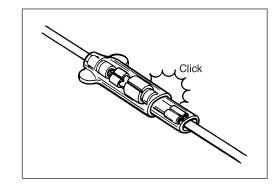
PDF Split DEMO : Purchase from www.A-PDF.com to remove ELECTRICAL SYSTEM

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CAUTIONS IN SERVICING

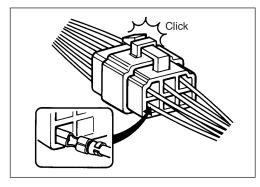
CONNECTORS

- When disconnecting a connector, be sure to hold the terminals; do not pull the lead wires.
- When connecting a connector, push it in so it is firmly attached.
- Inspect the connector for corrosion, contamination and any breakage in the cover.



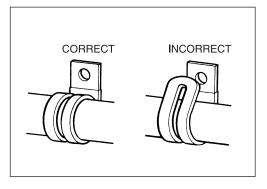
COUPLERS

- With a lock-type coupler, be sure to release the lock before disconnecting it. When connecting a coupler, push it in until the lock clicks shut.
- When disconnecting a coupler, be sure to hold the coupler; do not pull the lead wires.
- · Inspect each terminal on the coupler for looseness or bends.
- Inspect each terminal for corrosion and contamination.



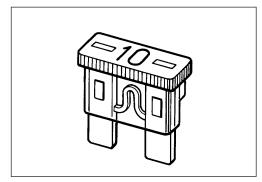
CLAMPS

- Refer to the "WIRE HARNESS ROUTING" section for proper clamping procedures. (29-13 and 9-14)
- Bend the clamp properly, as shown in the illustration.
- When clamping the wire harness, do not allow it to hang down.
- Do not use wire or any substitutes for the band-type clamp.



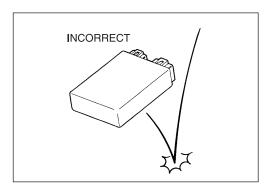
FUSES

- When a fuse blows, always investigate the cause, correct the problem, and then replace the fuse.
- · Do not use a fuse of a different capacity.
- Do not use any substitutes for the fuse (e.g., wire).



SEMICONDUCTOR EQUIPPED PARTS

- Do not drop any part that contains a semiconductor (e.g., ignitor unit, regulator/rectifier).
- When inspecting the part, follow the inspection instructions carefully. Neglecting proper procedures may cause this part to be damaged.



BATTERY

- The MF battery used in this motorcycle does not require maintenance (e.g., electrolyte level inspection, distilled water replenishment).
- During normal charging, no hydrogen gas is produced. However, if the battery is overcharged, hydrogen gas may be produced. Therefore, be sure there are no fire or spark sources (e.g., short circuit) nearby when charging the battery.
- Be sure to recharge the battery in a well-ventilated and open area
- Note that the charging system for the MF battery is different from that of a conventional battery. Do not replace the MF battery with a conventional battery.

CONNECTING THE BATTERY

- When disconnecting terminals from the battery for disassembly or servicing, be sure to disconnect the

 battery lead wire, first.
- When connecting the battery lead wires, be sure to connect the

 battery lead wire, first.
- If the terminal is corroded, remove the battery, pour warm water over it and clean it with a wire brush.
- After connecting the battery, apply a light coat of grease to the battery terminals.
- Install the cover over the \oplus battery terminal.

WIRING PROCEDURE

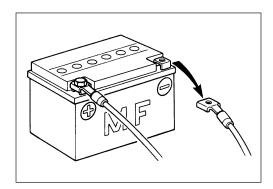
• Properly route the wire harness according to the "WIRE ROUT-ING" section. (9-13 to 9-14)

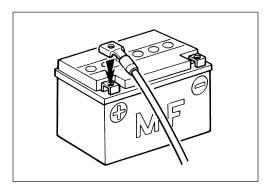
USING THE MULTI CIRCUIT TESTER

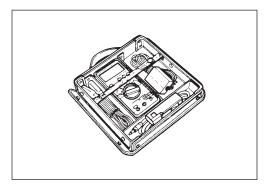
- Properly use the multi circuit tester ⊕ and ⊕ probes. Improper use can cause damage to the motorcycle and tester.
- If the voltage and current values are not known, begin measuring in the highest range.
- When measuring the resistance, make sure that no voltage is applied. If voltage is applied, the tester will be damaged.
- After using the tester, be sure to turn the switch to the OFF position.

▲ CAUTION

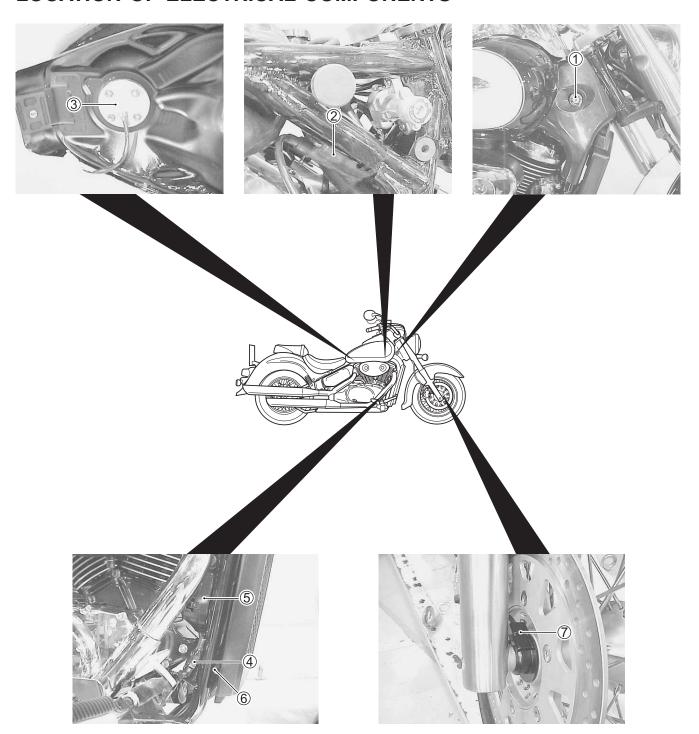
Before using the multi circuit tester, read its instruction manual.





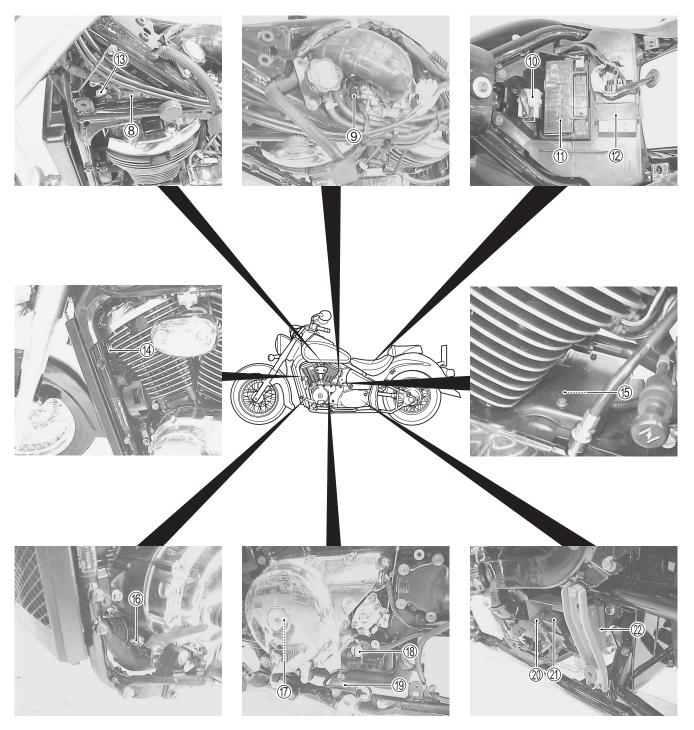


LOCATION OF ELECTRICAL COMPONENTS



- 1 Ignition switch
- 2 Ignition coil #2
- ③ Fuel level gauge
- 4 Rear brake switch

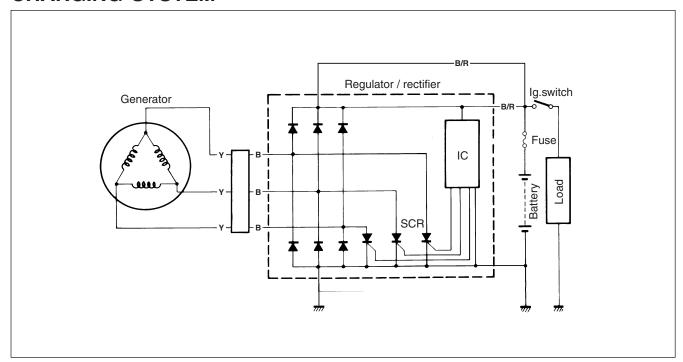
- ⑤ Cooling fan
- 6 Cooling fan thermo-switch
- Speedometer sensor



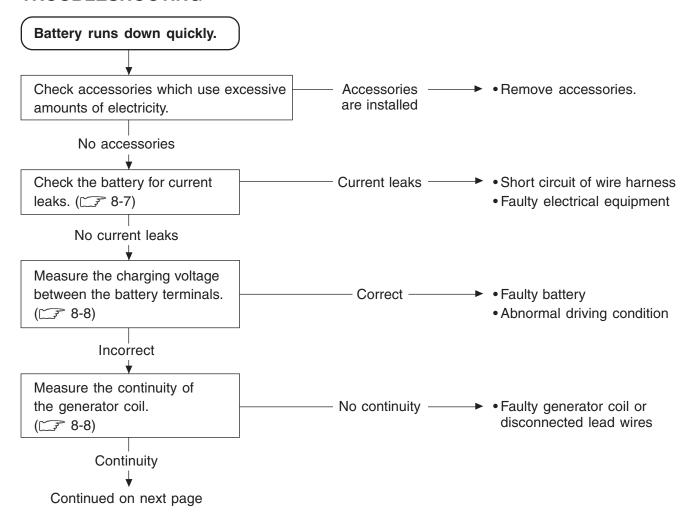
- 8 Ignition coil #1
- 9 Throttle position sensor
- 10 Starter relay/main fuse
- 11) Battery
- 12 Ignitor
- ③ Engine coolant temperature sensor
- 14 Horn
- **15** Starter motor

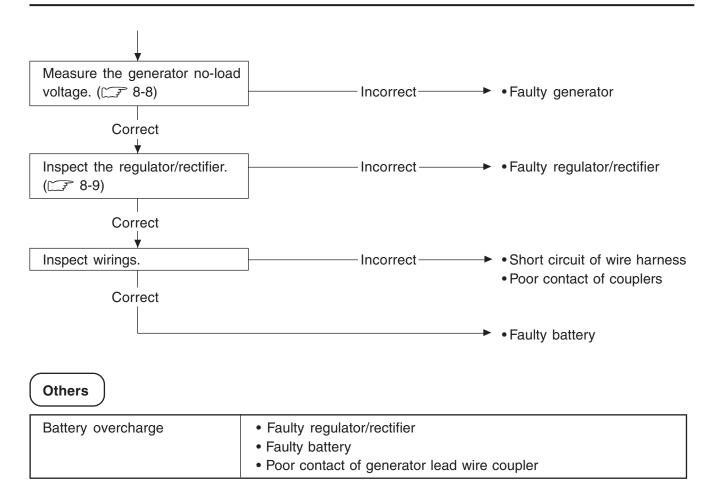
- 16 Oil pressure switch
- (17) Generator
- (18) Gear position switch
- 19 Side-stand switch
- 20 Fuse box
- Turn signal side-stand relayRegulator/rectifier

CHARGING SYSTEM



TROUBLESHOOTING





INSPECTION

BATTERY CURRENT LEAKAGE

- Remove the two seats. (7-2)
- Turn the ignition switch to the OFF position.
- Disconnect the battery \bigcirc lead wire.

Measure the current between \bigcirc battery terminal and the \bigcirc battery lead wire using the multi circuit tester. If the reading exceeds the specified value, leakage is evident.

09900-25008: Multi circuit tester set

DATA Battery current (leak): Under 3 mA

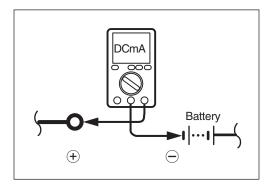
Tester knob indication: Current (---, 20 mA)

A CAUTION

- * Because the current leak might be large, turn the tester to high range first to avoid tester damage.
- * Do not turn the ignition switch to the "ON" position when measuring current.

When checking to find the excessive current leakage, remove the couplers and connectors, one by one, checking each part.





REGULATED VOLTAGE

- Remove the two seats. (7-2)
- Start the engine and keep it running at 5 000 r/min. with lighting switch turned ON (except for E-03, 28, 24, 33 models) and dimmer switch turned HI position.

Measure the DC voltage between the \oplus and \bigcirc battery terminals using the multi circuit tester. If the voltage is not within the specified value, inspect the generator and regulator/rectifier. ($\square F$ 8-8 and 8-9)

NOTE:

When making this test, be sure that the battery is in fully-charged condition

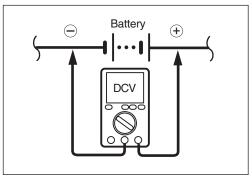
09900-25008: Multi circuit tester set

Tester knob indication: Voltage (---)

Charging output (Regulated voltage):

14.0 - 15.5 V at 5 000 r/min.





GENERATOR COIL RESISTANCE

- Remove the secondary gear case cover.
- · Disconnect the generator coupler.

Measure the resistance between the three lead wires.

If the resistance is not specified value, replace the stator with a new one. Also, check that the generator core is insulated.

09900-25008: Multi circuit tester set

Tester knob indication: Resistance (Ω)

Generator coil resistance: $0.2 - 1.5 \Omega$ (Yellow – Yellow) $\infty \Omega$ (Yellow – Ground)

NOTE:

When making above test, it is not necessary to remove the generator.

GENERATOR NO-LOAD PERFORMANCE

• Start the engine and keep it running at 5 000 r/min.

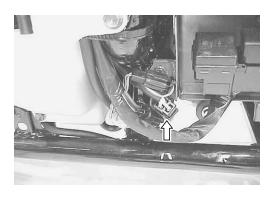
Using the multi circuit tester, measure the voltage between three lead wires.

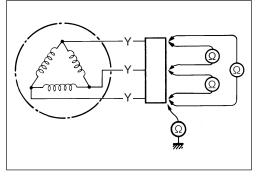
If the tester reads under the specified value, replace the generator with a new one.

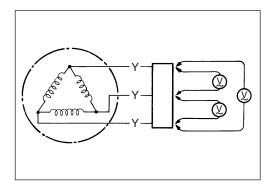
09900-25008: Multi circuit tester set

Tester knob indication: Voltage (~)

Generator no-load performance (When engine is cold): More than 70 V at 5 000 r/min







REGULATOR/RECTIFIER

- Remove the secondary gear case cover.
- Disconnect the regulator/rectifier couplers.

Measure the voltage between the lead wires using the multi circuit tester as indicated in the table below. If the voltage is not within the specified valve, replace the regulator/rectifier with a new one.

09900-25008: Multi circuit tester set

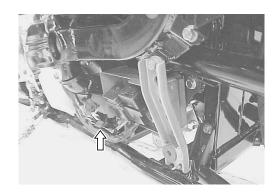
Unit: V

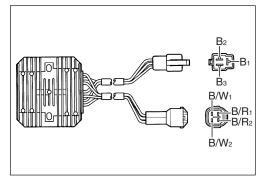
	Tester probe							
		B/R ₁	B/R ₂	B ₁	B ₂	B ₃	B/W ₁	B/W ₂
	B/R ₁		0	0.4 – 0.7	0.4 – 0.7	0.4 - 0.7	0.5 – 1.2	0.5 – 1.2
probe	B/R ₂	0		0.4 – 0.7	0.4 - 0.7	0.4 - 0.7	0.5 – 1.2	0.5 – 1.2
	B ₁	*	*		*	*	0.4 – 0.7	0.4 - 0.7
este	B ₂	*	*	*		*	0.4 – 0.7	0.4 - 0.7
- Tester	Вз	*	*	*	*		0.4 – 0.7	0.4 - 0.7
	B/W ₁	*	*	*	*	*		0
	B/W ₂	*	*	*	*	*	0	

* More than 1.4 V (tester's battery voltage)

NOTE:

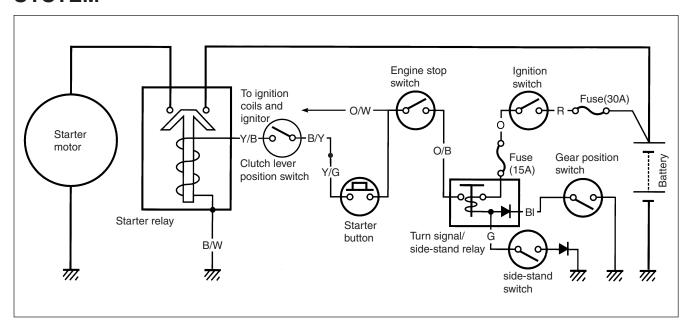
If the tester reads under 1.4 V when the tester probes are not connected, replace the battery of multi circuit tester.



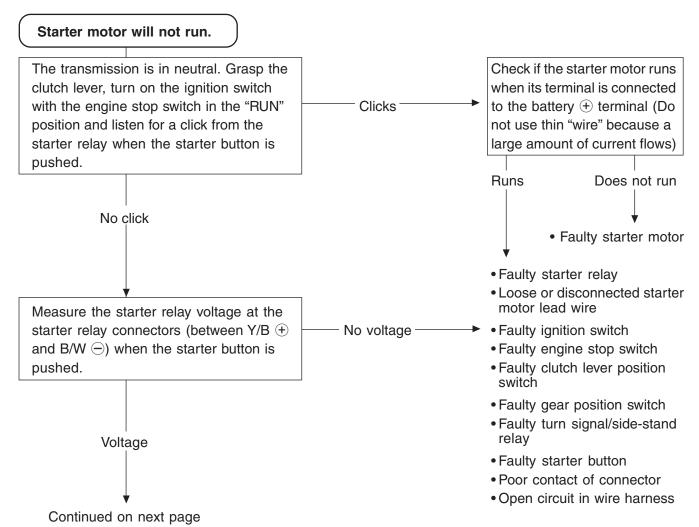


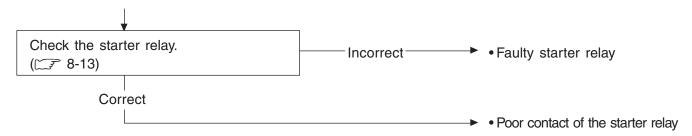
WIRE COLOR B: Black, B/R: Black with Red tracer, B/W: Black with White tracer

STARTER SYSTEM AND SIDE-STAND/IGNITION INTERLOCK SYSTEM

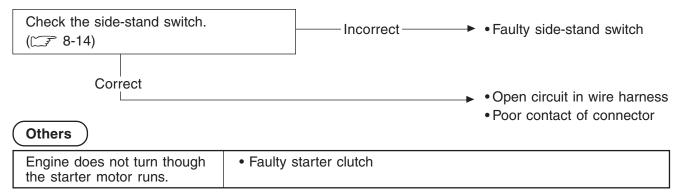


TROUBLESHOOTING



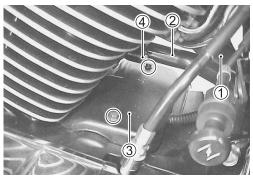


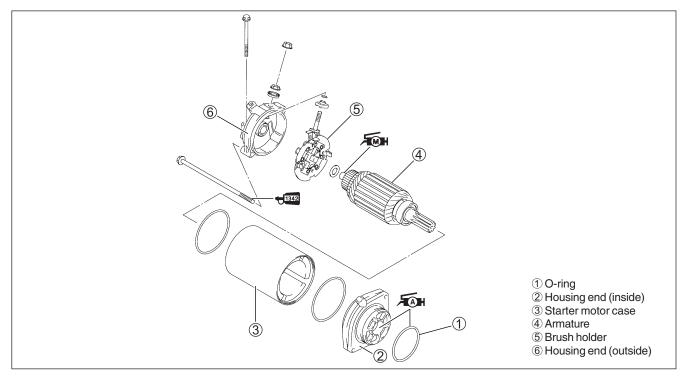
The starter motor runs when the transmission is in neutral, but does not run when the transmission is in any position other than neutral, with the side-stand up.



STARTER MOTOR REMOVAL AND DISASSEMBLY

- Drain engine coolant. (2-13)
- Remove the muffler (No.1) ①. (CF3-5)
- Remove the engine coolant pipe 2. (3-13)
- Remove the starter motor cover ③.
- Remove the engine coolant inlet 4.
- Remove the starter motor. (3-14)
- Disassemble the starter motor as shown in the illustration.



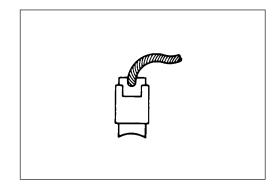


STARTER MOTOR INSPECTION

CARBON BRUSH

Inspect the brushes for abnormal wear, cracks, or smoothness in the brush holder.

If any damages are found, replace the brush assembly with a new one.

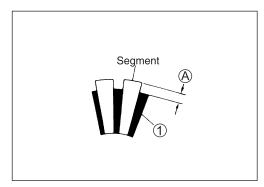


COMMUTATOR

Inspect the commutator for discoloration, abnormal wear or undercut $\widehat{\mathbb{A}}$.

If abnormal wear is found, replace the armature with a new one. If the commutator surface is discolored, polish it with #400 sand paper and wipe it using a clean dry cloth.

If there is no undercut, scrape out the insulator ① with a saw blade.

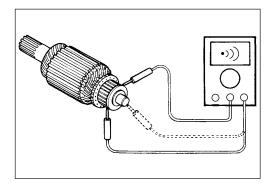


ARMATURE COIL INSPECTION

Check for continuity between each segment and between each segment and the armature shaft using the multi circuit tester. If there is no continuity between the segments or there is continuity between the segments and shaft, replace the armature with a new one.

09900-25008: Multi circuit tester set

Tester knob indication: Continuity test (•)))



OIL SEAL INSPECTION

Check the oil seal lip for damage or leakage. If any damage is found, replace the housing end.



STARTER MOTOR REASSEMBLY

Reassemble the starter motor in the reverse order of disassembly. Pay attention to the following points:

• Apply grease to the lip of the oil seal.

For U.S.A.

√A 99000-25030: SUZUKI SUPER GREASE "A"

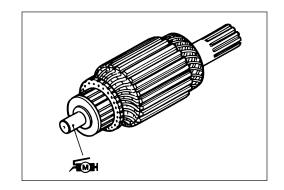
For the other countries

√A 99000-25010: SUZUKI SUPER GREASE "A"



Apply a small quantity of SUZUKI MOLY PASTE to the armature shaft.

1 99000-25140: SUZUKI MOLY PASTE



- Align the tonque ① on the brush holder with the groove ② on the housing end.
- Align the threaded parts ③ on the housing end.
- Apply a small quantity of THREAD LOCK "1342" to the starter motor housing bolts.

+1342 99000-32050: THREAD LOCK "1342"

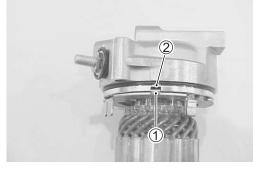
• Apply SUZUKI SUPER GREASE "A" to the O-ring.

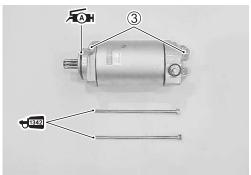
For U.S.A.

★AH 99000-25030: SUZUKI SUPER GREASE "A"

For the others

√A**H** 99000-25010: SUZUKI SUPER GREASE "A"





STARTER RELAY INSPECTION

- Remove the two seats. (\$\sumsymbol{2}7-2\$)
- Disconnect the battery

 lead wire from the battery.
- Remove the starter relay cover.
- Disconnect the starter motor lead wire ①, battery lead wire ② and starter relay coupler ③.
- Remove the starter relay 4.

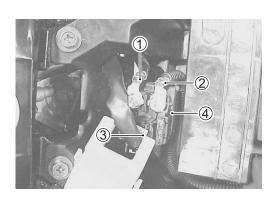
Apply 12 V to (A) and (B) terminals and check for continuity between the positive and negative terminals using the multi circuit tester. If the starter relay clicks and continuity is found, the relay is ok.

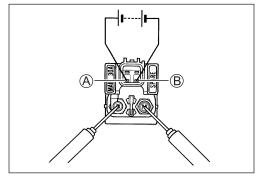


Tester knob indication: Continuity test (•)))

▲ CAUTION

Do not apply a battery voltage to the starter relay for more than five seconds, since the relay coil may overheat and damaged.

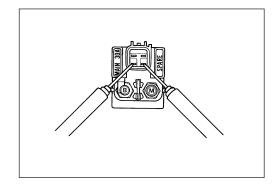




Measure the relay coil resistance between the terminals using the multi circuit tester. If the resistance is not within the specified value, replace the starter relay with a new one.

09900-25008: Multi circuit tester set

DATA Starter relay resistance: $3-7 \Omega$



SIDE STAND/IGNITION INTERLOCK SYSTEM PARTS INSPECTION

Check the interlock system for proper operation. If the interlock system does not operate properly, check each component for damage or abnormalities. If any abnormality is found, replace the component with a new one.

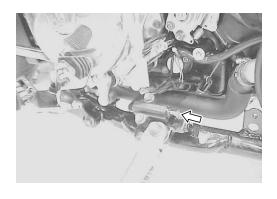
SIDE-STAND SWITCH

- Remove the secondary gear case cover.
- Disconnect the side-stand switch coupler and measure the voltage between Green and Black/White lead wires.

09900-25008: Multi circuit tester set

Tester knob indication: Diode test (-ば-)

	Green (⊕ Probe)	Black/White (⊖ Probe)	
ON (Side-stand up)	0.4-0.6 V		
OFF (Side-stand down)	More than 1.4 V (Tester's battery voltage)		



NOTE:

If the tester reads under 1.4V when the tester probes are not connected, replace its battery.

GEAR POSITION SWITCH

- · Remove the secondary gear case cover.
- Disconnect the gear position switch coupler and check the continuity between Blue and Black/White with the transmission in "NEUTRAL".

	Blue	Black/White
ON (Neutral)	<u> </u>	
OFF (Except neutral)		

▲ CAUTION

When disconnecting and connecting the gear position switch coupler, make sure to turn OFF the ignition switch, or electronic parts may get damaged.

