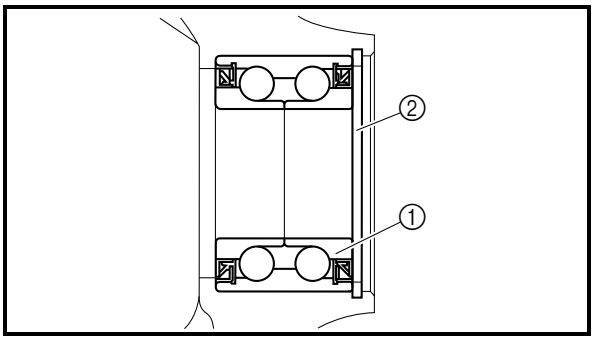

EBS01024
CHECKING THE REAR KNUCKLES

1. Check:
   - rear knuckle
     Damage/pitting → Replace.
2. Check:
   - rear wheel bearing ①
     Bearing allow play in the wheel hub or the wheel turns roughly → Replace.

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a. Clean the outside of the rear knuckle.
b. Remove the circlip ②.
c. Drive out the bearing.

⚠ WARNING

Eye protection is recommended when using striking tools.

d. Apply lithium-soap-based grease to the outer side of the bearing.
e. Install the new bearing.

CAUTION:

Do not strike the center race or balls of the bearing. Should be made only with the outer race.

f. Install the new circlip.

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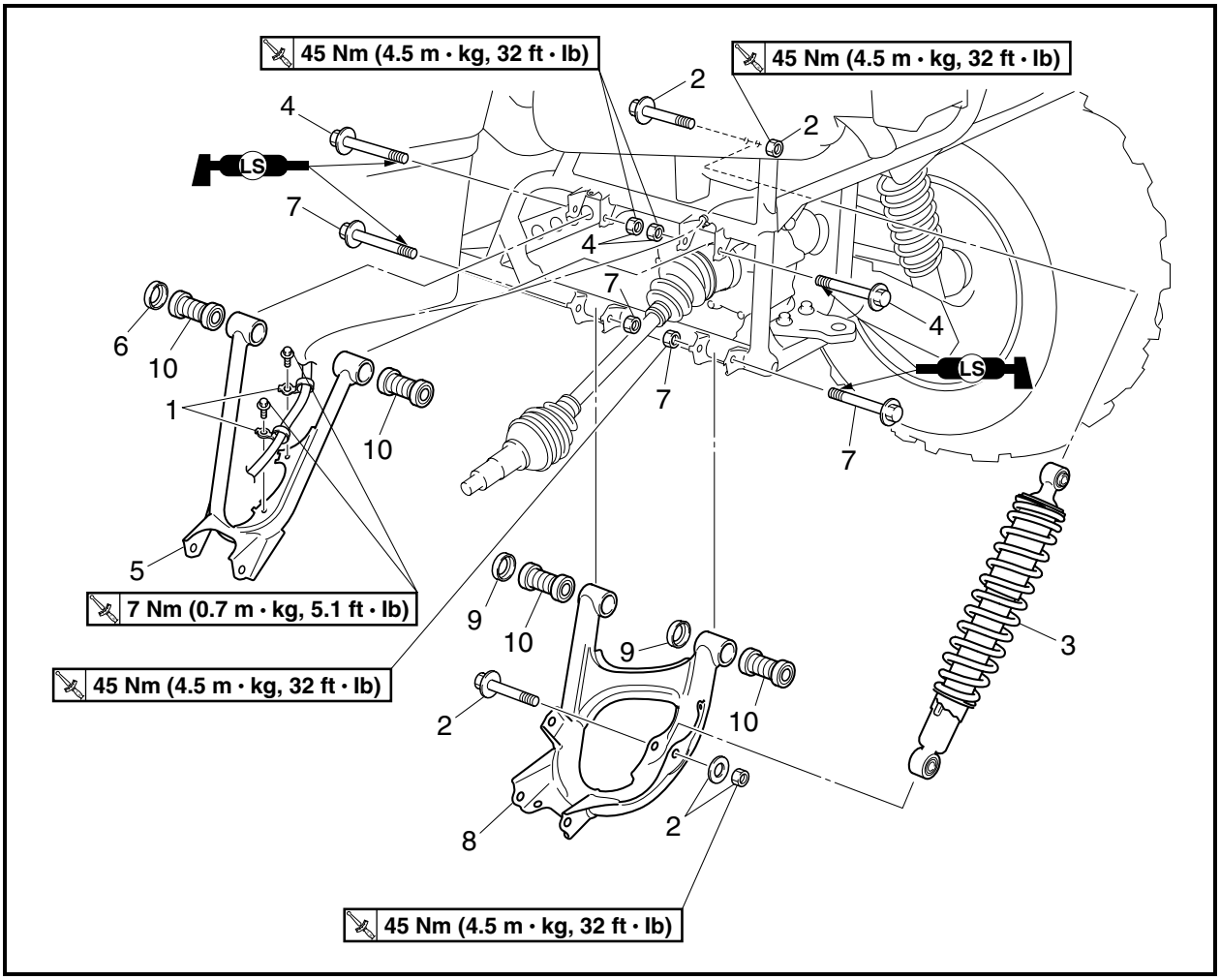
EBS01025
CHECKING THE STABILIZER

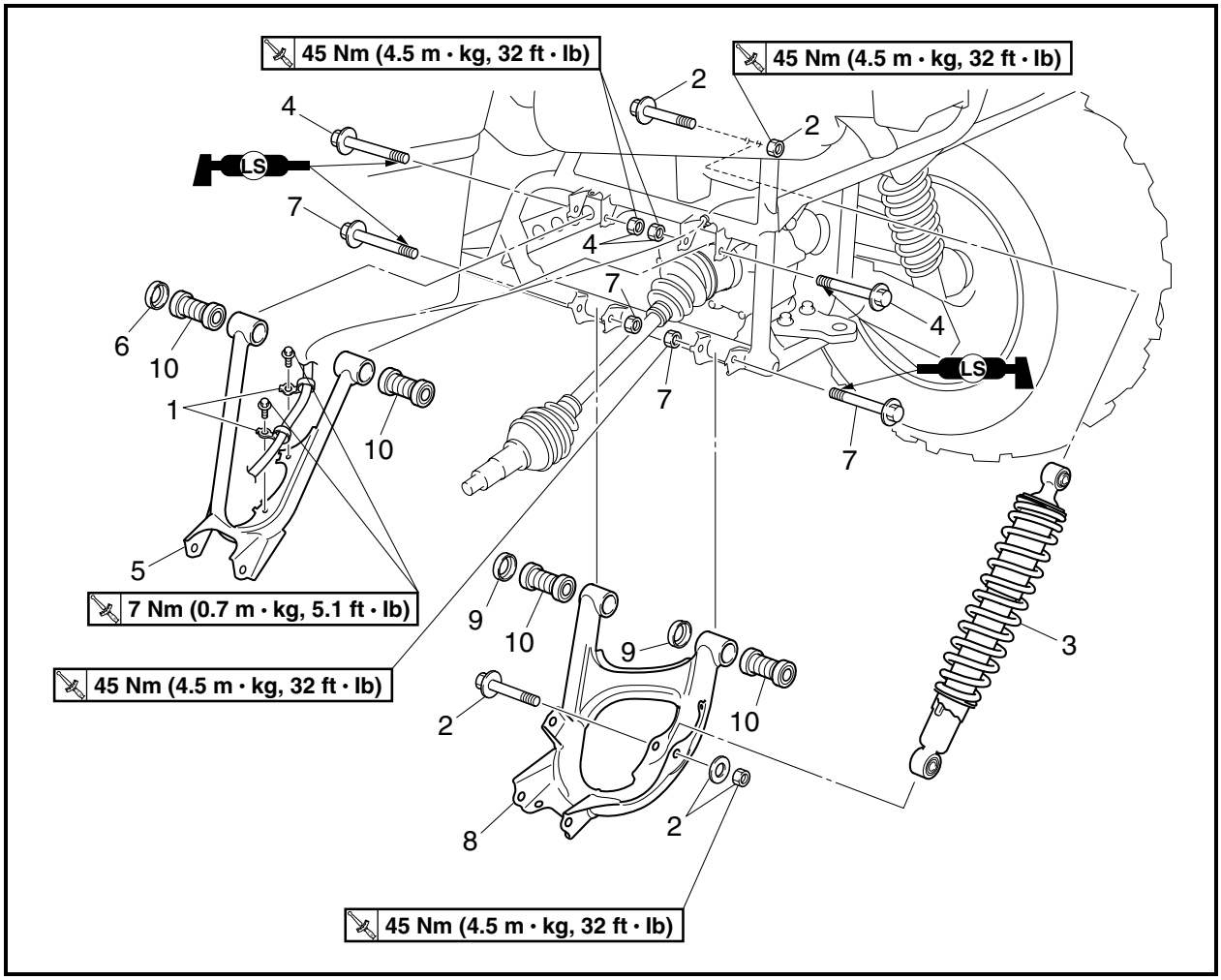
1. Check:
   - stabilizer
     Bends/cracks/damage → Replace.

EBS00476

REAR ARMS AND REAR SHOCK ABSORBER ASSEMBLIES



Order	Job/Part	Q'ty	Remarks
	Removing the rear arms and rear shock absorber assemblies		Remove the parts in the order listed. The following procedure applies to both of the rear arms and rear shock absorber assemblies.
	Rear knuckle/stabilizer		Refer to "REAR KNUCKLES AND STABILIZER".
1	Rear brake hose guide	2	
2	Nut/washer/bolt	2/1/2	Refer to "INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBER ASSEMBLIES".
3	Rear shock absorber assembly	1	
4	Nut/bolt	2/2	
5	Rear upper arm	1	
6	Dust cover	1	
7	Nut/bolt	2/2	
8	Rear lower arm	1	
9	Dust cover	2	



Order	Job/Part	Q'ty	Remarks
10	Bushing	4	Refer to "INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBER ASSEMBLIES". For installation, reverse the removal procedure.

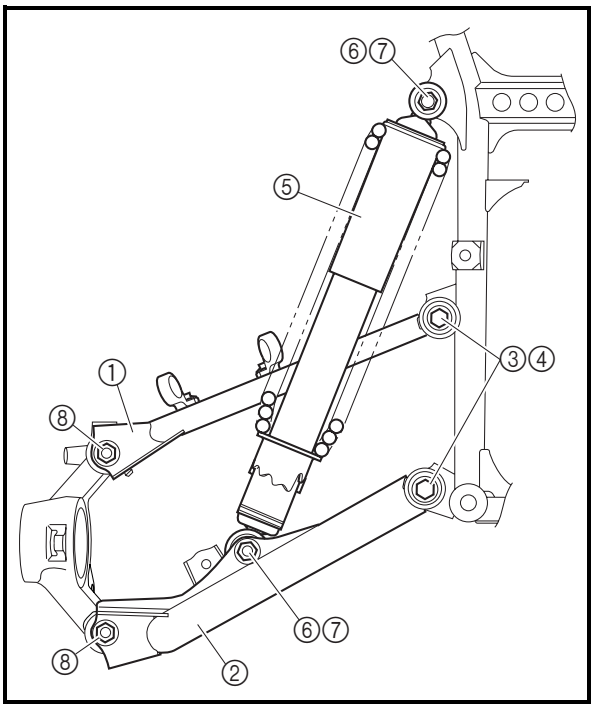
CHECKING THE REAR ARMS

1. Check:
   - rear arms
     Bends/damage → Replace.
2. Check:
   - bushings
     Wear/damage → Replace.

EBS00478

CHECKING THE REAR SHOCK ABSORBER ASSEMBLIES

1. Check:
   - shock absorber assemblies
     Oil leaks → Replace the shock absorber assembly.
   - spring
     Fatigue → Replace the shock absorber assemblies.
     Move the spring up and down.



EBS01027

INSTALLING THE REAR ARMS AND REAR SHOCK ABSORBER ASSEMBLIES

1. Install:
   - rear arms
   - rear shock absorber assemblies

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a. Install the rear upper arm ① and rear lower arm ②.

NOTE:

- Lubricate the bolts ③ with lithium-soap-based grease.
- Be sure to position the bolts ③ so that the bolt head faces outward.
- Temporarily tighten the nuts ④.

b. Install the rear shock absorber assembly ⑤ and bolts ⑥.

	**Nut ⑦** **45 Nm (4.5 m · kg, 32 ft · lb)**

c. Install the rear knuckle.

	**Nut ⑧** **45 Nm (4.5 m · kg, 32 ft · lb)**

d. Tighten the nuts ④.

	**Nut ④** **45 Nm (4.5 m · kg, 32 ft · lb)**

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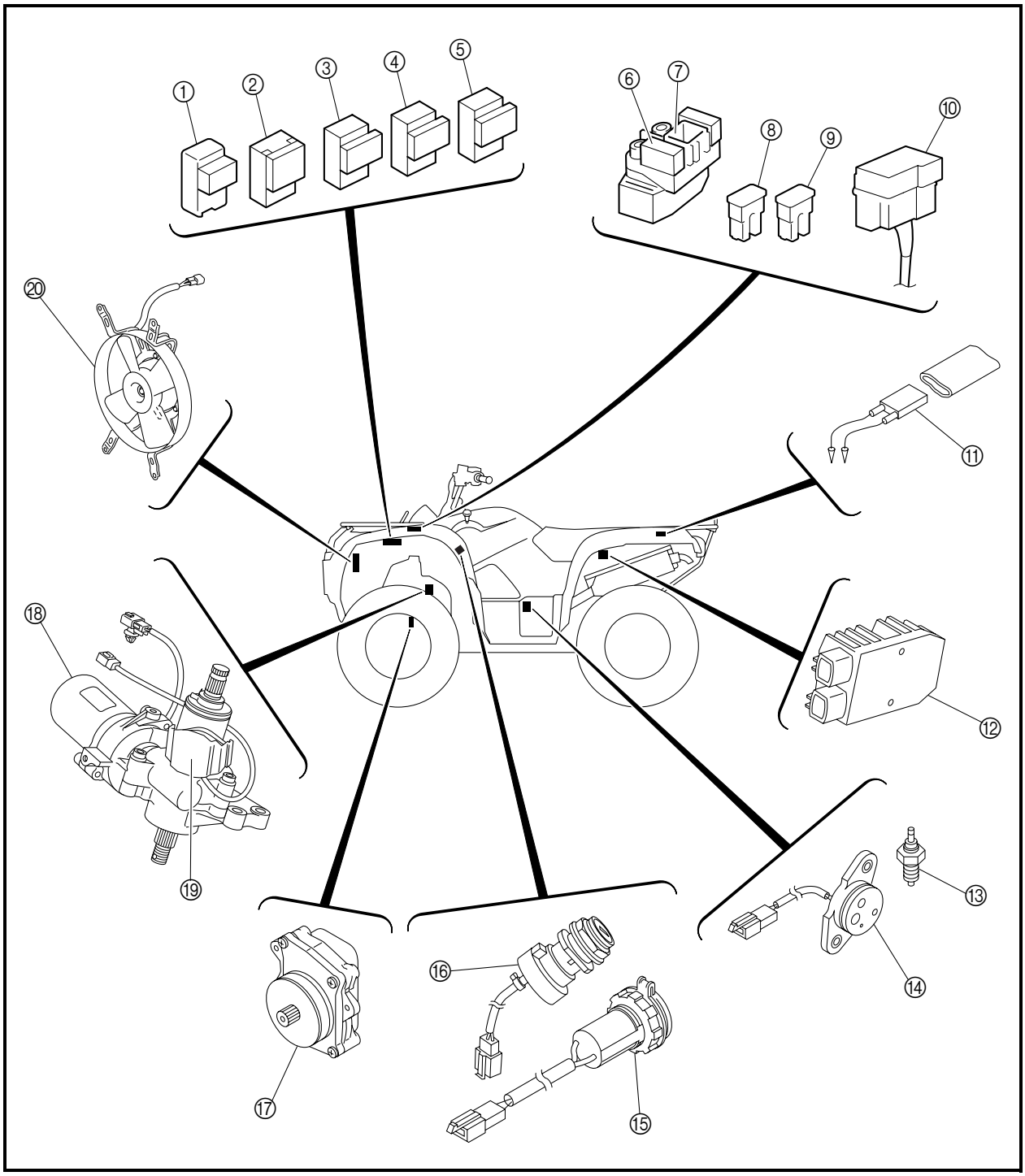
EBS00500

ELECTRICAL

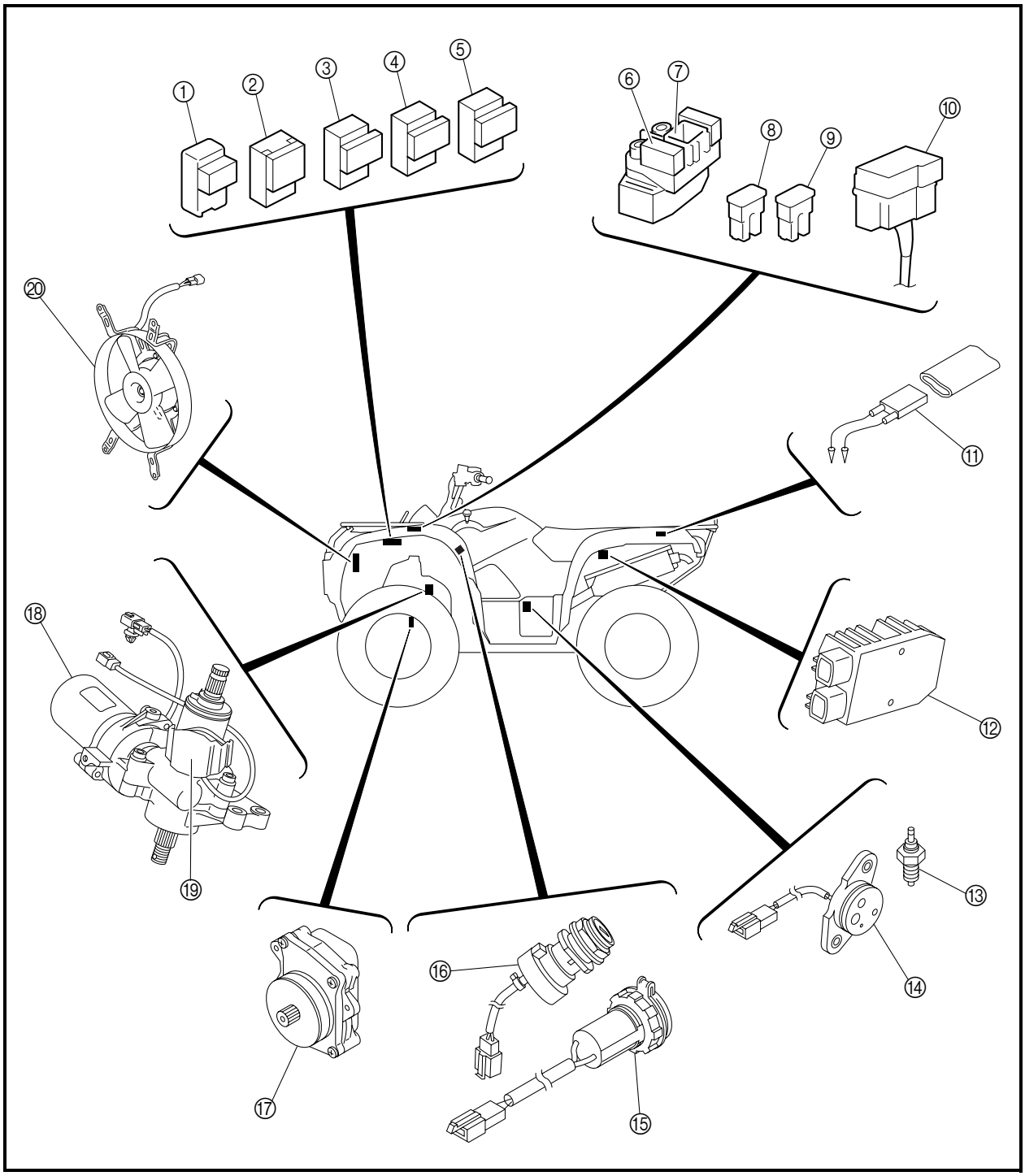
ELECTRICAL COMPONENTS

① Four-wheel-drive motor relay 3
② Rear brake relay
③ Four-wheel-drive motor relay 2
④ Four-wheel-drive motor relay 1
⑤ Headlight relay
⑥ Fuel injection system fuse
⑦ Starter relay
⑧ EPS fuse
⑨ Main fuse
⑩ Fuse box (ignition, headlights, four-wheel-drive motor, radiator fan motor, signaling system, auxiliary DC jack)
⑪ Radiator fan motor circuit breaker
⑫ Rectifier/regulator

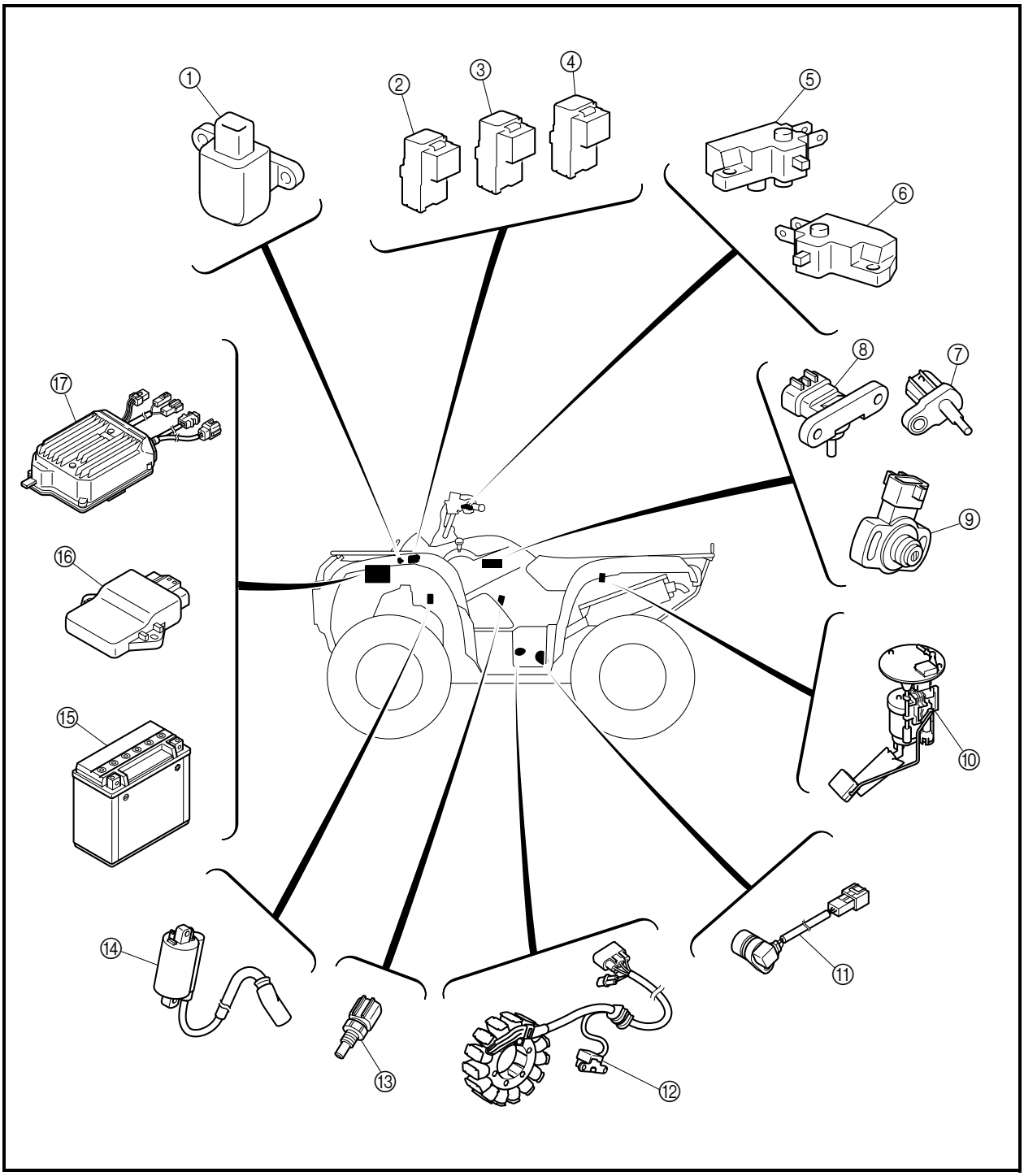


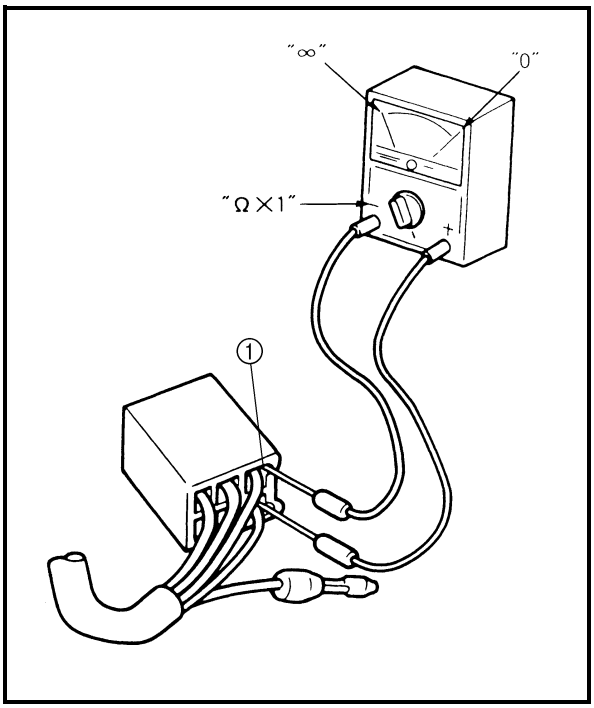
9

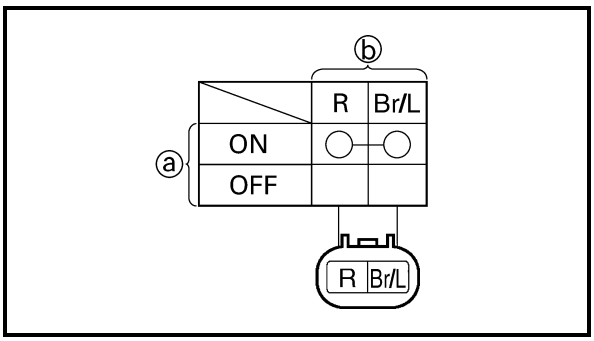
⑬ Reverse switch
⑭ Gear position switch
⑮ Auxiliary DC jack
⑯ Main switch
⑰ Differential gear motor
⑱ EPS motor
⑲ EPS torque sensor
⑳ Radiator fan motor



① Lean angle sensor
② Radiator fan motor relay
③ Fuel injection system relay
④ Starting circuit cut-off relay
⑤ Front brake light switch
⑥ Rear brake light switch
⑦ Intake air temperature sensor
⑧ Intake air pressure sensor
⑨ TPS (throttle position sensor)
⑩ Fuel pump
⑪ Speed sensor
⑫ Crankshaft position sensor
⑬ Coolant temperature sensor
⑭ Ignition coil
⑮ Battery
⑯ ECU (engine control unit)
⑰ EPS (electric power steering) control unit







EBS01028

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
Analog pocket tester
YU-03112-C

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).

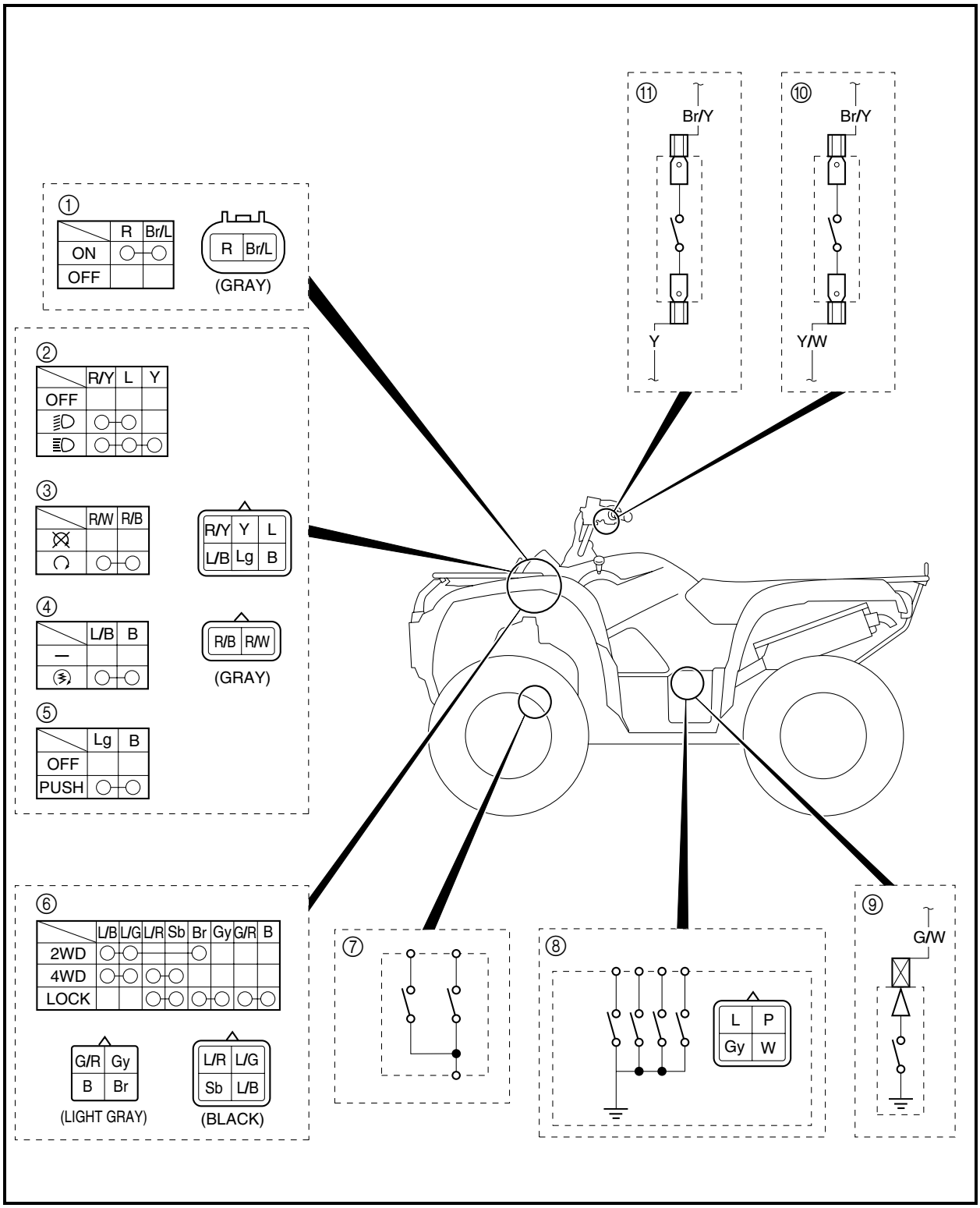
The example illustration on the left shows that:
There is continuity between red and brown/blue when the switch is set to "ON".

EBS01029

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.

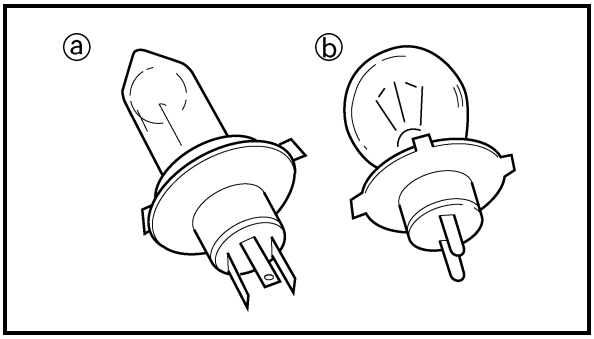


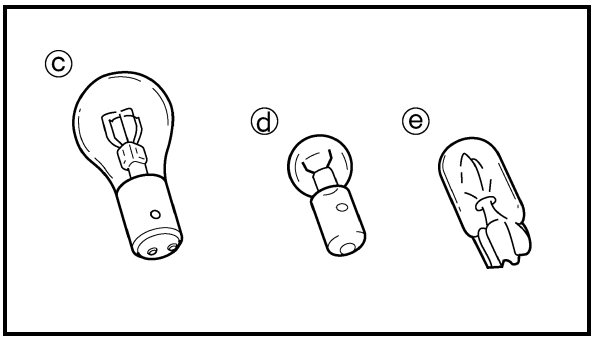
① Main switch
② Light switch
③ Engine stop switch
④ Start switch
⑤ Override switch
⑥ On-command four-wheel-drive motor switch and differential gear lock switch
⑦ Four-wheel-drive motor switch
⑧ Gear position switch
⑨ Reverse switch
⑩ Rear brake light switch
⑪ Front brake light switch

EBS01030
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 vehicle 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 ⓒ is 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:

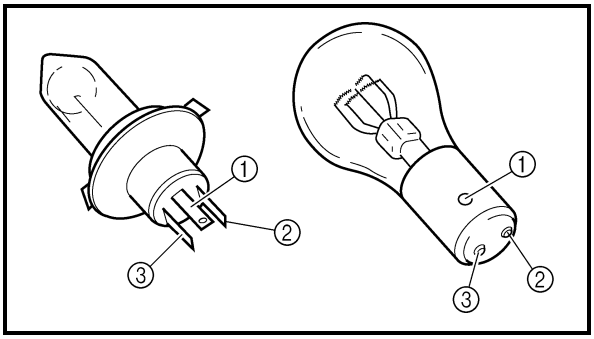
- **Be sure to hold the socket firmly when removing the bulb. Never pull the lead, otherwise it may be pulled out of the terminal in the coupler.**
- **Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb, and the 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
90890-03112
Analog pocket tester
YU-03112-C

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
90890-03112
Analog pocket tester
YU-03112-C

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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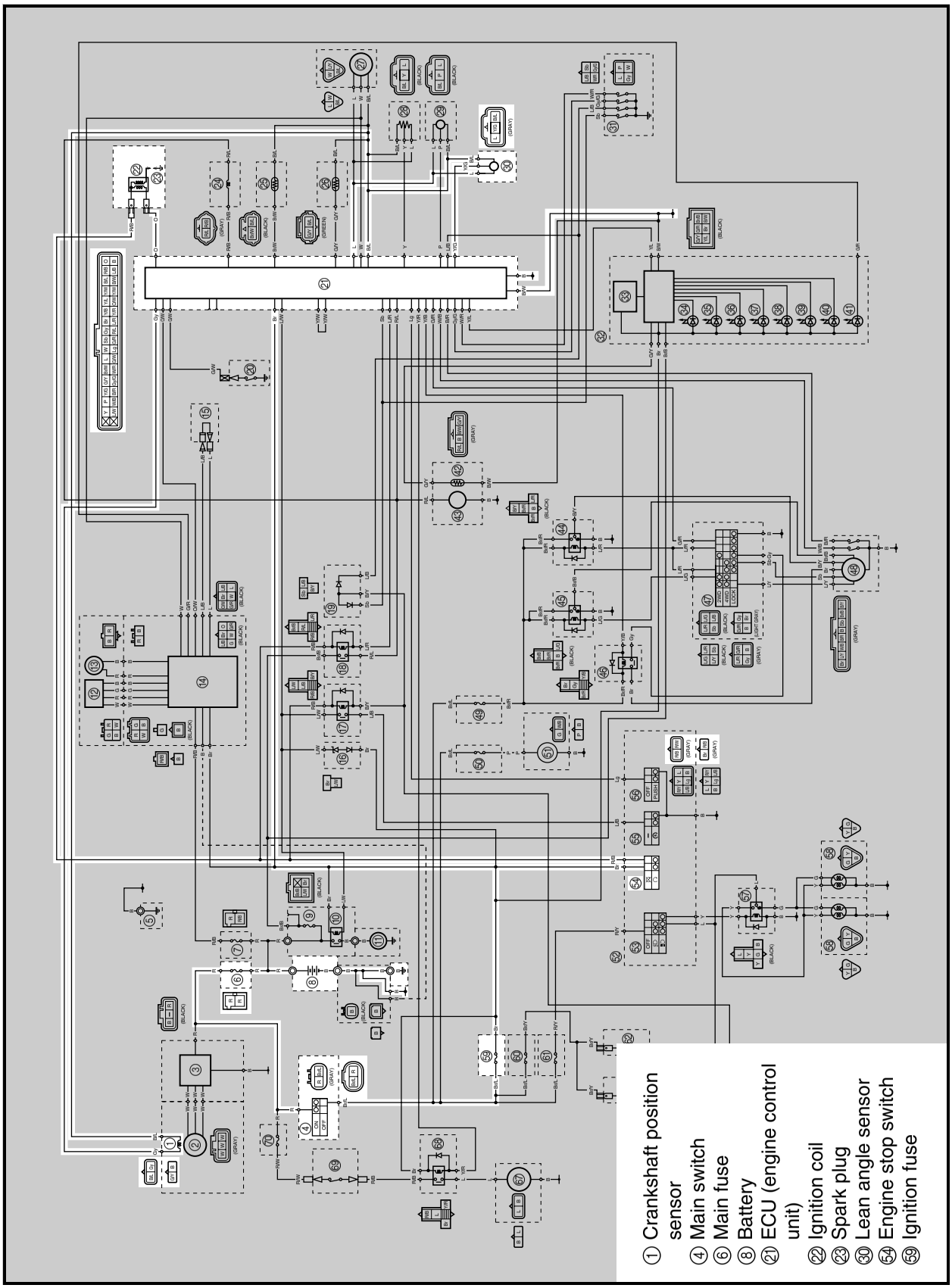
EBS00503

IGNITION SYSTEM

CIRCUIT DIAGRAM



EBS01045
TROUBLESHOOTING

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

Check:
1. main and ignition fuses
2. battery
3. spark plug
4. ignition spark gap
5. spark plug cap resistance
6. ignition coil resistance
7. main switch
8. engine stop switch
9. crankshaft position sensor resistance
10. lean angle sensor
11. wiring connections (of the entire ignition system)

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

1. seat
2. battery cover
3. right side panel
4. V-belt cooling duct 2

- Troubleshoot with the following special tool(s).

Ignition checker
90890-06754
Opama pet-4000 spark checker
YM-34487
Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

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).

EBS01044

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.

EBS01032

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
CR8E (NGK)
Spark plug gap
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

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

YES

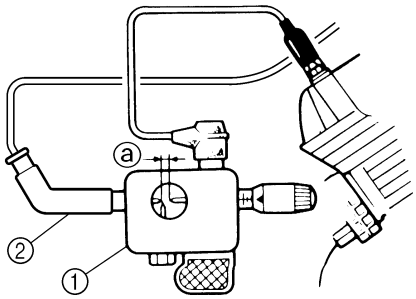
NO

Re-gap or replace the spark plug.

EBS01034

4. Ignition spark gap

- Disconnect the spark plug cap from the spark plug.
- Connect the ignition checker ① as shown.
  ② Spark plug cap
- Set the main switch to “ON”.
- Measure the ignition spark gap ⓐ.
- Crank the engine by pushing the start switch and gradually increase the spark gap until a misfire occurs.



Minimum ignition spark gap
6.0 mm (0.24 in)

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

NO

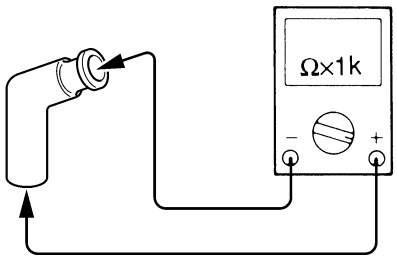
YES

The ignition system is OK.

EBS01036

5. Spark plug cap resistance

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



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

- Is the spark plug cap OK?

YES

NO

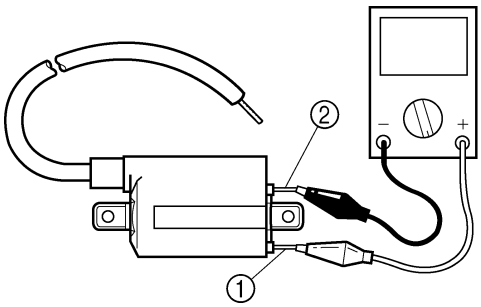
Replace the spark plug cap.

EBS01038

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 →
red/black lead terminal ①
Negative tester probe →
orange lead terminal ②

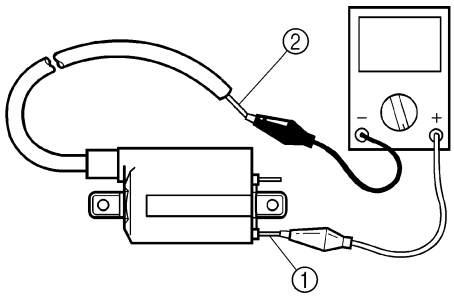


- Measure the primary coil resistance.

Primary coil resistance
3.4 ~ 4.6 Ω at 20 °C (68 °F)

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

Positive tester probe →
red/black lead terminal ①
Negative tester probe → spark plug lead ②



- Measure the secondary coil resistance.

Secondary coil resistance
10.4 ~ 15.6 kΩ at 20 °C (68 °F)

- Is the ignition coil OK?

YES

NO

Replace the ignition coil.

EBS01041

7. Main switch

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

YES

NO

Replace the main switch.

EBS01042

8. Engine stop switch

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

YES

NO

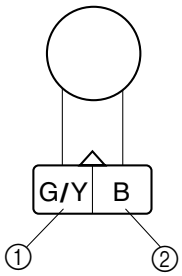
Replace the left handlebar switch.

EBS01040

9. Crankshaft position sensor resistance

- Disconnect the crankshaft position sensor coupler from the wire harness.
- Connect the pocket tester ($\Omega \times 100$) to the crankshaft position sensor coupler as shown.

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



- Measure the crankshaft position sensor resistance.

Crankshaft position sensor resistance
459 ~ 561 Ω at 20 °C (68 °F)

- Is the crankshaft position sensor OK?

YES

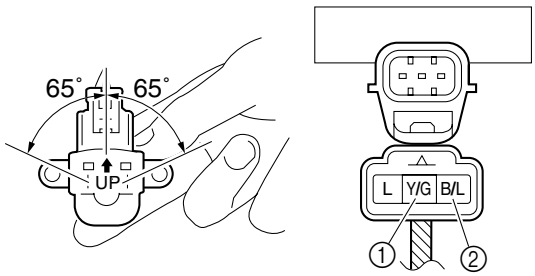
NO

Replace the crankshaft position sensor/stator assembly.

10.Lean angle sensor

- Remove the lean angle sensor.
- Connect the pocket tester (DC 20 V) to the lean angle sensor coupler as shown.

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



- Set the main switch to "ON".
- Turn the lean angle sensor to 65°.
- Measure the lean angle sensor output voltage.

Lean angle sensor voltage
Less than 65° ± 5° →
3.55 ~ 4.45 V
More than 65° ± 5° →
0.65 ~ 1.35 V

- Is the lean angle sensor OK?

YES

NO

Replace the lean angle sensor.

EBS01047

11.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

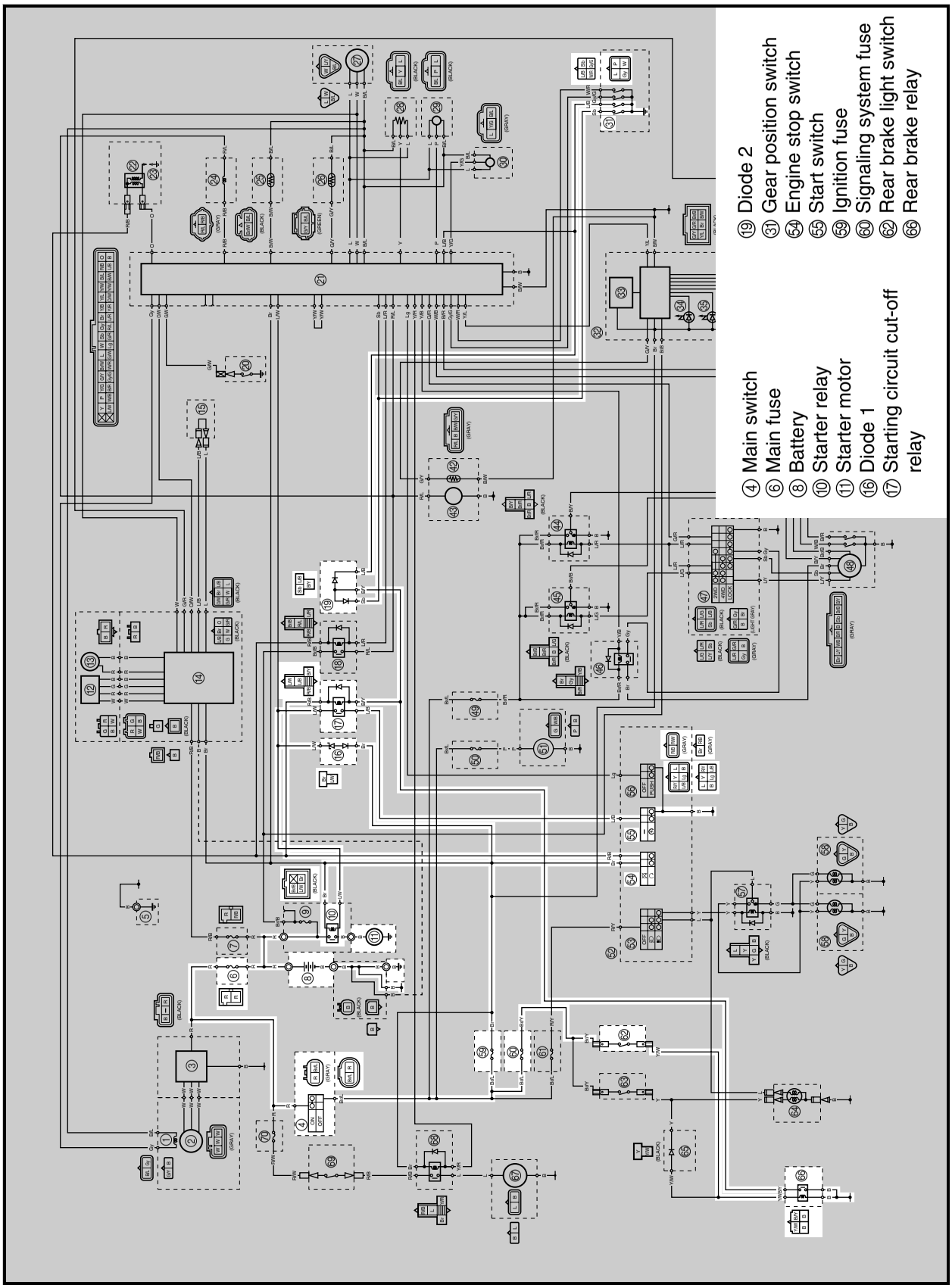
Replace the ECU.

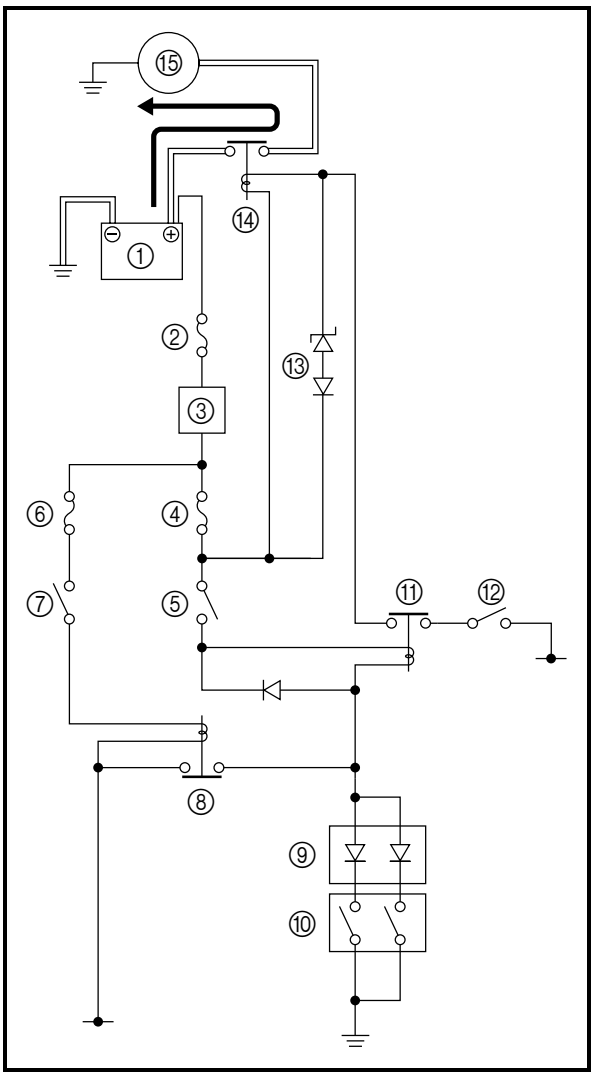
Properly connect or repair the ignition system's wiring.

EBS00506

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM





EBS00507

STARTING CIRCUIT OPERATION

The starting circuit on this model consists of the starter motor, starter relay, starting circuit cut-off relay, rear brake light switch, rear brake relay and gear position switch. If the main switch is on and the engine stop switch is in the RUN position, the starter motor can be operated only if:

- The transmission is in neutral (the neutral switch circuit of the gear position switch is closed).

or

- The transmission is in park (the park switch circuit of the gear position switch is closed).

or

- You pull in the rear brake lever or push down on the brake pedal (the rear brake light switch circuit is closed).

The starting circuit cut-off relay prevents the starter from operating when the select lever is in gear or in reverse and the rear brake lever and brake pedal is free. In this instance, the starting circuit cut-off relay is off so that current cannot reach the starter motor.

① Battery
② Main fuse
③ Main switch
④ Ignition fuse
⑤ Engine stop switch
⑥ Signaling system fuse
⑦ Rear brake light switch
⑧ Rear brake relay
⑨ Diode 2
⑩ Gear position switch
⑪ Starting circuit cut-off relay
⑫ Start switch
⑬ Diode 1
⑭ Starter relay
⑮ Starter motor

EBS01048
TROUBLESHOOTING

The starter motor fails to turn.

Check:
1. main, ignition and signaling system fuses
2. battery
3. starter motor
4. starting circuit cut-off relay
5. starter relay
6. Rear brake relay
7. Diode 2
8. main switch
9. engine stop switch
10. start switch
11. rear brake light switch
12. gear position switch
13. wiring connections
    (of the entire starting system)

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

1. seat
2. battery cover
3. side covers

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

1. Main, ignition and signaling system fuses
- Check the main, ignition and signaling system fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main, ignition and signaling system fuses OK?

YES → NO

Replace the fuse(s).

EBS01044

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)

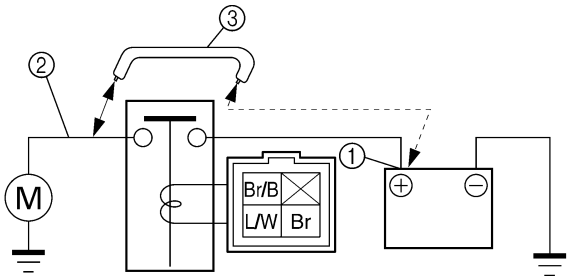
- Is the battery OK?

YES → NO

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

EBS01051

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.

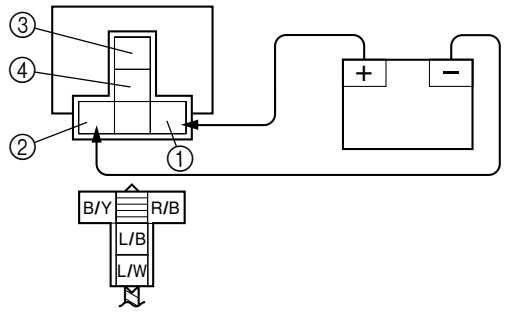
EBS01052

4. Starting circuit cut-off relay

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

Positive battery terminal → red/black ①
Negative battery terminal → black/yellow ②

Positive tester probe → blue/white ③
Negative tester probe → blue/black ④



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

YES → Replace the starting circuit cut-off relay.

NO

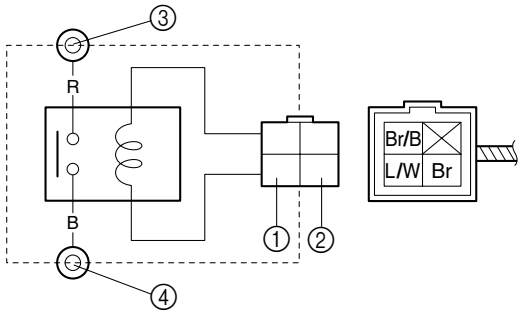
EBS01054

5. 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 as shown.

Positive battery terminal → brown ①
Negative battery terminal → blue/white ②

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



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

YES

NO → Replace the starter relay.

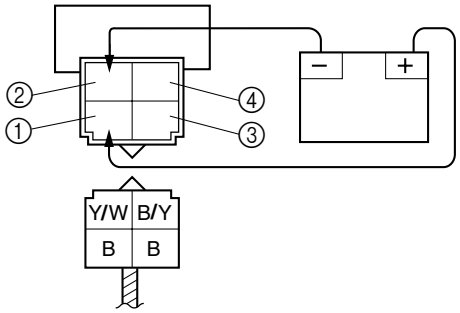
EBS01054

6. Rear brake relay

- Remove the rear brake relay from the wire harness.
- Connect the pocket tester (Ω × 1) and battery (12 V) to the rear brake relay as shown.

Positive battery terminal →
yellow/white ①
Negative battery terminal → black ②

Positive tester probe → black/yellow ③
Negative tester probe → black ④



- Does the rear brake relay have continuity between black/yellow and black?

YES

NO

Replace the rear brake relay.

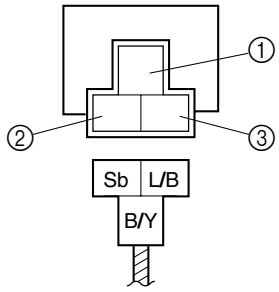
EBS01053

7. Diode 2

- Remove the diode 2 from the wire harness.
- Connect the pocket tester (Ω × 1) to the diode 2 as shown.
- Measure the diode 2 for continuity as follows.

NOTE:
The pocket tester 90890-03112 and the analog pocket tester YU-03112-C readings are shown in the following table.

Positive tester probe → black/yellow ① **Negative tester probe → sky blue ②**	**Continuity**
Positive tester probe → black/yellow ① **Negative tester probe → blue/black ③**	**Continuity**
Positive tester probe → sky blue ② **Negative tester probe → black/yellow ①**	**No continuity**
Positive tester probe → blue/black ③ **Negative tester probe → black/yellow ①**	**No continuity**



- Are the testing readings correct?

YES

NO

Replace the diode 2.

EBS01041

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.

EBS01042

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 left handlebar switch.

EBS01057

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

YES ⇩ NO ⇩

Replace the left handlebar switch.

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

YES ⇩ NO ⇩

Replace the rear brake light switch.

EBS01058

12.Gear position switch
- Check the gear position switch for continuity.
  Refer to “CHECKING THE SWITCHES”.
- Is the gear position switch OK?

YES ⇩ NO ⇩

Replace the gear position switch.

EBS01059

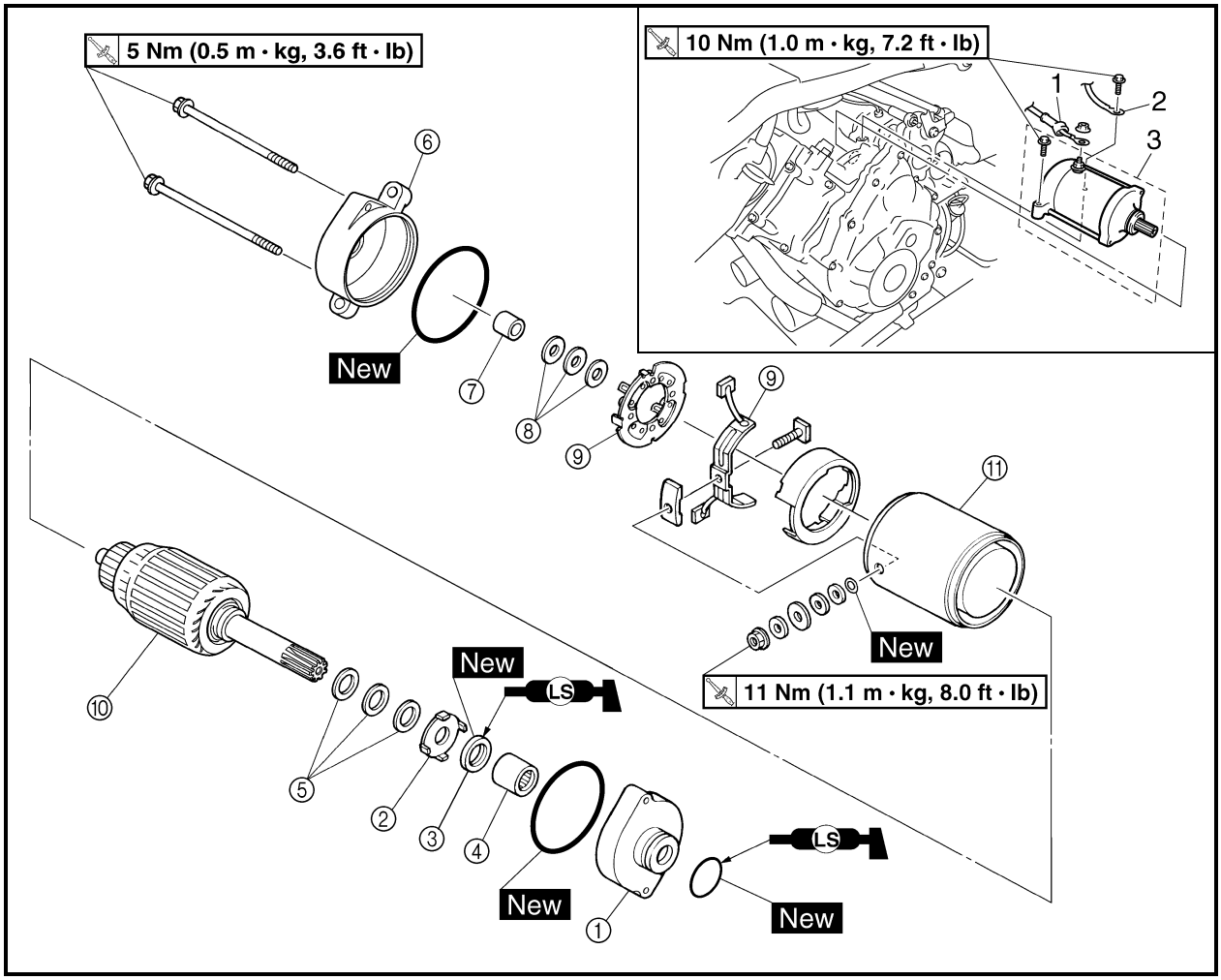
13.Wiring
- Check the entire starting system’s wiring.
  Refer to “CIRCUIT DIAGRAM”.
- Is the starting system’s wiring properly connected and without defects?

YES ⇩ NO ⇩

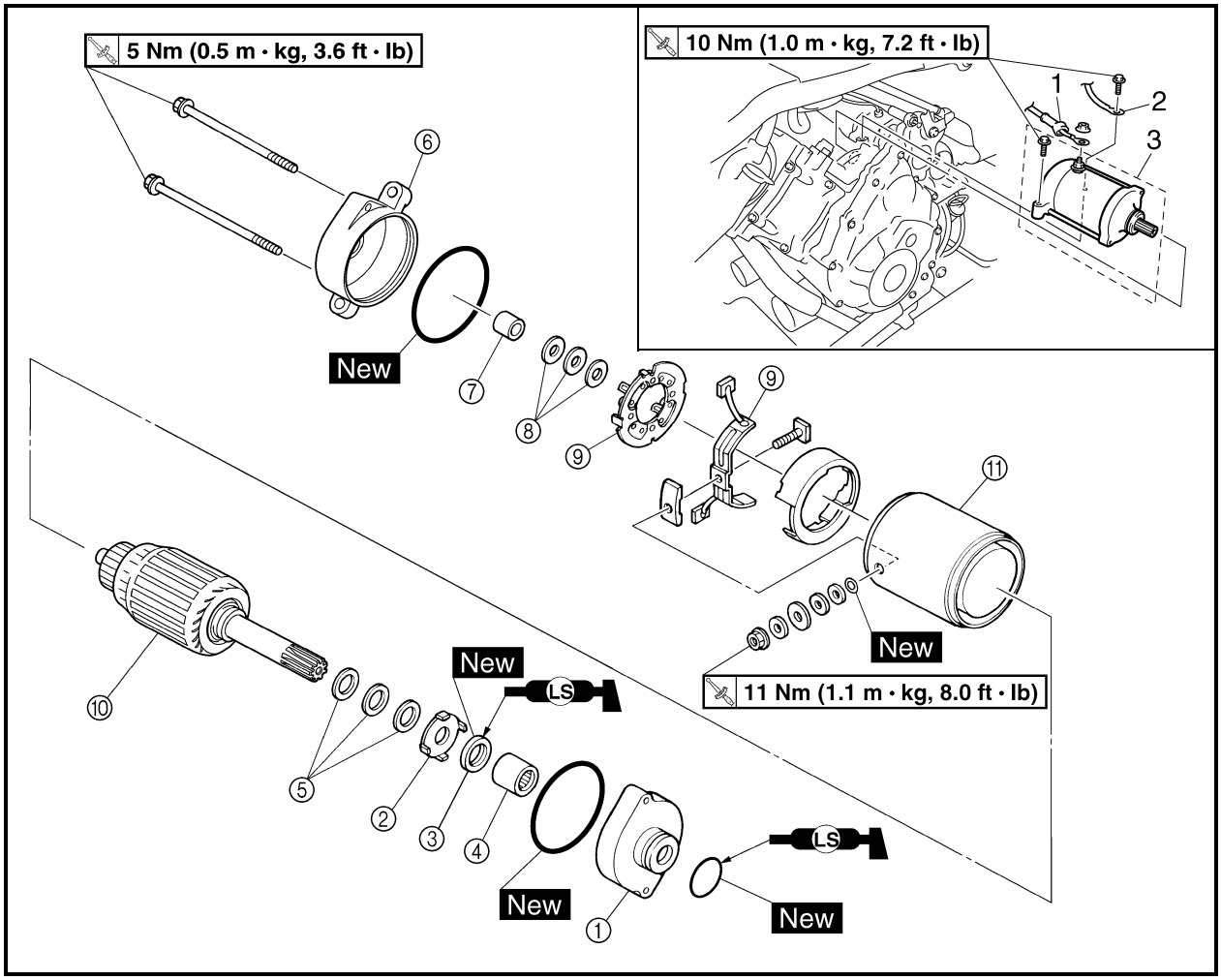
The starting system circuit is OK.

Properly connect or repair the starting system’s wiring.

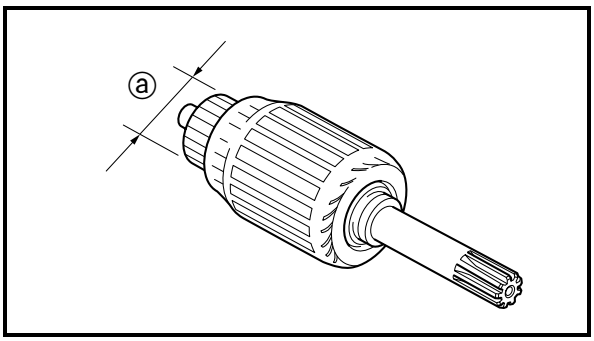
EBS01061
STARTER MOTOR



Order	Job/Part	Q'ty	Remarks
	Removing the starter motor		Remove the parts in the order listed.
	Muffler		Refer to "ENGINE REMOVAL" in chapter 4.
1	Starter motor lead	1	Disconnect.
2	Ground lead	1	Disconnect.
3	Starter motor	1	
			For installation, reverse the removal procedure.
	Disassembling the starter motor		Remove the parts in the order listed.
①	Starter motor front cover	1	Refer to "ASSEMBLING THE STARTER MOTOR".
②	Lock washer	1	
③	Oil seal	1	
④	Bearing	1	
⑤	Shim	*	
⑥	Starter motor rear cover	1	



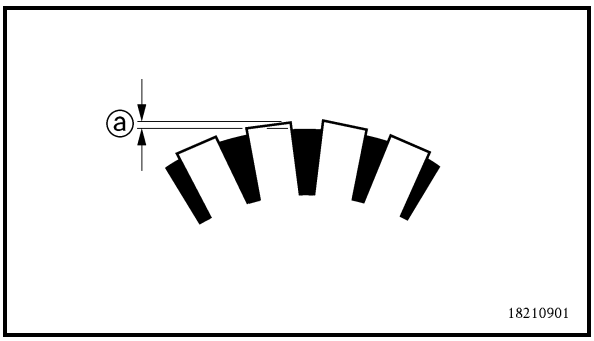
Order	Job/Part	Q'ty	Remarks
⑦	Bushing	1	
⑧	Shim	*	Refer to "ASSEMBLING THE STARTER MOTOR".
⑨	Brush holder set	1	
⑩	Armature assembly	1	
⑪	Starter motor yoke	1	
			For assembly, reverse the disassembly procedure.



EBS01064
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 **27 mm (1.06 in)**

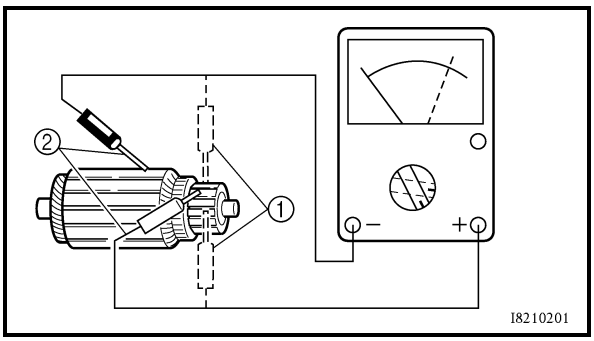


3. Measure:
   - mica undercut ⓐ
     Out of specification → Scrape the mica to the proper measurement with a hacksaw blade that has been grounded to fit the commutator.

	Mica undercut **0.70 mm (0.03 in)**

NOTE:
The mica of the commutator 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
90890-03112
Analog pocket tester
YU-03112-C

Armature coil
Commutator resistance ①
0.0250 ~ 0.0350 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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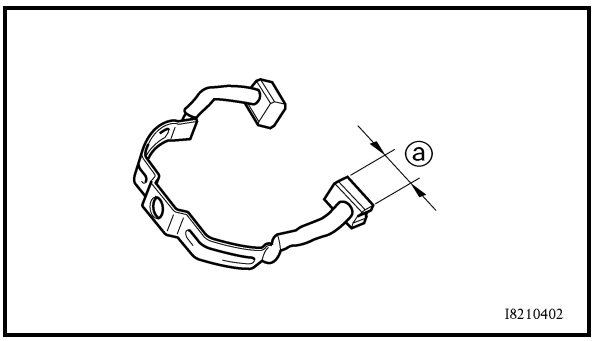
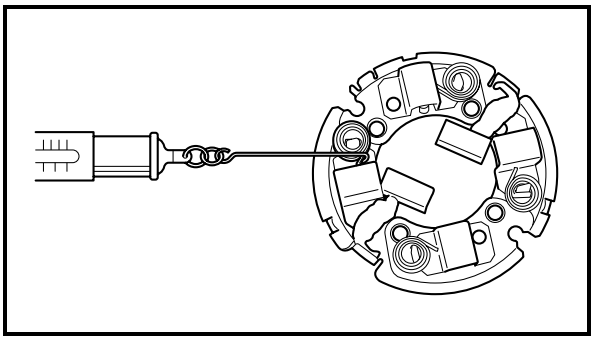


5. Measure:
• brush length ⓐ
Out of specification → Replace the brushes as a set.

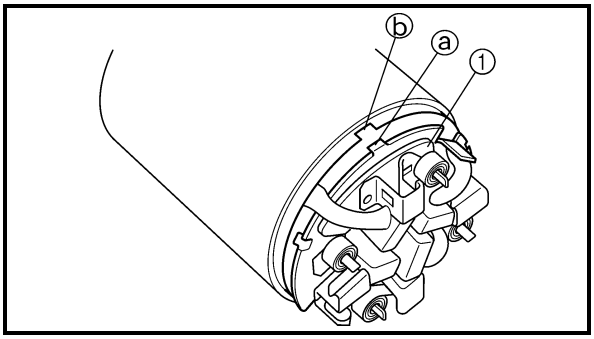
Brush length wear limit
5.00 mm (0.20 in)



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

Brush spring force
7.65 ~ 10.01 N (780 ~ 1021 gf, 27.54 ~ 36.03 oz)

7. Check:
• gear teeth
Damage/wear → Replace the gear.
8. Check:
• bearing
• oil seal
Damage/wear → Replace the defective part(s).



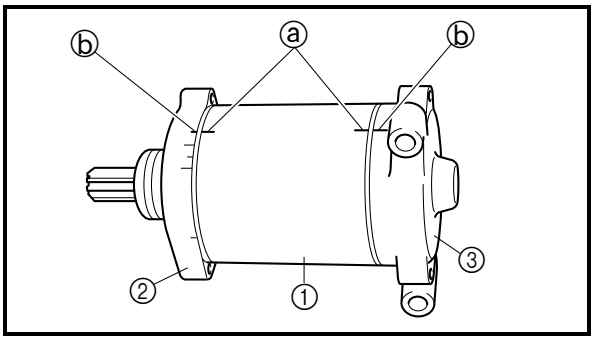
EBS00515

ASSEMBLING THE STARTER MOTOR

1. Install:
   - brush holder set ①

NOTE:

Align the projection ⓐ on the brush holder set with the slot ⓑ in the starter motor yoke.



2. Install:
   - starter motor yoke ①
   - starter motor front cover ②
   - starter motor rear cover ③

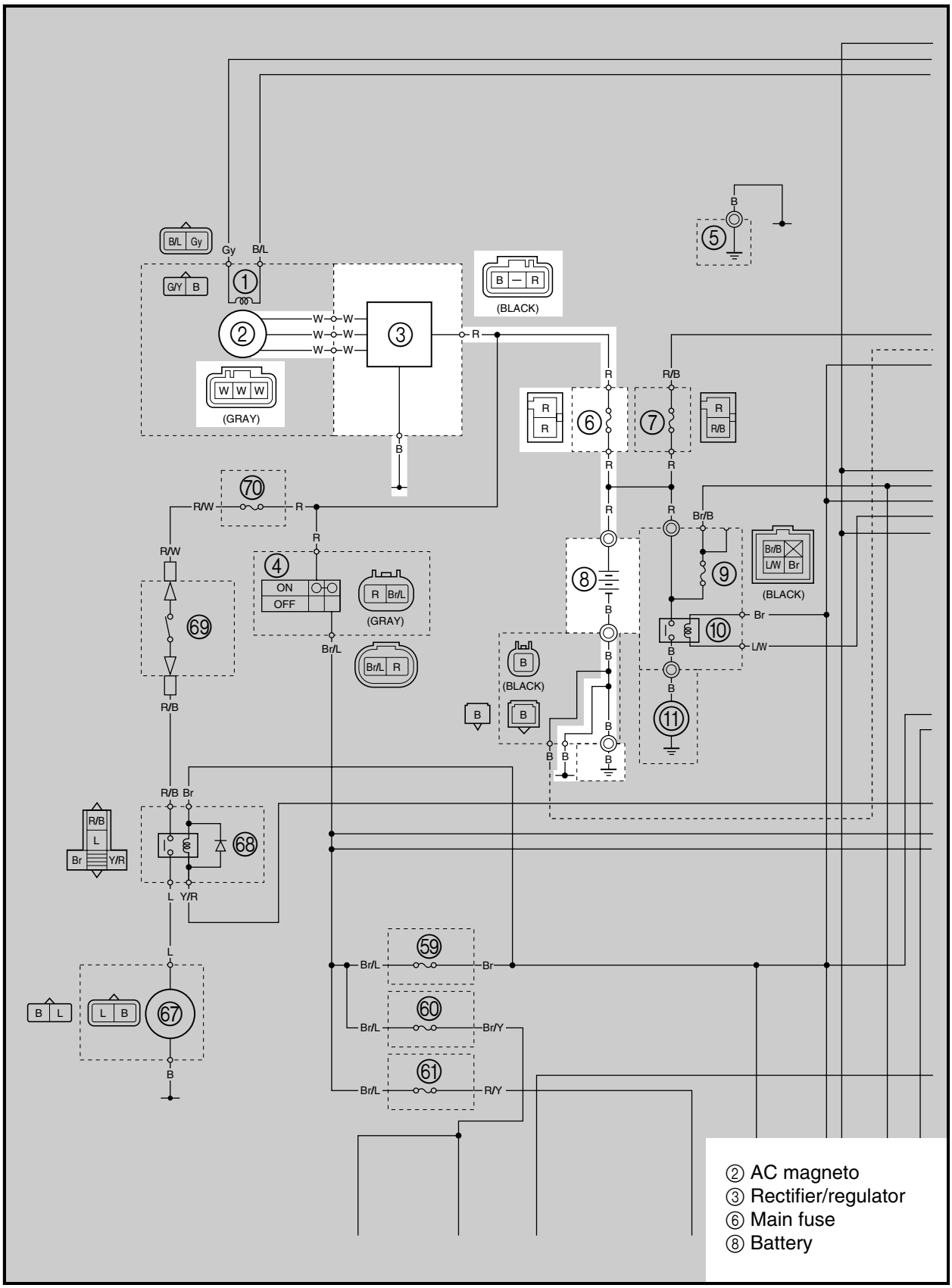
NOTE:

Align the match marks ⓐ on the starter motor yoke with the match marks ⓑ on the starter motor front and rear covers.

EBS00516

CHARGING SYSTEM

CIRCUIT DIAGRAM



EBS01065
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. seat
2. battery cover
3. right side cover
4. V-belt cooling duct 2

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

1. Main fuse

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

YES

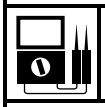
NO

Replace the main fuse.

EBS01044

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

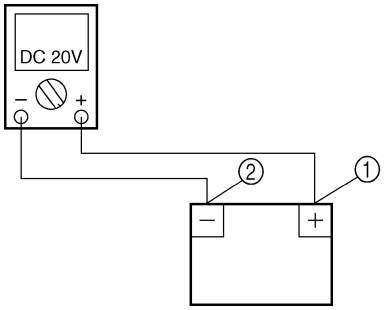
- Clean the battery terminals.
- Recharge or replace the battery.

EBS01066

3. Charging voltage

- Connect the engine 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 1,000 r/min.
- Measure the charging voltage.

Charging voltage
14 V at 5,000 r/min

NOTE:
Make sure the battery is fully charged.

- Is the charging voltage within specification?

NO → The charging circuit is OK.

YES → 4. Stator coil resistance

EBS01100

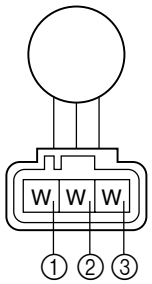
4. Stator coil resistance

- Disconnect the AC magneto coupler from the wire harness.
- Connect the pocket tester (Ω × 1) to the stator coils.

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

Positive tester probe → white terminal ①
Negative tester probe → white terminal ③

Positive tester probe → white terminal ②
Negative tester probe → white terminal ③



- Measure the stator coil resistance.

Stator coil resistance
0.108 ~ 0.132 Ω at 20 °C (68 °F)

YES → 5. Wiring

NO → Replace the crankshaft position sensor/ stator assembly.

5. Wiring

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

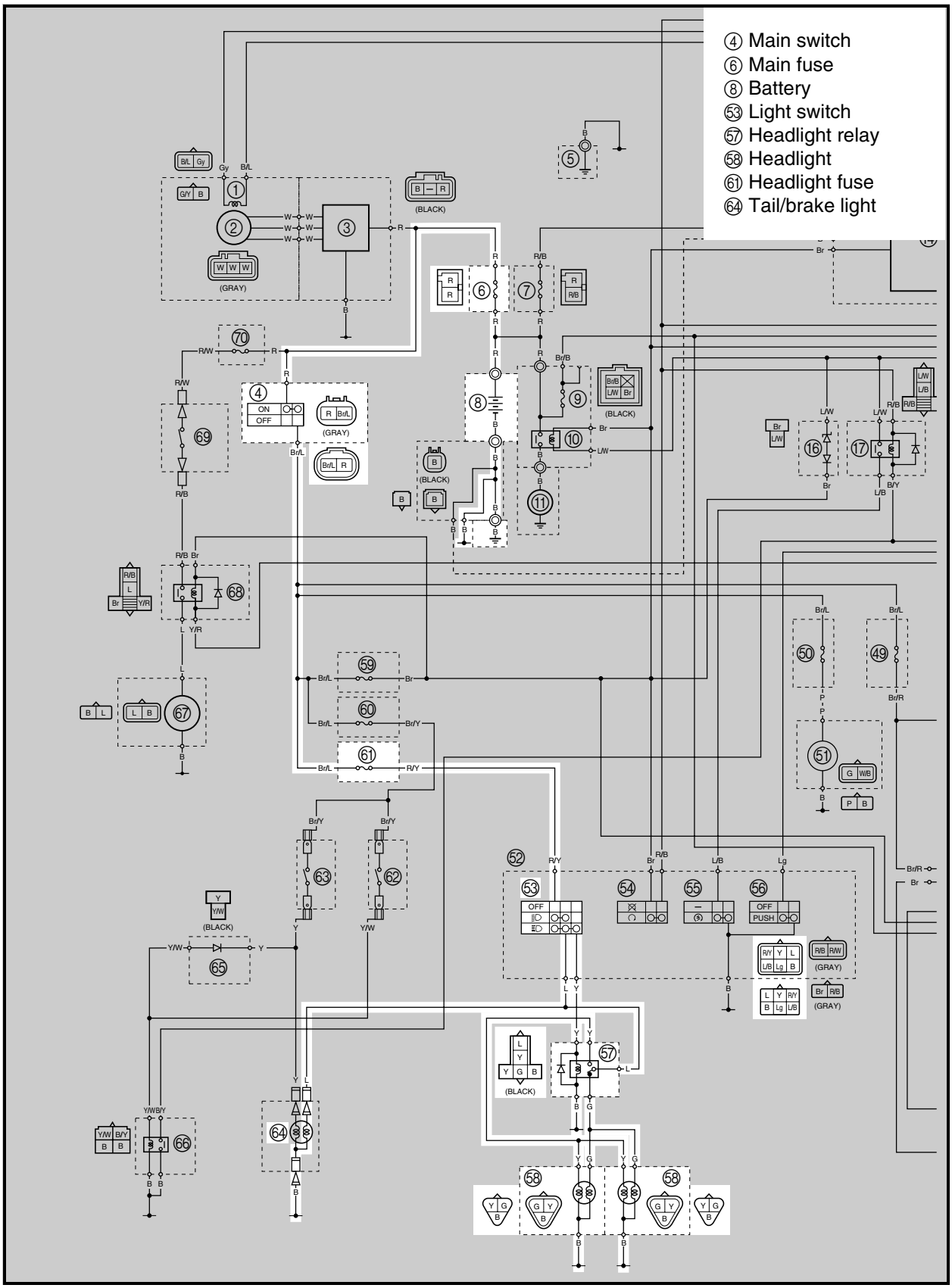
YES → Replace the rectifier/ regulator.

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

EBS00518

LIGHTING SYSTEM

CIRCUIT DIAGRAM



EBS01067
TROUBLESHOOTING

Any of the following fail to light: headlight, tail/brake light.

Check:
1. main and headlight fuses
2. battery
3. main switch
4. light switch
5. wiring connections
   (of the entire lighting system)

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

1. seat
2. battery cover
3. tail/brake light cover

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

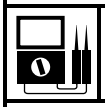
1. Main and headlight fuses
- Check the main and headlight fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main and headlight fuses OK?

YES → NO

Replace the fuse(s).

EBS01044

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.

EBS01041

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.

EBS01068

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

YES → NO

Replace the left handlebar switch.

EBS01069

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

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

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

EBS01070

CHECKING THE LIGHTING SYSTEM

1. The headlights fail to come on.

1. Headlight bulb and socket
- Check the headlight bulb and socket for continuity. Refer to "CHECKING THE BULBS AND BULB SOCKETS".
- Are the headlight bulb and socket OK?

YES → 2. Headlight relay

NO → Replace the headlight bulb, socket or both.

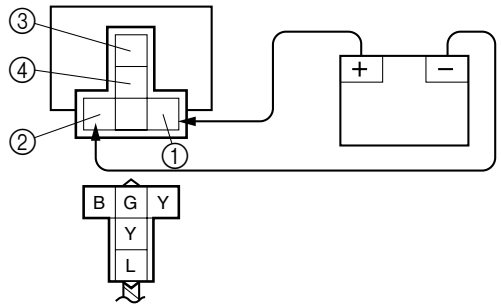
2. Headlight relay
- Remove the headlight relay.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the headlight relay as shown.

A high beam
B low beam

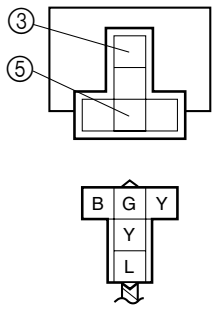
Positive battery terminal → yellow ①
Negative battery terminal → black ②

Positive tester probe → blue ③
Negative tester probe → yellow ④ or green ⑤

A



B



- Does the headlight relay have continuity between blue and yellow? A
- Does the headlight relay have continuity between blue and green? B

YES → Replace the headlight relay.

NO

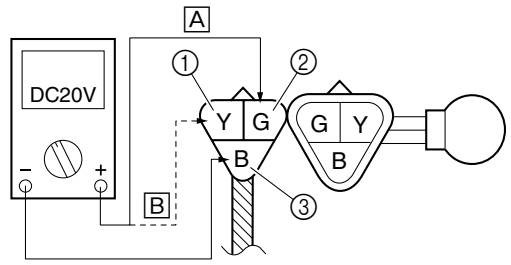
3. Voltage

- Connect the pocket tester (DC 20 V) to the headlight couplers as shown.

A When the light switch is set to "LO"
B When the light switch is set to "HI"

Headlight coupler (wire harness side)

Headlight
Positive tester probe →
yellow ① or green ②
Negative tester probe → black ③



- Set the main switch to "ON".
- Set the light switch to "LO" or "HI".
- Measure the voltage (DC 12 V) of yellow ① or green ② on the headlight coupler (wire harness side).
- Is the voltage within specification?

YES

This circuit is OK.

NO

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

2. The taillight fails to come on.

1. Taillight bulb and socket

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

YES

NO

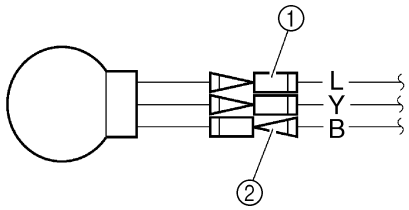
Replace the taillight bulb, socket or both.

2. Voltage

- Connect the pocket tester (DC 20 V) to the tail/brake light connectors as shown.

Tail/brake light connectors (wire harness side)

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



- Set the main switch to "ON".
- Set the light switch to "LO" or "HI".
- Measure the voltage (DC 12 V) of blue ① on the tail/brake light connectors (wire harness side).
- Is the voltage within specification?

YES

This circuit is OK.

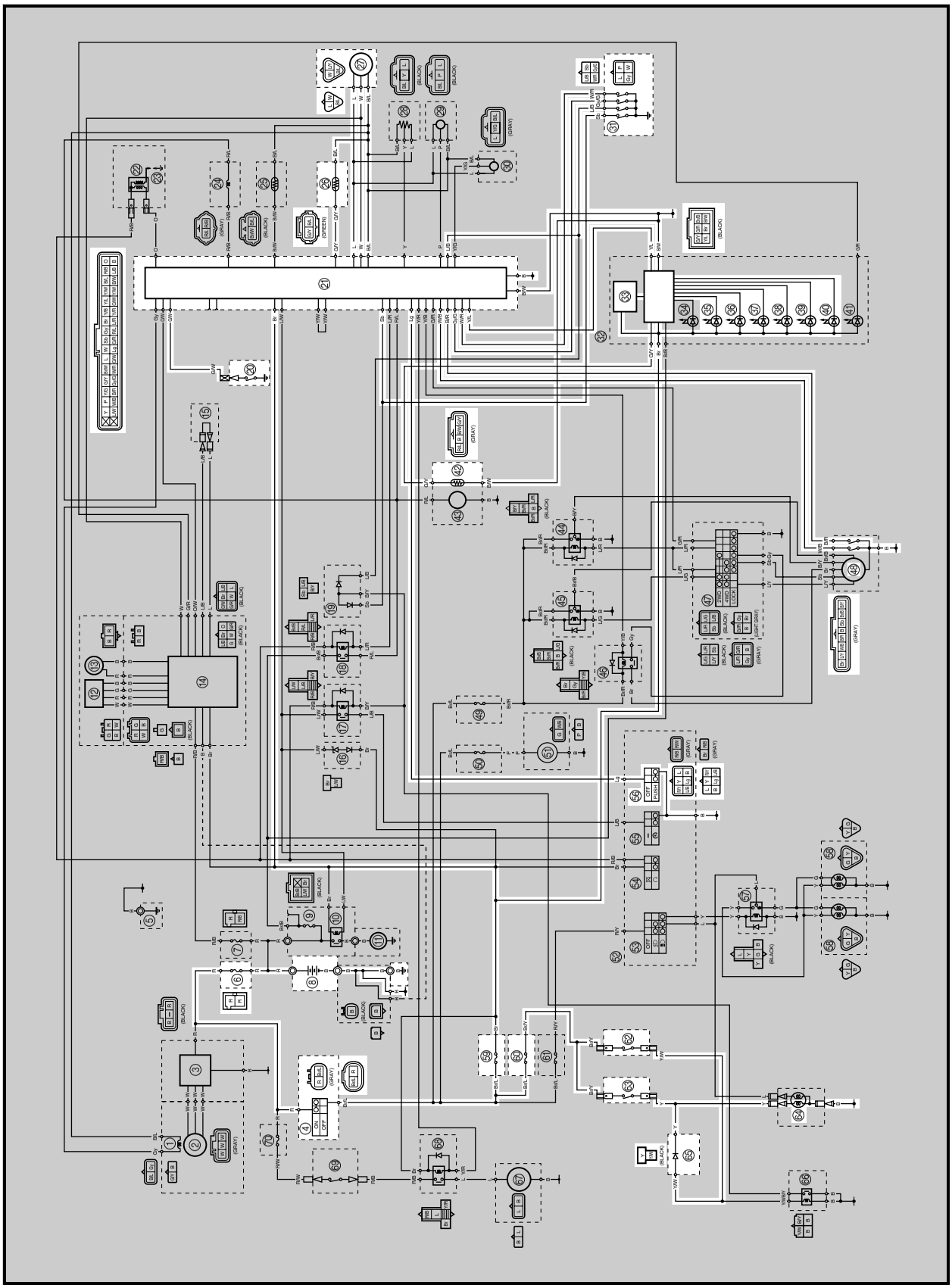
NO

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

EBS00521

SIGNALING SYSTEM

CIRCUIT DIAGRAM



④ Main switch
⑥ Main fuse
⑧ Battery
⑳ Reverse switch
㉑ ECU (engine control unit)
㉖ Coolant temperature sensor
㉗ Speed sensor
㉛ Gear position switch
㉝ Multifunction meter
㉟ Coolant temperature warning light
㊱ Park indicator light
㊲ Reverse indicator light
㊳ Neutral indicator light
㊴ High-range indicator light
㊵ Low-range indicator light
㊷ Fuel sender
㊽ Differential gear motor
㊻ Override switch
㊾ Ignition fuse
㊿ Signaling system fuse
(62) Rear brake light switch
(63) Front brake light switch
(64) Tail/brake light
(65) Diode 3

EBS01073
TROUBLESHOOTING

Any of the following fail to light: warning light, brake light or an indicator light.

Check:
1. main, signaling system 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. seat
2. battery cover
3. side panels
4. V-belt cooling duct 2
5. rear fender

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

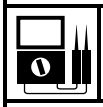
1. Main, signaling system and ignition fuses
   - Check the main, signaling system and ignition fuses for continuity.
     Refer to "CHECKING THE FUSES" in chapter 3.
   - Are the main, signaling system and ignition fuses OK?

YES → NO

Replace the fuse(s).

EBS01044

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.

EBS01041

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.

EBS01074

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

YES → NO

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

Properly connect or repair the signaling system wiring.

EBS01075
CHECKING THE SIGNALING SYSTEM
EBS01076
1. The brake light fails to come on.

1. Brake light bulb and bulb socket
- Check the brake light bulb and bulb socket for continuity.
  Refer to “CHECKING THE BULBS AND BULB SOCKETS”.
- Are the brake light bulb and bulb socket OK?

YES ⇩ NO ⇩

Replace the brake light bulb, 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 ⇩

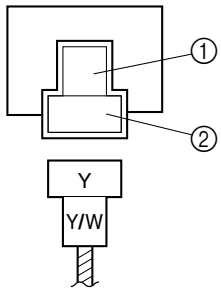
Replace the brake light switch.

EBS01053

3. Diode 3
- Remove the diode 3 from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) to the diode 3 as shown.
- Measure the diode 3 for continuity as follows.

NOTE:
The pocket tester 90890-03112 and the analog pocket tester YU-03112-C readings are shown in the following table.

Positive tester probe → yellow/white ① **Negative tester probe → yellow ②**	**Continuity**
Positive tester probe → yellow ② **Negative tester probe → yellow/white ①**	**No continuity**



- Are the testing readings correct?

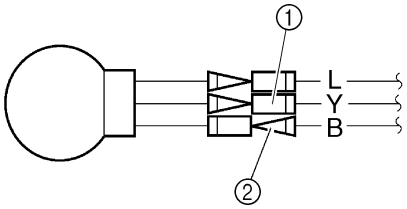
YES ⇩ NO ⇩

Replace the diode 3.

4. Voltage

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

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



- Set the main switch to "ON".
- Pull in the brake lever or push down on the brake pedal.
- Measure the voltage (DC 12 V) of yellow ① on the tail/brake light connector (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 connector is faulty and must be repaired.

EBS01078

2. The neutral, park, high-range, and/or low-range indicator light fails to come on.

1. Gear position switch

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

YES

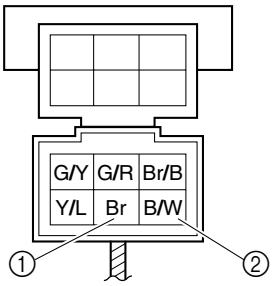
NO

Replace the gear position switch.

2. Voltage

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

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



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

YES

Replace the meter assembly or ECU.

NO

The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EBS01079
3. The reverse indicator light fails to come on.

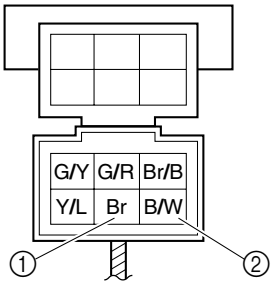
1. Reverse switch
- Check the reverse switch for continuity. Refer to “CHECKING THE SWITCHES”.
- Is the reverse switch OK?

YES → 2. Voltage

NO → Replace the reverse switch.

2. Voltage
- Connect the pocket tester (DC 20 V) to the meter assembly coupler as shown.

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



- Set the main switch to “ON”.
- Measure the voltage (12 V) of brown ① and black/white ② at the meter assembly coupler.
- Is the voltage within specification?

YES → Replace the meter assembly or ECU.

NO → The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EBS01081
4. The differential gear lock indicator light and/or four-wheel-drive motor indicator light fails to come on.

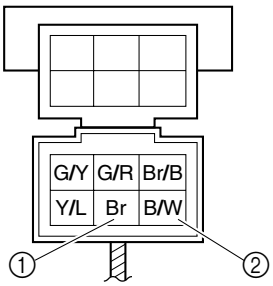
1. Four-wheel-drive motor switch (differential gear motor)
- Check the four-wheel-drive motor switch for continuity. Refer to “CHECKING THE SWITCHES”.
- Is the four-wheel-drive motor switch OK?

YES → 2. Voltage

NO → Replace the differential gear motor.

2. Voltage
- Connect the pocket tester (DC 20 V) to the meter assembly coupler as shown.

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

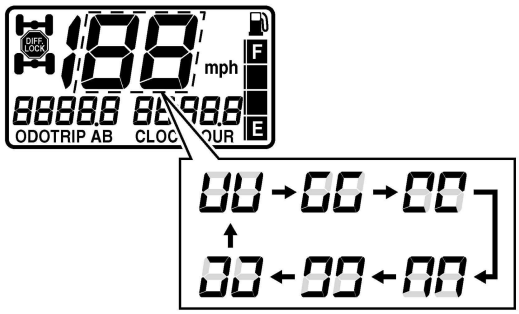


- Set the main switch to “ON”.
- Measure the voltage (12 V) of brown ① and black/white ② at the meter assembly coupler.
- Is the voltage within specification?

YES → Replace the meter assembly or ECU.

NO → The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

5. While the override switch is pushed, the segments of the speedometer digits will not appear as shown in the illustration.



1. Override switch

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

YES

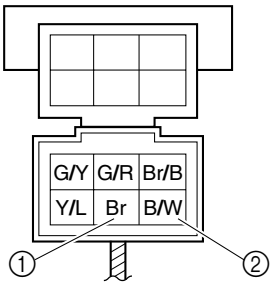
NO

Replace the left handlebar switch.

2. Voltage

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

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



- Set the main switch to “ON”.
- Measure the voltage (12 V) of brown ① and black/white ② at the meter assembly coupler.
- Is the voltage within specification?

YES

NO

Replace the meter assembly or ECU.

The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EBS01083

6. The coolant temperature warning light does not come on when the main switch is set to "ON", or if the coolant temperature warning light does not come on when the temperature is high (more than 112 °C (233.6 °F)).

EBS00812

1. Coolant temperature sensor

- Remove the coolant temperature sensor from the cylinder head.
- Connect the pocket tester (Ω × 100) to the coolant temperature sensor ① as shown.
- Immerse the coolant temperature sensor in a container filled with coolant ②.

NOTE:

Make sure the coolant temperature sensor terminals do not get wet.

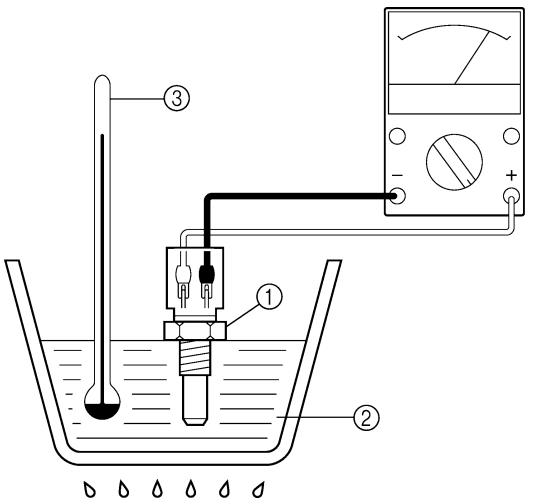
- Place a thermometer ③ in the coolant.
- Slowly heat the coolant, and then let it cool to the specified temperature indicated in the table.
- Measure the coolant temperature sensor resistance.

Coolant temperature sensor resistance
290 ~ 354 Ω at 80 °C (176 °F)

⚠ WARNING

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

Coolant temperature sensor
18 Nm (1.8 m · kg, 13 ft · lb)



- Does the coolant temperature sensor operate properly?

YES

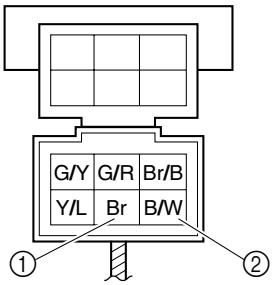
NO

Replace the coolant temperature sensor.

2. Voltage

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

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



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

YES

Replace the meter assembly or ECU.

NO

The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

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

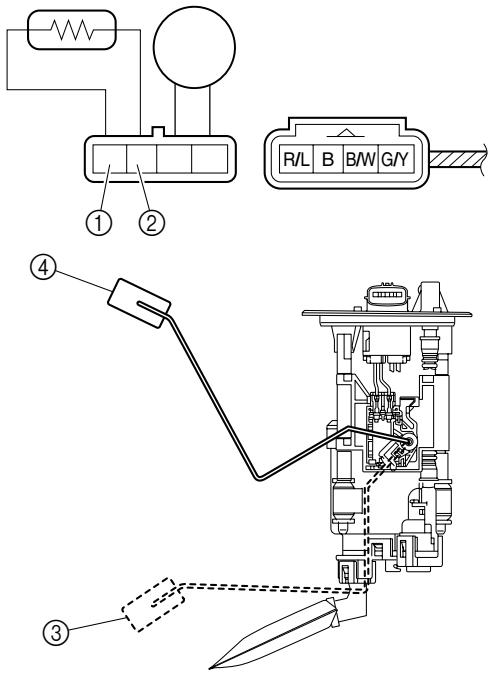
1. Fuel sender

- Drain the fuel from the fuel tank and then remove the fuel pump assembly (fuel sender) from the fuel tank.
- Connect the pocket tester (Ω × 10) to the fuel pump terminals as shown.

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

- Move the fuel sender float to the minimum ③ and maximum ④ level positions.
- Measure the fuel sender resistance.

Fuel sender resistance
Minimum ③: 139.0 ~ 141.0 Ω
Maximum ④: 19.0 ~ 21.0 Ω



- Is the fuel sender OK?

YES

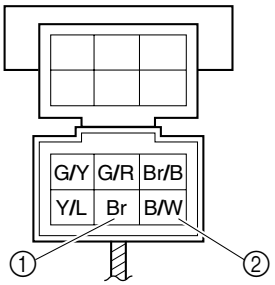
Replace the fuel pump assembly.

NO

2. Voltage

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

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



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

YES

Replace the meter assembly.

NO

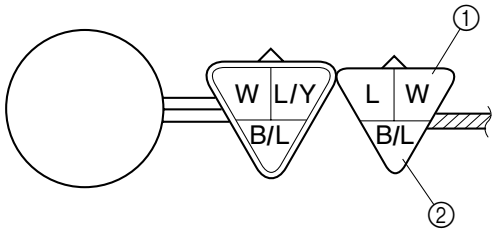
The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

8. The speedometer fails to come on.

1. Speed sensor

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

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



- Turn the main switch to "ON".
- Elevate the rear wheels and slowly rotate them.
- Measure the voltage of white and black/blue. With each full rotation of the rear wheels, the voltage reading should cycle from 0.6 V to 4.8 V to 0.6 V to 4.8 V.
- Is the speed sensor OK?

YES

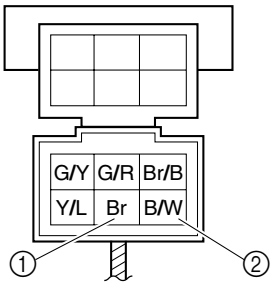
NO

Replace the speed sensor.

2. Voltage

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

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



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

YES

Replace the meter assembly or ECU.

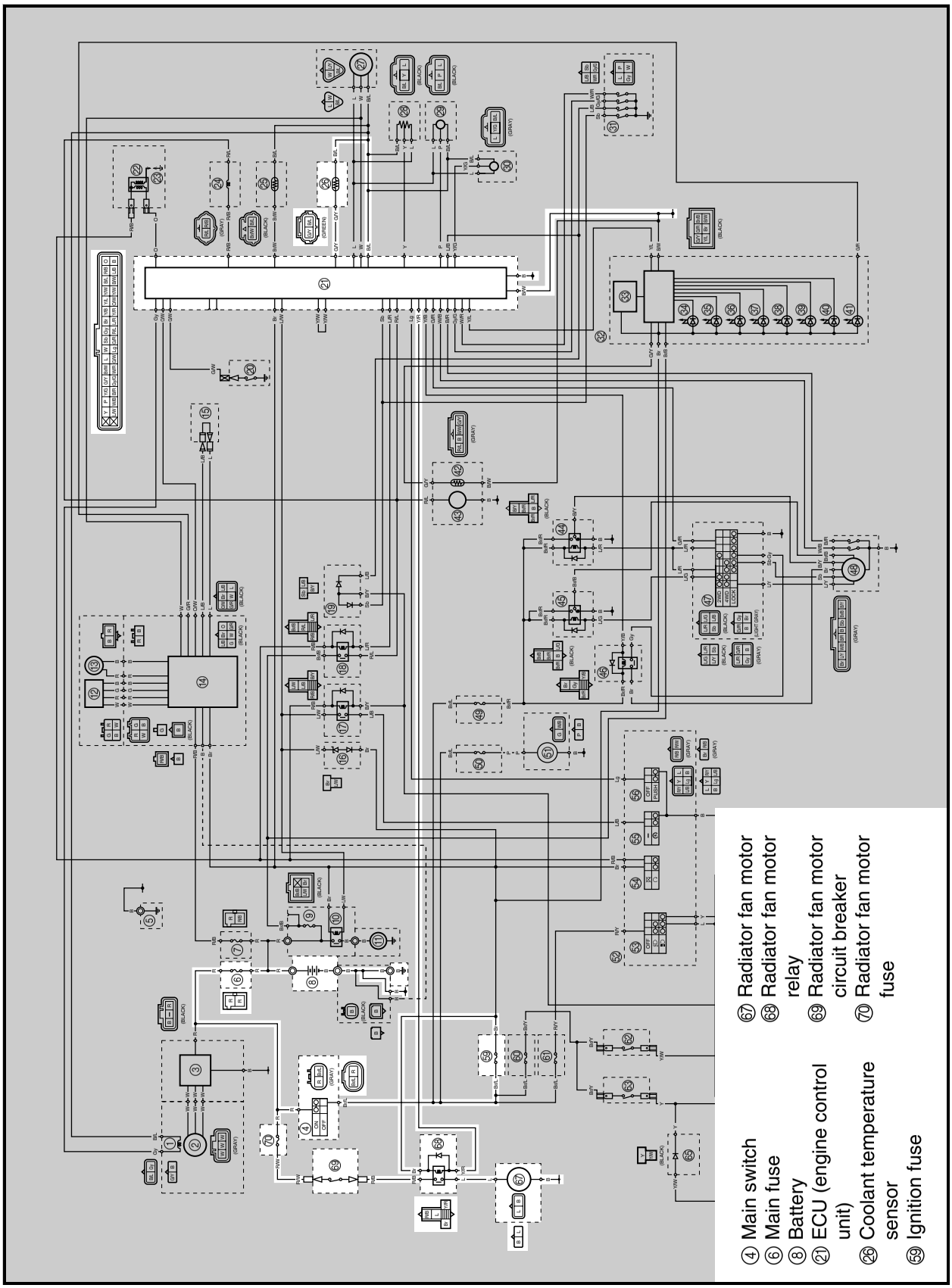
NO

The wiring circuit from the main switch to the meter assembly coupler is faulty and must be repaired.

EBS00532

COOLING SYSTEM

CIRCUIT DIAGRAM



EBS01085
TROUBLESHOOTING

The radiator fan motor fails to turn.

Check:
1. main, ignition, and radiator fan motor fuses
2. battery
3. main switch
4. radiator fan motor
5. radiator fan motor relay
6. radiator fan motor circuit breaker
7. coolant temperature sensor
8. wiring connections
   (the entire cooling system)

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

1. seat
2. battery cover
3. side panels
4. front fenders

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

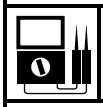
1. Main, ignition, and radiator fan motor fuses
   - Check the main, ignition, and radiator fan motor fuses for continuity.
     Refer to "CHECKING THE FUSES" in chapter 3.
   - Are the main, ignition, and radiator fan motor fuses OK?

YES ⇩ NO ⇩

Replace the fuse(s).

EBS01044

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.

EBS01041

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

YES ⇩ NO ⇩

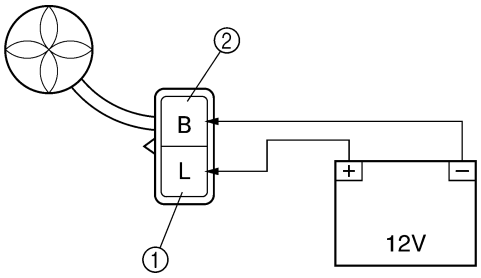
Replace the main switch.

EBS01086

4. Radiator fan motor

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

Positive battery lead → blue ①
Negative battery lead → black ②



- Does the radiator fan motor turn?

YES

NO

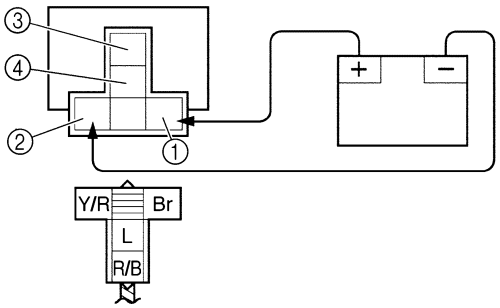
The radiator fan motor is faulty and must be replaced.

5. Radiator fan motor relay

- Remove the radiator fan motor relay from the wire harness.
- Connect the pocket tester (Ω × 1) and battery (12 V) to the radiator fan motor relay terminal as shown.
- Check the radiator fan motor relay of continuity.

Positive battery lead → brown ①
Negative battery lead → yellow/red ②

Positive tester probe → red/black ③
Negative tester probe → blue ④



- Does the radiator fan motor relay have continuity between red/black and blue?

YES

NO

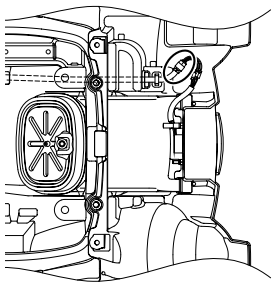
The radiator fan motor relay is faulty and must be replaced.

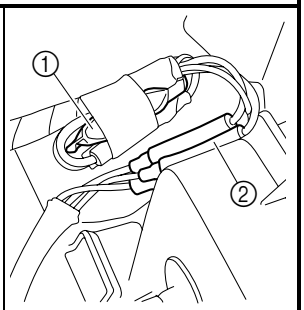
6. Radiator fan motor circuit breaker

- Remove the radiator fan motor circuit breaker from the wire harness.

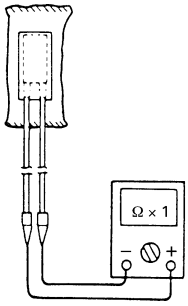
NOTE:

The radiator fan motor circuit breaker ① is attached to the wire harness with black tape near the tail/brake light connectors ②.





- Connect the pocket tester (Ω × 1) to the radiator fan motor circuit breaker.



Radiator fan motor circuit breaker resistance
Zero Ω at 20 °C (68 °F)

YES

NO

Replace the radiator fan motor circuit breaker.

EBS00812

7. Coolant temperature sensor

- Remove the coolant temperature sensor from the cylinder head.
- Connect the pocket tester (Ω × 100) to the coolant temperature sensor ① as shown.
- Immerse the coolant temperature sensor in a container filled with coolant ②.

NOTE:
Make sure the coolant temperature sensor terminals do not get wet.

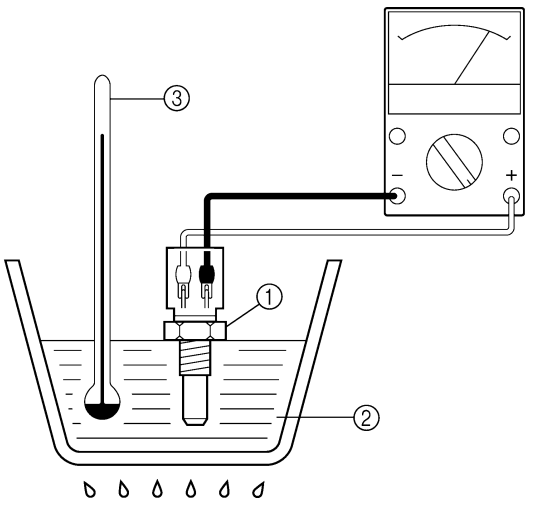
- Place a thermometer ③ in the coolant.
- Slowly heat the coolant, and then let it cool to the specified temperature indicated in the table.
- Measure the coolant temperature sensor resistance.

Coolant temperature sensor resistance
290 ~ 354 Ω at 80 °C (176 °F)

⚠ WARNING

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

Coolant temperature sensor
18 Nm (1.8 m · kg, 13 ft · lb)



- Does the coolant temperature sensor operate properly?

YES

NO

Replace the coolant temperature sensor.

EBS01090

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

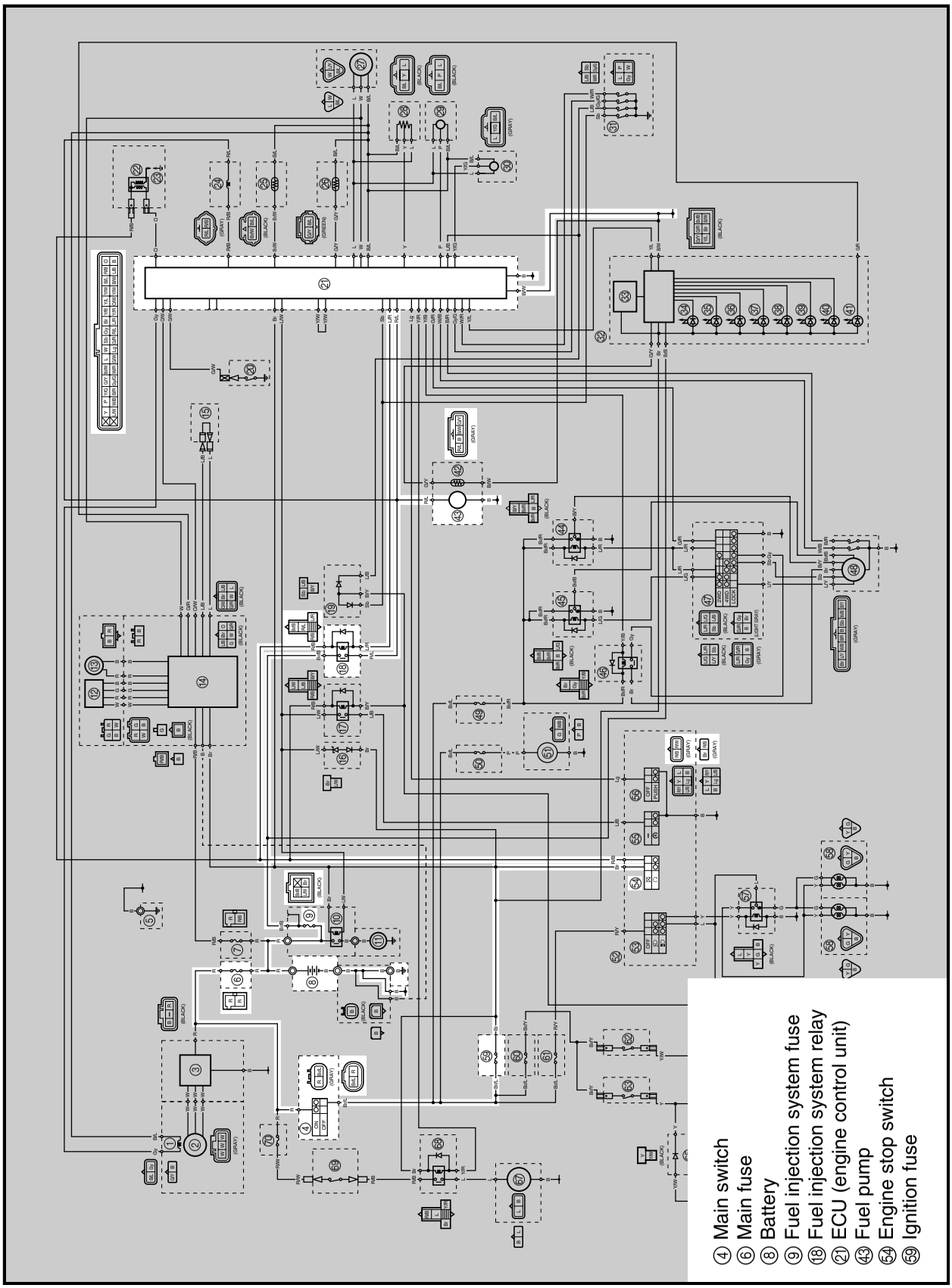
NO

Replace the ECU.

Properly connect or repair the cooling system's wiring.

FUEL PUMP SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

The fuel pump fails to operate.

Check:
1. main, ignition, and fuel injection system fuses
2. battery
3. main switch
4. engine stop switch
5. fuel injection system relay
6. fuel pump
7. wiring connections (the entire fuel pump system)

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

1. seat
2. battery cover
3. rear fender

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

1. Main, ignition, and fuel injection system fuses

- Check the main, ignition, and fuel injection system fuses for continuity.
  Refer to "CHECKING THE FUSES" in chapter 3.
- Are the main, ignition, and fuel injection system fuses OK?

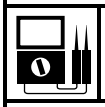
YES

NO → Replace the fuse(s).

EBS01044

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.

EBS01041

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.

4. Engine stop switch

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

YES

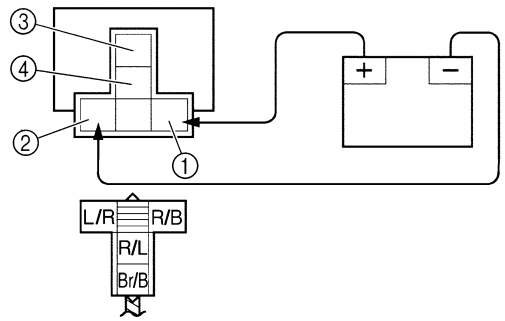
NO → Replace the left handlebar switch.

5. Fuel injection system relay

- Remove the fuel injection system relay from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) and battery (12 V) to the fuel injection system relay terminal as shown.
- Check the fuel injection system relay of continuity.

Positive battery lead → **red/black** ①
Negative battery lead → **blue/red** ②

Positive tester probe → **brown/black** ③
Negative tester probe → **red/blue** ④



- Does the fuel injection system relay have continuity between brown/black and red/blue?

YES → The fuel injection system relay is faulty and must be replaced.

NO

6. Fuel pump

- Check the condition of the fuel pump. Refer to "CHECKING THE FUEL PUMP BODY" in chapter 6.

YES

NO → Replace the fuel pump assembly.

7. Wiring

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

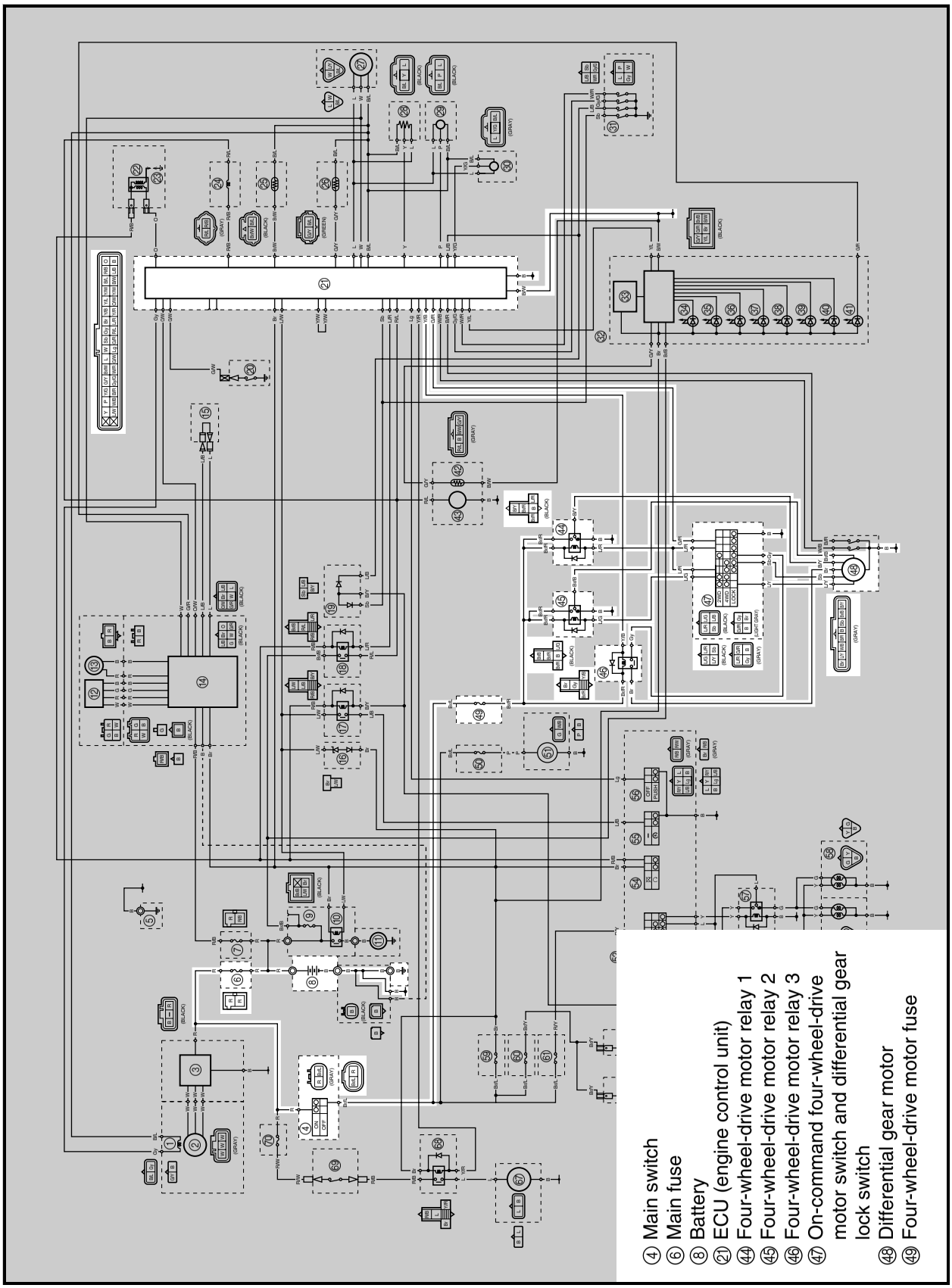
YES → Replace the ECU.

NO → Properly connect or repair the fuel pump system wiring.

EBS00535

2WD/4WD SELECTING SYSTEM

CIRCUIT DIAGRAM



EBS01095
TROUBLESHOOTING

The four-wheel-drive motor indicator light fails to come on.

Check:
1. main and four-wheel-drive motor fuses
2. battery
3. main switch
4. four-wheel-drive motor relay 1
5. four-wheel-drive motor relay 2
6. four-wheel-drive motor relay 3
7. on-command four-wheel-drive motor switch and differential gear lock switch
8. differential gear motor
9. wiring connection (the entire 2WD/4WD selecting system)

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

1. seat
2. battery cover

- Troubleshoot with the following special tool(s).

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

EBS01043

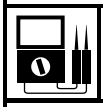
1. Main and four-wheel-drive motor fuses
- Check the main and four-wheel-drive motor fuses for continuity.
  Refer to “CHECKING THE FUSES” in chapter 3.
- Are the main and four-wheel-drive motor fuses OK?

YES → NO

Replace the fuse(s).

EBS01044

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.

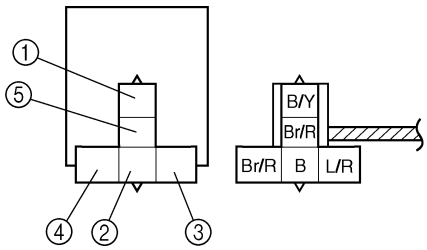
EBS01041

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.

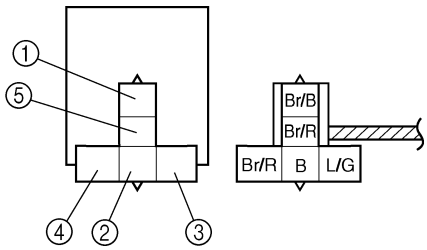
EBS01096

4. Four-wheel-drive motor relay 1
• Remove the four-wheel-drive motor relay 1 from the wire harness. • Connect the pocket tester ($\Omega \times 1$) and the battery (12 V) to the four-wheel-drive motor relay 1 terminals.
Positive tester probe → **black/yellow** ① **Negative tester probe** → **black** ②
Positive battery terminal → **brown/red** ③ **Negative battery terminal** → **blue/red** ④
Positive tester probe → **black/yellow** ① **Negative tester probe** → **brown/red** ⑤

• Check the four-wheel-drive motor relay 1 for continuity.

YES → Replace the four-wheel-drive motor relay 1.

NO

EBS01097

5. Four-wheel-drive motor relay 2
• Remove the four-wheel-drive motor relay 2 from the wire harness. • Connect the pocket tester ($\Omega \times 1$) and the battery (12 V) to the four-wheel-drive motor relay 2 terminals.
Positive tester probe → **brown/black** ① **Negative tester probe** → **black** ②
Positive battery terminal → **brown/red** ③ **Negative battery terminal** → **blue/green** ④
Positive tester probe → **brown/black** ① **Negative tester probe** → **brown/red** ⑤

• Check the four-wheel-drive motor relay 2 for continuity.

YES → Replace the four-wheel-drive motor relay 2.

NO

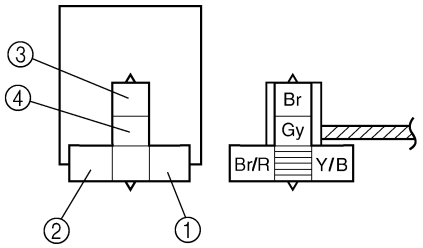
EBS01098

6. Four-wheel-drive motor relay 3

- Remove the four-wheel-drive motor relay 3 from the wire harness.
- Connect the pocket tester ($\Omega \times 1$) and the battery (12 V) to the four-wheel-drive motor relay 3 terminals.

Positive battery terminal → brown/red ①
Negative battery terminal →
yellow/black ②

Positive tester probe → brown ③
Negative tester probe → gray ④



- Check the four-wheel-drive motor relay 3 for continuity.

YES

NO → Replace the four-wheel-drive motor relay 3.

EBS01092

7. On-command four-wheel-drive motor switch and differential gear lock switch

- Check the on-command four-wheel-drive motor switch and differential gear lock switch for continuity.
  Refer to “CHECKING THE SWITCHES”.
- Is the on-command four-wheel-drive motor switch and differential gear lock switch OK?

YES

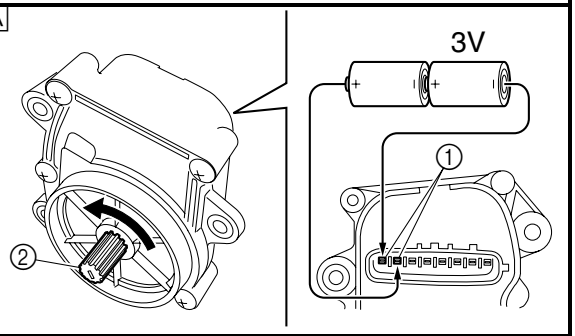
NO → Replace the on-command four-wheel-drive motor switch and differential gear lock switch.

8. Differential gear motor

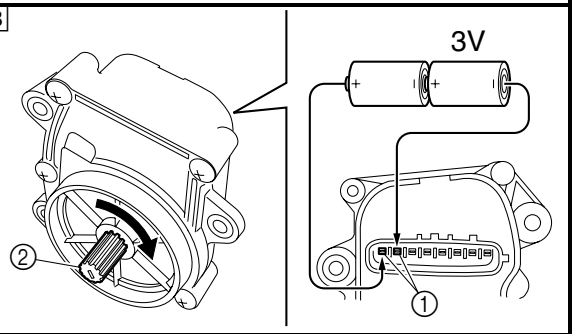
- Disconnect the differential gear motor coupler.
- Remove the differential gear motor from the differential gear case.
  Refer to “FRONT CONSTANT VELOCITY JOINTS AND DIFFERENTIAL GEAR” in chapter 7.
- Connect two C size batteries to the differential gear motor terminals ① (as shown illustrations).

A Check that the pinion gear ② turns counterclockwise.
B Check that the pinion gear ② turns clockwise.

A



B



- Make sure that the drive gear (shift fork sliding gear) operates correctly.

NOTE:
When installing the differential gear motor, refer to “FRONT CONSTANT VELOCITY JOINTS AND DIFFERENTIAL GEAR” in chapter 7.

YES

NO

Replace the differential gear motor.

EBS01094

9. Wiring connection

- Check the connections of the entire 2WD/4WD selecting system.
  Refer to “CIRCUIT DIAGRAM”.
- Is the 2WD/4WD system wiring properly connected and without defects?

YES

Replace the ECU.

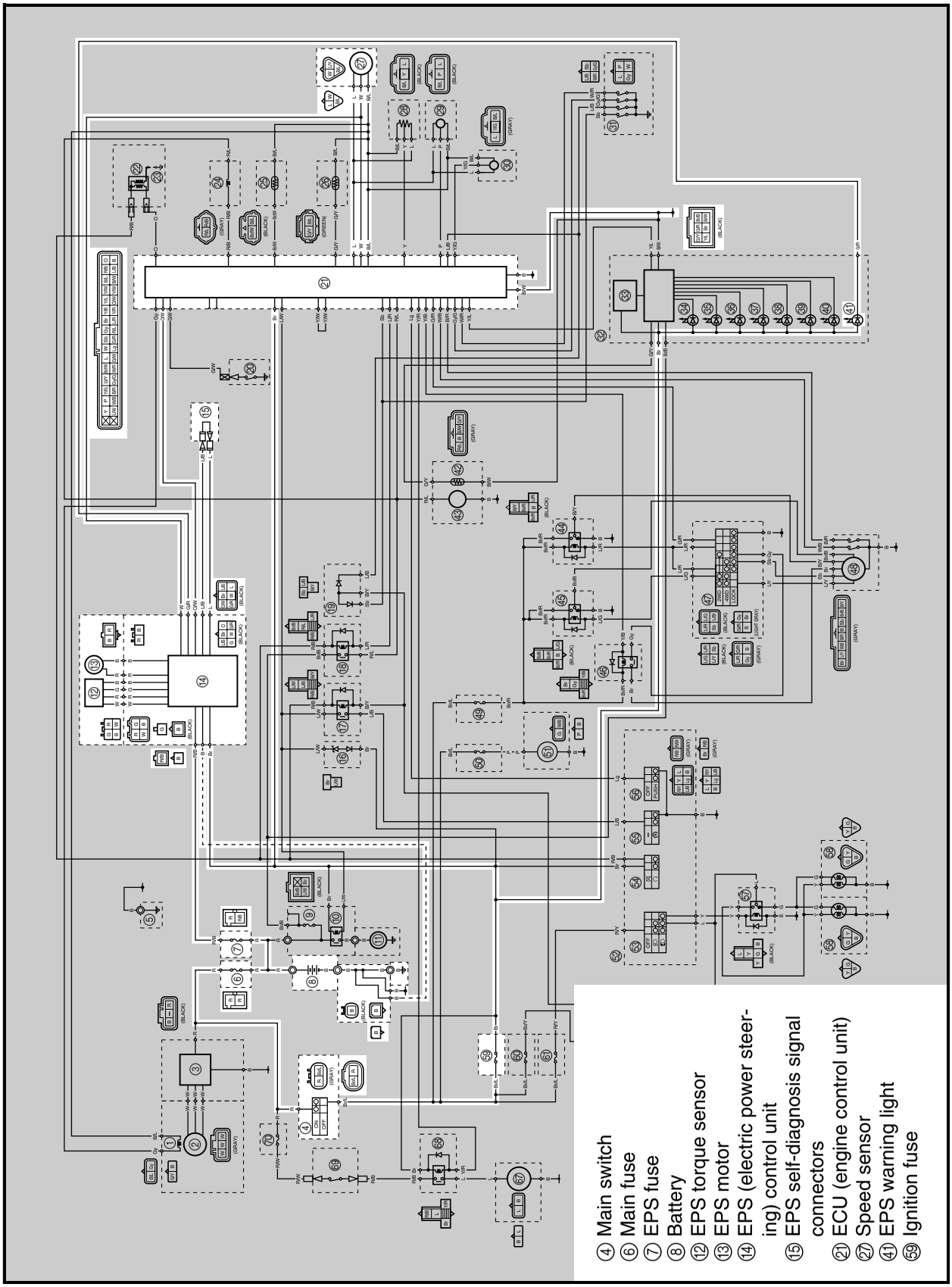
NO

Properly connect or repair the 2WD/4WD selecting system wiring.

EBS00532

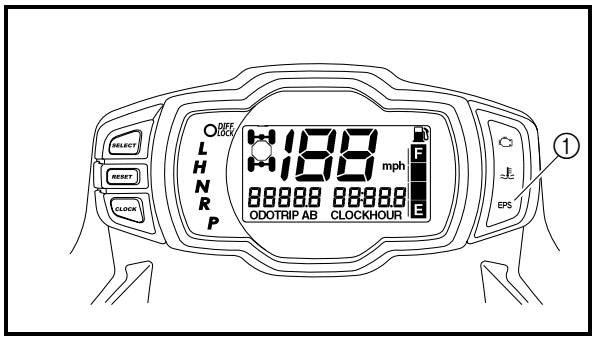
EPS (ELECTRIC POWER STEERING) SYSTEM

CIRCUIT DIAGRAM



EPS CONTROL UNIT'S SELF-DIAGNOSTIC FUNCTION

The EPS control unit is equipped with a self-diagnostic function. If this function detects a malfunction in the EPS system, it lights the EPS warning light to alert the rider that a malfunction has occurred in the system. Once a malfunction has been detected, it becomes stored in the EPS control unit memory in the form of a fault code.



① EPS warning light

- The EPS warning light comes on when the main switch is turned to "ON", and then goes off once the engine is started. If the warning light remains on or comes on after the engine is started, the EPS system may be defective.
- The electrical circuit of the warning light can be checked by turning the main switch to "ON". If the warning light does not come on, the electrical circuit may be defective.

NOTE:

- If the engine is stopped using the engine stop switch and the main switch is in the "ON" position, the EPS warning light comes on to indicate that the power assistance for the steering is not functioning.
- If the steering usage is too heavy (i.e., excessive steering use when the vehicle is traveling at a slow speed), the power assist is reduced to protect the EPS motor from overheating.

EPS WARNING LIGHT DURING NORMAL OPERATION

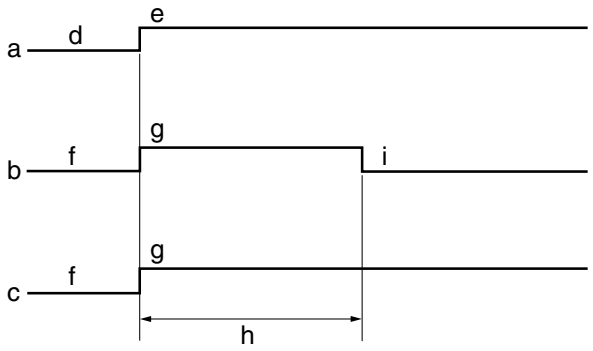
The EPS warning light comes on initially for 2 seconds after the main switch is turned to “ON”. However, the warning light remains on until the engine is started.

In addition, if a malfunction is detected while the warning light comes on initially, the warning light remains on.

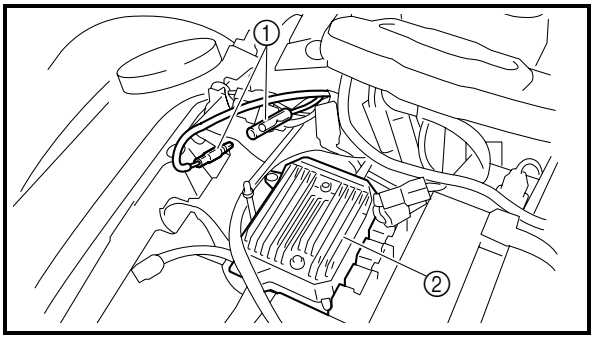
Furthermore, the warning light comes on whenever a malfunction has occurred.

NOTE:

The EPS system does not operate while the EPS warning light is on.



a. Main switch
b. EPS warning light (no malfunction detected)
c. EPS warning light (malfunction detected)
d. OFF
e. ON
f. Off
g. Comes on.
h. Initial lighting: 2 seconds
i. Goes off.



DIAGNOSTIC MODE

Setting the diagnostic mode (present and past malfunctions)

1. Turn the main switch to “ON”.
2. Disconnect the EPS self-diagnosis signal connector ①.

NOTE:

Do not disconnect the EPS self-diagnosis signal connector before turning the main switch to “ON”.

3. Select the signaling mode by grounding the EPS self-diagnosis signal connector (male side) to the EPS control unit ② or disconnecting it from the unit as follows.
   a) Present malfunction signaling mode
      Ground the EPS self-diagnosis signal connector within 5 seconds after turning the main switch to “ON”, and leave it grounded. The signaling mode is activated after 5 seconds.
   b) Past malfunction signaling mode
      While the present malfunction mode is activated, briefly disconnect the EPS self-diagnosis signal connector, ground it again, and leave it grounded. The signaling mode is activated after 5 seconds.
4. Turn the main switch to “OFF” to cancel the diagnostic mode.

NOTE:

- The diagnostic mode can also be canceled by riding the vehicle at speeds above 2 km/h.
- When the diagnostic mode is selected and during the initial lighting of the EPS warning light, the EPS control unit does not receive input from the EPS self-diagnosis signal connector.

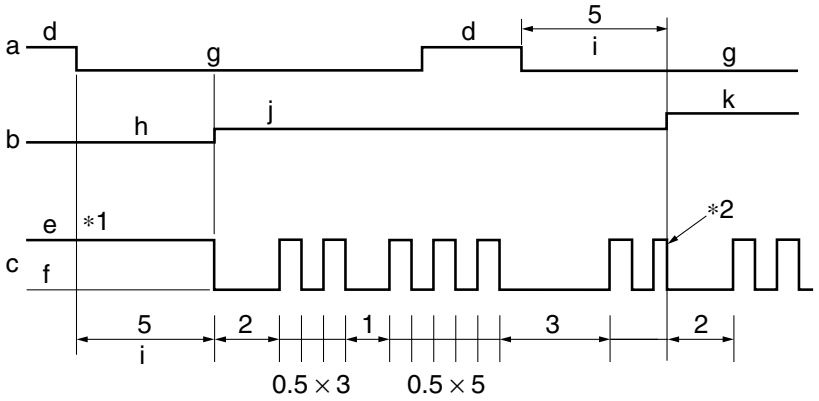
Identifying fault codes

When the diagnostic mode is activated, the fault codes determined by the fail-safe specifications are signaled by the EPS warning light as follows.

- Present malfunction signaling mode: Currently detected fault codes are signaled.
- Past malfunction signaling mode: Both previously detected fault codes and currently detected fault codes are signaled.

Signaling method

Example 1: Fault code No. 23

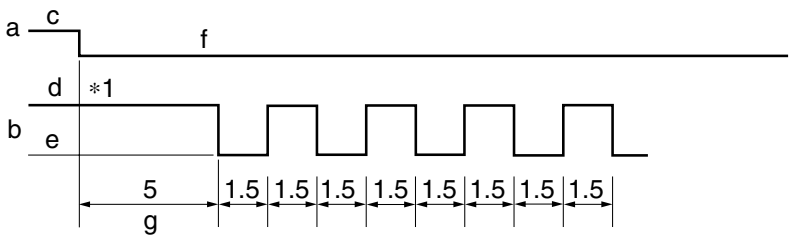


a. EPS self-diagnosis signal connector
b. Diagnostic mode
c. EPS warning light
d. Disconnected
e. On
f. Off
g. Grounded
h. Normal mode (diagnostic mode not activated)
i. Mode selection judgment
j. Present malfunction signaling mode
k. Past malfunction signaling mode

*1 The EPS warning light comes on for 5 seconds during the diagnostic mode selection judgment.
*2 Display of the present malfunctions stops when the past malfunction display mode is selected.
After the mode selection judgment is completed (present or past malfunction mode), the current fault code signaling stops immediately, and then the first code of the mode is signaled 2 seconds later.

When a fault code is signaled, the EPS warning light goes off for 1 second between the units of 10 and the units of 1 for the code. After a fault code is signaled, the warning light goes off for 3 seconds, and then the next code is signaled.

Example 2: No malfunctions are detected

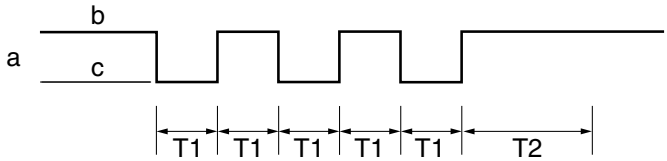


a. EPS self-diagnosis signal connector
b. EPS warning light
c. Disconnected
d. Comes on.
e. Goes off.
f. Grounded
g. Mode selection judgment

*1 The EPS warning light comes on for 5 seconds during the diagnostic mode selection judgment.
After the mode selection judgment is completed (present display or past malfunction mode), the current fault code signaling stops immediately, and then the EPS warning light starts flashing at 1.5-second intervals.

Deleting fault codes

To delete fault codes, ground the EPS self-diagnosis signal connector 3 or more times within 5 seconds while the present or past malfunction mode is activated. The currently selected mode remains active after the fault codes of that mode are deleted.



a. EPS self-diagnosis signal connector
b. Disconnected
c. Grounded

T1: Connector grounded - - - - $0.1 \leq T1 \leq 1.6$ seconds
T2: Fault codes deleted - - - - - Maximum 1.5 seconds required

SELF-DIAGNOSTIC FUNCTION TABLE (EPS SYSTEM)

Fault code No.	Item	Symptom	Probable cause of malfunction
11 13 15 16	EPS torque sensor	No normal signals are received from the torque sensor.	• Open or short circuit in wire harness. • Malfunction in torque sensor. • Malfunction in EPS control unit.
21	Speed sensor	No normal signals are received from the speed sensor.	• Open or short circuit in wire harness. • Malfunction in speed sensor. • Malfunction in EPS control unit.
22	Engine speed signal	No normal signals are received from the ECU.	• Open or short circuit in wire harness. • Malfunction in ECU. • Malfunction in EPS control unit.
41 42 43 45	EPS motor	No normal signals are received from the EPS motor.	• Open or short circuit in wire harness. • Malfunction in EPS motor. • Malfunction in EPS control unit.
52	EPS control unit	Relay contacts in the EPS control unit are welded together.	Malfunction in EPS control unit.
53	EPS control unit	Battery voltage has dropped.	• Faulty battery. • Malfunction in the charging system. Refer to “CHARGING SYSTEM”. • Malfunction in EPS control unit.
54	EPS control unit	Relay contacts in the EPS control unit are welded together.	Malfunction in EPS control unit.
55	EPS control unit	Battery voltage has increased. Abnormality exists between the EPS and the ECU.	• Malfunction in the charging system. Refer to “CHARGING SYSTEM”. • Malfunction in EPS control unit.

TROUBLESHOOTING DETAILS (EPS SYSTEM)

NOTE:

The malfunction history is stored even if the main switch is turned to “OFF”, therefore, be sure to erase the history (present and past malfunction signaling modes) after repairing the cause of the EPS system malfunction. The malfunction history must be erased in the diagnostic mode. Refer to “DIAGNOSTIC MODE” and “Deleting fault codes”.

Fault code No.	**11, 13, 15, 16**	**Symptom**	**EPS torque sensor: open or short circuit detected.**

Order	**Item/components and probable cause**	**Check or maintenance job**	**Reinstatement method**
1	Connections • EPS torque sensor coupler	• Check the coupler for any pins that may have pulled out. • Check the locking condition of the coupler. • If there is a malfunction, repair it and connect the coupler securely.	Turning the main switch to “OFF”.
2	Defective EPS torque sensor.	• Replace if defective. Refer to “CHECKING THE EPS TORQUE SENSOR”.	
3	Open or short circuit in EPS torque sensor lead.	• Repair or replace if there is an open or short circuit. • Between EPS torque sensor coupler and EPS control unit coupler. (white–white) (red–red) (green–green) (black–black)	

Fault code No.	21	Symptom	Speed sensor: open or short circuit detected.	
Order	**Item/components and probable cause**		**Check or maintenance job**	**Reinstatement method**
1	Connections • Speed sensor coupler • EPS control unit coupler at the wire harness		• Check the coupler for any pins that may have pulled out. • Check the locking condition of the coupler. • If there is a malfunction, repair it and connect the coupler securely.	Starting the engine and activating the vehicle speed sensor by operating the vehicle above 5 km/h, or turning the main switch to “OFF”, then to “ON”, and then deleting the fault codes. Refer to “DIAGNOSTIC MODE” and “Deleting fault codes”.
2	Open or short circuit in wire harness.		• Repair or replace if there is an open or short circuit. • Between speed sensor coupler and EPS control unit coupler. (white–white)	
3	Defective speed sensor.		• Execute the diagnostic mode. (Code No.21) • Replace if defective. Refer to “SIGNALING SYSTEM”.	

Fault code No.	22	Symptom	No normal signals are received from the ECU.	
Order	**Item/components and probable cause**		**Check or maintenance job**	**Reinstatement method**
1	Connections • EPS control unit coupler at the wire harness • ECU coupler at the wire harness		• Check the coupler for any pins that may have pulled out. • Check the locking condition of the coupler. • If there is a malfunction, repair it and connect the coupler securely.	Turning the main switch to “OFF”.
2	Open or short circuit in wire harness.		• Repair or replace if there is an open or short circuit. • Between ECU coupler and EPS control unit coupler. (orange/white–orange/white)	
3	Malfunction in ECU.		Replace the ECU.	

Fault code No.	41, 42, 43, 45	Symptom	EPS motor: open or short circuit detected.

Order	Item/components and probable cause	Check or maintenance job	Reinstatement method
1	Connections • EPS motor coupler	• Check the coupler for any pins that may have pulled out. • Check the locking condition of the coupler. • If there is a malfunction, repair it and connect the coupler securely.	Turning the main switch to "OFF".
2	Open or short circuit in EPS motor lead.	• Repair or replace if there is an open or short circuit. • Between EPS motor and EPS control unit coupler. (red–red) (black–black)	
3	Defective EPS motor.	Replace if defective. Refer to "CHECKING THE EPS MOTOR".	

Fault code No.	52	Symptom	Relay contacts in the EPS control unit are welded together.

Order	Item/components and probable cause	Check or maintenance job	Reinstatement method
1	Malfunction in EPS control unit.	Replace the EPS control unit.	Turning the main switch to "OFF".

Fault code No.	53	Symptom	Power supply to the EPS control unit is not normal (low battery voltage).

Order	Item/components and probable cause	Check or maintenance job	Reinstatement method
1	Faulty battery.	Replace or charge the battery. Refer to "CHECKING AND CHARGING THE BATTERY" in chapter 3.	Turning the main switch to "OFF".
2	Malfunction in rectifier/regulator or charging system.	Replace if defective. Refer to "CHARGING SYSTEM".	
3	Malfunction in EPS control unit.	Replace the EPS control unit.	

Fault code No.	54	Symptom	Relay contacts in the EPS control unit are welded together.

Order	Item/components and probable cause	Check or maintenance job	Reinstatement method
1	Malfunction in EPS control unit.	Replace the EPS control unit.	Turning the main switch to “OFF”.

Fault code No.	55	Symptom	Power supply to the EPS control unit is not normal (High battery voltage). Malfunction in control unit.

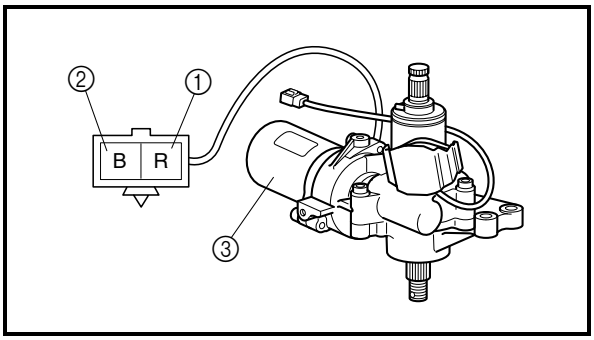
Order	Item/components and probable cause	Check or maintenance job	Reinstatement method
1	Faulty battery.	Replace the battery. Refer to “CHECKING AND CHARGING THE BATTERY” in chapter 3.	Turning the main switch to “OFF”.
2	Malfunction in rectifier/regulator.	Replace if defective. Refer to “CHARGING SYSTEM”.	
3	Malfunction in EPS control unit.	Replace the EPS control unit.	

CHECKING THE EPS MOTOR

1. Remove:
   - EPS unit
2. Check:
   - EPS motor
     Out of specification → Replace.

NOTE:

The pocket tester and the analog pocket tester readings are shown in the following table.



Continuity
Positive tester probe → red ①
Negative tester probe → black ②
No continuity
Positive tester probe → red ①
Negative tester probe → EPS motor body ③
No continuity
Positive tester probe → black ②
Negative tester probe → EPS motor body ③

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a. Connect the pocket tester (Ω × 1) to the EPS motor coupler terminal and EPS motor body.

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

b. Check the EPS motor for continuity.
c. Check the EPS motor for no continuity.

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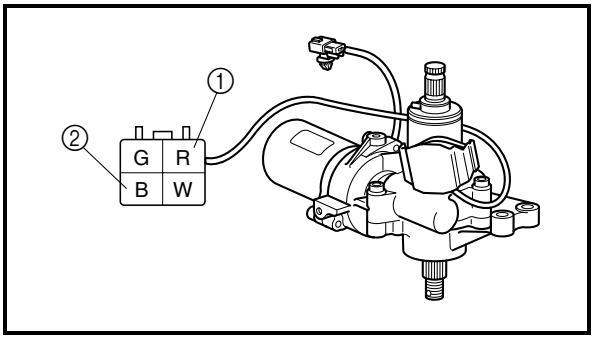
CHECKING THE EPS TORQUE SENSOR

1. Remove:
   - EPS unit
2. Check:
   - EPS torque sensor resistance
     Out of specification → Replace.

EPS torque sensor resistance
1.00 ~ 1.50 kΩ



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a. Connect the pocket tester (Ω × 1k) to the EPS torque sensor coupler terminal as shown.

Pocket tester
90890-03112
Analog pocket tester
YU-03112-C

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

b. Measure the EPS torque sensor resistance.

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EBS00537

TROUBLESHOOTING

NOTE:

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

STARTING FAILURE/HARD STARTING

FUEL SYSTEM

Fuel tank
- Empty
- Clogged fuel tank drain hose
- Deteriorated or contaminated fuel

Fuel pump
- Faulty fuel pump
- Faulty fuel injection system relay

Throttle body
- Deteriorated or contaminated fuel
- Sucked-in air

Air filter
- Clogged air filter element

ELECTRICAL SYSTEM

Spark plug
- Improper plug gap
- Worn electrodes
- Wire between terminals broken
- Improper heat range
- Faulty spark plug cap

Ignition coil
- Broken or shorted primary/secondary
- Faulty spark plug lead
- Broken body

Ignition system
- Faulty ECU
- Faulty crankshaft position sensor
- Broken AC magneto rotor woodruff key

Switches and wiring
- Faulty main switch
- Faulty engine stop switch
- Broken or shorted wiring
- Faulty gear position switch
- Faulty start switch
- Faulty brake light switch

Starting system
- Faulty starter motor
- Faulty starter relay
- Faulty starter circuit cut-off relay
- Faulty starter clutch

Battery
- Faulty battery

Fuse(s)
- Blown, damaged or incorrect fuse
- Improperly installed fuse

COMPRESSION SYSTEM

Cylinder and cylinder head
- Loose spark plug
- Loose cylinder head or cylinder
- Broken cylinder head gasket
- Broken cylinder gasket
- Worn, damaged or seized cylinder

Valve, camshaft and crankshaft
- Improperly sealed valve
- Improperly contacted valve and valve seat
- Improper valve timing
- Broken valve spring
- Seized camshaft
- Seized crankshaft

Piston and piston rings
- Improperly installed piston ring
- Worn, fatigued or broken piston ring
- Seized piston ring
- Seized or damaged piston

Crankcase and crankshaft
- Improperly seated crankcase
- Seized crankshaft

Valve train
- Improperly adjusted valve clearance
- Improperly adjusted valve timing

EBS00538

POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE

Throttle body
- Damaged or loose throttle body joint
- Improperly adjusted idle speed (throttle stop screw)
- Improper throttle cable play
- Flooded throttle body

Electrical system
- Faulty spark plug
- Faulty ECU
- Faulty crankshaft position sensor
- Faulty ignition coil

Valve train
- Improperly adjusted valve clearance

Air filter
- Clogged air filter element

EBS00539

POOR MEDIUM AND HIGH-SPEED PERFORMANCE

POOR MEDIUM AND HIGH-SPEED PERFORMANCE

Refer to “STARTING FAILURE/HARD STARTING” and “POOR IDLE SPEED PERFORMANCE”.

Fuel pump
- Faulty fuel pump

Air filter
- Clogged air filter element

EBS00540

FAULTY DRIVE TRAIN

The following conditions may indicate damaged shaft drive components:

Symptoms	Possible Causes
1. A pronounced hesitation or “jerky” movement during acceleration, deceleration, or sustained speed. (This must not be confused with engine surging or transmission characteristics.) 2. A “rolling rumble” noticeable at low speed; a high-pitched whine; a “clunk” from a shaft drive component or area. 3. A locked-up condition of the shaft drive mechanism, no power transmitted from the engine to the front and/or rear wheels.	A. Bearing damage. B. Improper gear lash. C. Gear tooth damage. D. Broken drive shaft. E. Broken gear teeth. F. Seizure due to lack of lubrication. G. Small foreign objects lodged between the moving parts.

NOTE:

Areas A, B, and C above may be extremely difficult to diagnose. The symptoms are quite subtle and difficult to distinguish from normal vehicle operating noise. If there is reason to believe these components are damaged, remove the components and check them.

EBS00542
FAULTY GEAR SHIFTING

HARD SHIFTING
Refer to “FAULTY CLUTCH PERFORMANCE”.

SHIFT LEVER DOES NOT MOVE
Shift drum, shift forks
- Groove jammed with impurities
- Seized shift fork
- Bent shift fork guide bar

Transmission
- Seized transmission gear
- Jammed impurities
- Incorrectly assembled transmission

Shift guide
- Broken shift guide

JUMPS OUT OF GEAR
Shift forks
- Worn shift fork

Shift drum
- Improper thrust play
- Worn shift drum groove

Transmission
- Worn gear dog

EBS00543
FAULTY CLUTCH PERFORMANCE

ENGINE OPERATES BUT VEHICLE WILL NOT MOVE
V-belt
- Bent, damaged or worn V-belt
- V-belt slips

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

Transmission
- Damaged transmission gears

CLUTCH SLIPPING
Clutch spring
- Damaged, loose or worn clutch shoe spring

Clutch shoe
- Damaged or worn clutch shoe

Primary sliding sheave
- Seized primary sliding sheave

POOR STARTING PERFORMANCE
V-belt
- V-belt slips
- Oil or grease on the V-belt

Primary sliding sheave
- Faulty operation
- Worn pin groove
- Worn pin

Clutch shoe
- Bent, damaged or worn clutch shoe

POOR SPEED PERFORMANCE

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

Primary pulley weight
- Faulty operation
- Worn primary pulley weight

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

EBS00546
OVERHEATING

OVERHEATING

Ignition system
- Improper spark plug gap
- Improper spark plug heat range
- Faulty ECU

Fuel system
- Faulty throttle body
- Damaged or loose throttle body joint
- Clogged air filter element

Compression system
- Heavy carbon build-up

Engine oil
- Improper oil level
- Improper oil viscosity
- Inferior oil quality

Brake
- Brake drag

Cooling system
- Low coolant level
- Clogged or damaged radiator
- Damaged or faulty water pump
- Faulty fan motor
- Faulty coolant temperature sensor

EBS00548
OVERCOOLING

COOLING SYSTEM

Thermostat
- Thermostat stays open

EBS00550
FAULTY BRAKE

POOR BRAKING EFFECT

Disc brake
- Worn brake pads
- Worn disc
- Air in brake fluid
- Leaking brake fluid
- Faulty master cylinder kit cup
- Faulty caliper kit seal
- Loose union bolt
- Broken brake hose and pipe
- Oily or greasy disc/brake pads
- Improper brake fluid level

EBS00551
SHOCK ABSORBER MALFUNCTION
MALFUNCTION
- Bent or damaged damper rod
- Damaged oil seal lip
- Fatigued shock absorber spring

EBS00552
UNSTABLE HANDLING
UNSTABLE HANDLING
Handlebar
- Improperly installed or bent

Steering
- Incorrect toe-in
- Bent steering stem
- Improperly installed steering stem
- Damaged bearing or bearing race
- Bent tie-rods
- Deformed steering knuckles

Tires
- Uneven tire pressures on both sides
- Incorrect tire pressure
- Uneven tire wear

Wheels
- Deformed wheel
- Loose bearing
- Bent or loose wheel axle
- Excessive wheel runout

Frame
- Bent
- Damaged frame

EBS00553
LIGHTING SYSTEM
HEADLIGHT DOES NOT COME ON
- Improper bulb
- Too many electric accessories
- Hard charging (broken stator coil and/or faulty rectifier/regulator)
- Incorrect connection
- Improperly grounded
- Poor contacts (main or light switch)
- Bulb life expired

BULB BURNT OUT
- Improper bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded
- Faulty main and/or light switch
- Bulb life expired

YFM7FGPW 2007 WIRING DIAGRAM

① Crankshaft position sensor
② AC magneto
③ Rectifier/regulator
④ Main switch
⑤ Frame ground
⑥ Main fuse
⑦ EPS fuse
⑧ Battery
⑨ Fuel injection system fuse
⑩ Starter relay
⑪ Starter motor
⑫ EPS torque sensor
⑬ EPS motor
⑭ EPS (electric power steering) control unit
⑮ EPS self-diagnosis signal connectors
⑯ Diode 1
⑰ Starting circuit cut-off relay
⑱ Fuel injection system relay
⑲ Diode 2
⑳ Reverse switch
㉑ ECU (engine control unit)
㉒ Ignition coil
㉓ Spark plug
㉔ Fuel injector
㉕ Intake air temperature sensor
㉖ Coolant temperature sensor
㉗ Speed sensor
㉘ TPS (throttle position sensor)
㉙ Intake air pressure sensor
㉚ Lean angle sensor
㉛ Gear position switch
㉜ Meter assembly
㉝ Multifunction meter
㉞ Engine trouble warning light
㉟ Coolant temperature warning light
㊱ Park indicator light
㊲ Reverse indicator light
㊳ Neutral indicator light
㊴ High-range indicator light
㊵ Low-range indicator light
㊶ EPS warning light
㊷ Fuel sender
㊸ Fuel pump
㊹ Four-wheel-drive motor relay 1
㊺ Four-wheel-drive motor relay 2
㊻ Four-wheel-drive motor relay 3
㊼ On-command four-wheel-drive motor switch and differential gear lock switch
㊽ Differential gear motor
㊾ Four-wheel-drive motor fuse
㊿ Auxiliary DC jack fuse
(51) Auxiliary DC jack
(52) Left handlebar switch
(53) Light switch
(54) Engine stop switch
(55) Start switch
(56) Override switch
(57) Headlight relay
(58) Headlight
(59) Ignition fuse
(60) Signaling system fuse
(61) Headlight fuse
(62) Rear brake light switch
(63) Front brake light switch
(64) Tail/brake light
(65) Diode 3
(66) Rear brake relay
(67) Radiator fan motor
(68) Radiator fan motor relay
(69) Radiator fan motor circuit breaker
(70) Radiator fan motor fuse

COLOR CODE

B..... Black
Br ..... Brown
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/L ..... Brown/Blue
Br/R..... Brown/Red
Br/W ..... Brown/White
Br/Y ..... Brown/Yellow
G/R..... Green/Red
G/W..... Green/White
G/Y ..... Green/Yellow
Gy/G..... Gray/Green
L/B..... Blue/Black
L/G ..... Blue/Green
L/R ..... Blue/Red
L/W..... Blue/White
L/Y..... Blue/Yellow
O/G ..... Orange/Green
O/W..... Orange/White
R/B ..... Red/Black
R/L ..... Red/Blue
R/W ..... Red/White
R/Y ..... Red/Yellow
W/B ..... White/Black
W/L..... White/Blue
W/R ..... White/Red
Y/B ..... Yellow/Black
Y/G..... Yellow/Green
Y/L..... Yellow/Blue
Y/R ..... Yellow/Red
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YAMAHA MOTOR CO., LTD.
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