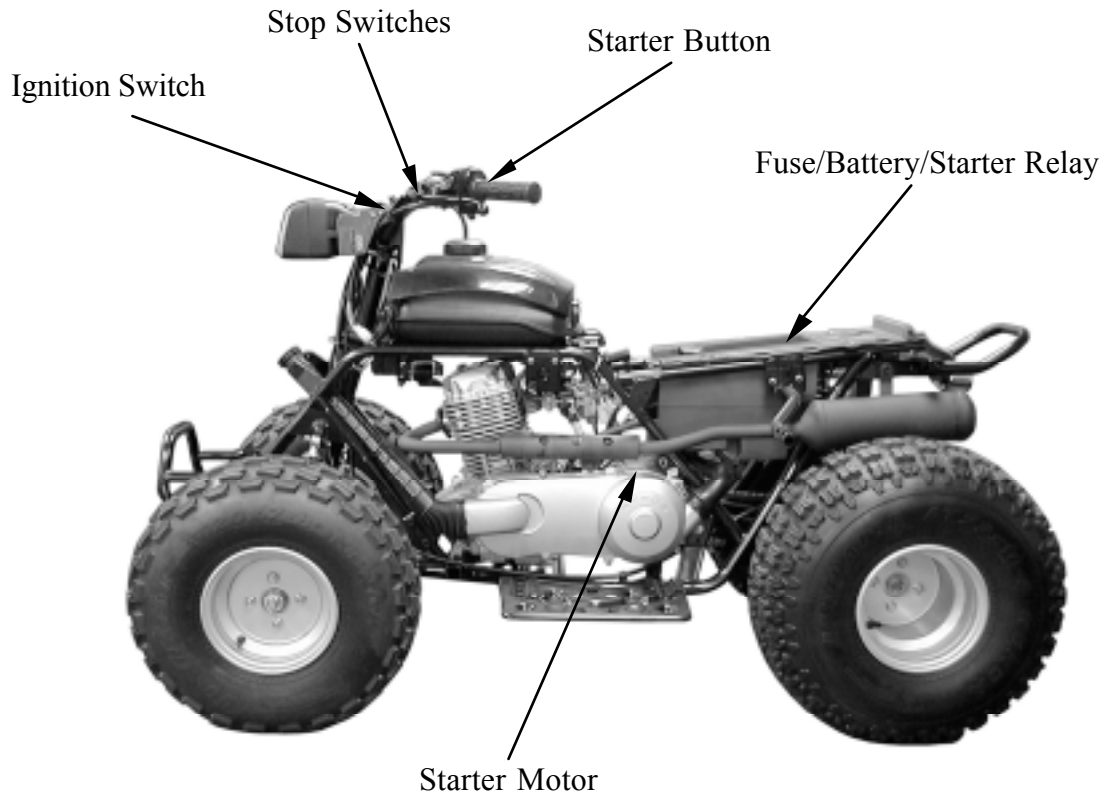


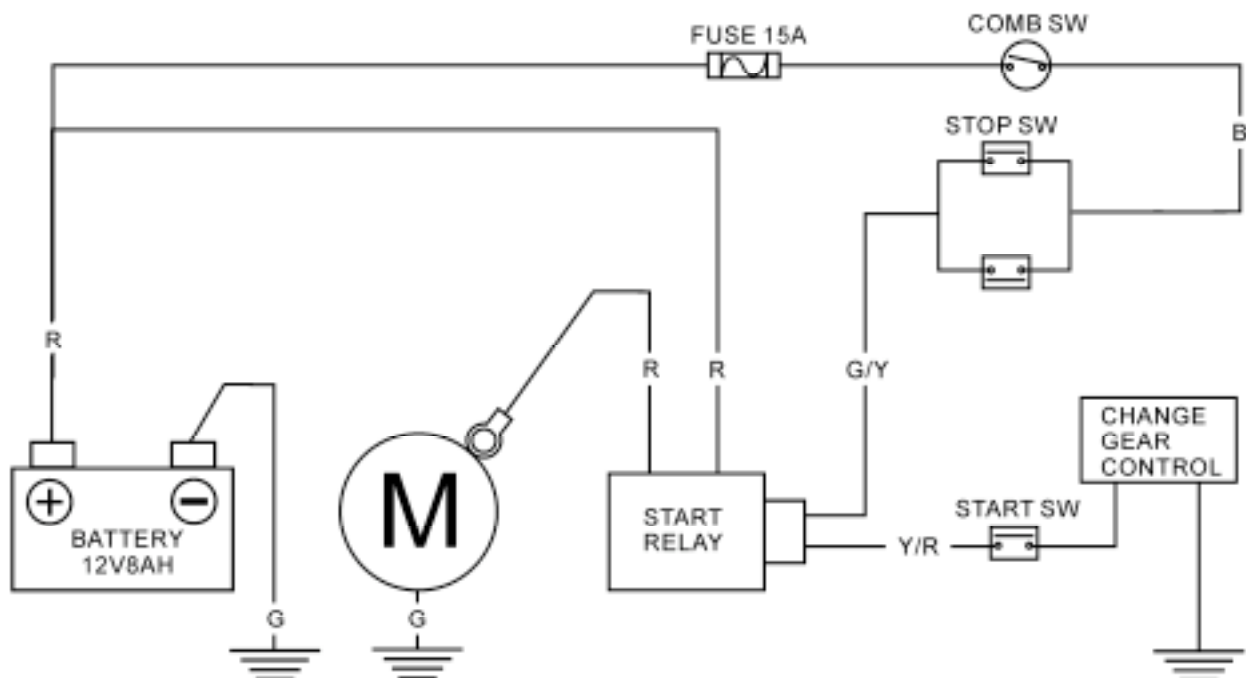
STARTING SYSTEM

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16. STARTING SYSTEM



STARTING CIRCUIT



16. STARTING SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- The removal of starter motor can be accomplished with the engine installed.
- For the starter clutch removal, refer to Section 4.

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

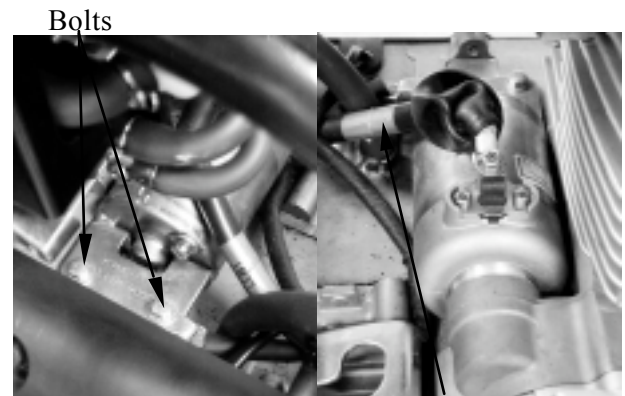
STARTER MOTOR

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 two starter motor mounting bolts and the motor.

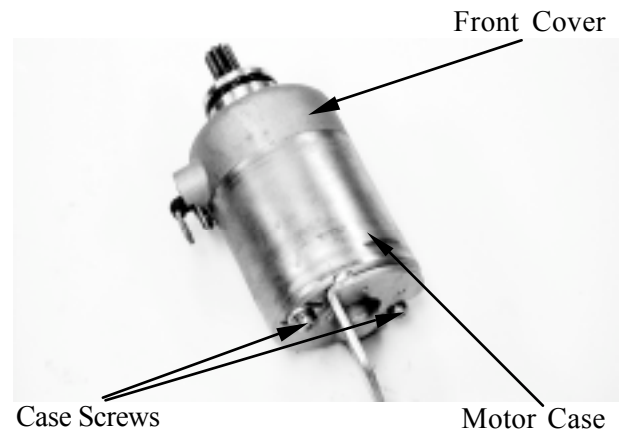
Remove the waterproof rubber jacket and disconnect the starter motor cable connector.



Starter Motor Cable

DISASSEMBLY

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



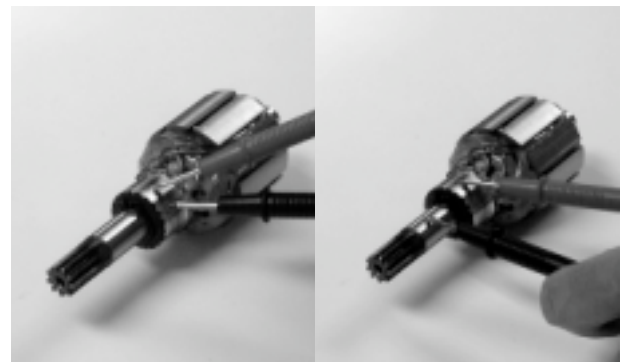
INSPECTION

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.



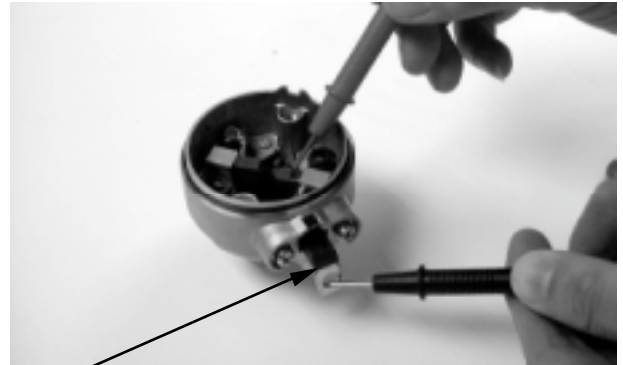
16. STARTING SYSTEM

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.

Replace if necessary.



Wire Terminal

Measure the length of the brushes.

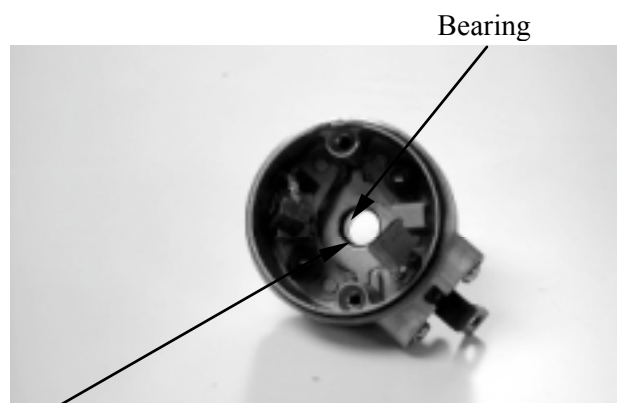
Service Limit: 8.5mm replace if below



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

Bearing

16. STARTING SYSTEM

there is no continuity.

ASSEMBLY

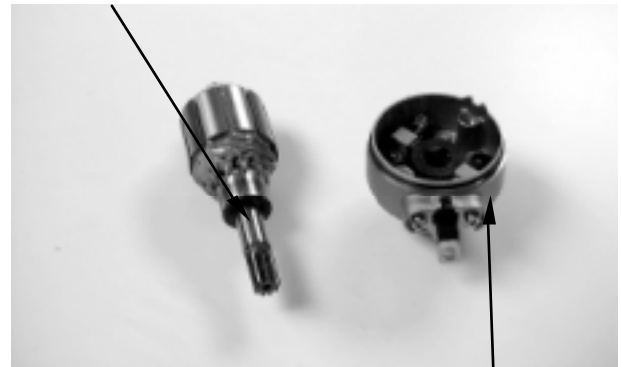
Apply grease to the dust seal in the front cover.
Install the brushes onto the brush holders.
Apply a thin coat of grease to the two ends of the armature shaft.
Insert the commutator into the front cover.

- * 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.

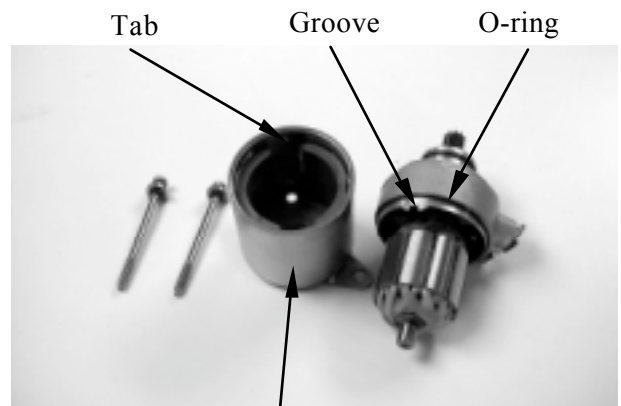
Install a new O-ring to the front cover.
Install the starter motor case, aligning the tab on the motor case with the groove on the front cover.
Tighten the starter motor case screws.

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

Commutator

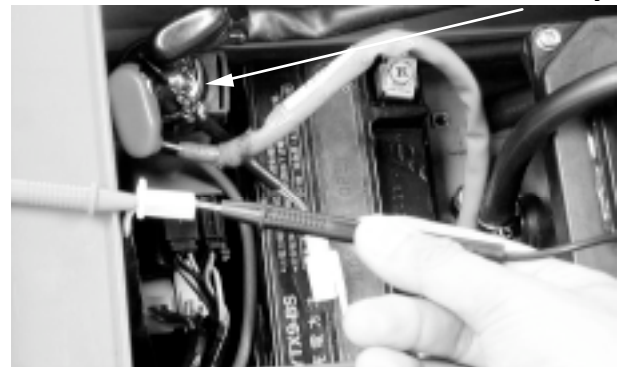


Front Cover



Motor Case

Starter Relay



STARTER RELAY

INSPECTION

Remove the seat.
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
- Check for continuity between the starter relay yellow/red and green/red wire terminals

STARTER RELAY VOLTAGE

INSPECTION

Connect a 12V battery across the starter relay yellow/red and green/red wire terminals.

Connect an electric tester between the starter relay large terminals and check for continuity between the two terminals.
The relay is normal if there is continuity.
Replace the starter relay with a new one if



16. STARTING SYSTEM

STARTER MOTOR INSTALLATION

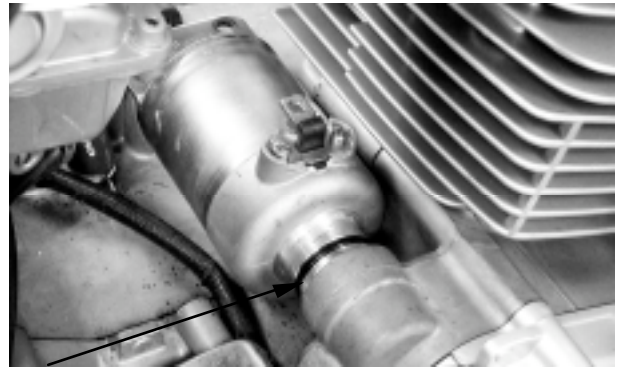
Connect the starter motor cable connector and properly install the waterproof rubber jacket.

Check the O-ring for wear or damage and replace if necessary.

Apply grease to the O-ring and install the starter motor.

Tighten the two mounting bolts.

- * The starter motor cable connector must be installed properly.



O-ring