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Battery Charging

Batteries low in voltage (below 11.6 volts) need to be specially charged. A battery at this voltage is heavily sulfated and needs either a very long, slow charge, or a very high initial charge voltage.

If a standard automotive charger is used, the battery should be left on the charger for at least two days. Since the acid in the battery will mostly be stratified, it needs sufficient overcharge to mix. Even after a two day charge, the battery still may only come to 60-80 percent of capacity and may need to be cycled to come to full charge. If possible, once the battery is fully charged by this method, it's advisable to finish with a constant 1 amp for an additional 24 hours.



A battery that is below 11.6 volts can also be hydrated. This means there is lead sulfate in the separator that will form lead shorts once the battery charges. Because of these shorts, the battery may self discharge once the battery has been recharged.

If a standard charger is used with a maximum voltage of 14.8 volts and the battery is getting hot on charge, it is a good indication that the battery has internal shorts.

If a boost charger can be used, a deeply discharged battery can be placed on the high setting for up to 30 minutes. This will help the recharge reaction get started. After a boost charge for 30 minutes, the battery still needs at least an 8 hour slow charge. But, the battery may only reach a 60-80 percent state of charge.

Batteries from 11.6 to 12.1 volts may also be somewhat difficult to charge, and may need extra time to reach full capacity. With any low voltage battery, it's a good practice to give it a second charge after the battery has been sitting for at least a day.

It is always a good practice to check gravities to determine if all the cells are charging equally. Gravities that differ by more than 30 points may indicate some potential problem with the battery. Batteries with differences in gravities of greater than 50 points between cells should be replaced.