



"Powerful Brands at Competitive Prices" <sup>SM</sup>

## LITHIUM BATTERY CHARGING

- ◆ **BULK CHARGE = 14.4V-14.6V**
- ◆ **FLOAT CHARGE = 13.8V**
  
- ◆ Each of our Lithium Batteries have a rate specifying the maximum amount of current with which it can be charged. It is important to make sure that you do not charge the battery with higher than rated current.
- ◆ Due to the different parameters required for charging Lithium Ion Batteries as opposed to Lead Acid Batteries, we do not recommend using a standard lead acid charger for your Lithium Ion Batteries.
- ◆ Improper charging presents the risks of damage, decreased lifespan and overall suboptimal performance. This will also void your warranty.
- ◆ Because of the 99% efficiency within the technology, Bulk Charging is normally the only stage necessary to charge our Lithium Ion Battery. If your charger can be programmed to deliver Constant Current and a Constant Voltage charge up to 14.6V, there is no need for an Absorption Phase. Some chargers require both a Bulk Stage and an Absorption Stage, programmed at different voltages. In this case you would set the Bulk Rate at 14.2V and the Absorption Rate at 14.6V. Our batteries need to reach between 14.4V and 14.6V to be at Full Charge and deliver optimal results. If your charging voltage is higher than this and cannot be reprogrammed to a lower voltage, it is not recommended to use this charger with our batteries. Likewise, if your charging voltage is lower than the required 14.4V-14.6V range, your Lithium Ion Battery will not reach full charge and thus will underperform to their full potential. If a Float Charge setting is necessary to program your charger, it should be set at 13.8V.

### SERIES or PARALLEL CONNECTION OF THE 12-VOLT BATTERY

- ⇒ If multiple 12-Volt Batteries are to be used in a Series or Parallel Connection, these batteries should be Fully Charged / Discharged before use. This will help ensure the batteries are of the same consistency.
- ⇒ For a Series Connection, the Negative Pole of the 1st Battery should be connected to the Positive Pole of the 2nd Battery. This process will be continued until your desired Series Voltage is reached. Once complete your Positive Pole on the 1st Battery and the Negative Pole on the last Battery will serve as your System Output Poles. Be aware of the Series / Parallel Limitations set per Battery Model. These limitations are located on the Battery Data Sheet.
- ⇒ For a Parallel Connection, Positive Poles of all batteries should be connected as the Positive Output and the Negative Poles of all batteries should be connected as the Negative Output. The 1st Battery Positive Pole and the last Battery Negative Pole will serve as your System Output Poles.
- ⇒ If a battery or batteries become overcharged or over discharged the Battery Protection System will initiate. Once initiated a delay must occur before the battery output recovers. Once recovered, Charge or Discharge the battery or batteries in Normal Mode. In the case of a battery or batteries that can not be automatically recovered the battery or batteries will need to be Charged (14.6V) / Discharged independently to ensure Battery and System Consistency.
  
- ◆ Please note that Batteries are shipped at 50% State of Charge. This is the best voltage for shipment & storage of Constant Power Lithium Ion Batteries. The 50% state of charge allows the batteries to be stored with minimal aging and self-discharge (Less than 9% Annually).
- ◆ If requested we will fully charge our batteries prior to shipment for our customers convenience. For all expedited shipments, batteries are shipped at 50% charge, due to the shortened time frame of delivery.

**\*\* We offer Lithium Ion Battery Chargers and Fuel Gauges to fit all your battery needs. Please do not hesitate to contact us for a best possible solution to your Lithium Battery investment. \*\***

*\*\*\* This Information is Subject to Change without Notice \*\*\* Copyright Pending*

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ADDITIONAL ROYAL BATTERY LOCATIONS INCLUDE:

BROWARD / MIAMI, FL \* PALM BAY, FL HOLLY HILL (Daytona), FL \*  
PENSACOLA, FL \* MACON, GA

*Southeastern Locations Include: Battery Tree, Kernersville NC  
\* Battery Specialists, Greenville SC \* Battery Specialists, Wilmington NC*