Motorcycle Batteries Explained

The latest motorcycle batteries are all sealed and maintenance-free. Gone are the days of sloshing battery acid all over your motorcycle and nice clothes. But there are so many new battery types on the market these days, with numerous confusing names and claims. If you need a new battery, then here's some information to help you decide which type battery might be best for you.

Background

If you designed a dam for a lake, you could choose to let the water out fast or slow. The faster you let the water out the more power you could create, but the sooner the lake would be empty. On the other hand, the slower you let the water flow through the dam the available power would be less, but the power would last much longer. And so it is with batteries.

The need to release vast amounts of electrical power to enable an electric starter completely dominates the design of the battery. Therefore, batteries fall into 2 categories: those for use with electric starters and those without. Batteries that give up huge amounts of power for an electric starter are physically different from batteries designed for long storage life. This is why you may see so many types of batteries when you go to the battery store.

UNSEALED BATTERIES

The older generation batteries we've all had experience with are called "flooded cells". These lead-acid batteries have a supply of electrolyte (battery acid) that is boiled off over time and must be manually replaced. Because of the loss of liquid, the cells must have an access cap to allow the owner to add water. These batteries also have a vent hose and huge electrical terminals. There is only one type, and they are prescribed for both kick-start and electric-start motorcycles.

SEALED BATTERIES

Any battery without the fill caps is a "sealed battery", regardless of its other design characteristics. Within this large group of new generation batteries are found several designs for numerous electrical duties. The modern maintenance-free design is achieved by keeping the minimal contents under a slight pressure. This pressure helps any gases condense back into liquid and flow back onto the battery plates. The result is that over the life of the battery so little acid is lost that it simply doesn't need to be replenished.

SLA

SLA is simply a "sealed lead acid" battery. It's nothing more than your regular "flooded cell" battery that, due to the new technology, needs no fill caps or vent hose. These batteries are designed for use with an electric starter. That's why they have huge electrical terminals and most of them tout their "cold cranking amps" on the label. If your bike is equipped with an electric starter, the SLA will do a wonderful job of starting your bike without the fuss and muss of leaking battery acid. The average life for a battery of this design is the same as a flooded cell, about 2 to 3 years.

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AGM

AGM is the abbreviation standing for "absorbed glass mat". This is a relatively new type of sealed battery designed for low power release over an extended period. AGM batteries are designed for use in things without electric starters, like emergency lighting, telephone equipment, emergency power supplies (UPS), solar power, etc. These are all items that get slow steady use over a long period of time, or items that must remain ready for use without routine maintenance. In keeping with its lower power output the AGM has much smaller terminals. Among its many features is a long life expectancy, typically beyond 5 years.

If your British motorcycle is like most, then it is kick-start only. Without an electric starter to worry about, you are now free to install an AGM and gain the advantage of a much longer battery life. By using an AGM you can easily double the battery life you've been getting and forego the muss and fuss of dealing with battery acid and breather hoses.

Another feature is that the AGM batteries hold their charge much longer than the standard "flooded cell" or SLA, and therefore need much less attention when the motorcycle is not being ridden. This is great news for classic bike owners who may only ride once a month.

The downside of the AGM is that... just like they don't like to give up electrons fast... they don't like to receive electrons fast either. So you have to limit your charge rate and time on charge. A stock Lucas electrical system (which has no current regulator) might over-charge an AGM on a 5-hour ride without special precautions. Either the owner needs to fit a higher wattage headlamp bulb to use up the excess charge current, or install a Podtronics or Tynpanium unit in the electrical system. It all depends on how often and how far you ride.

Gel-Cell

The ability to hold the battery acid in a gelatin led to one of the first spill-free batteries. This technology has been mostly replaced now by the fully-sealed SLA battery, however it does find some use in children's toys and cordless lawn care products. Since they're too small for use with electric starters and don't have the long life of the AGM, they're not the best choices for bikes. However, some of the physical dimensions are closer to the size of an English battery tray than most AGM batteries. Again, as with the AGM, the charge rates used with a Gel-Cell must be carefully moderated to keep from "cooking" the battery.

Caution !

Although several of the manufactures claim that their sealed batteries can be used in any position this is simply not the whole truth. All lead-acid batteries make hydrogen gas while being charged; therefore even sealed batteries must have vents to prevent an explosion in case of over charging. If the battery is lying on its side, then liquid acid could come out during the venting process. It's therefore best, if possible, to always keep the terminal side of the battery on top, especially if one of your reasons for using a sealed battery is less damage from battery acid.

Hope this helps! RF Whatley Rodi British Bikes