

Locating Battery Problems

A lot of people start having issues with their motorcycle after their bike sits a long time, especially when they first get the bike out for the spring. After checking the fuel level and replacing the spark plugs most owners diagnose this as “battery problems”. They place a voltmeter across the battery terminals and read the meter. However, the information they gather is misleading and can keep them from finding the root cause.

Voltage readings mean absolutely **nothing** without a “load”. You must have a load on the battery at the same time you make your voltage reading. This is why a shop will use a "battery load tester" which has a built-in meter and heavy-duty resistor. However you don't have to have this special tool or go to a shop. See the GABMA article *Testing Batteries* for a home brewed method that is about 98% accurate.

Battery voltage always drops over time due to the effects of normal aging in a chemical storage device. Simply put, the higher your voltage is, then the better shape (newer) your battery is. Battery voltage levels can start as high as ~12.7V. If you are running a Boyer or similar electronic ignition (EI), then your minimum battery voltage must always be above 12.1V; points will operate OK down to ~8V.

If your bike stops on the road, don't wait until you get home to measure the battery. Due to the chemical nature of a conventional battery, voltage will “rebound” after not being used for several minutes. So a high battery voltage reading means nothing if taken after the bike gets back home. As soon as a load is applied, the voltage quickly drops again. This supports why measuring battery voltage without a load is so useless.

Important Note

If you own a Norton, or another bike that's running the big blue 2MC battery eliminator capacitor, it is very important that you unplug the RED lead from your big Lucas 2MC capacitor. This should be hanging right next to the battery, usually on a spring. Unplug only the RED wire, and don't ever plug it back in. You don't need it and it can only degrade your electrical system and discharge your battery. See the GABMA article *2MC Warning* for more information on this.

Diagnosing Dead Battery Causes

In order to quickly and efficiently get to the bottom of your battery issues, follow this logic flow in your diagnosis. Simple testing at each stage can then reveal the problem area. Test in this exact order....

A) A dead or dying battery has only 2 causes:

- The battery will not accept a charge (it's dead, gone, over stayed it's welcome, kaput)
- The battery is simply not being charged enough (low charge rate)

B) A low charge rate can have several causes:

- The alternator/ rectifier combo is not outputting full power
- The power requirements of the electrical system exceed the power being supplied by the alternator

C) Not having enough power to meet the needs of the electrical system can have several causes:

- Owner has installed a brighter headlamp bulb, disco lighting, BBQ grill, hair dryer, or other drain that the electrical system was never designed to handle.
- Having no return wiring (using the metal frame for "ground"). See the GABMA article *Proper Grounding* for more information on this.
- Harness wires may have rubbed through their insulation and touched the frame, but due to heavy paint or corrosion act more like a resistor than an out and out "short circuit".
- Special case for Nortons: A dying 2MC capacitor (the big blue "batter eliminator" capacitor back near the battery) acts like a system "drain" rather than a system helper.

Hopefully this information will help you get back on the road.

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