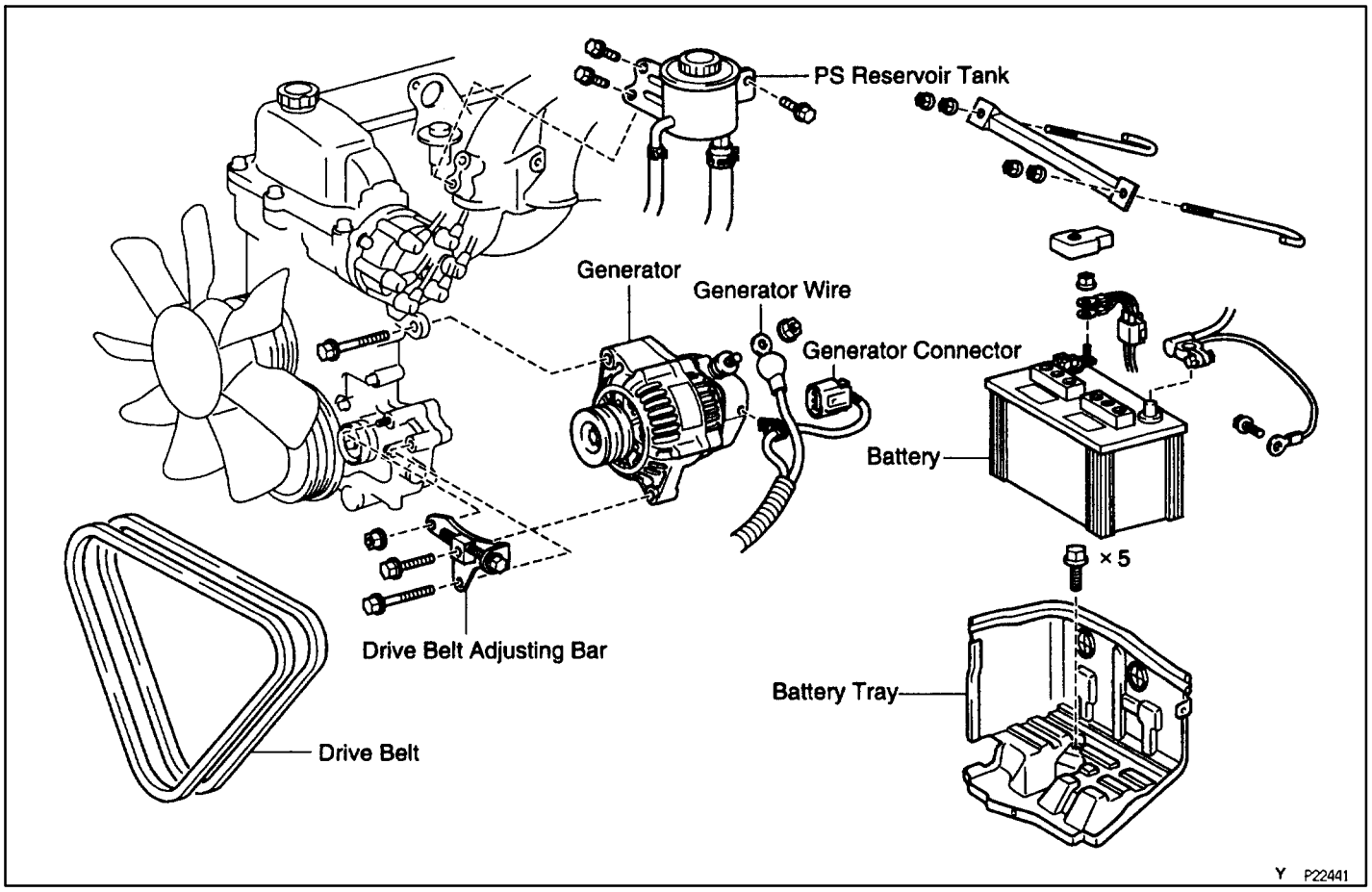
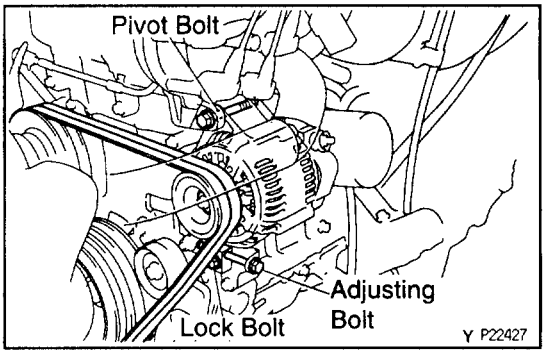
GENERATOR
COMPONENTS FOR REMOVAL AND INSTALLATION





GENERATOR REMOVAL

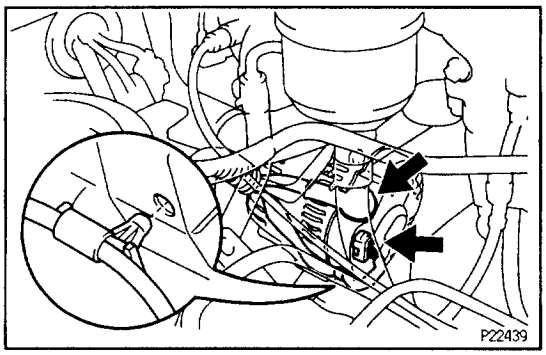
1. REMOVE BATTERY AND BATTER TRAY

2. DISCONNECT POWER STEERING (PS) RESERVOIR TANK

3. REMOVE DRIVE BELTS

(a) Loosen the lock bolt, pivot bolt and adjusting bolt.

(b) Remove the 2 drive belts.

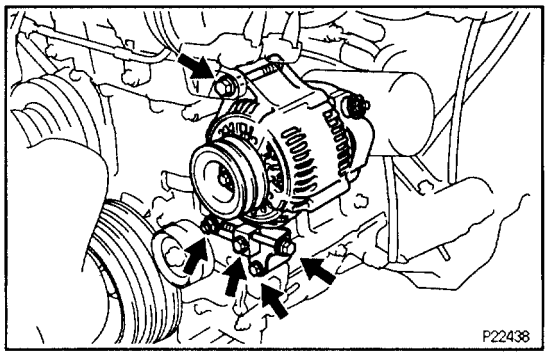


4. REMOVE GENERATOR

(a) Disconnect the generator connector.

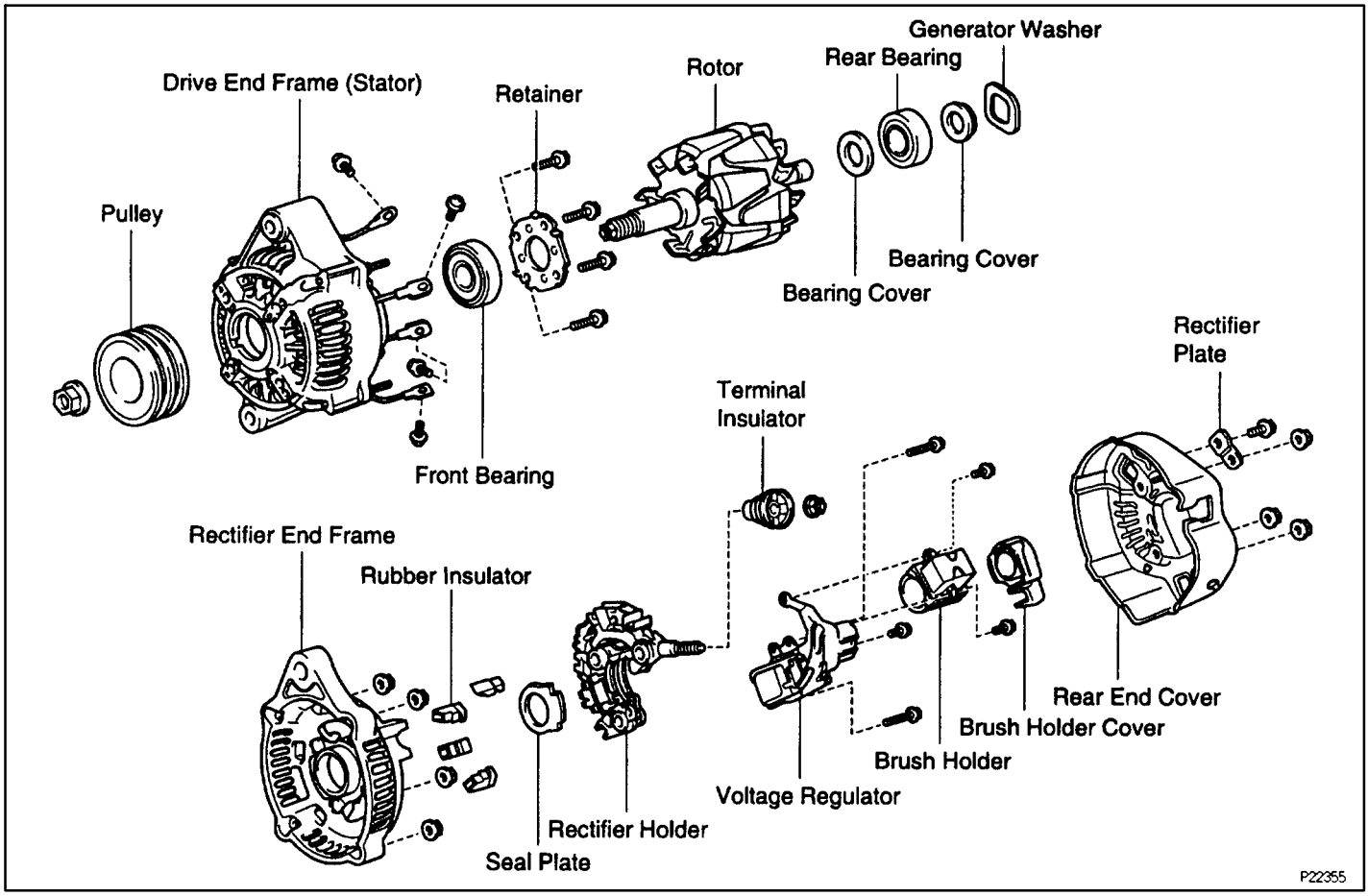
(b) Remove the rubber cap and nut, and disconnect the generator wire.

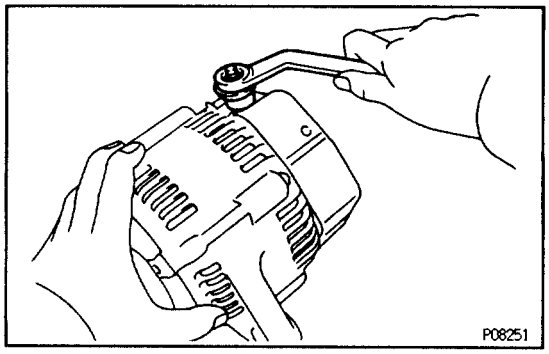
(c) Disconnect the generator wire clamp from the generator.



(d) Remove the lock bolt, bolt, nut and drive belt adjusting bar.
(e) Remove the pivot bolt and generator.

COMPONENTS FOR DISASSEMBLY AND ASSEMBLY

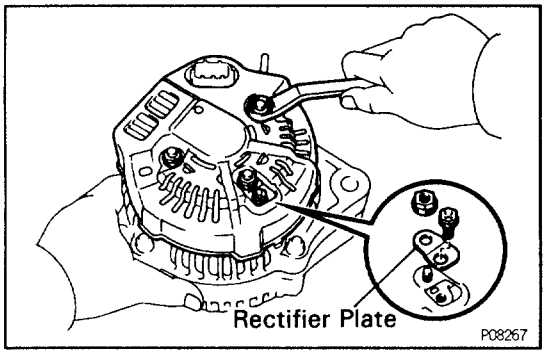




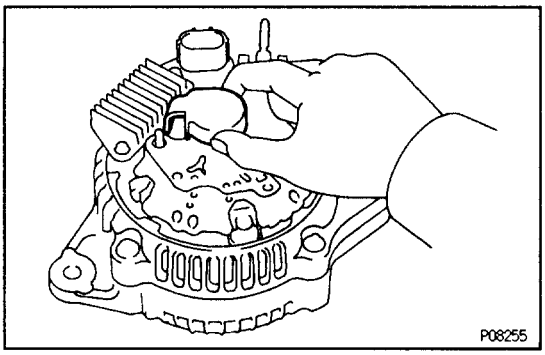
GENERATOR DISASSEMBLY

1. REMOVE REAR END COVER

(a) Remove the nut and terminal insulator.

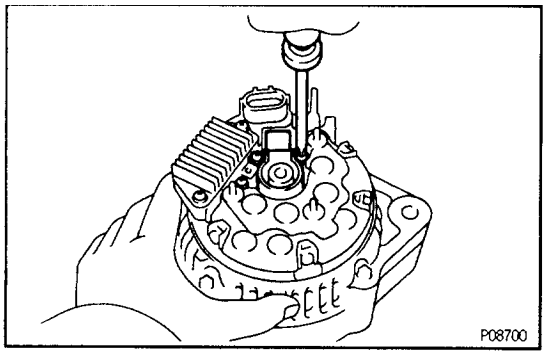


(b) Remove the 3 nuts, bolt, rectifier plate and rear end cover.

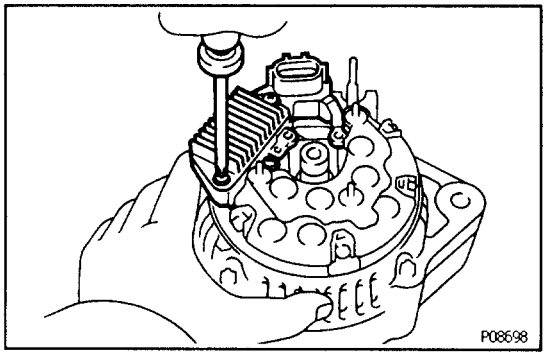


2. REMOVE BRUSH HOLDER

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

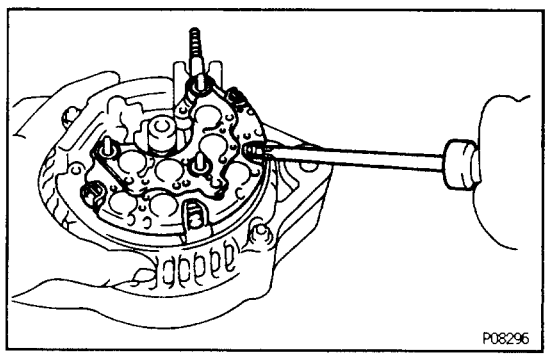


(b) Remove the 2 screws and brush holder.



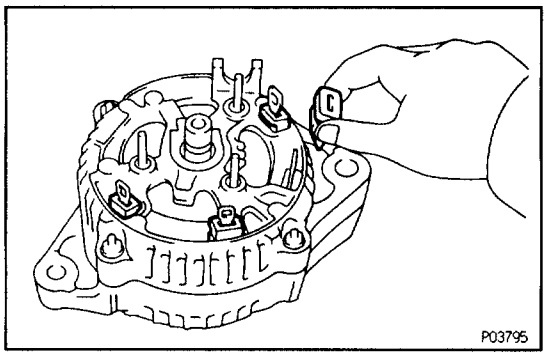
3. REMOVE VOLTAGE REGULATOR

Remove the 3 screws and voltage regulator.

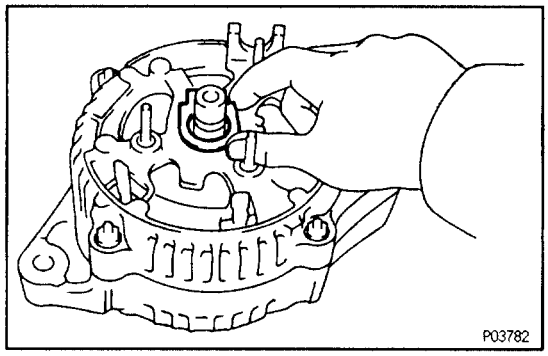


4. REMOVE RECTIFIER HOLDER

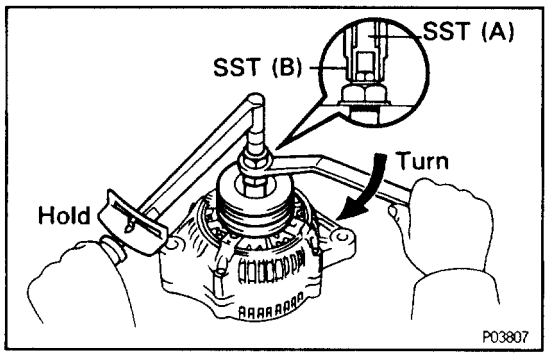
(a) Remove the 4 screws and rectifier holder.



(b) Remove the 4 rubber insulators.



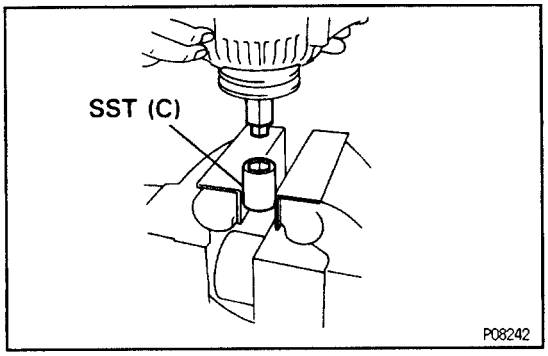
(c) Remove the seal plate.



5. REMOVE PULLEY

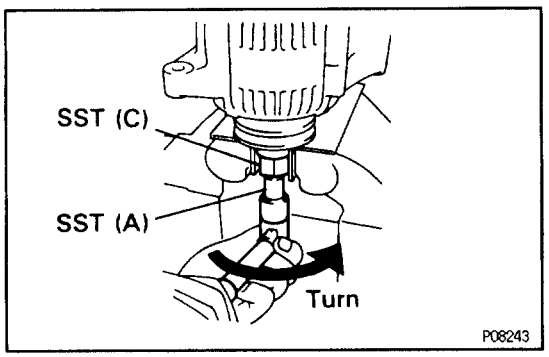
(a) Hold SST (A) with a torque wrench, and tighten SST (B) clockwise to the specified torque.
SST 09820–63010
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

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



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

(d) Install the generator to SST (C).

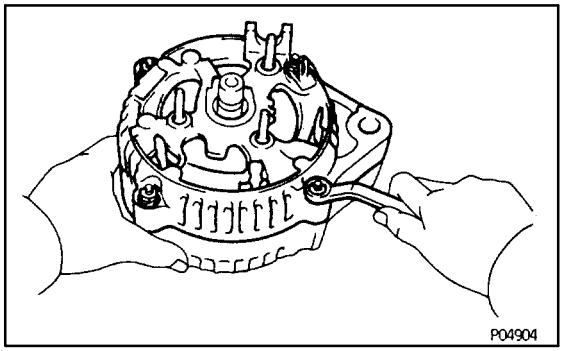


(e) To loosen the pulley nut, turn SST (A) in the direction shown in the illustration.
NOTICE: To prevent damage to the rotor shaft, do not loosen the pulley nut more than one–half of a turn.

(f) Remove the generator from SST (C).

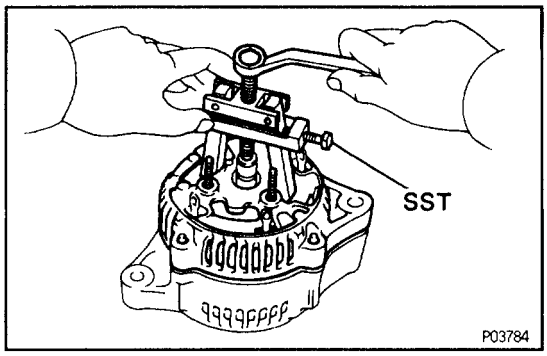
(g) Turn SST (B) and remove SST (A and B).

(h) Remove the pulley nut and pulley.

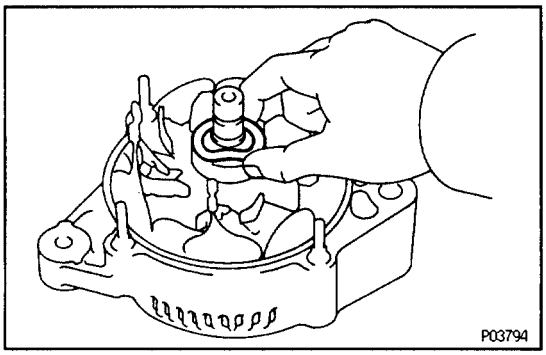


6. REMOVE RECTIFIER END FRAME

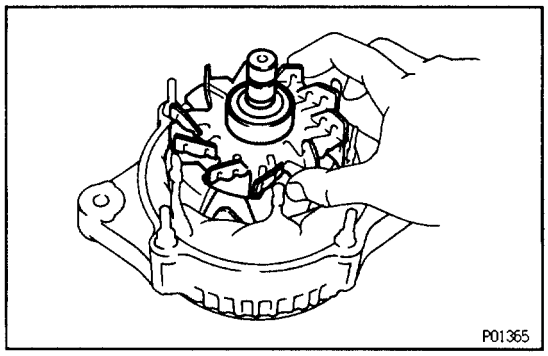
(a) Remove the 4 nuts.



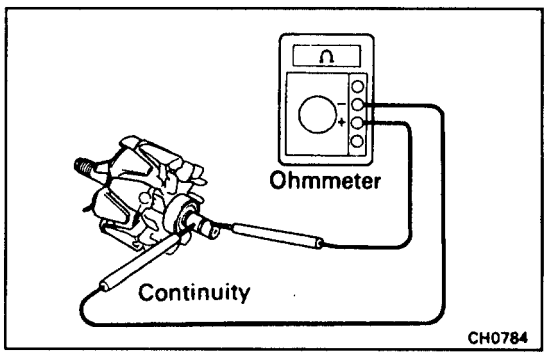
(b) Using SST, remove the rectifier end frame.
SST 09286–46011



(c) Remove the generator washer.



7. REMOVE ROTOR FROM DRIVE END FRAME



GENERATOR INSPECTION AND REPAIR

Rotor

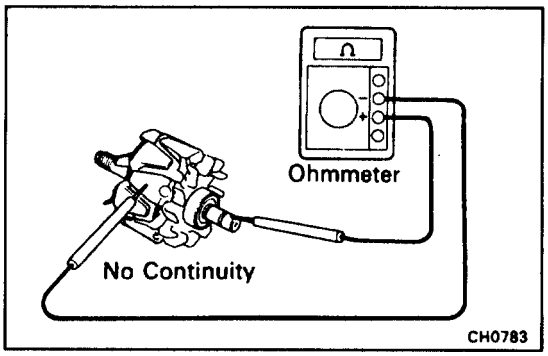
1. INSPECT ROTOR FOR OPEN CIRCUIT

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

Standard resistance (Cold):

2.8 – 3.0 Ω

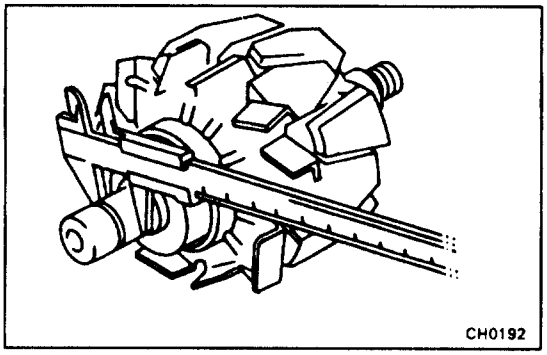
If there is no continuity, replace the rotor.



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 a vernier caliper, measure the slip ring diameter.

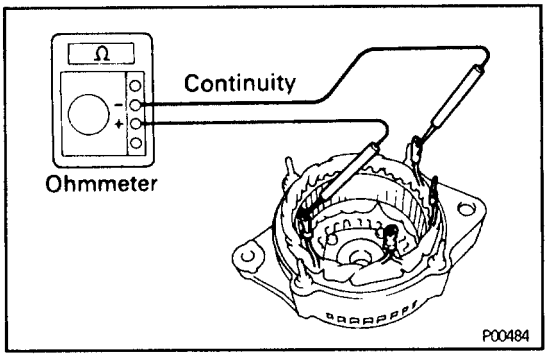
Standard diameter:

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.

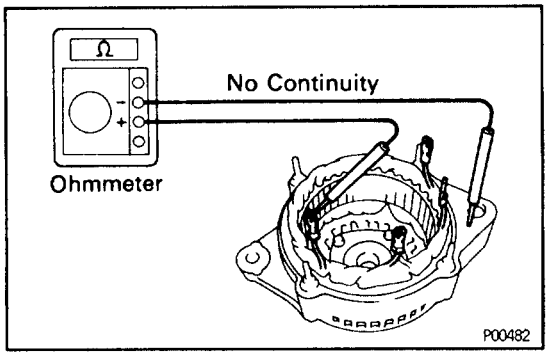


Stator (Drive End Frame)

1. INSPECT STATOR FOR OPEN CIRCUIT

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

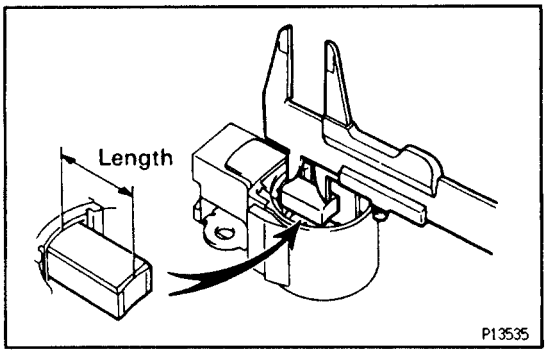
If there is no continuity, replace the drive end frame assembly.



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

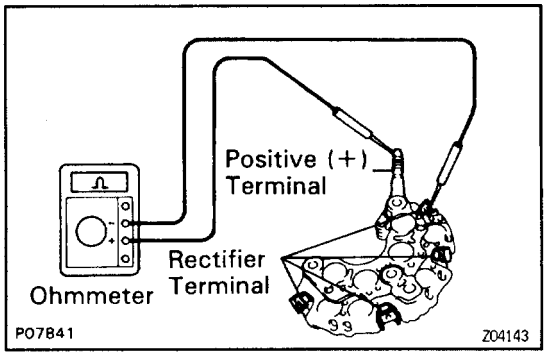
Using a vernier caliper, measure the exposed brush length.

Standard exposed length:

10.5 mm (0.413 in.)

Minimum exposed length:

1.5 mm (0.059 in.)



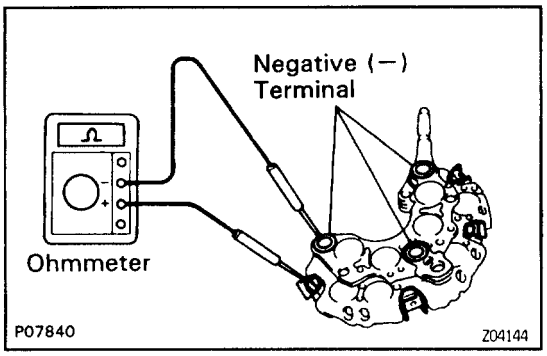
If the exposed length is less than minimum, replace the brushes and brush holder assembly.

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.

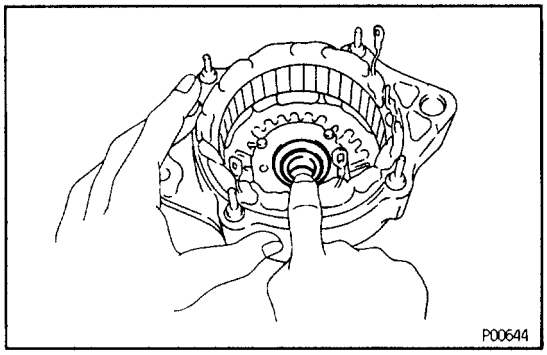
If continuity is not as specified, replace the rectifier holder.



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.

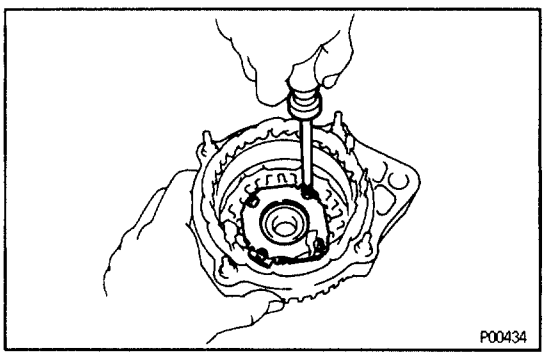
If continuity is not as specified, replace the rectifier holder.



Bearings

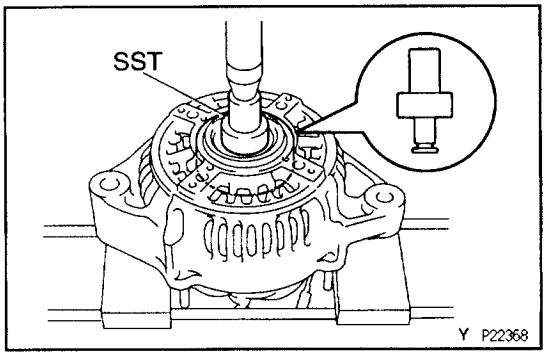
1. INSPECT FRONT BEARING

Check that the bearing is not rough or worn.

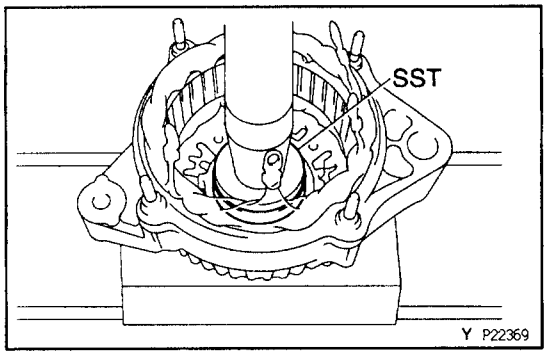


2. IF NECESSARY, REPLACE FRONT BEARING

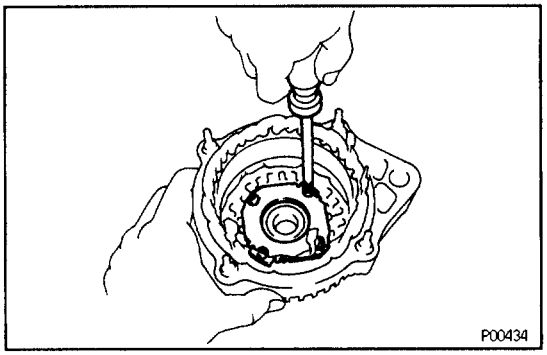
(a) Remove the 4 screws and bearing retainer.



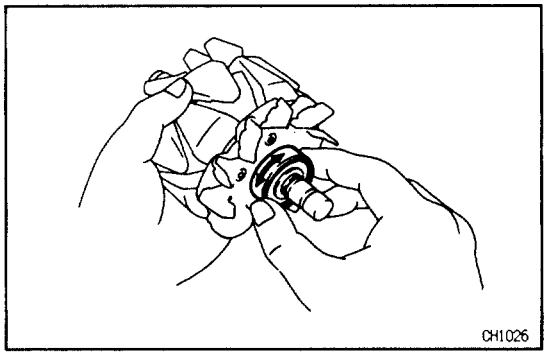
(b) Using SST and a press, press out the bearing.
SST 09950–60010 (09951–00260, 09952–06010)



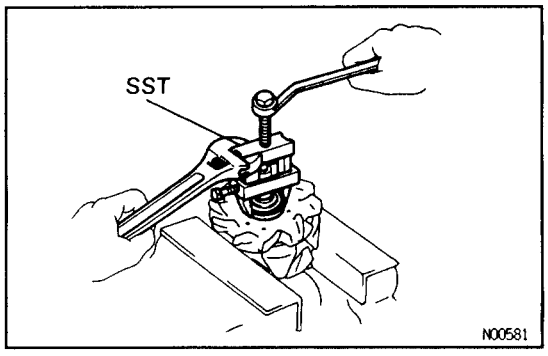
(c) Using SST and a press, press in a new bearing.
SST 09950–60010 (09951–00500)



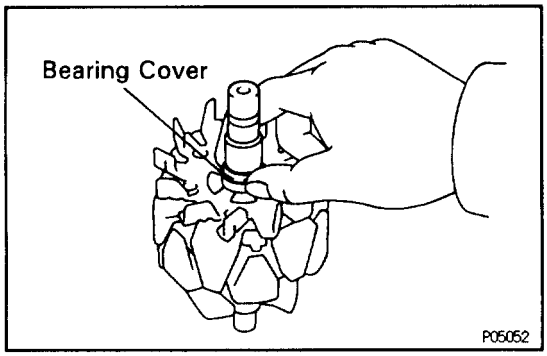
(d) Install the bearing retainer with the 4 screws.
Torque: 2.6 N·m (27 kgf·cm, 23 in.·lbf)



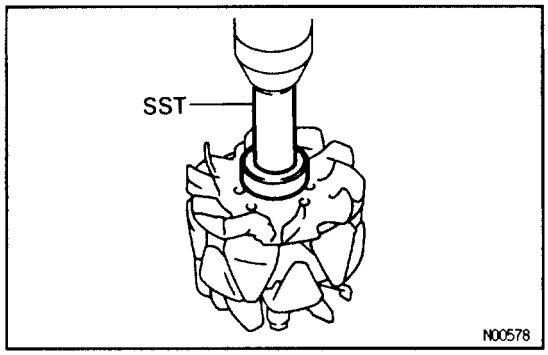
3. INSPECT REAR BEARING
Check that the bearing is not rough or worn.



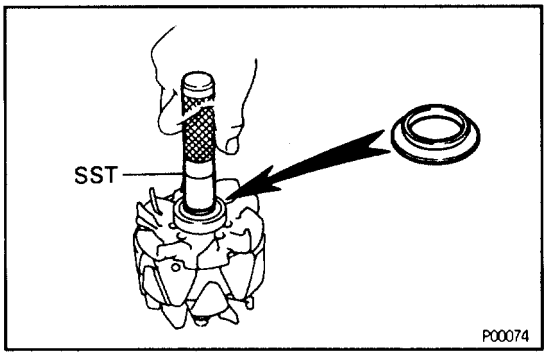
4. IF NECESSARY, REPLACE REAR BEARING
(a) Using SST, remove the bearing cover (outside) and bearing.
SST 09820–00021
NOTICE: Be careful not to damage the fan.
(b) Remove the bearing cover (inside).



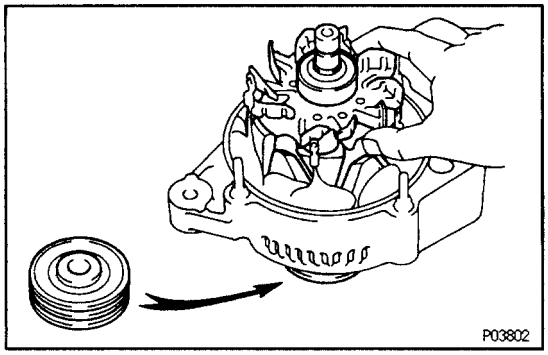
(c) Place the bearing cover (inside) on the rotor.



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



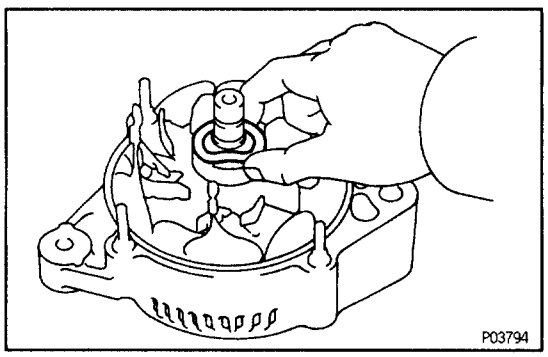
(e) Using SST, push in the bearing cover (outside).
SST 09285–76010



GENERATOR ASSEMBLY

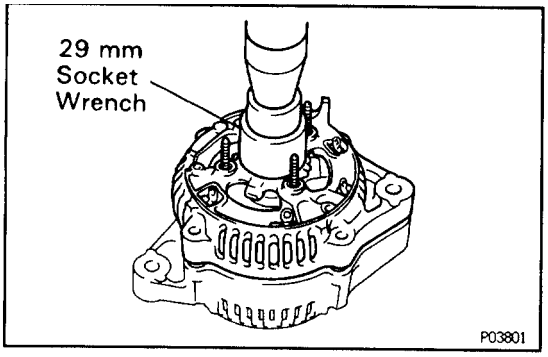
1. PLACE RECTIFIER END FRAME ON PULLEY

2. INSTALL ROTOR TO DRIVE END FRAME

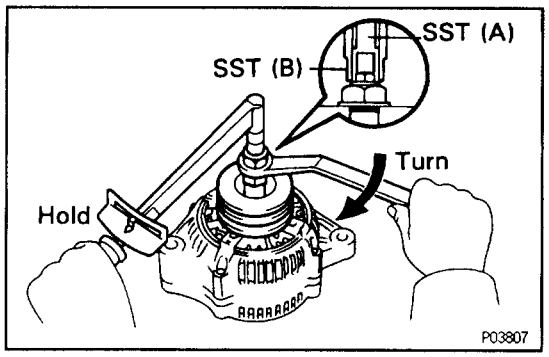


3. INSTALL RECTIFIER END FRAME

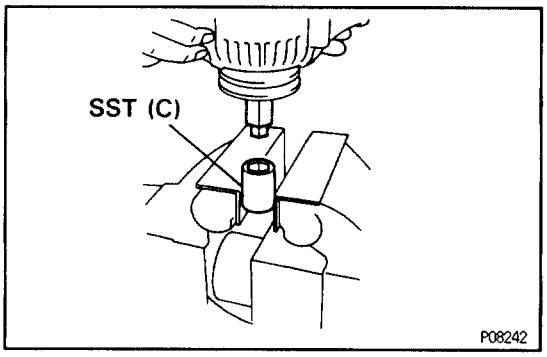
(a) Place the generator washer on the rotor.



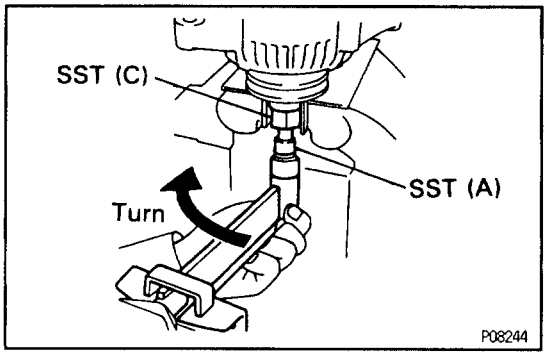
(b) Using a 29 mm socket wrench and press, slowly press in the rectifier end frame.
(c) Install the 4 nuts.
Torque: 4.5 N·m (46 kgf·cm, 40 in.·lbf)



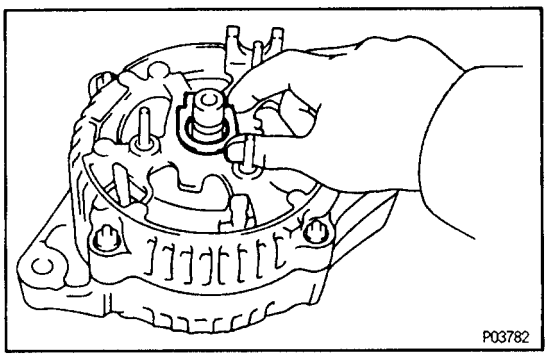
4. INSTALL PULLEY
(a) Install the pulley to the rotor shaft by tightening the pulley nut by hand.
(b) Hold SST (A) with a torque wrench, and tighten SST (B) clockwise to the specified torque.
SST 09820–63010
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
(c) Check that SST (A) is secured to the pulley shaft.



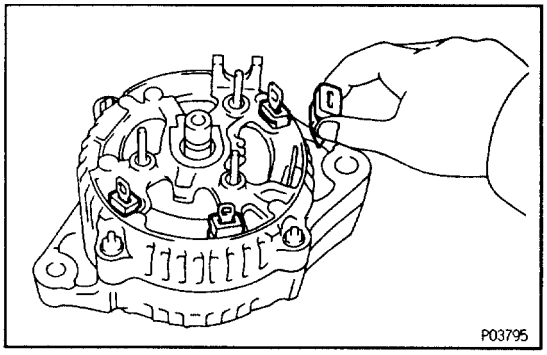
(d) Mount SST (C) in a vise.
(e) Install the generator to SST (C).



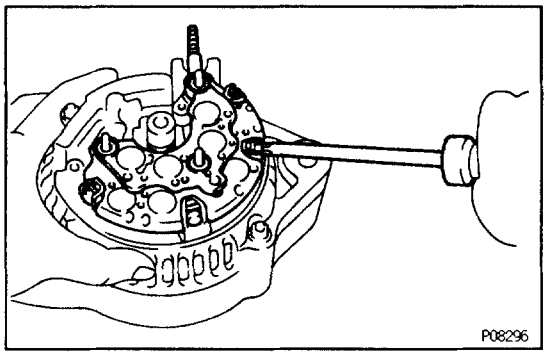
(f) To torque the pulley nut turn SST (A) in the direction shown in the illustration.
Torque: 110 N·m (1,125 kgf·cm, 81 ft·lbf)
(g) Remove the generator from SST (C).
(h) Turn SST (B), and remove SST (A and B).



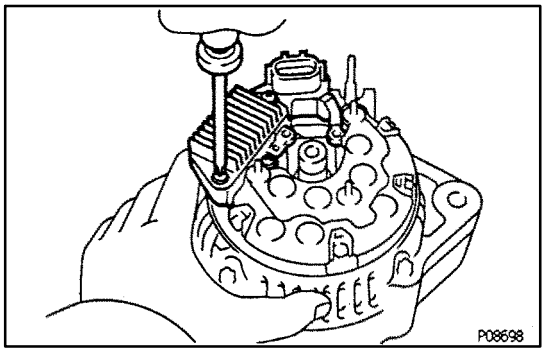
5. INSTALL RECTIFIER HOLDER
(a) Place the seal plate on the rectifier end frame.



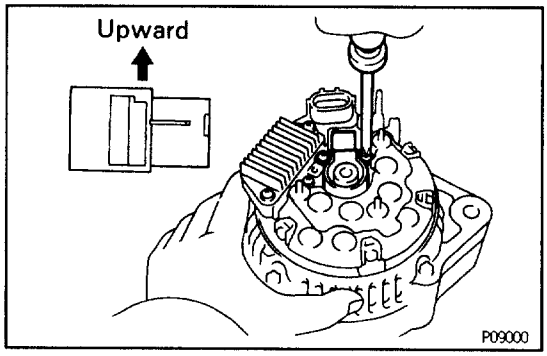
(b) Install the 4 rubber insulators on the lead wires.



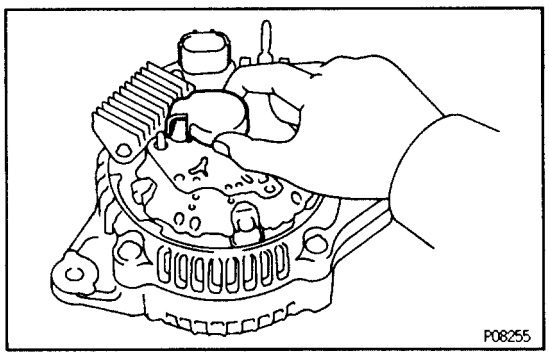
(c) Install the rectifier holder with the 4 screws.
Torque: 2.9 N·m (30 kgf·cm, 26 in.·lbf)



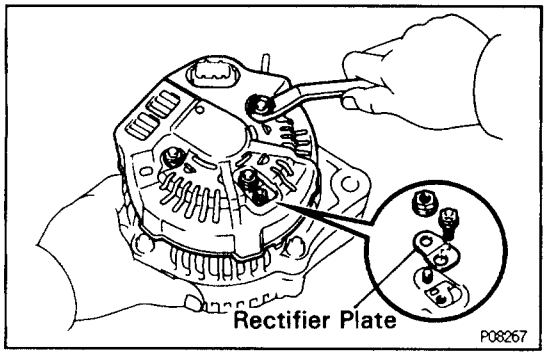
6. INSTALL VOLTAGE REGULATOR
Install the voltage regulator on the rectifier end frame with the 3 screws.



7. INSTALL BRUSH HOLDER
(a) Install the brush holder on the rectifier end frame with the 2 screws.
NOTICE: Be careful of the holder installation direction.

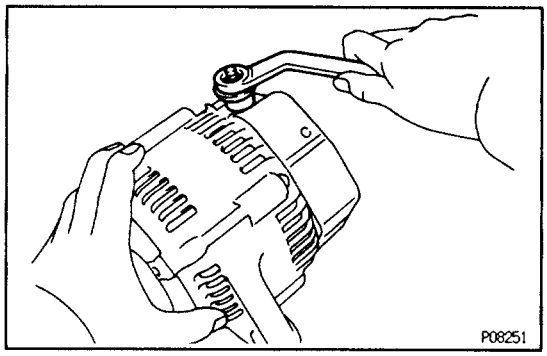


(b) Place the brush holder cover on the brush holder.

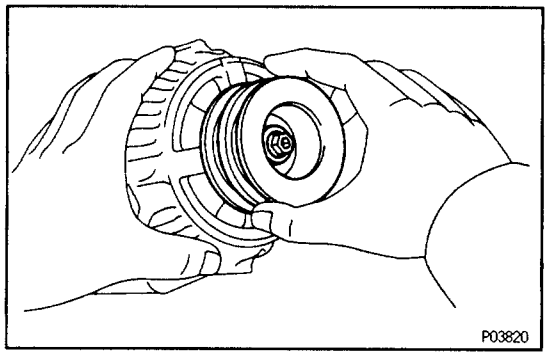


8. INSTALL REAR END COVER

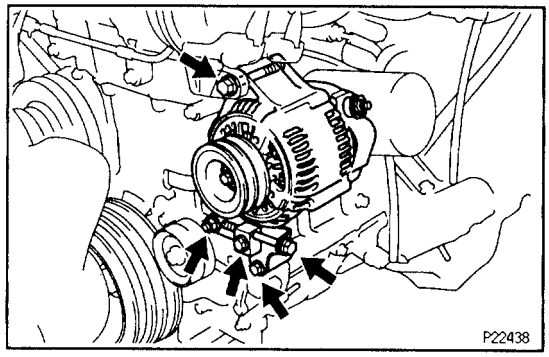
(a) Install the end cover together with the rectifier plate. Hand tighten the bolt first for positioning the plate. Tighten the 3 nuts and retighten the bolt.
Torque:
Bolt: 3.8 N·m (39 kgf·cm, 34 in.·lbf)
Nut: 4.4 N·m (45 kgf·cm, 39 in.·lbf)



(b) Install the terminal insulator with the nut.
Torque: 4.1 N·m (42 kgf·cm, 36 in.·lbf)



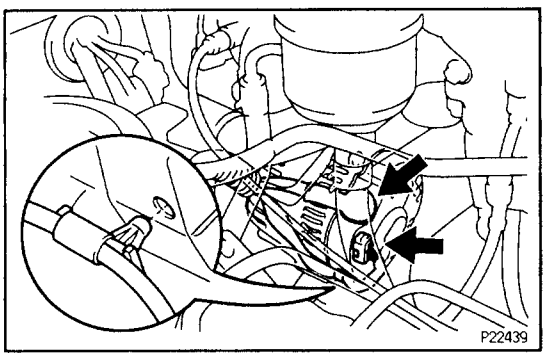
9. CHECK THAT ROTOR ROTATES SMOOTHLY



GENERATOR INSTALLATION

1. INSTALL GENERATOR

(a) Mount generator on the generator bracket with the pivot bolt. Do not tighten the bolt yet.
(b) Install the drive belt adjusting bar with the bolt and nut.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)
(c) Temporarily install the lock bolt.



(d) Connect the generator connector.
(e) Connect the generator wire with the nut and rubber cap.
(f) Connect the generator wire clamp to the generator.

2. INSTALL DRIVE BELTS

(a) Install the drive belts.

(b) Adjust the drive belt with the adjusting bolt. (See step 3 in on–vehicle inspection)

(c) Tighten the pivot and adjusting lock bolts.

Torque:

Pivot bolt: 59 N·m (600 kgf·cm, 43 ft·lbf)

Lock bolt: 21 N·m (210 kgf·cm, 15 ft·lbf)

3. CONNECT POWER STEERING (PS) RESERVOIR TANK

4. INSTALL BATTERY TRAY AND BATTERY

5. PERFORM ON–VEHICLE INSPECTION (See steps 5 to 7 in on–vehicle inspection)

SERVICE SPECIFICATIONS

SERVICE DATA

Battery	Voltage	at 20°C (68°F)	12.2 – 12.9
Drive belt	Tension	New belt	125 ± 25 lbf
		Used belt	80 ± 20 lbf
Generator	Rated output		12 V – 80 A
	Rotor coil resistance		2.8 – 3.0 Ω
	Slip ring diameter	STD	14.2 mm – 14.4 mm (0.559 – 0.567 in.)
		Minimum	12.8 mm (0.504 in.)
	Brush exposed length	STD	10.5 mm (0.413 in.)
		Minimum	1.5 mm (0.059 in.)
Voltage regulator	Regulating voltage	at 25°C (77°F)	14.0 – 15.0 V
		at 115°C (239°F)	13.5 – 14.3 V

TORQUE SPECIFICATIONS

Part tightened	N·m	kgf·cm	ft·lbf
Bearing retainer x Drive end frame	2.6	27	23 in.·lbf
Rectifier end frame x Drive end frame	4.5	46	40 in.·lbf
Generator pulley x Rotor	110	1,125	81
Rectifier x Rectifier holder	2.9	30	26 in.·lbf
Rear end cover x Rectifier holder	4.4	45	39 in.·lbf
Rectifier plate x Rectifier holder	3.8	39	34 in.·lbf
Terminal insulator x Rectifier holder	4.1	42	36 in.·lbf
Drive belt adjusting bar x Timing chain cover	21	210	15
Generator x Generator bracket	59	600	43
Drive belt adjusting bar x Generator	21	210	15