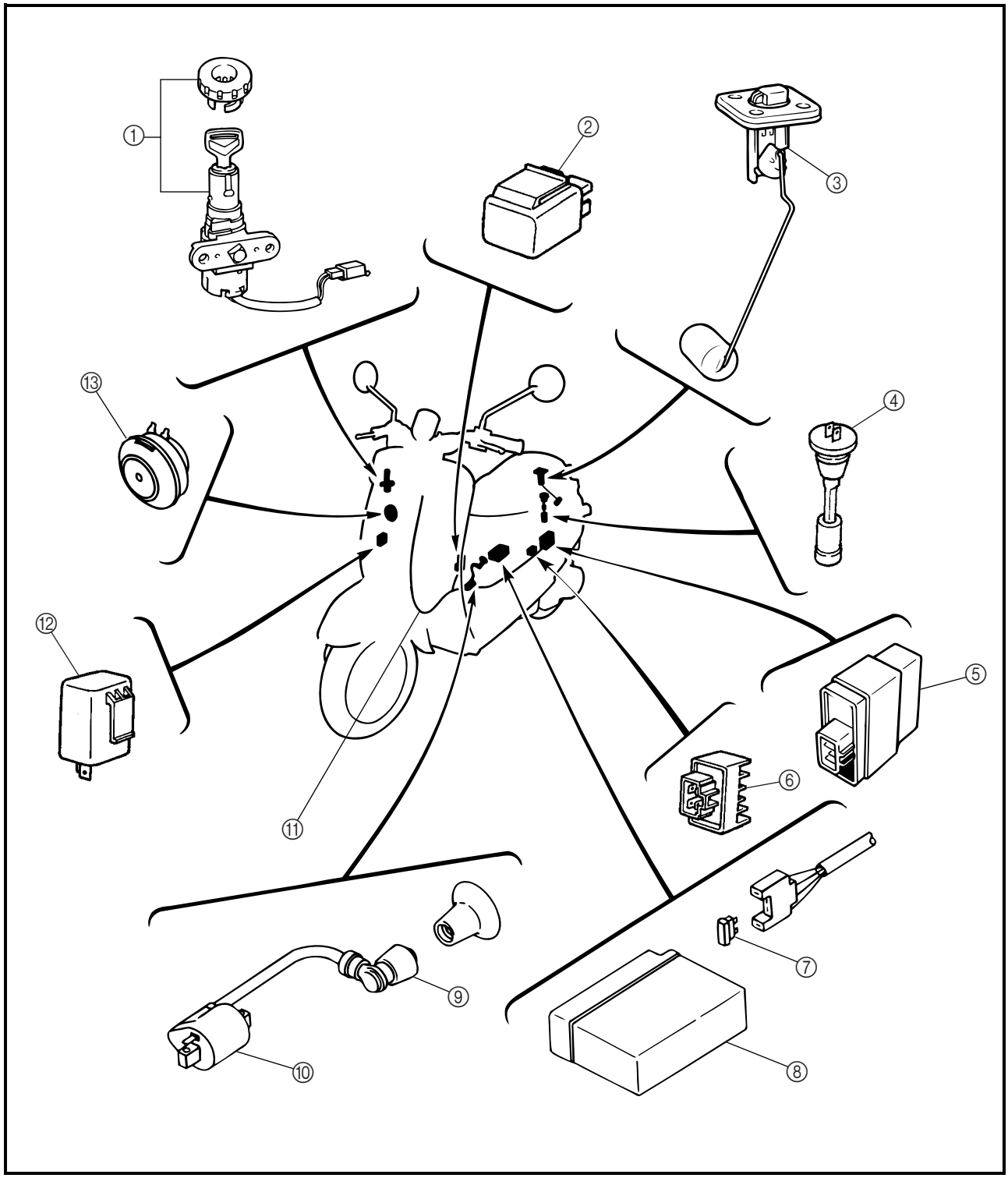
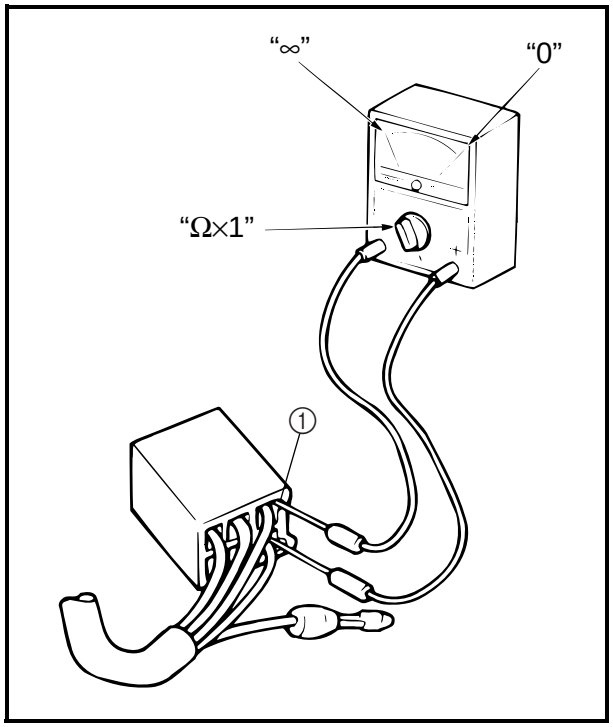
EAS00729

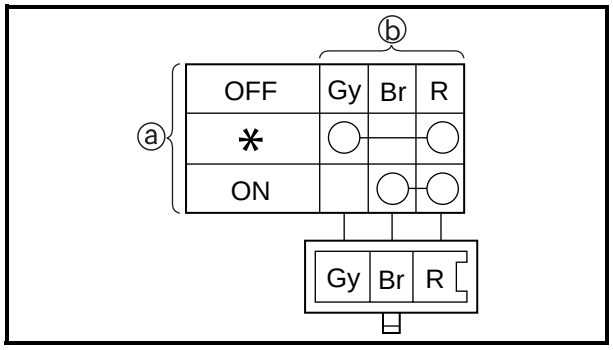
ELECTRICAL

ELECTRICAL COMPONENTS

① Main switch
② Starter relay
③ Fuel sender
④ Oil level switch
⑤ CDI unit
⑥ Rectifier/regulator
⑦ Main fuse
⑧ Battery
⑨ Spark plug cap
⑩ Ignition coil
⑪ Wire harness
⑫ Turn signal relay
⑬ Horn







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 **YU-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 ⓐ are shown in the far left column and the switch lead colors ⓑ 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).

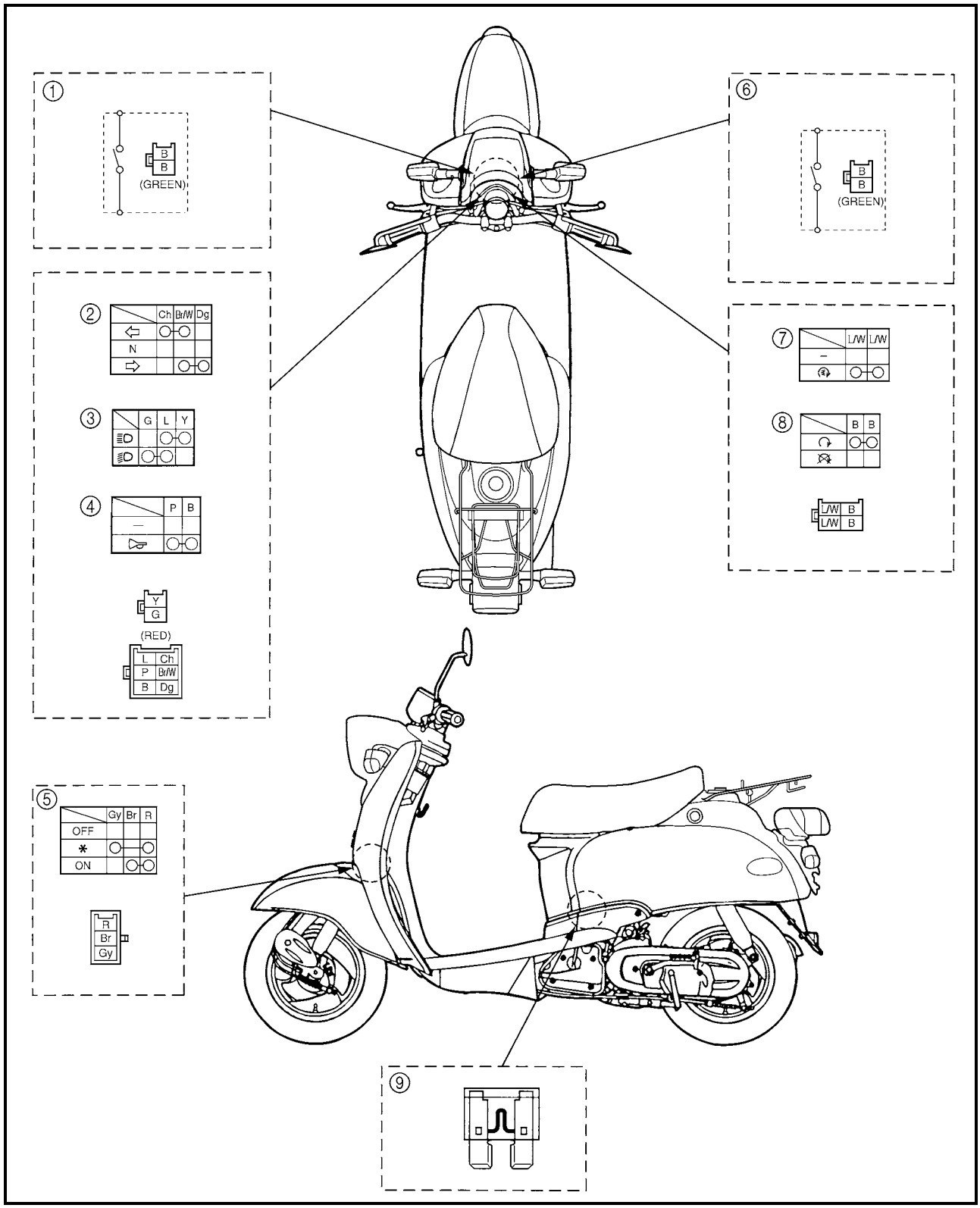
The example illustration on the left shows that:

There is continuity between red and brown when the switch is set to "ON".

EAS00731
CHECKING THE SWITCHES

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.
Improperly connected → Properly connect.
Incorrect continuity reading → Replace the switch.



① Front brake light switch
② Turn signal switch
③ Dimmer switch
④ Horn switch
⑤ Main switch
⑥ Rear brake light switch
⑦ Start switch
⑧ Engine stop switch
⑨ Main fuse

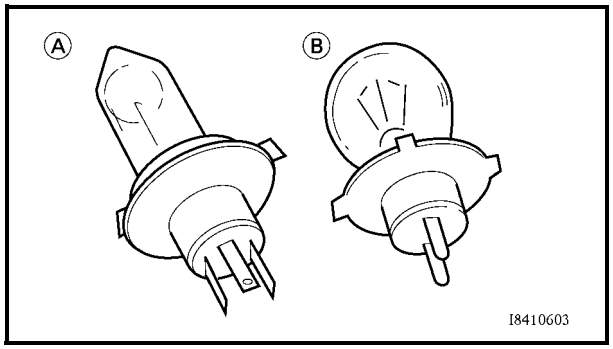
EAS00733
CHECKING THE BULBS AND BULB SOCKETS

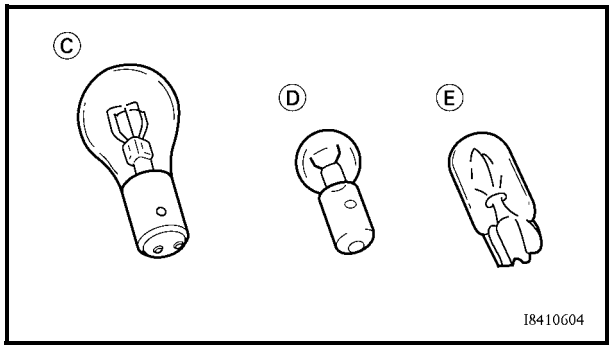
Check each bulb and bulb socket for damage or wear, proper connections, and also for continuity between the terminals.

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

Improperly connected → Properly connect.

No continuity → Repair or replace the bulb, bulb socket or both.





TYPES OF BULBS

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

- Bulbs Ⓐ and Ⓑ are used for the headlights and usually use a bulb holder that must be detached before removing the bulb. The majority of these types of bulbs can be removed from their respective socket by turning them counterclockwise.
- Bulbs Ⓒ are used for turn signal and tail/brake lights and can be removed from the socket by pushing and turning the bulb counterclockwise.
- Bulbs Ⓓ and Ⓔ 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

⚠ WARNING

Since the headlight bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

CAUTION:

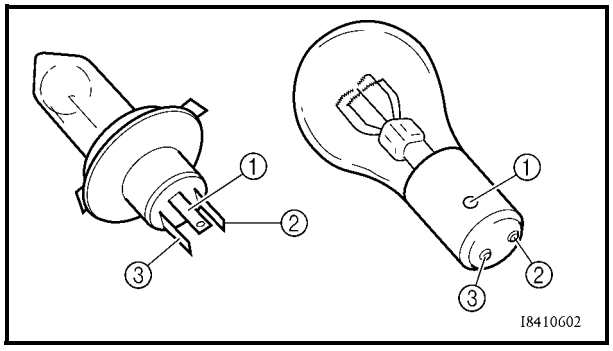
- **Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.**
- **Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb, and the luminous flux will be adversely affected. If the headlight bulb gets soiled, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.**

2. Check:
   - bulb (for continuity)
     (with the pocket tester)
     No continuity → Replace.

Pocket tester
YU-03112

NOTE:

Before checking for continuity, set the pocket tester to "0" and to the "Ω × 1" range.



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a. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ②, and check the continuity.
b. Connect the positive tester probe to terminal ① and the negative tester probe to terminal ③, and check the continuity.
c. If either of the readings indicate no continuity, replace the bulb.

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CHECKING THE CONDITION OF THE BULB SOCKETS

The following procedure applies to all of the bulb sockets.

1. Check:
   - bulb socket (for continuity)
     (with the pocket tester)
     No continuity → Replace.

Pocket tester
YU-03112

NOTE:

Check each bulb socket for continuity in the same manner as described in the bulb section; however, note the following.

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a. Install a good bulb into the bulb socket.
b. Connect the pocket tester probes to the respective leads of the bulb socket.
c. Check the bulb socket for continuity. If any of the readings indicate no continuity, replace the bulb socket.

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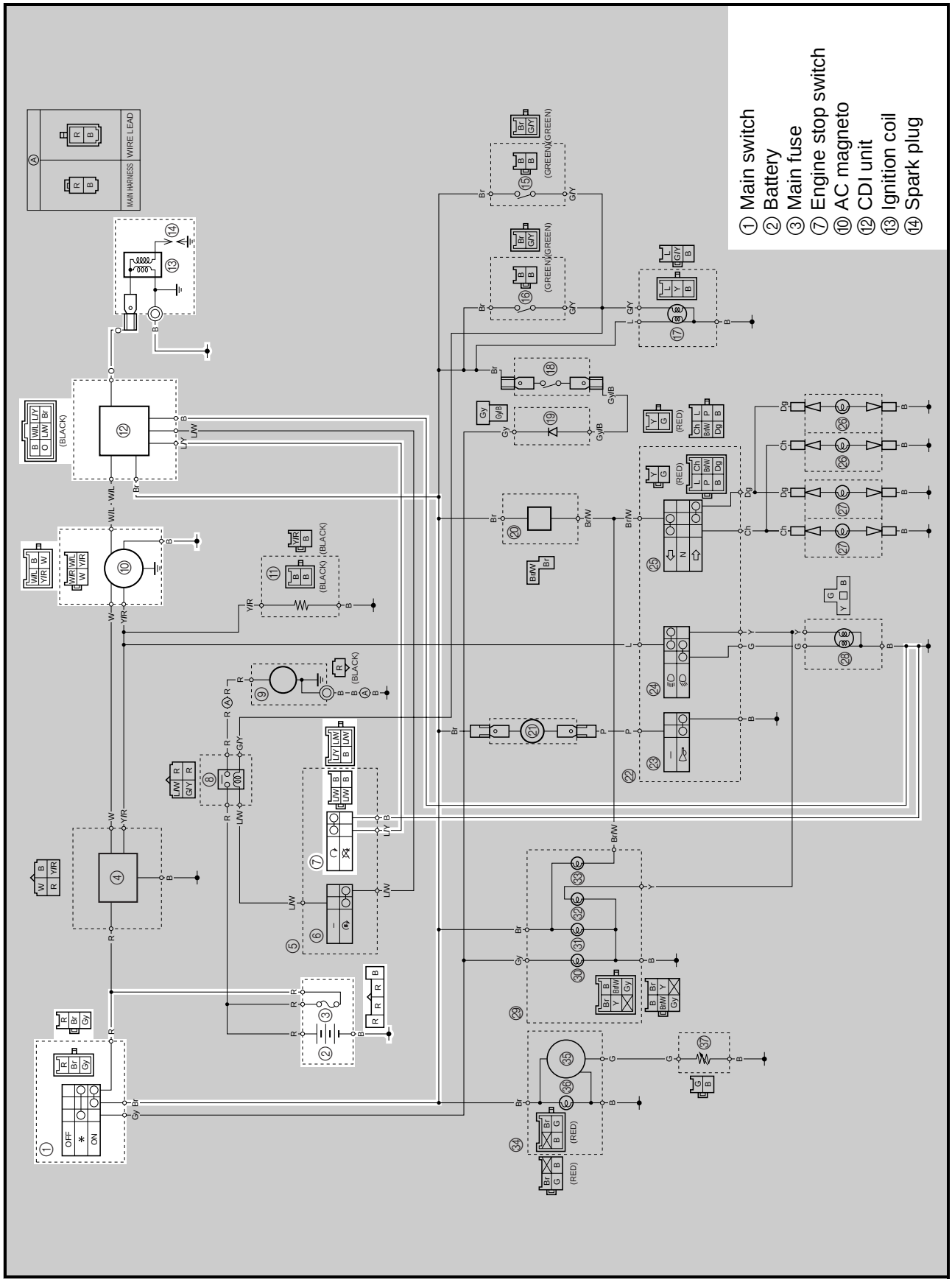
EAS00734
IGNITION SYSTEM
CIRCUIT DIAGRAM



EAS00736
TROUBLESHOOTING

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

Check:
1. main fuse
2. battery
3. spark plug
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. wiring (of the entire ignition system)

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

1) center cover
2) side cover (left)
3) side cover (right)
4) leg shield

- Troubleshoot with the following special tool(s).

Dynamic spark tester
YU-34487
Pocket tester
YU-03112

EAS00738

1. Main fuse

- Check the main fuse for continuity.
  Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?

YES → Replace the main fuse.

NO

EAS00739

2. Battery

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

Minimum 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.

EAS00740

3. Spark plug

- Check the condition of the spark plug.
- Check the spark plug type.
- Measure the spark plug gap.
  Refer to "CHECKING THE SPARK PLUG" in chapter 3.

Standard spark plug
BPR7HS (NGK)
Spark plug gap
0.6 ~ 0.7 mm (0.02 ~ 0.03 in)

- Is the spark plug in good condition, is it of the correct type, and is its gap within specification?

YES

NO
Re-gap or replace the spark plug.

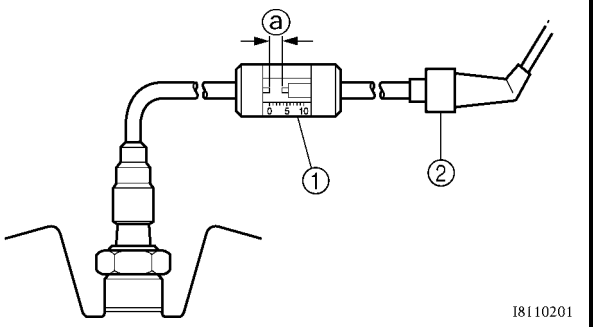
EAS00742

4. Ignition spark gap

- 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 ⓐ.
- Crank the engine by pushing the starter switch and gradually increase the spark gap until a misfire occurs.



Minimum ignition spark gap
6 mm (0.24 in)

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

NO

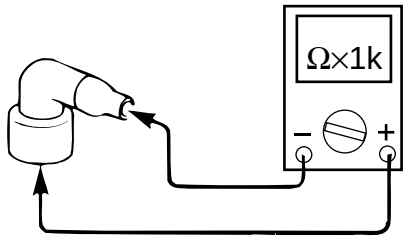
YES

The ignition system is OK.

EAS00744

5. Spark plug cap resistance

- Remove the spark plug cap from the spark plug lead.
- Connect the pocket tester ("Ω × 1k" range) to the spark plug cap as shown.
- Measure the spark plug cap resistance.



Spark plug cap resistance
5 kΩ at 20°C (68°F)

- Is the spark plug cap OK?

YES

NO

Replace the spark plug cap.

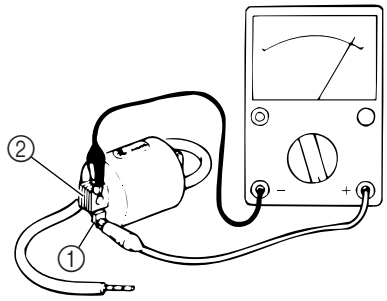
7

EAS00746

6. Ignition coil resistance

- Disconnect the ignition coil connectors from the ignition coil terminals.
- Connect the pocket tester (Ω × 1) to the ignition coil as shown.

Positive tester probe → orange ①
Negative tester probe → ignition coil base ②

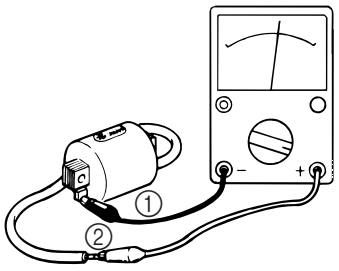


- Measure the primary coil resistance.

Primary coil resistance
0.18 ~ 0.28 Ω at 20 °C (68 °F)

- Connect the pocket tester (Ω × 1k) to the ignition coil as shown.

Negative tester probe → orange ①
Positive tester probe → spark plug lead ②



- Measure the secondary coil resistance.

Secondary coil resistance
6.32 ~ 9.48 kΩ at 20 °C (68 °F)

- Is the ignition coil OK?

YES → NO

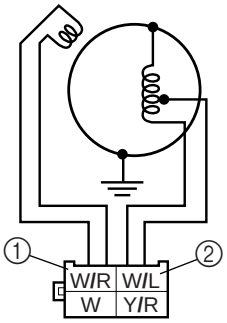
Replace the ignition coil.

EAS00748

7. Pickup coil resistance

- Disconnect the stator coil assembly coupler from the wire harness.
- Connect the pocket tester (Ω × 100) to the pickup coil terminal as shown.

Positive tester probe → white/red ①
Negative tester probe → white/blue ②



- Measure the pickup coil resistance.

Pickup coil resistance
248 ~ 372 Ω at 20 °C (68 °F)
(between white/red and white/blue)

- Is the pickup coil OK?

YES → NO

Replace the stator coil assembly.

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.

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.

EAS00754

10.Wiring

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

YES

NO

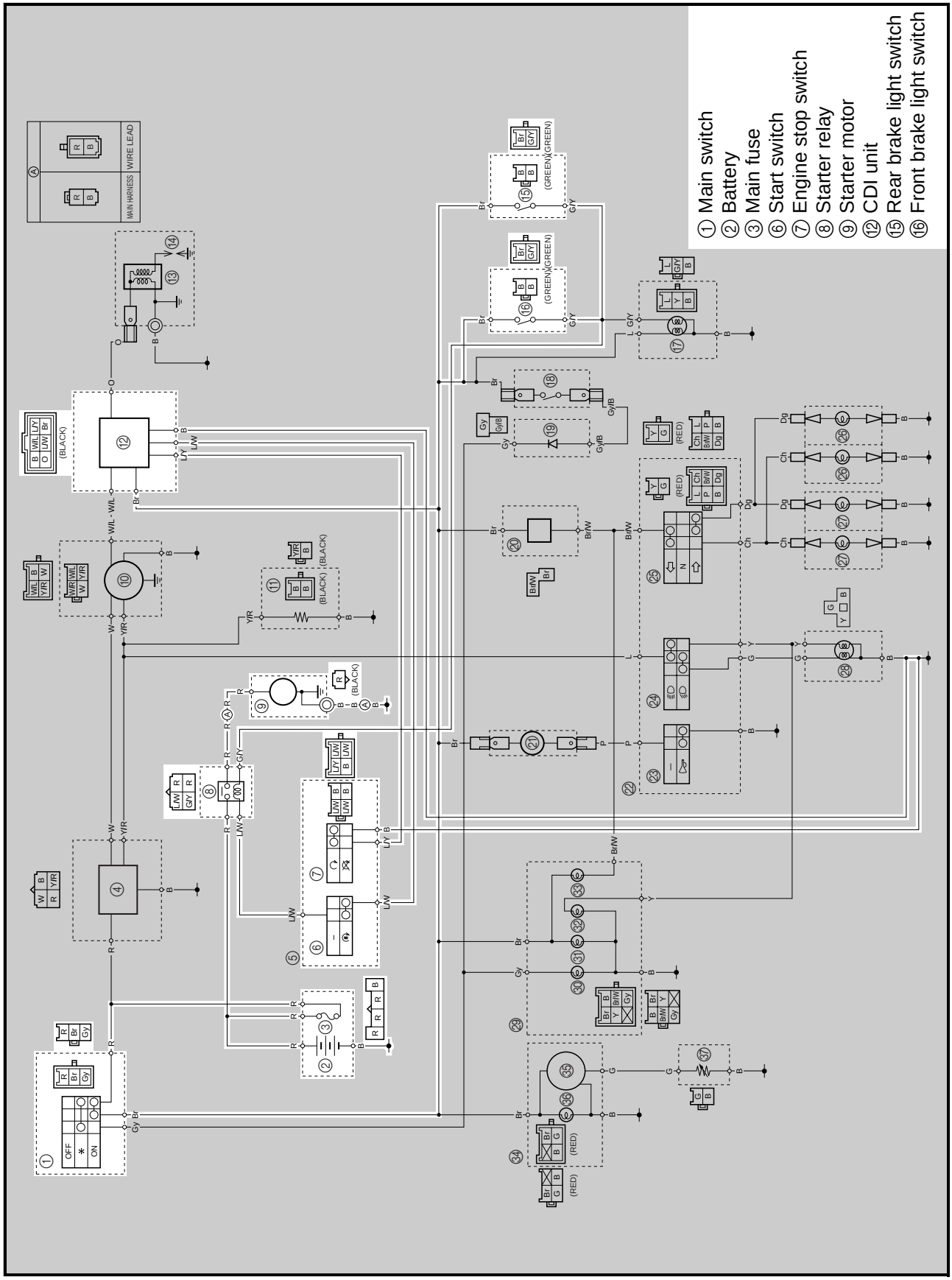
Replace the ignitor unit.

Properly connect or repair the ignition system’s wiring.

EAS00755

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM



EAS00757
TROUBLESHOOTING

The starter motor fails to turn.

Check:
1. main fuse
2. battery
3. starter motor
4. starter relay
5. main switch
6. engine stop switch
7. start switch
8. front brake light switch
9. rear brake light switch
10. wiring (of the entire starting system)

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

1) center cover
2) side cover (left)
3) side cover (right)
4) front panel
5) leg shield

- Troubleshoot with the following special tool(s).

Pocket tester
YU-03112

EAS00738
1. Main fuse

- Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?

YES

NO → Replace the main fuse.

EAS00739
2. Battery

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

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

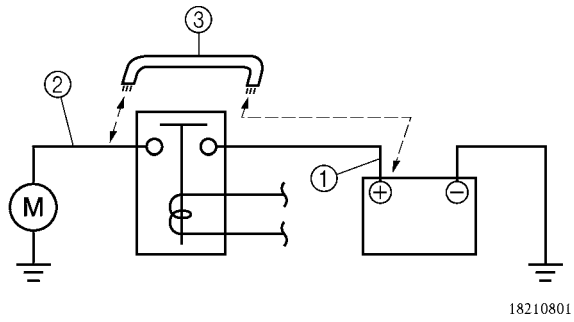
- Is the battery OK?

YES

NO →
- Clean the battery terminals.
- Recharge or replace the battery.

EAS00758
3. Starter motor

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



⚠ WARNING
- **A wire that is used as a jumper lead must have at least the same 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 nothing flammable is in the vicinity.**

- Does the starter motor turn?

YES

NO → Repair or replace the starter motor.

7

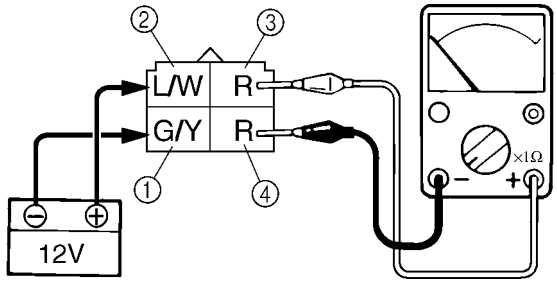
EAS00761

4. Starter relay

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

Negative battery terminal → green/yellow ①
Positive battery terminal → blue/white ②

Positive tester probe → red ③
Negative tester probe → red ④



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

YES → Replace the starter relay.
NO

EAS00749

5. Main switch

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

YES → Replace the main switch.
NO

EAS00750

6. 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.

EAS00764

7. 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.

8. Front brake light switch

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

YES
NO → Replace the front brake light switch.

9. Rear brake light switch

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

YES

NO

Replace the rear brake light switch.

EAS00766

10.Wiring

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

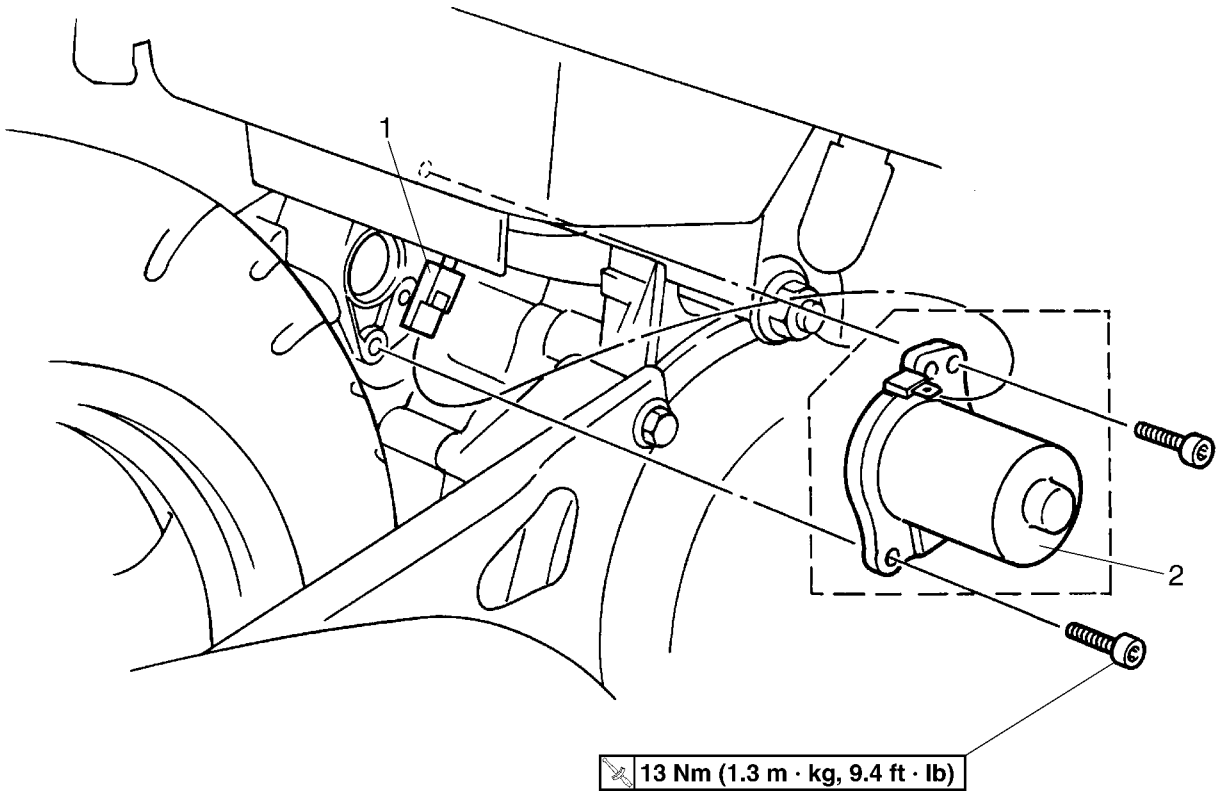
YES

NO

The starting system circuit is OK.

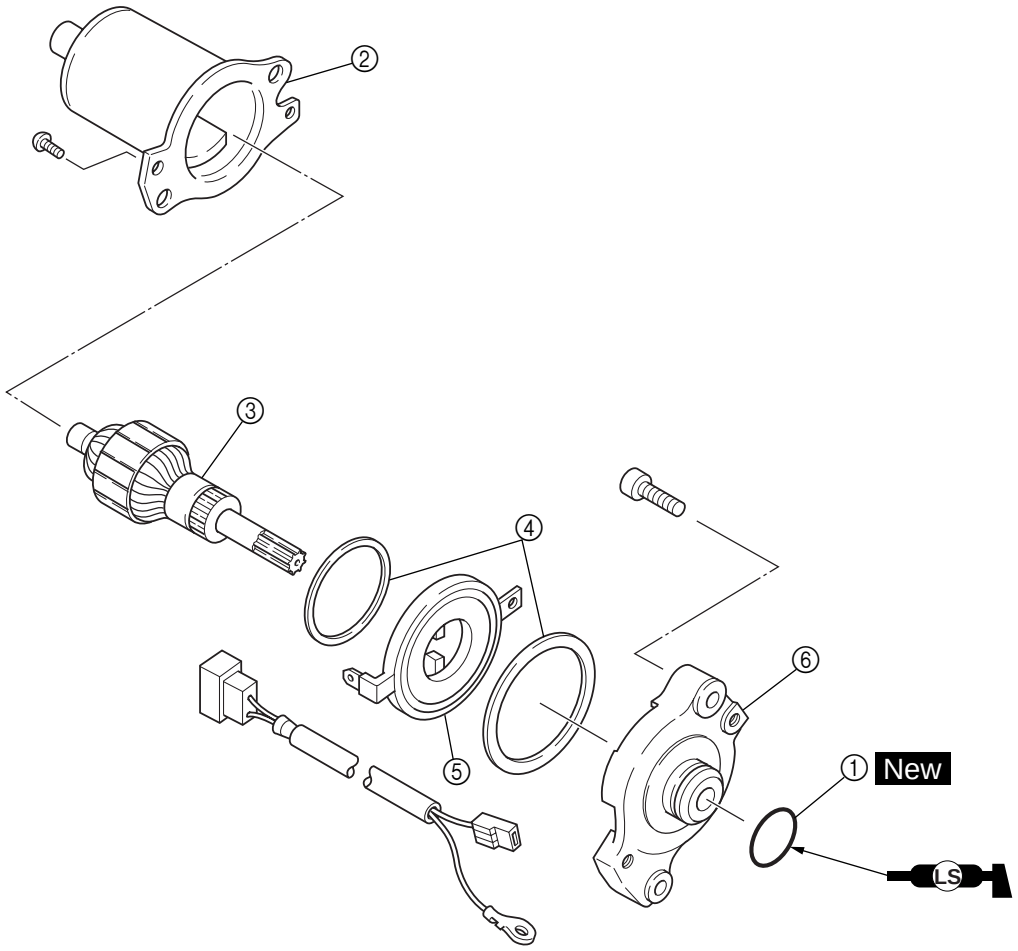
Properly connect or repair the starting system’s wiring.

EAS00767
STARTER MOTOR

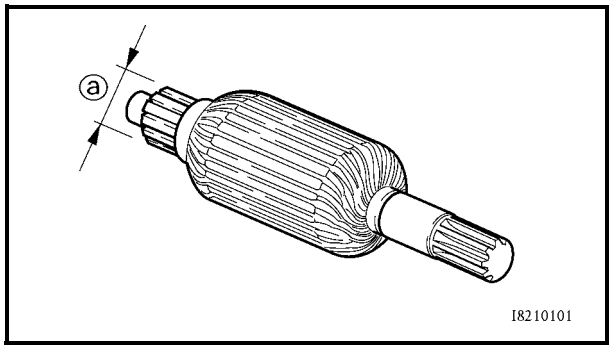


Order	Job/Part	Q'ty	Remarks
	Removing the starter motor		Remove the parts in the order listed.
	Air shroud		Refer to "CYLINDER HEAD, CYLINDER AND PISTON" in chapter 5.
1	Starter motor coupler	1	
2	Starter motor assembly	1	
			For installation, reverse the removal procedure.

EAS00768



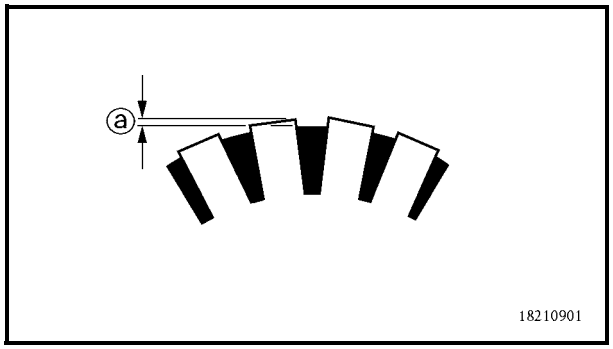
Order	Job/Part	Q'ty	Remarks
	Disassembling the starter motor		Remove the parts in the order listed.
①	O-ring	1	
②	Starter motor yoke	1	
③	Armature assembly	1	
④	Gasket	2	
⑤	Brush holder	1	
⑥	Starter motor cover	1	
			For assembly, reverse the disassembly procedure.



EAS00769
CHECKING THE STARTER MOTOR

1. Check:
   - commutator
     Dirt → Clean with 600-grit sandpaper.
2. Measure:
   - commutator diameter ⓐ
     Out of specification → Replace the starter motor.

Commutator wear limit
14.8 mm (0.58 in)



3. Measure:
   - mica undercut ⓐ
     Out of specification → Scrape the mica to the proper measurement with a hacksaw blade that has been grounded to fit the commutator.

Mica undercut
1.15 mm (0.05 in)

NOTE:
The mica must be undercut to ensure proper operation of the commutator.

4. Measure:
   - armature assembly resistances (commutator and insulation)
     Out of specification → Replace the starter motor.

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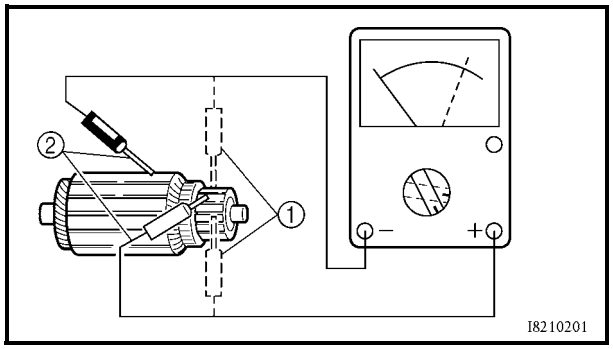
a. Measure the armature assembly resistances with the pocket tester.

Pocket tester
YU-03112



Armature coil
Commutator resistance ①
0.065 ~ 0.079 Ω at 20 °C (68 °F)
Insulation resistance ②
Above 1 MΩ at 20 °C (68 °F)

b. If any resistance is out of specification, replace the starter motor.

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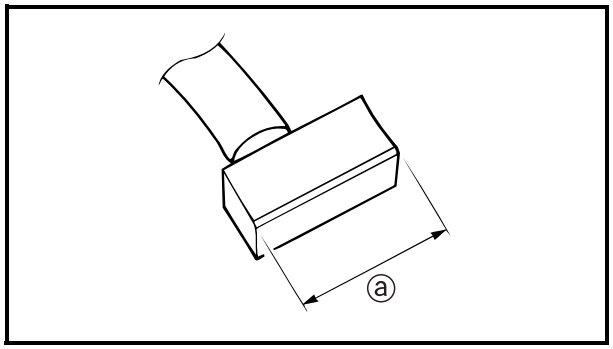


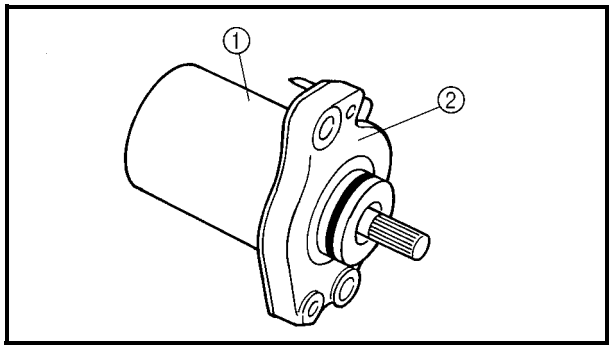
5. Measure:
• brush length ⓐ
Out of specification → Replace the brushes as a set.

Brush length wear limit
0.9 mm (0.04 in)

6. Measure:
• brush spring force
Out of specification → Replace the brush springs as a set.

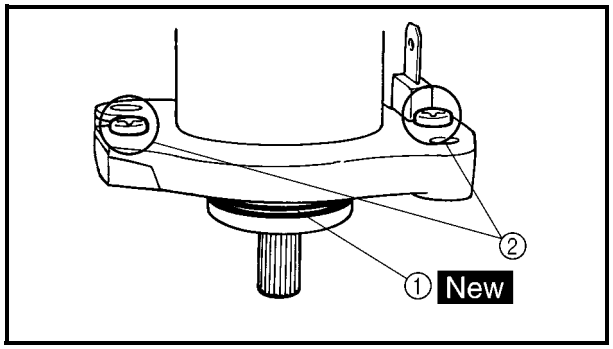
Brush spring force
2.32 ~ 3.48 N
(236.5 ~ 355.0 gf, 8.35 ~ 12.53 oz)

7. Check:
• gear teeth
Damage/wear → Replace the gear.



EAS00772
ASSEMBLING THE STARTER MOTOR

1. Install:
• starter motor yoke ①
• starter motor cover ②

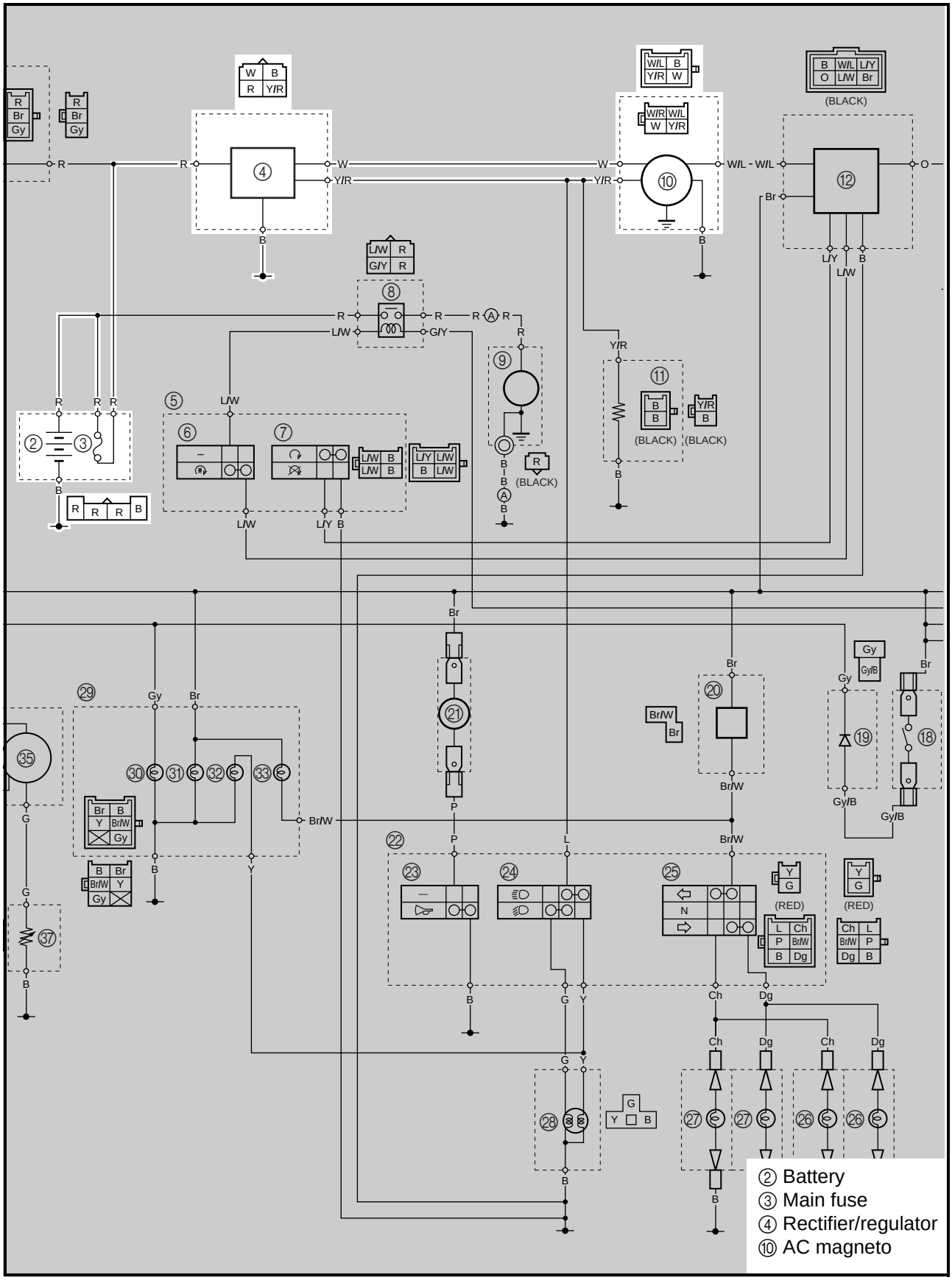


3. Install:
• O-ring ① New
• screws ② **2.5 Nm (0.25 m · kg, 1.7 ft · lb)**

EAS00773

CHARGING SYSTEM

CIRCUIT DIAGRAM



EAS00774
TROUBLESHOOTING

The battery is not being charged.

Check:
1. main fuse
2. battery
3. charging voltage
4. wiring (of the entire charging system)

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

1) center cover
2) side cover (left)
3) side cover (right)

- Troubleshoot with the following special tool(s).

Inductive tachometer
YU-8036-A
Pocket tester
YU-03112

EAS00738
1. Main fuse

- Check the main fuse for continuity. Refer to "CHECKING THE FUSE" in chapter 3.
- Is the main fuse OK?

YES ⇩ NO ⇩

Replace the main fuse.

EAS00739
2. Battery

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

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

- Is the battery OK?

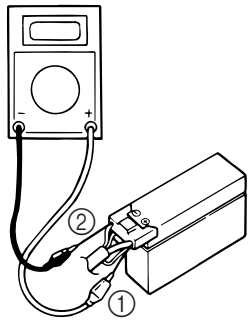
YES ⇩ NO ⇩

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

EAS00775
3. Charging voltage

- Connect the inductive tachometer to the spark plug lead.
- Connect the pocket tester (DC 20 V) to the battery as shown.

Positive tester probe →
positive battery terminal ①
Negative tester probe →
negative battery terminal ②



- 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

7

NOTE:
Make sure the battery is fully charged.

- Is the charging voltage within specification?

NO → The charging circuit is OK.

YES →

EAS00779

4. 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?

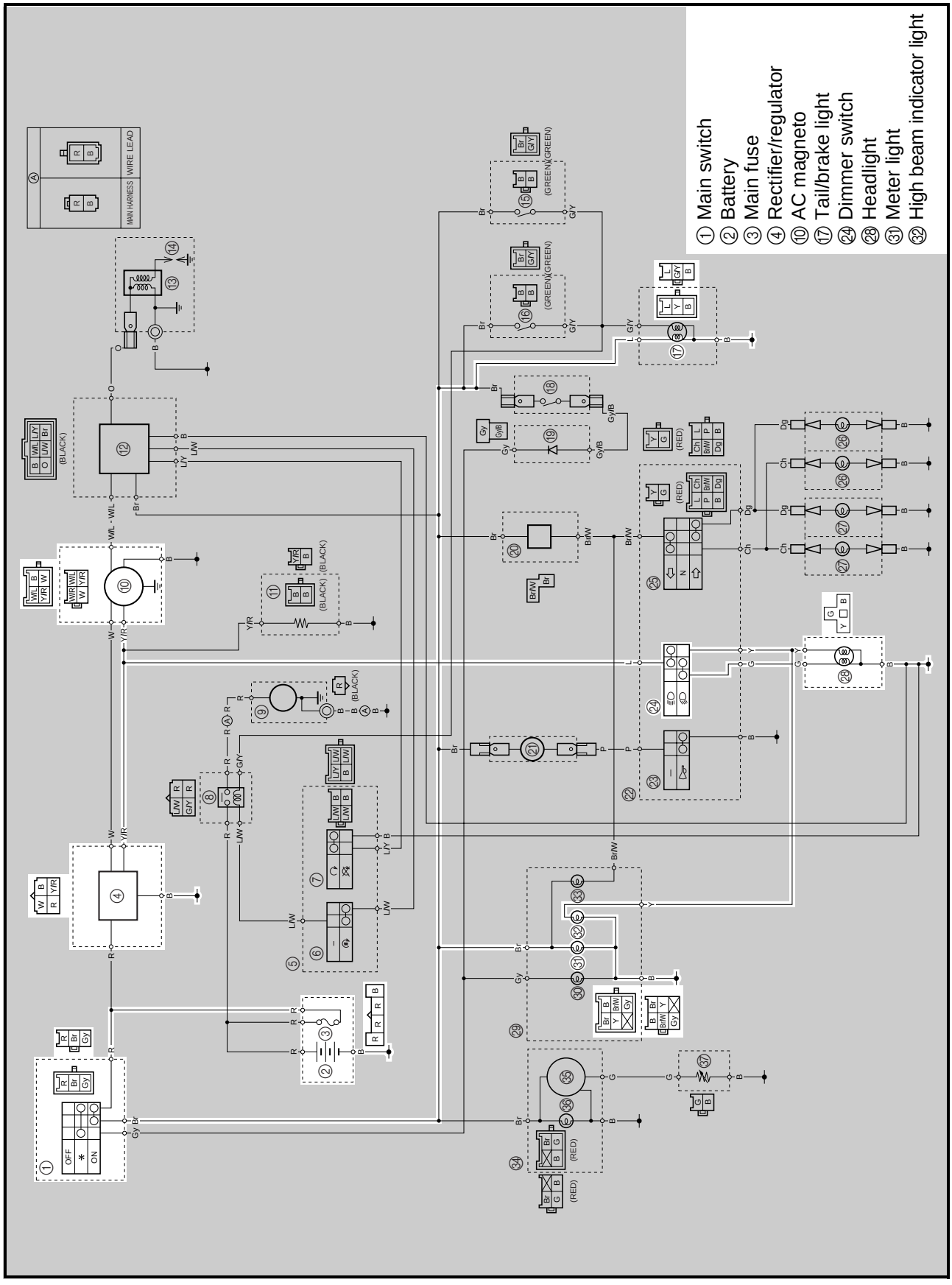
YES → Replace the rectifier/regulator.

NO → Properly connect or repair the charging system’s wiring.

EAS00780

LIGHTING SYSTEM

CIRCUIT DIAGRAM



EAS00782
TROUBLESHOOTING

Any of the following fail to light: Headlight, high beam indicator light, taillight, auxiliary light, and meter light.

Check:
1. main fuse
2. battery
3. main switch
4. dimmer switch
5. wiring (of the entire charging system)

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

1) center cover
2) side cover (left)
3) side cover (right)
4) tail cover
5) headlight cover
6) front panel

- Troubleshoot with the following special tool(s).

Pocket tester
YU-03112

EAS00738
1. Main fuse

- Check the main fuse for continuity. Refer to “CHECKING THE FUSE” in chapter 3.
- Is the main fuse OK?

YES ⇩

NO ⇩

Replace the main fuse.

EAS00739
2. Battery

- Check the condition of the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3.

Minimum 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.

EAS00785
4. Dimmer switch

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

YES ⇩

NO ⇩

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

EAS00787

5. Wiring

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

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

NO → Properly connect or repair the lighting system's wiring.

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 →

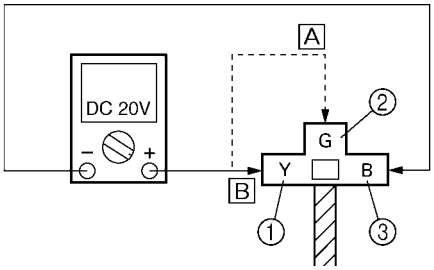
NO → Replace the headlight bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) 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 ".

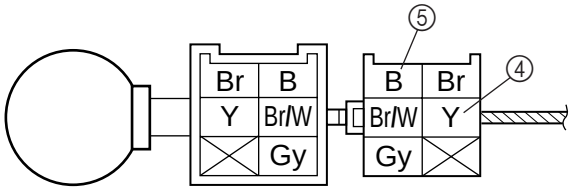
Headlight coupler (wire harness side)



Positive tester probe → yellow ①
Negative tester probe → black ③

Headlight
Positive tester probe → yellow ① or green ②
Negative tester probe → black ③
High beam indicator light
Positive tester probe → yellow ④
Negative tester probe → black ⑤

Meter light assembly coupler (wire harness side)



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

YES →

NO → This circuit is OK.

7

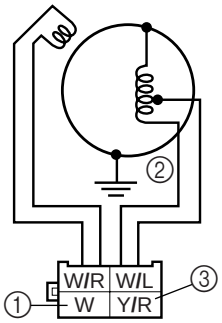
EAS00776

4. Source coil resistance

- Disconnect the stator coil assembly coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the source coils as shown.

Positive tester probe → white ①
Negative tester probe → ground ②

Positive tester probe → yellow/red ③
Negative tester probe → ground ②



- Measure the source coil resistances.

Stator coil resistance (W-B)
0.29 ~ 0.43 Ω at 20°C (68°F)

- Is the stator coil OK?

YES → The wiring circuit from the main switch to the headlight coupler is faulty and must be repaired.

NO → Replace the rectifier/regulator.

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

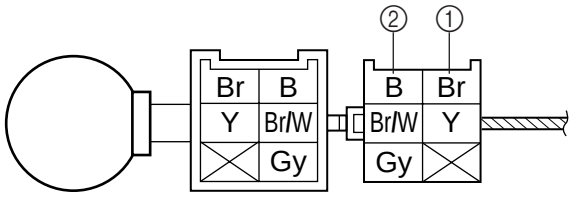
NO → Replace the meter light bulb, socket or both.

2. Voltage

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

Positive tester probe → brown ①
Negative tester probe → black ②

Meter light assembly coupler



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

YES → This circuit is OK.

NO → The wiring circuit from the main switch to the meter light coupler 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?

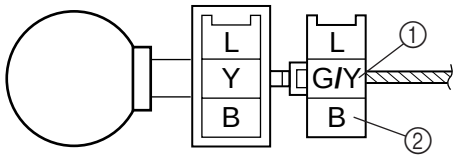
YES

NO → Replace the tail/brake light bulb, socket or both.

2. Voltage

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

Positive tester probe → **blue** ①
Negative tester probe → **black** ②



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

YES

This circuit is OK.

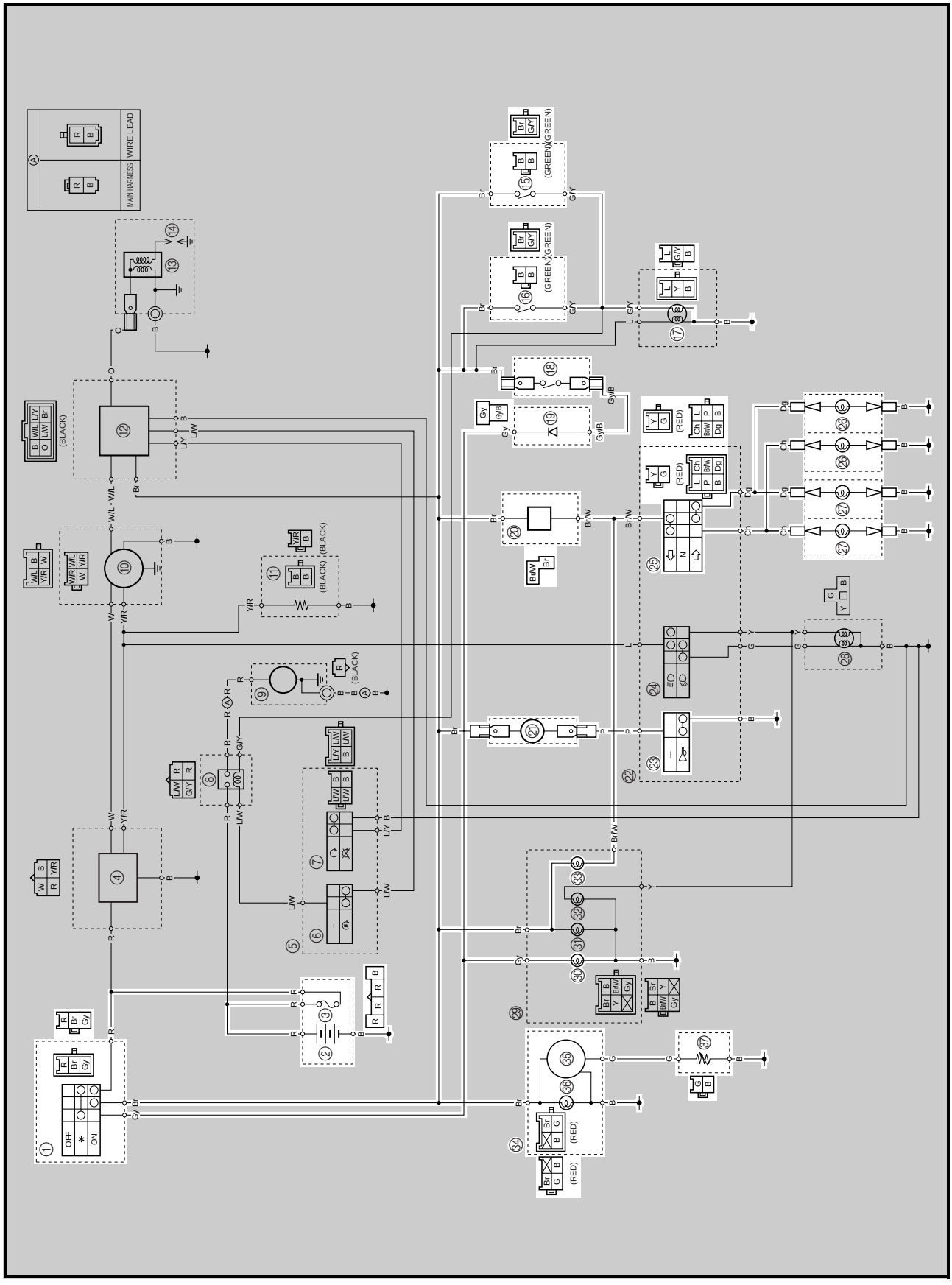
NO

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

EAS00793

SIGNALING SYSTEM

CIRCUIT DIAGRAM



① Main switch
② Battery
③ Main fuse
⑮ Rear brake light switch
⑯ Front brake light switch
⑰ Tail/brake light
⑱ Oil level gauge
⑲ Diode
⑳ Turn signal relay
㉑ Horn
㉓ Horn switch
㉕ Turn signal switch
㉖ Rear turn signal light
㉗ Front turn signal light
㉚ Oil level warning light
㉝ Turn signal indicator light
㉞ Fuel gauge assembly
㉟ Fuel level gauge
㊱ Fuel level indicator light
㊲ Fuel sender

EAS00794
TROUBLESHOOTING

- **Any of the following fail to light: Flasher light, brake light or an indicator light.**
- **The horn fails to sound.**

Check:
1. main fuse
2. battery
3. main switch
4. wiring (of the entire signaling system)

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

1) center cover
2) side cover (left)
3) side cover (right)
4) tail cover
5) headlight cover
6) front panel

- Troubleshoot with the following special tool(s).

Pocket tester
YU-03112

EAS00738
1. Main fuse

- Check the main fuse for continuity.
- Refer to “CHECKING THE FUSE” in chapter 3.
- Is the main fuse OK?

YES

NO → Replace the main fuse.

EAS00739
2. Battery

- Check the condition of the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3.

Minimum 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 → Check the condition of each of the signaling system’s circuits. Refer to “CHECKING THE SIGNALING SYSTEM”.

NO → Properly connect or repair the signaling system’s wiring.

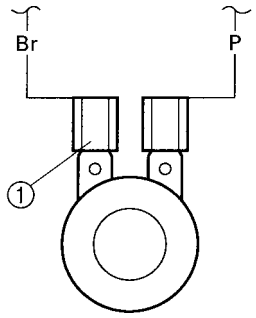
EAS00796
CHECKING THE SIGNALING SYSTEM

1. The horn fails to sound.

1. Horn switch
• Check the horn switch for continuity. Refer to “CHECKING THE SWITCHES”. • Is the horn switch OK?

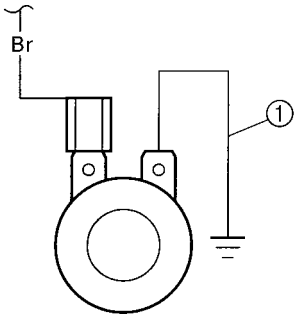
YES

NO → Replace the left handlebar switch.

2. Voltage
• Connect the pocket tester (DC 20 V) to the horn connector at the horn terminal as shown.
Positive tester probe → brown ① **Negative tester probe → ground**

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

YES

NO → The wiring circuit from the main switch to the horn connector is faulty and must be repaired.

3. Horn
• Disconnect the pink 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”. • Push the horn switch. • Does the horn sound?


NO

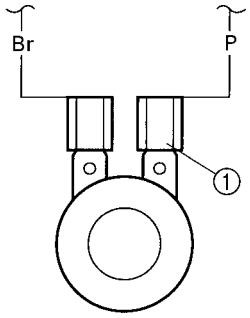
YES → The horn is OK.

7

4. Voltage

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

Positive tester probe → pink ①
Negative tester 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 → Repair or replace the horn.

NO → Replace the horn.

EAS00798
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 light switches

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

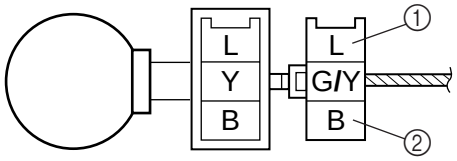
YES

NO → Replace the brake light switch.

3. Voltage

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

Positive tester probe → green/yellow ①
Negative tester probe → black ②



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

YES → This circuit is OK.

NO → The wiring circuit from the main switch to the tail/brake light coupler 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.
  Refer to “CHECKING THE SWITCHES”.
- Are the turn signal light bulb and socket OK?

YES

NO → Replace the turn signal light bulb, socket or both.

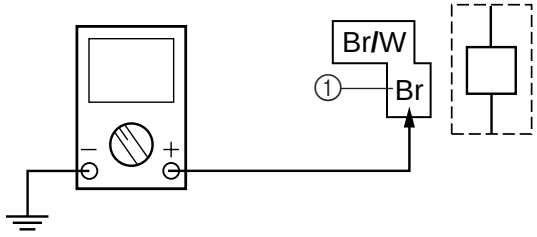
2. Turn signal switch
- Check the turn signal switch for continuity.
  Refer to “CHECKING THE SWITCHES”.
- Is the turn signal switch OK?

YES

NO → Replace the left handlebar switch.

3. Voltage
- Connect the pocket tester (DC 20 V) to the turn signal relay coupler (wire harness side) as shown.

Positive tester probe → brown ①
Negative tester probe → ground



- Set the main switch to “ON”.
- Measure the voltage (12 V) on brown ① at the turn signal relay coupler (wire harness side).
- Is the voltage within specification?

YES

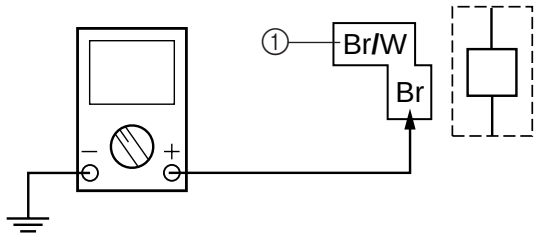
NO → The wiring circuit from the main switch to the turn signal relay coupler is faulty and must be repaired.

7

4. Voltage

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

Positive tester probe → brown/white ①
Negative tester probe → ground



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

YES

NO

The turn signal relay is faulty and must be replaced.

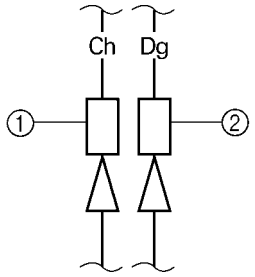
5. Voltage

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

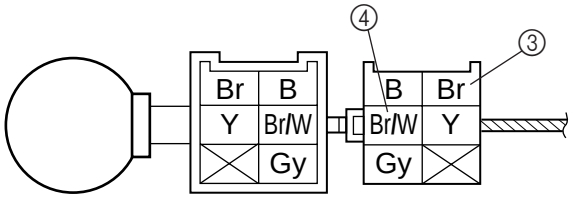
A Turn signal light
Left turn signal light
Positive tester probe → chocolate ①
Negative tester probe → ground
Right turn signal light
Positive tester probe → dark green ②
Negative tester probe → ground

B Turn signal indicator light
Positive tester probe → brown ③
Negative tester probe → brown/white ④

A



B



- Set the main switch to "ON".
- Set the turn signal switch to " ⇦ " or " ⇨ ".
- Measure the voltage (12 V) of the chocolate ① or dark green ② at 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 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.
  Refer to "CHECKING THE SWITCHES".
- Are the oil level warning light bulb and socket OK?

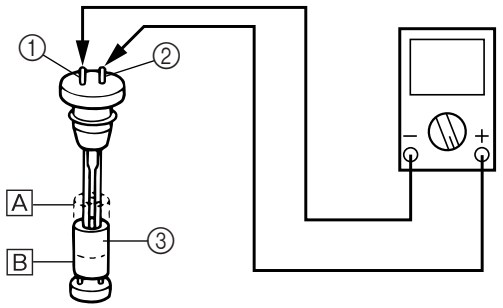
YES

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

2. Oil level switch

- Remove the oil level switch from the oil tank.
- Connect the pocket tester ($\Omega \times 1$) to the oil level switch.

Positive tester probe → **terminal** ①
Negative tester probe → **terminal** ②



- Check the oil level switch for continuity.
- Hold the oil level switch in an upright position [A] and let the float ③ go all the way down [B].
- Is the oil level switch OK?

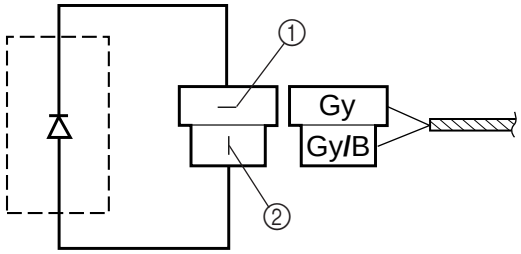
YES

NO → Replace the oil level switch.

3. Diode

- Remove the diode from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the diode terminals as shown.
- Check the diode for continuity as follows.

Tester positive probe → **gray** ① **Tester negative probe** → **gray/black** ②	**Continuity**
Tester positive probe → **gray/black** ① **Tester negative probe** → **gray** ②	**No 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

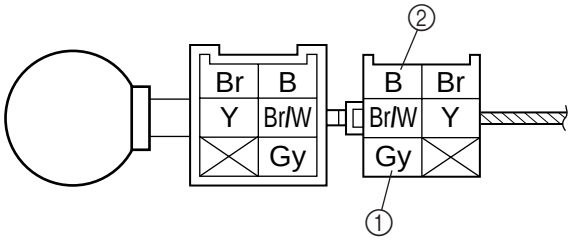
NO → Replace the diode.

7

4. Voltage

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

Positive tester probe → gray ①
Negative tester probe → black ②



- Set the main switch to "ON".
- Measure the voltage (12 V) of gray ① and black ② at the meter assembly coupler.
- Is the voltage within specification?

YES

This circuit is OK.

NO

The wiring circuit from the main switch to the meter light coupler 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 the fuel level indicator light bulb and socket for continuity.
- Are the fuel level indicator light bulb and socket OK?

YES

NO

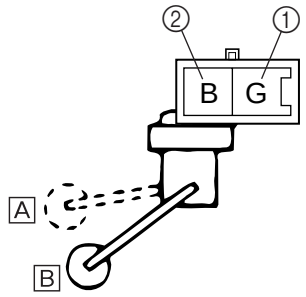
Replace the fuel level indicator light bulb, socket or both.

EAS00804

2. Fuel sender

- Remove the fuel sender from the fuel tank.
- Connect the pocket tester to the fuel sender coupler (fuel sender side) as shown.

Positive tester probe → green ①
Negative tester probe → black ②



Fuel sender resistance (up position) A
(Ω × 1)
4 ~ 10 Ω at 20 °C (68 °F)
Fuel sender resistance (down position) B
(Ω × 10)
90 ~ 100 Ω at 20 °C (68 °F)

- Is the fuel sender OK?

YES

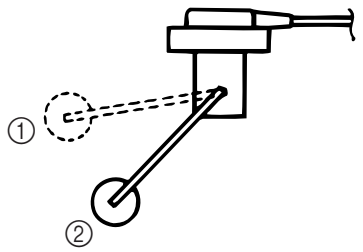
NO

Replace the fuel sender.

3. Fuel level gauge

- Set the main switch to “ON”.
- Move the float up ① or down ②.
- Check that the fuel level gauge needle moves to “F” or “E”.

NOTE:
Before reading the fuel level meter, leave the float in one position (either up or down) for at least three minutes.



- Does the fuel level gauge needle move appropriately?

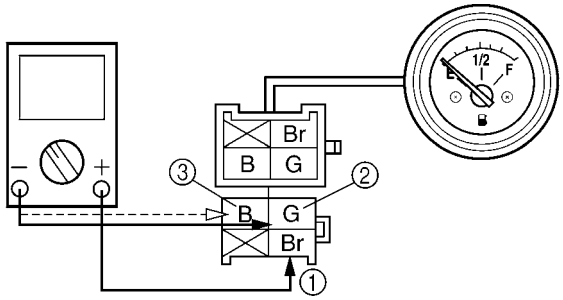
YES

NO → Replace the fuel level gauge.

4. Voltage

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

Fuel level gauge
Positive tester probe → brown ①
Negative tester probe → green ②
Fuel level indicator light
Positive tester probe → brown ①
Negative tester probe → black ③



- Set the main switch to “ON”.
- Measure the voltage (12 V) of brown ① on the fuel level gauge coupler (wire harness side).
- Is the voltage within specification?

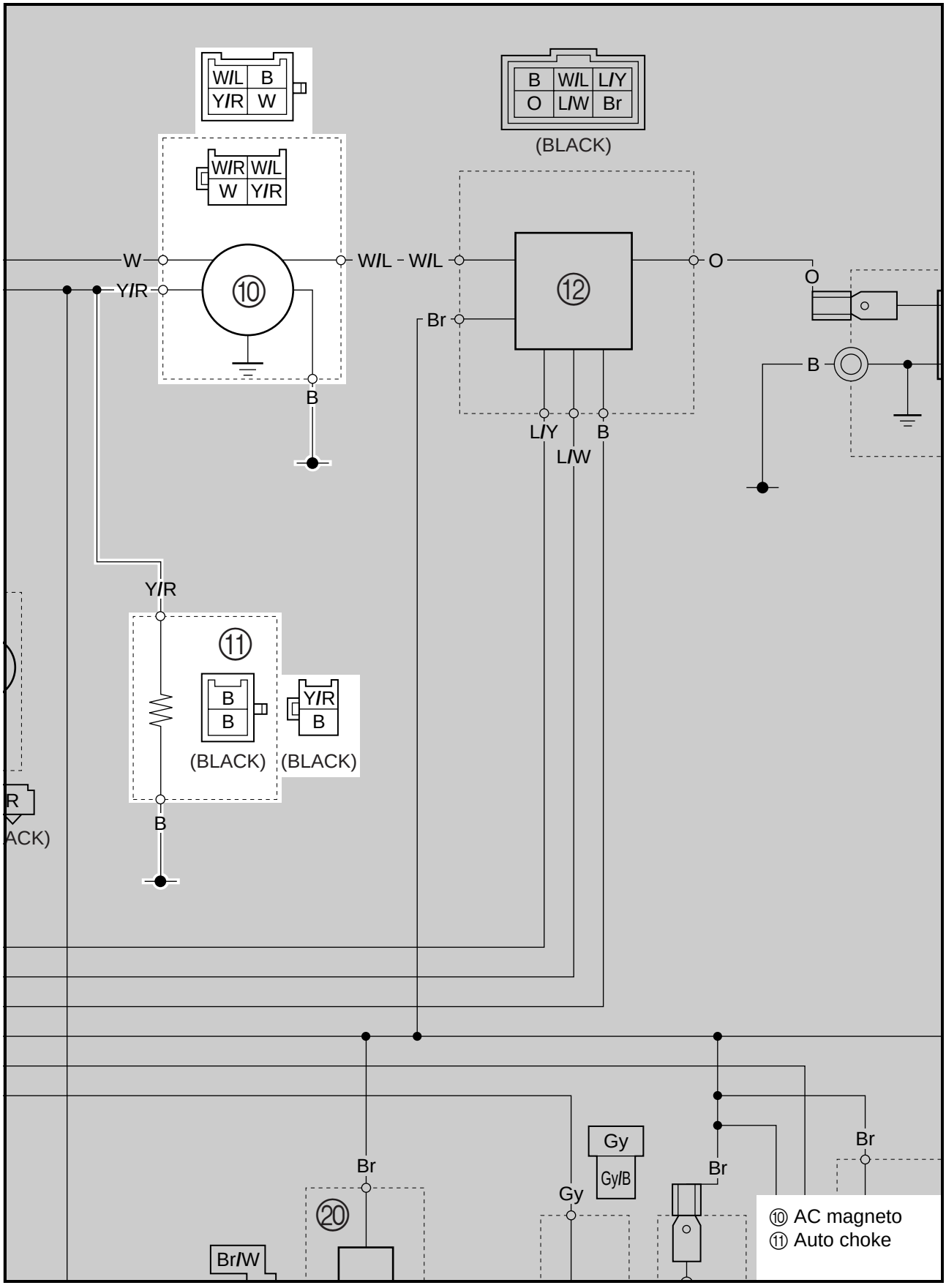
YES → This circuit is OK.

NO → Check the wiring connections of the entire signaling system.

7

AUTO CHOKE SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

The auto choke fails to operate

Check:
1. auto choke resistance
2. lighting coil resistance
3. voltage

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

1) center cover

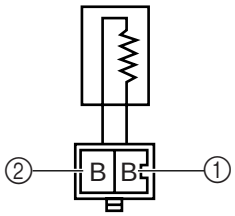
- Troubleshoot with the following special tool(s).

Pocket tester
YU-03112

1. Auto choke resistance

- Disconnect the auto choke coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the auto choke coupler as shown.

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



Auto choke resistance
8 ~ 12 Ω at 20 °C (68 °F)

- Is the auto choke unit OK?

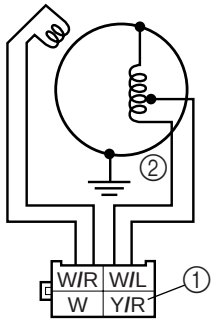
YES

NO → Replace the auto choke.

2. Source coil resistance

- Disconnect the stator coil assembly coupler from wire harness.
- Connect the pocket tester (Ω × 1) to the source coil lead.

Tester positive probe → yellow/red ①
Tester negative probe → ground ②



Source coil resistance
0.18 ~ 0.28 Ω at 20 °C (68 °F)

YES

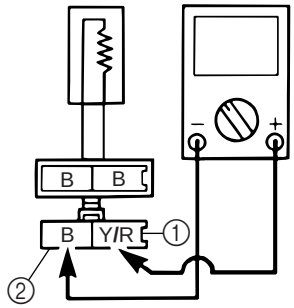
NO → Replace the stator coil assembly.

7

3. Voltage

- Connect the pocket tester (AC 20 V) to the auto choke lead.

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



- Set the main switch to “ON”.
- Start the engine and accelerate to about 3,000 r/min
- Check the voltage.

Voltage
12.8 V or more at 20 °C (68 °F)

YES

This auto choke is OK.

NO

Check the entire auto choke unit for connection.
Refer to the “CIRCUIT DIAGRAM”.

EAS00845

TROUBLESHOOTING

NOTE:

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 FAILURE/HARD STARTING

ENGINE

Cylinder and cylinder head
- Loose spark plug
- Loose cylinder head or cylinder
- Damaged cylinder head gasket
- Damaged cylinder gasket
- Worn or damaged cylinder

Piston 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 tank cap breather hole
- Deteriorated or contaminated fuel
- Clogged or damaged fuel hose

Carburetor
- 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 adjusted pilot air screw
- Improperly installed pilot jet
- Clogged starter jet
- Clogged emulsion tube

Autochoke unit
- Faulty starter plunger
- Faulty ignitor unit

ELECTRICAL SYSTEMS

Battery
- Improperly charged battery
- Faulty battery

Fuse
- Blown, damaged or incorrect fuse
- Improperly installed fuse

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

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 front, rear or both brake switches
- Faulty start switch
- Improperly grounded circuit
- Loose connections

Starting system
- Faulty starter motor
- Faulty starter relay
- Faulty starter clutch

EAS00847

INCORRECT ENGINE IDLING SPEED

ENGINE

Air filter

- Clogged air filter element

FUEL SYSTEM

Carburetor

- Faulty starter plunger
- Loose or clogged pilot jet
- Loose or clogged pilot air jet
- Damaged or loose carburetor joint
- Improperly adjusted engine idling speed (throttle stop screw)
- Improper throttle cable free play
- Flooded carburetor

Autochoke unit

- Faulty starter plunger
- Faulty ignitor unit

ELECTRICAL SYSTEMS

Battery

- Discharged battery
- Faulty battery

Spark plug

- 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

- Faulty spark plug lead

Ignition system

- Faulty ignitor unit
- Faulty pickup coil

EAS00848

POOR MEDIUM-AND-HIGH-SPEED PERFORMANCE

Refer to “STARTING FAILURE/HEAD STARTING”.

ENGINE

Air filter

- Clogged air filter element

FUEL SYSTEM

Carburetor

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

EAS00853

FAULTY CLUTCH

ENGINE OPERATES BUT SCOOTER WILL NOT MOVE

V-belt

- Bent, damaged or worn V-belt
- Slipping V-belt

Primary pulley cam and primary pulley slider

- Damaged or worn primary pulley cam
- Damaged or worn primary pulley slider

Transmission gear(s)

- Damaged transmission gear

CLUTCH SLIPS

Clutch shoe spring(s)

- Damaged, loose or worn clutch shoe spring(s)

Clutch shoe(s)

- Damaged or worn clutch shoe(s)

Primary sliding sheave

- Seized primary sliding sheave

POOR STARTING PERFORMANCE

V-belt

- Slipping V-belt
- Oil or grease on the V-belt

Primary sliding sheave

- Faulty operation
- Worn pin groove
- Worn pin

Clutch shoe(s)

- Bent, damaged or worn clutch shoe(s)

POOR ACCELERATION PERFORMANCE

V-belt

- Oil or grease on the V-belt

Primary pulley weight(s)

- Faulty operation
- Worn primary pulley weight(s)

Primary fixed sheave

- Worn primary fixed sheave

Primary sliding sheave

- Worn primary sliding sheave

Secondary fixed sheave

- Worn secondary fixed sheave

Secondary sliding sheave

- Worn secondary sliding sheave

EAS00854
OVERHEATING

ENGINE

Cylinder head and piston
- Heavy carbon buildup

Engine oil and transmission oil
- Incorrect oil level
- Incorrect oil viscosity
- Inferior oil quality

FUEL SYSTEM

Carburetor
- Incorrect main jet setting
- Incorrect fuel level
- Damaged or loose carburetor joint

Air filter
- Clogged air filter element

CHASSIS

Brake(s)
- Dragging brake

ELECTRICAL SYSTEMS

Spark plug
- Incorrect spark plug gap
- Incorrect spark plug heat range

Ignition system
- Faulty ignitor unit

EAS00858
POOR BRAKING PERFORMANCE

- Worn brake shoe lining
- Worn or rusty brake drum
- Incorrect brake lever position
- Incorrect brake lever free play
- Incorrect brake camshaft lever position
- Incorrect brake shoe position
- Damaged or fatigued brake shoe spring
- Oil or grease on the brake shoe
- Oil or grease on the brake drum
- Broken brake torque rod

EAS00862
UNSTABLE HANDLING

Handlebar
- Bent or improperly installed handlebar

Steering head components
- Improperly installed lower handlebar holder
- Improperly installed fork (improperly tightened ring nut)
- Bent steering stem
- Damaged ball bearing or bearing race

Front shock absorber assembly (-ies)
- Faulty front shock absorber spring(s)
- Leaking oil

Rear shock absorber assembly
- Faulty rear shock absorber spring
- Leaking oil

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

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 LIGHTING OR SIGNALING SYSTEM

HEADLIGHT DOES NOT LIGHT

- Wrong headlight bulb
- Too many electrical accessories
- Hard charging
- Incorrect connection
- Improperly grounded circuit
- Poor contacts (main switch)
- Burnt-out headlight bulb

HEADLIGHT BULB BURNT OUT

- Wrong headlight bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded circuit
- Faulty main switch
- Headlight bulb life expired

TAIL/BRAKE LIGHT DOES NOT LIGHT

- Wrong tail/brake light bulb
- Too many electrical accessories
- Incorrect connection
- Burnt-out tail/brake light bulb

TAIL/BRAKE LIGHT BULB BURNT OUT

- Wrong tail/brake light bulb
- Faulty battery
- Tail/brake light bulb life expired

TURN SIGNAL DOES NOT LIGHT

- Faulty turn signal switch
- Faulty turn signal relay
- Burnt-out turn signal bulb
- Incorrect connection
- Damaged or faulty wire harness
- Improperly grounded circuit
- Faulty battery
- Blown, damaged or incorrect fuse

TURN SIGNAL BLINKS SLOWLY

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

TURN SIGNAL REMAINS LIT

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

TURN SIGNAL BLINKS QUICKLY

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

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

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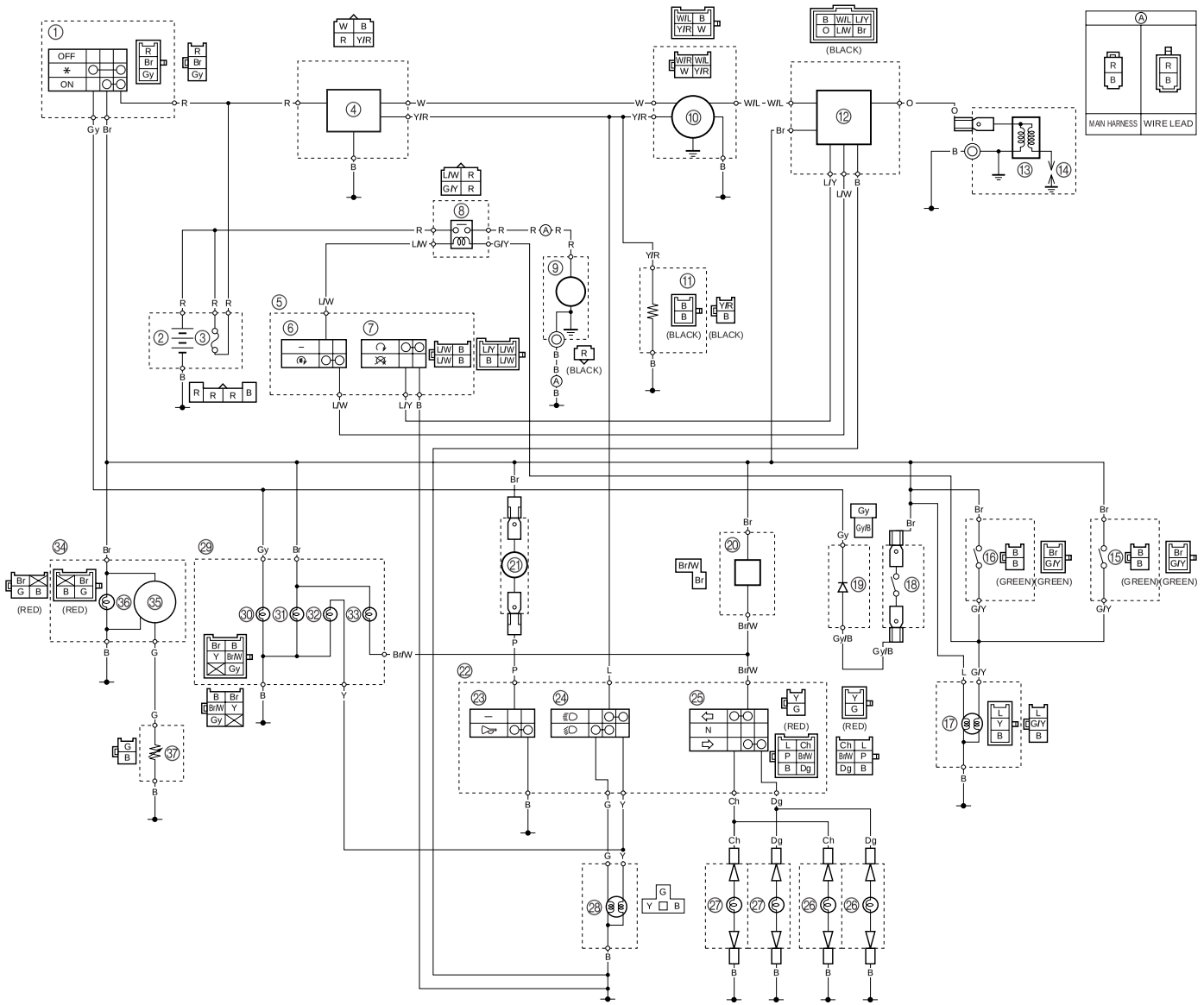
YJ50RN WIRING DIAGRAM



① Main switch
② Battery
③ Main fuse
④ Rectifier/regulator
⑤ Right handlebar switch
⑥ Start switch
⑦ Engine stop switch
⑧ Starter relay
⑨ Starter motor
⑩ AC magneto
⑪ Auto choke
⑫ CDI unit
⑬ Ignition coil
⑭ Spark plug
⑮ Rear brake light switch
⑯ Front brake light switch
⑰ Tail/brake light
⑱ Oil level gauge
⑲ Diode
⑳ Turn signal relay
㉑ Horn
㉒ Left handlebar switch
㉓ Horn switch
㉔ Dimmer switch
㉕ Turn signal switch
㉖ Rear turn signal light
㉗ Front turn signal light
㉘ Headlight
㉙ Meter assembly
㉚ Oil level warning light
㉛ Meter light
㉜ High beam indicator light
㉝ Turn signal indicator light
㉞ Fuel gauge assembly
㉟ Fuel level gauge
㊱ Fuel level indicator light
㊲ Fuel sender

COLOR CODE

B .....black	Gy.....gray	W .....white	L/W ..... blue/white
Br .....brown	L .....blue	Y .....yellow	L/Y ..... blue/yellow
Ch .....chocolate	O .....orange	Br/W.....brown/white	W/L ..... white/blue
Dg .....dark green	P.....pink	G/Y .....green/yellow	W/R ..... white/red
G.....green	R.....red	Gy/B.....gray/black	Y/R ..... yellow/red