BATTERY SERVICES INTERNATIONAL, LLC

Battery Specialists

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XCHARGER BATTERY POWER RECOVERY KIT

The XCharger Battery Power Recovery Kit is a state of the art technology designed to bring back the lost potentials of lead acid batteries despite the state of charge. It includes all that you will need to recover the capacity of any lead acid battery of 6, 8, and 12 volts. These batteries are used on applications for cranking motor vehicles into action or to power appliances. The 6, 8, and 12 volt deep cycle batteries are used on applications such golf carts, boats, and backup power of solar and wind generation. Below please find a description of all that is included in the XCharger Kit.

The XCharger is a multi-voltage & multi-battery charger. Automated capabilities that borrow intelligence from the imbedded software that self regulate the power while in use. It can recover the lost potential on any lead acid battery of 2, 6, 8, and 12, 24, 36, 48, 60, 72, and more (up to 196V) in twenty four hours or less. It can also service a large range of lead acid batteries such as batteries with flooded electrolyte, gelatinized, saturated electrolyte (AGM and VRLA). Here is a listing of the types of batteries that it can service:

QTY	Types of Batteries	Make
8	24 volt cranking batteries (military)	Flooded, Vented Sealed Gel, AGM & VRLA.
16	12 volt cranking or deep cycle	
24	8 volt cranking or deep cycle	
34	6 volt cranking or deep cycle	
2	98 volt deep cycle	

PowerPlus Battery Desulfation Agent is environmentally friendly. Five gallons of PowerPlus additive can desulfate:

- 213 car/truck batteries of 12 volts; or
- 106 deep cycle batteries of 6 volt of any amperage; or
- 80 deep cycle batteries of 8 volt of any amperage

55 gallons of PowerPlus is included in the XCharger kit.

The Battery Analyzer / Automotive Battery Tester utilizes state-of-the-art electronic battery test technology to quickly, accurately and safely evaluate the condition of lead-acid automotive and truck batteries. This tool is useful to measure what is the cranking amp capacity of the battery at the end of the recovery process.

The Carbon Pile Tester (500Ah) is used to test the state of health of all deep cycle batteries of 6, 8, and 12 volts. The 100Ah load tester is used to test cranking batteries during our Screening and Branding step. Our battery recovery training fully teaches how to use this tool.

The Hydrometer is used to measure the specific gravity of the electrolyte. This tool is used during our Screening step and during our Branding step of our battery reconditioning process. You will receive three hydrometers.

The Clamp Ammeter measures voltage and amperage both on Ac and DC modes. It is used during the Screening and the Branding steps of our battery reconditioning process.

The 1/2 drill beat with stop collar is used to make openings on lead acid batteries that are sealed. The package also includes plastic flange caps for covering the holes. The holes will allow you to evaluate the electrolyte and to inject our desulfation additive PowerPlus.

Safety Attire is necessary when working with lead acid batteries. Eyes, hands, and lungs shall be protected. We will provide you with the firsts safety attire accessories. Later you can buy this in your local area.

The BSI Electro-Chemical Battery Enhancement Manual contains all that you need to know about using our technology. It is also a manual on all types of lead acid batteries available of 6, 8, and 12 volts both cranking and deep cycle. Easy to read and easy to learn.

In addition, we will supply unlimited technical assistance.

BSI ELECTRO-CHEMICAL BATTERY ENHANCEMENT PROCESS

The XCharger Battery Power Recovery Kit is designed to be used with our battery reconditioning process named as *BSI Electro-Chemical Battery Enhancement Process.* It is comprised of the following steps: Screening, Diagnostic, Recovery, and Branding. The instruction manual fully describes our methodology. Here is a briefing of each step:

1. **Screening:** This is a diagnostic step to screen-out batteries that are damaged inside from batteries that only have sulfation. The screening step includes the following activities:

    a. Visual Inspection: inspection of the external features such as casing, terminals, caps; inspection of the internal aspects such as electrolyte, connectors; manufacturer, group classification, and year made.
    b. Specific Gravity Test: density reading of each cell electrolyte is taken.
    c. Discharge Test: the battery is submitted to a quick discharging test (load test) that is half the cranking amp of the battery.

    The aim of the screening step is identify batteries with structural or mechanical fractures either inside or outside. Only batteries with sulfation conditions are allowed to be submitted to the Genesis process. Time lapse: 60 seconds.

2. **Diagnostics:** Batteries are analyzed under this step. The XCharger will analyze a battery in some 15 seconds and emit a report on the following areas: Open Circuit Voltage, State of Charge, Level of Sulfation, and battery condition for rejuvenation with our process.

3. **Recovery:** This step is designed to recover the efficiency of the soft lead sulfates and to fully recharge the battery. We use an innovative recharging algorithm based on resonance overvoltage to restore the lost capacity and equalize the potentials of the electrolyte, and the plate voltages.

    To aid the Recovery step we use our chemical compound PowerPlus. This battery desulfation chemical functions as a catalyst to accelerate the recovery process or the softening of the hard lead sulfates. It states inside the battery permanently preventing hardening of the lead sulfates. PowerPlus Desulfation Agent is environmentally friendly and none harmful to human health. Time lapse of the Recovery is step: 24 hours.

4. **Branding:** This step is designed for quality control. Activities performed under this step are: measurement of cranking amp and amp hour capacity of the battery; cleaning, and re-labeling stating the guarantee and the re-classification as a refurbished battery.

    The XCharger Battery Power Recovery Process is automated process with minimal man hours involved. Typical man hours are two and half hours per every 30 batteries.

For more information on the XCharger Battery Power Recovery Kit please call or email us at:

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