

## **20. LIGHTS/METERS/SWITCHES**

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### **LIGHTS/METERS/SWITCHES**

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## **20. LIGHTS/METERS/SWITCHES**

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### **SERVICE INFORMATION**

#### **GENERAL**

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A halogen head light bulb becomes very hot while the head light is on, and remains for a while after it is turned off. Be sure to let it cool down before servicing.

- Note the following when replacing the halogen headlight bulb
  - Wear clean gloves while replacing the bulb. Do not put finger prints on the headlight bulb, as they may create hot spots on the bulb and cause it to fail.
  - If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent its early failure.
  - Be sure to install the dust cover after replacing the bulb.
- Check the battery condition before performing any inspection that requires proper battery voltage.
- A continuity test can be made with the switches installed on the scooter.
- Route the wires and cables properly after servicing each component.

# 20. LIGHTS/METERS/SWITCHES

## BULB REPLACEMENT

### HEADLIGHT

\* A halogen headlight bulb becomes very hot while the headlight is ON, and remain for a while after it is turned OFF. Be sure to let it cool down before servicing.

Remove the front cover (page 2-11)

Disconnect the headlight connector from the headlight bulb and remove the dust cover.

Unhook the retainer and remove the bulb from the headlight case.

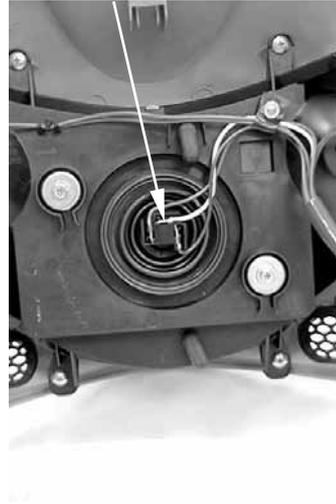
\* Avoid touching the halogen headlight bulb. Finger prints can create hot spots that cause a bulb to break.

Install a new bulb in the headlight case, by aligning the bulb tab with the case groove.

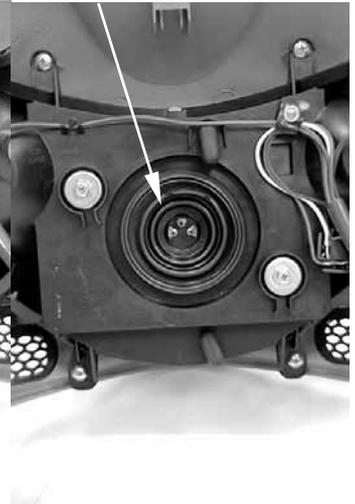
Hook the retainer.

Install the dust cover properly on to the headlight and connect the headlight connector

Headlight Connector



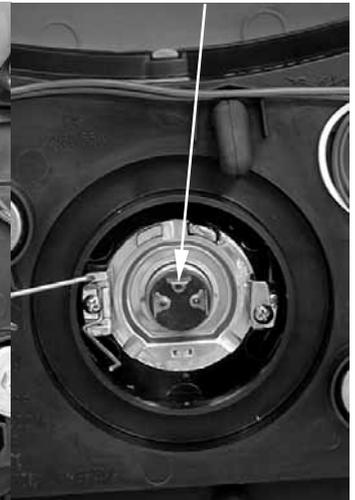
Dust Cover



Retainer



Bulb



### POSITION LIGHT

Remove the front cover (page 2-11).

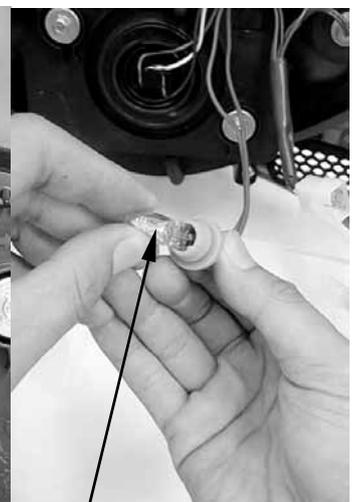
Remove the bulb socket and position light bulb. Remove the bulb and replace with a new one.

Installation is in the reverse order of removal.

Socket



Bulb



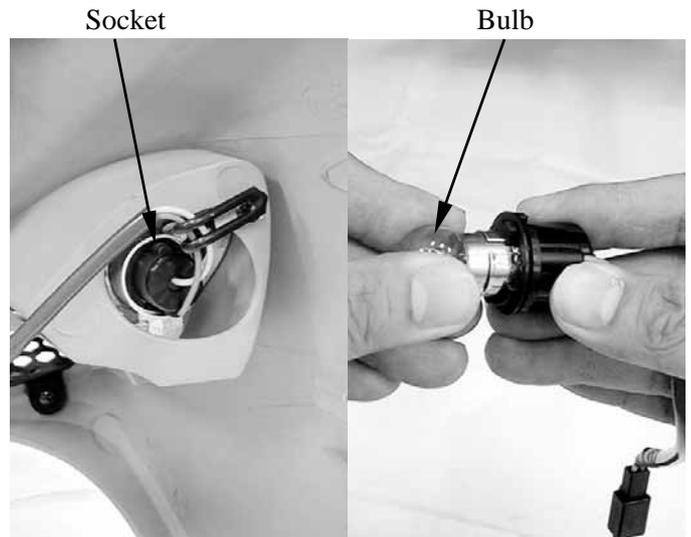
## 20. LIGHTS/METERS/SWITCHES

### FRONT TURN SIGNAL

Remove the front cover (page 2-11).

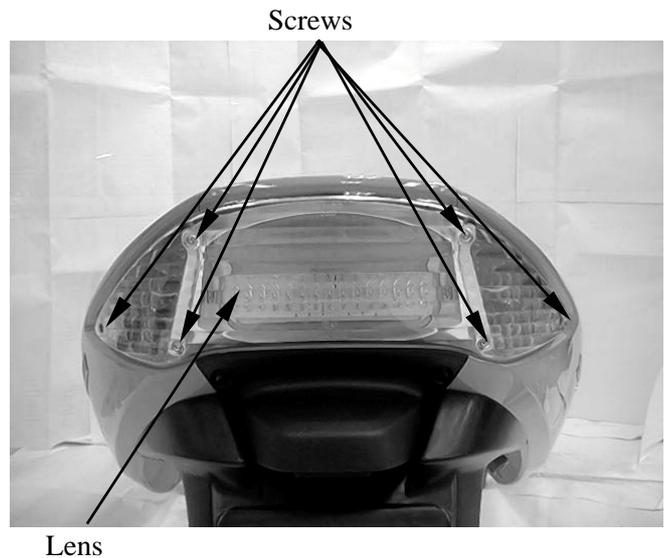
Turn the bulb socket counterclockwise to remove it.  
Remove the bulb and replace with a new one.

Installation is in the reverse order of removal.



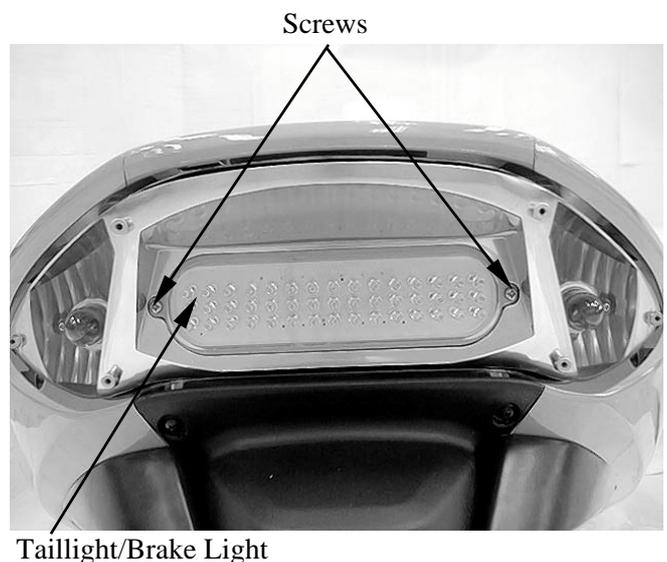
### TAILLIGHT/BRAKE LIGHT, REAR TURN SIGNAL

Remove the six screws and lens.



### Taillight/Brake light

Remove the two screws and remove the taillight/brake light.



## 20. LIGHTS/METERS/SWITCHES

Disconnect the taillight/brake light connectors.

Installation is in the reverse order of removal.

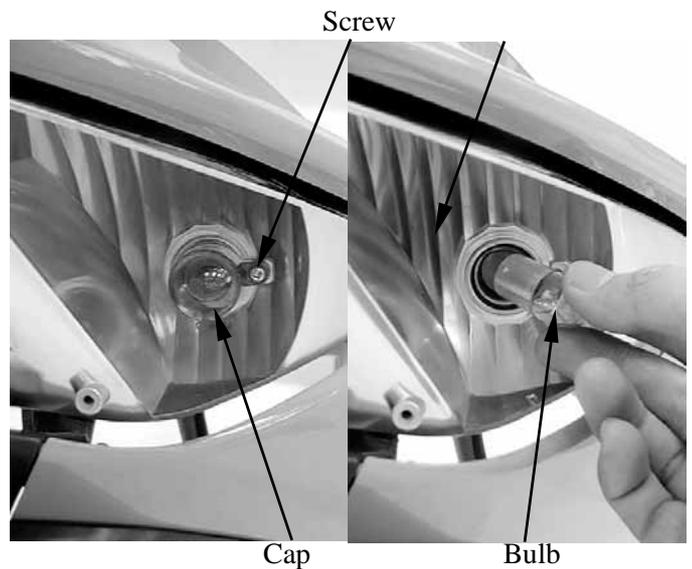


### **Rear turn signal**

Remove the screw and bulb cap.

Remove the bulb and replace with a new one.

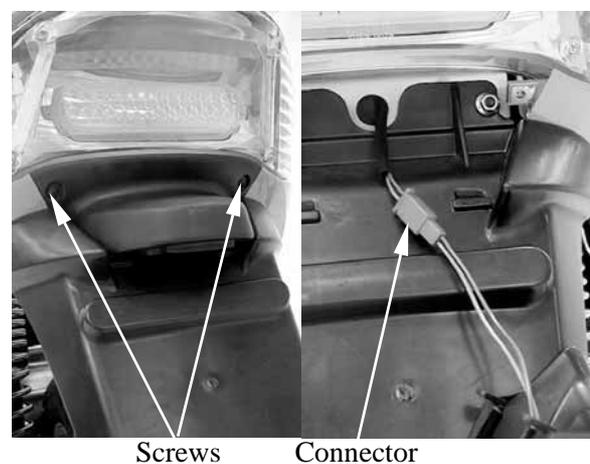
Installation is in the reverse order of removal.



### **LICENSE LIGHT**

Remove two screws.

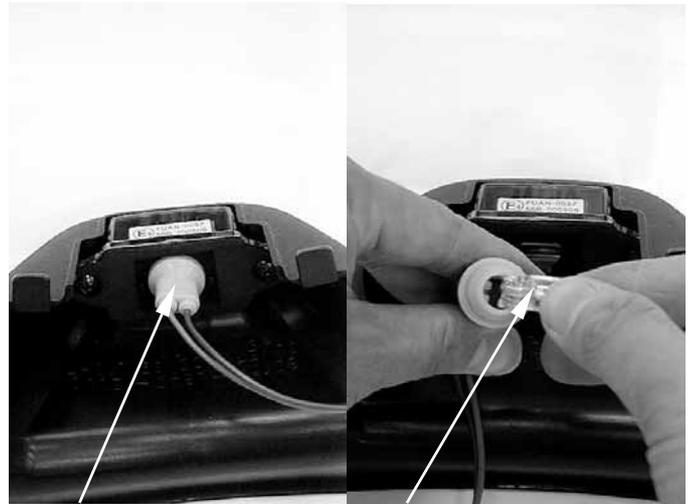
Disconnect the license light connector and remove the license light.



## 20. LIGHTS/METERS/SWITCHES

Remove the bulb socket and license light bulb.  
Remove the bulb and replace with a new one.

Installation is in the reverse order of removal.



Socket

Bulb

### SPEED SENSOR REMOVAL/INSTALLATION

Remove the front cover (page 2-11).

Disconnect the speed sensor connector.  
Remove the bolt and speed sensor.

Installation is in the reverse order of removal.

Speed Sensor connector



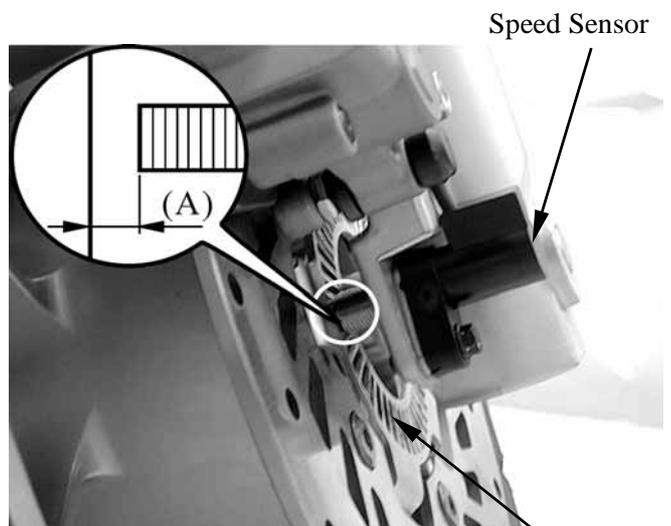
Bolt

Speed Sensor

### INSPECTION

Measure the speed sensor to speed sensor guide clearance.

**Standard (A): 0.3 – 1.2 mm (0.0012 – 0.048 in)**



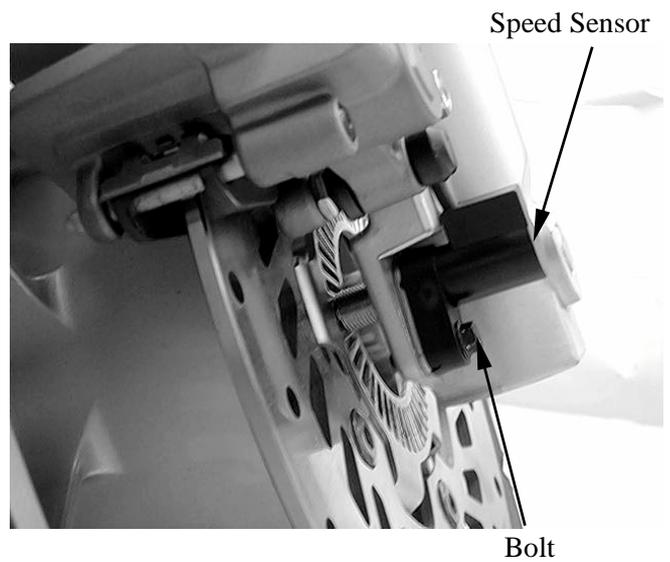
Speed Sensor

Speed Sensor Guide

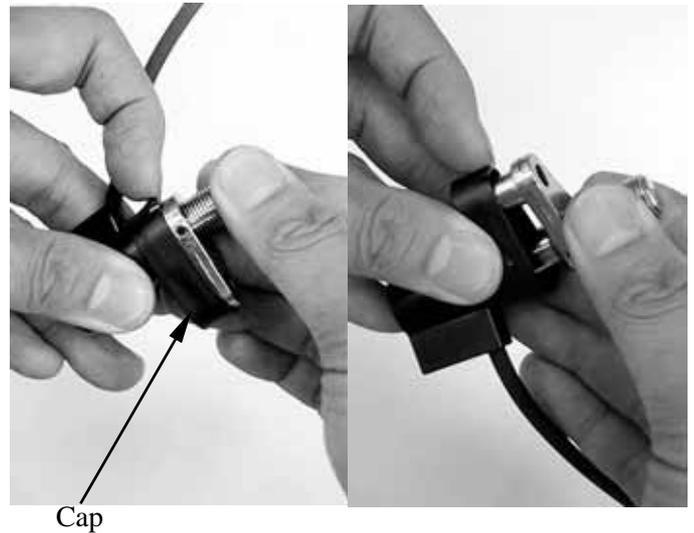
## 20. LIGHTS/METERS/SWITCHES

### ADJUSTMENT

Remove the bolt and speed sensor.

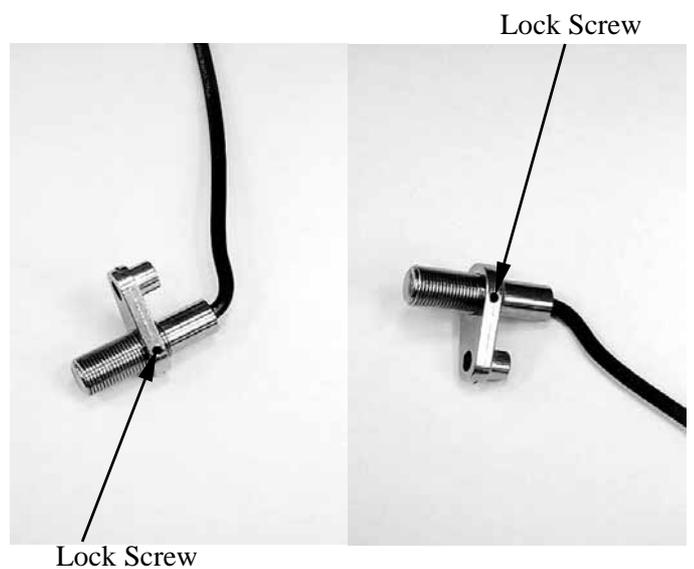


Remove the speed sensor cap.



Loosen the lock screws and adjust speed sensor to the standard clearance.

**Standard: 0.3 – 1.2 mm (0.0012 – 0.048 in)**



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### BRAKE LIGHT SWITCH

Remove the upper handlebar cover (page 2-5).

Disconnect front or rear light switch connector and check for continuity between the switch terminals.

There should be continuity with the front or rear brake lever squeezed, and there should be no continuity with the front or rear brake lever is released.



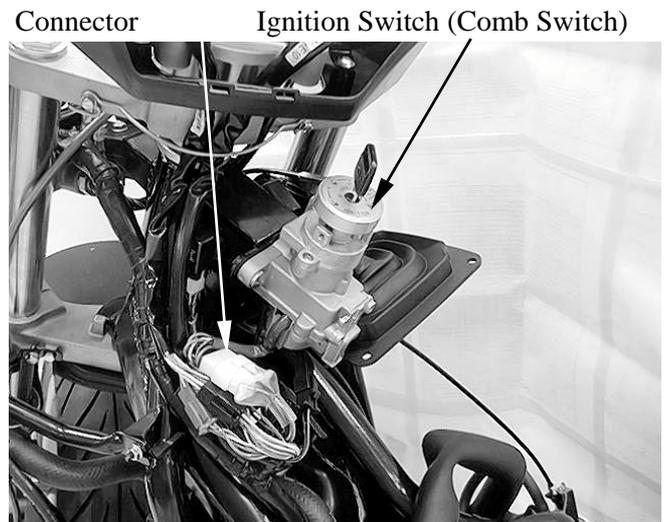
Brake Light Switch

### IGNITION SWITCH INSPECTION

Remove the front cover (page 2-11).

Disconnect the ignition switch connector and check for continuity at the switch side connector terminals.

Continuity should exist between the color code wires as follows:



#### COMB SW

	BAT2	IG	E	BAT1	HA
LOCK		○—○			
OFF		○—○		○—○	
ON	○			○—○	
COLOR	B	B/W	G	R	B/L

# 20. LIGHTS/METERS/SWITCHES

## HANDLEBAR SWITCH INSPECTION

Remove the front cover (page 2-11).

### Right handlebar switch

Disconnect the right handlebar switch connector and check for continuity at switch side connector terminals.

Continuity should exist between the color code wires as follows:

### LIGHTING SW

	BAT4	PO	TL	HL
•				
(N)				
P	○—○	○—○	○	
(N)	○—○	○—○	○—○	○
H	○		○—○	○
COLOR	BR/L	BR/W	BR	W/L

### STARTER SW

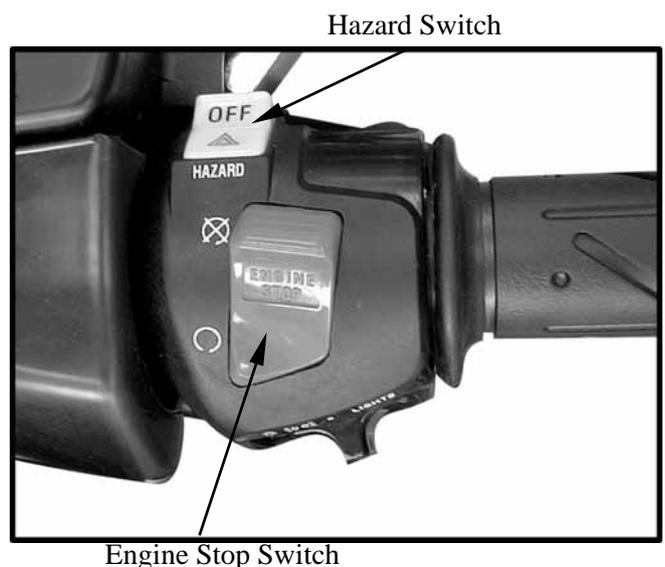
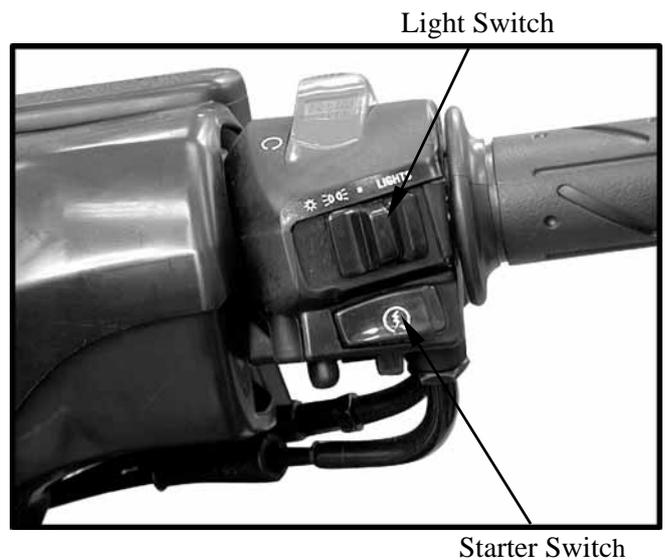
	E	ST
FREE		
PUSH	○—○	○
COLOR	G	Y/R

### HAZARD SW

	WR	HA
△	○—○	○
OFF	○—○	○
COLOR	B/L	Y/B

### ENGINE STOP SW

	IG	BAT3
OFF		
RUN	○—○	○
COLOR	B/W	B/G



# 20. LIGHTS/METERS/SWITCHES

## Left handlebar switch

Disconnect the left handlebar switch connector and check for continuity at switch side connector terminals.

Continuity should exist between the color code wires as follows:

### WINKER SW

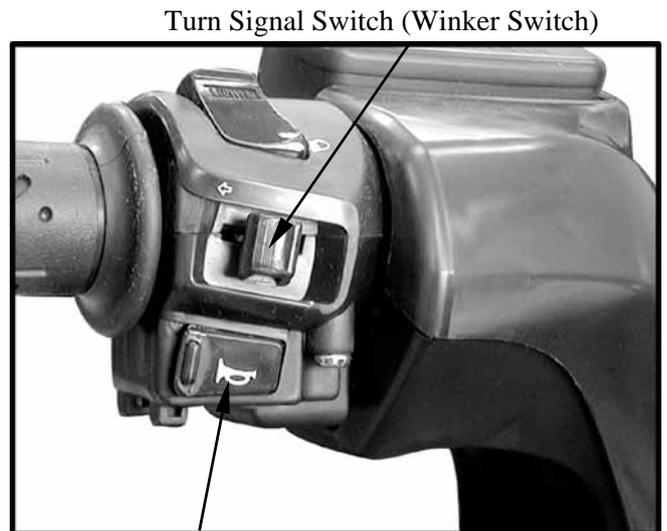
	WR	R	L
R	○ — ○		
N			
L	○ — ○ — ○		
COLOR	GR	SB	O

### HORN SW

	BAT4	HO
FREE		
PUSH	○ — ○	
COLOR	BR/L	LG

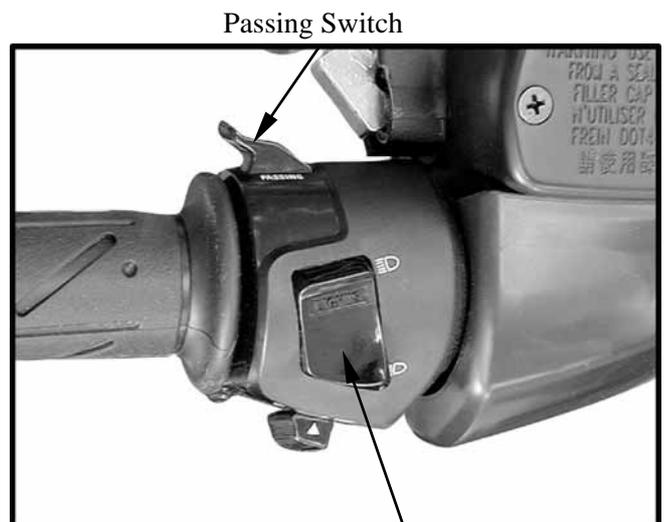
### PASSING SW

	BAT4	HI
FREE		
PUSH	○ — ○	
COLOR	BR/L	L



Horn Switch

Turn Signal Switch (Winker Switch)



Dimmer Switch

Passing Switch

### DIMMER SW

	HL	HI	LO
LO	○ — ○ — ○		
(N)	○ — ○ — ○		
HI	○ — ○		
COLOR	W/L	L	W

## 20. LIGHTS/METERS/SWITCHES

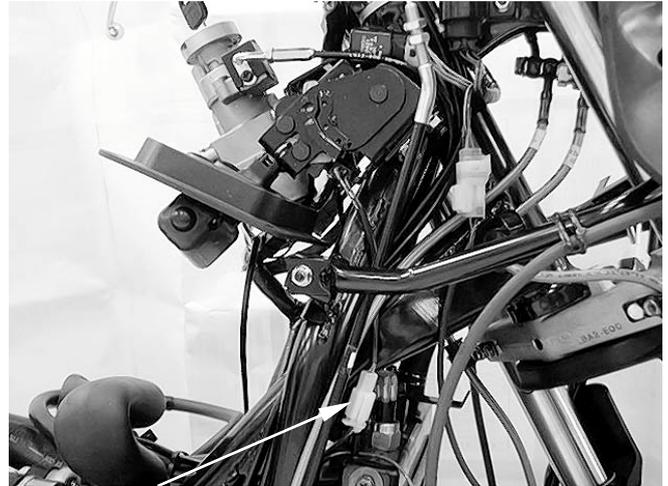
### PARKING SWITCH

#### INSPECTION

Remove the front cover (page 2-11).

Disconnect the parking switch connector and check for continuity between the switch terminals.

There should be continuity with the parking lever pull up, and there should be no continuity with the front brake lever is push down.



Parking Brake Switch Connector

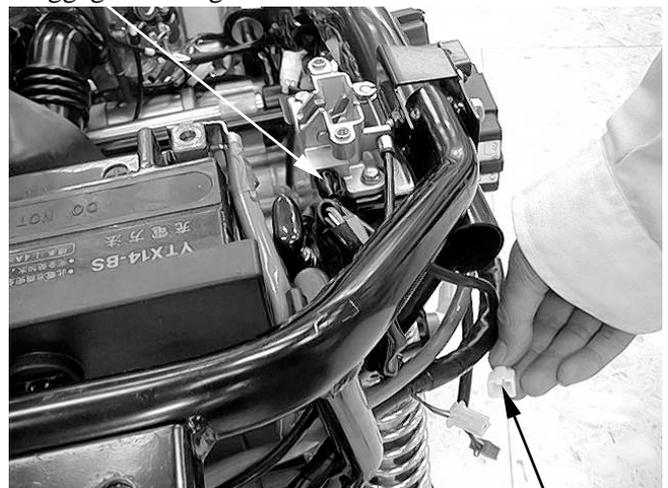
### Luggage Box Light Switch

#### INSPECTION

Remove the luggage box (page 2-3).

Disconnect the luggage box light switch connector and check for continuity between the switch terminals.

There should be no continuity with the luggage box light switch pushed, and there should be continuity with the luggage box light switch is released.



Switch Connector

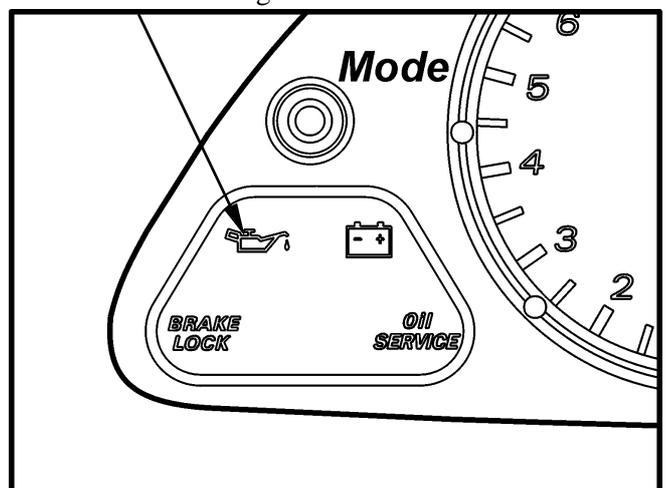
### OIL PRESSURE SWITCH

#### INSPECTION

If the oil pressure warning indicator stays on while the engine running, check the engine oil level before inspection.

Make sure that the oil pressure warning indicator come on with the ignition switch ON.

### Oil Pressure Warning Indicator



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If the indicator does not come on, inspect as follow:

Remove the dust cover and disconnect oil pressure switch terminal.

Short the oil pressure switch wire terminal with the ground using a jumper wire.

The oil pressure warning indicator comes on with the ignition switch is ON.

If the light does not comes on, check the fuse and wires for a loose connection or an open circuit.

Start the engine and make sure that the light goes out.

If the light does not go out, check the internal oil for leak.

If the engine oil does not leak, replace the oil pressure switch (see below).

### REMOVAL/INSTALLATION

Remove the dust cover and disconnect oil pressure switch terminal.

Remove the oil pressure switch from the crankcase.

Dust Cover



Oil Pressure Switch Terminal



Oil Pressure Switch



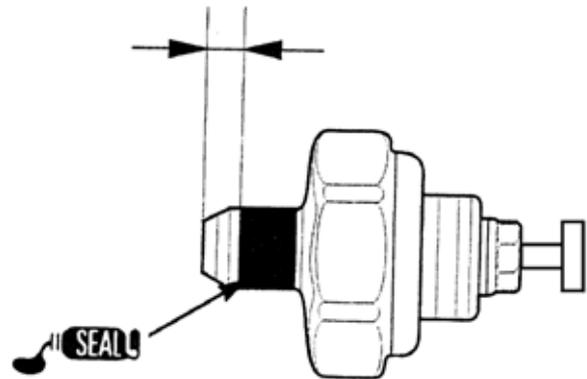
## 20. LIGHTS/METERS/SWITCHES

Apply sealant to the oil pressure switch threads as shown.

Install the oil pressure switch onto the crankcase, tighten it to the specified torque.

**Torque: 22 N•m (2.2 kgf•m, 16 lbf•ft)**

Do not apply sealant to the thread head 3 – 4 mm (0.1 – 0.2 in)



Oil Pressure Switch Terminal

Connect the oil pressure switch terminal to the switch.



Dust Cover

Install the dust cover.



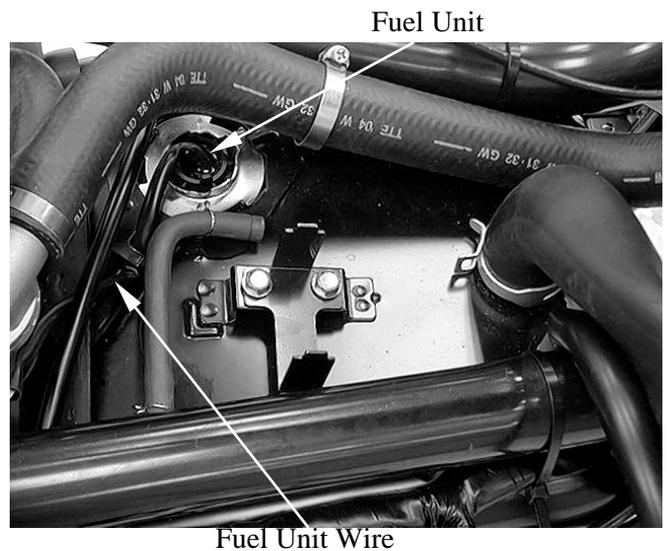
## 20. LIGHTS/METERS/SWITCHES

### FUEL UNIT

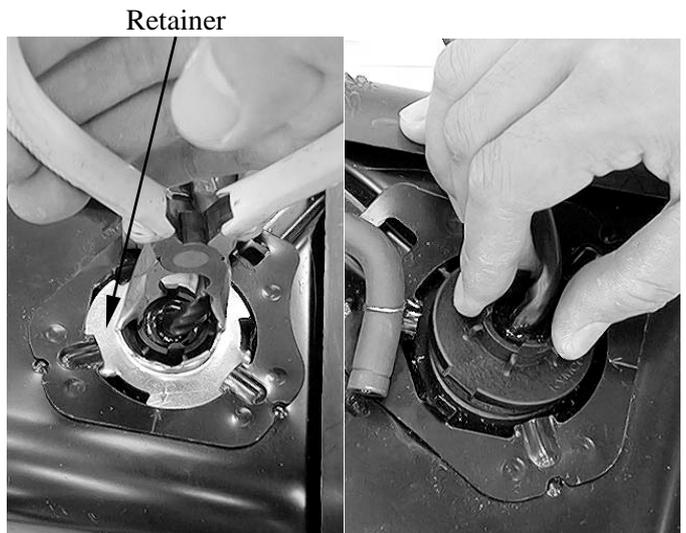
#### REMOVAL

Remove the floorboard (page 2-6).

Disconnect the fuel unit connector.



Turn the fuel unit retainer counterclockwise and remove it.



Remove the fuel unit.

\* Be careful not to bend or damage the fuel unit float arm.



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## INSPECTION

Connect the fuel unit wire connectors and turn the ignition switch "ON".

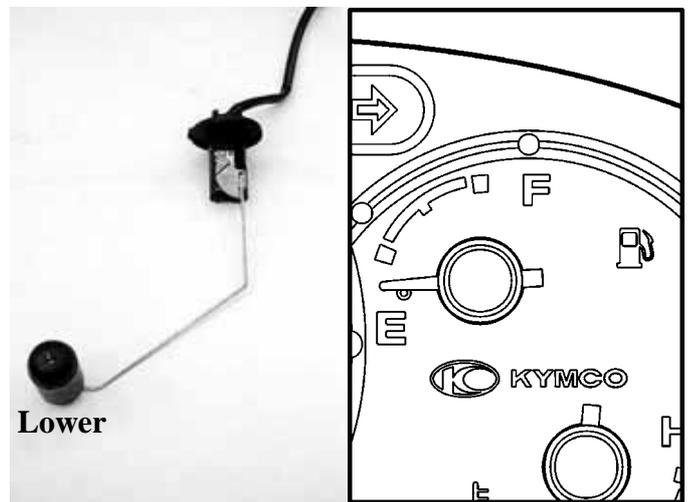
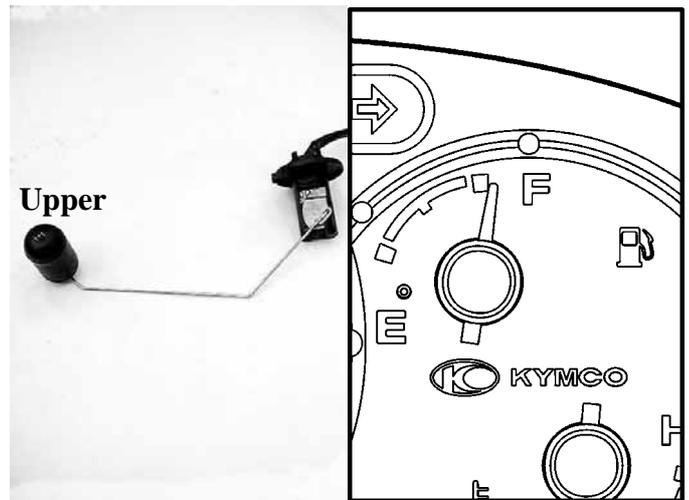
\* Before performing the following test, operate the turn signals to determine that the battery circuit is normal.

Check the fuel meter for correct indication by moving the fuel unit float up and down.

Float Position	Display
Upper	Much (Full)
Lower	Less (Empty)

Wire Terminals	Display
Free	From Much to Less
Apply	From Less to Much

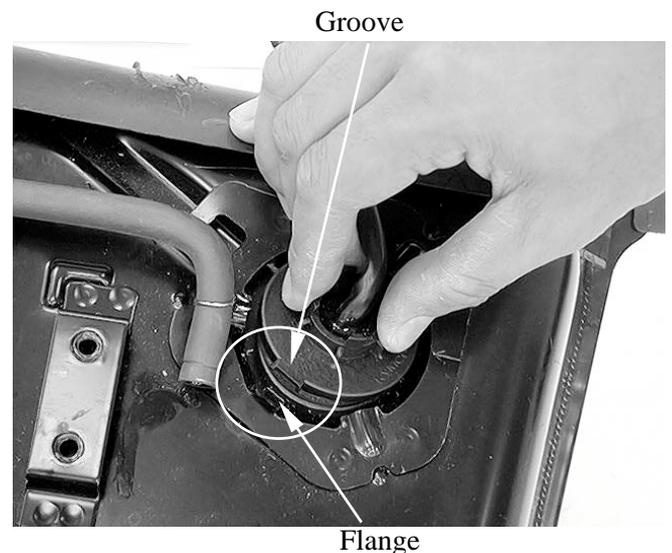
The fuel meter is normal if it operates as above indicated. If not, check for poorly connected terminals or shorted wires.



## INSTALLATION

Install the O-ring and fuel unit.

\* Align the groove on the fuel unit with the flange on the fuel tank.

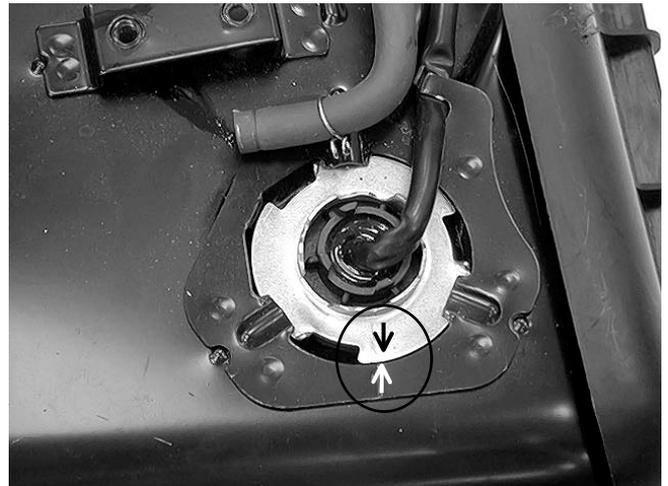


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Install the fuel unit retainer.

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Align the arrow mark on the fuel unit retainer with the arrow mark on the fuel tank.



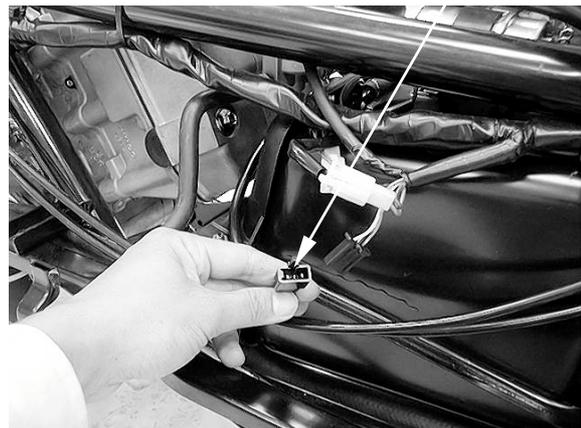
### SIDE STAND SWITCH INSPECTION

Remove the left floor skirt (page 2-5).

Disconnect the side stand switch connector. There should be continuity between the Yellow/Green and Green with the side stand retracted.

There should be continuity between the Yellow/Black and Green with the side stand applied.

Side Stand Switch Connector

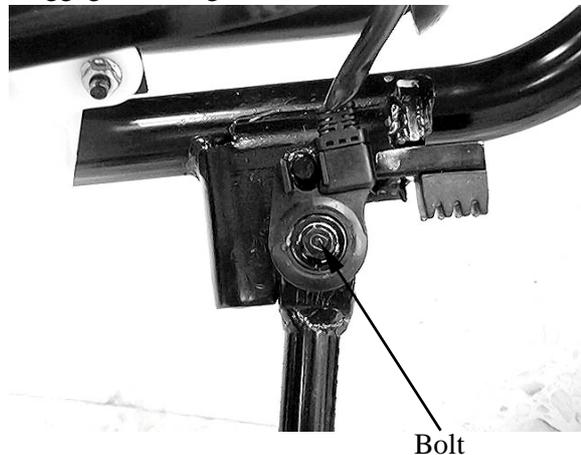


### REMOVAL

Remove the left floor skirt (page 2-5).

Disconnect the side stand switch connector. Remove the bolt and side stand switch from the side stand.

Luggage Box Light Connector



Bolt

## 20. LIGHTS/METERS/SWITCHES

Installs the side stand switch aligning the switch pin with the side stand hole.

Install and tighten the side stand switch bolt securely.



Hole

Pin

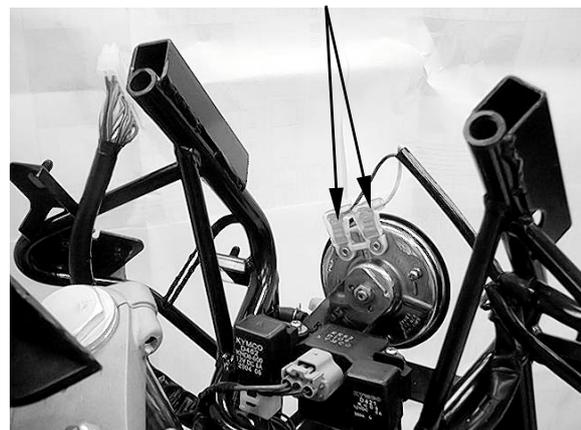
### **HORN INSPECTION**

Remove the front cover (page 2-11)

Disconnect the horn connectors from the horn.

Connect a 12 V battery to the horn terminals.  
The horn is normal if it sounds when the 12 V battery is connected across the horn terminals.

Connector



### **REMOVAL/INSTALLATION**

Remove the front cover (page 2-11)

Disconnect the horn connectors from the horn.  
Remove the nut and horn.

Installation is in the reverse order of removal.

Horn



Nut

## 20. LIGHTS/METERS/SWITCHES

### BANK ANGLE SENSOR

#### INSPECTION

Support the scooter level surface.

Remove the meter panel (page 2-13).

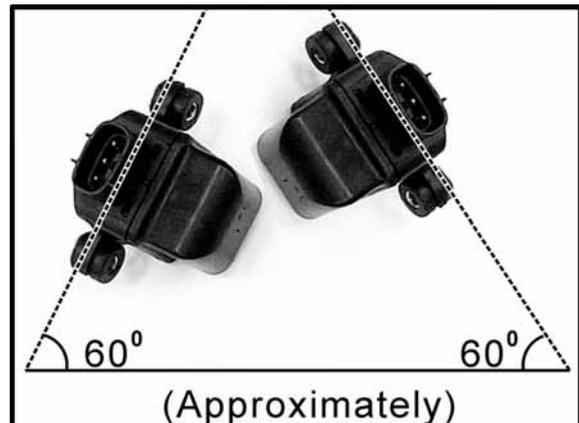
Turn the ignition switch to “ON” and measure the voltage between the following terminals of the bank angle sensor connector with the connector connected.

TERMINAL	STANDARD
Black/Blue	Battery voltage
Black/White	Battery voltage – (0-1 V)



Bank Angle Sensor

The engine should stop as you incline the bank angle sensor approximately degrees to the left or right.



#### REMOVAL/INSTALLATION

Disconnect the bank angle sensor connector.

Remove the two screws, washers and bank angle sensor.



Bank Angle

Sensor Screws/Washers

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Installation is in the reverse order of removal.

**\***

Install the bank angle sensor with its "UP" mark facing up.

Tighten the mounting screws securely.

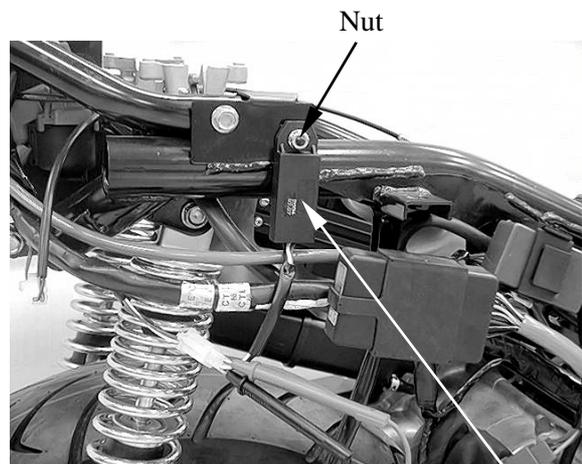


### HEATER CONTROL UNIT INSPECTION

Heater control unit inspection

1. Open ignition switch to check if the brown /blue wire of it is enough voltage.
2. Put the heater controller unit in refrigerator. Start engine after keeping the temperature under  $10 \pm 4$  .
3. Check if the yellow wire of heater controller unit has output voltage.

Start engine and if the temperature of heater controller unit is under  $10 \pm 4$  . Check if the white/yellow wire of heater controller unit has output voltage. If it has not any voltage. It is damaged.



Heater Control Unit

### REMOVAL/INSTALLATION

Remove the side body cover (page 2-8).

Remove the nut and heater control unit.

Installation is in the reverse order of removal.