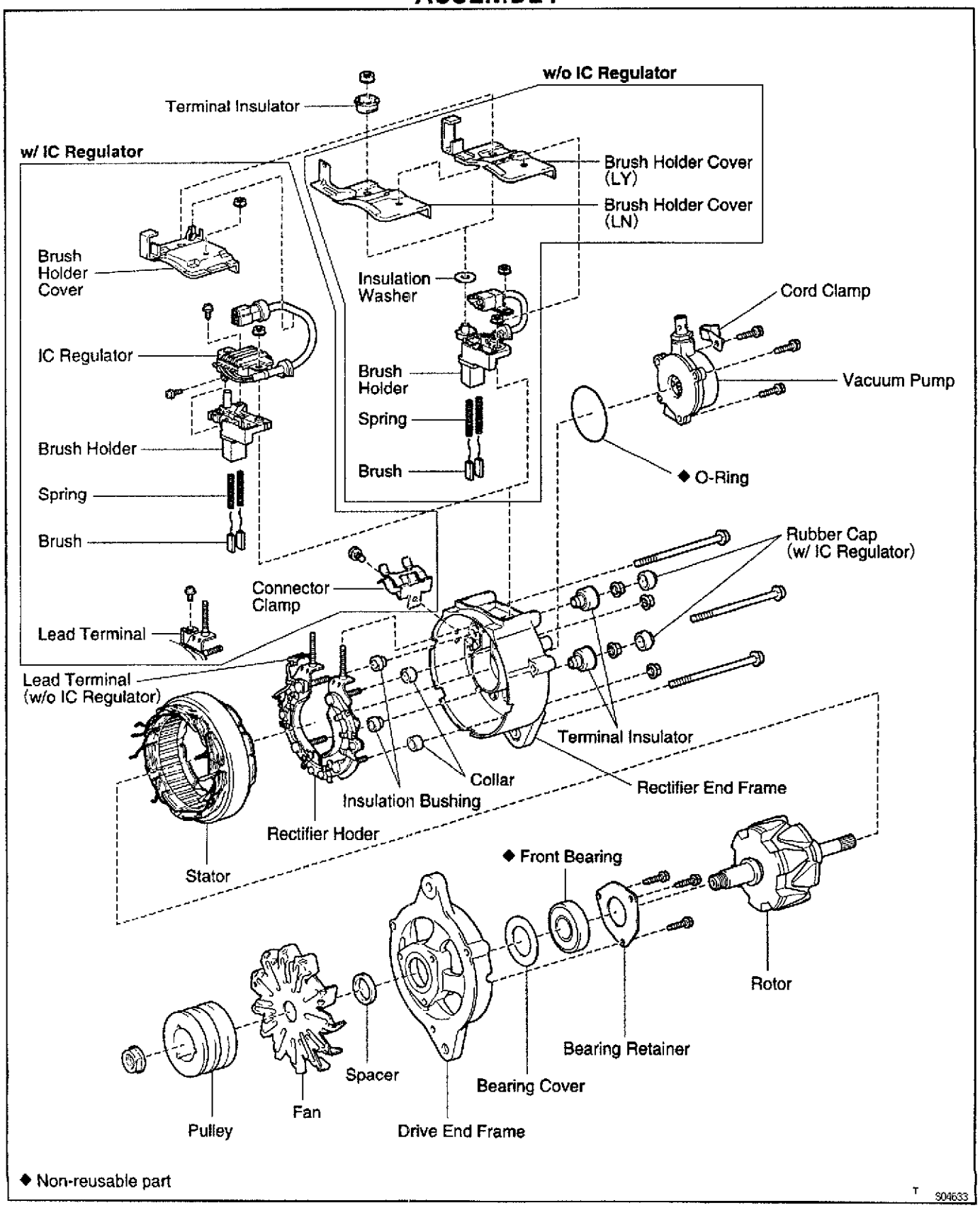
# ALTERNATOR (Conventional Type)

## COMPONENTS FOR DISASSEMBLY AND ASSEMBLY

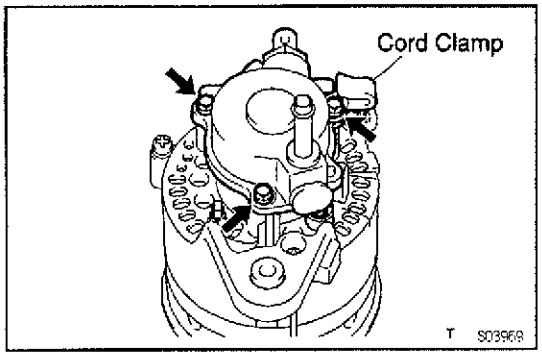
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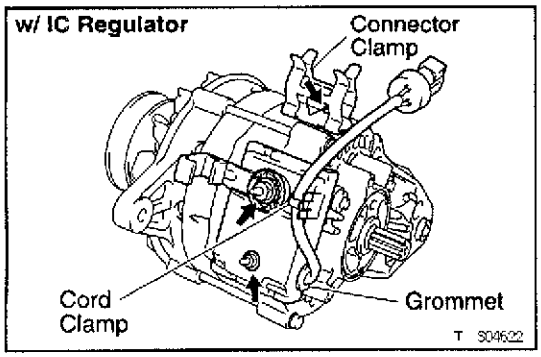
## ALTERNATOR DISASSEMBLY




**1. REMOVE VACUUM PUMP**

Remove the 3 bolts, cord clamp, vacuum pump and O −ring.






**2. w/ IC Regulator:**
**REMOVE CONNECTOR CLAMP**

Remove the screw and connector clamp.

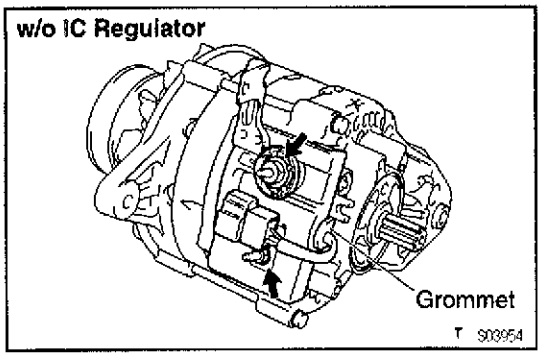
**3. REMOVE BRUSH HOLDER COVER**

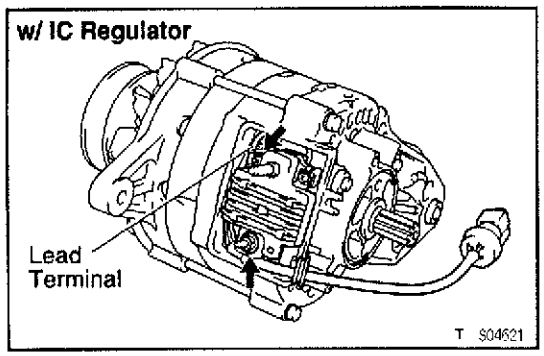
**w/ IC Regulator:**

(a) Disconnect the lead wire from the cord clamp on the brush holder cover.
(b) Remove the 2 nuts and terminal insulator.
(c) Disconnect the grommet from the cover, and remove the brush holder cover.

**w/o IC Regulator:**

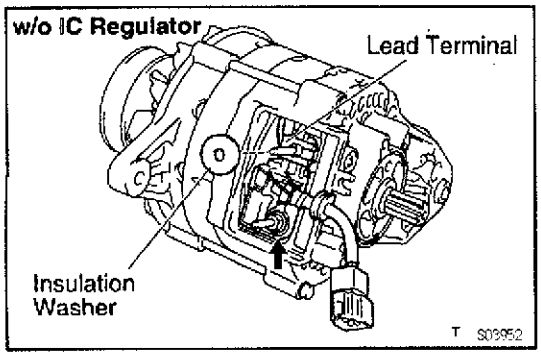
(a) Remove the 2 nuts and terminal insulator.
(b) Disconnect the lead grommet from the cover, and remove the brush holder cover.



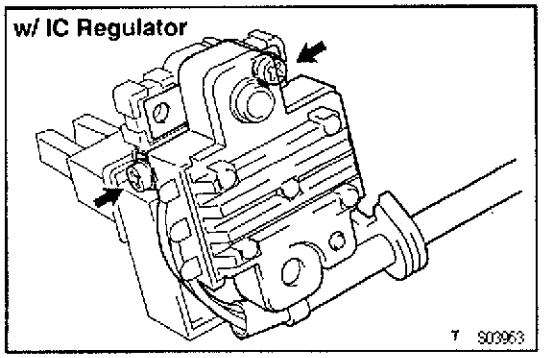

**4. w/ IC Regulator:**
**REMOVE IC REGULATOR AND BRUSH HOLDER ASSEMBLY**

(a) Remove the screw, and disconnect the lead terminal from the IC regulator.
(b) Remove the nut, the IC regulator and brush holder assembly.

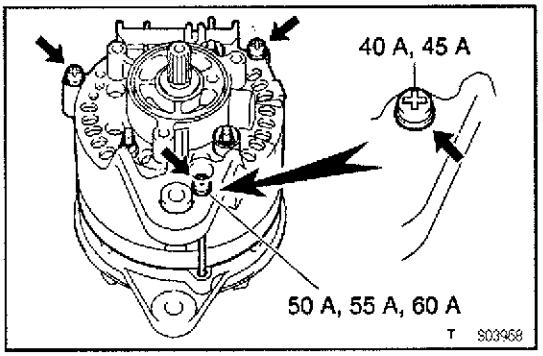



**5. w/o IC Regulator:**
**REMOVE BRUSH HOLDER**

(a) Remove the insulation washer.
(b) Disconnect the lead terminal from the brush holder.
(c) Remove the nut and brush holder.

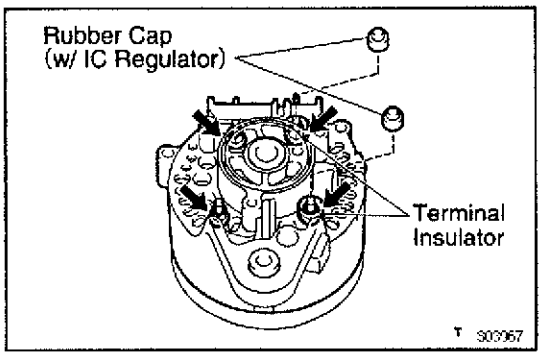



6. **w/ IC Regulator:**
**REMOVE IC REGULATOR FROM BRUSH HOLDER**
Remove the 2 screws and IC regulator.

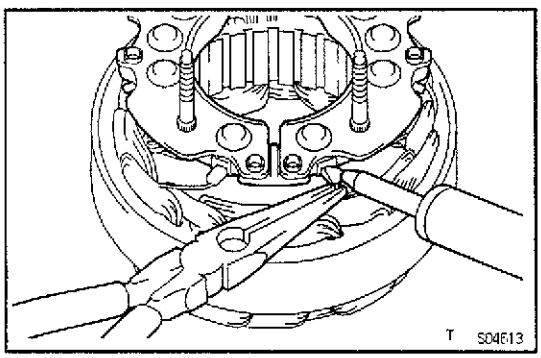



7. **REMOVE RECTIFIER END FRAME, RECTIFIER HOLDER AND STATOR ASSEMBLY**
Remove the 3 through screws, the rectifier end frame, rectifier holder and stator assembly.

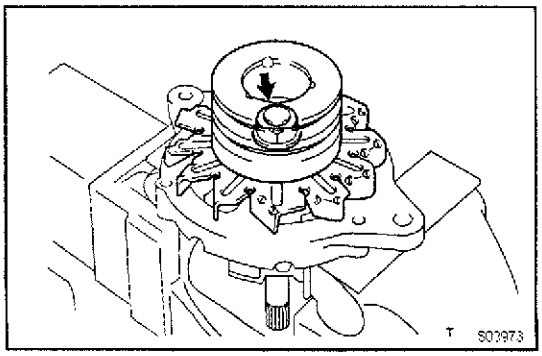
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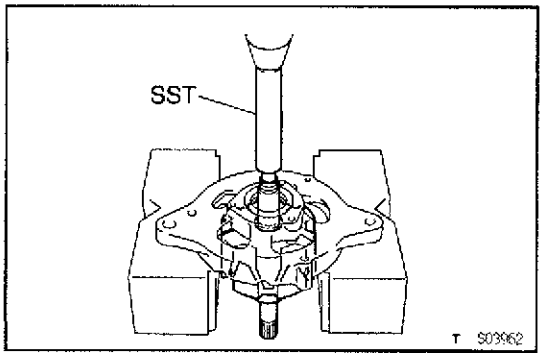

8. **REMOVE RECTIFIER END FRAME FROM RECTIFIER HOLDER**
(a) w/ IC Regulator:
Remove the 2 rubber caps.
(b) Remove the 4 nuts and 2 terminal insulators.
(c) Remove the rectifier end frame.
(d) Remove the 2 insulation bushing and 2 collars from the rectifier holder studs.




9. **REMOVE RECTIFIER HOLDER FROM STATOR**
Hold the stator coil lead with needle–nose pliers, and unsolder the leads.
**NOTICE: Protect the rectifiers from heat.**



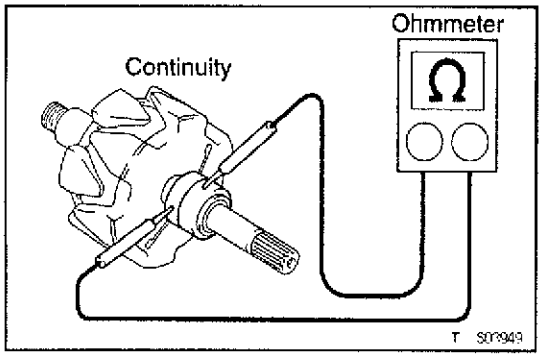

10. **REMOVE PULLEY AND FAN FROM DRIVE END FRAME**
(a) Mount the rotor in a soft jaw vise.
(b) Remove the pulley nut, pulley, fan and spacer.




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

Using SST and a press, press out the rotor.
09950–70010 (09951–07100)

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## ALTERNATOR INSPECTION AND REPAIR

### Rotor

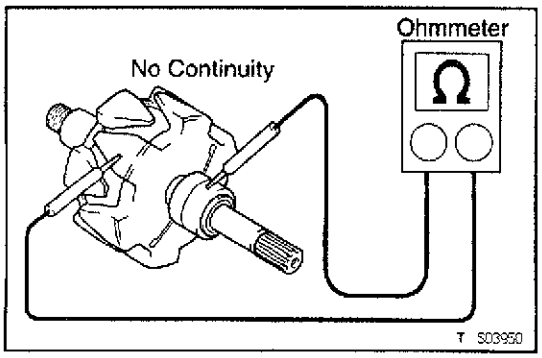
**1. INSPECT ROTOR FOR OPEN CIRCUIT**

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

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

| | |
|---|---|
| w/ IC regulator | 2.7 – 3.1 Ω |
| w/o IC regulator | 3.9 – 4.1 Ω |

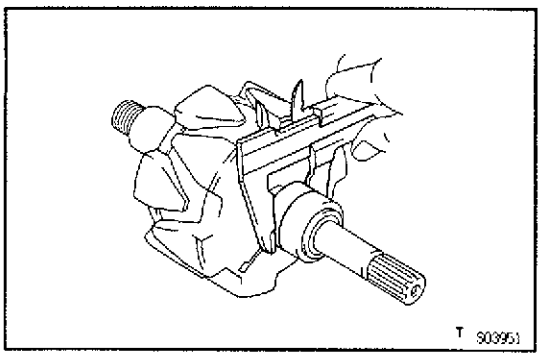
If there is no continuity, replace the rotor.




**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.

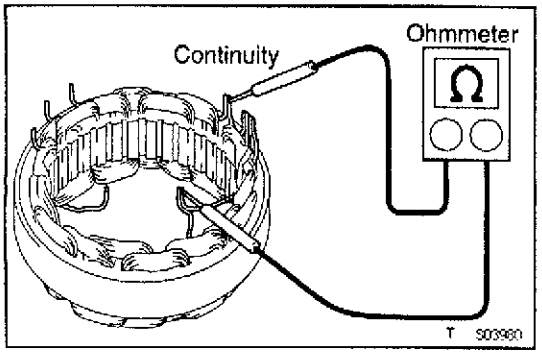
**Standard diameter:**

**32.3 – 32.5 mm (1.272 – 1.280 in.)**

**Minimum diameter:**

**32.1 mm (1.264 in.)**

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

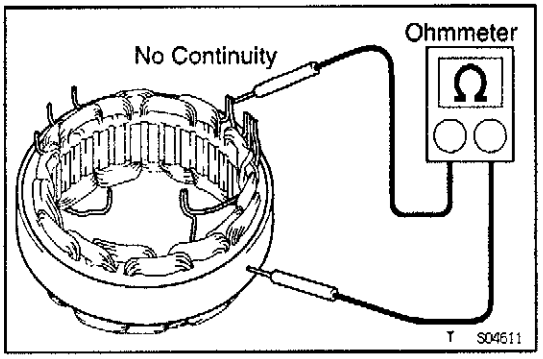



### Stator

**1. INSPECT STATOR FOR OPEN CIRCUIT**

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

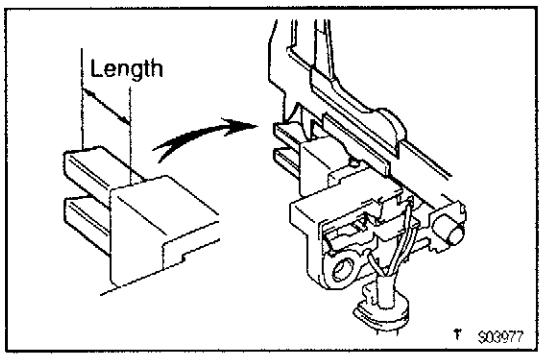
If there is no continuity, replace the drive end frame assembly.




**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



**1. INSPECT EXPOSED BRUSH LENGTH**

Using vernier calipers, measure the exposed brush length.

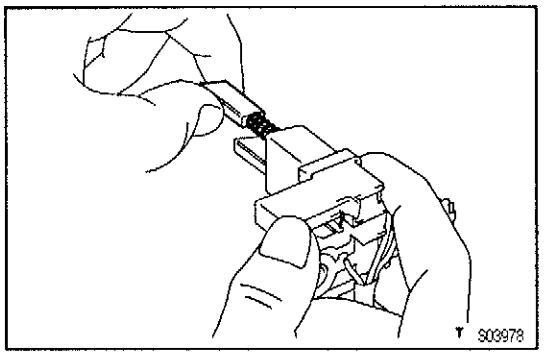
**Standard exposed length:**

**20.0 mm (0.787 in.)**

**Minimum exposed length:**

**5.5 mm (0.217 in.)**

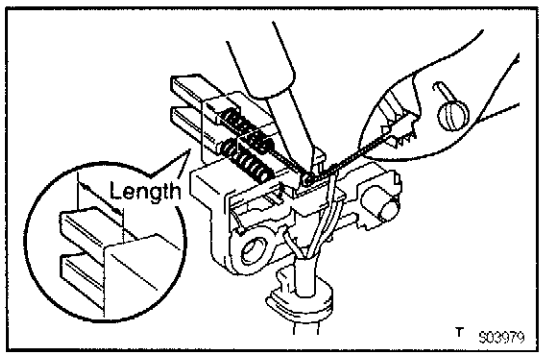
If the exposed length is less than minimum, replace the brushes.




**2. 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:**

**20.0 mm (0.787 in.)**

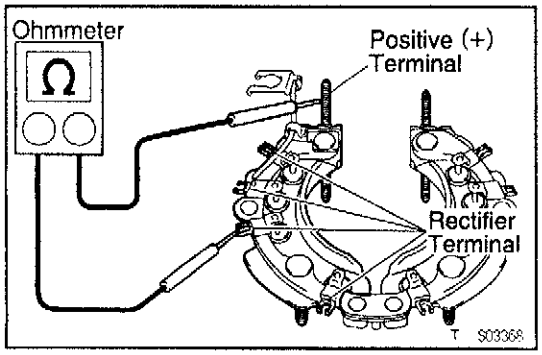
(d) Check that the brush moves smoothly in the brush holder.

(e) Cut off the excess wire.

(f) Apply insulation paint to the soldered area.

## Rectifiers (Rectifier Holder)

**1. INSPECT POSITIVE SIDE RECTIFIER**

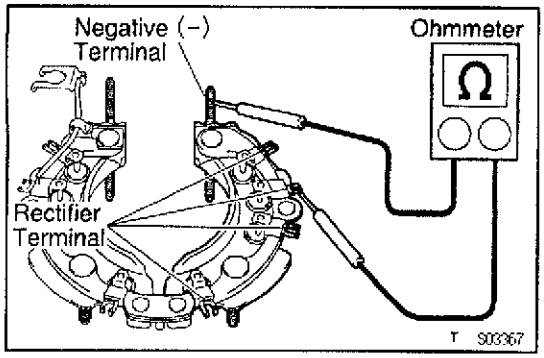



(a) Using an ohmmeter, connect one tester probe to the positive (+) terminal and the other to each rectifier terminal.

(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 SIDE RECTIFIER**

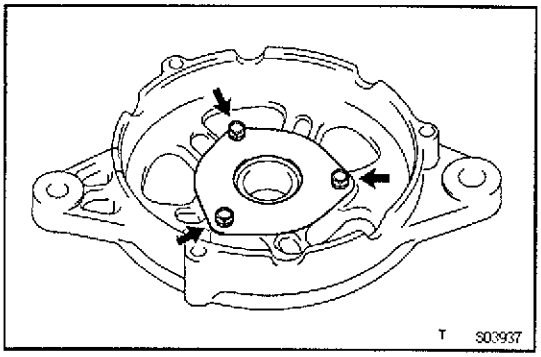
(a) Using an ohmmeter, connect one tester probe to each negative (–) terminal and the other to each rectifier terminal.

(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.

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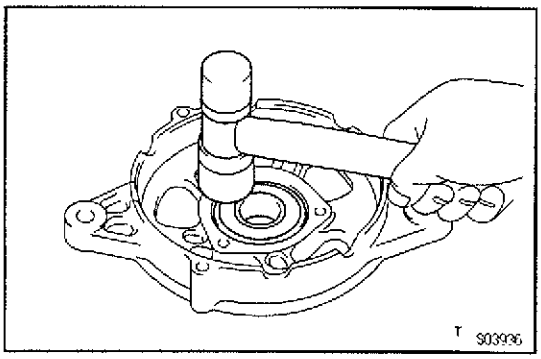

## Bearings

**1. INSPECT FRONT BEARING**

Check that the bearing is not rough or worn.

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

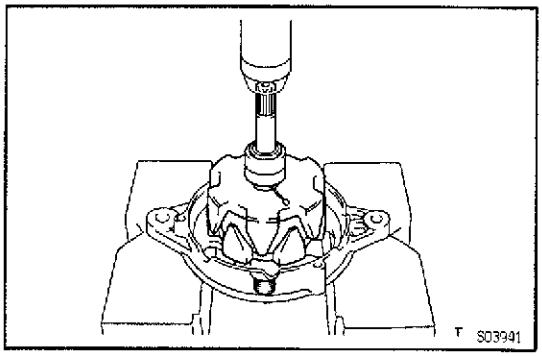
(a) Remove the 3 bolts, bearing retainer, bearing and bearing cover.




(b) Install the bearing cover, a new bearing and the bearing retainer with the 3 bolts.

**Torque: 6.9 N·m (70 kgf·cm, 61 in.·lbf)**

If necessary, lightly tap the bearing with a plastic–faced hammer.

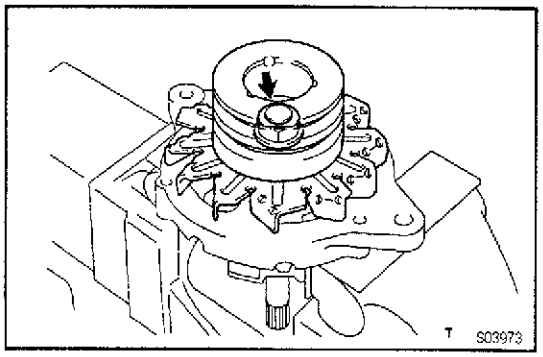



## ALTERNATOR ASSEMBLY

CHOEH-01

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

Using a press, press in the rotor.



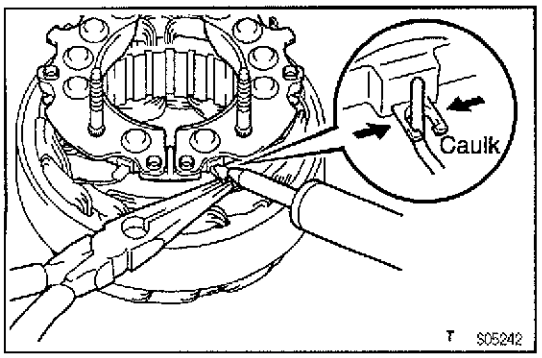

**2. INSTALL PULLEY FAN AND PULLEY TO DRIVE END FRAME**

(a) Mount the rotor in a soft jaw vise.

(b) Slide the spacer collar onto the rotor shaft.

(c) Install the fan and pulley with the nut.

**Torque: 176.5 N·m (1,800 kgf·cm, 136 ft·lbf)**

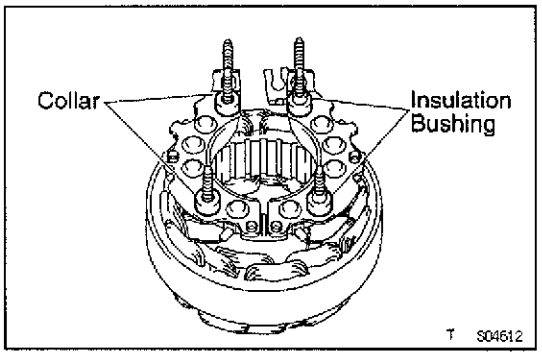



**3. INSTALL RECTIFIER HOLDER TO STATOR**

(a) Connect the stator coil leads to the rectifier terminals by caulking the terminals securely.

(b) Hold the stator coil lead with needle–nose pliers, and solder the leads.

**NOTICE: Protect the rectifiers from heat.**



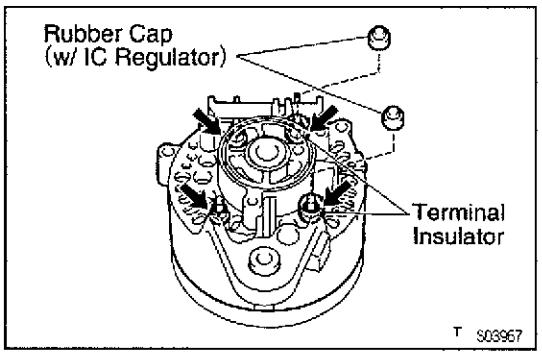

**4. INSTALL RECTIFIER END FRAME TO RECTIFIER HOLDER**

(a) Install the 2 insulation bushings on the positive (+) studs of the rectifier holder.

(b) Install the 2 collars on the negative (–) studs of the rectifier holder.

(c) Install the rectifier end frame on the rectifier holder.

**NOTICE: Check that the leads are not touching the rectifier end frame.**

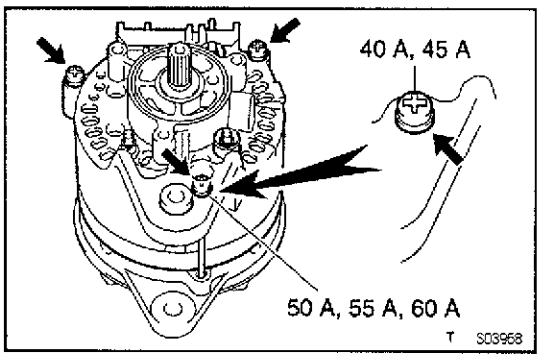



(d) Install the 2 terminal insulators on the positive (+) studs of the rectifier holder.

(e) Install the 4 nuts.

**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**

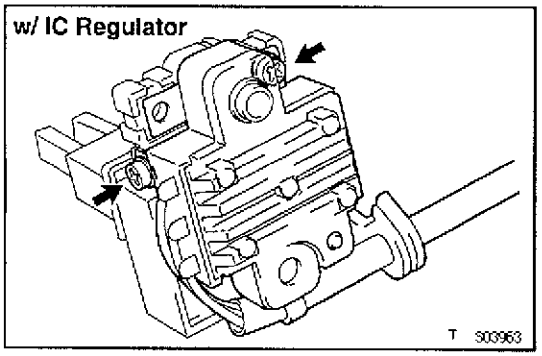
(f) w/ IC Regulator:
Install the 2 rubber caps.




**5. INSTALL RECTIFIER END FRAME, RECTIFIER HOLDER AND STATOR ASSEMBLY**

Install the rectifier end frame, rectifier holder and stator assembly with the 3 through screws.

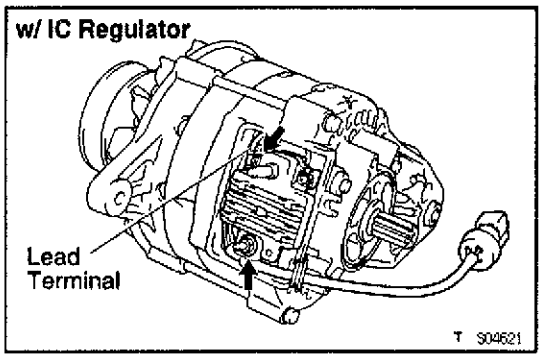
**Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)**




**6. w/ IC Regulator:**
**INSTALL IC REGULATOR TO BRUSH HOLDER**

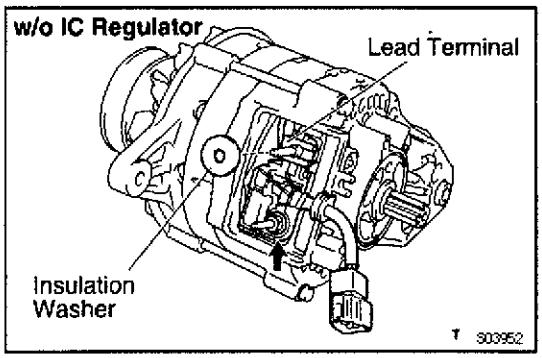
Install the IC regulator with the 2 screws.

**Torque: 2.5 N·m (25 kgf·cm, 22 in.·lbf)**

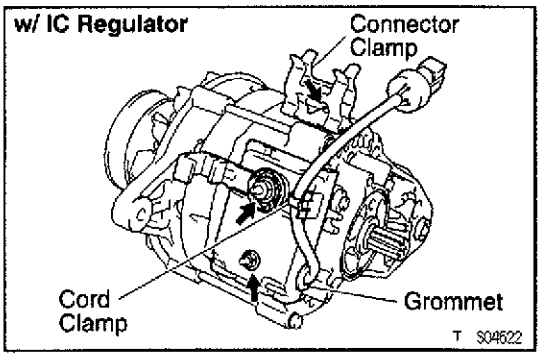



7. **w/ IC Regulator:**
**INSTALL IC REGULATOR AND BRUSH HOLDER ASSEMBLY**
(a) Install the brush holder and IC regulator assembly with the nut.
**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**
(b) Install the lead terminal with the screw.
**Torque: 2.5 N·m (25 kgf·cm, 22 in.·lbf)**

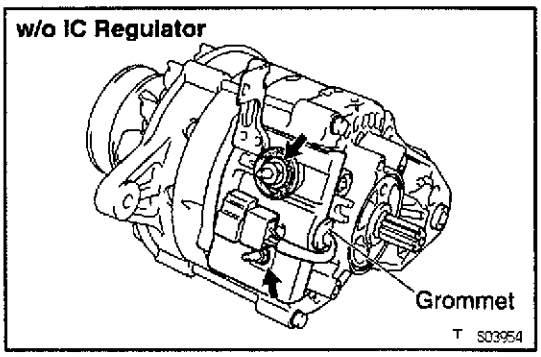
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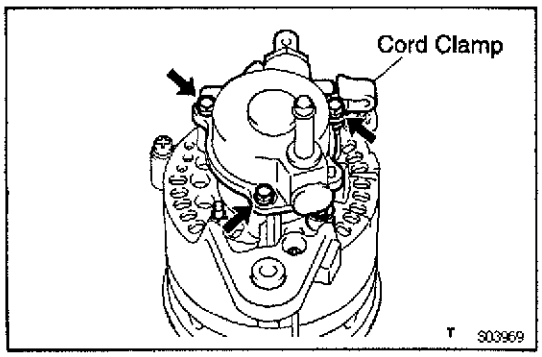

8. **w/o IC Regulator:**
**INSTALL BRUSH HOLDER**
(a) Install the brush holder with the nut.
**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**
(b) Install the lead terminal.
(c) Install the insulation washer.




9. **w/ IC Regulator:**
**INSTALL CONNECTOR CLAMP**
Install the connector clamp with the screw.
**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**
10. **INSTALL BRUSH HOLDER COVER**
**w/ IC Regulator:**
(a) Install the grommet to the brush holder cover.
(b) Install the brush holder cover and terminal insulator with the 2 nuts.
**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**
(c) Install the lead wire to the lead clamp on the brush holder cover.




**w/o IC Regulator:**
(a) Install the grommet to the brush holder cover.
(b) Install the brush holder cover, terminal insulator and connector clamp with the 2 nuts.
**Torque: 3.9 N·m (40 kgf·cm, 35 in.·lbf)**




11. **INSTALL VACUUM PUMP**
Install a new O—ring, the vacuum pump and cord clamp with the 3 bolts.
**Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)**
12. **CHECK THAT ROTOR ROTATES SMOOTHLY**