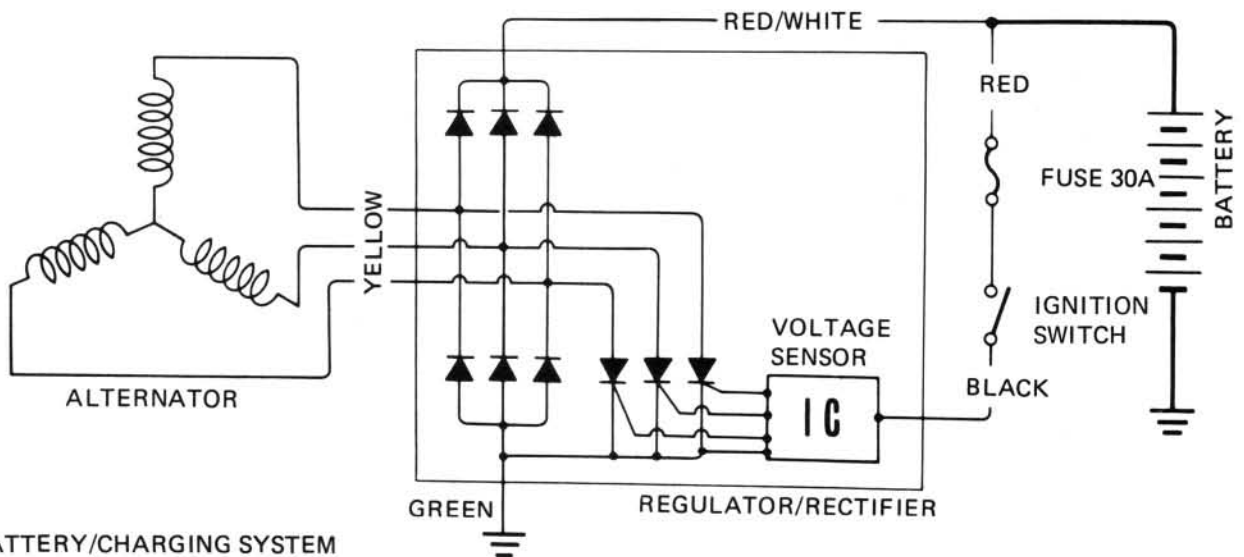
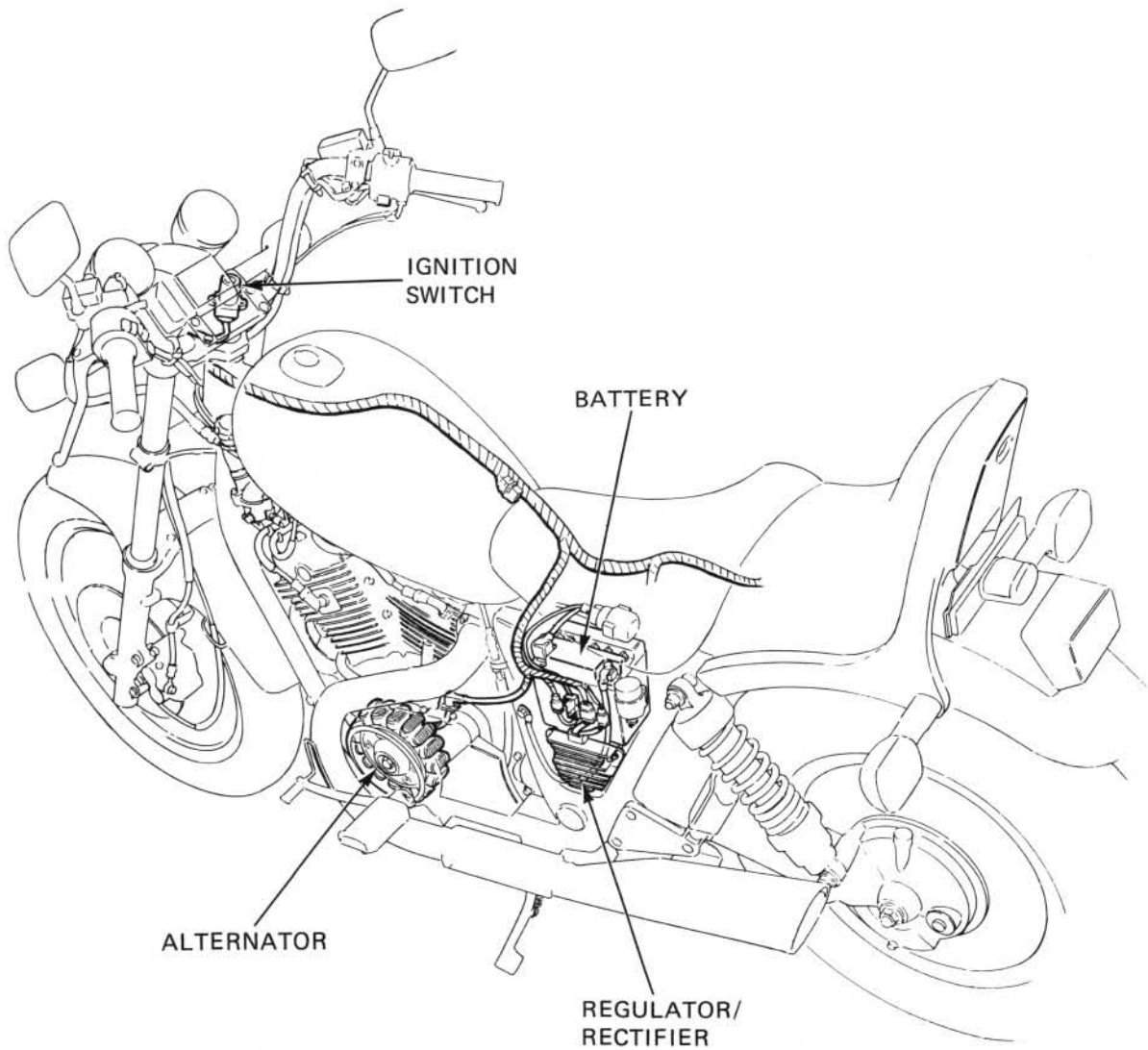


# BATTERY/CHARGING SYSTEM



BATTERY/CHARGING SYSTEM

# 18. BATTERY / CHARGING SYSTEM

SERVICE INFORMATION	18-1
TROUBLESHOOTING	18-2
BATTERY	18-3
CHARGING SYSTEM	18-4

## SERVICE INFORMATION

### GENERAL

- Battery fluid level should be checked regularly. Fill with distilled water when necessary.
- Quick charge a battery, only in an emergency. Slow-charging is preferred.
- Remove the battery from the motorcycle for charging. If the battery must be charged on the motorcycle, disconnect the battery cables.

#### WARNING

*Do not smoke, and keep flames away from a charging battery. The gas produced by a battery will explode if flames or sparks are brought near.*

- All charging system components can be tested on the motorcycle.
- Alternator removal is in Section 8.

### SPECIFICATIONS

Battery	Capacity	12V 16AH	
	Specific gravity	1.280/20°C (68°F)	
	Charging rate	1.4 amperes maximum	
Alternator Capacity	1,000 rpm	5,000 rpm	
	11.8A min. (No. load)	25.6A min. (No load)	
Voltage regulator	Transistorized non-adjustable regulator		

## BATTERY/CHARGING SYSTEM

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### TROUBLESHOOTING

#### No power – key turned on:

1. Dead battery.
  - Low fluid level.
  - Low specific gravity.
  - Charging system failure.
2. Disconnected battery cable.
3. Main fuse burned out.
4. Faulty ignition switch.

#### Low power – key turned on:

1. Weak battery.
  - Low fluid level.
  - Low specific gravity.
  - Charging system failure.
2. Loose battery connection.

#### Low power – engine running:

1. Battery undercharged.
  - Low fluid level.
  - One or more dead cells.
2. Charging system failure.

#### Intermittent power:

1. Loose battery connection.
2. Loose charging system connection.
3. Loose starting system connection.
4. Loose connection or short circuit in ignition system.
5. Loose connection or short circuit in lighting system.

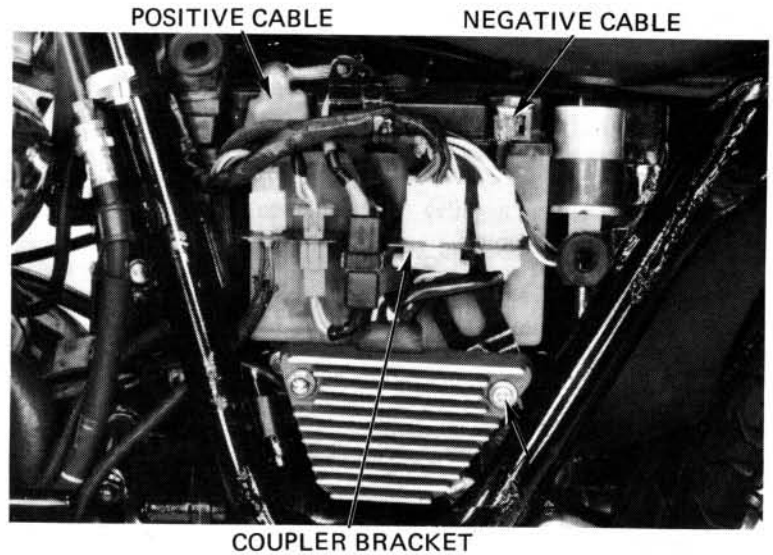
#### Charging system failure:

1. Loose, broken or shorted wire or connection.
2. Faulty voltage regulator/rectifier.
3. Faulty alternator.

## BATTERY

### REMOVAL

Remove the left side cover.  
 Remove the regulator/rectifier mount screw.  
 Disconnect the ground cable at the battery terminal.  
 Open the coupler bracket, then disconnect the positive cable.  
 Remove the battery.



### TESTING SPECIFIC GRAVITY

Test each cell with a hydrometer.

**SPECIFIC GRAVITY: 1.270–1.290 (20°C, 68°F)**

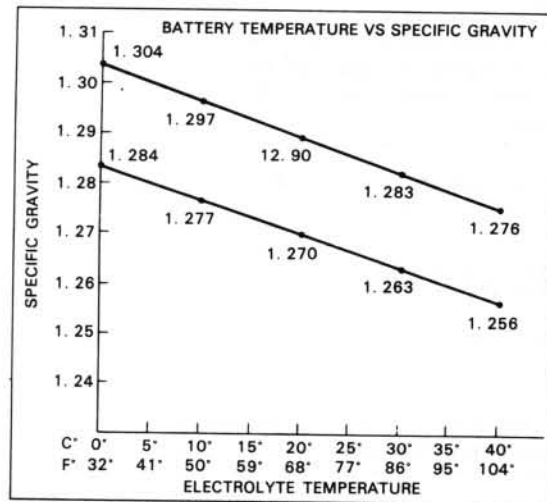
1.270–1.290	Fully charged
Below 1.260	Undercharged

#### NOTES:

- The battery must be recharged if the specific gravity is below 1.230.
- The specific gravity varies with the temperature as shown in the accompanying table.
- Replace the battery if sulfation is evident or if the space below the cell plates is filled with sediment.

#### **WARNING**

*The battery contains sulfuric acid. Avoid contact with skin, eyes, or clothing.  
 Antidote: Flush with water and get prompt medical attention.*



Specific gravity changes by 0.007 for every 10°C.

## BATTERY/CHARGING SYSTEM

### CHARGING

Remove the battery cell caps. Fill the battery cells with distilled water to the upper level line, if necessary.

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

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

**Charging current: 1.6 amperes max.**

Charge the battery until specific gravity is 1.270–1.290 at 20°C (68°F).

#### WARNING

- Before charging a battery, remove the cap from each cell.
- Keep flames and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals to prevent sparks.
- Discontinue charging if the electrolyte temperature exceeds 45°C (113°F).

#### CAUTION:

- Quick-charging should only be done in an emergency; slow-charging is preferred.
- Route the breather tube as shown on the battery caution label.

After installing the battery, coat the terminals with clean grease.

## CHARGING SYSTEM

### CURRENT TEST

#### NOTE:

Be sure the battery is in good condition before performing this test.

Warm up the engine.

Remove the frame right side cover.

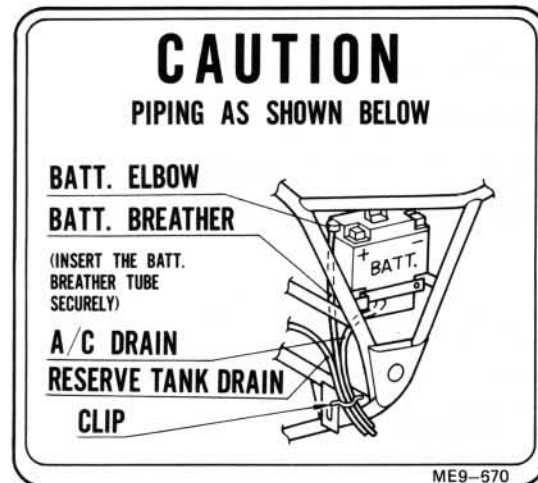
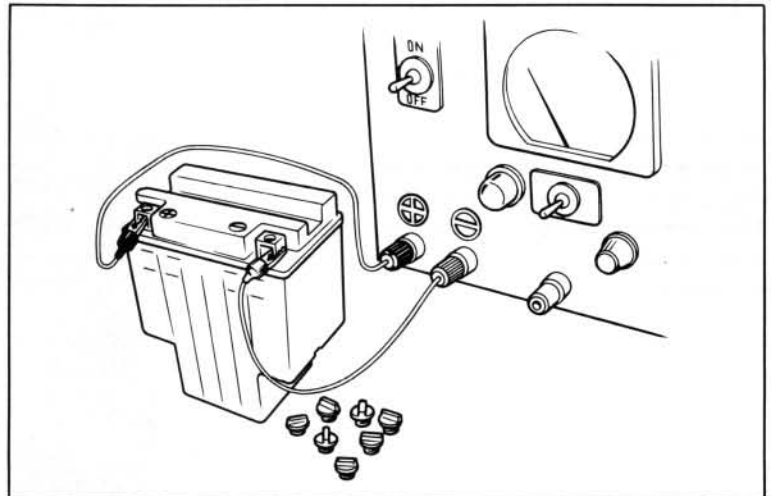
Disconnect the black wire at the regulator/rectifier coupler and disconnect the headlight.

Disconnect the battery positive cable at the battery terminal and connect an ammeter between the battery cable and terminal.

Allow the engine to idle.

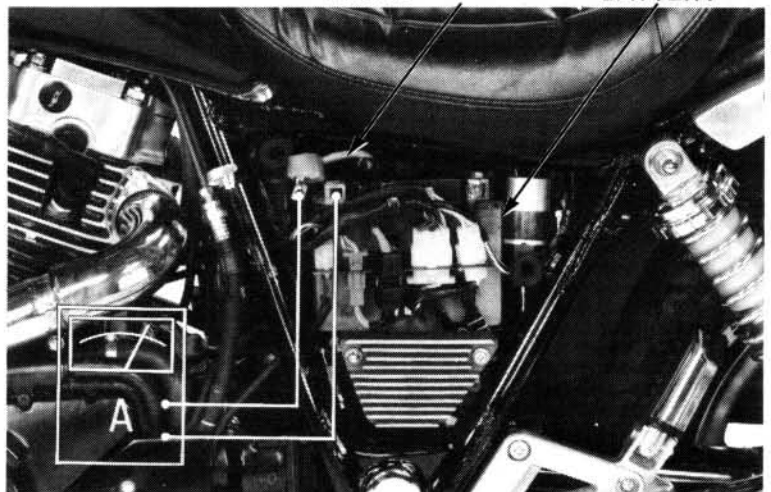
Increase engine speed slowly. Charging amperage should be a minimum of 11.8 at 1,000 rpm and should be a minimum of 25.6 amperes at 5,000 rpm.

Check the stator (page 18-5) and then the regulator/rectifier (page 18-5), if the charging specifications are not met.



BATTERY POSITIVE  
CABLE

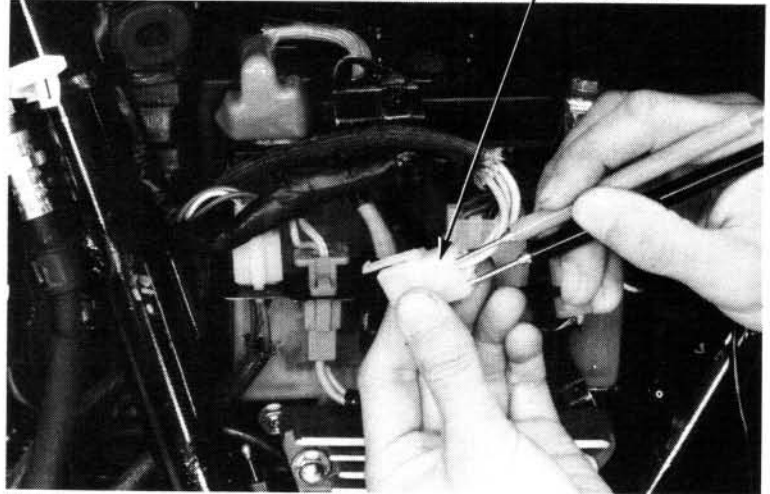
BATTERY



**STATOR CONTINUITY TEST**

Remove the left side cover.  
 Disconnect the alternator coupler.  
 Check for continuity between the leads, and between the leads and ground.  
 Replace the stator if there is no continuity between the leads, or if there is continuity between the leads and ground.

ALTERNATOR COUPLER



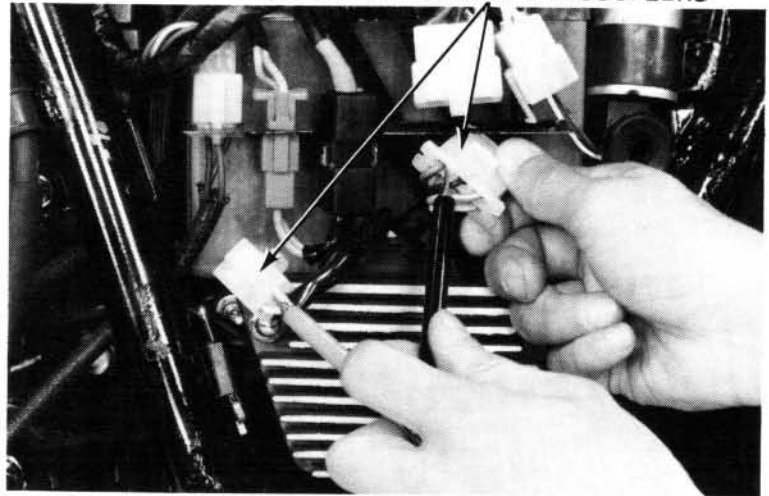
**VOLTAGE REGULATOR/RECTIFIER TEST**

Remove the left side cover.  
 Disconnect the regulator/rectifier couplers.  
 Check for continuity between the leads with an ohmmeter.

**NOTE:**

The test results shown are for a positive ground ohmmeter and the opposite results will be obtained when a negative ground ohmmeter is used.

REGULATOR/RECTIFIER COUPLERS

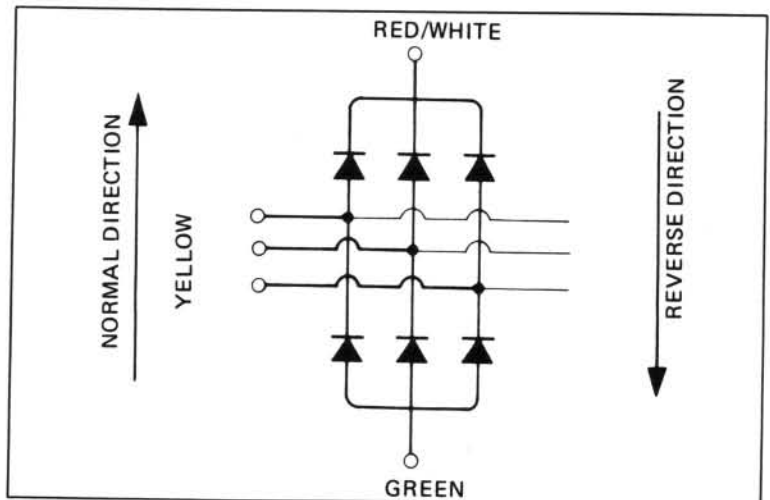


**NORMAL DIRECTION: CONTINUITY**

	⊕ probe	⊖ probe
I	YELLOW	GREEN
II	RED/WHITE	YELLOW

**REVERSE DIRECTION: NO CONTINUITY**

	⊕ probe	⊖ probe
I	GREEN	YELLOW
II	YELLOW	RED/WHITE



## BATTERY/CHARGING SYSTEM

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### VOLTAGE REGULATOR PERFORMANCE TEST

Connect a voltmeter across the battery.  
Check regulator performance with the engine running. The regulator must divert current to ground when battery voltage reaches 14.0 ~ 15.0 V.

