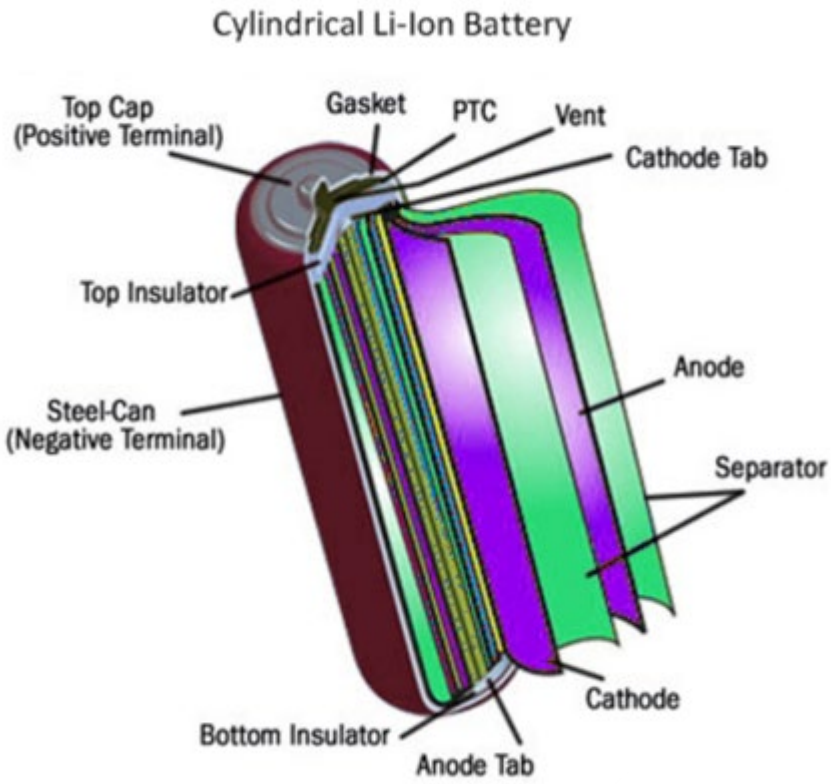
Lithium Battery Pack Care

Lithium cells are a tremendous advance in battery technology. However, due to the chemistry of lithium cells, there are some requirements to ensure that they are Stored and Maintained Correctly.

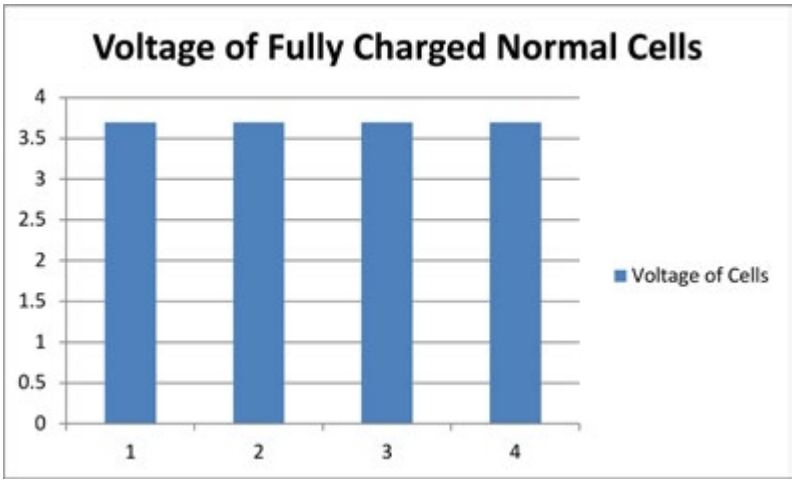
The main cause of failure of lithium batteries is caused over time by insufficient and/or incorrect charging and overheating. This basically means that they require an active maintenance program.

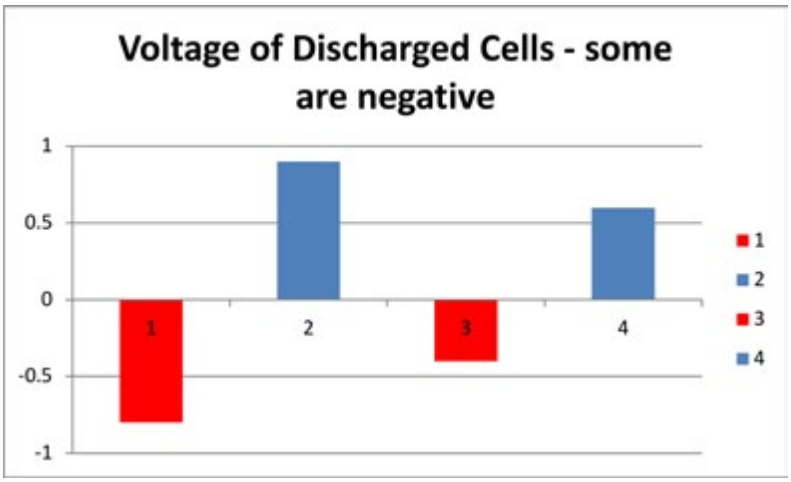
Most Lithium batteries use a series of cells to achieve the total voltage used for their intended purpose. Insufficient charging over time creates a differential voltage between the separate cells.

Lithium batteries are made of 3 main components, an Aluminium Anode with a small amount of Lithium as an electrolyte on it, a porous separator/insulator that the lithium travels through to reach the Copper Cathode in the normal path of current travel. This is similar to a lead acid battery that has lead plates of slightly different composition to create an Anode and Cathode separated by a porous insulator and all immersed in acid as the electrolyte.



If Lithium Battery cells have been undercharged for a number of cycles a differential in voltage between the cells may develop and as they reach a near zero voltage condition some cells may actually go into a negative voltage situation which can in turn lead to a breakdown of the copper negative Cathode as current flows in a reverse direction. This copper can migrate through the central porous separator creating a short circuit which degrades the individual battery and reduces its useful life.





1. To prevent this possibility there are a number of precautions that must be adhered to.

2. Lithium Batteries MUST be regularly Charged Fully, we would suggest within 3 – 5 months of last charge. The jump pack has a balancing circuit as part of the charging process that balances the different cells voltage.

3. Avoid leaving unattended while charging.

4. Do not use to jump start a vehicle if below 60% charged, recharge before use.

5. They must NEVER be short circuited by allowing their leads or clamps to touch when they are active. Most Jumper packs have Technology that will not allow this but have an override button that bypasses the voltage sensing circuitry when putting on a very flat battery that makes the leads “Live”.

6. Do not leave in high temperature situations exceeding 60 degrees Celsius.

7. Only Charge with the correct charger designed for the battery pack never use a charger with a higher voltage rating.

8. Do not disassemble or allow the separate cells to short against each other’s terminals.

Following these basic precautions will both prolong the life of your Jump starter pack and also prevent a potential hazardous situation.