

## 15-26 ELECTRICAL SYSTEM

### Charging System

★ If the output voltage shows the value in the table, the alternator operates properly and the regulator/rectifier is damaged. A much lower reading than that given in the table indicates that the alternator is defective.

- Check the stator coil resistance as follows.
- Stop the engine.
- Connect the hand tester as shown in the table 2.
- Note the readings (total 3 measurement).

**Table 2 Stator Coil Resistance**

Tester Range	Connections		Reading
	Tester (+) to	Tester (-) to	
$\times 1 \Omega$	One Black lead	Another Black lead	0.3 ~ 0.4 $\Omega$

★ If there is more resistance than shown in the table, or no hand tester reading (infinity) for any two leads, the stator has an open lead and must be replaced. Much less than this resistance means the stator is shorted, and must be replaced.

● Using the highest resistance range of the hand tester, measure the resistance between each of the black leads and chassis ground.

★ Any hand tester reading less than infinity ( $\infty$ ) indicates a short, necessitating stator replacement.

★ If the stator coils have normal resistance, but the voltage check showed the alternator to be defective; then the rotor magnets have probably weakened, and the rotor must be replaced.

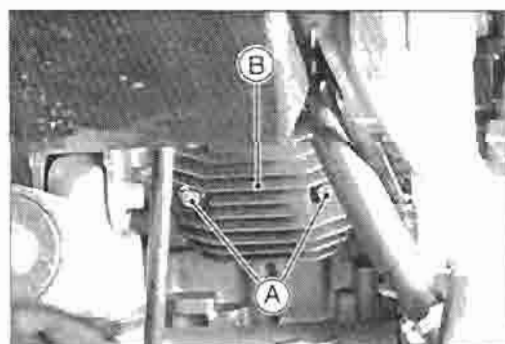
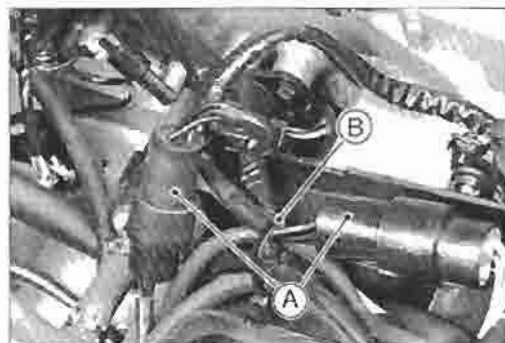
**Special Tool - Hand Tester: 57001-1394**

#### Regulator/Rectifier Inspection

- Remove:
  - Seat Cover (see Frame chapter)
  - Fuel Tank (see fuel System chapter)
  - Connectors [A] (disconnect)
  - Clamp [B]

Bolts [A]

Regulator/Rectifier [B]



## Charging System

### Rectifier Circuit Check:

- Check conductivity of the following pair of terminals.

#### Rectifier Circuit Inspection

Tester/ connection	BK/BL-BK1,	BK/BL-BK2,	BK/BL-BK3
	BK/W-BK1,	BK/W-BK2,	BK/W-BK3

- ★ The resistance should be low in one direction and more than ten times as much in the other direction. If any two leads are low or high in both directions, the rectifier is defective and must be replaced.

#### NOTE

The actual meter reading varies with the meter used and the individual rectifier, but, generally speaking the lower reading should be from zero to one half the scale.

### Regulator Circuit Check:

To test the regulator out of circuit, use three 12 V batteries and a test light (12 V 3 ~ 6 W bulb in a socket with leads).

#### CAUTION

The test light works as an indicator and also a current limiter to protect the regulator/rectifier from excessive current. Do not use an ammeter instead of a test light.

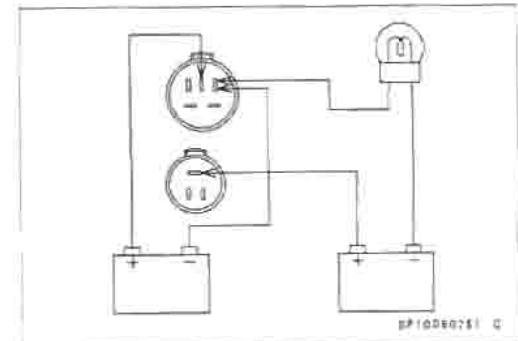
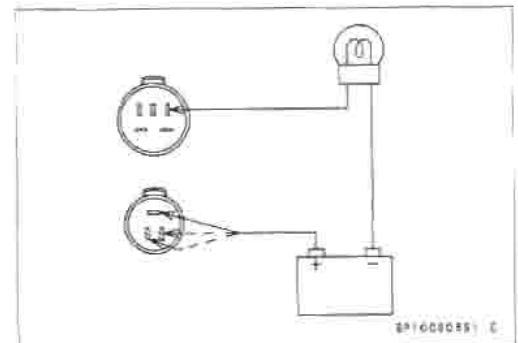
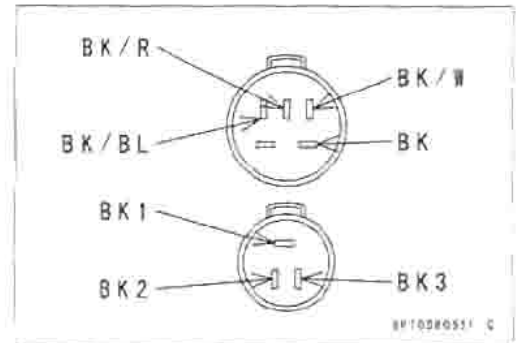
- Check to be sure the rectifier circuit is normal before continuing.

#### Regulator Circuit Test-1st Step:

- Connect the test light and the 12 V battery to the regulator/rectifier as shown.
- Check BK1, BK2, and BK3 terminal respectively.
- ★ If the test light turns on, the regulator/rectifier is defective. Replace it.
- ★ If the test light does not turn on, continue the test.

#### Regulator Circuit Test-2nd Step:

- Connect the test light and the 12 V battery in the same manner as specified in the "Regulator Circuit Test-1st Step".
- Apply 12 V to the BK/R terminal.
- Check BK1, BK2, and BK3 terminal respectively.
- ★ If the test light turns on, the regulator/rectifier is defective. Replace it.
- If the test light does not turn on, continue the test.



## 15-28 ELECTRICAL SYSTEM

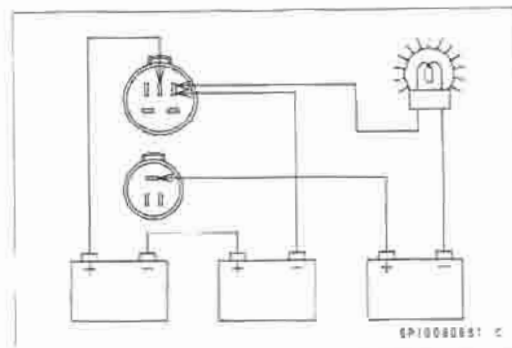
### Charging System

#### Regulator Circuit Test-3rd Step:

- Connect the test light and the 12 V battery in the same manner as specified in the "Regulator Circuit Test-1st Step"
- Momentarily apply 24 V to the BK/R terminal by adding a 12 V battery.
- Check BK1, BK2, and BK3 terminals respectively.

#### CAUTION

Do not apply more than 24 V to the regulator/rectifier and do not leave the 24 V applied for more than a few seconds, or the unit will be damaged.



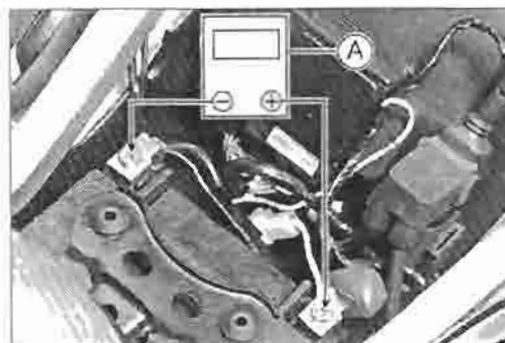
- ★ If the test light did not light when the 24 V was applied momentarily to the BK/R terminal, the regulator/rectifier is defective. Replace it.
- ★ If the regulator/rectifier passes all of the tests described, it may still be defective. If the charging system still does not work properly after checking all of the components and the battery, test the regulator/rectifier by replacing it with a known good unit.

#### Regulator/Rectifier Output Voltage Inspection

- Check the battery condition (see Battery section).
- Warm up the engine to obtain actual alternator operating conditions.
- Remove the seats (see Frame chapter).
- Check that the ignition switch is turned off, and connect the hand tester [A] to the battery terminal.

Special Tool - Hand Tester: 57001-1394

- Start the engine, and note the voltage readings at various engine speeds with the headlight turned on and then turned off. (To turn off the headlight of US, Canada, Australia and Malaysia models, disconnect the headlight connector in the upper fairing.) The readings should show nearly battery voltage when the engine speed is low, and, as the engine speed rises, the readings should also rise. But they must be kept under the specified voltage.



#### Regulator/Rectifier Output Voltage

Tester Range	Connections		Reading
	Tester (-) to	Tester (+) to	
25 V DC	Battery (-)	Battery (+)	14.2 ~
			15.2 V

- Turn off the Ignition switch to stop the engine, and disconnect the hand tester
- ★ If the regulator/rectifier output voltage is kept between the values given in the table, the charging system is considered to be working normally.
- ★ If the output voltage is much higher than the values specified in the table, the regulator/rectifier is defective or the regulator/rectifier leads are loose or open.
- ★ If the battery voltage does not rise as the engine speed increases, then the regulator/rectifier is defective or the alternator output is insufficient for the loads. Check the alternator and regulator/rectifier to determine which part is defective.

## Charging System

Charging System Circuit

