



## Battery Life

Your motorcycle battery is the single most important part on your motorcycle when it comes to not working. But that is true for many parts. The difference being some things we have limited or no control of their lifespan. The battery is a part we know will need replacing. The question is when and how do we prevent it from failing at the most inopportune time.

Goldwing motorcycle batteries and their charging systems have been the discussions of many Goldwing owners for years. Not all of the discussions were pleasant. I believe that every GL1200 stator failed. While not normally a big deal, the engine must be removed to replace it. The Early 90's Yuasa produced some bad batteries that would fail with no warning.

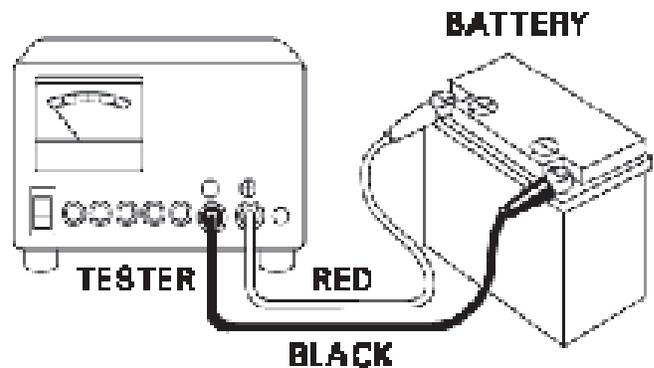
Do the human math on that and it equals me being cussed at. Yes folks as nice as I am, people would and do take their frustrations out on me. When the first Goldwing came out, who knew it would evolve into a rolling platform for led light shows that blink and change colors with the music playing.

The charging systems were somewhat fragile on the old motorcycles but the solid state rectifier and regulator were making the charging systems more dependable. For obvious reasons motorcycle designers and engineers are challenged to find room to install adequate sized alternators. Many motorcycles use what is called a stator but in the end it all ends up charging the battery.

I hate to confess this but there have been many customers angry at me for not diagnosing their charging systems correctly. This was many years ago and I hope it was not one of you reading this. If so I apologize again! In my defense diagnosing the old charging systems was difficult.

We struggled with poor design and weak charging systems and the industry testing procedures that were very vague. Just because it passed the test did not mean it charged the battery correctly. To this day there is still confusion on how it works exactly.

This means Honda's explanation may not be the same as another O.E.M. but the testing procedures have improved. Volt ohm meters were expensive 30 years ago and not readily available. The first one I purchased was \$39.95 at Radio Shack in 1978 and that was a pretty expensive tool for a motorcycle mechanic back then. It was such an expensive tool I took care of it and still have it. It works perfect, by the way, but it is analog.



In order to keep the battery charged we have to put more voltage in than we pull out. Think of it as a glass full of fluid with a variable tap on the bottom. We have to keep the glass full (battery charged) regulating what goes in being equal to what goes out. This usually equates to at least 1 volt over the battery and the battery voltage will vary from 12.1 volts to 12.8 with a new battery. Here we go again with a silly math formula  $12.1 + 1 = 13.1$ . Now that was not so hard was it? We would like to see a number closer to 14.5 to be sure we are recharging. Here is where it starts getting gray.

A weaker battery can sometimes cause the regulator to allow our charging number to be higher when in fact the battery is not taking the charge. A higher number means the alternator is working but is not an indication of the battery condition. Now you see why so many people are mad at me. But wait, it gets even fuzzier. A brand new battery will usually show a lower number when the machine is running. That is why most service manuals have a range of around 13.1 volts to sometimes 14.5 volts. I have tested some motorcycles above 15 volts which was with in the manufactures specifications.



The old cars and trucks were equipped with amp meters which were a true indication of the charging system but do not monitor the battery condition. It would tell you if the generator or alternator was working but give you no idea of the condition of the battery. Modern machinery that has a volt meter, monitors the battery and is probably the most accurate way to evaluate the charging system. Still, not a perfect system though.

Motorcycles have small alternators that basically keep a fully charged battery fully charged. They only charge the battery when going at steady speeds above idle. Please re-read that last sentence. Starting your bike and letting it idle does not re-charge the battery. The GL 1500 and 1800 have an automotive style alternator and can produce some power at low speeds but minimum voltage.

Most motorcycle engines at idle do not produce enough horsepower to recharge the battery. Not that they don't make enough horsepower at idle but the different loads would make the machine idle different because of the battery charging. We do not want the battery determining how fast the engine idles. To

prevent this engineers have designed the alternators to not charge at idle.

How can you prevent a battery failure? A quality battery and a charging system working correctly will give your battery the best chance of surviving. Hooking you battery up to a charger that monitors voltage and shuts off is a great way to prolong battery life. All motorcycles today have some draw on the battery with key off.

ITEM		STANDARD
Battery	Capacity	12V - 18 Ah
	Current leakage	5 mA max.
Voltage (20°C/68°F)	Fully charged	13.0 - 13.2 V
	Needs charging	Below 12.3 V
Charging current	Normal	1.8 A x 5 - 10 h
	Quick	9.0 A x 1.0 h

Goldwing's will discharge the battery to the point of not starting in about 3 weeks because of key off memory draw. That is your preset radio stations and etc.

Quality batteries are the secret. They have to be properly activated charged and stored to get maximum life out of them. Having your charging system checked during services will give you comfort in spotting a problem before you are stranded. Your battery is going to have a 3 to 4 year life with 2 to 3 years of it at 50% capacity.

You can choose to leave it in and hope you have a good battery or plan on every 2 to 3 years buying a new one. That way you are sure! Otherwise let me sell you some motorcycle jumper cables because you are going to need them.

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