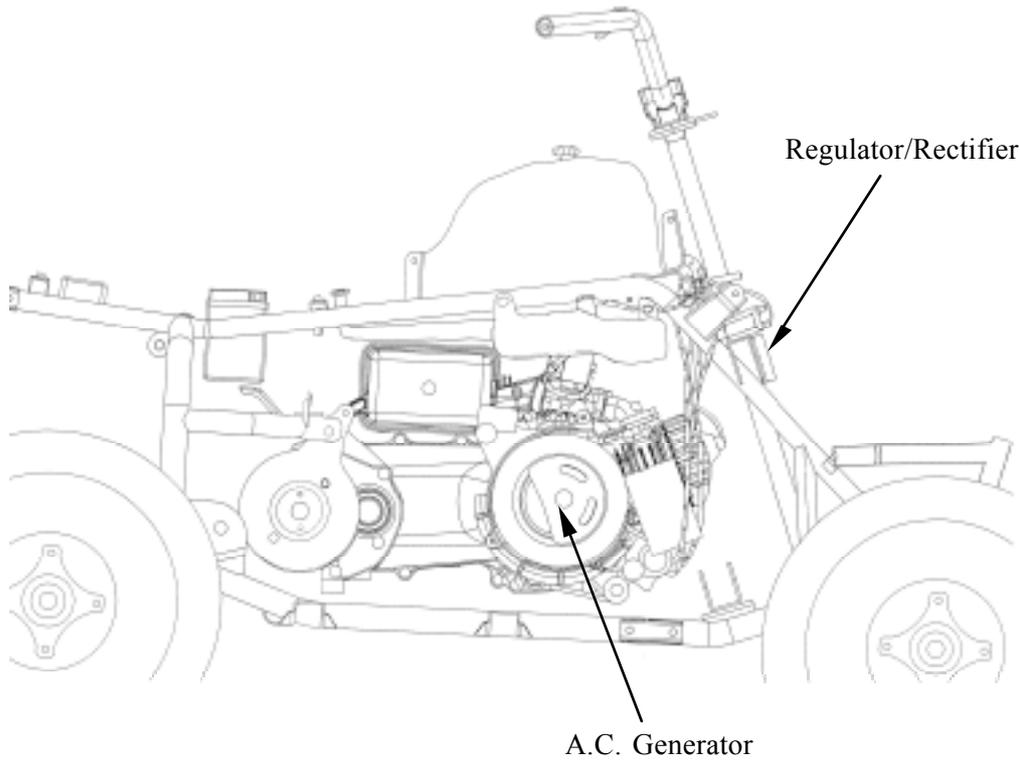
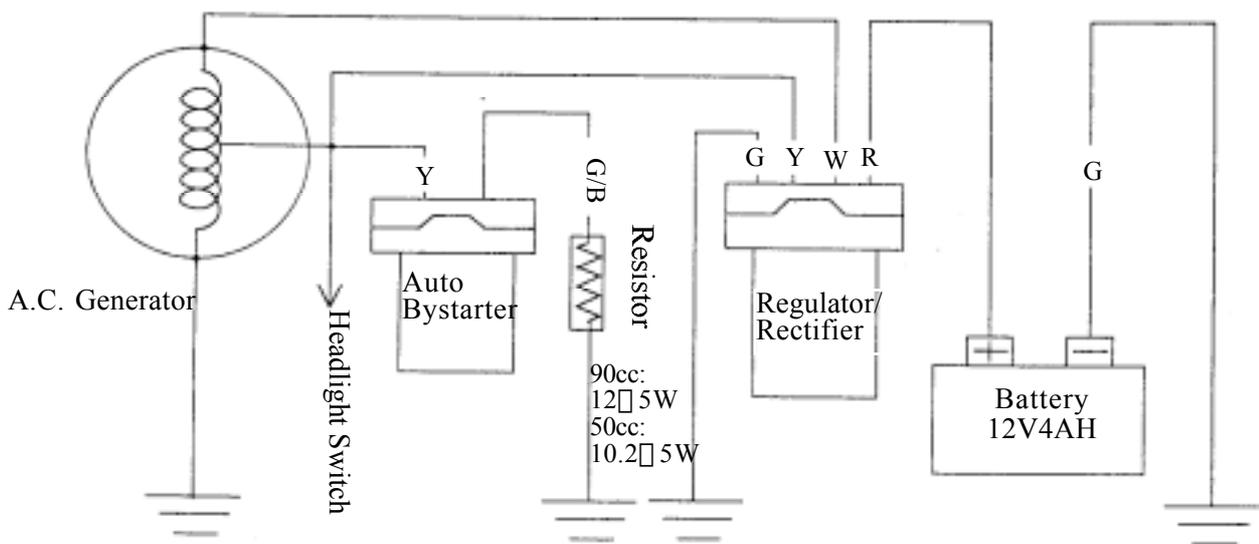

**BATTER/CHARGING SYSTEM/
A.C. GENERATOR**

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14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR



CHARGING CIRCUIT



14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

SERVICE INFORMATION

GENERAL INSTRUCTIONS

The battery electrolyte (sulfuric acid) is poisonous and may seriously damage the skin and eyes. Avoid contact with skin, eyes, or clothing. In case of contact, flush with water and get prompt medical attention

- The battery can be charged and discharged repeatedly. If a discharged battery is not used for a long time, its service life will be shortened. Generally, the capacity of a battery will decrease after it is used for 2_ 3 years. A capacity-decreased battery will resume its voltage after it is recharged but its voltage decreases suddenly and then increases when a load is added.
- When a battery is overcharged, some symptoms can be found. If there is a short circuit inside the battery, no voltage is produced on the battery terminals. If the rectifier won't operate, the voltage will become too high and shorten the battery service life.
- If a battery is not used for a long time, it will discharge by itself and should be recharged every 3 months.
- A new battery filled with electrolyte will generate voltage within a certain time and it should be recharged when the capacity is insufficient. Recharging a new battery will prolong its service life.
- Inspect the charging system according to the sequence specified in the Troubleshooting.
- Do not disconnect and soon reconnect the power of any electrical equipment because the electronic parts in the regulator/rectifier will be damaged. Turn off the ignition switch before operation.
- It is not necessary to check the MF battery electrolyte or fill with distilled water.
- Check the load of the whole charging system.
- Do not quick charge the battery. Quick charging should only be done in an emergency.
- Remove the battery from the motorcycle for charging.
- When replacing the battery, do not use a traditional battery.
- When charging, check the voltage with an voltmeter.

SPECIFICATIONS

Item		Standard	
ATV Name & Type		Mongoose/KXR 90	Mongoose/KXR 50
Battery	Capacity/Model	12V4AH	
	Voltage (20℃J)	Fully charged	13.1V
		Undercharged	12.3V
	Charging current	STD: 0.4A Quick: 4.0A	
	Charging time	STD: 5 10hr Quick: 30min	
A.C. Generator	Capacity	150W	
Regulator/Rectifier	Charging	14.5±0.5V	

TESTING INSTRUMENTS

Electric tester: YF-3051

TROUBLESHOOTING

No power

- Dead battery
- Disconnected battery cable
- Fuse burned out
- Faulty ignition switch

Low power

- Weak battery
- Loose battery connection
- Charging system failure
- Faulty regulator/rectifier

Intermittent power

- Loose battery cable connection
- Loose charging system connection
- Loose connection or short circuit in lighting system

Charging system failure

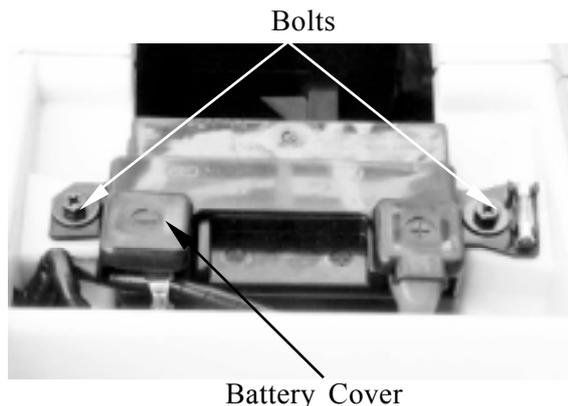
- Loose, broken or shorted wire or connector
- Faulty regulator/rectifier
- Faulty A.C. generator

14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

BATTERY REMOVAL

Remove seat. (See page 2-3)
Remove the battery cover, by removing the mount bolts. (Make sure the ignition switch is OFF)

Remove the battery by removing the bolts.

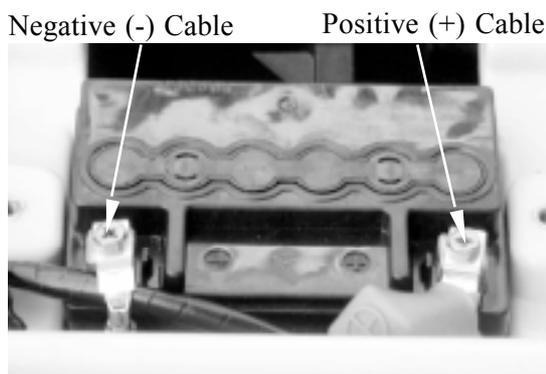


First disconnect the battery negative (-) cable and then the positive (+) cable.

 When disconnecting the battery positive (+) cable, do not touch the frame with tool; otherwise it will cause short circuit and sparks to fire the fuel.

The installation sequence is the reverse of removal.

 First connect the positive (+) cable and then negative (-) cable to avoid short circuit.

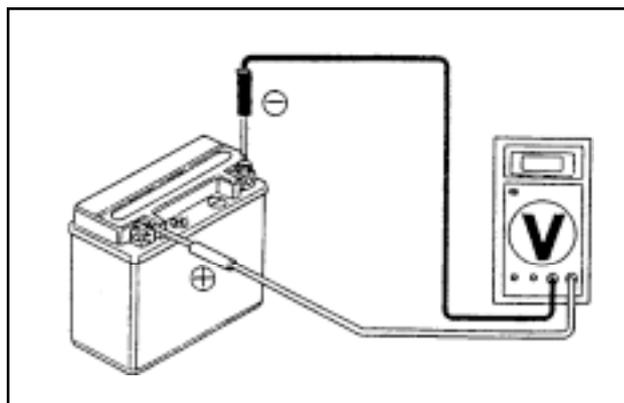


BATTERY VOLTAGE (OPEN CIRCUIT VOLTAGE) INSPECTION

Remove the seat. (See page 2-3)
Disconnect the battery cables.
Measure the voltage between the battery terminals.

Fully charged : 13.1V
Undercharged : 12.3V max

 Battery charging inspection must be performed with a voltmeter.



14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

CHARGING

Connect the charger positive (+) cable to the battery positive (+) terminal.

Connect the charger negative (-) cable to the battery negative (-) terminal.



- Keep flames and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals to prevent sparks near the battery to avoid explosion.
- Charge the battery according to



- Quick charging should only be done in an emergency.
- Measure the voltage 30 minutes after the battery is charged.

Charging current : Standard : 0.4A

Quick : 4.0A

Charging time : Standard : 5_ 10 hours

Quick : 30 minutes

After charging Open circuit voltage: 12.8V min.

Red

Power Lamp (Red)

Black

Charging Lamp
(Green)

14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

CHARGING SYSTEM

SHORT CIRCUIT TEST

Disconnect the ground wire from the battery and connect an ammeter across the battery negative (-) terminal and the ground wire. Turn the ignition switch OFF and check for short circuit.

- Connect the electric tester positive (+) terminal to ground wire and the tester negative (-) terminal to the battery negative (-) terminal.

If any abnormality is found, check the ignition switch and wire harness for short circuit.

CURRENT TEST

This inspection must be performed with an electric tester when the battery is fully charged.

Warm up the engine for inspection.

Connect the electric tester across the battery terminals. Disconnect the red wire from the fuse terminal and connect an ammeter between the red wire lead and the fuse terminal as shown.

Attach a tachometer to the engine.

Start the engine and gradually increase the engine speed to measure the limit voltage and current.

Limit Voltage/Current:

13.5_ 15.5V/0.5
A max (5000rpm
max)

If the limit voltage is not within the specified range, check the regulator/rectifier.

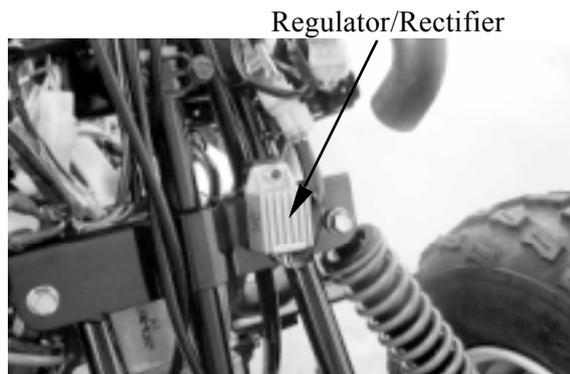


14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

REGULATOR/RECTIFIER

MAIN HARNESS CIRCUIT INSPECTION

Remove the front covers. (⇒2-2)
Remove the regulator/rectifier 4P coupler and check for continuity between the wire harness terminals according to the following :

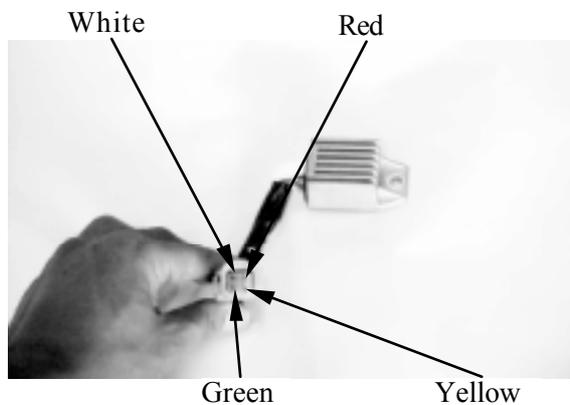


Item (Wire Color)	Judgment
Between battery (red) and engine ground	Battery has voltage
Between ground (green) and engine ground	Continuity exists
Between lighting wire (yellow) and engine ground (Remove the resistor coupler and auto bystarter coupler and turn the lighting switch OFF for inspection)	A.C. generator stator has resistance
Between charging coil (white) and engine ground	A.C. generator stator has resistance

REGULATOR/RECTIFIER INSPECTION

If the main harness terminals are normal, check the regulator/rectifier coupler for loose connection and measure the resistances between the regulator/rectifier terminals.

- * Do not touch the tester probes with your finger because human body has resistance.
- Use the following specified testers for accurate testing. Use of an improper tester in an improper range may give false readings.
- Testing instrument
YF-3501
- If the dry battery in the tester is weak, the readings will be incorrect. In this case, check the dry battery.



Probe⊕ Probe(-)	White	Yellow	Red	Green
White		°	°	°
Yellow	°		°	10.75M
Red	6.62M	°		°
Green	°	11.17M	°	

Replace the regulator/rectifier if the readings are not within the specifications in the table.

14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

A.C. GENERATOR CHARGING COIL

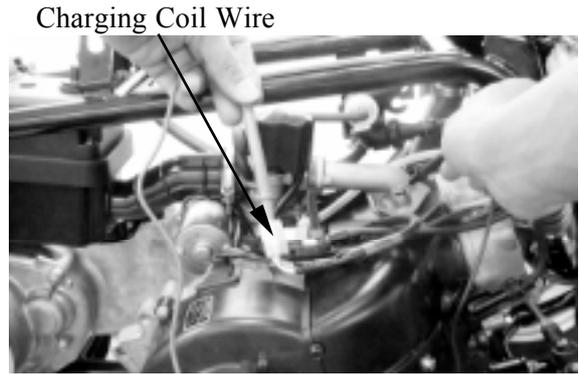
* The inspection of A.C. generator charging coil can be made with the engine installed.

INSPECTION

Disconnect the A.C. generator 2P connector. Measure the resistance between the A.C. generator white wire and engine ground with an electric tester (YF-3501 tester).

Standard: 2.2Ω (at 20°C)

Replace the A.C. generator charging coil if the reading is not within the specifications.



A.C. GENERATOR LIGHTING COIL

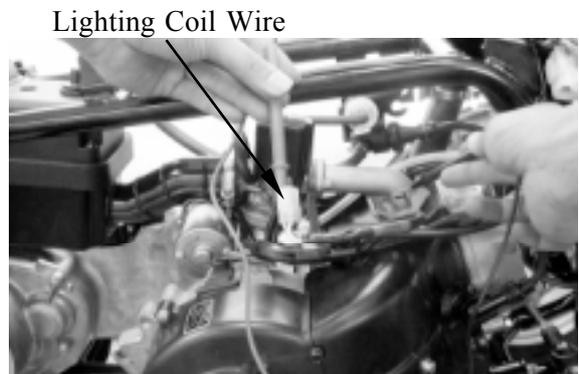
* The inspection of A.C. generator lighting coil can be made with the engine installed.

INSPECTION

Disconnect the A.C. generator 2P connector. Measure the resistance between the A.C. generator yellow wire and engine ground with an electric tester (YF-3501 tester).

Standard: 3.1Ω (20°C)

Replace the A.C. generator lighting coil if the reading is not within the specifications.

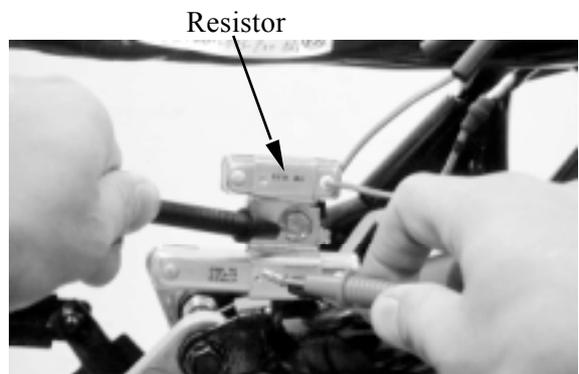


RESISTOR INSPECTION

Remove the front covers. (⇒2-2)
Measure the resistance between the resistor lead and engine ground.

Resistances:

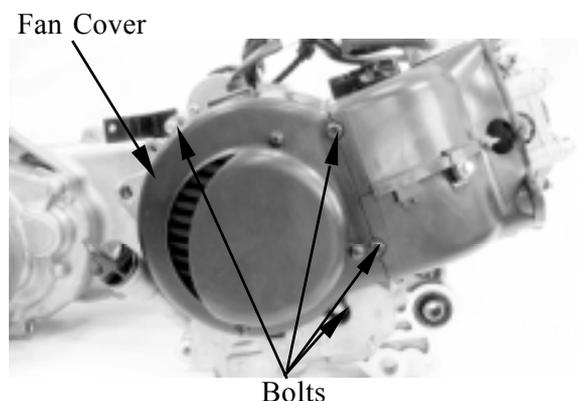
Mongoose/KXR 90: 5W12Ω
30W7.5Ω
Mongoose/KXR 50: 5W10.2Ω
30W5.9Ω



A.C. GENERATOR REMOVAL

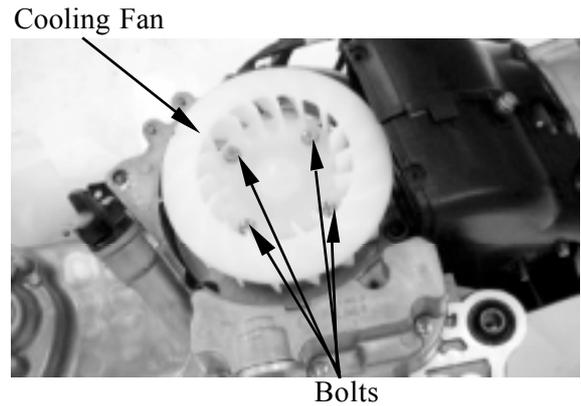
Remove the four bolts attaching the cooling fan cover.

Remove the fan cover.



14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

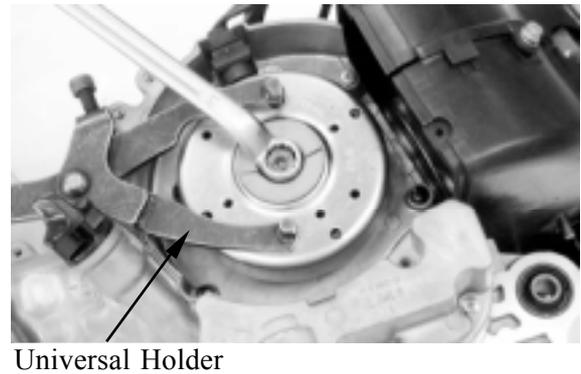
Remove the cooling fan by removing the four cooling fan attaching bolts.



Hold the flywheel with an universal holder.
Remove the flywheel nut.

Special

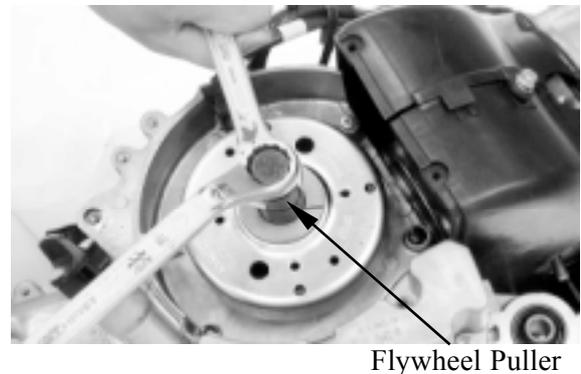
Universal Holder E017



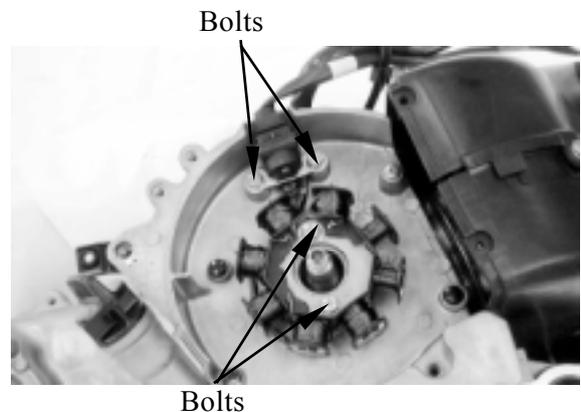
Remove the A.C. generator flywheel using the flywheel puller.

Special

Flywheel Puller E001

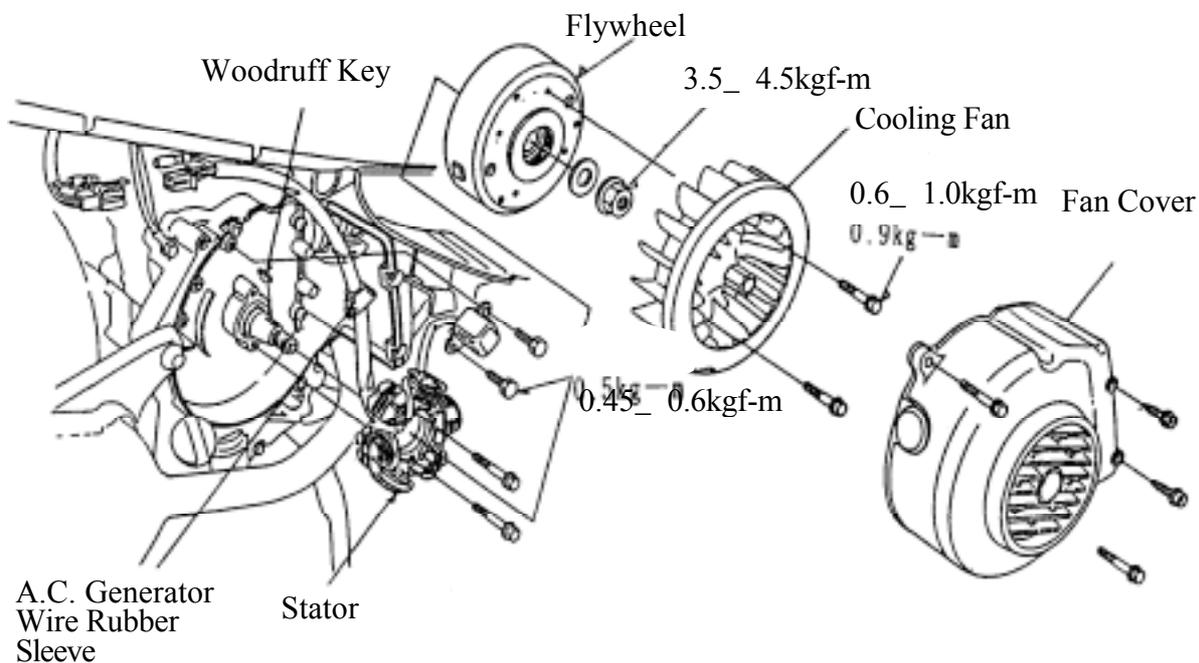


Remove the pulser coil bolts.
Remove the A.C. generator wire rubber sleeve and pulser coil from the right crankcase.
Remove the two bolts and A.C. generator stator.



14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

A.C. GENERATOR INSTALLATION



Reverse the A.C. GENERATOR
REMOVE” procedures.

Install the A.C. generator stator and pulser
coil onto the right crankcase.
Install the A.C. generator wire rubber sleeve.
Tighten the stator and pulser coil bolts.

Torques: Pulser Coil: 0.45~0.6kgf-m

Stator: 0.8~1.2kgf-m

Connect the A.C. generator wire connector.

Clean the taper hole in the flywheel off any
burrs and dirt.

Install the woodruff key in the crankshaft
keyway.

Install the flywheel onto the crankshaft with
the flywheel hole aligned with the
crankshaft woodruff key.

* The inside of the flywheel is magnetic.
Make sure that there is no bolt or nut
before installation.



Woodruff Key

14. BATTERY/CHARGING SYSTEM/ A.C. GENERATOR

 **KYMCO**
Mongoose/KXR 90/50

Hold the flywheel with the universal holder
and tighten the flywheel nut.

Torque: 3.5~4.5kgf-m

 Special

Universal Holder E017

Install the cooling fan.

Torque: 0.6~1.0kgf-m

Install the fan cover and tighten bolts.