

6CH RC Helicopter Adjustment Guide

For Dragonfly No35/No36/No22E/No37 6ch Helicopter

For all 6ch related RC Helicopter

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Statement

The Helicopter is not a toy, Please check the factory manual for the safety topic. Be safety to use the Helicopter and the Battery, especially the Li-Poly battery. We, Uce-tech, will not take any responsibility for your Helicopter crash and damage, even the risk and liability for person or property damage and injury resulting from the buyer's use of the product.

Note:

<1>The copy right of document is reserved by UCETECH, INC.

<2>We try our best to provide valuable information for you.

<3> The guide is based on our experienced pilot, but it may not meet your style and your way, we don't take any responsibility for you helicopter crash/damage or your safety when you use the manual as your reference.

<4> The guide uses Mode2 Transmitter as reference, which most North American and Europe hobbyist adopts it. If you use Model transmitter, you can directly refer the factory manual.

<5> The guide maybe modified without to notice you

<6>Always get help from experience from the hobbyist and experienced player

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The Helicopter Adjustment Guide

The Guide is for Mode2 Transmitter, which is used by most Europe and US Hobbyist.

1. Checking and debugging before you fly it

1.1. Power Checking

A. Open the battery box of Transmitter (TX, or call Remote controller), and put brand new 8 pcs AA batteries into the battery box, and then plug the battery box connector into the TX, please make sure the connector direction is correct when you plug the battery connector into the TX.

B. Charge the battery before you connect the battery to the helicopter. Then put the Li-poly battery into the helicopter battery holder. Please check if the Li-poly battery is higher than 11.1V, if yes, then you can plug the Battery connector into the helicopter
Note:

- Please use Li-poly battery charger to charge the Li-poly battery; use Ni-MH battery charger to charge the Ni-MH battery. For Li-poly battery, the charging duration is around 2 hours, we suggest 1.5 hours, and don't put it on easy burn material, due to it's high energy battery, it may have potential security risky, be safe to use it
- Make sure the connector direction is correct
- When you use the Transmitter at first time, we suggest you don't change the following configuration in the transmitter:
 - <i> Pitch range trim
 - <ii> Pitch trim
 - <iii> landing skit switch(face down)
 - <iv> 3D switch(face down)
 - < v > the DIP switch in back of the transmitter



Figure1

C. When you plug the battery into the helicopter, you will see LED in Gyro and Receiver box flash. (Note: when you plug battery into the helicopter, if you find the main rotor automatic spin, please notify us for help, and don't do further test)

D. Move the Throttle in lowest position (for Mode2 TX, it's left stick), right stick in middle position (for Mode2, the stick is for elevator and aileron), and move all trim (Throttle/Rudder/Elevator/Aileron) in middle position. Set the Flight Mode Switch (3D) to "N", GEAR Switch to up. See following picture:



Picture 2

E. Turn on the TX power, and plug out the antenna, in 30 seconds you will see the LED of Gyro and Receiver stop flash, it becomes RED. It means the Receiver in helicopter can communicate with TX.

Note: When you use your hand to hold the helicopter and test it, for safety you need to let the Helicopter far from you.

1.2 Transmitter (TX, or Remote Controller) Function Checking

After the TX and Receiver communication is setup, please follow the following steps to check if the Helicopter function is correct.

- A. Move the TX right stick (Elevator/Aileron in Mode2 TX) UP/DOWN (Elevator function), you will see the Helicopter main blade will have little movement which is driven by the plastic bar linked to servo.
- B. Move the TX right stick (Elevator/Aileron in Mode2 TX) LEFT/RIGHT (Aileron function), you will see the Helicopter main blade will have little movement, which is driven by the plastic bar linked to servo.
- C. Move the TX left stick (Throttle in Mode2 TX) UP, you will see the main motor spin,
- D. Put the TX left stick (Throttle in Mode2 TX) in middle and you will see the main motor spin, in the meantime, move the TX left stick RIGHT/LEFT (rudder function), you will see the tail blade spin.

If you are beginner, don't adjust the Pitch range Trim/Pitch Trim/Landing skit switch/3D switch. And don't adjust the DIP Switch in back of the TX. Normally these switches are adjusted in normal status in factory, you don't need adjust it yourself.

For the 3D Stick, only you fly the helicopter very well, then you can use the 3D switch to fly the helicopter with upside-down, otherwise please don't operate it, it may damage your helicopter.

After above checking step, it means your helicopter function works normally. You can fly your helicopter now, but we suggest you do further adjustment before you use it, otherwise you will damage your helicopter.

1. 2. Fine Adjusting of the Transmitter

A: Adjust the Elevator stick and Elevator Trim

Please check picture2 in page8 of HM036 Manual. Normally the Swash plate (HM036-016) is in Horizontal status. If you find the Swash plate is not head lean up/down position, please do the following adjustment.

(i) If the Swash plate leans head down, you need adjust the elevator trim (for Mode2 TX) UP (see picture as following) to make the Swash plate in Horizontal status.

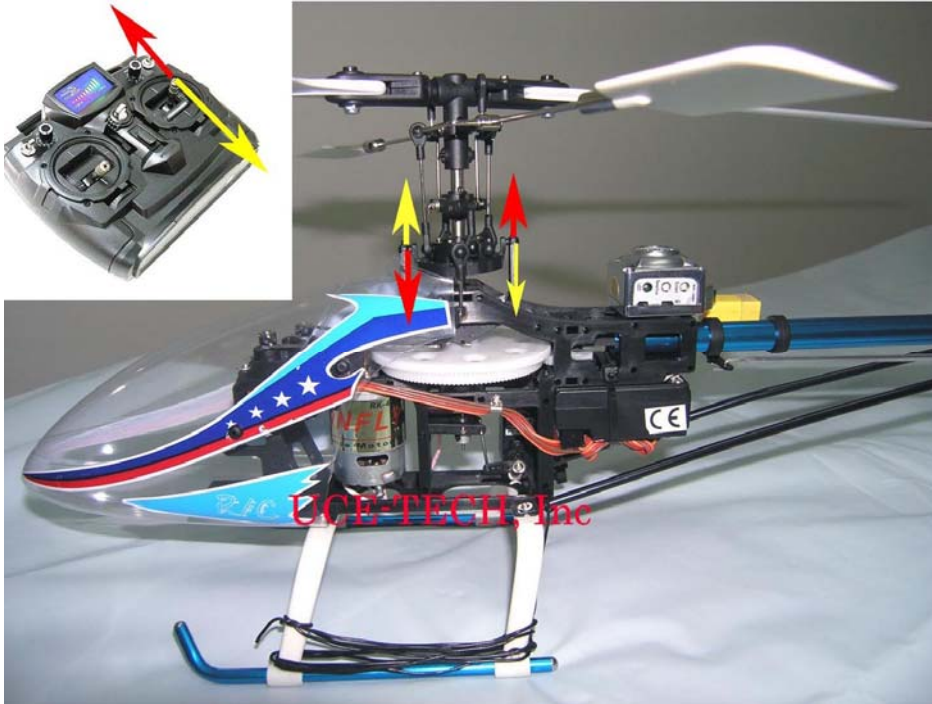
(ii) If the Swash plate leans head up, you need adjust the elevator trim (For Mode2 TX) DOWN (see picture as following picture) to make the Swash plate in Horizontal status.

For (a), (b), please refer to the following picture.



Picture 3

(iii) You can also use the picture to learn how to adjust the right stick (Elevator stick). If you move the right stick DOWN (elevator in mode 2), the helicopter will fly head up. If you move the right stick UP (elevator in mode 2), the helicopter will fly head down, refer to following picture.



Picture 4

B: Adjust the Aileron Trim and Stick

Please check picture 2 in page 8 of HM036 Manual. Normally the Swash plate (HM036-016) is in Horizontal status. If you find the Swash plate is in body lean left/right position, please do the following adjustment.

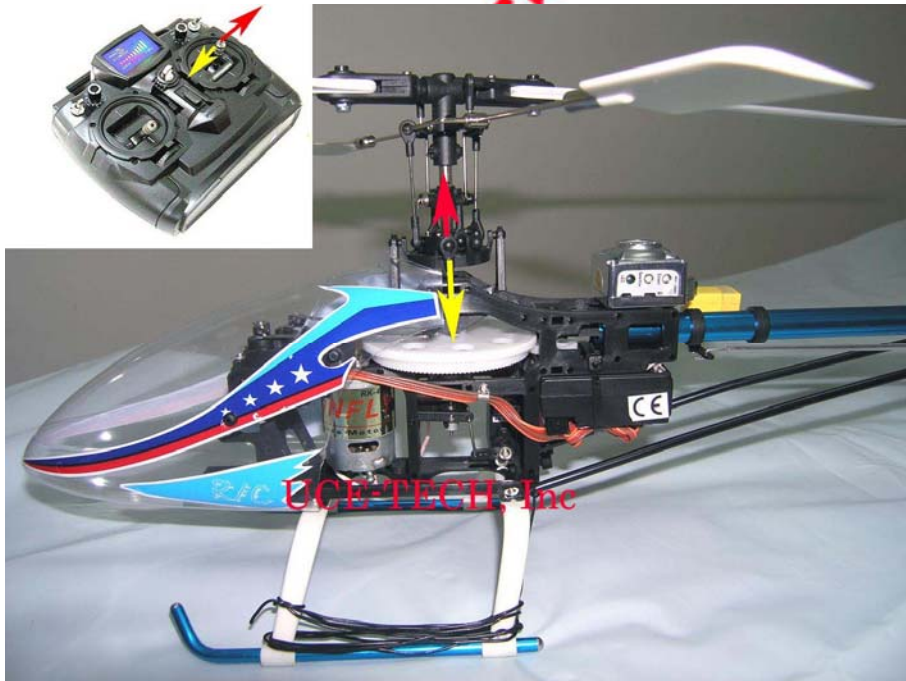
(i) If the Swash plate leans body left, you need to adjust the Aileron trim (for Mode 2 TX) Left (see picture as following) to make the Swash plate in Horizontal status.

(ii) If the Swash plate leans body right, you need adjust the Aileron trim (For Mode 2 TX) RIGHT (see picture as following picture) to make the Swash plate in Horizontal status. For (a), (b) please refer to the following picture.



Picture 5

(iii) You can also use the picture to learn how to adjust the right stick for Aileron. If you move the right stick LEFT (rudder in mode 2), the helicopter body will fly lean left. If you move the right stick RIGHT (rudder in mode 2), the helicopter body will lean right. Please refer to the following picture.



Picture 6

C. Adjust the Throttle

Setup the Throttle Trim in the middle, the Throttle stick in lowest position. Please refer to following Picture.

When you push throttle stick up, the main blade will spin. The more up you push, the more fast it spins.



Picture 7

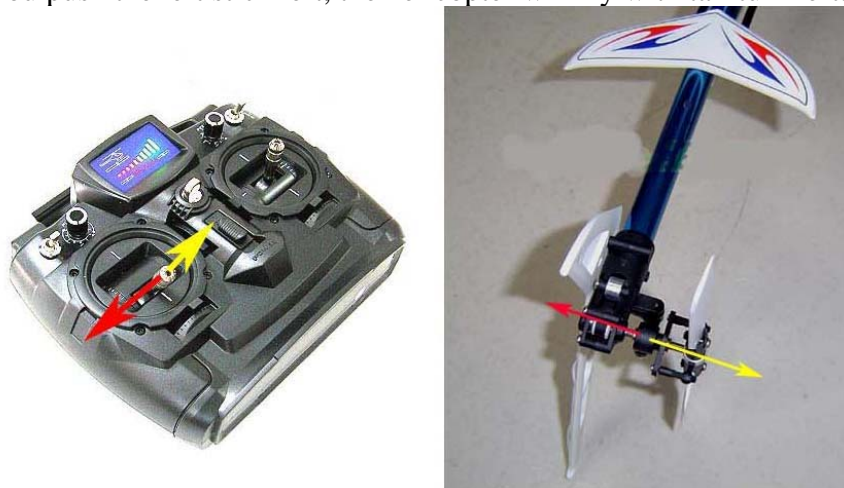
D: Adjust the Rudder Trim to make the tail rotor in best position

- (i) Put the Rudder trim in the middle, put the throttle up (main blade will spin fast), if the helicopter tail turns left, adjust the Rudder trim (for tail blade) a little left, you need to do fine adjustment until the tail will not turn; if the helicopter turns right, adjust the Rudder trim a little right, you need to do fine adjustment until the tail will not turn left/right when you speed up the main blade. See following picture.



Picture 8

(ii) Please follow picture to learn how to adjust the left stick for tail spinning. When you push the left stick right, the helicopter will fly with tail turn right; when you push the left stick left, the helicopter will fly with tail turn left.



Picture 9

E. Gyro Verification

Check and adjust the gyro to make sure if the gyro works normally. Moving the tail, you will here “click” sound from tail servo (the yellow one in Picture), and you will see the movement of tail rotor driving bar (see following picture). If you can see this, then it means the gyro works normally.

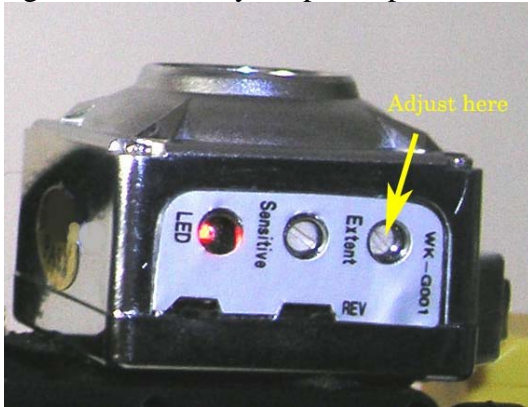


Picture 10

F> Adjust the Gyro

If you follow step (i) of <D> adjustment step, the tail still turns right or left when speed up the main blade, then you need to adjust the gyro to make the tail in best status. Please check the following picture to adjust the gyro mini-switch to adjust the tail turn status. Please don't adjust it too much, just a little, after that try if the tail is turn. In order to

adjust the tail turn in best status, you need adjust it many times until the tail will not turn right or left when you speed up the main blade.



Picture 11

G: Main Blade Adjustment

Checking main blade in normal model (see picture 4 in factory manual page 9)

If the two main blades are not in same horizontal level, the helicopter is not in best status, and will affect the helicopter fly stability.

You need to adjust the length of two plastic stick bars to make the two main blades in horizontal level. In following picture you find the left stick bar is long than right one, so the main blade is a little lean. We need to adjust the left stick a little short. In order to realize this, just release the connection between the stick bar and the metal ball (shown in right of following picture), in the two end of the stick bar, there is plastic screw to connect the bar, Just adjust the screw to reduce the distance between the connection balls of the bar, then connect it back, to check if the two main blades are in horizontal level, if not, you need adjust it many times until it is in horizontal level.



Picture 12

H. After above fine adjustment, you can start to fly the helicopter. But we suggest you don't fly it too high, just one meter (three feet) is enough, otherwise when you miss-control the helicopter it will be easy to be damaged.

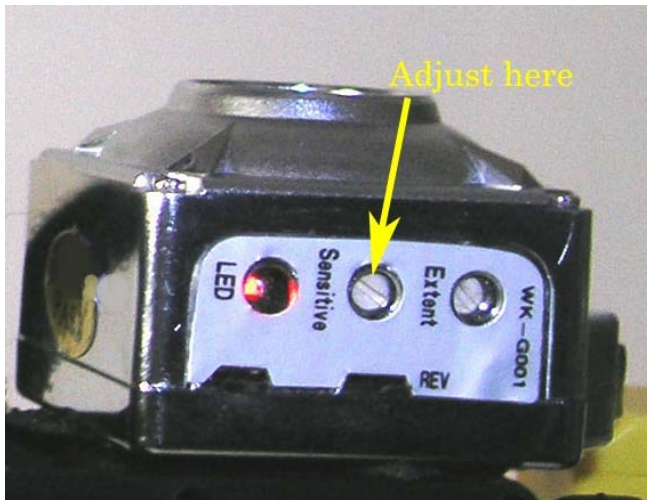
2. Flying the Helicopter and Adjustment

After above adjustment, you can start to fly the helicopter. But you may find the helicopter still is not in best status, you need to do further fine adjustment.

According to our experience, you may meet the following cases:

1. Gyro Adjustment

When the helicopter is lift ground, you will find the tail rotor is swing (left to right, right to left) badly, it means the tail rotor isn't locked very well, you need adjust the gyro to let the tail rotor to be locked, please refer to the following picture.



Picture 13

Please adjust the Gyro Sensitive switch right turn (or left turn), after the adjustment, please fly it with less than 3 feet high and to check if the helicopter tail still swing. In order to let the helicopter tail isn't swing, you may need to adjust it many times.

2. Adjust the Main Blade Pitch

After you know above adjustment, and can control the helicopter very well, then you may want to fly it higher, if you can fly it higher and can control it very well, then we congratulate you did it and have fun to play it!

But you may meet another trouble, the helicopter can't fly higher than 3-5 feet, even the battery is fully charged (the output voltage is 11.1V~12.6V), if you meet this problem, then you do the fine adjustment for main blade pitch, and this part is difficult to do for beginner.

Note: In factory this part is well adjusted, but we think you still have chance to make mistake to adjust the switch in transmitter (Pitch Trim, Pitch range Trim, and the DIP switch in the back of the helicopter) when you use it at first time.

And if you do the adjustment without fully understanding, the result will be even worse than before you adjust. We strongly suggest you mark the Pitch Range Trim and Pitch Trim position before you adjust it.

In order to do this part adjustment, we try our best to provide detail information as we can. If you are hobbyist, we think you will learn it very quick. The following is the steps:

A. Move the Switch DIP8 in back of the transmitter to Unlock position

(Normally the switch isn't allowed to adjust if you are not expert). Refer to the following picture.



B. When you did above step, you need to adjust the Pitch Range Trim in the middle, and Pitch Trim in left side (refer to the following picture).

After you did above setting, please put the battery into the helicopter, and move the throttle up to speed up the main blade, you may feel the strong wing (wing towards your hand) from the main blade.

You need to adjust the pitch range trim to left to get a best position to let the main blade generate strongest wing (wing towards your hand) to lift the helicopter.

Please not to adjust the Pitch Range Trim mark to right, (if you turn it right, you will find the wing is against your hand, it will not lift your helicopter.).



After the Pitch Range Trim is set to get the strongest wing, please push the Switch DIP8 to “Lock” position in order to lock the main blade pitch range. Please fly the helicopter to check if it gets more lift force than before, <i>if it can fly higher, even can fly more than 5 feet, then it means you finish the adjustment.

<ii> If it can fly higher than before, but still can't reach the 3~5 feet, then you need to adjust the Pitch Trim.

Please put the switch DIP8 to “Unlock” again, and keep the Pitch Range Trim to be un-changed.

Just adjust the Pitch Trim to little left to let the wing generate strongest win than before you adjust it.

And then put the switch DIP8 to “Lock” again, and fly the helicopter to try if it can fly higher than 3~5 feet, if yes, then you finish the adjustment.

If you still can't let it fly higher than 3 feet, then you need to adjust the Pitch range Trim and Pitch Trim again.

In this part adjustment, you should have patience to try it one more times and gradually you will understand the adjustment.

Normally after above adjustment, the pitch of main blade is around 5-15 degree, if the pitch degree is bigger than 15 degree, then the main motor will consume more power, and the fly duration will be reduced compare to the degree is around 10 degree with same battery power.

And actually if the pitch of main blade is bigger than 15 degrees, the main motor life-circle will be short than around 10 degree.

3. Flying the Helicopter

After above adjustment, then you can start to fly the helicopter easily.

1. Using transmitter to control the Helicopter

Please follow instruction in Page 5 of Factory Instruction Manual to control the helicopter fly.

Note: In Factory Instruction Manual Page 5, the diagram is took Model Transmitter (Throttle stick is in right of the TX) as example. If you use Mode 2 Transmitter, the stick is as followings:

<1> UP.	Push left throttle stick up
<2> Down.	Push left throttle stick down
<3> Head turn left.	Push left throttle stick left (for rudder function)
<4> Head turn right.	Push left throttle stick right (for rudder function)
<5> Head down forward.	Push right elevator stick up
<6> Head up backward.	Push right elevator stick down
<7> Body lean left.	Push right throttle stick left (for Aileron function)
<8> Body lean right.	Push right throttle stick right (for Aileron function)

2. Aerobatic Fly

If you can fly above action very well, then you may learn the 3D aerobatic fly, but we reminder you if you didn't fly helicopter aerobatic before, you may damage your helicopter, even though you fly airplane aerobatic very well. And we suggest you fly the 3D aerobatic only when it flies higher than 30 feet, in this height, even you make mistake, you still have chance to adjust to save your helicopter.

4. Reference Information

Transmitter introduction

Before you use the Helicopter, we suggest you read the section first.

This is 6 Ch Mode2 Transmitter shown as in following picture.



- **Landing GEAR Switch**

The Helicopter doesn't have Landing GEAR to control the Landing skit, so the function of the TX isn't used when you use it to control the Helicopter. Normally just push the switch towards up

- **3D Switch**

The Helicopter can fly upside-down, when you can fly the helicopter very well, you may want to use it.

For 3D Aerobatic (Upside-down), you need move the switch to "1".

For Normal fly operation, you need move the switch to "N". Be aware of it may damage your helicopter or injure someone when you miss-operate it.

We strongly suggest you move it to "N" when you start to fly it.

- **Aileron Operation**

Please refer to the following picture.

- **Elevator Operation**

Please refer to the following picture.

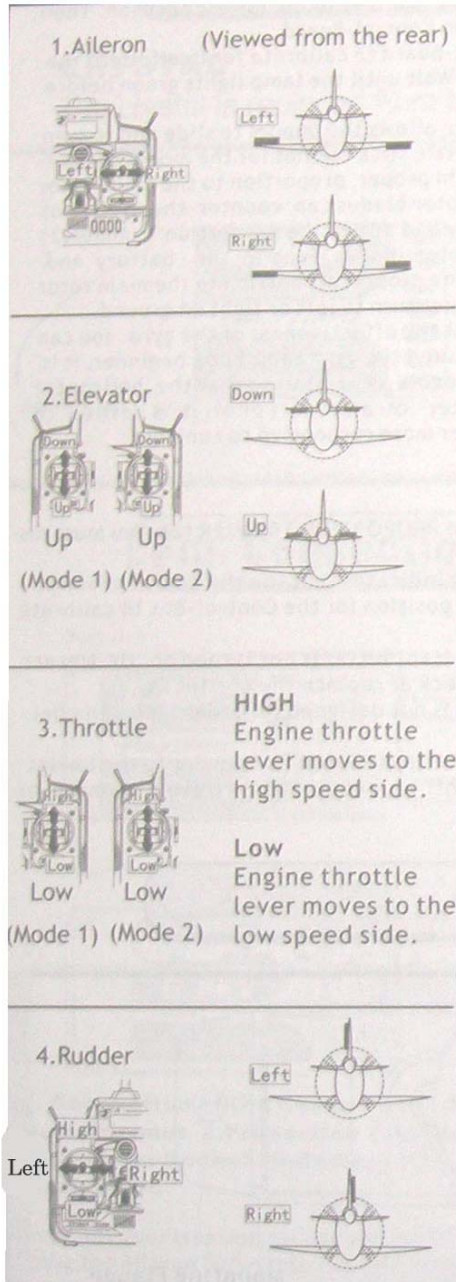
- **Throttle Operation**

Please refer to the following picture.

- **Rudder Operation**

Please refer to the following picture.

TRANSMITTER OPERATION AND MOVEMENT OF EACH SERVO



Before making any adjustments, learn the operation of the transmitter and the movement of each servo. (In the following descriptions, the transmitter is assumed to be in the standby state.)

AILERON OPERATION

When the aileron stick is moved to the right, the right aileron is raised and the left aileron is lowered, relative to the direction of flight, and the plane turns to the right. When the aileron stick is moved to the left, the ailerons move in the opposite direction.

ELEVATOR OPERATION

When the elevator stick is pulled back, the tail elevator is raised and the tail of the plane is forced down, the air flow applied to the wings is changed, the lifting force is increased, and the plane climbs (UP operation). When the elevator stick is pushed forward, the elevator is lowered, the tail of the plane is forced up, the air flow applied to the wings is changed, the lifting force is decreased, and the plane dives (DOWN operation).

THROTTLE OPERATION

When the throttle stick is pulled back, the engine throttle lever arm moves to the SLOW (low speed) side. when the throttle stick is pushed forward, the throttle lever arm moves to the HIGH (high speed) side

RUDDER OPERATION

When the rudder stick is moved to the right, the rudder moves to the right and the nose points to the right, relative to the direction of flight. When the rudder stick is moved to the left, the rudder moves to the left and the nose points to the left and the direction of travel of the plane changes.

Safety Instruction for Rechargeable Battery, especially for Li-Poly Battery

The Li-poly battery is newest battery without any pollutant to the environment.

Charge the battery **before** you connect the battery to the helicopter first, then put the Li-poly battery into the helicopter battery holder. Please check if the voltage of Li-poly battery is higher than 11.1V, if yes, then you can plug the battery connector into the helicopter.

Because it's high energy battery, if you miss-operate it may damage your helicopter, person or property. We don't take any responsibility for any kind of damage when you use the battery. Before you use, please always check it first. And keep our notice in mind.

Notice:

- Please use Li-poly battery charger to charge the Li-poly battery; use Ni-MH battery charger to charge the Ni-MH battery (never mess them up). Never use Ni-MH charger to Li-poly battery, and Vice Versa.
- For Li-poly battery, its charging duration is around 2 hours, we suggest 1.5 hours, and charge the battery in a safe place which will not cause fire or damage, always keep it away from Children. If you are not sure how to charge or use the Li-poly battery safely, please email us first.
- Make sure the connector direction is correct
- Don't disassemble or reconstruct battery
- Don't short -circuit battery
- Don't use or leave battery nearby fire, stove or heated place, or under the blazing sun
- Don't immerse the battery in water or sea water, or get it wet
- Do use the specified charger and observe charging requirement (under 1A)
- Don't drive a nail into the battery, strike it by hammer, or tread it.
- Don't give battery impact or fling it
- Don't use the battery with conspicuous damage or deformation
- Don't make direct soldering on battery
- Don't reserve charge or reserve-connect
- Don't connect battery to plug socket or car-cigarette-plug
- Don't use the battery for unspecified equipment
- Don't touch a leaked battery directly
- Keep the battery from Baby
- Don't use Lithium-ion battery in mixture
- Don't continue to charge battery over specified time
- Don't get it into microwave or high pressure container
- Don't use the leaked battery near by fire
- Don't use an abnormal battery
- Don't use it nearby the place where generates the static electricity, which gives damage to the protection circuit,
- When you charge it, please keep it far away the easy-burn area, such as carpet, etc.
- Charging temperature range is regulated 0 degree(C) to 45 C degree. Don't charge it out of this range.
- When the battery has rust, bad smell or something abnormal at first time-using, don't use it, and report to us.

- In case Children use the battery, their parents should teach how to use it. And also, when children are using the battery, pay attention to according to that or not
- Keep the battery out of the reach of children. And also using the battery, pay attention to be taken out it from charger or equipment by little children
- If the skin or cloth is smeared with liquid from the battery, wash with fresh water, it may cause the skin inflammation.

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Be Aware when you use it:

- Please operate as follow to get best 8C discharging capacity if the battery will be discharged under 8C discharge current.
- Be fully charge under no more than 1A by using the specified charger
- Be discharged under less than 5C voltage but avoiding discharge time too long to harm the battery, sometime it may get burn if you over-charge it.
- Repeat the first and second steps one or two times
- Please alter specified or large voltage discharge connecting before discharged under 8C discharge current.

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