

16. BATTERY/CHARGING SYSTEM

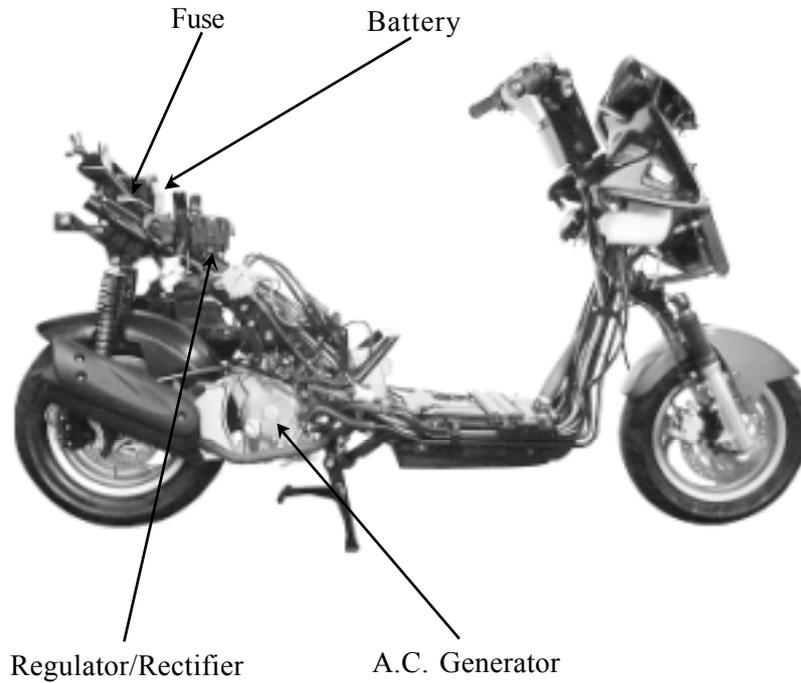
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BATTERY/CHARGING SYSTEM

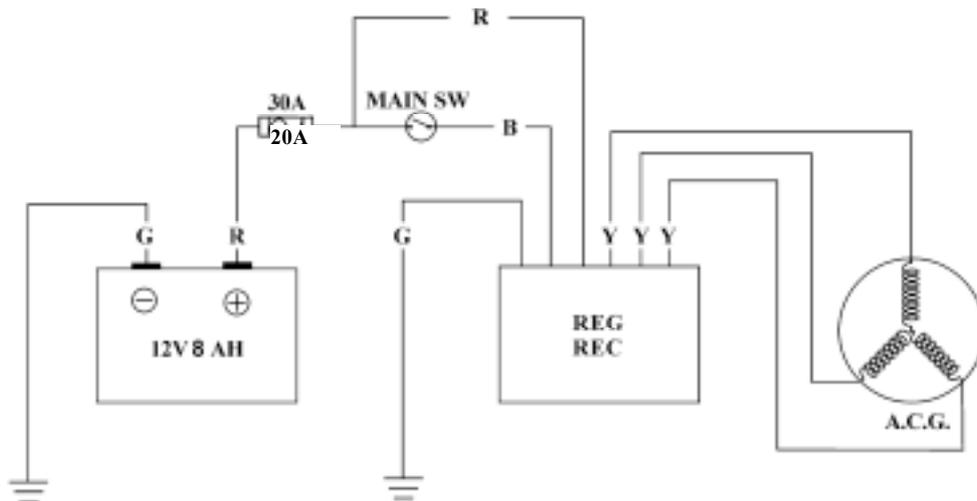
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16. BATTERY/CHARGING SYSTEM

CHARGING SYSTEM LAYOUT



CHARGING CIRCUIT



16. BATTERY/CHARGING SYSTEM

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 electric tester.

SPECIFICATIONS

Item		Standard	
Battery	Capacity		12V8AH
	Voltage (20°C)	Fully charged	13.2V
		Undercharged	12.3V
	Charging current		STD: 0.9A Quick: 4.0A
	Charging time		STD: 5-10hr Quick: 30min
A.C. Generator	Capacity		160W/500rpm
	Charging coil resistance (20°C)		Yellow_ Yellow 0.6_ 1.6□
	Charging rpm		1300rpm max (14V)
	Charging performance		8A min/5000rpm
Regulator/Rectifier	Limit voltage		14.5±0.5V

TESTING INSTRUMENTS

Ammeter
Electric tester
Tachometer

TORQUE VALUES

Pulser coil bolt 4.9N-m
Coil lock bolt 8.8N-m
Flywheel nut 34.3_ 44.1N-m

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SPECIAL TOOLS

Universal holder
Flywheel puller

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 ignition system

Charging system failure

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

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CHARGING SYSTEM

CURRENT TEST

- * Use a fully charged battery (12.8V min.) to check the charging system.

Warm up the engine after connecting a fully charged battery.

Connect an 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.

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: 14_ 15V/0.5A
max. (5000rpm
max.)

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



Red Wire



PERFORMANCE TEST

Engine Speed	2500rpm	5000rpm
Charging Current	6A min.	8A min.

- * When measuring the charging current, disconnect the black wire from the regulator/rectifier wire coupler.

If the readings do not meet the specified values, check the regulator/rectifier.

A.C. GENERATOR INSPECTION

- * This test can be made without removing the stator from the engine. Disconnect the yellow wire from the auto bystarter.

Remove the frame center cover.

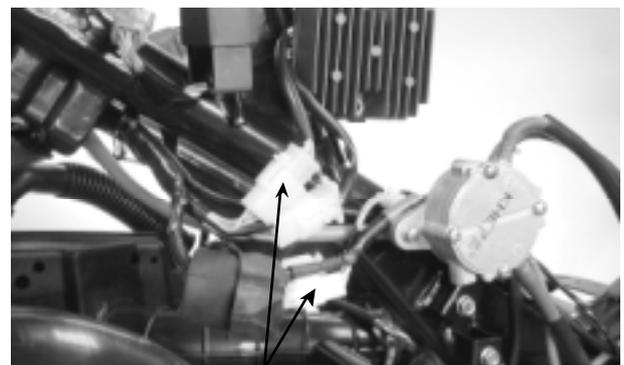
Disconnect the A.C. generator connector.

Check the continuity between the yellow wires and ground.

There should be continuity between the yellow wires and no continuity between each yellow wire and ground.

Resistance:

Yellow_ Yellow	0.6_ 1.6Ω
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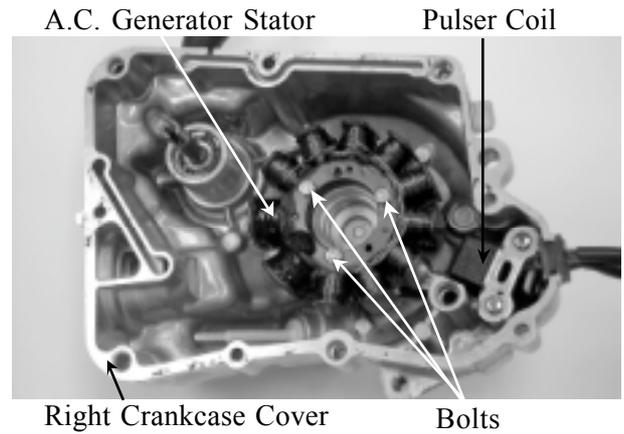


A.C. Generator Connector

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A.C. GENERATOR REMOVAL

A.C. generator removal (⇒ 10-3)
 A.C. generator installation (⇒ 10-6)



REGULATOR/RECTIFIER

INSPECTION

Remove the frame front cover. (⇒ 2-5)
 Remove the regulator/rectifier wire coupler.
 Check the continuity between the wire terminals.

Normal Direction: Continuity

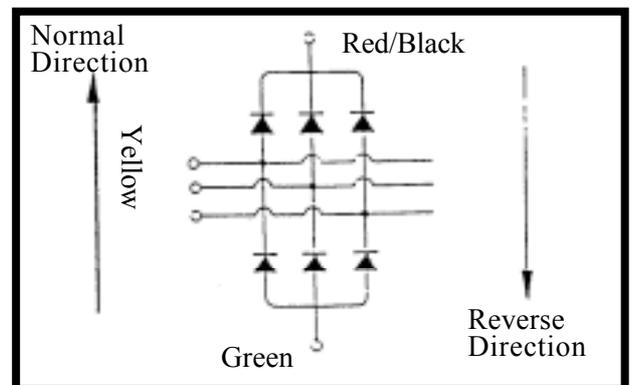
	(+) Probe	(-) Probe
I	Yellow	Green
II	Red/Black	Yellow



Regulator/Rectifier

Reverse Direction: No Continuity

	(+) Probe	(-) Probe
I	Green	Yellow
II	Yellow	Red/Black



VOLTAGE REGULATION TEST

Connect a voltmeter across the battery terminals.
 Start the engine and gradually increase the engine speed.
 The battery terminal voltage should be within 14.0_ 15.0V.

