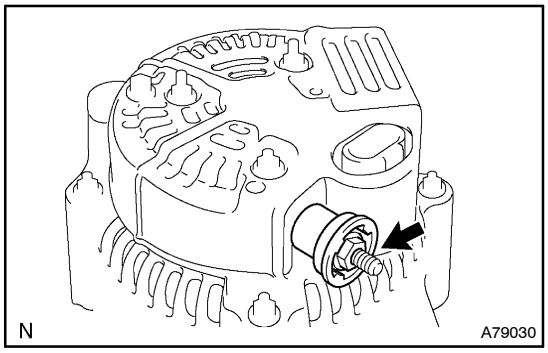
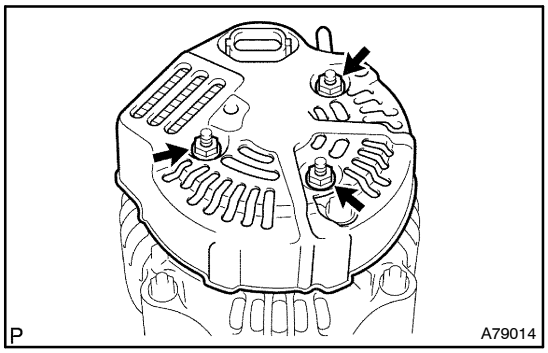
190KN–01

OVERHAUL

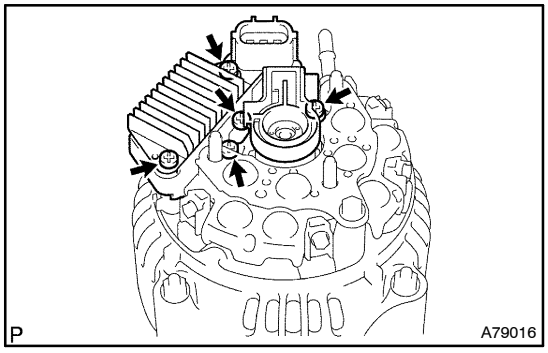


1. REMOVE REAR END COVER

(a) Remove the nut and terminal insulator.

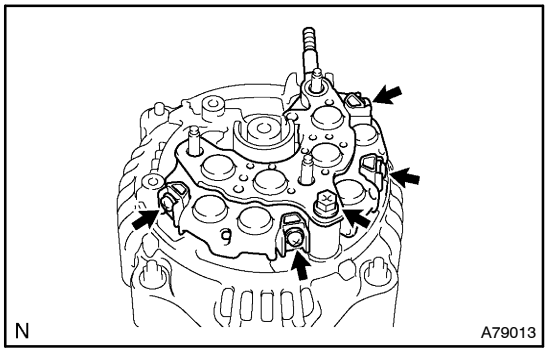


(b) Remove the 3 nuts and end cover.



2. REMOVE GENERATOR BRUSH HOLDER AND VOLTAGE REGULATOR

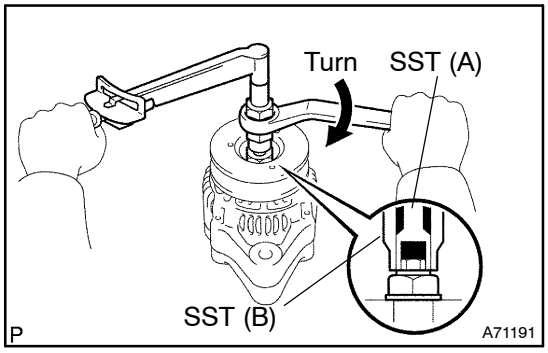
(a) Remove the 5 screws, brush holder and voltage regulator.



3. REMOVE GENERATOR HOLDER W/ RECTIFIER

(a) Remove the bolt, 4 screws and holder.

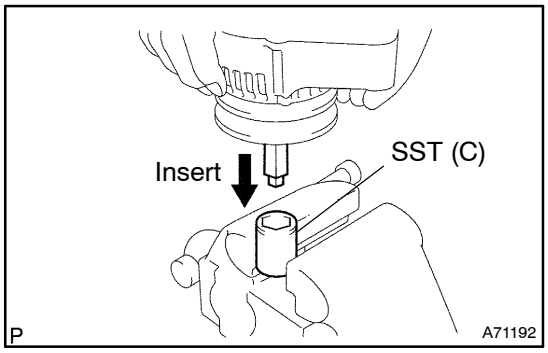
(b) Remove the 4 rubber insulators.



4. REMOVE GENERATOR PULLEY

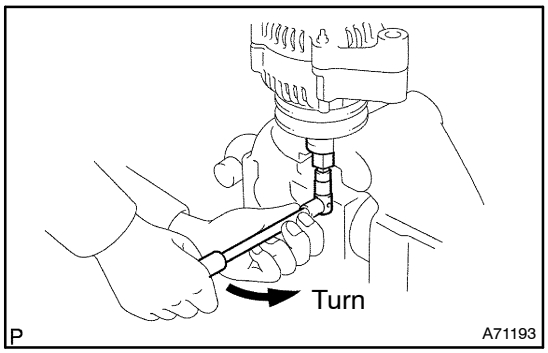
(a) Securely install SST (A) and (B) to the shaft of the rotor.
SST 09820–63010

(b) Hold SST (A) with a torque wrench and tighten SST (B) clockwise.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)



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

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

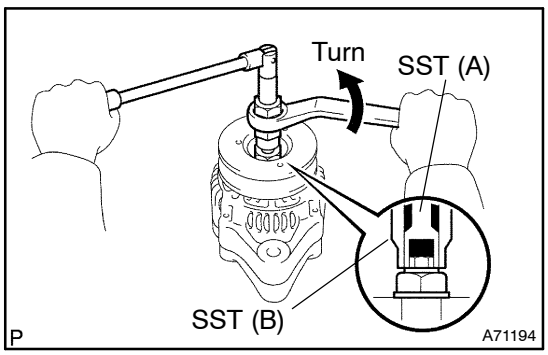


(e) In order to loosen the pulley nut, turn SST (A), as shown in the illustration.

NOTICE:

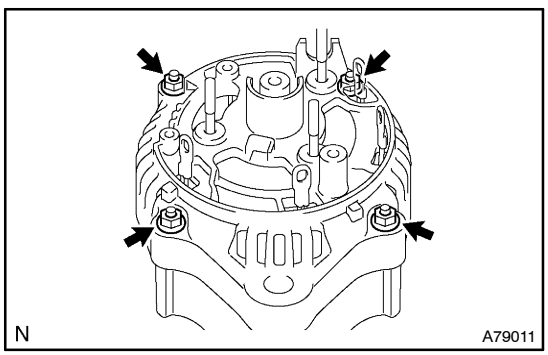
To prevent damage to the rotor shaft, do not loosen the pulley nut more than one–half of a turn.

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



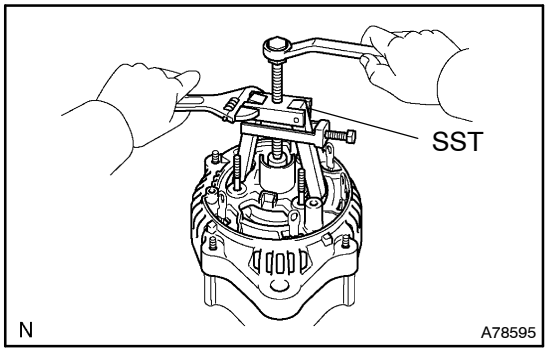
(g) Turn SST (B) and remove SST (A) and (B).
SST 09820–63010

(h) Remove the nut and pulley.



5. REMOVE RECTIFIER END FRAME

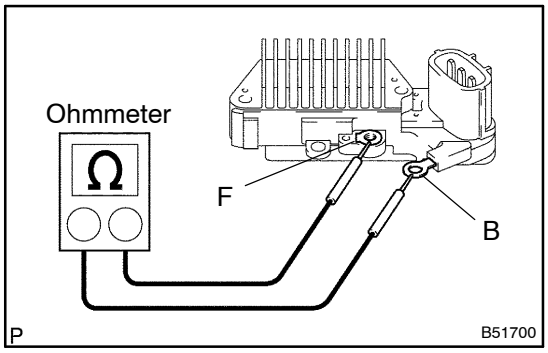
(a) Remove the 4 nuts.



(b) Using SST, remove the end frame.
SST 09820–00021

(c) Remove the generator washer.

6. REMOVE GENERATOR ROTOR ASSY



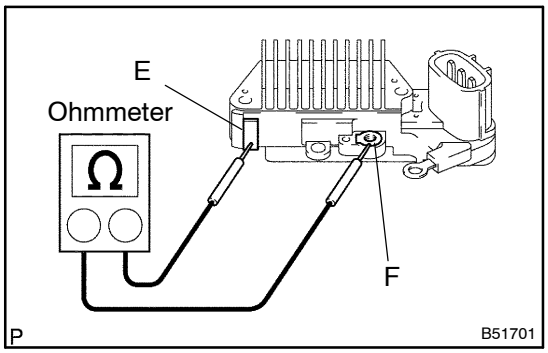
7. INSPECT VOLTAGE REGULATOR

(a) Using an ohmmeter, check the continuity between terminals F and B.

Standard:

When the positive and negative poles between terminals F and B are exchanged, there is continuity in one way but no continuity in another way.

If the continuity is not as specified, replace the voltage regulator.

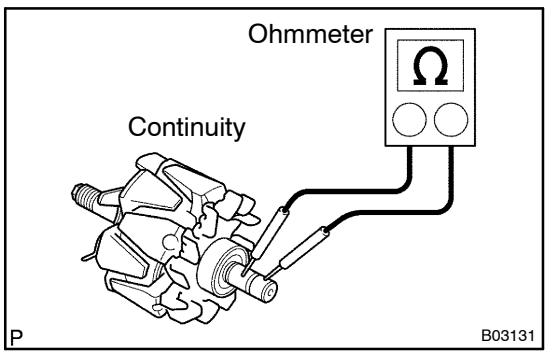


(b) Using an ohmmeter, check the continuity between terminals F and E.

Standard:

When the positive and negative poles between terminals F and E are exchanged, there is continuity in one way but no continuity in another way.

If the continuity is not as specified, replace the voltage regulator.



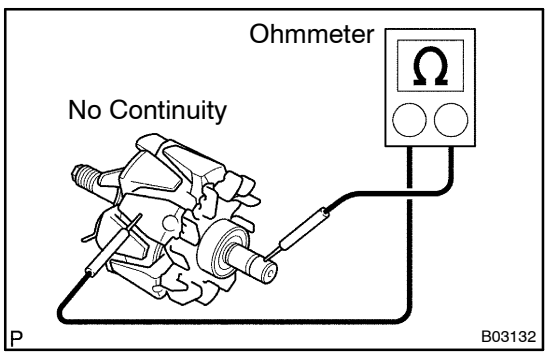
8. INSPECT GENERATOR ROTOR ASSY

(a) Check for open circuit.

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

Standard resistance: 11.6 – 12.4 Ω

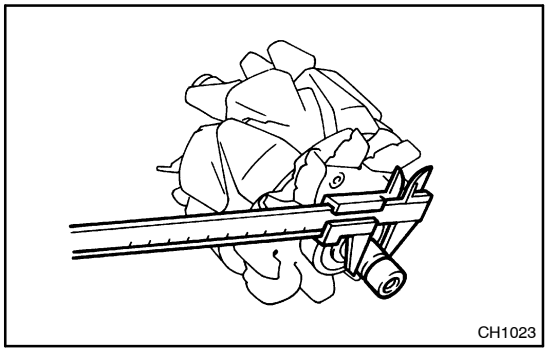
If there is no continuity, replace the rotor assy.



(b) Check for ground.

(1) Using an ohmmeter, check that there is no continuity between the slip rings and rotor body.

If there is continuity, replace the rotor assy.


CH1023

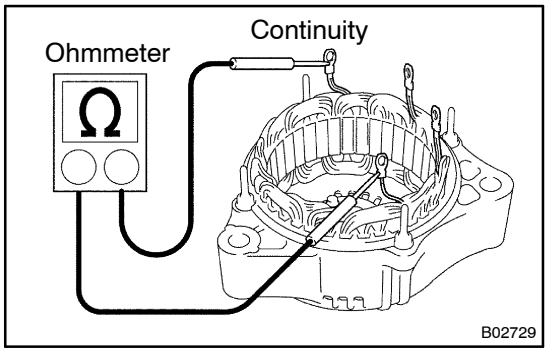
(c) Check the slip rings.
(1) Check that the slip rings are not rough or scored.

If the slip rings are rough or scored, replace the rotor assy.

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

Standard diameter: 14.2 – 14.4 mm (0.559 – 0.567 in.)
Minimum diameter: 14.0 mm (0.551 in.)

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

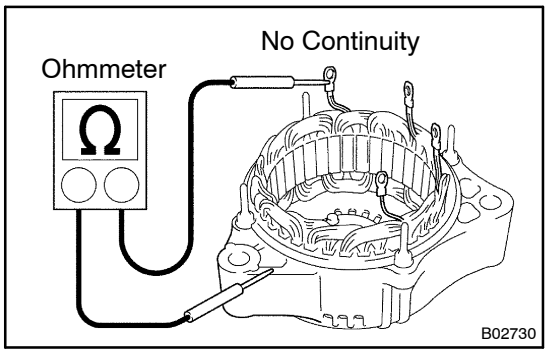


B02729

9. INSPECT DRIVE END FRAME (STATOR)

(a) Check for open circuit.
(1) Using an ohmmeter, check that there is continuity between the coil terminals.

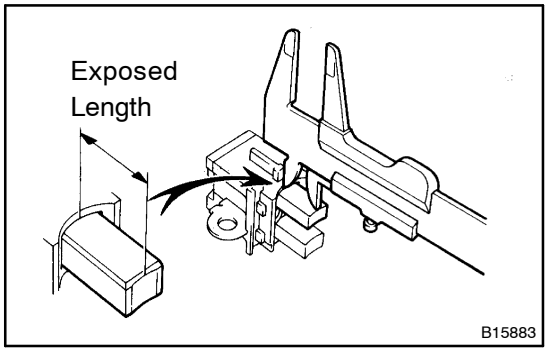
If there is no continuity, replace the drive end frame.



B02730

(b) Check for ground.
(1) Using an ohmmeter, check that there is no continuity between the coil terminal and end frame.

If there is continuity, replace the drive end frame.



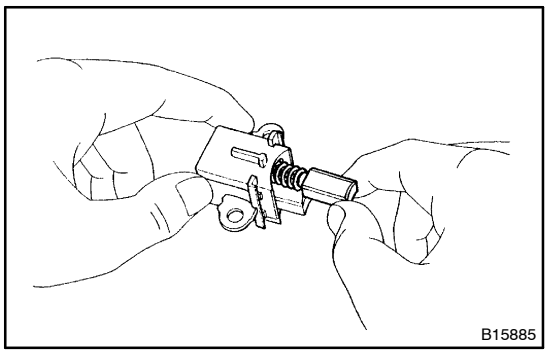
B15883

10. INSPECT BRUSH

(a) Using vernier calipers, measure the exposed brush length.

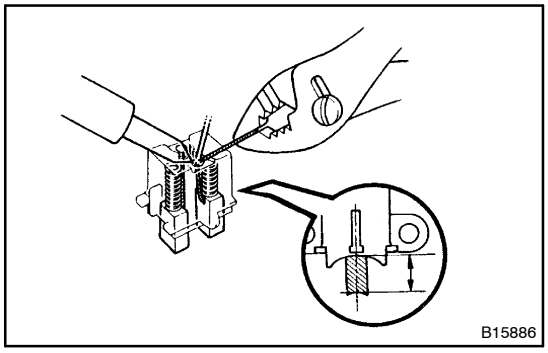
Standard exposed length: 10.5 mm (0.413 in.)
Minimum exposed length: 4.5 mm (0.177 in.)

If the exposed length is less than the minimum, replace the brushes (See step 11).


B15885

11. REPLACE BRUSH

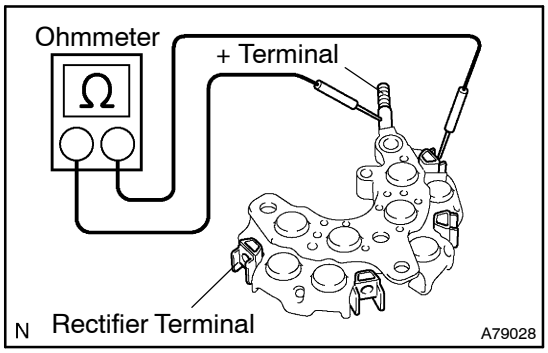
(a) Remove the brushes.
(1) Unsolder and remove the brush and spring.



(b) Install new brushes.
(1) 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.
(2) Solder the brush wire to the brush holder at the specified exposed length.

Exposed length: 10.5 mm (0.413 in.)

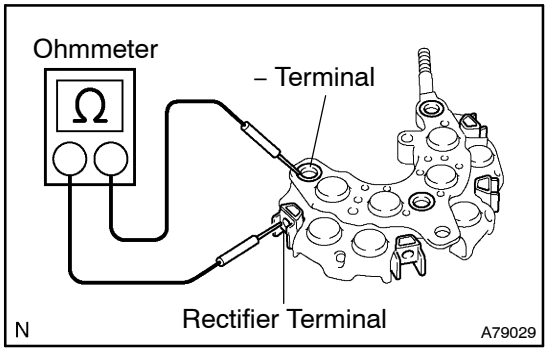
(3) Check that the brush smoothly moves in the brush holder.
(4) Cut off the excess wire.
(5) Apply insulation paint to the soldered area.



12. INSPECT GENERATOR HOLDER W/ RECTIFIER

(a) Check the positive rectifier.
(1) Using an ohmmeter, connect one tester probe to the positive (+) terminal and the other to each rectifier terminal.
(2) Reverse the polarity of the tester probes and perform step (1).
(3) Check that one shows continuity and the other shows no continuity.

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



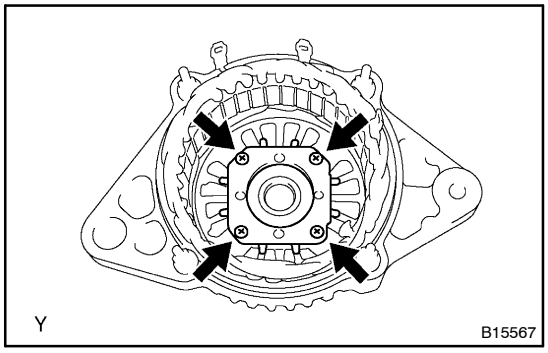
(b) Check the negative rectifier.
(1) Using an ohmmeter, connect one tester probe to each negative (–) terminal and the other to each rectifier terminal.
(2) Reverse the polarity of the tester probes and perform step (1).
(3) Check that one shows continuity and the other shows no continuity.

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

13. INSPECT BEARING

(a) Check that the drive end frame bearing and rotor bearing are not rough or worn.

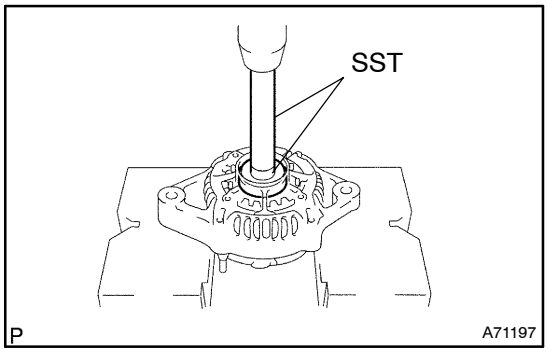
If the bearings are rough or worn, replace the bearings (See step 14 or 15).



14. REPLACE BEARING (FRONT)

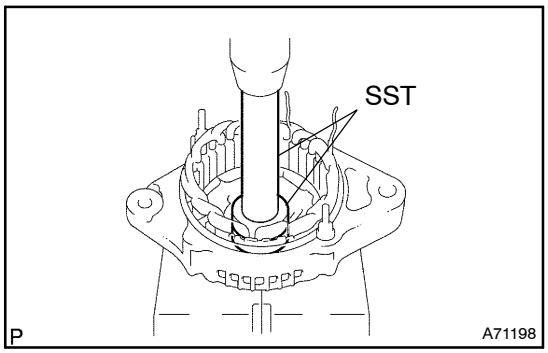
(a) Remove the bearing.

(1) Remove the 4 screws and bearing retainer.



(2) Using SST and a press, press out the bearing.

SST 09950–60010 (09951–00220), 09950–70010 (09951–07100)



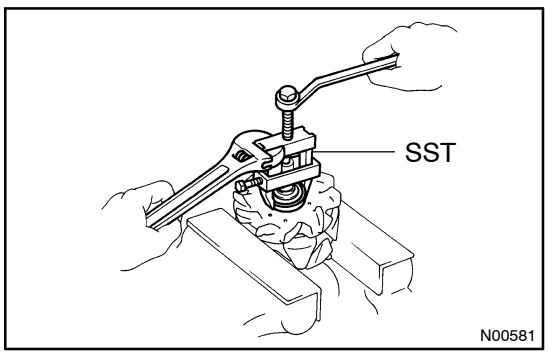
(b) Install a new bearing.

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

SST 09950–60010 (09951–00520), 09950–70010 (09951–07100)

(2) Install the bearing retainer plate with the 4 screws.

Torque: 2.95 N·m (30 kgf·cm, 26 in.·lbf)



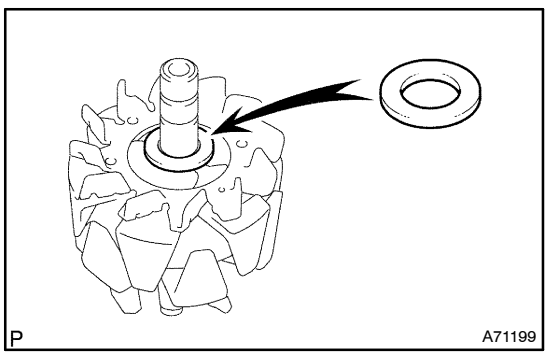
15. REPLACE BEARING (REAR)

(a) Remove the bearing.

(1) Using SST, remove the bearing cover (outside) and bearing.

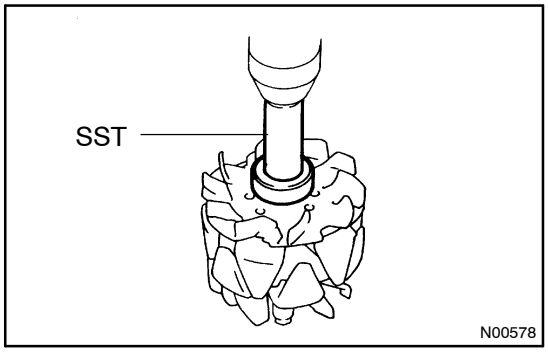
SST 09820–00021

(2) Remove the bearing cover (inside).

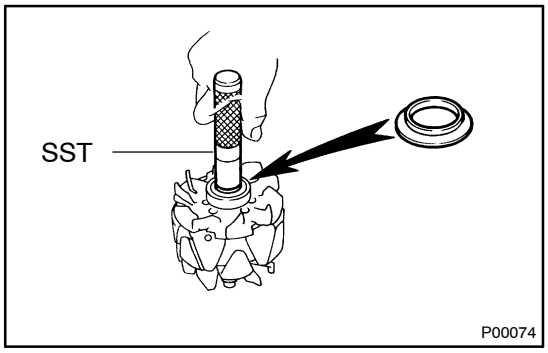


(b) Install a new bearing.

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



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

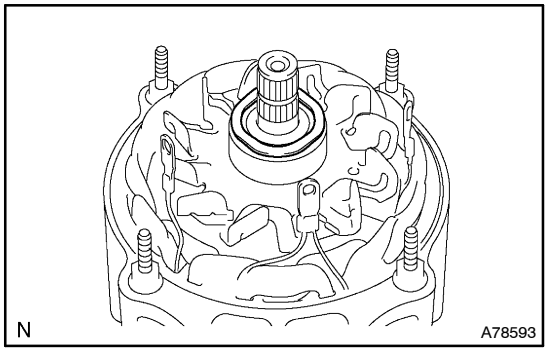


(3) Using SST and a press, press in the bearing cover (outside).
SST 09820–00031

16. INSTALL GENERATOR ROTOR ASSY

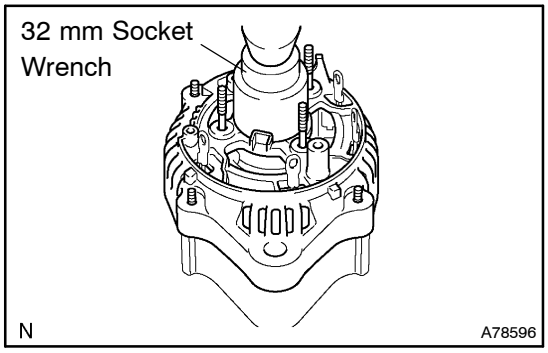
(a) Place the drive end frame on the pulley.

(b) Install the rotor to the drive end frame.

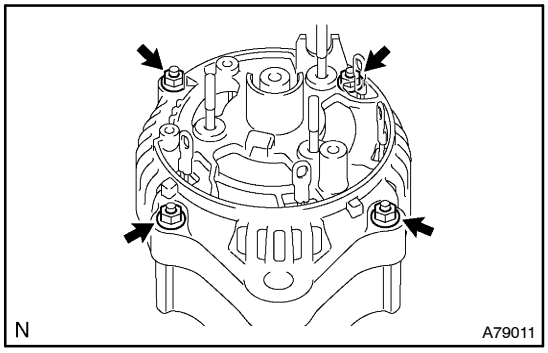


17. INSTALL RECTIFIER END FRAME

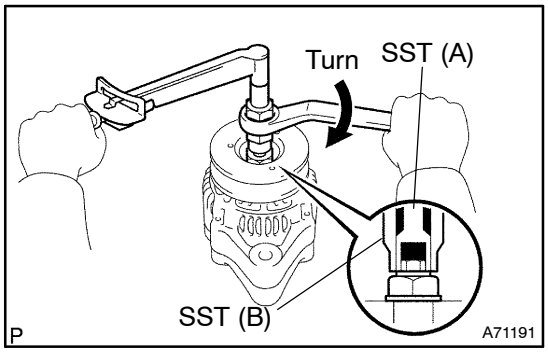
(a) Place the generator washer on the rotor.



(b) Using a 32 mm socket wrench and a press, slowly press in the end frame.



(c) Install the 4 nuts.
Torque: 4.5 N·m (46 kgf·cm, 40 in.·lbf)

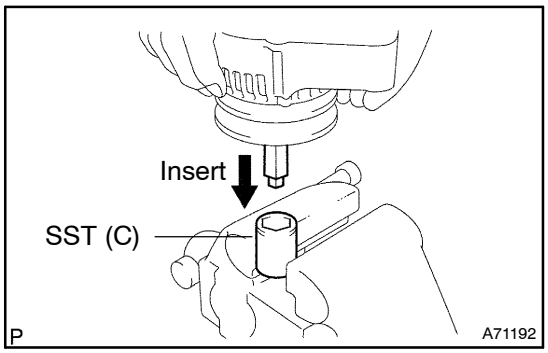


18. INSTALL GENERATOR PULLEY

(a) Install the pulley to the shaft of the rotor and tighten the nut by hand.

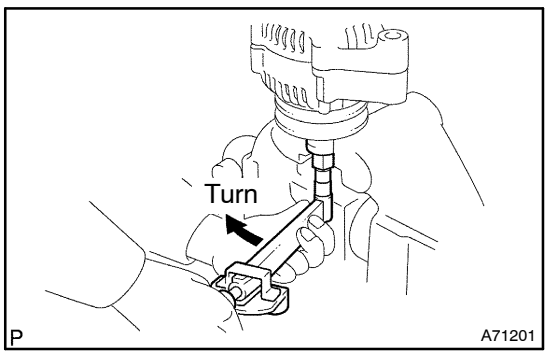
(b) Securely install SST (A) and (B) to the shaft of the rotor.
SST 09820–63010

(c) Hold SST (A) with a torque wrench and tighten SST (B) clockwise.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)



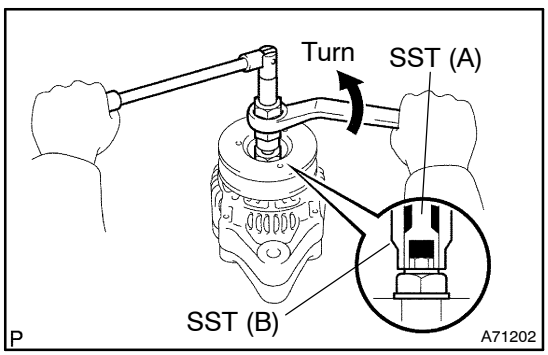
(d) Mount SST (C) in a vise.

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

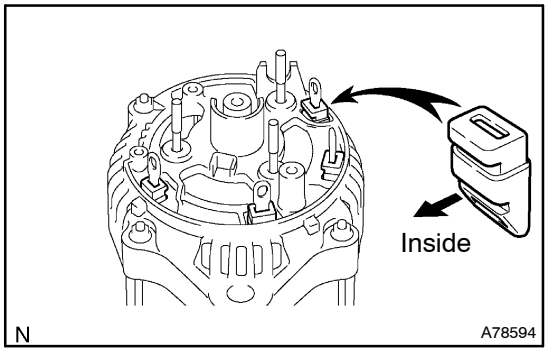


(f) In order to tighten the pulley nut, turn SST (A), as shown in the illustration.
Torque: 110.5 N·m (1,125 kgf·cm, 82 ft·lbf)

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



(h) Turn SST (B) and remove SST (A) and (B).
SST 09820–63010

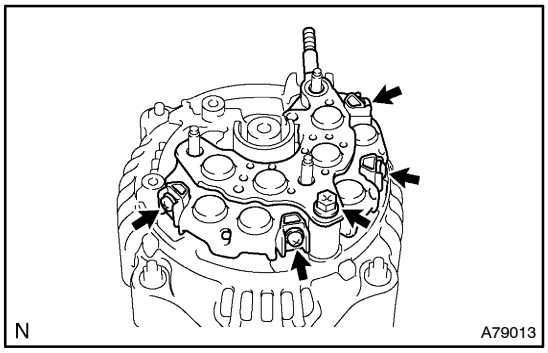


19. INSTALL GENERATOR HOLDER W/ RECTIFIER

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

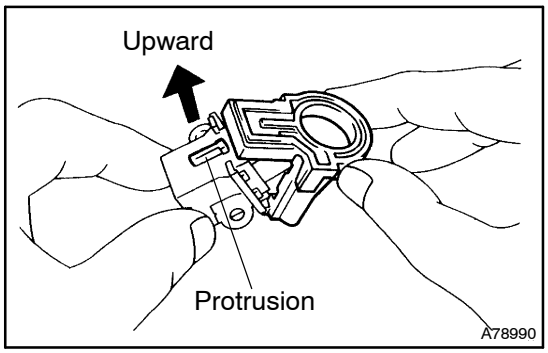
NOTICE:

Be careful of the rubber insulators installation direction.



(b) Install the holder with the bolt and 4 screws.

Torque:
1.96 N·m (20 kgf·cm, 17 in.·lbf) for screw
3.9 N·m (40 kgf·cm, 34 in.·lbf) for bolt

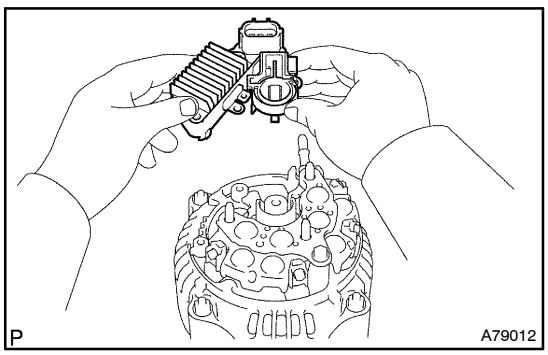


20. INSTALL GENERATOR BRUSH HOLDER AND VOLTAGE REGULATOR

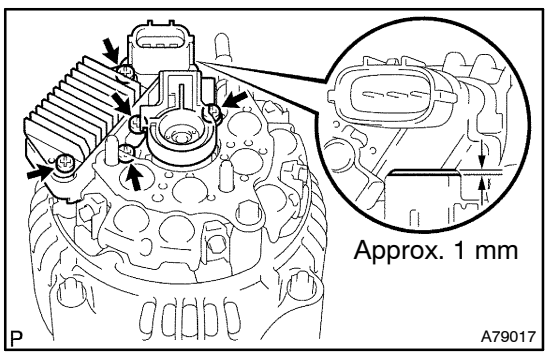
(a) Install the brush holder cover to the brush holder.

NOTICE:

Be careful of the holder installation direction.

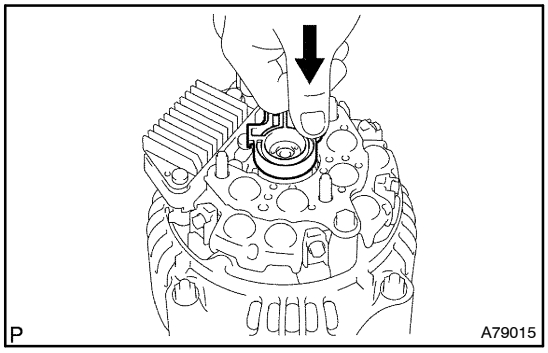


(b) Horizontally place the voltage regulator together with the brush holder on the rectifier end frame.

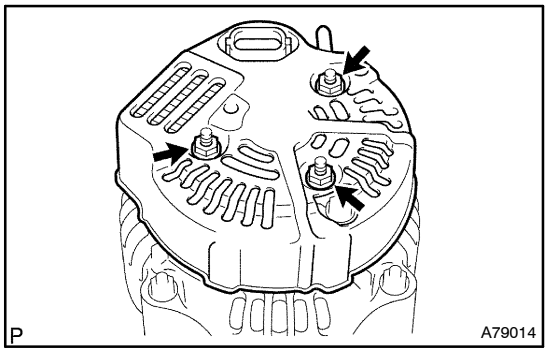


(c) Install the 5 screws until there is a clearance of approx. 1 mm (0.04 in.) between the brush holder and voltage regulator.

Torque: 1.96 N·m (20 kgf·cm, 17 in.·lbf)

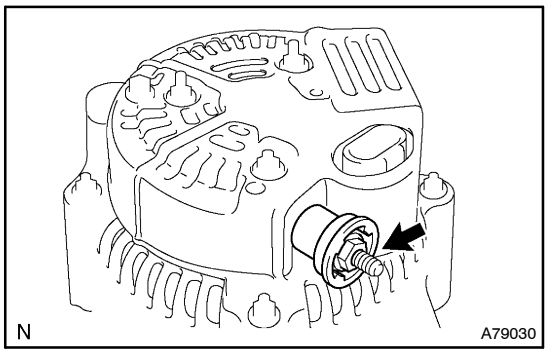


(d) Fit the brush holder cover.



21. INSTALL REAR END COVER

(a) Install the end cover with the 3 nuts.
Torque: 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)

22. INSPECT GENERATOR ASSY

(a) Check that the pulley smoothly rotates.