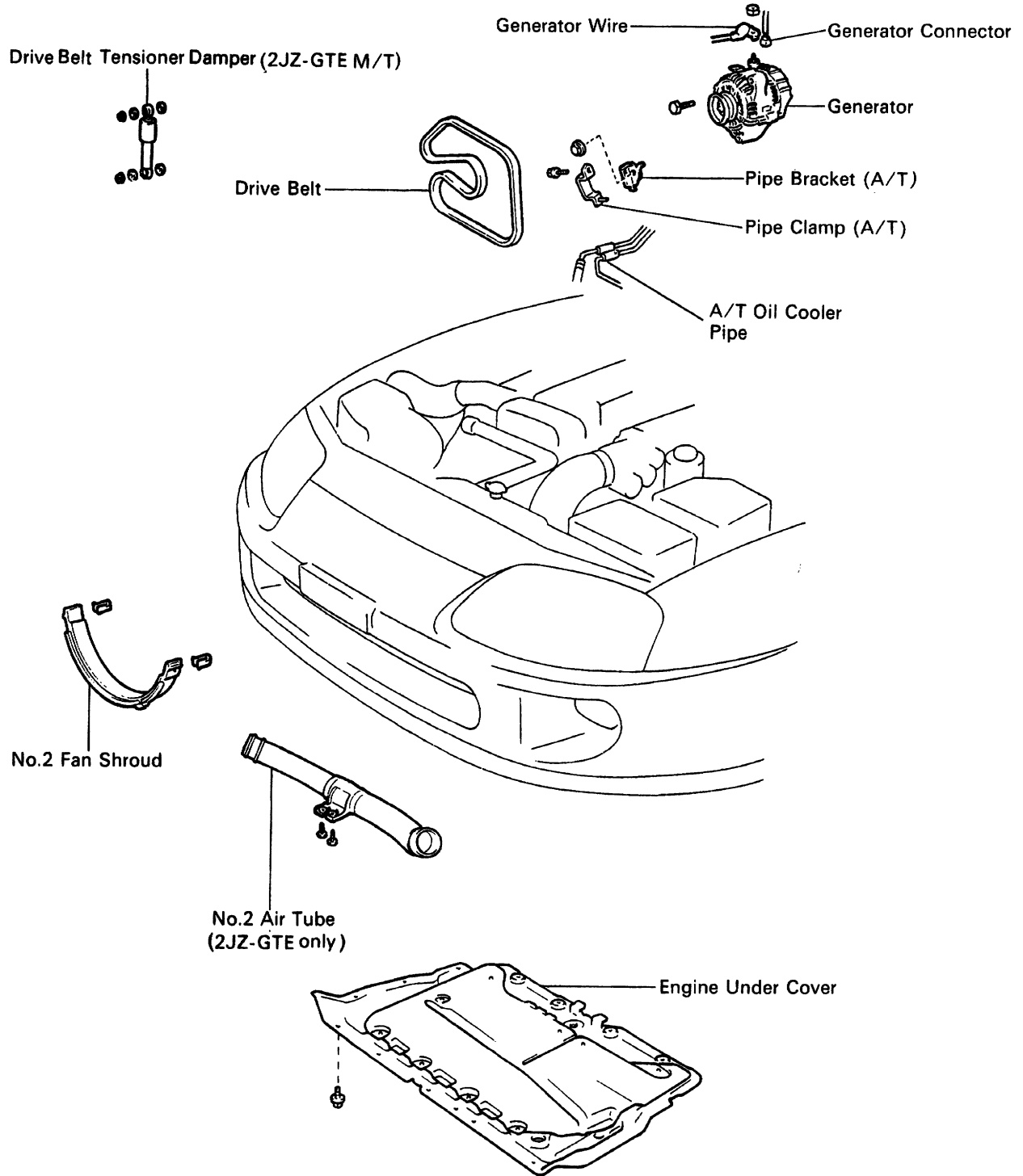
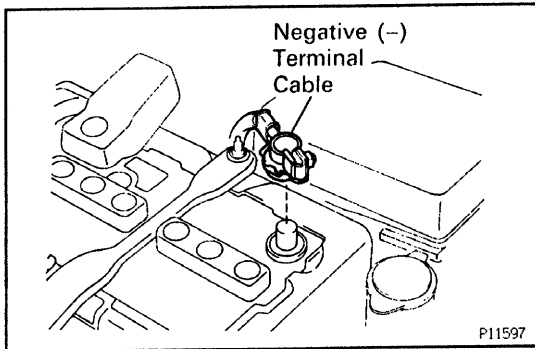


# GENERATOR COMPONENTS FOR REMOVAL AND INSTALLATION

CH011-07





## GENERATOR REMOVAL

(See Components for Removal and Installation)

### 1. DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY

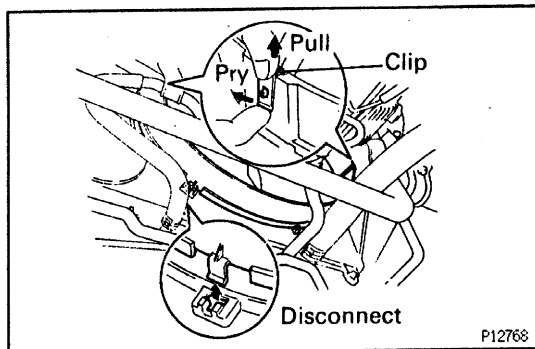
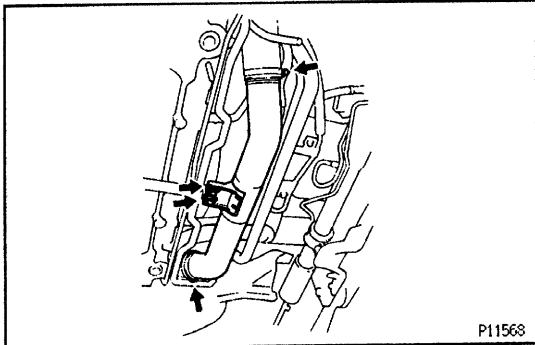
**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

### 2. REMOVE ENGINE UNDER COVER

#### 3. 2JZ-GTE:

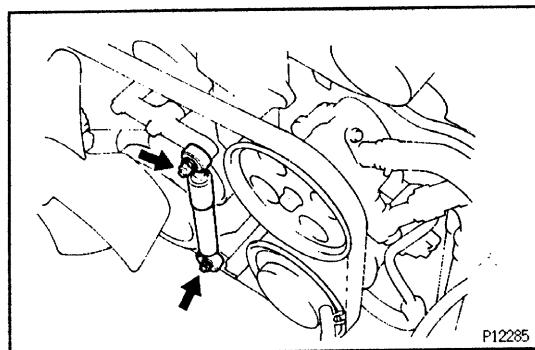
##### REMOVE NO.2 AIR TUBE FOR CAC

- Loosen the 2 hose clamps.
- Remove the 2 bolts.
- Disconnect the air tube from the air hoses, and remove the air tube.



### 4. REMOVE NO.2 FAN SHROUD

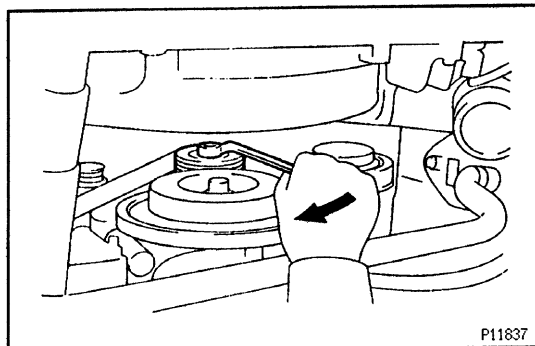
- Remove the 2 clips.
- Disconnect the claw of the No.2 fan shroud from the hook of the No. 1 fan shroud, and remove the No.2 fan shroud.



### 5. 2JZ-GTE M/T:

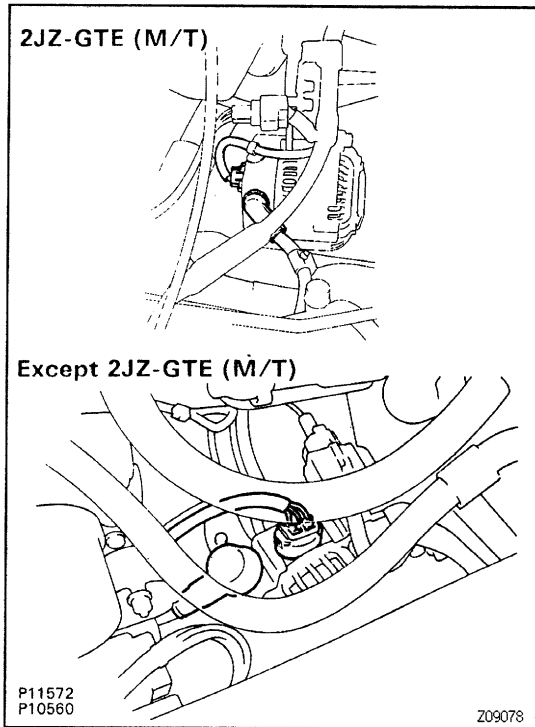
##### REMOVE DRIVE BELT TENSIONER DAMPER

Remove the 2 nuts and tensioner damper.



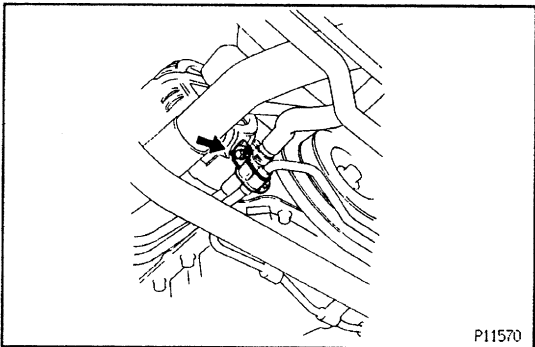
### 6. REMOVE DRIVE BELT

Loosen the belt tension by turning the drive belt tensioner clockwise, and remove the drive belt.

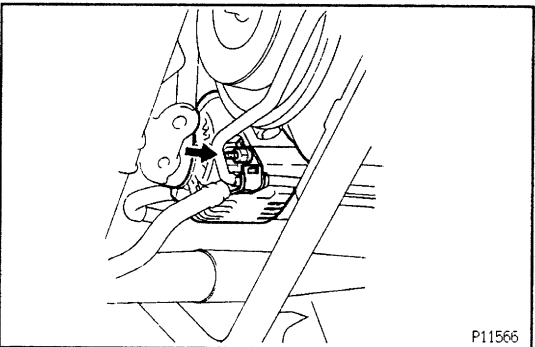


## 7. REMOVE GENERATOR

- (a) Disconnect the generator connector.
- (b) Remove the rubber cap and nut, and disconnect the generator wire.



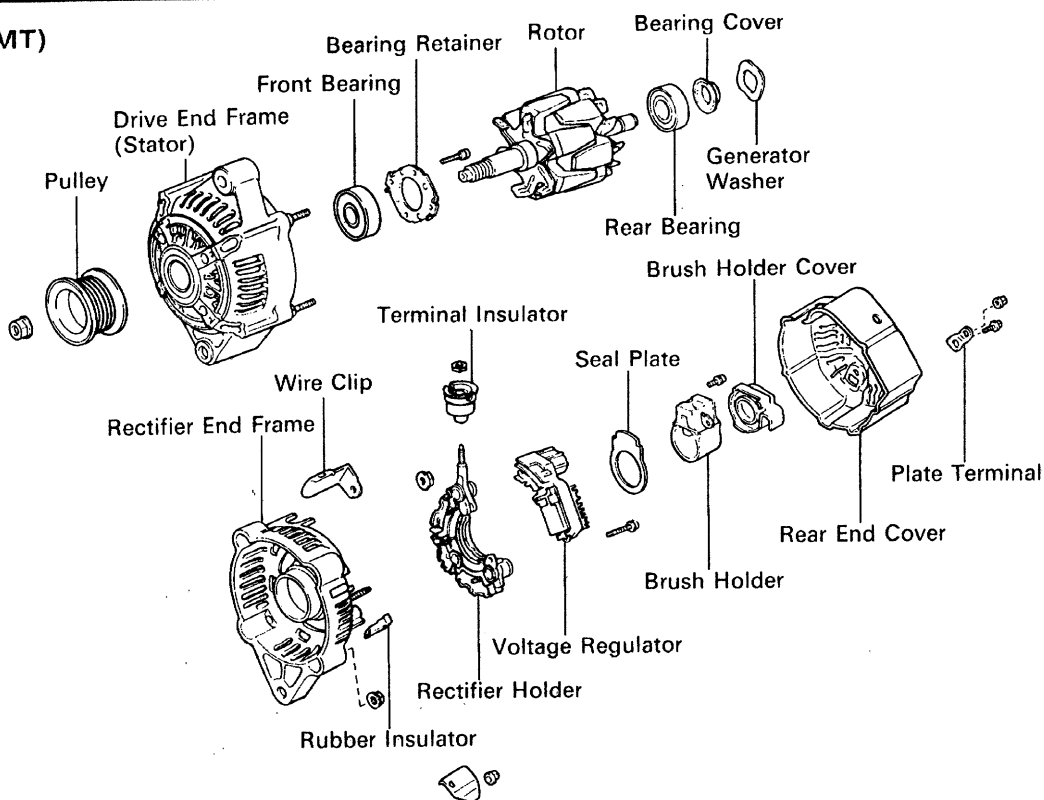
- (c) Disconnect the generator wire clamp from the wire clip on the generator.
- (d) A/T:  
Remove the bolt and pipe clamp, and disconnect the 2 oil cooler pipes from the generator.



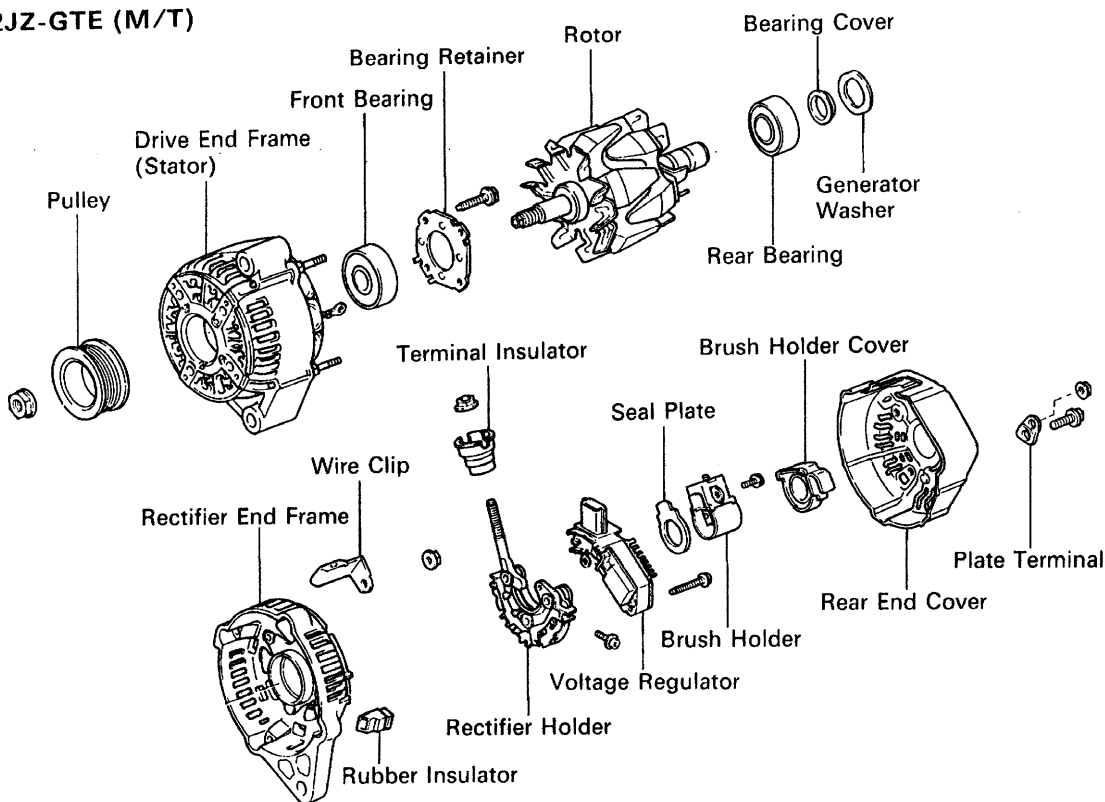
- (e) Remove the bolt, nut, pipe bracket and generator.

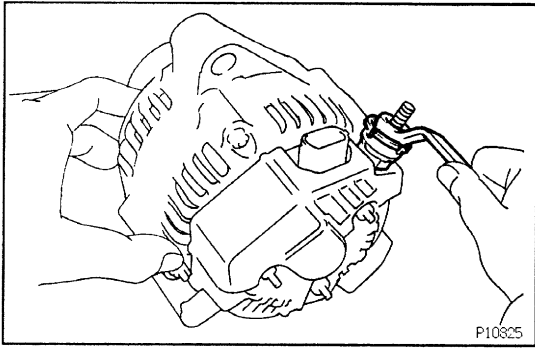
# COMPONENTS FOR DISASSEMBLY AND ASSEMBLY

## 2JZ-GTE (MT)



## Except 2JZ-GTE (M/T)



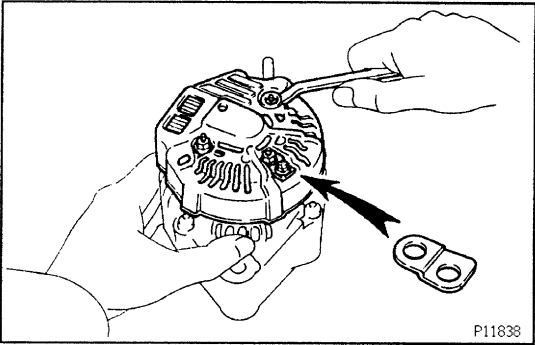


## GENERATOR DISASSEMBLY

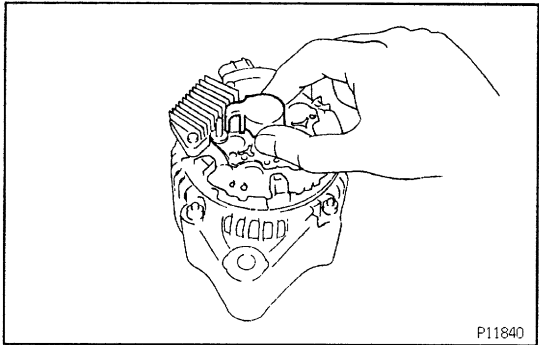
(See Components for Disassembly and Assembly)

### 1. REMOVE REAR END COVER

(a) Remove the nut and terminal insulator.

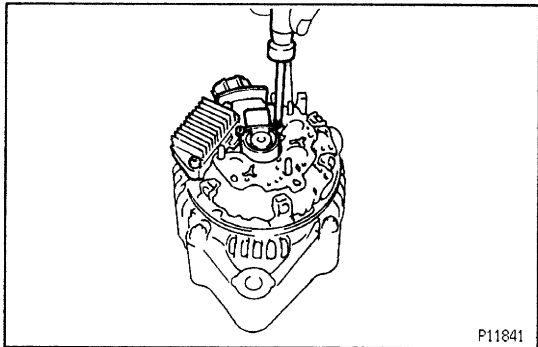


(b) Remove the bolt, 3 nuts, plate terminal and end cover.

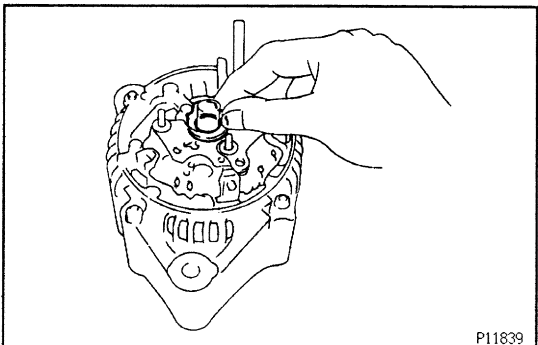


### 2. REMOVE BRUSH HOLDER AND VOLTAGE REGULATOR

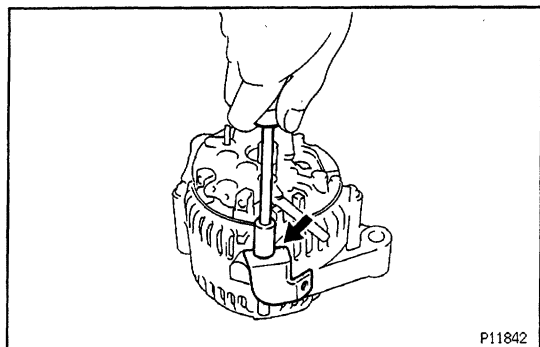
(a) Remove the brush holder cover from the brush holder.



(b) Remove the 5 screws, brush holder and voltage regulator.

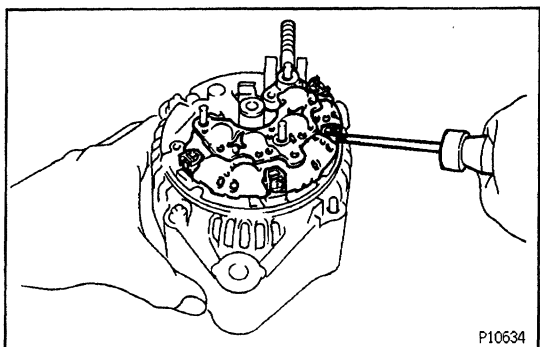


(c) Remove the seal plate from the rectifier end frame.



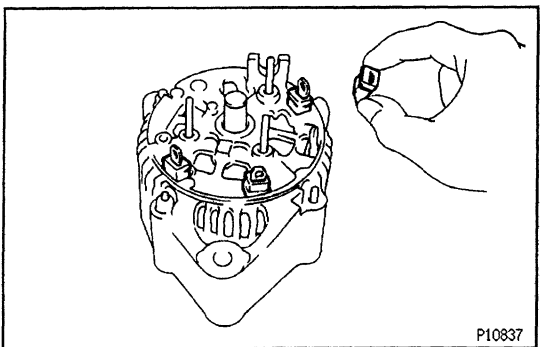
### 3. REMOVE WIRE CLIP

Remove the nut and wire clip.

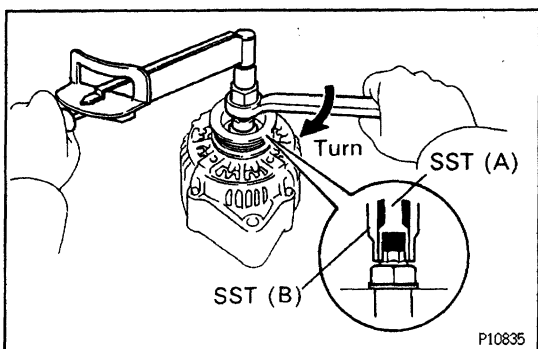


### 4. REMOVE RECTIFIER HOLDER

(a) Remove the 4 screws and rectifier holder.



(b) Remove the 4 rubber insulators.



### 5. REMOVE PULLEY

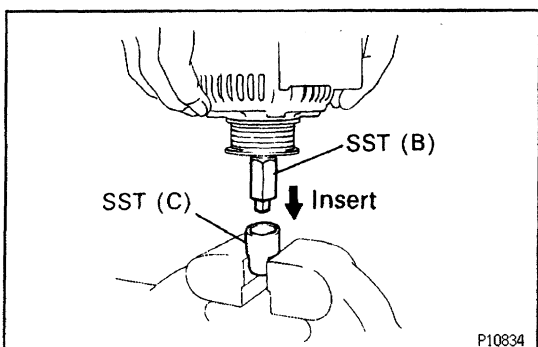
(a) Hold SST

(A) with a torque wrench, and tighten SST  
(B) clockwise to the specified torque.

SST 09820-63010

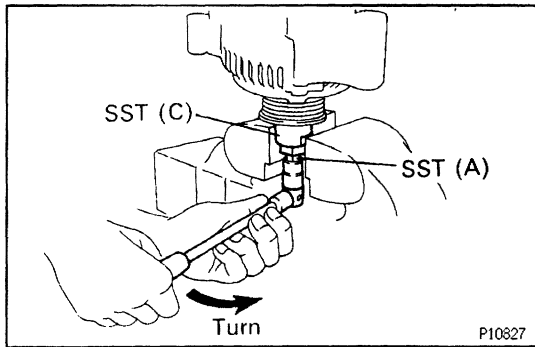
**Torque: 39 N-m (400 kgf-cm, 29 ft-lbf)**

(b) Check that SST (A) is secured to the rotor shaft.

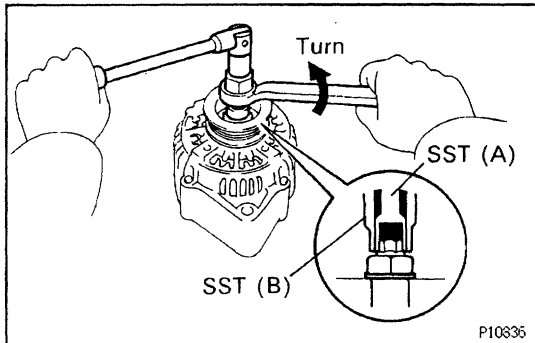


(c) Mount SST (C) in a vise.

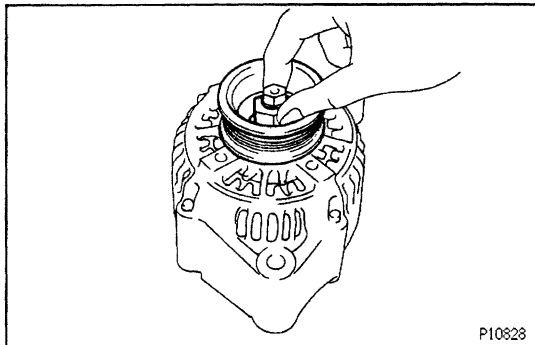
(d) Insert SST (B) into SST (C), and attach the pulley nut to SST (C).



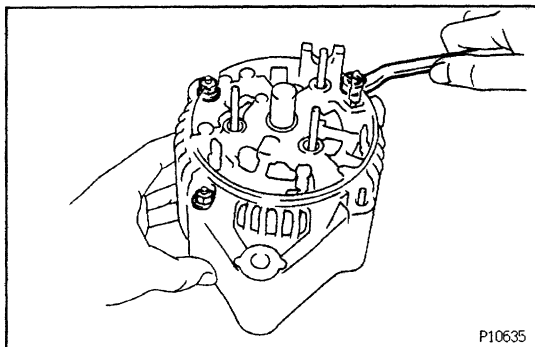
- (e) To loosen the pulley nut, turn SST (A) in the direction shown in the illustration.  
**NOTICE: To prevent damage to the rotor shaft, do not loosen the pulley nut more than one-half of a turn.**  
 (f) Remove the generator from SST (C).



- (g) Turn SST (B), and remove SST (A and B).

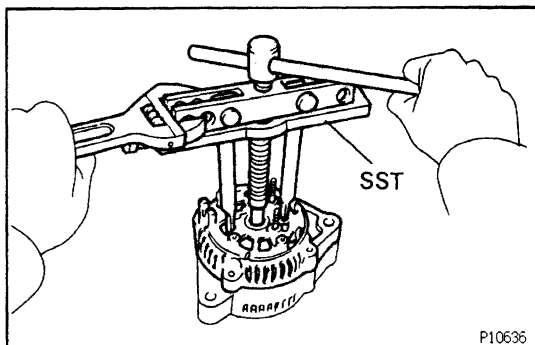


- (h) Remove the pulley nut and pulley.

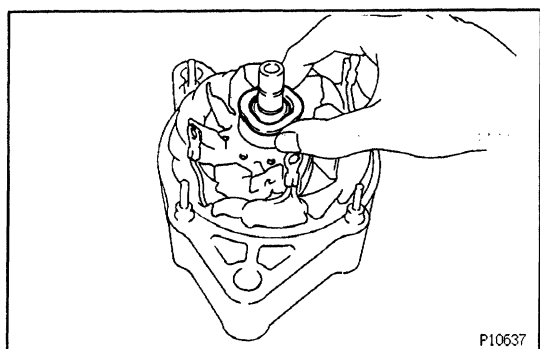


## 6. REMOVE RECTIFIER END FRAME

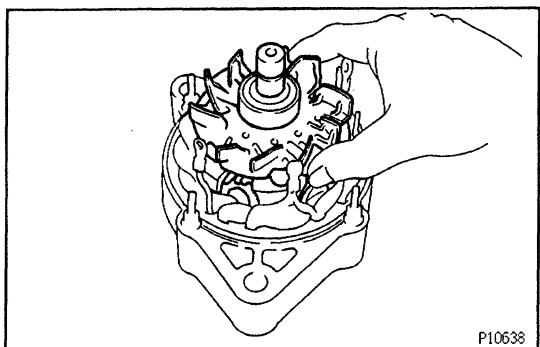
- (a) Remove the 3 nuts.



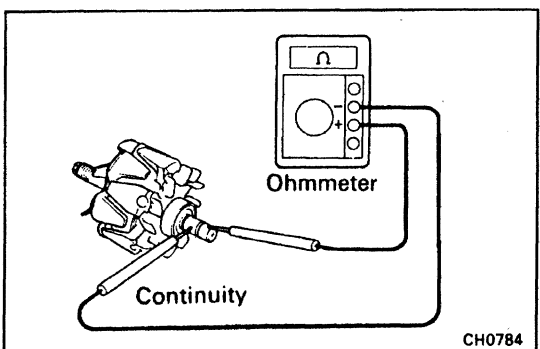
- (b) Using SST, remove the rectifier end frame.  
 SST 09950-20017



(c) Remove the generator washer.



## 7. REMOVE ROTOR FROM DRIVE END FRAME



## GENERATOR INSPECTION AND REPAIR

### Rotor

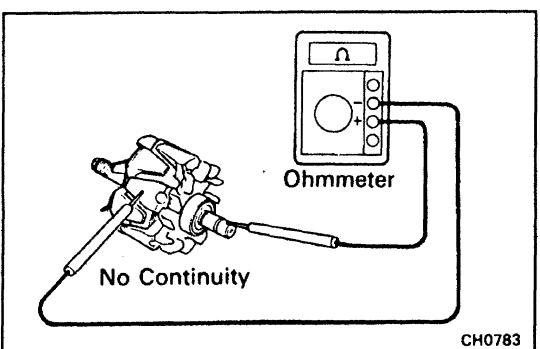
#### 1. INSPECT ROTOR FOR OPEN CIRCUIT

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

**Standard resistance (Cold):**

**2.8–3.0  $\Omega$**

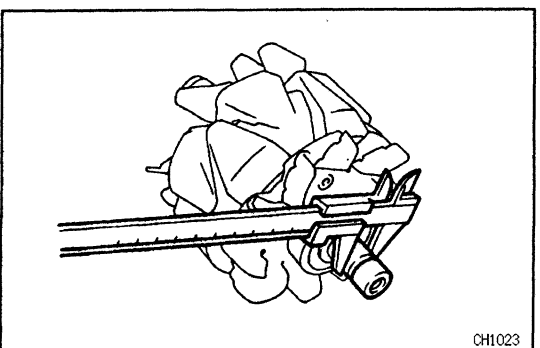
If there is no continuity, replace the rotor.



#### 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 a vernier caliper, measure the slip ring diameter.

**Standard diameter:**

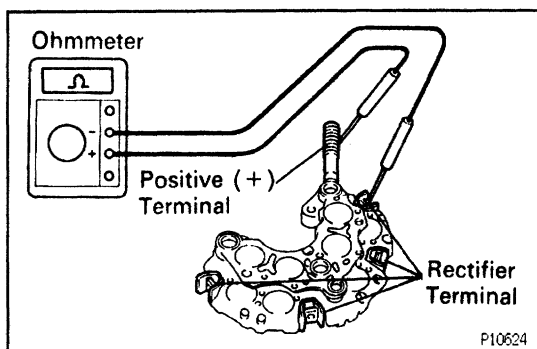
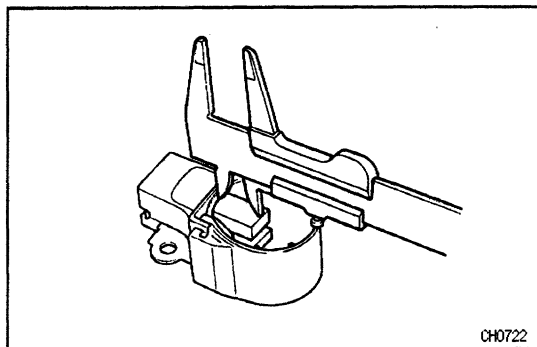
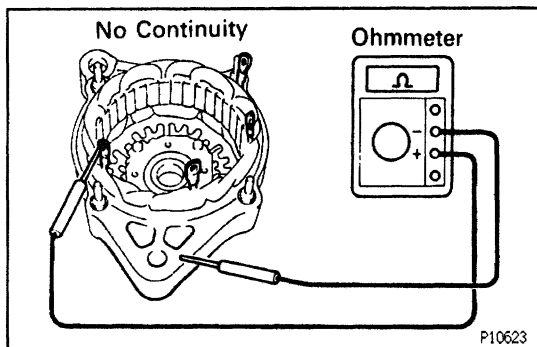
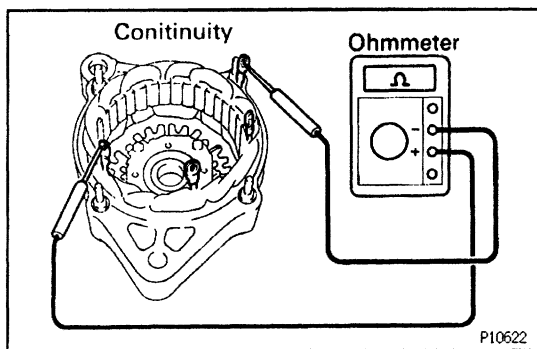
**14.2 – 14.4 mm (0.559 – 0.567 in.)**

**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

### INSPECT EXPOSED BRUSH LENGTH

Using a vernier caliper, measure the exposed 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 brush holder.

## Rectifiers (Rectifier Holder)

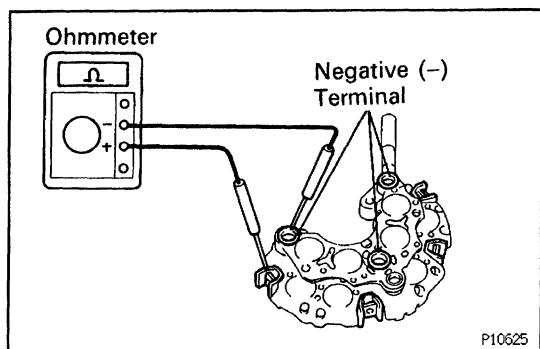
### 1. INSPECT POSITIVE RECTIFIER

(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

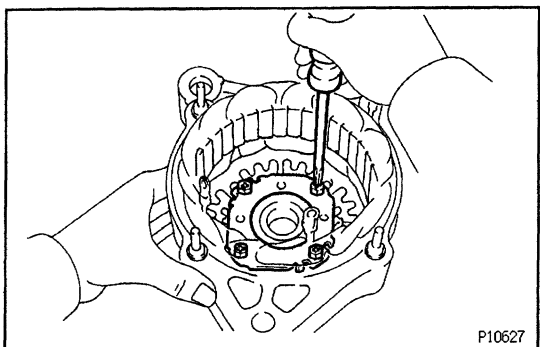
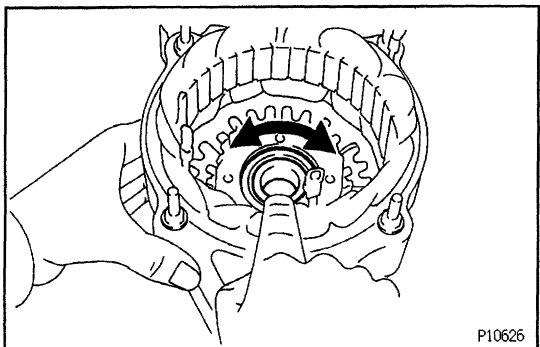
- Using an ohmmeter, connect one tester probe to each negative (-) terminal and the other to each rectifier terminal.
- Reverse the polarity of the tester probes and repeat step (a).
- Check that one shows continuity and the other shows no continuity.

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

Bearings

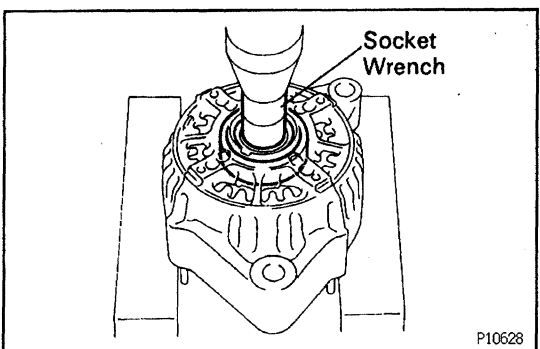
## 1. INSPECT FRONT BEARING

Check that the bearing is not rough or worn.

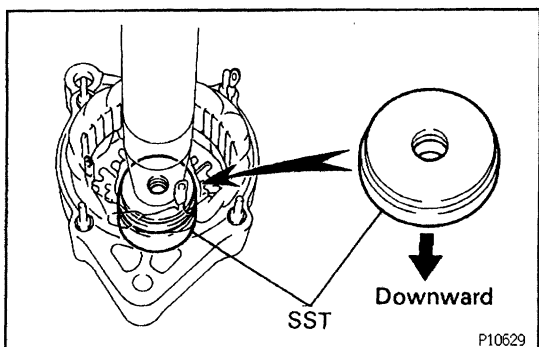


## 2. IF NECESSARY, REPLACE FRONT BEARING

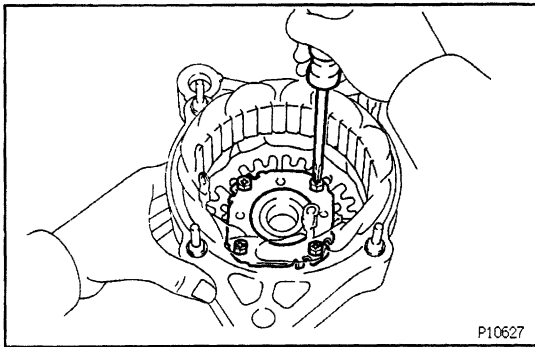
- Remove the 4 screws, bearing retainer and bearing.



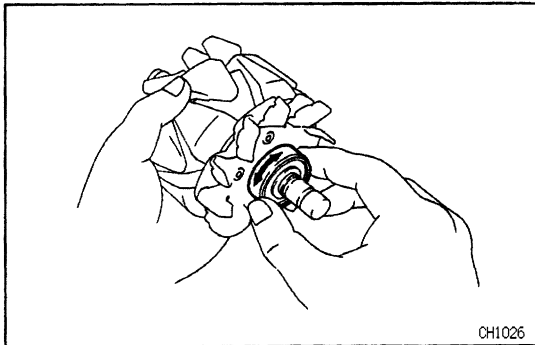
- Using a socket wrench and press, press out the bearing.



- Using SST and a press, press in a new bearing.  
SST 09608-20012 (09608-00030)

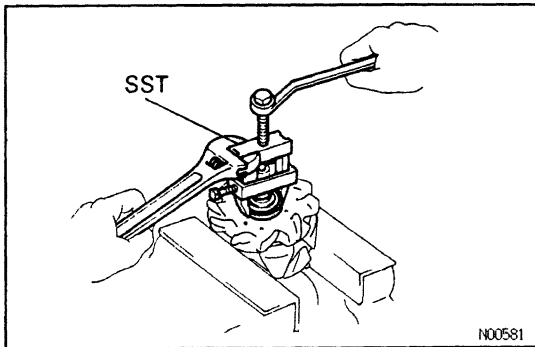


(d) Install the bearing retainer with the 4 screws.



### 3. INSPECT REAR BEARING

Check that the bearing is not rough or worn.

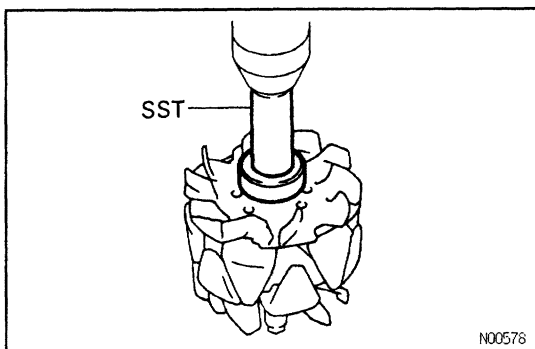


### 4. IF NECESSARY, REPLACE REAR BEARING

(a) Using SST, remove the bearing cover and bearing.

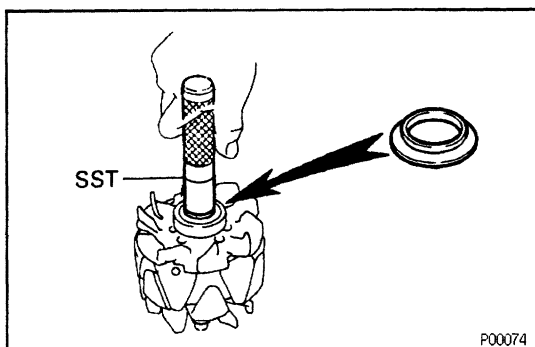
SST 09820 - 00021

**NOTICE:** Be careful not to damage the fan.



(b) Using SST and a press, press in a new bearing.

SST 09820-00030



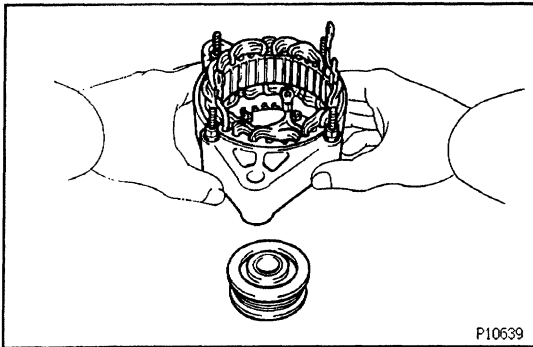
(c) Using SST, push in the bearing cover.

SST 09285-76010

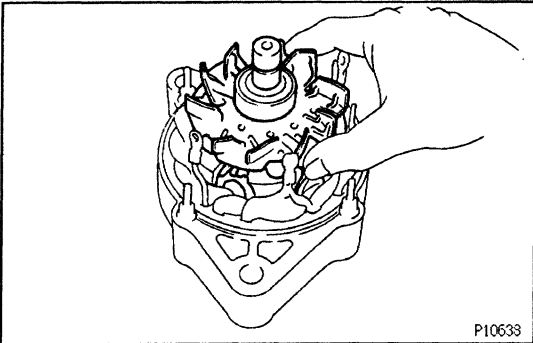
## GENERATOR ASSEMBLY

(See Components for Disassembly and Assembly)

### 1. PLACE RECTIFIER END FRAME ON PULLEY

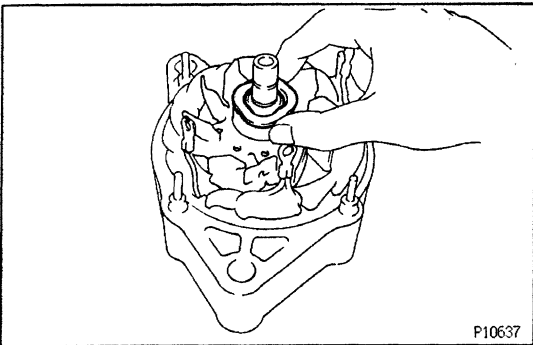


### 2. INSTALL ROTOR TO RECTIFIER END FRAME

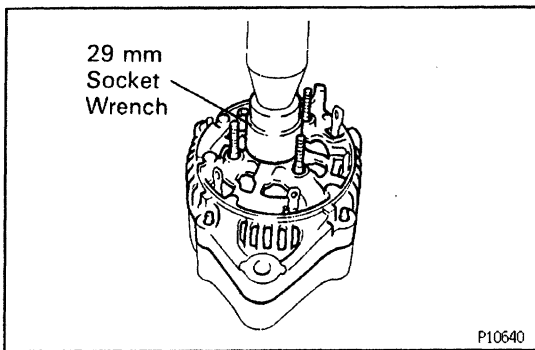


### 3. INSTALL RECTIFIER END FRAME

(a) Place the generator washer on the rotor.

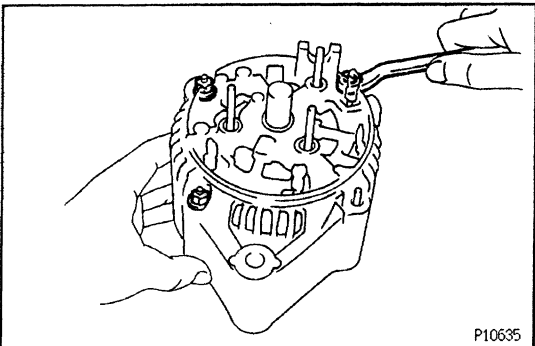


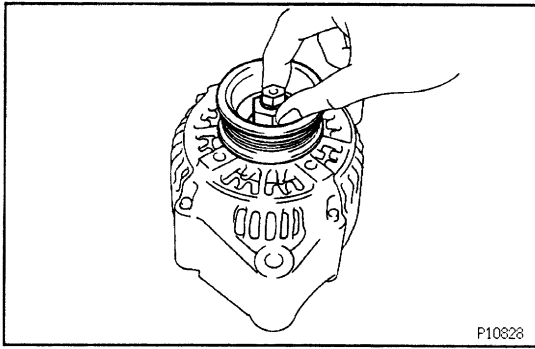
(b) Using a 29 mm socket wrench and press, slowly press in the rectifier end frame.



(c) Install the 3 nuts.

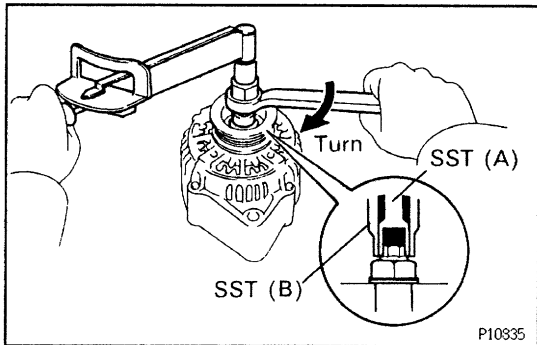
**Torque: 4.5 N-m (46 kgf-cm, 40 in.-lbf)**





#### 4. INSTALL PULLEY

- (a) Install the pulley to the rotor shaft by tightening the pulley nut by hand.

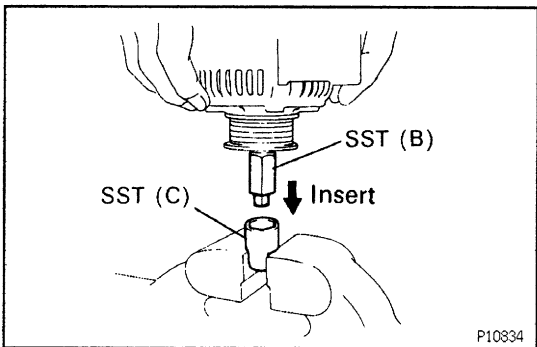


- (b) Hold SST (A) with a torque wrench, and tighten SST (B) clockwise to the specified torque.

SST 09820-63010

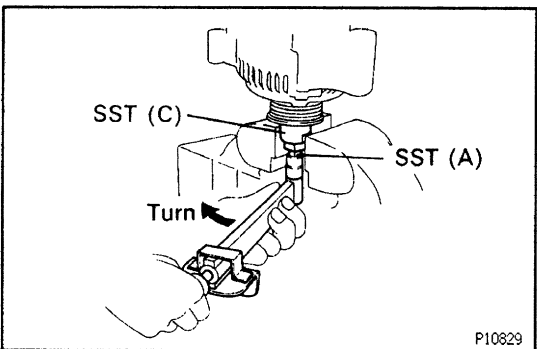
**Torque: 39 N-m (400 kgf-cm, 29 ft-lbf)**

- (c) Check that SST (A) is secured to the pulley shaft.



- (d) Mount SST (C) in a vise.

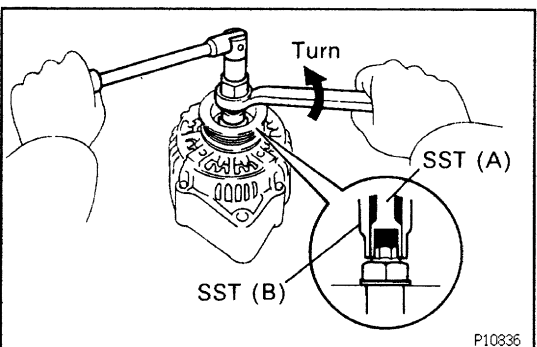
- (e) Insert SST (B) into SST (C), and attach the pulley nut to SST (C).



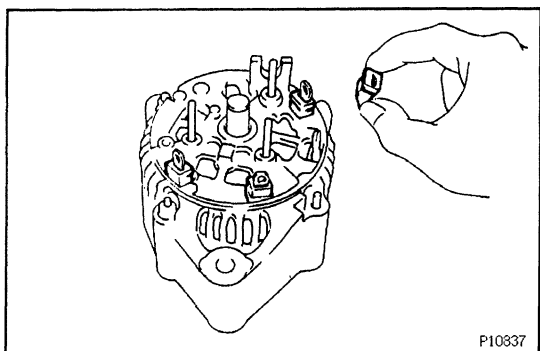
- (f) To torque the pulley nut, turn SST (A) in the direction shown in the illustration.

**Torque: 110 N-m (1,125 kgf-cm, 81 ft-lbf)**

- (g) Remove the generator from SST (C).

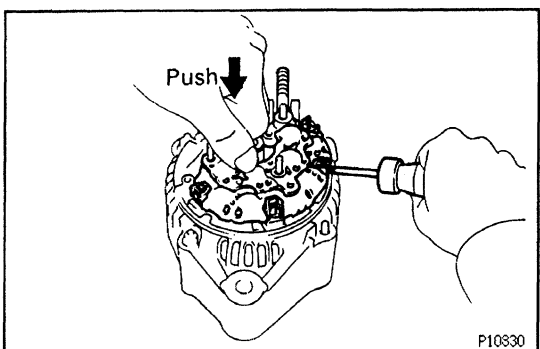


- (h) Turn SST (B), and remove SST (A and B).



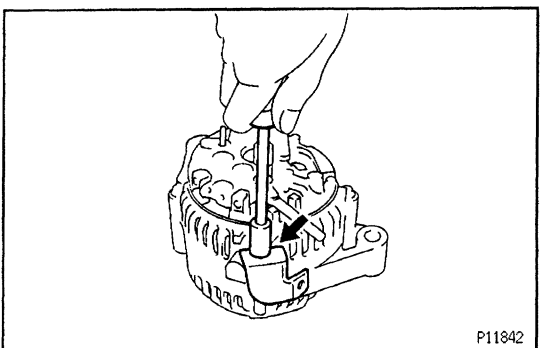
## 5. INSTALL RECTIFIER HOLDER

(a) Install the 4 rubber insulators on the lead wires.



(b) Install the rectifier holder while pushing it with the 4 screws.

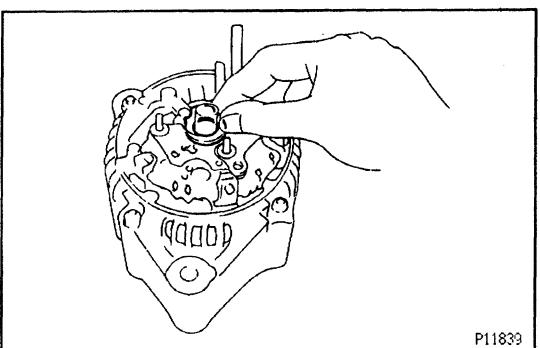
**Torque: 2.0 N-m (20 kgf-cm, 17 in.·lbf)**



## 6. INSTALL WIRE CLIP

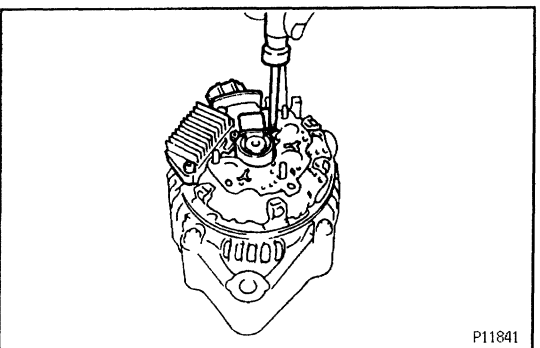
Install the wire clip with the nut.

**Torque: 4.5 N-m (46 kgf-cm, 40 in.-lbf)**



## 7. INSTALL VOLTAGE REGULATOR AND BRUSH HOLDER

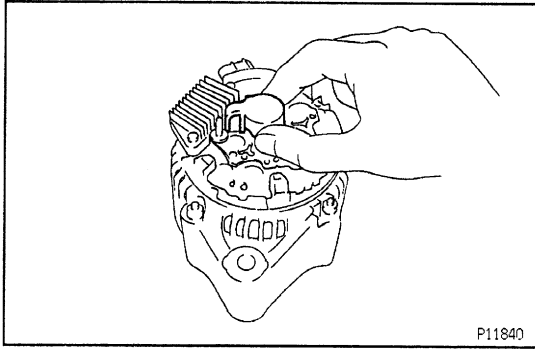
(a) Place the seal plate on the rectifier end frame.



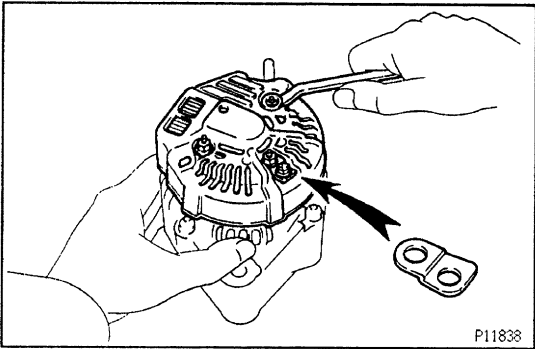
(b) Place the voltage regulator and brush holder on the rectifier end frame.

**NOTICE: Be careful of the holder installation direction.**

(c) Install the 5 screws until there is a clearance of approx. 1 mm (0.04 in.) between the brush holder and voltage regulator.



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



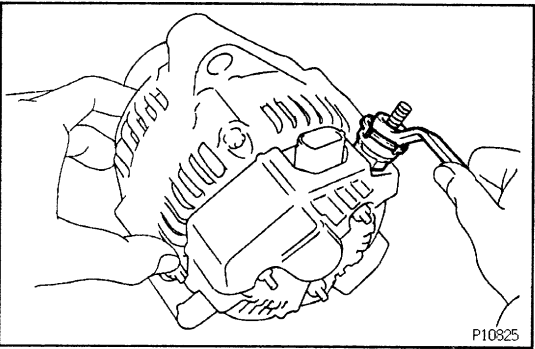
### 8. INSTALL REAR END COVER

(a) Install the end cover and plate terminal with the bolt and 3 nuts.

#### Torque:

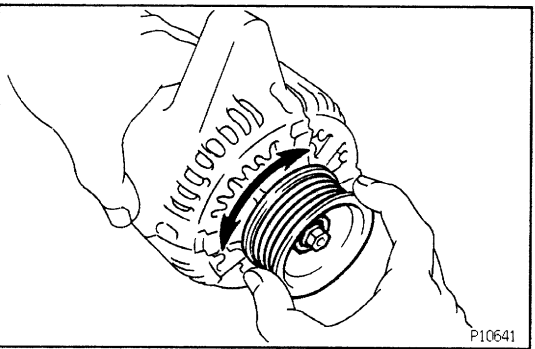
**4.5 N-m (46 kgf-cm, 40 MAW) for nut**

**3.9 N-m (40 kgf-cm, 35 in.-lbf) for bolt**

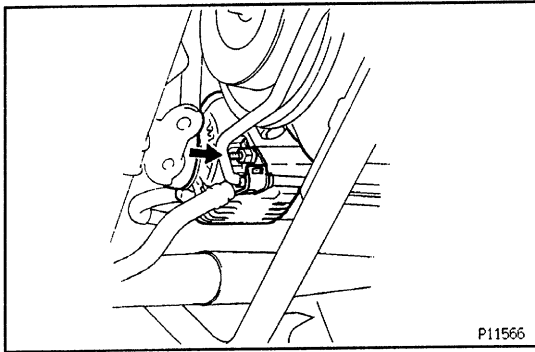


(b) Install the terminal insulator with the nut.

**Torque: 6.5 N-m (66 kgf-cm, 58 in.-lbf)**



### 9. CHECK THAT ROTOR ROTATES SMOOTHLY



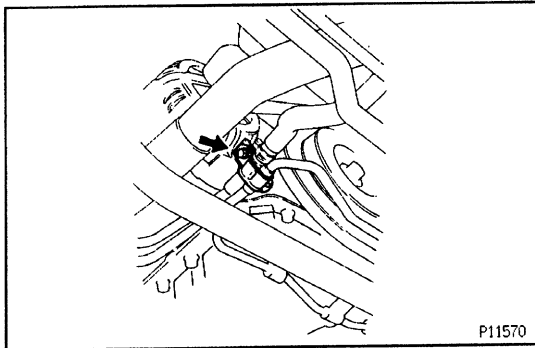
## GENERATOR INSTALLATION

(See Components for Removal and Installation)

### 1. INSTALL GENERATOR

- (a) Install the generator and pipe bracket with the bolt and nut.

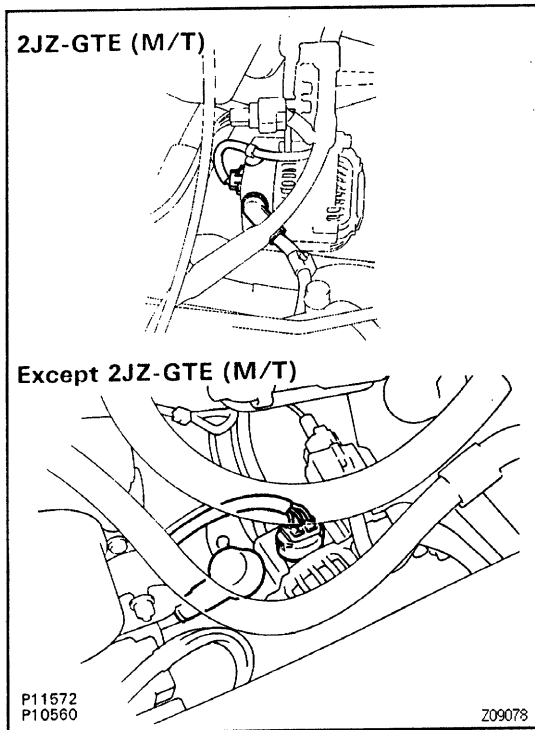
**Torque: 37 N-m (380 kgf-cm, 27 ft-lbf)**



- (b) A/T:

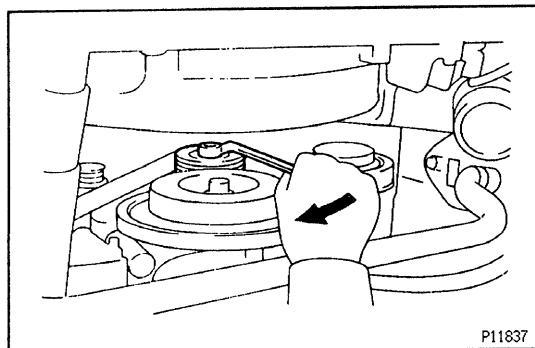
Install the 2 A/T oil cooler pipes with the pipe clamp and bolt.

- (c) Install the generator wire clamp to the wire clip on the generator.



- (d) Connect the generator connector.

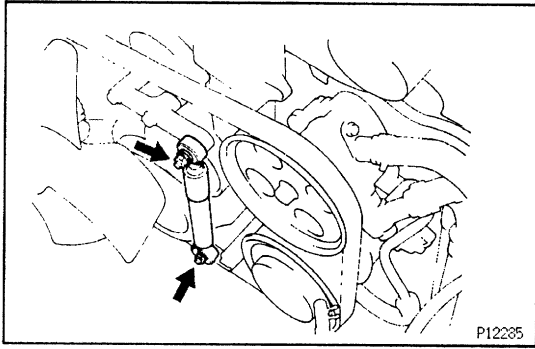
- (e) Connect the generator wire with the nut and rubber cap.



### 2. INSTALL DRIVE BELT

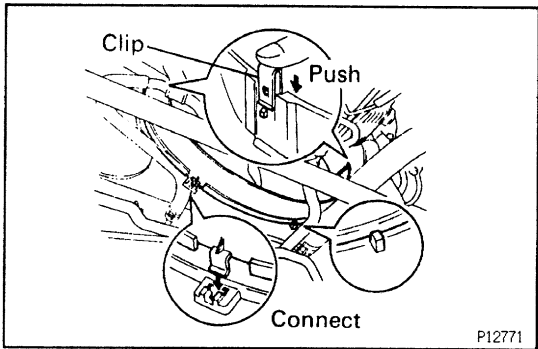
Install the drive belt by turning the drive belt tensioner clockwise.



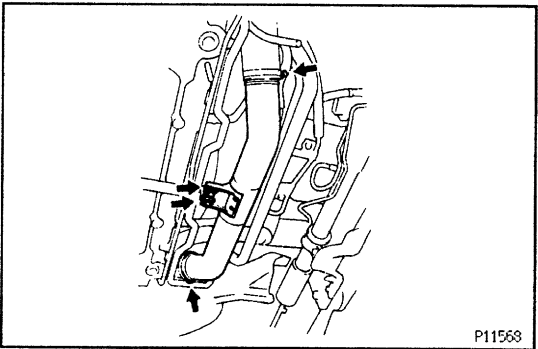
**3. 2JZ-GTE M/T:****INSTALL DRIVE BELT TENSIONER DAMPER**

Install the tensioner damper with the 2 nuts.

**Torque: 20 N-m (200 kgf-cm, 14 ft-lbf)**

**4. INSTALL NO.2 FAN SHROUD**

- (a) Connect claw of the No.2 fan shroud from the hook of the No.1 fan shroud.
- (b) Install the No.2 fan shroud with the 2 clips.

**5. INSTALL NO.2 AIR TUBE FOR CAC**

- (a) Connect the air tube to the air hoses.
- (b) Install the air tube with the 2 bolts.
- (c) Tighten the 2 hose clamps.

**6. CONNECT NEGATIVE TERMINAL CABLE TO BATTERY****7. PERFORM ON-VEHICLE INSPECTION**

(See steps 6 to 8 on pages [CH-8](#) and 9)

**8. INSTALL ENGINE UNDER COVER**