



BATTERY SERVICES INTERNATIONAL, LLC

Battery Specialists

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GENESIS INDUSTRIAL BATTERY POWER RECOVERY KIT

The Genesis Pro Industrial Battery Power Recovery Kit and the Genesis Max Industrial Battery Power Recovery Kit are a state of the art technology designed to bring back the lost potentials of industrial lead acid batteries despite actual state of charge. Both reconditioning kits include all that you will need to recover the capacity of any industrial lead acid battery. The Genesis Pro is designed for 24 to 48V batteries of any amp hour capacity. The Genesis Max is designed for 24 to 200V batteries of any amp hour capacity. These batteries are used on applications such as electric forklifts and backup power stations. Below please find a description of all that is included in both Genesis Kit.

The Genesis Industrial Battery Reconditioner is a multivoltage multibattery 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 24 to 200 volts in twenty four hours or less. It can also service a large range of lead acid batteries made of flooded electrolyte, gelatinized, saturated electrolyte (AGM and VRLA). Here is a listing of the types of batteries that it can service:



Genesis Pro:

QTY	Types of Batteries	Make
2	24 volt	Flooded, Vented
1	36 volt deep cycle	Sealed
1	48 volt cranking or deep cycle	Gel, AGM and VRLA.

OR

Genesis Max (Not Included in this kit)

QTY	Types of Batteries	Make
8	24 volt industrial batteries	Flooded, Vented
5	36 volt industrial batteries	Sealed
4	48 volt industrial batteries	Gel, AGM and VRLA.

The Genesis Max is a more capable reconditioner. It cost more that the Genesis Pro.



PowerPlus Industrial Battery Desulfation Agent is environmentally friendly. A 5 gallons container can desulfate all types of industrial lead acid batteries such as:

- 10 industrial batteries of 24 volts of any amp hours, or
- 7 industrial batteries of 36 volts of any amp hours, or
- 5 industrial batteries of 48 volts of any amp hours.

15 gallons of PowerPlus is included in the XCharger kit.



The Carbon Pile Tester (500Ah) is used to test the state of health of all industrial batteries of any voltage. Our battery recovery training fully teaches how to use this tool to identify cells that are sulfated from those that needs replacement.



The Hydrometer measures the specific gravity of the electrolyte. This tool is used during our Screening step and during our Branding step of our battery reconditioning process to identify good cells from bad ones.

You will receive five 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.



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 Industrial Battery Power Recovery Manual contains all that you need to know about using our technology. It is also a manual on all types of industrial lead acid batteries available of any voltage and amp hour. Easy to read and easy to learn from.

In addition, we will supply technical assistance for a period of 6 months.

Genesis Battery Power Recovery Process

The Genesis Battery Power Recovery Kit is designed to be used with our battery reconditioning process named as *Genesis Battery Power Recovery Process*. It is comprised of the following steps: Screening, Regen, Recovery, and Branding. The Industrial Battery Power Recovery Manual fully describes our methodology. Here is a briefing of each step:

1. **Screening:** This is a diagnostic step to screen-out battery specimens with mechanical issues from batteries taken by lead sulfate hardening. 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 (500A load test).

The aim of the screening step is identify batteries with cells that have structural or mechanical fractures either inside or outside. Only batteries with sulfation conditions are allowed to be submitted to the Genesis process. Time lapse: 10 seconds per cell unit of 2 volts.

2. **Regen:** This is a step that aims to fracture the hard lead sulfate crystals developed on the lead sulfate paste on each electrode. The general outcome of lead sulfate hardening is that prevents for batteries to fully recharge lowering the state of charge. Sulfation also shortens the runtime and the cycle life of the battery. To recover the power in a battery our Regen step splinters the cemented lead sulfates on the battery electrodes to open a pathway for the recovery of the cycle life of the battery. Time lapse of this step: 10 minutes per every 12 volts segments of the battery.
3. **Recovery:** This step is designed to recover the efficiency of the soft lead sulfates and to fully recharge the battery. We use a recharging algorithm based on overvoltage to restore and equalize the potentials of the electrolyte, and the plate voltages.

To aid the Recovery step we use our chemical compound PowerPlus Industrial. 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 amp hour capacity of the battery; cleaning, and re-labeling stating the guarantee and the re-classification as a refurbished battery.

The Genesis Battery Power Recovery Process is automated process with minimal man hours involved. Typical man hours are two and half hours per every industrial battery.

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

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