

ELECTRICAL SYSTEM

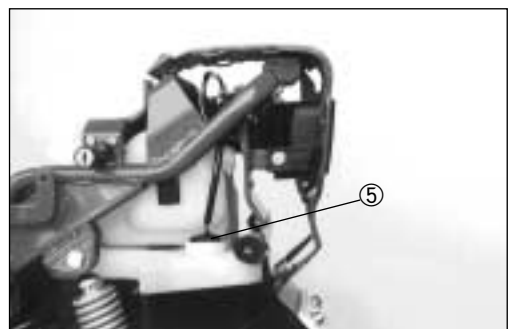
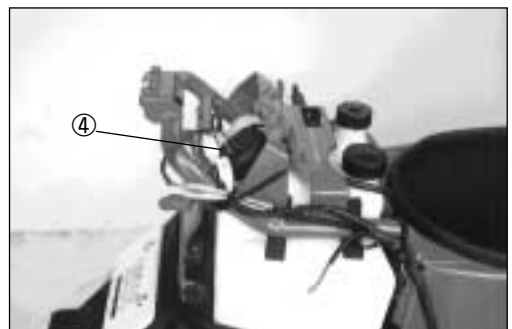
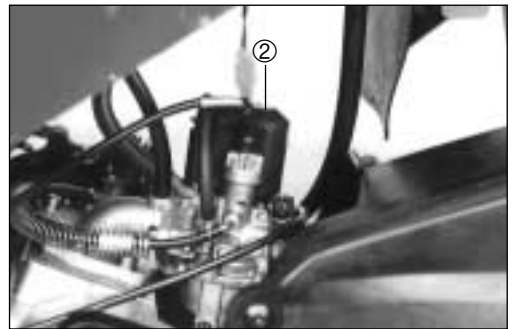
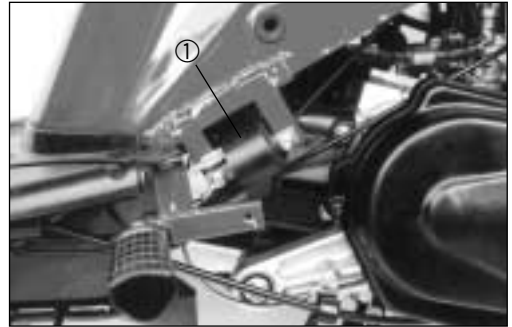
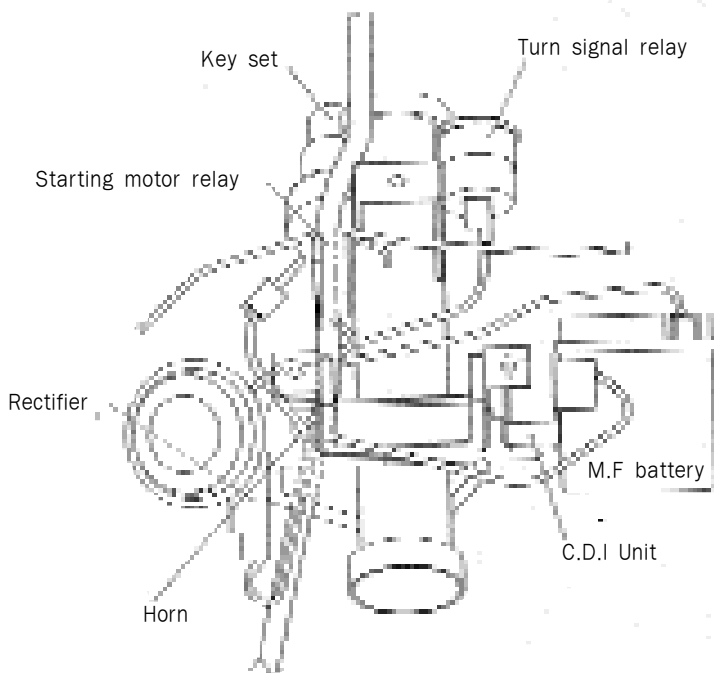
CONTENTS

ELECTRICAL PARTS	5- 1
IGNITION/CHARGING SYSTEM	5- 2
IGNITION COIL	5- 2
STATOR COILS	5- 3
REGULATOR/RECTIFIER	5- 3
STARTER SYSTEM	5- 4
STARTER MOTOR INSPECTION	5- 5
STARTER RELAY INSPECTION	5- 5
FUEL LEVEL GAUGE	5- 6
OIL LEVEL CHECK LIGHT	5- 7
THERMOELEMENT	5- 8
SWITCHES	5- 9
BATTERY	5-10

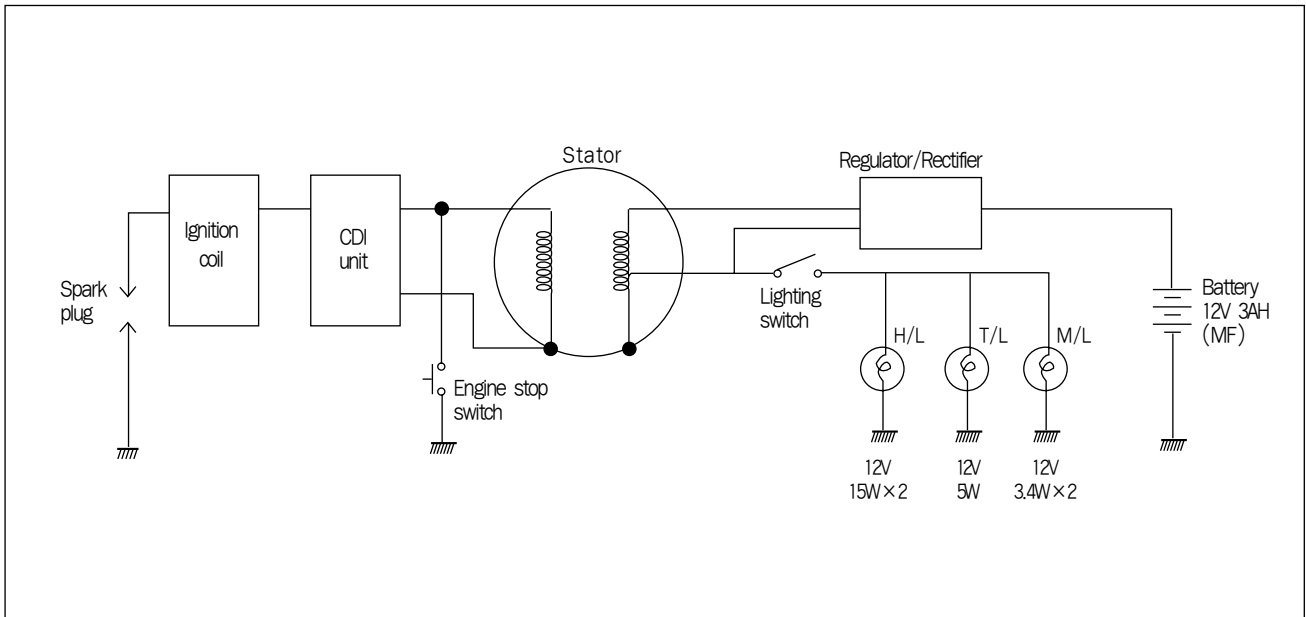
5-1 ELECTRICAL SYSTEM

ELECTRICAL PARTS

- ① Ignition coil
- ② Thermostament assembly
- ③ Trunk box lamp
- ④ Fuel level gauge
- ⑤ Oil level gauge



IGNITION/CHARGING SYSTEM

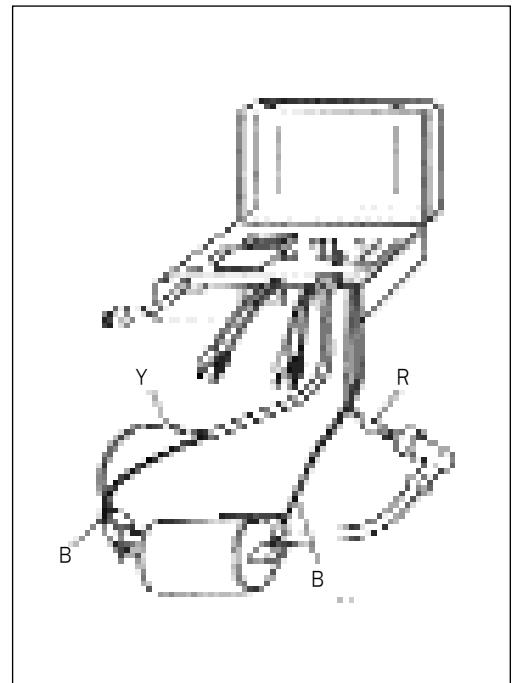
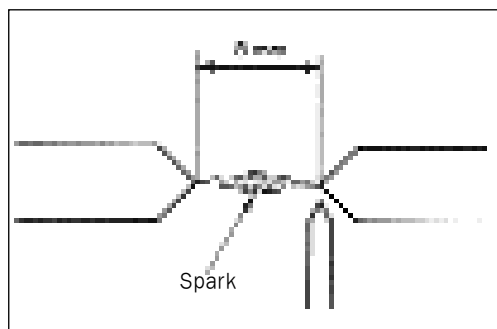


IGNITION COIL

- Check the ignition coil with electro tester.
- Test the ignition coil for sparking performance. Test connection is as indicated. Make sure that the three-needle sparking distance is at least 8mm. Test it at least for 5 minutes.

09900-28106	Electro tester
-------------	----------------

STD spark performance	8 mm
-----------------------	------

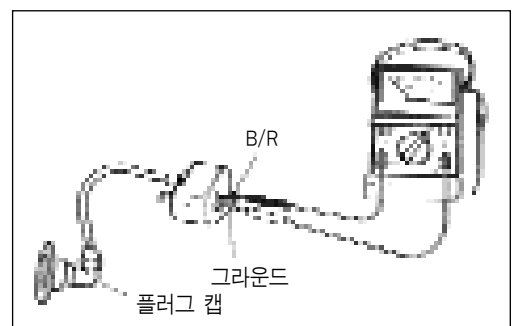


- Check the ignition coil with pocket tester.

09900-25002	Pocket tester
-------------	---------------

IGNITION COIL RESISTANCE

Primary	W/L-Ground Approx. 0.15-0.28 Ω
Secondary	Plug cap-Ground Approx. 14-20 kΩ



5-3 ELECTRICAL SYSTEM

STATOR COILS

- Using a pocket tester, measure the resistance between the lead wire and ground. If the resistance checked is incorrect, replace the coil.

		Standard resistance	
Y/W	Ground	Lighting	0.6-1.4 Ω
W/R	Ground	Charging	0.6-1.4 Ω
B/R	Ground	Exciting	180-230 Ω

CHARGING OUTPUT CHECK

Start the engine and keep it running at 5000 r/min with lighting switch turned ON.

Measure the DC voltage between the battery terminal \oplus and \ominus with a pocket tester.

If the tester reads under or over following specification, check the no-lead performance or replace the regulator/rectifier.

NOTE:

When making this test, be sure that the battery is in fully-charged condition.

09900-25002	Pocket tester
09900-26006	Tachometer
STD charging output	14-15V at 5000 r/min

NO-LOAD PERFORMANCE

- Disconnect the magneto lead wire coupler.
- Start the engine and keep it running at 5000 r/min.
- Using a pocket tester, measure the AC voltage between the White with Red tracer white lead wire and ground. If the tester reading is as follows, magneto is in good condition.

STD No-load performance	More than 100 V(AC) at 5000 r/min
-------------------------	-----------------------------------

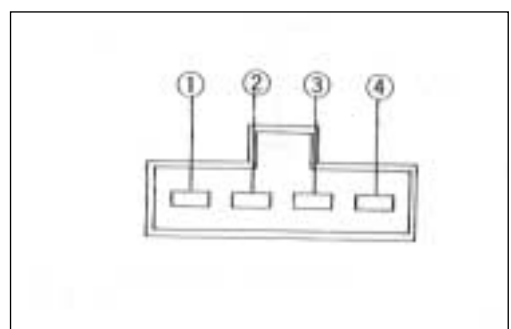
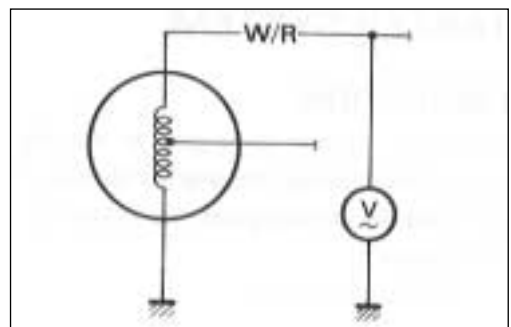
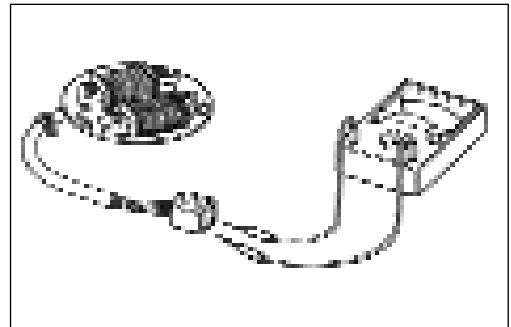
REGULATOR/RECTIFIER

- Disconnect the coupler.
- Using the pocket tester ($\times 1 \text{ K}\Omega$ range), measure the resistance between the terminals as shown in the following table. If the resistance checked is incorrect, replace the regulator/rectifier.

09900-25002	Pocket tester
-------------	---------------

Unit: Approx. $\text{K}\Omega$

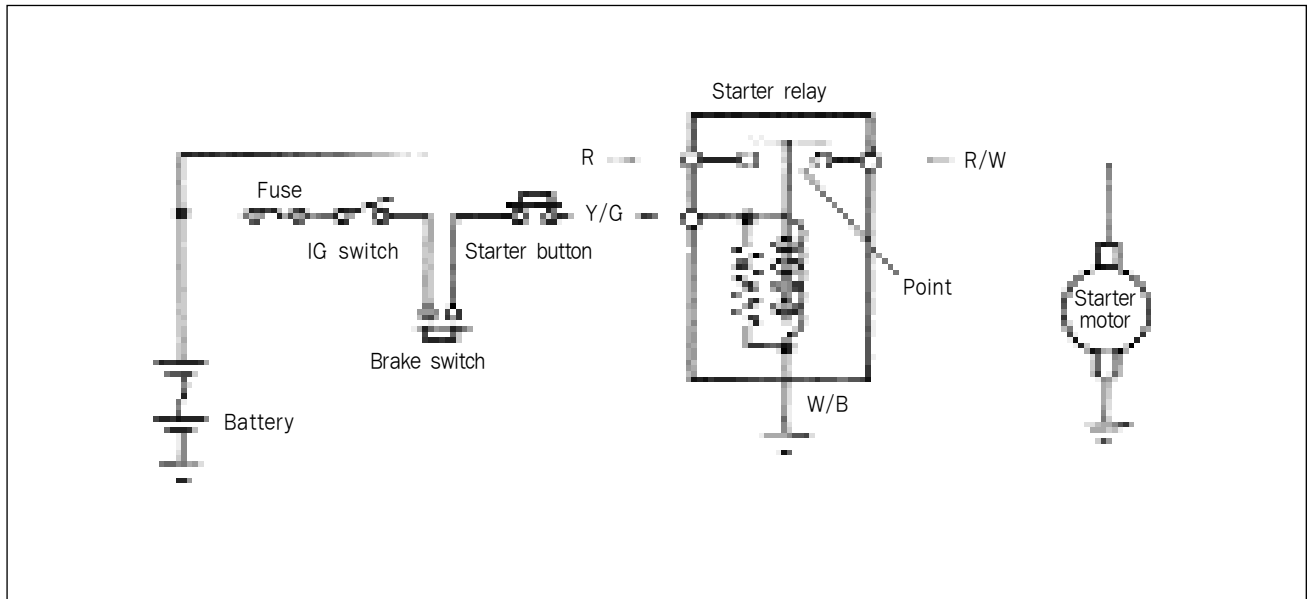
		\oplus Probe of tester to:			
		①	②	③	④
\oplus Probe of tester to:	①		50-260	∞	∞
	②	50-230		∞	∞
	③	∞	∞		∞
	④	∞	∞	10-100	



STARTER SYSTEM

DESCRIPTION

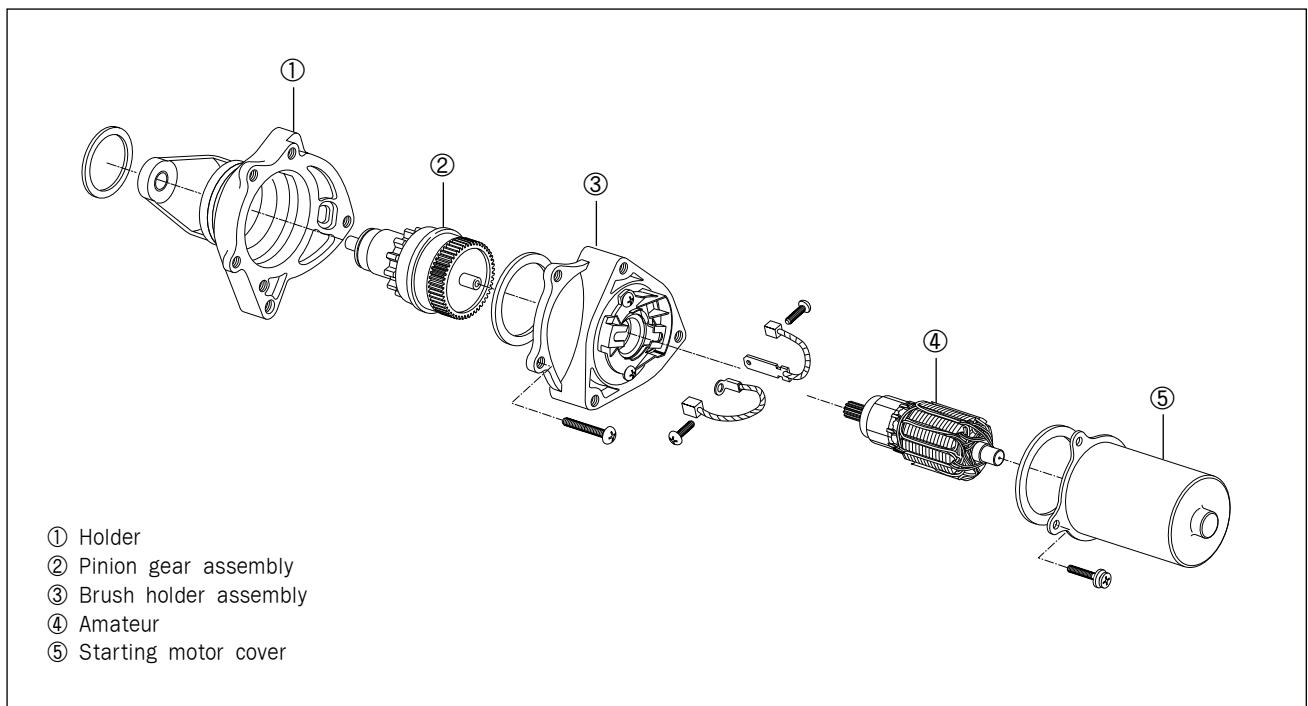
The starter system is shown in the diagram below: namely, the starter motor, relay, starter switch and battery. Depressing the starter button (on the right handlebar switch box) while squeezing the front or rear brake lever energizes the relay, causing the contact points to close which connects the starter motor to the battery.



STARTER MOTOR REMOVAL AND DISASSEMBLY

Remove the starter motor.

Disassemble the starter motor as shown in the illustration.



5-5 ELECTRICAL SYSTEM

STARTER MOTOR INSPECTION

CARBON BRUSHES

When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent this, periodically inspect the length of the brushes and replace them when they are too short or chipping.

Service Limit	4mm(0.16in)
---------------	-------------

COMMUTATOR

If the commutator surface is dirty, starting performance will decrease. Polish the commutator with #400 or similar fine emery paper when it is dirty. After polishing wipe the commutator with a clean dry cloth.

Measure the commutator under cut ①.

Service Limit	4mm(0.16in)
---------------	-------------

ARMATURE COIL

Using the pocket tester, check the coil for open and ground by placing probe pins on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.

If the coil is found to be open-circuited or grounded, replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

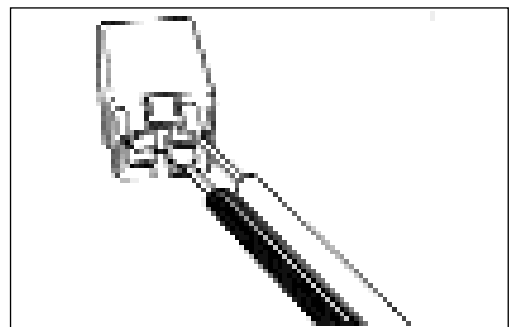
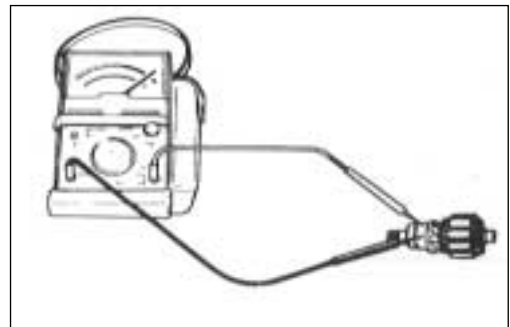
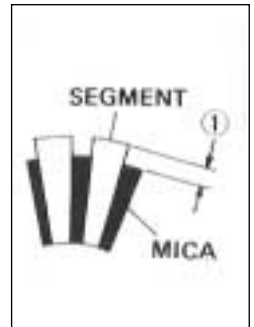
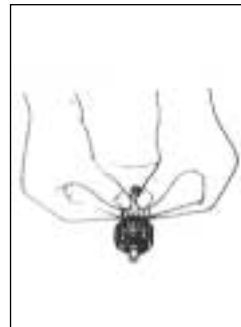
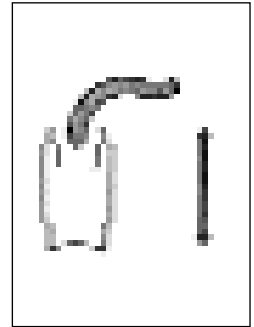
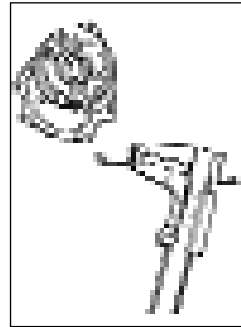
09900-25002	Pocket tester
-------------	---------------

STARTER RELAY INSPECTION

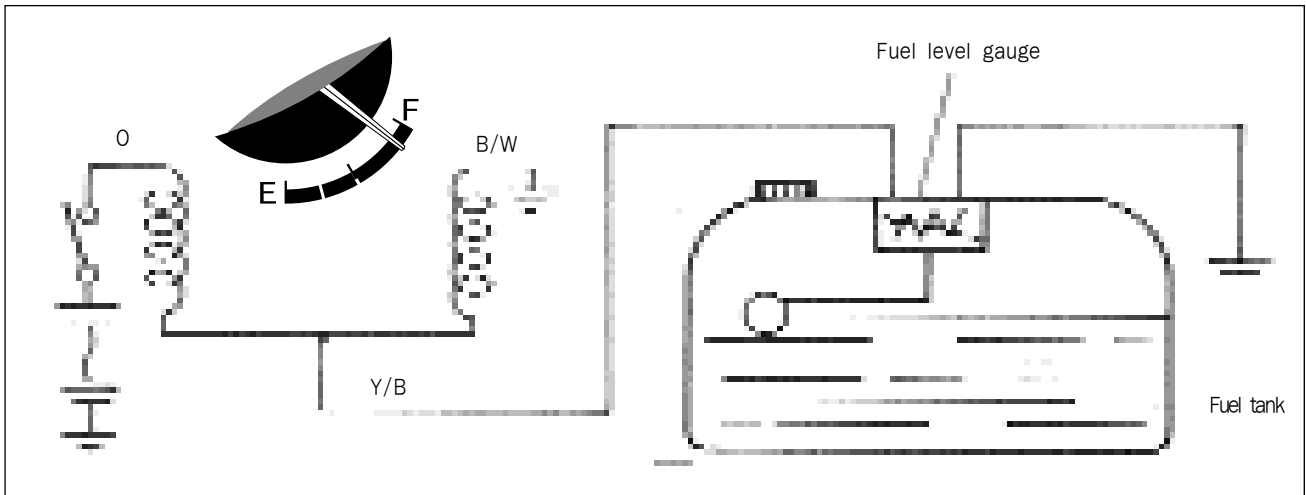
- Disconnect the starter relay lead wire coupler. Check the coil for "open", "ground" and ohmic resistance. The coil is in good condition, if the resistance is as follows.

09000-25002	Pocket tester
-------------	---------------

STD resistance	0-70 Ω
----------------	--------



FUEL GAUGE



FUEL LEVEL METER/GAUGE

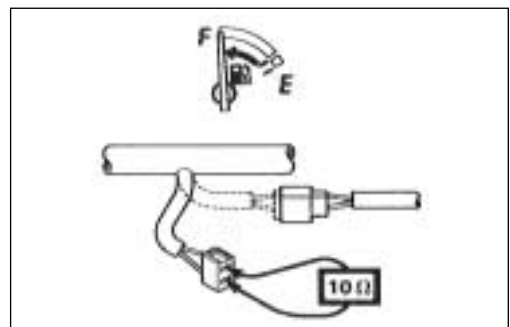
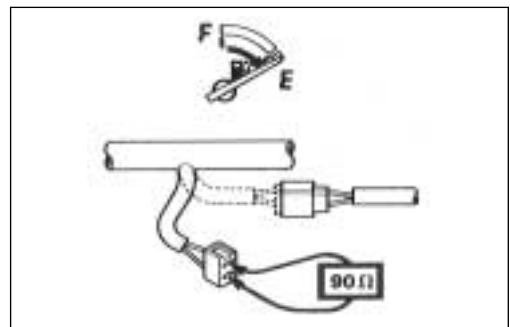
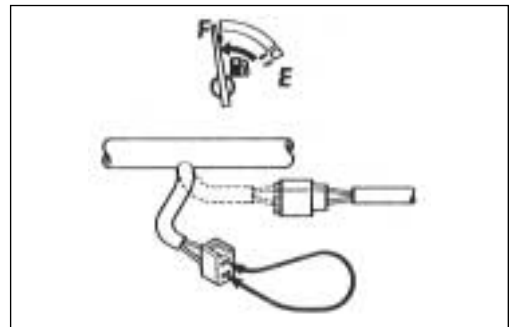
FUEL METER INSPECTION

To test the Fuel Meter two different checks may be used.

The first, and simplest test will tell if the meter is operating but will not indicate the meters accuracy throughout the range. To perform this test, lift the seat and remove the right frame cover, then disconnect the B/W and Y/B lead connector of the fuel gauge sending unit. Connect a jumper wire between B/W and Y/B wires coming from the main wiring harness. With the ignition switch turned ON, the fuel meter should indicate "F".

The second test will check the accuracy of the meter in the full and empty positions. Connect a 90-ohm resistor between the Y/B and B/W lead wires. The fuel meter is normal if its pointer indicates the E(empty) position when the specified voltage is applied to the circuit and if its pointer indicates the F(full) position when the resistor is changed to 10 ohms.

If either one or both indications are abnormal, replace the fuel meter with a new one.

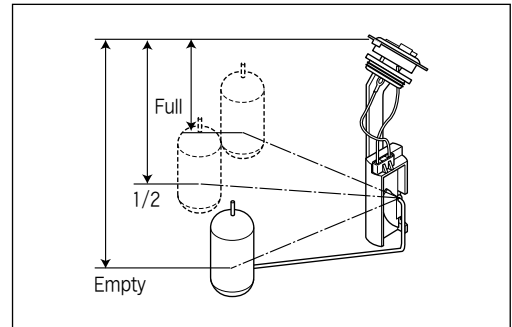


5-7 ELECTRICAL SYSTEM

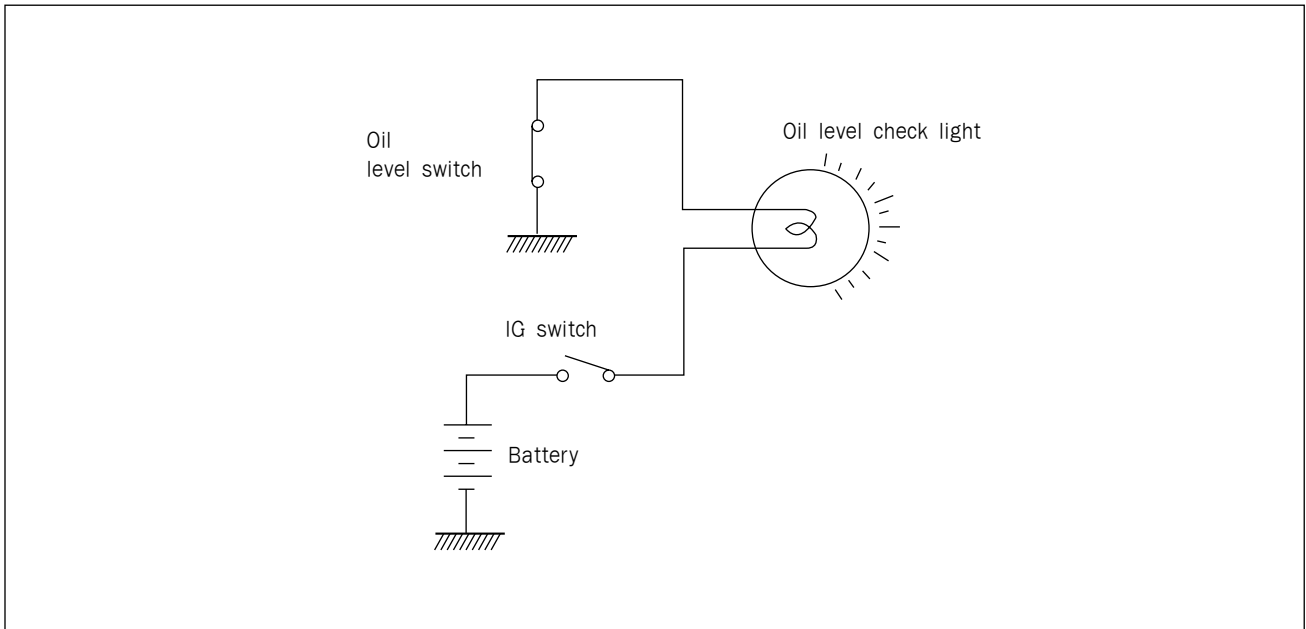
FUEL GAUGE SENDING UNIT INSPECTION

- Disconnect the lead wires coming out of the fuel gauge and check resistance of each position.
- If the resistance measured is incorrect, replace the fuel gauge assembly with a new one.
- The relation between the position of the fuel gauge float and resistance is shown in the following table.

Float position	Resistance
F(Full)	Approx. 10 Ω
1/2	Approx. 38 Ω
E(Empty)	Approx. 90 Ω



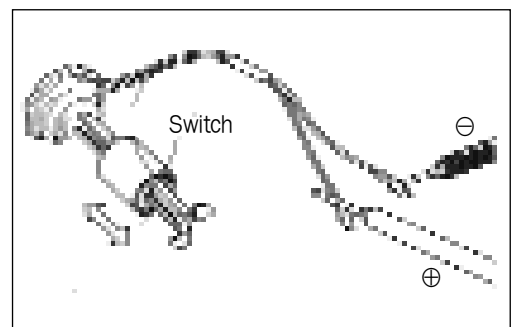
OIL LEVEL CHECK LIGHT



OIL LEVEL SWITCH INSPECTION

Check the oil level switch for continuity between the lead wire. If the tester does not show the value of 0-1 ohm when the switch ring is in bottom position, file the contact surface or replace the unit.

09900-25002	Pocket tester
-------------	---------------

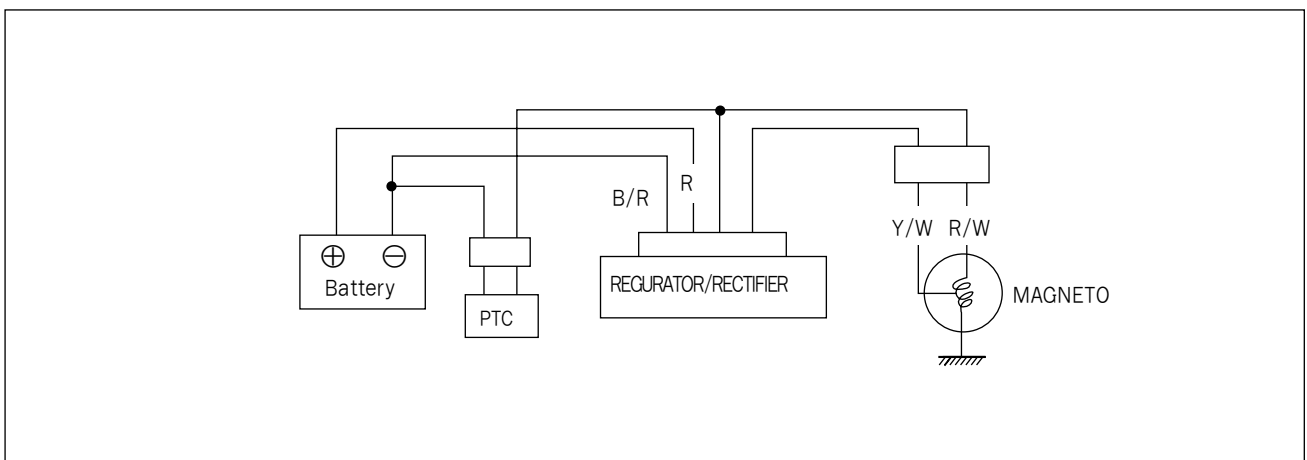


OIL LEVEL CHECK LIGHT INSPECTION

Disconnect the L/W and B/W lead connector ① of the oil level check light.

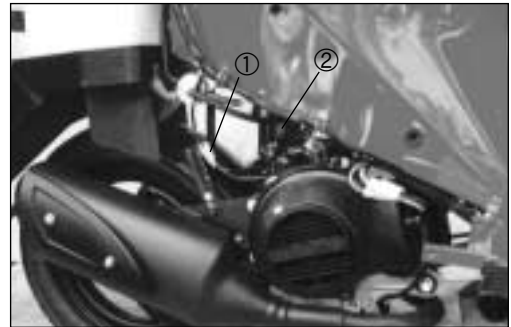
Connect a jumper wire between L/W and B/W wires coming from the main wiring harness. With the ignition switch turned ON, the oil level check light should flash.

If there is no flash, check the wiring harness continuity and the bulb blown out.

**THERMOELEMENT****INSPECTION**

- Disconnect the thermoelement coupler.
- Connect the thermoelement coupler ① to a 12V battery and touch the thermoelement ② to check the temperature being raised.

The thermoelement ② should become heated to a temperature more than that of human body within five minutes. If not, replace with new one.

**NOTE:**

This check should be carried out when the carburetor is cold.

5-9 ELECTRICAL SYSTEM

SWITCHES

Inspect each switch for continuity with the pocket tester referring to the chart. If it is found any abnormality, replace the repective switch assembly with new one.

WIRE COLOR

B	.....	Black
G	.....	Green
Gr	.....	Gray
Sb	.....	Light blue
Lg	.....	Light green
O	.....	Orange
R	.....	Red
W	.....	White
Y	.....	Yellow
B/R	.....	Black with Red tracer
B/W	.....	Black with White tracer
W/B	.....	White with Black tracer
Y/W	.....	Yellow with white tracer

LIGHTING SWITCH		
	Gr	YW
ON	○ ——— ○	○ ——— ○
OFF		

STARTER BUTTON		
	BW	YG
ON	○ ——— ○	○ ——— ○
OFF		

FRONT AND REAR BRAKE LIGHT SWITCH		
	O	WB
ON	○ ——— ○	○ ——— ○
OFF		

DIMMER SWITCH			
	W	Y	Gr
LO	○ ——— ○		○ ——— ○
HI		○ ——— ○	○ ——— ○

TURN SIGNAL LIGHT SWITCH			
	Lg	B	Sb
L		○ ——— ○	○ ——— ○
.			
R	○ ——— ○		○ ——— ○

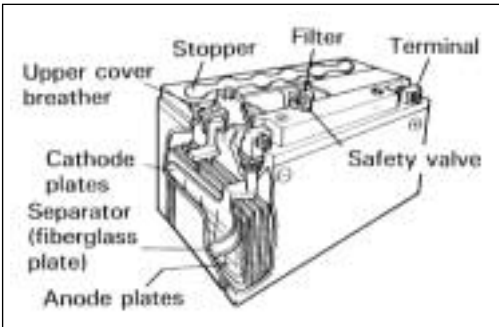
HORN BUTTON		
	BW	G
ON	○ ——— ○	○ ——— ○
OFF		

IGNITION SWITCH				
	BW	BR	R	O
LOCK	○ ——— ○	○ ——— ○		
OFF	○ ——— ○	○ ——— ○		
ON			○ ——— ○	○ ——— ○

BATTERY

SPECIFICATION

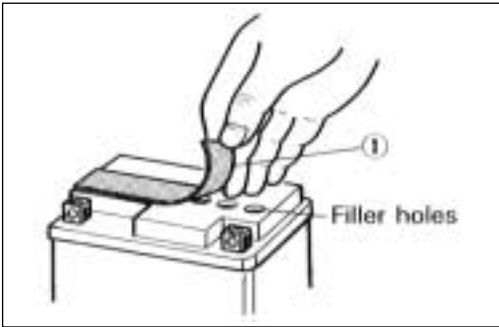
Type designation	YTX4L-BS
Capacity	12V, 3AH/10HR
Standard electrolyte S.G.	1.32 at 20 °C (68°F)



INITIAL CHARGING

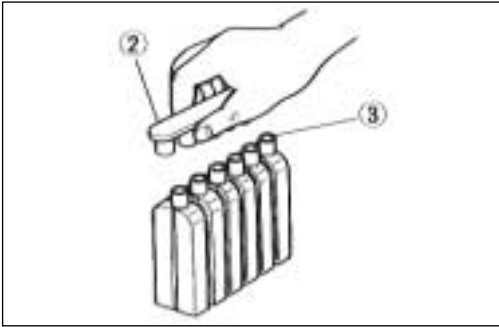
FILLING ELECTROLYTE

- Remove the aluminum tape ① sealing the battery electrolyte filler holes.

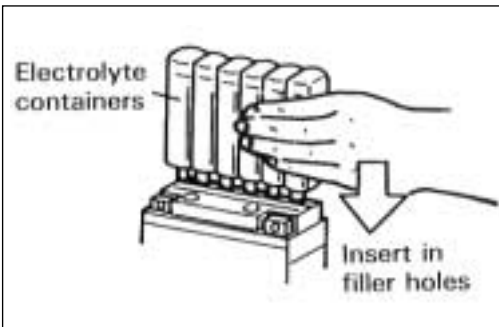


- Remove the caps ②.

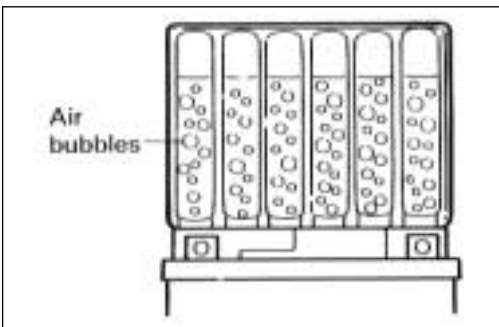
NOTE:
 After filling the electrolyte completely, use the removed cap ② as the sealed caps of battery-filler holes.
 Do not remove or pierce the sealed areas ③ of the electrolyte container.



- Insert the nozzels of the electrolyte container into the battery's electrolyte filler holes, holding the container firmly so that it does not fall. Take precaution not to allow any of the fluid to spill.



- Make sure air bubbles are coming up each electrolyte container, and leave in this position for about more than 20 minutes.



5-11 ELECTRICAL SYSTEM

NOTE:

If no air bubbles are coming up from a filler port, tap the bottom of the two or three times.
Never remove the container from the battery.

- After confirming that the electrolyte has entered the battery completely, remove the electrolyte containers from the battery. Wait for around 20 minutes.
- Insert the caps into the filler holes, pressing in firmly so that the top of the caps do not protrude above the upper surface of the battery's top cover.

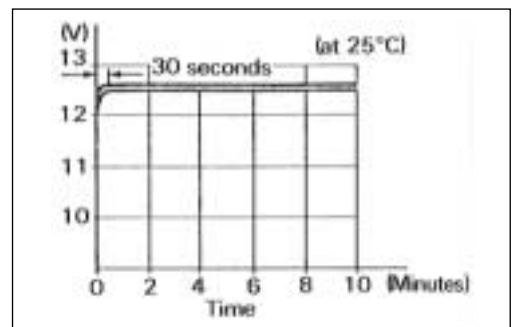
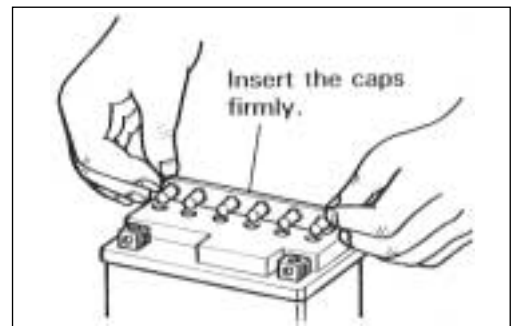
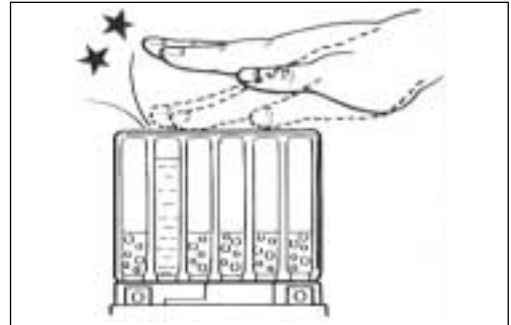
CAUTION:

Never use anything except the specified battery.
Once install the caps to the battery, do not remove the caps.

- Using HYOSUNG pocket tester, measure the battery voltage. The tester should indicate more than 12.5-12.6 V(DC) as shown in the Fig. If the battery voltage is lower than the specification, charge the battery with a battery charger.

NOTE:

Initial charging for a new battery is recommended if two years have elapsed since the date of manufacture.



SERVICING

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one. If the battery terminals are found to be coated with rust or an acidic white powdery substance, then this can be cleaned away with sandpaper.

RECHARGING OPERATION

- Using the pocket tester, check the battery voltage. If the voltage reading is less than 12.0V(DC), recharge the battery with a battery charger.

CAUTION:

When recharging the battery, remove the battery from the motorcycle.

NOTE:

Do not remove the sealing cap off the battery top while recharging.

Recharging time	0.4A for hours or 4.0A for half an hour
-----------------	--

CAUTION:

Be careful not to allow the charging current to exceed 4A at any time.

- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than 12.5V, recharge the battery again.
- If the battery voltage is still less than 12.5V after recharging, replace the battery with a new one.
- When a battery is left for a long term without using, it is subject to discharge. When the motorcycle is not used for more than 1 month(especially during the winter season), recharge the battery once a month at least.

