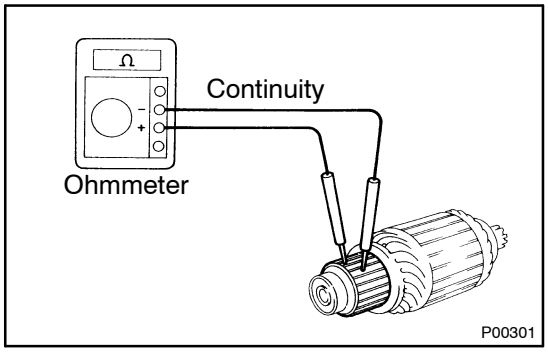
ST0OE–02

INSPECTION

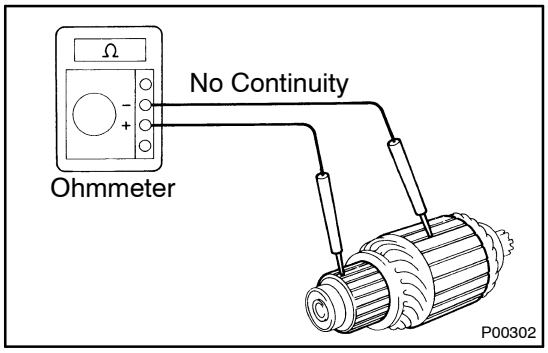


1. INSPECT COMMUTATOR FOR OPEN CIRCUIT

(a) If the surface of the commutator is dirty or replace the armature.

(b) Check the commutator open circuit.
Using an ohmmeter, check that there is continuity between the segments of the commutator.

If there is no continuity between any segment, replace the armature.

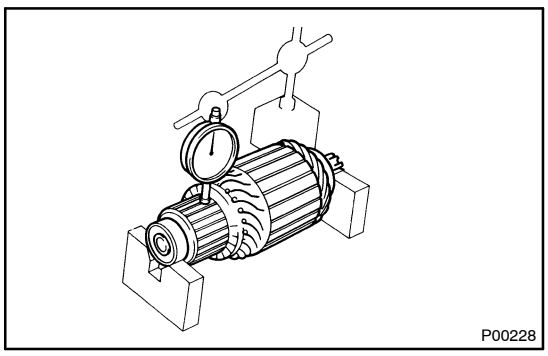


(c) Check the commutator for ground.
Using an ohmmeter, check that there is no continuity between the commutator and armature coil core.

If there is continuity, replace the armature.

2. INSPECT COMMUTATOR FRO DIRTY AND BURNT SURFACES

If the surface is dirty or burnt, correct it with sandpaper (No. 400) or on a lathe.

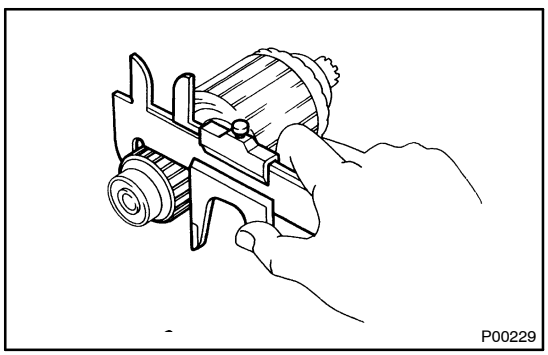


3. INSPECT COMMUTATOR CIRCLE RUNOUT

(a) Place the armature on V–blocks.

(b) Using a dial gauge, measure the circle runout.
Maximum circle runout: 0.05 mm (0.0020 in.)

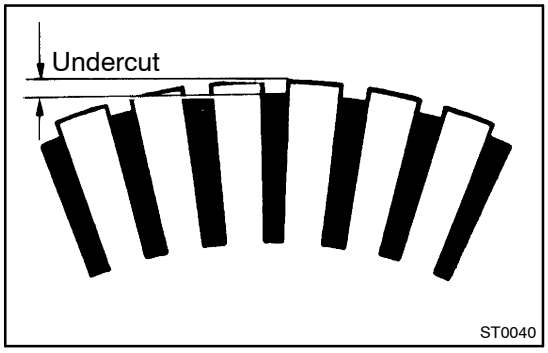
If the circle runout is greater than maximum, correct it with sandpaper (#400) or replace the armature.



(c) Using a vernier caliper, measure the commutator diameter.
Diameter:

Standard	36 mm (1.42 in.)
Minmum	35 mm (1.38 in.)

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



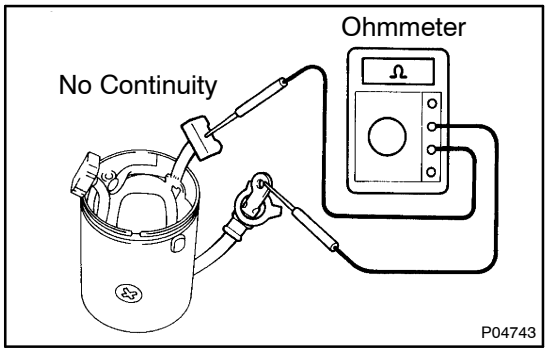
(d) Measure the undercut depth of commutator.
Depth:

Standard	0.7 mm (0.028 in.)
Minmum	0.2 mm (0.008 in.)

If the undercut depth is less than minimum, correct with a hacksaw blade.

4. INSPECT STARTER BEARING

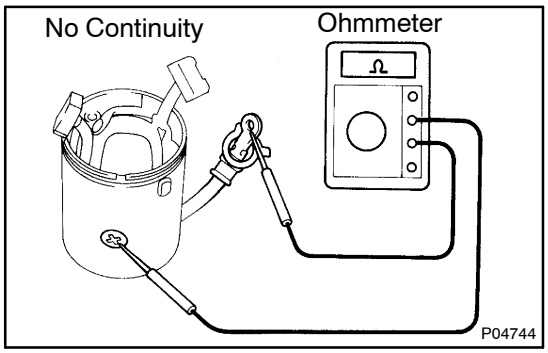
Check that the bearing rotate smoothly.



5. INSPECT STARTER YOKE

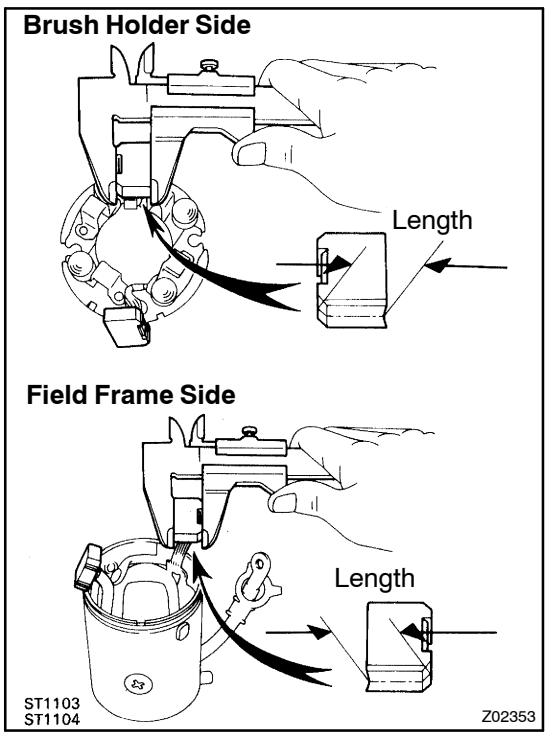
(a) Inspect for open circuit.
Check that there is continuity between the terminal C wire and brushes.

If there is no continuity, replace the starter yoke.



(b) Inspect for ground.
(1) Check that there is no continuity between the brushes and the starter yoke.
(2) Check that there is no continuity between the terminal C wire and the starter yoke.

If there is no continuity, replace the starter yoke.

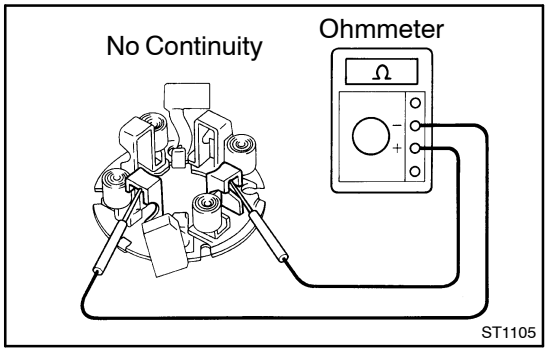


6. INSPECT BRUSH LENGTH

Using a vernier caliper, measure the brush length.
Brush lengh:

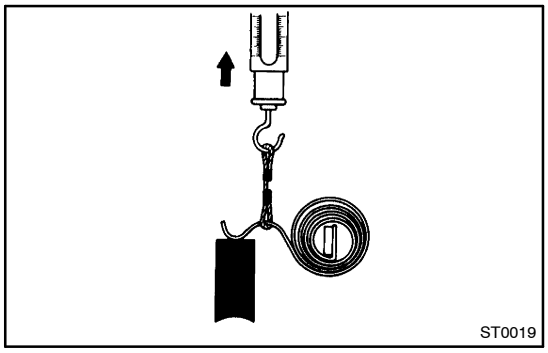
Standard	20.5 mm (0.807 in.)
Minmum	11 mm (0.433 in.)

If the length is less than minimum, replace the brush holder and starter yoke.



7. INSPECT BRUSH HOLDER INSULATION

Using an ohmmeter, check that there is no continuity between the positive (+) and negative (–) brush holders.
If there is continuity, replace the brush holder.



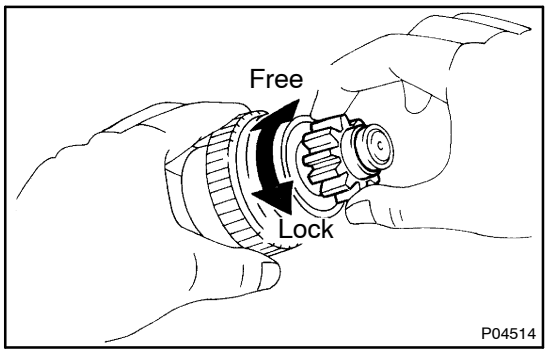
8. INSPECT BRUSH SPRING

Using a pull scale, measure the brush spring load.

Spring load:

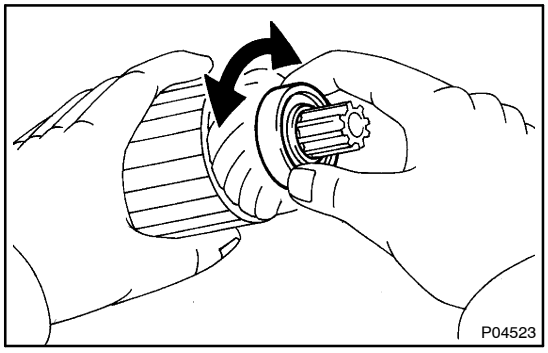
Standard	34.3 – 42.1 N·m (3.5 – 4.3 – kgf·cm, 7.7 – 9.5 ft·lbf)
Minmum	18.6 N·m (19 kgf·cm, 4.2 ft·lbf)

If the spring load is less than minimum replace the brush spring.



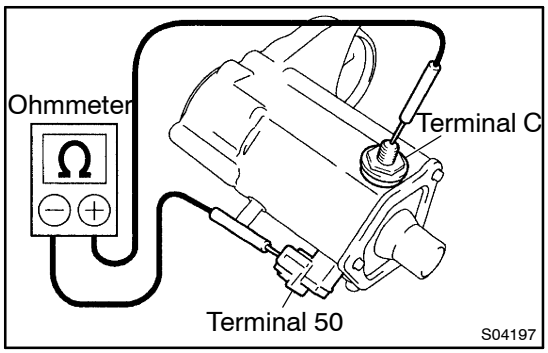
9. INSPECT CLUTCH AND GEAR

Check that the starter clutch operates.
If the starter clutch is dose not operate, replace it.



10. INSPECT BEARINGS

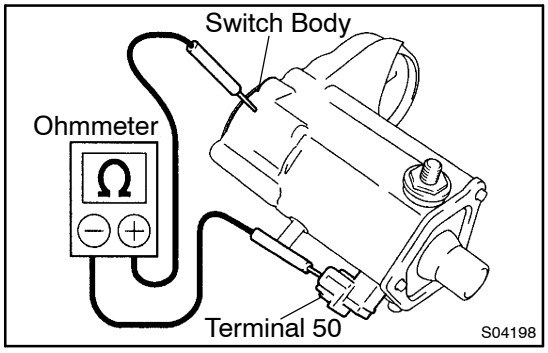
Turn the bearing by hand while applying inward force.
If resistance is felt or the bearing sticks, replace the bearing.



11. INSPECT MAGNETIC SWITCH

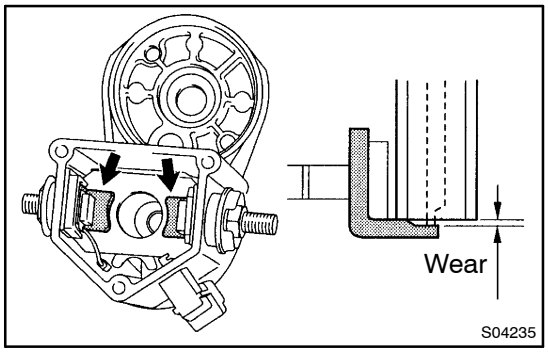
(a) Check the pull–in coil continuity.
Using an ohmmeter, check that there is continuity between terminals 50 and C.

If there is no continuity, replace the magnetic switch assembly.



(b) Check the holding coil continuity.
Using an ohmmeter, check that there is continuity between terminal 50 and switch body.

If there is no continuity, replace the magnetic switch assembly.



12. REPLACE MAGNETIC SWITCH TERMINAL KIT PARTS

(a) Remove the 3 bolts, end cover, gasket and plunger.

(b) Using vernier calipers, measure the contact plate for depth of wear.

Maximum wear: 1.6 mm (0.063 in.)

If the depth of wear is greater than the maximum replace the terminal kit parts.

(c) Install a new gasket, plunger, lead clamp and the end cover with the 3 bolts.