

The V-Star 1100 Charging System

There is a lot of issues noted online about the V*1100 charging system. Mainly that the battery gets real hot, may appear to be bloated, and no longer works. This and the 'dead battery' issues appear a lot. So I have made some attempt to document things you can do to determine the cause, and get the problems corrected.

Tools Needed:

A ac/dc volt meter and some basic knowledge on how to use it. (Radio Shack)
5mm hex driver tip

In the unfortunate event that the regulator is faulty, or if you just want to inspect the connector at the regulator, removal of the exhaust will be necessary.

Symptoms: Lights flickering at times and/or Battery gets hot to the touch	Possible Cause(s): Rectifier
Symptoms: Battery won't stay charged	Possible Cause(s): Rectifier Battery Stator Ground Connections

Brief description:

The alternator is where it starts. It contains the stator. The stator is basically some wire wrapped around a core. When a magnet passes near the core, an AC voltage is generated. This voltage is fed to the rectifier/regulator. The rectifier/regulator can be either 1 integrated device, or 2 separate devices. On the V*1100 it is 1 integrated device.

The rectifier has the simple job of converting the voltage that comes from the alternator, which is AC or alternating current, to DC, which is direct current.

The regulator makes sure that the total voltage going to the battery from the rectifier is at a safe level for the battery. Typically around 14.1 to 14.9 volts.

Now, let's look at a couple of the problems.

Lights flickering at times and/or battery gets hot to the touch.

This is probably the most common complaint I see online. Usually it is the regulator. When the regulator dies, it allows as much as 19 volts to appear across the battery. This is not good. It will cook the battery. And the battery could even explode.

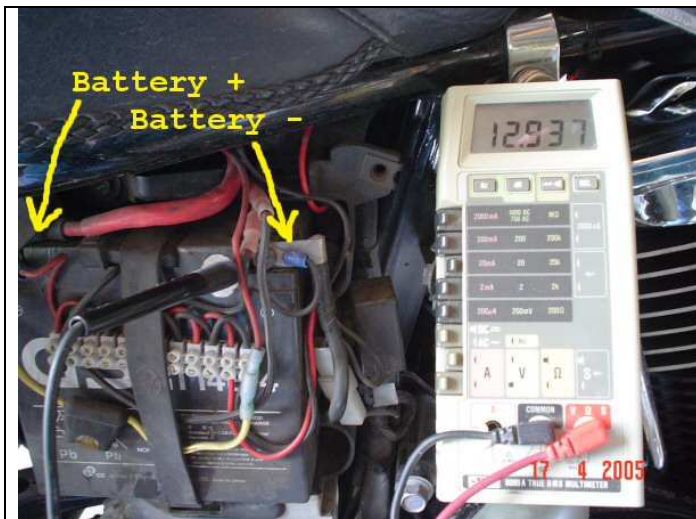
Battery won't stay charged, or won't charge at all.

This problem is usually a bad battery. But it can also be a bad ground connection, a bad Regulator assembly or even a bad stator.



Test 1 (the battery)

Remove the battery cover.



Measure the voltage (DC) across the battery. It should read about 12.4 – 12.9 volts.

If the battery voltage is too low, take the battery in and have it charged then tested under load.



Test 2 (the regulator)

Now start the bike.

Measure the voltage across the battery, but this time, rev the engine. The voltage should be between 14.1 and 14.9 volts.

Note, the alternator does not work very efficiently at a low rpm, the alternator needs to get above 3000 rpm to get a good reading.

If the voltage is greater than 14.9 volts, (usually 18 or 19 volts), then the regulator is bad. And chances are that the battery is cooked.

If the voltage is less than 14.0 volts then we need to test further.

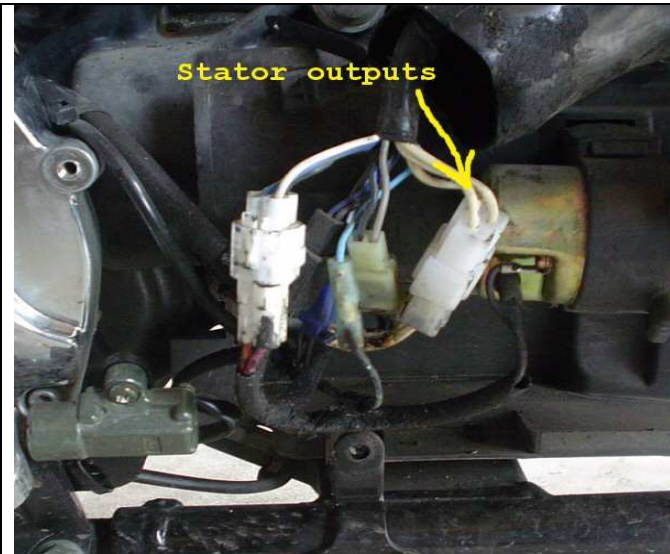
Test 3 (the stator)

Remove the left side cover.
It's the large cover below the tool box cover.



Stator outputs

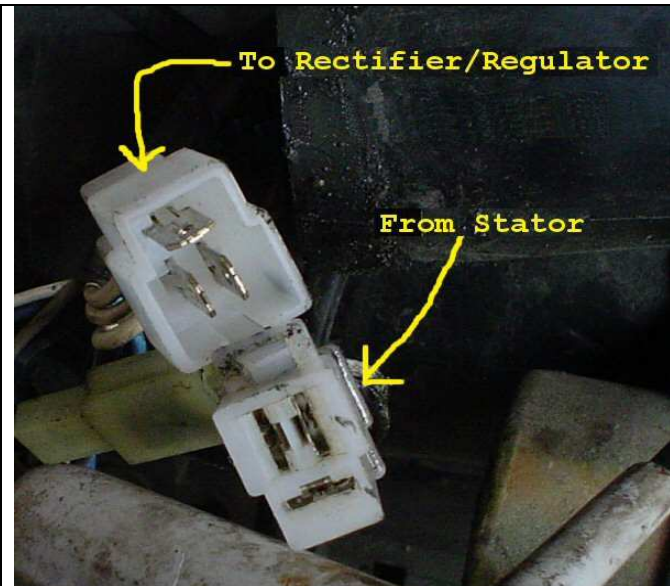
Look for the wire bundle that comes out of the engine. There will be 2 groups of wires in this bundle. One will have 2 wires going to a connector, the other will have 3 wires going to a connector. You want the one with 3 white wires going to it.



To Rectifier/Regulator

From Stator

Un-plug the 3 wire plug.



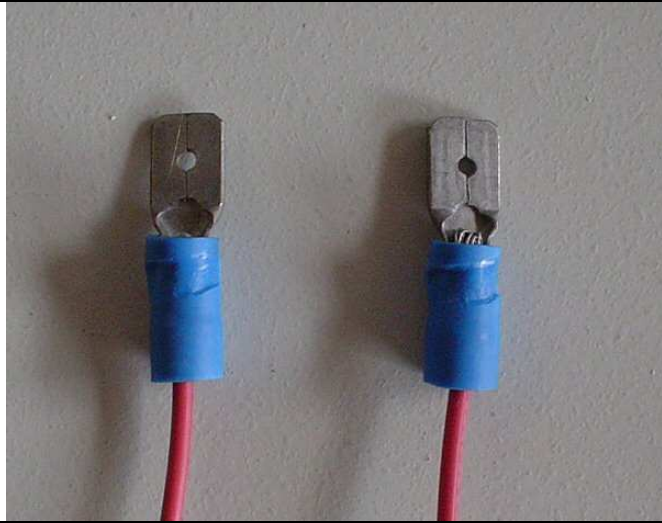
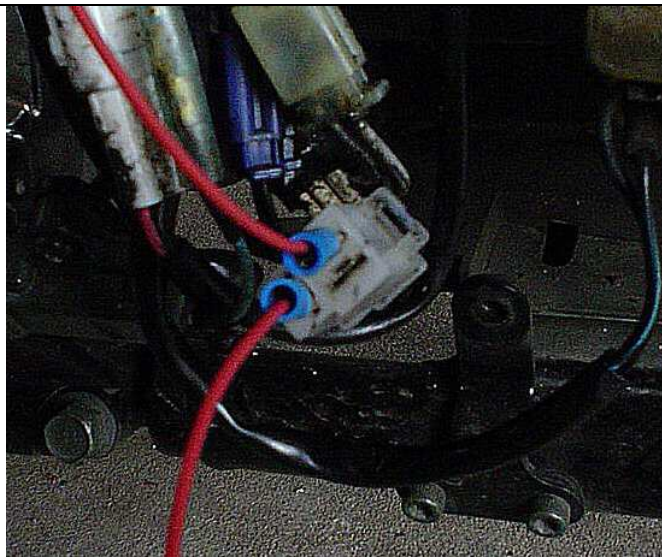


Photo of a couple of spade lugs with a 6" wire attached.



Attach your meter to pins 1 & 2, using the spade lugs shown above.

Set the volt meter to measure AC.

Start the engine.

You should be reading about 48 vAC. Actual readings depend on the rpm's of the engine. These readings were taken at a fast idle.

Turn off the engine.

Move the meter leads to pins 1 & 3.

Start the engine. (with the connector unplugged)

You should be reading about 48 vAC.

Turn off the engine.

Move the meter leads to pins 2 & 3.

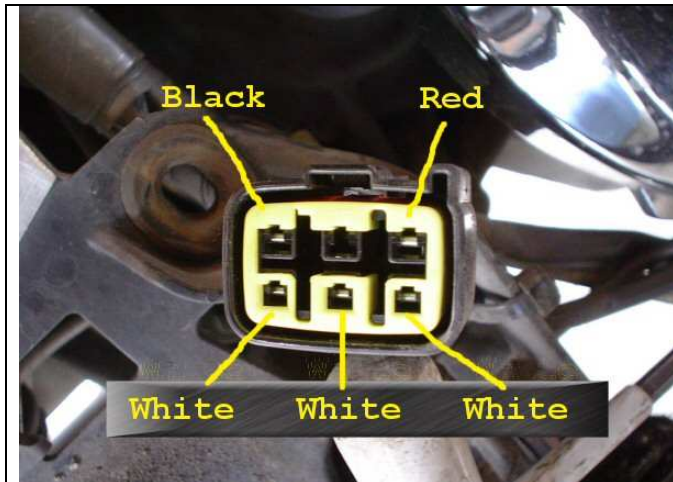
Start the engine. (with the connector unplugged)

You should be reading about 48 vAC.

Turn off the engine.

If all 3 readings are not the approx. the same, then you may have a bad stator.

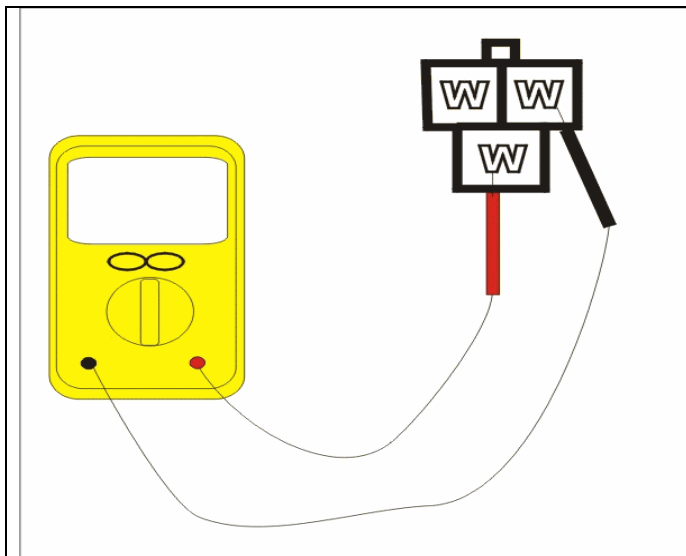
These above readings can also be done at the regulator connector as well.



The above readings can also be done at the regulator connector as well. The 3 pins shown with 'white' are from the stator.

Be sure the stator connector is connected.

Another test for the stator is an ohms reading.



Set the meter to measure ohms x 1.

Measure pins 1 to 2, 1 to 3, then 2 to 3.

All values should be between 0.36 & 0.44 ohms.

Note that these readings are done with the engine OFF.

**REGULATOR
RECTIFIER CONNECTOR**

