

Battery Discharging

5000 cycles can be achieved by not discharging a Lithium LiFePO4 battery past 50%, while 2000 cycles are available at full discharge (10%). Lithium LiFePO4 batteries do not hold a memory. The maximum discharge rate (Amps) cannot be exceeded otherwise the internal BMS (Battery Management System) will switch the battery off. Refer to the battery's specification sheet for the maximum A/h draw.

Procedure for Reactivating Battery's Internal BMS

If battery voltage drops below 10V, the internal battery management system (BMS) will turn off. The battery will not accept a charge until the battery's BMS is reactivated. Depending on the battery's voltage, this procedure can take 2-3 seconds or up to 2-3 minutes.

The following options can be used to reactivate the battery, if the above parameters have been exceeded:

- 1) Attach jumper cable leads from vehicle start battery to Lithium battery terminals
- 2) Attach leads from 240V 12V charger to Lithium battery terminals
- 3) Attach leads from another 12V battery to Lithium battery terminals
- 4) Disconnect the battery lead and then reconnect on the ac charging source, when using a multifunction charger

Storage

The following recommendations may be helpful if the battery is to be stored:

- When storing the battery in a vehicle or vessel, do not leave it on charge. Disconnect the negative battery cable. This will prevent inadvertent discharging of the battery that may lead to a complete discharge.
- Discharge the battery to 70% before putting it in storage and store in a cool place.
- Bulk charge the battery every 180 days to ensure maximum battery life.

For answers to general and warranty questions, please contact Revolution Power Australia on: 1300 303 498 or info@rpoweraust.com.au



Congratulations on the purchase of a new Revolution Power Australia Lithium battery! Revolution Power Australia is a leading name in Lithium LiFePO4 batteries for the marine, solar, 4WD, truck, RV and Caravan industry. The quality and durability of the Revolution Power Australia battery ranges has been proven again and again in recreational and commercial applications throughout Australasia.

The Lithium Difference

- Quick Recharge – 100ah Lithium LiFePO4 Battery can be recharged to 100% in 3 hours from fully discharged, using a 40amp Lithium LiFePO4 charger
- 100% maintenance free
- High sustained discharge Voltage and Amps
- Extremely low self-discharge
- Light Weight
- High Cycle life Span (50% discharge – 5,000 cycles)
- Low to No venting

BATTERY DO'S

- Think Safety First
- Do read entire Owner's Manual
- Do regular inspections of battery terminals
- Do keep out of direct sunlight
- Do use quality fully automatic Lithium LiFePO4 charging systems

BATTERY DON'TS

- Do not attempt to open the battery.
- Don't use unregulated non-Lithium LiFePO4 battery chargers to charge batteries, as this will void your warranty
- Don't place your equipment and toys into storage while connected to a charger
- Don't disconnect battery cables while the engine is running, your battery acts as a filter
- Don't let a battery get hot to the touch and boil violently when charging
- Don't mix Lithium batteries with other types or brands as they may not be compatible
- Don't over or under charge your batteries, as this will void your warranty
- Do not connect battery cables to the wrong battery terminals. Red to Red / Black to Black

Sizing a Battery Bank

It is always good to have twice the battery capacity that an application requires. This will promote long battery life and also reduce the amount of recharge time.

Multiple Batteries

If there is more than one battery in the battery bank, the following guidelines should be used:

- Always use batteries of identical make, model and with the same manufacturing date
- Do not mix different types or brands of batteries
- Make sure the battery cable is not undersized for the battery system
- Make sure the battery cables are connected to the terminals correctly. If unsure, professional assistance is recommended

Battery Charging

For maximum battery life, a battery must be recharged with a dedicated Lithium LiFePO4 Charger with a 14.6V bulk charge. Revolution Power Australia batteries are not covered under warranty, if they are not recharged properly. Once the battery is fully charged, remove it from charger.

The following charging voltages are recommended for maximum battery life for all Revolution Power Australia 12V battery models.

3 Stage Charger

Bulk	14.6 volts
Absorption	14.6 volts
Float	13.4 volts

2 Stage Charger

Bulk	14.6 volts
Float	13.4 volts

Single Stage Charger

Bulk	14.6 volts
------	------------

Battery Chargers

Use only fully automatic Lithium LiFePO4 battery chargers with the correct profile when charging Revolution Power Australia batteries. Failure to do so can lead to over or under charging and premature battery failure. Revolution Power Australia can recommend high quality Lithium LiFePO4 battery chargers. Call Revolution Power Australia, if you have any charging inquiries.

Alternators

Vehicle alternators (boat, car, truck, etc.) should be fitted with the correct Lithium LiFePO4 profiled DCDC charger when in a dual battery arrangement. The DCDC charger is to ensure the correct charging profile and voltage.

Solar Power

Solar power can be used to easily recharge Revolution Power Australia batteries, when conventional AC mains power is unavailable. It should be kept in mind that a solar power regulator must be used as the voltage output of solar panels is in the range of 16-22vdc depending on the panel construction and weather conditions. We do not recommend self-regulation as this method can lead to undercharging or overcharging of the battery and cause damage to the Battery. We recommend that the regulator is suitable for Lithium LiFePO4 batteries at the correct charging profile.

Generators

A petrol/diesel powered generator may be used in conjunction with a suitable Lithium LiFePO4 battery charger for recharging. We do not recommend that the battery be recharged from the "Charge Outlet" of the generator, if fitted as the charge regulation on many generators is insufficient. Recharging a Revolution Power Australia Lithium LiFePO4 battery from the "Charge Outlet" will void your warranty should the battery be damaged. If you wish to use a petrol/diesel powered generator AC Volts outlet with a battery charger, the alternating current circuit must be capable of delivering up to 4 amperes continuously, depending on the size of the charger to be used.

Knowing When To Recharge

For maximum battery life in deep cycle applications, do not discharge the battery bank below 50%. Continually discharging the battery bank below 50% will shorten the battery life.

The open circuit voltages listed below approximate the various States of Charge (SOC).

100% SOC	12.80 volts or greater
75% SOC	12.55 volts
50% SOC	12.20 volts
25% SOC	11.75 volts
0% SOC	10.50 volts

For Inverter/Charger Applications

Refer to your Inverter/Charger owner's manual to ensure that correct voltages have been set.