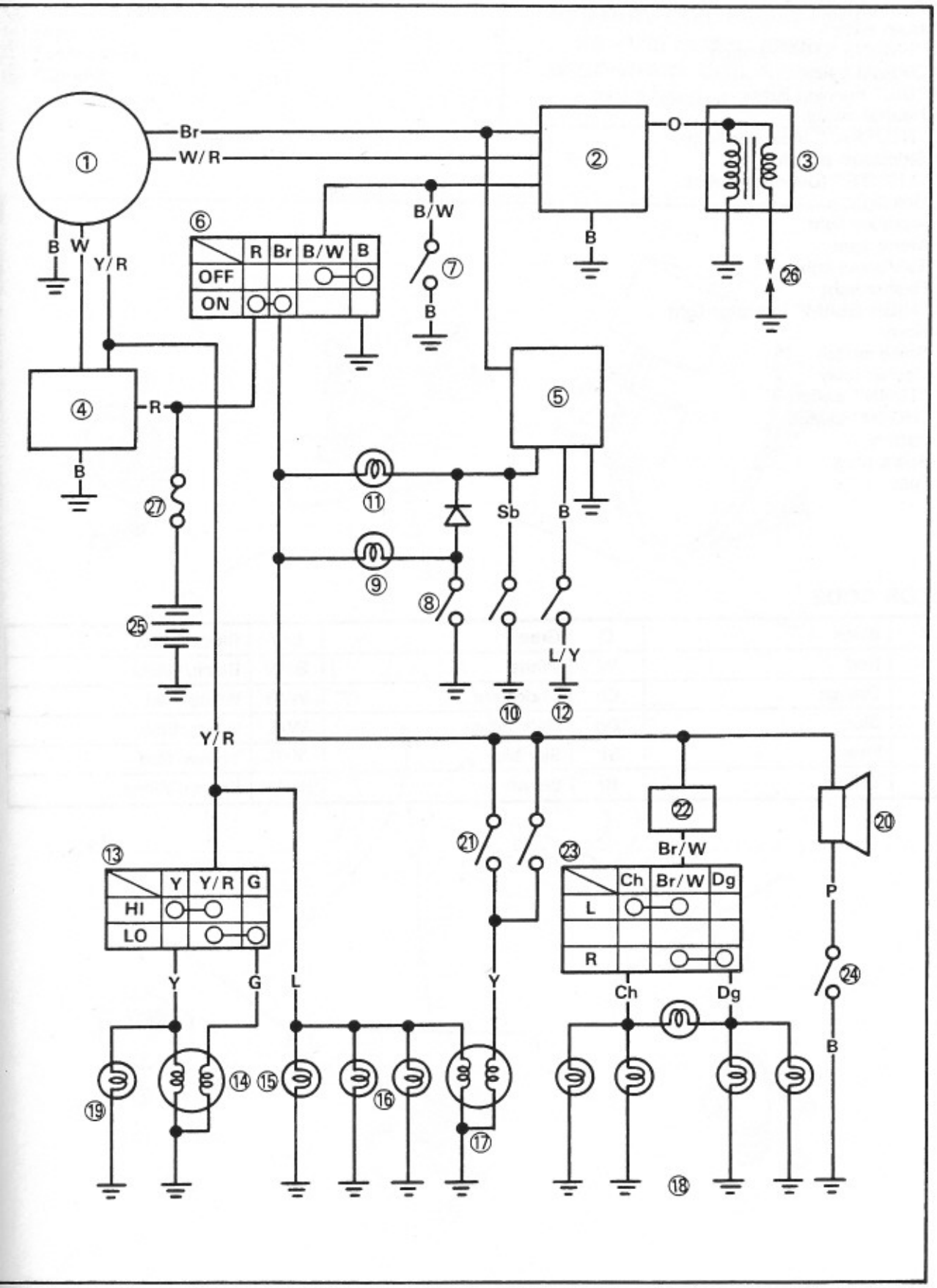
CHAPTER 7.
ELECTRICAL

ELECTRICAL

DT175D CIRCUIT DIAGRAM



① CDI magneto
② CDI unit
③ Ignition coil
④ Rectifier/Regulator
⑤ Control unit
⑥ Main switch
⑦ "ENGINE STOP" switch
⑧ Oil level gauge
⑨ "OIL" warning light
⑩ Neutral switch
⑪ "NEUTRAL" indicator light
⑫ Sidestand switch
⑬ "LIGHTS" (Dimmer) switch
⑭ Headlight
⑮ Auxiliary light
⑯ Meter light
⑰ Tail/brake light
⑱ Flasher light
⑲ "HIGH BEAM" indicator light
⑳ Horn
㉑ Brake switch
㉒ Flasher relay
㉓ "TURN" switch
㉔ "HORN" switch
㉕ Battery
㉖ Spark plug
㉗ Fuse

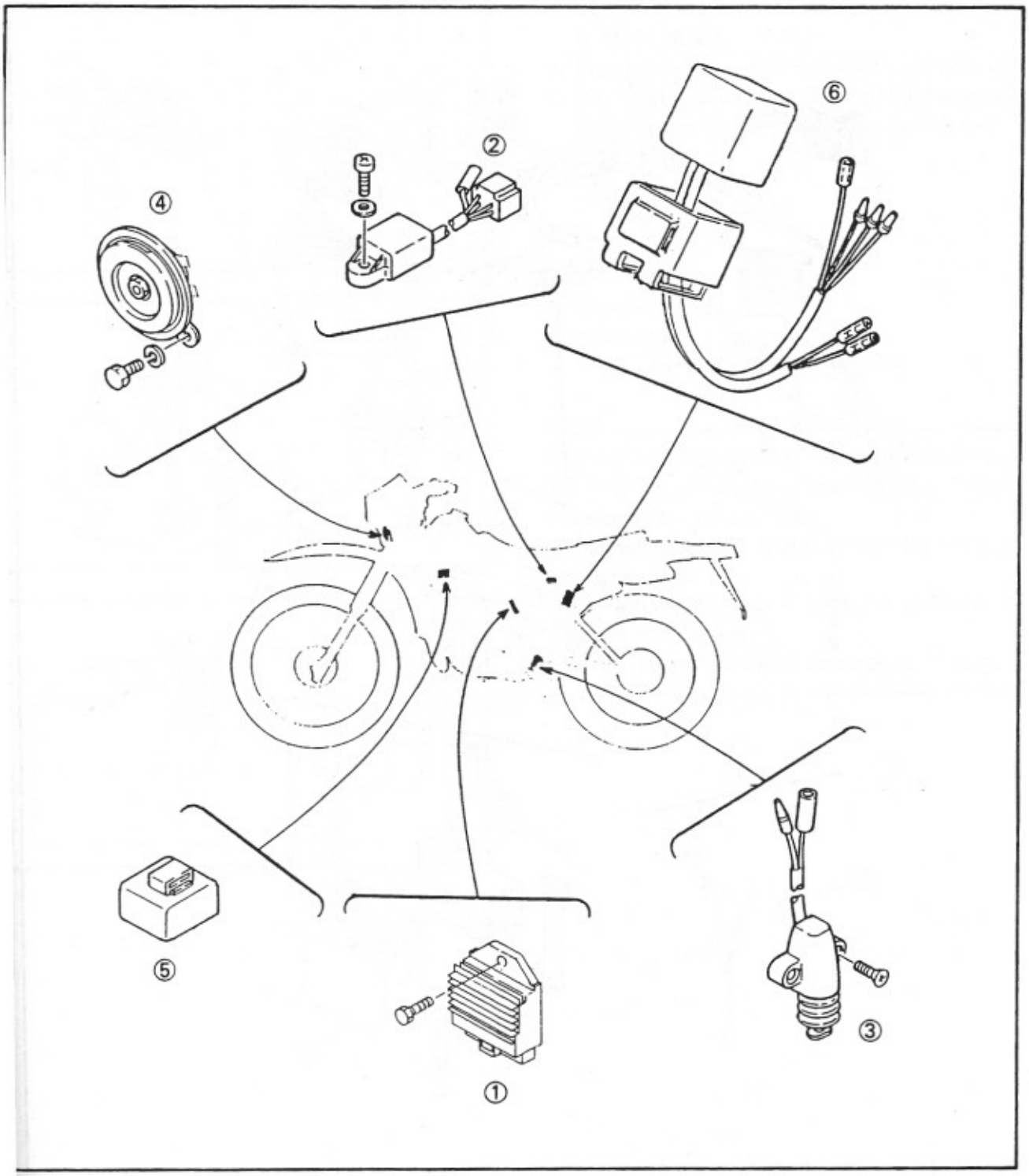
COLOR CODE

B	Black	G	Green	L/Y	Blue/Yellow
R	Red	W	White	B/W	Black/White
O	Orange	Ch	Chocolate	W/R	White/Red
L	Blue	Dg	Dark green	W/L	White/Blue
P	Pink	Sb	Sky blue	Y/R	Yellow/Red
Y	Yellow	Br	Brown	Br/W	Brown/White

ELECTRICAL COMPONENTS (1)

① Rectifier/Regulator
② Control unit
③ Sidestand switch
④ Horn
⑤ Flasher relay
⑥ CDI unit

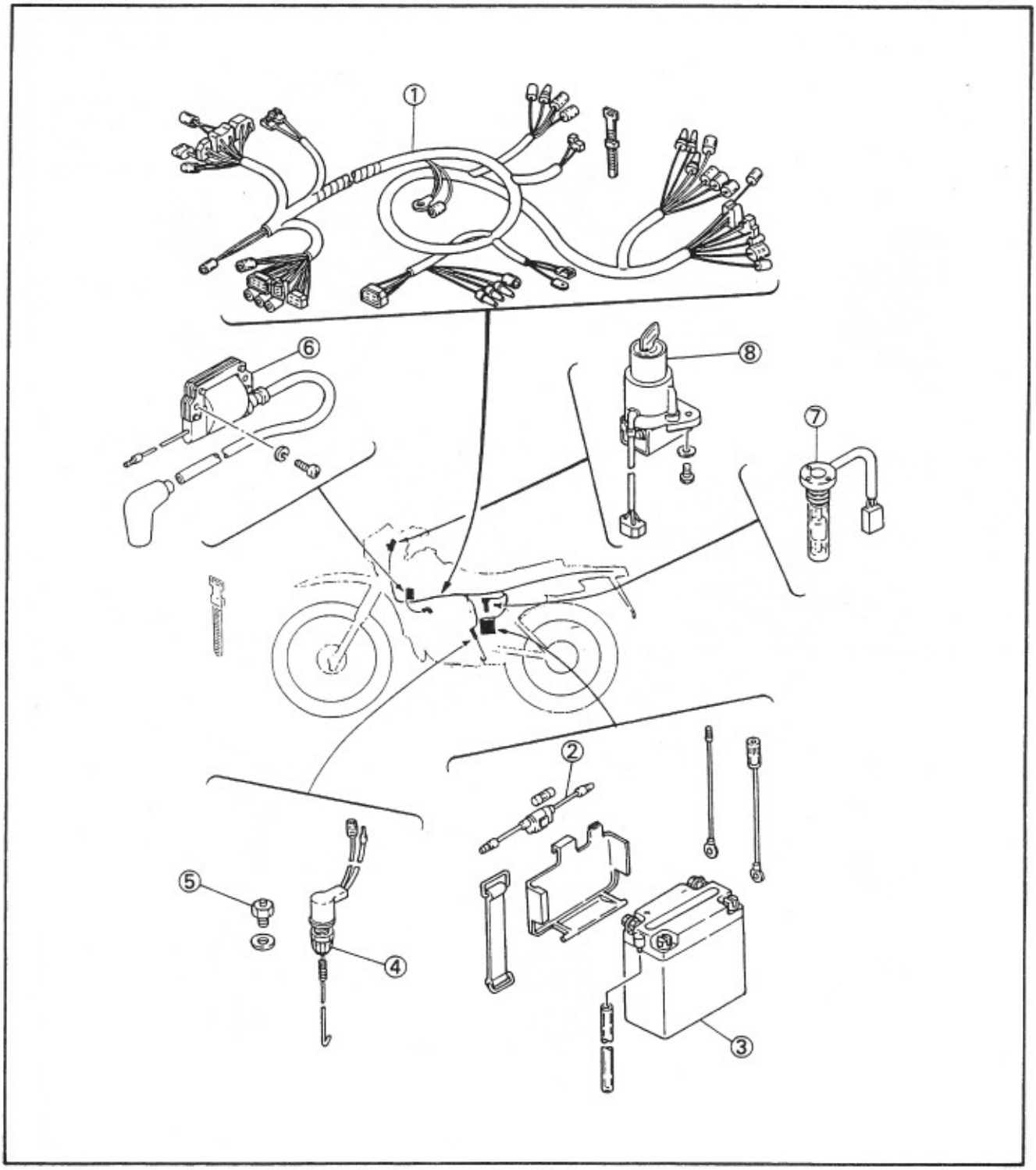
IGNITION COIL:
PRIMARY COIL RESISTANCE:
0.8 ~ 1.2Ω at 20°C (68°F)
SECONDARY COIL RESISTANCE:
4.72 ~ 7.08kΩ at 20°C (68°F)

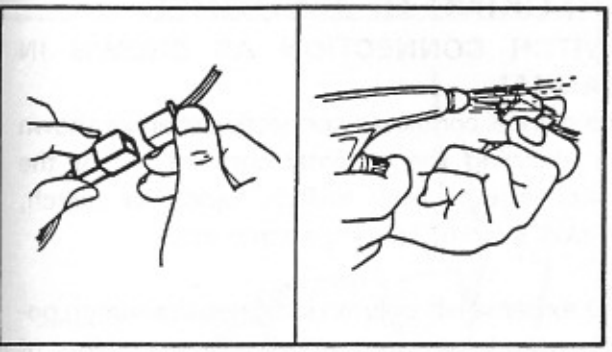


ELECTRICAL COMPONENTS (2)

① Wireharness
② Fuse
③ Battery
④ Brake switch
⑤ Neutral switch
⑥ Ignition coil
⑦ Oil level gauge
⑧ Main switch

BATTERY:
CAPACITY:
12V 3AH
SPECIFIC GRAVITY:
1.280 at 20°C (68°F)

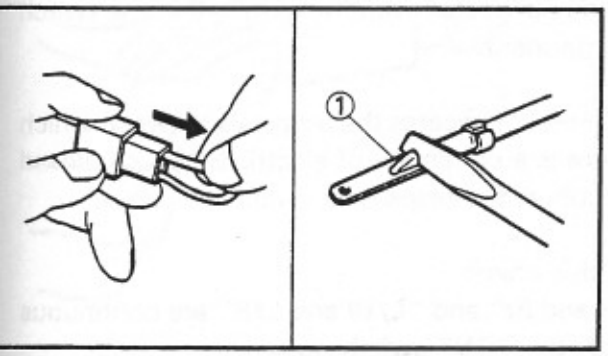




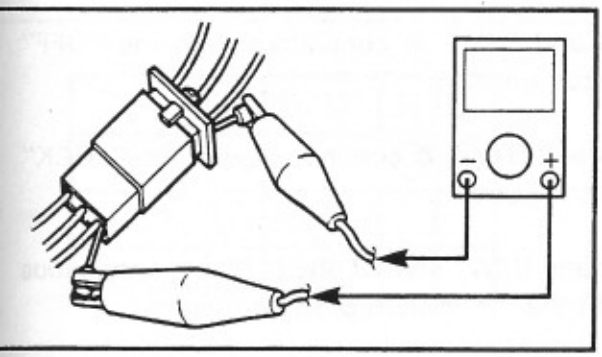
CHECKING OF CONNECTIONS

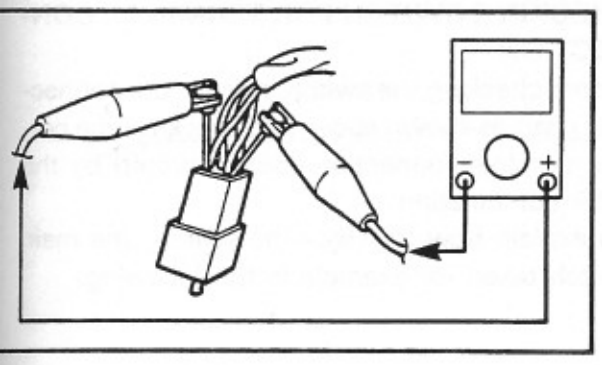
Dealing with stains, rust, moisture, etc. on the connector.

1. Disconnect:
   - Connector
2. Dry each terminal by an air blower.



3. Connect and disconnect the connector two or three times.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ① and reinsert the terminal into connector.





6. Connect:
   - Connector
7. Check for continuity by a tester.

NOTE:

- If there is no continuity, clean the terminals.
- Be sure to perform the above steps 1 to 7 when checking the wireharness.
- When replacing the CDI unit, be sure to check its connector.
- For a field remedy, use a contact revitalizer available on the market.
- Use the tester on the connector as shown.

CHECKING OF SWITCHES

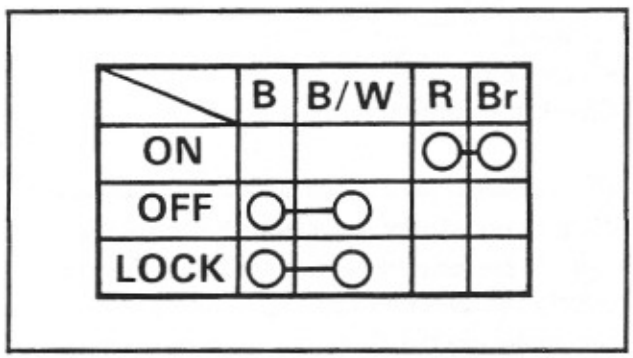
SWITCH CONNECTION AS SHOWN IN MANUAL

The manual contains a connection chart as shown left showing the terminal connections of the switches (e.g., main switch, handlebar switch, bracket switch, lighting switch etc.).

The extreme left column indicates the switch positions and the top line indicates the colors of leads connected with the terminals in the switch component.

"○—○" indicates the terminals between which there is a continuity of electricity; i.e., a closed circuit at the respective switch positions.

In this chart:
"R and Br" and "L/W and L/R" are continuous with the "ON" switch position.



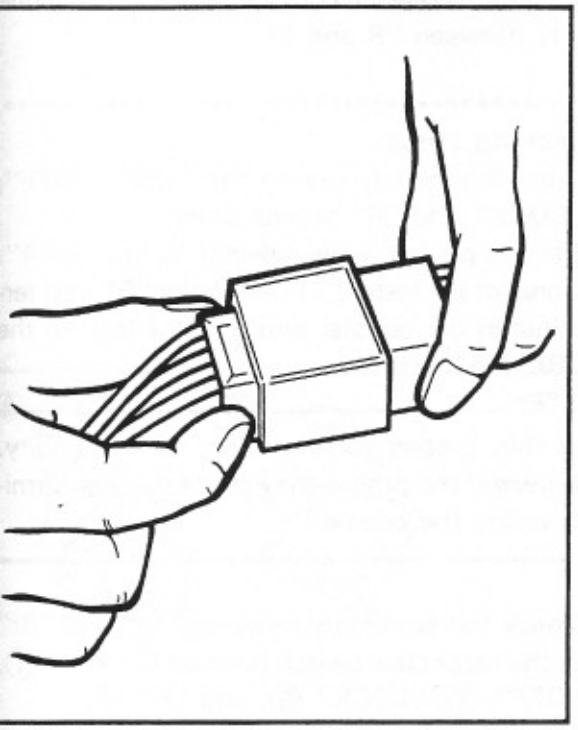
"B and B/W" is continuous with the "OFF" switch position.

"B and B/W" is continuous with the "LOCK" switch position.

"B and B/W" and "R and L/R" are continuous with the "P" switch position.

CHECKING SWITCH FOR TERMINAL CONNECTION

Before checking the switch, refer to the connection chart as shown above and check for the correct terminal connection (closed circuit) by the color combination.
To explain how to check the switch, the main switch taken for example in the following.



1. Disconnect the main switch coupler from the wireharness.

CAUTION:

Never disconnect the main switch coupler by pulling the leads. Otherwise, leads may be pulled off the terminals inside the coupler.

2. Inspect whether any lead is off the terminal inside the coupler. If it is, repair it.

NOTE:

If the coupler is clogged with mud or dust, blow it off by compressed air.

	B	B/W	R	Br
ON			○	○
OFF	○	○		
LOCK	○	○		

3. Use the connection chart to check the color combination for continuity (a closed circuit). In this example, the continuity is as follows.

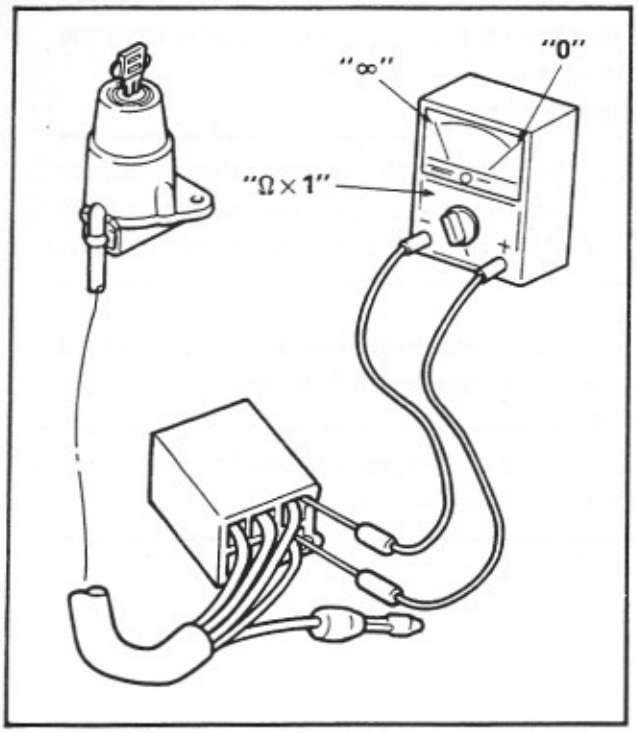
"R and Br" and "L/W and L/R" are continuous with the "ON" switch position.

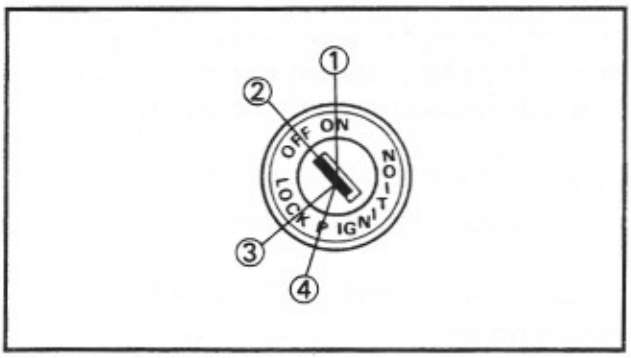
"B and B/W" is continuous with the "OFF" switch position.

"B and B/W" is continuous with the "LOCK" switch position.

"B and B/W" and "R and L/R" are continuous with the "P" switch position.

Please note that there is no continuity (an open circuit) at all for the color combinations other than the above.





4. Check the switch component for the continuity between "R and Br".

****

Checking steps:

- Turn the switch key to the "ON", "OFF", "LOCK" and "P" several times.
- Set the pocket tester selector to the "Ω×1".
- Connect the tester (+) lead to the "R" lead terminal in the coupler and the (−) lead to the "Br" lead terminal.

NOTE:

Use thin probes for checking the continuity. Otherwise, the probes may contact other terminals inside the coupler.

- Check the continuity between "R" and "Br" at the respective switch position of "ON" ①, "OFF" ②, "LOCK" ③, and "P" ④.
  There must be continuity (the tester indicating "0") at the "ON" switch position, and there must be no continuity (the tester indicating "∞") at "OFF", "LOCK" or "P".
  There is something wrong between "R" and "Br" if there is no continuity at the "ON" position or if there is some continuity either at the "OFF" or "LOCK" or "P".

NOTE:

Check the switch for continuity several times.

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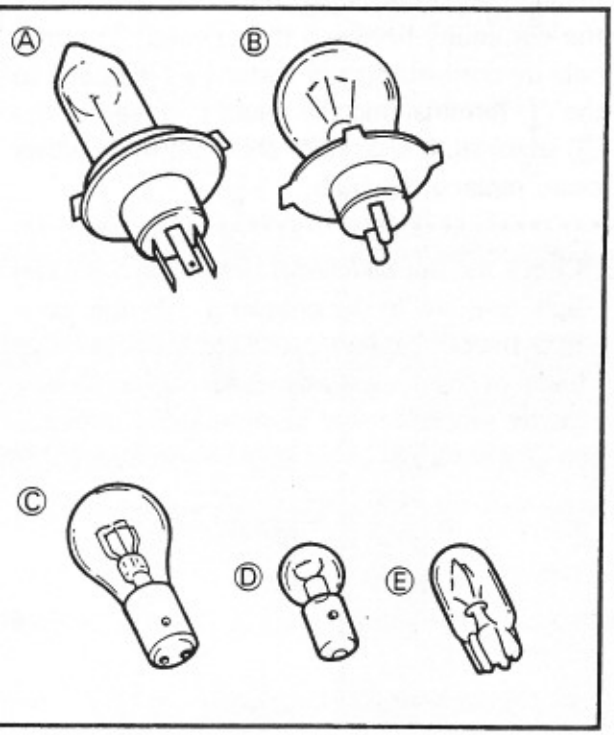
5. Next go on to checking of the continuity between "B" and "B/W", "L/W and L/R", and "R and L/R" at the respective switch positions, as in the same manner mentioned above.

6. If there is something wrong with any one of the combinations, replace the switch component.



CHECKING OF BULBS (FOR HEADLIGHT, TAIL/BRAKE LIGHT, FLASHER LIGHT, METER LIGHT, ETC.)

Check the bulb terminal continuity for the condition of the bulb.

KINDS OF BULBS

The bulbs used in the motorcycle are classified as shown left by the shape of the bulb socket.

Ⓐ and Ⓑ are mainly used for the headlight.

Ⓒ is mainly used for the flasher light and tail/brake light.

Ⓓ and Ⓔ are mainly used for the meter light and other indicator lights.

CHECKING BULB CONDITION

1. Remove the bulb.

NOTE:

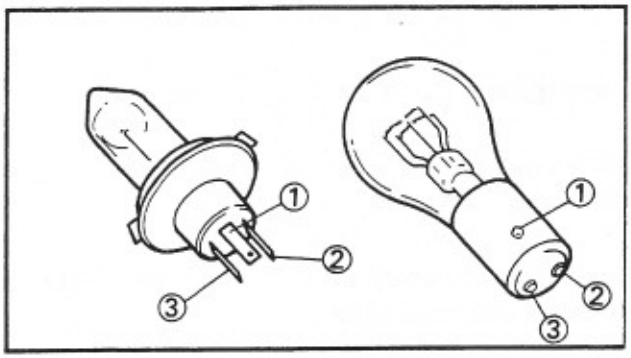
- Bulbs of the Ⓐ and Ⓑ type uses a bulb holder. Remove the bulb holder before removing the bulb itself. Most of the bulb holder for this type can be removed by turning them counterclockwise.
- Most of the bulbs of Ⓒ and Ⓓ type can be removed from the bulb sockets by pushing and turning them counterclockwise.
- Bulbs of the Ⓔ type can be removed from the bolb sockets by simply pulling them out.

CAUTION:

Be sure to hold the socket firmly when removing the bulb. Never pull the lead. Otherwise, the lead may be pulled off the terminal in the coupler.

⚠ WARNING

Keep flammable products or your hands away from the headlight bulb while it is on. It will be hot. Do not touch the bulb until it cools down.



2. Check the bulb terminals for continuity.

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Checking steps:

- Set the pocket tester selector to the "Ω × 1".
- Connect the tester lead to the respective bulb terminals. Take for example a 3-terminal bulb as shown left. First check the continuity between the ① and ② terminal by connecting the tester (+) lead to the ① terminal and the tester (−) lead to the ② terminal. Then check the continuity between the ① and ③ terminals by connecting the tester (+) lead still to the ① terminal and the tester (−) lead to the ③ terminal. If the tester shown "∞" in either case, replace the bulb.

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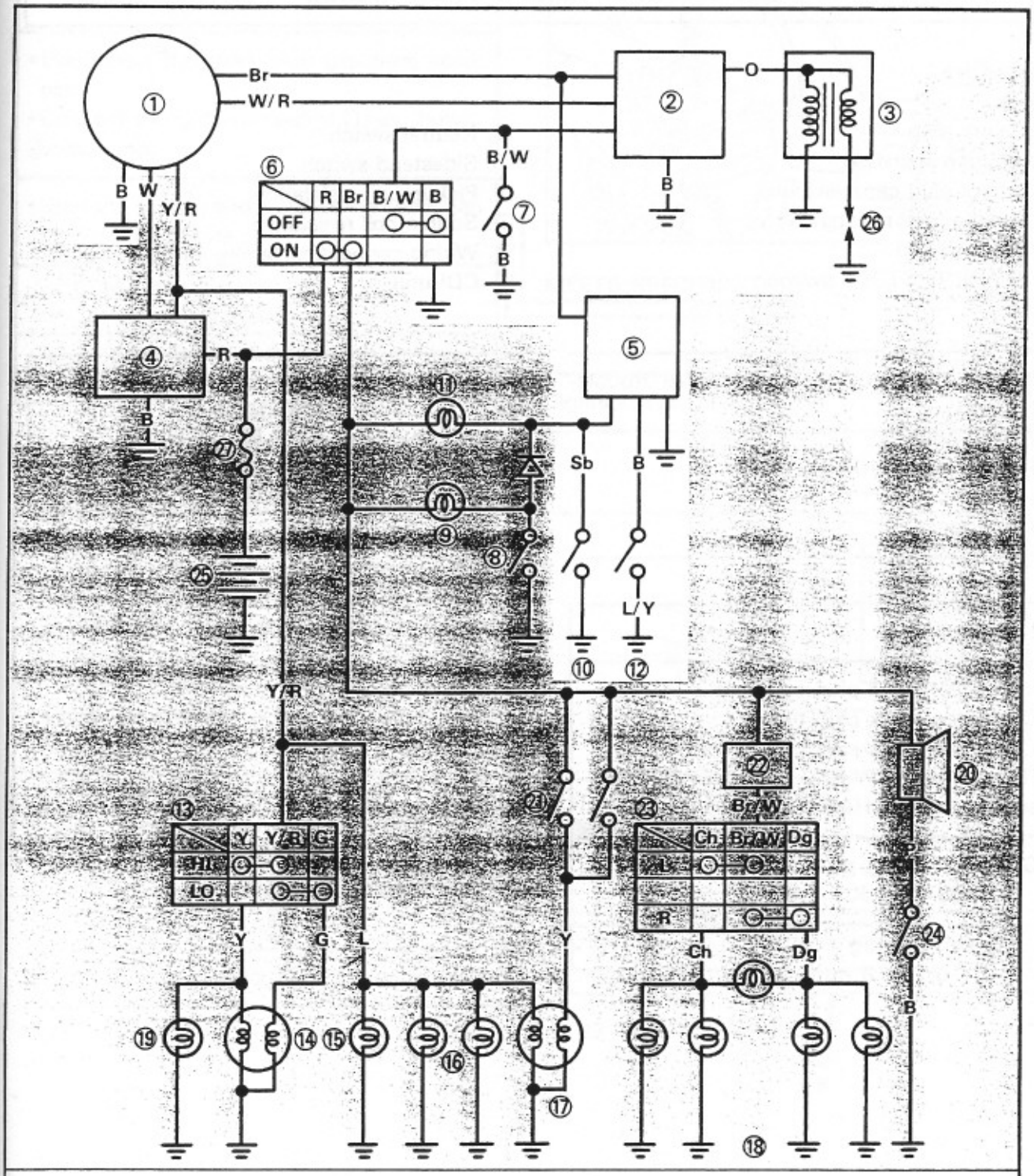
3. Check the bulb socket by installing a proven bulb to it. As in the checking of bulbs, connect the pocket tester leads to the respective leads of the socket and check for continuity in the same manner as mentioned above.

IGNITION SYSTEM

CIRCUIT DIAGRAM



① CDI magneto
② CDI unit
③ Ignition coil
⑤ Control unit
⑥ Main switch
⑦ "ENGINE STOP" switch
⑩ Neutral switch
⑫ Sidestand switch
㉖ Spark plug

TROUBLESHOOTING

IF IGNITION SYSTEM SHOULD BECOME INOPERATIVE (NO SPARK OR INTERMITTENT SPARK)

Procedure

Check;

1. Spark plug
2. Ignition spark gap
3. Spark plug cap resistance
4. Ignition coil resistance
5. Main switch
6. "ENGINE STOP" switch
7. Neutral switch
8. Sidestand switch
9. Pickup coil resistance
10. Source coil resistance
11. Wiring connection (entire ignition system)
12. CDI unit

NOTE:

- Remove the following parts before trouble-shooting.
  1) Front cover
  2) Side cover (left)
  3) Seat
  4) Fuel tank

Ignition checker:
P/N. 90890-06754
Pocket tester:
P/N. 90890-03112

1. Spark plug

- Check the spark plug condition.
- Check the spark plug type.
- Check the spark plug gap.
  Refer to the "SPARK PLUG INSPECTION" section in the CHAPTER 3.

Standard spark plug:
BR8ES (N.G.K.)

Spark plug gap:
0.7 ~ 0.8 mm (0.028 ~ 0.032 in)

INCORRECT → Repair or replace spark plug.

CORRECT ↓

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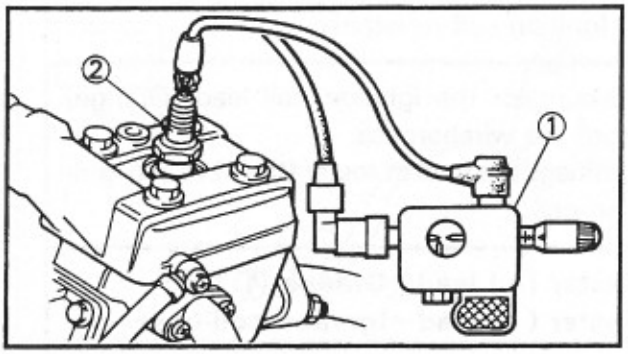
2. Ignition spark gap

- Disconnect the spark plug gap from spark plug.
- Connect the ignition checker ① as shown.

② Spark plug



- Start the engine, and increase the spark gap until misfire occurs.

Minimum spark gap:
6 mm (0.24 in)

Ignition checker:
90890-06754

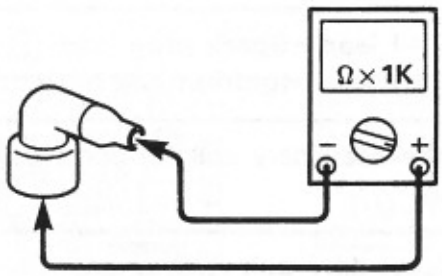
MEETS SPECIFICATION

Ignition system is good.

OUT OF SPECIFICATION
OR NO SPARK

3. Spark plug cap resistance

- Remove the spark plug cap.
- Connect the pocket tester (Ω × 1k) to the spark plug cap.



- Check the spark plug cap for specificated resistance.

Spark plug cap resistance:
5.46 ~ 7.34kΩ at 20°C (68°F)

OUT OF SPECIFICATION

MEETS
SPECIFICATION

*

Spark plug cap is faulty, replace it.

*

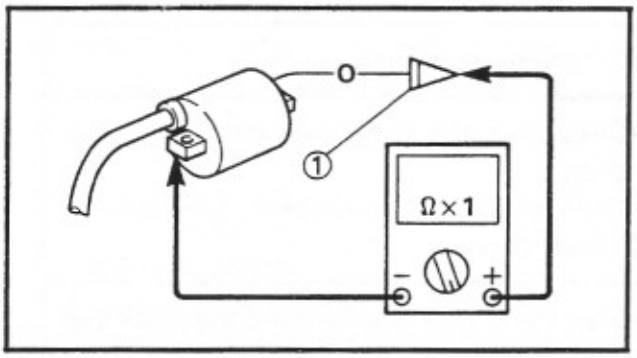
4. Ignition coil resistance

- Disconnect the ignition coil lead (Orange) from the wireharness.
- Connect the pocket tester (Ω × 1) to the ignition coil.

Tester (+) lead→Orange ① lead
Tester (−) lead→Ignition coil base

- Check the primary coil for specificated resistance.

Primary coil resistance:
0.8 ~ 1.2Ω at 20°C (68°F)
(Orange—coil base)

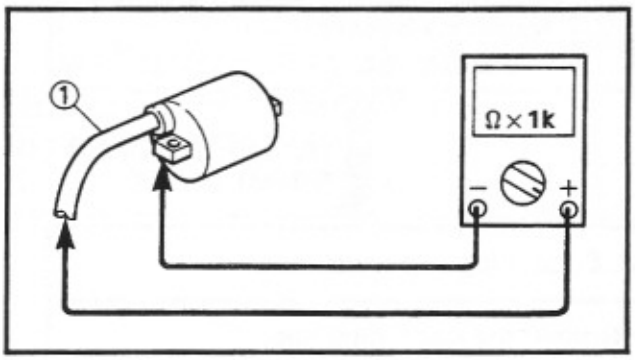


- Connect the pocket tester (Ω × 1k) to the ignition coil.

Tester (+) lead→Spark plug lead ①
Tester (−) lead→Ignition coil base

- Check the secondary coil for specificated resistance.

Secondary coil resistance:
4.72 ~ 7.08kΩ at 20°C (68°F)
(Spark plug lead—coil base)



OUT OF SPECIFICATION

Ignition coil is faulty, replace it.

BOTH MEET SPECIFICATIONS

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*

5. Main switch

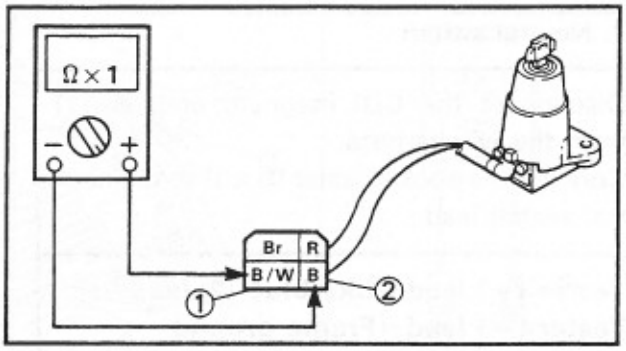
- Disconnect the main switch coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the main switch.

Tester (+) lead→Black/White ① lead
Tester (−) lead→Black ② lead

- Turn the main switch to "ON" and "OFF".
- Check the main switch for continuity.

Switch position	Good condition	Bad condition		
OFF	○	×	○	×
ON	×	○	○	×

○: Continuity ×: Nocontinuity



BAD CONDITION

Main switch is faulty, replace it.

GOOD CONDITION

6. "ENGINE STOP" switch

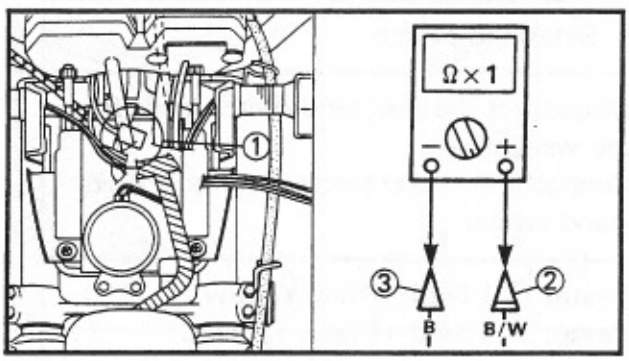
- Disconnect the "ENGINE STOP" switch leads ① from the wireharness.
- Connect the pocket tester (Ω × 1) to the "ENGINE STOP" switch.

Tester (+) lead→Black/White ② lead
Tester (−) lead→Black ③ lead

- Turn the "ENGINE STOP" switch to "OFF" and "RUN".
- Check the "ENGINE STOP" switch for continuity.

Switch position	Good condition	Bad condition		
RUN	×	○	×	○
OFF	○	×	×	○

○: Continuity ×: Nocontinuity



BAD CONDITION

Replace handlebar switch.

GOOD CONDITION

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7. Neutral switch

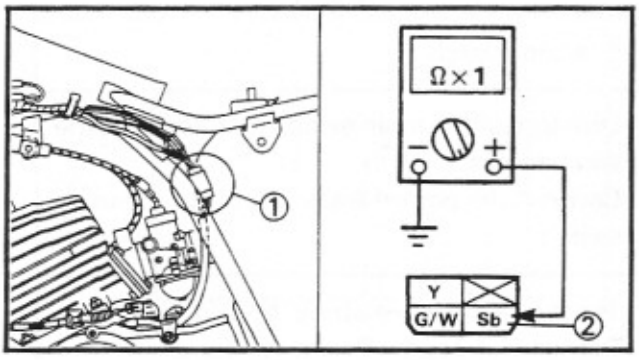
- Disconnect the CDI magneto coupler ① from the wireharness.
- Connect the pocket tester (Ω × 1) to the neutral switch lead.

Tester (+) lead→Sky blue ② lead
Tester (−) lead→Frame ground

- Shift the transmission in neutral and gear.
- Check the neutral switch for continuity.

Transmission position	Good condition	Bad condition		
Neutral	○	×	×	○
Gear	×	○	×	○

○: Continuity ×: Nocontinuity



BAD CONDITION

Replace neutral switch.

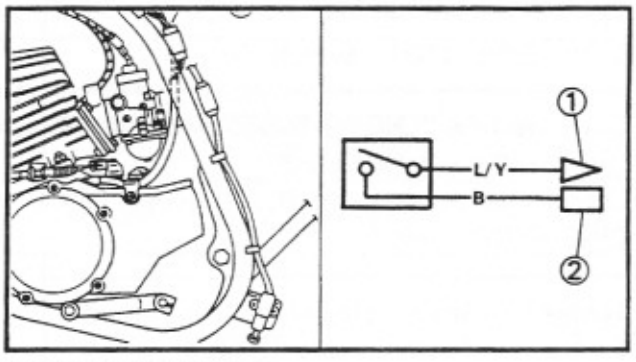
GOOD CONDITION

8. Sidestand switch

- Disconnect the sidestand switch leads from the wireharness.
- Connect the pocket tester (Ω × 1) to the sidestand switch.

Tester (+) lead→Blue/Yellow ① lead
Tester (−) lead→Black ② lead

- Check the sidestand switch for continuity.



NO CONTINUITY

Replace the sidestand switch.

CONTINUITY

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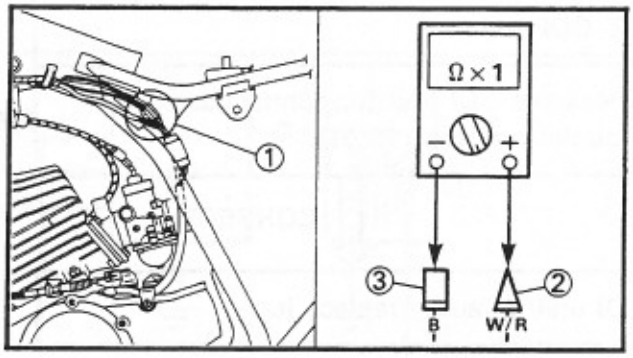
9. Pickup coil resistance

- Disconnect the CDI magneto leads (White/Red and Black) ① from the wireharness.
- Connect the pocket tester (Ω × 1) to the pickup coil.

Tester (+) lead→White/Red ② terminal
Tester (−) lead→Black ③ terminal

- Check the pickup coil for specificated resistance.

Pickup coil resistance:
8 − 12Ω at 20°C (68°F)



OUT OF SPECIFICATION → Replace pickup coil.

MEET SPECIFICATION

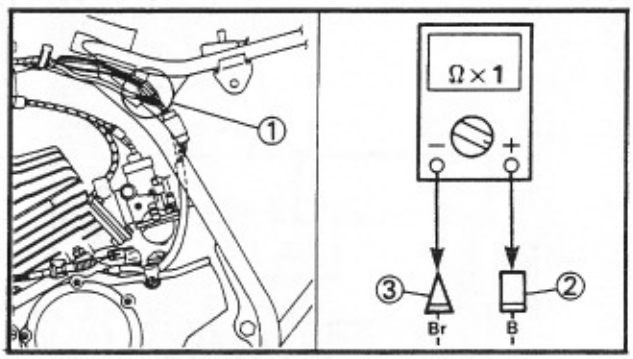
10. Source coil resistance

- Disconnect the CDI magneto coupler ① from the wireharness.
- Connect the pocket tester (Ω × 100) to the source coil.

Tester (+) lead→Black ② terminal
Tester (−) lead→Brown ③ terminal

- Measure the source coil resistance.

Source coil resistance:
270 − 330Ω at 20°C (68°F)



OUT OF SPECIFICATION → Replace source coil.

MEETS SPECIFICATION

11. Wiring connection

- Check the entire ignition system for connections.
  Refer to the "WIRING DIAGRAM" section.

POOR CONNECTION → Correct.

CORRECT

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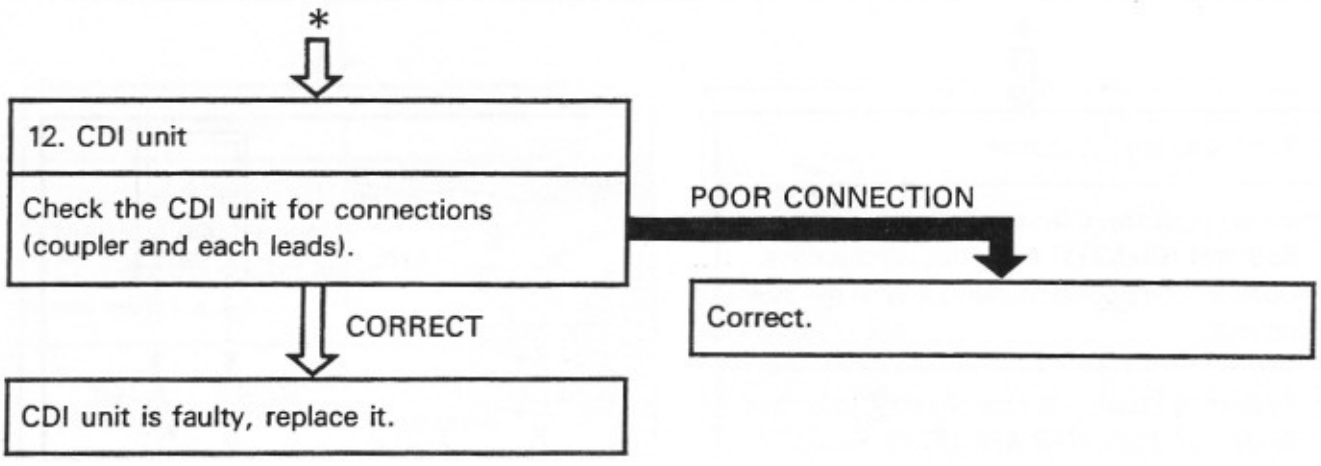
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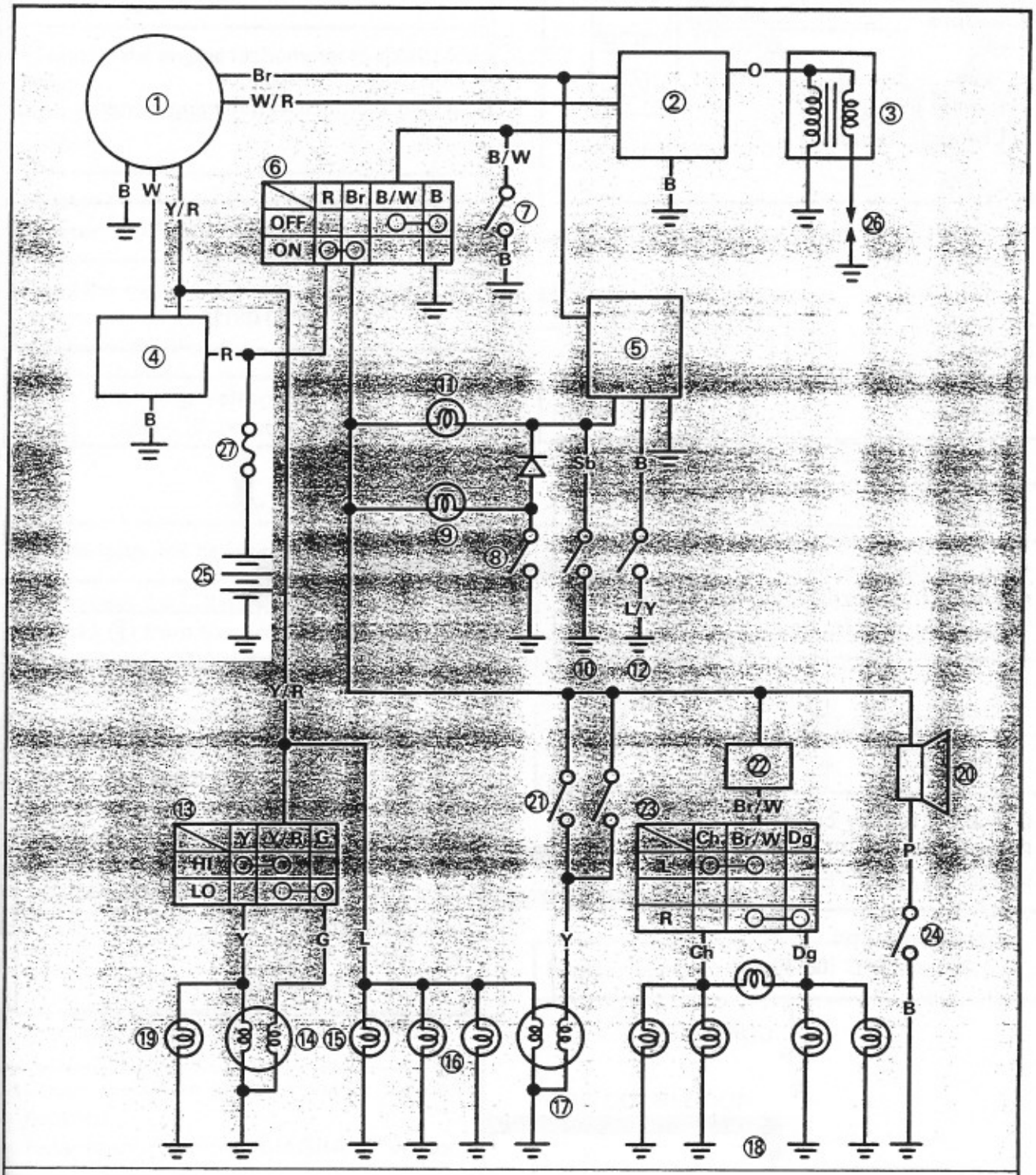
12. CDI unit
Check the CDI unit for connections (coupler and each leads).
POOR CONNECTION
Correct.
CORRECT
CDI unit is faulty, replace it.

CHARGING SYSTEM

CIRCUIT DIAGRAM



① CDI magneto
④ Rectifier/Regulator
㉕ Battery
㉗ Fuse

TROUBLESHOOTING

THE BATTERY IS NOT CHARGED.

Procedure

Check;

1. Fuse
2. Battery
3. Charging voltage
4. Charging coil resistance
5. Wiring connection (charging system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Side cover
  2) Fuel tank
  3) Seat
- Use the following special tool(s) in this troubleshooting.

Inductive tachometer:
P/N. 90890-03113
Pocket tester:
P/N. 90890-03112

1. Fuse

- Remove the fuse.
- Connect the pocket tester (Ω × 1) to the fuse.
- Check the fuse for continuity.

NOCONTINUITY → Replace fuse.

CONTINUITY ↓

2. Battery

Check the battery condition.
Refer to the "BATTERY INSPECTION" section in the CHAPTER 3.

Specific gravity:
1.280 at 20°C (68°F)

INCORRECT →

- Refill battery fluid.
- Clean battery terminals.
- Recharge or replace battery.

CORRECT ↓

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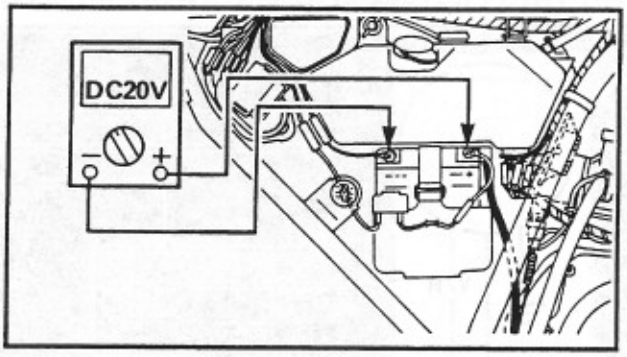
3. Charging voltage

- Connect the engine tachometer to spark plug lead.
- Connect the pocket tester (DC20V) to the battery.

Tester (+) lead→Battery (+) terminal
Tester (−) lead→Battery (−) terminal

- Start the engine and accelerate to about 3,000 r/min.
- Measure the charging voltage.

Charging voltage:
13.3 ~ 15.3V at 3,000 r/min



MEETS SPECIFICATION

Replace battery.

OUT OF SPECIFICATION

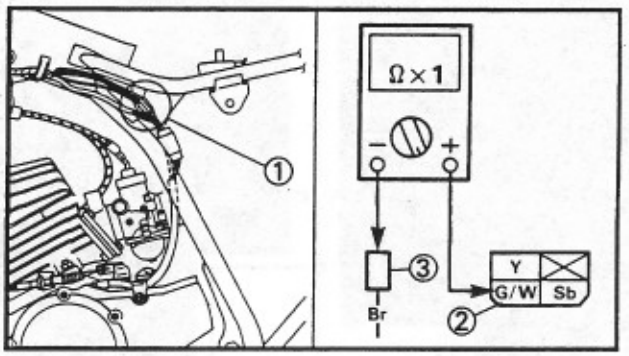
4. Charging coil resistance

- Disconnect the CDI magneto coupler and lead (Black) ① from the wireharness.
- Connect the pocket tester (Ω × 1) to the charging coil.

Tester (+) lead→Green/White ② lead
Tester (−) lead→Black ③ lead

- Measure the charging coil resistance.

Charging coil resistance:
0.24 ~ 0.36Ω at 20°C (68°F)



OUT OF SPECIFICATION

Replace stator assembly.

MEETS SPECIFICATION

5. Wiring connection

- Check the entire ignition system for connections.
  Refer to the "WIRING DIAGRAM" section.

POOR CONNECTION

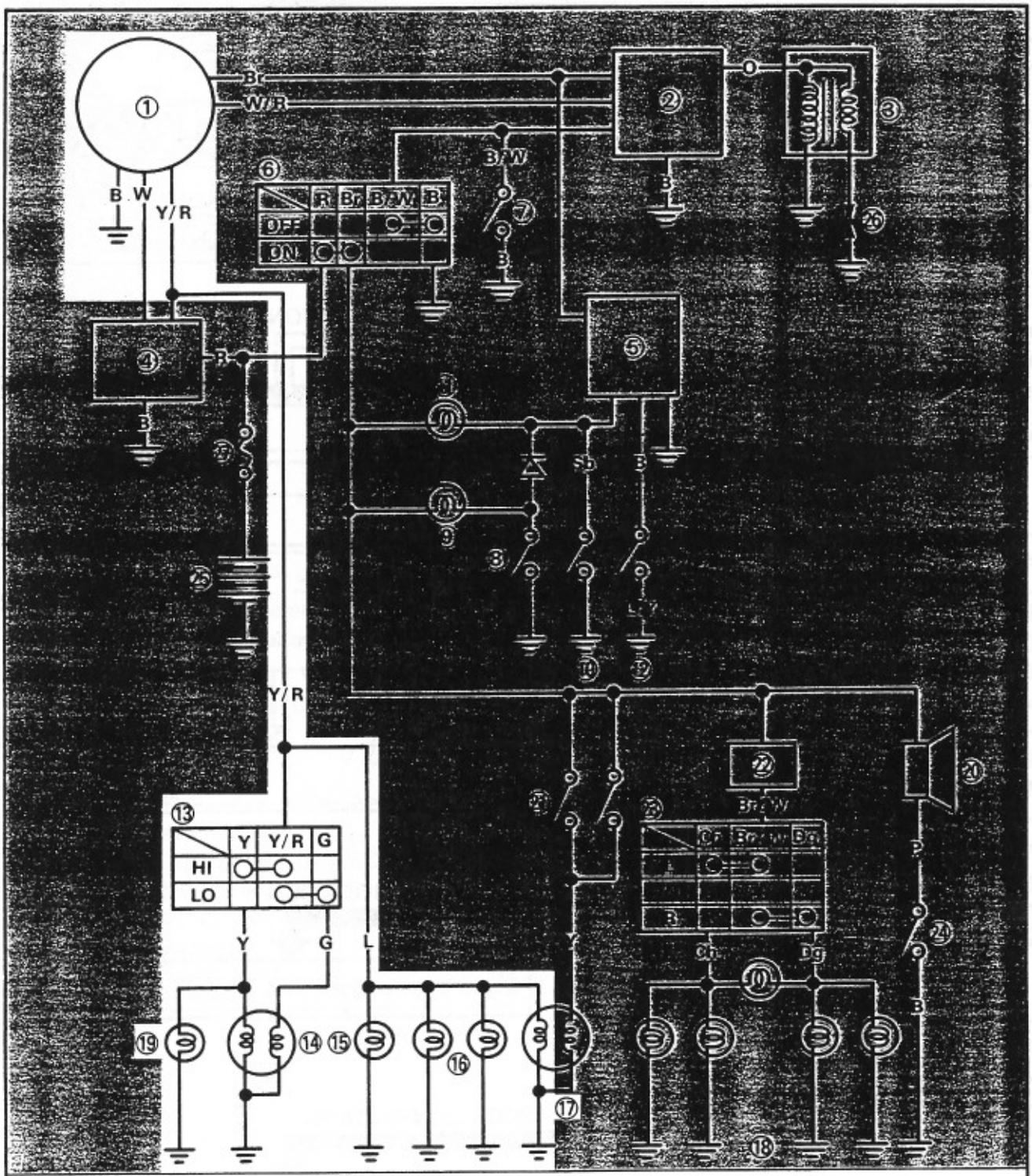
Correct.

CORRECT

Replace rectifier/regulator.

LIGHTING SYSTEM

CIRCUIT DIAGRAM



① CDI magneto
⑬ "LIGHTS" (Dimmer) switch
⑭ Headlight
⑮ Auxiliary light
⑯ Meter light
⑰ Tail/Brake light
⑲ "HIGH BEAM" indicator light

TROUBLESHOOTING

HEADLIGHT "HIGH BEAM" INDICATOR LIGHT, TAILLIGHT, AND/OR METER LIGHT DO NOT COME ON.

Procedure

Check;

1. "LIGHTS" (Dimmer) switch
2. Lighting coil resistance
3. Wiring connection

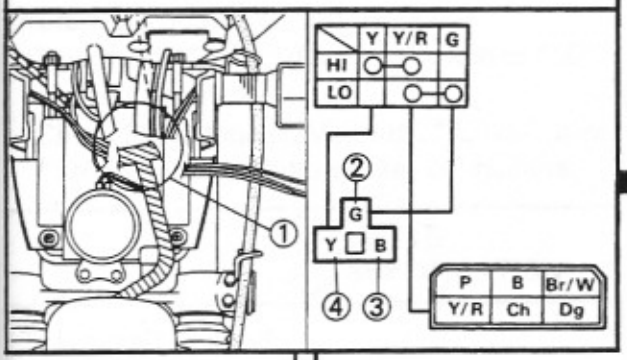
NOTE:

- Remove the following parts before troubleshooting.
  1) Side covers
  2) Seat
  3) Fuel tank
- Use the following special tool(s) in this troubleshooting.

Pocket tester:
P/N. 90890-03112

1. "LIGHTS" (Dimmer) switch

- Disconnect the handlebar switch (left) and headlight coupler ① from the wireharness.
- Check the switch component for the continuity between "Green ② and Yellow/Red ③" and "Yellow/Red ③ and Yellow ④". Refer to the "CHECKING OF SWITCHES" section.



INCORRECT

Replace handlebar switch (left).

CORRECT

*

*

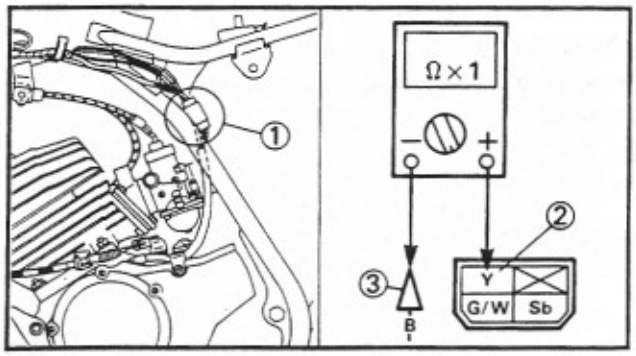
2. Lighting coil resistance

- Disconnect the CDI magneto coupler and lead (Black) ① from the wireharness.
- Connect the pocket tester (Ω × 1) to the lighting coil coupler.

Tester (+) lead→Yellow ② terminal
Tester (−) lead→Black ③ terminal

- Measure the lighting coil resistance.

Lighting coil resistance:
0.14 ~ 0.22Ω at 20°C (68°F)



OUT OF SPECIFICATION

Replace stator assembly.

MEETS SPECIFICATION

3. Wiring connection

- Check the entire lighting system for connections.
  Refer to the "WIRING DIAGRAM" section.

POOR CONNECTION

Correct.

CORRECT

Check condition of each circuit for lighting system.
Refer to "LIGHTING SYSTEM CHECK" section.

LIGHTING SYSTEM CHECK

1. Headlight and "HIGH BEAM" indicator light does not come on.

1. Bulb and bulb socket
•Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY → Replace bulb and/or bulb socket.

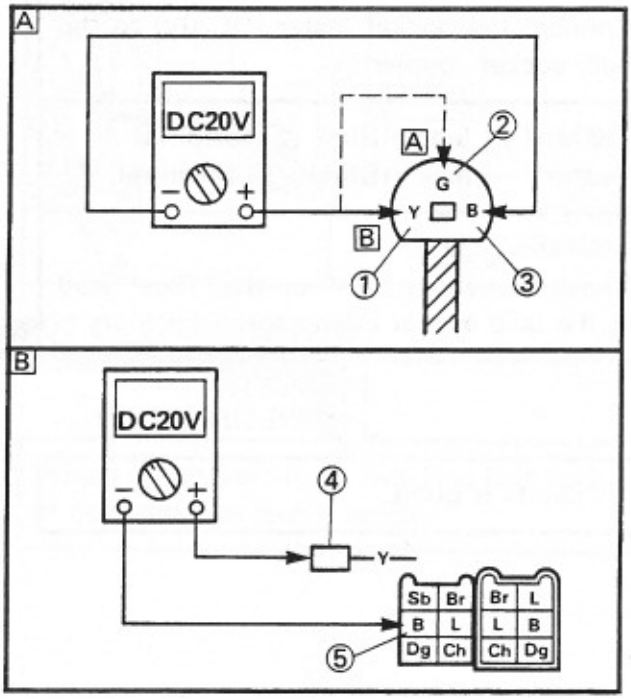
CONTINUITY ↓

2. Voltage
•Connect the pocket tester (DC20V) to the headlight and "HIGH BEAM" indicator light couplers.
[A] When "LIGHTS" (Dimmer) switch is "LO" position. [B] When "LIGHTS" (Dimmer) switch is "HI" position.
Headlight: **Tester (+) lead→Yellow ① or Green ② lead** **Tester (−) lead→Black ③ lead** **"HIGH BEAM" indicator light:** **Tester (+) lead→Yellow ④ lead** **Tester (−) lead→Black ⑤ lead**
•Start the engine. •Turn the "LIGHTS" (Dimmer) switch to "LO" or "HI" position. •Check for voltage (12V) on the "Green" and "Yellow" lead at bulb socket connectors.

OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.



2. Meter light does not come on.

1. Bulb and bulb socket

•Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY

Replace bulb and/or bulb socket.

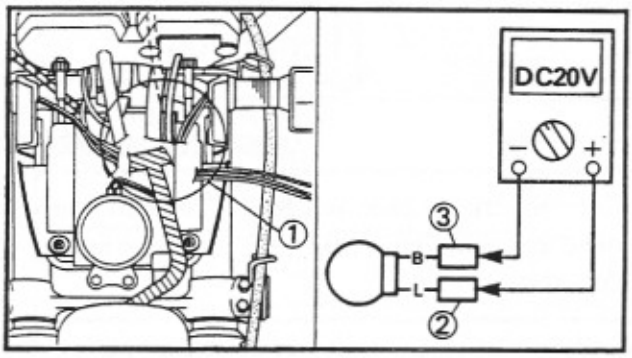
CONTINUITY

2. Voltage

•Connect the pocket tester (DC20V) to the bulb socket coupler ①.

Tester (+) lead→Blue ② terminal
Tester (−) lead→Black ③ terminal

•Start the engine.
•Check for voltage (12V) on the "Blue" lead at the bulb socket connector.



OUT OF SPECIFICATION

MEETS SPECIFICATION

This circuit is good.

Wiring circuit from main switch to bulb socket connector is faulty, repair.

3. Taillight does not come on.

1. Bulb and bulb socket

•Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY → Replace bulb and/or bulb socket.

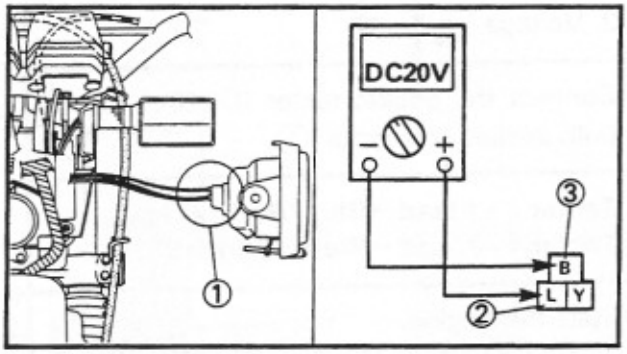
CONTINUITY ↓

2. Voltage

•Connect the pocket tester (DC20V) to the bulb socket connector ①.

Tester (+) lead→Blue ② terminal
Tester (−) lead→Black ③ terminal

•Start the engine.
•Check for voltage (12V) on the "Blue" lead at the bulb socket connector.



OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connection is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

4. Auxiliary light does not come on.

1. Bulb and bulb socket

•Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY → Bulb and/or bulb socket are faulty, replace.

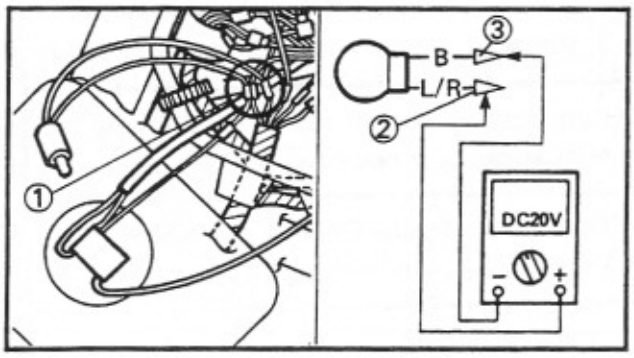
CONTINUITY ↓

2. Voltage

•Connect the pocket tester (DC20V) to the bulb socket connector ①.

Tester (+) lead→Blue/Red ② lead
Tester (−) lead→Black ③ lead

•Start the engine.
•Check for voltage (12V) on the "Blue/Red" lead at the bulb socket connector.



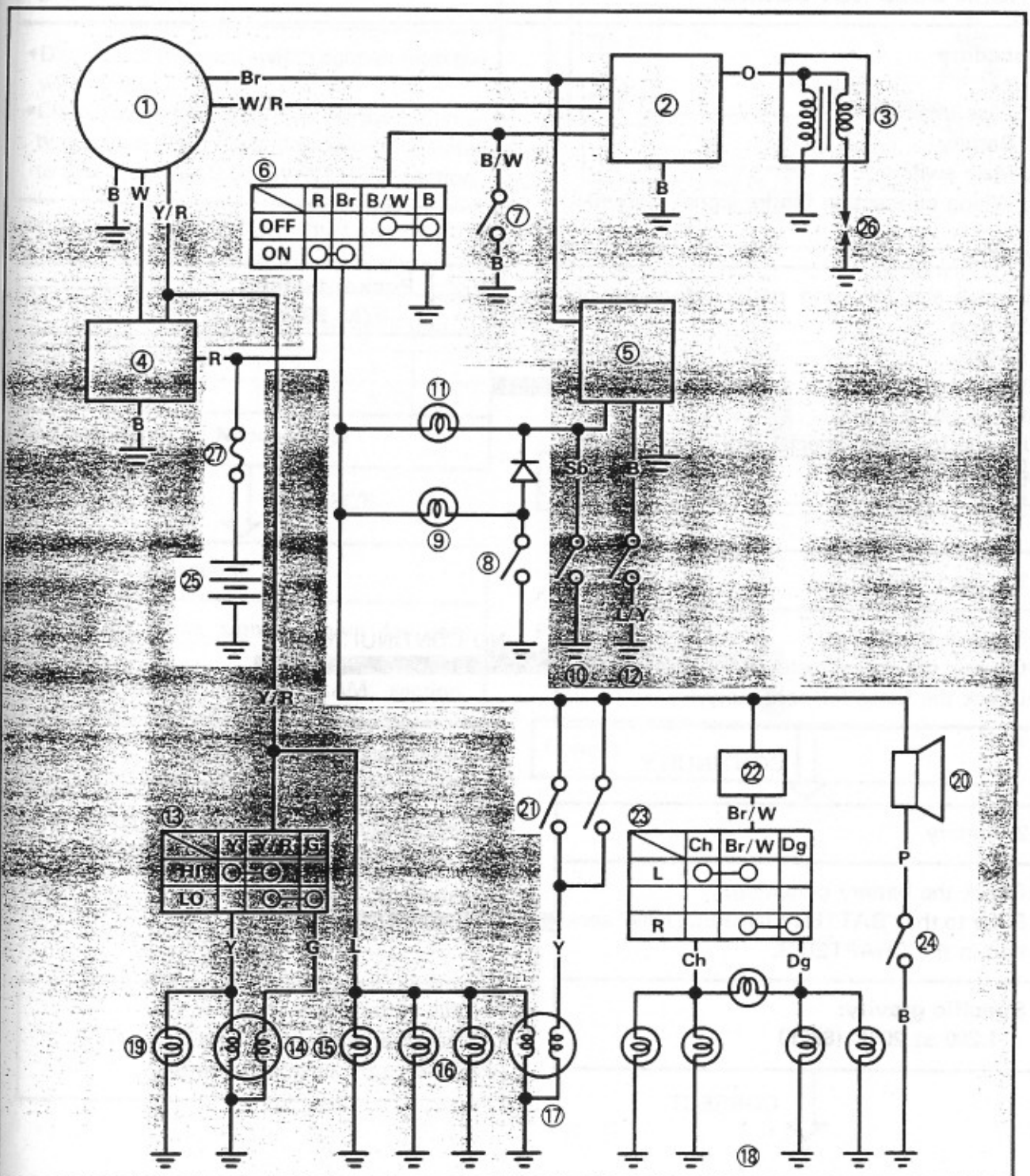
OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

SIGNAL SYSTEM

CIRCUIT DIAGRAM



⑥ Main switch
⑧ Oil level gauge
⑨ "OIL" warning light
⑪ "NEUTRAL" indicator light
⑰ Tail/Brake light
⑱ Flasher light
⑳ Horn
㉑ Brake switch
㉒ Flasher relay
㉓ "TURN" switch
㉔ "HORN" switch
㉕ Battery
㉗ Fuse

TROUBLESHOOTING

•FLASHER LIGHT, BRAKE LIGHT AND/OR INDICATOR LIGHT DO NOT COME ON.
•HORN DOES NOT SOUND.

Procedure
Check;
1. Fuse (main)
2. Battery
3. Main switch
4. Wiring connection (entire signal system)

NOTE:
- Remove the following parts before troubleshooting.
  1) Seat
  2) Side cover (left)
  3) Side cover (right)
- Use the following special tool in this troubleshooting.

Pocket tester:
P/N. 90890-03112

1. Fuse (main)

- Remove the fuses.
- Connect the pocket tester (Ω×1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace fuse.

CONTINUITY ↓

2. Battery

- Check the battery condition.
  Refer to the "BATTERY INSPECTION" section in the CHAPTER 3.

Specific gravity:
1.280 at 20°C (68°F)

INCORRECT →
- Refill battery fluid.
- Clean the battery terminals.
- Recharge or replace the battery.

CORRECT ↓

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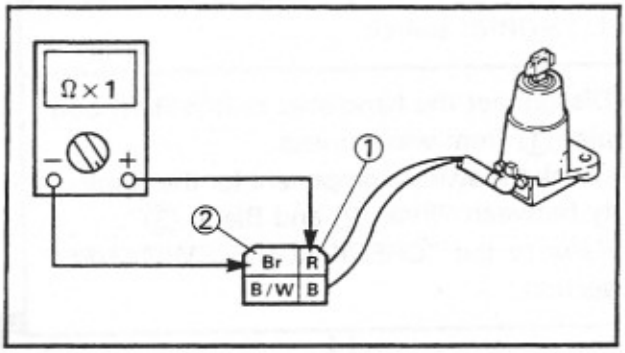
3. Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②". Refer to the "CHECKING OF SWITCHES" section.



- Turn the main switch to "ON" and "OFF".
- Check the main switch for continuity.

Switch position	Good condition	Bad condition		
ON	○	×	×	○
OFF	×	○	×	○

○: Continuity ×: Nocontinuity

INCORRECT

Replace main switch.

CORRECT

4. Wiring connection

- Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.

POOR CONNECTION

Correct.

CORRECT

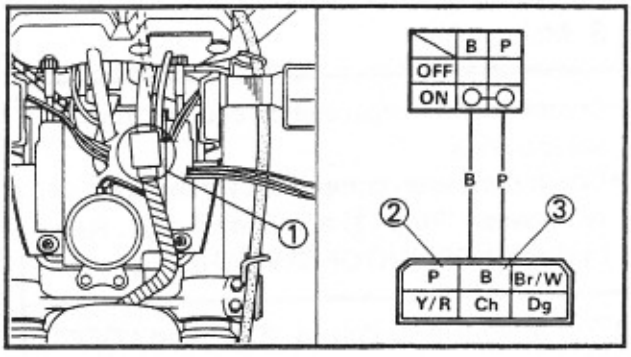
Check condition of each circuit for signal system. Refer to "SIGNAL SYSTEM CHECK" section.

SIGNAL SYSTEM CHECK

1. Horn does not sound.

1. "HORN" switch.

- Disconnect the handlebar switch (left) coupler ① from wireharness.
- Check the switch component for the continuity between "Pink ② and Black ③". Refer to the "CHECKING OF SWITCHES" section.



INCORRECT

Replace handlebar switch (left).

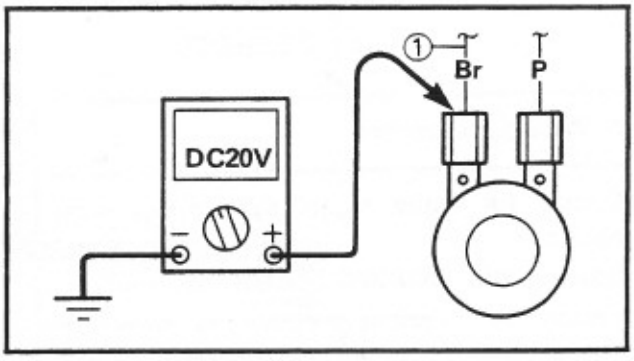
CORRECT

2. Voltage

- Connect the pocket tester (DC20V) to the horn lead.

Tester (+) lead→Brown ① lead
Tester (−) lead→Frame ground

- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown" lead at the horn terminal.



OUT OF SPECIFICATION

Wiring circuit from main switch to horn terminal is faulty, repair.

MEETS SPECIFICATION (12V)

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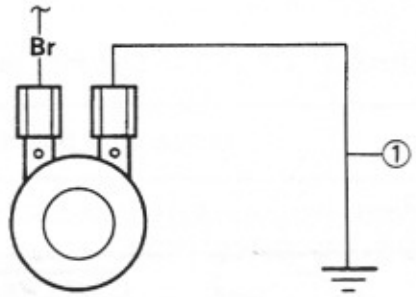
3. Horn

- Disconnect the "Pink" lead from the horn terminal.
- Connect a jumper lead ① to the horn terminal and ground the jumper lead.
- Turn the main switch to "ON".



HORN IS SOUNDED

Horn is good.

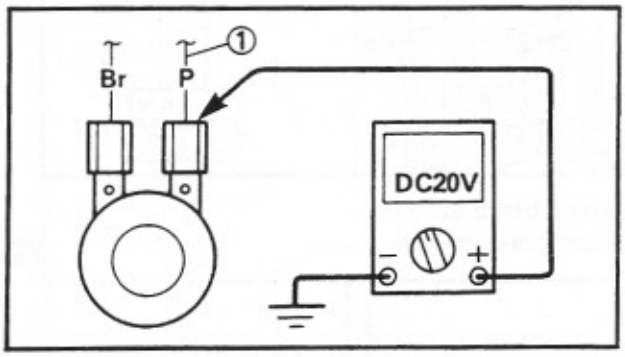
HORN IS NOT SOUNDED

4. Voltage

- Connect the pocket tester (DC20V) to the horn at the "Pink" terminal.

Tester (+) lead→Pink ① lead
Tester (−) lead→Frame ground

- Turn the main switch to "ON".
- Check for voltage (12V) on the "Pink" lead at the horn terminal.



OUT OF SPECIFICATION

Horn is faulty, replace it.

MEETS SPECIFICATION (12V)

Adjust or replace horn.

2. Brake light does not come on.

1. Bulb and bulb socket

- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

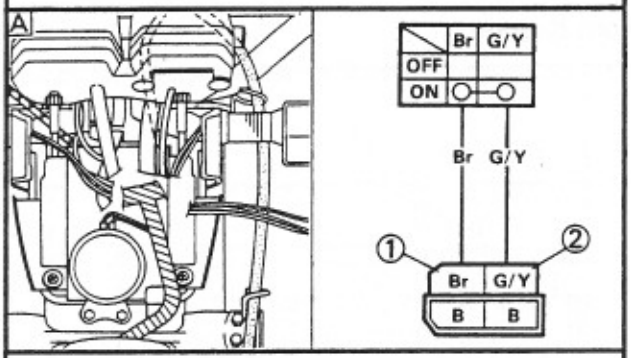
NO CONTINUITY

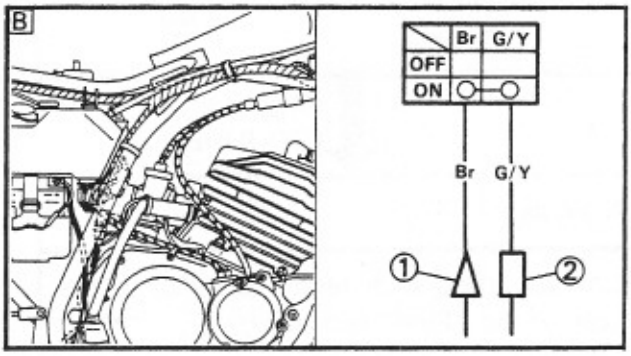
Replace bulb and/or bulb socket.

CONTINUITY

2. Brake switch

- Disconnect the brake switch leads from the wireharness.
- Check the switch component for the continuity between "Black ① and Black ②". Refer to the "CHECKING OF SWITCHES" section.





A Front brake switch
B Rear brake switch

INCORRECT

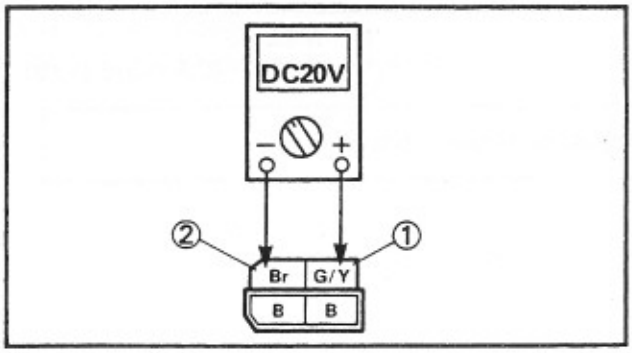
Replace brake switch.

CORRECT

3. Voltage

- Connect the pocket tester (DC20V) to the bulb socket connector.

Tester (+) lead→Green/Yellow ① lead
Tester (−) lead→Brown ② lead



- Turn the main switch to "ON".
- The brake lever is pulled in or brake pedal is stepped down.
- Check for voltage (12V) on the "Green/Yellow" lead at the bulb socket connector.

OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION (12V) → This circuit is good.

3. Flasher light and/or "TURN" indicator light does not blink.

1. Bulb and bulb socket

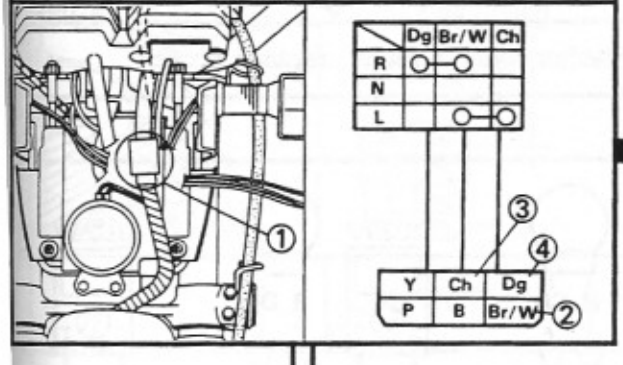
- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NOCONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY →

2. "TURN" switch

- Disconnect the handlebar switch (left) coupler ① from the wireharness.
- Check the switch component for the continuity between "Brown/White ② and Chocolate ③" and "Brown/White ② and Dark green ④". Refer to the "CHECKING OF SWITCHES" section.



NOCONTINUITY → "TURN" switch is faulty, replace handlebar switch (left).

CORRECT →

*

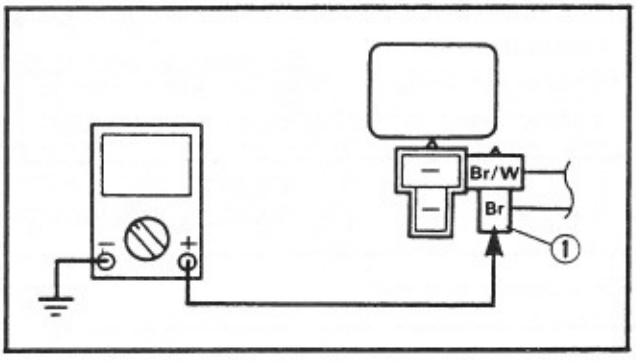
*

3. Voltage

- Connect the pocket tester (DC20V) to the flasher relay.

Tester (+) lead→Brown ① lead
Tester (−) lead→Frame ground

- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown" lead at the flasher relay terminal.



OUT OF SPECIFICATION → Wiring circuit from main switch to flasher relay connector is faulty, repair.

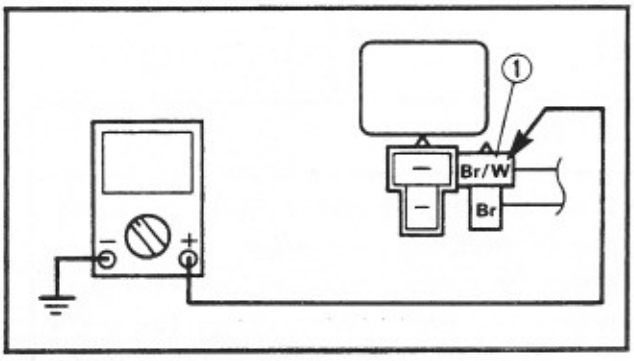
MEETS SPECIFICATION (12V)

4. Voltage

- Connect the pocket tester (DC20V) to the flasher relay.

Tester (+) lead→Brown/White ① lead
Tester (−) lead→Frame ground

- Turn the main switch to "ON".
- Check for voltage (12V) on the "Brown/White" lead at the flasher relay terminal.



OUT OF SPECIFICATION → Flasher relay is faulty, replace it.

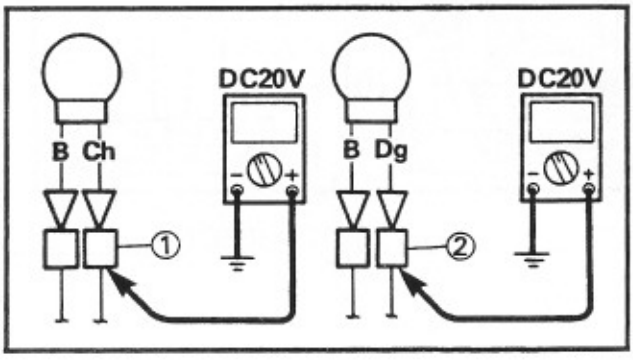
MEETS SPECIFICATION (12V)

5. Voltage

- Connect the pocket tester (DC20V) to the bulb socket connector.

At flasher light (left):
Tester (+) lead→Chocolate ① lead
Tester (−) lead→Frame ground

At flasher light (right):
Tester (+) lead→Dark green ② lead
Tester (−) lead→Frame ground



- Turn the main switch to "ON".
- Turn the "TURN" switch to "L" or "R".
- Check for voltage (12V) on the "Chocolate" lead or "Dark green" lead at the bulb socket connector.

OUT OF SPECIFICATION → Wiring circuit from "TURN" switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION (12V) → This circuit is good.

4. "NEUTRAL" indicator light does not come on.

1. Bulb and bulb socket

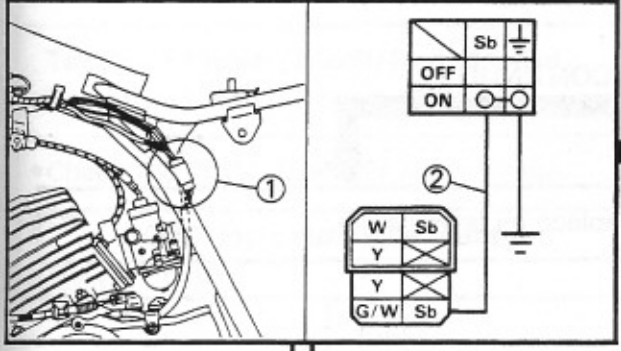
- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NO CONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY →

2. Neutral switch

- Disconnect the neutral switch coupler ① from the wireharness.
- Check the switch component for the continuity between "Sky blue ② and Ground". Refer to the "CHECKING OF SWITCHES" section.



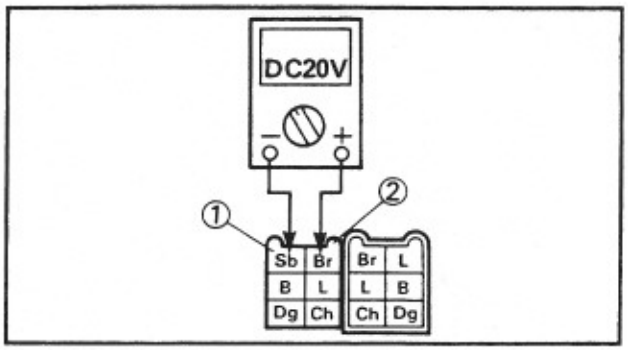
INCORRECT → Replace neutral switch.

CORRECT →

3. Voltage

- Connect the pocket tester (DC20V) to the bulb socket connector.

Tester (+) lead→Sky blue ① terminal
Tester (−) lead→Brown ② terminal



- Turn the main switch to "ON".
- Check for voltage (12V) on the "Sky blue and Brown" lead at bulb socket connector.

OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

5. "OIL" indicator light does not come on.

1. Bulb and bulb socket

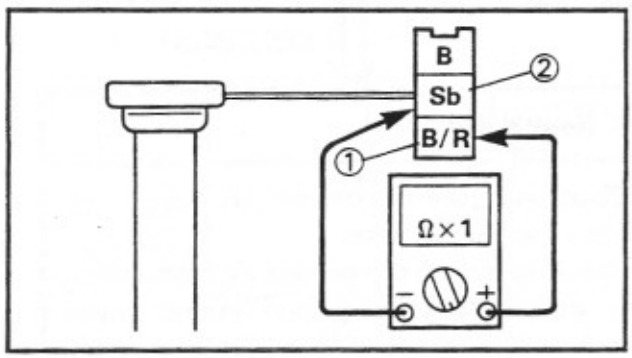
- Check the bulb and bulb socket for continuity. Refer to the "CHECKING OF BULBS" section.

NOCONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY ↓

2. Oil level gauge

- Remove the oil level gauge from the oil tank.
- Disconnect the oil level gauge coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the oil level gauge.



Check 1:
Tester (+) lead → Black/Red ① lead
Tester (–) lead → Sky blue ② lead

- Check the oil level gauge for continuity.

NOCONTINUITY → Replace oil level gauge.

CONTINUITY ↓

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3. Oil level gauge

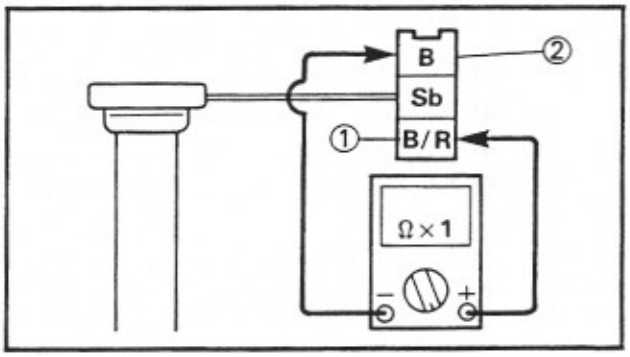
- Connect the pocket tester (Ω × 1) to the oil level gauge.

Check 2:
Tester (+) lead → Black/Red ① lead
Tester (−) lead → Black ② lead

- Check the oil level gauge for continuity.

Switch position	Good condition	Bad condition		
Upright position	○	×	×	○
Up-side down position	×	○	×	○

○: Continuity ×: Nocontinuity



BAD CONDITION

Replace oil level gauge.

GOOD CONDITION

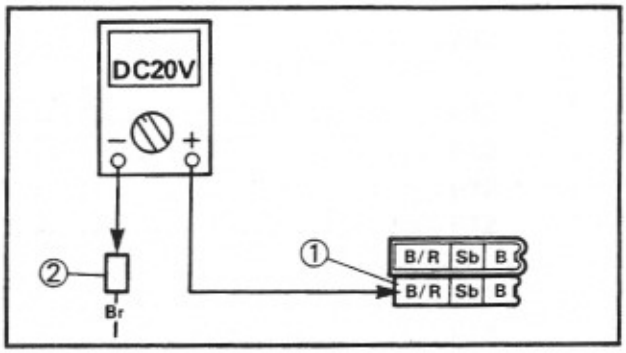
4. Voltage

- Disconnect the indicator light box coupler from the wireharness.
- Connect the pocket tester (DC20V) to the "OIL" indicator light coupler.

Tester (+) lead → Black/Red ① lead
Tester (−) lead → Brown ② lead

- Check the "OIL" indicator light voltage.

"OIL" indicator light voltage: 12.0V



OUT OF SPECIFICATION

5. Wiring connection

Check the entire signal system for connections. Refer to the "WIRING DIAGRAM" section.

MEETS SPECIFICATION

This circuit is good.

CHAPTER 8. TROUBLESHOOTING

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 inspection, adjustment and replacement of parts.

STARTING FAILURE/HARD STARTING

FUEL SYSTEM	PROBABLE CAUSE
Fuel tank	• Empty • Clogged fuel filter • Clogged fuel tank cap • Deteriorated fuel or fuel containing water or foreign material
Fuel cock	• Clogged fuel hose
Carburetor	• Deteriorated fuel, fuel containing water or foreign material • Clogged pilot jet • Clogged pilot air passage • Sucked-in air • Deformed float • Groove-worn needle valve • Improperly sealed valve seat • Improperly adjusted fuel level • Improperly set pilot jet • Clogged starter jet • Starter plunger malfunction • Improperly adjusted starter cable
Air cleaner	• Clogged air filter

STARTING FAILURE/HARD STARTING

ELECTRICAL SYSTEM

	PROBABLE CAUSE
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
CDI unit system	• Faulty CDI unit • Faulty source coil • Faulty pick-up coil • Broken woodruff key
Switches and wiring	• Faulty main switch • Faulty engine stop switch • Broken or shorted wiring • Faulty neutral switch • Faulty sidestand switch • Faulty ignition control unit

COMPRESSION SYSTEM

	PROBABLE CAUSE
Cylinder and cylinder head	• Loose spark plug • Loose cylinder head or cylinder • Broken cylinder head gasket • Broken cylinder gasket • Worn, damaged or seized cylinder
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 • Improperly sealed crankcase (Damaged oil seal) • Seized crankshaft
Reed valve	• Deformed reed valve stopper • Improperly seated read valve • Loose intake manifold • Broken gasket • Broken reed valve

POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE	PROBABLE CAUSE
Carburetor	• Improperly returned starter plunger • Clogged or loose pilot jet • Clogged pilot air passage • Improperly adjusted idle speed (Throttle stop screw) • Improper throttle cable play • Faulty pick up coil

POOR MEDIUM AND HIGH SPEED PERFORMANCE

FUEL SYSTEM	PROBABLE CAUSE
Fuel tank	• Clogged fuel filter • Deteriorated fuel or fuel containing water or foreign material • Clogged fuel breather hose
Fuel cock	• Clogged fuel hose
Carburetor	• Deteriorated fuel, fuel containing water or foreign material • Sucked-in air • Deformed float • Groove-worn needle valve • Improperly sealed valve seat • Improperly set clip position of jet needle • Improperly adjusted fuel level • Clogged or loose main jet • Clogged or loose needle jet
Air cleaner	• Clogged air filter

FAULTY GEAR SHIFTING

TRBL SHTG ?

ELECTRICAL SYSTEM

	PROBABLE CAUSE
Spark plug	• Improper plug gap • Worn electrodes • Wire between terminals broken • Improper heat range • Faulty spark plug cap
CDI unit system	• Faulty CDI unit • Faulty source coil • Faulty pickup coil

COMPRESSION SYSTEM

	PROBABLE CAUSE
Cylinder and cylinder head	• Loose spark plug • Broken cylinder head gasket • Broken cylinder gasket • Loose cylinder head or cylinder • Worn, damaged or seized cylinder
Piston and piston ring	• Improperly installed piston ring • Worn, fatigued or broken piston ring • Seized piston ring • Seized or damaged piston
Crankcase and crankshaft	• Improperly seated crankcase • Improperly sealed crankcase (Damaged oil seal) • Seized crankshaft
Reed valve	• Deformed reed valve stopper • Improperly adjusted reed valve stopper height • Improperly seated reed valve • Loose intake manifold • Broken gasket • Broken reed valve

FAULTY GEAR SHIFTING

HARD SHIFTING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Improperly adjusted push lever position • Improper engagement of push lever and push rod • Warped clutch plate • Swollen friction plate • Broken clutch plate
Transmission oil	• High oil level • Improper quality (High viscosity) • Deterioration

CLUTCH SLIPPING/DRAGGING

SHIFT PEDAL DOES NOT MOVE

	PROBABLE CAUSE
Shift shaft	• Bent shift shaft
Shift cam and shift fork	• Groove jammed with impurities • Seized shift fork • Bent shift fork guide bar
Transmission	• Seized transmission gear • Jammed impurities • Incorrectly assembled transmission

JUMP-OUT GEAR

	PROBABLE CAUSE
Shift shaft	• Improperly adjusted shift lever position • Improperly returned stopper lever
Shift fork	• Worn shift fork
Shift cam	• Improper thrust play • Worn shift cam groove
Transmission	• Worn gear dog

CLUTCH SLIPPING/DRAGGING

CLUTCH SLIPPING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Loose clutch spring • Fatigued clutch spring • Worn friction plate • Worn clutch plate
Transmission oil	• Low oil level • Improper quality (Low viscosity) • Deterioration

CLUTCH DRAGGING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Improperly adjusted push lever position • Improper engagement of push lever and push rod • Warped clutch plate • Swollen friction plate • Broken clutch boss
Transmission oil	• High oil level • Improper quality (High viscosity) • Deterioration

IMPROPER KICKING

SLIPPING

	PROBABLE CAUSE
Kick axle assembly	• Low tension of kick clip • Worn kick axle • Worn or damaged kick idle gear • Worn or damaged kick gear • Damaged kick clip • Kick clip coming off • Damaged kick clip stopper
Transmission oil	• Improper quality (Low viscosity) • Deterioration

HARD KICKING

	PROBABLE CAUSE
Kick axle assembly	• High tension of kick clip • Seized kick gear • Seized kick idle gear
Transmission oil	• Improper quality (High viscosity) • Deterioration
Cylinder, piston and piston ring	• Damaged or seized cylinder • Damaged or seized piston • Damaged or seized piston ring
Crankcase and crankshaft	• Improperly seated crankcase • Improperly seated crankshaft • Damaged or seized crankshaft • Damaged or seized crankshaft bearing

KICK CRANK NOT RETURNING

	PROBABLE CAUSE
Kick axle assembly	• Damaged kick return spring • Kick return spring coming off • Kick clip coming off • Damaged kick return spring stopper

FAULTY BRAKE

POOR BRAKING EFFECT

	PROBABLE CAUSE
Drum brake	• Worn brake shoe • Worn or rusty brake drum • Improperly adjusted brake free play • Improper brake cam lever position • Improper brake shoe position • Fatigue/Damaged return spring • Oily or greasy brake shoe • Oily or greasy brake drum • Broken brake cable

FRONT FORK OIL LEAKAGE AND FRONT FORK MALFUNCTION

OIL LEAKAGE

PROBABLE CAUSE

- Bent, damaged or rusty inner tube
- Damaged or cracked outer tube
- Damaged oil seal lip
- Improperly installed oil seal
- Improper oil level (too much)
- Loose damper rod holding bolt
- Broken cap bolt O-ring
- Loose drain bolt
- Damaged drain bolt gasket

MALFUNCTION

PROBABLE CAUSE

- Bent, deformed or damaged inner tube
- Bent or deformed outer tube
- Damaged fork spring
- Worn or damaged slide metal
- Bent or damaged damper rod
- Improper oil viscosity
- Improper oil level

INSTABLE HANDLING

INSTABLE HANDLING

INSTABLE HANDLING	PROBABLE CAUSE
Handlebars	• Improperly installed or bent
Steering	• Improperly installed handlebar crown • Bent steering shaft • Improperly installed steering shaft (Improperly tightened ringnut) • Damaged ball bearing, roller bearing or bearing race
Front forks	• Uneven oil levels on both sides • Uneven spring tension (Uneven damping adjuster position) • Broken spring • Twisted front forks
Tires	• Uneven tire pressures on both sides • Incorrect tire pressure • Unevenly worn tires
Wheels	• Incorrect wheel balance • Deformed cast wheel • Loose bearing • Bent or loose wheel axle • Excessive wheel run-out
Frame	• Twisted • Damaged head pipe • Improperly installed bearing race
Swingarm	• Worn bearing or bush • Bent or damaged
Rear shock absorber	• Fatigued spring • Improperly adjusted spring preload • Oil leakage
Drive chain	• Improperly adjusted chain slack

FAULTY SIGNAL AND LIGHTING SYSTEM

HEADLIGHT DARK

PROBABLE CAUSE

- Improper bulb
- Too many electric accessories
- Hard charging (Broken charging coil and/or faulty rectifier/regulator)
- Incorrect connection
- Improperly grounded
- Bulb life expired

BULB BURNT OUT

PROBABLE CAUSE

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

FLASHER DOES NOT LIGHT

PROBABLE CAUSE

- Improperly grounded
- Discharged battery
- Faulty "TURN" switch
- Faulty flasher relay
- Broken wireharness
- Loosely connected coupler
- Bulb burnt out

FLASHER KEEPS ON

PROBABLE CAUSE

- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Bulb burnt out

FLASHER WINKS SLOWER

PROBABLE CAUSE

- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Improper bulb
- Faulty main and/or "TURN" switch

FLASHER WINKS QUICKER

PROBABLE CAUSE

- Improper bulb
- Faulty flasher relay

HORN IS INOPERATIVE

PROBABLE CAUSE

- Faulty battery
- Faulty main and/or horn switch
- Improperly adjusted horn
- Faulty horn
- Broken wireharness

OVERHEATING

OVERHEATING

PROBABLE CAUSE

- Ignition system
  - Improper spark plug gap
  - Improper spark plug heat range
  - Faulty CDI unit
- Fuel system
  - Improper carburetor main jet (Improper setting)
  - Improperly adjusted fuel height
  - Clogged air cleaner element
- Compression system
  - Heavy carbon build-up
- Engine oil
  - Incorrect oil level
  - Improper oil viscosity
  - Inferior oil quality
- Brake
  - Dragging brake