

# **Duracell Powerpack Initial Battery Charging**

**Application Note** 

976-0054-01-01 Rev A

## Introduction

A new, out-of- the-box Duracell Powerpack may not immediately accept a charge even though its charger light may indicate that the battery is fully charged, according to the Owner's Manual.

All Duracell Powerpack lead acid batteries will naturally self-discharge over a period of several months when they are held in storage (such as in a warehouse). This is due to a naturally occurring chemical process within the battery even when the inverter is off. The Owner's Manual recommends that the battery be periodically recharged every three months for maximum performance, especially if the Duracell Powerpack is left in a place where it is not attached to the charger, such as a vehicle trunk. In a home, the AC charger may be left on continuously as it automatically reduces to a float charge which maintains the battery at full charge without risk of overcharge. If the Duracell Powerpack battery has been in storage for many months, the battery must be charged for an extended period or time to fully prepare the battery for normal duty use.

## Solution

The longer the Duracell Powerpack battery has been stored, the longer the battery will take to recharge initially. The initial refresh charge to "wake up" the battery may take as long as seven days to achieve best battery performance and life expectancy. After the first few battery discharge and charge cycles have taken place the battery gradually achieves full capacity and the ability to recharge within the 8 to 15 hours as described in the respective Owner's Manuals.

### To charge a battery that has been in prolonged storage:

- 1. Connect the included battery charger to the Duracell Powerpack as described in the Owner's Manual. The Duracell Powerpack may begin to charge almost immediately for a battery that has been warehoused for several months. During the initial refresh charge the battery charger should remain connected to the Duracell Powerpack to continue charging for up to 7 days for maximum battery performance.
- 2. After several days of initial charge, disconnect the charger and allow the Duracell Powerpack to rest for 15 minute. Test the battery capacity to verify retention of a full charge as described in the Owner's Manual.
- 3. Turn on the inverter and connect an incandescent 40 watt light bulb load to verify 120 Vac operation.
- 4. If the Duracell Powerpack does not hold its charge after completing the steps 1 to 3, contact your place of purchase or customer service (see below for contact information). Duracell Powerpack batteries reach their maximum capacity performance after approximately five charge and discharge cycles.

The Duracell Powerpack should now be ready for use. After discharging the battery during use, recharge the Duracell Powerpack.

### **Notes**

For best performance Duracell recommends that you recharge the Duracell Powerpack fully between uses. Read the entire Owner's Manual for other features and to achieve maximum benefit from this product.

If you have an AC charger connected to your Duracell Powerpack and it is clicking, be sure that the plug on the AC charger is fully seated in the port on the Duracell Powerpack. If it is not making a good connection, it can cause the charger to click.

If the Duracell Powerpack has been left uncharged for more than three months, or was put away deeply discharged, the AC charger may not supply enough charging current to recharge the battery. This will be demonstrated either by 'clicking' during charging, or failure of the unit to charge after the charge duration indicated in the Owner's Manual, generally between 10 and 40 hours for a full recharge depending on the product and battery size.

Discharged lead acid batteries are subject to sulfation; sulfation refers to the battery no longer being able to hold a charge due to the crystallization of lead sulfate.

- Since the battery is sealed, it's possible to mix up the electrolyte in the battery by turning the unit (and the battery inside it) upside down and leaving it that way for a day. This may stir up the electrolyte enough that the battery may take a charge afterwards.
- You may be able to get the battery to start taking a charge by recharging it using the DC to DC charge cable (car charger) which came with the product. Connect the DC charging cable and drive around for a few days of normal driving. Connect the Duracell Powerpack back to the AC charger after a few days and see if the battery will recharge.

If upending the battery and trying to charge the battery using the DC to DC charging cable (car charger) doesn't allow you to charge the battery, the product battery should be replaced or, if the battery is not user serviceable, you may need to replace the entire unit.

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Date and RevisionAugust 2007 Rev APart Number 976-0054-01-01Contact InformationTelephone: 1 408 987 6359Web: www.xantrex.com/support

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