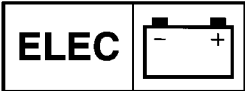


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ELECTRICAL COMPONENTS

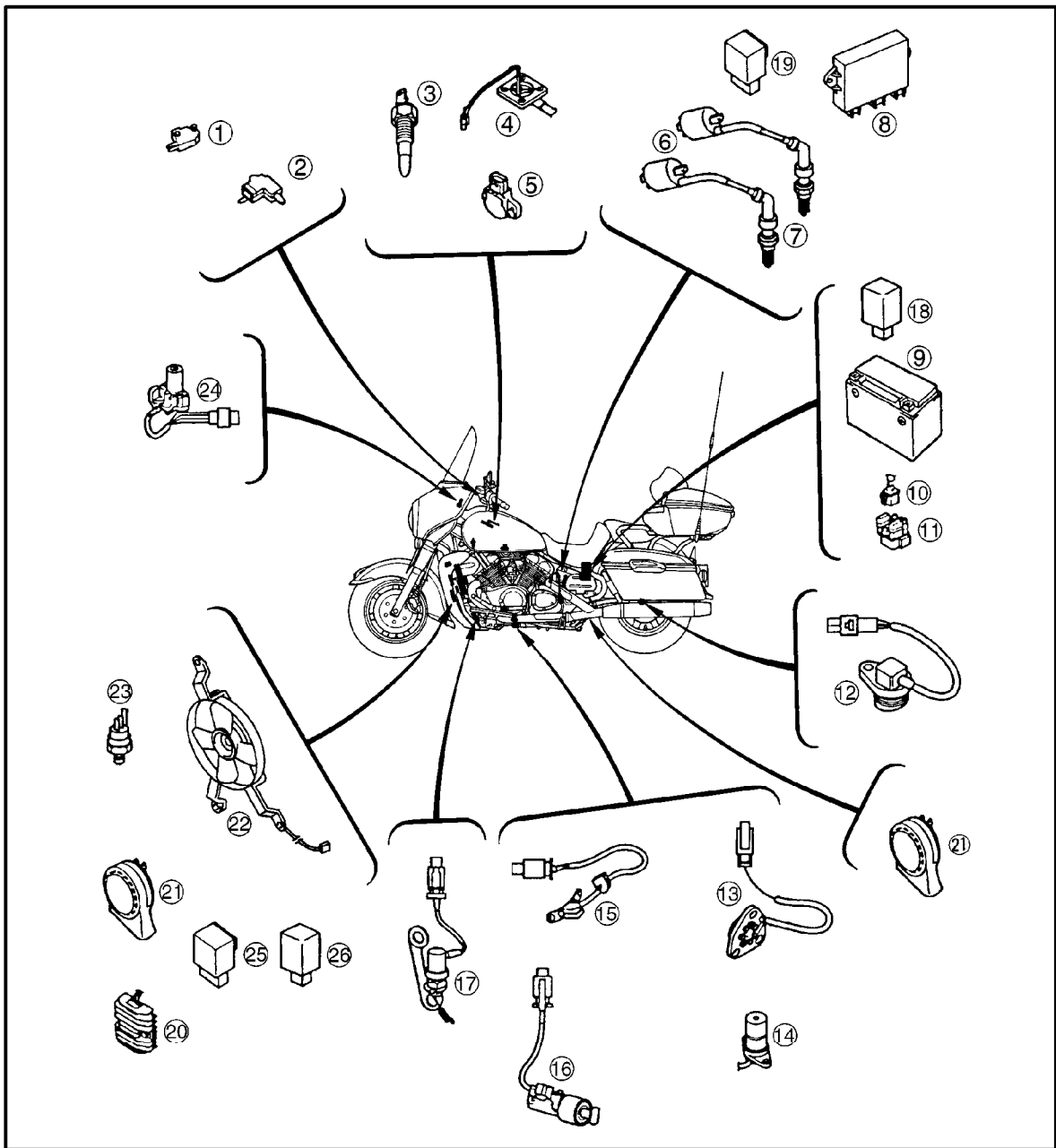


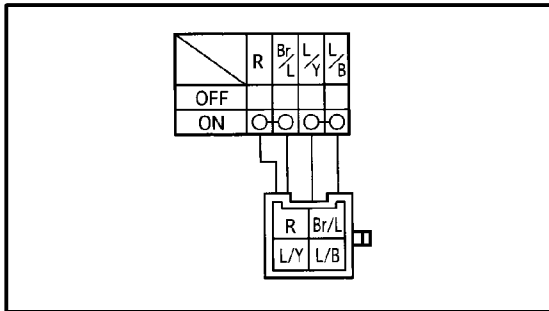
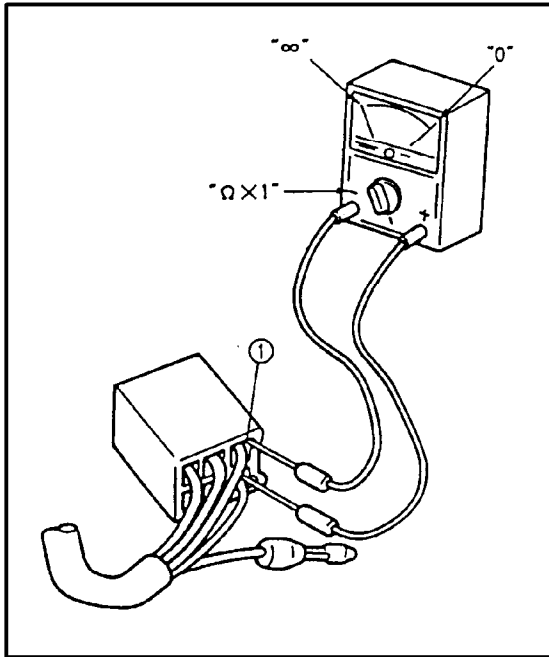
EAS00729

ELECTRICAL

ELECTRICAL COMPONENTS

- | | | |
|----------------------------------|--------------------|----------------------------------|
| ① Front brake switch | ⑨ Battery | ⑰ Rear brake switch |
| ② Clutch switch | ⑩ Fuse (main) | ⑱ Flasher relay |
| ③ Thermo unit | ⑪ Starter relay | ⑲ Starting circuit cut-off relay |
| ④ Fuel sender | ⑫ Speed sensor | ⑳ Rectifier/regulator |
| ⑤ TPS (throttle position sensor) | ⑬ Neutral switch | ㉑ Horn ~ 2 |
| ⑥ Ignition coil | ⑭ Oil level switch | ㉒ Fan motor |
| ⑦ Spark plug | ⑮ Pickup coil | ㉓ Thermo switch |
| ⑧ Ignitor unit | ⑯ Sidestand switch | ㉔ Main switch |
| | | ㉕ Brake light relay (blue) |
| | | ㉖ Cruise control relay (white) |





EAS00730

SWITCHES

CHECKING SWITCH CONTINUITY

Check each switch for continuity with the pocket tester. If the continuity reading is incorrect, check the wiring connections and if necessary, replace the switch.

CAUTION:

Never insert the tester probes into the coupler terminal slots ①. Always insert the probes from the opposite end of the coupler, taking care not to loosen or damage the leads.



Pocket tester
90890-03112

NOTE:

- Before checking for continuity, set the pocket tester to “0” and to the “Ω ~ 1” range.
- When checking for continuity, switch back and forth between the switch positions a few times.

The terminal connections for switches (e.g., main switch, engine stop switch) are shown in an illustration similar to the one on the left. The switch positions ③ are shown in the far left column and the switch lead colors ④ are shown in the top row in the switch illustration.

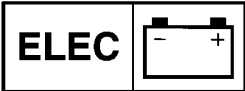
NOTE:

“○—○” indicates a continuity of electricity between switch terminals (i.e., a closed circuit at the respective switch position).

The example illustration on the left shows that:

There is continuity, between brown/blue and red, and between blue/yellow and blue/black when the switch is set to “ON”.

SWITCH INSPECTION



EAS00731

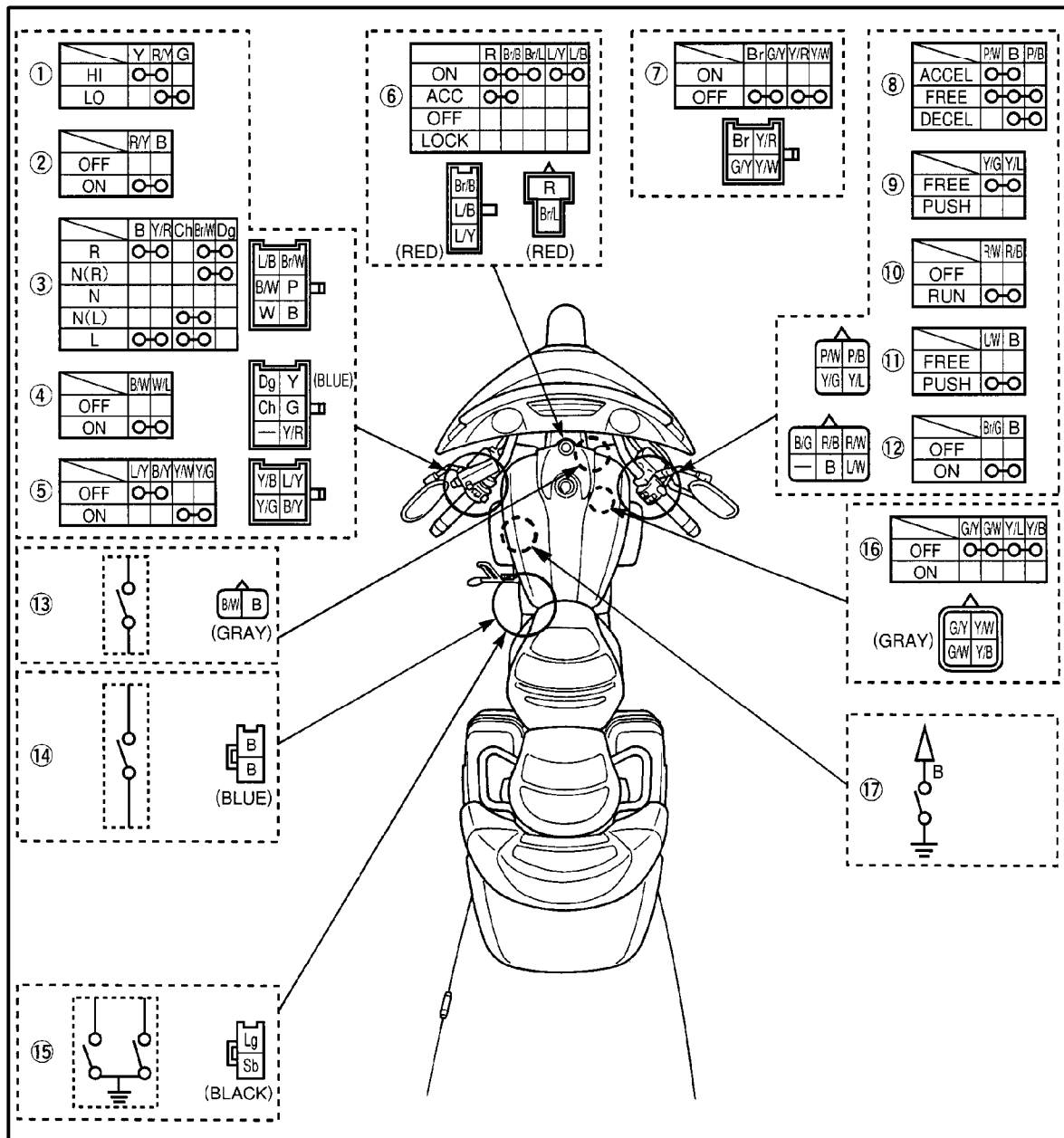
SWITCH CONTINUITY INSPECTION

Check each switch for damage or wear, proper connections, and also for continuity between the terminals. Refer to "CHECKING SWITCH CONTINUITY".

Damage/wear → Repair or replace the switch.

Improperly connected → Properly connect.

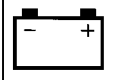
Incorrect continuity reading → Replace the switch.



- | | | |
|----------------------|-------------------------|-------------------------|
| ① Dimmer switch | ⑦ Front brake switch | ⑬ Emergency stop switch |
| ② Horn switch | ⑧ Griuse control switch | ⑭ Side stand switch |
| ③ Turn signal switch | ⑨ "CANCEL" switch | ⑮ Neutral switch |
| ④ Talk switch | ⑩ Engine stop switch | ⑯ Rear brake switch |
| ⑤ Clutch switch | ⑪ Start switch | ⑰ Oil level switch |
| ⑥ Main switch | ⑫ Hazard switch | |

CHECKING THE BULBS AND BULB SOCKETS

ELEC



EAS00732

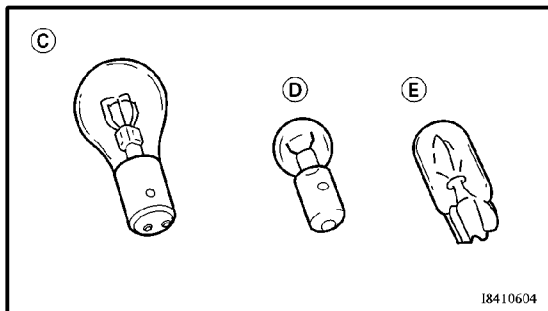
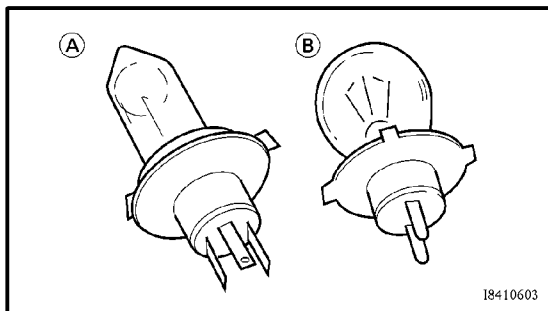
CHECKING THE BULBS AND BULB SOCKETS

Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.

Damage/wear → Repair or replace the bulb, bulb socket or both.

Improperly connected → Properly connect.

Incorrect continuity reading → Repair or replace the bulb, bulb socket or both.



TYPES OF BULBS

The bulbs used on this motorcycle are shown in the illustration on the left.

- Bulbs (A) and (B) are used for headlights and usually use a bulb holder which must be detached before removing the bulb. The majority of these bulbs can be removed from their respective socket by turning them counterclockwise.
- Bulb (C) is used for turn signal and tail/brake lights and can be removed from the socket by pushing and turning the bulb counterclockwise.
- Bulbs (D) and (E) are used for meter and indicator lights and can be removed from their respective socket by carefully pulling them out.

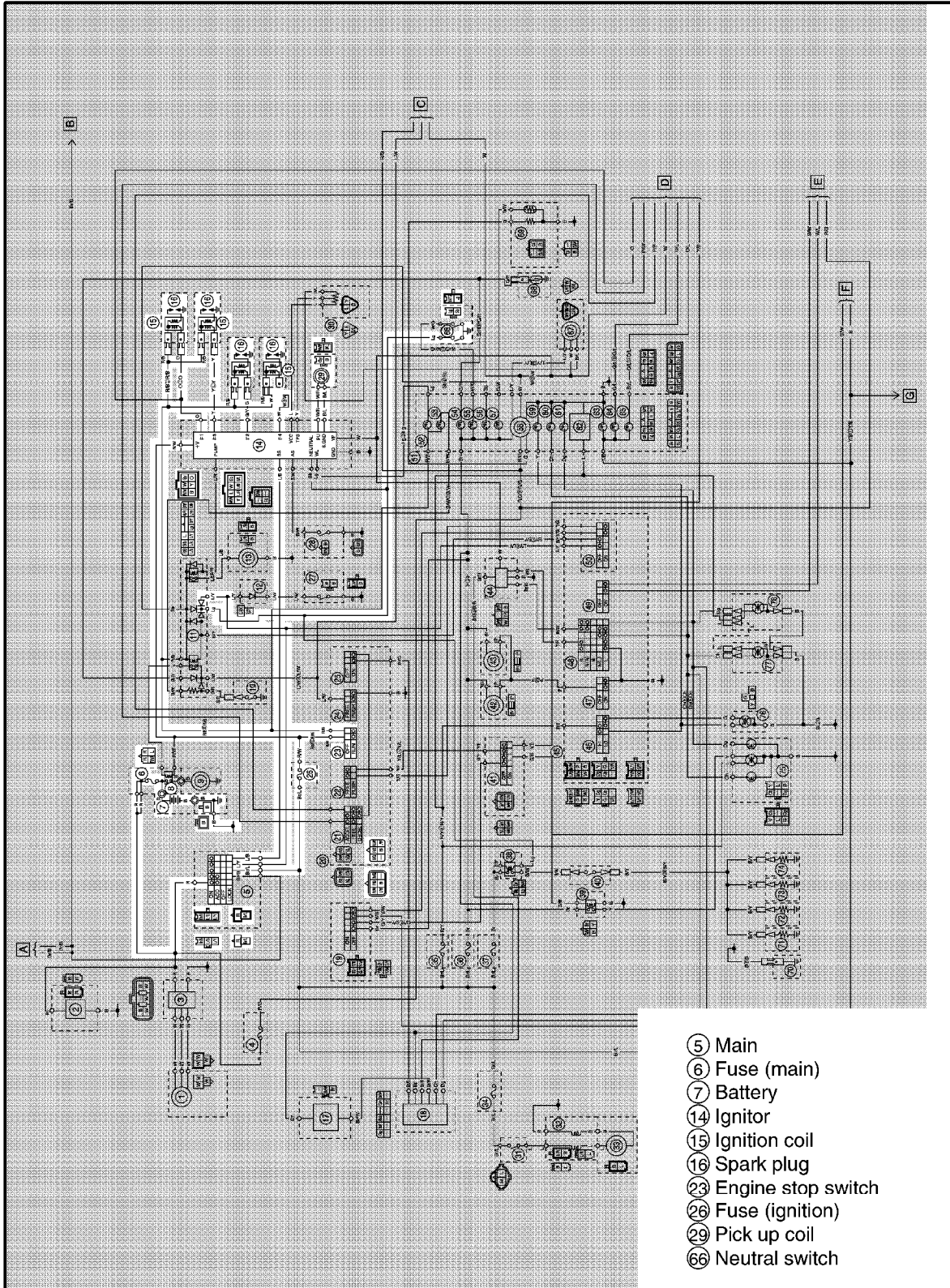
CHECKING THE CONDITION OF THE BULBS

The following procedure applies to all of the bulbs.

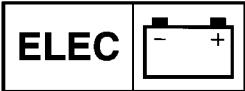
1. Remove:
 - bulb

DAS00734

IGNITION SYSTEM CIRCUIT DIAGRAM



IGNITION SYSTEM



EAS00737

TROUBLESHOOTING

The ignition system fails to operate (no spark or intermittent spark).

Check:

1. Main and ignition fuses
2. Battery
3. Spark plugs
4. Ignition spark gap
5. Spark plug cap resistance
6. Ignition coil resistance
7. Pickup coil resistance
8. Main switch
9. Engine stop switch
10. Neutral switch
11. Starting circuit cut-off relay (diode)
12. Wiring connections
(of the entire ignition system)

NOTE:

Before troubleshooting, remove the following part(-s):

- 1) Rider and passenger seats
 - 2) Side cover (left and right)
 - 3) Front cowling
- Troubleshoot with the following special tool(-s).

	Dynamic spark tester YM-34487 Ignition checker 90890-60754 Pocket tester YU-03112, 90890-03112
--	--

EAS00738

1. Main and ignition fuses • Check the main and ignition fuses for continuity. Refer to “CHECKING THE FUSES” in CHAPTER 3. • Are the main and ignition fuses OK?
--



Replace the fuse(-s).

EAS00739

2. Battery
• Check the condition of the battery. Refer to “CHECKING THE BATTERY” in CHAPTER 3.
Open-circuit voltage 12.8 V or more at 20°C (68°C)
• Is the battery OK?



• Clean the battery terminals.
• Recharge or replace the battery.

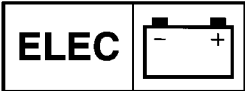
EAS00741

3. Spark plugs
• The following procedure applies to all of the spark plugs. • Check the condition of the spark plug. • Check the spark plug type. • Measure the spark plug gap. Refer to “CHECKING THE SPARK PLUGS” in CHAPTER 3.
Standard spark plug DPR8EA-9 (NGK) X24EPR-U9 (NIPPONDENSO) Spark plug gap 0.8 ~ 0.9 mm (0.031 ~ 0.035 in)
• Is the spark plug in good condition, it is of the correct type, and its gap within specification?



Re-gap or replace the spark plug.

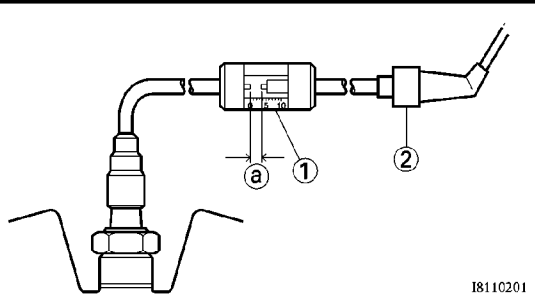
IGNITION SYSTEM



EAS00743

4. Ignition spark gap

- The following procedure applies to all of the spark plugs.
- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker/dynamic spark tester ① as shown.
- ② Spark plug cap
- Set the main switch to "ON".
- Measure the ignition spark gap ③.
- Crank the engine by pushing the starter switch and gradually increase the spark gap until a misfire occurs.



18110201



Minimum ignition spark gap
0.8 mm (0.031 in)

- Is there a spark and is the spark gap within specification?



YES



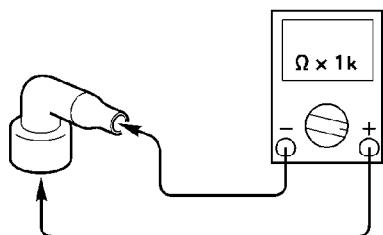
NO

The ignition system is OK.

EAS00745

5. Spark plug cap resistance

- The following procedure applies to all of the spark plug caps.
- Remove the spark plug cap.
- Connect the pocket tester ($\Omega \sim 1k$ range) to the spark plug cap as shown.
- Measure the spark plug cap resistance.



18040101



Spark plug cap resistance
10 k Ω at 20°C (68°C)

- Is the spark plug cap OK?



YES



NO

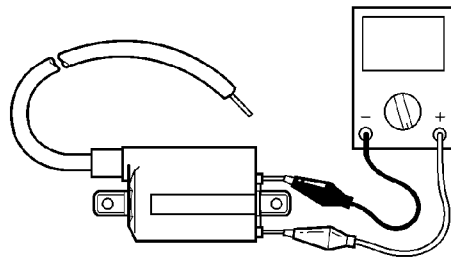
Replace the spark plug cap.

EAS00747

6. Ignition coil resistance

- The following procedure applies to all of the ignition coils.
- Disconnect the ignition coil leads from the wire harness.
- Connect the pocket tester ($\Omega \sim 1$) to the ignition coil as shown.

Tester positive probe → red/black
Tester negative probe → orange (gray)



18110104

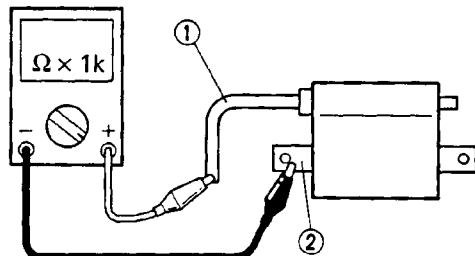
- Measure the primary coil resistance.



Primary coil resistance
3.57 ~ 4.83 Ω at 20°C (68°F)

- Connect the pocket tester ($\Omega \sim 1k$) to the ignition coil as shown.
- Measure the secondary coil for the specified resistance.


Tester positive probe → spark plug lead ①
Tester negative probe → ignition oil base ②



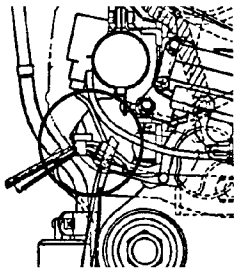
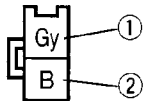

373-017

IGNITION SYSTEM

ELEC	
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	Secondary coil resistance 10.71 ~ 14.49 kΩ at 20°C (68°C)
• Is the ignition coil OK?	
↓ YES	↓ NO
Replace the ignition coil.	

EAS00750 9. Engine stop switch	
• Check the engine stop switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the engine stop switch OK?	
↓ YES	↓ NO
Replace the right handlebar switch.	

EAS00748 7. Pickup coil resistance	
• Disconnect the pickup coil coupler from the wire harness. • Connect the pocket tester (Ω ~ 100) to the pickup coil terminal as shown.	
Tester positive probe – green/yellow ① Tester negative probe – black ②	
	
• Measure the pickup coil resistance.	
	Pickup coil resistance 189 ~ 231 Ω at 20°C (68°F) (between gray and black)
• Is the pickup coil OK?	
↓ YES	↓ NO
Replace the pickup coil.	

EAS00751 10. Neutral switch	
• Check the neutral switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the neutral switch OK?	
↓ YES	↓ NO
Replace the neutral switch.	

EAS00753 12. Starting circuit cut-off relay (diode)	
• Disconnect the starting circuit cut-off relay coupler from the wire harness. • Connect the pocket tester (Ω ~ 1) to the starting circuit cut-off relay coupler as shown. • Check the starting circuit cut-off relay for continuity.	
Tester positive probe → blue/yellow ① Tester positive probe → light green ②	No continuity
Tester positive probe → light green ① Tester positive probe → blue/yellow ②	Continuity
NOTE: When you switch the tester's positive and negative probes, the readings in the above chart will be reversed.	
• Are the tester readings correct?	
↓ YES	↓ NO
Replace the starting circuit cut-off relay.	

EAS00749 8. Main switch	
• Check the main switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the main switch OK?	
↓ YES	↓ NO
Replace the main switch.	

EAS00754

13. Wiring

- Check the entire ignition system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the ignition system's wiring properly connected and without defects?



NO



YES

Properly connect or repair the ignition system's wiring.

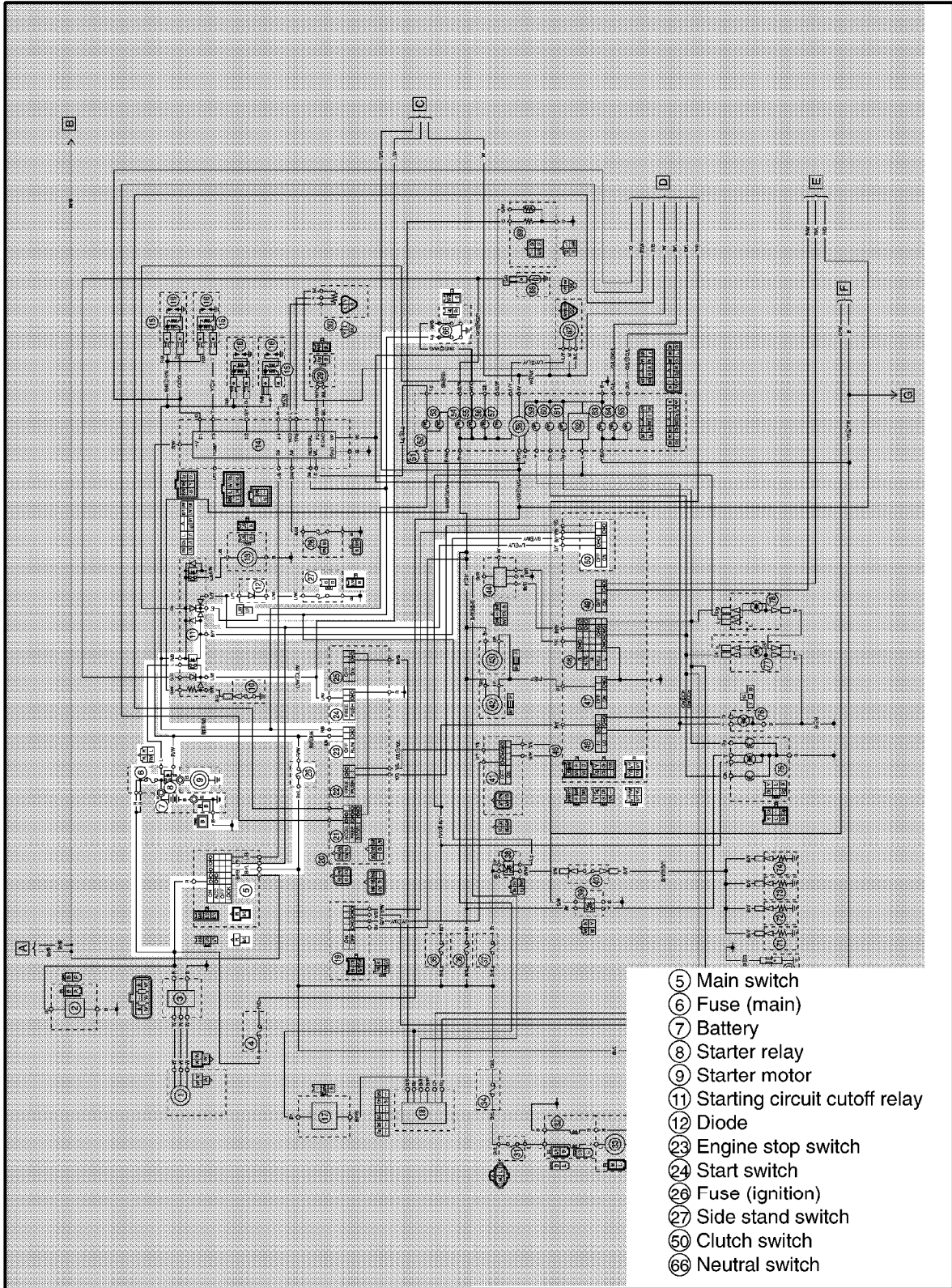
Replace the ignitor unit.

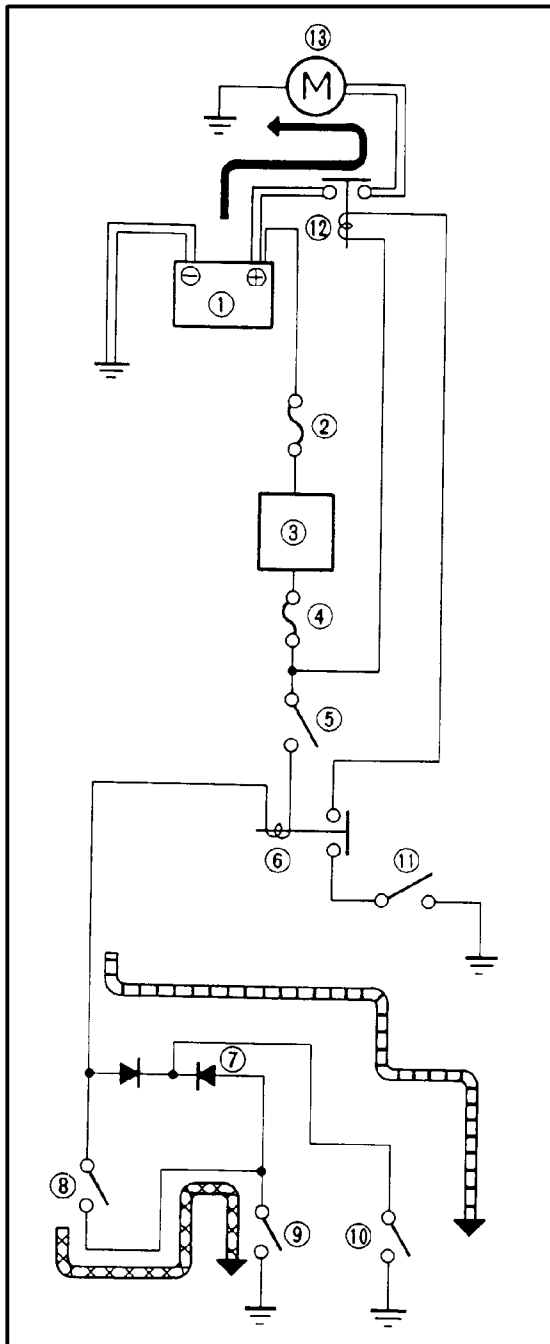
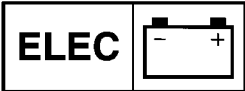
ELECTRIC STARTING SYSTEM



EAS00755

ELECTRIC STARTING SYSTEM CIRCUIT DIAGRAM





EAS00756

STARTING CIRCUIT CUTOFF SYSTEM OPERATION

If the engine stop switch is set to “○” and the main switch is set to “ON” (both switches are closed), the starter motor can only operate if at least one of the following conditions is met:

- The transmission is in neutral (the neutral switch is closed).
- The clutch lever is pulled to the handlebar (the clutch switch is closed) and the sidestand is up (the sidestand switch is closed).

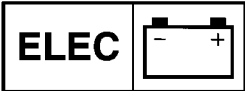
The neutral relay prevents the starter motor from operating when neither of these conditions has been met. In this instance, the neutral relay is open so current cannot reach the starter motor. When at least one of the above conditions has been met the neutral relay is closed and the engine can be started by pressing the start switch.

← WHEN THE TRANSMISSION IS IN NEUTRAL

← WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED TO THE HANDLEBAR

- ① Battery
- ② Fuse (main)
- ③ Main switch
- ④ Fuse (ignition)
- ⑤ Engine stop switch
- ⑥ Starting circuit cut-off relay
- ⑦ Diode
- ⑧ Clutch switch
- ⑨ Sidestand switch
- ⑩ Neutral switch
- ⑪ Start switch
- ⑫ Starter relay
- ⑬ Starter motor

ELECTRIC STARTING SYSTEM



EAS00757

TROUBLESHOOTING

The starter motor fails to turn.

Check:

1. Main and ignition fuses
2. Battery
3. Starter motor
4. Starting circuit cut-off relay
5. Starter relay
6. Main switch
7. Engine stop switch
8. Neutral switch
9. Sidestand switch
10. Clutch switch
11. Start switch
12. Wiring connections
(of the entire starting system)

NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Rider and passenger seats
 - 2) Fuel tank
 - 3) Front cowling
- Troubleshoot with the following special tool(-s).

	Pocket tester YU-03112, 90890-03112
--	---

EAS00738

1. Main and ignition fuses • Check the main and ignition fuses for continuity. Refer to “CHECKING THE FUSES” in CHAPTER 3. • Are the main and ignition fuses OK?

↓ YES
↓ NO

Replace the fuse (-s).

EAS00739

2. Battery		
• Check the condition of the battery. Refer to “CHECKING THE BATTERY” in CHAPTER 3.		
<table border="1"> <tr> <td style="text-align: center;"></td> <td> Open-circuit voltage 12.8 V or more at 20°C (68°C) </td> </tr> </table>		Open-circuit voltage 12.8 V or more at 20°C (68°C)
	Open-circuit voltage 12.8 V or more at 20°C (68°C)	
• Is the battery OK?		

↓ YES
↓ NO

• Clean the battery terminals.
 • Recharge or replace the battery.

EAS00758

3. Starter motor
• Connect the battery positive terminal ① and starter motor lead ② with a jumper lead ③.
18210801

⚠ WARNING

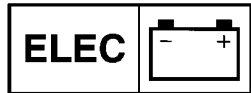
- A wire that is used as a jumper lead must have the equivalent capacity or more as that of the battery lead, otherwise the jumper lead may burn.
- This check is likely to produce sparks, therefore make sure that no flammable gas or fluid is in the vicinity.

• Does the starter motor turn?

↓ YES
↓ NO

Repair or replace the starter motor.

ELECTRIC STARTING SYSTEM



EAS00756

4. Starting circuit cut-off relay

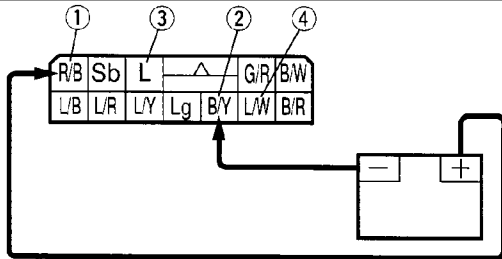
- Disconnect the starting circuit cut-off relay coupler from the wire harness.
- Connect the pocket tester ($\Omega \sim 1$) and battery (12 V) to the starting circuit cut-off relay coupler as shown.

Battery positive terminal → red/black ①

Battery negative terminal → black/yellow ②

Tester positive probe → blue ③

Tester negative probe → blue/white ④



- Does the starting circuit cut-off relay have continuity between blue and blue/white?

↓ YES ↓ NO

Replace the starting circuit cut-off relay.

EAS00761

5. Starter relay

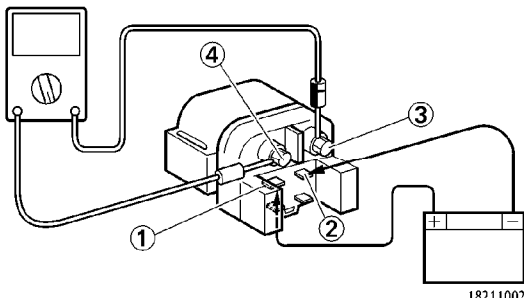
- Disconnect the starter relay coupler from the wire harness.
- Connect the pocket tester ($\Omega \sim 1$) and battery (12 V) to the starter relay coupler as shown.

Battery positive terminal → blue ①

Battery negative terminal → red/white ②

Tester positive probe → red ③

Tester negative probe → black ④



18211002

- Does the starter relay have continuity between red and black?

↓ YES ↓ NO

Replace the starter relay.

EAS00749

6. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".

- Is the main switch OK?

↓ YES ↓ NO

Replace the main switch.

EAS00750

7. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".

- Is the engine stop switch OK?

↓ YES ↓ NO

Replace the right handlebar switch.

EAS00751

8. Neutral switch

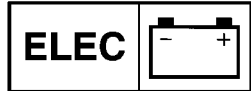
- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".

- Is the neutral switch OK?

↓ YES ↓ NO

Replace the neutral switch.

ELECTRIC STARTING SYSTEM



EAS00752

9. Sidestand switch

- Check the sidestand switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the sidestand switch OK?

↓ YES

↓ NO

Replace the side-stand switch.

EAS00763

10. Clutch switch

- Check the clutch switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the clutch switch OK?

↓ YES

↓ NO

Replace the clutch switch.

EAS00764

11. Start switch

- Check the start switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the start switch OK?

↓ YES

↓ NO

Replace the right handlebar switch.

EAS00766

12. Wiring

- Check the entire starting system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the starting system's wiring properly connected and without defects?

↓ YES

↓ NO

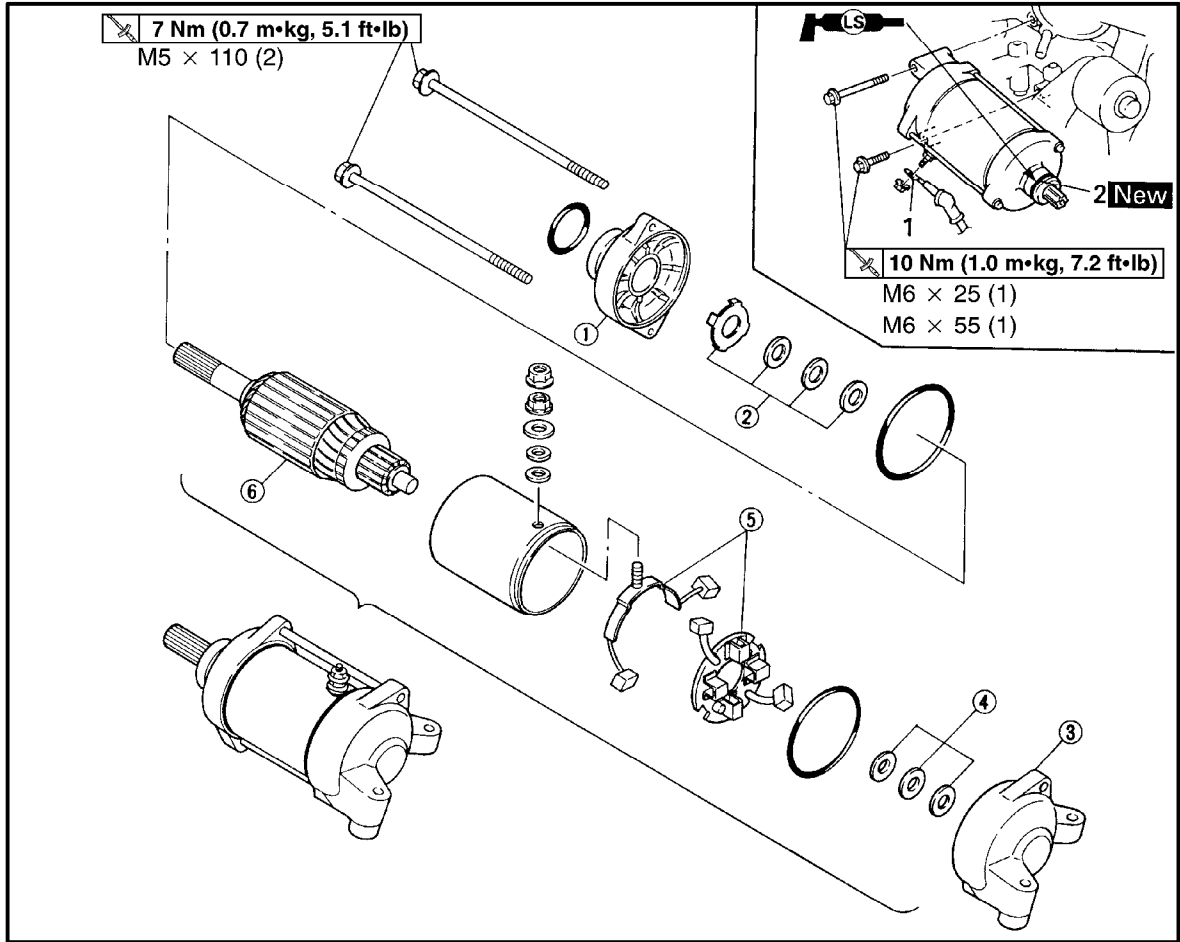
The starting system circuit is OK?

Properly connect or repair the starting system's wiring.

ELECTRIC STARTING SYSTEM

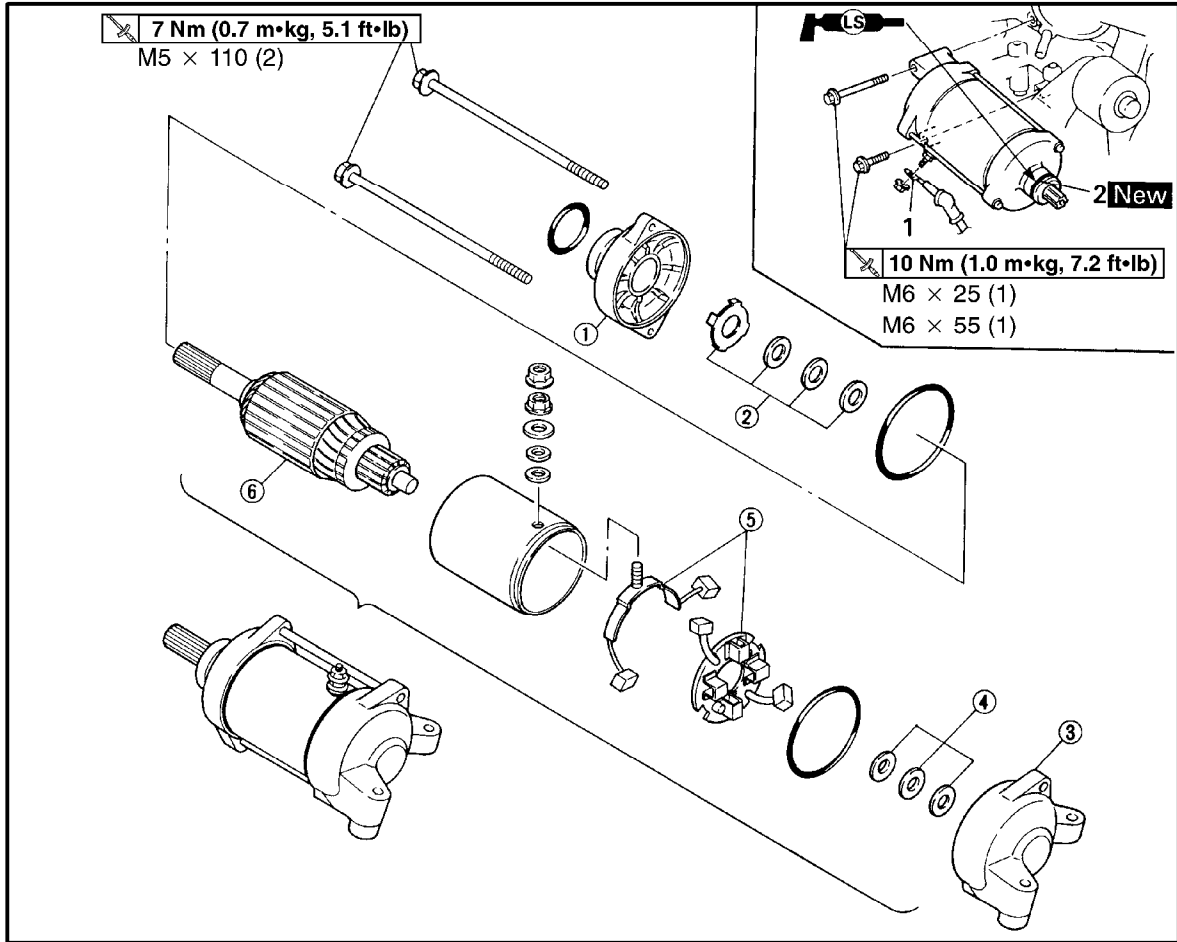
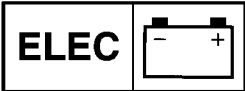


STARTER MOTOR



Order	Job/Part	Q'ty	Remarks
	Removing the starter motor Exhaust pipe assembly		Remove the parts in the order listed. Refer to "REMOVING THE ENGINE" in CHAPTER 4.
1	Starter motor lead	1	
2	Starter motor/O-ring	1/1	For installation, reverse the removal procedure.

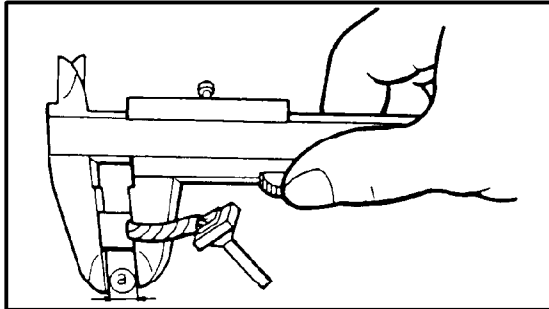
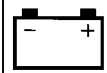
ELECTRIC STARTING SYSTEM



Order	Job/Part	Q'ty	Remarks
	Disassembling the starter motor		Disassemble the parts in the order listed.
①	Front bracket	1	Refer to "ASSEMBLING THE STARTER MOTOR". NOTE: _____ Be sure to remove the installation nut on brush #1 first. _____
②	Washer kit	1	
③	Rear bracket	2	
④	Washer kit	1	
⑤	Brush seat/Brush #1	1/1	
⑥	Armature coil	1	For assembly reverse the disassembly procedure.

ELECTRIC STARTING SYSTEM

ELEC



5. Measure:

- brush length (a)

Out of specification → Replace the brushes as a set.



Brush length wear limit
5 mm (0.20 in)

6. Measure:

- brush spring force

Fatigue/out of specification → Replace the brush springs as a set.



Brush spring force
570 ~ 920 N (20.1 ~ 32.5 gf)

7. Check:

- gear teeth

Damage/wear → Replace the gear.

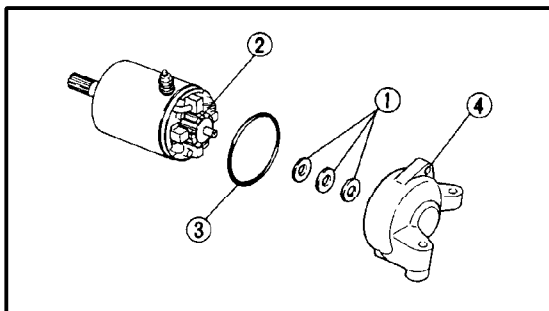
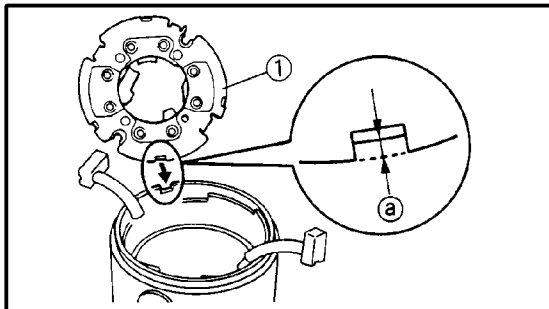
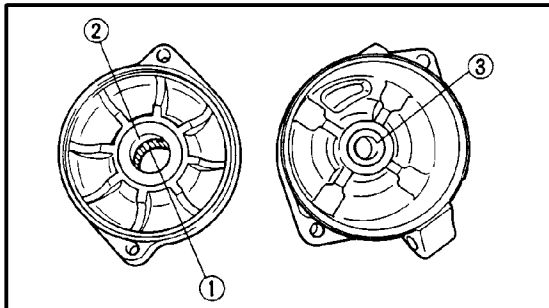
8. Check:

- bearing (1)

- oil seal (2)

- bushing (3)

Damage/wear → Replace the defective part(-s).



EAS00772

ASSEMBLING THE STARTER MOTOR

1. Install:

- brush seat (1)

NOTE:

Align the tab (a) on the brush seat with the slot (b) in the rear cover.

2. Install:

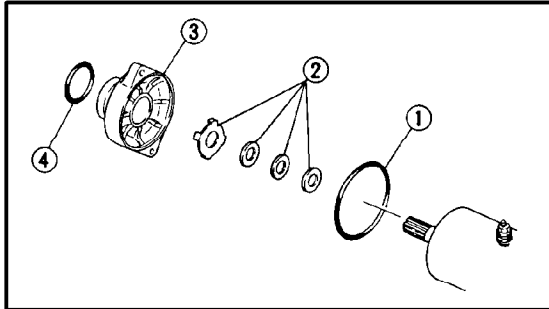
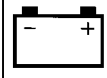
- washers (1)
- armature coil (2)
- o-ring (3)
- rear bracket (4)

NOTE:

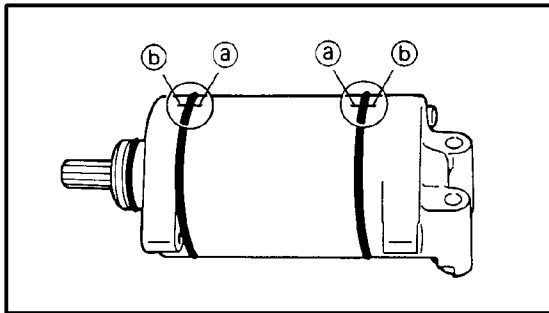
To prevent damaging the brushes during installation push down on the brush springs.

ELECTRIC STARTING SYSTEM

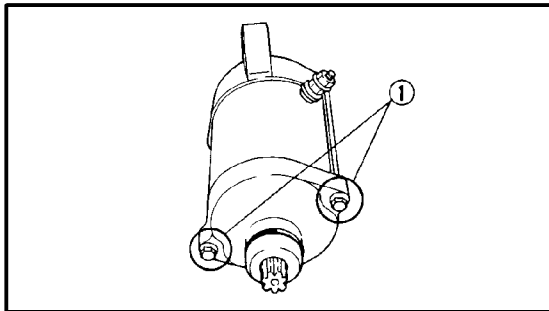
ELEC




3. Install:
- o-ring ① **New**
 - washers ②
 - front bracket ③
 - o-ring ④ **New**

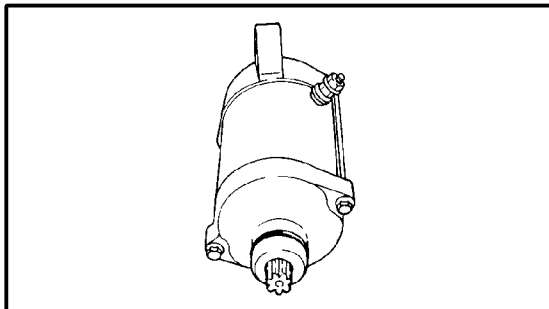


NOTE: _____
Align the match marks (a) on the yoke with the match marks (b) on the brackets.



4. Install:
- bolts ①

 **7 Nm (0.7 m•kg, 5.1 ft•lb)**



INSTALLATION

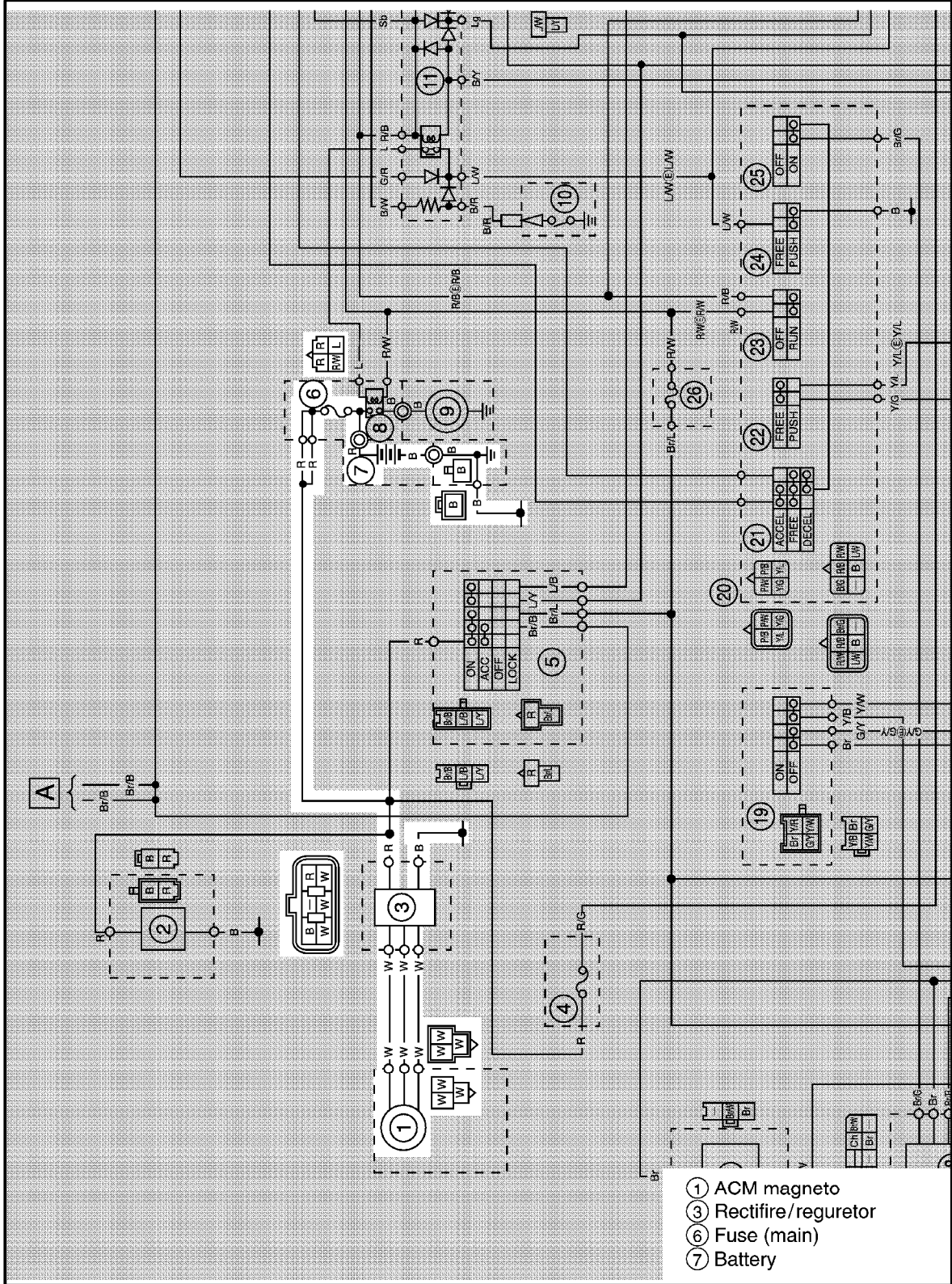
1. Install:
- starter motor  **10 Nm (1.0 m•kg, 7.2 ft•lb)**
- Refer to "AC MAGNETO AND STARTER CLUTCH" in CHAPTER 4.

CHARGING SYSTEM



YP804000

CHARGING SYSTEM CIRCUIT DIAGRAM



- ① ACM magneto
- ③ Rectifire/reguretor
- ⑥ Fuse (main)
- ⑦ Battery

CHARGING SYSTEM



EAS00774

TROUBLESHOOTING

The battery is not being charged.

Check:

1. Main fuse
2. Battery
3. Charging voltage
4. Stator coil resistance
5. Wiring connections
(of the entire charging system)

NOTE:

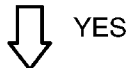
- Before troubleshooting, remove the following part(-s):
 - 1) Rider and passenger seats
 - 2) Side cover (left)
- Troubleshoot with the following special tool(-s).

	Engine tachometer YU-08036-A, 90890-03113
	Pocket tester YU-03112, 90890-03112

EAS00738

1. Main fuses

- Check the fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.
- Are the fuses OK?



Replace the fuse (-s).

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



Open-circuit voltage
12.8 V or more at 20°C (68°C)

- Is the battery OK?



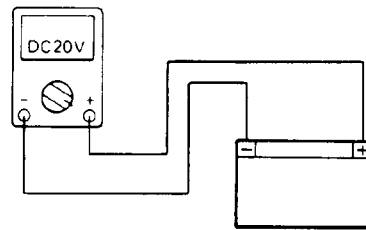
• Clean the battery terminals.
• Recharge or replace the battery.

EAS00775

3. Charging voltage

- Connect the engine tachometer to the spark plug lead of cylinder #1.
- Connect the pocket tester (20 V DC) to the battery as shown.

Tester positive probe → battery positive terminal
Tester negative probe → battery negative terminal



- Start the engine and let it run at approximately 5,000 r/min.
- Measure the charging voltage.



Charging voltage
14 V at 5,000 r/min

NOTE:

- Make sure that the battery is fully charged.
- Is the charging voltage within specification?



The charging circuit is OK.

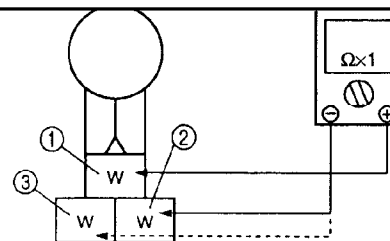
EAS00776

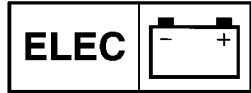
4. Stator coil resistance

- Remove the generator cover.
- Connect the pocket tester ($\Omega \sim 1$) to the stator coils as shown.


Tester positive probe → white ①
Tester negative probe → white ②

Tester positive probe → white ③
Tester negative probe → white ④





• Measure the stator coil resistances.

	Stator coil resistance 0.279 ~ 0.341 Ω at 20°C (68°F)
---	---

• Is the stator coil OK?



YES



NO

Replace the stator coil assembly.

EAS00779

5. Wiring

- Check the wiring connections of the entire charging system. Refer to "CIRCUIT DIAGRAM".
- Is the charging system's wiring properly connected and without defects?



YES



NO

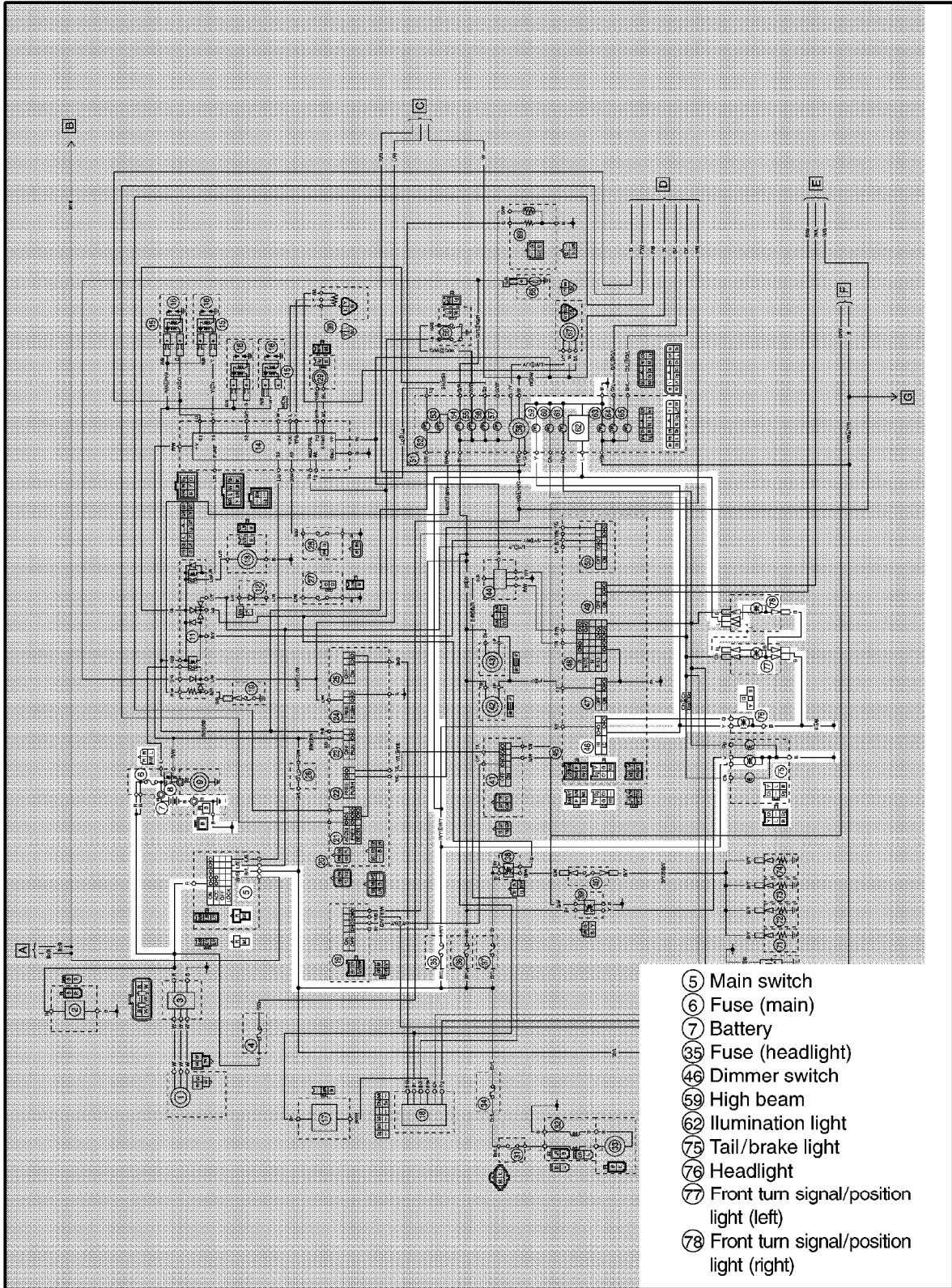
Replace the rectifier/regulator.

Properly connect or repair the charging system's wiring.

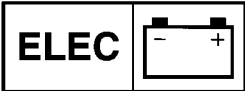


EB804000

LIGHTING SYSTEM CIRCUIT DIAGRAM



LIGHTING SYSTEM



EAS00782

TROUBLESHOOTING


Any of the following fail to come on: headlight, high beam indicator light, taillight, and meter light.

Check:

1. Main and headlight fuses
2. Battery
3. Main switch
4. Light/dimmer switch
5. Wiring connections
(of the entire charging system)

NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Rider and passenger seats
 - 2) Side cover (left and right)
 - 3) Front cowling
- Troubleshoot with the following special tool(-s).

	Pocket tester YU-03112, 90890-03112
--	--

EAS00738

1. Main and headlight fuses

- Check the main and headlight fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.

• Are the main and headlight fuses OK?



Replace the fuse (-s).

WAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



Open-circuit voltage
12.8 V or more at 20°C (68°C)

• Is the battery OK?



- Clean the battery terminals.
- Recharge or replace the battery.

EAS00739

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".

• Is the main switch OK?



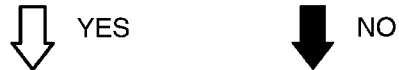
Replace the main switch.

EAS00785

4. Light/dimmer switch

- Check the light/dimmer switch for continuity. Refer to "CHECKING THE SWITCHES".

• Is the light/dimmer switch OK?



The light/dimmer switch is faulty. Replace the left handlebar switch.

EAS00787

5. Wiring

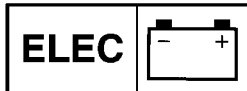
- Check entire lighting system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the lighting system's wiring properly connected and without defects?



Check the condition of each of the lighting system's circuits. Refer to "CHECKING THE LIGHTING SYSTEM".

Properly connect or repair the lighting system's wiring.

LIGHTING SYSTEM



EAS00788

CHECKING THE LIGHTING SYSTEM

1. The headlight and the high beam indicator light fail to come on.

1. Headlight bulb and socket

- Check the headlight bulb and socket for continuity.
- Are the headlight bulb and socket OK?

↓ YES

↓ NO

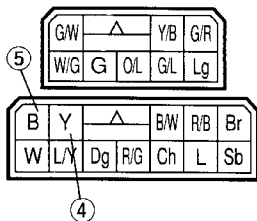
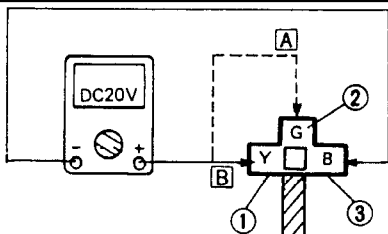
Replace the headlight bulb, socket or both

2. Voltage

- Connect the pocket tester (20 V DC) to the headlight and high beam indicator light couplers as shown.

- [A] When the dimmer switch is set to "☰D".
- [B] When the dimmer switch is set to "☷D".

Headlight coupler (headlight side)
Headlight
 Tester positive probe → yellow ① or green ②
 Tester negative probe → black ③
High beam indicator light
 Tester positive probe → yellow ④
 Tester negative probe → black ⑤



Meter light coupler (wire harness side)

- Set the main switch to "ON".
- Set the dimmer switch to "☷D" or "☰D".
- Measure the voltage (12 V) of green ② on the headlight coupler (headlight side). ②
- Is the voltage within specification?

↓ YES

↓ NO

This circuit is OK.

The wiring circuit from the main switch to the headlight coupler (wire harness side) is faulty and must be repaired.

EAS00789

2. The meter light fails to come on.

1. Meter light bulb and socket

- Check the meter light bulb and socket for continuity.
- Are the meter light bulb and socket OK?

↓ YES

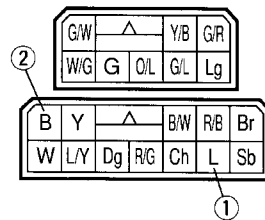
↓ NO

Replace the meter light bulb, socket of both.


2. Voltage

- Connect the pocket tester (20 V) to the meter light coupler (wire harness side) as shown.

Tester positive probe → blue ①
 Tester negative probe → black ②



LIGHTING SYSTEM

ELEC	
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- Set the main switch to "ON".
- Measure the voltage (12 V) of blue ① on the meter light coupler (wire harness side).
- Is the voltage within specification?

↓ YES
↓ NO

This circuit is OK.

The wiring circuit from the main switch to the meter light coupler (wire harness side) is faulty and must be repaired.

- Set the main switch to "ON".
- Measure the voltage (12 V) of blue ①, yellow ③ on the tail/brake light coupler (tail/brake light side).
- Is the voltage within specification?

↓ YES
↓ NO

This circuit is OK.

The wiring circuit from the main switch to the tail/brake light coupler (tail/brake light side) is faulty and must be repaired.

EAS00790

3. The tail/brake light fails to come on.

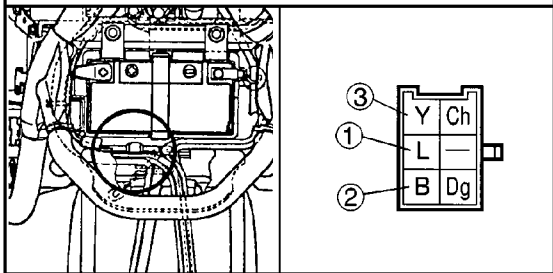
- 1. Tail/brake light bulb and socket**
- Check the tail/brake light bulb and socket for continuity.
 - Are the tail/brake light bulb and socket OK?

↓ YES
↓ NO

Replace the tail/brake light bulb, socket or both

- 2. Voltage**
- Connect the pocket tester (20 V DC) to the tail/brake light coupler (wire harness side) as shown.

Tester positive probe → blue ①, yellow ③
Tester positive probe → black ②



EAS00791

4. The turn signal/position light fails to come on.

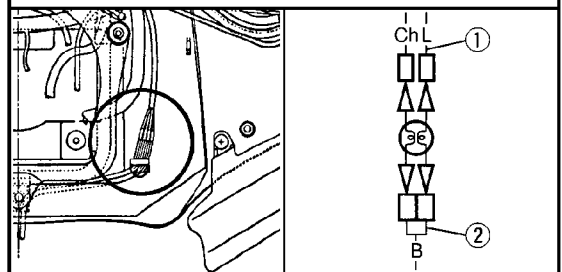
- 1. Turn signal/position light bulb and socket**
- Check the turn signal/position light bulb and socket for continuity.
 - Are the turn signal/position light bulb and socket OK?

↓ YES
↓ NO

Replace the turn signal/position light bulb, socket or both.

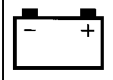
- 2. Voltage**
- Connect the pocket tester (20 V DC) to the auxiliary light connectors (turn signal/position light side) as shown.

Tester positive probe → blue ①
Tester negative probe → black ②



LIGHTING SYSTEM

ELEC



- Set the main switch to "ON".
- Measure the voltage (12 V) of blue① on the auxiliary light connectors (auxiliary light side).
- Is the voltage within specification?



YES



NO

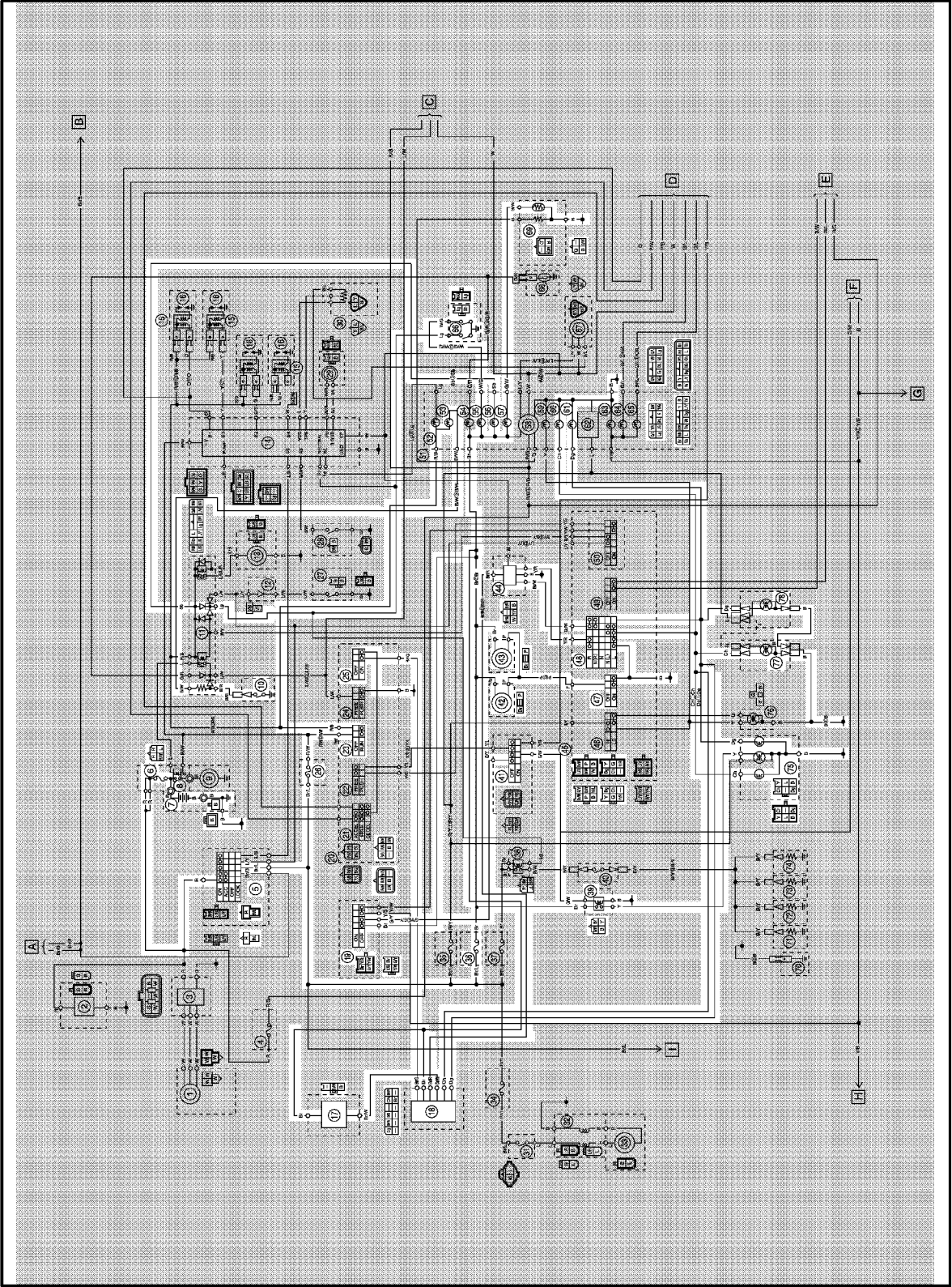
This circuit is OK.

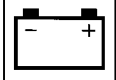
The wiring circuit from the main switch to the turn signal/position light connectors (turn signal/position light side) is faulty and must be repaired.



EB806000

SIGNAL SYSTEM
CIRCUIT DIAGRAM





- ⑤ Main switch
- ⑥ Fuse (main)
- ⑦ Battery
- ⑩ Oil level switch
- ⑪ Starting circuit cutoff relay
- ⑰ Flasher relay (hazard)
- ⑱ Hazard relay
- ⑲ Front brake switch
- ⑳ Engine stop switch
- ㉓ Hazard switch
- ㉔ Fuse (ignition)
- ㉕ Fuse (signal)
- ㉙ Brake light relay
- ④① Rear brake switch
- ④② Horn 2
- ④③ Horn 1
- ④④ Flasher relay
- ④⑦ Horn switch
- ④⑧ Turn signal switch
- ⑤③ Oil warning indicator light
- ⑤⑤ Over drive indicator light
- ⑤⑥ Neutral indicator light
- ⑤⑦ Fuel indicator light
- ⑥① Turn signal indicator light (left)
- ⑥① Turn signal indicator light (right)
- ⑥⑥ Neutral switch
- ⑥⑨ Fuel sender unit
- ⑦⑤ Tail/brake light
- ⑦⑦ Front turn signal/position light (left)
- ⑦⑧ Front turn signal/position light (right)

SIGNAL SYSTEM

ELEC



EAS00794

TROUBLESHOOTING

- Any of the following fail to come on: turn signal light, brake light or indicator light.
- The horn fails to sound.

Check:

1. Main, signal and ignition fuses
2. Battery
3. Main switch
4. Wiring connections
(of the entire signaling system)

NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Rider seat
 - 2) Side covers (left and right)
 - 3) Fuel tank
 - 4) Front upper cowling
- Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

EAS00738

1. Main, signal and ignition fuses

- Check the main, signal and ignition fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.
- Are the main, signal and ignition fuses OK?

↓ YES

↓ NO

Replace the fuse (-s).

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



Open-circuit voltage
12.8 V or more at 20°C (68°F)

- Is the battery OK?

↓ YES

↓ NO

- Clean the battery terminals.
- Recharge or replace the battery.

EAS00749

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

↓ YES

↓ NO

Replace the main switch.

EAS00795

4. Wiring

- Check the entire signal system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the signaling system's wiring properly connected and without defects?

↓ YES

↓ NO

Check the condition of each of the signaling system's circuits. Refer to "CHECKING THE SIGNALING SYSTEM".

Properly connect or repair the signaling system's wiring.

EAS00796

CHECKING THE SIGNALING SYSTEM

1. The horn fails to sound.

1. Horn switch

Refer to "CHECKING THE SWITCHES".

↓ YES

↓ NO

Replace the left handlebar switch.

2. Voltage

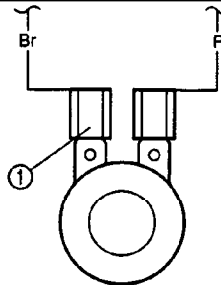
- Connect the pocket tester (20 V DC) to the horn lead (at the horn terminal) as shown.

SIGNAL SYSTEM

ELEC



Tester positive probe → brown ①
 Tester negative probe → ground



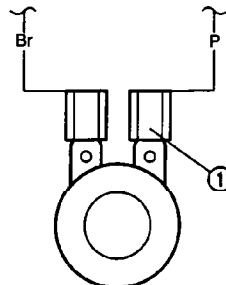
- Set the main switch to “ON”.
- Measure the voltage (12 V) of the brown connector at the horn terminal.
- Is the voltage within specification?

↓ YES

↓ NO

The wiring circuit from the main switch to the horn terminal is faulty and must be repaired.

Tester positive probe → pink ①
 Tester negative probe → ground



- Set the main switch to “ON”.
- Measure the voltage (12 V) of pink ① at the horn terminal.
- Is the voltage within specification?

↓ YES

↓ NO

Repair or adjust the horn.

Replace the horn.

EAS00797

2. The tail/brake light fails to come on.

1. Tail/brake light bulb and socket.

- Check the tail/brake light bulb and socket for continuity.
- Are the tail/brake light bulb and socket OK?

↓ YES

↓ NO

Replace the tail/brake light bulb, socket or both.

2. Brake switch

- Check the brake switch for continuity. Refer to “CHECKING THE SWITCHES”.
- Is the brake switch OK?

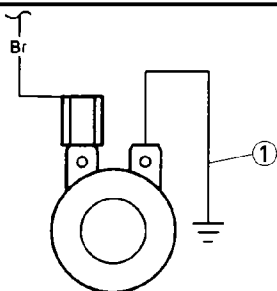
↓ YES

↓ NO

Replace the brake switch.

3. Horn

- Disconnect the black connector at the horn terminal.
- Connect a jumper lead ① to the horn terminal and ground the jumper lead.
- Set the main switch to “ON”.
- Does the horn sound?



↓ YES

↓ NO

Replace the horn.

4. Voltage

- Connect the pocket tester (20 V DC) to the horn at the black terminal as shown.

3. Voltage

- Connect the pocket tester (20 V DC) to the tail/brake light coupler (wire harness side) as shown.

SIGNAL SYSTEM

ELEC



Tester positive probe → yellow ①
Tester negative probe → black ②

- Set the main switch to "ON".
- Pull in the brake lever or push down on the brake pedal.
- Measure the voltage (12 V) of yellow ① on the tail/brake light coupler (wire harness side).
- Is the voltage within specification?

↓ YES ↓ NO

This circuit is OK.

The wiring circuit from the main switch to the tail/brake light coupler (wire harness side) is faulty and must be repaired.

EAS00799

3. The turn signal light, turn signal indicator light or both fail to blink.

1. Turn signal indicator light bulb and socket

- Check the turn signal light bulb and socket for continuity.
- Are the turn signal light bulbs and socket OK?

↓ YES ↓ NO

Replace the turn signal light bulb, socket or both.

2. Turn signal switch

- Check the turn signal switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the turn signal switch OK?

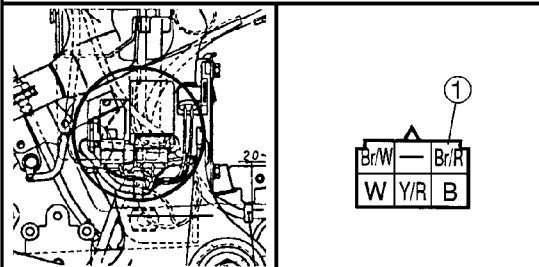
↓ YES ↓ NO

Replace the left handlebar switch.

3. Voltage

- Connect the pocket tester (20 V DC) to the flasher relay coupler (flasher relay side) as shown.
- Set the hazard switch "OFF".

Tester positive probe → brown/red ①
Tester negative probe → ground



- Set the main switch to "ON".
- Measure the voltage (12 V) of brown/red ① at the flasher relay coupler (wire harness side).
- Is the voltage within specification?

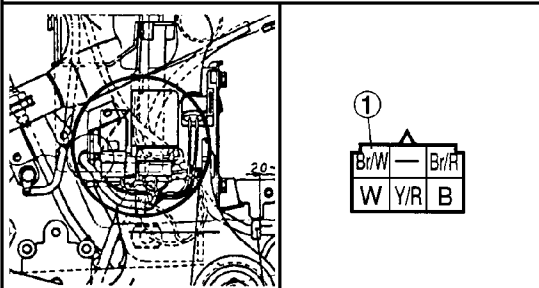
↓ YES ↓ NO

The wiring circuit from the main switch to the flasher relay coupler (wire harness side) is faulty and must be repaired.

4. Voltage

- Connect the pocket tester (20 V DC) to the flasher relay coupler (wire harness side) as shown.

Tester positive probe → brown/white ①
Tester negative probe → ground



SIGNAL SYSTEM

ELEC



- Set the main switch to "ON".
- Measure the voltage (12 V) on brown/white ① at the flasher relay coupler (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

The flasher relay is faulty and must be replaced.

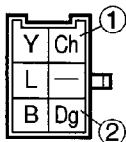
5. Voltage (rear)

- Connect the pocket tester (20 V DC) to the turn signal light connector (wire harness side) as shown.

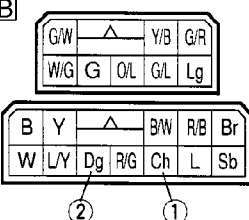
- [A] Rear turn signal light
- [B] Turn signal indicator light

- Left turn signal light**
 Tester positive probe → chocolate ①
 Tester negative probe → ground
- Right turn signal light**
 Tester positive probe → dark green ②
 Tester negative probe → ground

A



B



- Set the main switch to "ON".
- Set the turn switch to "↔" or "↔".
- Measure the voltage (12 V) of the chocolate ① or dark green ② on the turn signal light connector (wire harness side).
- Is the voltage within specification?

↓ YES

↓ NO

This circuit is OK.

The wiring circuit from the turn signal switch to the turn signal light connector (wire harness side) is faulty and must be repaired.

EAS00800

4. The neutral indicator light fails to come on.

1. Neutral indicator light bulb and socket

- Check the neutral indicator light bulb and socket for continuity.
- Are the neutral indicator light bulb and socket OK?

↓ YES

↓ NO

Replace the neutral indicator light bulb, socket or both.

2. Neutral switch

- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the neutral switch OK?

↓ YES

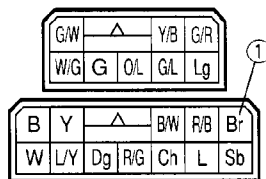
↓ NO

Replace the neutral switch.

3. Voltage

- Connect the pocket tester (20 V DC) to the meter light bulb coupler (wire harness side) as shown.

- Tester positive probe → brown ①
- Tester negative probe → ground



- Set the main switch to "ON".
- Measure the voltage (12 V).
- Is the voltage within specification?

↓ YES

↓ NO

The wiring circuit from the main switch to the meter light bulb coupler (wire harness side) is faulty and must be repaired.



4. Voltage

- Connect the pocket tester (20 V DC) to the neutral switch coupler (wire harness side) as shown.

Tester positive probe → light green ①
Tester negative probe → ground

- Set the main switch to "ON".
- Set the transmission without neutral.
- Measure the voltage (12 V).
- Is the voltage within specification?

YES → This circuit is OK.

NO → The wiring circuit from the neutral switch to neutral switch coupler (wire harness side) is faulty and must be repaired.

EAS00802

5. The oil level warning light fails to come on.

1. Oil level warning light bulb and socket

- Check the oil level warning light bulb and socket for continuity.
- Are the oil level warning light bulb and socket OK?

YES →

NO → Replace the oil level warning light bulb, socket or both.

2. Starting circuit cut-off relay

- Disconnect the starting circuit cut-off relay coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the starting circuit cut-off relay coupler (wire harness side) as shown.
- Measure the resistor for the specified resistance.

Tester positive terminal → black/red ①
Tester negative terminal → black/white ②

R/B	Sb	L		G/R	B/W
L/B	L/R	L/Y	Lg	B/Y	L/W
				B/R	

6.4 – 9.6 Ω at 20°C (68°F)

- Is the resistor resistance within specification?

YES →

NO → Replace the starting circuit cut-off relay.

3. Engine oil level switch

- Drain the engine oil and remove the engine oil level switch from the oil pan.
- Check the engine oil level switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine oil level switch OK?

YES →

NO → Replace the engine oil level switch.

EAS00750


4. Engine stop switch

- Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the engine stop switch OK?

YES →

NO → Replace the right handlebar switch.

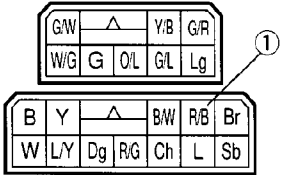
SIGNAL SYSTEM

ELEC 

5. Voltage

- Connect the pocket tester (20 V DC) to the meter light coupler (wire harness side) as shown.

Tester positive probe → red/brack ①
Tester negative probe → ground



- Set the main switch to "ON".
- Measure the voltage (12 V).
- Is the voltage within specification?

↓ YES ↓ NO

This circuit is OK.

The wiring circuit from the main switch to the meter light coupler (wire harness side) is faulty and must be repaired.

EAS00803

6. The fuel level indicator light fails to come on.

1. Fuel level indicator light bulb and socket

- Check: Do the fuel level indicator light bulb and socket have continuity?

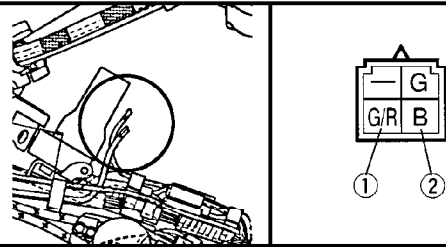
↓ YES ↓ NO

Replace the fuel level indicator light bulb, socket of both.

2. Fuel sender

- Drain the fuel from the fuel tank and remove the fuel sender from the fuel tank.
- Disconnect the fuel sender coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the fuel sender as shown.

Tester positive probe → green/red ①
Tester negative probe → black ②



- Check: Does the fuel sender have continuity?

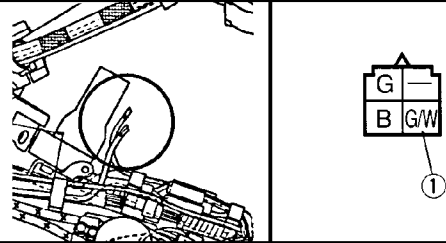
↓ YES ↓ NO

Replace the fuel sender.

3. Voltage

- Connect the pocket tester (20 V DC) to the fuel sender coupler (wire harness side) as shown.

Tester positive probe → green/white ①
Tester negative probe → ground



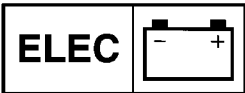
- Set the main switch to "ON".
- Measure the voltage (12 V).
- Is the voltage within specification?

↓ YES ↓ NO

This circuit is OK.

The wiring circuit from the main switch to the fuel sender coupler (wire harness side) is faulty and must be repaired.

SIGNAL SYSTEM



7. The over drive indicator light fails to come on.

- 1. Over drive indicator light bulb and socket**
- Check the over drive indicator light bulb and socket for continuity.
 - Are the over drive indicator light bulb and socket OK?

↓ YES

↓ NO

Replace the over drive indicator light bulb, socket or both.

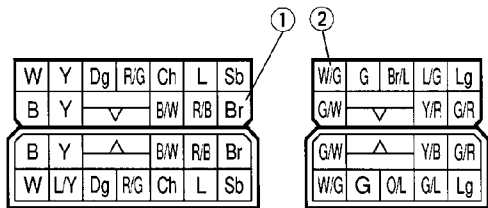
- 2. Neutral switch**
- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
 - Is the neutral switch OK?

↓ YES

↓ NO

Replace the neutral switch.

- 3. Voltage**
- Connect the pocket tester (20 V DC) to the meter light bulb coupler (wire harness side) as shown.
- Tester positive probe → brown ①**
Tester negative probe → white/green ②



- Set the main switch to "ON".
- Set the transmission 5th gear.
- Measure the voltage (12 V).
- Is the voltage within specification?

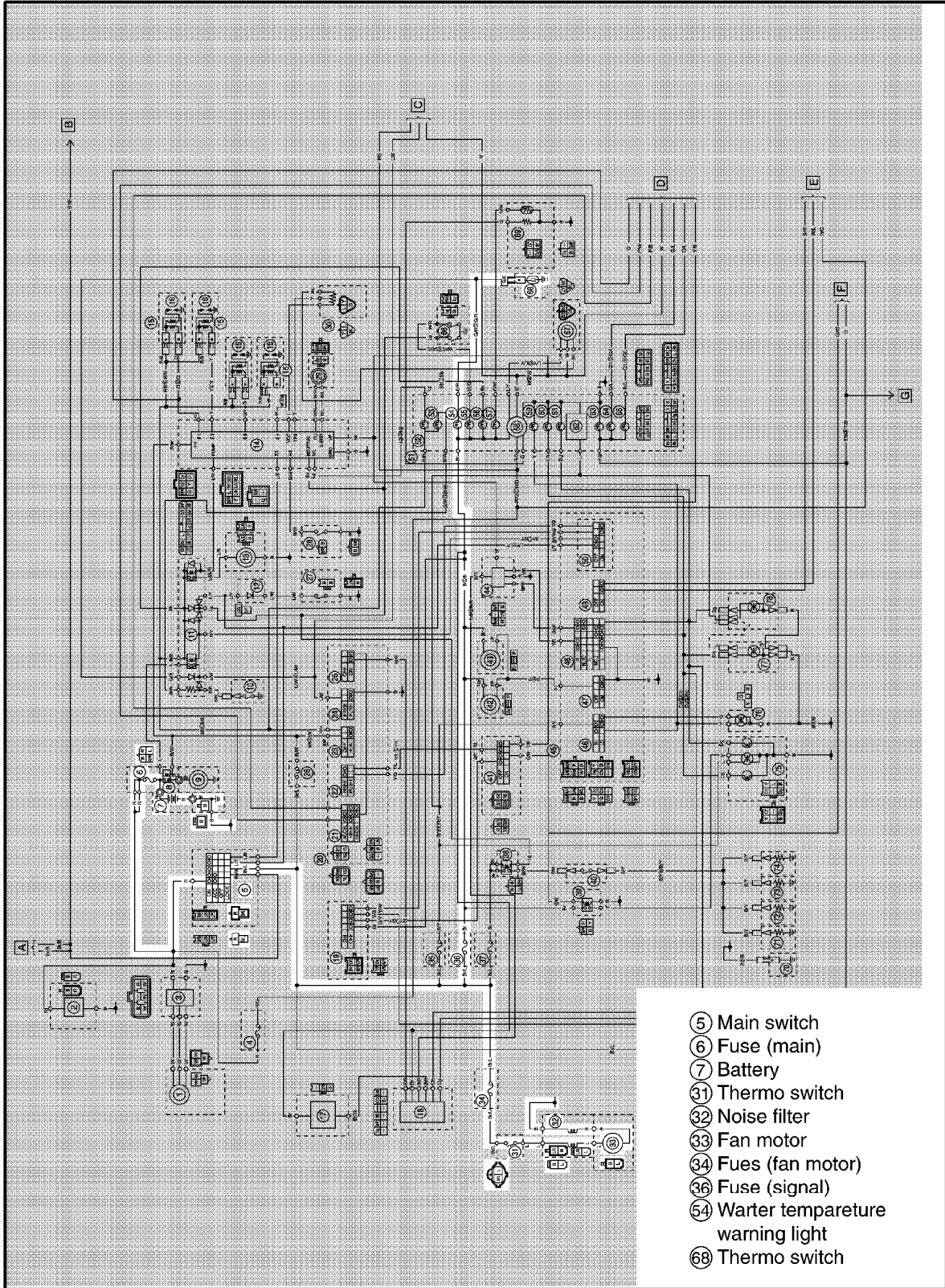
↓ YES

↓ NO

This circuit is OK.

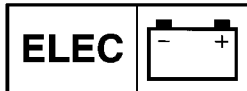
The wiring circuit from the main switch to the meter light coupler (wire harness side) and meter light coupler to over drive switch are faulty and must be repaired.

COOLING SYSTEM
CIRCUIT DIAGRAM



- ⑤ Main switch
- ⑥ Fuse (main)
- ⑦ Battery
- ③① Thermo switch
- ③② Noise filter
- ③③ Fan motor
- ③④ Fues (fan motor)
- ③⑥ Fuse (signal)
- ⑤④ Water tempareture warning light
- ⑥⑧ Thermo switch

COOLING SYSTEM



EAS00808

TROUBLESHOOTING

- The radiator fan motor fails to turn.
- The water temperature warning light fails to come on when the engine is hot.

Check:

1. Main, turn signal, and radiator fan motor fuses
2. Battery
3. Main switch
4. Radiator fan motor
5. Thermo switch
6. Thermo unit
7. Water temperature warning light bulb and socket
8. Wiring connections (the entire cooling system)

NOTE:

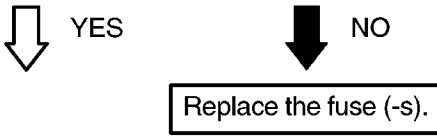
- Before troubleshooting, remove the following part(-s).
 - 1) Rider and passenger seats
 - 2) Side covers (left and right)
 - 3) Fuel tank
- Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

EAS00738

1. Main, signal, and radiator fan motor fuses
 - Check the main, signal, and radiator fan motor fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.
 - Are the main, turn signal, and radiator fan motor fuses OK?



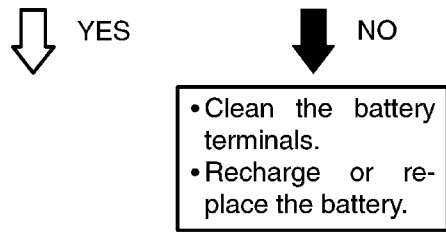
EAS00739

2. Battery
 - Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



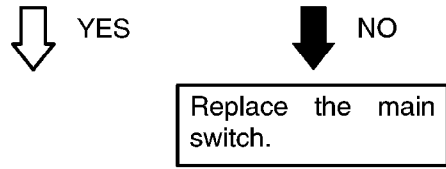
Open-circuit voltage
12.8 V or more at 20°C (68°C)

• Is the battery OK?



EAS00749

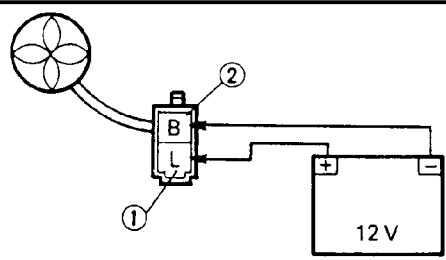
3. Main switch
 - Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
 - Is the main switch OK?



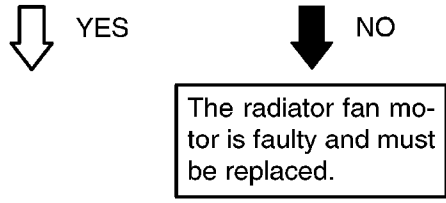
EAS00809

4. Radiator fan motor
 - Disconnect the radiator fan motor coupler (wire harness side).
 - Connect the battery (12 V) as shown.

Battery positive lead → blue ①
Battery negative lead → black ②



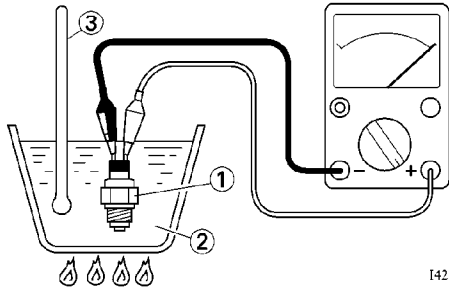
• Does the radiator fan motor turn?



EAS00811

5. Thermo switch

- Remove the thermo switch from the thermostat housing.
- Connect the pocket tester ($\Omega \times 1$) to the thermo switch ① as shown.



- Immerse the thermo switch in a container filled with coolant ②.
- Place a thermometer ③ in the coolant.
- Slowly heat the coolant, then let it cool down to the specified temperature.
- Check the thermo switch for continuity at the temperatures indicated below.

Test step	Coolant temperature	Continuity
	Thermo switch	
1	0 – 98 °C (32 – 208.4 °F)	NO
2	More than 105 ± 3 °C (221.0 ± 5.4 °F)	YES
3*	105 to 98 °C (221.0 to 208.4 °F)	YES
4*	Less than 98 °C (208.4 °F)	NO

Steps 1 & 2: Heating phase
Steps 3* & 4*: Cooling phase

⚠ WARNING

- Handle the thermo switch with special care.
- Never subject the thermo switch to strong shocks.
If the thermo switch is dropped, replace it.



Thermo switch
8 Nm (0.8 m•kg, 5.8 ft•lb)
Three bond sealock® 10

- Thermo switch circuit open, radiator fan off
- Thermo switch circuit closed, radiator fan on
- Does the thermo switch operate properly as described above?

• Does the radiator fan motor turn?

↓ YES

↓ NO

Replace the thermo switch.

6. Water temperature warning light bulb and socket

- Check the water temperature warning light bulb and socket for continuity.

• Are the water temperature warning light bulb and socket OK?

↓ YES

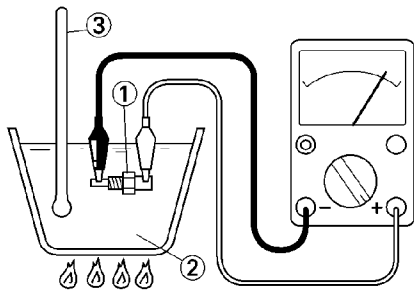
↓ NO

Replace the water temperature warning light bulb, socket or both.

EAS00812

7. Thermo unit

- Remove the thermo unit sender from the radiator.
- Connect the pocket tester ($\Omega \times 10$) to the thermo unit ① as shown.
- Immerse the temperature sender in a container filled with coolant ②.
- Place a thermometer ③ in the coolant.
- Slowly heat the coolant. Check the thermo unit sender for continuity at the temperatures indicated below.



14210103



Temperature sender resistance

80°C (170°F): 47 – 53 Ω

100°C (212°F): 26 – 30 Ω

⚠ WARNING

- Handle the temperature sender with special care.
- Never subject the temperature sender to strong shocks. If the temperature sender is dropped, replace it.



Temperature sender

23 Nm (2.3 m•kg, 17 ft•lb)

Three bond sealock® 10

- Does the thermo unit operate properly?

↓ YES

↓ NO

Replace the thermo unit sender.

EAS00813

8. Wiring

- Check the entire cooling system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the cooling system's wiring properly connected and without defects?

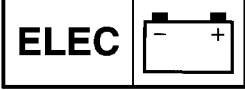
↓ YES

↓ NO

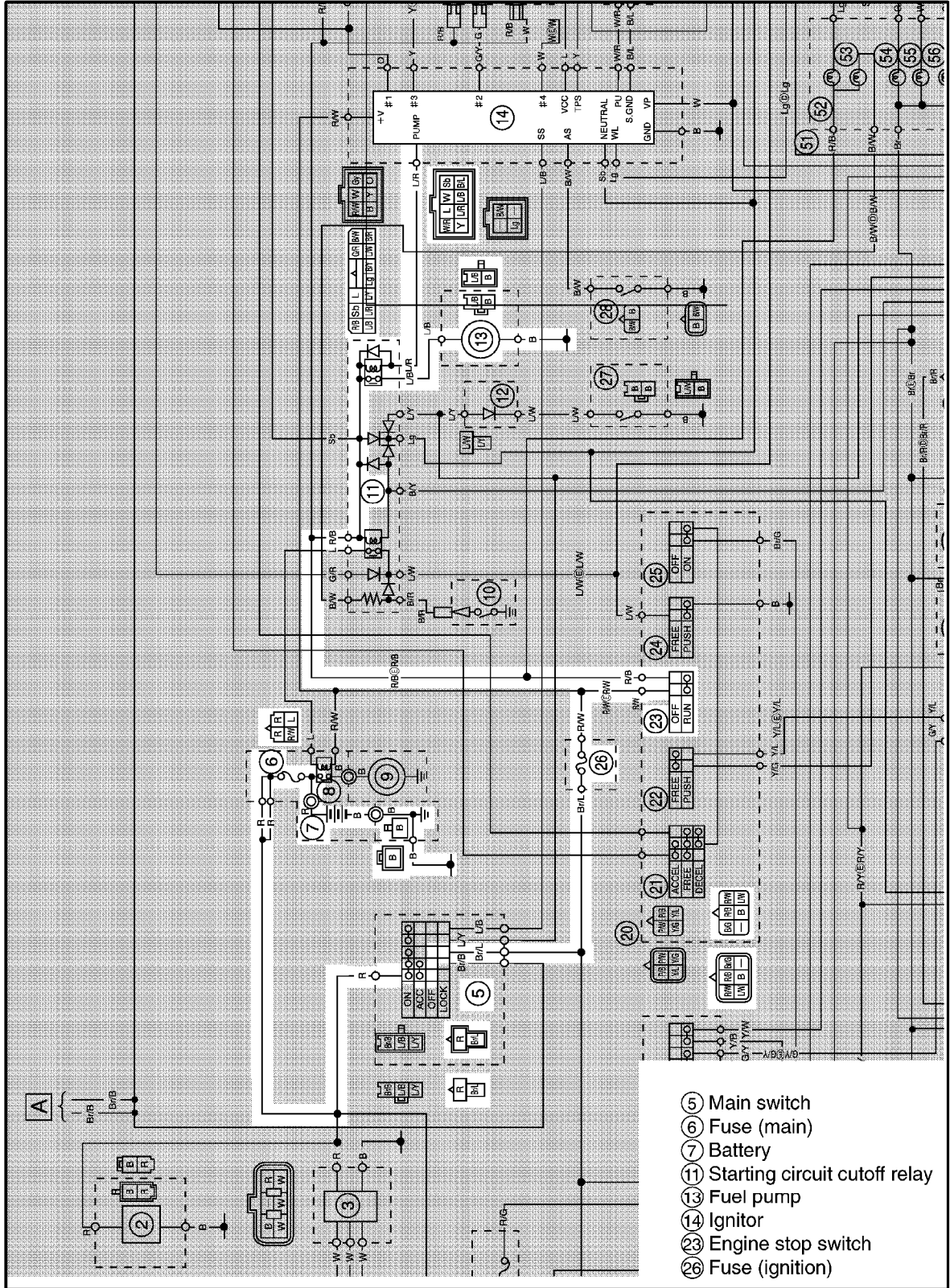
This circuit is OK.

Properly connect or repair the cooling system's wiring.

FUEL PUMP SYSTEM

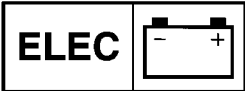


FUEL PUMP SYSTEM CIRCUIT DIAGRAM



- ⑤ Main switch
- ⑥ Fuse (main)
- ⑦ Battery
- ⑪ Starting circuit cutoff relay
- ⑬ Fuel pump
- ⑭ Ignitor
- ⑲ Engine stop switch
- ⑳ Fuse (ignition)

FUEL PUMP SYSTEM



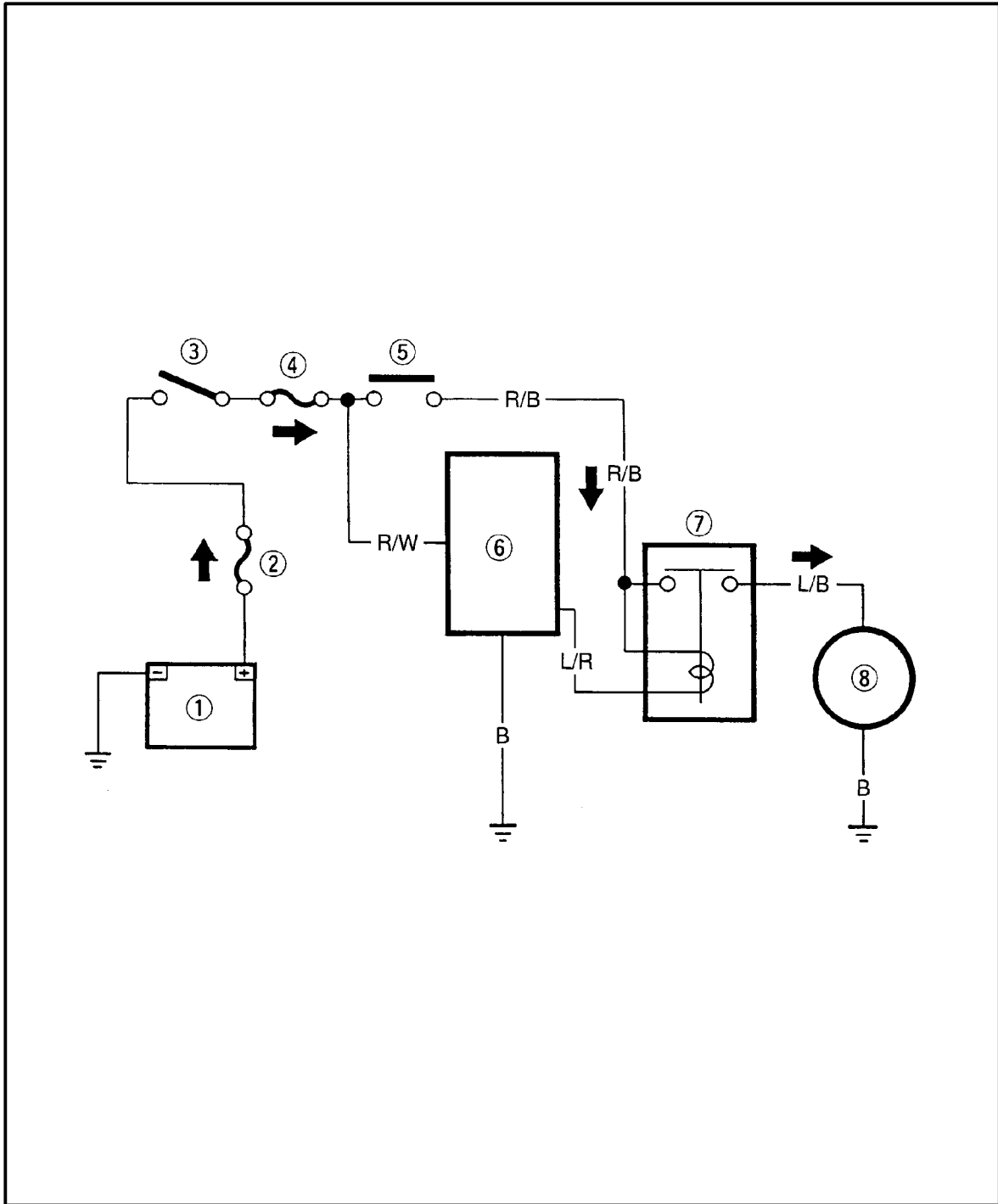
EB808010

FUEL PUMP CIRCUIT OPERATION

The fuel pump circuit consists of the fuel pump relay, fuel pump, engine stop switch and ignitor unit.

The ignitor unit includes the control unit for the fuel pump.

- ① Battery
- ② Main fuse
- ③ Main switch
- ④ Ignition fuse
- ⑤ Engine stop switch
- ⑥ Ignitor unit
- ⑦ Fuel pump relay
- ⑧ Fuel pump



FUEL PUMP SYSTEM

ELEC



EAS00816

TROUBLESHOOTING

If the fuel pump fails to operate:

Check:

1. Main and ignition fuses
2. Battery
3. Main switch
4. Engine stop switch
5. Starting circuit cut-off relay (the fuel pump relay)
6. Fuel pump
7. Wiring connections (the entire fuel system)

NOTE:

• Before troubleshooting, remove the following part(-s):

- 1) Rider seat
- 2) Side cover (left)
- 3) Fuel tank

Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

EAS00738

1. Main, and ignition fuses

• Check the main and ignition fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.

• Are the main and ignition fuses OK?

↓ YES ↓ NO

Replace the fuse (-s).

EAS00739

2. Battery

• Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



Open-circuit voltage
12.8 V or more at 20°C (68°F)

• Is the battery OK?

↓ YES ↓ NO

• Clean the battery terminals.
• Recharge or replace the battery.

EAS00749

3. Main switch

• Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".

• Is the main switch OK?

↓ YES ↓ NO

Replace the main switch.

EAS00750

4. Engine stop switch

• Check the engine stop switch for continuity. Refer to "CHECKING THE SWITCHES".

• Is the engine stop switch OK?

↓ YES ↓ NO

Replace the right handlebar switch.

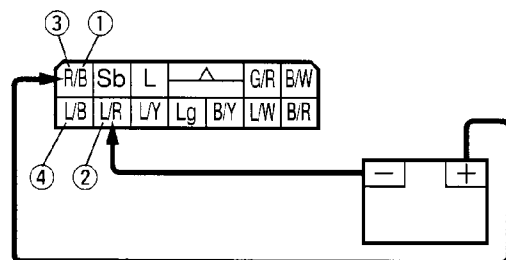
EAS00759

5. Starting circuit cut-off relay

• Disconnect the starting circuit cut-off relay coupler from the wire harness.
• Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the starting circuit cut-off relay coupler as shown.

Battery positive terminal → red/black ①
Battery negative terminal → blue/red ②

Tester positive probe → red/black ③
Tester negative probe → blue/black ④



• Does the starting circuit cut-off relay have continuity between red/black and blue/black?

↓ YES ↓ NO

Replace the starting circuit cut-off relay.

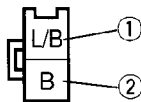
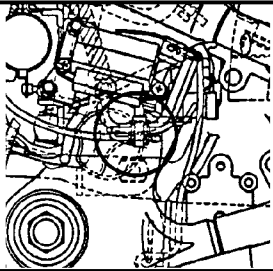
EAS00817

6. Fuel pump resistance

- Disconnect the fuel pump coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the fuel pump coupler as shown.

Tester positive probe → blue/black ①

Tester negative probe → black ②



- Measure the fuel pump resistance.



Fuel pump resistance
4 – 30 Ω at 20°C (68°F)

- Is the fuel pump OK?



YES



NO

Replace the fuel pump.

EAS00818

7. Wiring

- Check the entire fuel pump system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the fuel system's wiring properly connected and without defects?



YES

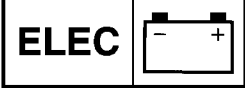


NO

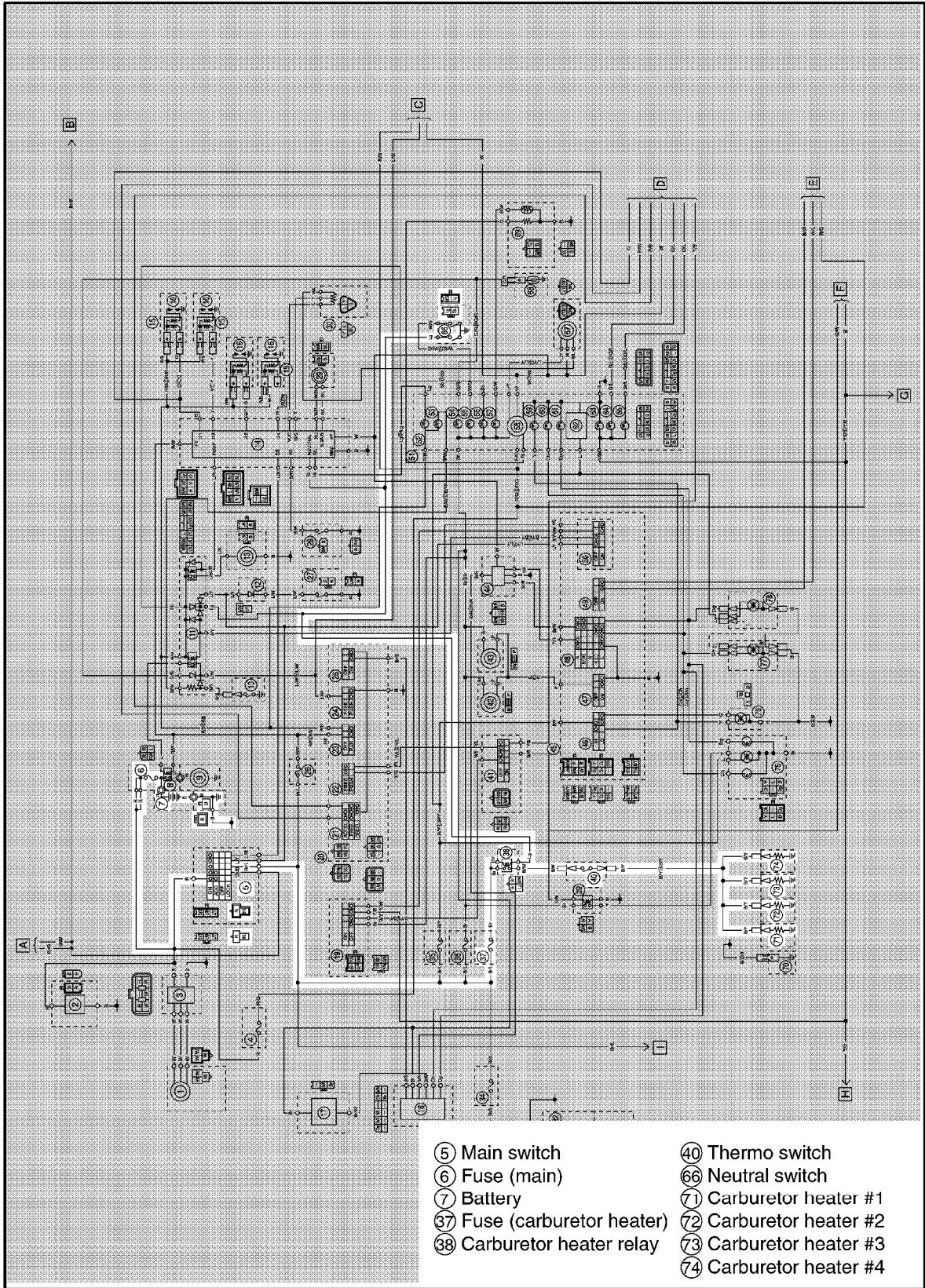
Replace the ignitor unit.

Properly connect or repair the fuel system's wiring.

CARBURETOR HEATING SYSTEM



CABURETOR HEATING SYSTEM



- | | |
|-----------------------------|-------------------------|
| ⑤ Main switch | ④⑩ Thermo switch |
| ⑥ Fuse (main) | ⑥⑥ Neutral switch |
| ⑦ Battery | ⑦① Carburetor heater #1 |
| ③⑦ Fuse (carburetor heater) | ⑦② Carburetor heater #2 |
| ③⑧ Carburetor heater relay | ⑦③ Carburetor heater #3 |
| | ⑦④ Carburetor heater #4 |

CARBURETOR HEATING SYSTEM

ELEC



EAS00821

TROUBLESHOOTING

The carburetor heating system fails to operate.

Check:

1. Main and carburetor heater fuses
2. Battery
3. Main switch
4. Neutral switch
5. Carburetor heater relay
6. Thermo switch
7. Carburetor heater
8. Wiring connections
(of the entire carburetor heating system)

NOTE:

Before troubleshooting, remove the following part(-s):

- 1) Rider and passenger seats
- 2) Fuel tank

Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

EAS00738

1. Main, and carburetor heater fuses

- Check the main and carburetor heater fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.
- Are the main and carburetor heater fuses OK?

↓ YES

↓ NO

Replace the fuse (-s).

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING THE BATTERY" in CHAPTER 3.



Open-circuit voltage
12.8 V or more at 20°C (68°C)

- Is the battery OK?

↓ YES

↓ NO

- Clean the battery terminals.
- Recharge or replace the battery.

EAS00749

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?

↓ YES

↓ NO

Replace the main switch.

EAS00751

4. Neutral switch

- Check the neutral switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the neutral switch OK?

↓ YES

↓ NO

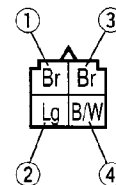
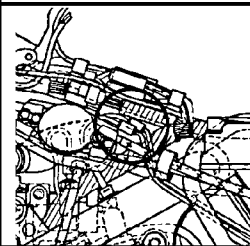
Replace the neutral switch.

EAS00822

5. Carburetor heater relay

- Disconnect the carburetor heater relay coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the carburetor heater relay coupler as shown.

Battery positive terminal → brown ①
Battery negative terminal → light green ②
Tester positive probe → brown ③
Tester negative probe → black/white ④



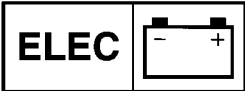
- Check the carburetor heater relay for no continuity.
- Is the carburetor heater relay OK?

↓ YES

↓ NO

Replace the carburetor heater relay.

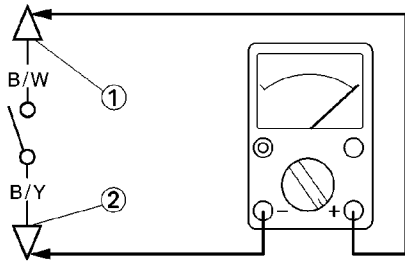
CARBURETOR HEATING SYSTEM



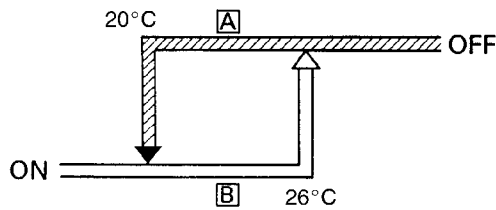
6. Thermo switch

- Remove the thermo switch from the thermo switch plate.
- Connect the pocket tester to the ($\Omega \times 1$) to the thermo switch as shown.

Tester positive probe → brack/white ①
 Tester negative probe → brack/yellow ②



- Check the thermo switch for continuity at the temperatures indicated below.



- A** COOL DOWN
- B** HEAT UP

- Does the thermo switch operated properly?

↓ YES ↓ NO

Replace the thermo switch.

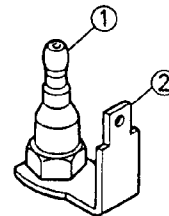
EAS00825

The following procedure applies to all of the carburetor heating elements.

7. Carburetor heater

- Remove the carburetor heating element from the carburetor.
- Connect the pocket tester to the carburetor heating element as shown.

Tester positive probe → heating element ①
 Tester negative probe → heating element body ②



- Measure the carburetor heater resistance.



Carburetor heating element resistance
 6 ~ 12 Ω at 20°C (68°F)

- Is the carburetor heating element OK?

↓ YES ↓ NO

Replace the carburetor heating element.

EAS00826

8. Wiring

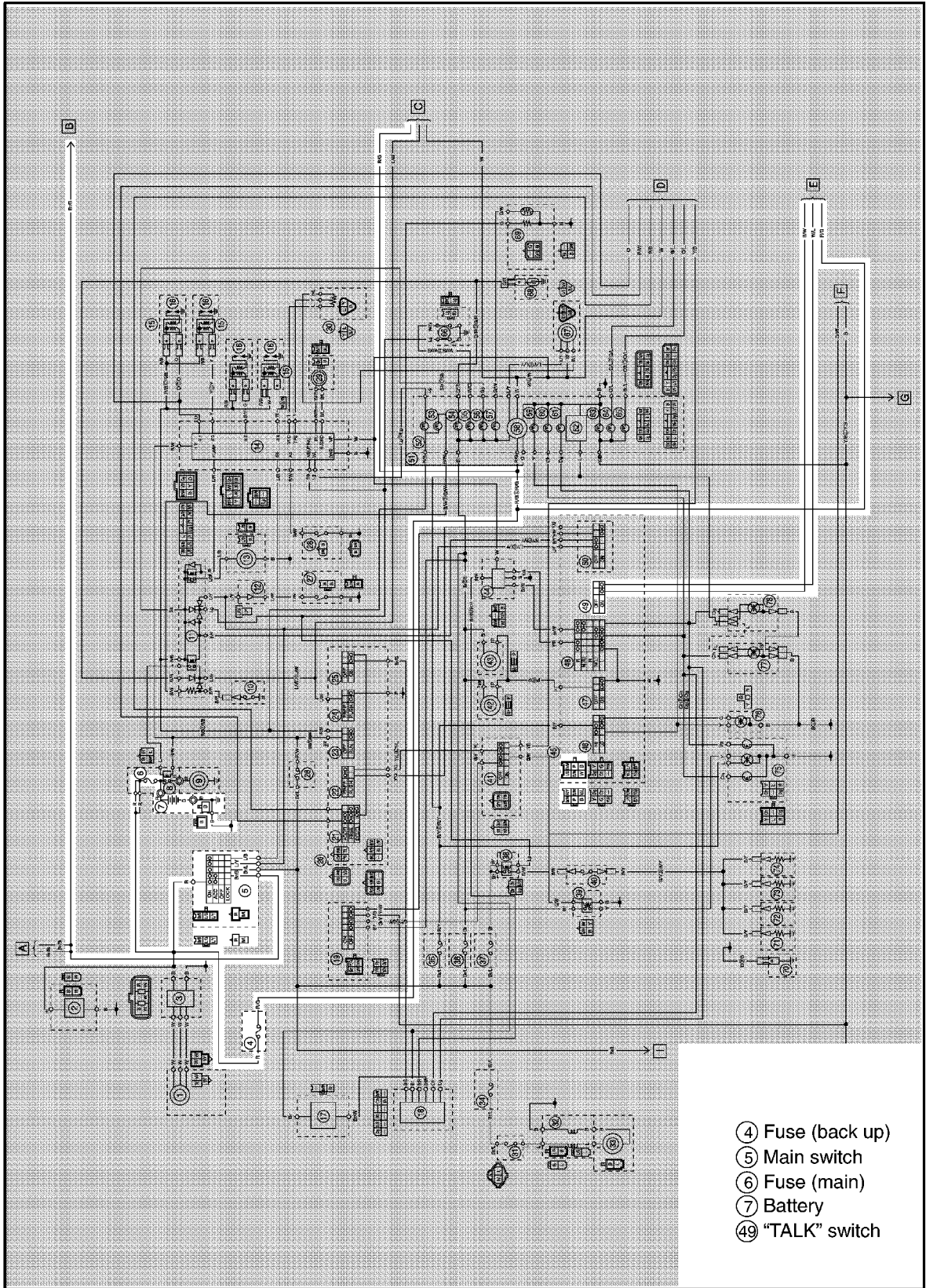
- Check the entire carburetor heating system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the carburetor heating system's wiring properly connected and without defects?

↓ NO

Properly connect or repair the carburetor heating system's wiring.

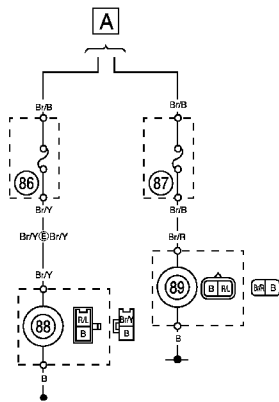
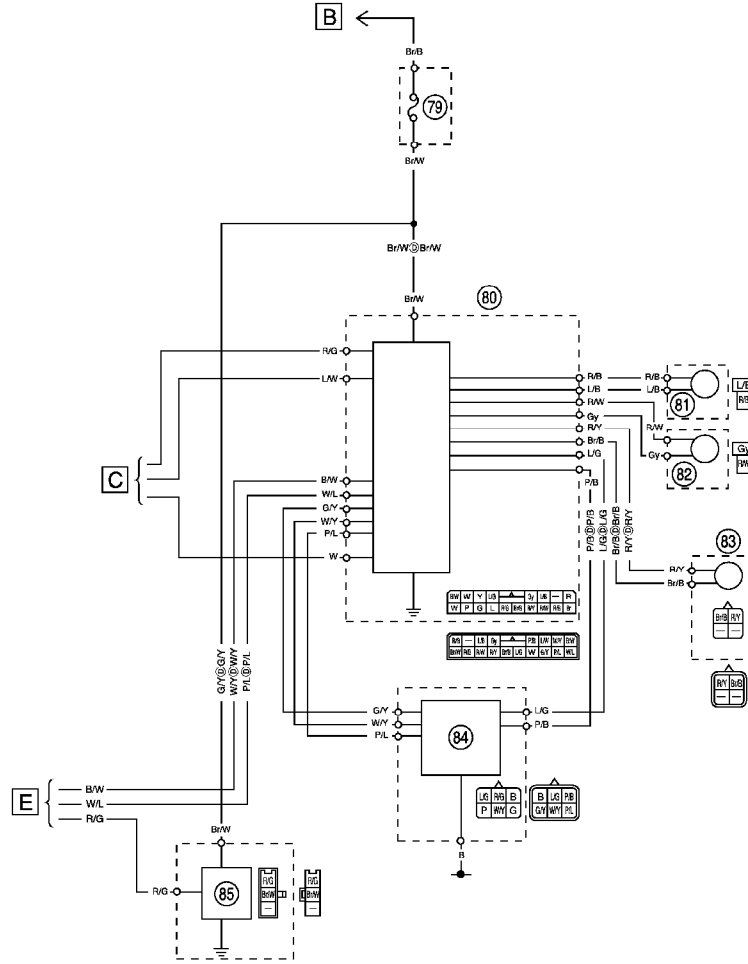
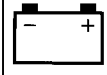


AUDIO SYSTEM

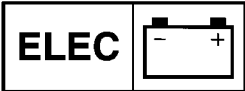


AUDIO SYSTEM

ELEC



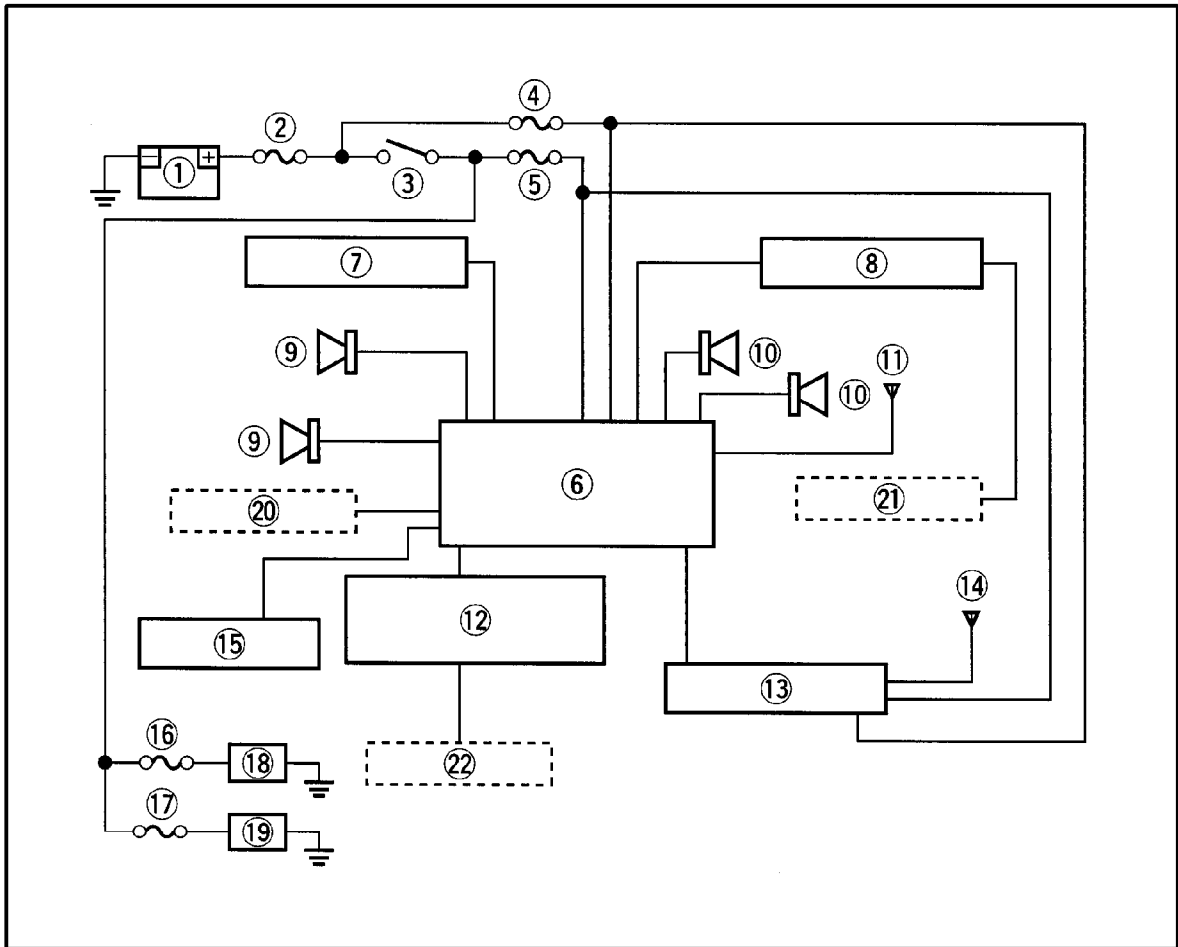
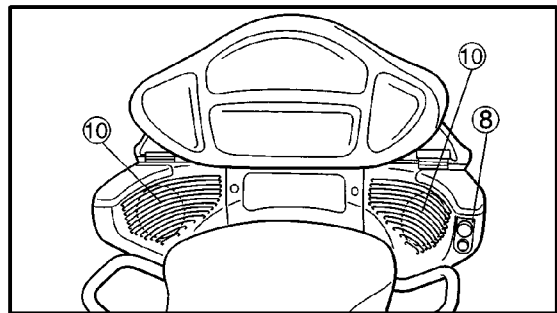
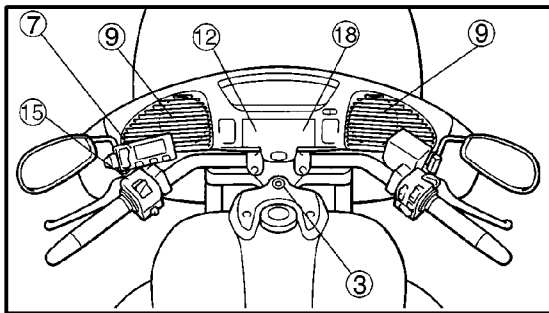
- 79 Fuse (audio)
- 80 MCU
- 81 Speaker (front)
- 82 Speaker (front)
- 83 Speaker (rear)
- 84 Front remote controller
- 85 CB unit
- 86 Fuse (front DC outlet)
- 87 Fuse (rear DC outlet)
- 88 DC outlet (front)
- 89 DC outlet (rear)



AUDIO SYSTEM CIRCUIT OPERATION

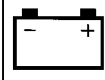
The audio system circuit consists of the front/rear remote controllers, front/rear speakers, tape deck, CB unit, antennas, TALK switch and main control unit (MCU).

- ① Battery
- ② Fuse (main)
- ③ Main switch
- ④ Fuse (back up)
- ⑤ Fuse (audio)
- ⑥ Main control unit
- ⑦ Front remoto controller
- ⑧ Rear remoto controller
- ⑨ Front speakers
- ⑩ Rear speakers
- ⑪ FM/AM antenna
- ⑫ Tape deck
- ⑬ CB unit
- ⑭ CB antenna
- ⑮ "TALK" switch
- ⑯ Fuse (front DC outlet)
- ⑰ Fuse (rear DC outlet)
- ⑱ DC outlet (front)
- ⑲ DC outlet (rear)
- ⑳ Front headset (option)
- ㉑ Rear headset (option)
- ㉒ CD changer (option)



AUDIO SYSTEM

ELEC



AUDIO SYSTEM does not operation

Check:

1. Fuses
2. Ground
3. MCU
4. Wiring connections
(of the entire audio system)

NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

1. All AUDIO system does not operation.

1. Fuse

- Check the main back up and audio fuse for continuity.
Refer to "CHECKING THE FUSES" in CHAPTER 3.

• Is the main back up and audio fuse OK?

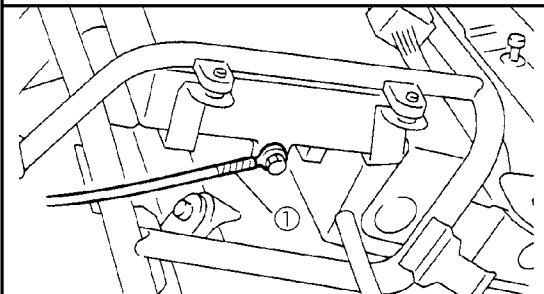
↓ YES

↓ NO

Replace the fuses.

2. Ground lead

- Check the ground lead ①.
- Check the wiring.
- Check the ground.



• Is the ground lead OK?

↓ YES

↓ NO

Correct the ground lead.

3. MCU coupler

- Check the connection of MCU 18P connector.
Refer to "checking the connection".

• Is the MCU connector OK?

↓ YES

↓ NO

Correct the MCU connector.

4. MCU back up

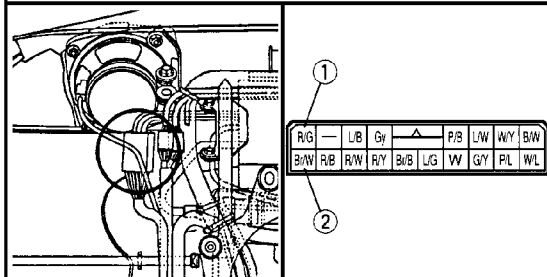
- Disconnect the MCU 18P connector from the wire harness.
- Connect the pocket tester (20 V DC) to the MCU 18P connector as shown.

Back up

Tester positive probe → red/green ①
Tester negative probe → ground

Audio

Tester positive probe → brown/white ②
Tester negative probe → ground



- Measure the voltage (12 V) on the MCU 18P connector.
- Is the voltage within specification?

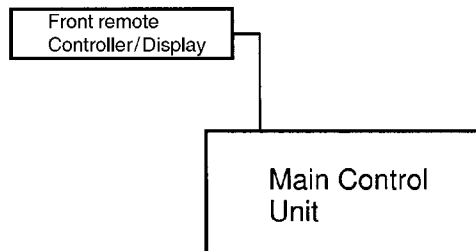
↓ YES

↓ NO

Correct the wiring.

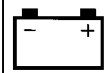
5. Wiring connections

- Check the wiring (blue/green) of MCU ~ front remote controller.



AUDIO SYSTEM

ELEC



• Is the MCU ~ front remote controller wiring properly connected and without defects?

↓ YES

Replace the MCU.

↓ NO

Correct the MCU ~ front remote controller wiring.

• Is the MCU ~ cassette deck 13P wiring properly connected and without defected?

↓ YES

Replace the MCU.

↓ NO

Correct the MCU ~ cassette deck 13P wiring.

2. Radio does not sound.

1. Wiring connections

• Check the wiring of MCU ~ antenna (right).

• Is the MCU ~ antenna wiring properly connected and without defected?

↓ YES

Replace the MCU.

↓ NO

Correct the MCU ~ antenna wiring.

3. Casset deck does not sound.

1. Casset deck

• Check the cassette deck operation.

• Is the cassette desk moved?

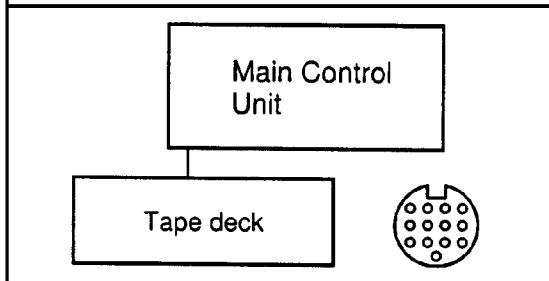
↓ YES

Replace the cassette deck.

↓ NO

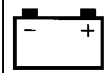
2. Wiring connections

• Check the wiring (gray) of MCU ~ cassette deck 13P DIN wiring.



AUDIO SYSTEM

ELEC



Speaker does not sound

Check:

1. Out put mode
2. Speaker
3. Wiring connections
(of the entire audio system)

NOTE:

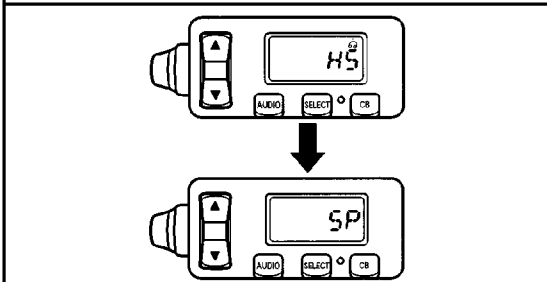
- Before troubleshooting, remove the following part(-s).
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).



Pocket tester
YU-03112, 90890-03112

1. Out put mode.

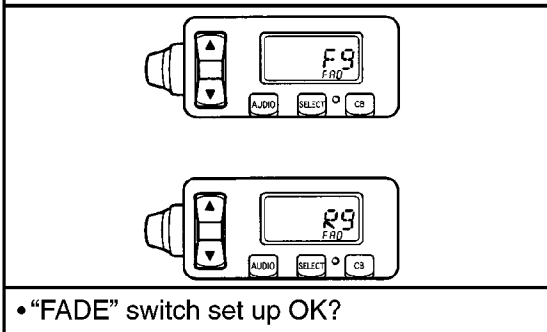
- Change the out put mode "HS" → "SP".



2. Front or rear speaker does not sound.

1. "FADE" switch

- "FADE" switch set up near front or rear.



- "FADE" switch set up OK?

↓ YES

↓ NO

Replace the MCU.

Set up the "FADE" switch.

3. Does not sound of the speaker.

1. Speaker

- Remove the speaker.
- Connect the pocket tester ($\Omega \times 1$) to the speaker as shown.

Front left

- Tester positive prove → gray ①
- Tester negative prove → red/white ②

Front right

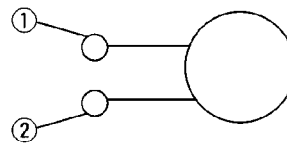
- Tester positive prove → red/black ①
- Tester negative prove → blue/black ②

Rear left

- Tester positive prove → blue ①
- Tester negative prove → pink/black ②

Rear right

- Tester positive prove → red/yellow ①
- Tester negative prove → brown/black ②



- Measure the speaker resistance.



Speaker resistance
3.4 ~ 4.6 Ω at 20°C

- Is the speaker resistance with in specification?

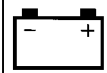
↓ YES

↓ NO

Replace the speaker.

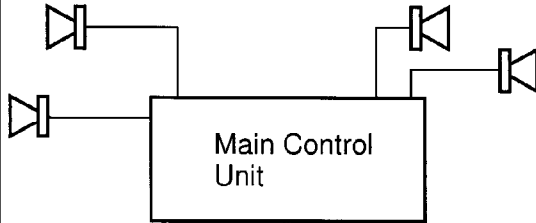
AUDIO SYSTEM

ELEC



2. Wiring connections

- Check the wiring of MCU ~ wire harness ~ speaker wiring.



- Is the MCU ~ wire harness ~ speaker wiring properly connected and without defected?



YES



NO

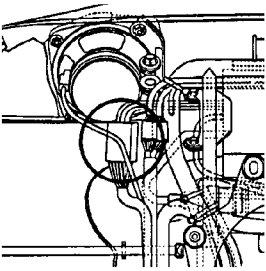
Replace the MCU.

Correct the MCU ~ wire harness ~ speaker wiring.

4. All speaker does not sound

1. MCU 18P connector

- Check the MCU 18P connector. Refer to "CHECKING THE CONNECTION".



R/G	LB	Gy	▲	P/B	L/W	W/Y	B/W
B/W	R/B	R/W	R/Y	B/B	L/G	W	G/Y
							P/L
							W/L

- Is the MCU 18P connector OK?



YES



NO

Replace the MCU.

Correct the MCU 18P connector.

Headset does not sound

Check:

1. Out put mode
2. Front head set
3. Rear head set
4. Wiring connections (of the entire audio system)

NOTE:

- Before troubleshooting, remove the following part(-s).
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).

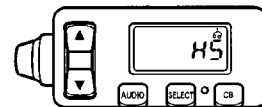
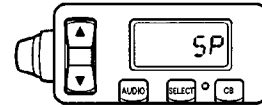


Pocket tester

YU-03112, 90890-03112

1. Out put mode.

- Change the out put mode "SP" → "HS".



2. Front head set does not sound

1. Wiring connections

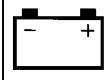
- Check the wiring of head set.
- Check the pocket tester ($\Omega \times 1$) to the head set wiring as shown.

Left

Tester positive prove → 3
Tester negative prove → 2

Right

Tester positive prove → 5
Tester negative prove → 2



Front head set

Main Control Unit

- Check the head set wiring for continuity.
- Is the head set wiring OK?



YES



NO

Correct the head set wiring.

- Is the rear remote controller volume out put level OK?



YES



NO

Adjust the rear remote controller volume out put level.

2. Wiring connections

- Check the wiring of MCU ~ 5P DIN cable ~ head set (red).

Front head set

Main Control Unit

- Is the MCU ~ 5P DIN cable ~ head set wiring properly connected and without defected OK?



YES



NO

Replace the MCU.

Correct the MCU ~ 5P DIN cable ~ head set wiring.

2. Wiring connections

- Check the wiring of head set.
- Connect the pocket tester ($\Omega \times 1$) to the head set as shown.

Left
 Tester positive prove → 3
 Tester negative prove → 2

Right
 Tester positive prove → 5
 Tester negative prove → 2

Rear remote controller (Vol/TALK)

Main Control Unit

Rear head set

- Check the head set wiring for continuity.
- Is the head set wiring OK?



YES



NO

Correct the head set wiring.

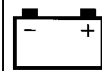
3. Rear head set does not sound

1. Rear remote controller volume

- Check the rear remote controller volume ① out put level.

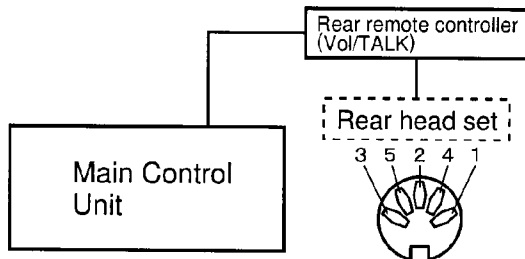
AUDIO SYSTEM

ELEC



2. Wiring connections

- Check the wiring of MCU ~ 5P DIN cable ~ head set (white).



- Is the MCU ~ 5P DIN cable ~ head set wiring properly connected and without defected?

YES

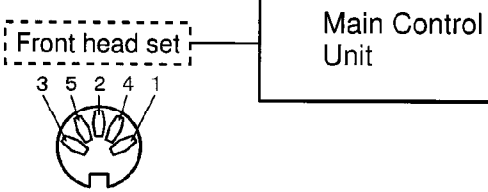
NO

Replace the MCU.

Correct the MCU ~
5P DIN cable ~
head set wiring.

Mike

- Tester positive prove → 1
- Tester negative prove → 4



- Check the head set wiring for continuity.
- Is the head set wiring OK?

YES

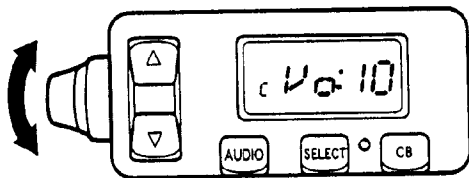
NO

Replace the MCU.

Correct the head set
wiring.

4. Intercom does not used

1. Intercom volume out put level



YES

NO

Adjust the Intercom
volume out put level.

2. Wiring connections

- Check the head set wiring.
- Connect the pocket tester ($\Omega \times 1$) to the head set wiring as shown.

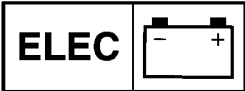
Left

- Tester positive prove → 3
- Tester negative prove → 2

Right

- Tester positive prove → 5
- Tester negative prove → 2

AUDIO SYSTEM




Front remote controller does not operation

Check:

1. Wiring connections (of the entire audio system)

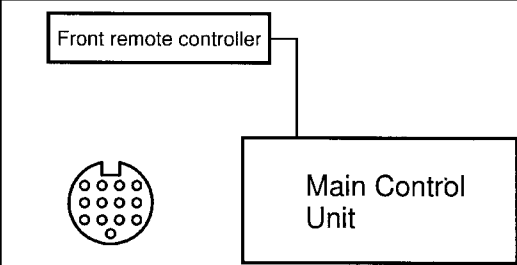
NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).

 **Pocket tester**
YU-03112, 90890-03112

1. Wiring connections

- Check the MCU ~ front remote controller 13P wiring (blue).



• Is the MCU ~ front remote controller 13P wiring properly connected and without defected?

↓ YES
↓ NO

Replace MCU or front remote controller
Correct the MCU ~ front remote controller 13P wiring.


Rear remote controller does not operation

Check:

1. Wiring connections (of the entire audio system)

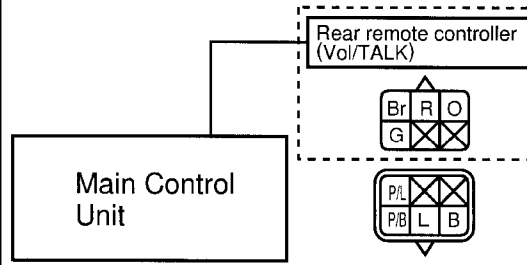
NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).

 **Pocket tester**
YU-03112, 90890-03112

1. Wiring connections

- Check the wire harness ~ rear remote controller wiring.



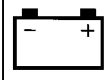
• Is the wire harness ~ rear remote controller wiring properly connected and without defected?

↓ YES
↓ NO

Replace MCU or rear remote controller.
Correct the Wire harness ~ rear remote controller wiring.

AUDIO SYSTEM

ELEC



CB unit does not operation

Check:

1. Wiring connections
(of the entire audio system)
2. Voltage
3. Talk switch

NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) Front cowling
 - 2) Trunk
- Troubleshoot with the following special tool(-s).

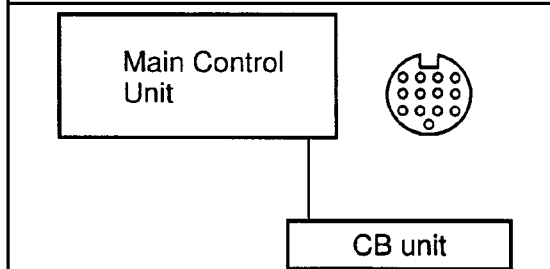


Pocket tester
YU-03112, 90890-03112

1. CB unit does not operation

1. Wiring connections

- Check the MCU ~ 13P DIN cable ~ CB unit wiring (yellow).



- Is the MCU ~ 13P DIN cable ~ CB unit wiring properly connected and without defected?

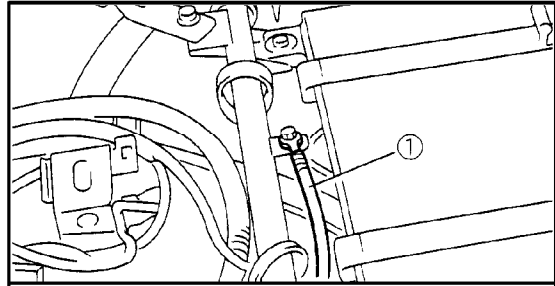
↓ YES

↓ NO

Correct the MCU ~ 13P DIN cable ~ CB unit wiring.

2. Ground lead

- Check the ground lead ①
- Check the wiring.
- Check the ground.



- Is the ground lead OK?

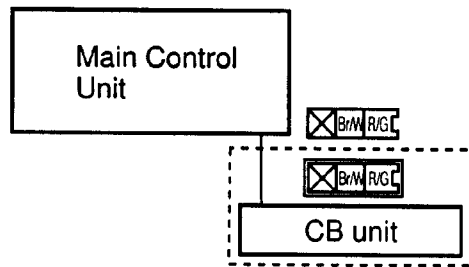
↓ YES

↓ NO

Correct the ground lead.

3. Wiring connections

- Check the CB unit ~ wire harness 3P wiring.



- Is the CB unit ~ wire harness 3P wiring properly connected and without defected?

↓ YES

↓ NO

Correct the CB unit ~ wire harness 3P wiring.

4. Voltage

- Connect the pocket tester (20 V DC) to the CB unit coupler as shown.

Back up

Tester positive prove → red/green ①

Tester negative prove → ground

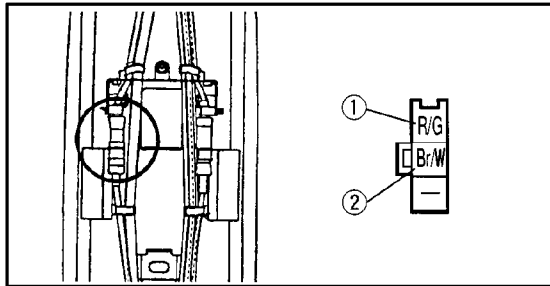
Audio

Tester positive prove → brown/white ②

Tester negative prove → ground

AUDIO SYSTEM

ELEC	
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• Measure the CB unit voltage



CB unit voltage
12 V

• Is the CB unit voltage within specification?



YES



NO

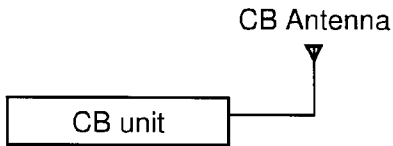
Replace the CB unit.

Correct the wiring.

2. Does not transmitting and receiving the CB radio.

1. Wiring connection

• Check the CB unit ~ antenna wiring.



• Is the CB unit ~ antenna wiring properly connected and without defected?



YES



NO

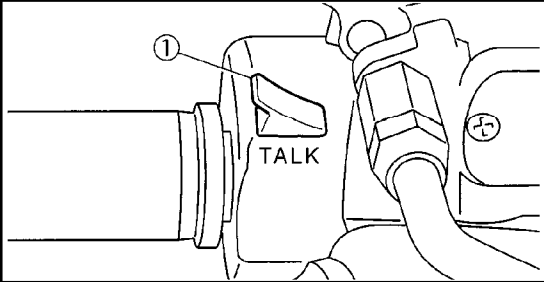
Replace the CB unit.

Correct the CB unit ~ antenna wiring.

3. Does not transmitting the CB radio

1. TALK switch

• Check the TALK switch for continuity.
Refer to "CHECKING THE SWITCHES"



• Is the switch OK?



YES



NO

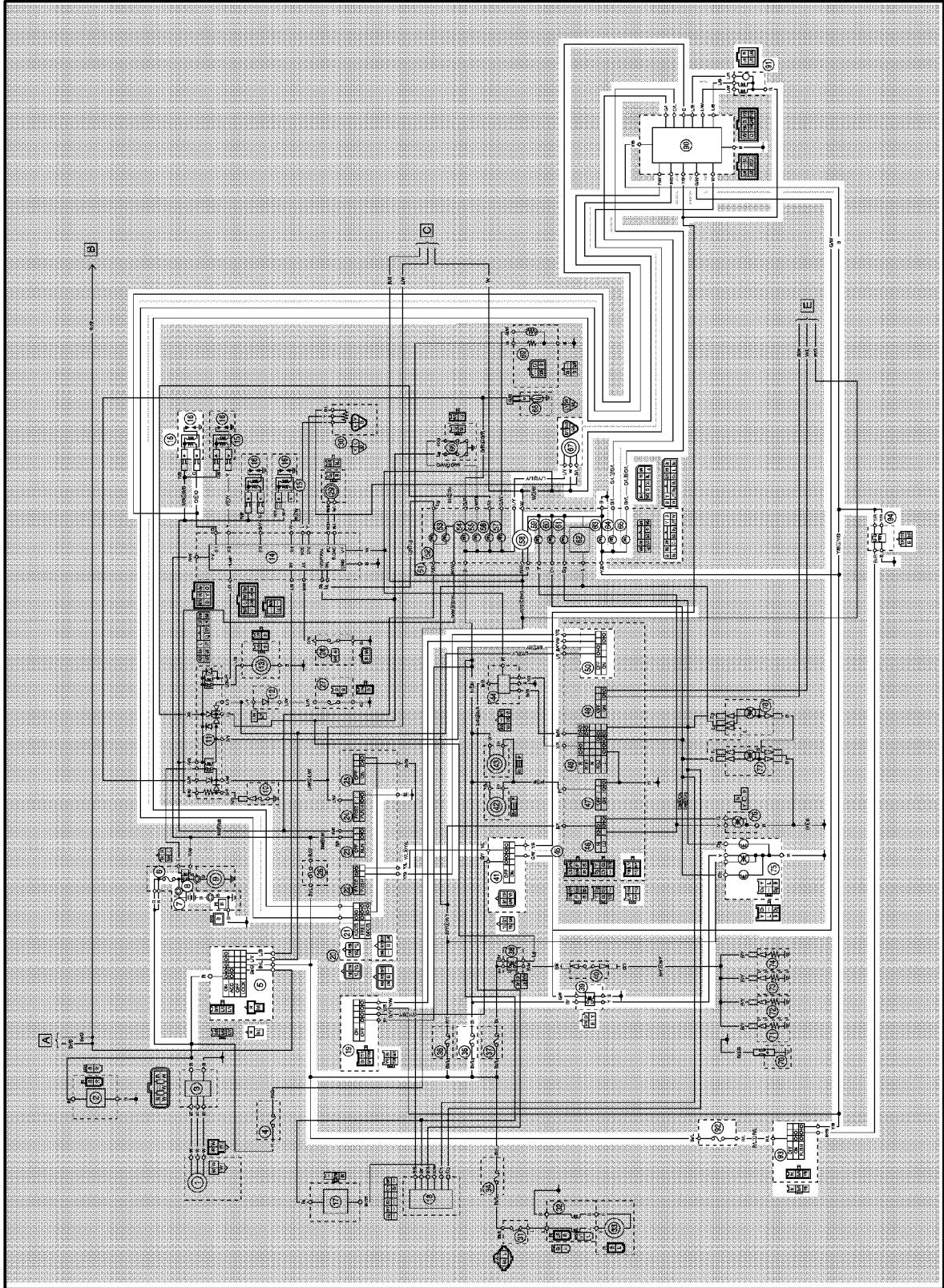
Replace the CB unit.

Correct the "TALK" switch.

CRUISE CONTROL SYSTEM

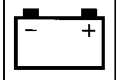


CRUISE CONTROL SYSTEM CIRCUIT DIAGRAM



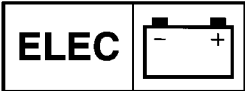
CRUISE CONTROL SYSTEM

ELEC



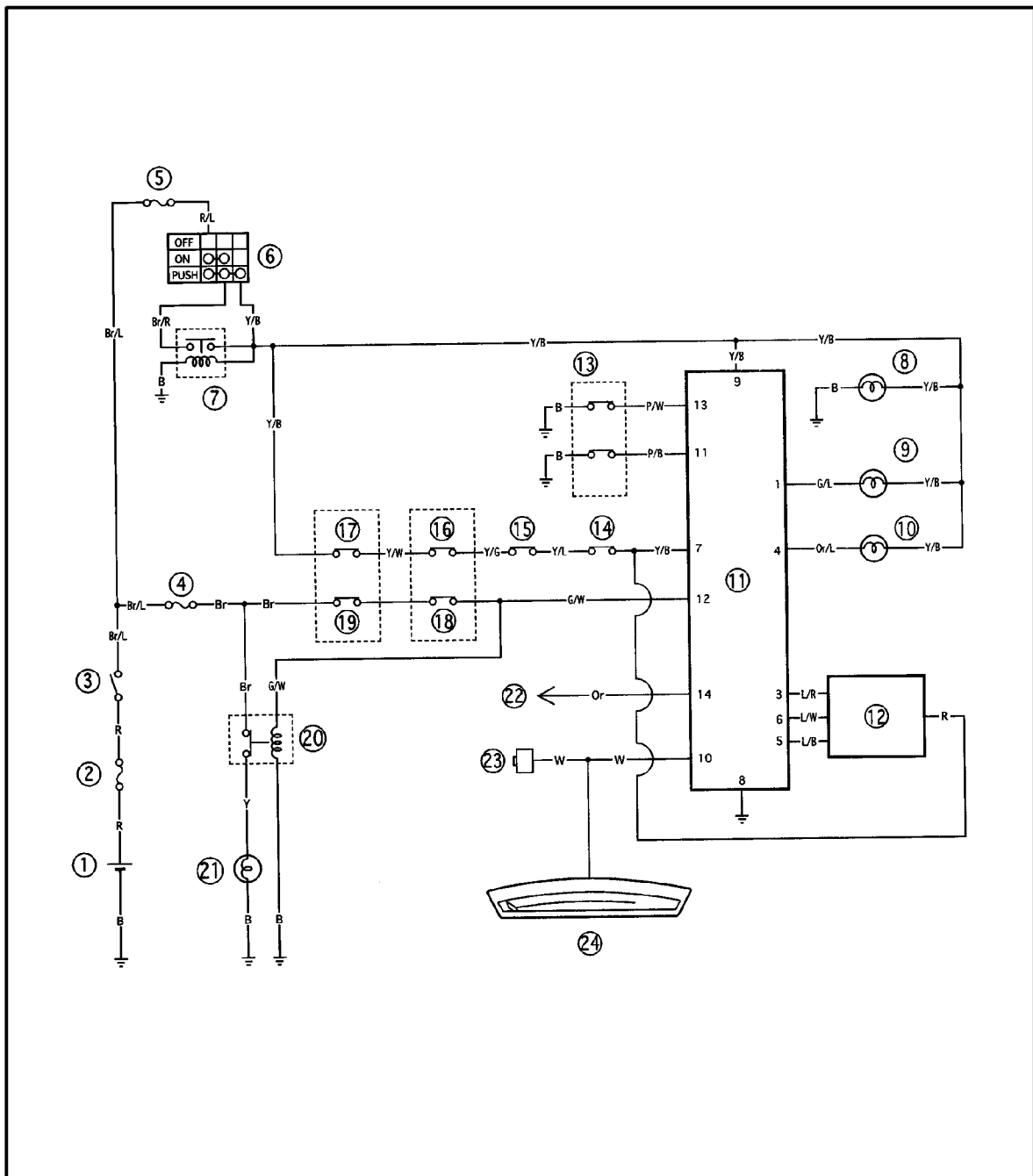
- ⑤ Main switch
- ⑥ Fuse (main)
- ⑦ Battery
- ⑮ Ignition coil
- ⑲ Front brake switch
- ⑳ Cruise control switch
- ㉑ Cruise control cancel switch
- ⑳ Clutch switch
- ⑳ Fuse (turn signal)
- ㉑ Brake light relay
- ④① Rear brake switch
- ⑤① Clutch switch
- ⑤② Engine warning light
- ⑥③ Cruise control light (MAIN)
- ⑥④ Cruise control light (SET)
- ⑥⑤ Cruise control light (RES)
- ⑥⑦ Speed sensor
- ⑦⑤ Tail/brake light
- ⑨① Cruise control unit
- ⑨① Vacuum pump
- ⑨② Fuse (cruise control)
- ⑨③ P/W switch
- ⑨④ Cruise control relay

CRUISE CONTROL SYSTEM



CRUISE CONTROL CIRCUIT OPERATION

- ① Battery
- ② Main fuse
- ③ Main switch
- ④ Signal fuse
- ⑤ Cruise control fuse
- ⑥ "CRUISE" switch
- ⑦ Cruise control relay
- ⑧ "ON" indicator light
- ⑨ "SET" indicator light
- ⑩ "RES" indicator light
- ⑪ Cruise contrl unit
- ⑫ Vacuum pump
- ⑬ Cruise contrl switch
- ⑭ Rear brake switch
- ⑮ Cancel switch
- ⑯ Clutch switch
- ⑰ Front brake switch
- ⑱ Rear brake light switch
- ⑲ Front brake light switch
- ⑳ Brake lamp relay
- ㉑ Brake light
- ㉒ To ignition coil
- ㉓ Speed sensor
- ㉔ Speedometer

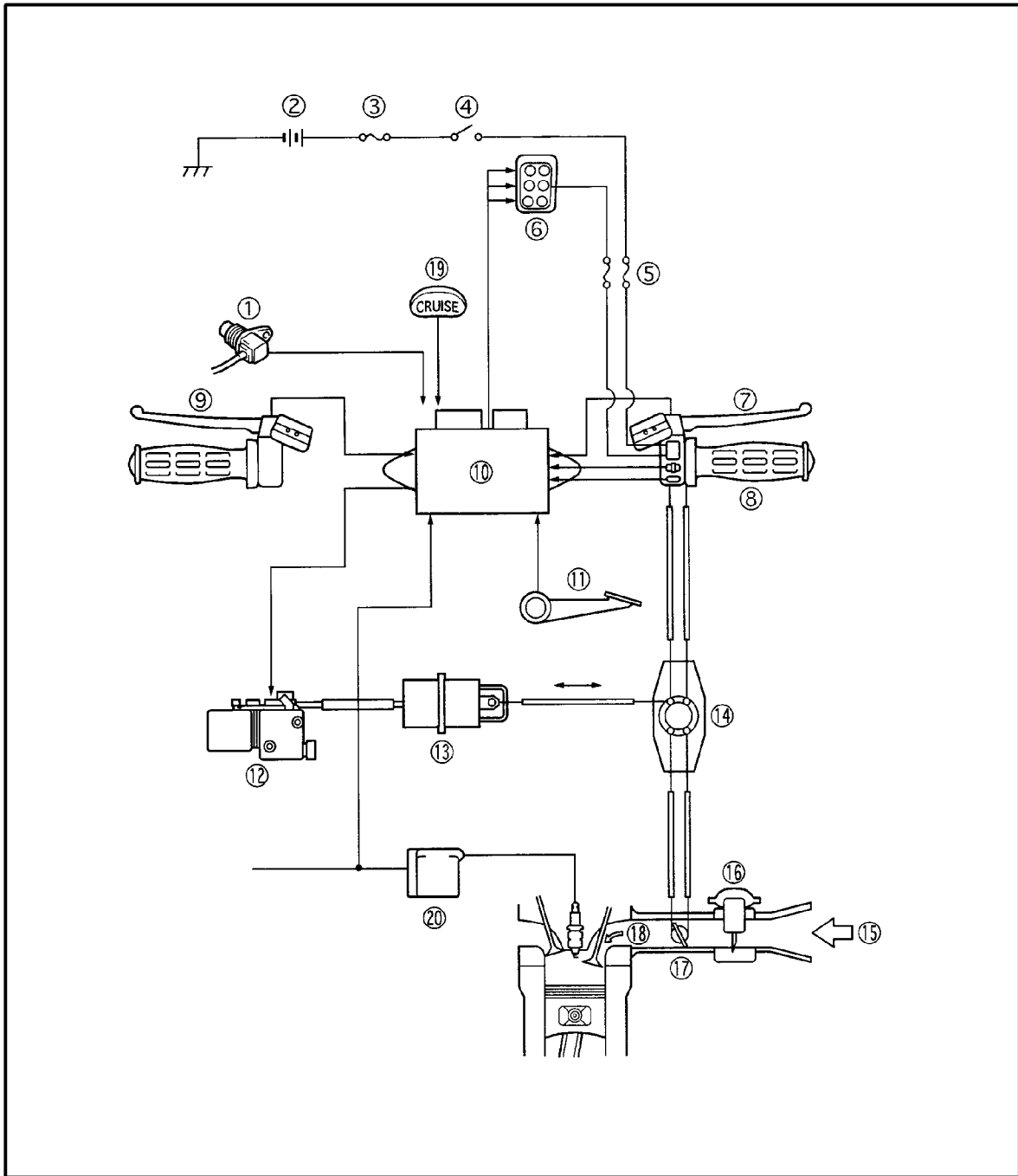


CRUISE CONTROL SYSTEM

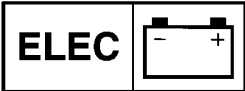


CRUISE CONTROL SYSTEM COMPONENTS

- ① Speed sensor
- ② Battery
- ③ Fuse
- ④ Main switch
- ⑤ Fuse
- ⑥ Indicators
- ⑦ Front brake switch
- ⑧ Cruise control switch/cancel switch
- ⑨ Clutch switch
- ⑩ Cruise control unit
- ⑪ Rear brake switch
- ⑫ Vacuum pump
- ⑬ Vacuum autuator
- ⑭ Throttle cable joint
- ⑮ Air
- ⑯ Carburetor (s)
- ⑰ Throttle valve
- ⑱ Air/Fuel mixture
- ⑲ "CRUISE" switch
- ⑳ Ignition coil



CRUISE CONTROL SYSTEM



EAS00781

TROUBLESHOOTING

Check:

1. main, signal and cruise control
2. battery
3. main switch
4. "CRUISE" switch
5. cruise control relay
6. wiring
(of the entire charging system)

NOTE:

- Before troubleshooting, remove the following part (-s):
 - 1) seat
 - 2) under cowl (left and right)
 - 3) upper cowl
- Troubleshoot with the following special tool (-s).



EAS00738

1. Main, signal, and cruise control fuses

- Check the control fuses for continuity. Refer to "CHECKING THE FUSES" in CHAPTER 3.
- Are the control fuses OK?



Replace the fuse (-s).

EAS00739

2. Battery

- Check the condition of the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in CHAPTER 3.

Open-circuit voltage
12.8 V or more at 20°C

• Is the battery OK?



• Clean the battery terminals
• Recharge or replace the battery.

EAS00749

3. Main switch

- Check the main switch for continuity. Refer to "CHECKING THE SWITCHES".
- Is the main switch OK?



Replace the main switch.

4. "CRUISE" switch

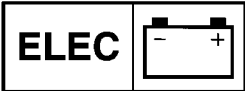
- Disconnect the "CRUISE" switch connector.
- Check the "CRUISE" switch for continuity.

Tester positive prove → red/blue ①
Tester negative prove → brown/red ② or yellow/black ③

• Is the "CRUISE" switch OK?



Replace the "CRUISE" switch.



5. Cruise control relay.

- Disconnect the relay from the connector.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the relay unit terminal as shown.

Battery positive terminal → yellow/red ①
Battery negative terminal → black ②

Tester positive probe → brown/red ③
Tester negative probe → yellow/red ④

• Does the cruise control relay have continuity between brown/red and yellow/red?

↓ YES
↓ NO

Replace the relay unit.

6. Wiring

- Check the entire cruise control system's wiring. Refer to "CIRCUIT DIAGRAM".
- Is the cruise control system's wiring properly connected and without defects?

↓ YES
↓ NO

Check the condition of each of the cruise control system's circuits. Refer to "CHECKING THE CRUISE CONTROL SYSTEM".

Properly connect or repair the cruise control system's wiring.

CHECKING THE CRUISE CONTROL SYSTEM
Detecting an abnormality with the motor-cycle stopped

1. The cruise control indicator light fail to come on.

1. Cruise control indicator light bulb and socket

- Check the cruise control indicator light bulb and socket for continuity. Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the cruise control indicator light bulb and socket OK?

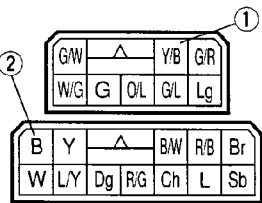
↓ YES
↓ NO

Replace the cruise control indicator light bulb, socket or both.

2. Voltage

- Connect the pocket tester (20 V) to the meter assembly coupler (wire harness side) as shown.

Tester positive probe → yellow/black ①
Tester negative probe → black ②



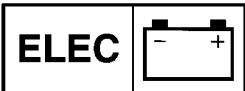
- Set the main switch to "ON".
- Set the cruise switch to "ON".
- Measure the voltage (12V) of blue 1 on the meter assembly coupler (wire harness side).
- Is the voltage within specification?

↓ YES
↓ NO

This circuit is OK.

The wiring circuit from the cruise control relay to the meter assembly coupler is faulty and must be repaired.

CRUISE CONTROL SYSTEM



2. The "SET"/"RES" indicator light will show any an abnormality of the cruise control system.

1. "SET"/"RES" indicator light bulb and socket

- Check the "SET"/"RES" indicator light bulb and socket for continuity. Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the "SET"/"RES" indicator light bulb and socket OK?



Replace the "SET"/"RES" indicator light bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) to the "SET"/"RES" indicator light couplers (wire harness side) as shown.

"SET" indicator light

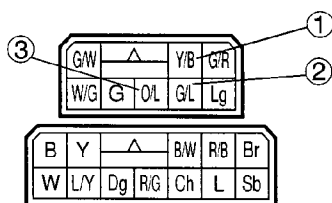
Tester positive probe → yellow/black ①

Tester negative probe → green/blue ②

"RES" indicator light

Tester positive probe → yellow/black ①

Tester negative probe → orange/blue ③



- Set the main switch to "ON".
- Set the "CRUISE" switch to "ON".
- Measure the voltage (12 V) of yellow/black ① on the meter assembly couplers (wire harness side).
- Is the voltage within specification?



The wiring circuit from the cruise control relay to the meter light connectors is faulty and must be repaired.

3. Check

- Set the main switch to "ON" and the "CRUISE" switch to "ON".
- The cruise control, "SET" and "RES" indicator lights come on.
- The "SET", "RES" and "ON" indicator lights go out after approximately 1.4 second (to check for a burned bulb). The "ON" indicator light stays on.
- Is it correct?



This circuit is OK.

The "SET" and "RES" indicator light(s) flashes. Refer to "SELF-DIAGNOSIS".

Detecting and abnormality during operation

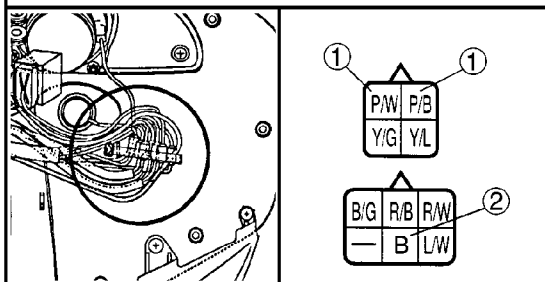
1. The cruise control system can not be set. (The "SET" indicator light does not come on)

1. Cruise control switch

- Disconnect the connector from the cruise control unit.
- Connect the pocket tester ($\Omega \times 1$) to the connector.

Tester positive probe → pink/white on pink/black ①

Tester negative probe → black ②

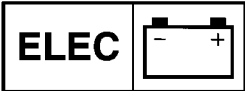


- When set the cruise control switch to "SET. DEC", the resistance reading 0Ω to $\infty \Omega$.
- Is the resistance with specification?



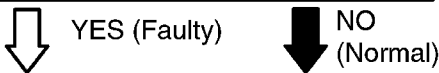
The cruise control switch is faulty. Replace the right handlebar switch.

CRUISE CONTROL SYSTEM



2. Speed sensor

- Check the following items.
 - 1) Speedometer is faulty operation
 - a. Engine warning light is flashing (Fault code 4)
Refer to "SELF-DIAGNOSIS".
 - b. "SET" and/or "RES" indicator light is flashing (Fault code 4)
Refer to "SELF-DIAGNOSIS".
- Is the speed sensor OK?



Replace the speed sensor.

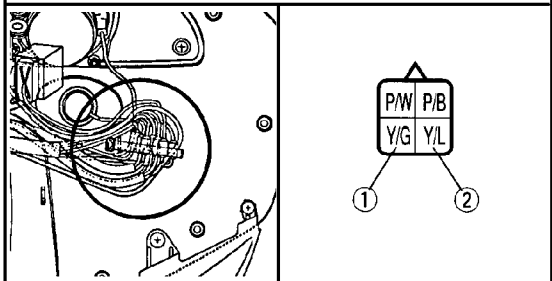
Replace the cruise control unit.

2. Set speed can not be cancelled by cancel switches ("CANCEL", front brake, rear brake and/or clutch switches)

1. "CANCEL" switch

- Disconnect the right handlebar switch from the connector.
- Check the "CANCEL" switch for continuity.

Tester positive prove → yellow/green ①
Tester negative prove → yellow/blue ②



• Is the "CANCEL" switch OK?



The "CANCEL" switch is faulty. Replace the right handlebar switch.

2. Front brake, rear brake and clutch switch.

- Check the switches for continuity. Refer to "CHECKING THE SWITCHES".
- Are the switches OK?

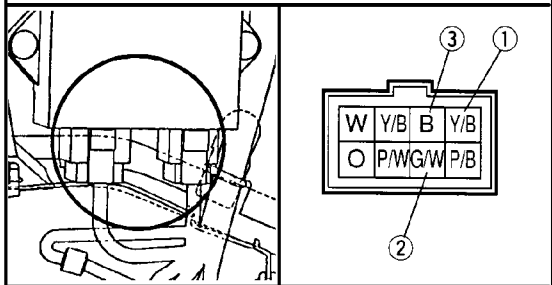


Replace the faulty switch(es).

3. Cruise control unit

- Disconnect the cruise control unit from the connector.
- Connect the pocket tester (DC20V) to the connector.

Tester positive prove → yellow/black ①
or green/white ②
Tester negative prove → black ③



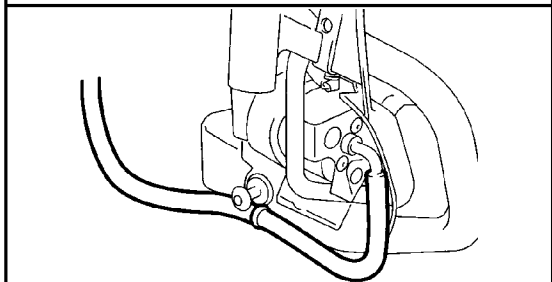
- Set the main switch to "ON" and the "CRUISE" switch to "ON".
- When operating the cancel switches ("CANCEL," front brake, rear brake or clutch switches), the voltage reading is 12 V to 0 V.
- Is the voltage with specification?



The wiring circuit is faulty and must be repaired.

4. Vacuum hose

- Check the vacuum hose for clogging and/or damage.



• Is the vacuum hose OK?



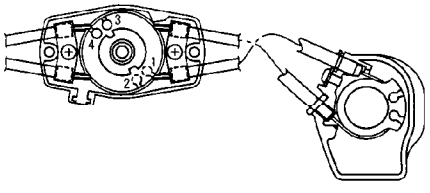
Repair or replace the vacuum hose.

CRUISE CONTROL SYSTEM



5. Throttle cables

- Check the throttle cables and throttle housing condition.



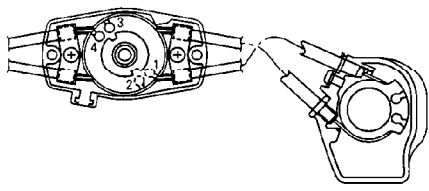
• Is the throttle cables OK?

↓ YES ↓ NO

Replace the cruise control unit. Repair or replace the throttle cables.

2. Throttle cable joint

- Check the throttle cable joint operation by operating the actuator manually, and check if the throttle valve opens.



• Is the throttle cable joint OK?

↓ YES ↓ NO

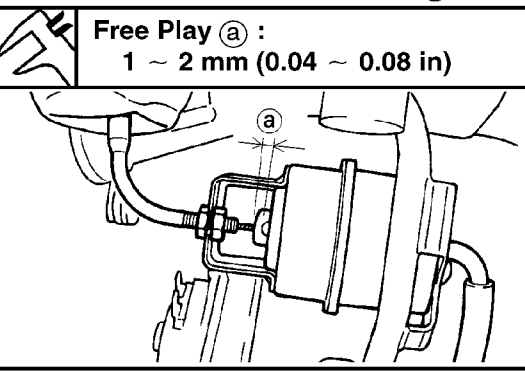
Repair or replace the throttle cable joint.

3. Cruise control system can not be set ("SET" indicator light come on)

1. Throttle cable free play

- Check the throttle cable free play (a).

Free Play (a) :
1 ~ 2 mm (0.04 ~ 0.08 in)



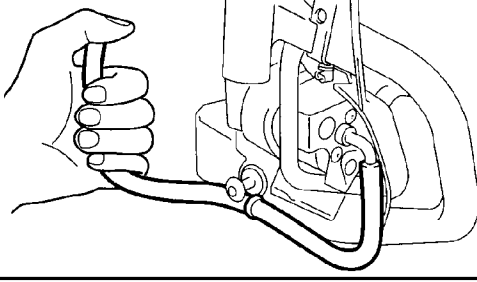
• Is the throttle cable free play OK?

↓ YES ↓ NO

Adjust the free play. Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY" in CHAPTER 3.

3. Vacuum actuator

- Disconnect the vacuum hose at the vacuum pump and operate the actuator manually and play the open end of the hose by a finger.

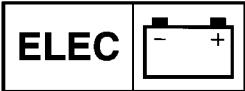


• Is the actuator diaphragm staying?

↓ YES ↓ NO

Actuator diaphragm and/or vacuum hose are faulty. Replace as required.

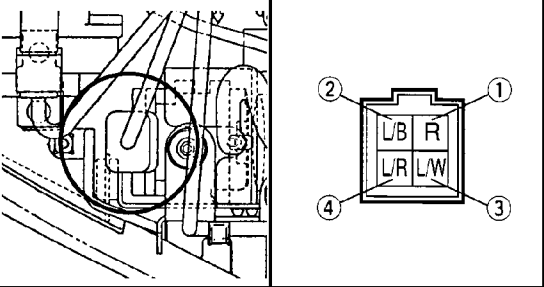
CRUISE CONTROL SYSTEM



4. Vacuum pump 1

- Reconnect the vacuum hose and disconnect the vacuum pump connector.
- Connect the battery (12 V) as shown.

Battery positive terminal → red ①
Battery negative terminal → blue/black ②
 blue/white ③
 blue/red ④



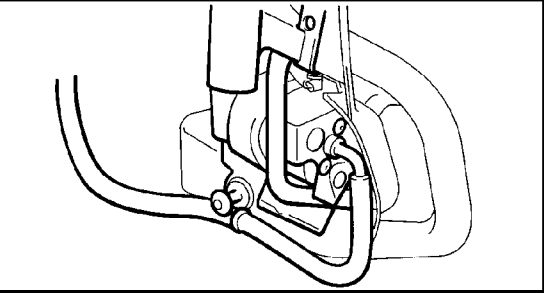
• Is the actuator operating?

↓ YES ↓ NO

Replace the vacuum pump.

5. Vacuum pump 2

- After operating the actuator, stop the vacuum pump by disconnecting the battery lead from the 4 terminals. In this condition, leave it approximately 5 seconds and check if the actuator diaphragm stays or returns.



• Is the actuator diagram stying?

↓ YES ↓ NO

Replace the cruise control unit. Replace the vacuum pump.

4. Vehicle speed fluctuate during the cruising

1. Speed sensor

- Check the following items.
 - Speedometer is faulty operation.
 - Engine warning light is flashing (Fault code 4)
Refer to "SELF-DIAGNOSIS".
 - "SET" and/or "RES" indicator light is flashing (Fault code 4)
Refer to "SELF-DIAGNOSIS".
- Is the speed sensor OK?

↓ YES (Faulty) ↓ NO (Normal)

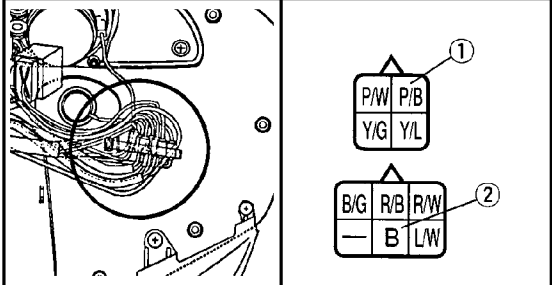
Replace the speed sensor. Replace the cruise control unit.

5. Cruising speed can not be increased or resume can not be operated by cruise control switch.

1. Cruise control switch

- Disconnect the right handlebar switch connector from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the connector.

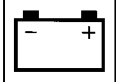
Tester positive prove → pink/black ①
Tester negative prove → black ②



- When set the cruise control switch to "RES. ACC", the resistance reading 0Ω to $\infty \Omega$.
- Is the resistance with specification?

↓ YES ↓ NO

Replace the cruise control unit. The cruise control switch is faulty. Replace the right handlebar switch.



SELF DIAGNOSIS FUNCTION OF THE CRUISE CONTROL SYSTEM

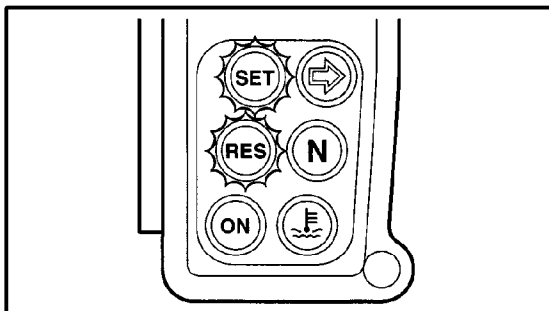
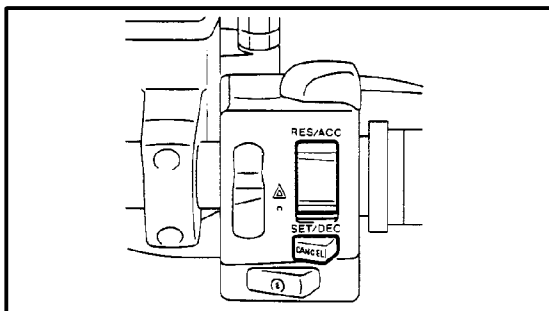
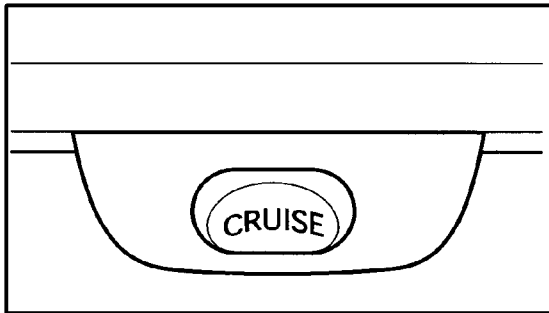
The cruise control system has a self diagnosis function.

Use of the function allows the self diagnosis about the following:

1. Trouble diagnosis of the cancel switch signal.
2. Trouble diagnosis of the brake light signal.
3. Trouble diagnosis of the throttle drive system.

Operating procedure for the self diagnosis mode

- 1) Turn on the main switch.
- 2) Set the "CRUISE" switch to the "ON" position.



- 3) Start the engine.
- 4) Use the engine stop switch and stop the engine.
- 5) Wait for 10 seconds.
- 6) Push the cruise control switch to the "SET" and "RES" alternatively three times (total of 6 times) within 2 seconds while pressing the cancel switch.

Then the indicator light will be lit and the cruise control system will enter the self diagnosis mode.

- 1) The "SET" and "RES" indicator lights will then blink alternatively three times.

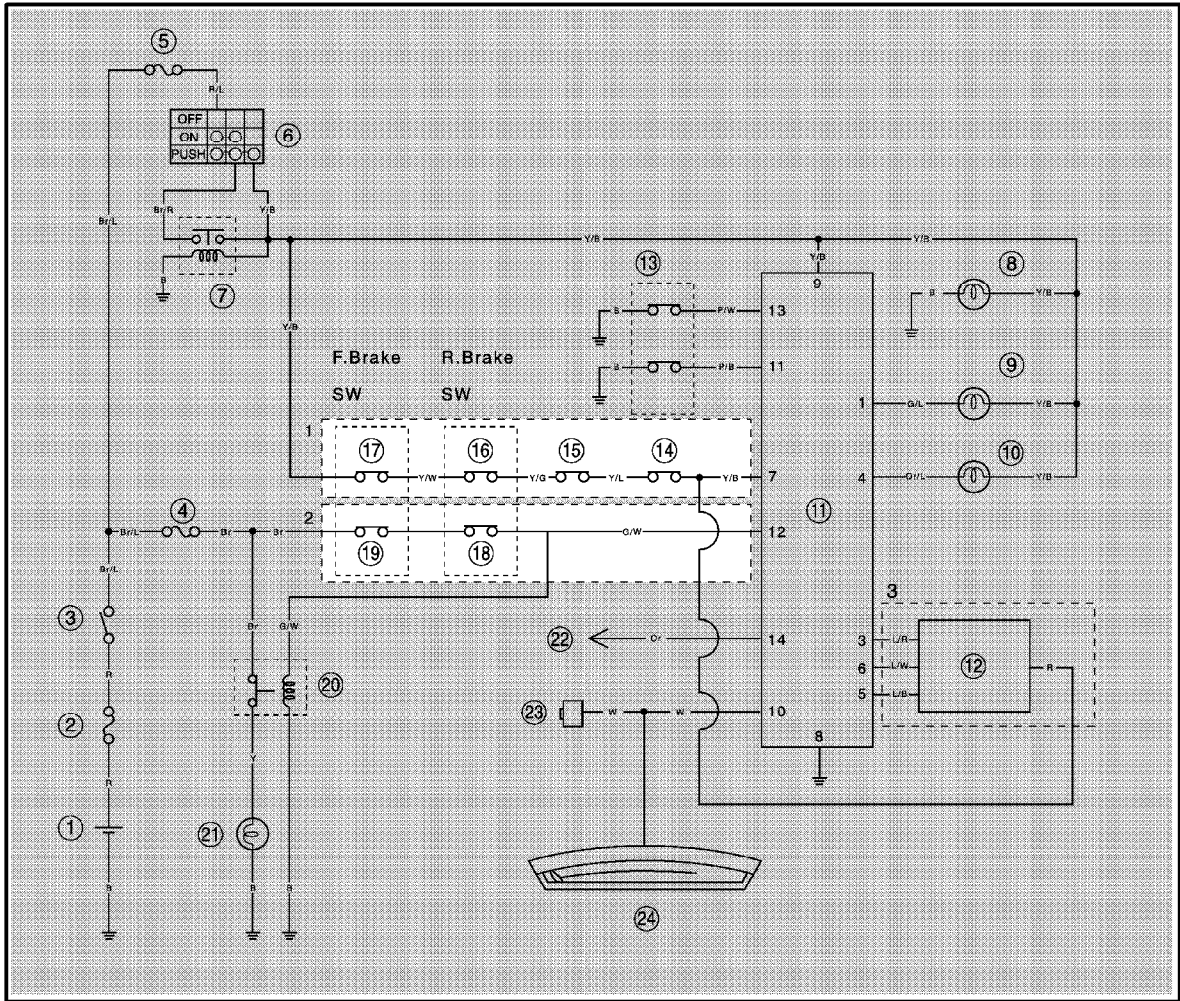
NOTE:

When the cruise control system is not failure, the "SET" and "RES" indicator lights will be remained on.

Exiting the self diagnosis mode

Perform any one of the four steps shown below. The system will then exit the self diagnosis mode.

- 1) Start the engine.
- 2) Turn the rear wheels.
- 3) Turn off the main switch.
- 4) Push the "CRUISE" switch to "OFF".

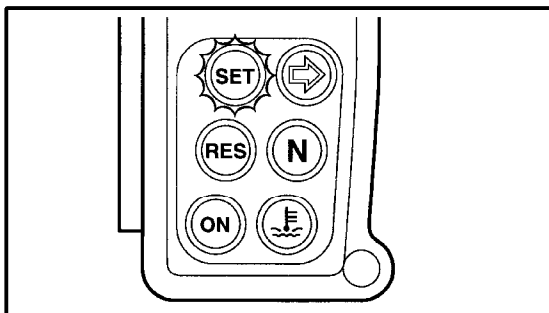


- ⑭ Rear brake switch
- ⑮ Concel switch
- ⑯ Clutch switch
- ⑰ Front brake light switch
- ⑱ Rear brake light switch
- ⑲ Front brake light switch

1. Trouble diagnosis of the cancel switch signal

- 1) The "SET" indicator light is lit.
- 2) Operate the cancel, front brake, rear brake, and clutch switches.

If the "SET" indicator light is not extinguished after any one of these switches is operated, it mean that the relevant switch is in failure.

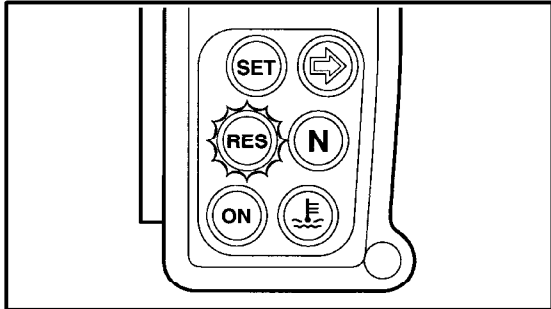
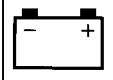


Example:

If the cancel switch is operated and the "SET" indicator light is not extinguished, it means that the cancel switch is in failure.

CRUISE CONTROL SYSTEM

ELEC



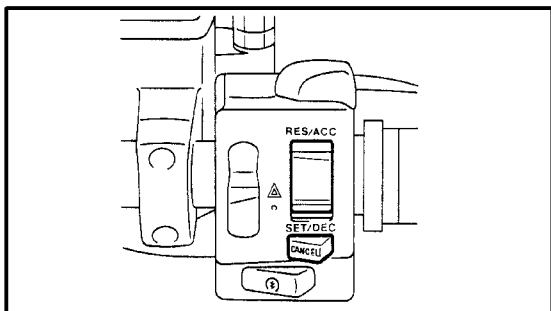
2. Trouble diagnosis of the brake light signal

- 1) The "RES" indicator light is lit.
- 2) Operate the following front brake and rear switches.

If the RES indicator light is not extinguished after either of these switches is operated, it means that the relevant switch is in failure.

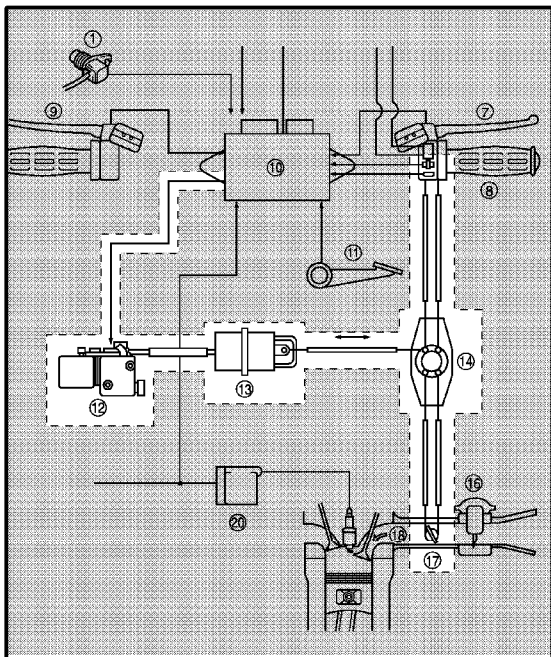
Example:

If the front brake switch is operated and the "RES" indicator light is not extinguished, it means that the front brake switch is in failure.



3. Trouble diagnosis of the throttle drive

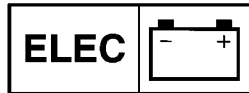
- 1) Push the cruise control switch to "RES".
The throttle will be then opened fully in approx. 2.5 seconds and kept fully open for 3 seconds.
The throttle will be fully closed approx. 2.5 seconds later.
Check the closing throttle for noises and operation.



If noise is heard from the vacuum pump but the throttle is not operating, it means that the throttle cable is in failure.

If no noises are heard from the vacuum pump, it means that the vacuum pump is in failure.

- ⑫ Vacuum pump
- ⑬ Vacuum actuator
- ⑭ Throttle cable joint
- ⑰ Throttle valve



SELF-DIAGNOSIS

The XVZ13LT features a self-diagnosing system for following displays.

1. Engine warning light
2. Fuel meter
3. “SET”/“RES” indicator light

1. ENGINE WARNING LIGHT

When the main switch is turned to “ON”, the following items are monitored and the condition codes are displayed on the engine warning light (irrespective of whether the engine is running or not).

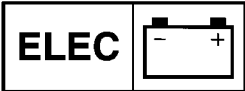
NOTE:

The XVZ13LT features a self-diagnosing system.

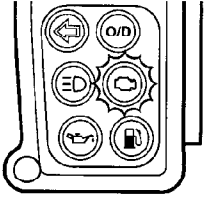
In the EVZ13LT, when the main switch is turned on the “Engine indicator light” in the speedometer comes on for 1.4 seconds then goes off. However, if there is a malfunction, it comes on for 1.4 seconds, goes off and then begins flashing. (However, it is on while the engine is running.)

Item	Condition	Response	Display condition code	
			When engine is stationary	When engine is running
Throttle position sensor (TPS)	Disconnected Short-circuit Locked	<ul style="list-style-type: none"> • Enables the motorcycle to run so that the ignition timing is fixed when the throttle is fully opened. • Displays the condition code on the engine indicator light. 	Blinks in Fault code [3]	Light on
Speed sensor	Illegality pulse Disconnected Short-circuit	<ul style="list-style-type: none"> • Operate the speed limiter (5,000 r/min) 	Blinks in Fault code [4]	Light on
Emergency stop switch	Disconnected	—	Blinks in Fault code [9]	Light on

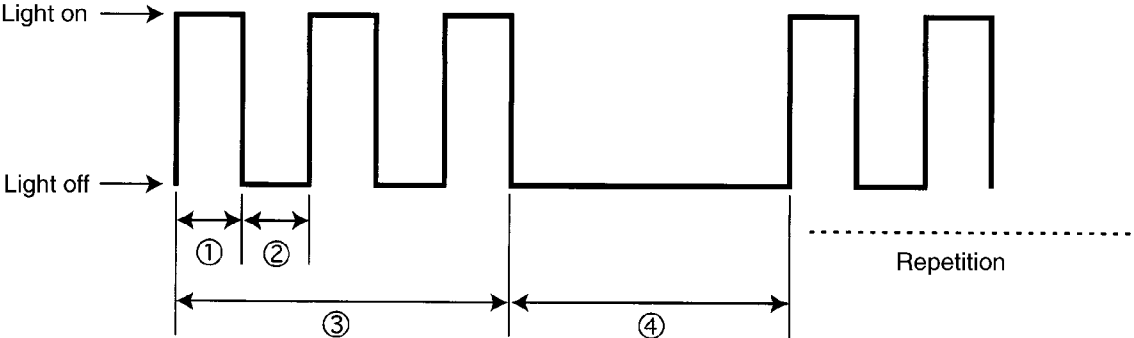
SELF-DIAGNOSIS



Display order on the engine warning light When one item being monitored



- ① Light on (seconds) 0.5 seconds
- ② Light off (seconds) 0.5 seconds
- ③ Number of blinks Fault code
- ④ Light off (seconds) 3 seconds



Light on →

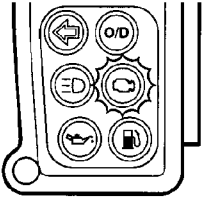
Light off →

① ②

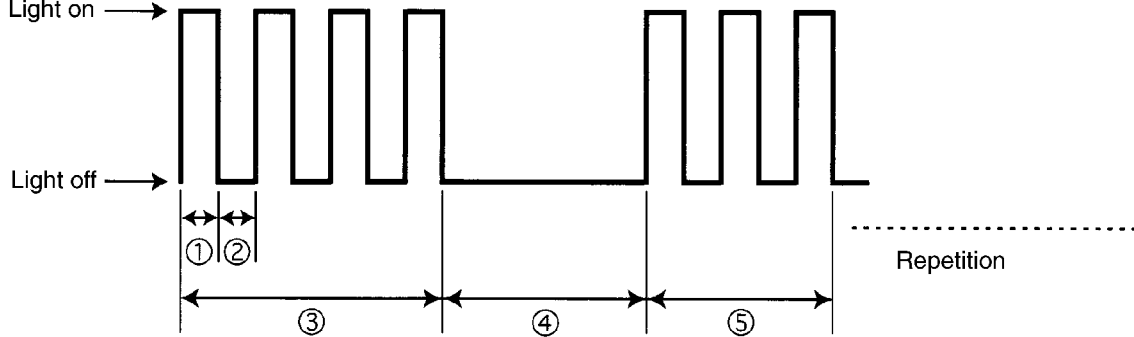
③ ④

Repetition

When more than one item is being monitored



- ① Light on (seconds) 0.5 seconds
- ② Light off (seconds) 0.5 seconds
- ③ Number of blinks Fault code [4]
- ④ Light off (seconds) 3 seconds
- ⑤ Number of blinks Fault code [3]



Light on →

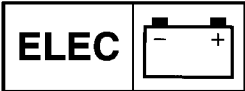
Light off →

① ②

③ ④ ⑤

Repetition

SELF-DIAGNOSIS



EAS00635

TROUBLESHOOTING

The tachometer starts to display the self-diagnosis sequence.

Check:

1. throttle position sensor
2. speed sensor
3. emergency stop switch

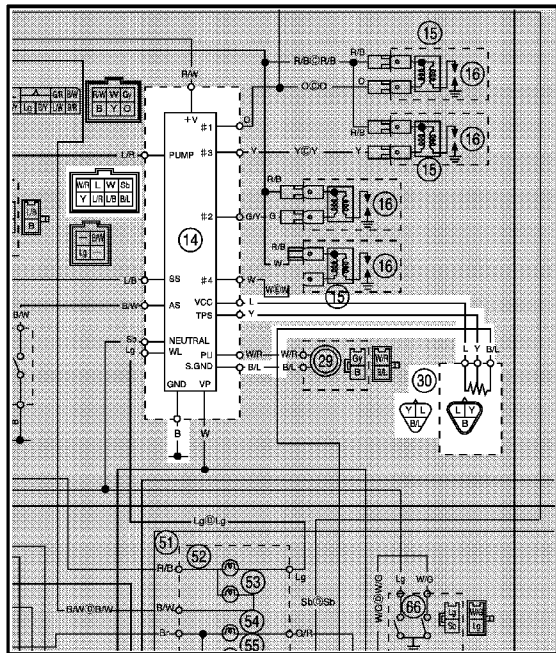
NOTE:

- Before troubleshooting, remove the following part(-s):
 - 1) rider seat
 - 2) fuel tank
 - 3) air filter case
- Troubleshoot with the following special tool(-s).

Pocket tester
90890-03112

EAS00636

1. Throttle position sensor CIRCUIT DIAGRAM



- ⑭ Ignitor unit
- ⑳ Throttle position sensor

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

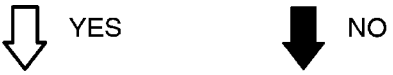


Repair or replace the wire harness.

EBB12401

2. Throttle position sensor

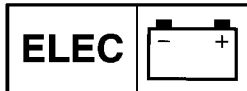
- Check the throttle position sensor for continuity. Refer to "CHECKING AND ADJUSTING THE THROTTLE POSITION SENSOR" in chapter 6.
- Is the throttle position sensor OK?



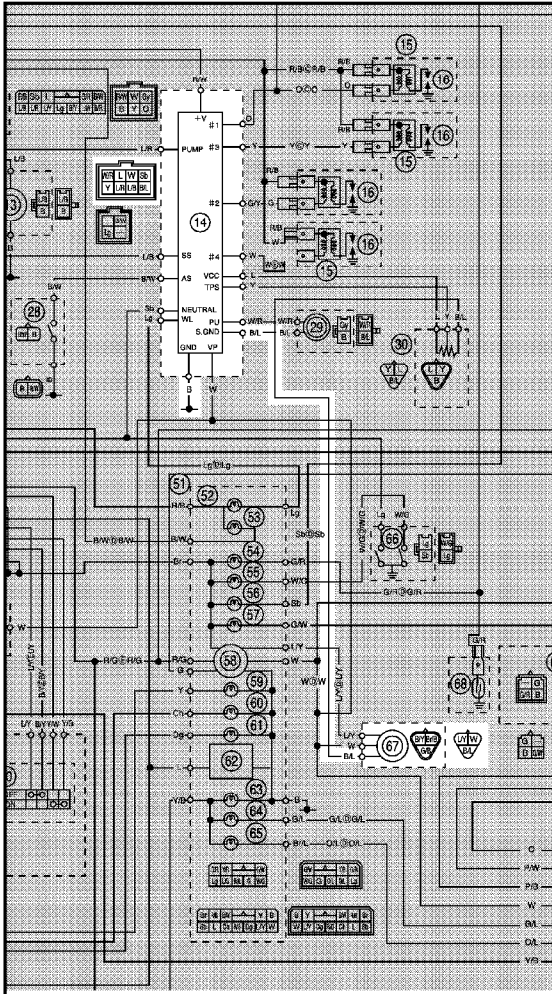
Replace the ignitor unit.

Replace the throttle position sensor.

SELF-DIAGNOSIS



2. Speed sensor CIRCUIT DIAGRAM



- 14 Ignitor unit
- 67 Speed sensor

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES ↓ NO

Repair or replace the wire harness.

EB812401

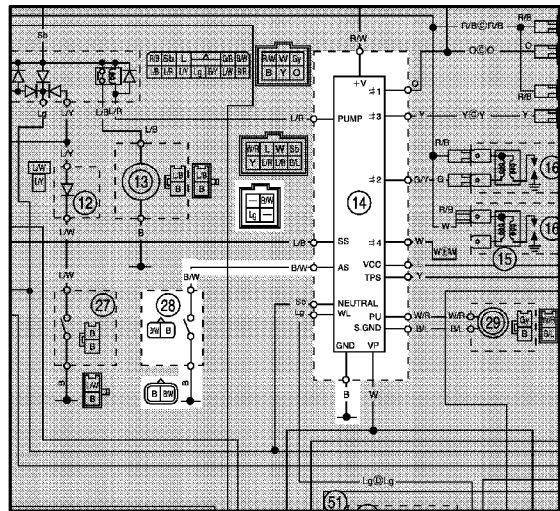
2. Speedometer

- Check the speedometer operation.
- Is the speedometer OK?

↓ YES ↓ NO

Replace the ignitor unit. Replace the speed sensor.

3. Emergency stop switch CIRCUIT DIAGRAM



- 14 Ignitor unit
- 28 Emergency stop switch

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES ↓ NO

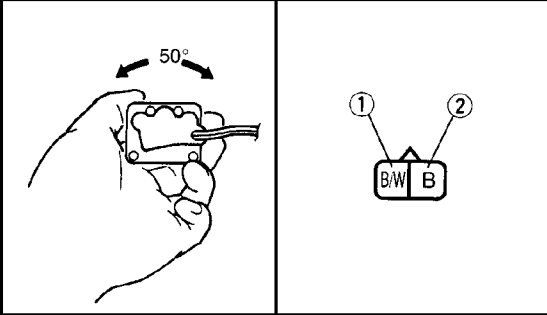
Repair or replace the wire harness.

EB812401

2. Emergency stop switch

- Remove the emergency stop switch.
- Connect the pocket tester ($\Omega \times 1$) to the emergency stop switch connector as shown.

Tester positive probe → black/white ①
 Tester negative probe → black ②



- When turn the emergency stop switch approx. 50°, the resistance reading is 0 Ω to $\infty \Omega$.
- Is the emergency stop switch OK?

↓ YES

↓ NO

Replace the ignitor unit.

Replace the emergency stop switch.

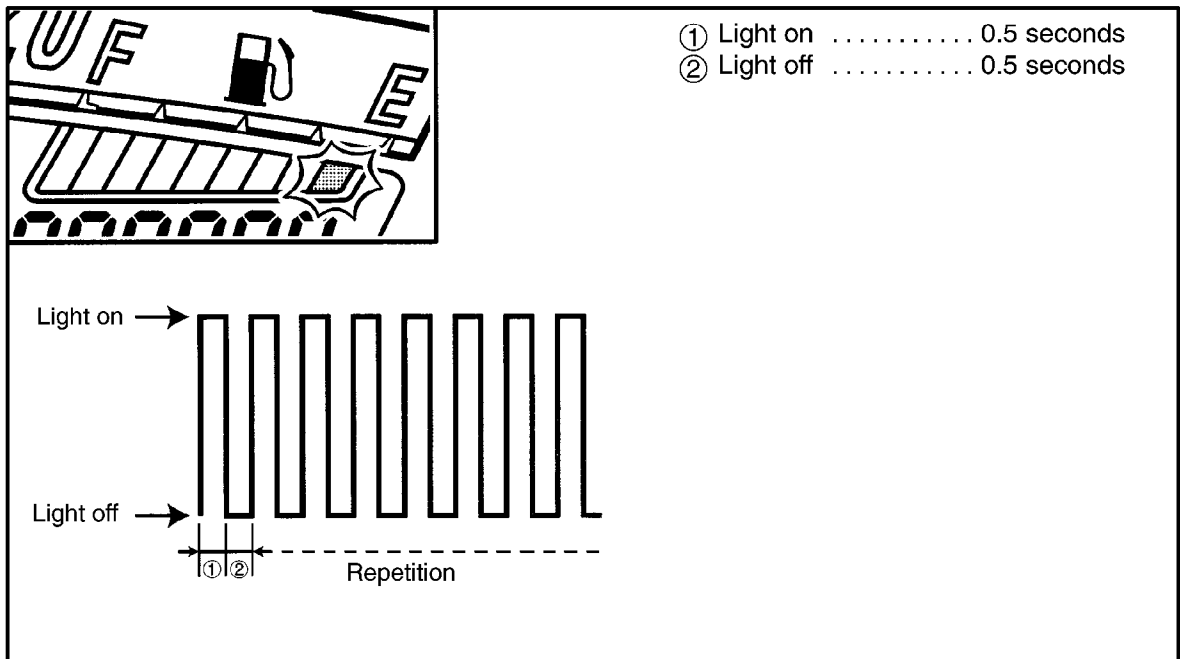
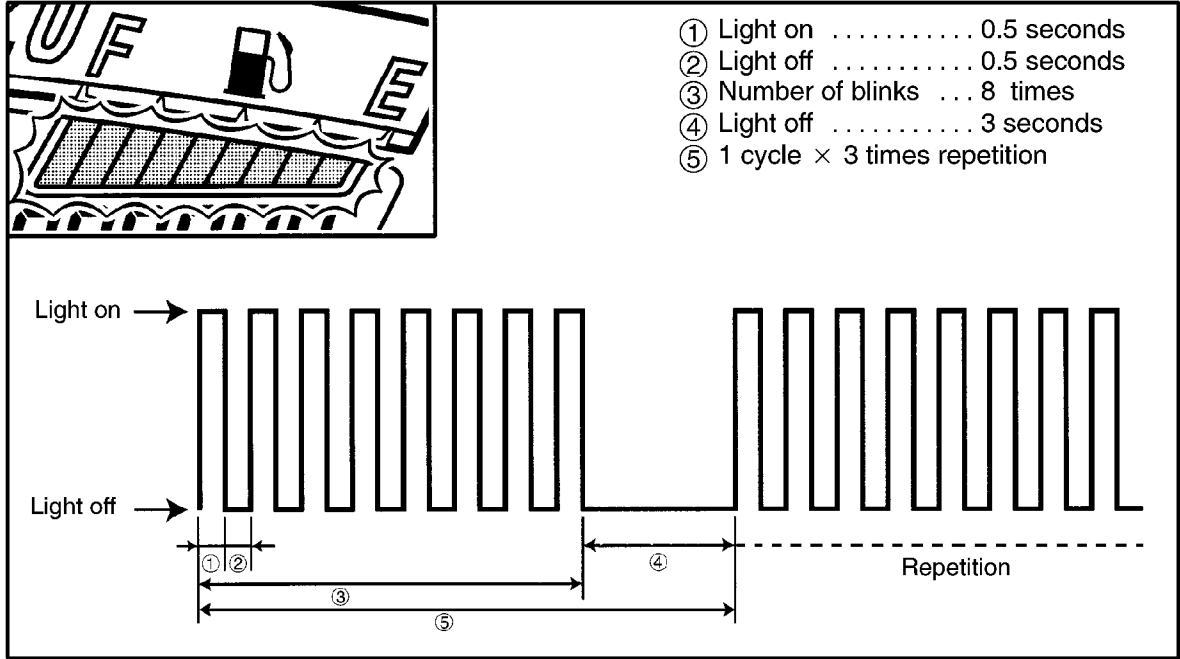
2. FUEL METER

The fuel meter is indicated the fault displays as follows

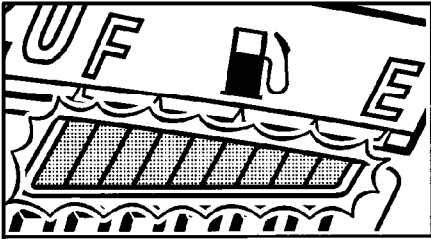
- Fuel sender
- Fuel thermistor

Fuel meter display sequence

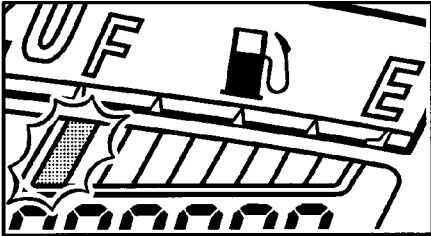
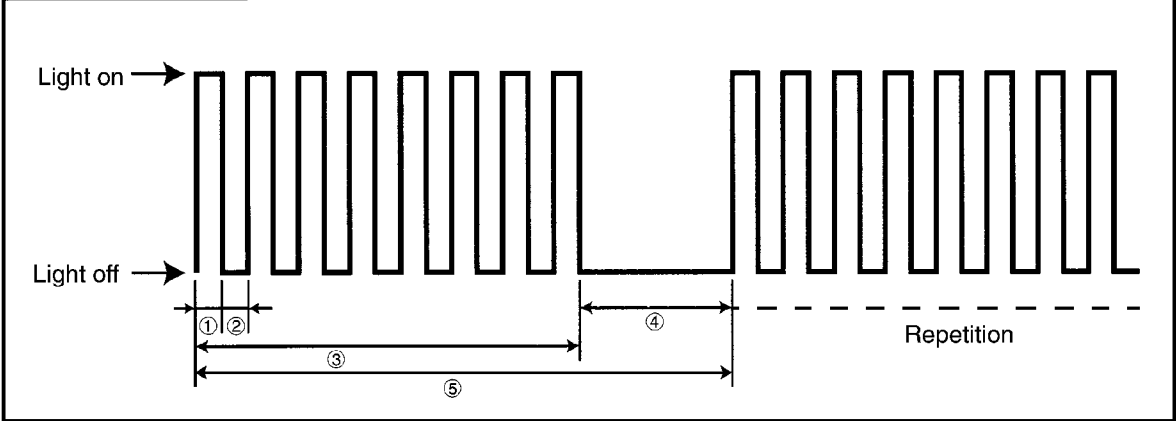
Fuel sender



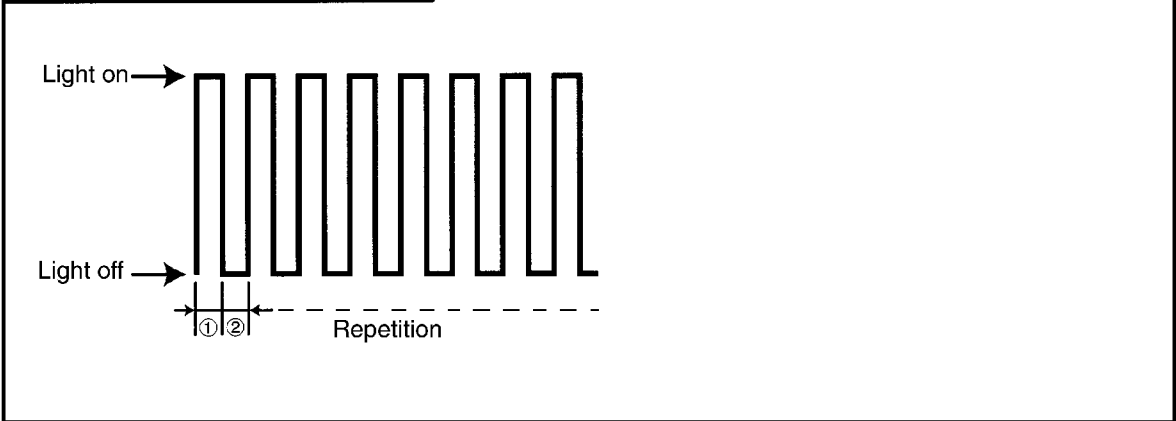
Fuel thermistor



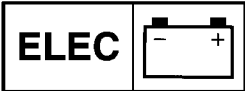
- ① Light on 0.5 seconds
- ② Light off 0.5 seconds
- ③ Number of blinks ... 8 times
- ④ Light off 3 seconds
- ⑤ 1 cycle × 3 times repetition



- ① Light on 0.5 seconds
- ② Light off 0.5 seconds



SELF-DIAGNOSIS



EAS00835

TROUBLESHOOTING

The fuel meter starts to display the self-diagnosis sequence.

Check:

1. fuel sender
2. fuel thermistor

NOTE:

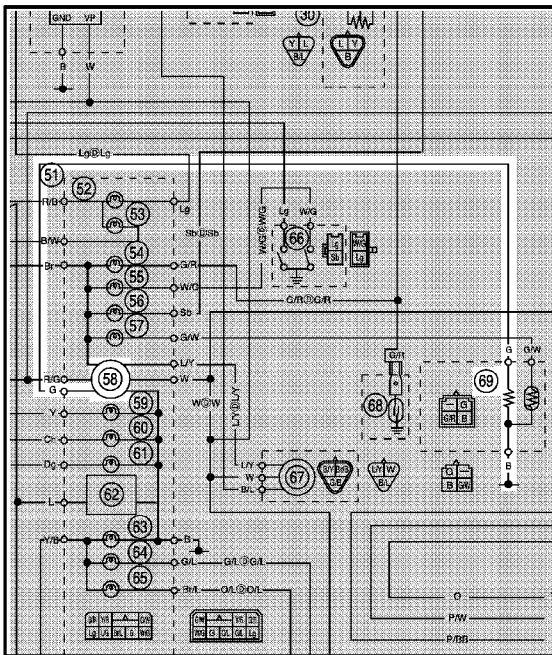
- Before troubleshooting, remove the following part (-s):
 - 1) rider seat
 - 2) fuel tank
 - 3) air filter case
- Troubleshoot with the following special tool (-s).



Pocket tester
90890-03112

EAS00836

1. Fuel sender CIRCUIT DIAGRAM



- 58 Fuel meter
- 69 Fuel sender

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES

↓ NO

Repair or replace the wire harness.

EBB12401

2. Fuel sender

- Check the fuel sender for continuity. Refer to "SIGNAL SYSTEM".
- Is the fuel sender OK?

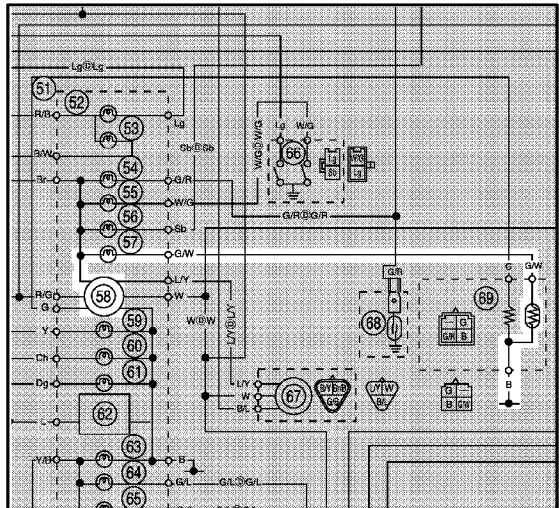
↓ YES

↓ NO

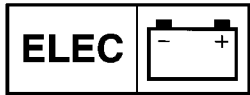
Replace the fuel meter.

Replace the fuel sender unit.

2. Fuel CIRCUIT DIAGRAM



- 58 Fuel meter
- 69 Fuel sender (thermistor)



1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?



Repair or replace the wire harness.

EB812401

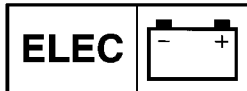
2. Fuel thermistor

- Check the fuel thermistor operation.
- When set the main switch to on, the fuel level indicator light comes on.
- After 1.4 second, the fuel level indicator light goes off.
- Is the fuel thermistor OK?



Replace the fuel meter.

The fuel thermistor is faulty. Replace the fuel sender unit.

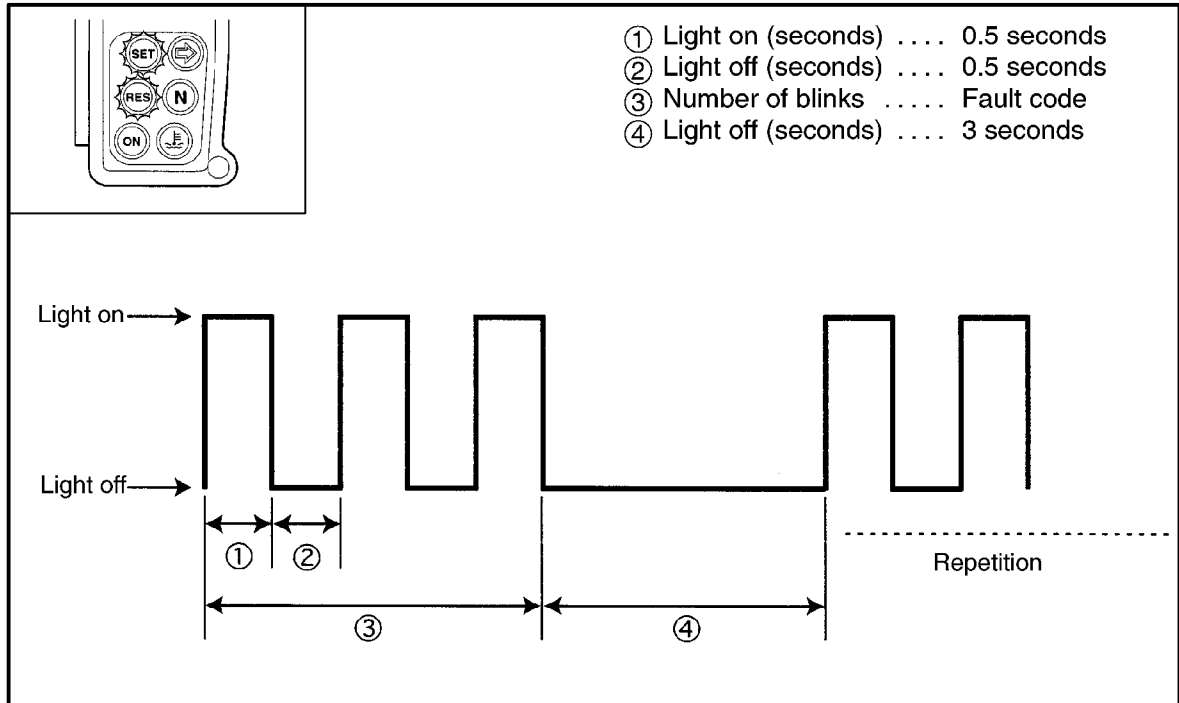


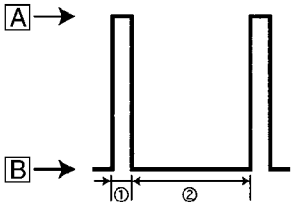
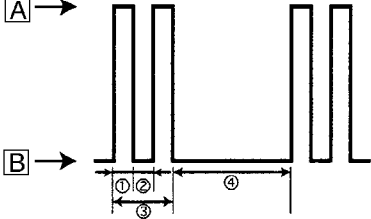
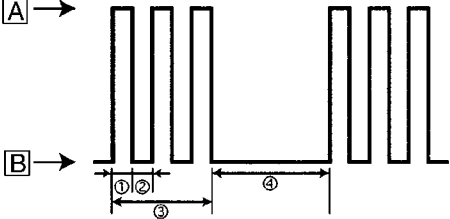
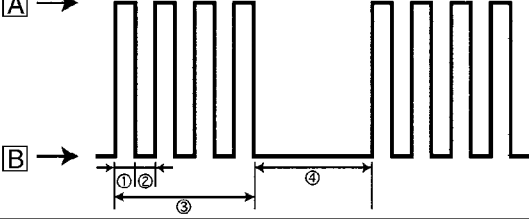
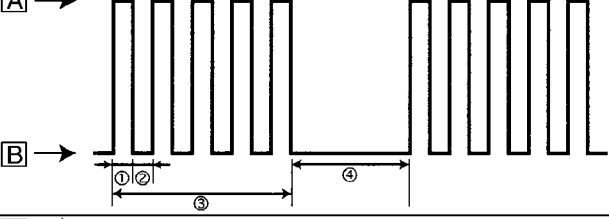
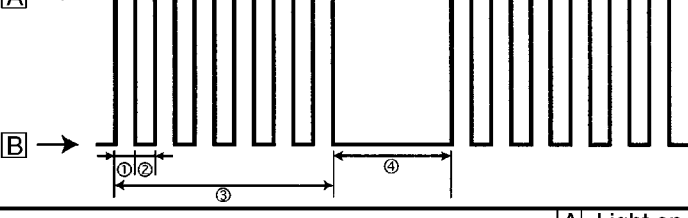
3. “SET”/“RES” INDICATOR LIGHT

When the main switch is turned to “ON”, the following items are monitored and the condition codes are displayed on the “SET”/“RES” indicator light at same time (irrespective of whether the engine is running or not).

Item	Condition	Display condition		
		When engines is stationary	When engine is running	Fault code
Cruise control unit	Disconnected Short-circuit	Blinks in	Blinks in	1
Vacuum pump	Disconnected Short-circuit	Blinks in	Blinks in	2
Concel switch, Front brake switch, Rear brake switch or Clutch switch	Disconnected Short-circuit	Blinks in	Blinks in	3
Speed sensor	Illegality pulse	Blinks in	Blinks in	4
Ignition coil	Illegality pulse Disconnected Short-circuit	Blinks in	Blinks in	5
Cruise control switch	Disconnected	Blinks in	Blinks in	6

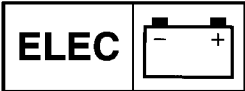
Display order on the “SET”/“RES” indicator light



Fault code	
1	
2	
3	
4	
5	
6	

- ① 0.5 seconds
 - ② 0.5 seconds
 - ③ Number of blinks Fault code
 - ④ 3 seconds
- A → Light on
B → Light off

SELF-DIAGNOSIS



EAS00835

TROUBLESHOOTING

The "SET"/"RES" indicator light starts to display the self-diagnosis sequence.

Check:

1. cruise control unit
2. vacuum pump
3. cancel switch, front brake switch, rear brake switch or clutch switch
4. speed sensor
5. ignition coil
6. cruise control switch

NOTE:

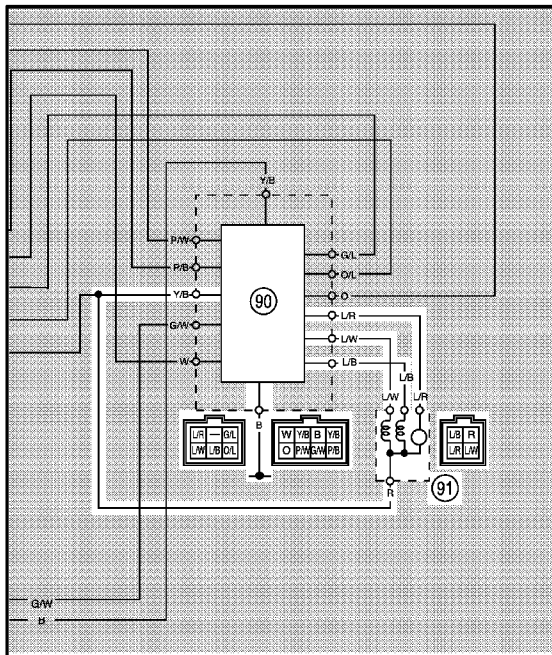
- Before troubleshooting, remove the following part (-s):
 - 1) rider seat
 - 2) fuel tank
 - 3) air filter case
- Troubleshoot with the following special tool (-s):

	Pocket tester 90890-03112
--	--

1. Cruise control unit

Replace the cruise control unit.

2. Vacuum pump
CIRCUIT DIAGRAM



- 90 Cruise control unit
- 91 Vacuum pump

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES ↓ NO

Repair or replace the wire harness.

EB812401

2. Vacuum pump

- Check the vacuum pump for continuity. Refer to "CRUISE CONTROL SYSTEM".
- Is the vacuum pump OK?

↓ YES ↓ NO

Replace the cruise control.

Replace the vacuum pump.

3. Cancen switch, front brake switch rear brake switch or clutch switch

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES ↓ NO

Repair or replace the wire harness.

2. Cancel switch, front brake switch, rear brake switch and clutch switch

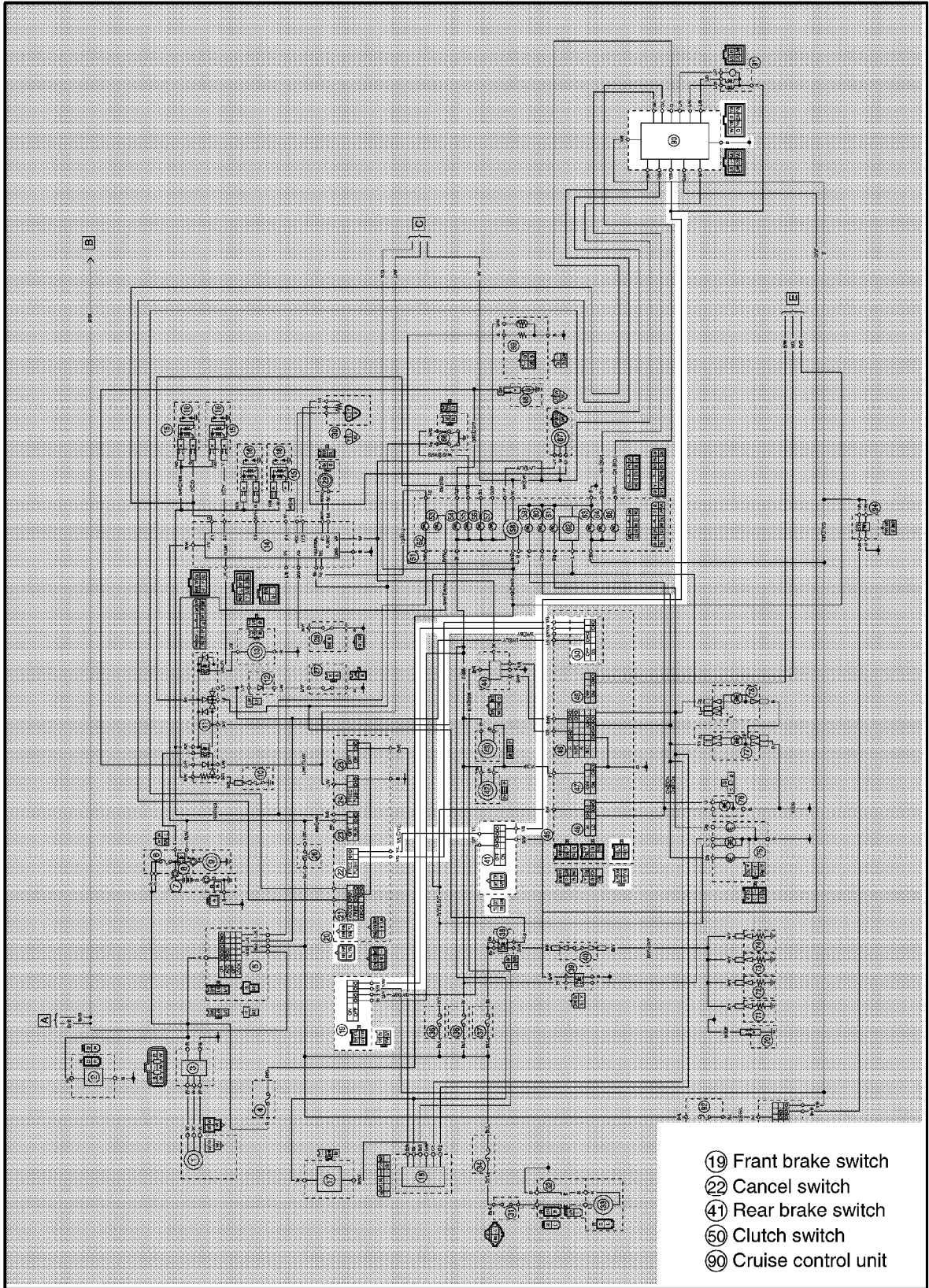
- Check the switches for continuity. Refer to "CRUISE CONTROL SYSTEM".
- Are the switches OK?

↓ YES ↓ NO

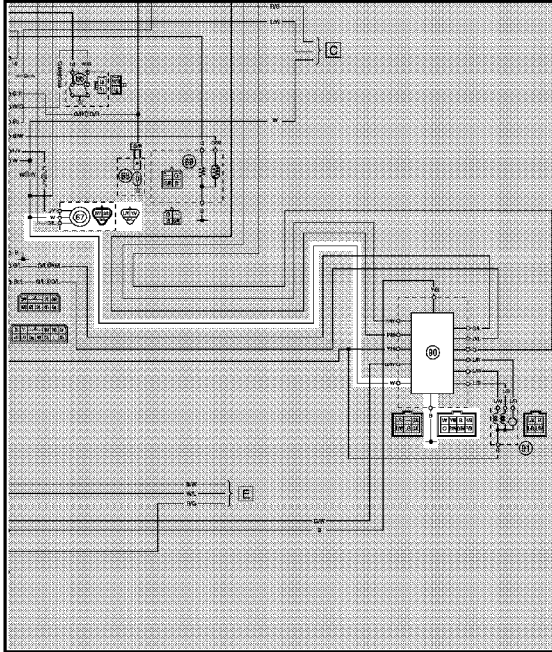
Replace the cruise control unit.

Repair or replace the faulty switch (es).

CIRCUIT DIAGRAM



**4. Speed sensor
CIRCUIT DIAGRAM**



- ⑥7 Speed sensor
- ⑨0 Cruise control unit

1. Wire harness

- Check the wire harness for continuity. Refer to “CIRCUIT DIAGRAM”.
- Is the wire harness OK?

↓ YES

↓ NO

Repair or replace the wire harness.

EB812401

2. Speed sensor

- Check the speed sensor operation. Refer to “CRUISE CONTROL SYSTEM”.
- Is the speed sensor OK?

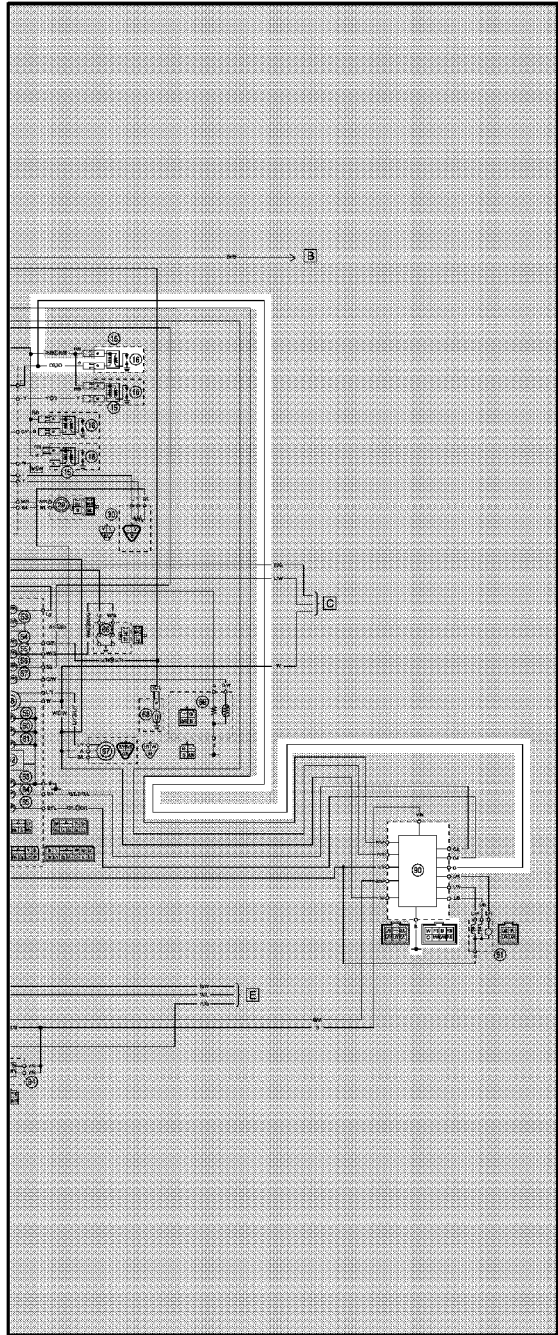
↓ YES

↓ NO

Replace the cruise control unit.

Replace the speed sensor.

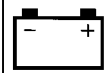
**5. Ignition coil
CIRCUIT DIAGRAM**



- ①5 Ignition coil
- ⑨0 Cruise control unit

SELF-DIAGNOSIS

ELEC



1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES

↓ NO

Repair or replace the wire harness.

2. Engine condition

- Start the engine and check the engine condition from the idling to full opening the throttle.
- Is the engine condition OK?

↓ YES

↓ NO

Replace the cruise control unit.

Replace the ignition coil.

6. Cruise control switch

1. Wire harness

- Check the wire harness for continuity. Refer to "CIRCUIT DIAGRAM".
- Is the wire harness OK?

↓ YES

↓ NO

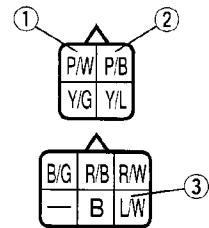
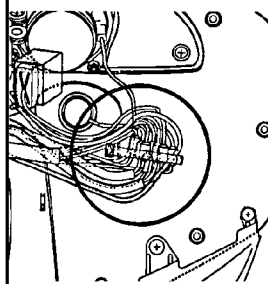
Repair or replace the wire harness.

2. Cruise control switch

- Disconnect the handlebar switch
- Connect the pocket tester ($\Omega \times 1$) to the handlebar switch connector.

Tester positive prove → pink/white ①
pink/black ②

Tester negative prove → black ③



- Check the cruise control switch for continuity.
- Is the cruise control switch OK?

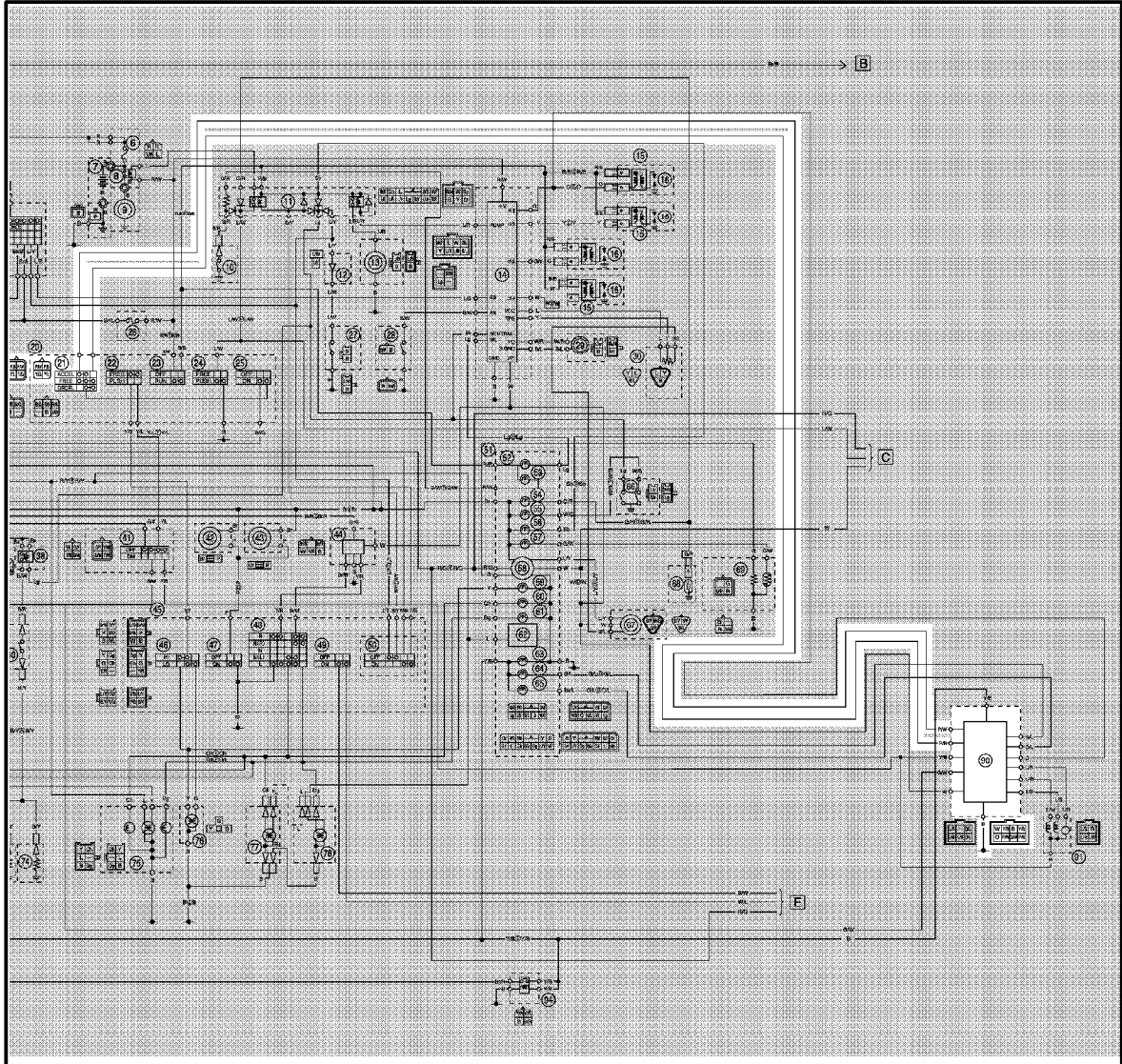
↓ YES

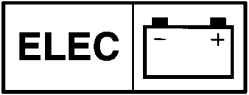
↓ NO

Replace the cruise control unit.

The cruise control switch is faulty. Replace the right handlebar switch.

CIRCUIT DIAGRAM





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TROUBLESHOOTING

The following guide for troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to basic troubleshooting. Refer to the relative procedure in this manual for checks, adjustments, and replacement of parts.

STARTING PROBLEMS

ENGINE

Cylinder(-s) and cylinder head (-s)

- Loose spark plug
- Loose cylinder head or cylinder
- Damaged cylinder head gasket
- Damaged cylinder gasket
- Worn or damaged cylinder
- Incorrect valve clearance
- Improperly sealed valve
- Incorrect valve-to-valve-seat contact
- Incorrect valve timing
- Faulty valve spring
- Seized valve
- Piston(-s) and piston ring(-s)
- Improperly installed piston ring
- Damaged, worn or fatigued piston ring
- Seized piston ring
- Seized or damaged piston

Air filter

- Improperly installed air filter
- Clogged air filter element
- Crankcase and crankshaft
- Improperly assembled crankcase
- Seized crankshaft

FUEL SYSTEM

Fuel tank

- Empty fuel tank
- Clogged fuel filter
- Clogged fuel strainer
- Clogged fuel tank drain hose
- Clogged rollover valve
- Clogged rollover valve hose
- Deteriorated or contaminated fuel

Fuel pump

- Faulty fuel pump
- Faulty fuel pump relay

Fuel cock

- Clogged or damaged fuel hose

Carburetor(-s)

- Deteriorated or contaminated fuel
- Clogged pilot jet
- Clogged pilot air passage
- Sucked-in air
- Damaged float
- Worn needle valve
- Improperly installed needle valve seat
- Incorrect fuel level
- Improperly installed pilot jet
- Clogged starter jet
- Faulty starter plunger
- Improperly adjusted starter cable



ELECTRICAL SYSTEMS

Battery

- Improperly charged battery
- Faulty battery

Fuse(-s)

- Blown, damaged or incorrect fuse
- Improperly installed fuse

Spark plug(-s)

- Incorrect spark plug gap
- Incorrect spark plug heat range
- Fouled spark plug
- Worn or damaged electrode
- Worn or damaged insulator
- Faulty spark plug cap

Starting system

- Faulty starter motor
- Faulty starter relay
- Faulty starting circuit cut-off relay
- Faulty starter clutch

Ignition system

- Faulty ignitor unit
- Faulty pickup coil
- Broken generator rotor woodruff key
- Switches and wiring
- Faulty main switch
- Faulty engine stop switch
- Broken or shorted wiring
- Faulty neutral switch
- Faulty start switch
- Faulty sidestand switch
- Faulty clutch switch
- Improperly grounded circuit
- Loose connections

Ignition coil(-s)

- Cracked or broken ignition coil
- Broken or shorted primary or secondary coils
- Faulty spark plug lead

EAS00846

INCORRECT ENGINE IDLING SPEED ENGINE

Cylinder(-s) and cylinder head(-s)

- Incorrect valve clearance
- Damaged valve train components

Air filter

- Clogged air filter element

FUEL SYSTEM

Carburetor(-s)

- Faulty starter plunger
- Loose or clogged pilot jet
- Loose or clogged pilot air jet
- Damaged or loose carburetor joint
- Improperly synchronized carburetors
- Improperly adjusted engine idling speed (throttle stop screw)
- Improper throttle cable free play (at the flange of the throttle grip)
- Flooded carburetor
- Faulty air induction system

ELECTRICAL SYSTEMS

Battery

- Improperly charged battery
- Faulty battery
- Spark plug(-s)
- Incorrect spark plug gap
- Incorrect spark plug heat range
- Fouled spark plug
- Worn or damaged electrode
- Worn or damaged insulator
- Faulty spark plug cap

Ignition coil(s)

- Broken or shorted primary or secondary coils
- Faulty spark plug lead
- Cracked or broken ignition coil

Ignition system

- Faulty ignitor unit
- Faulty pickup coil
- Broken generator rotor woodruff key

EAS00849

POOR MEDIUM-AND-HIGH-SPEED PERFORMANCE

Refer to "STARTING PROBLEMS".

ENGINE**Air filter**

- Clogged air filter element
- Air intake system
- Bent, clogged or disconnected carburetor air vent hose
- Clogged or leaking air duct

FUEL SYSTEM**Carburetor(-s)**

- Faulty diaphragm
- Incorrect fuel level
- Loose or clogged main jet

Fuel pump

- Faulty fuel pump

EAS00850

FAULTY GEAR SHIFTING**SHIFTING IS DIFFICULT**

Refer to "CLUTCH DRAGS".

SHIFT PEDAL DOES NOT MOVE

- Shift shaft
- Improperly adjusted shift rod
- Bent shift shaft.
- Shift drum and shift fork(-s)
- Foreign object in the shift drum groove
- Seized shift fork
- Bent shift fork guide bar

Transmission

- Seized transmission gear
- Foreign object between transmission gears
- Improperly assembled transmission

JUMPS OUT OF GEAR**Shift shaft**

- Incorrect shift pedal position
- Improperly returned stopper lever

Shift fork(-s)

- Worn shift fork

Shift drum

- Incorrect axial play
- Worn shift drum groove

Transmission

- Worn gear dog

EAS00852

FAULTY CLUTCH**CLUTCH SLIPS**

- Clutch
- Improperly assembled clutch
- Improperly assembled clutch master cylinder
- Improperly assembled clutch release cylinder
- Incorrect clutch fluid level
- Damage clutch hose
- Loose or fatigued clutch spring
- Loose union bolt
- Worn friction plate
- Worn clutch plate
- Damage clutch release cylinder

Engine oil

- Incorrect oil level
- Incorrect viscosity (low)
- Deteriorated oil

CLUTCH DRAGS

- Clutch Air in hydraulic clutch system
- Unevenly tensioned clutch springs
- Warped pressure plate
- Bent clutch plate
- Swollen friction plate
- Bent clutch push rod
- Damaged clutch boss
- Burnt primary driven gear bushing
- Damaged clutch release cylinder
- Match marks not aligned

Engine oil

- Incorrect oil level
- Incorrect viscosity (high)
- Deteriorated oil

EAS00855

OVERHEATING

ENGINE

- Clogged coolant passages Cylinder head(-s) and piston(-s)
- Heavy carbon buildup

Engine oil

- Incorrect oil level
- Incorrect oil viscosity
- Inferior oil quality

FUEL SYSTEM

Carburetor(-s)

- Incorrect main jet setting
- Incorrect fuel level
- Air leak at carburetor joint

Air filter

- Clogged air filter element

ELECTRICAL SYSTEMS

Spark plug(-s)

- Incorrect spark plug gap
- Incorrect spark plug heat range

Ignition system

- Faulty ignitor unit

COOLING SYSTEM

Coolant

- Low coolant level

Radiator

- Damaged or leaking radiator
- Faulty radiator cap
- Bent or damaged radiator fins

Water pump

- Damaged or defective water pump

Thermostat

- Thermostat stays closed

Oil cooler

- Clogged or damaged oil cooler hose(-s) and pipe(-s)
- Damaged hose
- Improperly connected hose
- Damaged pipe
- Improperly connected pipe

CHASSIS

Brake(-s)

- Dragging brake

EAS00856

OVERCOOLING

COOLING SYSTEM

Thermostat

- Thermostat stays open

EAS00857

POOR BRAKING PERFORMANCE

Disc brake

- Worn brake pad
- Worn brake disc
- Air in hydraulic brake system
- Leaking brake fluid
- Faulty brake caliper kit

- Faulty brake caliper seal
- Loose union bolt
- Damaged brake hose
- Oil or grease on the brake disc
- Oil grease on the brake pad
- Incorrect brake fluid level

EAS00861

FAULTY FRONT FORK LEGS**LEAKING OIL**

- Bent, damaged or rusty inner tube
- Cracked or damaged outer tube
- Improperly installed oil seal
- Damaged oil seal lip
- Incorrect oil level (high)
- Loose damper rod bolt
- Damaged damper rod bolt copper washer
- Cracked or damaged cap bolt O-ring

MALFUNCTION

- Bent, deformed or damaged inner tube
- Bent, deformed or damaged outer tube
- Damaged fork spring
- Worn or damaged outer tube bushing
- Bent or damaged damper rod
- Incorrect oil viscosity
- Incorrect oil level

EAS00862

UNSTABLE HANDLING**Handlebar**

- Bent or improperly installed handlebar

Steering

- Improperly installed upper bracket
- Improperly installed lower bracket (improperly tightened ring nut)
- Bent steering stem
- Damaged ball bearing or bearing race

Tire(-s)

- Uneven tire pressures (front and rear)
- Incorrect tire pressure
- Uneven tire wear

Swingarm

- Worn bearing or bushing
- Bent or damaged swingarm
- Rear shock absorber assembly(-ies)
- Faulty rear shock absorber spring
- Leaking oil or gas

Front fork leg(-s)

- Uneven oil levels (both front fork legs)
- Uneven fork spring tension (both front fork legs)
- Broken fork spring
- Bent or damaged inner tube
- Bent or damaged outer tube

Wheel(-s)

- Incorrect wheel balance
- Deformed cast wheel
- Damaged wheel bearing
- Bent or loose wheel axle
- Excessive wheel runout

Frame

- Bent frame
- Damaged steering head pipe
- Improperly installed bearing race

EAS00866

FAULTY SIGNALING SYSTEM**HEADLIGHT DOES NOT LIGHT**

- Wrong headlight bulb
- Too many electrical accessories
- Hard charging
- Incorrect connection
- Incorrect ground
- Poor contacts (main or light switch)
- Burnt-out headlight bulb

TURN SIGNAL DOES NOT LIGHT

- Faulty turn signal switch
- Faulty flasher relay
- Burnt-out turn signal bulb
- Incorrect connection
- Damaged or defective wire harness
- Incorrect ground
- Discharged battery
- Blown, damaged or incorrect fuse

HORN DOES NOT SOUND

- Improperly adjusted horn
- Damaged or faulty horn
- Faulty main switch
- Faulty horn switch
- Faulty battery
- Blown, damaged or incorrect fuse
- Faulty wire harness

HEADLIGHT BULB BURNT OUT

- Wrong headlight bulb
- Faulty battery
- Faulty rectifier/regulator
- Incorrect ground
- Faulty main switch
- Faulty light switch
- Headlight bulb life expired

TURN SIGNAL BLINKS SLOWLY

- Faulty flasher relay
- Faulty main switch
- Faulty turn signal switch
- Incorrect turn signal bulb

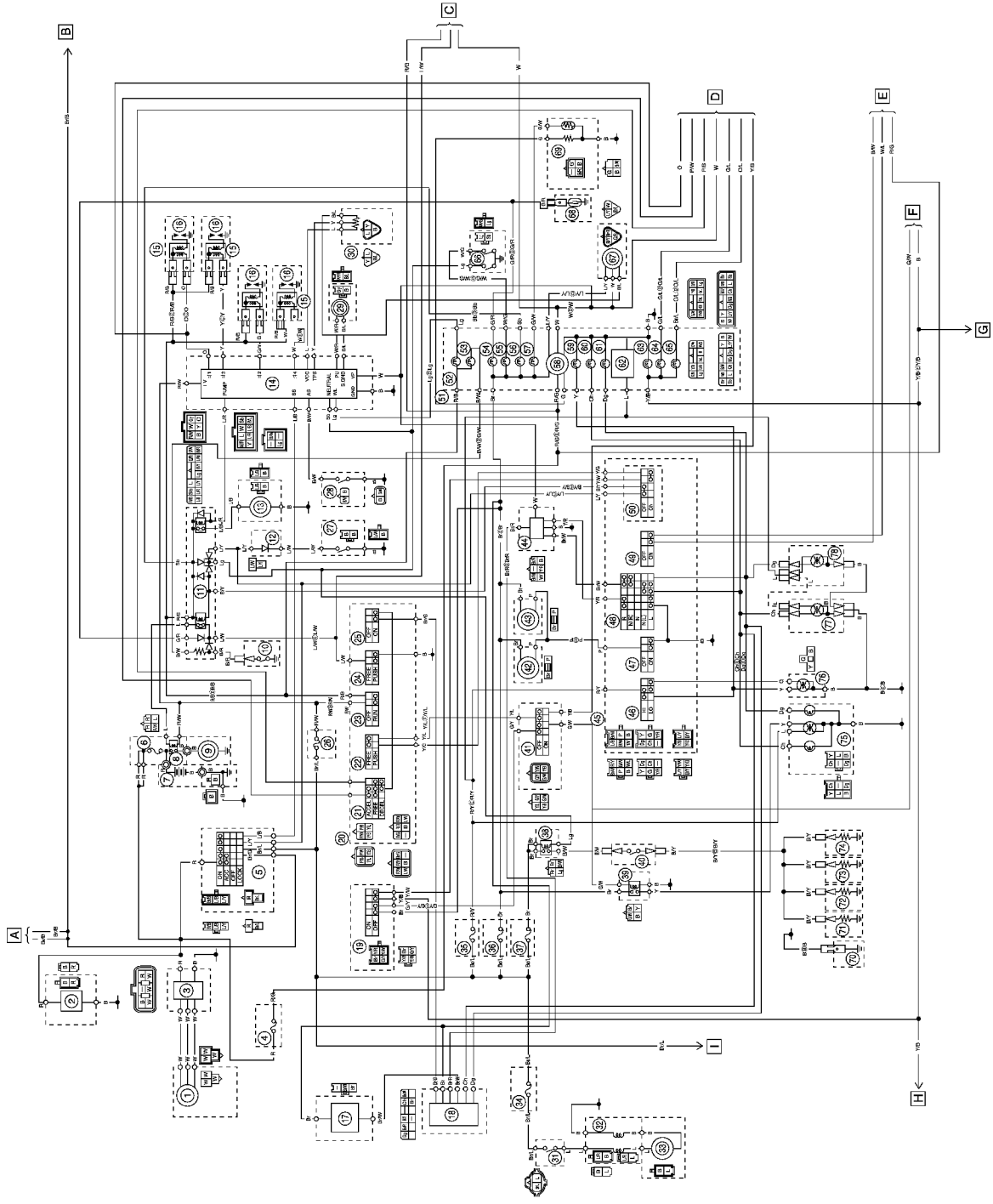
TURN SIGNAL REMAINS LIT

- Faulty flasher relay
- Burnt-out turn signal bulb

TURN SIGNAL BLINKS QUICKLY

- Incorrect turn signal bulb
- Faulty flasher relay
- Burnt-out turn signal bulb

XVZ13TFL/XVZ13TFLC WIRING DIAGRAM



- 1 AC magneto
- 2 Condenser
- 3 Rectifier/regulator
- 4 Fuse (back up)
- 5 Main switch
- 6 Fuse (main)
- 7 Battery
- 8 Starter relay
- 9 Starter motor
- 10 Oil level switch
- 11 Starting circuit cutoff relay

- 12 Diode
- 13 Fuel pump
- 14 Ignitor
- 15 Ignition coil
- 16 Spark plug
- 17 Flasher relay
- 18 Hazard relay
- 19 Front brake switch
- 20 Handlebar switches (right)
- 21 Cruise control switch
- 22 "CANCEL" switch
- 23 Engine stop switch
- 24 Start switch
- 25 Hazard switch
- 26 Fuse (ignition)
- 27 Side stand switch
- 28 Emergency stop switch
- 29 Pick up coil
- 30 Throttle position sensor
- 31 Thermo switch
- 32 Noise filter
- 33 Fan motor
- 34 Fuse (fan motor)
- 35 Fuse (head light)
- 36 Fuse (signal)
- 37 Fuse (carburetor heater)
- 38 Carburetor heater relay
- 39 Brake light relay

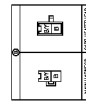
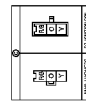
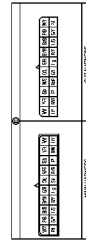
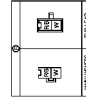
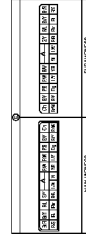
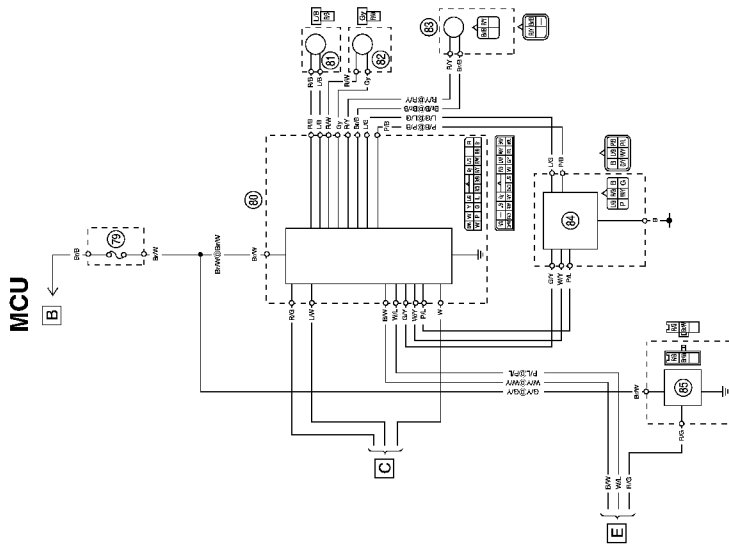
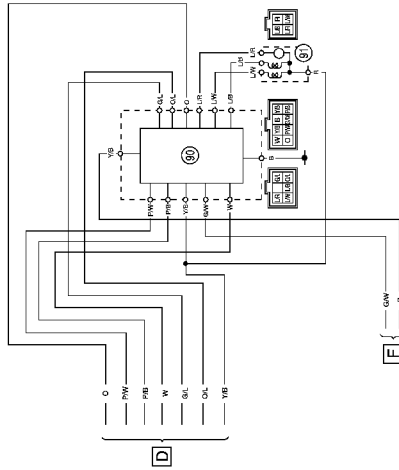
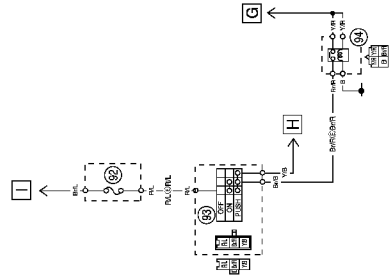
- 40 Thermo switch
- 41 Rear brake switch
- 42 Horn 2
- 43 Horn 1
- 44 Flasher relay
- 45 Handlebar switches (left)
- 46 Dimmer switch
- 47 Horn switch
- 48 Turn signal switch
- 49 "TALK" switch
- 50 Clutch switch
- 51 Meter assembly
- 52 Engine warning light
- 53 Oil warning light
- 54 Warning temperature warning light
- 55 Over drive indicator light
- 56 Neutral indicator light
- 57 Fuel meter light
- 58 Fuel meter
- 59 High beam indicator light
- 60 Turn signal indicator light (left)
- 61 Turn signal indicator light (right)
- 62 Illumination light
- 63 "ON" indicator light (MAIN)
- 64 "SET" indicator light (SET)
- 65 "RES" indicator light (RES)
- 66 Neutral switch
- 67 Speed sensor
- 68 Thermo switch
- 69 Fuel sender unit
- 70 Carburetor heater ground
- 71 Carburetor heater #1
- 72 Carburetor heater #2
- 73 Carburetor heater #3
- 74 Carburetor heater #4
- 75 Tail/brake light
- 76 Headlight
- 77 Front turn signal/position light (left)
- 78 Front turn signal/position light (right)

MCU

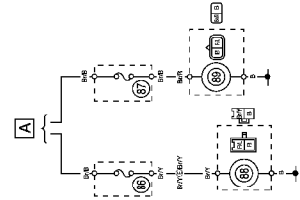
CUISE CONTROL UNIT

"CRUISE" SWITCH

- 79 Fuse (audio)
- 80 MCU
- 81 Speaker (front)
- 82 Speaker (front)
- 83 Speaker (rear)
- 84 Cord (remocon)
- 85 CB unit
- 86 Fuse (front DC outlet)
- 87 Fuse (rear DC outlet)
- 88 DC outlet (front)
- 89 DC outlet (rear)
- 90 Cruise control unit
- 91 Vacuum pump
- 92 Fuse (cruise control)
- 93 "CRUISE" switch
- 94 Cruise control relay



D.C. OUTLET



COLOR CODE

- B Black
- Br Brown
- Ch Chocolate
- Dg Dark green
- G Green
- Gy Gray
- L Blue
- Lg Light green
- O Orange

- P Pink
- R Red
- Sb Sky blue
- W White
- Y Yellow
- B/L Black/Blue
- B/R Black/Red
- B/W Black/White
- B/Y Black/Yellow

- Br/B Brown/Black
- Br/G Brown/Green
- Br/L Brown/Blue
- Br/R Brown/Red
- Br/W Brown/White
- Br/Y Brown/Yellow
- G/B Green/Black
- G/L Green/Blue
- G/R Green/Red

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