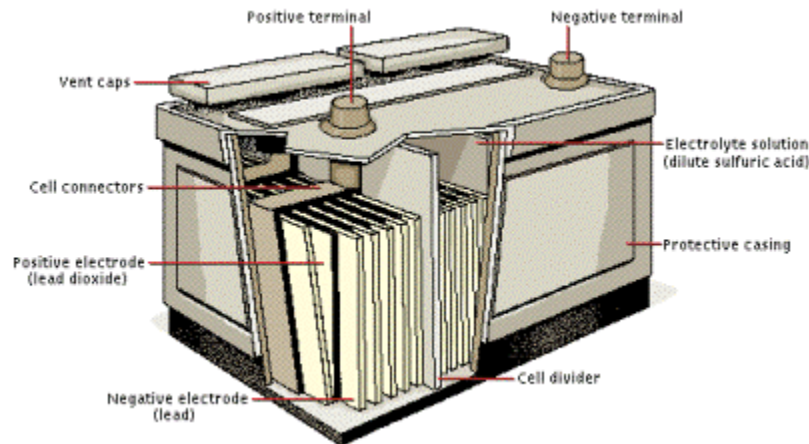


Battery Maintenance and Charging Information



The most commonly used battery in scooters and motorcycles is the Lead Acid battery. These batteries are made up of plates, lead, and lead oxide with a 30% sulfuric acid and 70% water mixture. This solution is the battery acid which causes a chemical reaction to produce energy.

There are two main types of lead acid batteries. Starting/Cranking for running an engine and Deep Cycle for marine and golf cart applications. The starting battery SLI (starting lighting ignition) is designed to start and run engines. Engine starters need a large starting current for a short time. Starting batteries have a large number of thin plates for maximum surface area. A Deep Cycle battery has less initial energy, but greater long-term energy by using solid lead plates. There are also dual purpose batteries which combine the features of both types.

Batteries come with classifications and standard codes which are AH, RC, CCA and CA. These are standards that most battery manufacturers use to rate the output and capacity of a battery.

- *Amp Hour (AH) is a rating usually found on most batteries. If a battery is rated at 100 amp hours it should deliver 5 amps for 20 hours, 20 amps for 5 hours.
- *Reserve Capacity (RC) is an important rating. This is the number of minutes a fully charged battery at 80 degrees F will discharge 25 amps until the battery drops below 10.5 volts.
- *Cold Cranking Amps (CCA) is a measurement of the number of amps a battery can deliver at 0 degrees F for 30 seconds and not drop below 7.2 volts. A high CCA battery rating is especially important for starting battery applications, and in cold weather.
- *Cranking Amps (CA) is measured at 32 degrees F. This rating is also called marine cranking amps (MCA).

The freshness of a battery should always be considered. The longer a battery sits on a shelf and is not re-charged, the more deterioration that can occur. Most batteries have a date of manufacture code on them. The month is indicated by a letter starting with A and beginning in January and

the year is a one or two digit number. For example, 'A10' would tell us a battery was manufactured in January 2010.

Battery maintenance is very important. The battery should be kept on a battery tender when not in use. If not properly maintained they might only last 2 seasons because of sulfation. Sulfation is defined as the build-up of sulfur molecules in battery acid. When left alone it will become so deeply discharged that the molecules begin to coat the battery's lead plates. Before too long the plates become so coated that the battery dies. We have a large selection of Battery Chargers to choose from and PulseTech products are great at preventing this occurrence. Choose from our selection of Xtreme Smart Chargers and Solar Pulse Chargers and Maintainers. These ultra-high quality chargers use modern technology to perform a 3 step charging process. The first step is bulk charging where 80% of the battery energy capacity is replaced by the charger using the maximum voltage and current amp rating of the charger. 2nd step is when the battery voltage reaches 14 volts it will start the absorption charge. This is when the voltage is held at a constant 14 volts and the amps reduce until the battery is almost fully charged at 97-98%. The final step is the float charge which is a regulated voltage of no more than 13.4 volts and usually less than 1 amp of current. This will bring the battery to being 100% charged. The float charge will not heat batteries but will maintain the batteries at 100% and prevent cycling during inactivity.

Battery care is just as important. Batteries and terminals can be cleaned using a solution with 2 tablespoons of baking soda and a pint of water. Cable connections need to be cleaned and tightened routinely. Many battery problems are caused by corroded and loose connections. A battery needs to have the fluid level checked and it is suggested to use mineral free water when refilling. Distilled water has the impurities removed and will not contaminate battery cells. A good tip is to never overfill battery cells, especially in warm weather. What happens is the fluid expansion caused by heat can push excess battery acid from the battery. To prevent corrosion of cables on top post batteries use silicon sealer at the base of the post and place a felt battery washer over it. Coat the washer with a high temp grease then place the cable on the post and tighten.

Battery testing should be done on a routine basis. Battery drain can occur even with the key off. Many vehicles have clocks, computers, alarm systems and other electronic devices that can drain a battery. The constant low or dead battery caused by excessive energy drain will quickly shorten battery life. One of the easiest ways to measure voltage is to use a digital D.C. voltmeter and a load tester if testing sealed batteries. Before testing voltage the battery should be fully charged and rested for a few hours after the charge in order to get the most accurate reading.

By following these steps and applying a proper maintenance technique, the life of a battery can be extended by up to 5 years and provide your vehicle with a dependable power source.