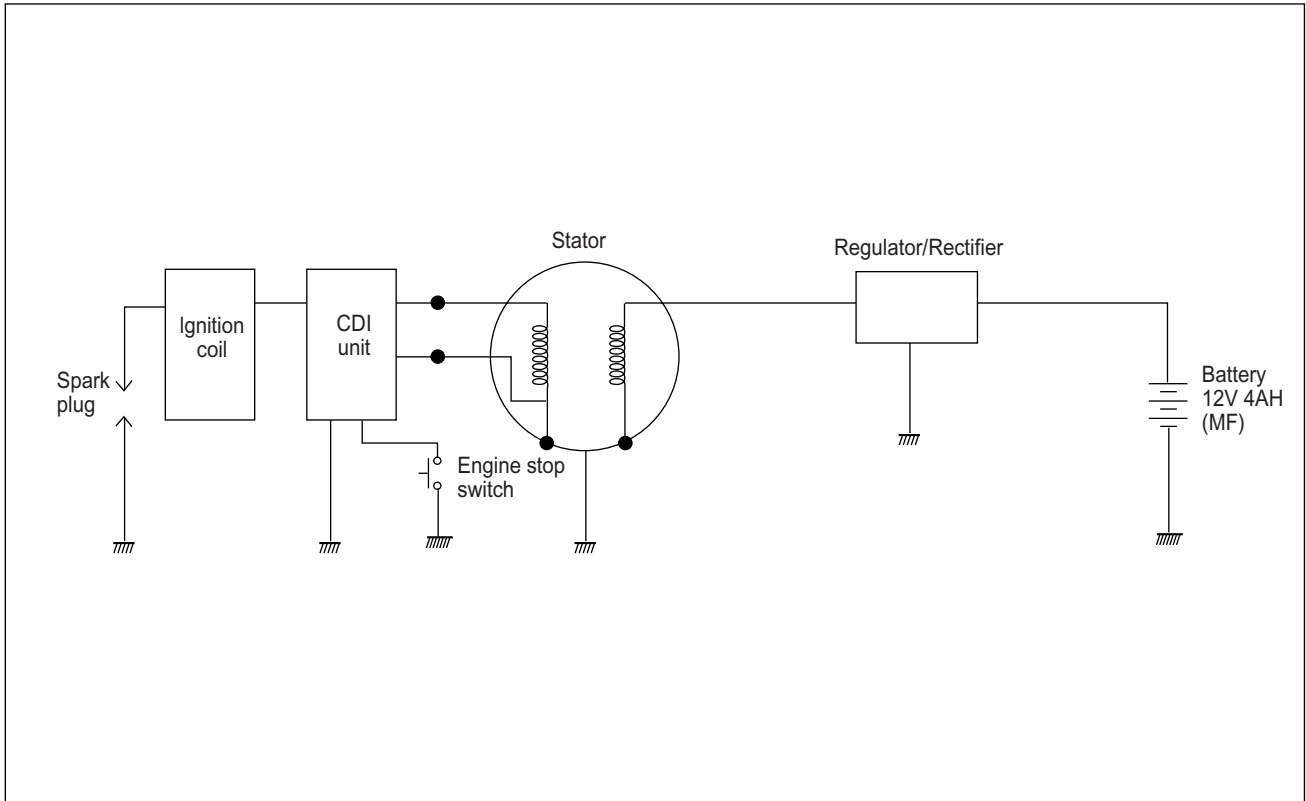


ELECTRICAL SYSTEM

CONTENTS

<i>IGNITION/CHARGING SYSTEM</i>	5- 1
<i>IGNITION COIL</i>	5- 1
<i>STATOR COILS</i>	5- 2
<i>REGULATOR/RECTIFIER</i>	5- 3
<i>STARTER SYSTEM</i>	5- 3
<i>STARTING MOTOR REMOVAL AND DISASSEMBLY</i>	5- 4
<i>STARTING MOTOR INSPECTION</i>	5- 4
<i>STARTER RELAY INSPECTION</i>	5- 5
<i>THERMOELEMENT</i>	5- 5
<i>SWITCHES INSPECTION</i>	5- 6
<i>BATTERY</i>	5- 7

IGNITION/CHARGING SYSTEM

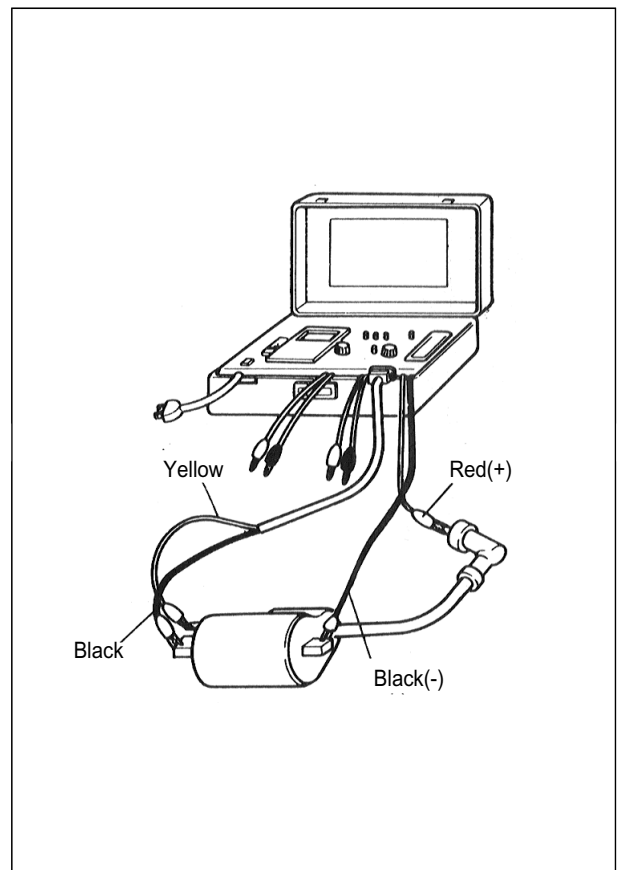
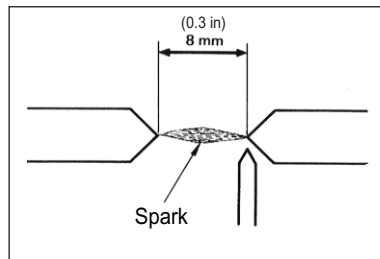


IGNITION COIL

- 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.

 **Electro tester : 09900-28106**

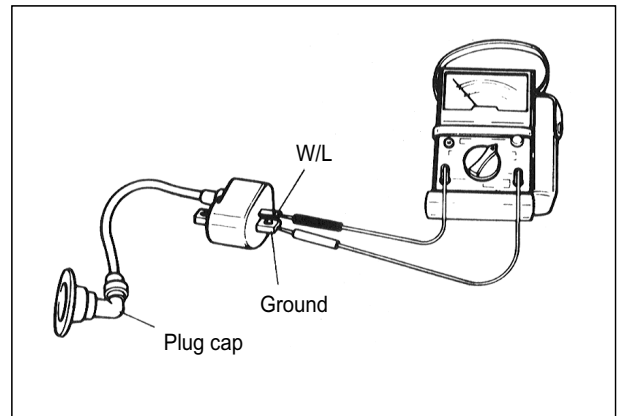
Spark performance	Over 8 mm (0.3 in)
--------------------------	---------------------------



- Check the ignition coil with the pocket tester.

 **Pocket tester : 09900-25002**

Ignition coil resistance	
Primary	0.19 ~ 0.24 Ω
Secondary	5.4 ~ 6.6 k Ω

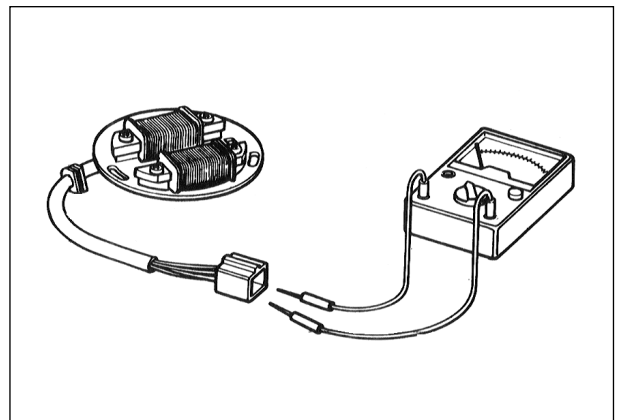


STATOR COILS

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

Unit : Ω

Stator coil resistance	Standard
Charging coil	0.69 ~ 1.03 Ω
Exciting coil	220 ~ 260 Ω



⊙ CHARGING OUTPUT CHECK

Start the engine and keep it running at 5,000 rpm. 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-load performance or replace the regulator/rectifier.

CAUTION

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

 **Pocket tester : 09900-25002**
Engine tachometer : 09900-26006

Standard charging output	14.0 ~ 15.0 V (at 5,000 rpm)
--------------------------	------------------------------

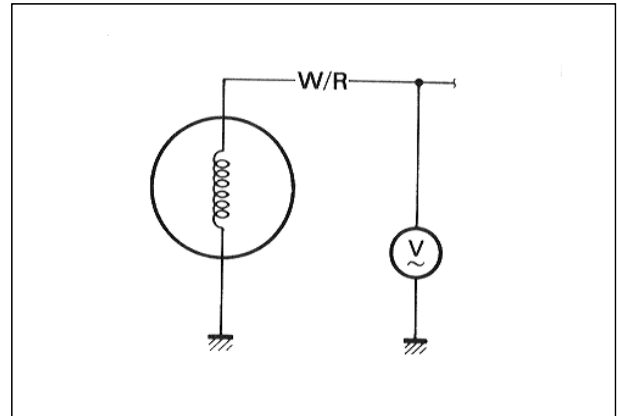


5-3 ELECTRICAL SYSTEM

⊙ NO-LOAD PERFORMANCE OF A.C. GENERATOR

- Disconnect the magneto lead wire coupler.
- Start the engine and keep it running at 5,000 rpm.
- Using a pocket tester, measure the AC voltage between the three lead wire. If the tester reading is as follows, magneto is in good condition.

Standard no-load performance of A.C. generator	More than 17.0 V (at 5,000 rpm)
---	---------------------------------



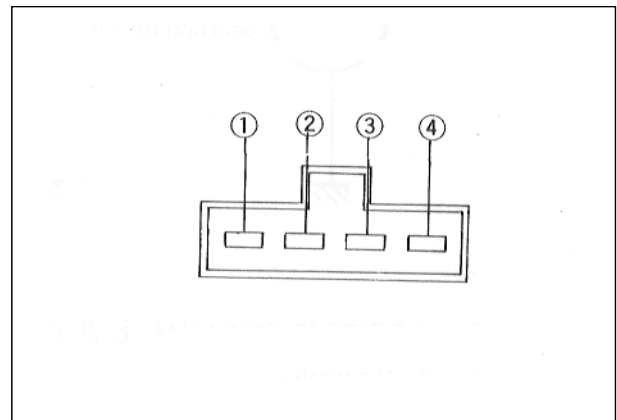
REGULATOR/RECTIFIER

- Disconnect the coupler.
- Using the pocket tester (× 1kΩ Range), measure the resistance between the terminals as shown in the following table. If the resistance checked is incorrect, replace the regulator/rectifier.

Pocket tester : 09900-25002

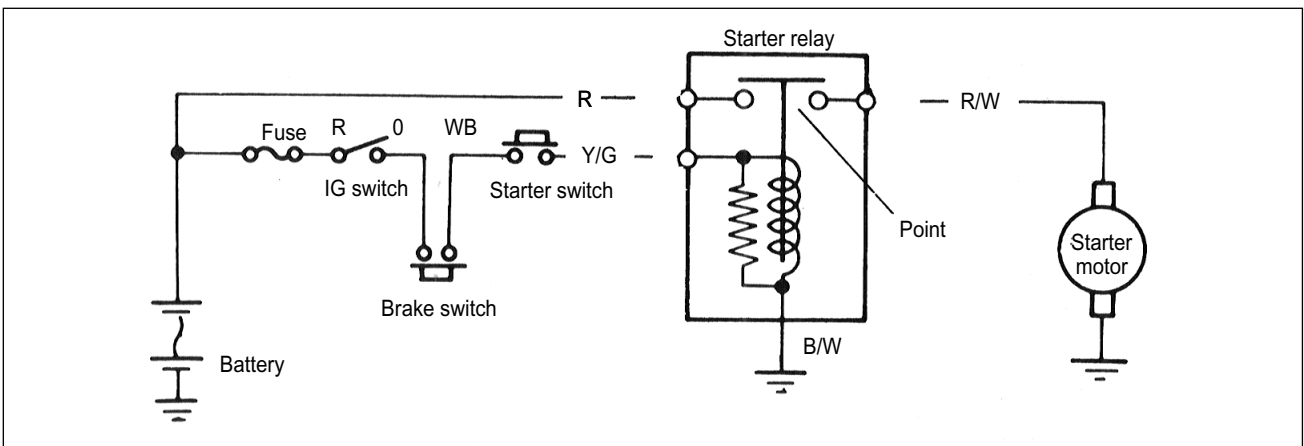
Unit : kΩ

		⊕ Probe of tester to:			
		1	2	3	B
⊖ Probe of tester to:	1		50 ~ 260	∞	∞
	2	50 ~ 230		∞	∞
	3	∞	∞		∞
	4	∞	∞	10 ~ 100	



STARTER SYSTEM

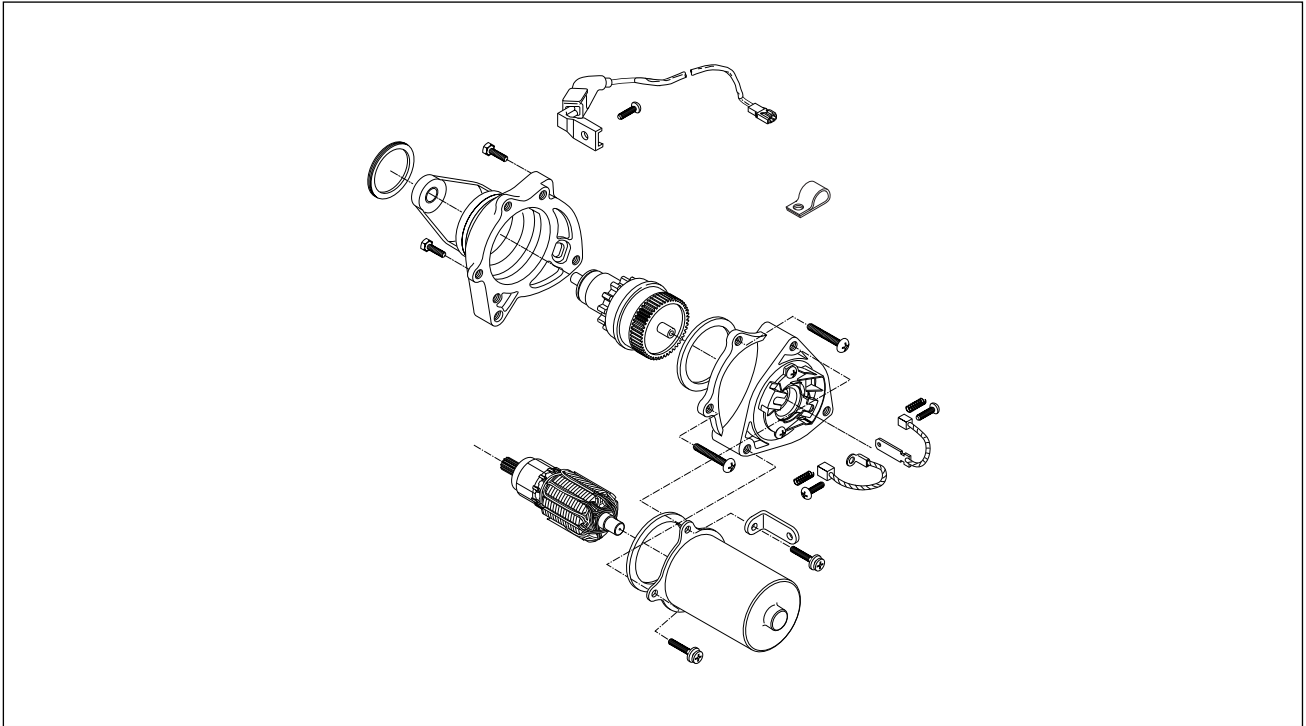
The starter system is shown in the diagram below: namely, the starting motor, starter relay, starter switch and battery. Depressing the starter switch (on the left handlebar switch box) while squeezing the front or rear brake lever energizes the relay, causing the contact points to close which connects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



STARTING MOTOR REMOVAL AND DISASSEMBLY

Remove the starting motor.

Disassemble the starting motor as shown in the illustration.

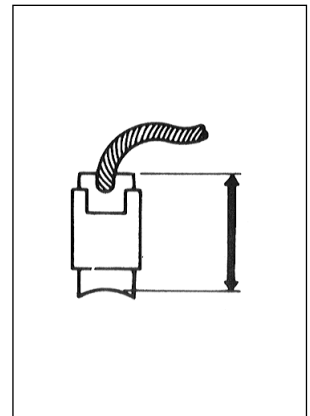
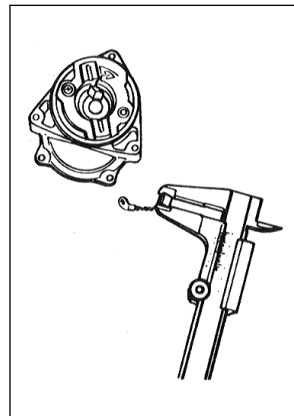


STARTING MOTOR INSPECTION

⊙ CARBON BRUSHES

When the brushes are worn, the motor will be unable to procedure 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.

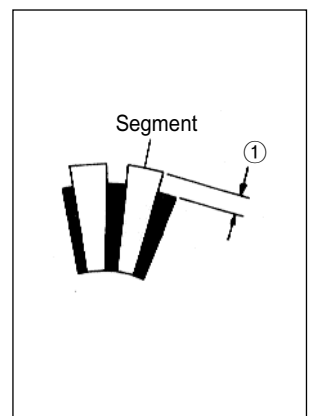
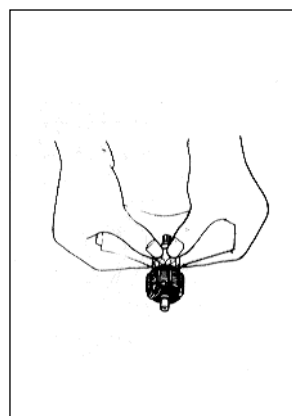
Carbon brushes wear	Service limit
	4.0 mm (0.158 in)



⊙ 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.

Commutator under cut	Service limit
	0.2 mm (0.008 in)



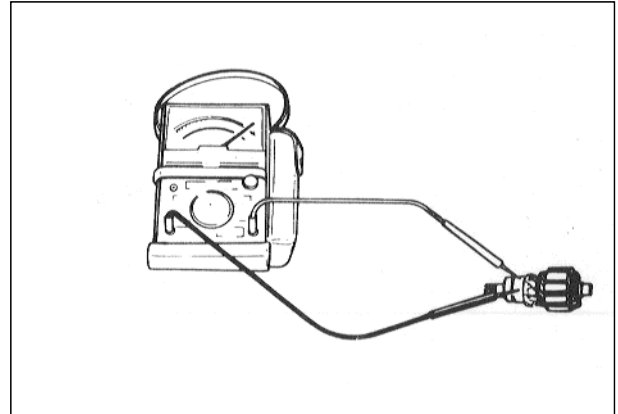
5-5 ELECTRICAL SYSTEM

⊙ 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 starting motor to suddenly fail.

 **Pocket tester : 09900-25002**



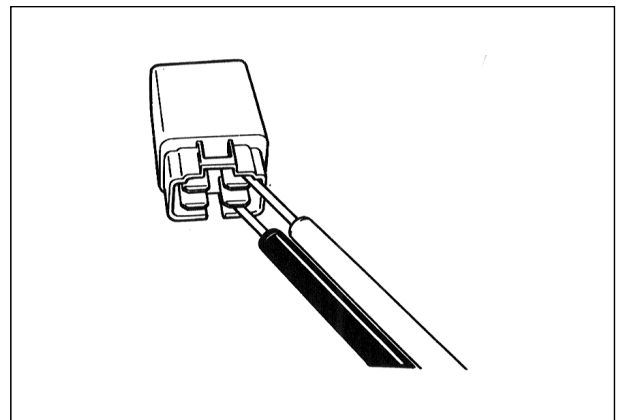
STARTER RELAY INSPECTION

● Disconnect the starter relay lead wire coupler.

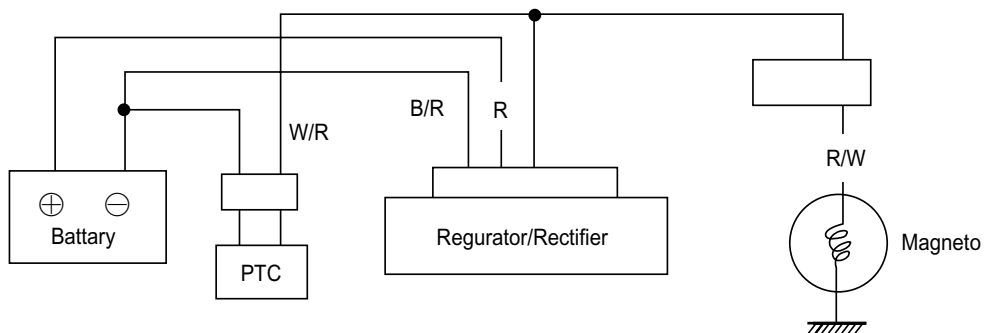
Check the coil for “open”, “ground” and ohmic resistance. The coil is in good condition, if the resistance is as follows.

 **Pocket tester : 09900-25002**

Starter relay standard resistance	Standard
	0 ~ 70 Ω



THERMOELEMENT



⊙ INSPECTION

- Disconnect the thermoelement coupler ①.
 - 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.

⚠ CAUTION

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



SWITCHES INSPECTION

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

 **Pocket tester : 09900-25002**

WIRE COLOR

- B Black
- L Blue
- 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
- Y/G Yellow with Green tracer
- L/W Blue with White tracer



STARTER SWITCH

	W/B	Y/G
ON	○-----○	○-----○
OFF		

IGNITION SWITCH

	B/W	B/R	R	O
OFF	○-----○			
ON			○-----○	○-----○

ENGINE STOP SWITCH

	B/R	B/W
	○-----○	○-----○
		

BATTERY

⦿ CAUTION OF BATTERY TREATMENT

The battery should be well taken care of because it emits flammable gas.

If you don't follow the instruction in the below, there may be a explosion and severe accident.

Therefore, please pay attention to the following points.

- Prohibit positively battery from contacting to short, spark or firearms.
- The recharge of battery should be done in the wide place where the wind is well ventilated.
Please don't recharge it at the sight of wind-proof.

⦿ CAUTION OF BATTERY ELECTROLYTE TREATMENT

- Pay attention for the battery electrolyte not to stain the chasis or the humanbody.
- If be stain the chassis or the humanbody, at once wash a vast quantity of water.
When it be stained, clothes should come into being a hole or painting should take off.
Be cured from a doctor.
- When the battery electrolyte was dropped to the surface of land, wash a vast quantity of water.
Neutralize by hydroxide, bicarbonate of soda and so on.

⦿ CAUTION OF MAINTENANCE FREE BATTERY TREATMENT

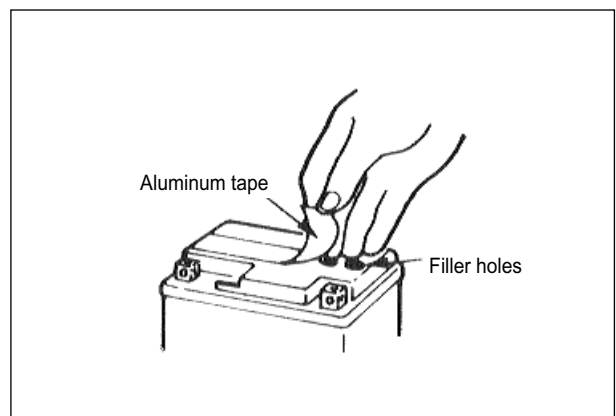
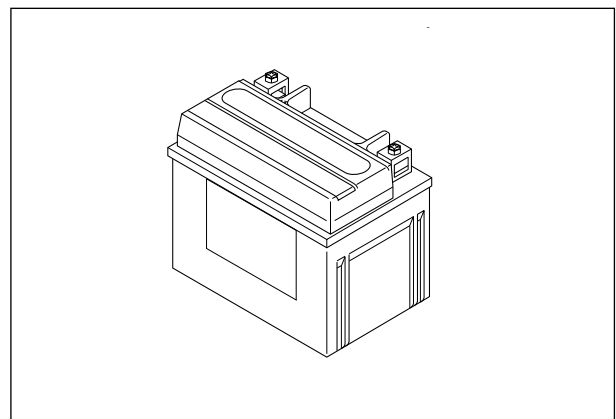
- Do not remove the aluminum tape to seal the battery electrolyte filler hole untill use as battery of completely seal type.
- Do not use it except the battery electrolyte.
- When pour into the battery electrolyte, necessarily use the electrolyte of the specified capacity.
- Do not open the sealing cap after recharge the battery electrolyte.

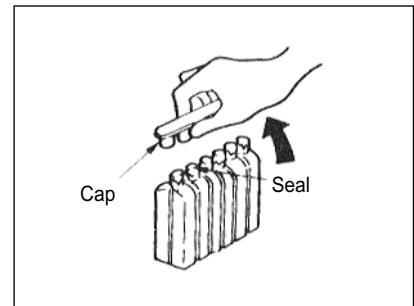
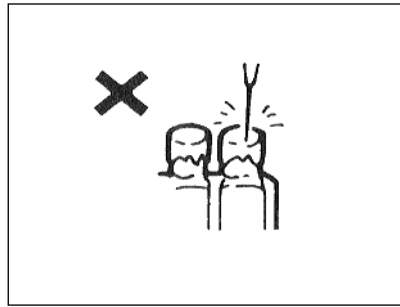
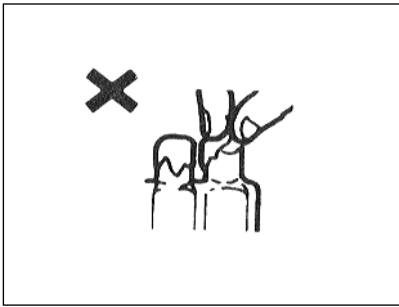
- Filling electrolyte.

- ① The battery is puted on even land, remove the aluminum tape sealing.
- ② Remove the cap at the electrolyte container.

⚠ CAUTION

Do not remove the seal, not prick with sharp thing.





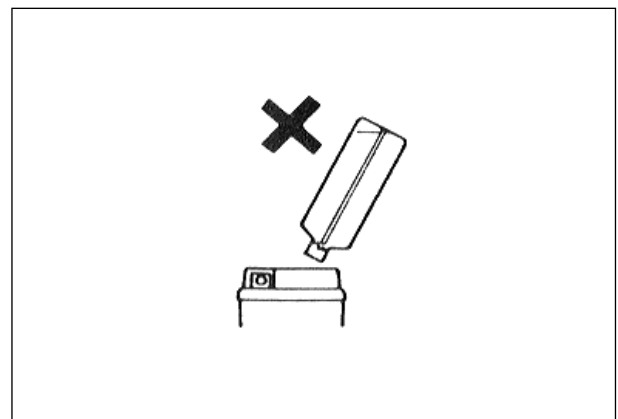
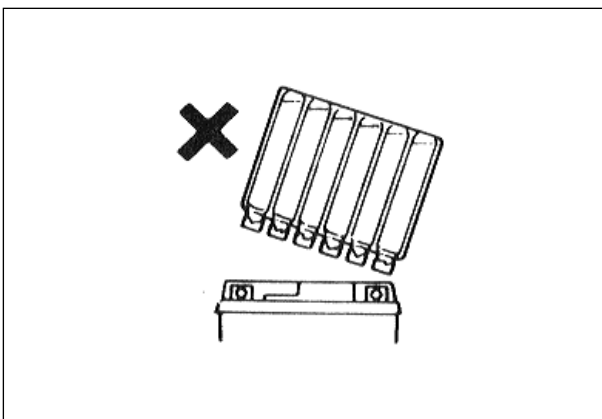
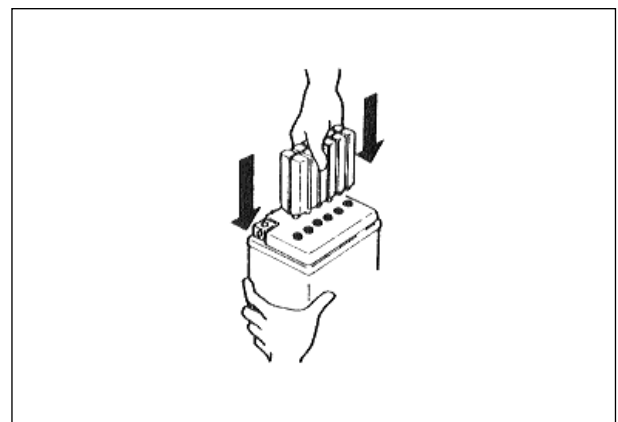
③ Pouring of battery electrolyte

When insert the nozzles 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.

⚠ CAUTION

There may be a case which can't pour the electrolyte if you put it into electrolyte container slopely.

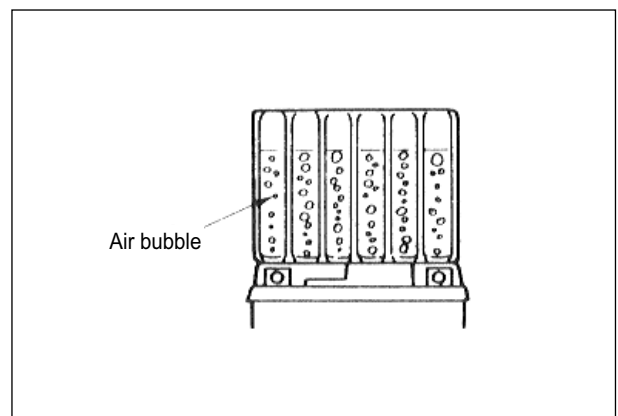


④ Confirmation of pour

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

⚠ CAUTION

If no air bubbles are coming up from a filler port, tap the bottom of the two or three times.



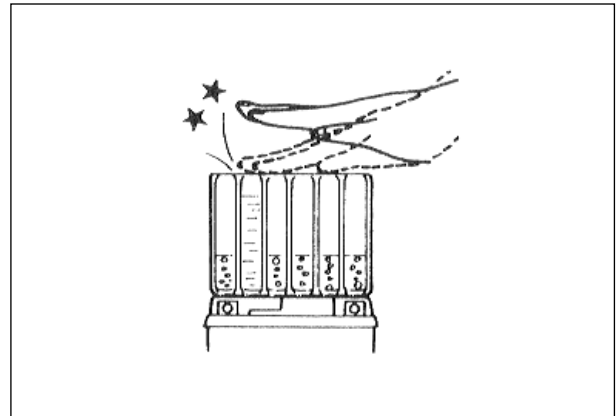
5-9 ELECTRICAL SYSTEM

⑤ Separation of electrolyte container

After confirming that you entered the electrolyte into battery completely, remove the electrolyte containers from the battery.

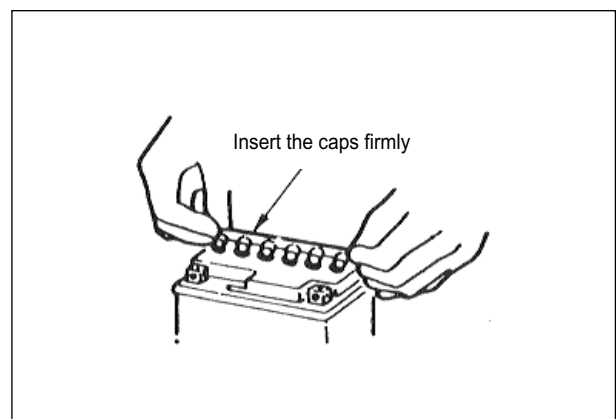
⚠ CAUTION

Draw the empty receptacle out slowly because there may be a chance which remaining electrolyte vaporize.



⑥ Insert of the caps

Insert the cap into the filler holes, pressing it firmly so that the top of the caps do not protrude above the upper surface of the battery's top cover.



⦿ ASSISTANCE RECHARGING

Use the battery that is made after 2 years as the maintenance free battery.

Use the battery at condition of the high temperature.

Assistance recharging to the following points.

- The main principle of assistance recharging.
Assistance recharging from rule of electric current or voltage, when the battery discharged.
- Do not assistance recharge except the right side table.
- In times of recharging the battery, please do it at the condition of removal of the lead wire.

⚠ WARNING

The firearm is strictly prohibited.

Assistance Recharging	
Standard	0.5A × 5 hours
Fast	5A × 30 minutes.