

Power Tips for Correct Handling, Maintenance and Charging of Banner Energy Bull batteries

A Banner battery is a power pack brimming with the latest technology and top innovations. In order to conserve this quality and use service life and performance to the full, the battery must be handled correctly. Banner's power tips ensure that the Energy Bull provides optimum performance over a long period.

Installation

- In 24V systems, always install 2 batteries simultaneously and never replace only one.
- Minimum 12.50V open circuit voltage during installation.
- Should batteries be discharged to below 12.50V, they must be recharged immediately.
- Measure the open circuit voltage as a control of the charging level. (Minimum five hours unenergised)
- The charging level can also be ascertained by measuring the acid density. (Not below 1.23-1.25 at approx 25 °C)
- Use deep discharging protection whenever possible.
- **Banner Tip!** Lead-acid batteries contain diluted sulphuric acid, which can cause burns. Always wear protective clothing and eye protection when handling the battery.

Maintenance

- Check the acid level at regular intervals using the MIN/MAX marking on the battery casing.
- Top up with distilled or demineralised water should the acid level fall below the MIN marking. (Fill to the MAX marking)
- Ensure that the acid level in all six cells is as uniform as possible.
- Open the screws when refilling with distilled water. All six cells can be individually filled in this manner.
- First recharge the battery when the water levels have been replenished.

Storage

- Filled batteries that are ready to use must always be kept in a clean, dry and cool place as this reduces self-discharge.

Charging

- Check the level of charging of the battery with a voltmeter or acid level. Use a charger with a max charging voltage of 14.4V.
- The battery should be removed for recharging in order to prevent possible damage to the object. **Warning! Follow the instructions of the charger manufacturer when disconnecting!**
- Batteries may only be charged with DC. Connect the positive pole (+) on the battery with that on the charger (+) and the negative pole (-) on the battery with that on the charger (-). Only switch on the charger following connection with the battery. The charger should first be switched off following the end of charging.
- A tenth of capacity is recommended as charging current. (e.g. 180AH/10 = 18A charging current)

- The acid temperature may not exceed 55° during charges. Should this temperature be surpassed, charging is to be interrupted.
- Charging is complete when the charging current approaches 0, or the automatic charger switches itself off.
- Ensure good ventilation when charging. **Warning! Highly explosive oxy-hydrogen gas forms during charging! Open flames, sparks, open lights and smoking are forbidden!**

Charge Retention

- Should the battery not be in regular use, deep discharging may occur. This creates lasting battery damage.
- Discharged batteries should therefore be immediately recharged, otherwise capacity loss will result.
- A charger with charge retention function should be employed. Full charging is achieved through measured current feeding.
- As part of its range, Europower offers test and charging devices from respected producers, which are specially suited for employment with long-time discharge batteries. Please contact us for further information.