PowerBack™

Battery Maintenance Tips

Maintenance Tips To Insure Long Battery Life and Maximum Performance for Your PowerBack™ UPS System

CAUTION: *Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.*

CAUTION: *A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:*

1. Remove watches, rings, or other metal objects.
2. Use tools with insulated handles.
3. Wear rubber gloves or boots.
4. Do not lay tools or metal parts on top of batteries.
5. Disconnect the charging source prior to connecting or disconnecting battery terminals.
6. Determine if the battery is inadvertently grounded and remove source of ground. Contact with any part of a grounded battery can result in electrical shock.

Periodic Battery Maintenance

(Always wear eye protection / Keep sparks and flames away.)

1. Conduct a visual inspection of the battery, checking for loose connections or corrosion.
2. Record the battery string voltage.
3. Record the individual battery voltages. Replace the battery if it measures less than 10.5 VDC.
4. Record the ambient temperature.
5. Re-torque all battery terminal connections to 65 lb. in.

See the Battery Maintenance Schedule on reverse side of this page.

Capacity Testing

Capacity tests may be run if operation is questionable. Do not discharge the batteries beyond the specified final voltage. Record all findings. Should it be determined that any individual battery need be replaced, contact your supplier and or Myers Power Products for replacement.

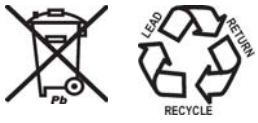
Battery Tester / Load Tester

A battery load tester is an instrument which draws current from the battery with an electrical load, while recording the voltage, usually done at high discharge rates for short periods. Although not designed to measure capacity, a load tester may be used to determine the general health or consistency within a battery system.

Battery Disposal and Recycling

Batteries are considered hazardous items as they contain toxic materials such as lead, acids, and plastics which can harm humans and the environment. For this reason, laws have been established which dictate the requirements for battery disposal and recycling. In most areas, batteries may be taken to the local landfill, where they are in turn taken to approved recycling centers. *Under no circumstance should batteries be disposed of in landfills.*

For battery disposal, please contact; **A**merican **P**ower **S**ystems at (800) 395-0693.



Important Information Regarding Absorbed Glass Mat (AGM) Batteries & Battery Gassing and Overcharge Reaction

A key feature of AGM batteries is the phenomenon of *internal gas recombination*. As a charging lead-acid battery nears full state of charge, hydrogen and oxygen gasses are produced by the reaction between the negative and positive plates. With an AGM battery, due to the excellent *ion* transport properties of the liquid electrolyte held suspended in the glass mats, the oxygen molecules can migrate from the positive plate and recombine with the slowly evolving hydrogen from the negative plate and form water again. Under conditions of controlled charging, the pressure relief vents in AGM batteries are designed to remain closed, preventing the release of any gasses and water loss.

PowerBack™ Systems use only AGM batteries.

U.S. Traffic Corporation'sPowerBack™ systems **will not overcharge or damage batteries**. The PowerBack™ system is a *Smart Charging Temperature Compensating System* which limits the amount of charge and regulates the charge based on battery voltage and temperature. From start-up, the PowerBack™ system will not function in UPS mode unless the *battery temperature sensor* is installed. This sensor is an invaluable component to the system. With the sensor installed, the PowerBack™ system regulates and prevents overcharging of the battery. The sensor provides battery temperature data to the PowerBack™ Smart Charger, thereby cutting off charge at high temperatures to prevent battery damage. These features were designed to ensure the best performance and utmost safety for traffic intersection hardware, field personnel, and the public at large.

Battery Maintenance Schedule

TIME	TASK	TOOLS REQ'D	STRING VOLTAGE	AMBIENT TEMP.	INITIALS
6 months	**Perform "Periodic Battery Maintenance" (see page 1).**	**Voltmeter Torque Wrench**			
12 months	**Perform "Periodic Battery Maintenance" (see page 1). Thoroughly clean unit.**	**Voltmeter, Torque Wrench, Vacuum/Brush**			
18 months	**Perform "Periodic Battery Maintenance" (see page 1).**	**Voltmeter Torque Wrench**			
24 months	**Perform "Periodic Battery Maintenance" (see page 1). Thoroughly clean unit.**	**Voltmeter, Torque Wrench, Vacuum/Brush**			
30 months	**Perform "Periodic Battery Maintenance" (see page 1).**	**Voltmeter Torque Wrench**			
36 months	**Perform "Periodic Battery Maintenance" (see page 1). Thoroughly clean unit.**	**Voltmeter, Torque Wrench, Vacuum/Brush**			
42 months	**Perform "Periodic Battery Maintenance" (see page 1). Replace batteries if not meeting defined tolerance.**	**Voltmeter Torque Wrench**			

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