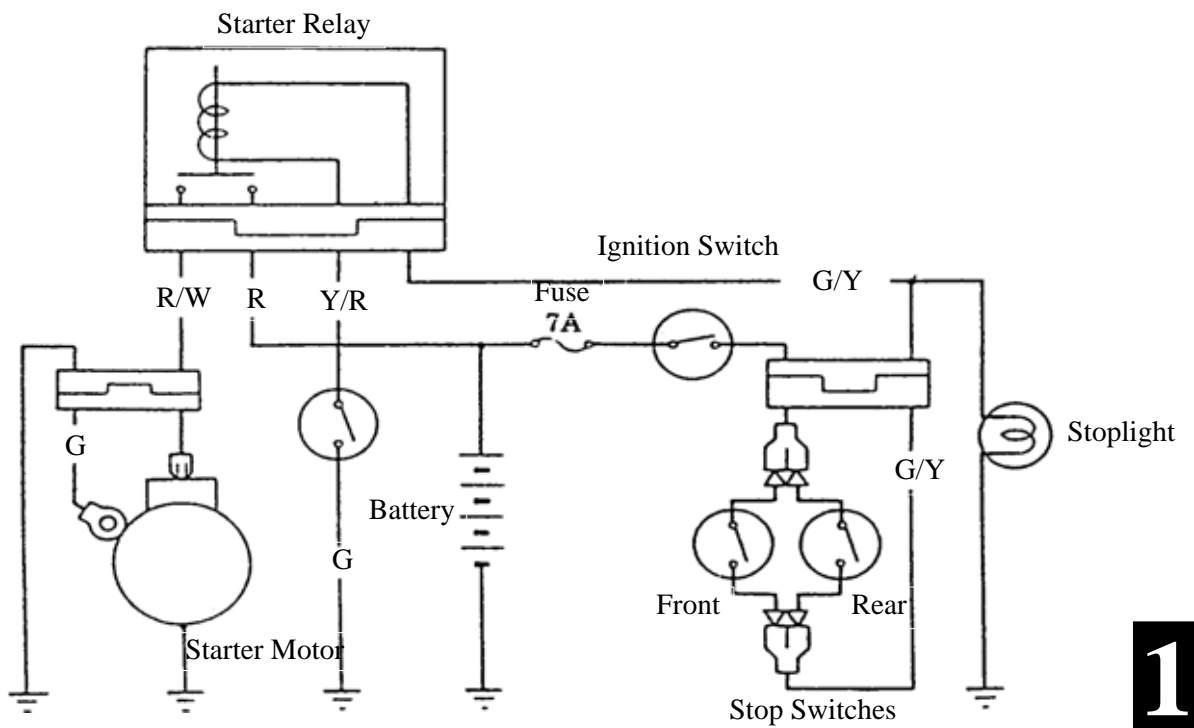
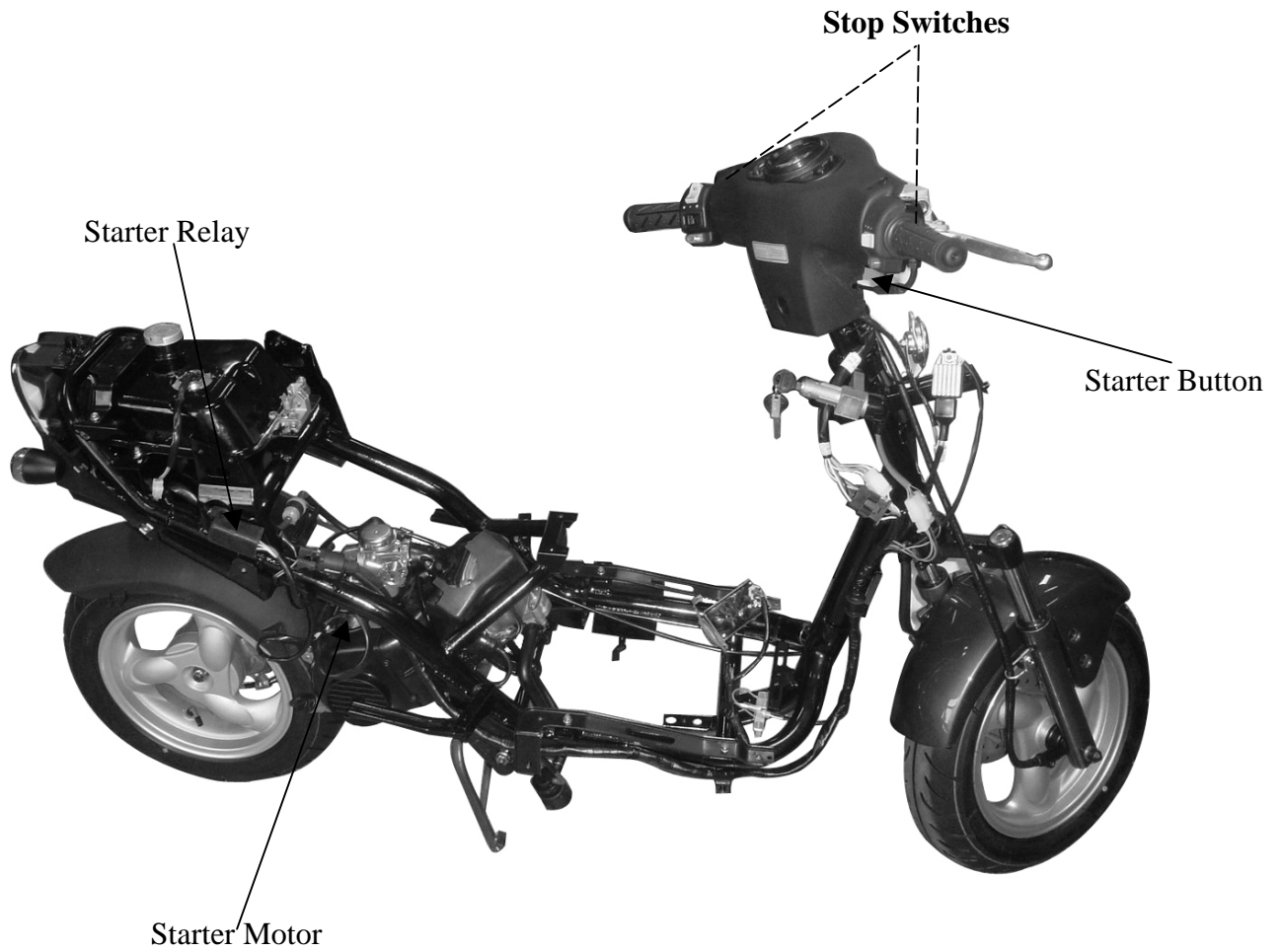


# 16. STARTING SYSTEM



# 16. STARTING SYSTEM

SERVICE INFORMATION.....	16-1	STARTER MOTOR .....	16-2
TROUBLESHOOTING.....	16-1	STARTER RELAY.....	16-4

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- The removal of starter motor can be accomplished with the engine installed.

### SPECIFICATIONS

Item	Standard (mm)	Service Limit (mm)
Starter motor brush length	12.5	8.5

## TROUBLESHOOTING

### Starter motor won't turn

- Fuse burned out
- Weak battery
- Faulty ignition switch
- Faulty starter clutch
- Faulty front or rear stop switch
- Faulty starter relay
- Poorly connected, broken or shorted wire
- Faulty starter motor

### Lack of power

- Weak battery
- Loose wire or connection
- Foreign matter stuck in starter motor or gear

### Starter motor rotates but engine does not start

- Faulty starter clutch
- Starter motor rotates reversely
- Weak battery

# 16. STARTING SYSTEM

## STARTER MOTOR

### REMOVAL

\* Before removing the starter motor, turn the ignition switch OFF and remove the battery ground. Then, turn on the ignition switch and push the starter button to see if the starter motor operates properly.

Remove the front cover.

Remove the starter motor cable.

Remove the two starter motor mounting bolts and the motor.

Remove the waterproof rubber jacket and disconnect the starter motor cable connector.

### DISASSEMBLY

Remove the two starter motor case screws, front cover, motor case and other parts.

### INSPECTION

Inspect the removed parts for wear, damage or discoloration and replace if necessary. Clean the commutator if there is metal powder between the segments.

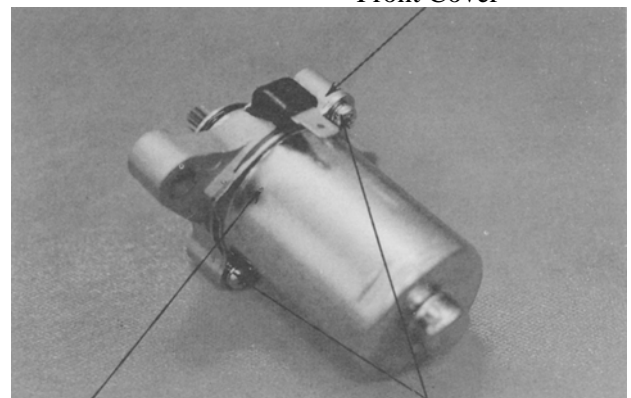
Check for continuity between pairs of the commutator segments and there should be continuity.

Also, make a continuity check between individual commutator segments and the armature shaft. There should be no continuity.



Bolts

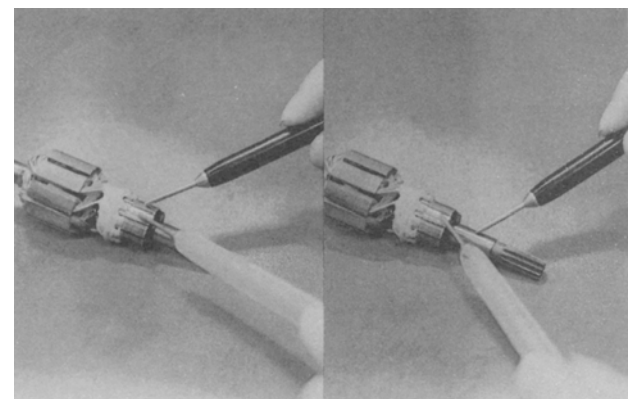
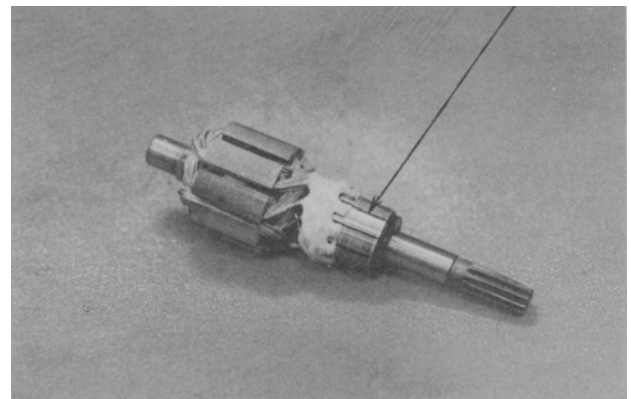
Starter Motor Cable  
Front Cover



Motor Case

Case Screws

Commutator



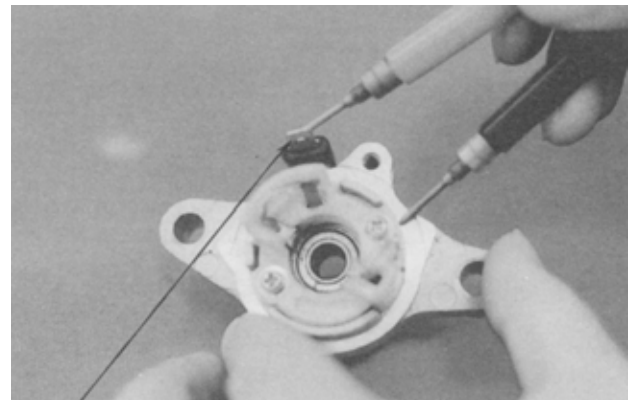
# 16. STARTING SYSTEM

## STARTER MOTOR CASE CONTINUITY CHECK

Check to confirm that there is no continuity between the starter motor wire terminal and the motor front cover.

Also check for the continuity between the wire terminal and each brush and there should be continuity.

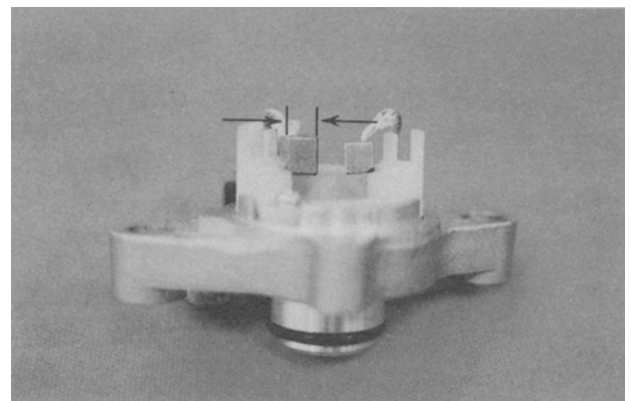
Replace if necessary.



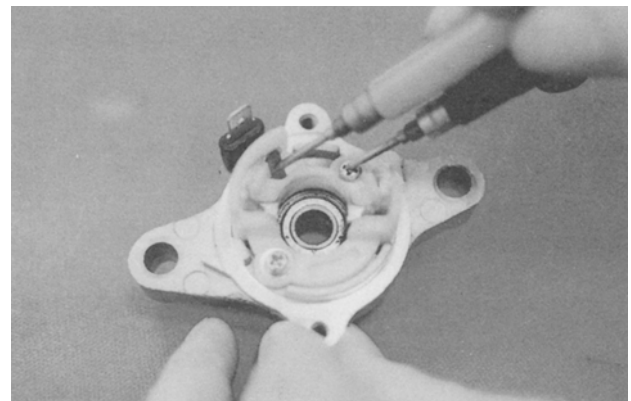
Wire Terminal

Measure the length of the brushes.

**Service Limit:** 8.5mm replace if below



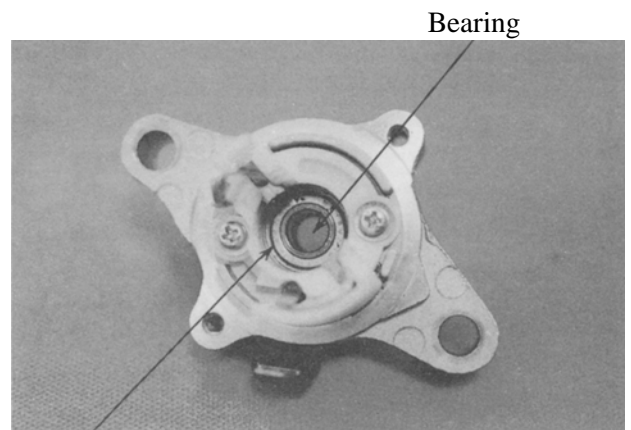
Check for continuity between the brushes. If there is continuity, replace with new ones.



Check if the needle bearing in the front cover turns freely and has no excessive play.

Replace if necessary.

Check the dust seal for wear or damage.



Dust Seal

# 16. STARTING SYSTEM

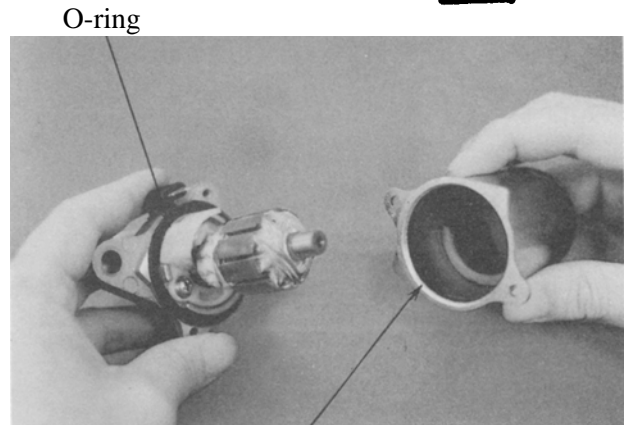
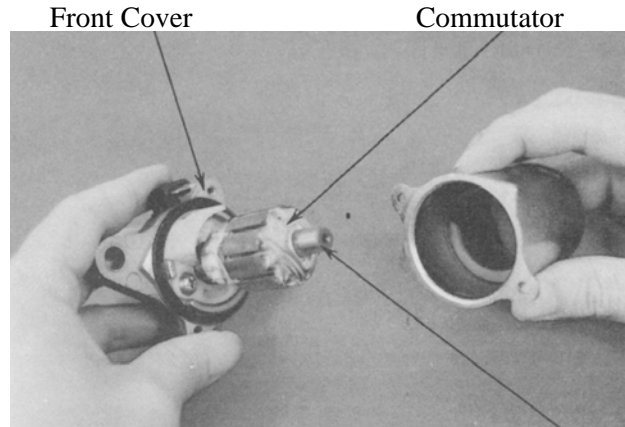
## ASSEMBLY

Apply grease to the dust seal in the front cover.  
 Install the brushes onto the brush holders.  
 Apply a thin coat of grease to the two ends of the armature shaft.  
 Insert the commutator into the front cover.

- \* 
 • Be careful not to damage the brush and armature shaft mating surfaces.  
 • When installing the commutator, the armature shaft should not damage the dust seal lip.

Install a new O-ring to the front cover.  
 Install the starter motor case, aligning the tab on the motor case with the tab on the front cover.  
 Tighten the starter motor case screws.

- \* 
 When assembling the front cover and motor case, slightly press down the armature shaft to assemble them.



## STARTER RELAY

### INSPECTION

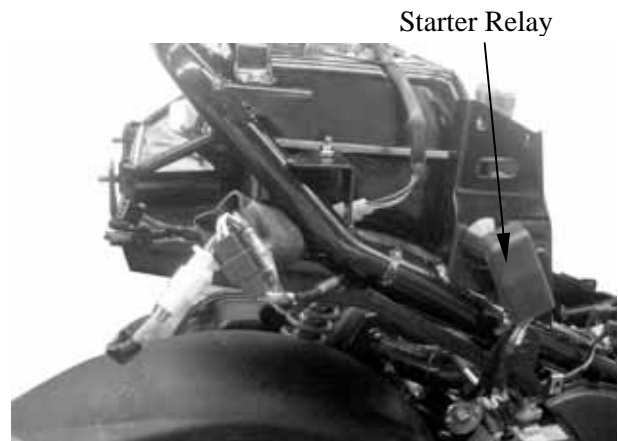
Remove the met-in box.  
 Remove the battery cover.  
 Remove the frame body cover. (⇒2-2)  
 Turn the ignition switch ON and the starter relay is normal if you hear a click when the starter button is depressed.  
 If there is no click sound:

- Inspect the starter relay voltage
- Inspect the starter relay ground circuit
- Inspect the starter relay operation

### STARTER RELAY VOLTAGE INSPECTION

Place the motorcycle on its main stand.  
 Measure the voltage between the starter relay connector green/yellow wire (-) and engine ground.  
 Turn the ignition switch ON and the battery voltage should be normal when the brake lever is fully applied.  
 If the battery has no voltage, inspect the stop switch continuity and cable.

- \* 
 Turn to the DCV position for the voltage meter, then inspect the starter relay.



Green/Yellow Wire

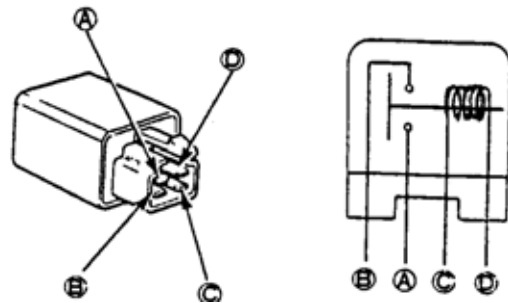
# 16. STARTING SYSTEM

## STARTER RELAY TEST

Remove the battery cover.  
 Disconnect the 4P connector from the starter relay and remove the starter relay.



Connect the starter relay (D) terminal to the 12V battery positive (+) terminal and the relay (C) terminal to the battery negative (-) terminal. Check for continuity between the starter relay (A) and (B) terminals. The relay is normal if there is continuity.



## STARTER MOTOR INSTALLATION

Apply engine oil to the starter motor O-ring and install the starter motor.  
 Tighten the two mounting bolts.  
 Connect the starter motor cable connector.

