

## REMOVAL

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

**CAUTION:**

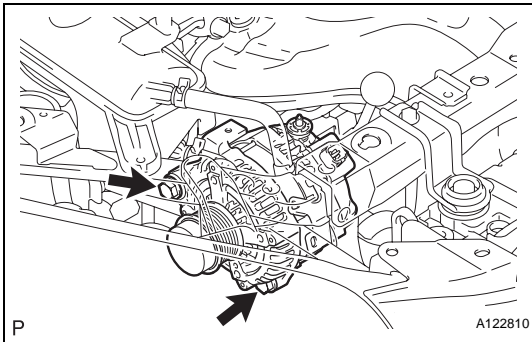
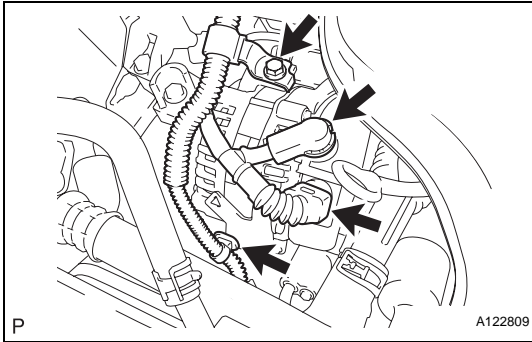
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE FAN AND GENERATOR V BELT**

(a) Remove the belt (see page EM-6).

3. **REMOVE GENERATOR ASSEMBLY**

- (a) Disconnect the generator connector.
- (b) Remove the terminal cap.
- (c) Remove the nut and disconnect the generator wire.
- (d) Remove the bolt and wire harness clamp bracket.
- (e) Remove the wire harness clamps.



- (f) Remove the 2 bolts and generator.

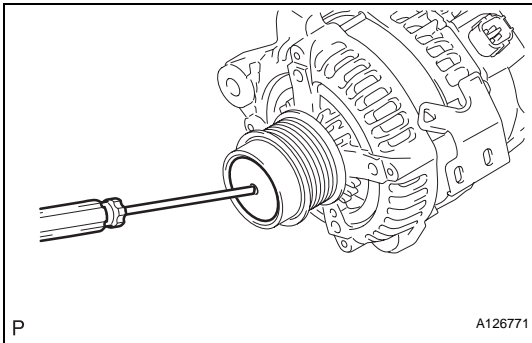
## DISASSEMBLY

1. **REMOVE GENERATOR PULLEY WITH CLUTCH**

- (a) Remove the cap from the pulley.
  - (1) Using a screwdriver, puncture the center of the cap and pry it off.

**NOTICE:**

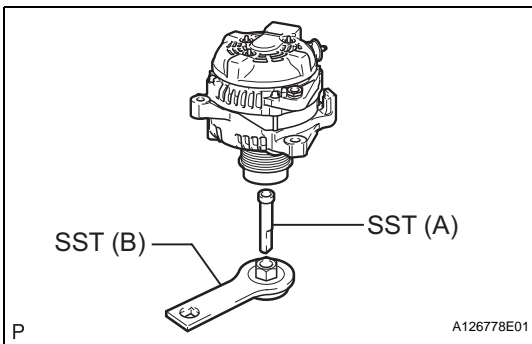
**Do not reuse the cap.**

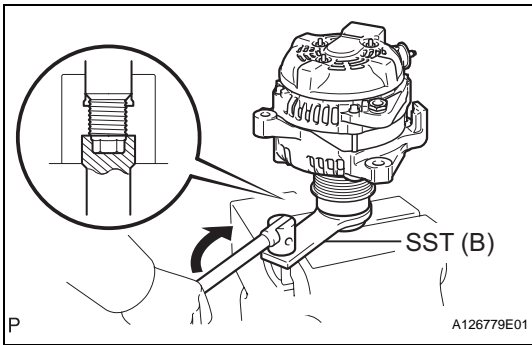


- (b) Install SST to the pulley and vise as shown in the illustration.

**SST 09820-63020**

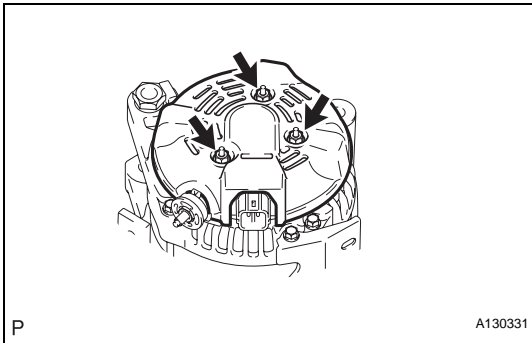
- (c) Mount SST (A) in a vise.



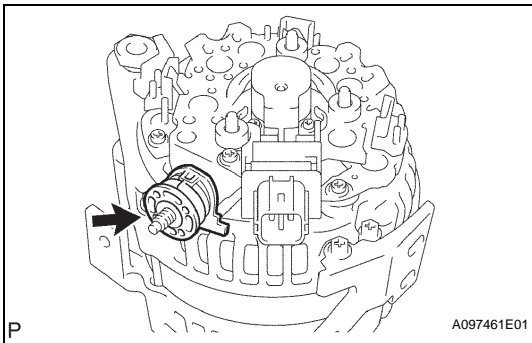


- (d) Turn SST (B) clockwise to loosen the pulley.
- (e) Remove the pulley.

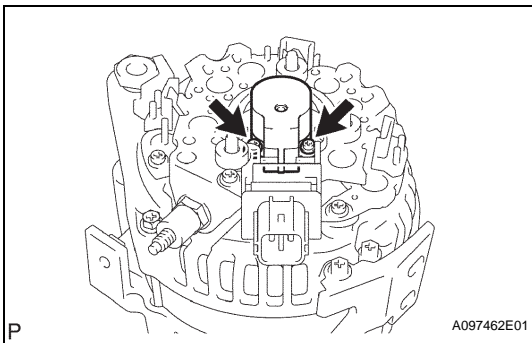
**2. REMOVE GENERATOR BRUSH HOLDER ASSEMBLY**



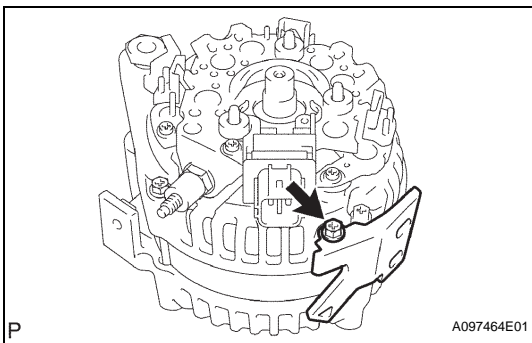
- (a) Remove the 3 nuts and generator rear end cover.



- (b) Remove the terminal insulator.

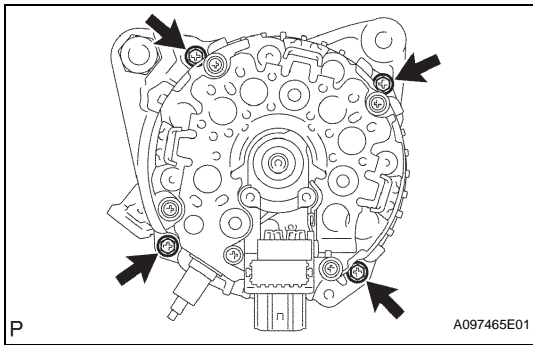


- (c) Remove the 2 screws and generator brush holder.

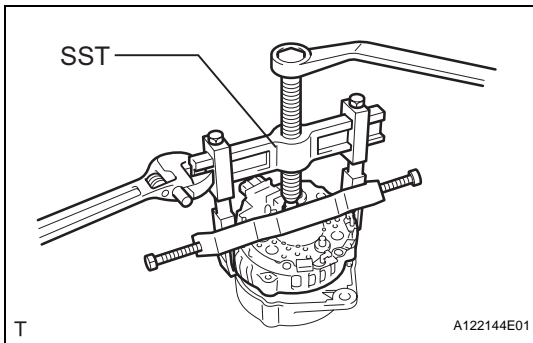


**3. REMOVE GENERATOR ROTOR ASSEMBLY**

- (a) Remove the bolt and cord clip.



(b) Remove the 4 bolts.

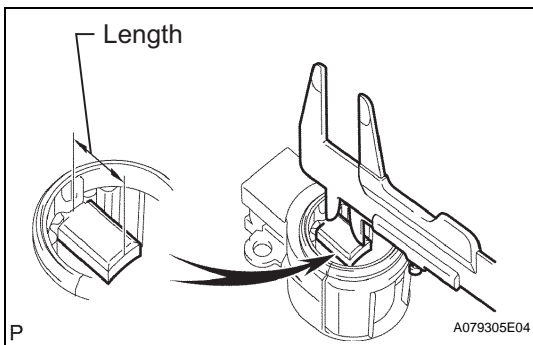


(c) Using SST, remove the coil.

**SST 09950-40011 (09951-04020, 09952-04010, 09953-04020, 09954-04010, 09955-04071, 09957-04010)**

(d) Remove the washer.

(e) Remove the generator rotor.



## INSPECTION

### 1. INSPECT GENERATOR BRUSH HOLDER ASSEMBLY

(a) Using a vernier caliper, measure the brush length.

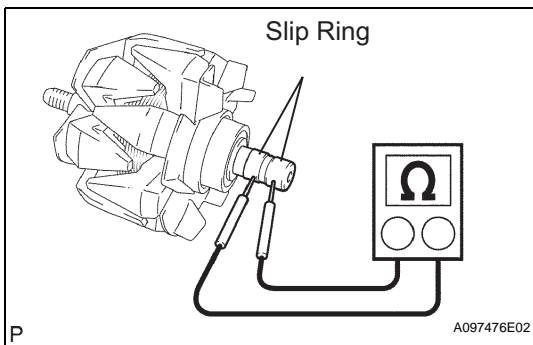
**Standard length:**

**9.5 to 11.5 mm (0.374 to 0.453 in.)**

**Minimum length:**

**4.5 mm (0.177 in.)**

If the brush length is less than the minimum, replace the generator brush holder assembly.



### 2. INSPECT GENERATOR ROTOR ASSEMBLY

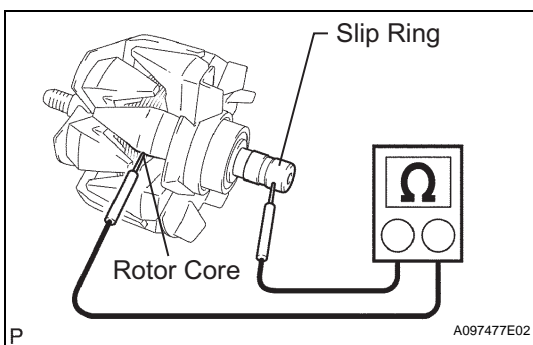
(a) Check the resistance.

(1) Measure the resistance between the slip rings.

**Standard resistance:**

**2.3 to 2.7  $\Omega$  at 20°C (68°F)**

If the result is not as specified, replace the generator rotor assembly.

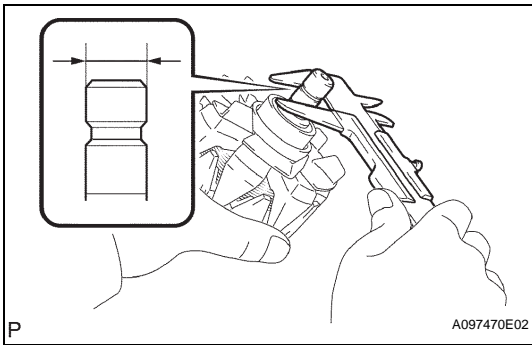


(2) Measure the resistance between the slip ring and rotor core.

**Standard resistance:**

**1 M $\Omega$  or higher**

If the result is not as specified, replace the generator rotor assembly.



- (b) Check the slip ring diameter.  
 (1) Using a vernier caliper, measure the slip ring diameter.

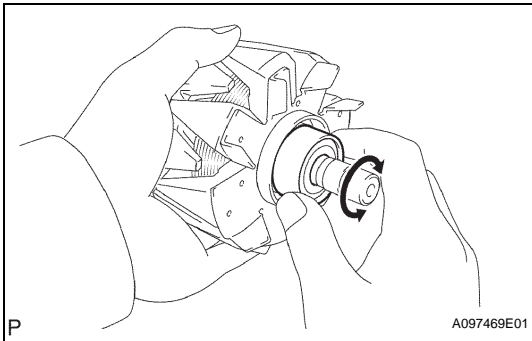
**Standard diameter:**

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

**Minimum diameter:**

**14 mm (0.551 in.)**

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

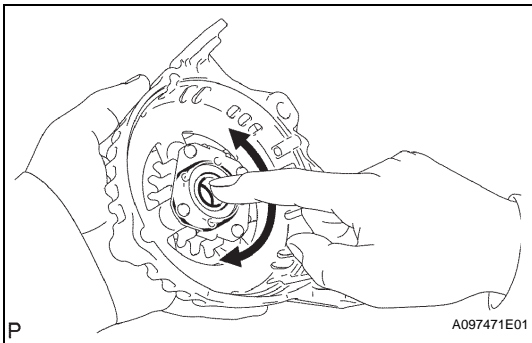


- (c) Check the appearance.  
 (1) Check that the bearing is not rough or worn.

**OK:**

**The bearing rotates smoothly.**

If the result is not as specified, replace the generator rotor assembly.



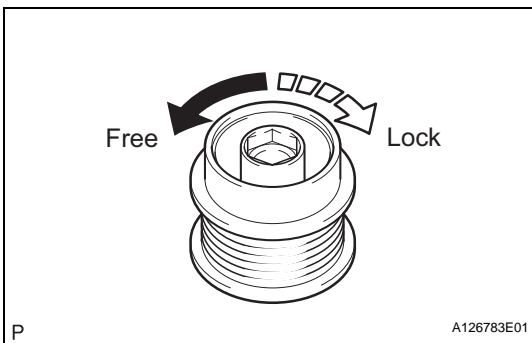
### 3. INSPECT GENERATOR DRIVE END FRAME BEARING

- (a) Check that the bearing is not rough or worn.

**OK:**

**The bearing rotates smoothly.**

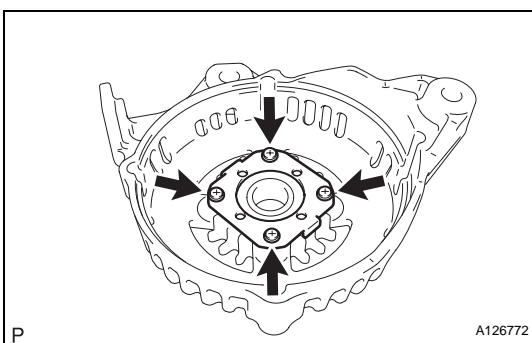
If the bearing does not rotate smoothly, replace the bearing.



### 4. INSPECT GENERATOR PULLEY WITH CLUTCH

- (a) Hold the center of the pulley, and confirm that the outer ring turns counterclockwise and does not turn clockwise.

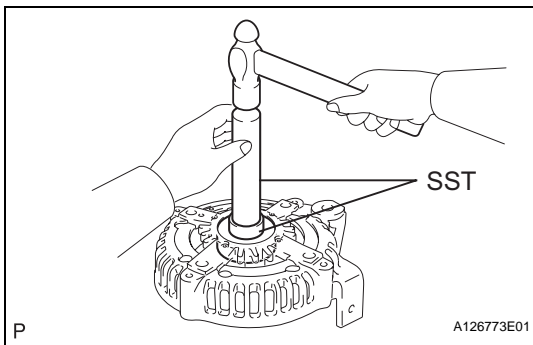
If the result is not as specified, replace the generator pulley with clutch.



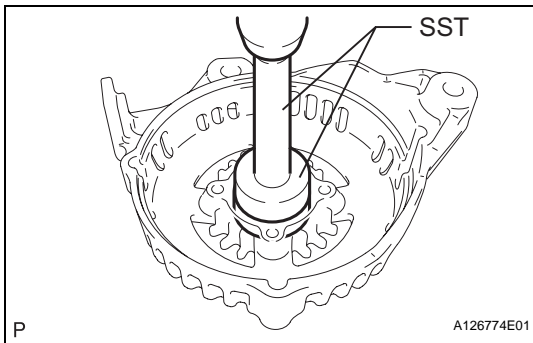
## REPLACEMENT

### 1. REPLACE GENERATOR DRIVE END FRAME BEARING

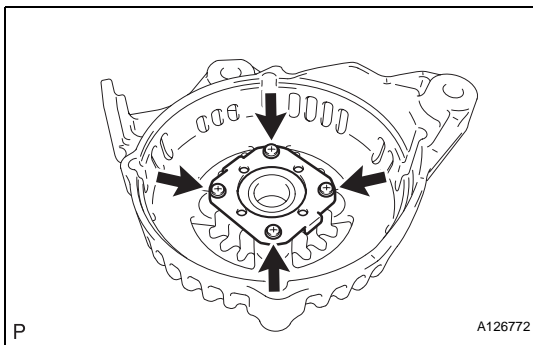
- (a) Remove the 4 screws and bearing retainer.



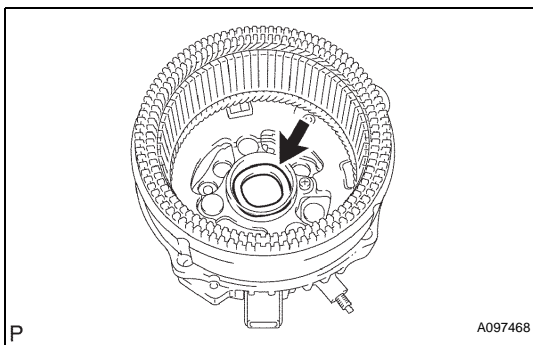
- (b) Using SST and a hammer, tap out the bearing.  
**SST 09950-60010 (09951-00250), 09950-70010 (09951-07100)**



- (c) Using SST and a press, press in a new bearing.  
**SST 09950-60010 (09951-00250), 09950-70010 (09951-07100)**



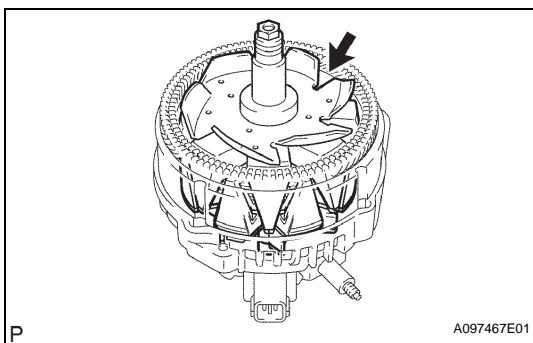
- (d) Install the bearing retainer with the 4 screws.  
**Torque: 2.3 N\*m (23 kgf\*cm, 20 in.\*lbf)**



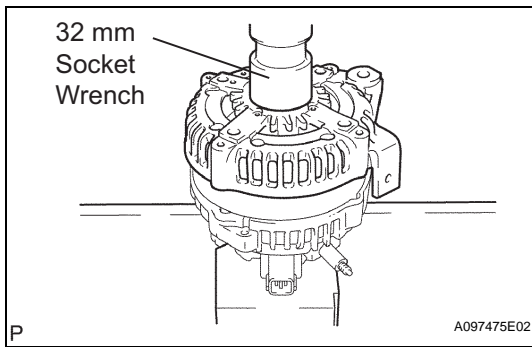
## REASSEMBLY

### 1. INSTALL GENERATOR ROTOR ASSEMBLY

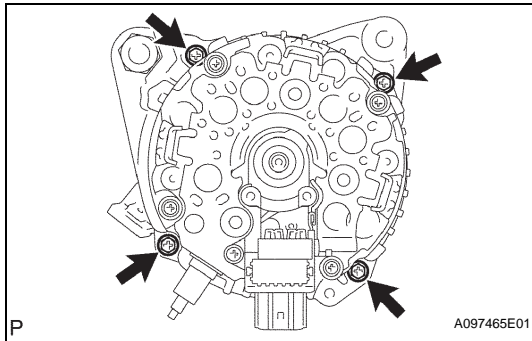
- (a) Install the washer onto the generator rectifier end frame.



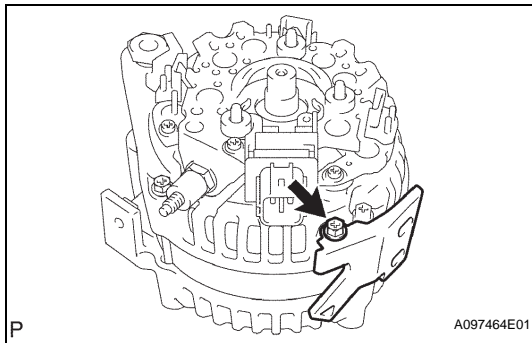
- (b) Install the generator rotor onto the generator rectifier end frame.



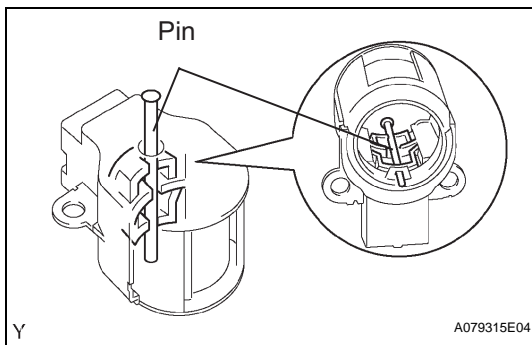
- (c) Using a 32 mm socket wrench and press, slowly push the generator drive end frame onto the generator rectifier end frame.



- (d) Tighten the 4 bolts.  
**Torque: 5.8 N\*m (59 kgf\*cm, 51 in.\*lbf)**

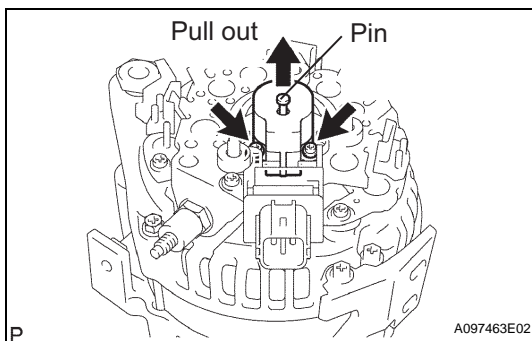


- (e) Install the cord clip with the bolt.  
**Torque: 4.6 N\*m (47 kgf\*cm, 41 in.\*lbf)**

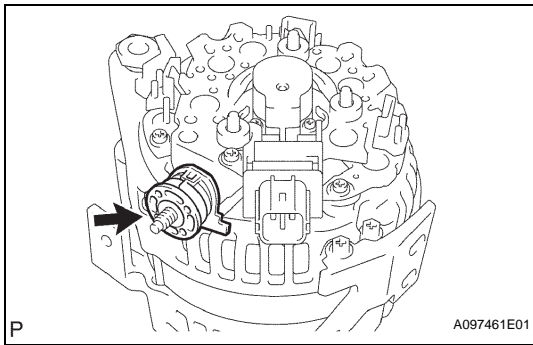


## 2. INSTALL GENERATOR BRUSH HOLDER ASSEMBLY

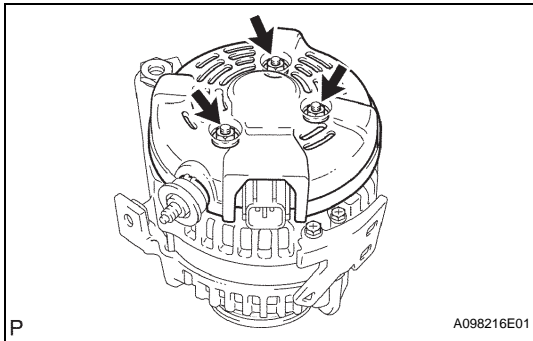
- (a) While pushing the 2 brushes into the generator brush holder, insert a 1.0 mm (0.039 in.) pin into the generator brush holder.



- (b) Install the generator brush holder with the 2 screws.  
**Torque: 1.8 N\*m (18 kgf\*cm, 16 in.\*lbf)**
- (c) Pull the pin out of the generator brush holder.



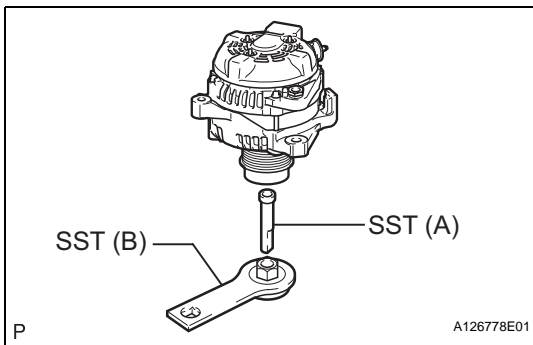
- (d) Install the terminal insulator onto the generator rectifier end frame.



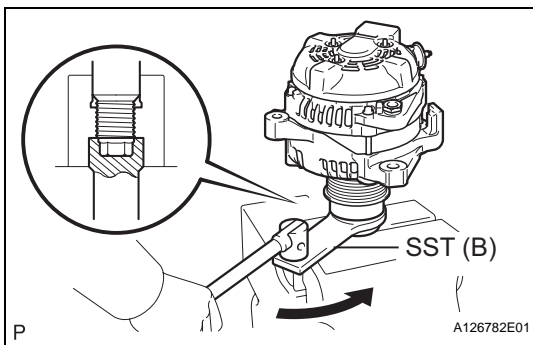
- (e) Install the generator rear end cover with the 3 nuts.  
**Torque: 4.6 N\*m (47 kgf\*cm, 41 in.\*lbf)**

### 3. INSTALL GENERATOR PULLEY WITH CLUTCH

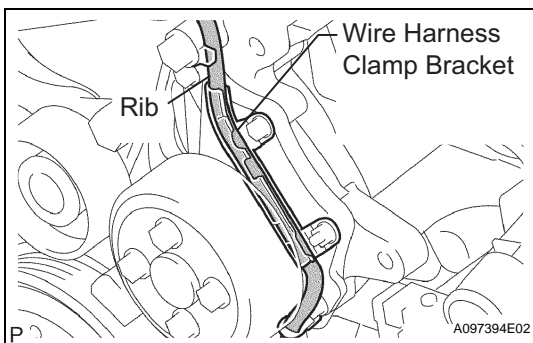
- (a) Install the pulley by hand.



- (b) Install SST to the pulley and vise as shown in the illustration.  
**SST 09820-63020**



- (c) Turn SST (B) counterclockwise to tighten the pulley.  
**Torque: 111 N\*m (1125 kgf\*cm, 81 ft.\*lbf)**
- (d) Install a new cap to the pulley.
- (e) Check that the generator pulley rotates smoothly.

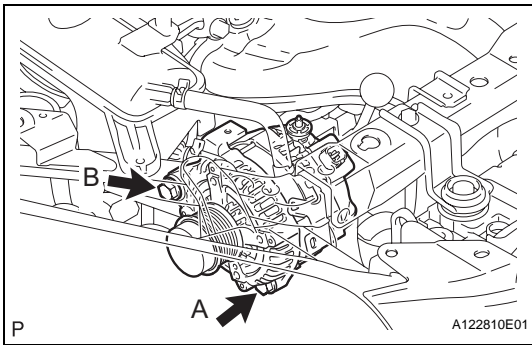


## INSTALLATION

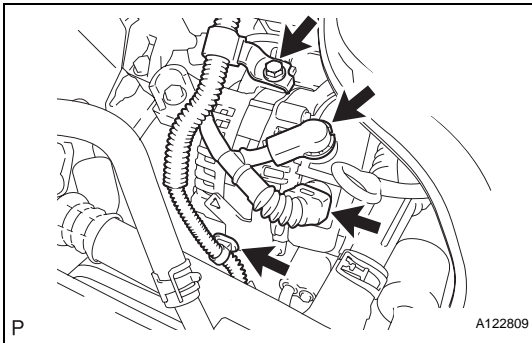
### 1. INSTALL GENERATOR ASSEMBLY

- (a) Confirm that the wire harness of the crankshaft position sensor is secured to the wire harness clamp bracket through the back of the rib of the timing chain cover.





- (b) Install the generator with the 2 bolts.  
**Torque: 21 N\*m (215 kgf\*cm, 16 ft.\*lbf) for bolt A**  
**52 N\*m (530 kgf\*cm, 38 ft.\*lbf) for bolt B**



- (c) Install the wire harness clamp.  
 (d) Install the wire harness clamp bracket with the bolt.  
**Torque: 8.4 N\*m (85 kgf\*cm, 74 in.\*lbf)**  
 (e) Connect the generator wire with the nut.  
**Torque: 9.8 N\*m (100 kgf\*cm, 7 ft.\*lbf)**  
 (f) Install the terminal cap.  
 (g) Connect the generator connector.

## 2. INSTALL FAN AND GENERATOR V BELT

- (a) Install the belt (see page [EM-7](#)).

## 3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL