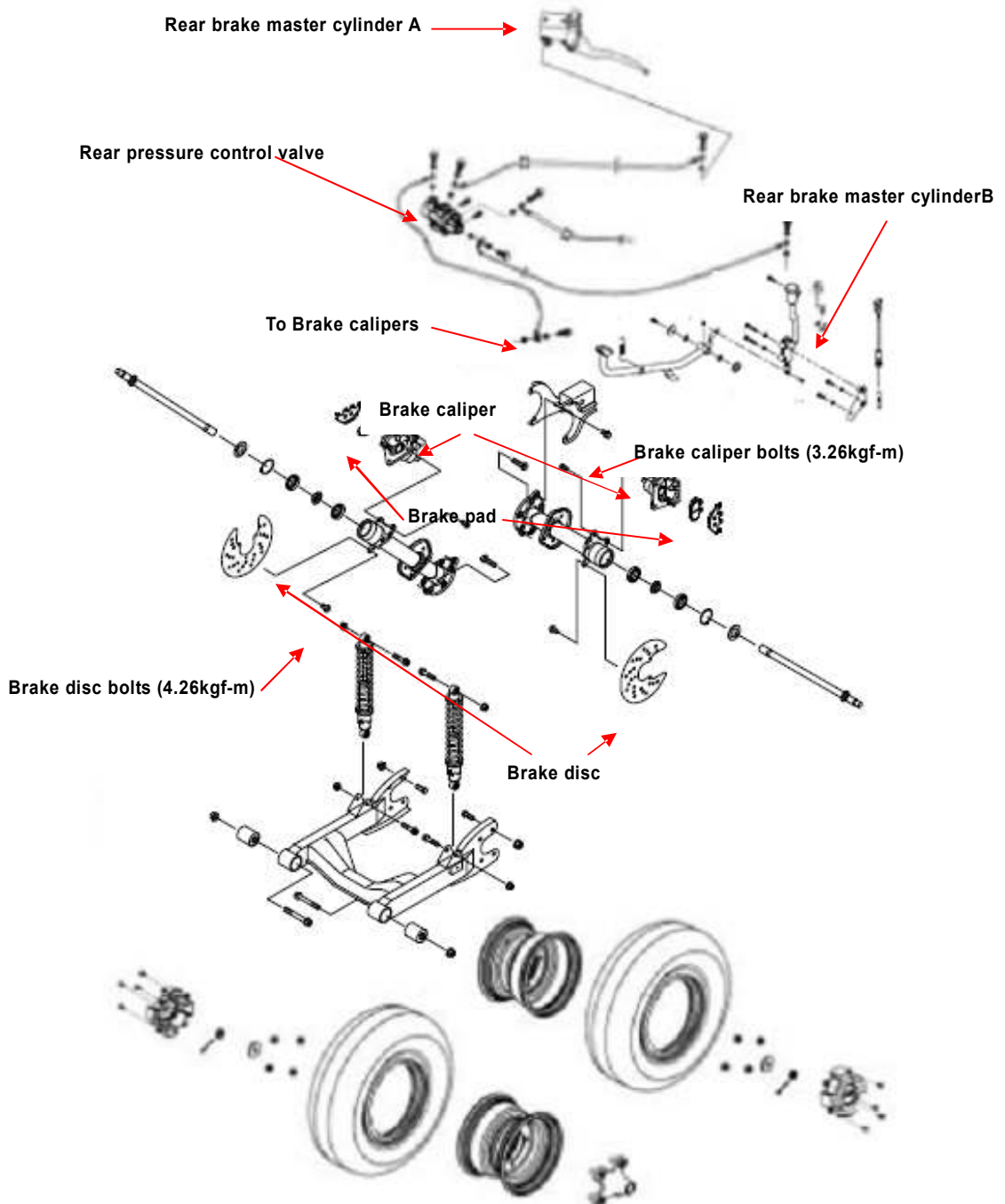


16. REAR BRAKE & REAR WHEEL & REAR CUSHION

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Mechanism Diagram



1

16. REAR BRAKE & REAR WHEEL & REAR CUSHION

Maintenance Description

Operational precautions

Caution

Inhaling asbestos may cause disorders of respiration system or cancer, therefore, never use air hose or dry brush to clean brake parts. Use vacuum cleaner or other authorized tool instead.

- The brake caliper can be removed without removing the hydraulic system.
- After the hydraulic system is removed, or the brake system is felt to be too soft, bleed the hydraulic system.
- While refilling brake fluid, care should be taken not to let the foreign material entering into the brake system.
- Do not spill brake fluid on the painted surfaces, plastic or rubber parts to avoid damage.
- Check the operation of the brake system before riding.
- Please refer to the Maintenance Manual of tubeless tire in respect to the removal, repair and installation of the tire.

Specifications

Item	Standard (mm)	Limit (mm)
The thickness of front and rear brake disk	4.000	2.500
Front and rear brake disk eccentricity	< 0.100	0.300
Master cylinder inner diameter (hand brake)	14.000 ~ 14.043	14.055
Master cylinder piston outer diameter (hand brake)	13.957 ~ 13.984	13.945
Master cylinder inner diameter (foot brake)	15.900 ~ 15.943	15.955
Master cylinder piston outer diameter (foot brake)	15.857 ~ 15.884	15.845
Diameter of rear disk	220.000	-
Thickness of rear brake lining	7.000	2.000

Tire pressure as cold: 0.8 kg/cm² (12psi)

Torque values

Brake hose bolt	3.50kgf-m	Rear axle castle nut	5.00kgf-m
Bolt for brake caliper	3.25kgf-m	Rear axle holder bolt	9.20kgf-m
Bolts for the brake disk	4.25kgf-m	Rear wheel axle nut	9.20kgf-m
Brake lever nut	1.00kgf-m	Rear cushion mounting bolt	
Air-bleed valve	0.50kgf-m	4.6kgf-m Swing arm pivot bolt	9.2kgf-m
Rear wheel nut	2.40kgf-m		

Special tools

Inner bearing puller: TGB-440645

Rear axle bearing driver (6007LLU): TGB-440640

Trouble Diagnosis

Soft brake lever

1. Air inside the hydraulic system
2. Hydraulic system leaking
3. Worn master piston
4. Worn brake pad
5. Poor brake caliper
6. Worn brake lining/disk
7. Low brake fluid
8. Blocked brake hose
9. Warp/bent brake disk
10. Bent brake lever

Hard operation of brake lever

1. Blocked brake system
2. Poor brake caliper
3. Blocked brake pipe
4. Seized/worn master cylinder piston
5. Bent brake lever

Uneven brake

1. Dirty brake lining/disk
2. Poor wheel alignment
3. Clogged brake hose
4. Deformed or warped brake disk
5. Restricted brake hose and fittings

Tight brake

1. Dirty brake lining/disk
2. Poor wheel alignment
3. Deformed or warped brake disk

Brake noise

1. Dirty lining
2. Deformed brake disk
3. Poor brake caliper installation
4. Imbalance brake disk or wheel

Vibration or Wobble

1. Axle is not tightened well
2. Bent rim
3. Axle bearings are worn
4. Faulty tires
5. Rear axle bearing holder is faulty

Hard Suspension

1. Bent damper rod
2. Faulty swing arm pivot bushings

Soft Suspension

1. Weak shock absorber damper
2. Weak shock absorber spring

16. REAR BRAKE & REAR WHEEL & REAR CUSHION

Rear Wheel

Removal

Raise the rear wheels off the ground by placing a jack or other support under the frame.



Remove the rear wheel nuts, and then remove rear wheels.

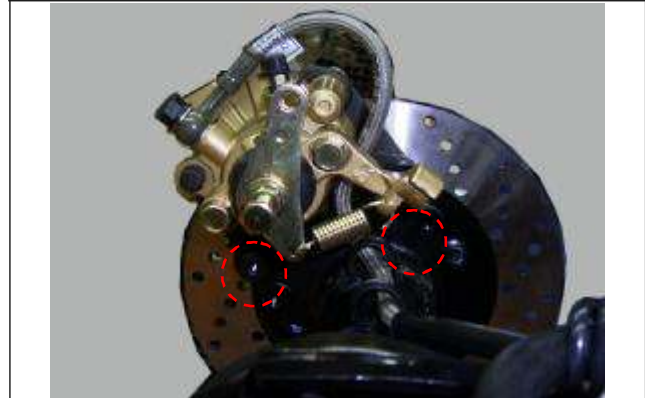
Installation

Install the rear wheel and tighten the nuts.
Torque: 2.4kgf-m



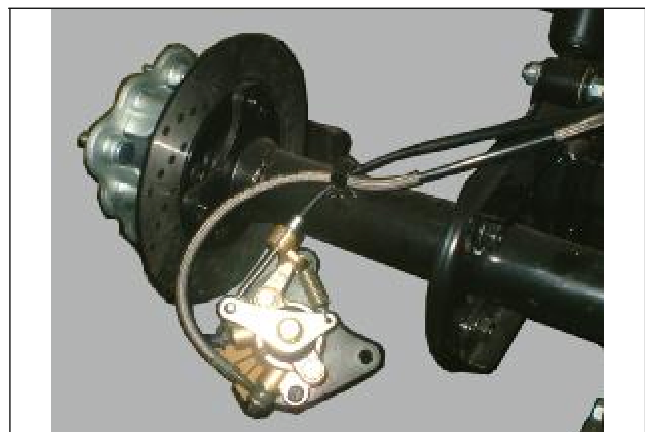
Removal

Remove the brake caliper 2 nuts. and then remove the brake caliper.



Installation

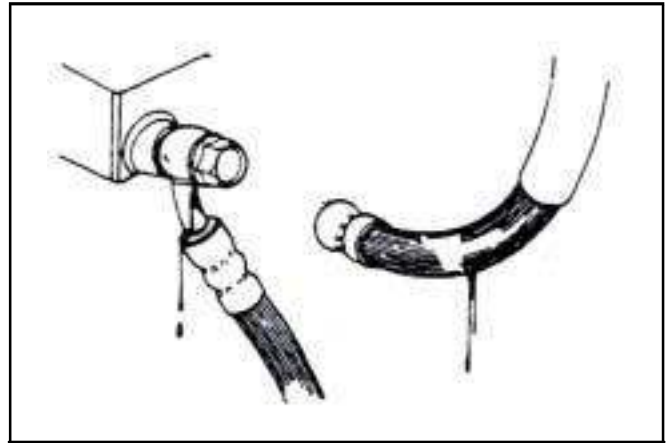
Install the rear wheel shaft connector.
 Install wheel shaft connector washer and tighten the wheel shaft connector nut.
Torque: 2.4kgf-m
 Install cotter pin.



Disk Brake System Inspection

Inspection

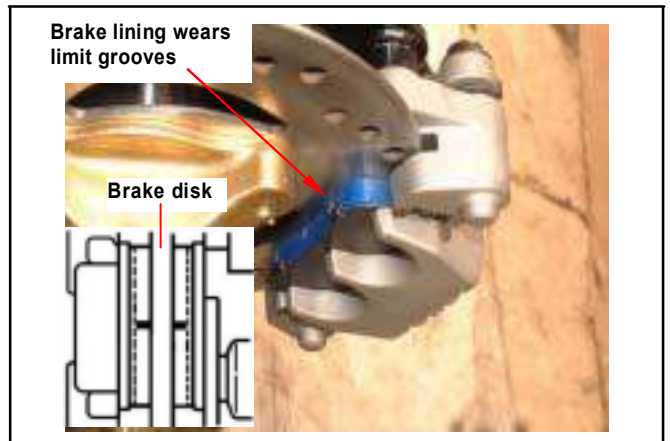
By visual examination whether divulges or the damage, with spanner inspection brake tube seam whether becomes less crowded, and the inspection handle bar turn right or turn left, or pressure the cushion, whether besides the pipeline protection department, whether there is interferes, contacts other parts of.



Check the brake from behind the brake caliper. The brake pad must be replaced with new lining when the brake pad wear limit reaches the brake disk.

Caution

- Check the rear brake lining must be removed rear wheel first.

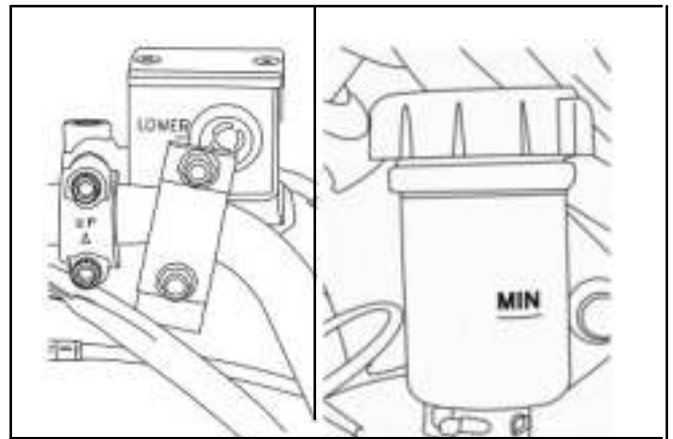


Park the ATV on a level ground, and check if fluid level is under the "LOWER" mark.

Recommended Brake Fluid: WELL RUN BRAKE OIL (DOT 4)

Caution

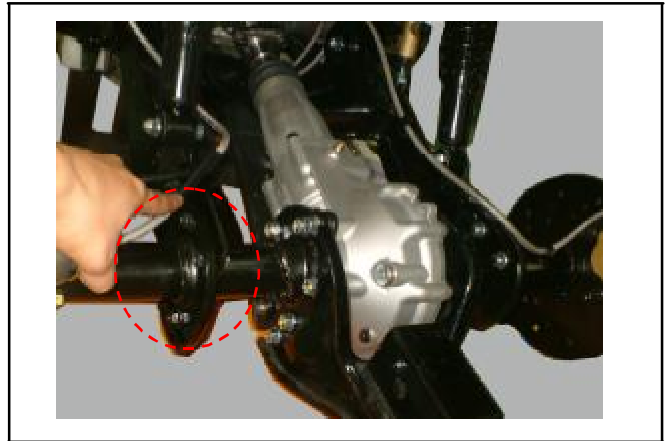
- The vehicles inclined or just stop, the survey oil level could not be accurate, had to settle the 3~5 minute
- In order to prevent has the chemical change, please do not use counterfeiting or other unclear trade marks brake fluid.
- Uses by all means must with the trade mark brake fluid, guarantees the ghost vehicle efficiency.



16. REAR BRAKE & REAR HEEL & REAR CUSHION

Rear Wheel Axle

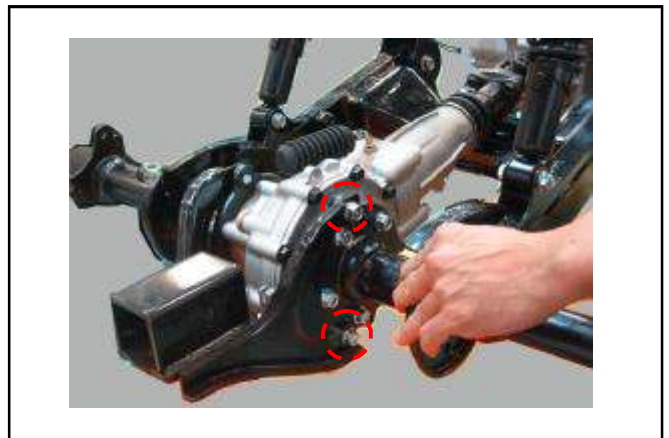
Remove rear wheel housing 4 bolts.



Escape rear wheel housing from rear fork assy.



Remove tow ball mount 4 bolts (2 bolts each side)



Remove rear axle housing 4 bolts.



Remove rear axle housing



Inspection

Check bearings on rear wheel axle bearing seat. Rotate each bearing's inner ring with fingers. Check if bearings can be turned in smooth and silent, and also check if bearing outer ring is mounted on bearing seat.

If bearing rotation is uneven, noising, or loose bearing mounted, then replace it.

Check oil seal for wear or damage, and replace it if necessary.



Caution

- Never install used bearings. Once bearing removed, it has to be replaced with new one.

Adding Brake Fluid

Before the brake fluid reservoir is removed, turn the handle so that the brake fluid reservoir becomes horizontal, and then remove the brake fluid reservoir.

When maintenance brake system, will be supposed to paint the surface or the rubber parts catches up by the rags.

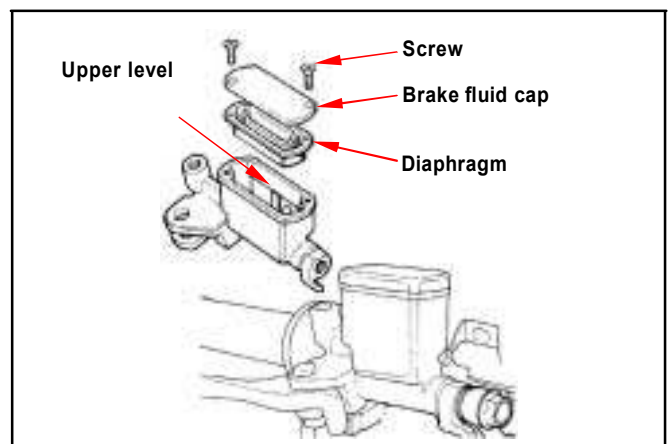
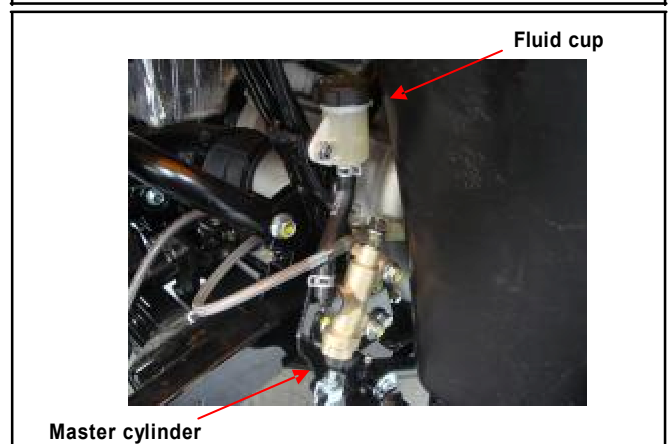
Caution

Supplement brake fluid please do not surpass the upper limit, spilled brake fluid on painted surfaces, plastic or rubber components may result in their damages.

Remove the brake fluid cap and diaphragm. Increases the high quality brake fluid, uses by all means must with the trade mark brake fluid joins in the master cylinder. Clean the dirty brake disk.

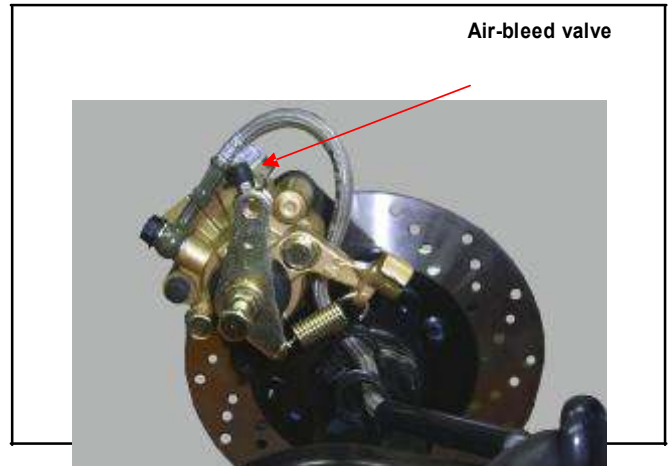
Caution

- The dirty brake lining or disk will reduce the brake performance.
- To mixed non-compatible brake fluid will reduce brake performance.
- Foreign materials will block the system causing brake performance to be reduced or totally lost.

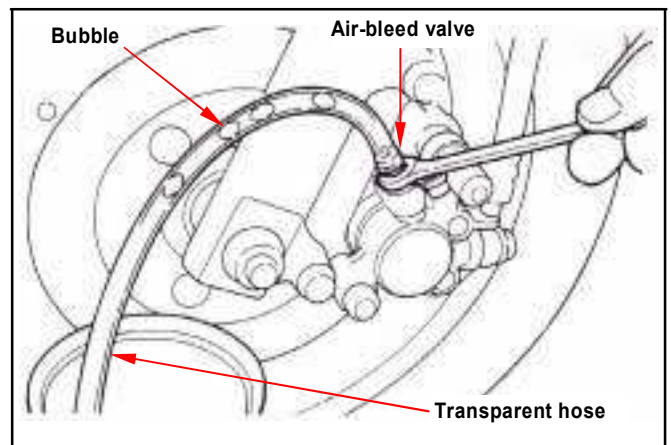


Brake fluid replacement / Air-bleed

Connect drain hose to air-bleed valve.
 Open the drain valve on the caliper and operate the brake lever until the old brake fluid is entirely drained out.
 Close the drain valve and add specified brake fluid into the brake master cylinder.
Recommended brake fluid: WELLRUN DOT 3 brake fluid



Connect one end of transparent hose to the drain valve, and put the other end into a container. Open the drain valve around 1/4 turns, and at the same time hold the brake lever until there is no air bubble in the drain hose and also feeling resistance on the brake lever.
 Close the drain valve when finishing the brake system refilling fluid procedure, and operate the brake lever to check whether air bubble is in brake system or not.



If brake is still soft, please bleed the system as described below:

1. Tightly hold the brake lever and open the drain valve around 1/4 turns, and then close the valve.

Caution

- Do not release the brake lever before the drain valve is closed.
- Always check the brake fluid level when carrying out the air bleeding procedure to avoid air enters into the system.

2. Slowly release the brake lever, and wait for a few seconds until it reaches its top position.
3. Repeat the steps 1 and 2 until there is no air bubble at the end of the hose.
4. Tightly close the drain valve.
5. Make sure the brake fluid is in the UPPER level of the master cylinder, and refill the fluid if necessary.
6. Cover the cap.

16. REAR BRAKE & REAR WHEEL & REAR CUSHION

Rear Brake Caliper

Removal

Place a container under the brake caliper, and loosen the brake hose bolt and finally remove the brake hose.

Caution

Do not spill brake fluid on painted surfaces.

Remove two caliper bolts and the caliper.

Inspection

Make sure the brake linings condition. Replace the linings if the brake linings wear limitation groove close to the brake disk.

Installation

Install the brake caliper and tighten the attaching bolts securely.

Torque: 3.25kgf-m

Caution

- Use M8 x 20 mm flange bolt only.
- Long bolt will impair the operation of brake disk.

Use two seal washers and hose bolts to lock the hose and brake caliper in place.

Torque: 3.5kgf-m

Refill up the brake fluid to the reservoir and make necessary air bleeding.

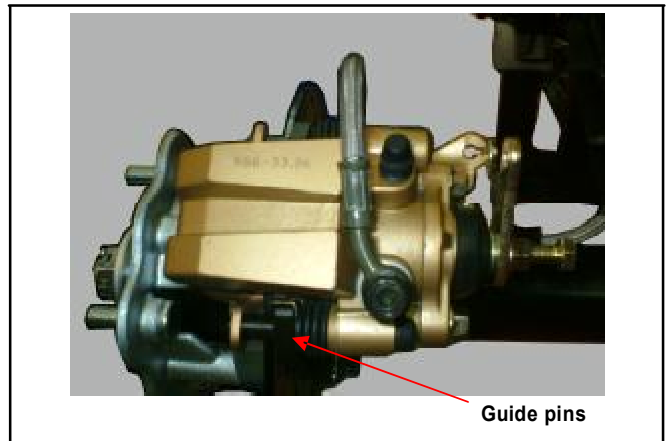
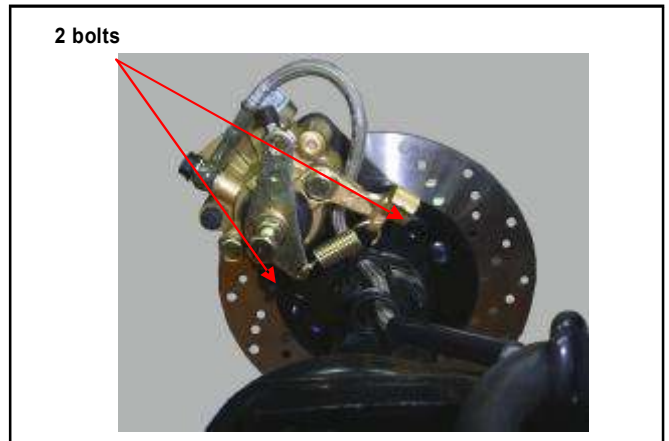
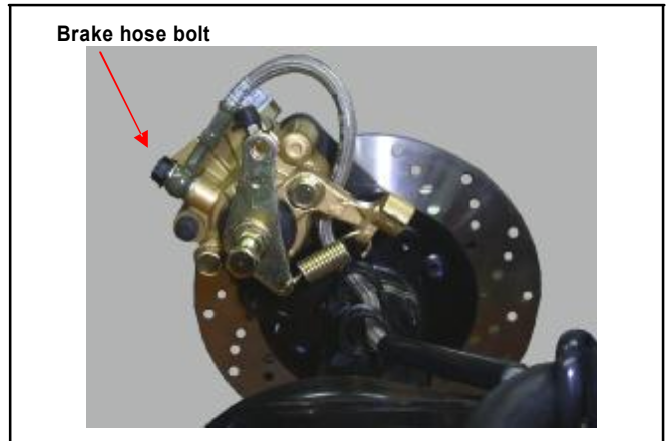
Brake lining replacement

Remove two guide pins.

Remove brake caliper cylinder, and then remove brake linings.

Install new linings and brake caliper cylinder. Tighten the guide pins.

Torque: 1.8kgf-m

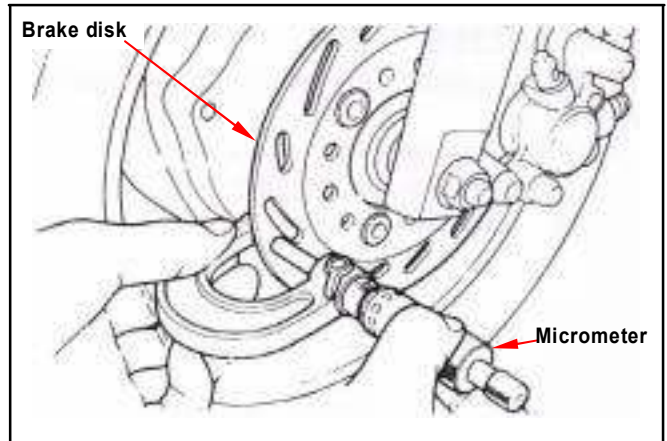


Brake Disk

Inspection

Visually check the brake disk for wear or break. Measure the thickness of the disk at several places. Replace the disk if it has exceeded the service limit.

Allowable limit: 2.5 mm

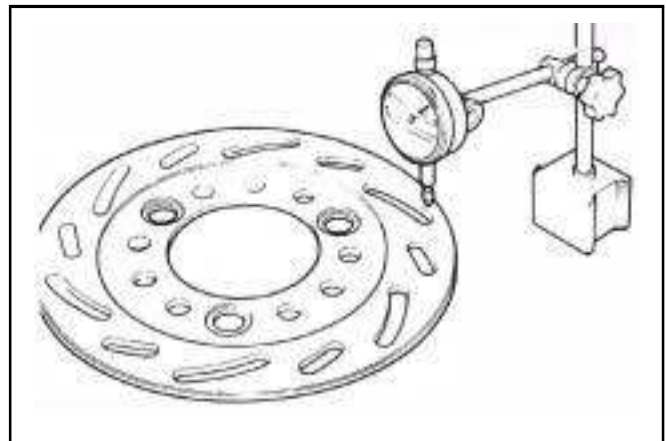


Remove the brake disk from rear wheel axle. Check the disk for deformation and bend.

Allowable limit: 0.30 mm

⚠ Caution

- The dirty brake lining or disk will reduce the brake performance.
- Brake lining includes the asbestos ingredient, cannot use the air-gun to be clean, the operator should dress the mouthpiece and the glove, use vacuum cleaner clean it.



Rear Brake Master Cylinder

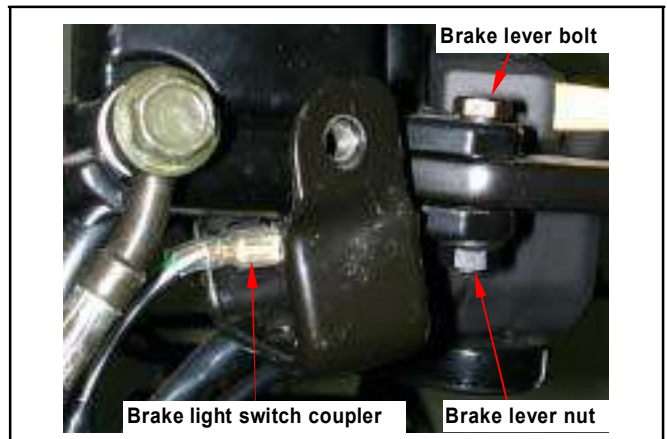
Master Cylinder Removal

⚠ Caution

Do not let foreign materials enter into the cylinder.

⚠ Caution

The whole set of master cylinder, piston, spring, diaphragm and cir clip should be replaced as a set.



Handle left side – rear brake master cylinder A

Remove brake light switch coupler.

Drain out the brake fluid.

Remove the brake hose.

Remove the brake lever from the brake master cylinder.

Remove the master cylinder socket bolts and the master cylinder.



16. REAR BRAKE & REAR WHEEL & REAR CUSHION

Measure the outer diameter of the piston. Replace the piston if its measured value exceeds allowable limit.

Allowable limit:

Hand brake 13.954 mm

Foot brake 15.850 mm

Master Cylinder Assembly

Caution

- It is necessary to replace the whole set comprising piston, spring, piston cup, and cir clip.
- Make sure there is no dust on all components before assembling.

Apply clean brake fluid to the piston cup, and then install the cup onto the piston.

Install the larger end of the spring onto the master cylinder.

The master cup's cavity should be face inside of master cylinder when installing the master cup. Install the cir clip.

Caution

- Never install cup lip in the opposite direction.
- Make sure the cir clip is seated securely in the groove.

Install the rubber boot into groove properly.

Master Cylinder Install

Caution

Improper routing may damage leads, hoses or pipes.

Caution

Kink of brake leads, hose or pipe may reduce brake performance.

Handle left side – rear brake master cylinder A

Install the rubber pad into the groove correctly. Place the master cylinder onto handlebar, and install the bolts.

Install the brake lever, and connect coupler to brake light switch.

Connect brake hoses with 2 new washers.

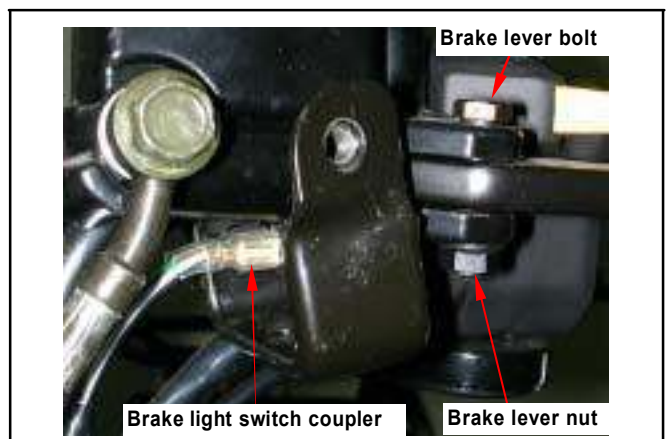
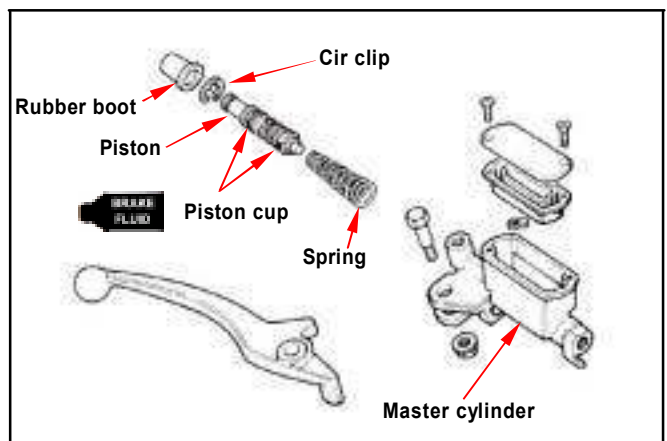
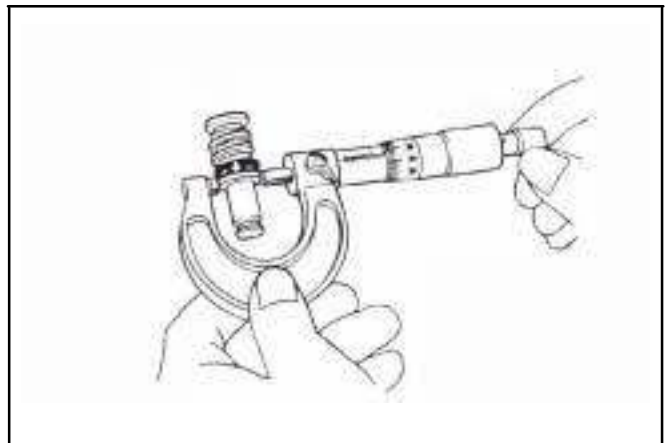
Tighten the brake hose bolt to the specified torque value.

Torque: 3.5kgf-m

Make sure the hose is installed correctly.

Install all wires, hoses, and components carefully so avoid to twisting them together.

Add specified brake fluid and bleed the system.



Right footrest side – rear brake master cylinder

B

Install the master cylinder bolts and the master cylinder.



Install brake push rod to the brake pedal, and install pin and clip.

Caution

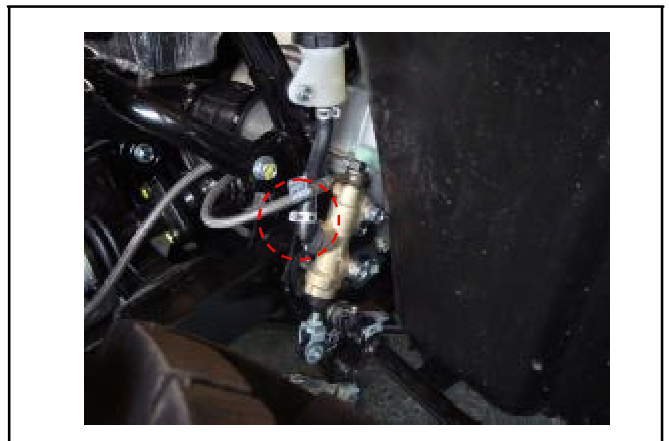
To adjustment brake pedal, you must be removed push rod pin fist. Loosen lock nut, and turn adjustment nut and push rod bracket to adjustment brake free play.



Install fluid hose and clamp.
Connect brake hoses with 2 new washers.
Tighten the brake hose bolt to the specified torque value.

Torque: 3.5kgf-m

Make sure the hose is installed correctly.
Install all wires, hoses, and components carefully so avoid to twisting them together.
Add specified brake fluid and bleed the system.

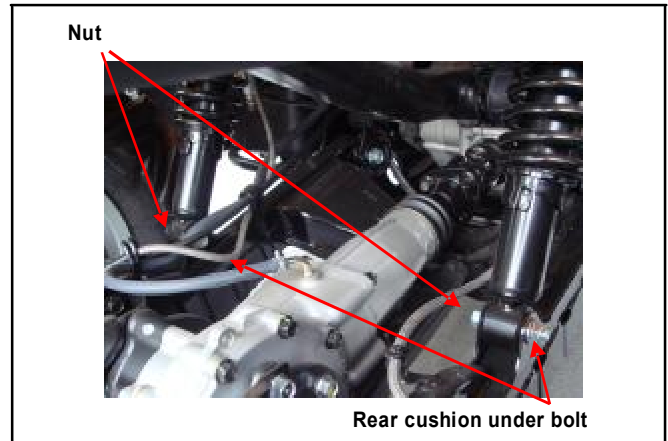


16. REAR BRAKE & REAR WHEEL & REAR CUSHION

Rear Cushion

Removal

Support the frame.
Loosen rear cushion under bolt nut, and remove rear cushion under bolt.

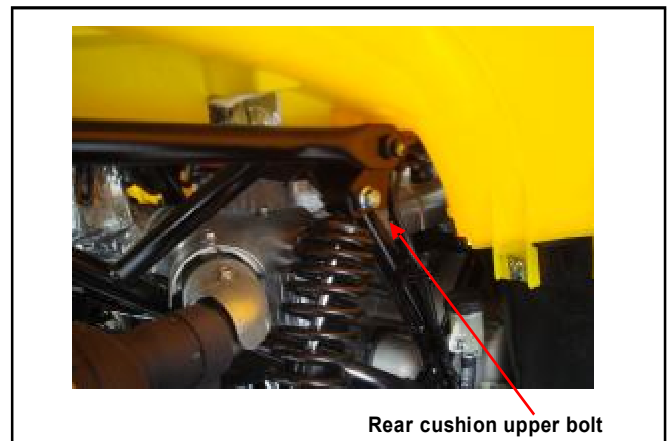


Remove rear cushion upper bolt, and then remove rear cushion.

Installation

Install rear cushion, and install rear cushion upper bolt.
Install rear cushion under bolt, and install nut. Tighten the rear cushion upper bolt and under nut to the specified torque value.

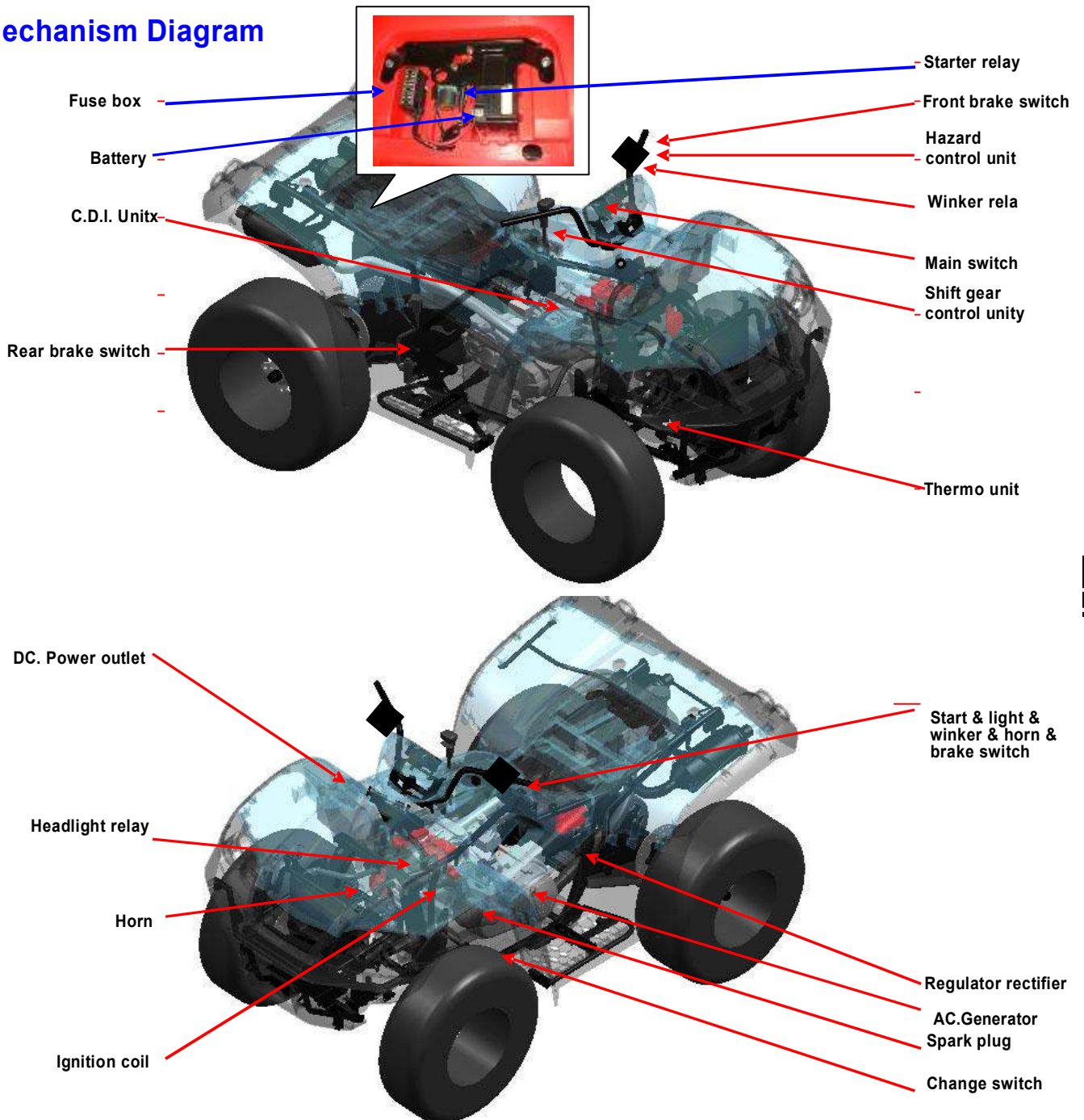
Torque: 4.6kgf-m



Note :

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Starting System	17-10		

Mechanism Diagram



17. ELECTRICAL SYSTEM

Maintenance Data

Operational precaution

- When remove the battery, the disconnection sequence of cable terminals shall be strictly observed. (First disconnect the negative cable terminal, next, the positive cable terminal.)
- The model of the spark plug and the tightening torque.
- The ignition timing.
- Adjustment of headlight.
- Removal and installation of AC generator.
- The maintenance free battery requires no inspection of electrolyte level and refilling of distilled water.
- To recharge the battery, remove the battery from rack without removing ventilation caps.
- Unless in emergency, never rapid charge the battery.
- The voltage must be checked with the voltmeter while charging the battery.
- As C.D.I assembly does not require an ignition timing check. In case ignition timing is incorrect, check C.D.I and AC generator. Verify with an ignition timing light after replacement if necessary.

Technical Specification

Charging system

Description		Specification
Battery	Capacity	12V18Ah
	Charging rate 14A / 0.5	1.4A / 5 ~ 10 hours (standard) hour (fast charging)
Leak current		< 1mA
Charging current		1.2 A / 1500rpm
Control voltage in charging		14.5 + 0.5 V / 1500rpm

Ignition system

Description		Specification
Spark plug	Model	NGK CR7E (Recommended)
	Gap	0.8mm
Ignition coil and resistance	Primary winding	2.9 ± 10%Ω
	Secondary winding	Without cap: 15. ± 10KΩ
		With cap: 20 ± 10KΩ
Ignition timing “F” mark		15° TDC / 1700rpm
		46° TDC / 4200rpm

Trouble Diagnosis

No voltage

- Battery discharged
- The cable disconnected
- The fuse is blown
- Improper operation of the main switch

Low voltage

- The battery is not fully charged
- Poor contact
- Poor charging system
- Poor voltage regulator

No spark produced by spark plug

- The spark plug is out of work
- The cable is poorly connected, open or short-circuited
 - Between AC.G. and C.D.I.
- Poor connection between C.D.I. and ignition coil
 - Poor connection between C.D.I. and the main switch
- Poor main switch
- Poor C.D.I.
- AC.G. is out of work

Starter motor does not work

- The fuse is blown
- The battery is not fully charge
- Poor main switch
- Poor starter switch
- The front and rear brake switches do not operate correctly
- Starter relay is out of work
- The ignition coil is poorly connected, open or short-circuited
- The starter motor is out of work

Intermittent power supply

- The connector of the charging system becomes loose
- Poor connection of the battery cable
- Poor connection or short-circuit of the discharging system
- Poor connection or short-circuit of the power generation system

Charging system does not operate properly

- Burnt fuse
- Poor contact, open or short circuit
- Poor regulator
- Poor ACG

Engine does not crank smoothly

- Primary winding circuit
 - Poor ignition coil
 - Poor connection of cable and connectors
 - Poor main switch
- Secondary winding circuit
 - Poor ignition coil
 - Poor spark plug
 - Poor ignition coil cable
 - Current leakage in the spark plug
- Incorrect ignition timing
 - Poor AC.G.
 - Improper installation of the pulse sensor
 - Poor C.D.I.

Weak starter motor

- Poor charging system
- The battery is not fully charged
- Poor connection in the windings
- The motor gear is jammed by foreign material

Starter motor is working, but engine does not crank

- Poor starter motor pinion
- The starter motor run in reverse direction
- Poor battery

17. ELECTRICAL SYSTEM

Battery

Removal

Remove the seat, and then you can see the battery.
 Disconnect the negative cable terminal first, then the positive cable terminal.
 Remove the battery clamp, and then remove battery...



Clamp

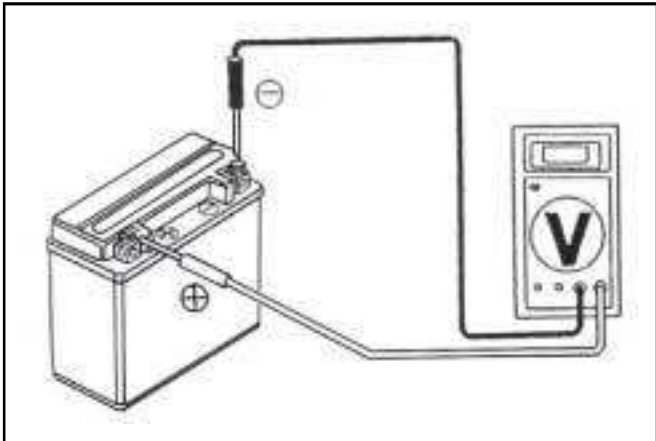
Voltage Check

Use the digital voltmeter to check the voltage of the battery.

Voltage:

Fully charged: 13.0~13.2 V at 20°C

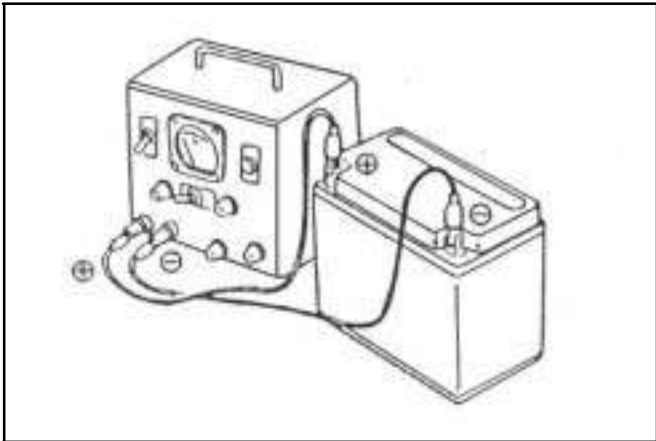
Undercharged: Below 12.3 V at 20°C



Charging

Connect the positive terminal (+) of the charger to the battery positive terminal (+).
 Connect the negative terminal (-) of the charger to the battery negative terminal (-).

	Standard	Maximum
Charging current	1.8A	18.0A
Charging time	5H	0.5H



Warning

- Keep flames away while recharging.
- Charging is completely controlled by the ON/OFF switch on the charger, not by battery cables.

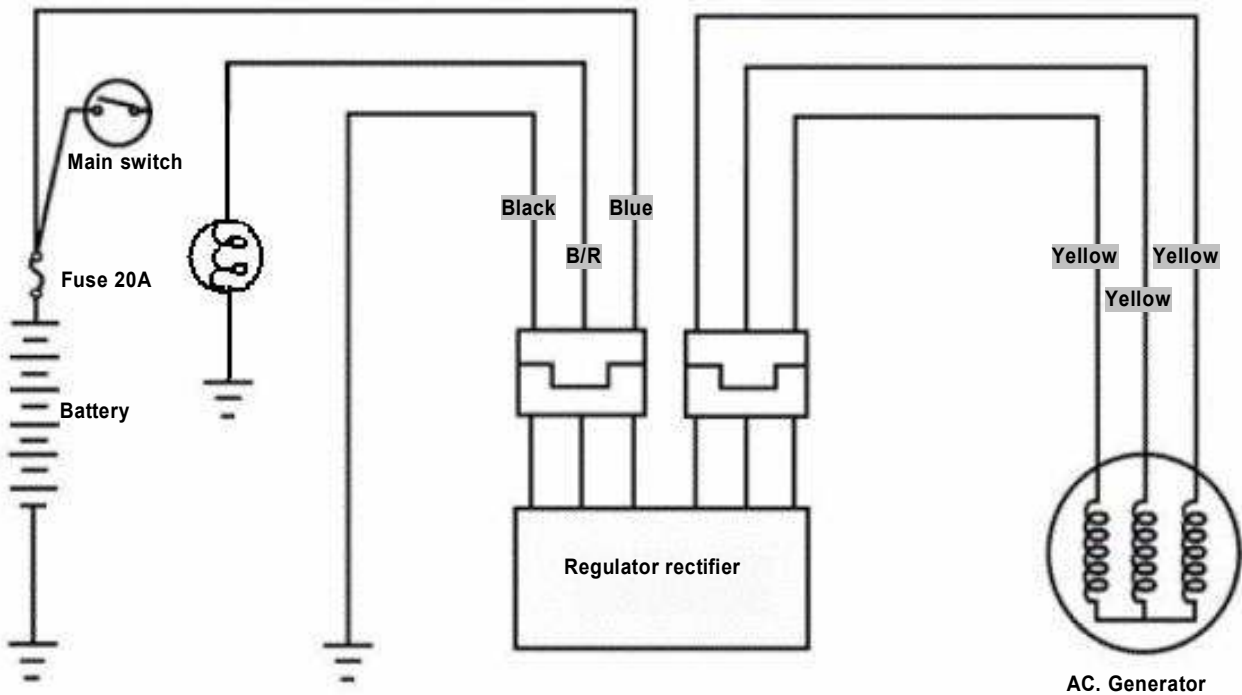
Caution

- Never rapid charge the battery unless in emergency.
- Verify the battery is recharged with current and duration prescribed above.
- Large current and fast time to charge will render damage to the battery.

When installing the battery, coat the cable terminal with grease.

Charging System

Charging circuit



Current Leakage Inspection

Turn the main switch to OFF position, and remove the negative cable terminal (-) from the battery. Connect an ammeter between the negative cable terminal and the battery negative terminal.

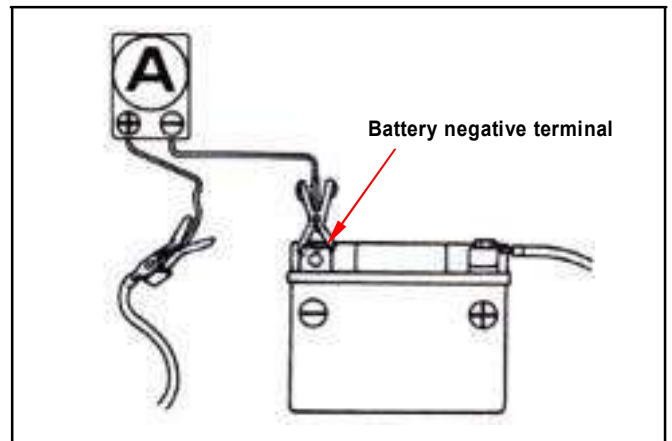
Caution

- In the current leakage test, set the current range at the largest scale, then gradually decrease to the lower scale as the test process goes to avoid possible damage to the ammeter and the fuse.
- Do not turn the main switch to ON position during test.

If the leaked current exceeds the specified value, it may indicate a short circuit.

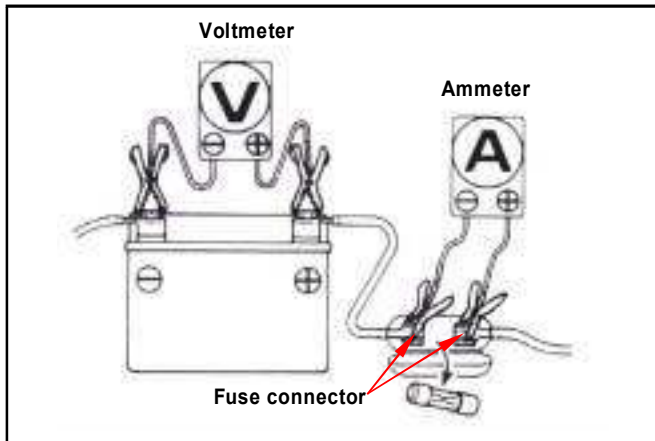
Allowable current leakage: Less than 1mA

Disconnect each cable one by one and take measurement of the current of each cable to locate the short circuit.



17. ELECTRICAL SYSTEM

Inspection on Charging Voltage



Caution

- Before conducting the inspection, be sure that the battery is fully charged. If undercharged, the current changes dramatically.
- Use a fully charged battery having a voltage larger than 13.0 V
- While starting the engine, the starter motor draws large amount of current from the battery.

After the engine is warmed up, replace original battery with a fully charged battery. Connect a digital voltmeter to the battery terminals. Connect an ammeter between both ends of the main fuse.

Caution

When the probe is reversibly connected, use a voltmeter having an indication that the current flows from the positive or the negative direction and the measurement should be at zero, ammeter at one direction only.

Caution

- Does not use short-circuit cable.
- It is possible to measure the current by connecting an ammeter between the battery positive terminal and the cable position terminal, however, while the starter motor is activated, the surge current the motor draws from the battery may damage the ammeter. Use the kick starter to start the engine.
- The main switch shall be turned to OFF position during the process of inspection. Never tamper with the ammeter and the cable while there is current flowing through. It may damage the ammeter.

Connect a tachometer.
Turn on the headlight to high beam and start the engine.

Accelerate the engine to the specified revolution per minute and measure the charging voltage.

Specified Charging Current:

1.2 A / 6000 rpm

Control Charging Voltage:

14.5 + 0.5 V / 2000 rpm

Caution

To replace the old battery, use a new battery with the same current and voltage.

The following problems are related to the charging system; follow the instructions provided in the checking list to correct it if any one of the problems takes place.

- (1) The charging voltage can not exceed the voltage between two battery terminals and the charging current is in the discharging direction.
- (2) The charging voltage and current are too much higher than the standard values.

The following problems are not related to the charging system; correct it if any by following steps indicate in the checking list.

- (1) The standard charging voltage and current can only reach when the revolution of the engine exceeds the specified rpm.
 - Bulbs used exceed their rate and consume too much power.
 - The replacement battery is aged and does not have enough capacity.
- (2) The charging voltage is normal, but the current is not.
 - The replacement battery is aged and does not have enough capacity.
 - Battery used does not have enough electricity or is over charged.
 - The fuse of the ammeter is blown.
 - The ammeter is improperly connected.
- (3) The charging current is normal, but the voltage is not.
 - The fuse of the voltmeter is blown.

Inspection on regulator rectifier

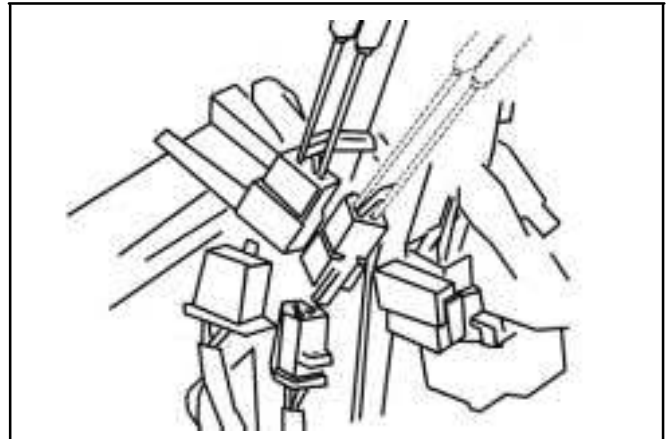
Remove the seat, rear carrier and rear fender. Disconnect two 3 pin couplers of the regulator rectifier.

Inspection the rectifier coupler to the wire harness passes the condition.

Item	Check Points	Standard Value
Main switch connection	BI – B	Battery voltage (ON)
Battery connection	BI – B	Battery voltage
Charging coil	B – B	0.1 ~ 0.5Ω

If the readings measured are not normal, check parts in the circuit.

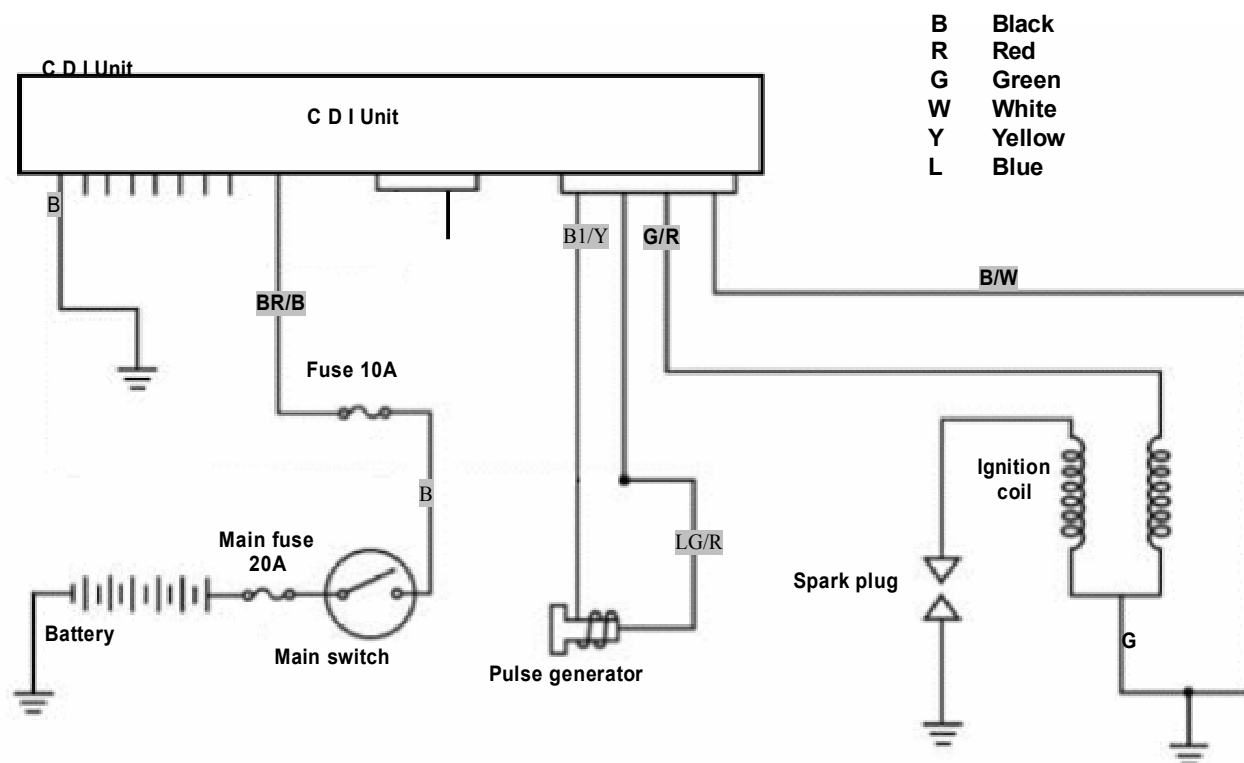
If the parts are normal, then trouble is in the wiring. If there is nothing wrong with parts and wiring, replace the regulator rectifier.



17. ELECTRICAL SYSTEM

Ignition System

Ignition circuit diagram



C.D.I unit

Disconnect connectors of the C.D.I unit.

Check the following connectors as indicated in the table at the harness side.

Item	Points to check	Result	
Main switch turn to "ON" position	Br/Bl ~ B	Battery voltage	
Pulse generator	Bl/Y ~ G/R	50~170Ω	
Ignition coil	Primary circuit	G/R ~ B	2.9±10%Ω
	Secondary circuit	TERMINAL-B ~ with no cap	15.0±10%Ω
		TERMINAL-B ~ with cap	20.0±10%KΩ

Inspection on Ignition Coil

Disengage the connector of the ignition coil and the spark plug cap.

Measure the resistance between the terminals of the primary winding.

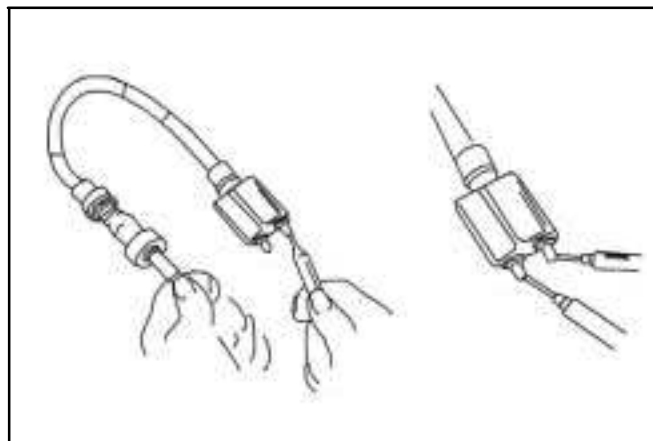
Standard resistance: $2.9\Omega \pm 10\%$

Remove the cap from the spark plug and measure the resistance between the spark plug and the primary winding.

Standard resistance:

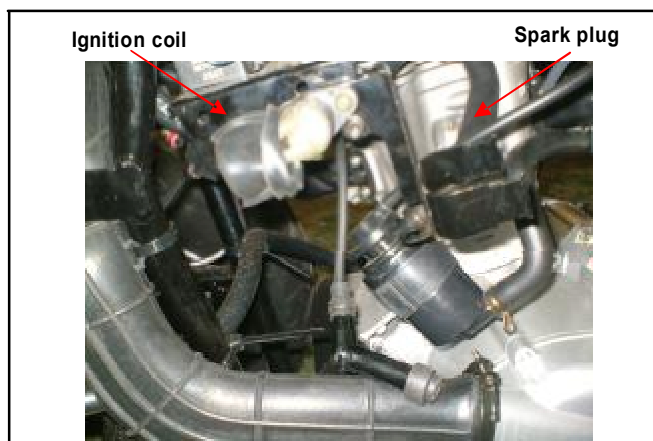
With no cap: $15.0\Omega \pm 10\%$

With cap: $20.0 \pm 10\% K\Omega$



Ignition Coil Replacement

Loosen the lock bolt and replace the ignition coil if necessary.



Inspection of Pulse Generator

Disconnect the coupler of the pulse generator and measure the resistance between the terminals of green/white and blue/yellow.

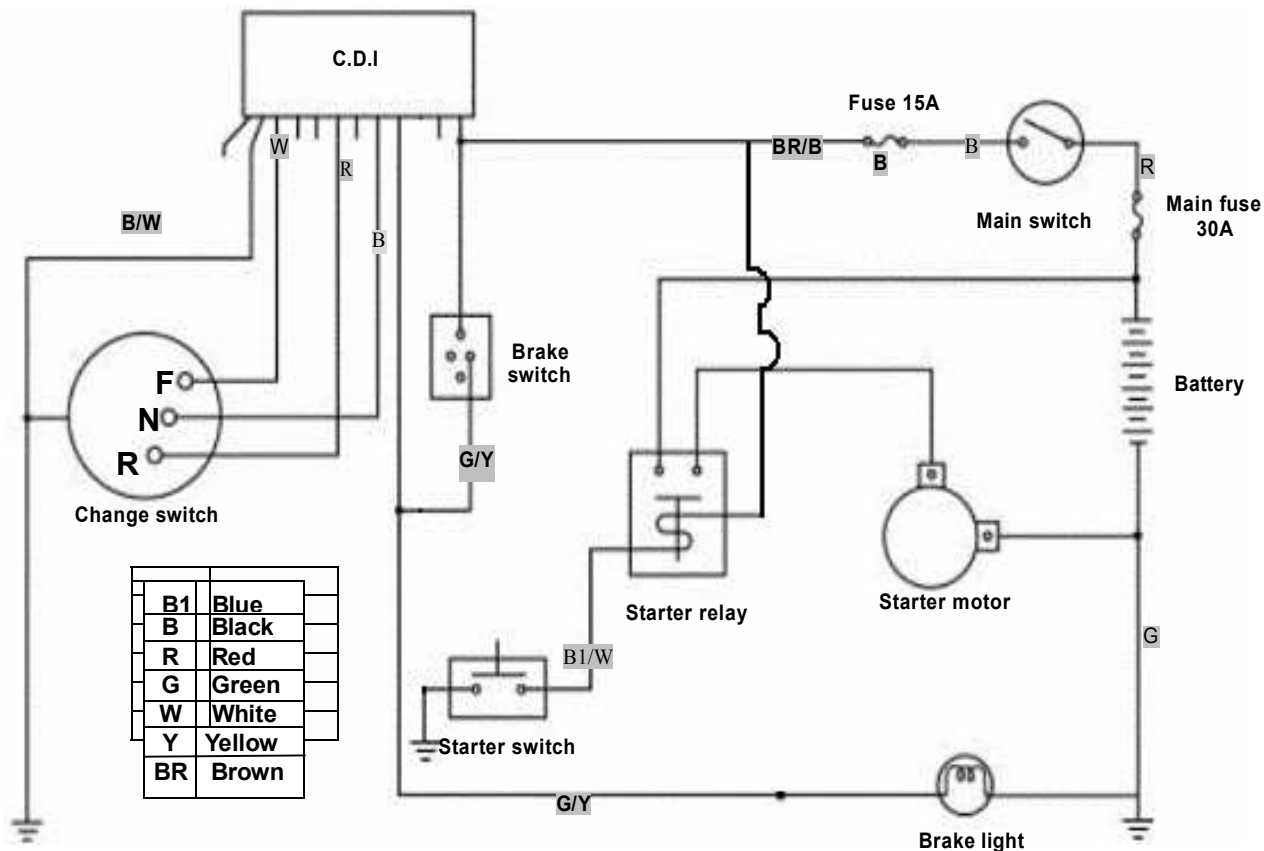
Standard resistance: $50\sim 170\Omega$



17. ELECTRICAL SYSTEM

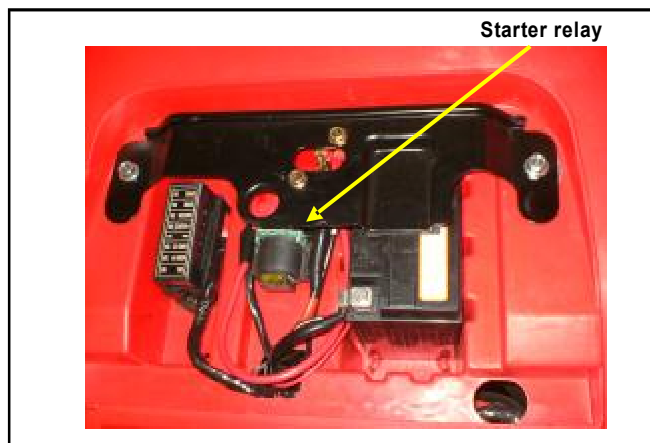
Starting System

Starting circuit diagram

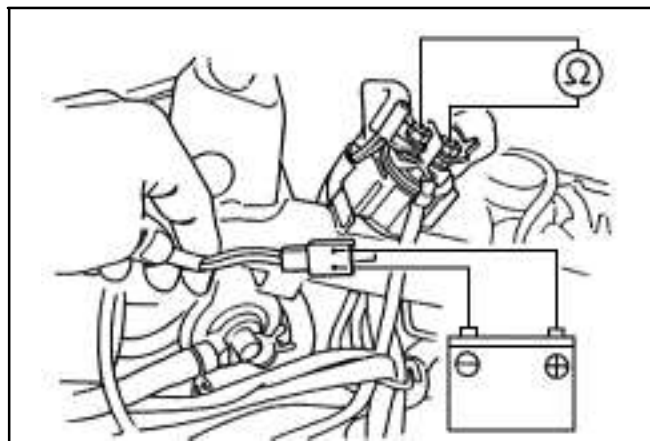


Inspection on starter relay

Open the main switch.
 Press the brake.
 Push down the starter switch.
 If a sound of "Looh Looh" is heard, it indicates the relay function normally.

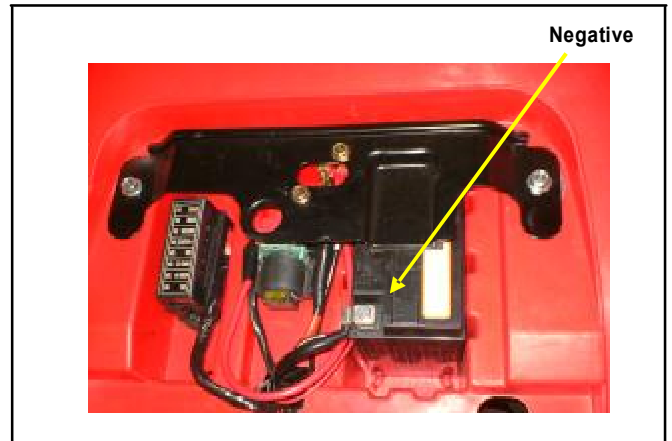


Remove the seat.
 Disconnect the negative cable terminal of the battery.
 Disconnect the cable positive terminal from the relay.
 Disconnect the positive cable of the starter motor.
 Disconnect the coupler of the relay.
 Connect an ohmmeter to the large terminal end.
 Connect the yellow/red cable to the battery positive terminal and the black / blue cable to the battery negative terminal.
 Check the continuity of the large terminal end. If there is no continuity, replace the relay.



Removal of Starter motor

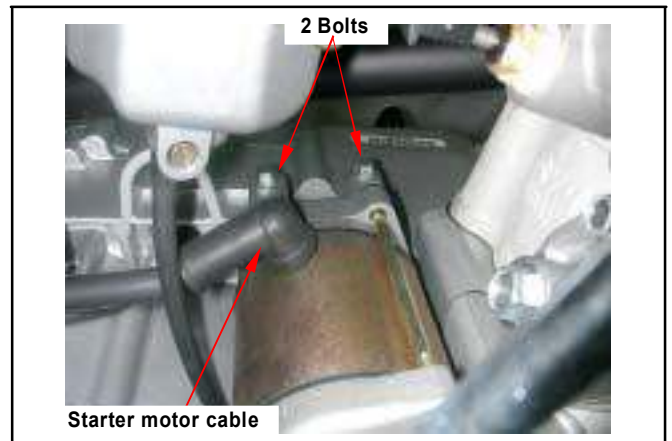
Remove the seat.
Disconnect the cable negative terminal (-), then
the cable positive terminal (+).



Remove starter motor cable.
Loosen the lock bolts and remove the starter
motor.

Installation of Starter motor

Install in reverse order of removal procedures.



17. ELECTRICAL SYSTEM

Meters

Removal

Loosen 4 bolts of the meter stay.



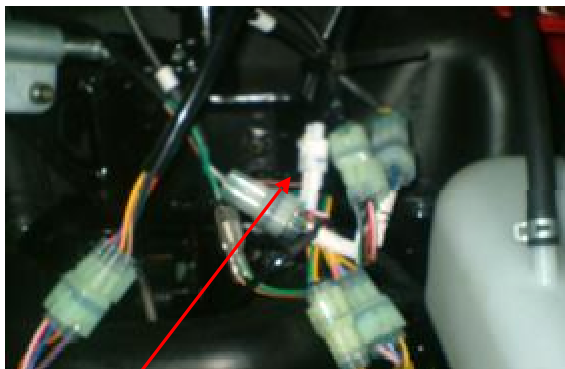
Each side 2 bolts

Remove the front center cover, and then remove meter couplers and main switch coupler. Remove speedometer cable.



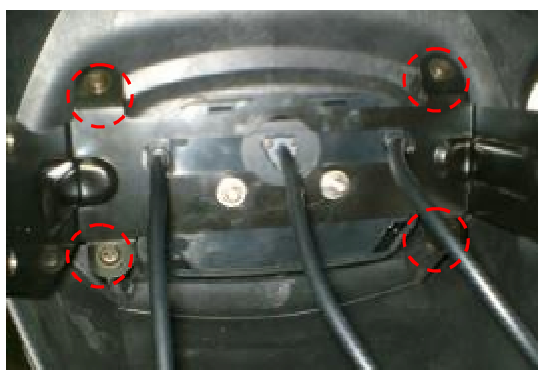
Main switch coupler

Remove speedometer cable, and then remove meter set, main switch and handle cover



speedometer cable

Remove 4 nuts and meter wire, and then remove speedometer and fuel meter.

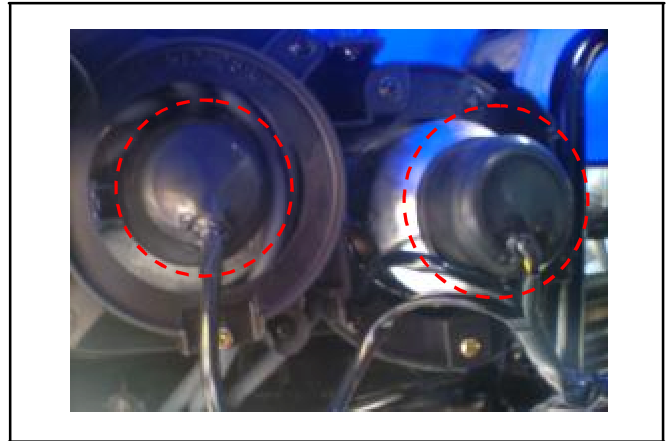


4 nuts

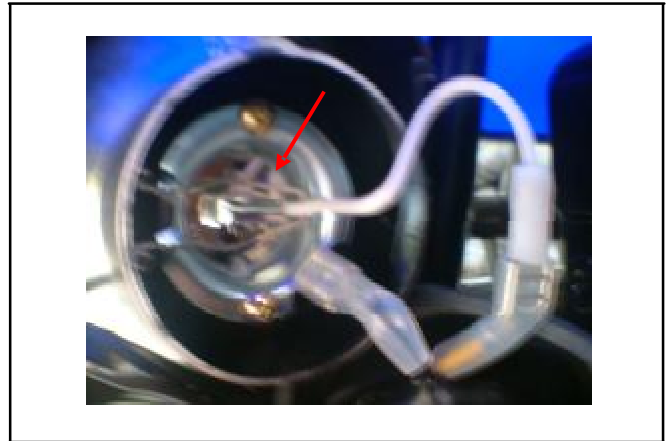
Light / Bulb

Replacing Bulb for Headlight

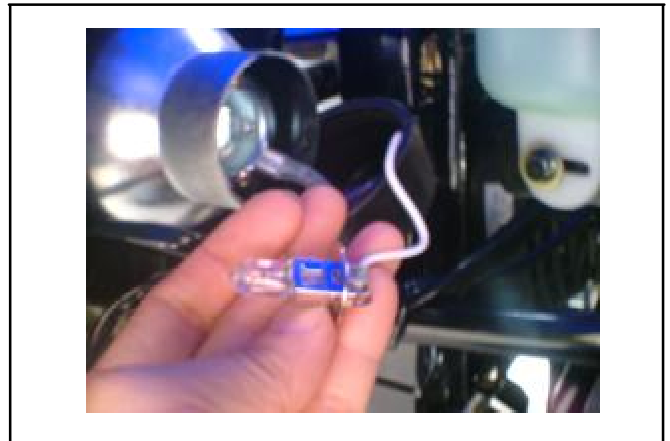
Remove waterproof cover for the headlight.



Remove bulb setting hook.



Take out the bulb connector and the bulb. Replace with new bulb if necessary.
(Main beam H3 12V 55W)



(Dipped 12V 55W)

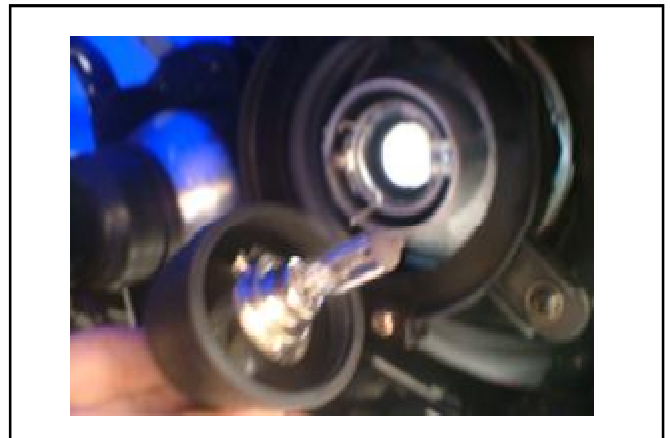
Caution

- Never touch the bulb with finger, which will create a heat point.
- Clean the fingerprint left on the bulb with alcohol.

Install the bulb of the headlight in reverse order of removal.

Upon completion of replacement, turn on the main switch to ensure the headlight works well.

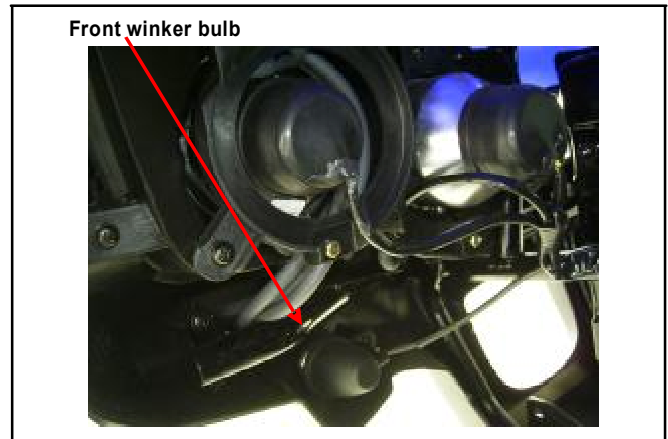
Adjust the beam and distance of the headlight if necessary.



17. ELECTRICAL SYSTEM

Replacing the Front winker light Bulb

Pull out the front winker light bulb seat.

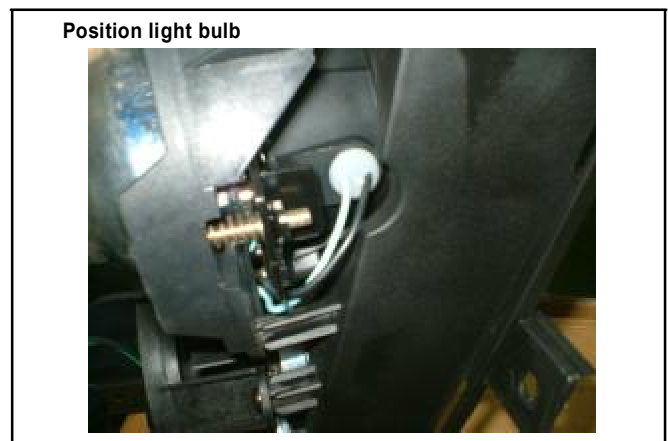


Replace with new front winker light bulb.
(12V 21W)



Replacing Bulb of Position Light

Pull out the position light bulb seat.



Replace with new position light bulb.
(12V 5W)

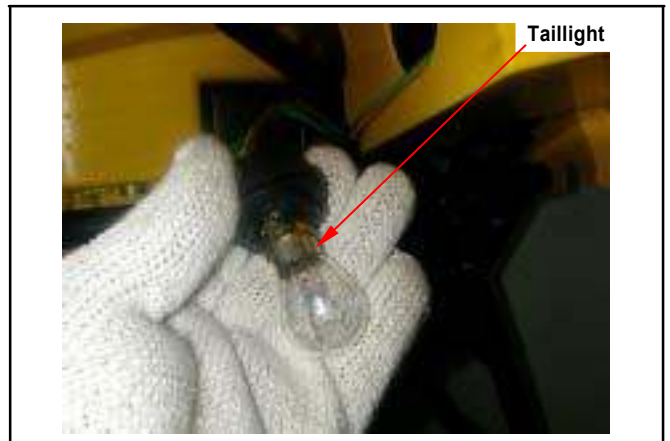


Replacing Bulb of Taillight

Turn the taillight and rear winker light bulb connectors by CCW.



Replace with new taillight bulb.
(12V 5W/21W)



Rear Winker Light

Replace with new rear winker light bulb.
(12V 21W)



Replacing Bulb of License Light

Turn the license light bulb connectors by CCW.
Replace with new license light bulb.



17. ELECTRICAL SYSTEM

Switch / Horn

Main Switch

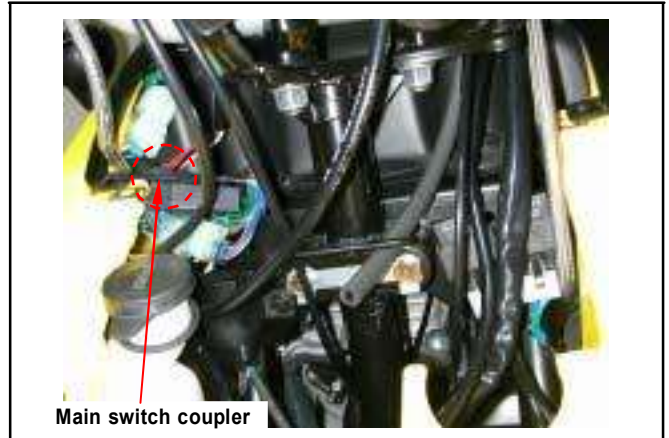
Inspection

Remove the front center cover.
 Disconnect the main switch coupler.
 Check the continuity between two points as indicated below:

Pin \ Position	BAT1	BAT2
OFF		
ON	○ — ○	○ — ○
Wire Color	Red/White	Brown/Blue

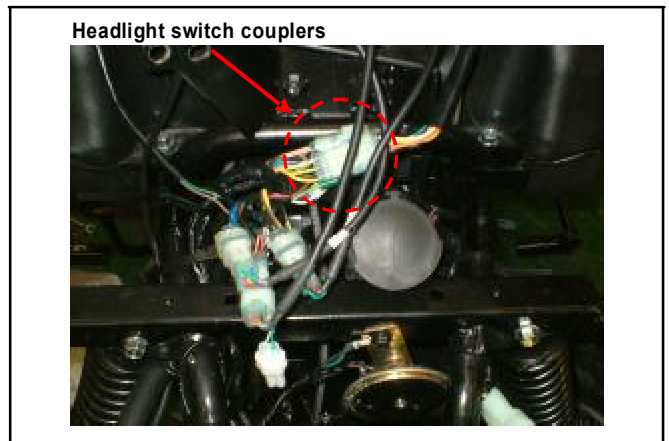
Replacement of main switch

Disconnect the coupler of the main switch.
 Push out the main switch.
 Align the main switch stopper with the meter cover groove, and install main switch.
 Install the main switch coupler.



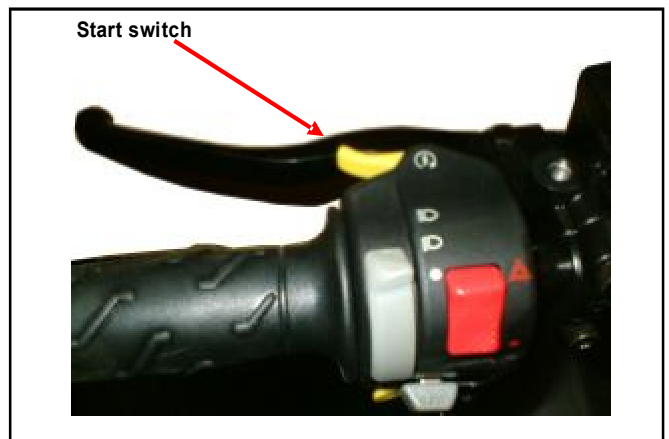
Handle switches

Disconnect the coupler of handle from front fender left side.
 Check the continuity between two points as indicated in the table below.



Start Switch

Pin \ Position	ST	SG
FREE		
	○ — ○	○ — ○
Wire Color	Blue / White	Black



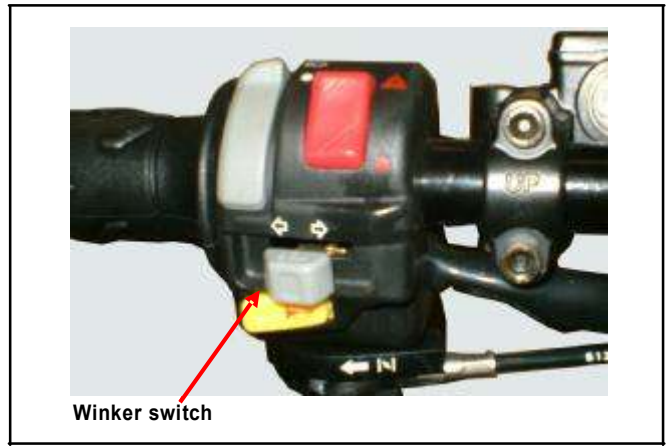
Headlight Switch

Pin Position	BAT3	LO	HI	PL
	○	○	○	○
	○	○	○	○
Wire color	Red	Red /Green Brown	Red /Yellow	Blue Blue



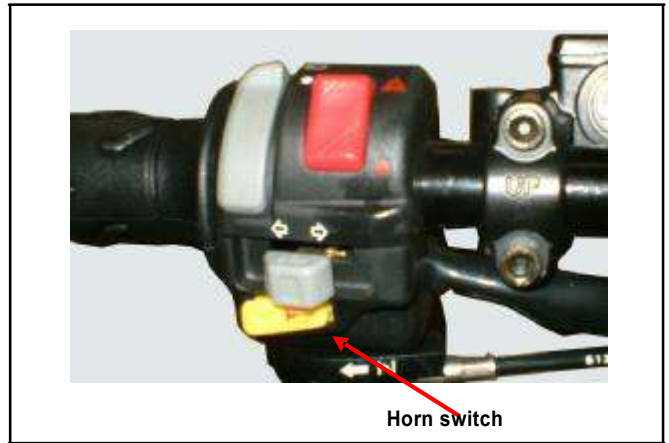
Winker switch

Pin Position	L	WR	R
	○	○	
N PUSH OFF			
		○	○
Wire color	Brown	Brown / White	Green



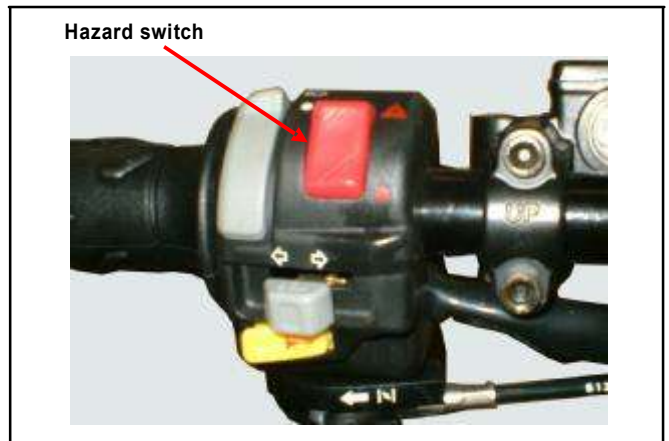
Horn switch

Pin Position	BAT3	HO
FREE		
	○	○
Wire Color	Brown/ White	Pink



Hazard switch

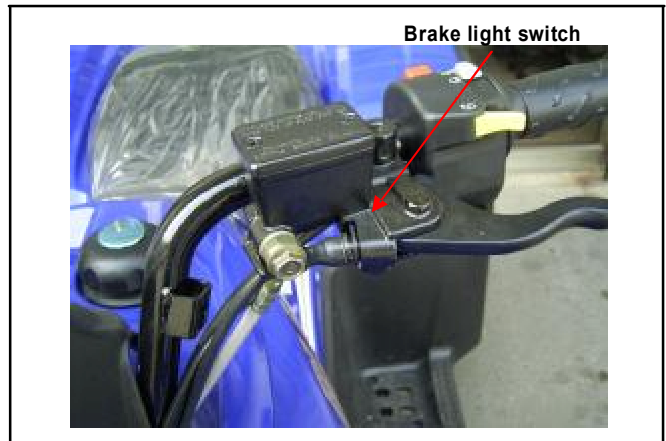
Pin Position	HD	E
	○	○
Wire Color	Brown / White	Black



17. ELECTRICAL SYSTEM

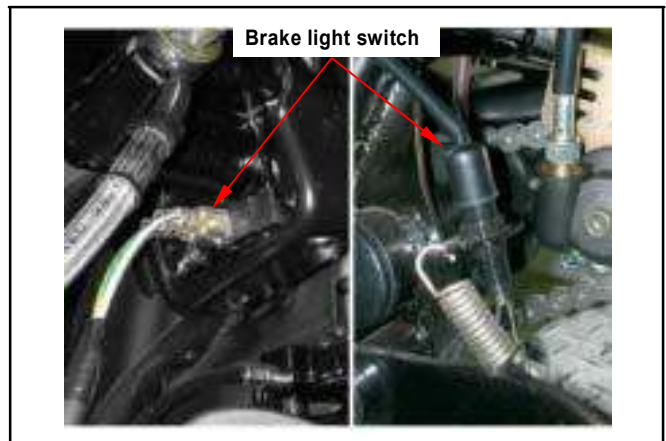
Front Brake Switch

While grasp the brake lever firmly, the terminals of brown/blue and green/yellow of the brake should have continuity.
Replace the switch if damaged.



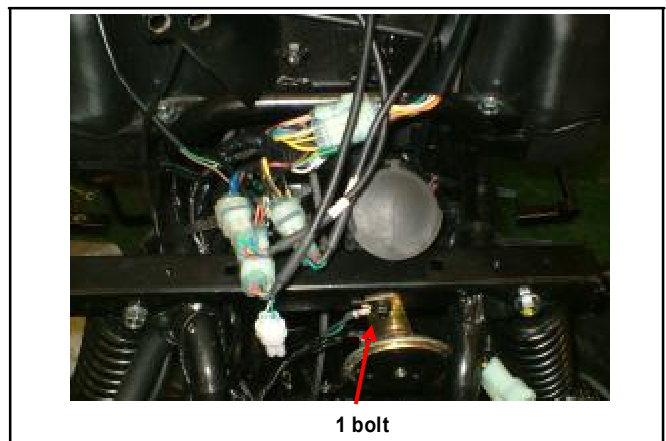
Rear Brake Switch

While grasp the brake lever firmly, the terminals of white/black and Brown/White of the brake should have continuity.
Replace the switch if damaged.

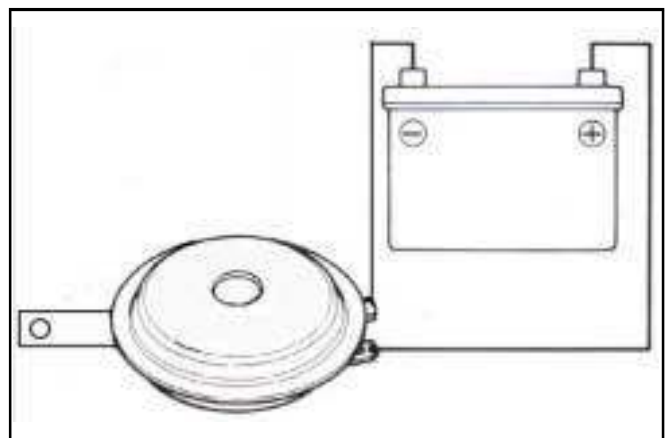


Horn

Remove the horn from front fender.



Apply 12 V power source to two terminals of the horn, the horn should sound.
Replace the horn if necessary.

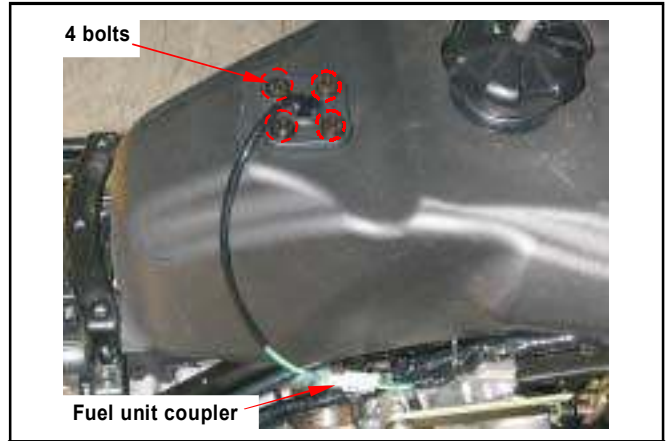


Fuel Unit

- Remove the seat.
- Remove the fuel tank cap.
- Remove the fuel tank cover and front fender (refer chapter 13).
- Disconnect the coupler of the fuel unit.
- Remove the fuel unit (4 bolts).

⚠ Caution

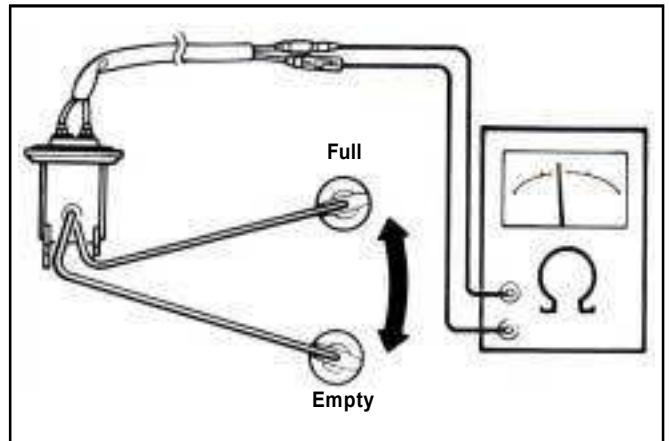
- Great care shall be taken not to damage or bend the float arm of the gauge.



When the float arm shifts to the F position or the E position, the resistance measured shall be as follows:

Position	Resistance
E (Empty)	97.5~107.5 Ω
F (Full)	4~10 Ω

Connect the wiring to the fuel unit and the ohmmeter as shown.

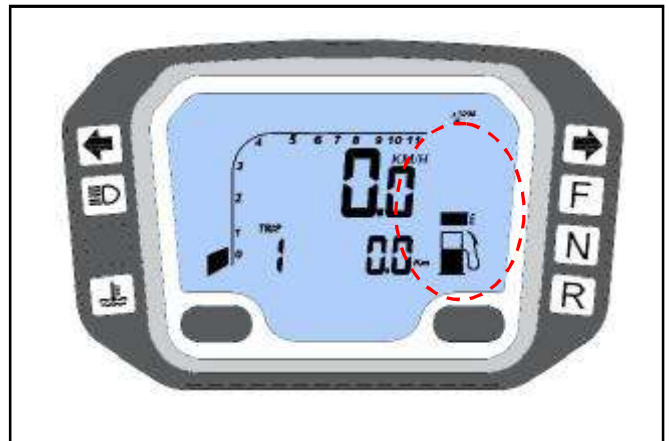


Connect the fuel unit coupler to the wire harness. Turn on the main switch. Move the float arm to verify the proper position the fuel gauge needle indicates.

Arm Position	Bargrahpic Position
Up (Full)	7 Bargrahpic (Full)
Down (Empty)	E (Empty)

⚠ Caution

While conducting the test, turn on the direction indication lamp to make sure that the battery is in serviceable condition.



17. ELECTRICAL SYSTEM

Cooling Fan Thermo Switch

The thermo switch mounted on the radiator controls the operation of the cooling fan motor. In case that the fan motor fails to work, disconnect the green and black/blue leads and connect jump wires to the terminals, then, turn on the main switch, the fan motor should operate.

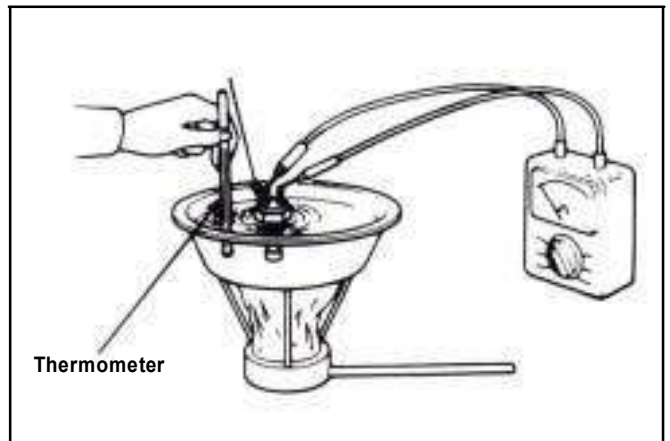
If the fan motor still fails to run, measure battery voltage between the green and black/blue leads. If there is no voltage, check for blown fuse, loose connection or short-circuit.

If the fan motor runs, check the thermo switch in the manner as described below:

Hang the thermo switch on the bowl filled with coolant to check the switch's opening and closing temperatures, confirm the switch is open circuited at room temperature, increase the coolant temperature gradually. The switch should have continuity at $85 \pm 3^\circ\text{C}$.

Caution

- Keep the coolant at a constant temperature at least for three minutes. Sudden increase the coolant temperature will cause the thermometer and the tester to indicate wrong readings.
- Never let the thermometer and the thermo switch contact the wall of the bowl, which may result in wrong readings.
- The thermo switch shall be placed in the coolant until the teeth are completely submerged.



Thermo unit

Remove the thermo unit.
 Hang the thermo unit in an oil heater, heat the oil and measure the resistance at each temperature.

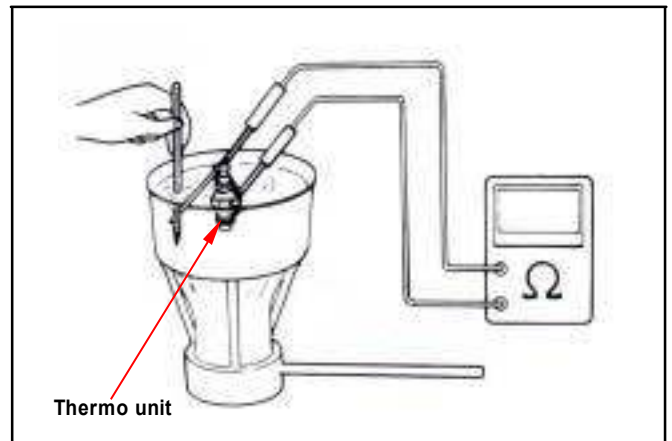
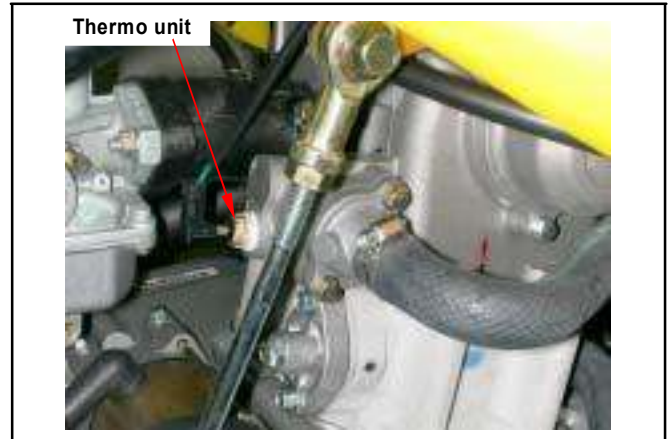
Temperature	50°C	80°C	100°C	120°C
Standard (Ω)	134~149	47.5~57.0	26~29	14.8~17.2

⚠ Caution

- Wear gloves and goggles when performing this test.

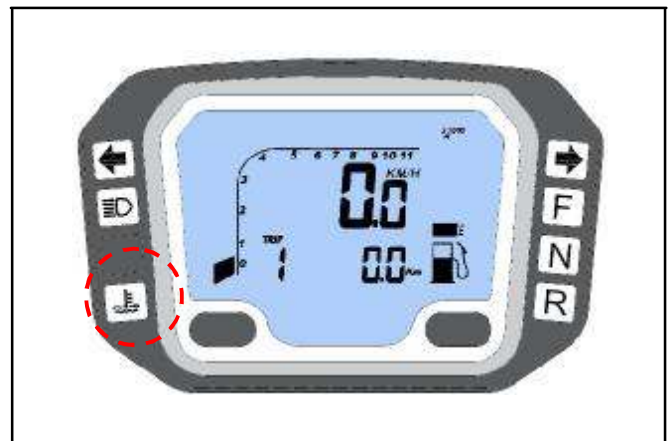
⚠ Caution

- Engine oil should be used as a heating medium as the test temperature must be higher than 100°C.
- Contacting the container wall by the thermometer and the thermo unit may result in wrong readings.

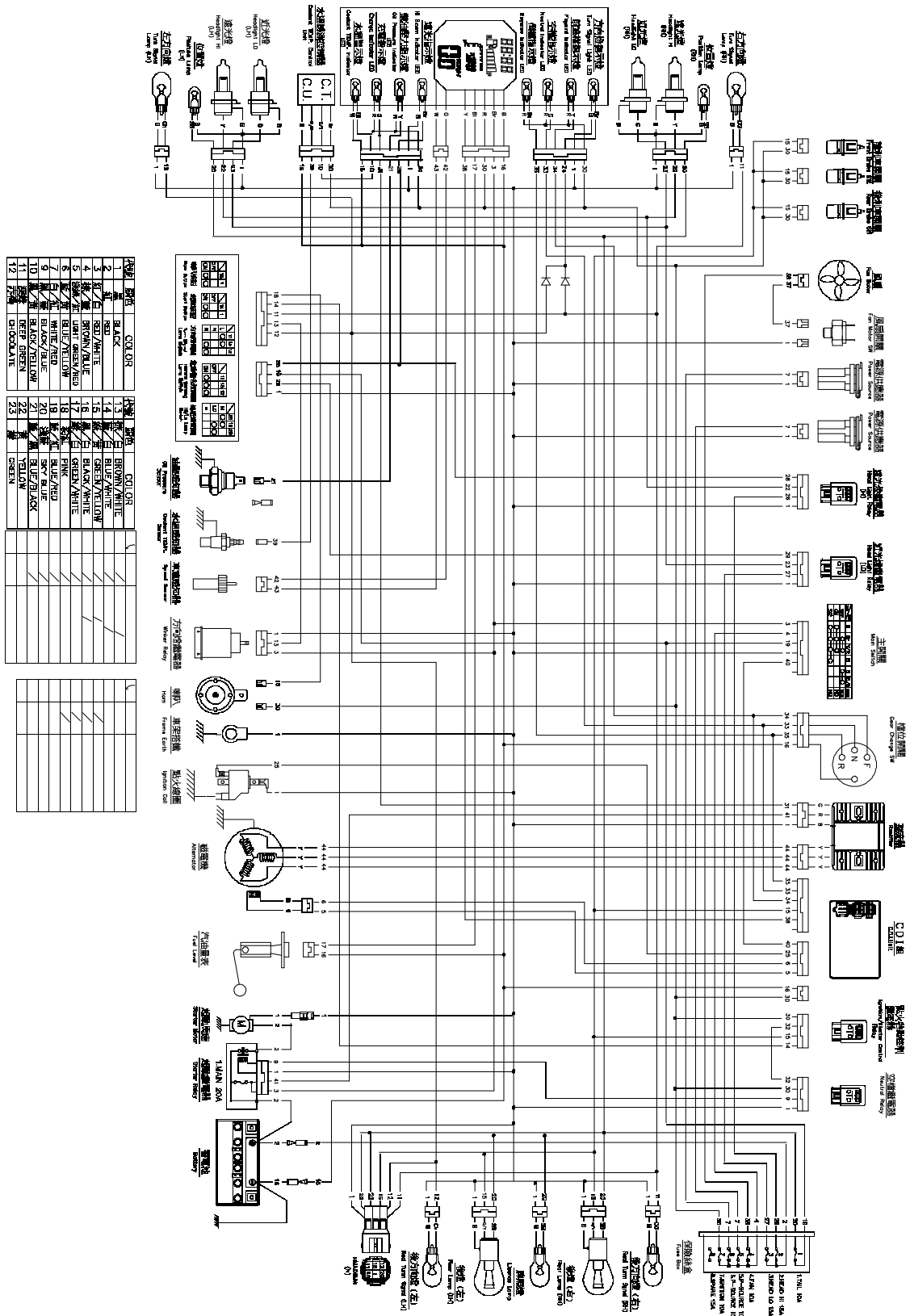


Water Temperature Indicator Light

Disconnect the water temperature meter and connect it to engine ground.
 Turn on the main switch.
 The indicator light of the fuel meter should be lighting.



Notes:



18. ELECTRICAL DIAGRAM

Notes: