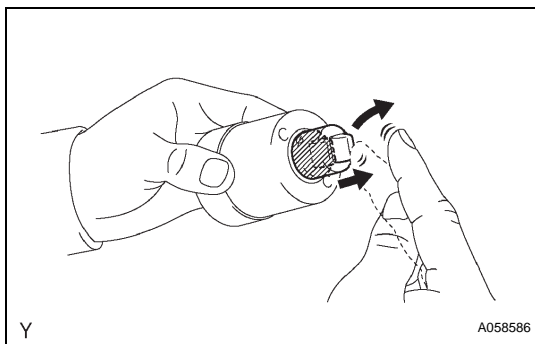


## 6. REMOVE PLANET GEAR

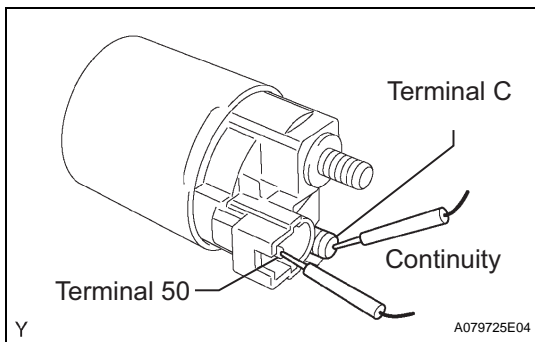
- (a) Remove the 3 planet gears from the motor terminal starter kit.



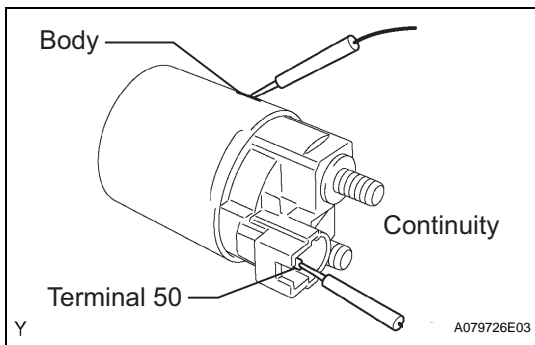
## INSPECTION

### 1. INSPECT REPAIR SERVICE STARTER KIT

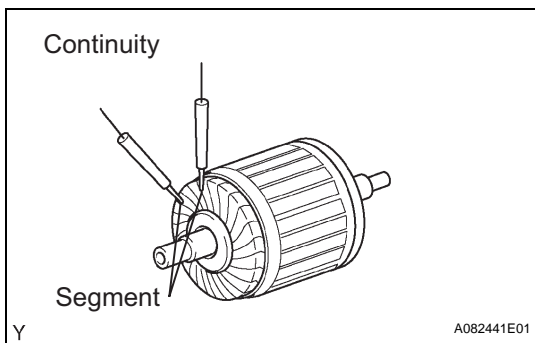
- (a) Check the plunger.
- (1) Push in the plunger and check that it returns quickly to its original position. If necessary, replace the repair service starter kit.



- (b) Check the pull-in coil for open circuit.
- (1) Using an ohmmeter, check that there is continuity between terminals 50 and C. If there is no continuity, replace the repair service starter kit.

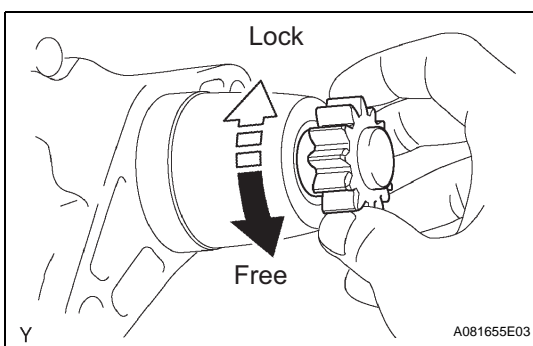
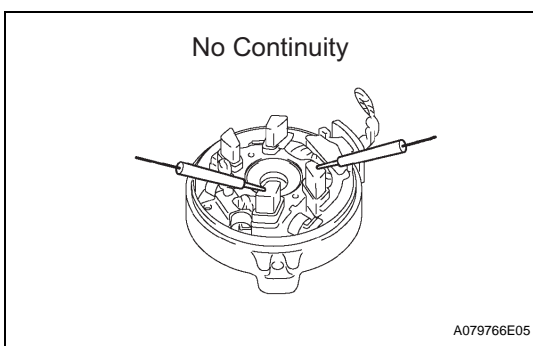
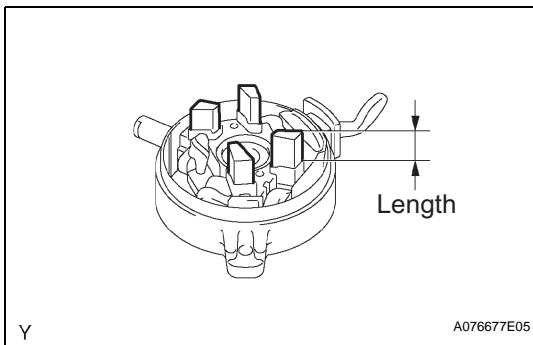
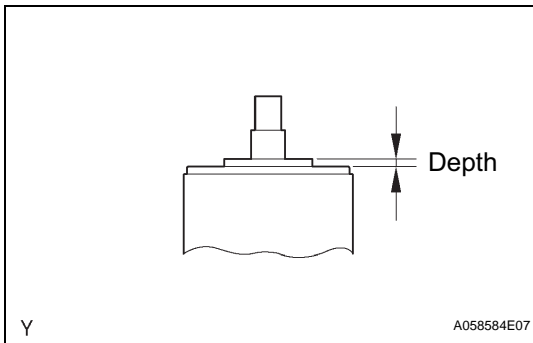
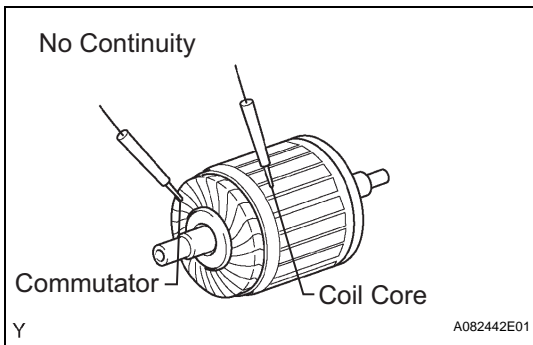


- (c) Check whether or not the holding coil has an open circuit.
- (1) Using an ohmmeter, check that there is continuity between terminal 50 and the switch body. If there is no continuity, replace the repair service starter kit.



### 2. INSPECT STARTER ARMATURE ASSEMBLY

- (a) Check the commutator for open circuit.
- (1) Using an ohmmeter, check that there is continuity between the segments of the commutator. If there is no continuity between any segments, replace the starter armature.



- (b) Check the commutator for ground.
- (1) Using an ohmmeter, check that there is no continuity between the commutator and the armature coil core.  
If there is continuity, replace the starter armature.
- (c) Check the commutator for dirty and burned surface.  
If the surface is dirty or burnt, smooth the surface with 400-grit sandpaper or lathe.
- (d) Check the commutator depth.
- (1) Using vernier calipers, measure the commutator depth.  
**Standard length:**  
**3.1 mm (0.122 in.)**  
**Maximum length:**  
**3.8 mm (0.150 in.)**  
If the depth is greater than maximum, replace the starter armature.

### 3. INSPECT STARTER COMMUTATOR END FRAME ASSEMBLY

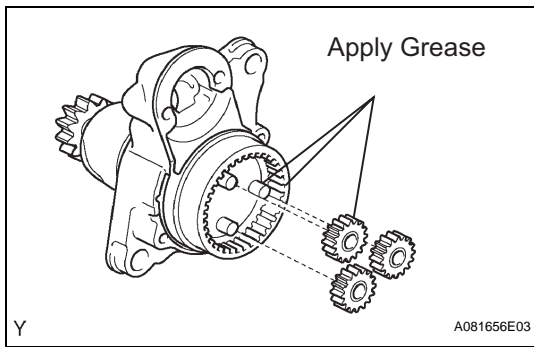
- (a) Check the brush length.
- (1) Using vernier calipers, measure the brush holder length.  
**Standard length:**  
**9.0 mm (0.354 in.)**  
**Minimum length:**  
**4.0 mm (0.158 in.)**  
If the length is less than minimum, replace the starter commutator end frame.
- (b) Check the brush.
- (1) Using an ohmmeter, check that there is no continuity between the positive (+) and negative (-) brush.  
If there is continuity, repair or replace the starter commutator end frame.

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### 4. INSPECT MOTOR TERMINAL STARTER KIT

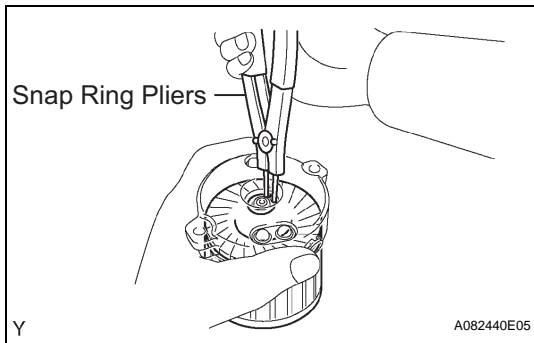
- (a) Check the starter clutch.
- (1) Rotate the clutch pinion gear counterclockwise and check that it turns freely. Try to rotate the clutch pinion gear clockwise and check that it locks.  
If necessary, replace the motor terminal starter kit.

## REASSEMBLY



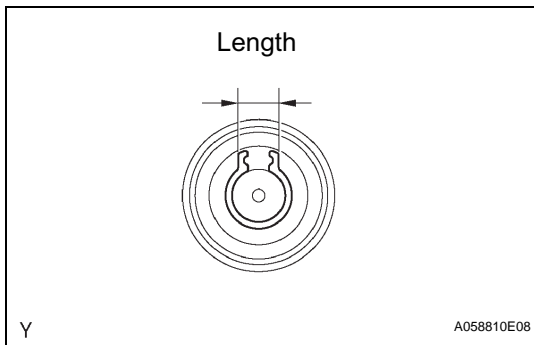
### 1. INSTALL PLANET GEAR

- Apply grease to the planet gears and pin parts of the planetary shaft.
- Install the 3 planet gears.



### 2. INSTALL STARTER ARMATURE ASSEMBLY

- Apply grease to the plate washer and the armature shaft.
- Install the starter armature to the starter commutator end frame.
- Using snap ring pliers, install the plate washer and a new snap ring.



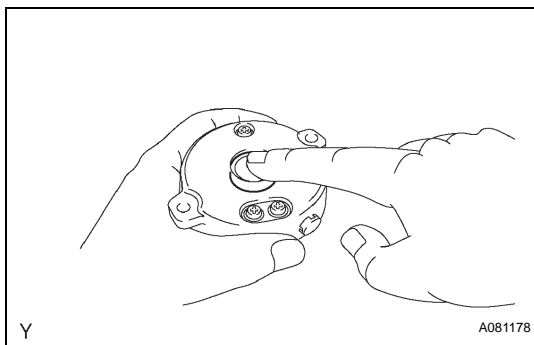
- Using vernier calipers, measure the snap ring.

#### Maximum length:

**5.0 mm (0.197 in.)**

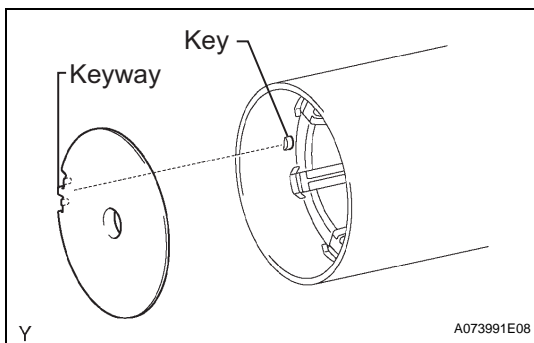
If the length is greater than maximum, replace it with a new snap ring.

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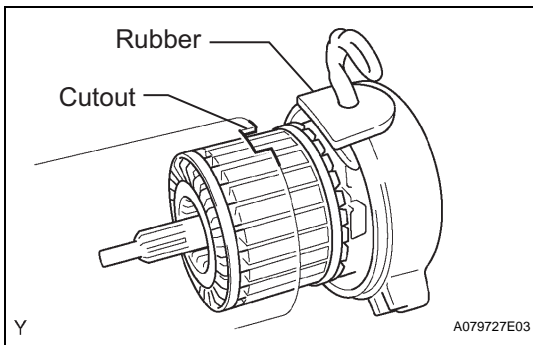
### 3. INSTALL STARTER COMMUTATOR END FRAME COVER

- Install the starter commutator end frame cover to the starter commutator end frame.



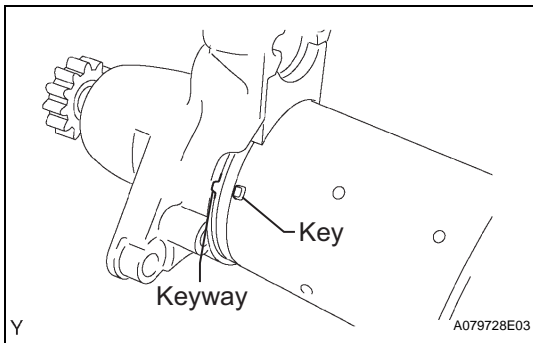
### 4. INSTALL STARTER ARMATURE PLATE

- Insert the starter armature plate to the starter yoke.
- Align the keyway of the starter plate with the key inside the starter yoke, and install the starter plate.



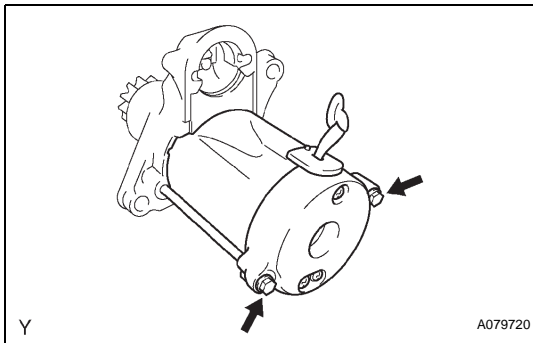
### 5. INSTALL STARTER COMMUTATOR END FRAME ASSEMBLY

- (a) Align the rubber with the convex cutout of starter yoke.
- (b) Install starter commutator end frame to the starter yoke.

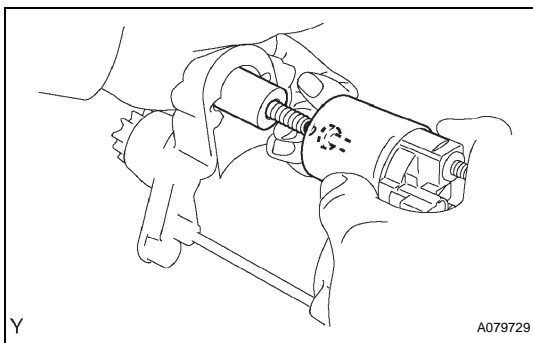


### 6. INSTALL STARTER YOKE ASSEMBLY

- (a) Align the key of the starter yoke with the keyway of starter drive housing.

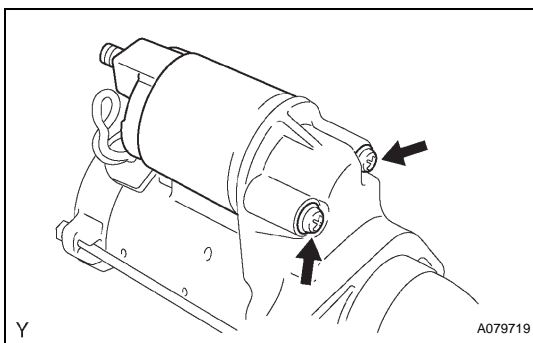


- (b) Install the starter yoke with the 2 through bolts.  
**Torque: 6.0 N\*m (61 kgf\*cm, 53 in.\*lbf)**

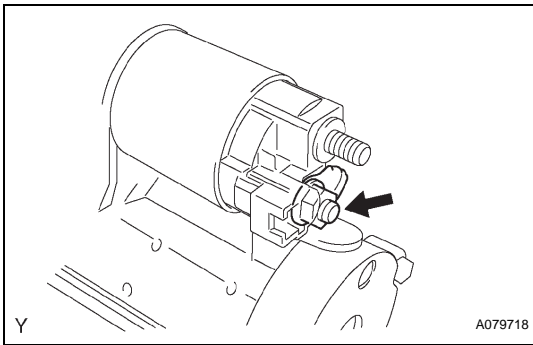


### 7. INSTALL REPAIR SERVICE STARTER KIT

- (a) Apply grease to the plunger and the hook.
- (b) Hang the plunger hook of the repair service starter kit to the drive lever.
- (c) Install the plunger and the return spring.



- (d) Install repair service starter kit with the 2 screws.  
**Torque: 7.5 N\*m (76 kgf\*cm, 66 in.\*lbf)**



- (e) Connect the lead wire to the repair service starter kit with the nut.

**Torque: 10 N\*m (102 kgf\*cm, 7 ft.\*lbf)**