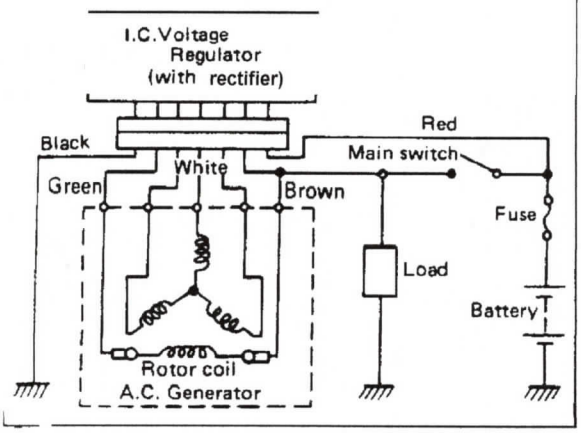
B. CHARGING SYSTEM

1. Block Diagram

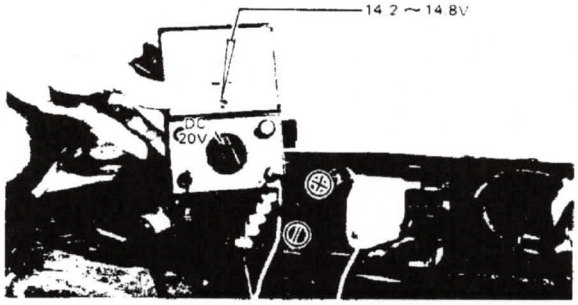


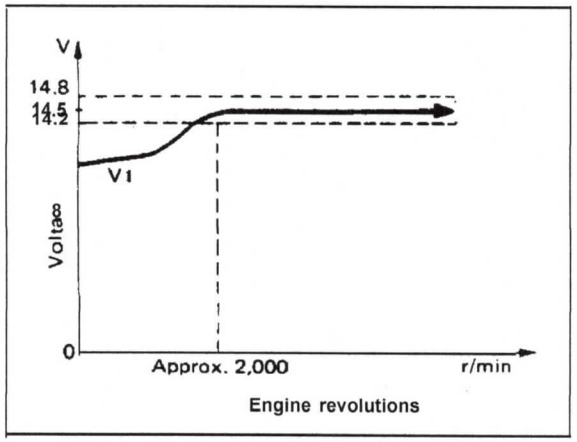
2. A.C. Generator/Voltage Regulator

a. Output voltage check

1) Remove the seat and left side cover.
2) Connect a D.C. voltmeter to the battery terminals and start the engine.
3) Accelerate the engine to approximately 2,000 r/min or more and check the generated voltage.

Generated voltage: 14.2 ~14.8V





NOTE:

Remove the headlight fuse (10A) in the fuse box so that the headlight does not turn on when the engine is started. Do not turn on the signals.

4) If the indicated voltage cannot reach the specification, then perform the following tests.

-CAUTION:

Never disconnect the wires from the battery while the generator is in operation. If the battery is disconnected, the voltage across the generator terminals will increase, damaging the semiconductors.

b. Brush

Check the brush length. Replace brush if at, or near, limits. Check the brush spring pressure by comparing it with a new spring. Replace the old spring if it is weak.

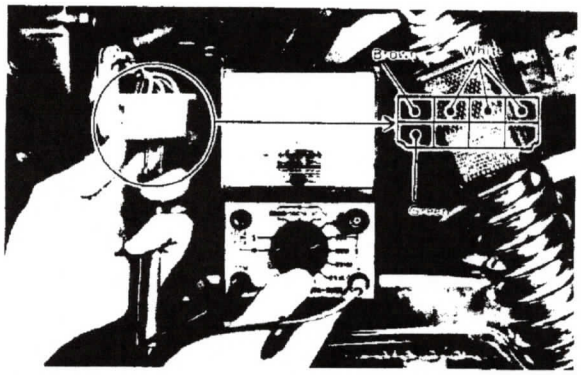
Minimum brush length: 7 mm (0.28 in)

c. Rotor coil/Stator coil

Check the resistance between terminals using the Yamaha Pocket Tester or other circuit tester as shown. If resistance is out of specification, check the coil connections. If the coil connections are good, then the coil is broken inside and it should be replaced.

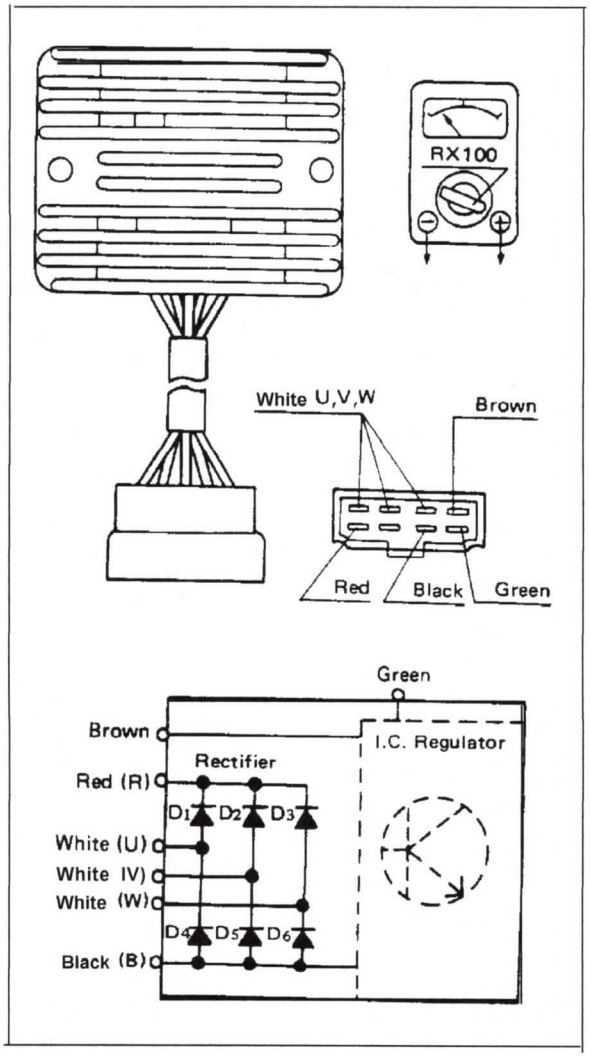
Rotor coil resistance (Green-Brown):
5.3Ω ± 10% at 20°C (68°F)
Stator coil resistance (White-White):
0.46Ω ± 10% at 20°C (68°F)

All three stator windings must be checked. Also test between each terminal and ground. A reading other than infinity indicates an improper ground which must be corrected.



d. Silicon rectifier

Check the silicon rectifiers as specified using the Yamaha Pocket Tester or other circuit tester. Even if only one of the elements is broken, replace the voltage regulator assembly.



Checking element	Tester lead connecting point (+) (red)	Tester lead connecting point (−) (black)	Good	Replace (element shorted)	Replace (element opened)
D1	R	U	○	○	x
	U	R	x	○	x
D2	R	V	○	○	x
	V	R	x	○	x
D3	R	W	○	○	x
	W	R	x	○	x
D4	U	B	○	○	x
	B	U	x	○	x
D5	V	B	○	○	x
	B	V	x	○	x
D6	W	B	○	○	x
	B	W	x	○	x

○ : Continuity
x : Discontinuity (∞)

-CAUTION:

The silicon rectifier can be damaged if subjected to overcharging. Special care should be taken to avoid a short circuit and/or incorrect connection of the positive and negative leads at the battery. Never connect the rectifier directly to the battery to make a continuity check.

e. If the above inspection reveals that the regulator is faulty, it cannot be adjusted and must be replaced.