Electrical System

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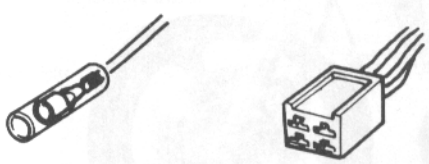
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Precautions

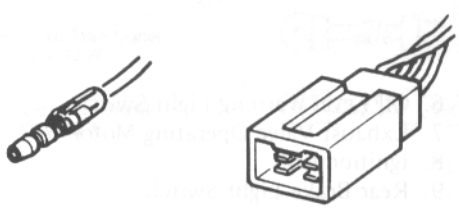
There are numbers of important precautions that are musts when servicing electrical system. Learn and observe all the rules below.

- Do not reverse the battery lead connections. This will burn out the diodes in the electrical parts.
- Always check battery condition before condemning other parts of an electrical system. A fully charged battery is a must for conducting accurate electrical system tests.
- The electrical parts should never be struck sharply, as with a hammer, or allowed to fall on a hard surface. Such a shock to the parts can damage them.
- To prevent damage to electrical parts, do not disconnect the battery leads or any other electrical connections when the ignition switch is on, or while the engine is running.
- Because of the large amount of current, never keep the starter switch pushed when the starter motor will not turn over, or the current may burn out the starter motor windings.
- Do not use a meter illumination bulb rated for other than voltage or wattage specified in the wiring diagram, as the meter or gauge panel could be warped by excessive heat radiated from the bulb.
- Take care not to short the leads that are directly connected to the battery positive (+) terminal to the chassis ground.
- Troubles may involve one or in some cases all items. Never replace a defective part without determining what CAUSED the failure. If the failure was brought on by some other item or items, they too must be repaired or replaced, or the new replacement will soon fail again.
- Make sure all connectors in the circuit are clean and tight, and examine wires for signs of burning, fraying, etc. Poor wires and bad connections will affect electrical system operation.
- Electrical Connectors

Female Connectors



Male Connectors

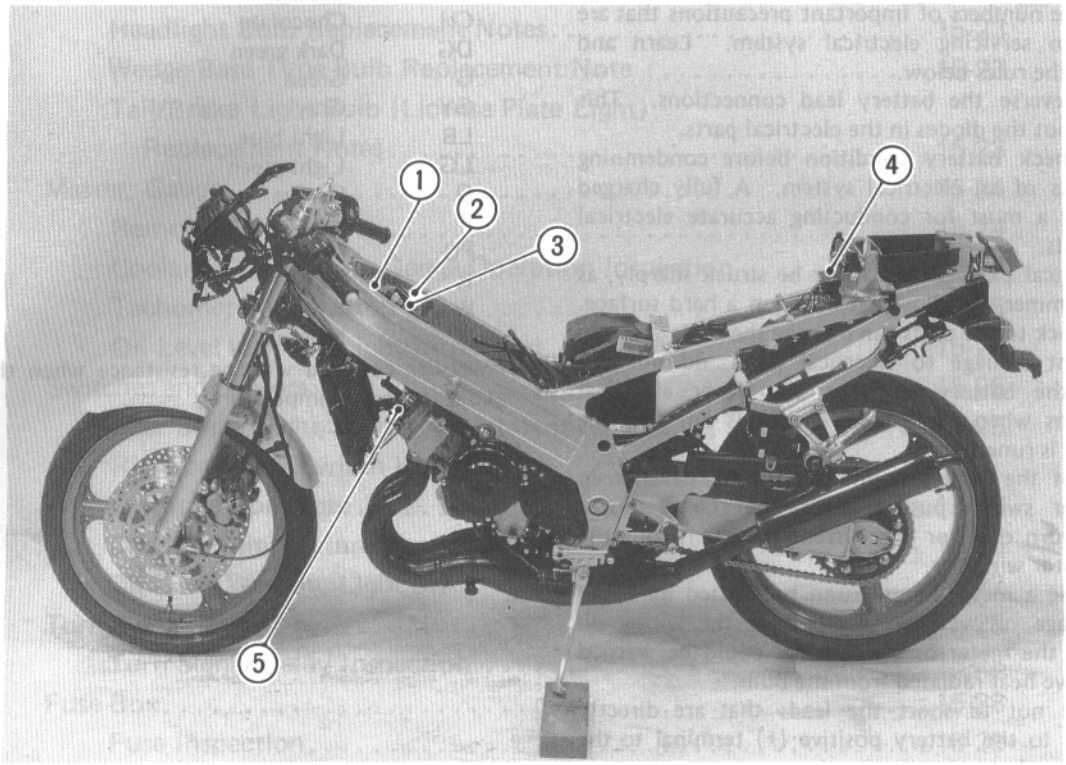


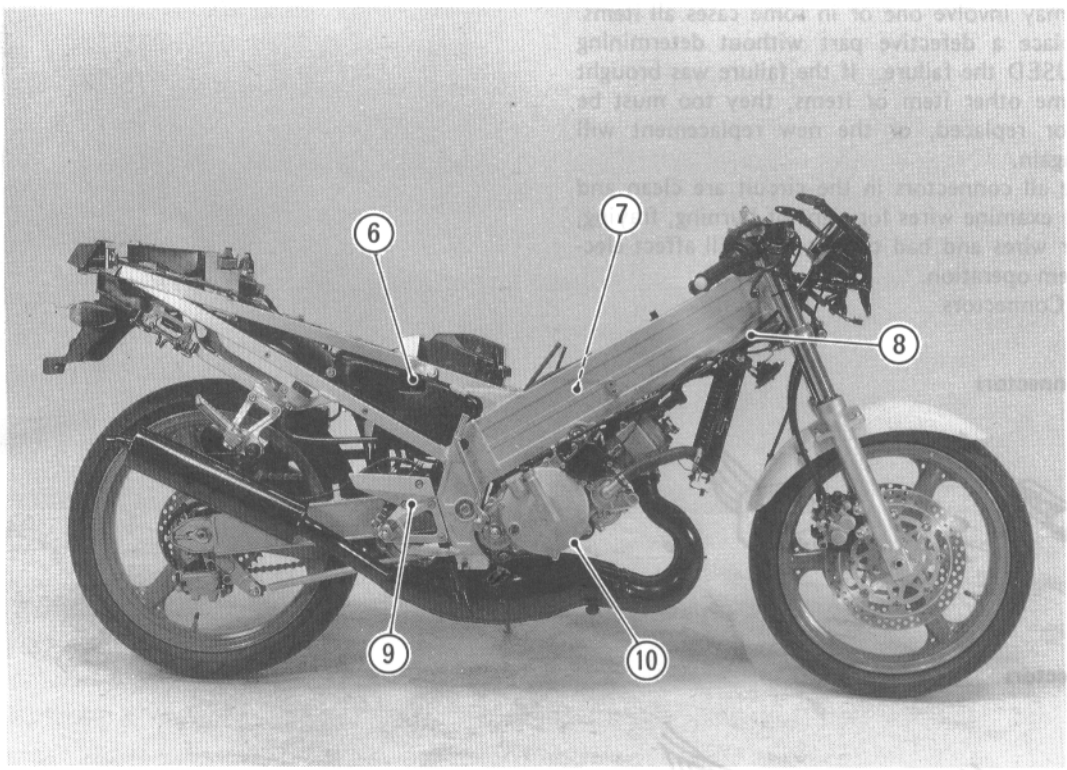
- Color Codes:

BK	Black
BL	Blue
BR	Brown
CH	Chocolate
DG	Dark green
G	Green
GY	Gray
LB	Light blue
LG	Light green
O	Orange
P	Pink
PU	Purple
R	Red
W	White
Y	Yellow

- Measure coil and winding resistance when the part is cold (at room temperature).

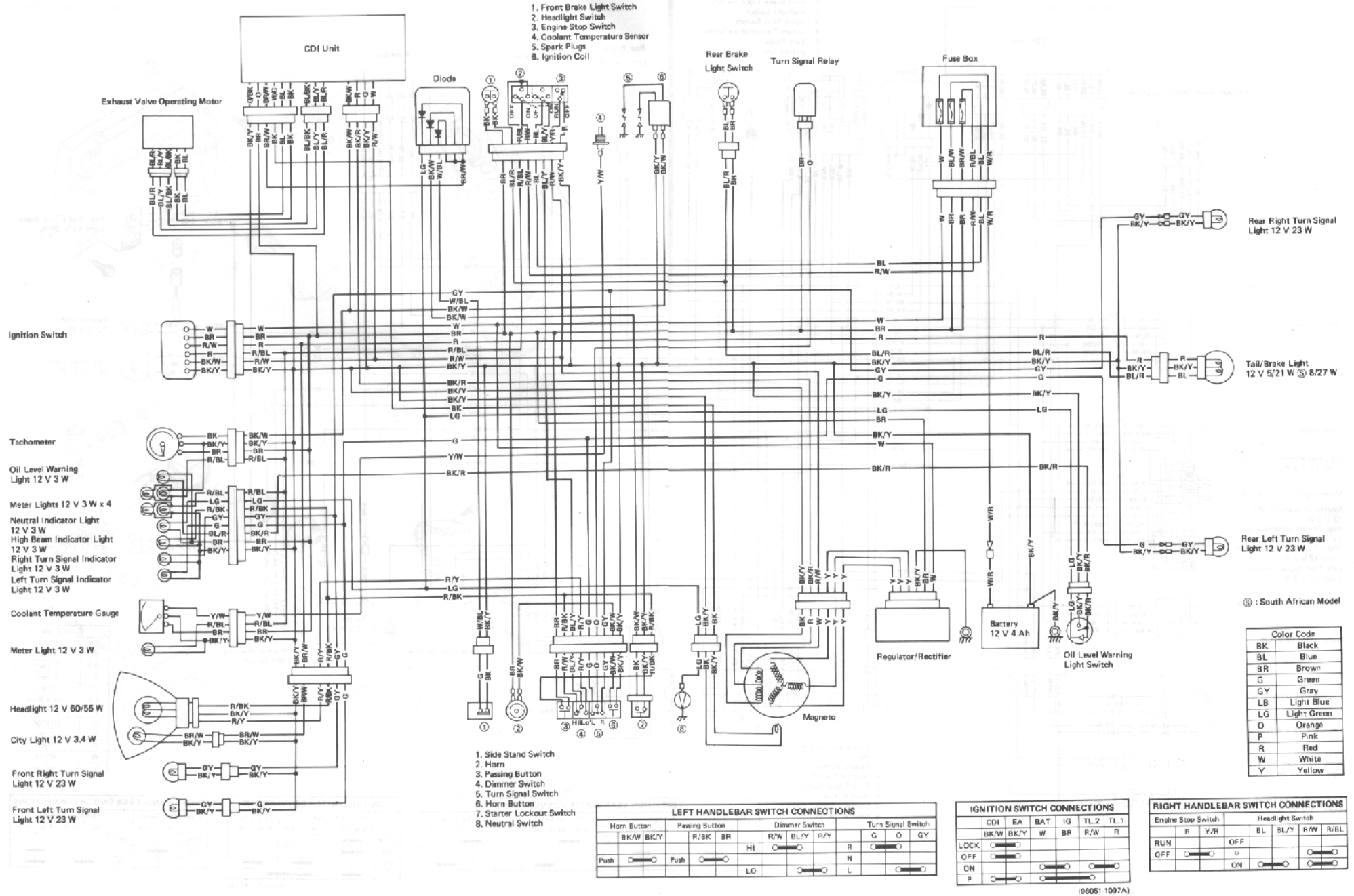
Parts Location





1. Regulator/Rectifier
2. Diode
3. Turn Signal Relay
4. CDI Unit
5. Exhaust Valve Operating Unit
6. Oil Level Warning Light Switch
7. Exhaust Valve Operating Motor
8. Ignition Coil
9. Rear Brake Light Switch
10. Neutral Switch

KR250-B1, B2 Wiring Diagram (Australian and South African models)



Ⓢ : South African Model

Color Code	
BK	Black
BL	Blue
BR	Brown
G	Green
GY	Gray
LB	Light Blue
LG	Light Green
O	Orange
P	Pink
R	Red
W	White
Y	Yellow

LEFT HANDLEBAR SWITCH CONNECTIONS

Horn Button		Passing Button		Dimmer Switch			Turn Signal Switch		
BK/W	BK/Y	R/BK	BR	R/W	BL/Y	R/Y	G	O	GY
Push		Push		HI			R		
							N		
				LO			L		

IGNITION SWITCH CONNECTIONS

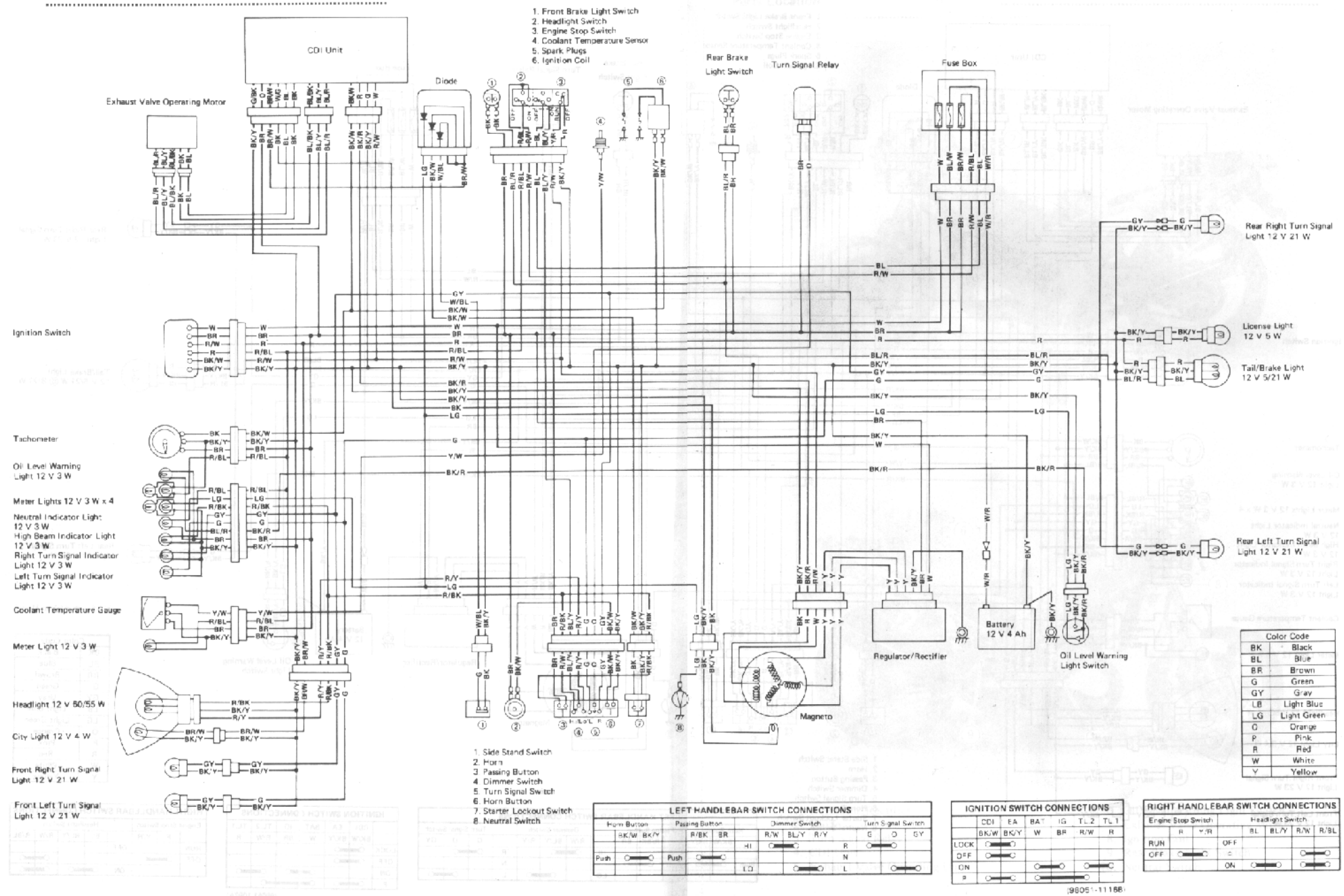
	CDI	EA	BAT	IG	TL.2	TL.1
	BK/W	BK/Y	W	BR	R/W	R
LOCK						
OFF						
ON						
P						

RIGHT HANDLEBAR SWITCH CONNECTIONS

Engine Stop Switch		Headlight Switch				
	R	Y/R		BL	BL/Y	R/W	R/BL
RUN			OFF				
OFF			O				
			ON				

(98051-1097A)

KR250-B2 Wiring Diagram
(Other than Australian and South African models)



Color Code	
BK	Black
BL	Blue
BR	Brown
G	Green
GY	Gray
LB	Light Blue
LG	Light Green
O	Orange
P	Pink
R	Red
W	White
Y	Yellow

LEFT HANDLEBAR SWITCH CONNECTIONS

Horn Button		Passing Button		Dimmer Switch			Turn Signal Switch		
	BK/W	BK/Y		R/BK	BR		R/W	BL/Y	R/Y		G	O	GY
						HI			R				
Push			Push						N				
						LO			L				

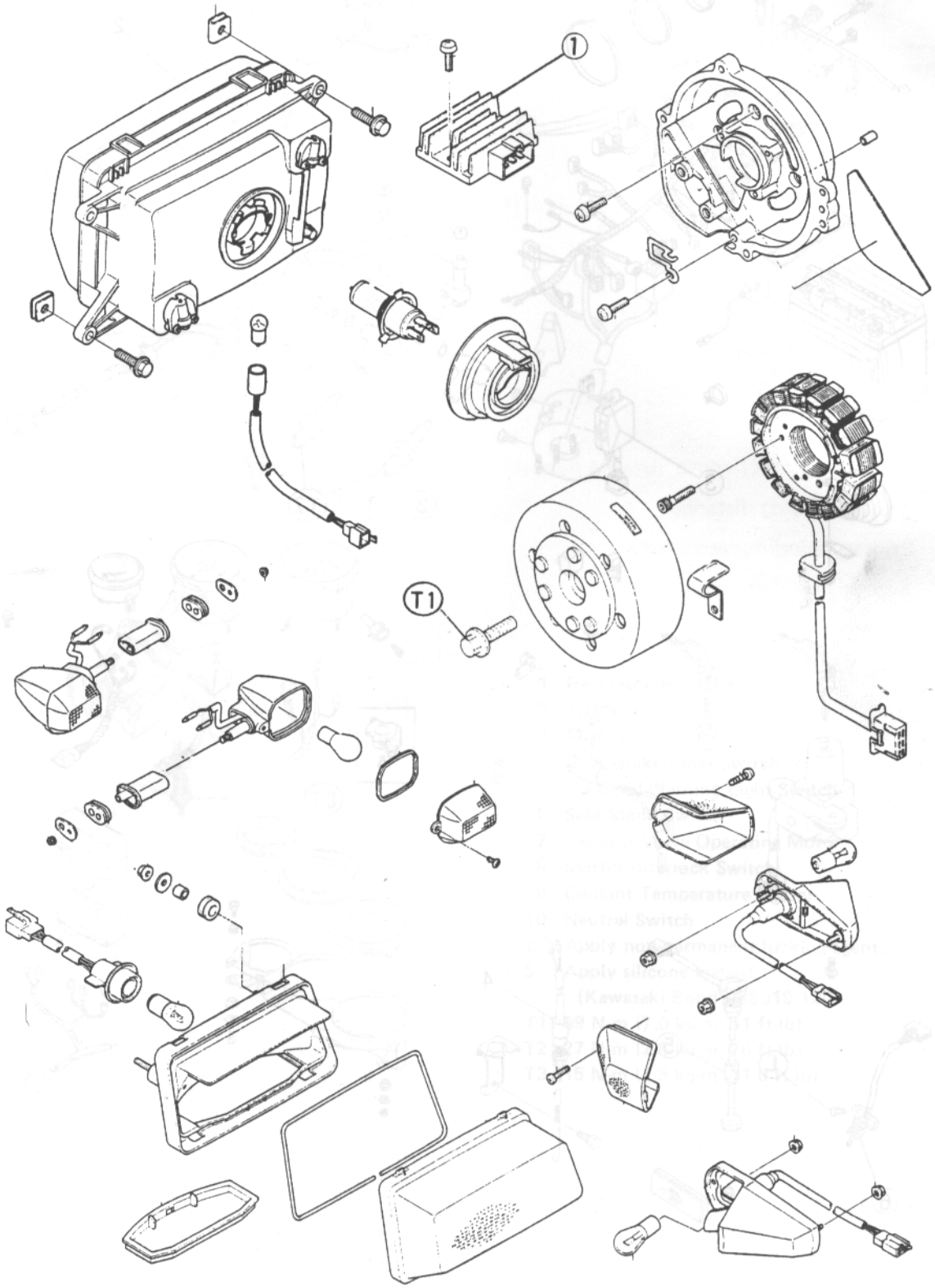
IGNITION SWITCH CONNECTIONS

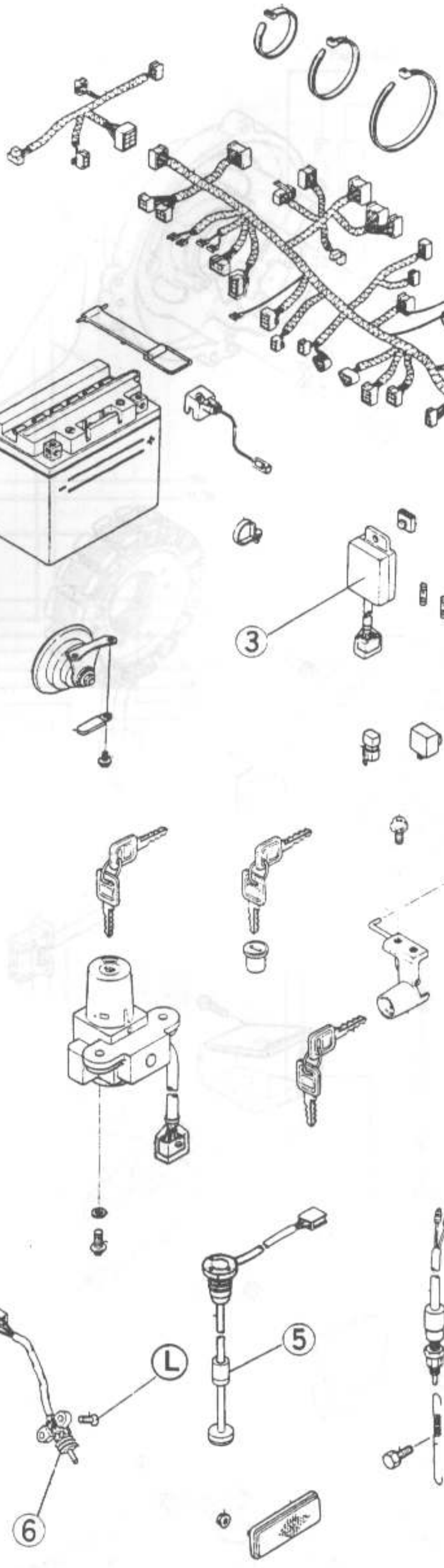
	CDI	EA	BAT	IG	TL 2	TL 1
	BK/W	BK/Y	W	BR	R/W	R
LOCK						
OFF						
ON						
P						

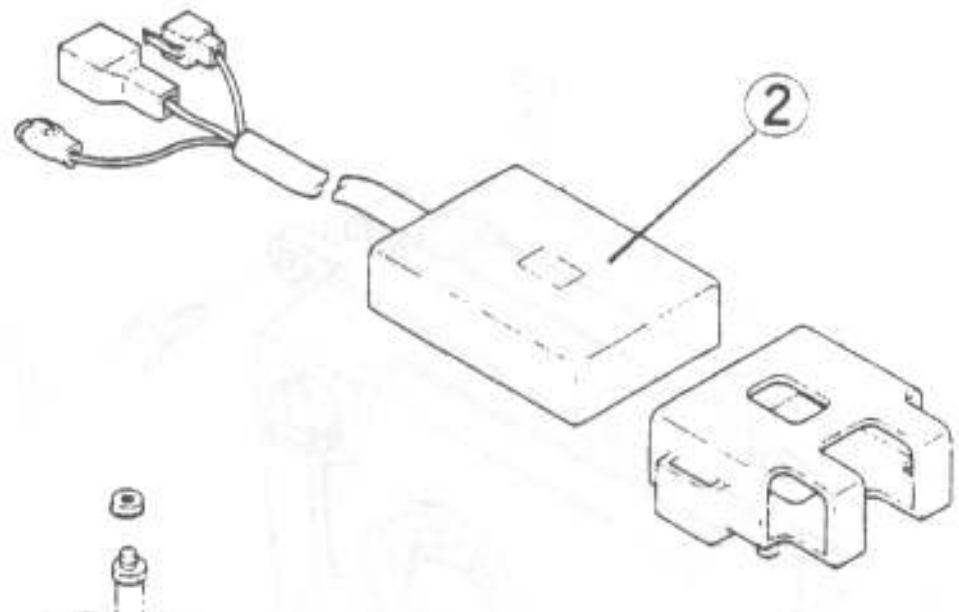
RIGHT HANDLEBAR SWITCH CONNECTIONS

Engine Stop Switch			Headlight Switch			
	R	Y/R		BL	BL/Y	R/W	R/BL
RUN			OFF				
OFF			○				
			ON				

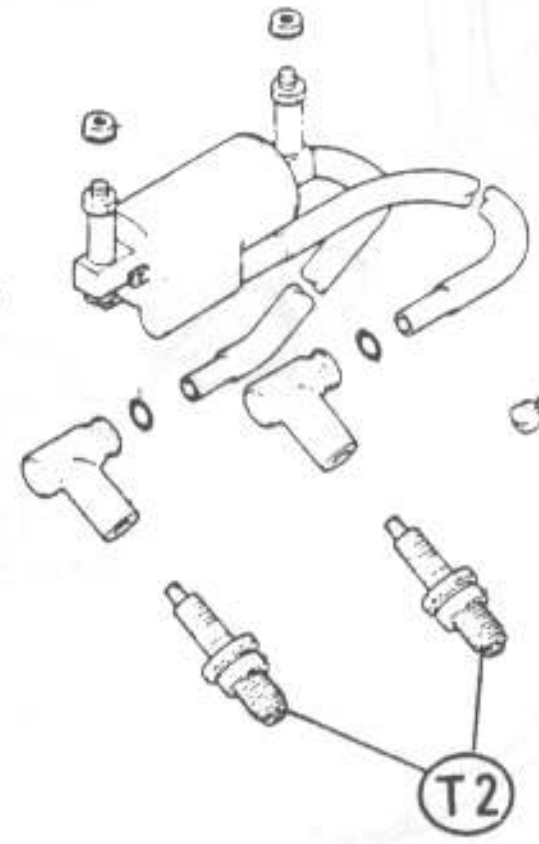
Exploded View

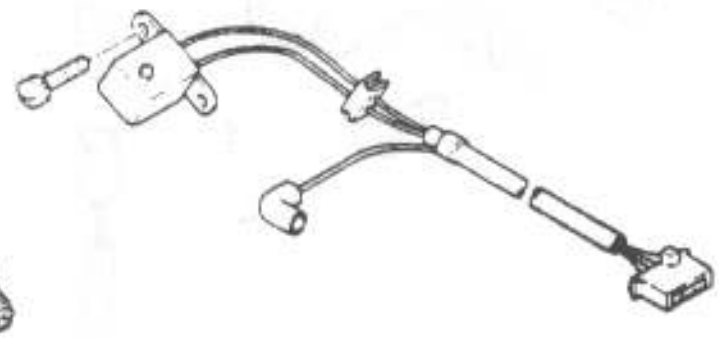


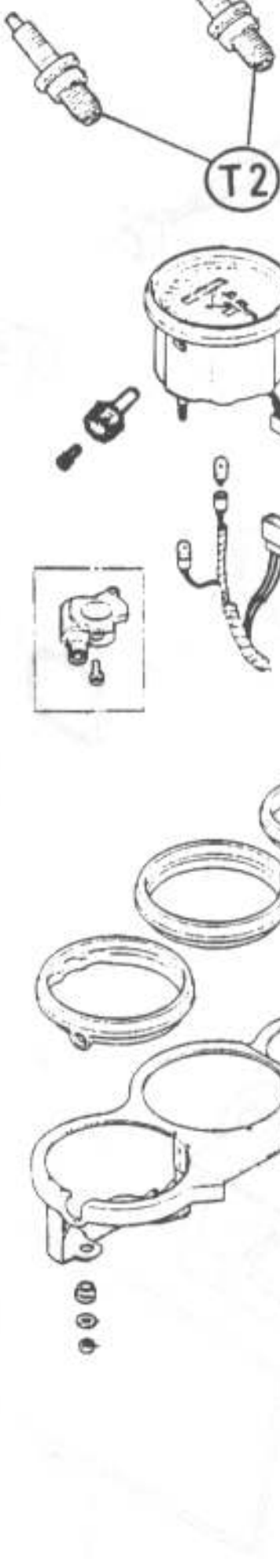


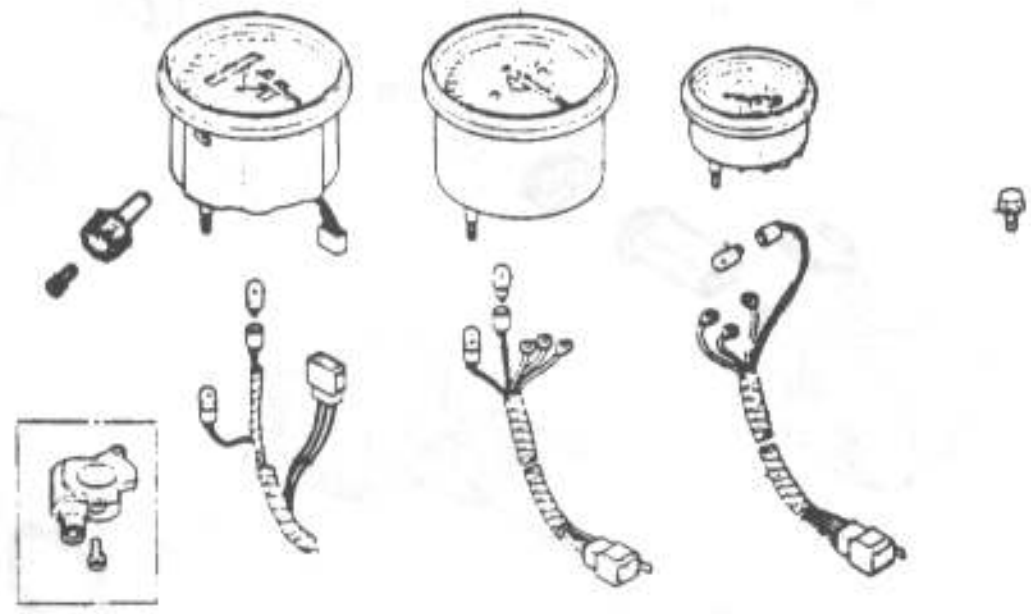

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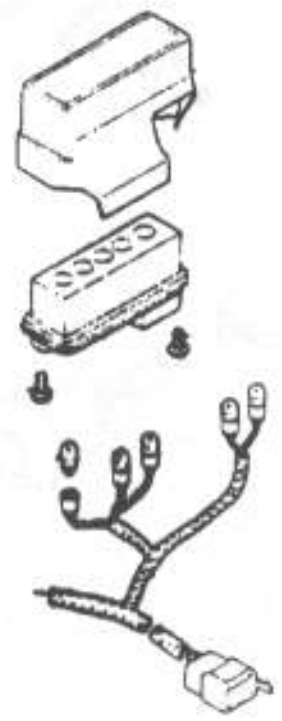
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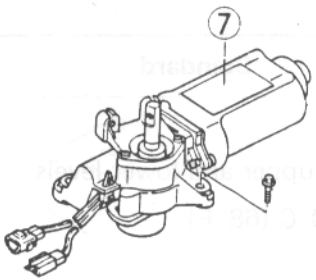


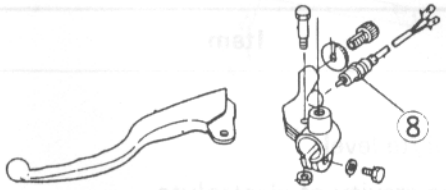

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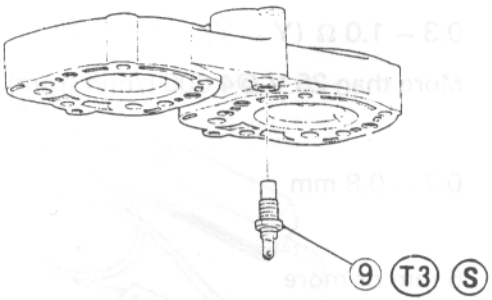


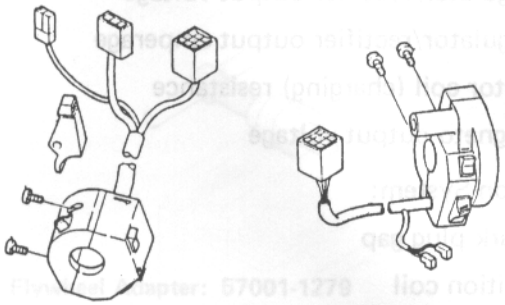


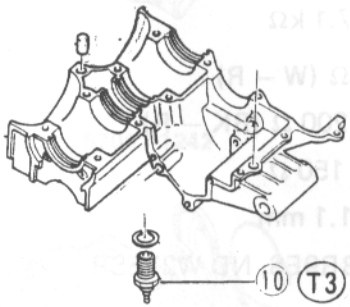
L
5
4
6











1. Regulator/Rectifier
2. CDI Unit
3. Fuse Box
4. Rear Brake Light Switch
5. Oil Level Warning Light Switch
6. Side Stand Switch
7. Exhaust Valve Operating Motor
8. Starter Interlock Switch
9. Coolant Temperature Sensor
10. Neutral Switch

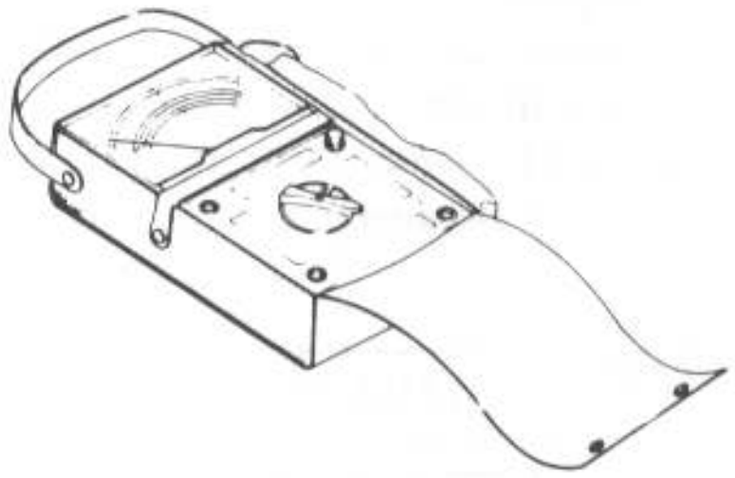
L : Apply non-permanent locking agent.
S : Apply silicone sealant
(Kawasaki Bond: 56019-120).
T1: 69 N-m (7.0 kg-m, 51 ft-lb)
T2: 27 N-m (2.8 kg-m, 20 ft-lb)
T3: 15 N-m (1.5 kg-m, 11.0 ft-lb)

Specifications

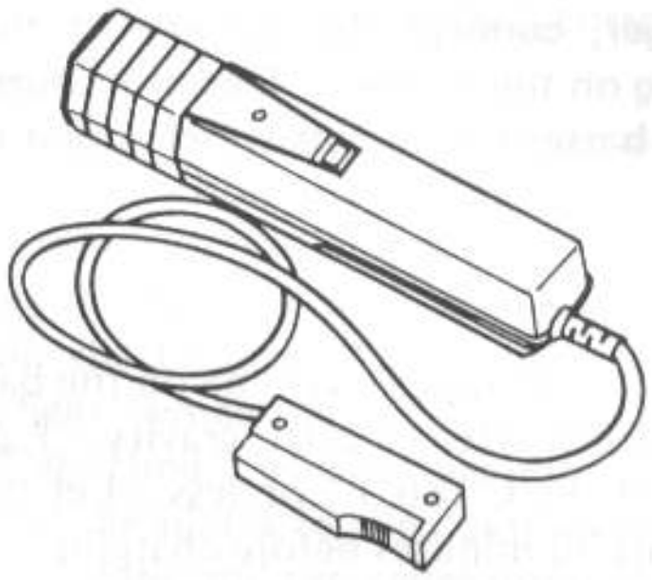
Item	Standard
Battery:	
Electrolyte level	Between upper and lower levels
Specific gravity of electrolyte	1.28 @20°C (68°F)
Charging System:	
Regulator/rectifier output voltage	Battery voltage to 14 V
Regulator/rectifier output amperage	12.5 A
Stator coil (charging) resistance	0.3 – 1.0 Ω (Y – Y)
Magneto output voltage	More than 25 V @4 000 r/min (rpm)
Ignition System:	
Spark plug gap	0.7 – 0.8 mm
Ignition coil	
3 needle arcing distance	6 mm or more
Primary winding resistance	0.28 – 0.38 Ω
Secondary winding resistance	4.7 – 7.1 kΩ
Exciter coil resistance	2 – 7 Ω (W – R) 100 – 200 Ω (BK – R)
Pickup coil resistance	100 – 150 Ω
Pickup coil air gap	0.4 – 1.1 mm
Spark plug	NGK BR9ES, ND W27ESR
Meter Unit:	
Coolant temperature sensor	48 – 57 Ω @80°C (176°F) 26 – 29 Ω @100°C (212°F)
Rear Brake Light Switch:	On after about 10 mm pedal travel

Special Tools

Hand Tester: 57001-983



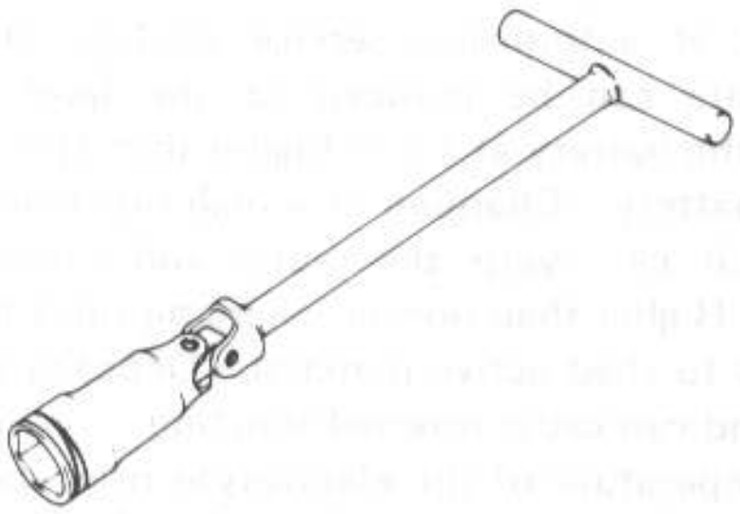
Timing Light: 57001-1241



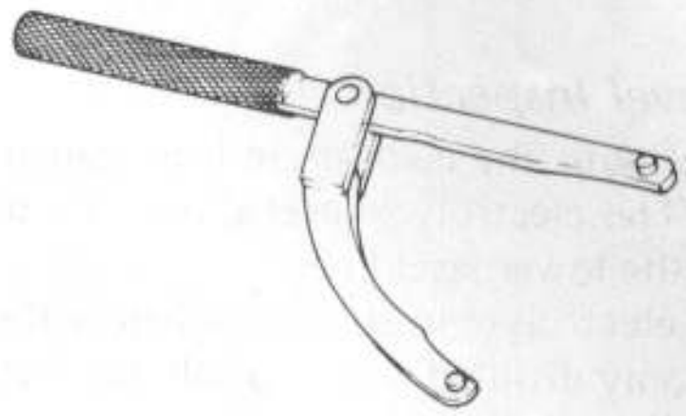
Ignition Coil Tester: 57001-1242



Spark Plug Wrench: 57001-110



Flywheel Holder: 57001-306



Flywheel Puller: 57001-252



Flywheel Adapter: 57001-1279



NOTE

○*The flywheel holder (P/N 57001-1313) can be used instead of the flywheel holder (P/N 57001-306).*

Sealant

Kawasaki Bond (Silicone Sealant): 56019-120



Battery

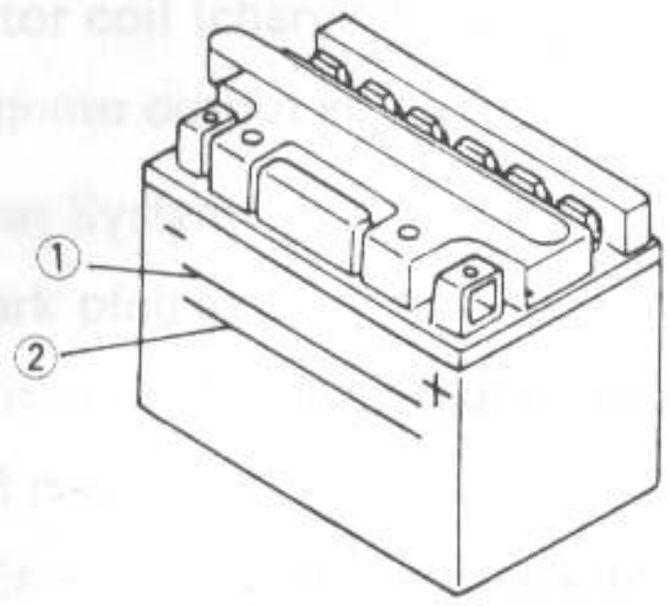
Electrolyte Level Inspection

- Check the level with the electrolyte level gauge on the battery case. The electrolyte level should be between the upper and the lower level lines.

★If the level of electrolyte in any cell is below the lower level line, add only distilled water to cell, until the level is at the upper level line.

CAUTION

○Ordinary tap water is not a substitute for distilled water and will shorten the life of the battery.



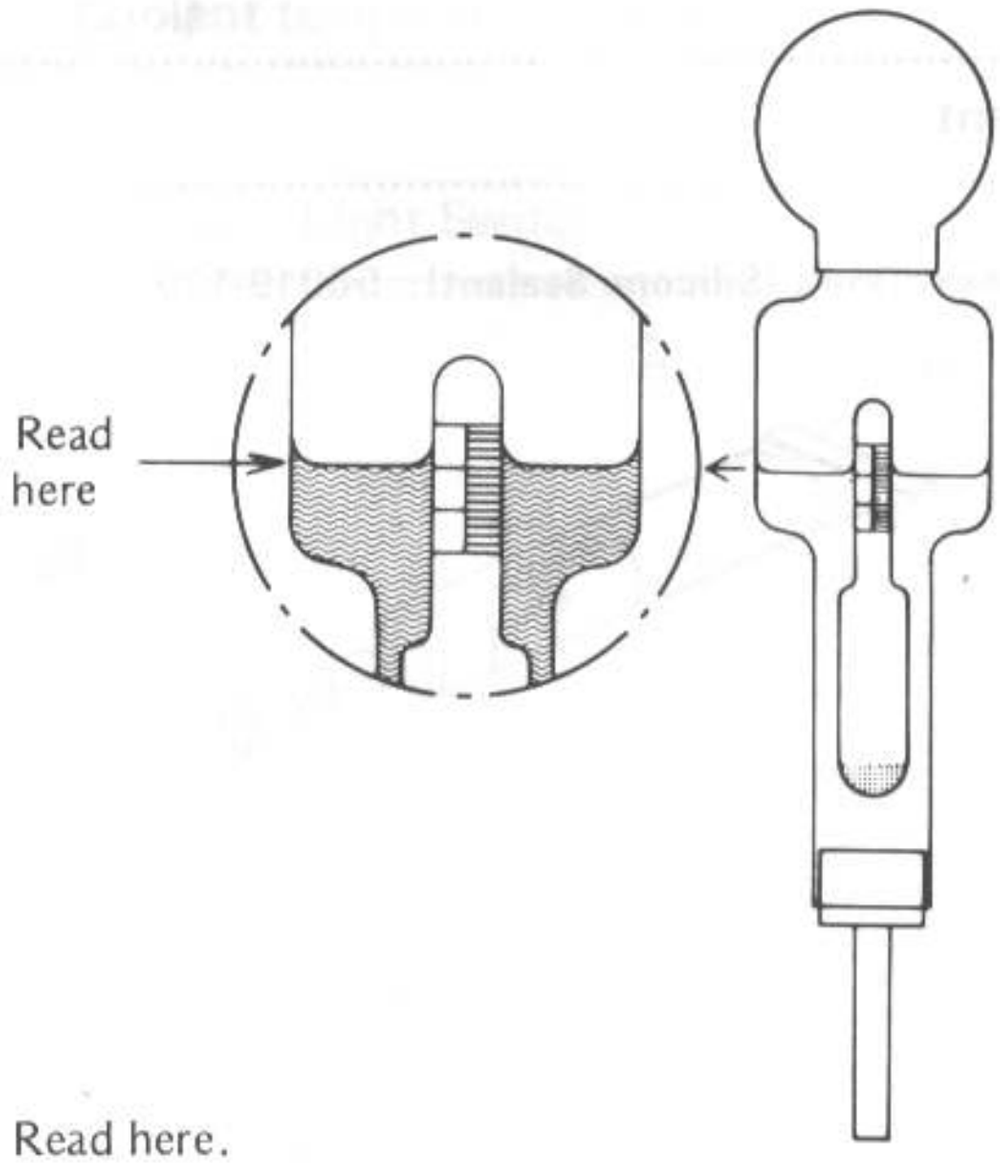
1. Upper Level Line 2. Lower Level Line

Electrolyte Specific Gravity Inspection

- Check battery condition by testing the specific gravity of the electrolyte in each cell with a hydrometer.

○Read the level of the electrolyte on the floating scale.

Hydrometer



1. Read here.

★If the specific gravity is below 1.20 (charge 60%) the battery needs to be charged.

Initial Charging

WARNING

○Keep the battery away from sparks and open flames during charging, since the battery gives off an explosive gas mixture of hydrogen and oxygen. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

- Fill each cell to the upper level line on the battery case with fresh electrolyte (special gravity: 1.280) at a temperature of 30°C (86°F) or less. Let the battery stand for about 30 minutes before charging.

NOTE

○If the electrolyte level drops, add electrolyte to the upper level line before charging.

- Set the charging rate at 1/10 the battery capacity, and **charge it for 10 hours**. For example, if the battery is rated at 12 Ah, the charging rate would be 1.2A.

CAUTION

○If the battery is not given a full initial charging, it will discharge in a few weeks. After that it can not be charged by supplement charging.

○Do not use a high rate battery charger, as is typically employed at automotive service stations, unless the charger rate can be reduced to the level required. Charging the battery at a rate higher than specified may ruin the battery. Charging at a high rate causes excess heat which can warp the plates and cause internal shorting. Higher-than-normal charging rates also cause the plates to shed active material. Deposits will accumulate, and can cause internal shorting.

○If the temperature of the electrolyte rises above 45°C (115°F) during charging, reduce the charging rate to lower the temperature, and increase charging time proportionately.

Ordinary Charging

WARNING

○Keep the battery away from sparks and open flames during charging, since the battery gives off an explosive gas mixture of hydrogen and oxygen. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

CAUTION

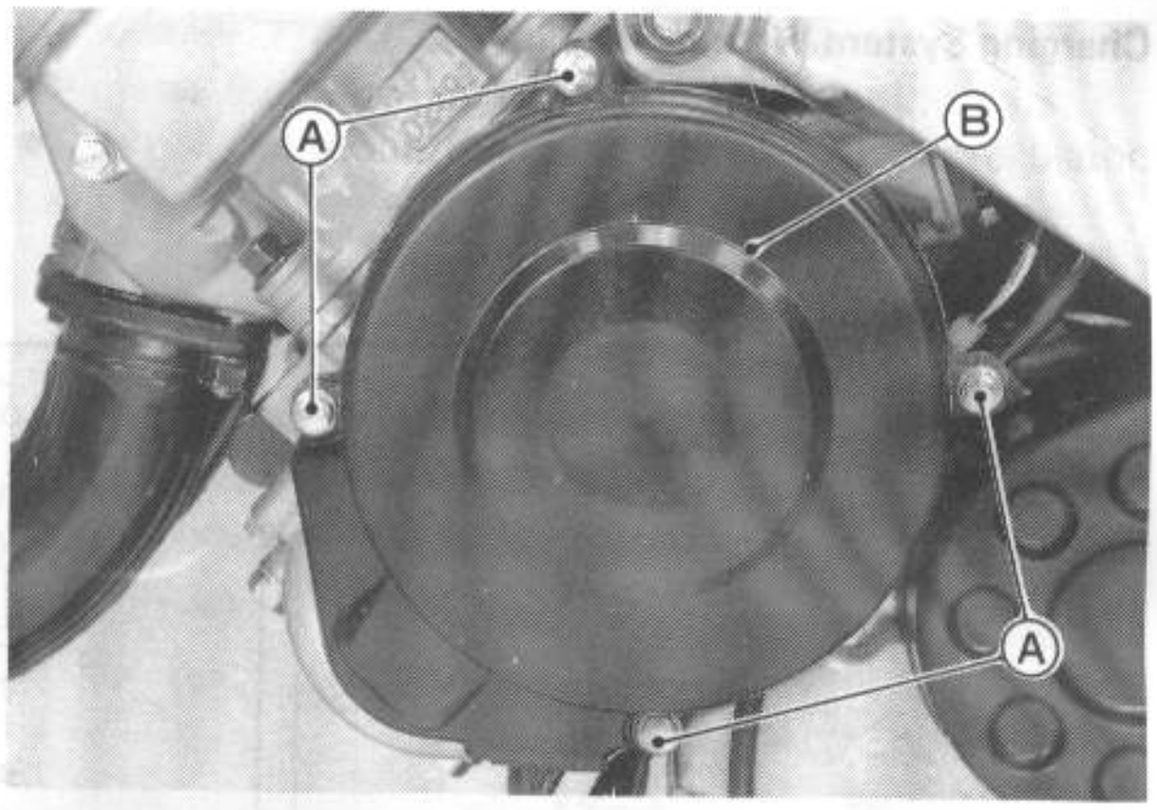
○The use of a sulfated old battery which will not accept a full charge by supplement charging will damage the CDI unit.

○Always remove the battery from the motorcycle for charging. If the battery is charged while still installed, battery electrolyte may spill and corrode the frame or other parts of the motorcycle.

○Do not use a high rate battery charger, as is typically employed at automotive service stations, unless the charger rate can be reduced to the level required. Charging the battery at a rate higher than specified may ruin the battery. Charging at a high rate causes excess heat which can warp the plates and cause internal shorting. Higher-than-normal charging rates also cause the plates to shed active material. Deposits will accumulate, and can cause internal shorting.

○If the temperature of the electrolyte rises above 45°C (115°F) during charging, reduce the charging rate to lower the temperature, and increase charging time proportionately.

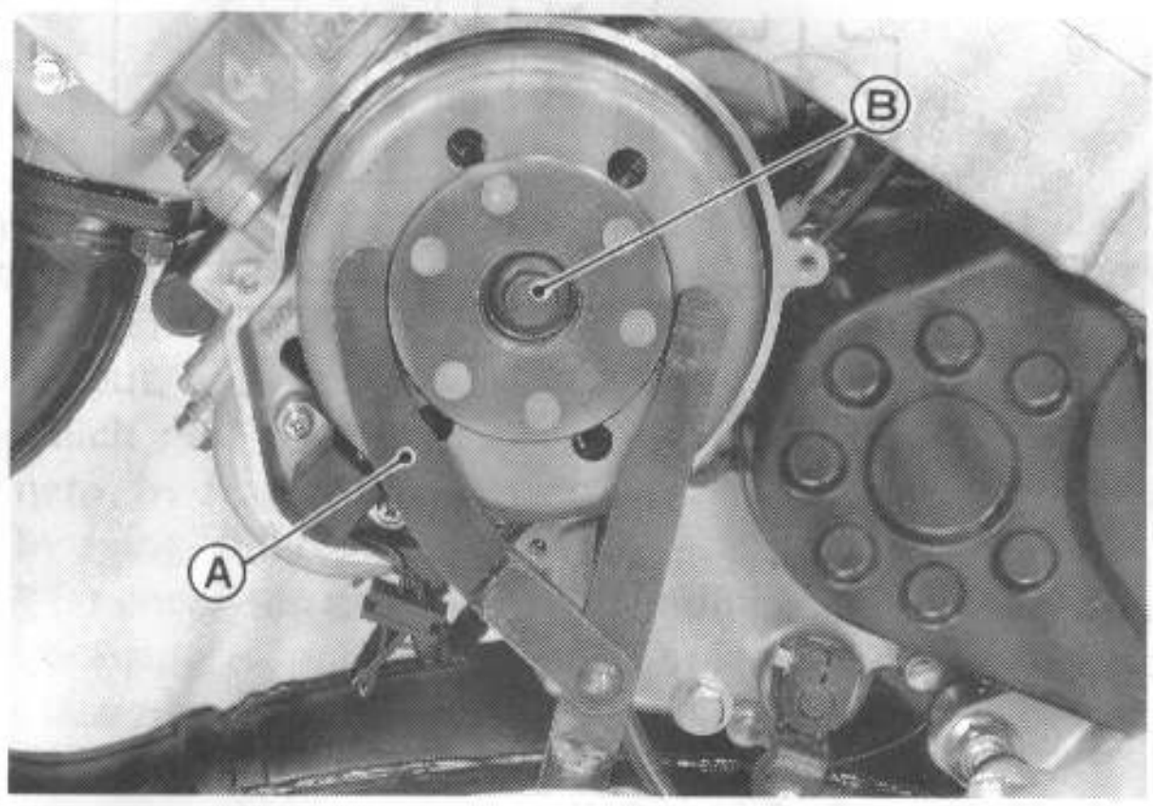
- Set the charging rate at 1/10 the battery capacity, and charge until the electrolyte gravity becomes 1.280 at a temperature of 30°C (86°F) or less.
- Check the electrolyte level after charging.



A. Mounting Bolts B. Magneto Cover

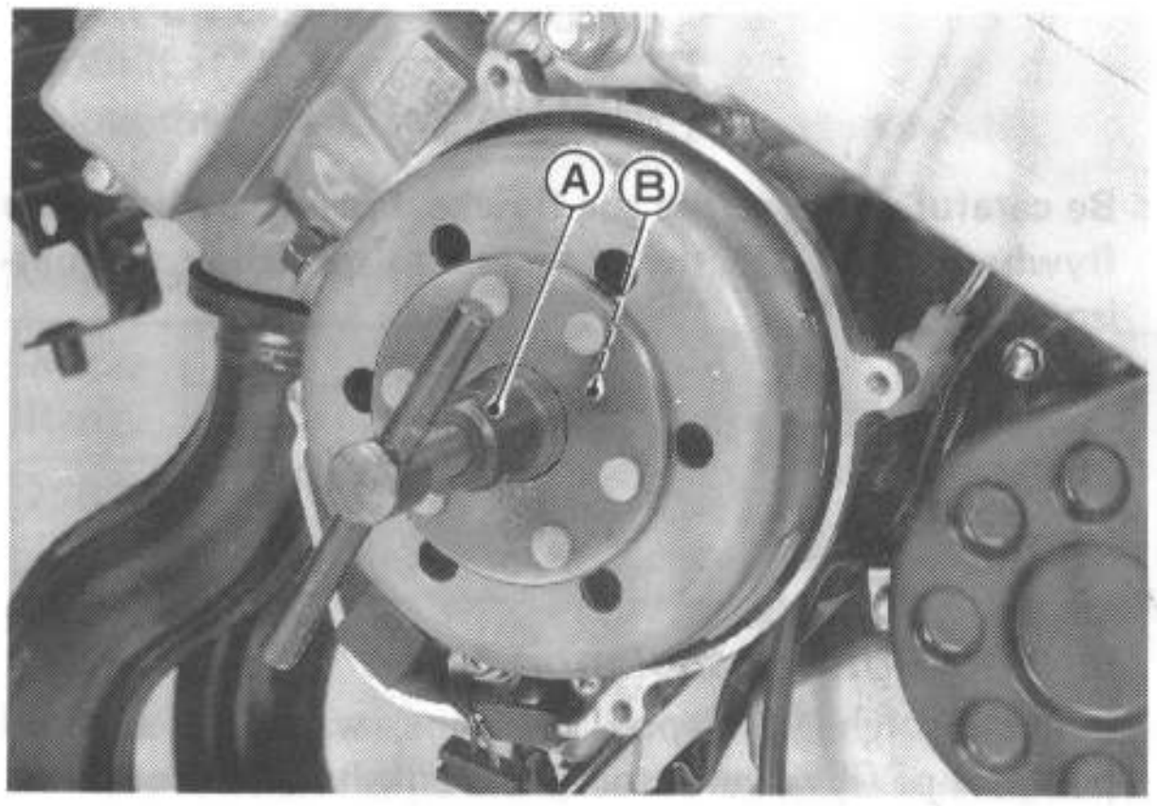
Magneto Rotor Removal

- Remove the magneto cover.
- Using the flywheel holder (special tool) to keep the flywheel from rotating, unscrew the rotor bolt.



A. Flywheel Holder: 57001-306 B. Rotor Bolt

- Using the flywheel puller (special tool) and adapter (special tool), remove the magneto rotor.



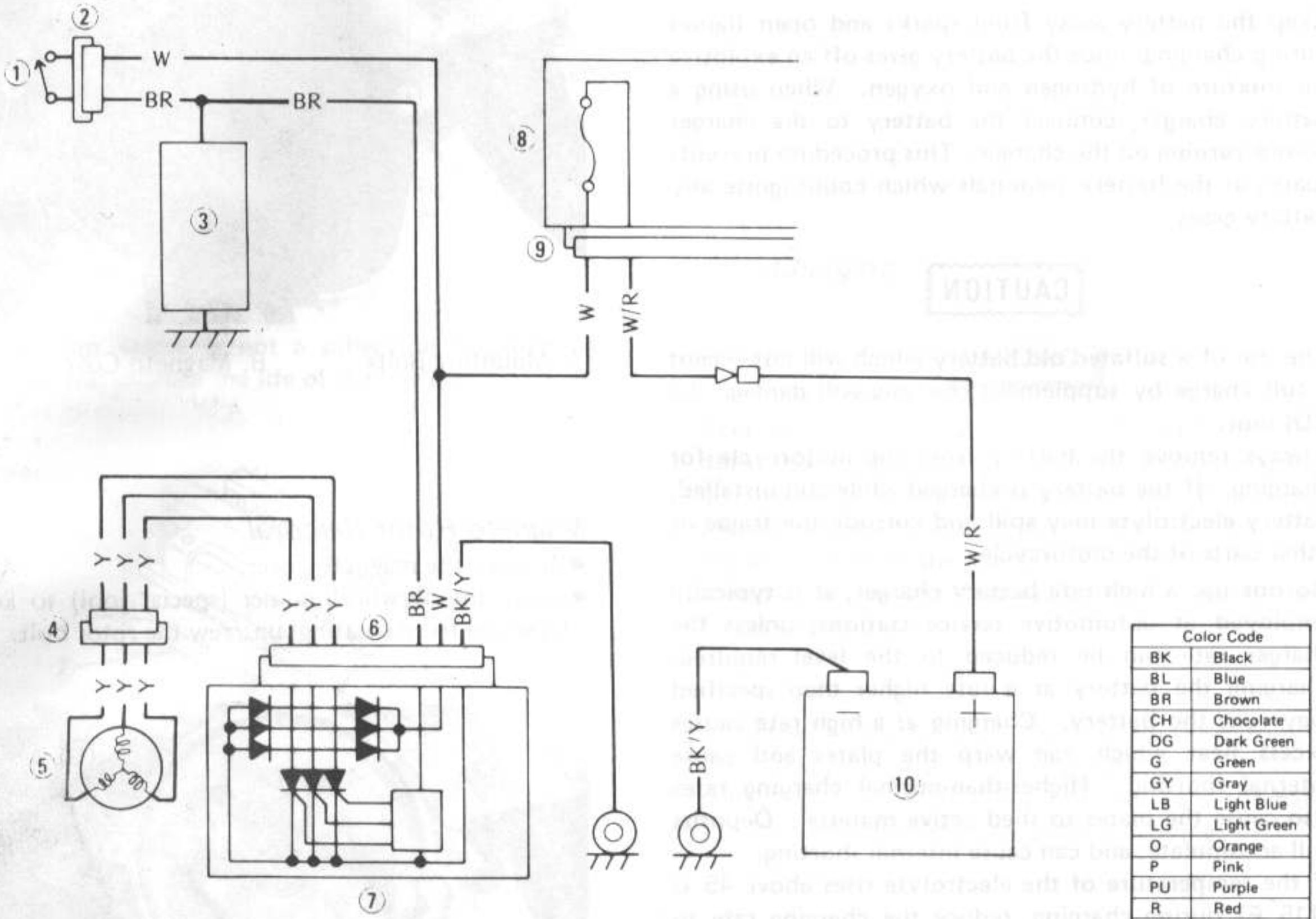
A. Flywheel Puller: 57001-252
B. Adapter: 57001-1279

Charging System

Magneto Cover Removal

- Remove the following.
  Lower Fairing

Charging System Wiring Diagram



Color Code	
BK	Black
BL	Blue
BR	Brown
CH	Chocolate
DG	Dark Green
G	Green
GY	Gray
LB	Light Blue
LG	Light Green
O	Orange
P	Pink
PU	Purple
R	Red
W	White
Y	Yellow

1. Ignition Switch
2. 6-pin Connector
3. Load
4. 6-pin Connector
5. Stator Coil
6. 6-pin Connector
7. Regulator/Rectifier
8. 20A Fuse
9. 6-pin Connector
10. Battery

CAUTION

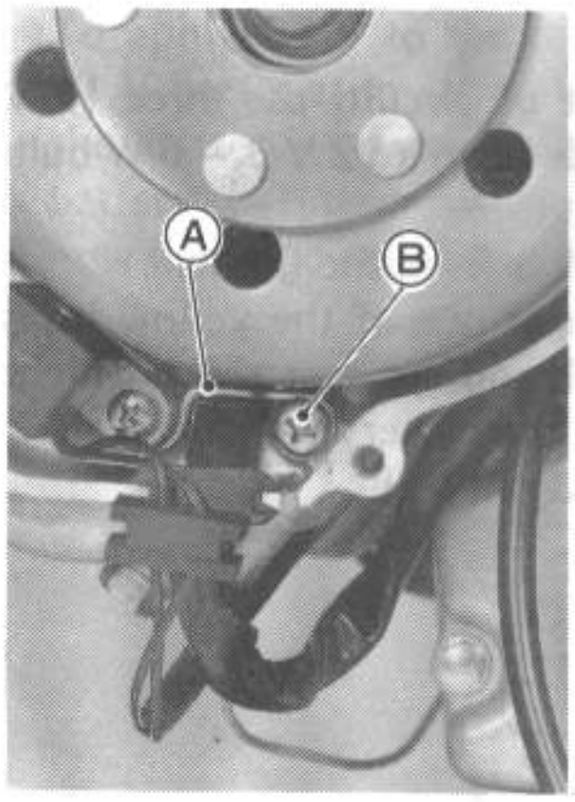
○Be careful not to strike the flywheel itself. Striking the flywheel can cause the magneto to lose their magnetism.

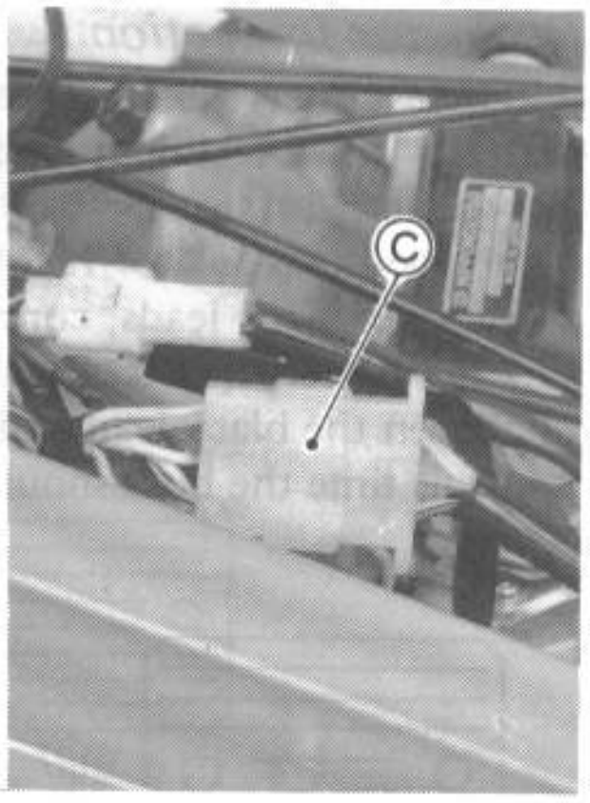
Magneto Rotor Installation Notes

- Using a high flash point solvent, wash the tapered portions of flywheel rotor and crankshaft.
- Tighten the magneto rotor bolt to the specified torque (see General Information chapter).

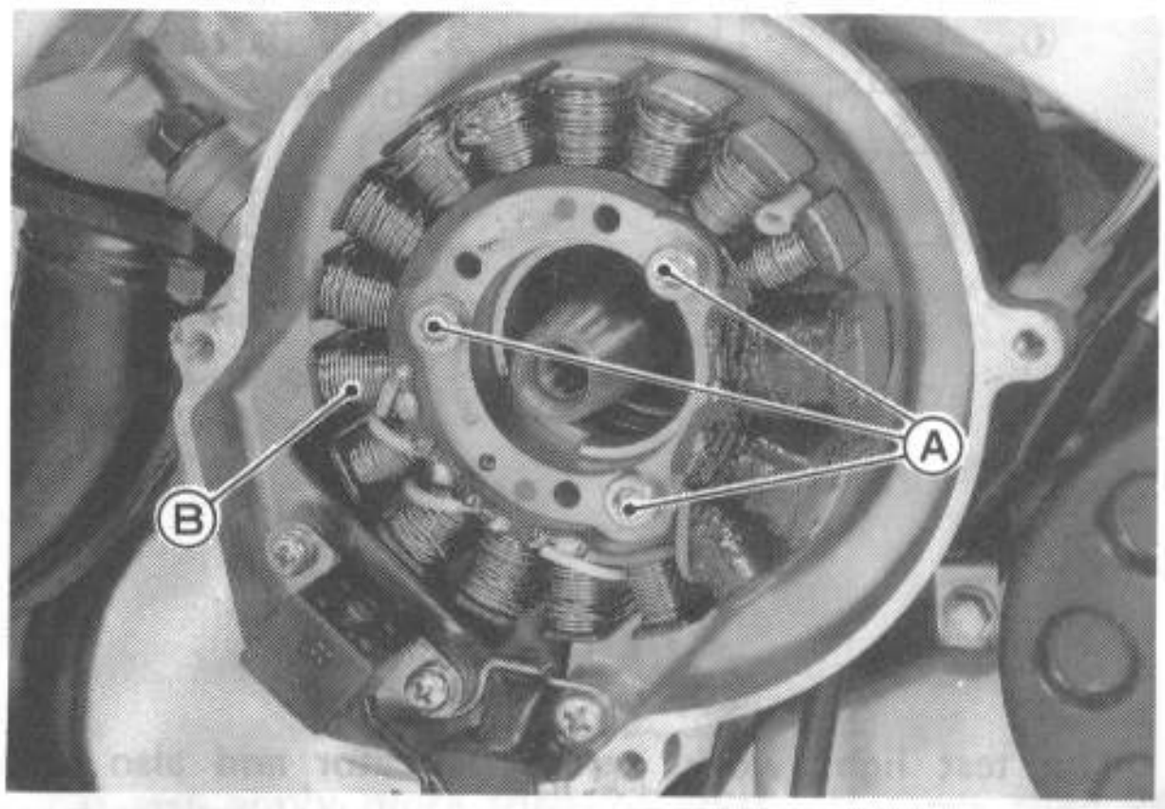
Stator Coil Removal

- Remove the magneto rotor.
- Remove the following.
  Seat
  Side Covers
  Fuel Tank





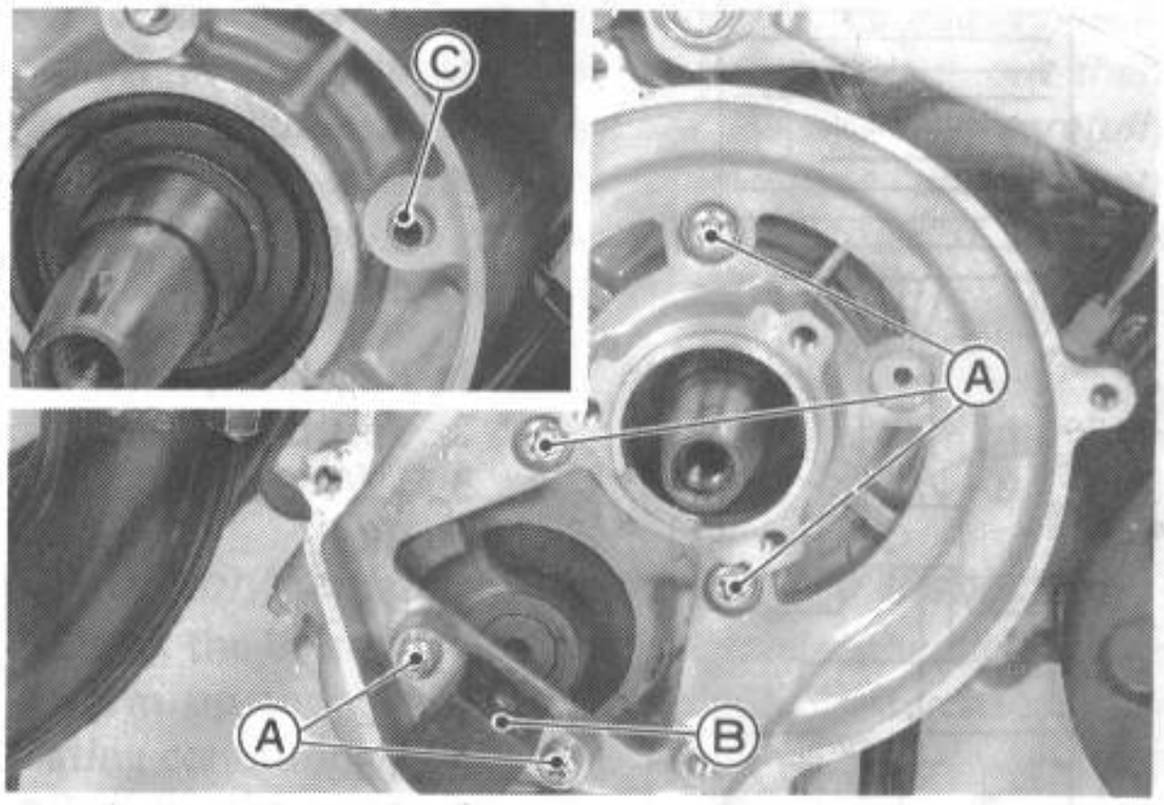
A. Stator Lead Clamp
B. Mounting Screw
C. Stator Lead Connector



A. Mounting Bolts
B. Stator Coil

Magneto Base Removal

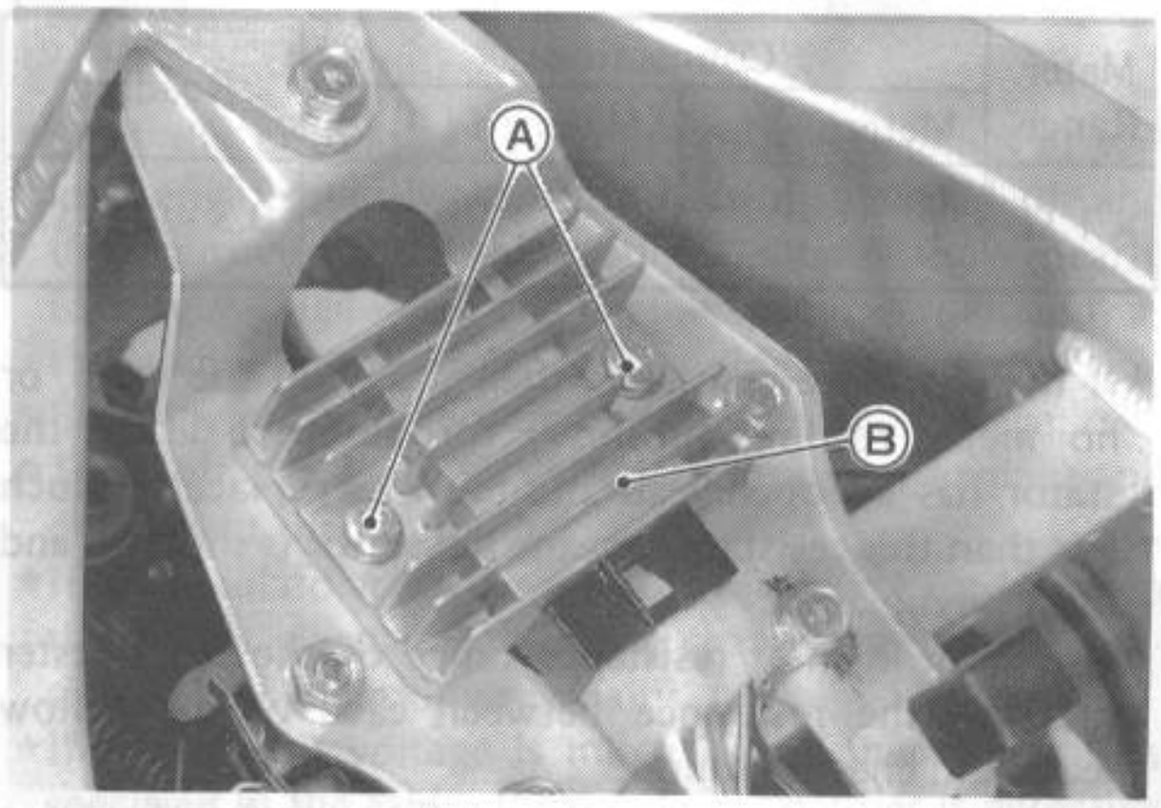
- Remove the stator coil.
- Remove the following.



A. Mounting Screws
B. Pickup Coil
C. Knock Pin

Regulator/Rectifier Removal

- Remove the seat, side covers, and fuel tank.
- Unscrew the mounting bolts, and remove the regulator/rectifier.



A. Mounting Bolts
B. Regulator/Rectifier

Magneto Inspection

There are three types of magneto failures; short, open (wire burned out), or loss in rotor magnetism. A short or open in one of the coil wires will result in either a low output, or no output at all. A loss in rotor magnetism, which may be caused by dropping or hitting the magneto, by leaving it near an electromagnetic field, or just by aging, will result in low output.

- To check the magneto output voltage, do the following procedures. Refer to the appropriate chapters and charging system Wiring Diagram.
  - ○ Turn off the ignition switch.
  - ○ Remove the seat, side covers, and fuel tank.
  - ○ Disconnect the stator lead connector (see Stator Coil Removal).
  - ○ Install the fuel tank and connect the fuel hose.
  - ○ Connect the hand tester to the stator side of the stator lead connector as shown in the table.
  - ○ Start the engine.
  - ○ Run it at the rpm given in table.
  - ○ Note the voltage readings (total 3 measurements).

Magneto Output Voltage

Meter Range	Connections		Reading @4,000 rpm
	Meter (+) to	Meter (–) to	
250 V AC	One yellow lead	Another yellow lead	more than 25 V

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