Lipo Battery Safety A Must Read:

Lipo (Lithium) Battery And Charger Safety Guide

Lithium batteries store a large amount of energy. Care must be taken to ensure that batteries and chargers are in good order and are compatible.
1. Do not use this product in direct sunlight, rainy or moist environments.
2. This product should be kept away from dangerous materials such as heat source, high pressure, water, flammable gas and corrosive agents. Operate the charger in a suitable environment 5 °C ~ 45 °C.
3. The product should be placed on a horizontal surface. Ensure the charger has sufficient ventilation(recommended >50cm).
4. Do not cover the product or battery during operation. Do not place the battery on top of the charger.
5. Do not charge non-rechargeable lithium batteries or incompatible batteries.
6. During operation, the charger and battery should be placed on a strong anti-flammable and non-conductive surface. Do not charge batteries on a car seat, carpet or other similar surfaces.
7. Only charge compatible batteries. Charging incompatible batteries is a fire risk.
8. Do not charge or discharge a battery that has been physically damaged.
9. Do not disconnect the input line during charging. After charging has completed, disconnect the battery and then the input line.
10. Keep the charger clean and dry.
11. Do not modify or disassemble this product.
12. Avoid using this product during thunderstorms.
13. Do not allow children under the age of 14 to use the charger.
14. Do not short-circuit or disassemble a battery.
15. NEVER LEAVE A LITHIUM BATTERY UNATTENDED DURING CHARGING OR DISCHARGING.
16. In the event of fire, disconnect the charger and use a dry powder fire extinguisher to fight the fire.
16. Do not strike the battery with any object, do not drop the battery.

Warranty does not cover damage due to neglect or incorrect usage of the charger or battery's including

1. Product damage caused by failure to use a suitable input voltage as required.
2. Damage caused by not following the instructions.
3. Any man-made, accidental impact or other force majeure that causes damage to the product.
4. Modification, disassembly or modification of the internal circuit of this product without the approval of the company.
5. Water immersion or intrusion, moisture or other foreign matter entering the product and causing damage.
6. Aging, bumps and scratches on the surface of the product.
The product specifications and information mentioned in this manual are for reference only and are subject to change without notice.

Warranty does not cover damage due to neglect or incorrect usage of the charger or the battery's including:
The user is responsible for any consequences caused by the operation of the charger or battery's.
SwellPro or its agents is not liable for the costs beyond the cost of the product and reserves the right to modify the terms of this warranty which is subject to change without notice.
●
1. This product is not intended for use by persons with physical, sensory or mental disabilities or lack of experience and relevant knowledge (especially children). ●

2. This product is not a toy. Please keep away from children. ●

3. If the product is in any way damaged, turn off the power to avoid the risk of electric shock. ●

4. This Charger is for indoor use only.

Charging Lithium Polymer or LiPo batteries have very specific charging requirements and MUST only be changed by specific chargers designed to charge lithium polymer batteries. Mishandling of these batteries can lead to fire or explosions.

Lithium Polymer or LiPo batteries are a great new way of storing energy for portable devices from cell phones, home electronics to RC hobby battery packs used in cars, boats and flight. They're great because they can store 350% (approximately) more energy than a typical NiCd/NiHm battery pack and weigh 10% - 20% less. They can also discharge much more current than a NiCd/NiHm battery and can be fully charged in about an hour. LiPo batteries also don't develop memory or voltage depression characteristics like NiCd/NiHm batteries, and do not need to be discharged before being charged.But they're not without their downside. Mishandling of these batteries can lead to fire, explosions and toxic smoke inhalation. In the rest of this guide we will cover safety guidelines of charging and handling Lipo battery packs. Some may seem pretty obvious, but it is often the obvious things that are the most dangerous when ignored.Charging Lithium Polymer or LiPo batteries have very specific charging requirements and MUST only be changed by specific chargers designed to charge lithium polymer batteries. We recommend only balance charging your lipo batteries. All good quality Lipo battery packs come with 2 leads. The main charge / discharge lead and connector and a balance lead and connector. Using a computerised balance charger to charge your Lipo batteries will ensure that all the cells in the battery pack have the same voltages. The voltage value is critical to the condition (during use) and safety of each cell, which we will cover more in this article."1S" or 1 cell LiPo battery has a nominal voltage of 3.7v. When fully charged it has a maximum voltage of 4.2v and when fully discharged, it should never go below 3.0v without risking cell damage. Based n this logic "5S4P" battery pack means that the pack contains 5 cells in a series circuit and 4 cells in a parallel circuit. Since each cell is 3.7v (nominal) a 5S LiPo battery has a nominal voltage of 18.5v, a fully charged voltage of 21.0v and a maximum discharged voltage of 15.0v before damage occurs.When charging LiPo batteries, they must be charged at the voltage of the number of cells in series, therefore a 5S4P pack must be charged as a 5 cell pack.

The LiPo charger you're using must be able to handle the cell count of the battery you are charging. A good computerised charger will automatically detect the cell count of the battery being charged while the cheaper ones will require a manual setting.

Chargers that auto detect the cell count of a LiPo battery can sometimes be wrong. They use the current voltage of the battery to determine the cell count and if the battery is fully charged or at a lower voltage than it should be, it may read the cell count incorrectly. This is why it is very important to double check that it reads the right cell count which is typically displayed on the LCD display.
Doing some research and investing in a good quality Lipo charger from the outset will not only save you money in the long run and give you more enjoyment of whatever you are running, but will also ensure your safety!

LiPo Battery Charging Tips

- Always use a charger made to charge LiPo packs.
- Double check that the settings for the lithium polymer charger are correct for the pack being charged. This includes the cell count, as well as the current settings. In general, most lithium polymer batteries should be charged to no more than 4.2 volts per cell or depleted to less than 3.0 volts per cell.
- Ensure that charging leads are connected correctly. Reverse charging can lead to cell damage or a fire or explosion.
- Always charge LiPo batteries on surfaces that won't catch on fire such as cement, steel, ceramic or stone. Wooden tables and carpeted floors are not recommended charging surfaces.
- Do not charge batteries near flammable products or liquids.
- Never charge a LiPo battery while inside your model or other electronic device. If it catches fire it can lead to total destruction of the item it is being charged in.
- LiPo batteries should be charged within a temperature range of 0C to 50C. Batteries charged outside this temperature range may experience leakage, heat generation or cell damage.
- Never leave a charging lithium polymer battery pack unattended.
- Do not charge inside an automobile, especially while driving.
- Do not store batteries inside an automobile.
- If unsure of the charge rating, never charge a lithium polymer battery pack at a rate over 1C (1 x the battery packs rated capacity).
- Never charge a LiPo pack that has ballooned or swelled due to over / under charging or from a crash.
- Never charge a lithium polymer battery pack that has been punctured or damaged in a crash.
- Never, under any circumstances let the positive and negative battery leads touch each other. It can lead to cell ballooning, cell damage or fire or an explosion.
- Have a fire extinguisher near the charging area or a large bucket of dry sand. Do not try to distinguish with water.
- If you notice your LiPo battery pack is swelling, stop the charging process immediately, put the battery in a safe container and observe it for 15 minutes.
- Always charge your Lipo battery packs in a Lipo charging safe bag.

LiPo Battery Handling & Storage

- Keep LiPo battery packs WELL out of reach of children.
- Do not put battery packs in pockets or bags where they can short circuit.
- Do not store or transport batteries where they can come into contact with sharp or metallic objects.
- Do not store your LiPo pack in extreme temperatures below 0C or above 50C.
- Always store your LiPo pack in a safe and non flammable container away from flammable objects. A LiPo Sack or metal / ceramic storage container is best.
- Always store your LiPo's partially charged. They will maintain their performance levels over time and there's no need to cycle them unless stored for periods longer than 3-6 months.
- Do not immerse the battery in water or allow the battery to get wet.
- Do not dispose of in fire or heat.
- When mailing or shipping LiPo batteries, always ship them at a 30% charged state for safety reasons.
- When storing batteries for extended periods, store at a half charged state.
- To dispose of a LiPo battery, discharge it fully then place it in a bucket of salt water for one week. To dispose of, follow your municipal battery disposal guidelines.

Finally, always follow the manufacturer's safety instructions and charging guidelines for lithium polymer battery packs. These are there for not only the longevity of the battery pack, but also your safety.