



Troubleshooting - Scooter won't start

To start a scooter needs three things:

- Gas
- A spark
- Cylinder compression

If your scooter won't start it due to one of the above not being present. Before you start troubleshooting, make sure there is gas in the tank by actually looking into it. Don't just trust the gas gauge!

Most scooters have four things that need to be done before they can be started with the electric starter:

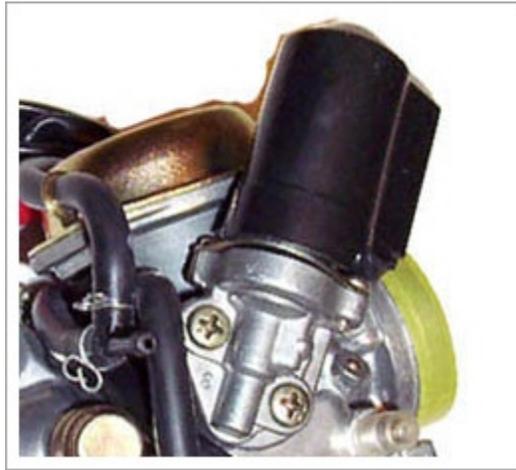
- The ignition has to be turned on
- The kill switch (usually near the right grip) has to be in the "on" position
- The rear (left) brake lever has to be squeezed.
- The starter button must be pressed.

Some scooters may have other interlocks on the front brake or the center stand. Check your owner's manual to make sure that you are doing all you need to complete the electrical circuit which enables it to start.

If the scooter doesn't turn over when you've done all the required operations, there's an electrical problem with the battery. Make sure the battery is charged. If it is, make sure the fuse hasn't blown. If it hasn't, check to see if you are getting voltage to the starter motor terminals. If you are, the starter motor is likely defective. Many scooters have a kick start (see your manual). If the battery is OK and the starter motor doesn't work, try kick starting it. It's usually not too hard. My scooter usually starts OK on the 2nd or 3rd kick.

If the scooter does turn over but still doesn't start you have to check for a spark and make sure gas is getting to the engine. To check for a spark, remove the spark plug from the cylinder, hold the tip of the plug against the cylinder head and crank the engine. You should see a spark across the gap. If you don't, there's a problem with the ignition. Could be a faulty coil or electronic ignition module which will have to be replaced, or it could just be a loose wire.

If you do have a spark, you need to check the gas. Make sure there is gas in the tank first! If there is you need to check the fuel valve. Most scooters use a gravity fuel feed by locating the fuel tank higher than the carburetor. The fuel usually then flows through filter and then through a vacuum operated valve. The valve has three hoses connected to it. One if from the fuel tank and is for the gas going in, one is connected to the carburetor and is for the gas coming out and one goes to the engine manifold which provides a vacuum. If you disconnect the hose from the carburetor, fuel should run out when you crank the engine (be careful to catch the gas if you do this and don't do it with a hot engine). If you don't see gas the fuel valve may be faulty. You can try applying a vacuum to the control port of the valve and see if the fuel flows. Sucking on the line is one way to do this (but make sure it's the vacuum line, not the gas line if you try this!).



If you are getting a spark and you are getting gas to the carburetor and the engine is turning over on the starter OK, it's possible that the electrically operated automatic choke has failed. It's supposed to operate when the engine is cold, but if it's stuck or burned out, the mixture will be weak and the scooter probably won't start. The automatic choke is usually a black cylindrical object attached to the carburetor with a couple of wires coming out of it as shown on the left. It's the only electrical powered component attached to the carburetor, so it's usually not hard to spot. If you have a voltmeter you can measure the resistance across the leads of the choke. It should be somewhere in the region of around 10 or 20 ohms. If it's an open circuit, it's burned out and will need to be replaced. If it seems to be OK it may be stuck, or the wiring to it may have a problem. Check to see that it's getting voltage.

It's also possible that there is a problem with the carburetor and if so you may need to remove it and clean it out. If the scooter has been sitting for a few months with gas in the carburetor, the gas may have evaporated and left a sticky "gum" behind that will prevent the carburetor from working properly and which must be removed.

If the automatic choke is OK, the starter cranks the engine, there's gas and there's a spark then there may be an engine problem. You need to check the cylinder compression. You need a compression tester to do this. It screws in instead of the spark plug and measures cylinder pressure. When you crank the engine you should see a reading of around 150 psi or more. If it's 100 psi or less there's likely an engine problem (bad valve, bad piston, failed piston rings) which will need the engine taken apart to find.

Probably the most common problems are a dead battery or carburetor problems due to bad adjustment or build up of gummy deposits. Carburetor problems usually come on slowly though. If a scooter is OK one day and refuses to start the next day, I'd first suspect an electrical problem.