

Handling Precautions and Guidelines For Lipo (Lithium-ion Polymer) Rechargeable Batteries

INTRODUCTION

Thank you for choosing products manufactured by R/C INDUSTRIES INTERNATIONAL LTD. Before using the product, Please read and follow the instructions below and safety precautions carefully.

Statement

End Users must contact R/C INDUSTRIES INTERNATIONAL LTD in their first instance if they need to use the battery in conditions which are not mentioned in this document, because we need to conduct a series of specific tests to verify the performance and security of the battery under abnormal conditions of use. Otherwise, R/C INDUSTRIES, distributors and its retailers will assume no liability for failure to comply with these instructions and safety precautions.

1. Charge

1.1 First charge

When you first receive the battery, please do not use it immediately, but make sure to fully charge it first with a specific Lipo balance-charger.

1.2 Charger

Use specific Lipo balance-charger only. Other types of chargers are not recommended to charge our batteries. **All Lipo Batteries above 1s must be always balanced charged**

1.3 Charging Current

Never charge batteries with current over the maximum charging current which was regulated by specifications (0.5-1.0C in general), we recommend Charging should not exceed **2C**. Higher charging settings may lead to insufficient charging, reduced performance, extreme heat, reduced cycle life and even leakage.

1.4 Charging Voltage

Charging Voltage should be controlled around 4.20V and under no circumstance must the voltage be regulated above the maximum limit voltage of (4.25V/cell). As for battery packs in series, please use balance charging or charge each cell individually. Series charging is not recommended. If the charging voltage is too high or you choose series charging, over-charge may occur. All these may result in battery swelling, heating or even leakage, severely deteriorating the batteries' cell performance and cycle life.

1.5 Charging Temperature

Batteries must be charged within ambient temperature ranged from **15°C** to **35°C**, or it may lead to the reduction of charging & discharging efficiency, charging insufficiency, finally affecting the performance and cycle life of the battery.

1.6 Reverse Polarity is prohibited

Please correctly connect the positive (+) and negative (-) terminals of the battery, and strictly avoid reverse polarity. Reversing the polarity could lead to leaking cells and most importantly an explosion

1.7 Monitoring Charging Process

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Never charge batteries unattended. During the whole charging process, you should always use a lipo safety bag and remain in constant observation to monitor the charging process and react to any potential problem that may occur. Be sure to cut off power supply immediately after you finish charging.

1.8 Disposal of abnormal phenomena while charging

If there's any abnormal condition occurring during the charging process, please discontinue the charging process immediately and consult relevant professionals for disposal.

2. Usage

2.1 Checking voltage

Before the battery packs are put in use, please check the voltage of the pack. The voltage difference between any two cells should not be too large, or recharging is needed. If the voltage difference of two cells is too large, the one with the lower voltage may have been over-discharge while use, causing battery swelling, heating, and finally deteriorating the batteries' performance and shortening their cycle life.

2.2 Discharging current

Never discharge batteries with current over the designed maximum continuous discharging current which was regulated in relevant specifications, or the battery's performance may be deteriorated and cycle life be shortened, causing overheating and even swelling, internal short-circuit, etc.

2.3 Discharging temperature

If the surface temperature of the battery exceeds **65°C** while discharging, the battery discharge cycle should be suspended until the Battery cools down to ambient temperature. Higher temperature may result in battery swelling and performance deterioration.

2.4 Cut-off Voltage

Please make sure the cut-off voltage is no lower than **3.3V**, and not lower than **3.5V** is recommended, otherwise the battery's performance may be severely affected because of over-discharging.

3. Storage & Transportation

3.1 Transportation

Please avoid severe vibration, shocks, extrusions and high temperature during battery transportation... All batteries should be packed in bubble rap or soft foam there for protection while in transport.

3.2 Long-term storage

If storing batteries for long periods of time, batteries must be stored at about **3.8V/cell** (approximately **50% charged**)/ in the semi-electric status (**about 3.8V**). Do regularly charge & discharge the stored batteries for maintenance purposes (**about 2-3 times every 2 months**).

3.3 Storage Environment

Please store batteries at an area with low-humidity and free from corrosive gas and liquids within the temperature ranged of **-20°C~40°C**.

4. Additional Notes

4.1 Crushing and bending batteries is prohibited. Also Protect them from sharp objects

4.2 Under no circumstances may you disassemble the batteries

4.3 Do not short circuit the batteries by directly connecting the positive and negative electrodes, or batteries may be severely damaged, even cause fire and explosion.

4.4 Do not throw batteries into fire, otherwise fire disaster or explosion may occur.

4.5 Do not Soak batteries in liquid, such as fresh water, sea water and beverages (i.e. juice, coffee) etc.

4.6 The replacement of bare cells should be conducted by the Manufacturer and not the end user.

4.7 The use of damaged batteries is prohibited. Batteries may have been be damaged during

Their transportation. If there are any abnormal features, such as the damage of battery's seal edge, breakage of the hard case, or emitting electrolyte fumes, these batteries are should no be used . Any battery with electrolyte leakage or emitting electrolyte fumes should be kept fair distance away from flammable/combustible materials to avoid fire and explosion.

4.8 If there's any question while using, please contact relevant professionals for disposal.

4.9 Used or damaged batteries should be disposed of in a proper manner and be should be handed to a specific Hazardous Waste Facility for disposal.

4.10 The exposure of batteries under the extreme temperatures of the burning sun is prohibited, and storage of batteries in a non moving vehicle which has been exposed to extreme temperature is also prohibited.

5 Quality Assurance

5.1 When you received the battery, under the condition of unused or not disassembled, and the voltage difference is over I. 25mv within a month, II .the voltage difference is over 40mv within 6 months, III. The single battery voltage is lower than 3.75v within 6 month, or you find fluctuations and leakage, we shall be responsible for the return and exchange of goods, and we will be liable for the freight cost.

5.2 The used and problem battery should be returned to our warehouse freight pre-paid for inspection. By analyzing, it is our quality problem; we will be responsible for the exchange of goods and freight cost.

5.3 Damage caused by the end user by not following the instruction manual, shall be the responsibility of the end user and return of goods and exchange of goods will be void and null.

5.4 The quality guaranteed period is 6 months, we shall not accept returned or exchanged products after this period has lapsed, and the production date is subject to shipping date.

6 Amendments to specifications

Any amendment of specifications from product upgrades will be reflected in our updated instructions manual.

P.S: Above instructions are subjected to change without further notice.

7 Any problems/issues that may occur that are beyond your ability of solving during the normal function process of your product please contact the Customer Service Dept @ **R/C INDUSTRIES INTERNATIONAL LTD** for further information.

8 **Email:proamps@gmail.com**

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