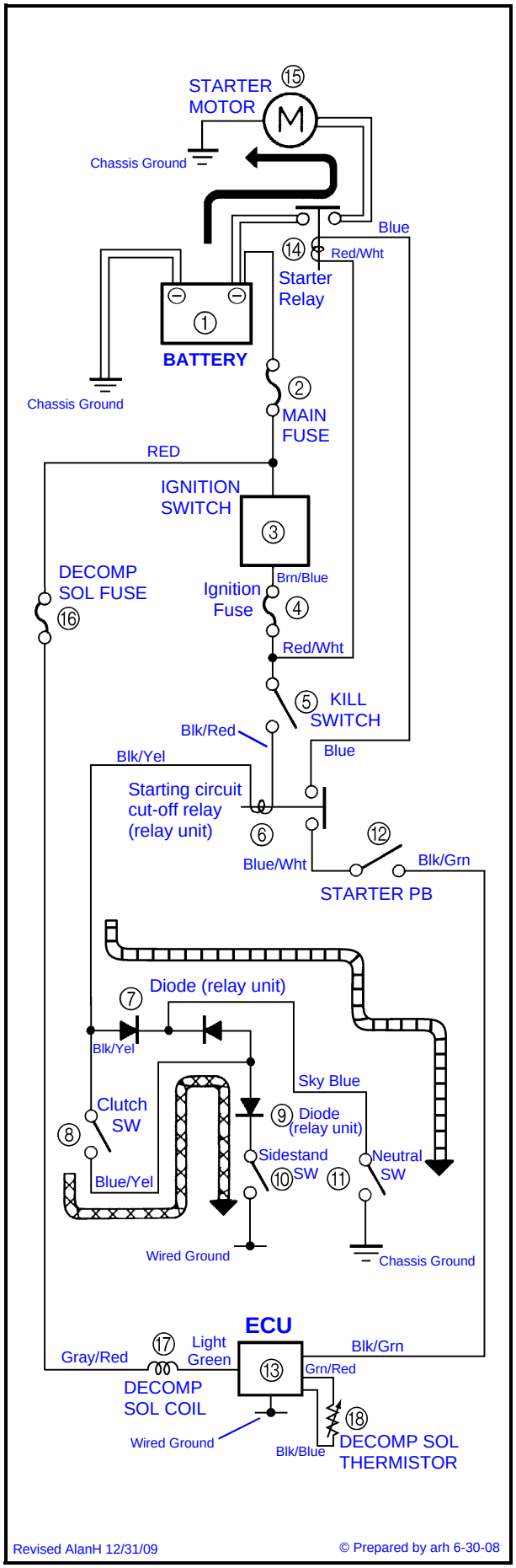


EAS00756

STARTING CIRCUIT CUT-OFF SYSTEM OPERATION

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

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

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

WHEN THE TRANSMISSION IS IN NEUTRAL WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED TO THE HANDLEBAR

① Battery
② Main fuse
③ Main switch
④ Ignition fuse
⑤ Engine stop switch - Engine Kill Switch Shown Open
⑥ Starting circuit cut-off relay (relay unit) - Shown Deenergized
⑦ Diode (relay unit) ** See Note
⑧ Clutch switch - Clutch Hand Lever Released (Closes when Operated)
⑨ Diode (relay unit) ** See Note
⑩ Sidestand switch - Sidestand Down (Closes Sidestand Up)
⑪ Neutral switch - Shown Bike in Gear (Closes in Neutral)
⑫ Start switch - Starter PB Not Depressed
⑬ ECU
⑭ Starter relay - Deenergized
⑮ Starter motor
⑯ Decompression solenoid fuse
⑰ Decompression solenoid coil
⑱ Decompression solenoid thermistor

** Note:
Diode Relay Unit is False until the conditions change for 8 & 10 or 11 to Initiate Start Interlocks listed below:

(1) 8 & 10 - The Clutch SW is Closed & the Sidestand SW is Closed (Sidestand UP)
(2) 11 - Neutral SW Closed (Transmission in Neutral)

EAS00757
TROUBLESHOOTING

The starter motor fails to turn.

Check:
1. main, ignition and decompression solenoid fuses
2. battery
3. starter motor
4. relay unit (starting circuit cut-off relay)
5. relay unit (diode)
6. starter relay
7. main switch
8. engine stop switch
9. neutral switch
10. sidestand switch
11. clutch switch
12. start switch
13. decompression solenoid
14. wiring connections (of the entire starting system)

NOTE:
- Before troubleshooting, remove the following part(s):
1. seat
2. headlight lens unit
- Troubleshoot with the following special tool(s).

Pocket tester
YU-03112

EAS00738

1. Main, ignition and decompression solenoid fuses

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

YES

NO → Replace the fuse(s).

EAS00739

2. Battery

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

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

- Is the battery OK?

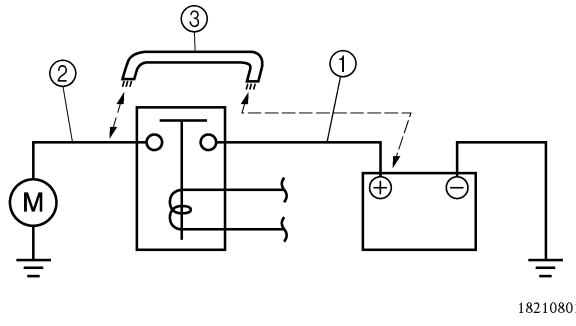
YES

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

EAS00758

3. Starter motor

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



⚠ WARNING
- **A wire that is used as a jumper lead must have at least the same capacity or more as that of the battery lead, otherwise the jumper lead may burn.**
- **This check is likely to produce sparks, therefore make sure nothing flammable is in the vicinity.**

- Does the starter motor turn?

YES

NO → Repair or replace the starter motor.

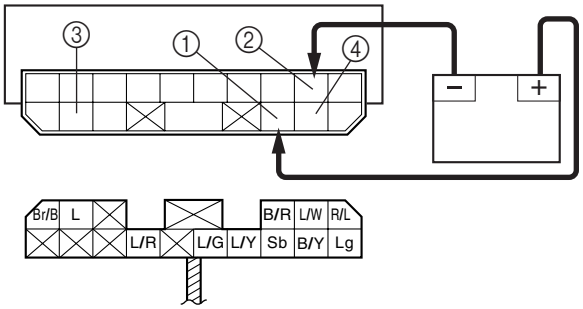
EAS00759

4. Relay unit (starting circuit cut-off relay)

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

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

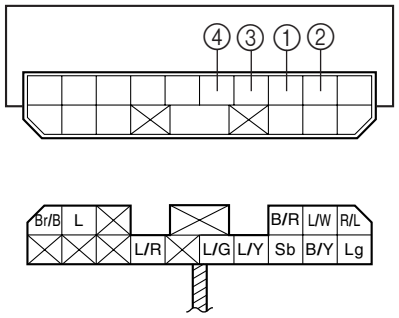
Positive tester probe → blue ③
Negative tester probe → blue/white ④



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

YES

Positive tester probe →	Continuity
sky blue ① Negative tester probe → black/yellow ②	
Positive tester probe → sky blue ① Negative tester probe → blue/yellow ③	
Positive tester probe → blue/green ④ Negative tester probe → blue/yellow ③	
Positive tester probe → black/yellow ② Negative tester probe → sky blue ①	No continuity
Positive tester probe → blue/yellow ③ Negative tester probe → sky blue ①	
Positive tester probe → blue/yellow ③ Negative tester probe → blue/green ④	



NOTE:
When you switch the tester's positive and negative probes, the readings in the above chart will be reversed.

- Are the testing readings correct?

YES

Replace the relay unit.

NO

Replace the relay unit.

EAS00760

5. Relay unit (diode)

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

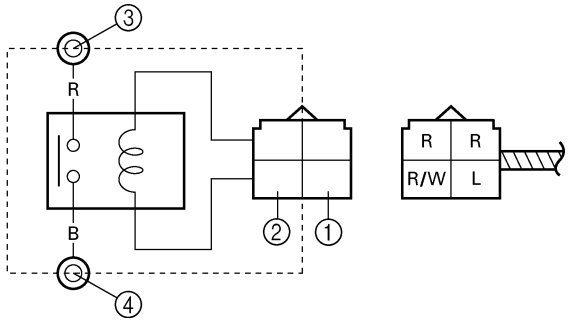
EAS00761

6. Starter relay

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

Positive battery terminal → red/white ①
Negative battery terminal → blue 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.

EAS00749

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.

EAS00750

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 right handlebar switch.

EAS00751

9. Neutral switch

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

YES → NO

Replace the neutral switch.

EAS00752

10. Sidestand switch

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

YES → NO

Replace the sidestand switch.

EAS00763

11. Clutch switch

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

YES → NO

Replace the clutch switch.

EAS00764

12.Start switch

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

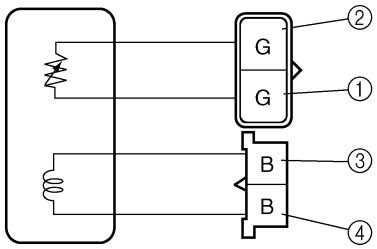
YES → 13.Decompression solenoid

NO → Replace the right handlebar switch.

13.Decompression solenoid

- Disconnect the decompression solenoid couplers from the wire harness.
- Connect the pocket tester (Ω × 10) to the decompression solenoid coupler as shown.

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



- Measure the decompression solenoid resistance.

Decompression solenoid resistance (thermistor)
70 Ω at 25 °C (77 °F)

NOTE:
The resistance value for the thermistor changes when the temperature changes; therefore, measure the decompression solenoid resistance at the specified temperature.

- Connect the pocket tester (Ω × 1) to the decompression solenoid coupler as shown.

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

Decompression solenoid resistance
1.2 Ω at 20 °C (68 °F)

- Check the decompression solenoid for continuity.
- Is the decompression solenoid OK?

YES → EAS00766

NO → Replace the decompression solenoid.

EAS00766

14.Wiring

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

YES → Replace the ECU.

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