Starting Circuit Troubleshooting Guide

Perform the following tests either outside or in an area where there is adequate ventilation, and ensure that there is no source of ignition near the motorcycle!

1) Turn on the master switch. Turn the ignition switch to the middle "on" position. Turn the fuel petcock to the "on" position. Pull out the choke knob on each carburetor. Press the electric start button. Did the electric starter motor do anything?
   - No - Go to step 2.
   - Yes - Go to step 3.

2) Press the starter button again. Listen for a click sound under the seat. Did you hear a sound?
   - No - Go to step 10.
   - Yes - Go to step 10.

3) When the motor was turning over, could you hear either cylinder fire at all?
   - No - Go to step 4.
   - Yes - Exchange the spark plugs and leads between cylinders by reversing the positions of the spark plug leads at the ignition coil. If the problem follows either the spark plug or lead to the other cylinder, then replace the defective component as required. If the problem remains with one cylinder then suspect either the carburetor or valve adjustments. Go to step 5.

4) Pull the spark plug from each cylinder and lay the plugs on top of the cylinder heads so that the threaded part of the plug makes electrical contact with the bare metal of the cooling fins. Press the electric start button again and look for sparks jumping across the spark gaps. Did you see sparks on either of the spark plugs?
   - No - Go to step 7.
   - Yes - Go to step 5.

5) Remove the fuel supply hoses from each of the carburetors. Did you see an unrestricted flow of gasoline pour out from the ends of the hoses?
   - No - Go to step 6.
   - Yes - Let the engine sit with the spark plugs removed for 30 minutes to dry out. The cylinders may be flooded. You may have a weak coil. A weak coil will work at atmospheric pressure, but will not provide a spark in the cylinder under compression. The only test & cure for a weak coil is to replace the coil with one that is known to be functional.

6) Momentarily remove the fuel supply hose from the fuel petcock under the fuel tank. Was there an unrestricted flow of fuel from the fuel petcock? (Make sure the fuel petcock is turned on)

No - Fill the fuel tank with fuel and go to step 1

Yes - Check the fuel supply hoses and fuel filters for restrictions. Reconnect the fuel lines and filters and go to step 5.

7) Use a voltmeter and check for +12 volts on the red wire of the ignition module located under the front engine cover. Did you measure +12 volts with the other lead of the voltmeter connected to the metal of the engine?

No - Check the fuses and look for poor wire connections in the fuse holder assembly. Also make sure that the kill switch is in the run position. Repeat step 7.

Yes - Go to step 8.

8) Use an ohmmeter to check the ignition coil. Measure the resistance of the primary winding by attaching the ohmmeter leads to the outside studs of the ignition coil. The meter should read approximately 1 ohm. Now measure the resistance of the secondary coil by connecting the ohmmeter between the two extending high voltage output connectors of the coil. The resistance should be approximately 7,700 ohms. Are the resistance characteristics of the ignition coil close the above values?

No - Replace the ignition coil.

Yes - Go to step 9.

9) Check the electronic ignition assembly for any loose wires. The disk with the steel pins must spin with the motor crankshaft. The gap between the timing disk and the timing sensor must be .010 inches. Are there any visible problems?

No - Replace the electronic ignition module.

Yes - Correct the problems and if required, return to step 3.

10) Locate the starter relay mounted under the rider's seat. Connect a voltmeter to the two connectors of the starter relay. Press the start button and measure the voltage at the relay's connectors. Did you measure 12 volts?

No - Check the wires going to the relay for loose connections or a break in the wire. Check the electric start switch for correct operation. Replace the switch if required.

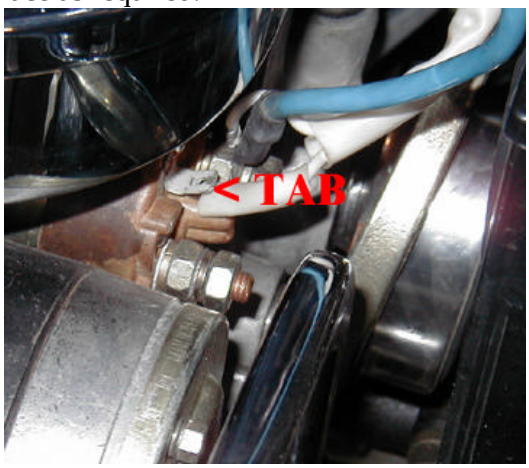
Yes - Check the wire that carries the 12 volts from the output of the starter relay to the starter solenoid. Look for loose or dirty connectors or a break in the wire. Go to step 11.

11) Use a screwdriver to carefully form a jumper between the starter solenoid tab and the starter solenoid stud, which has the wires, connected to it. Did the starter solenoid motor activate?

No - Go to step 12.

Yes - If the starter motor activated with the screwdriver bypass but not with the electric start button then there are several things, which need to be checked. Start with the fuse holder assembly. Look for any blown fuses or poor wire connections on the ends of the fuse holders. Look for green corrosion or loose wires. Remove the electric start switch from the bike & look for internal signs of broken switch contacts. Look at the switch connector also and make sure that it makes good contact. Look under the rider's seat of the bike behind the master switch. There you will find a small relay, which is controlled by the electric start switch. When activated, the relay sends 12

volts to the tab on the starter solenoid. Check for loose connections on the relay or broken wires going to / from the relay. If you are unable to find a problem with the start switch, fuses, or wiring then replace the relay. Otherwise, replace as required.



12) Turn off the master switch. Remove the heavy wire that leads to the battery from the stud connector on the starter solenoid. ***Hold it in your fingers so that there is no possibility of it touching anything metal on the bike!!*** Turn the master switch back on. Briefly tap the metal connector in your fingers to the other metal stud connector on the starter solenoid that is closest to the starter motor. Did the motor start momentarily? Turn off the master switch and return the heavy wire to its original terminal.

No - Replace or repair the starter motor
Yes - Replace the starter solenoid.

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