SHORAI LITHIUM-ION BATTERY

BY **BILL MCILRATH**

Someone posted a question on Facebook recently looking to find an inexpensive cup holder for his GL1800. This took me back to a time when funds were short and I had to seek out the least expensive of whatever was needed. Over time it has become evident to me that going with high-end products for our GL1800 has been an investment more than expense. When it comes to improving ride and reliability, the overall "fun factor," sometimes the expense is not worthwhile. Our F4 windshield and Traxxion suspension proved this to my wife, Lyn and I. The price for the Shorai battery puts it in the same class as these other products. The question here is – expense or investment?

SOME ASSEMBLY REQUIRED

Out of the box there are some differences from other batteries. There are two places to connect the battery cables in the location one would expect, but not in the manner that you are accustomed to. There are two more contacts on top near the back of the battery about 1.5-inches apart. A "shorting bar" needs to be connected here and then a cover installed over it. The battery comes complete with different brackets for the cables to attach to depending on the application. These brackets have built-in nuts. Gone are the days of trying to get the cable screws to line up and thread into floating nuts somewhere inside the terminal. I give this design, two thumbs up! Select and install the brackets and you are ready to install the battery. All of this assembly work takes less than five minutes.

THE INSTALL

If you didn't notice it when you first picked up the Shorai, you will when you remove the old battery from the bike. The Shorai weighs 6.28 pounds less. Besides being lighter it is smaller. The packaging material consists of varying thicknesses of self-stick foam. You cut and apply these to the battery for an exact fit and improved vibration isolation. In this case, all that was needed was one piece of thin foam on each side. I added a small piece of scrap on the hold-in bracket just to keep the charger wires from rubbing on the metal. Connecting the wires was, as expected, easier with Shorai's bracket design. The other end of the charging cable was routed to the opening in the battery side-cover for easy access when needed.

THE ELECTRICAL DIFFERENCES

Your typical car/bike battery should measure 12.6 volts when fully charged. (Note: Never measure a battery's voltage immediately after charging. Allow the bike's clock several hours to drain down the "surface charge" for a more accurate reading.) Before use, batteries often require "top off" charging. Out of the box this battery measured 13.45 volts. Fully charged it is 14.4 volts, which is right around what the charging system is supposed to put out. I used the optional factory charger to top off the charge. (More on the charger later.)

Why should you care about the voltage? Voltage is only a "measurement of potential," current (amps) does the work. When it comes to the hard tasks, in our case cranking the engine to life, the higher the voltage – the lower the required current. Measured in "cold cranking amps" or CCA, a factory battery is rated at 250-270 while Shorai claims 540. With higher voltage and double the CCA one would think this product will start your Wing under any circumstances.

Cold weather starting is a bit different. According to their FAQ page: Down to about 20 F (-7 C), most users find they can start normally on the first crank. If your headlight comes on at KEY-ON, it is good for the batteries to flow some current before cranking in cold weather. The suggested headlight-on time before cranking depends on the temperature. If starting at 40 F/5 C, 30 seconds will help wake the battery and increase cranking performance. If at 0 F/-17 C, leave the lights on four to five minutes before cranking. The result will be a better first crank, and longer battery life. If the engine fails to start on first crank, that first crank has warmed the battery, and the second attempt will be much stronger. Other accessories that can be turned on before cranking can also be used for this purpose, such as heated gear, radio, etc. Insuring the battery is fully charged after storage also improves first-start performance in cold weather. The rest of their FAQs can be found here: http://shoraipower.com/faq.

THE FIRST START

It was obvious the engine was spinning faster when asked. It fired up almost immediately. Then, there was the unexpected. When the engine is first started, there seems to be a several second delay before the charging system puts out full power. It is not known if this is a typical trait of the 1800 or an anomaly in the tested unit. Due to the higher voltage of this battery, the HID headlights came to full brightness surprisingly faster.

THE CHARGER

It is not necessary to purchase the proprietary charger for this battery, as long as you follow all of the recommendations listed in the FAQs. If you live in a northern climate, go months without riding and do not want to disconnect the battery, then you should give serious consideration to making this purchase. Disconnected, the battery should hold its charge for up to a year.

There is little else to say at this time. I will be covering the ongoing testing in the annual updates to my product evaluations. Tentatively, these will be published in each June issue of *Wing World.*

In the 80 percent Depth Of Discharge Lab Test, a lead acid battery typically will cycle 500-800 times vs. the Lithium LIFE which will cycle ~2000 times. In terms of starting and shutting off the engine that number should be several times the 2000 cycles. The warranty is three years prorated; I do not expect to need it. WW

Bill McIlrath is a GWRRA Life Member who resides in Bethel, Connecticut. Additional Shorai battery photos and interim updates can be found on Bill's website at http://billmcilrathmotorcyclephotojournalist.com.